Muncy Area Corridor Access Management Plan Technical Appendices

Hughesville and Muncy Borough, Muncy, Muncy Creek and Wolf Township, Lycoming County, PA

Prepared by

McMAHON
TRANSPORTATION ENGINEERS & PLANNERS

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Prepared for
Lycoming County

December 17, 2015
McMahon Project Number 913480.11

APPENDIX A

Meeting Agendas

McMAHON
TRANSPORTATION ENGINEERS & PLANNERS

AGENDA

Muncy Area Corridor Access Management Plan
Kickoff Meeting with PennDOT, County and Municipal Representatives
February 25, 2014 – 1 pm

- Introductions
    - Jodie Evans, PE, PTOE– Transportation Engineering consultant
    - Nicole Kline, PE, PTOE – Transportation Engineering consultant
    - Tom Comitta, AICP, CNU-A, RLA – Land Use consultant
    - PennDOT, County and Municipal Representatives

- Project Team Structure
    - McMahon lead consultant – TCA land use subconsultant
    - Regional Corridor Study Committee

- Overview of Proposed Study
    - Similar to Act 209 for possible conversion
    - General study area
    - Request available transportation and land use data available
    - Anticipated Study Results

- Local feedback on transportation-related issues/concerns in the general study area (DOT/Co./Municipal), such as:
    - Safety concerns
    - Access management issues
    - Missing transportation linkages
    - Constraints along corridors
    - Existing and proposed land use challenges

- Next meeting – possible driving field view to refine study scope and goals

McMAHON TRANSPORTATION ENGINEERS & PLANNERS

TCA THOMAS COMITTA ASSOCIATES, INC. Town Planners & Landscape Architects

AGENDA

Muncy Area Corridor Access Management Plan
Meeting with Steering Committee
at PennDOT District 3-0 (Downstairs Conf. Rm.)
March 20, 2015 – 1:30 pm

- Existing Traffic Conditions
    - Data collection completed – supplemented data already available
    - Accident data requested and summarized
    - Existing traffic conditions Capacity/Level of Service Analyses

- Land Use Assumptions Report (LUAR) Overview
    - Projected Residential Land Use Yields
    - Projected Non-Residential Land Use Yields
    - One-third (1/3) Assumption for growth over the next 20 years

- Access Management Concepts: Road/Street Design & Redesign Guidelines
    - Topics for Design Guidelines
    - Design Guidelines Index Map

- Next meeting:
    - Future traffic conditions without improvements and preferred level of service discussion
    - Option of using MindMixer (online engagement tool) for input from Steering Committee Members

McMAHON TRANSPORTATION ENGINEERS & PLANNERS

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AGENDA

Muncy Area Corridor Access Management Plan
Meeting with Steering Committee
at PennDOT District 3-0 (Downstairs Conf. Rm.)
June 5, 2015 – 1:30 pm

- Trip Generation Assumptions
    - Review proposed assumptions
    - Discussion with Steering Committee
- Trip Distribution Assumptions
    - Review proposed assumptions
    - Discussion with Steering Committee
- Future Pass-through Traffic Conditions
    - Review process of establishing future pass-through traffic volumes
        - Background Growth Rate
        - Significant development from adjacent municipalities
    - Future pass-through traffic conditions Capacity/Level of Service Analyses Results
- Future Development Traffic Conditions
    - Review process of establishing future development traffic volumes
    - Future development traffic conditions Capacity/Level of Service Analyses Results
- Preferred Level of Service
    - Present preferred level of service considerations
    - Discussion and approval by Steering Committee
- Next meeting:
    - Future traffic conditions with improvements

McMAHON TRANSPORTATION ENGINEERS & PLANNERS

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AGENDA

Muncy Area Corridor Access Management Plan
Meeting with Steering Committee
at PennDOT District 3-0 (Downstairs Conf. Rm.)
August 24, 2015 – 1:00 pm

- Future Development Improvements per LUAR Assumptions (1/3)
    - Review significance of improvements with LUAR development assumptions to meet preferred LOS and note some locations unable to reasonably meet preferred LOS
    - Discussion with Steering Committee

- Trip Generation Reductions
    - Review recommended revised assumptions for more feasible improvements (1/3 => 15%)
    - Discussion with Steering Committee
        - Discuss thoughts on trip generation reduction
        - Discuss managing growth

- Alternative Future Development Improvements with Reduced Trip Generation (1/3 => 15%)
    - Review reduced future development traffic volumes
    - Review improvement options and recommendations for reduced future development traffic conditions to meet preferred LOS

- Discussion and approval of recommended improvements by Steering Committee
    - Approve future development growth – 1/3 vs 15%
    - Approve improvement recommendations
    - Provide input regarding multi-modal recommendations within study area

- Next meeting:
    - Capital Improvement Plan Preliminary Cost Estimates
    - Draft Report Discussion/Input from Steering Committee

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AGENDA

Muncy Area Corridor Access Management Plan
Meeting with Steering Committee
at PennDOT District 3-0 (Downstairs Conf. Rm.)
November 16, 2015 – 1:30 pm

- Future Development Improvement Revisions
    - Review improvement revisions based on discussions at last meeting

- Future Development Improvements Costs
    - Review general cost estimate assumptions
    - Review cost alternatives considered
    - Review cost per development "new" weekday afternoon peak hour trip
    - Discussion with Steering Committee

- Draft Report
    - Summarizes process, existing and future conditions
    - Includes LUAR growth and reduced growth trip generation options considered
    - Includes Capital Improvement Plan with associated costs and potential "transportation impact fee"

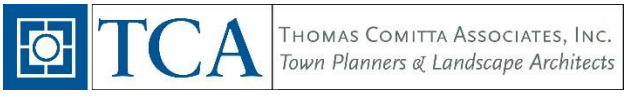
- Next:
    - McMahon to finalize Capital Improvement Plan preliminary cost estimates and report per discussion/input from Steering Committee

APPENDIX B

Land Use Assumptions Report

LAND USE ASSUMPTIONS REPORT
Muncy Area Corridor Access Management Plan

Lycoming County, PA





Draft: August 27, 2014**; Revised/Updated: December 30, 2014**

LAND USE ASSUMPTIONS REPORT
Muncy Area Corridor Access Management Plan

Table of Contents

1. Introduction 1-1

2. Mapping **& Analysis** 2-1

    1. Existing Land Use

    2. Existing Land Use – Hughesville Borough

    3. Existing Land Use – Muncy Borough

    4. Existing Zoning – General Districts

    5. Existing Zoning – Parcel Specific

    6. Existing Zoning – Parcel Specific; Hughesville Borough

    7. Existing Zoning – Parcel Specific; Muncy Borough

    8. Potential Future Land Use

    9. Potential Future Land Use – Hughesville Borough

    10. Potential Future Land Use – Muncy Borough

3. Projected Land Use 3-1

    11. Future Land Use Change & Yields

    12. Excess Land Use Yields on Existing Parcels

Appendix A – Parcel Index Maps A-1

Appendix B – Muncy Area Corridor Access Management Plan, Aerial Photograph B-1

LAND USE ASSUMPTIONS REPORT
Muncy Area Corridor Access Management Plan

Introduction

This Land Use Assumptions Report has been prepared in the context of a 6.7 square mile Transportation Service Area. This Report was prepared by Thomas Comitta Associates, Inc., Town Planners & Landscape Architects and McMahon Associates, Transportation Engineers & Planners, with the assistance of the Lycoming County Planning Commission.

The Muncy Area Corridor Access Management Plan was prepared for five (5) Municipalities including Hughesville Borough, Muncy Borough, Muncy Creek Township, Muncy Township, and Muncy Creek Township.

The primary road system is comprised of State Routes 405, 406, 2014, 2036, and 2049, as well as U.S. Route 220, and Interstate 180.

The maps in this LUAR pertain to **five (5)** important elements, including:

1. Existing Land Use – that was derived from an initial "windshield" survey on May 18, 2014, aerial photographs, and a second "windshield" survey on June 13, 2014;

2. Existing Zoning – that was derived from data of the Lycoming County Planning Commission, and individual municipal Zoning Ordinances and Zoning Maps;

3. Potential Future Land Use – that was derived from the Existing Land Use map, the Existing Zoning maps, data from the Lycoming County Planning Commission, a field survey on June 13, 2014, and a "Highest and Best Use" concept for developable lands;

4. **Future Land Use Change & Yields – that indicates the parcels that will change in the future, and the Land Use Yields for each parcel;**

5. **Excess Land Use Yields on Existing Parcels – that indicates existing parcels that will not involve a Land Use change, but can be further subdivided and/or developed.**

The "Highest and Best Use" concept reflected on the Potential Future Land Use map includes the following considerations:

+ that all existing and viable developed properties shown on the Existing Land Use map, should continue into the future;

Introduction (continued)

+ that all current land development proposals being reviewed by the Lycoming County Planning Commission are assumed to be reasonable land development proposals and, therefore, should be treated as reasonable approximations of the future land use for those parcels;

+ that any vacant building/lot attain a future land use designation at the highest level of land use permitted under the existing Zoning Ordinances;

+ that any existing lot with an Agricultural land use, located within a proposed growth area of a municipal Comprehensive Plan or the Lycoming County Comprehensive Plan attain a Future Land Use designation at the highest level of land use permitted under the existing Zoning Ordinances;

+ that any existing lot with an Agricultural land use, located outside of a proposed growth area of a municipal Comprehensive Plan and the Lycoming County Comprehensive Plan, remain Agricultural use (such as along the U.S. Route 220 corridor between Interstate 180 and Hughesville Borough); and

+ that properties between U.S. Route 220 and Muncy Borough, along John Brady Drive, be designated for Industrial use, even if the existing Zoning Ordinances allow for a higher intensity of Commercial uses.

The Existing Land Use map**,** Potential Future Land Use map**, and Land Use Change Map** can now be used for the purpose of generating vehicular trips by McMahon Associates. Those vehicular trips will be calculated to determine:

A. The sufficiency of the existing roadways to accommodate existing traffic;

B. The sufficiency of the roadways to accommodate future/projected traffic as a result of changes in land use; and

C. A Transportation Capital Improvements Plan, focused on the needed roadway improvements.

Fortunately, the Transportation Service Area is less than 7 square miles. As such, if the five municipalities choose in the future to create and adopt Act 209 Transportation Plans, this Land Use Assumptions Report will be very helpful.

LAND USE ASSUMPTIONS REPORT
Muncy Area Corridor Access Management Plan

Section 2. Mapping & Analysis

The following maps of the Muncy Area Corridor Access Management Plan are included in this Section 2:

Map 1. Existing Land Use

Map 2. Existing Land Use – Hughesville Borough

Map 3. Existing Land Use – Muncy Borough

Map 4. Existing Zoning – General Districts

Map 5. Existing Zoning – Parcel Specific

Map 6. Existing Zoning – Parcel Specific; Hughesville Borough

Map 7. Existing Zoning – Parcel Specific; Muncy Borough

Map 8. Potential Future Land Use

Map 9. Potential Future Land Use – Hughesville Borough

Map 10. Potential Future Land Use – Muncy Borough

Please refer to **the following** maps prepared for this Land Use Assumptions Report, and a brief discussion of the Legends.

Section 2. Mapping & Analysis (continued)

The "Existing Land Use" Map has 14 categories as described and clarified below.

+ Agriculture
+ Recreation (includes parks and playgrounds)

+ Single-Family Detached Residential
+ Single-Family Semi-Detached Residential (includes Twins or Duplex Units)
+ Single-Family Attached Residential (includes Townhouses and Row Houses)
+ Multi-Family Residential (includes Apartments)

+ School, Church
+ Hospital
+ Governmental

+ Retail, Restaurant
+ Office

+ Industrial
+ Utilities

+ Vacant (includes properties with no discernable land use, or a building that was vacant as of 5-18-14)

The Existing Land Uses were classified using a predominant use rule. In other words, if 51% or more of a parcel is occupied by a particular use, we classified the entire parcel for that use.

Existing Land Use

Muncy Area Corridor
Access Management Plan

Legend

Residential
- Agriculture
- Recreation
- Single-Family Detached
- Single-Family Semi-Detached
- Single-Family Attached
- Multi-Family

Institutional
- School, Church
- Hospital
- Governmental

Commercial
- Retail, Restaurant
- Office

Industrial
- Industrial
- Utilities
- Vacant

- Main Road Corridors
- Secondary Roads
- Expanded Parcels

June 13, 2014
Revised: June 27, 2014; July 14, 2014

Note:
Existing Land Use based on:

1. Windshield survey of 5-18-2014
2. Predominant land use coding for 51%+ land use
3. Land use parcels contain a total area of 6.7 square miles

Data Sources:
Lycoming County Planning Commission &
The Pennsylvania Department of Transportation

0 0.25 0.5 1 1.5 2 Miles

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S.R. 2049
S.R. 2014
S.R. 2036
S.R. 405
S.R. 442
Lycoming Mall Drive
Pond Road
Village Road
Auchmuty Road
Rabbitown Road
Wolf Run Road
Lime Bluff Road
Ellis Artley Road
Middle Road
Narber
Fry Road
Chippewa Road
Elm Drive
Cemetery Drive
Race Street
E. Water Street
Boak Avenue
Sawmill Road
Meadowbrook Road
E. Lime Bluff Road
Industrial Park Road
John Brady Drive
E. Penn Street
W. Penn Street
S. Main Street
180
220

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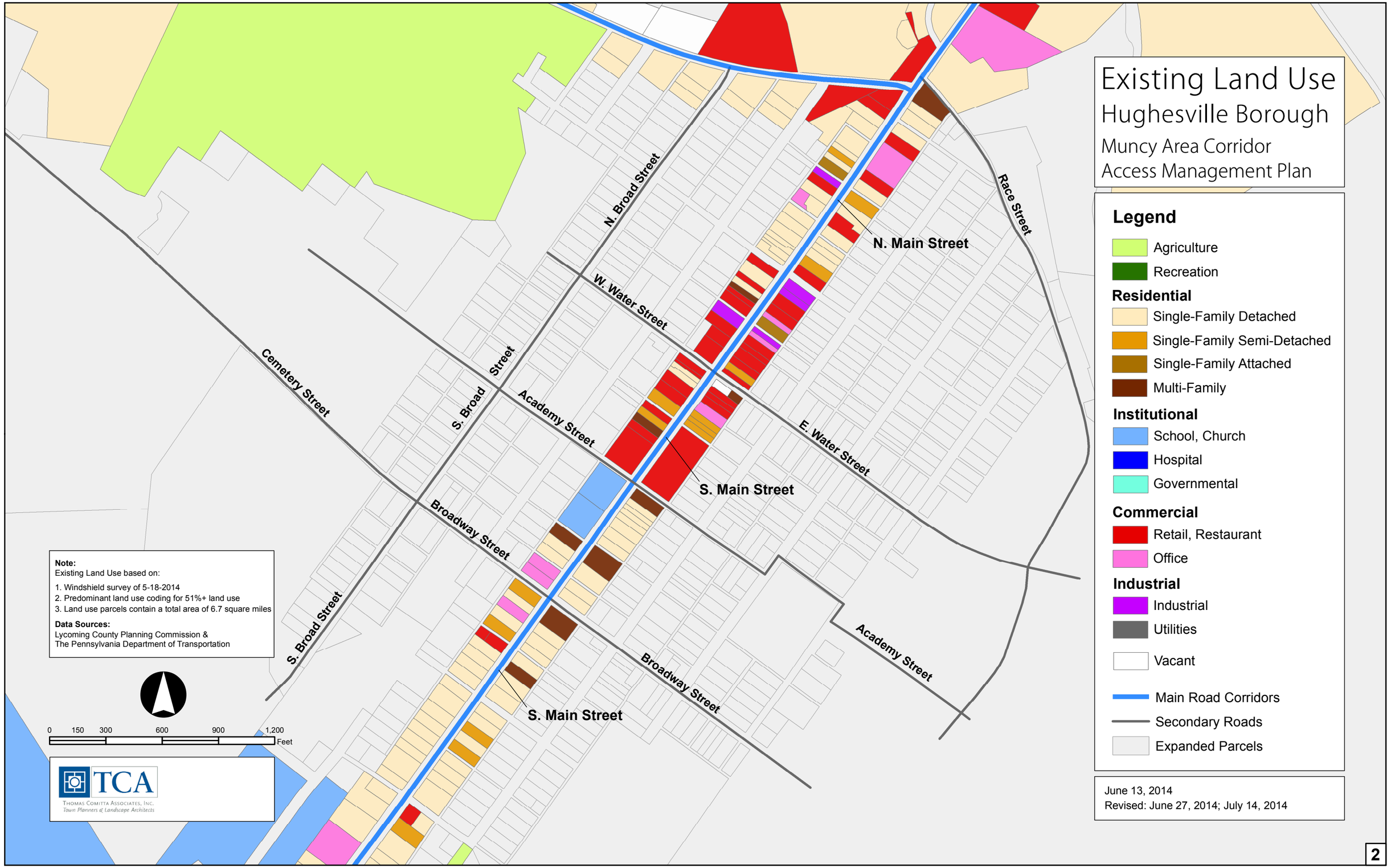
Existing Land Use
Hughesville Borough
Muncy Area Corridor Access Management Plan



Note:
Existing Land Use based on:

1. Windshield survey of 5-18-2014
2. Predominant land use coding for 51%+ land use
3. Land use parcels contain a total area of 6.7 square miles

Data Sources:
Lycoming County Planning Commission &
The Pennsylvania Department of Transportation

0 150 300 600 900 1,200 Feet

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Legend

- Agriculture
- Recreation

Residential

- Single-Family Detached
- Single-Family Semi-Detached
- Single-Family Attached
- Multi-Family

Institutional

- School, Church
- Hospital
- Governmental

Commercial

- Retail, Restaurant
- Office

Industrial

- Industrial
- Utilities

- Vacant
- Main Road Corridors
- Secondary Roads
- Expanded Parcels

June 13, 2014
Revised: June 27, 2014; July 14, 2014

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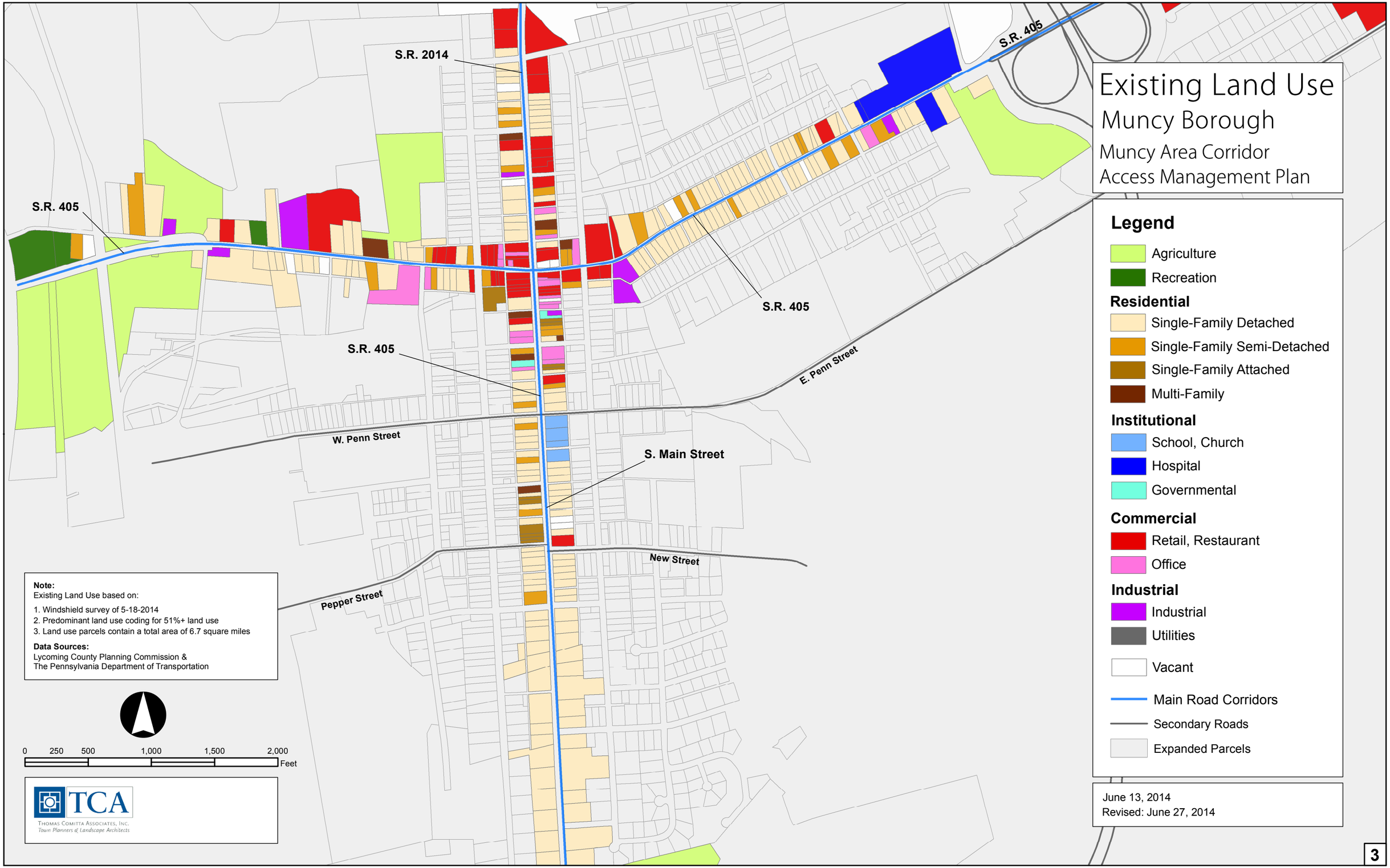
S.R. 2014
S.R. 405
S.R. 405
S.R. 405
S.R. 405
E. Penn Street
W. Penn Street
S. Main Street
New Street
Pepper Street
Existing Land Use
Muncy Borough
Muncy Area Corridor
Access Management Plan
Legend
Agriculture
Recreation
Residential
Single-Family Detached
Single-Family Semi-Detached
Single-Family Attached
Multi-Family
Institutional
School, Church
Hospital
Governmental
Commercial
Retail, Restaurant
Office
Industrial
Industrial
Utilities
Vacant
Main Road Corridors
Secondary Roads
Expanded Parcels
Note:
Existing Land Use based on:
1. Windshield survey of 5-18-2014
2. Predominant land use coding for 51%+ land use
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Data Sources:
Lycoming County Planning Commission &
The Pennsylvania Department of Transportation
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Feet
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June 13, 2014
Revised: June 27, 2014
3

Section 2. Mapping & Analysis (continued)

The "Existing Zoning: General Districts" Map has 23 categories as described and clarified below.

+ Agricultural
+ Open
+ Floodway

+ Neighborhood Preservation
+ Rural Center
+ Estate
+ Suburban Estate
+ Residential
+ One Family
+ Suburban
+ Two Family
+ Mixed Residential Development
+ Multiple Family
+ Urban

+ Central Business
+ Neighborhood Commercial
+ General Commercial
+ Suburban Mixed Use
+ Highway Commercial
+ Regional Commercial

+ Industrial
+ Light Industrial
+ Heavy Industrial

Note: Refer to the "Existing Zoning: Parcel Specific" Map categories on pages 2-9 to 2-11 for greater detail.

Existing Zoning Map:
General Districts
Muncy Area Corridor
Access Management Plan

Legend

- Agricultural
- Open
- Floodway

Residential

- Neighborhood Preservation
- Rural Center
- Estate
- Suburban Estate
- Residential
- One Family
- Suburban
- Two Family
- Mixed Residential Development
- Multiple Family
- Urban

Commercial

- Central Business
- Neighborhood Commercial
- General Commercial
- Suburban Mixed Use
- Highway Commercial
- Regional Commercial

Industrial

- Industrial
- Light Industrial
- Heavy Industrial

- Main Road Corridors
- Secondary Roads
- Frontage Parcels
- Expanded Parcels

June 13, 2014
Revised: June 27, 2014

Data Sources:
Lycoming County Planning Commission &
The Pennsylvania Department of Transportation

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4

Section 2. Mapping & Analysis (continued)

The "Existing Zoning: Parcel Specific" Map has 21 categories as described and clarified below.

+ Agricultural

+ Neighborhood Preservation
+ Rural Center
+ Estate
+ Suburban Estate
+ Residential
+ One Family
+ Suburban
+ Two Family
+ Mixed Residential Development
+ Multiple Family
+ Urban

+ Central Business
+ Neighborhood Commercial
+ General Commercial
+ Suburban Mixed Use
+ Highway Commercial
+ Regional Commercial

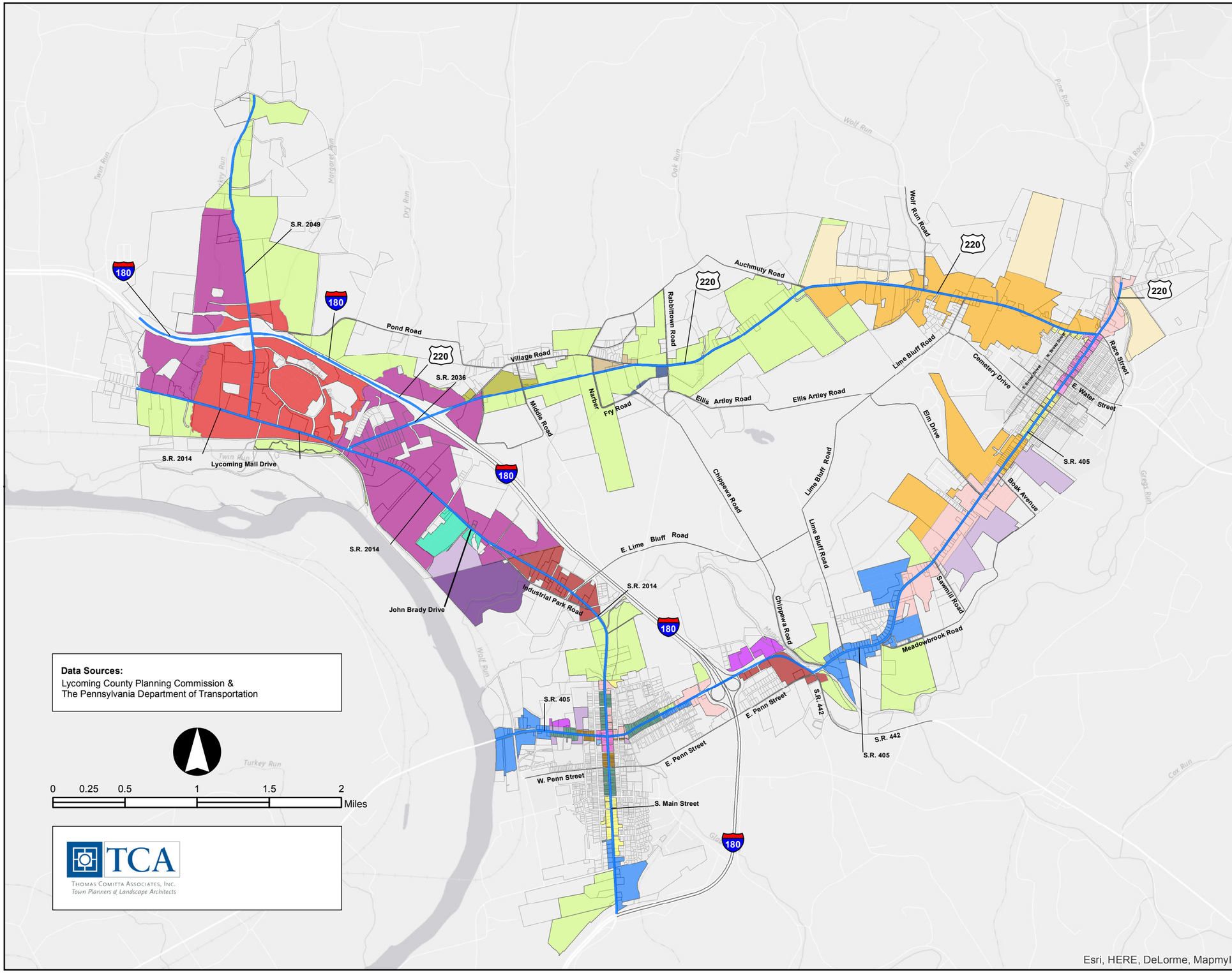
+ Industrial
+ Light Industrial
+ Heavy Industrial

Note: These categories are derived from the classifications in the municipal Zoning Ordinances, and by the Lycoming County Planning Commission.

Existing Zoning Map:

Parcel Specific

Muncy Area Corridor
Access Management Plan



Data Sources:
Lycoming County Planning Commission &
The Pennsylvania Department of Transportation

0 0.25 0.5 1 1.5 2 Miles

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Legend

Residential
- Agricultural
- Neighborhood Preservation
- Rural Center
- Estate
- Suburban Estate
- Residential
- One Family
- Suburban
- Two Family
- Mixed Residential Development
- Multiple Family
- Urban

Commercial
- Central Business
- Neighborhood Commercial
- General Commercial
- Suburban Mixed Use
- Highway Commercial
- Regional Commercial

Industrial
- Industrial
- Light Industrial
- Heavy Industrial

- Main Road Corridors
- Secondary Roads
- Expanded Parcels

June 13, 2014
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5

Existing Zoning Map:

Parcel Specific
Hughesville Borough

Muncy Area Corridor
Access Management Plan



Legend

- Agricultural

Residential

- Neighborhood Preservation
- Rural Center
- Estate
- Suburban Estate
- Residential
- One Family
- Suburban
- Two Family
- Mixed Residential Development
- Multiple Family
- Urban

Commercial

- Central Business
- Neighborhood Commercial
- General Commercial
- Suburban Mixed Use
- Highway Commercial
- Regional Commercial

Industrial

- Industrial
- Light Industrial
- Heavy Industrial

- Main Road Corridors
- Secondary Roads
- Expanded Parcels

Data Sources:
Lycoming County Planning Commission &
The Pennsylvania Department of Transportation

0 150 300 600 900 1,200 Feet

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6

Existing Zoning Map:
Parcel Specific
Muncy Borough
Muncy Area Corridor
Access Management Plan

S.R. 2014
S.R. 405
S.R. 405
S.R. 405
S.R. 405
E. Penn Street
W. Penn Street
S. Main Street
New Street
Pepper Street

Legend

Agricultural

Residential
- Neighborhood Preservation
- Rural Center
- Estate
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Data Sources:
Lycoming County Planning Commission &
The Pennsylvania Department of Transportation

0 250 500 1,000 1,500 2,000 Feet

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Revised: June 27, 2014

7

Section 2. Mapping & Analysis (continued)

The "Potential Future Land Use" Map **and the "Future Land Use Change & Yields" Map** have 13 categories as described and clarified below.

+ Agricultural
+ Recreation (includes parks and playgrounds)

+ Single-Family Detached Residential
+ Single-Family Semi-Detached Residential (includes Twins or Duplex Units)
+ Single-Family Attached Residential (includes Townhouses and Row Houses)
+ Multi-Family Residential (includes Apartments)

+ School, Church
+ Hospital
+ Governmental

+ Retail, Restaurant
+ Office

+ Industrial
+ Utilities

Note: Refer to pages 1-1 and 1-2 for a description of the "Highest and Best Use" principle used for the Potential Future Land Use classification.

Potential Future Land Use

Muncy Area Corridor Access Management Plan

Legend

Residential
- Agriculture
- Recreation
- Single-Family Detached
- Single-Family Semi-Detached
- Single-Family Attached
- Multi-Family

Institutional
- School, Church
- Hospital
- Governmental

Commercial
- Retail, Restaurant
- Office

Industrial
- Industrial
- Utilities

- Main Road Corridors
- Secondary Roads
- Expanded Parcels

Notes:
1. Predominant land use coding for 51%+ land use
2. Land use parcels contain an area of 6.7 square miles

June 13, 2014
Revised: June 27, 2014; July 15, 2014;
December 30, 2014

Note:
This plan is based on:
1. Existing Land Use Map
2. Existing Zoning Map
3. Interpretation of Existing Land Use and Existing Zoning Maps using the "Highest and Best Use" principle

Data Sources:
Lycoming County Planning Commission &
The Pennsylvania Department of Transportation

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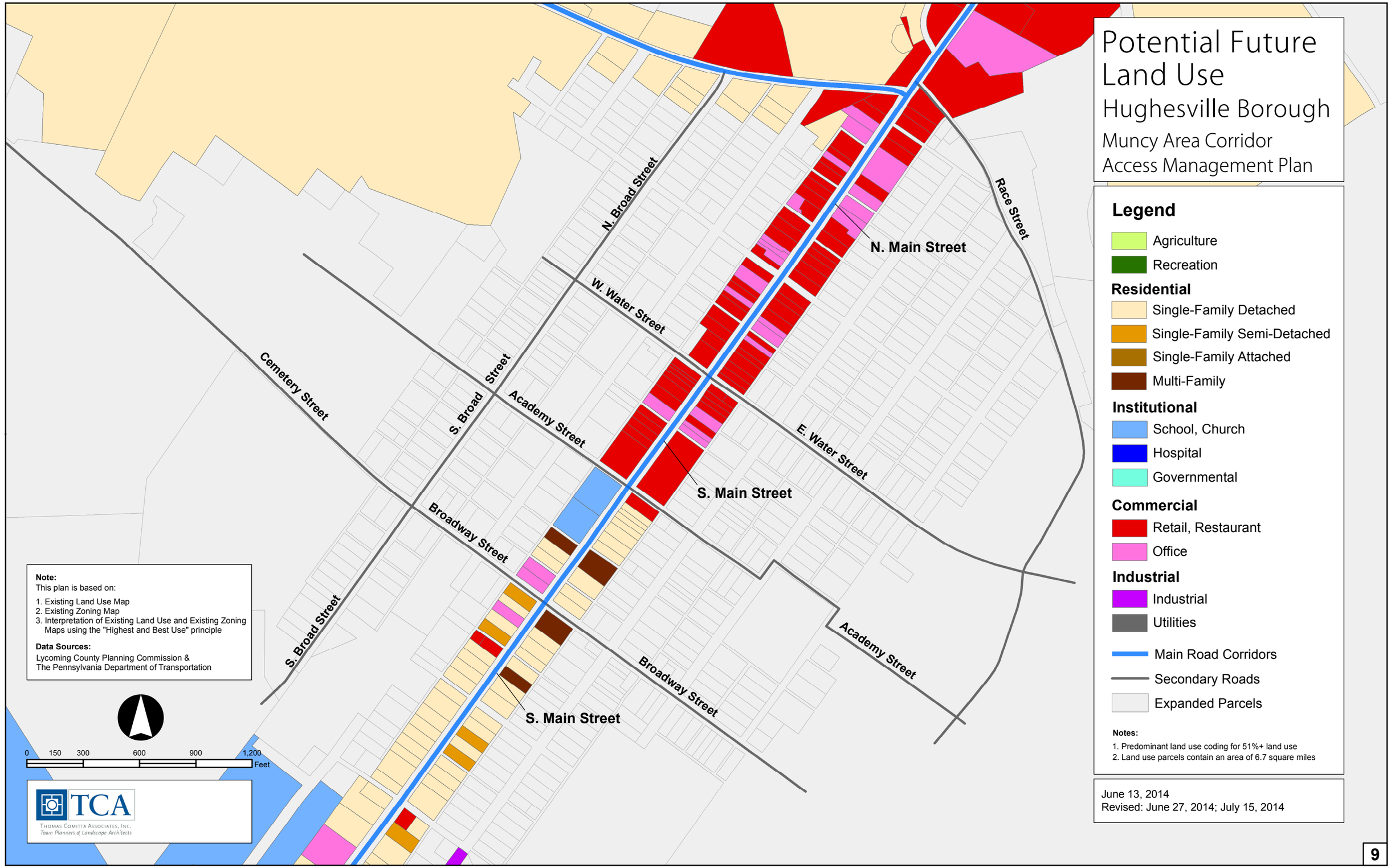
Potential Future Land Use
Hughesville Borough
Muncy Area Corridor Access Management Plan



Legend

- Agriculture
- Recreation

Residential

- Single-Family Detached
- Single-Family Semi-Detached
- Single-Family Attached
- Multi-Family

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- School, Church
- Hospital
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- Office

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Notes:

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Note:
This plan is based on:

1. Existing Land Use Map
2. Existing Zoning Map
3. Interpretation of Existing Land Use and Existing Zoning Maps using the "Highest and Best Use" principle

Data Sources:
Lycoming County Planning Commission &
The Pennsylvania Department of Transportation

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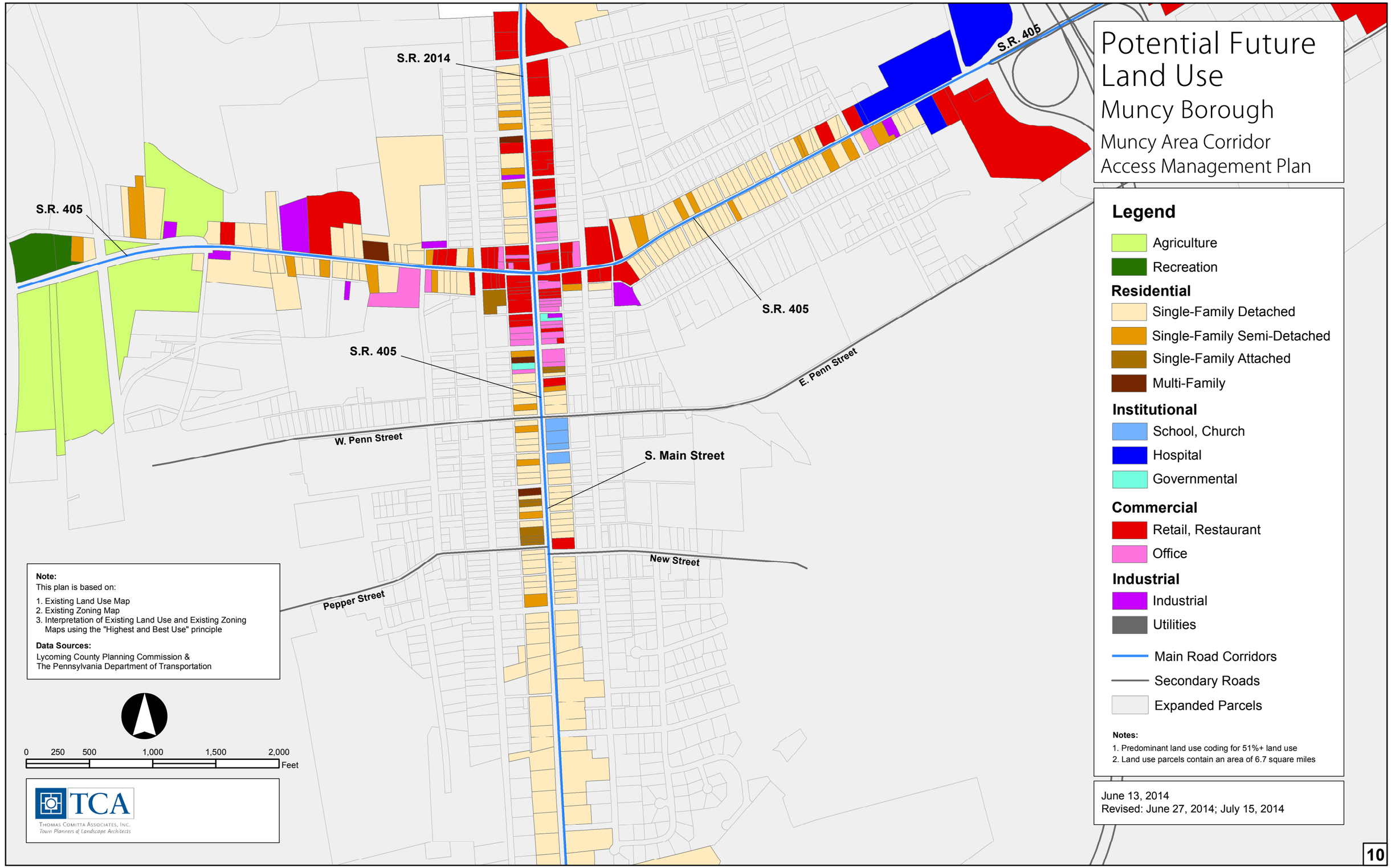
9



Potential Future Land Use

Muncy Borough

Muncy Area Corridor Access Management Plan

Legend

Residential
- Agriculture
- Recreation
- Single-Family Detached
- Single-Family Semi-Detached
- Single-Family Attached
- Multi-Family

Institutional
- School, Church
- Hospital
- Governmental

Commercial
- Retail, Restaurant
- Office

Industrial
- Industrial
- Utilities

- Main Road Corridors
- Secondary Roads
- Expanded Parcels

Notes:
1. Predominant land use coding for 51%+ land use
2. Land use parcels contain an area of 6.7 square miles

June 13, 2014
Revised: June 27, 2014; July 15, 2014

Note:
This plan is based on:
1. Existing Land Use Map
2. Existing Zoning Map
3. Interpretation of Existing Land Use and Existing Zoning Maps using the "Highest and Best Use" principle

Data Sources:
Lycoming County Planning Commission &
The Pennsylvania Department of Transportation

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Town Planners & Landscape Architects

10

LAND USE ASSUMPTIONS REPORT
Muncy Area Corridor Access Management Plan

Projected Land Use

Overview

This Land Use Assumptions Report, relative to Projected Land Use, includes the following assumptions:

- **that the Single-Family Detached Land Use category could yield two (2) dwelling units per acre;**
- **that the Single-Family Semi-Detached Land Use category could yield two (2) dwelling units per acre;**
- **that the Single-Family Attached Land Use category could yield five (5) dwelling units per acre;**
- **that the Multi-Family Land Use category could yield eight (8) dwelling units per acre;**
- **that the Non-Residential Land Use categories could yield 40% of the square footage of a parcel as building coverage (because the remainder of the parcel would be devoted to parking, driveways, and setbacks); and**
- **that only one-third (1/3) of the potential yields will be built in the next 20 years.**

The information on the following pages is based on these assumptions.

Map 11 – Future Land Use Change & Yields

A more detailed look at Projected Land Use can be derived from Map 11 – Future Land Use Change & Yields map, on page 3-5, wherein the Projected Land Use is specified by:

- **SF: Square footage of non-residential land use for each parcel; and**
- **DU: Dwelling Units.**

Using an assumption of one-third (1/3) growth for the next 20 years, the Projected Land Use yields could be:

- **that one-third (1/3) of the total of 1,084 Single-Family Detached Dwellings, or 361 dwelling units will be built by 2035, using Map 11;**

Map 11 – Future Land Use Change & Yields (continued)

- **that all 50 Single-Family Attached units will be built by 2035; and**
- **that one-third (1/3) of the total of 19,738,549 Non-Residential square footage, or 6,579,517 square feet of building will occur by 2035, using Map 11.**

Please note that the red labels indicating number of Dwelling Units (DU) and Square Feet (SF) on Map 11 – Future Land Use Change & Yields map, simply indicate the increase in DU or SF for each parcel, due to a change in Land Use based on the "Highest and Best Land Use" principle outlined on page 1-1 and 1-2. In other words, a parcel that has a Potential Future Land Use that is Institutional, Commercial, or Industrial, and an Existing Land Use that is Residential, will be labeled with the amount of building square feet that is generated, but will not be labeled with the amount of dwelling units lost due to the change in Land Use.

Overall metrics of dwelling units and square feet by Land Use type on Map 11 – Future Land Use Change & Yields map, are listed below. These metrics are based upon the assumptions outlined on page 3-1.

Land Use Type	DU / SF Gain	DU / SF Loss	DU / SF Yield
Residential			
Single-Family Detached	**1,497 DU**	**413 DU**	**1,084 DU**
Single-Family Semi-Detached	**17 DU**	**25 DU**	**0 DU**
Single-Family Attached	**50 DU**	**4 DU**	**50 DU**
Multi-Family	**0 DU**	**16 DU**	**0 DU**
Institutional			
School/Church	**0 SF**	**0 SF**	**0 SF**
Hospital	**159,809 SF**	**0 SF**	**159,809 SF**
Governmental	**0 SF**	**0 SF**	**0 SF**
Commercial			
Retail, Restaurant	**11,793,931 SF**	**166,685 SF**	**11,627,246 SF**
Office	**696,324 SF**	**0 SF**	**696,324 SF**
Industrial	**8,156,671 SF**	**901,501 SF**	**7,255,170 SF**
Total Non-Residential SF			**19,738,549 SF**

Note: SF = Square Footage; DU = Dwelling Units

Map 12 – Excess Land Use Yields on Existing Parcels

Another look at potential Projected Land Use can be derived by looking at parcels that do not involve a Future Land Use change, but are further subdividable and developable. Map 12, "Excess Land Use Yields on Existing Parcels" simply looks at parcels greater than 3 acres for additional Single-Family Detached Dwellings, and parcels greater than 8 acres for additional Non-Residential square footage (on properties not impacted by Floodways). These parcels are capable of adding more homes and more buildings because they are big enough to accommodate additional growth.

Utilizing the one-third (1/3) assumptions as mentioned above, another consideration would be:

- **that one-third (1/3) of the total of 1,108 Single-Family Detached Dwellings or 369 dwellings would be built by 2035; using Map 12; and**

- **that one-third (1/3) of the total of 7,677,075 Non-Residential square footage or 2,559,025 square feet of building will occur by 2035, using Map 12.**

Utilizing all three methods described above, the ranges listed below could be considered, using the one-third assumptions.

Land Use Type	Map 12 Yields
Residential	
Single-Family Detached	**1,108 DU**
Single-Family Semi-Detached	**-**
Single-Family Attached	**-**
Multi-Family	**-**
Institutional	
School/Church	**1,393,588 SF**
Hospital	**-**
Governmental	**-**
Commercial	
Retail, Restaurant	**3,117,010 SF**
Office	**474,749 SF**
Industrial	**2,691,728 SF**
Total Non-Residential SF	**7,677,075 SF**

Note: SF = Square Footage; DU = Dwelling Units

LAND USE ASSUMPTIONS REPORT
Muncy Area Corridor Access Management Plan

Grand Summary

Utilizing the figures from Maps 11 and 12, the Grand Summary of Land Use yields based on the one-third of growth assumption over the next 20 years is listed below.

Land Use Type	Map 11 Yields	Map 12 Yields	Total Yields
Residential			
Single-Family Detached	**361 DU**	**369 DU**	**730 DU**
Single-Family Semi-Detached	**0 DU**	**-**	**0 DU**
Single-Family Attached	**50 DU**	**-**	**50 DU**
Multi-Family	**0 DU**	**-**	**0 DU**
Institutional			
School/Church	**0 SF**	**464,529 SF**	**464,529 SF**
Hospital	**53,270 SF**	**-**	**53,270 SF**
Governmental	**0 SF**	**-**	**0 SF**
Commercial			
Retail, Restaurant	**3,875,749 SF**	**1,039,003 SF**	**4,914,752 SF**
Office	**232,108 SF**	**158,250 SF**	**390,358 SF**
Industrial	**2,418,390 SF**	**897,243 SF**	**3,315,633 SF**
Total Non-Residential SF	**6,579,517 SF**	**2,559,025 SF**	**9,138,542 SF**

Note: SF = Square Footage; DU = Dwelling Units

Future Land Use Change & Yields

Muncy Area Corridor Access Management Plan

Legend

Existing Land Use

- Agriculture
- Recreation
- Single-Family Detached
- Single-Family Semi-Detached
- Single-Family Attached
- Multi-Family
- Retail, Restaurant
- Industrial
- Vacant

Potential Future Land Use

- Single-Family Detached
- Single-Family Semi-Detached
- Single-Family Attached
- Hospital
- Retail, Restaurant
- Office
- Industrial

- Main Road Corridors
- Secondary Roads
- Unchanged Parcels
- Expanded Parcels

June 13, 2014
Revised: June 27, 2014; July 10, 2014; July 15, 2014; December 30, 2014

Notes:

1. Existing Land Use based on:
   a. Windshield survey of 5-18-2014
   b. Predominant land use coding for 51%+ land use
   c. Land use parcels contain a total area of 6.7 square miles

2. Future Land Use based on:
   a. Existing Land Use Map
   b. Existing Zoning Map
   c. Interpretation of Existing Land Use and Existing Zoning Maps using the "Highest and Best Use" principle
   d. Study area tour on 6-13-2014

3. Land use parcels contain an area of 6.7 square miles

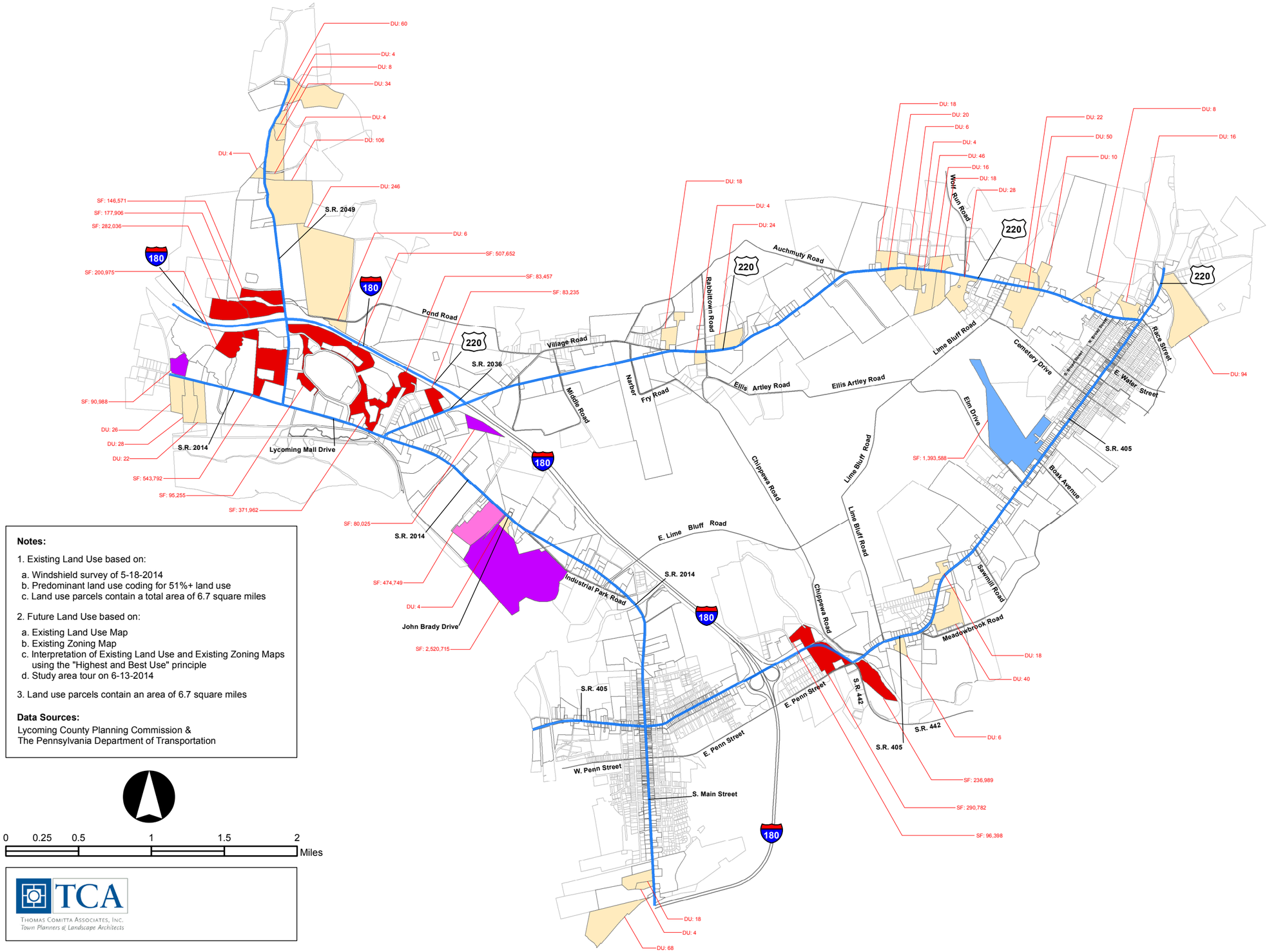
Data Sources:
Lycoming County Planning Commission &
The Pennsylvania Department of Transportation

0 0.25 0.5 1 1.5 2 Miles

TCA
Thomas Comitta Associates, Inc.
Town Planners & Landscape Architects

Excess Land Use Yields on Existing Parcels

Muncy Area Corridor Access Management Plan



Legend

Existing & Potential Future Land Use

- Single-Family Detached
- School, Church
- Retail, Restaurant
- Office
- Industrial

- Main Road Corridors
- Secondary Roads
- Unchanged Parcels
- Expanded Parcels

June 13, 2014
Revised: June 27, 2014; July 10, 2014; July 15, 2014; December 30, 2014

Notes:

1. Existing Land Use based on:
   a. Windshield survey of 5-18-2014
   b. Predominant land use coding for 51%+ land use
   c. Land use parcels contain a total area of 6.7 square miles

2. Future Land Use based on:
   a. Existing Land Use Map
   b. Existing Zoning Map
   c. Interpretation of Existing Land Use and Existing Zoning Maps using the "Highest and Best Use" principle
   d. Study area tour on 6-13-2014

3. Land use parcels contain an area of 6.7 square miles

Data Sources:
Lycoming County Planning Commission &
The Pennsylvania Department of Transportation

0 0.25 0.5 1 1.5 2 Miles

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12

LAND USE ASSUMPTIONS REPORT
Muncy Area Corridor Access Management Plan

Appendix A – Parcel Index Maps

The following maps of the Muncy Area Corridor Access Management Plan are included in this Appendix A:

A-1. Parcel Index Map

A-2. Parcel Index Map – Hughesville Borough

A-3. Parcel Index Map – Muncy Borough

Muncy Area Corridor
Access Management Plan

Legend

- Main Road Corridors
- Secondary Roads
- Frontage Parcels
- Expanded Parcels

1
2
3
4

S.R. 2049
S.R. 2036
S.R. 2014
Lycoming Mall Drive
Pond Road
Village Road
Auchmuty Road
Rabbittown Road
Middle Road
Narber
Fry Road
Ellis Artley Road
Wolf Run Road
Lime Bluff Road
Cemetery Drive
Elm Drive
Chippewa Road
John Brady Drive
E. Lime Bluff Road
Industrial Park Road
Sawmill Road
Meadowbrook Road
Boak Avenue
N. Broad Street
S. Broad Street
Race Street
E. Water Street
E. Penn Street
S.R. 405
S.R. 442
220
180

Twin Run
Hokey Run
Margaret Run
Dry Run
Oak Run
Wolf Run
Greg's Run

Notes:

1. Parcel numbers 1 through 1029 alternate either side of the main corridor until the end of the segment, beginning at point 1 and followed by points 2, 3, 4, and 5.
2. Frontage parcels contain a total area of 6.7 square miles

Data Sources:

Lycoming County Planning Commission &
The Pennsylvania Department of Transportation

0 0.125 0.25 0.5 0.75 1 Miles

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June 13, 2014
Revised: June 27, 2014;
July 14, 2014

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Muncy Area Corridor
Access Management Plan
Hughesville Borough

Legend

- Main Road Corridors
- Secondary Roads
- Frontage Parcels
- Expanded Parcels

Notes:

1. Parcel numbers 1 through 1029 alternate either side of the main corridor until the end of the segment, beginning at point 1 and followed by points 2, 3, 4, and 5.
2. Frontage parcels contain a total area of 6.7 square miles

Data Sources:

Lycoming County Planning Commission &
The Pennsylvania Department of Transportation

0 175 350 700 1,050 1,400 Feet

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Thomas Comitta Associates, Inc.
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June 13, 2014
Revised: June 27, 2014;
July 14, 2014

A-2



Muncy Area Corridor
Access Management Plan
Muncy Borough

Legend

- Main Road Corridors
- Secondary Roads
- Frontage Parcels
- Expanded Parcels

Notes:

1. Parcel numbers 1 through 1029 alternate either side of the main corridor until the end of the segment, beginning at point 1 and followed by points 2, 3, 4, and 5.
2. Frontage parcels contain a total area of 6.7 square miles

Data Sources:

Lycoming County Planning Commission &
The Pennsylvania Department of Transportation

0 250 500 1,000 1,500 2,000 Feet

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June 13, 2014
Revised: June 27, 2014

A-3

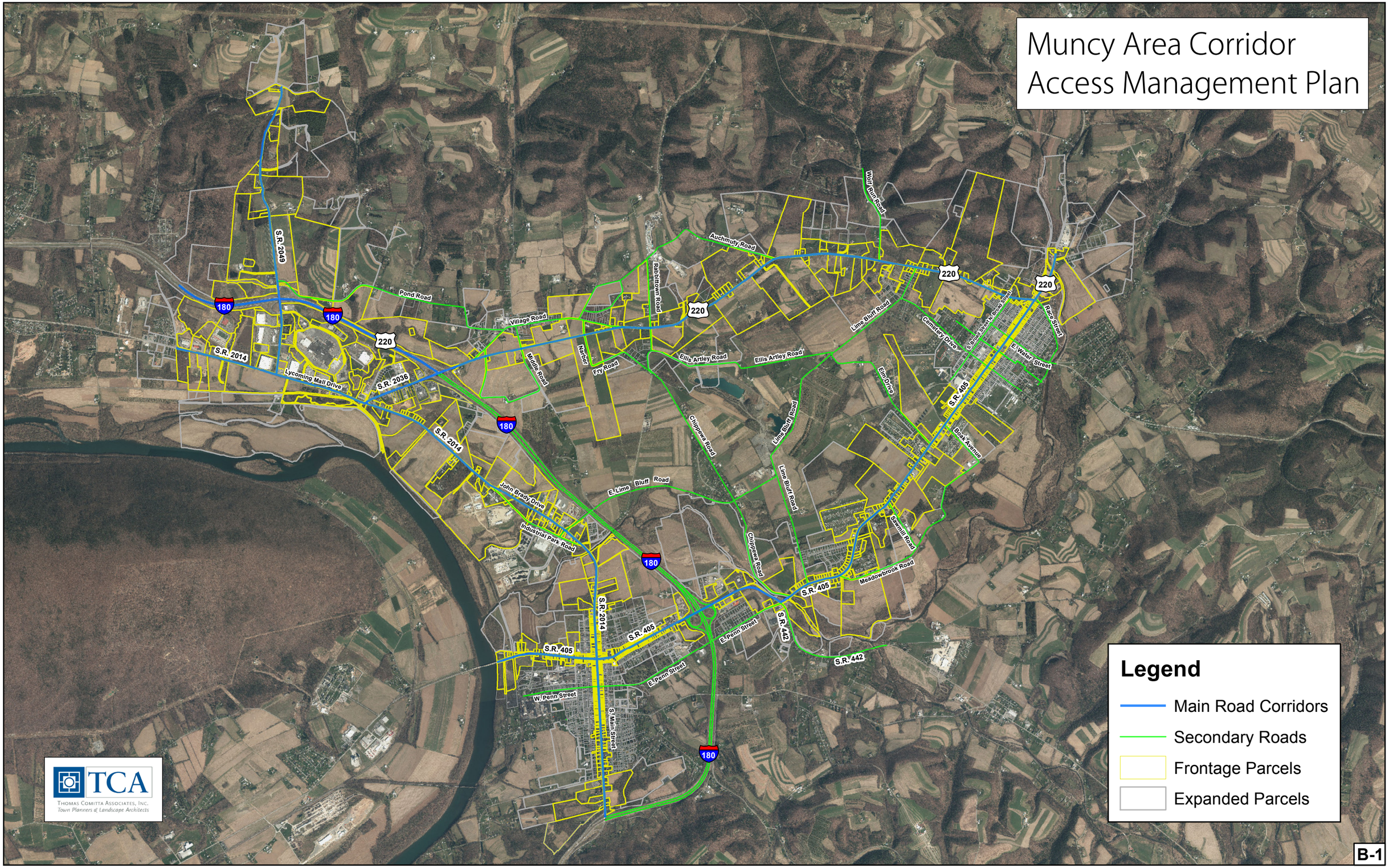
LAND USE ASSUMPTIONS REPORT
Muncy Area Corridor Access Management Plan

Appendix B – Muncy Area Corridor Access Management Plan, Aerial Photograph

The following map of the Muncy Area Corridor Access Management Plan is included in this Appendix B:

B-1. Aerial Photograph Map

Muncy Area Corridor Access Management Plan



APPENDIX C

Traffic Count Data and Field Information

Muncy Corridor Access Management Plan

Study Intersections – Traffic Count Data Sources

McMahon Associates – Counts completed September/October 2014 (with Lycoming County Planning Commission):

7. U.S. 220 at Village Rd
8. U.S. 220 at Middle Rd (Quaker Church Rd)
9. U.S. 220 at Rabbittown Rd
10. U.S. 220 at Lime Bluff Rd
13. Industrial Pkwy at Industrial Park Rd
14. John Brady Dr at Lime Bluff Rd
15. N. Main St at Industrial Park Rd
19. PA Route 405 at Chippewa Rd
20. PA Route 405 at Lime Bluff Rd

Lycoming County Growth Plan – Counts completed summer/fall 2010 (adjusted to 2014)

1. Lycoming Mall Rd at I-180 WB Ramps
2. S. Lycoming Mall Rd at Lycoming Mall Cir (I-180 EB Ramps)
3. Lycoming Mall Dr at S. Lycoming Mall Rd
4. John Brady Dr at Lycoming Mall Dr
5. U.S. 220 at I-180 EB Ramps
6. U.S. 220 at I-180 WB Ramps
11. PA Route 405 (Main St) at PA Route 118 (Hughesville Borough)
12. John Brady Dr at Industrial Park Rd
16. PA Route 405 at I-180 EB Ramps
17. PA Route 405 at I-180 WB Ramps
18. PA Route 405 at PA Route 442

URS - ARLE Grant Traffic Analysis, count data from Lycoming County (May/June 2014)

21. PA Route 405 (Water St) & Main St (Muncy Borough)

Traffic Data (Manual Turning Movement Counts)
McMahon Associates

Counts completed September/October 2014 (with Lycoming County Planning Commission)

McMahon Associates Inc.

425 Commerce Drive, Suite 200
Fort Washington, PA 19034

Municipality: Muncy Township
Location: US 220/Middle Road (Quaker Ch)
Counter/Board #: EF/0985

File Name : Muncy11_am&pm
Site Code : 91348011
Start Date : 9/30/2014
Page No : 1

Groups Printed- Passenger Vehicles - Heavy Vehicles

	N Middle Road Southbound				US 220 Westbound				Middle Road Northbound				US 220 Eastbound				
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Int. Total
07:00	1	8	3	0	1	100	0	0	0	7	0	0	0	49	0	0	169
07:15	2	11	1	0	1	84	0	0	1	6	0	0	0	56	1	0	163
07:30	2	7	0	0	0	118	0	0	2	5	0	0	1	43	1	0	179
07:45	0	5	1	0	0	77	0	0	1	5	0	0	0	48	0	0	137
Total	5	31	5	0	2	379	0	0	4	23	0	0	1	196	2	0	648
08:00	1	4	1	0	0	59	1	0	1	2	0	0	1	31	2	0	103
08:15	1	3	2	0	1	70	0	0	2	3	0	0	0	29	2	0	113
08:30	1	4	1	0	0	75	0	0	3	6	0	0	1	37	1	0	129
08:45	0	0	0	0	2	53	0	0	2	1	2	0	2	35	0	0	97
Total	3	11	4	0	3	257	1	0	8	12	2	0	4	132	5	0	442
*** BREAK ***																	
16:00	0	3	1	0	1	63	0	0	1	11	1	0	0	86	11	0	178
16:15	1	9	0	0	1	75	0	0	1	11	0	0	1	97	4	0	200
16:30	0	8	0	0	0	58	0	0	2	7	1	0	0	90	5	0	171
16:45	0	7	0	0	1	56	0	0	0	4	0	0	1	116	1	0	186
Total	1	27	1	0	3	252	0	0	4	33	2	0	2	389	21	0	735
17:00	1	9	1	0	0	31	2	0	1	4	1	0	2	98	4	0	154
17:15	0	9	0	0	0	71	1	0	1	5	0	0	2	113	4	0	206
17:30	2	5	1	0	0	66	1	0	3	7	2	0	0	88	1	0	176
17:45	2	6	1	0	0	61	0	0	1	9	0	0	0	71	3	0	154
Total	5	29	3	0	0	229	4	0	6	25	3	0	4	370	12	0	690
Grand Total	14	98	13	0	8	1117	5	0	22	93	7	0	11	1087	40	0	2515
Apprch %	11.2	78.4	10.4	0	0.7	98.8	0.4	0	18	76.2	5.7	0	1	95.5	3.5	0	
Total %	0.6	3.9	0.5	0	0.3	44.4	0.2	0	0.9	3.7	0.3	0	0.4	43.2	1.6	0	
Passenger Vehicles	13	95	11	0	8	1012	4	0	21	91	7	0	11	992	39	0	2304
% Passenger Vehicles	92.9	96.9	84.6	0	100	90.6	80	0	95.5	97.8	100	0	100	91.3	97.5	0	91.6
Heavy Vehicles	1	3	2	0	0	105	1	0	1	2	0	0	0	95	1	0	211
% Heavy Vehicles	7.1	3.1	15.4	0	0	9.4	20	0	4.5	2.2	0	0	0	8.7	2.5	0	8.4

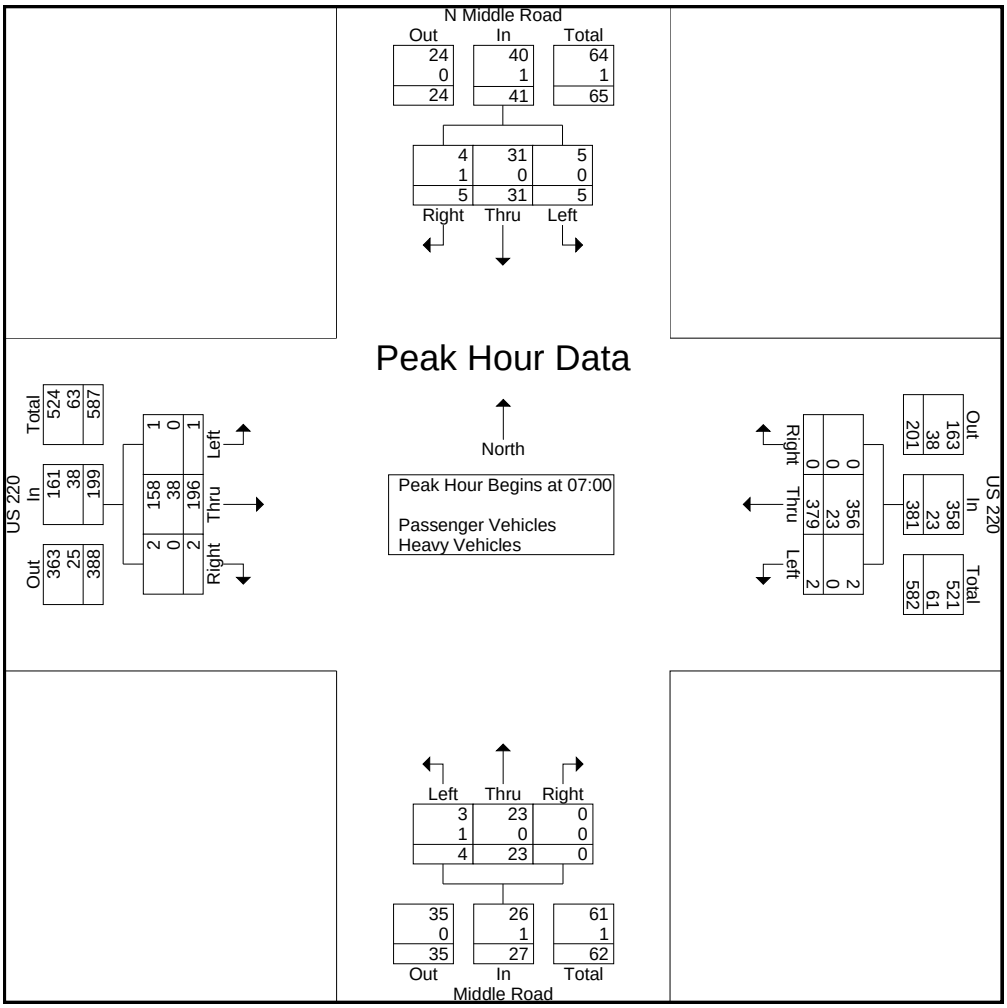
McMahon Associates Inc.

425 Commerce Drive, Suite 200
Fort Washington, PA 19034

Municipality: Muncy Township
Location: US 220/Middle Road (Quaker Ch)
Counter/Board #: EF/0985

File Name : Muncy11_am&pm
Site Code : 91348011
Start Date : 9/30/2014
Page No : 2

	N Middle Road Southbound				US 220 Westbound				Middle Road Northbound				US 220 Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 11:45 - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00																	
07:00	1	8	**3**	12	**1**	100	0	101	0	**7**	0	**7**	0	49	0	49	169
07:15	**2**	**11**	1	**14**	1	84	0	85	1	6	0	7	0	**56**	**1**	**57**	163
07:30	2	7	0	9	0	**118**	0	**118**	**2**	5	0	7	**1**	43	1	45	**179**
07:45	0	5	1	6	0	77	0	77	1	5	0	6	0	48	0	48	137
Total Volume	5	31	5	41	2	379	0	381	4	23	0	27	1	196	2	199	648
% App. Total	12.2	75.6	12.2		0.5	99.5	0		14.8	85.2	0		0.5	98.5	1		
PHF	.625	.705	.417	.732	.500	.803	.000	.807	.500	.821	.000	.964	.250	.875	.500	.873	.905
Passenger Vehicles	5	31	4	40	2	356	0	358	3	23	0	26	1	158	2	161	585
% Passenger Vehicles	100	100	80.0	97.6	100	93.9	0	94.0	75.0	100	0	96.3	100	80.6	100	80.9	90.3
Heavy Vehicles	0	0	1	1	0	23	0	23	1	0	0	1	0	38	0	38	63
% Heavy Vehicles	0	0	20.0	2.4	0	6.1	0	6.0	25.0	0	0	3.7	0	19.4	0	19.1	9.7



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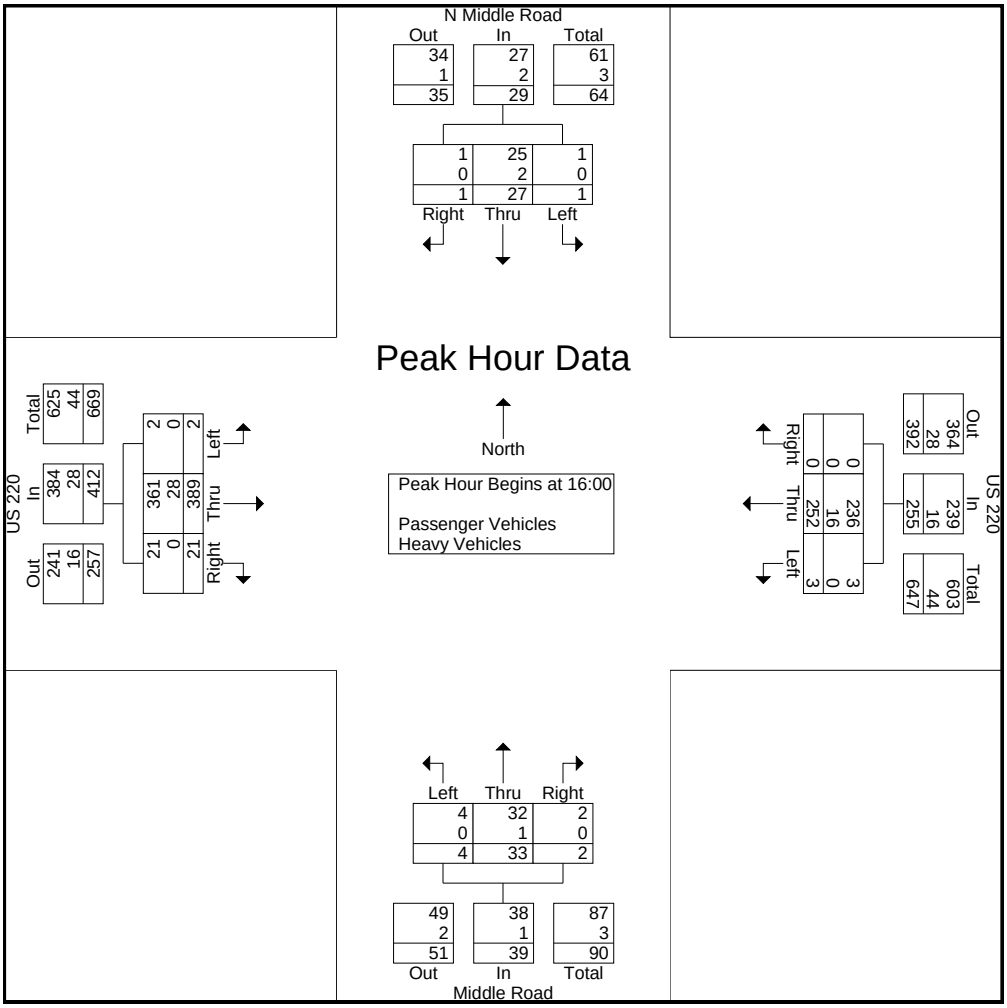
425 Commerce Drive, Suite 200
Fort Washington, PA 19034

Municipality: Muncy Township
Location: US 220/Middle Road (Quaker Ch)
Counter/Board #: EF/0985

File Name : Muncy11_am&pm
Site Code : 91348011
Start Date : 9/30/2014
Page No : 3

	N Middle Road Southbound				US 220 Westbound				Middle Road Northbound				US 220 Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 12:00 to 17:45 - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 16:00																	
16:00	0	3	**1**	4	**1**	63	0	64	1	**11**	**1**	**13**	0	86	**11**	97	178
16:15	**1**	**9**	0	**10**	1	**75**	0	**76**	1	11	0	12	**1**	97	4	102	**200**
16:30	0	8	0	8	0	58	0	58	**2**	7	1	10	0	90	5	95	171
16:45	0	7	0	7	1	56	0	57	0	4	0	4	1	**116**	1	**118**	186
Total Volume	1	27	1	29	3	252	0	255	4	33	2	39	2	389	21	412	735
% App. Total	3.4	93.1	3.4		1.2	98.8	0		10.3	84.6	5.1		0.5	94.4	5.1		
PHF	.250	.750	.250	.725	.750	.840	.000	.839	.500	.750	.500	.750	.500	.838	.477	.873	.919
Passenger Vehicles	1	25	1	27	3	236	0	239	4	32	2	38	2	361	21	384	688
% Passenger Vehicles	100	92.6	100	93.1	100	93.7	0	93.7	100	97.0	100	97.4	100	92.8	100	93.2	93.6
Heavy Vehicles	0	2	0	2	0	16	0	16	0	1	0	1	0	28	0	28	47
% Heavy Vehicles	0	7.4	0	6.9	0	6.3	0	6.3	0	3.0	0	2.6	0	7.2	0	6.8	6.4



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425 Commerce Drive, Suite 200
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Municipality: Muncy Township
Location: US 220/Middle Road (Quaker Ch)
Counter/Board #: EF/0985

File Name : Muncy11_am&pm
Site Code : 91348011
Start Date : 9/30/2014
Page No : 1

Groups Printed- Passenger Vehicles

	N Middle Road Southbound			US 220 Westbound			Middle Road Northbound			US 220 Eastbound			
Start Time	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Int. Total
07:00	1	8	3	1	95	0	0	7	0	0	37	0	152
07:15	2	11	1	1	78	0	1	6	0	0	49	1	150
07:30	2	7	0	0	111	0	1	5	0	1	37	1	165
07:45	0	5	0	0	72	0	1	5	0	0	35	0	118
Total	5	31	4	2	356	0	3	23	0	1	158	2	585
08:00	1	4	1	0	54	1	1	2	0	1	23	1	89
08:15	0	2	2	1	64	0	2	3	0	0	25	2	101
08:30	1	4	0	0	60	0	3	6	0	1	30	1	106
08:45	0	0	0	2	46	0	2	1	2	2	29	0	84
Total	2	10	3	3	224	1	8	12	2	4	107	4	380
*** BREAK ***													
16:00	0	3	1	1	58	0	1	10	1	0	78	11	164
16:15	1	9	0	1	69	0	1	11	0	1	92	4	189
16:30	0	6	0	0	56	0	2	7	1	0	82	5	159
16:45	0	7	0	1	53	0	0	4	0	1	109	1	176
Total	1	25	1	3	236	0	4	32	2	2	361	21	688
17:00	1	9	1	0	29	1	1	4	1	2	98	4	151
17:15	0	9	0	0	62	1	1	5	0	2	112	4	196
17:30	2	5	1	0	55	1	3	7	2	0	87	1	164
17:45	2	6	1	0	50	0	1	8	0	0	69	3	140
Total	5	29	3	0	196	3	6	24	3	4	366	12	651
Grand Total	13	95	11	8	1012	4	21	91	7	11	992	39	2304
Apprch %	10.9	79.8	9.2	0.8	98.8	0.4	17.6	76.5	5.9	1.1	95.2	3.7	
Total %	0.6	4.1	0.5	0.3	43.9	0.2	0.9	3.9	0.3	0.5	43.1	1.7	

McMahon Associates Inc.

425 Commerce Drive, Suite 200
Fort Washington, PA 19034

Municipality: Muncy Township
Location: US 220/Middle Road (Quaker Ch)
Counter/Board #: EF/0985

File Name : Muncy11_am&pm
Site Code : 91348011
Start Date : 9/30/2014
Page No : 1

Groups Printed- Heavy Vehicles

	N Middle Road Southbound			US 220 Westbound			Middle Road Northbound			US 220 Eastbound			
Start Time	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Int. Total
07:00	0	0	0	0	5	0	0	0	0	0	12	0	17
07:15	0	0	0	0	6	0	0	0	0	0	7	0	13
07:30	0	0	0	0	7	0	1	0	0	0	6	0	14
07:45	0	0	1	0	5	0	0	0	0	0	13	0	19
Total	0	0	1	0	23	0	1	0	0	0	38	0	63
08:00	0	0	0	0	5	0	0	0	0	0	8	1	14
08:15	1	1	0	0	6	0	0	0	0	0	4	0	12
08:30	0	0	1	0	15	0	0	0	0	0	7	0	23
08:45	0	0	0	0	7	0	0	0	0	0	6	0	13
Total	1	1	1	0	33	0	0	0	0	0	25	1	62
*** BREAK ***													
16:00	0	0	0	0	5	0	0	1	0	0	8	0	14
16:15	0	0	0	0	6	0	0	0	0	0	5	0	11
16:30	0	2	0	0	2	0	0	0	0	0	8	0	12
16:45	0	0	0	0	3	0	0	0	0	0	7	0	10
Total	0	2	0	0	16	0	0	1	0	0	28	0	47
17:00	0	0	0	0	2	1	0	0	0	0	0	0	3
17:15	0	0	0	0	9	0	0	0	0	0	1	0	10
17:30	0	0	0	0	11	0	0	0	0	0	1	0	12
17:45	0	0	0	0	11	0	0	1	0	0	2	0	14
Total	0	0	0	0	33	1	0	1	0	0	4	0	39
Grand Total	1	3	2	0	105	1	1	2	0	0	95	1	211
Apprch %	16.7	50	33.3	0	99.1	0.9	33.3	66.7	0	0	99	1	
Total %	0.5	1.4	0.9	0	49.8	0.5	0.5	0.9	0	0	45	0.5	

McMahon Associates Inc.

425 Commerce Drive, Suite 200
Fort Washington, PA 19034

Municipality: Muncy Creek Township
Location: Industrial Pkwy/Industrial Rd
Counter/Board #: EF/0985

File Name : Muncy12_am&pm
Site Code : 91348012
Start Date : 9/25/2014
Page No : 1

Groups Printed- Passenger Vehicles - Heavy Vehicles

	Industrial Parkway Southbound				Industrial Park Rd Westbound				Industrial Parkway Northbound				Industrial Park Rd Eastbound				
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Int. Total
07:00	0	6	6	0	1	2	0	0	0	4	1	0	17	33	1	0	71
07:15	3	12	6	0	0	2	1	0	0	2	0	0	0	6	3	0	35
07:30	3	1	3	0	2	0	0	0	2	10	1	0	4	0	4	0	30
07:45	4	5	9	0	1	2	2	0	0	4	0	0	1	1	4	0	33
Total	10	24	24	0	4	6	3	0	2	20	2	0	22	40	12	0	169
08:00	3	2	5	0	1	2	1	0	0	2	0	0	0	0	2	0	18
08:15	1	4	6	0	1	3	0	0	0	5	2	0	0	0	1	0	23
08:30	0	2	3	0	0	1	0	0	1	4	0	0	1	2	0	0	14
08:45	0	2	0	0	0	1	0	0	0	1	1	0	0	0	3	0	8
Total	4	10	14	0	2	7	1	0	1	12	3	0	1	2	6	0	63
*** BREAK ***																	
16:00	0	1	1	0	0	3	2	0	3	7	3	0	1	6	1	0	28
16:15	0	2	1	0	0	0	0	0	0	7	1	0	4	2	1	0	18
16:30	0	2	0	0	0	3	1	0	2	8	0	1	2	9	2	0	30
16:45	0	2	1	0	0	1	0	0	2	3	1	0	5	4	3	0	22
Total	0	7	3	0	0	7	3	0	7	25	5	1	12	21	7	0	98
17:00	0	2	0	0	0	5	0	1	2	12	4	0	4	6	1	0	37
17:15	1	1	1	0	0	2	0	0	0	5	0	0	1	2	0	0	13
17:30	1	1	0	0	0	1	0	0	0	1	1	0	0	4	0	0	9
17:45	0	2	2	1	0	1	0	0	3	6	2	0	2	4	1	1	25
Total	2	6	3	1	0	9	0	1	5	24	7	0	7	16	2	1	84
Grand Total	16	47	44	1	6	29	7	1	15	81	17	1	42	79	27	1	414
Apprch %	14.8	43.5	40.7	0.9	14	67.4	16.3	2.3	13.2	71.1	14.9	0.9	28.2	53	18.1	0.7	
Total %	3.9	11.4	10.6	0.2	1.4	7	1.7	0.2	3.6	19.6	4.1	0.2	10.1	19.1	6.5	0.2	
Passenger Vehicles	16	35	39	1	5	26	7	1	15	55	14	1	37	77	17	1	347
% Passenger Vehicles	100	74.5	88.6	100	83.3	89.7	100	100	100	67.9	82.4	100	88.1	97.5	63	100	83.8
Heavy Vehicles	0	12	5	0	1	3	0	0	0	26	3	0	5	2	10	0	67
% Heavy Vehicles	0	25.5	11.4	0	16.7	10.3	0	0	0	32.1	17.6	0	11.9	2.5	37	0	16.2

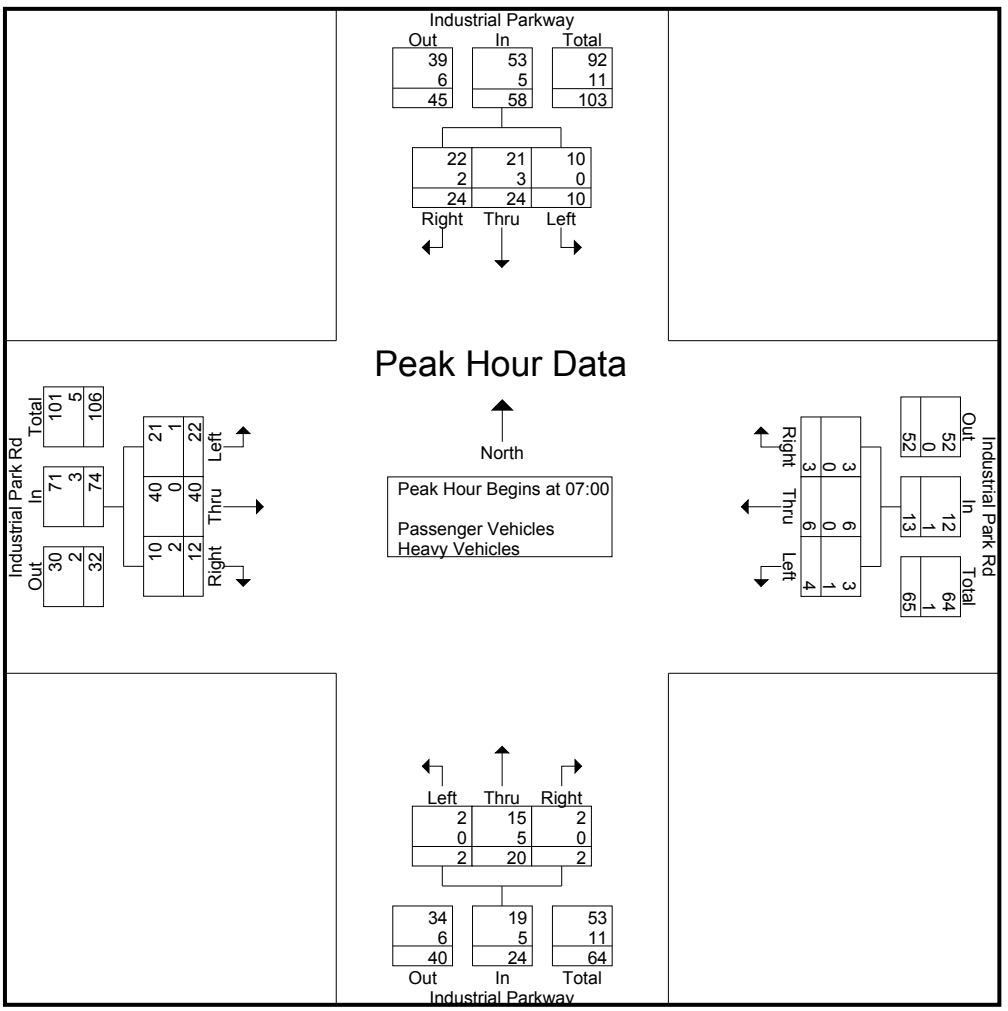
McMahon Associates Inc.

425 Commerce Drive, Suite 200
Fort Washington, PA 19034

Municipality: Muncy Creek Township
Location: Industrial Pkwy/Industrial Rd
Counter/Board #: EF/0985

File Name : Muncy12_am&pm
Site Code : 91348012
Start Date : 9/25/2014
Page No : 2

	Industrial Parkway Southbound				Industrial Park Rd Westbound				Industrial Parkway Northbound				Industrial Park Rd Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 11:45 - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00																	
07:00	0	6	6	12	1	**2**	0	3	0	4	**1**	5	**17**	**33**	1	**51**	**71**
07:15	3	**12**	6	**21**	0	2	1	3	0	2	0	2	0	6	3	9	35
07:30	3	1	3	7	**2**	0	0	2	**2**	**10**	1	**13**	4	0	**4**	8	30
07:45	**4**	5	**9**	18	1	2	**2**	**5**	0	4	0	4	1	1	4	6	33
Total Volume	10	24	24	58	4	6	3	13	2	20	2	24	22	40	12	74	169
% App. Total	17.2	41.4	41.4		30.8	46.2	23.1		8.3	83.3	8.3		29.7	54.1	16.2		
PHF	.625	.500	.667	.690	.500	.750	.375	.650	.250	.500	.500	.462	.324	.303	.750	.363	.595
Passenger Vehicles	10	21	22	53	3	6	3	12	2	15	2	19	21	40	10	71	155
% Passenger Vehicles	100	87.5	91.7	91.4	75.0	100	100	92.3	100	75.0	100	79.2	95.5	100	83.3	95.9	91.7
Heavy Vehicles	0	3	2	5	1	0	0	1	0	5	0	5	1	0	2	3	14
% Heavy Vehicles	0	12.5	8.3	8.6	25.0	0	0	7.7	0	25.0	0	20.8	4.5	0	16.7	4.1	8.3



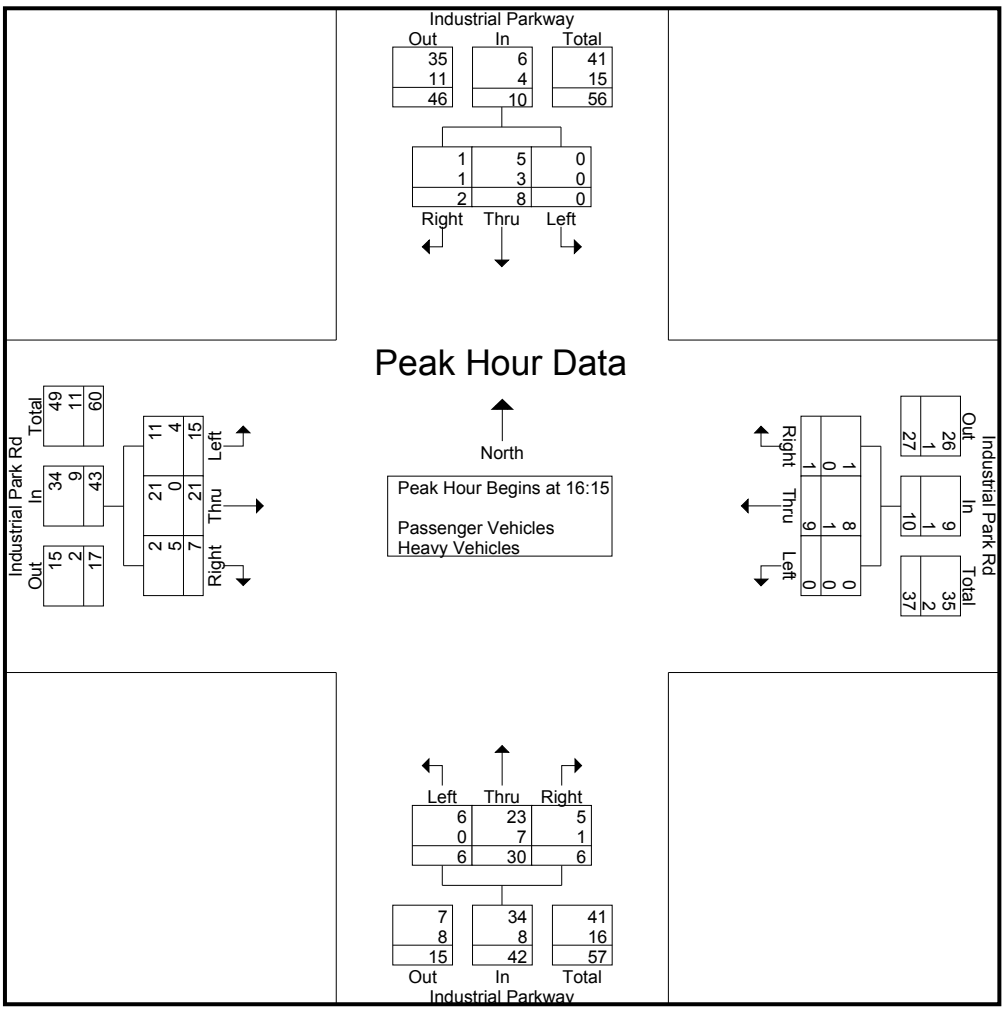
McMahon Associates Inc.

425 Commerce Drive, Suite 200
Fort Washington, PA 19034

Municipality: Muncy Creek Township
Location: Industrial Pkwy/Industrial Rd
Counter/Board #: EF/0985

File Name : Muncy12_am&pm
Site Code : 91348012
Start Date : 9/25/2014
Page No : 3

	Industrial Parkway Southbound				Industrial Park Rd Westbound				Industrial Parkway Northbound				Industrial Park Rd Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 12:00 to 17:45 - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 16:15																	
16:15	0	**2**	**1**	**3**	0	0	0	0	0	7	1	8	4	2	1	7	18
16:30	0	2	0	2	0	3	**1**	4	**2**	8	0	10	2	**9**	2	**13**	29
16:45	0	2	1	3	0	1	0	1	2	3	1	6	**5**	4	**3**	12	22
17:00	0	2	0	2	0	**5**	0	**5**	2	**12**	**4**	**18**	4	6	1	11	**36**
Total Volume	0	8	2	10	0	9	1	10	6	30	6	42	15	21	7	43	105
% App. Total	0	80	20		0	90	10		14.3	71.4	14.3		34.9	48.8	16.3		
PHF	.000	1.00	.500	.833	.000	.450	.250	.500	.750	.625	.375	.583	.750	.583	.583	.827	.729
Passenger Vehicles	0	5	1	6	0	8	1	9	6	23	5	34	11	21	2	34	83
% Passenger Vehicles	0	62.5	50.0	60.0	0	88.9	100	90.0	100	76.7	83.3	81.0	73.3	100	28.6	79.1	79.0
Heavy Vehicles	0	3	1	4	0	1	0	1	0	7	1	8	4	0	5	9	22
% Heavy Vehicles	0	37.5	50.0	40.0	0	11.1	0	10.0	0	23.3	16.7	19.0	26.7	0	71.4	20.9	21.0



McMahon Associates Inc.

425 Commerce Drive, Suite 200
Fort Washington, PA 19034

Municipality: Muncy Creek Township
Location: Industrial Pkwy/Industrial Rd
Counter/Board #: EF/0985

File Name : Muncy12_am&pm
Site Code : 91348012
Start Date : 9/25/2014

Groups Printed- Passenger Vehicles

	Industrial Parkway Southbound			Industrial Park Rd Westbound			Industrial Parkway Northbound			Industrial Park Rd Eastbound			
Start Time	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Int. Total
07:00	0	5	5	1	2	0	0	4	1	17	33	1	69
07:15	3	10	6	0	2	1	0	2	0	0	6	2	32
07:30	3	1	3	2	0	0	2	8	1	4	0	3	27
07:45	4	5	8	0	2	2	0	1	0	0	1	4	27
Total	10	21	22	3	6	3	2	15	2	21	40	10	155
08:00	3	2	5	1	2	1	0	2	0	0	0	1	17
08:15	1	3	6	1	3	0	0	2	1	0	0	1	18
08:30	0	1	2	0	0	0	1	1	0	1	2	0	8
08:45	0	1	0	0	0	0	0	0	1	0	0	2	4
Total	4	7	13	2	5	1	1	5	2	1	2	4	47
*** BREAK ***													
16:00	0	1	1	0	3	2	3	3	3	1	5	0	22
16:15	0	2	1	0	0	0	0	5	1	2	2	0	13
16:30	0	2	0	0	2	1	2	5	0	1	9	0	22
16:45	0	0	0	0	1	0	2	2	1	4	4	1	15
Total	0	5	2	0	6	3	7	15	5	8	20	1	72
17:00	0	1	0	0	5	0	2	11	3	4	6	1	33
17:15	1	0	1	0	2	0	0	4	0	1	2	0	11
17:30	1	0	0	0	1	0	0	0	0	0	3	0	5
17:45	0	1	1	0	1	0	3	5	2	2	4	1	20
Total	2	2	2	0	9	0	5	20	5	7	15	2	69
Grand Total	16	35	39	5	26	7	15	55	14	37	77	17	343
Apprch %	17.8	38.9	43.3	13.2	68.4	18.4	17.9	65.5	16.7	28.2	58.8	13	
Total %	4.7	10.2	11.4	1.5	7.6	2	4.4	16	4.1	10.8	22.4	5	

McMahon Associates Inc.

425 Commerce Drive, Suite 200
Fort Washington, PA 19034

Municipality: Muncy Creek Township
Location: Industrial Pkwy/Industrial Rd
Counter/Board #: EF/0985

File Name : Muncy12_am&pm
Site Code : 91348012
Start Date : 9/25/2014
Page No : 1

Groups Printed- Heavy Vehicles

	Industrial Parkway Southbound			Industrial Park Rd Westbound			Industrial Parkway Northbound			Industrial Park Rd Eastbound			
Start Time	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Int. Total
07:00	0	1	1	0	0	0	0	0	0	0	0	0	2
07:15	0	2	0	0	0	0	0	0	0	0	0	1	3
07:30	0	0	0	0	0	0	0	2	0	0	0	1	3
07:45	0	0	1	1	0	0	0	3	0	1	0	0	6
Total	0	3	2	1	0	0	0	5	0	1	0	2	14
08:00	0	0	0	0	0	0	0	0	0	0	0	1	1
08:15	0	1	0	0	0	0	0	3	1	0	0	0	5
08:30	0	1	1	0	1	0	0	3	0	0	0	0	6
08:45	0	1	0	0	1	0	0	1	0	0	0	1	4
Total	0	3	1	0	2	0	0	7	1	0	0	2	16
*** BREAK ***													
16:00	0	0	0	0	0	0	0	4	0	0	1	1	6
16:15	0	0	0	0	0	0	0	2	0	2	0	1	5
16:30	0	0	0	0	1	0	0	3	0	1	0	2	7
16:45	0	2	1	0	0	0	0	1	0	1	0	2	7
Total	0	2	1	0	1	0	0	10	0	4	1	6	25
17:00	0	1	0	0	0	0	0	1	1	0	0	0	3
17:15	0	1	0	0	0	0	0	1	0	0	0	0	2
17:30	0	1	0	0	0	0	0	1	1	0	1	0	4
17:45	0	1	1	0	0	0	0	1	0	0	0	0	3
Total	0	4	1	0	0	0	0	4	2	0	1	0	12
Grand Total	0	12	5	1	3	0	0	26	3	5	2	10	67
Apprch %	0	70.6	29.4	25	75	0	0	89.7	10.3	29.4	11.8	58.8	
Total %	0	17.9	7.5	1.5	4.5	0	0	38.8	4.5	7.5	3	14.9	

McMahon Associates Inc.

425 Commerce Drive, Suite 200
Fort Washington, PA 19034

Municipality: Muncy Creek Township
Location: Main St/Industrial Park Rd
Counter/Board #: EF/1403

File Name : Muncy13_am&pm
Site Code : 91348013
Start Date : 9/23/2014

Groups Printed- Passenger Vehicles - Heavy Vehicles

	John Brady Dr Southeastbound				N Main St Northwestbound				Shadduck Rd (T-809) Westbound				Industrial Park Rd Eastbound				
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Int. Total
07:00	0	45	0	0	2	45	0	0	1	0	0	0	0	0	27	0	120
07:15	0	64	0	0	3	52	1	0	2	0	0	0	0	1	5	0	128
07:30	0	52	0	0	4	62	0	0	0	0	0	0	1	0	4	0	123
07:45	0	52	0	0	5	62	0	0	1	0	0	0	0	0	2	0	122
Total	0	213	0	0	14	221	1	0	4	0	0	0	1	1	38	0	493
08:00	0	42	0	0	2	58	0	0	1	0	0	0	0	0	2	0	105
08:15	0	35	0	0	5	42	0	0	1	1	0	0	0	0	3	0	87
08:30	1	27	0	0	4	54	0	0	3	0	0	0	0	0	1	0	90
08:45	0	42	0	0	2	58	1	0	0	0	0	0	0	0	2	0	105
Total	1	146	0	0	13	212	1	0	5	1	0	0	0	0	8	0	387
*** BREAK ***																	
16:00	0	72	0	0	3	69	0	0	1	1	0	0	1	0	10	0	157
16:15	0	88	0	0	4	78	0	0	0	0	0	0	0	0	6	0	176
16:30	0	87	0	0	2	85	0	0	1	0	0	0	0	0	9	0	184
16:45	0	87	0	0	0	79	0	0	0	0	0	0	0	0	4	0	170
Total	0	334	0	0	9	311	0	0	2	1	0	0	1	0	29	0	687
17:00	0	105	0	0	2	72	0	0	1	0	0	0	1	0	12	0	193
17:15	1	93	0	0	1	80	1	0	1	0	0	0	0	0	2	0	179
17:30	0	69	0	0	2	71	0	0	1	0	0	0	0	0	2	0	145
17:45	0	76	0	0	3	53	0	0	1	0	0	0	0	0	4	0	137
Total	1	343	0	0	8	276	1	0	4	0	0	0	1	0	20	0	654
Grand Total	2	1036	0	0	44	1020	3	0	15	2	0	0	3	1	95	0	2221
Apprch %	0.2	99.8	0	0	4.1	95.6	0.3	0	88.2	11.8	0	0	3	1	96	0	
Total %	0.1	46.6	0	0	2	45.9	0.1	0	0.7	0.1	0	0	0.1	0	4.3	0	
Passenger Vehicles	1	991	0	0	36	979	3	0	13	2	0	0	2	1	94	0	2122
% Passenger Vehicles	50	95.7	0	0	81.8	96	100	0	86.7	100	0	0	66.7	100	98.9	0	95.5
Heavy Vehicles	1	45	0	0	8	41	0	0	2	0	0	0	1	0	1	0	99
% Heavy Vehicles	50	4.3	0	0	18.2	4	0	0	13.3	0	0	0	33.3	0	1.1	0	4.5

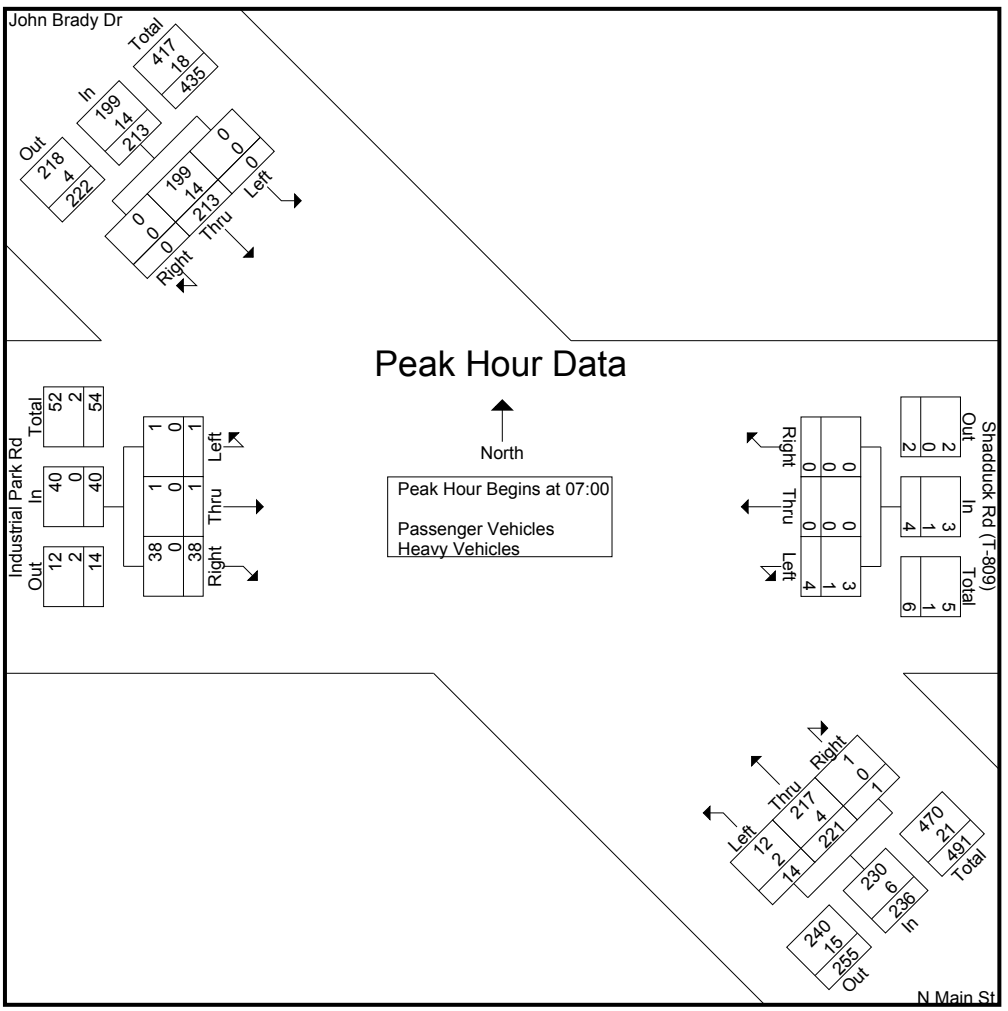
McMahon Associates Inc.

425 Commerce Drive, Suite 200
Fort Washington, PA 19034

Municipality: Muncy Creek Township
Location: Main St/Industrial Park Rd
Counter/Board #: EF/1403

File Name : Muncy13_am&pm
Site Code : 91348013
Start Date : 9/23/2014
Page No : 2

	John Brady Dr Southeastbound				N Main St Northwestbound				Shadduck Rd (T-809) Westbound				Industrial Park Rd Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 11:45 - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00																	
07:00	0	45	0	45	2	45	0	47	1	0	0	1	0	0	**27**	**27**	120
07:15	0	**64**	0	**64**	3	52	**1**	56	**2**	0	0	**2**	0	**1**	5	6	**128**
07:30	0	52	0	52	4	**62**	0	66	0	0	0	0	**1**	0	4	5	123
07:45	0	52	0	52	**5**	62	0	**67**	1	0	0	1	0	0	2	2	122
Total Volume	0	213	0	213	14	221	1	236	4	0	0	4	1	1	38	40	493
% App. Total	0	100	0		5.9	93.6	0.4		100	0	0		2.5	2.5	95		
PHF	.000	.832	.000	.832	.700	.891	.250	.881	.500	.000	.000	.500	.250	.250	.352	.370	.963
Passenger Vehicles	0	199	0	199	12	217	1	230	3	0	0	3	1	1	38	40	472
% Passenger Vehicles	0	93.4	0	93.4	85.7	98.2	100	97.5	75.0	0	0	75.0	100	100	100	100	95.7
Heavy Vehicles	0	14	0	14	2	4	0	6	1	0	0	1	0	0	0	0	21
% Heavy Vehicles	0	6.6	0	6.6	14.3	1.8	0	2.5	25.0	0	0	25.0	0	0	0	0	4.3



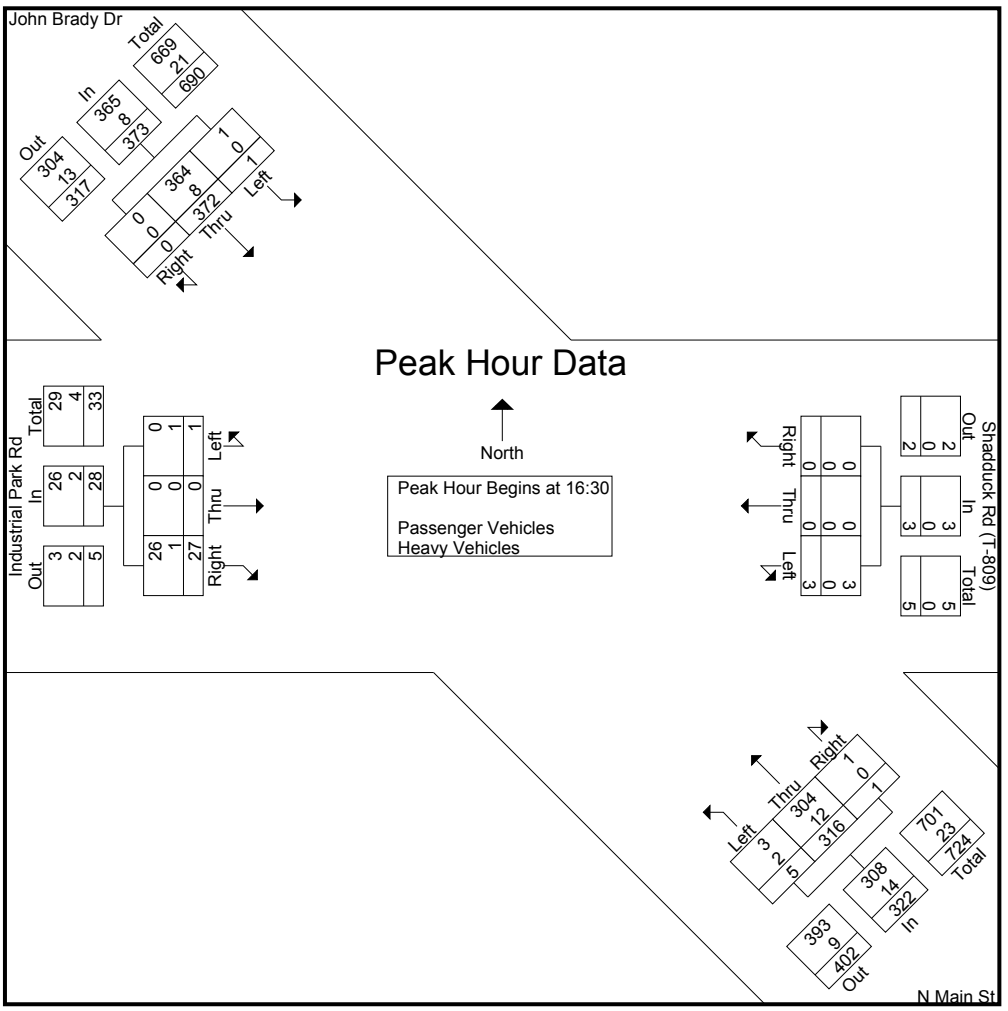
McMahon Associates Inc.

425 Commerce Drive, Suite 200
Fort Washington, PA 19034

Municipality: Muncy Creek Township
Location: Main St/Industrial Park Rd
Counter/Board #: EF/1403

File Name : Muncy13_am&pm
Site Code : 91348013
Start Date : 9/23/2014
Page No : 3

	John Brady Dr Southeastbound				N Main St Northwestbound				Shadduck Rd (T-809) Westbound				Industrial Park Rd Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 12:00 to 17:45 - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 16:30																	
16:30	0	87	0	87	**2**	**85**	0	**87**	**1**	0	0	**1**	0	0	9	9	184
16:45	0	87	0	87	0	79	0	79	0	0	0	0	0	0	4	4	170
17:00	0	**105**	0	**105**	2	72	0	74	1	0	0	1	**1**	0	**12**	**13**	**193**
17:15	**1**	93	0	94	1	80	**1**	82	1	0	0	1	0	0	2	2	179
Total Volume	1	372	0	373	5	316	1	322	3	0	0	3	1	0	27	28	726
% App. Total	0.3	99.7	0		1.6	98.1	0.3		100	0	0		3.6	0	96.4		
PHF	.250	.886	.000	.888	.625	.929	.250	.925	.750	.000	.000	.750	.250	.000	.563	.538	.940
Passenger Vehicles	1	364	0	365	3	304	1	308	3	0	0	3	0	0	26	26	702
% Passenger Vehicles	100	97.8	0	97.9	60.0	96.2	100	95.7	100	0	0	100	0	0	96.3	92.9	96.7
Heavy Vehicles	0	8	0	8	2	12	0	14	0	0	0	0	1	0	1	2	24
% Heavy Vehicles	0	2.2	0	2.1	40.0	3.8	0	4.3	0	0	0	0	100	0	3.7	7.1	3.3



McMahon Associates Inc.

425 Commerce Drive, Suite 200
Fort Washington, PA 19034

Municipality: Muncy Creek Township
Location: Main St/Industrial Park Rd
Counter/Board #: EF/1403

File Name : Muncy13_am&pm
Site Code : 91348013
Start Date : 9/23/2014

Groups Printed- Passenger Vehicles

	John Brady Dr Southeastbound			N Main St Northwestbound			Shadduck Rd (T-809) Westbound			Industrial Park Rd Eastbound			
Start Time	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Int. Total
07:00	0	43	0	1	45	0	0	0	0	0	0	27	116
07:15	0	59	0	3	49	1	2	0	0	0	1	5	120
07:30	0	48	0	4	62	0	0	0	0	1	0	4	119
07:45	0	49	0	4	61	0	1	0	0	0	0	2	117
Total	0	199	0	12	217	1	3	0	0	1	1	38	472
08:00	0	39	0	2	56	0	1	0	0	0	0	2	100
08:15	0	31	0	5	40	0	1	1	0	0	0	3	81
08:30	0	22	0	3	51	0	2	0	0	0	0	1	79
08:45	0	39	0	0	54	1	0	0	0	0	0	2	96
Total	0	131	0	10	201	1	4	1	0	0	0	8	356
*** BREAK ***													
16:00	0	71	0	2	68	0	1	1	0	1	0	10	154
16:15	0	85	0	4	73	0	0	0	0	0	0	6	168
16:30	0	84	0	0	81	0	1	0	0	0	0	8	174
16:45	0	86	0	0	77	0	0	0	0	0	0	4	167
Total	0	326	0	6	299	0	2	1	0	1	0	28	663
17:00	0	103	0	2	72	0	1	0	0	0	0	12	190
17:15	1	91	0	1	74	1	1	0	0	0	0	2	171
17:30	0	67	0	2	70	0	1	0	0	0	0	2	142
17:45	0	74	0	3	46	0	1	0	0	0	0	4	128
Total	1	335	0	8	262	1	4	0	0	0	0	20	631
Grand Total	1	991	0	36	979	3	13	2	0	2	1	94	2122
Apprch %	0.1	99.9	0	3.5	96.2	0.3	86.7	13.3	0	2.1	1	96.9	
Total %	0	46.7	0	1.7	46.1	0.1	0.6	0.1	0	0.1	0	4.4	

McMahon Associates Inc.

425 Commerce Drive, Suite 200
Fort Washington, PA 19034

Municipality: Muncy Creek Township
Location: Main St/Industrial Park Rd
Counter/Board #: EF/1403

File Name : Muncy13_am&pm
Site Code : 91348013
Start Date : 9/23/2014
Page No : 1

Groups Printed- Heavy Vehicles

	John Brady Dr Southeastbound			N Main St Northwestbound			Shadduck Rd (T-809) Westbound			Industrial Park Rd Eastbound			
Start Time	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Int. Total
07:00	0	2	0	1	0	0	1	0	0	0	0	0	4
07:15	0	5	0	0	3	0	0	0	0	0	0	0	8
07:30	0	4	0	0	0	0	0	0	0	0	0	0	4
07:45	0	3	0	1	1	0	0	0	0	0	0	0	5
Total	0	14	0	2	4	0	1	0	0	0	0	0	21
08:00	0	3	0	0	2	0	0	0	0	0	0	0	5
08:15	0	4	0	0	2	0	0	0	0	0	0	0	6
08:30	1	5	0	1	3	0	1	0	0	0	0	0	11
08:45	0	3	0	2	4	0	0	0	0	0	0	0	9
Total	1	15	0	3	11	0	1	0	0	0	0	0	31
*** BREAK ***													
16:00	0	1	0	1	1	0	0	0	0	0	0	0	3
16:15	0	3	0	0	5	0	0	0	0	0	0	0	8
16:30	0	3	0	2	4	0	0	0	0	0	0	1	10
16:45	0	1	0	0	2	0	0	0	0	0	0	0	3
Total	0	8	0	3	12	0	0	0	0	0	0	1	24
17:00	0	2	0	0	0	0	0	0	0	1	0	0	3
17:15	0	2	0	0	6	0	0	0	0	0	0	0	8
17:30	0	2	0	0	1	0	0	0	0	0	0	0	3
17:45	0	2	0	0	7	0	0	0	0	0	0	0	9
Total	0	8	0	0	14	0	0	0	0	1	0	0	23
Grand Total	1	45	0	8	41	0	2	0	0	1	0	1	99
Apprch %	2.2	97.8	0	16.3	83.7	0	100	0	0	50	0	50	
Total %	1	45.5	0	8.1	41.4	0	2	0	0	1	0	1	

McMahon Associates Inc.

425 Commerce Drive, Suite 200
Fort Washington, PA 19034

Municipality: Muncy Township
Location: US 220/Rabbittown Rd
Counter/Board #: EF/1403

File Name : Muncy14_am&pm
Site Code : 91348014
Start Date : 10/1/2014

Groups Printed- Passenger Vehicles - Heavy Vehicles

	Rabbittown Rd Southbound				US 220 Westbound				Beacon Light Rd Northbound				US 220 Eastbound				
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Int. Total
07:00	0	3	3	0	1	65	0	0	8	3	0	0	1	39	1	0	124
07:15	0	3	5	0	4	69	0	0	10	3	1	0	3	50	3	0	151
07:30	0	2	8	0	0	107	0	0	11	3	1	0	3	35	6	0	176
07:45	0	7	4	0	1	67	1	0	4	2	0	0	1	37	3	0	127
Total	0	15	20	0	6	308	1	0	33	11	2	0	8	161	13	0	578
08:00	0	5	5	0	1	63	0	0	7	1	3	0	1	30	0	0	116
08:15	0	4	2	0	1	68	0	0	6	1	2	0	4	42	2	0	132
08:30	0	1	4	0	1	41	0	0	12	1	1	0	5	32	1	0	99
08:45	2	5	4	0	0	42	2	0	11	4	0	0	5	22	3	0	100
Total	2	15	15	0	3	214	2	0	36	7	6	0	15	126	6	0	447
*** BREAK ***																	
16:00	0	5	3	0	4	54	0	0	5	2	2	0	5	71	12	0	163
16:15	0	2	5	0	4	28	0	0	4	8	1	0	6	66	12	0	136
16:30	1	2	3	0	3	51	1	0	8	3	2	0	3	55	20	0	152
16:45	1	3	7	0	1	44	0	0	10	4	3	0	4	93	11	0	181
Total	2	12	18	0	12	177	1	0	27	17	8	0	18	285	55	0	632
17:00	0	12	7	0	2	56	0	0	5	3	0	0	3	65	6	0	159
17:15	0	3	1	0	1	57	0	0	11	3	1	0	6	91	12	0	186
17:30	0	3	3	0	2	32	0	0	10	3	2	0	3	73	11	0	142
17:45	0	1	2	0	1	45	0	0	7	7	1	0	5	54	9	0	132
Total	0	19	13	0	6	190	0	0	33	16	4	0	17	283	38	0	619
Grand Total	4	61	66	0	27	889	4	0	129	51	20	0	58	855	112	0	2276
Apprch %	3.1	46.6	50.4	0	2.9	96.6	0.4	0	64.5	25.5	10	0	5.7	83.4	10.9	0	
Total %	0.2	2.7	2.9	0	1.2	39.1	0.2	0	5.7	2.2	0.9	0	2.5	37.6	4.9	0	
Passenger Vehicles	3	54	61	0	27	821	3	0	125	49	18	0	45	789	109	0	2104
% Passenger Vehicles	75	88.5	92.4	0	100	92.4	75	0	96.9	96.1	90	0	77.6	92.3	97.3	0	92.4
Heavy Vehicles	1	7	5	0	0	68	1	0	4	2	2	0	13	66	3	0	172
% Heavy Vehicles	25	11.5	7.6	0	0	7.6	25	0	3.1	3.9	10	0	22.4	7.7	2.7	0	7.6

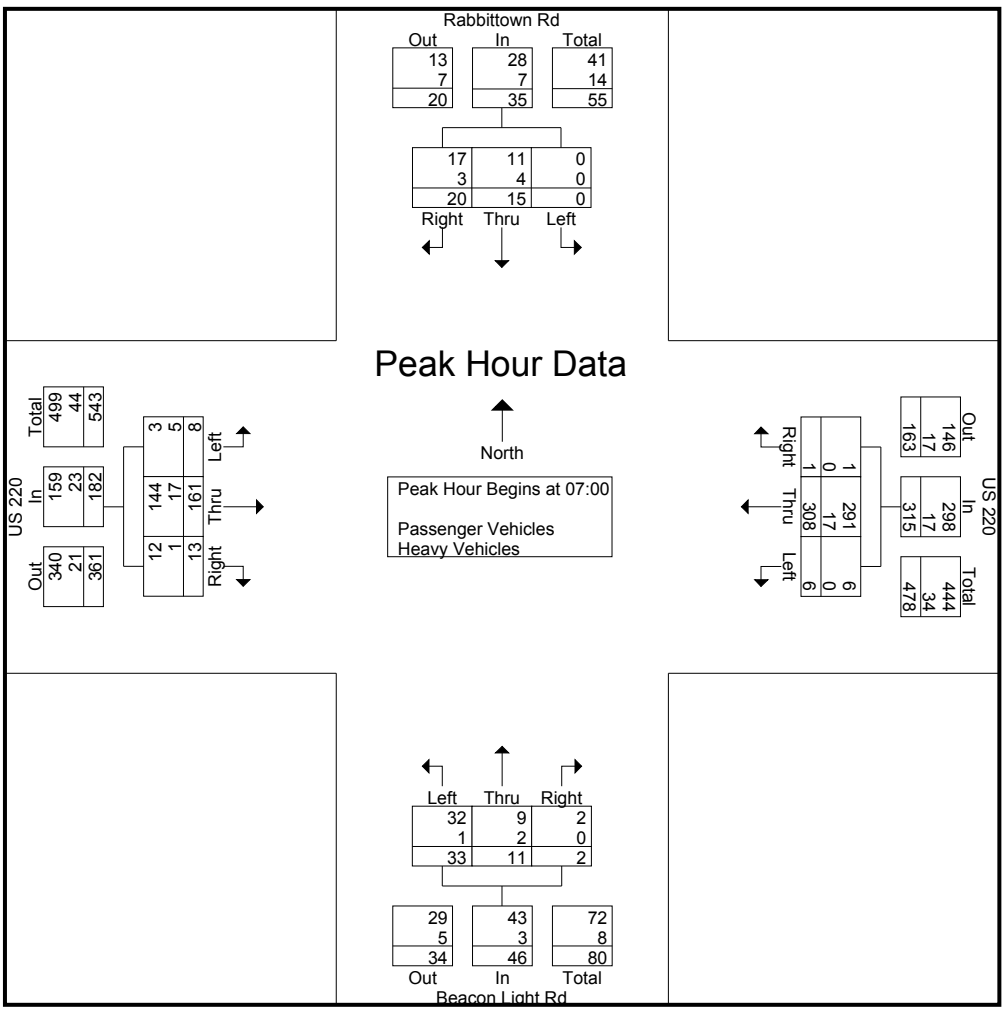
McMahon Associates Inc.

425 Commerce Drive, Suite 200
Fort Washington, PA 19034

Municipality: Muncy Township
Location: US 220/Rabbittown Rd
Counter/Board #: EF/1403

File Name : Muncy14_am&pm
Site Code : 91348014
Start Date : 10/1/2014
Page No : 2

	Rabbittown Rd Southbound				US 220 Westbound				Beacon Light Rd Northbound				US 220 Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 11:45 - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00																	
07:00	0	3	3	6	1	65	0	66	8	**3**	0	11	1	39	1	41	124
07:15	0	3	5	8	**4**	69	0	73	10	3	**1**	14	**3**	**50**	3	**56**	151
07:30	0	2	**8**	10	0	**107**	0	**107**	**11**	3	1	**15**	3	35	**6**	44	**176**
07:45	0	**7**	4	**11**	1	67	**1**	69	4	2	0	6	1	37	3	41	127
Total Volume	0	15	20	35	6	308	1	315	33	11	2	46	8	161	13	182	578
% App. Total	0	42.9	57.1		1.9	97.8	0.3		71.7	23.9	4.3		4.4	88.5	7.1		
PHF	.000	.536	.625	.795	.375	.720	.250	.736	.750	.917	.500	.767	.667	.805	.542	.813	.821
Passenger Vehicles	0	11	17	28	6	291	1	298	32	9	2	43	3	144	12	159	528
% Passenger Vehicles	0	73.3	85.0	80.0	100	94.5	100	94.6	97.0	81.8	100	93.5	37.5	89.4	92.3	87.4	91.3
Heavy Vehicles	0	4	3	7	0	17	0	17	1	2	0	3	5	17	1	23	50
% Heavy Vehicles	0	26.7	15.0	20.0	0	5.5	0	5.4	3.0	18.2	0	6.5	62.5	10.6	7.7	12.6	8.7



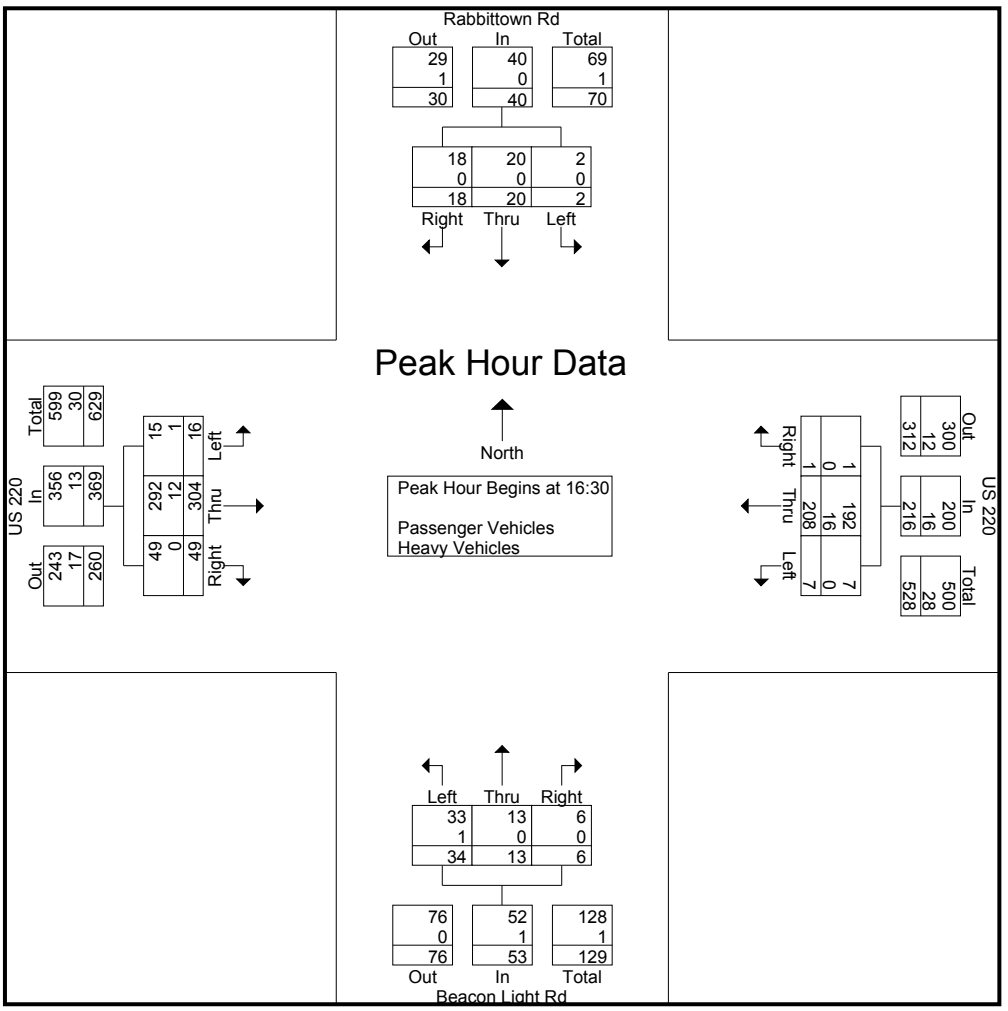
McMahon Associates Inc.

425 Commerce Drive, Suite 200
Fort Washington, PA 19034

Municipality: Muncy Township
Location: US 220/Rabbittown Rd
Counter/Board #: EF/1403

File Name : Muncy14_am&pm
Site Code : 91348014
Start Date : 10/1/2014
Page No : 3

	Rabbittown Rd Southbound				US 220 Westbound				Beacon Light Rd Northbound				US 220 Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 12:00 to 17:45 - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 16:30																	
16:30	**1**	2	3	6	**3**	51	**1**	55	8	3	2	13	3	55	**20**	78	152
16:45	1	3	**7**	11	1	44	0	45	10	**4**	**3**	**17**	4	**93**	11	108	181
17:00	0	**12**	7	**19**	2	56	0	**58**	5	3	0	8	3	65	6	74	159
17:15	0	3	1	4	1	**57**	0	58	**11**	3	1	15	**6**	91	12	**109**	**186**
Total Volume	2	20	18	40	7	208	1	216	34	13	6	53	16	304	49	369	678
% App. Total	5	50	45		3.2	96.3	0.5		64.2	24.5	11.3		4.3	82.4	13.3		
PHF	.500	.417	.643	.526	.583	.912	.250	.931	.773	.813	.500	.779	.667	.817	.613	.846	.911
Passenger Vehicles	2	20	18	40	7	192	1	200	33	13	6	52	15	292	49	356	648
% Passenger Vehicles	100	100	100	100	100	92.3	100	92.6	97.1	100	100	98.1	93.8	96.1	100	96.5	95.6
Heavy Vehicles	0	0	0	0	0	16	0	16	1	0	0	1	1	12	0	13	30
% Heavy Vehicles	0	0	0	0	0	7.7	0	7.4	2.9	0	0	1.9	6.3	3.9	0	3.5	4.4



McMahon Associates Inc.

425 Commerce Drive, Suite 200
Fort Washington, PA 19034

Municipality: Muncy Township
Location: US 220/Rabbittown Rd
Counter/Board #: EF/1403

File Name : Muncy14_am&pm
Site Code : 91348014
Start Date : 10/1/2014
Page No : 1

Groups Printed- Passenger Vehicles

	Rabbittown Rd Southbound			US 220 Westbound			Beacon Light Rd Northbound			US 220 Eastbound			
Start Time	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Int. Total
07:00	0	1	3	1	62	0	7	2	0	0	36	1	113
07:15	0	3	4	4	66	0	10	2	1	1	47	2	140
07:30	0	2	7	0	97	0	11	3	1	1	30	6	158
07:45	0	5	3	1	66	1	4	2	0	1	31	3	117
Total	0	11	17	6	291	1	32	9	2	3	144	12	528
08:00	0	4	5	1	59	0	6	1	2	0	22	0	100
08:15	0	3	1	1	58	0	5	1	2	2	33	2	108
08:30	0	1	4	1	38	0	12	1	0	3	27	1	88
08:45	1	5	3	0	38	1	11	4	0	4	18	2	87
Total	1	13	13	3	193	1	34	7	4	9	100	5	383
*** BREAK ***													
16:00	0	4	3	4	49	0	5	2	2	5	65	12	151
16:15	0	2	5	4	25	0	4	8	1	5	62	11	127
16:30	1	2	3	3	48	1	8	3	2	3	50	20	144
16:45	1	3	7	1	43	0	10	4	3	4	92	11	179
Total	2	11	18	12	165	1	27	17	8	17	269	54	601
17:00	0	12	7	2	52	0	4	3	0	2	64	6	152
17:15	0	3	1	1	49	0	11	3	1	6	86	12	173
17:30	0	3	3	2	30	0	10	3	2	3	72	11	139
17:45	0	1	2	1	41	0	7	7	1	5	54	9	128
Total	0	19	13	6	172	0	32	16	4	16	276	38	592
Grand Total	3	54	61	27	821	3	125	49	18	45	789	109	2104
Apprch %	2.5	45.8	51.7	3.2	96.5	0.4	65.1	25.5	9.4	4.8	83.7	11.6	
Total %	0.1	2.6	2.9	1.3	39	0.1	5.9	2.3	0.9	2.1	37.5	5.2	

McMahon Associates Inc.

425 Commerce Drive, Suite 200
Fort Washington, PA 19034

Municipality: Muncy Township
Location: US 220/Rabbittown Rd
Counter/Board #: EF/1403

File Name : Muncy14_am&pm
Site Code : 91348014
Start Date : 10/1/2014

Groups Printed- Heavy Vehicles

	Rabbittown Rd Southbound			US 220 Westbound			Beacon Light Rd Northbound			US 220 Eastbound			
Start Time	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Int. Total
07:00	0	2	0	0	3	0	1	1	0	1	3	0	11
07:15	0	0	1	0	3	0	0	1	0	2	3	1	11
07:30	0	0	1	0	10	0	0	0	0	2	5	0	18
07:45	0	2	1	0	1	0	0	0	0	0	6	0	10
Total	0	4	3	0	17	0	1	2	0	5	17	1	50
08:00	0	1	0	0	4	0	1	0	1	1	8	0	16
08:15	0	1	1	0	10	0	1	0	0	2	9	0	24
08:30	0	0	0	0	3	0	0	0	1	2	5	0	11
08:45	1	0	1	0	4	1	0	0	0	1	4	1	13
Total	1	2	2	0	21	1	2	0	2	6	26	1	64
*** BREAK ***													
16:00	0	1	0	0	5	0	0	0	0	0	6	0	12
16:15	0	0	0	0	3	0	0	0	0	1	4	1	9
16:30	0	0	0	0	3	0	0	0	0	0	5	0	8
16:45	0	0	0	0	1	0	0	0	0	0	1	0	2
Total	0	1	0	0	12	0	0	0	0	1	16	1	31
17:00	0	0	0	0	4	0	1	0	0	1	1	0	7
17:15	0	0	0	0	8	0	0	0	0	0	5	0	13
17:30	0	0	0	0	2	0	0	0	0	0	1	0	3
17:45	0	0	0	0	4	0	0	0	0	0	0	0	4
Total	0	0	0	0	18	0	1	0	0	1	7	0	27
Grand Total	1	7	5	0	68	1	4	2	2	13	66	3	172
Apprch %	7.7	53.8	38.5	0	98.6	1.4	50	25	25	15.9	80.5	3.7	
Total %	0.6	4.1	2.9	0	39.5	0.6	2.3	1.2	1.2	7.6	38.4	1.7	

McMahon Associates Inc.

425 Commerce Drive, Suite 200
Fort Washington, PA 19034

Municipality: Muncy Creek Township
Location: PA 405/Chippewa Rd
Counter/Board #: FM/1401

File Name : Muncy15_am&pm
Site Code : 91348015
Start Date : 9/23/2014

Groups Printed- Passenger Vehicles - Heavy Vehicles

	PA 405 Southwestbound				PA 405 Northeastbound				Driveway Westbound				Chippewa Rd Eastbound				
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Int. Total
07:00	0	100	3	0	1	66	1	0	0	0	0	0	0	0	5	0	176
07:15	0	127	8	0	7	73	1	0	0	0	0	0	1	0	8	0	225
07:30	0	179	1	0	5	80	0	0	0	0	0	0	1	0	4	0	270
07:45	0	143	2	1	7	105	0	1	0	0	0	0	0	0	6	0	265
Total	0	549	14	1	20	324	2	1	0	0	0	0	2	0	23	0	936
08:00	0	143	1	0	6	83	0	1	0	0	0	0	1	0	11	0	246
08:15	0	108	0	0	4	82	0	0	0	0	0	0	1	0	4	0	199
08:30	0	101	3	1	9	100	0	0	0	0	0	0	0	0	4	0	218
08:45	0	87	5	0	3	74	0	0	0	0	0	0	3	0	3	0	175
Total	0	439	9	1	22	339	0	1	0	0	0	0	5	0	22	0	838
*** BREAK ***																	
16:00	0	102	6	1	13	166	0	0	1	0	0	0	0	0	13	0	302
16:15	0	102	1	0	2	141	0	0	0	0	0	0	1	0	12	0	259
16:30	0	129	4	0	11	150	0	1	0	0	0	0	1	0	7	0	303
16:45	6	103	8	0	12	186	7	1	0	0	0	1	2	0	17	0	343
Total	6	436	19	1	38	643	7	2	1	0	0	1	4	0	49	0	1207
17:00	0	137	3	1	10	181	0	0	0	0	0	0	1	0	14	0	347
17:15	0	131	2	0	8	205	0	0	0	0	0	0	4	1	8	1	360
17:30	0	132	1	1	9	153	0	0	0	0	0	0	0	0	4	0	300
17:45	0	104	6	1	9	136	9	0	0	0	0	1	0	0	5	0	271
Total	0	504	12	3	36	675	9	0	0	0	0	1	5	1	31	1	1278
Grand Total	6	1928	54	6	116	1981	18	4	1	0	0	2	16	1	125	1	4259
Apprch %	0.3	96.7	2.7	0.3	5.5	93.5	0.8	0.2	33.3	0	0	66.7	11.2	0.7	87.4	0.7	
Total %	0.1	45.3	1.3	0.1	2.7	46.5	0.4	0.1	0	0	0	0	0.4	0	2.9	0	
Passenger Vehicles	6	1822	49	5	113	1890	18	4	1	0	0	2	16	1	121	1	4049
% Passenger Vehicles	100	94.5	90.7	83.3	97.4	95.4	100	100	100	0	0	100	100	100	96.8	100	95.1
Heavy Vehicles	0	106	5	1	3	91	0	0	0	0	0	0	0	0	4	0	210
% Heavy Vehicles	0	5.5	9.3	16.7	2.6	4.6	0	0	0	0	0	0	0	0	3.2	0	4.9

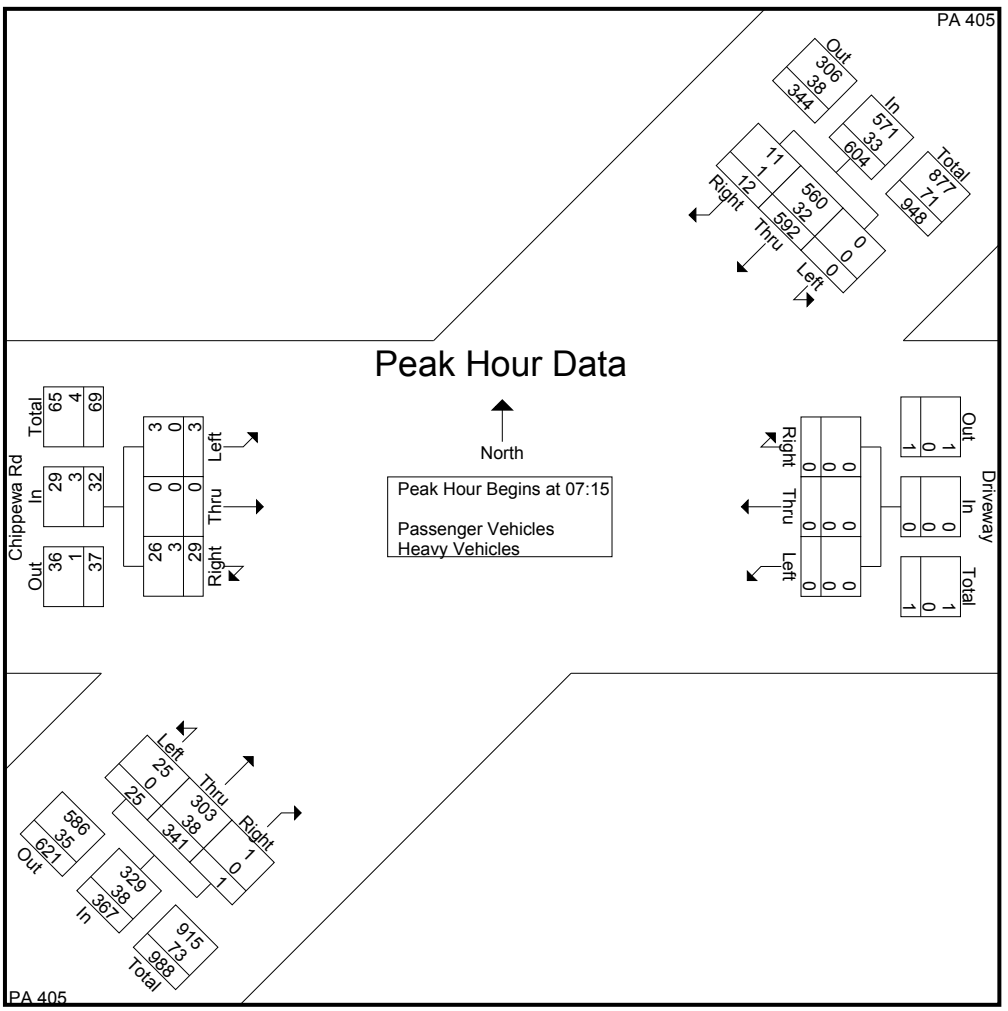
McMahon Associates Inc.

425 Commerce Drive, Suite 200
Fort Washington, PA 19034

Municipality: Muncy Creek Township
Location: PA 405/Chippewa Rd
Counter/Board #: FM/1401

File Name : Muncy15_am&pm
Site Code : 91348015
Start Date : 9/23/2014
Page No : 2

	PA 405 Southwestbound				PA 405 Northeastbound				Driveway Westbound				Chippewa Rd Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 11:45 - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:15																	
07:15	0	127	**8**	135	**7**	73	**1**	81	0	0	0	0	**1**	0	8	9	225
07:30	0	**179**	1	**180**	5	80	0	85	0	0	0	0	1	0	4	5	**270**
07:45	0	143	2	145	7	**105**	0	**112**	0	0	0	0	0	0	6	6	263
08:00	0	143	1	144	6	83	0	89	0	0	0	0	1	0	**11**	**12**	245
Total Volume	0	592	12	604	25	341	1	367	0	0	0	0	3	0	29	32	1003
% App. Total	0	98	2		6.8	92.9	0.3		0	0	0		9.4	0	90.6		
PHF	.000	.827	.375	.839	.893	.812	.250	.819	.000	.000	.000	.000	.750	.000	.659	.667	.929
Passenger Vehicles	0	560	11	571	25	303	1	329	0	0	0	0	3	0	26	29	929
% Passenger Vehicles	0	94.6	91.7	94.5	100	88.9	100	89.6	0	0	0	0	100	0	89.7	90.6	92.6
Heavy Vehicles	0	32	1	33	0	38	0	38	0	0	0	0	0	0	3	3	74
% Heavy Vehicles	0	5.4	8.3	5.5	0	11.1	0	10.4	0	0	0	0	0	0	10.3	9.4	7.4



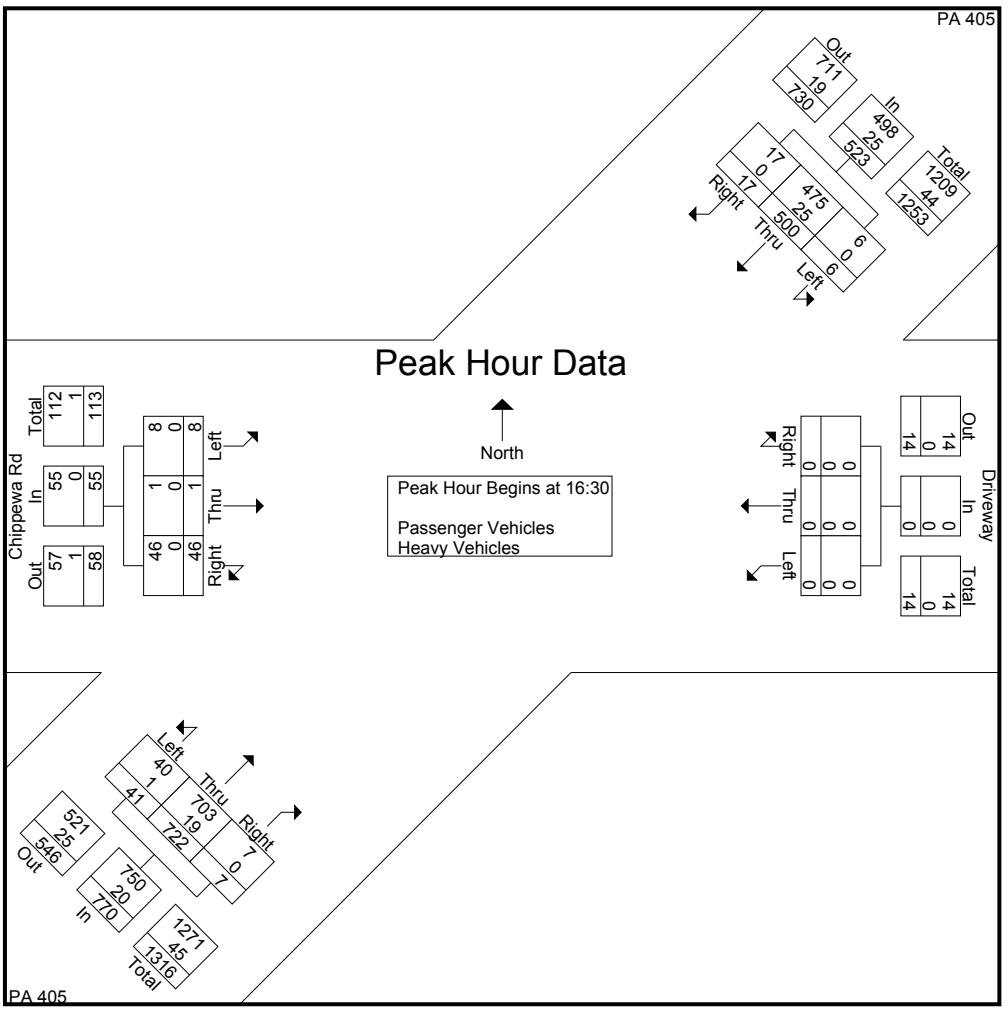
McMahon Associates Inc.

425 Commerce Drive, Suite 200
Fort Washington, PA 19034

Municipality: Muncy Creek Township
Location: PA 405/Chippewa Rd
Counter/Board #: FM/1401

File Name : Muncy15_am&pm
Site Code : 91348015
Start Date : 9/23/2014
Page No : 3

	PA 405 Southwestbound				PA 405 Northeastbound				Driveway Westbound				Chippewa Rd Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 12:00 to 17:45 - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 16:30																	
16:30	0	129	4	133	11	150	0	161	0	0	0	0	1	0	7	8	302
16:45	**6**	103	**8**	117	**12**	186	**7**	205	0	0	0	0	2	0	**17**	**19**	341
17:00	0	**137**	3	**140**	10	181	0	191	0	0	0	0	1	0	14	15	346
17:15	0	131	2	133	8	**205**	0	**213**	0	0	0	0	**4**	**1**	8	13	**359**
Total Volume	6	500	17	523	41	722	7	770	0	0	0	0	8	1	46	55	1348
% App. Total	1.1	95.6	3.3		5.3	93.8	0.9		0	0	0		14.5	1.8	83.6		
PHF	.250	.912	.531	.934	.854	.880	.250	.904	.000	.000	.000	.000	.500	.250	.676	.724	.939
Passenger Vehicles	6	475	17	498	40	703	7	750	0	0	0	0	8	1	46	55	1303
% Passenger Vehicles	100	95.0	100	95.2	97.6	97.4	100	97.4	0	0	0	0	100	100	100	100	96.7
Heavy Vehicles	0	25	0	25	1	19	0	20	0	0	0	0	0	0	0	0	45
% Heavy Vehicles	0	5.0	0	4.8	2.4	2.6	0	2.6	0	0	0	0	0	0	0	0	3.3



McMahon Associates Inc.

425 Commerce Drive, Suite 200
Fort Washington, PA 19034

Municipality: Muncy Creek Township
Location: PA 405/Chippewa Rd
Counter/Board #: FM/1401

File Name : Muncy15_am&pm
Site Code : 91348015
Start Date : 9/23/2014
Page No : 1

Groups Printed- Passenger Vehicles

	PA 405 Southwestbound			PA 405 Northeastbound			Driveway Westbound			Chippewa Rd Eastbound			
Start Time	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Int. Total
07:00	0	91	3	1	62	1	0	0	0	0	0	5	163
07:15	0	123	8	7	68	1	0	0	0	1	0	6	214
07:30	0	172	1	5	74	0	0	0	0	1	0	4	257
07:45	0	131	1	7	90	0	0	0	0	0	0	6	235
Total	0	517	13	20	294	2	0	0	0	2	0	21	869
08:00	0	134	1	6	71	0	0	0	0	1	0	10	223
08:15	0	105	0	3	77	0	0	0	0	1	0	3	189
08:30	0	92	3	9	91	0	0	0	0	0	0	4	199
08:45	0	80	5	3	70	0	0	0	0	3	0	3	164
Total	0	411	9	21	309	0	0	0	0	5	0	20	775
*** BREAK ***													
16:00	0	92	4	13	164	0	1	0	0	0	0	13	287
16:15	0	96	1	2	137	0	0	0	0	1	0	12	249
16:30	0	123	4	11	148	0	0	0	0	1	0	7	294
16:45	6	98	8	12	181	7	0	0	0	2	0	17	331
Total	6	409	17	38	630	7	1	0	0	4	0	49	1161
17:00	0	130	3	9	176	0	0	0	0	1	0	14	333
17:15	0	124	2	8	198	0	0	0	0	4	1	8	345
17:30	0	131	1	8	150	0	0	0	0	0	0	4	294
17:45	0	100	4	9	133	9	0	0	0	0	0	5	260
Total	0	485	10	34	657	9	0	0	0	5	1	31	1232
Grand Total	6	1822	49	113	1890	18	1	0	0	16	1	121	4037
Apprch %	0.3	97.1	2.6	5.6	93.5	0.9	100	0	0	11.6	0.7	87.7	
Total %	0.1	45.1	1.2	2.8	46.8	0.4	0	0	0	0.4	0	3	

McMahon Associates Inc.

425 Commerce Drive, Suite 200
Fort Washington, PA 19034

Municipality: Muncy Creek Township
Location: PA 405/Chippewa Rd
Counter/Board #: FM/1401

File Name : Muncy15_am&pm
Site Code : 91348015
Start Date : 9/23/2014

Groups Printed- Heavy Vehicles

	PA 405 Southwestbound			PA 405 Northeastbound			Driveway Westbound			Chippewa Rd Eastbound			
Start Time	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Int. Total
07:00	0	9	0	0	4	0	0	0	0	0	0	0	13
07:15	0	4	0	0	5	0	0	0	0	0	0	2	11
07:30	0	7	0	0	6	0	0	0	0	0	0	0	13
07:45	0	12	1	0	15	0	0	0	0	0	0	0	28
Total	0	32	1	0	30	0	0	0	0	0	0	2	65
08:00	0	9	0	0	12	0	0	0	0	0	0	1	22
08:15	0	3	0	1	5	0	0	0	0	0	0	1	10
08:30	0	9	0	0	9	0	0	0	0	0	0	0	18
08:45	0	7	0	0	4	0	0	0	0	0	0	0	11
Total	0	28	0	1	30	0	0	0	0	0	0	2	61
*** BREAK ***													
16:00	0	10	2	0	2	0	0	0	0	0	0	0	14
16:15	0	6	0	0	4	0	0	0	0	0	0	0	10
16:30	0	6	0	0	2	0	0	0	0	0	0	0	8
16:45	0	5	0	0	5	0	0	0	0	0	0	0	10
Total	0	27	2	0	13	0	0	0	0	0	0	0	42
17:00	0	7	0	1	5	0	0	0	0	0	0	0	13
17:15	0	7	0	0	7	0	0	0	0	0	0	0	14
17:30	0	1	0	1	3	0	0	0	0	0	0	0	5
17:45	0	4	2	0	3	0	0	0	0	0	0	0	9
Total	0	19	2	2	18	0	0	0	0	0	0	0	41
Grand Total	0	106	5	3	91	0	0	0	0	0	0	4	209
Apprch %	0	95.5	4.5	3.2	96.8	0	0	0	0	0	0	100	
Total %	0	50.7	2.4	1.4	43.5	0	0	0	0	0	0	1.9	

McMahon Associates Inc.

425 Commerce Drive, Suite 200
Fort Washington, PA 19034

Municipality: Muncy Creek Township
Location: PA 405/Lime Bluff Rd
Counter/Board #: EF/1401

File Name : Muncy16_am&pm
Site Code : 91348016
Start Date : 10/2/2014

Groups Printed- Passenger Vehicles - Heavy Vehicles

	Lime Bluff Rd Southbound				PA 405 Westbound				Driveway Northbound				PA 405 Eastbound				
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Int. Total
07:00	4	0	5	0	0	110	5	0	0	0	0	0	2	61	0	0	187
07:15	0	0	12	0	0	158	3	0	0	0	0	0	1	81	0	0	255
07:30	2	0	9	0	0	184	3	0	0	0	0	0	5	108	0	0	311
07:45	4	0	9	0	0	164	3	0	0	0	0	0	8	97	0	0	285
Total	10	0	35	0	0	616	14	0	0	0	0	0	16	347	0	0	1038
08:00	8	0	12	0	0	127	2	0	0	0	0	0	2	82	0	0	233
08:15	3	0	9	0	0	131	4	0	0	0	0	0	3	103	0	0	253
08:30	3	0	4	0	0	102	3	0	0	0	0	0	1	84	0	0	197
08:45	5	0	3	0	0	110	5	0	0	0	0	0	1	78	0	0	202
Total	19	0	28	0	0	470	14	0	0	0	0	0	7	347	0	0	885
*** BREAK ***																	
16:00	4	0	6	0	0	107	2	0	0	0	0	0	3	165	0	0	287
16:15	13	0	4	0	0	109	2	0	0	0	0	0	7	157	0	0	292
16:30	6	0	11	0	0	107	3	0	0	0	0	0	3	186	0	0	316
16:45	5	0	2	0	0	130	2	0	0	0	0	0	6	190	0	0	335
Total	28	0	23	0	0	453	9	0	0	0	0	0	19	698	0	0	1230
17:00	7	0	5	0	2	121	3	0	0	0	0	0	13	187	0	0	338
17:15	9	0	7	0	0	149	8	0	0	0	0	0	22	203	0	0	398
17:30	5	0	7	0	0	145	4	0	0	0	0	0	15	190	0	0	366
17:45	6	0	6	0	0	135	3	0	0	0	0	0	8	148	0	0	306
Total	27	0	25	0	2	550	18	0	0	0	0	0	58	728	0	0	1408
Grand Total	84	0	111	0	2	2089	55	0	0	0	0	0	100	2120	0	0	4561
Apprch %	43.1	0	56.9	0	0.1	97.3	2.6	0	0	0	0	0	4.5	95.5	0	0	
Total %	1.8	0	2.4	0	0	45.8	1.2	0	0	0	0	0	2.2	46.5	0	0	
Passenger Vehicles	74	0	106	0	2	1986	46	0	0	0	0	0	95	1988	0	0	4297
% Passenger Vehicles	88.1	0	95.5	0	100	95.1	83.6	0	0	0	0	0	95	93.8	0	0	94.2
Heavy Vehicles	10	0	5	0	0	103	9	0	0	0	0	0	5	132	0	0	264
% Heavy Vehicles	11.9	0	4.5	0	0	4.9	16.4	0	0	0	0	0	5	6.2	0	0	5.8

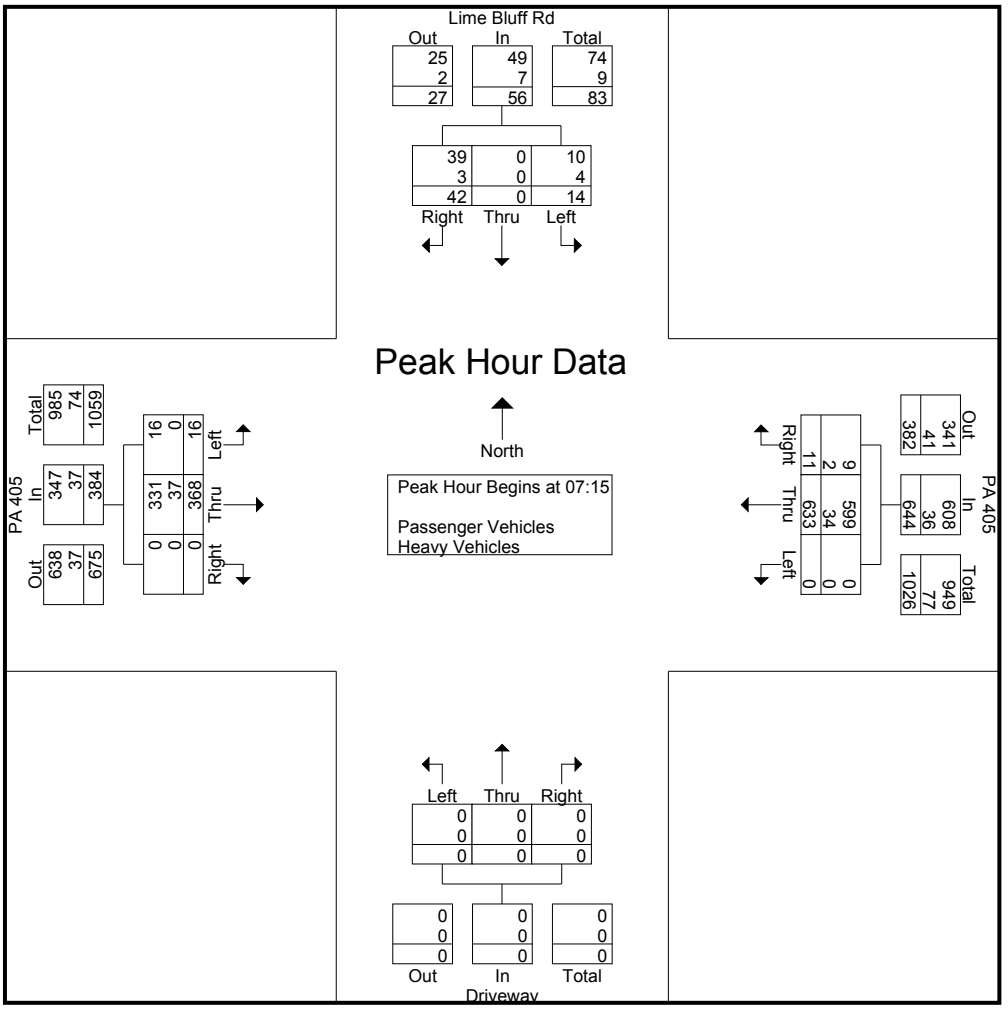
McMahon Associates Inc.

425 Commerce Drive, Suite 200
Fort Washington, PA 19034

Municipality: Muncy Creek Township
Location: PA 405/Lime Bluff Rd
Counter/Board #: EF/1401

File Name : Muncy16_am&pm
Site Code : 91348016
Start Date : 10/2/2014
Page No : 2

	Lime Bluff Rd Southbound				PA 405 Westbound				Driveway Northbound				PA 405 Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 11:45 - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:15																	
07:15	0	0	**12**	12	0	158	**3**	161	0	0	0	0	1	81	0	82	255
07:30	2	0	9	11	0	**184**	3	**187**	0	0	0	0	5	**108**	0	**113**	**311**
07:45	4	0	9	13	0	164	3	167	0	0	0	0	**8**	97	0	105	285
08:00	**8**	0	12	**20**	0	127	2	129	0	0	0	0	2	82	0	84	233
Total Volume	14	0	42	56	0	633	11	644	0	0	0	0	16	368	0	384	1084
% App. Total	25	0	75		0	98.3	1.7		0	0	0		4.2	95.8	0		
PHF	.438	.000	.875	.700	.000	.860	.917	.861	.000	.000	.000	.000	.500	.852	.000	.850	.871
Passenger Vehicles	10	0	39	49	0	599	9	608	0	0	0	0	16	331	0	347	1004
% Passenger Vehicles	71.4	0	92.9	87.5	0	94.6	81.8	94.4	0	0	0	0	100	89.9	0	90.4	92.6
Heavy Vehicles	4	0	3	7	0	34	2	36	0	0	0	0	0	37	0	37	80
% Heavy Vehicles	28.6	0	7.1	12.5	0	5.4	18.2	5.6	0	0	0	0	0	10.1	0	9.6	7.4



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Municipality: Muncy Creek Township
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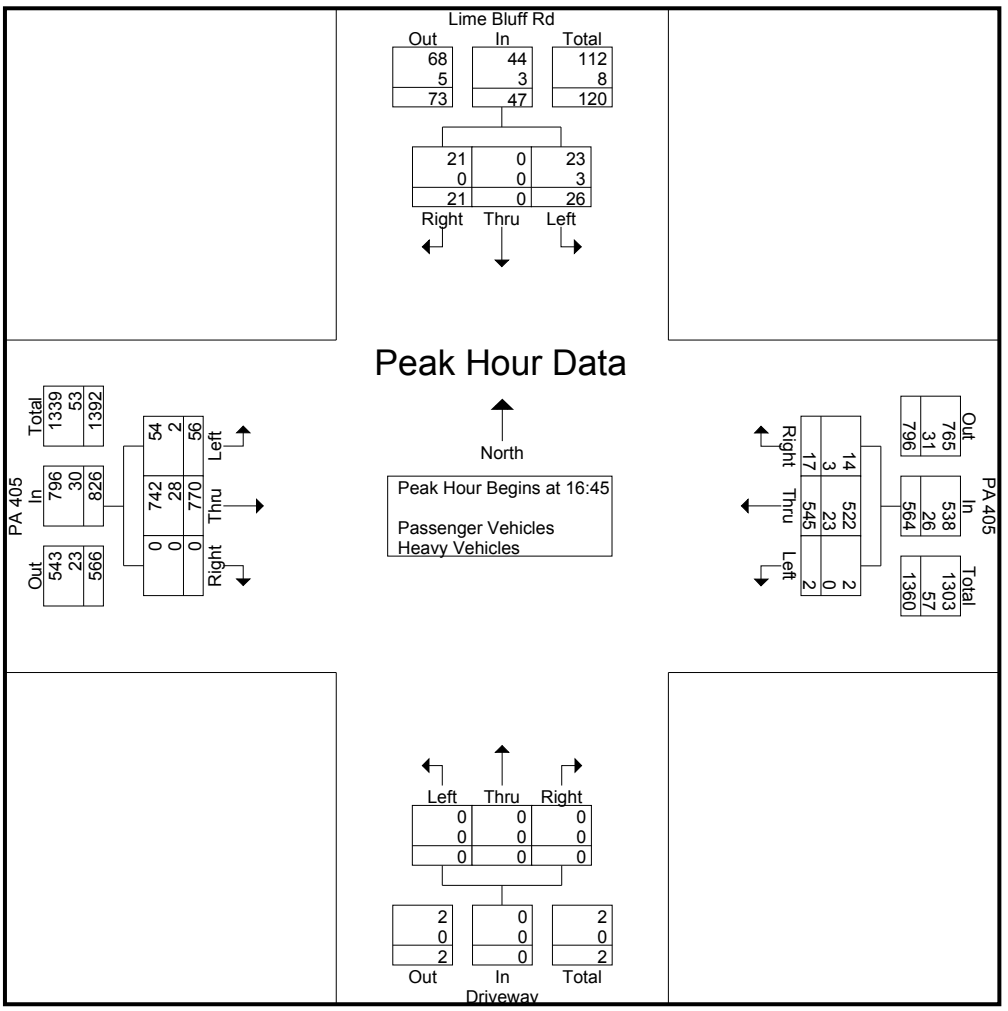
File Name : Muncy16_am&pm
Site Code : 91348016
Start Date : 10/2/2014
Page No : 3

	Lime Bluff Rd Southbound				PA 405 Westbound				Driveway Northbound				PA 405 Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 12:00 to 17:45 - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 16:45																	
16:45	5	0	2	7	0	130	2	132	0	0	0	0	6	190	0	196	335
17:00	7	0	5	12	**2**	121	3	126	0	0	0	0	13	187	0	200	338
17:15	**9**	0	**7**	**16**	0	**149**	**8**	**157**	0	0	0	0	**22**	**203**	0	**225**	**398**
17:30	5	0	7	12	0	145	4	149	0	0	0	0	15	190	0	205	366
Total Volume	26	0	21	47	2	545	17	564	0	0	0	0	56	770	0	826	1437
% App. Total	55.3	0	44.7		0.4	96.6	3		0	0	0		6.8	93.2	0		
PHF	.722	.000	.750	.734	.250	.914	.531	.898	.000	.000	.000	.000	.636	.948	.000	.918	.903
Passenger Vehicles	23	0	21	44	2	522	14	538	0	0	0	0	54	742	0	796	1378
% Passenger Vehicles	88.5	0	100	93.6	100	95.8	82.4	95.4	0	0	0	0	96.4	96.4	0	96.4	95.9
Heavy Vehicles	3	0	0	3	0	23	3	26	0	0	0	0	2	28	0	30	59
% Heavy Vehicles	11.5	0	0	6.4	0	4.2	17.6	4.6	0	0	0	0	3.6	3.6	0	3.6	4.1



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Municipality: Muncy Creek Township
Location: PA 405/Lime Bluff Rd
Counter/Board #: EF/1401

File Name : Muncy16_am&pm
Site Code : 91348016
Start Date : 10/2/2014

Groups Printed- Passenger Vehicles

	Lime Bluff Rd Southbound			PA 405 Westbound			Driveway Northbound			PA 405 Eastbound			
Start Time	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Int. Total
07:00	4	0	4	0	103	4	0	0	0	2	51	0	168
07:15	0	0	12	0	153	2	0	0	0	1	74	0	242
07:30	2	0	9	0	172	3	0	0	0	5	102	0	293
07:45	4	0	8	0	155	3	0	0	0	8	90	0	268
Total	10	0	33	0	583	12	0	0	0	16	317	0	971
08:00	4	0	10	0	119	1	0	0	0	2	65	0	201
08:15	2	0	8	0	124	4	0	0	0	3	87	0	228
08:30	2	0	4	0	96	3	0	0	0	1	73	0	179
08:45	5	0	3	0	104	5	0	0	0	1	70	0	188
Total	13	0	25	0	443	13	0	0	0	7	295	0	796
*** BREAK ***													
16:00	4	0	6	0	100	2	0	0	0	3	154	0	269
16:15	12	0	4	0	106	0	0	0	0	7	153	0	282
16:30	6	0	11	0	101	3	0	0	0	1	182	0	304
16:45	3	0	2	0	121	2	0	0	0	6	184	0	318
Total	25	0	23	0	428	7	0	0	0	17	673	0	1173
17:00	6	0	5	2	116	1	0	0	0	13	177	0	320
17:15	9	0	7	0	144	7	0	0	0	21	196	0	384
17:30	5	0	7	0	141	4	0	0	0	14	185	0	356
17:45	6	0	6	0	131	2	0	0	0	7	145	0	297
Total	26	0	25	2	532	14	0	0	0	55	703	0	1357
Grand Total	74	0	106	2	1986	46	0	0	0	95	1988	0	4297
Apprch %	41.1	0	58.9	0.1	97.6	2.3	0	0	0	4.6	95.4	0	
Total %	1.7	0	2.5	0	46.2	1.1	0	0	0	2.2	46.3	0	

McMahon Associates Inc.

425 Commerce Drive, Suite 200
Fort Washington, PA 19034

Municipality: Muncy Creek Township
Location: PA 405/Lime Bluff Rd
Counter/Board #: EF/1401

File Name : Muncy16_am&pm
Site Code : 91348016
Start Date : 10/2/2014

Groups Printed- Heavy Vehicles

	Lime Bluff Rd Southbound			PA 405 Westbound			Driveway Northbound			PA 405 Eastbound			
Start Time	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Int. Total
07:00	0	0	1	0	7	1	0	0	0	0	10	0	19
07:15	0	0	0	0	5	1	0	0	0	0	7	0	13
07:30	0	0	0	0	12	0	0	0	0	0	6	0	18
07:45	0	0	1	0	9	0	0	0	0	0	7	0	17
Total	0	0	2	0	33	2	0	0	0	0	30	0	67
08:00	4	0	2	0	8	1	0	0	0	0	17	0	32
08:15	1	0	1	0	7	0	0	0	0	0	16	0	25
08:30	1	0	0	0	6	0	0	0	0	0	11	0	18
08:45	0	0	0	0	6	0	0	0	0	0	8	0	14
Total	6	0	3	0	27	1	0	0	0	0	52	0	89
*** BREAK ***													
16:00	0	0	0	0	7	0	0	0	0	0	11	0	18
16:15	1	0	0	0	3	2	0	0	0	0	4	0	10
16:30	0	0	0	0	6	0	0	0	0	2	4	0	12
16:45	2	0	0	0	9	0	0	0	0	0	6	0	17
Total	3	0	0	0	25	2	0	0	0	2	25	0	57
17:00	1	0	0	0	5	2	0	0	0	0	10	0	18
17:15	0	0	0	0	5	1	0	0	0	1	7	0	14
17:30	0	0	0	0	4	0	0	0	0	1	5	0	10
17:45	0	0	0	0	4	1	0	0	0	1	3	0	9
Total	1	0	0	0	18	4	0	0	0	3	25	0	51
Grand Total	10	0	5	0	103	9	0	0	0	5	132	0	264
Apprch %	66.7	0	33.3	0	92	8	0	0	0	3.6	96.4	0	
Total %	3.8	0	1.9	0	39	3.4	0	0	0	1.9	50	0	

McMahon Associates Inc.

425 Commerce Drive, Suite 200
Fort Washington, PA 19034

Municipality: Wolf Township
Location: US 220/Lime Bluff Rd
Counter/Board #: EF/1403

File Name : Muncy17_am&pm
Site Code : 91348017
Start Date : 10/7/2014
Page No : 1

Groups Printed- Passenger Vehicles - Heavy Vehicles

	Driveway Southbound				US 220 Westbound				Lime Bluff Rd Northbound				US 220 Eastbound				
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Int. Total
07:00	0	0	0	0	2	67	0	0	7	0	1	0	1	19	10	0	107
07:15	0	0	0	0	3	75	0	0	7	0	1	0	0	35	21	0	142
07:30	0	0	0	0	5	96	0	0	7	0	1	0	0	27	15	0	151
07:45	0	0	0	0	7	49	0	0	6	0	3	0	0	34	24	0	123
Total	0	0	0	0	17	287	0	0	27	0	6	0	1	115	70	0	523
08:00	0	0	0	0	4	57	0	0	16	0	3	0	0	32	10	0	122
08:15	0	0	0	0	1	51	0	0	3	0	2	0	0	47	4	0	108
08:30	0	0	0	0	0	54	0	0	11	0	3	0	0	26	2	0	96
08:45	0	0	0	0	1	46	0	0	4	0	0	0	0	37	5	1	94
Total	0	0	0	0	6	208	0	0	34	0	8	0	0	142	21	1	420
*** BREAK ***																	
16:00	0	0	0	0	4	43	0	0	5	0	2	0	1	84	11	0	150
16:15	0	0	0	0	0	55	0	0	9	0	4	0	0	80	15	0	163
16:30	0	0	0	0	2	42	0	0	9	0	4	0	0	61	12	0	130
16:45	0	0	0	0	0	51	0	0	3	0	1	0	0	71	12	1	139
Total	0	0	0	0	6	191	0	0	26	0	11	0	1	296	50	1	582
17:00	0	0	0	0	3	52	0	0	11	0	2	0	0	61	8	0	137
17:15	0	0	0	0	1	48	0	0	13	0	6	0	0	63	25	0	156
17:30	0	0	0	0	0	44	0	0	7	0	4	0	0	121	25	0	201
17:45	0	0	0	0	0	54	0	0	13	0	1	0	0	59	18	0	145
Total	0	0	0	0	4	198	0	0	44	0	13	0	0	304	76	0	639
Grand Total	0	0	0	0	33	884	0	0	131	0	38	0	2	857	217	2	2164
Apprch %	0	0	0	0	3.6	96.4	0	0	77.5	0	22.5	0	0.2	79.5	20.1	0.2	
Total %	0	0	0	0	1.5	40.9	0	0	6.1	0	1.8	0	0.1	39.6	10	0.1	
Passenger Vehicles	0	0	0	0	31	827	0	0	126	0	37	0	2	791	209	2	2025
% Passenger Vehicles	0	0	0	0	93.9	93.6	0	0	96.2	0	97.4	0	100	92.3	96.3	100	93.6
Heavy Vehicles	0	0	0	0	2	57	0	0	5	0	1	0	0	66	8	0	139
% Heavy Vehicles	0	0	0	0	6.1	6.4	0	0	3.8	0	2.6	0	0	7.7	3.7	0	6.4

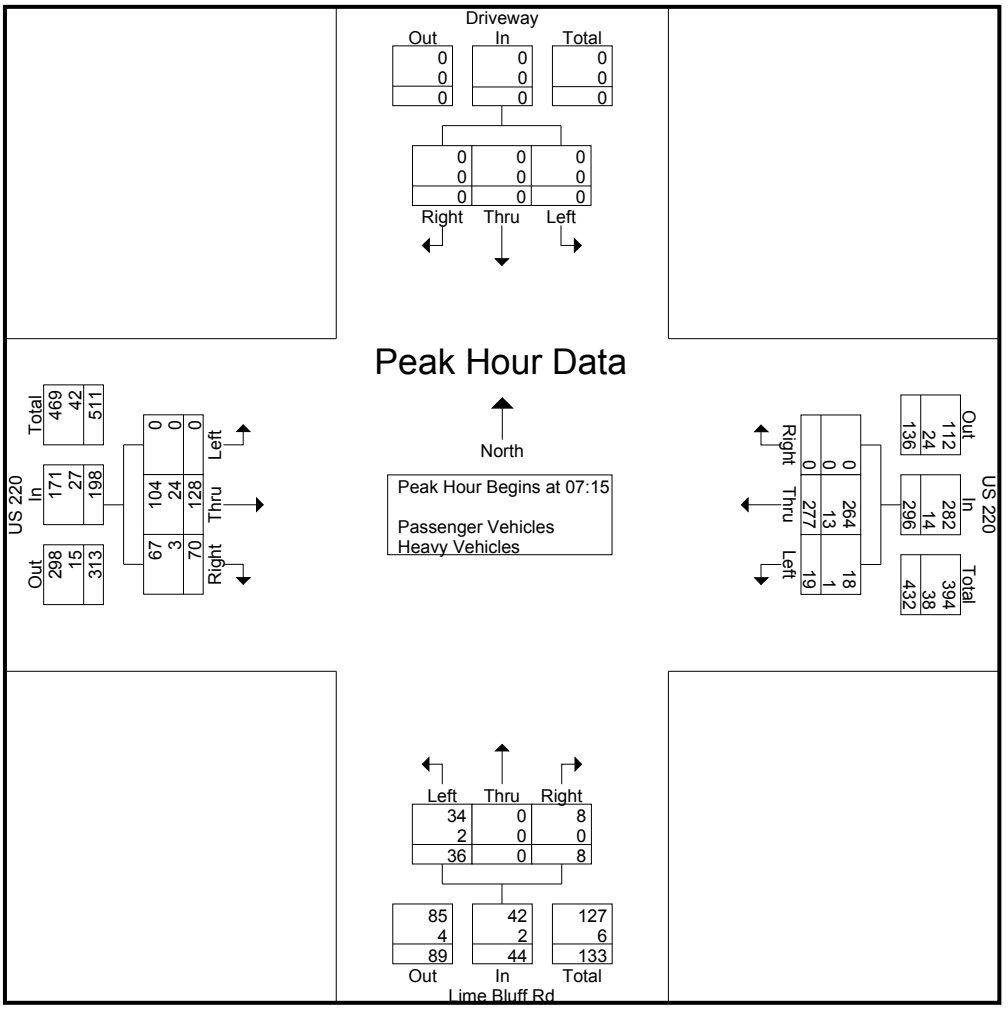
McMahon Associates Inc.

425 Commerce Drive, Suite 200
Fort Washington, PA 19034

Municipality: Wolf Township
Location: US 220/Lime Bluff Rd
Counter/Board #: EF/1403

File Name : Muncy17_am&pm
Site Code : 91348017
Start Date : 10/7/2014
Page No : 2

	Driveway Southbound				US 220 Westbound				Lime Bluff Rd Northbound				US 220 Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 11:45 - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:15																	
07:15	0	0	0	0	3	75	0	78	7	0	1	8	0	**35**	21	56	142
07:30	0	0	0	0	5	**96**	0	**101**	7	0	1	8	0	27	15	42	**151**
07:45	0	0	0	0	**7**	49	0	56	6	0	**3**	9	0	34	**24**	**58**	123
08:00	0	0	0	0	4	57	0	61	**16**	0	3	**19**	0	32	10	42	122
Total Volume	0	0	0	0	19	277	0	296	36	0	8	44	0	128	70	198	538
% App. Total	0	0	0		6.4	93.6	0		81.8	0	18.2		0	64.6	35.4		
PHF	.000	.000	.000	.000	.679	.721	.000	.733	.563	.000	.667	.579	.000	.914	.729	.853	.891
Passenger Vehicles	0	0	0	0	18	264	0	282	34	0	8	42	0	104	67	171	495
% Passenger Vehicles	0	0	0	0	94.7	95.3	0	95.3	94.4	0	100	95.5	0	81.3	95.7	86.4	92.0
Heavy Vehicles	0	0	0	0	1	13	0	14	2	0	0	2	0	24	3	27	43
% Heavy Vehicles	0	0	0	0	5.3	4.7	0	4.7	5.6	0	0	4.5	0	18.8	4.3	13.6	8.0



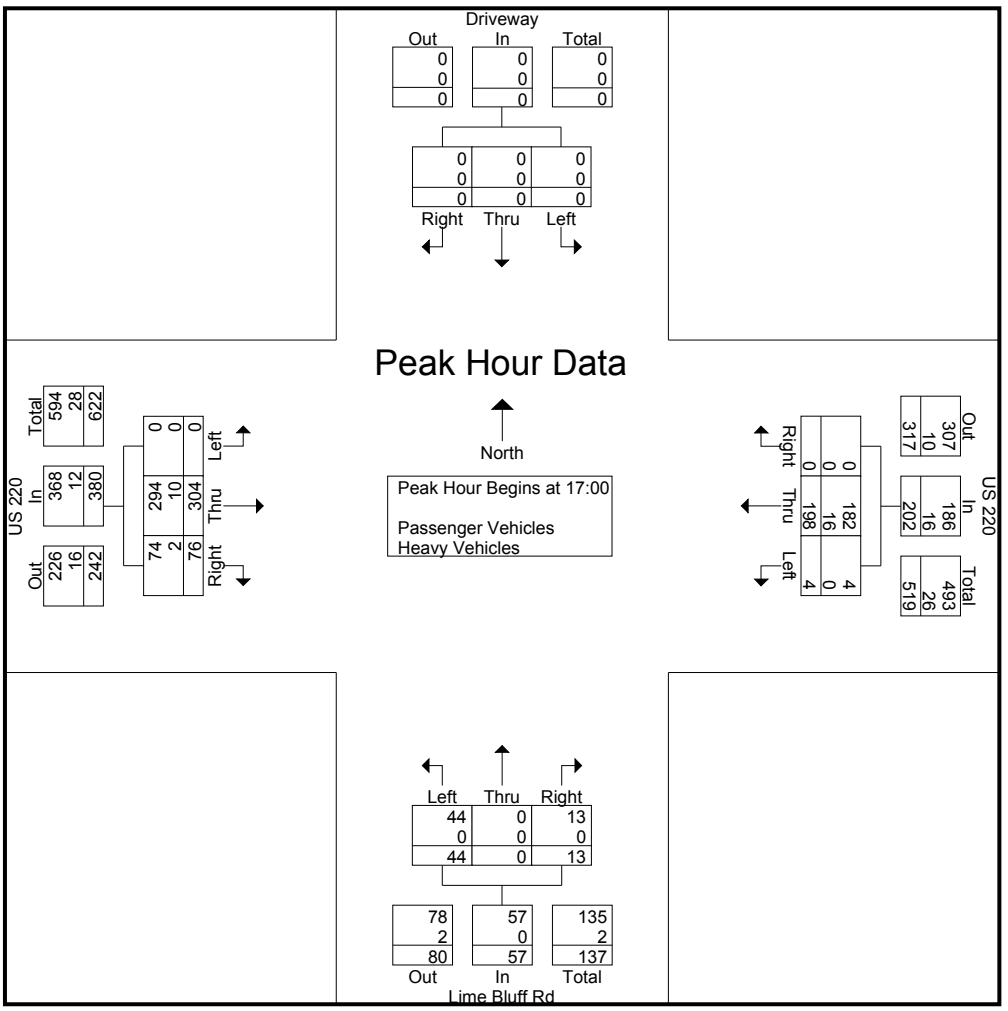
McMahon Associates Inc.

425 Commerce Drive, Suite 200
Fort Washington, PA 19034

Municipality: Wolf Township
Location: US 220/Lime Bluff Rd
Counter/Board #: EF/1403

File Name : Muncy17_am&pm
Site Code : 91348017
Start Date : 10/7/2014
Page No : 3

	Driveway Southbound				US 220 Westbound				Lime Bluff Rd Northbound				US 220 Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 12:00 to 17:45 - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 17:00																	
17:00	0	0	0	0	**3**	52	0	**55**	11	0	2	13	0	61	8	69	137
17:15	0	0	0	0	1	48	0	49	**13**	0	**6**	**19**	0	63	**25**	88	156
17:30	0	0	0	0	0	44	0	44	7	0	4	11	0	**121**	25	**146**	**201**
17:45	0	0	0	0	0	**54**	0	54	13	0	1	14	0	59	18	77	145
Total Volume	0	0	0	0	4	198	0	202	44	0	13	57	0	304	76	380	639
% App. Total	0	0	0		2	98	0		77.2	0	22.8		0	80	20		
PHF	.000	.000	.000	.000	.333	.917	.000	.918	.846	.000	.542	.750	.000	.628	.760	.651	.795
Passenger Vehicles	0	0	0	0	4	182	0	186	44	0	13	57	0	294	74	368	611
% Passenger Vehicles	0	0	0	0	100	91.9	0	92.1	100	0	100	100	0	96.7	97.4	96.8	95.6
Heavy Vehicles	0	0	0	0	0	16	0	16	0	0	0	0	0	10	2	12	28
% Heavy Vehicles	0	0	0	0	0	8.1	0	7.9	0	0	0	0	0	3.3	2.6	3.2	4.4



McMahon Associates Inc.

425 Commerce Drive, Suite 200
Fort Washington, PA 19034

Municipality: Wolf Township
Location: US 220/Lime Bluff Rd
Counter/Board #: EF/1403

File Name : Muncy17_am&pm
Site Code : 91348017
Start Date : 10/7/2014
Page No : 1

Groups Printed- Passenger Vehicles

	Driveway Southbound			US 220 Westbound			Lime Bluff Rd Northbound			US 220 Eastbound			
Start Time	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Int. Total
07:00	0	0	0	1	63	0	7	0	1	1	16	10	99
07:15	0	0	0	3	71	0	7	0	1	0	30	21	133
07:30	0	0	0	5	93	0	7	0	1	0	25	14	145
07:45	0	0	0	6	46	0	6	0	3	0	25	22	108
Total	0	0	0	15	273	0	27	0	6	1	96	67	485
08:00	0	0	0	4	54	0	14	0	3	0	24	10	109
08:15	0	0	0	1	46	0	3	0	2	0	41	3	96
08:30	0	0	0	0	48	0	10	0	3	0	21	2	84
08:45	0	0	0	1	44	0	3	0	0	0	33	4	85
Total	0	0	0	6	192	0	30	0	8	0	119	19	374
*** BREAK ***													
16:00	0	0	0	4	39	0	5	0	2	1	82	10	143
16:15	0	0	0	0	52	0	9	0	3	0	70	15	149
16:30	0	0	0	2	41	0	8	0	4	0	59	12	126
16:45	0	0	0	0	48	0	3	0	1	0	71	12	135
Total	0	0	0	6	180	0	25	0	10	1	282	49	553
17:00	0	0	0	3	47	0	11	0	2	0	58	8	129
17:15	0	0	0	1	42	0	13	0	6	0	62	23	147
17:30	0	0	0	0	42	0	7	0	4	0	115	25	193
17:45	0	0	0	0	51	0	13	0	1	0	59	18	142
Total	0	0	0	4	182	0	44	0	13	0	294	74	611
Grand Total	0	0	0	31	827	0	126	0	37	2	791	209	2023
Apprch %	0	0	0	3.6	96.4	0	77.3	0	22.7	0.2	78.9	20.9	
Total %	0	0	0	1.5	40.9	0	6.2	0	1.8	0.1	39.1	10.3	

McMahon Associates Inc.

425 Commerce Drive, Suite 200
Fort Washington, PA 19034

Municipality: Wolf Township
Location: US 220/Lime Bluff Rd
Counter/Board #: EF/1403

File Name : Muncy17_am&pm
Site Code : 91348017
Start Date : 10/7/2014
Page No : 1

Groups Printed- Heavy Vehicles

	Driveway Southbound			US 220 Westbound			Lime Bluff Rd Northbound			US 220 Eastbound			
Start Time	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Int. Total
07:00	0	0	0	1	4	0	0	0	0	0	3	0	8
07:15	0	0	0	0	4	0	0	0	0	0	5	0	9
07:30	0	0	0	0	3	0	0	0	0	0	2	1	6
07:45	0	0	0	1	3	0	0	0	0	0	9	2	15
Total	0	0	0	2	14	0	0	0	0	0	19	3	38
08:00	0	0	0	0	3	0	2	0	0	0	8	0	13
08:15	0	0	0	0	5	0	0	0	0	0	6	1	12
08:30	0	0	0	0	6	0	1	0	0	0	5	0	12
08:45	0	0	0	0	2	0	1	0	0	0	4	1	8
Total	0	0	0	0	16	0	4	0	0	0	23	2	45
*** BREAK ***													
16:00	0	0	0	0	4	0	0	0	0	0	2	1	7
16:15	0	0	0	0	3	0	0	0	1	0	10	0	14
16:30	0	0	0	0	1	0	1	0	0	0	2	0	4
16:45	0	0	0	0	3	0	0	0	0	0	0	0	3
Total	0	0	0	0	11	0	1	0	1	0	14	1	28
17:00	0	0	0	0	5	0	0	0	0	0	3	0	8
17:15	0	0	0	0	6	0	0	0	0	0	1	2	9
17:30	0	0	0	0	2	0	0	0	0	0	6	0	8
17:45	0	0	0	0	3	0	0	0	0	0	0	0	3
Total	0	0	0	0	16	0	0	0	0	0	10	2	28
Grand Total	0	0	0	2	57	0	5	0	1	0	66	8	139
Apprch %	0	0	0	3.4	96.6	0	83.3	0	16.7	0	89.2	10.8	
Total %	0	0	0	1.4	41	0	3.6	0	0.7	0	47.5	5.8	

McMahon Associates Inc.

425 Commerce Drive, Suite 200
Fort Washington, PA 19034

Municipality: Muncy Creek Township
Location: John Brady Dr/Lime Bluff Rd
Counter/Board #: EF/1403

File Name : Muncy19_am&pm
Site Code : 91348019
Start Date : 9/24/2014

Groups Printed- Passenger Vehicles - Heavy Vehicles

	Lime Bluff Rd Southwestbound				Industrial Parkway Northeastbound				John Brady Dr Northwestbound				John Brady Dr Southeastbound				
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Int. Total
07:00	14	4	4	0	3	12	0	0	3	34	7	0	2	33	0	0	116
07:15	21	7	5	0	1	0	2	0	2	43	10	0	3	32	8	0	134
07:30	13	2	9	0	4	7	2	0	4	42	8	0	4	34	9	0	138
07:45	12	8	13	0	5	0	0	0	8	58	9	0	2	38	6	0	159
Total	60	21	31	0	13	19	4	0	17	177	34	0	11	137	23	0	547
08:00	15	2	10	0	1	4	1	0	4	44	4	0	8	32	7	0	132
08:15	5	3	8	0	3	1	0	0	4	37	6	0	3	21	2	0	93
08:30	6	1	10	0	1	0	1	0	2	43	3	0	4	33	2	0	106
08:45	8	2	4	0	2	0	2	0	3	43	4	0	3	30	7	0	108
Total	34	8	32	0	7	5	4	0	13	167	17	0	18	116	18	0	439
*** BREAK ***																	
16:00	8	4	10	1	6	5	0	0	2	67	18	0	13	76	4	0	214
16:15	9	1	9	0	2	3	1	0	1	56	12	0	12	71	2	0	179
16:30	9	2	4	0	5	3	3	0	2	66	19	0	19	79	1	0	212
16:45	9	1	4	0	3	5	0	0	1	76	10	0	15	84	1	0	209
Total	35	8	27	1	16	16	4	0	6	265	59	0	59	310	8	0	814
17:00	17	1	2	0	4	12	2	0	1	64	19	0	16	107	2	0	247
17:15	17	1	6	0	1	5	0	0	0	43	9	0	20	86	0	0	188
17:30	12	0	6	0	3	1	2	0	1	43	10	0	11	62	1	0	152
17:45	10	1	6	0	2	2	0	0	1	46	5	0	7	59	1	0	140
Total	56	3	20	0	10	20	4	0	3	196	43	0	54	314	4	0	727
Grand Total	185	40	110	1	46	60	16	0	39	805	153	0	142	877	53	0	2527
Apprch %	55.1	11.9	32.7	0.3	37.7	49.2	13.1	0	3.9	80.7	15.3	0	13.2	81.8	4.9	0	
Total %	7.3	1.6	4.4	0	1.8	2.4	0.6	0	1.5	31.9	6.1	0	5.6	34.7	2.1	0	
Passenger Vehicles	177	35	103	1	31	55	14	0	34	774	147	0	138	849	31	0	2389
% Passenger Vehicles	95.7	87.5	93.6	100	67.4	91.7	87.5	0	87.2	96.1	96.1	0	97.2	96.8	58.5	0	94.5
Heavy Vehicles	8	5	7	0	15	5	2	0	5	31	6	0	4	28	22	0	138
% Heavy Vehicles	4.3	12.5	6.4	0	32.6	8.3	12.5	0	12.8	3.9	3.9	0	2.8	3.2	41.5	0	5.5

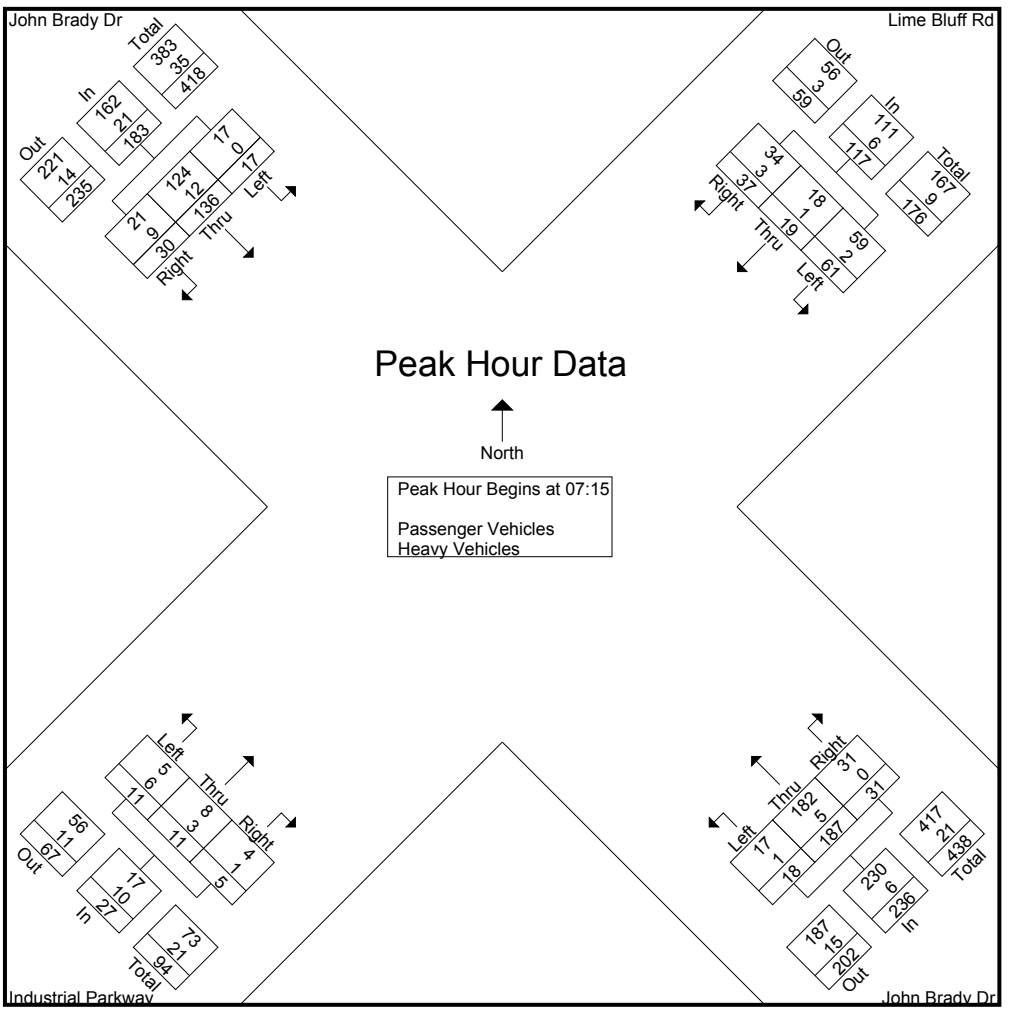
McMahon Associates Inc.

425 Commerce Drive, Suite 200
Fort Washington, PA 19034

Municipality: Muncy Creek Township
Location: John Brady Dr/Lime Bluff Rd
Counter/Board #: EF/1403

File Name : Muncy19_am&pm
Site Code : 91348019
Start Date : 9/24/2014
Page No : 2

	Lime Bluff Rd Southwestbound				Industrial Parkway Northeastbound				John Brady Dr Northwestbound				John Brady Dr Southeastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 11:45 - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:15																	
07:15	**21**	7	5	**33**	1	0	**2**	3	2	43	**10**	55	3	32	8	43	134
07:30	13	2	9	24	4	**7**	2	**13**	4	42	8	54	4	34	**9**	**47**	138
07:45	12	**8**	**13**	33	**5**	0	0	5	**8**	**58**	9	**75**	2	**38**	6	46	**159**
08:00	15	2	10	27	1	4	1	6	4	44	4	52	**8**	32	7	47	132
Total Volume	61	19	37	117	11	11	5	27	18	187	31	236	17	136	30	183	563
% App. Total	52.1	16.2	31.6		40.7	40.7	18.5		7.6	79.2	13.1		9.3	74.3	16.4		
PHF	.726	.594	.712	.886	.550	.393	.625	.519	.563	.806	.775	.787	.531	.895	.833	.973	.885
Passenger Vehicles	59	18	34	111	5	8	4	17	17	182	31	230	17	124	21	162	520
% Passenger Vehicles	96.7	94.7	91.9	94.9	45.5	72.7	80.0	63.0	94.4	97.3	100	97.5	100	91.2	70.0	88.5	92.4
Heavy Vehicles	2	1	3	6	6	3	1	10	1	5	0	6	0	12	9	21	43
% Heavy Vehicles	3.3	5.3	8.1	5.1	54.5	27.3	20.0	37.0	5.6	2.7	0	2.5	0	8.8	30.0	11.5	7.6



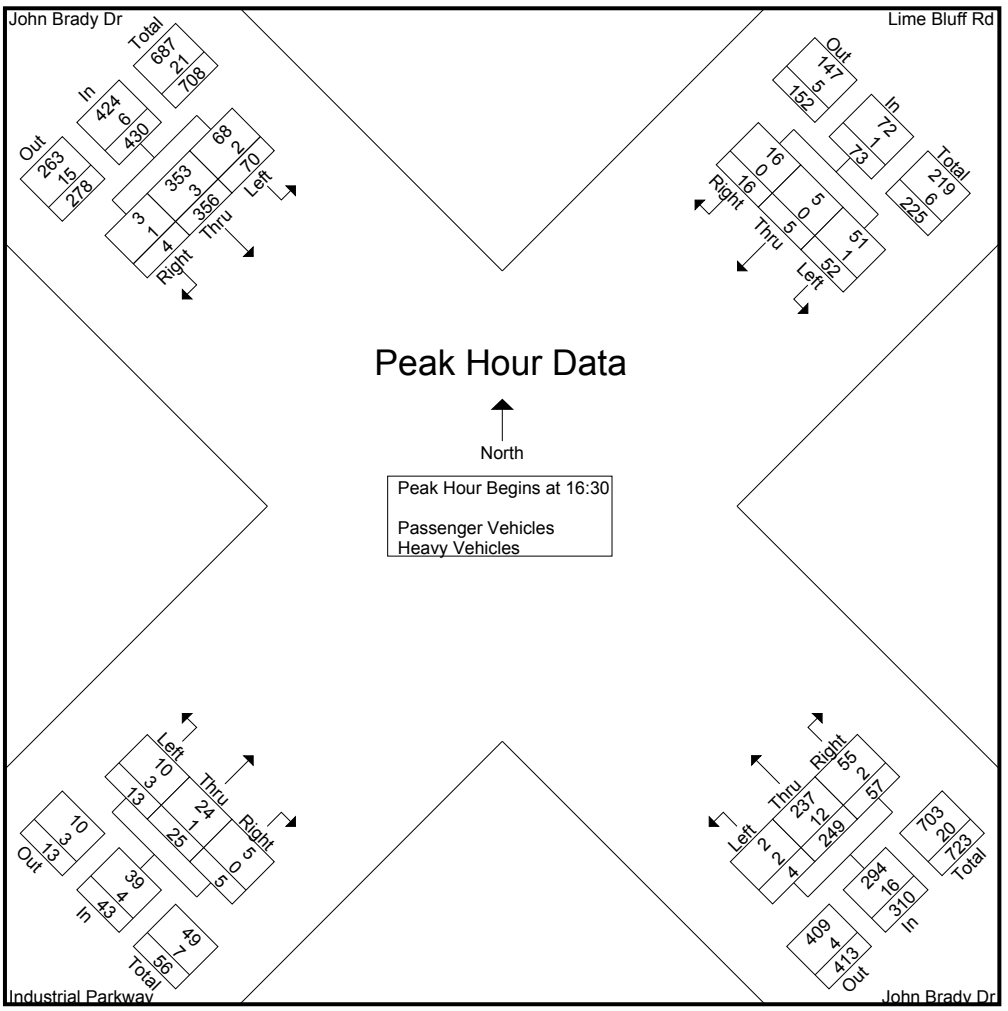
McMahon Associates Inc.

425 Commerce Drive, Suite 200
Fort Washington, PA 19034

Municipality: Muncy Creek Township
Location: John Brady Dr/Lime Bluff Rd
Counter/Board #: EF/1403

File Name : Muncy19_am&pm
Site Code : 91348019
Start Date : 9/24/2014
Page No : 3

	Lime Bluff Rd Southwestbound				Industrial Parkway Northeastbound				John Brady Dr Northwestbound				John Brady Dr Southeastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 12:00 to 17:45 - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 16:30																	
16:30	9	**2**	4	15	**5**	3	**3**	11	**2**	66	**19**	**87**	19	79	1	99	212
16:45	9	1	4	14	3	5	0	8	1	**76**	10	87	15	84	1	100	209
17:00	**17**	1	2	20	4	**12**	2	**18**	1	64	19	84	16	**107**	**2**	**125**	**247**
17:15	17	1	**6**	**24**	1	5	0	6	0	43	9	52	**20**	86	0	106	188
Total Volume	52	5	16	73	13	25	5	43	4	249	57	310	70	356	4	430	856
% App. Total	71.2	6.8	21.9		30.2	58.1	11.6		1.3	80.3	18.4		16.3	82.8	0.9		
PHF	.765	.625	.667	.760	.650	.521	.417	.597	.500	.819	.750	.891	.875	.832	.500	.860	.866
Passenger Vehicles	51	5	16	72	10	24	5	39	2	237	55	294	68	353	3	424	829
% Passenger Vehicles	98.1	100	100	98.6	76.9	96.0	100	90.7	50.0	95.2	96.5	94.8	97.1	99.2	75.0	98.6	96.8
Heavy Vehicles	1	0	0	1	3	1	0	4	2	12	2	16	2	3	1	6	27
% Heavy Vehicles	1.9	0	0	1.4	23.1	4.0	0	9.3	50.0	4.8	3.5	5.2	2.9	0.8	25.0	1.4	3.2



McMahon Associates Inc.

425 Commerce Drive, Suite 200
Fort Washington, PA 19034

Municipality: Muncy Creek Township
Location: John Brady Dr/Lime Bluff Rd
Counter/Board #: EF/1403

File Name : Muncy19_am&pm
Site Code : 91348019
Start Date : 9/24/2014

Groups Printed- Passenger Vehicles

	Lime Bluff Rd Southwestbound			Industrial Parkway Northeastbound			John Brady Dr Northwestbound			John Brady Dr Southeastbound			
Start Time	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Int. Total
07:00	13	4	4	3	12	0	3	32	7	2	32	0	112
07:15	21	6	4	1	0	1	2	42	10	3	30	5	125
07:30	13	2	8	3	7	2	4	42	8	4	33	7	133
07:45	12	8	13	1	0	0	7	54	9	2	35	5	146
Total	59	20	29	8	19	3	16	170	34	11	130	17	516
08:00	13	2	9	0	1	1	4	44	4	8	26	4	116
08:15	4	2	6	1	1	0	4	37	4	2	21	2	84
08:30	5	1	10	1	0	1	1	41	3	4	26	1	94
08:45	8	0	4	1	0	1	3	40	4	3	30	1	95
Total	30	5	29	3	2	3	12	162	15	17	103	8	389
*** BREAK ***													
16:00	7	4	9	5	5	0	2	65	18	12	74	1	202
16:15	8	0	8	1	3	1	1	53	11	12	70	1	169
16:30	9	2	4	4	3	3	1	64	18	19	78	1	206
16:45	9	1	4	3	5	0	0	70	10	14	83	0	199
Total	33	7	25	13	16	4	4	252	57	57	305	3	776
17:00	17	1	2	3	12	2	1	62	19	15	106	2	242
17:15	16	1	6	0	4	0	0	41	8	20	86	0	182
17:30	12	0	6	3	1	2	1	41	10	11	61	1	149
17:45	10	1	6	1	1	0	0	46	4	7	58	0	134
Total	55	3	20	7	18	4	2	190	41	53	311	3	707
Grand Total	177	35	103	31	55	14	34	774	147	138	849	31	2388
Apprch %	56.2	11.1	32.7	31	55	14	3.6	81	15.4	13.6	83.4	3	
Total %	7.4	1.5	4.3	1.3	2.3	0.6	1.4	32.4	6.2	5.8	35.6	1.3	

McMahon Associates Inc.

425 Commerce Drive, Suite 200
Fort Washington, PA 19034

Municipality: Muncy Creek Township
Location: John Brady Dr/Lime Bluff Rd
Counter/Board #: EF/1403

File Name : Muncy19_am&pm
Site Code : 91348019
Start Date : 9/24/2014
Page No : 1

Groups Printed- Heavy Vehicles

	Lime Bluff Rd Southwestbound			Industrial Parkway Northeastbound			John Brady Dr Northwestbound			John Brady Dr Southeastbound			
Start Time	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Int. Total
07:00	1	0	0	0	0	0	0	2	0	0	1	0	4
07:15	0	1	1	0	0	1	0	1	0	0	2	3	9
07:30	0	0	1	1	0	0	0	0	0	0	1	2	5
07:45	0	0	0	4	0	0	1	4	0	0	3	1	13
Total	1	1	2	5	0	1	1	7	0	0	7	6	31
08:00	2	0	1	1	3	0	0	0	0	0	6	3	16
08:15	1	1	2	2	0	0	0	0	2	1	0	0	9
08:30	1	0	0	0	0	0	1	2	0	0	7	1	12
08:45	0	2	0	1	0	1	0	3	0	0	0	6	13
Total	4	3	3	4	3	1	1	5	2	1	13	10	50
*** BREAK ***													
16:00	1	0	1	1	0	0	0	2	0	1	2	3	11
16:15	1	1	1	1	0	0	0	3	1	0	1	1	10
16:30	0	0	0	1	0	0	1	2	1	0	1	0	6
16:45	0	0	0	0	0	0	1	6	0	1	1	1	10
Total	2	1	2	3	0	0	2	13	2	2	5	5	37
17:00	0	0	0	1	0	0	0	2	0	1	1	0	5
17:15	1	0	0	1	1	0	0	2	1	0	0	0	6
17:30	0	0	0	0	0	0	0	2	0	0	1	0	3
17:45	0	0	0	1	1	0	1	0	1	0	1	1	6
Total	1	0	0	3	2	0	1	6	2	1	3	1	20
Grand Total	8	5	7	15	5	2	5	31	6	4	28	22	138
Apprch %	40	25	35	68.2	22.7	9.1	11.9	73.8	14.3	7.4	51.9	40.7	
Total %	5.8	3.6	5.1	10.9	3.6	1.4	3.6	22.5	4.3	2.9	20.3	15.9	

McMahon Associates Inc.

425 Commerce Drive, Suite 200
Fort Washington, PA 19034

Municipality: Muncy Township
Location: US 220/Village Rd (West INT)
Counter/Board #: AF/1397

File Name : Muncy20_am&pm
Site Code : 91348020
Start Date : 10/1/2014
Page No : 1

Groups Printed- Passenger Vehicles - Heavy Vehicles

	Village Rd Southwestbound				US 220 Eastbound				US 220 Westbound				
Start Time	Left	Left	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Int. Total
07:00	0	0	15	0	4	37	0	0	0	79	0	0	135
07:15	0	0	9	0	12	56	0	0	0	88	0	0	165
07:30	0	0	21	0	5	43	0	0	0	116	0	0	185
07:45	0	0	9	0	6	36	0	0	0	84	0	0	135
Total	0	0	54	0	27	172	0	0	0	367	0	0	620
08:00	0	0	8	0	6	29	0	0	0	86	0	0	129
08:15	0	0	10	0	4	51	0	0	0	77	0	0	142
08:30	0	0	7	0	5	32	0	0	0	61	0	0	105
08:45	0	0	15	0	9	33	0	0	0	56	0	0	113
Total	0	0	40	0	24	145	0	0	0	280	0	0	489
*** BREAK ***													
16:00	1	0	11	0	22	86	0	0	0	75	1	0	196
16:15	0	0	17	0	20	90	0	0	0	35	0	0	162
16:30	0	0	9	0	19	90	0	0	0	62	0	0	180
16:45	0	0	8	0	16	102	0	0	0	65	0	0	191
Total	1	0	45	0	77	368	0	0	0	237	1	0	729
17:00	0	0	18	1	22	92	0	0	0	63	0	0	196
17:15	0	0	10	0	15	103	0	0	0	65	0	0	193
17:30	0	0	6	0	10	98	0	0	0	51	1	0	166
17:45	0	0	8	0	19	76	0	0	0	63	0	0	166
Total	0	0	42	1	66	369	0	0	0	242	1	0	721
Grand Total	1	0	181	1	194	1054	0	0	0	1126	2	0	2559
Apprch %	0.5	0	98.9	0.5	15.5	84.5	0	0	0	99.8	0.2	0	
Total %	0	0	7.1	0	7.6	41.2	0	0	0	44	0.1	0	
Passenger Vehicles	1	0	172	1	184	981	0	0	0	1054	2	0	2395
% Passenger Vehicles	100	0	95	100	94.8	93.1	0	0	0	93.6	100	0	93.6
Heavy Vehicles	0	0	9	0	10	73	0	0	0	72	0	0	164
% Heavy Vehicles	0	0	5	0	5.2	6.9	0	0	0	6.4	0	0	6.4

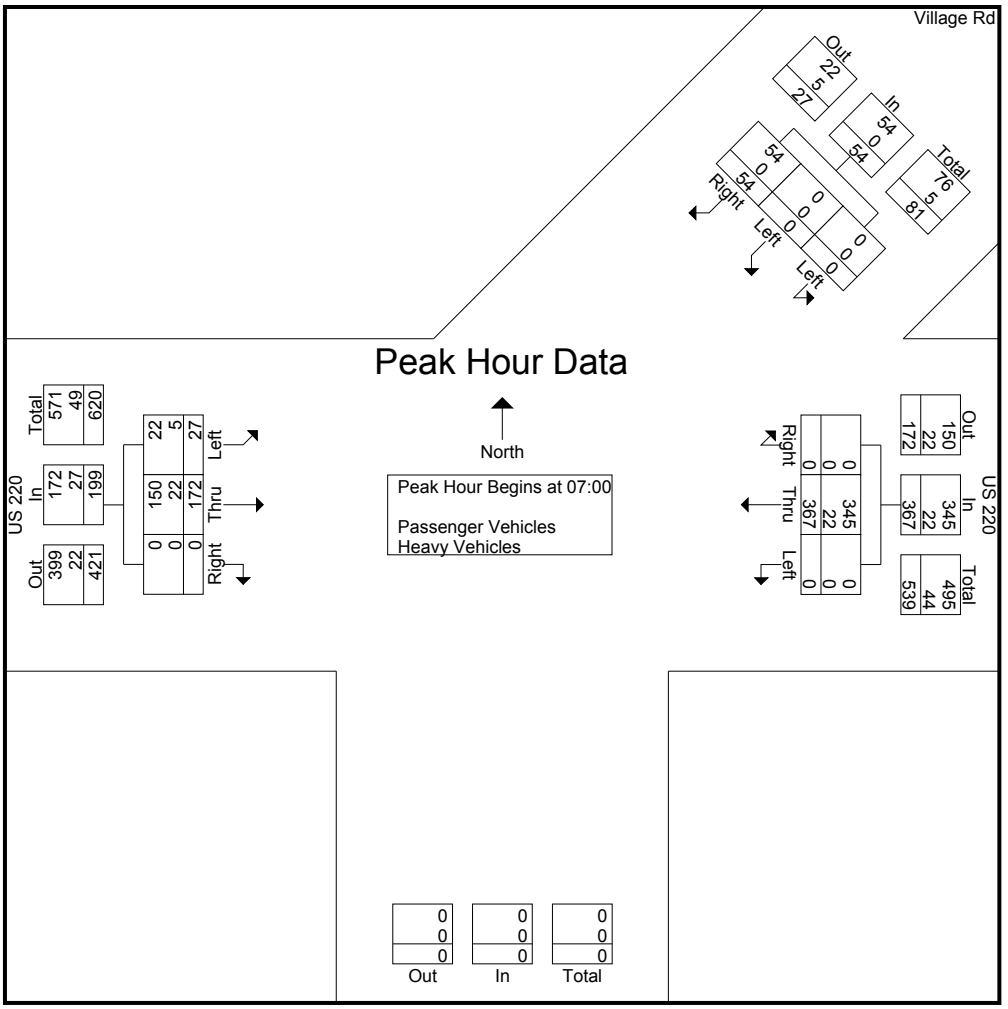
McMahon Associates Inc.

425 Commerce Drive, Suite 200
Fort Washington, PA 19034

Municipality: Muncy Township
Location: US 220/Village Rd (West INT)
Counter/Board #: AF/1397

File Name : Muncy20_am&pm
Site Code : 91348020
Start Date : 10/1/2014

	Village Rd Southwestbound				US 220 Eastbound				US 220 Westbound				
Start Time	Left	Left	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 11:45 - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 07:00													
07:00	0	0	15	15	4	37	0	41	0	79	0	79	135
07:15	0	0	9	9	**12**	**56**	0	**68**	0	88	0	88	165
07:30	0	0	**21**	**21**	5	43	0	48	0	**116**		**116**	**185**
07:45	0	0	9	9	6	36	0	42	0	84	0	84	135
Total Volume	0	0	54	54	27	172	0	199	0	367	0	367	620
% App. Total	0	0	100		13.6	86.4	0		0	100	0		
PHF	.000	.000	.643	.643	.563	.768	.000	.732	.000	.791	.000	.791	.838
Passenger Vehicles	0	0	54	54	22	150	0	172	0	345	0	345	571
% Passenger Vehicles	0	0	100	100	81.5	87.2	0	86.4	0	94.0	0	94.0	92.1
Heavy Vehicles	0	0	0	0	5	22	0	27	0	22	0	22	49
% Heavy Vehicles	0	0	0	0	18.5	12.8	0	13.6	0	6.0	0	6.0	7.9



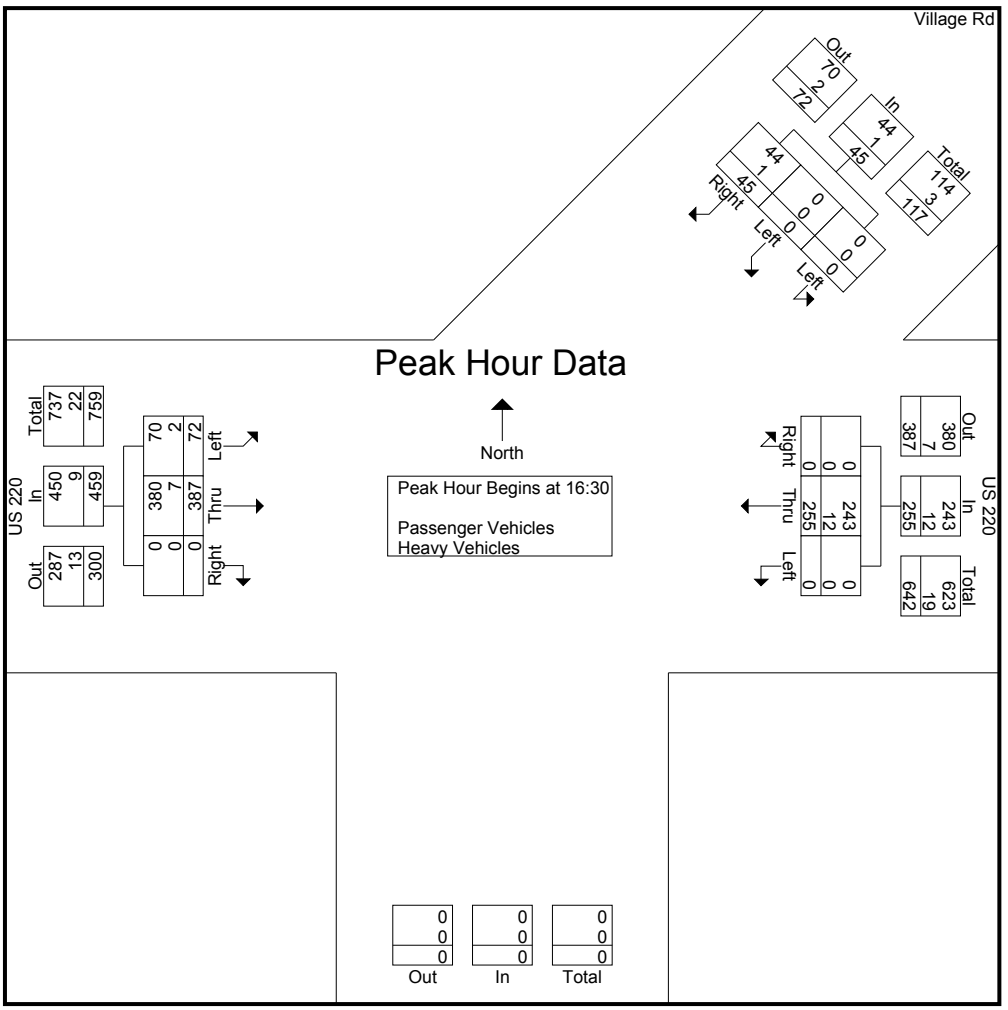
McMahon Associates Inc.

425 Commerce Drive, Suite 200
Fort Washington, PA 19034

Municipality: Muncy Township
Location: US 220/Village Rd (West INT)
Counter/Board #: AF/1397

File Name : Muncy20_am&pm
Site Code : 91348020
Start Date : 10/1/2014
Page No : 3

	Village Rd Southwestbound				US 220 Eastbound				US 220 Westbound				
Start Time	Left	Left	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 12:00 to 17:45 - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 16:30													
16:30	0	0	9	9	19	90	0	109	0	62	0	62	180
16:45	0	0	8	8	16	102	0	**118**	0	**65**	**0**	**65**	191
17:00	0	0	**18**	**18**	**22**	92	0	114	0	63	0	63	**195**
17:15	0	0	10	10	15	**103**	0	118	0	65	0	65	193
Total Volume	0	0	45	45	72	387	0	459	0	255	0	255	759
% App. Total	0	0	100		15.7	84.3	0		0	100	0		
PHF	.000	.000	.625	.625	.818	.939	.000	.972	.000	.981	.000	.981	.973
Passenger Vehicles	0	0	44	44	70	380	0	450	0	243	0	243	737
% Passenger Vehicles	0	0	97.8	97.8	97.2	98.2	0	98.0	0	95.3	0	95.3	97.1
Heavy Vehicles	0	0	1	1	2	7	0	9	0	12	0	12	22
% Heavy Vehicles	0	0	2.2	2.2	2.8	1.8	0	2.0	0	4.7	0	4.7	2.9



McMahon Associates Inc.

425 Commerce Drive, Suite 200
Fort Washington, PA 19034

Municipality: Muncy Township
Location: US 220/Village Rd (West INT)
Counter/Board #: AF/1397

File Name : Muncy20_am&pm
Site Code : 91348020
Start Date : 10/1/2014

Groups Printed- Passenger Vehicles

	Village Rd Southwestbound			US 220 Eastbound			US 220 Westbound			
Start Time	Left	Left	Right	Left	Thru	Right	Left	Thru	Right	Int. Total
07:00	0	0	15	4	33	0	0	74	0	126
07:15	0	0	9	9	50	0	0	86	0	154
07:30	0	0	21	5	37	0	0	107	0	170
07:45	0	0	9	4	30	0	0	78	0	121
Total	0	0	54	22	150	0	0	345	0	571
08:00	0	0	8	6	21	0	0	81	0	116
08:15	0	0	10	4	41	0	0	67	0	122
08:30	0	0	5	4	28	0	0	57	0	94
08:45	0	0	13	8	27	0	0	51	0	99
Total	0	0	36	22	117	0	0	256	0	431
*** BREAK ***										
16:00	1	0	7	22	80	0	0	70	1	181
16:15	0	0	17	20	82	0	0	34	0	153
16:30	0	0	9	18	87	0	0	59	0	173
16:45	0	0	8	15	102	0	0	64	0	189
Total	1	0	41	75	351	0	0	227	1	696
17:00	0	0	17	22	89	0	0	60	0	188
17:15	0	0	10	15	102	0	0	60	0	187
17:30	0	0	6	10	97	0	0	47	1	161
17:45	0	0	8	18	75	0	0	59	0	160
Total	0	0	41	65	363	0	0	226	1	696
Grand Total	1	0	172	184	981	0	0	1054	2	2394
Apprch %	0.6	0	99.4	15.8	84.2	0	0	99.8	0.2	
Total %	0	0	7.2	7.7	41	0	0	44	0.1	

McMahon Associates Inc.

425 Commerce Drive, Suite 200
Fort Washington, PA 19034

Municipality: Muncy Township
Location: US 220/Village Rd (West INT)
Counter/Board #: AF/1397

File Name : Muncy20_am&pm
Site Code : 91348020
Start Date : 10/1/2014

Groups Printed- Heavy Vehicles

	Village Rd Southwestbound			US 220 Eastbound			US 220 Westbound			
Start Time	Left	Left	Right	Left	Thru	Right	Left	Thru	Right	Int. Total
07:00	0	0	0	0	4	0	0	5	0	9
07:15	0	0	0	3	6	0	0	2	0	11
07:30	0	0	0	0	6	0	0	9	0	15
07:45	0	0	0	2	6	0	0	6	0	14
Total	0	0	0	5	22	0	0	22	0	49
08:00	0	0	0	0	8	0	0	5	0	13
08:15	0	0	0	0	10	0	0	10	0	20
08:30	0	0	2	1	4	0	0	4	0	11
08:45	0	0	2	1	6	0	0	5	0	14
Total	0	0	4	2	28	0	0	24	0	58
*** BREAK ***										
16:00	0	0	4	0	6	0	0	5	0	15
16:15	0	0	0	0	8	0	0	1	0	9
16:30	0	0	0	1	3	0	0	3	0	7
16:45	0	0	0	1	0	0	0	1	0	2
Total	0	0	4	2	17	0	0	10	0	33
17:00	0	0	1	0	3	0	0	3	0	7
17:15	0	0	0	0	1	0	0	5	0	6
17:30	0	0	0	0	1	0	0	4	0	5
17:45	0	0	0	1	1	0	0	4	0	6
Total	0	0	1	1	6	0	0	16	0	24
Grand Total	0	0	9	10	73	0	0	72	0	164
Apprch %	0	0	100	12	88	0	0	100	0	
Total %	0	0	5.5	6.1	44.5	0	0	43.9	0	

Traffic Data (Manual Turning Movement Counts)
Lycoming County Growth Plan

Counts completed summer/fall 2010 (adjusted to 2014)

McMahon Associates Inc.

425 Commerce Drive, Suite 200
Fort Washington, PA 19034

Default Comments
Change These in The Preferences Window
Select File/Preference in the Main Scree
Then Click the Comments Tab

File Name : 44amLycoMalRd and JBD
Site Code : 00000441
Start Date : 7/28/2010

Groups Printed- Vehicles - Heavy Vehicles

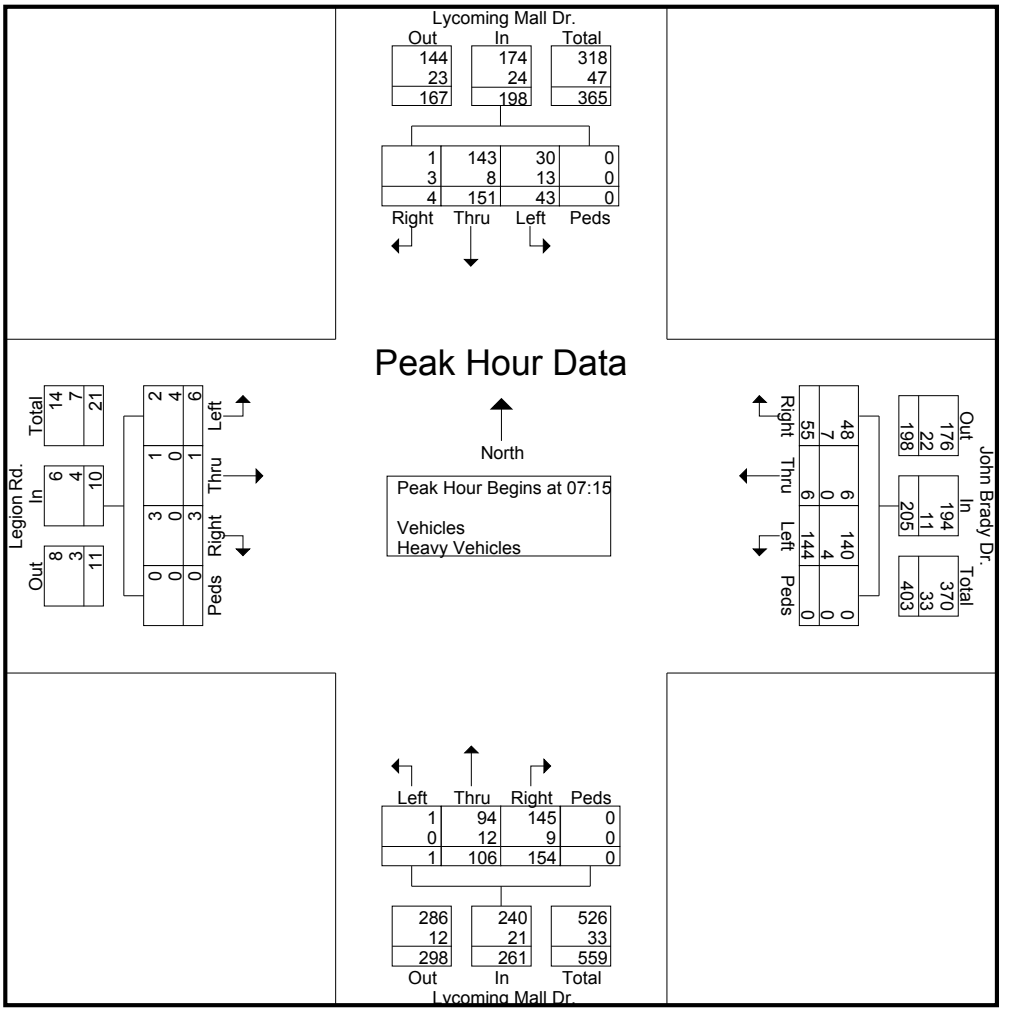
	Lycoming Mall Dr. Southbound				John Brady Dr. Westbound				Lycoming Mall Dr. Northbound				Legion Rd. Eastbound				
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Int. Total
07:00	5	30	2	0	31	2	23	0	0	17	21	0	0	0	0	0	131
07:15	5	37	1	0	31	1	11	0	0	29	33	0	1	1	2	0	152
07:30	8	38	1	0	38	3	15	0	0	30	43	0	3	0	1	0	180
07:45	18	43	0	0	50	0	18	0	1	27	35	0	0	0	0	0	192
Total	36	148	4	0	150	6	67	0	1	103	132	0	4	1	3	0	655
08:00	12	33	2	0	25	2	11	0	0	20	43	0	2	0	0	0	150
08:15	9	26	2	0	28	1	14	0	1	29	33	0	1	0	1	0	145
08:30	17	28	2	0	50	0	12	0	0	32	24	0	1	0	1	0	167
08:45	8	41	4	0	50	0	10	0	1	20	26	0	1	1	1	0	163
Total	46	128	10	0	153	3	47	0	2	101	126	0	5	1	3	0	625
Grand Total	82	276	14	0	303	9	114	0	3	204	258	0	9	2	6	0	1280
Apprch %	22	74.2	3.8	0	71.1	2.1	26.8	0	0.6	43.9	55.5	0	52.9	11.8	35.3	0	
Total %	6.4	21.6	1.1	0	23.7	0.7	8.9	0	0.2	15.9	20.2	0	0.7	0.2	0.5	0	
Vehicles	62	256	8	0	292	9	100	0	2	183	243	0	2	2	5	0	1164
% Vehicles	75.6	92.8	57.1	0	96.4	100	87.7	0	66.7	89.7	94.2	0	22.2	100	83.3	0	90.9
Heavy Vehicles	20	20	6	0	11	0	14	0	1	21	15	0	7	0	1	0	116
% Heavy Vehicles	24.4	7.2	42.9	0	3.6	0	12.3	0	33.3	10.3	5.8	0	77.8	0	16.7	0	9.1

McMahon Associates Inc.

425 Commerce Drive, Suite 200
Fort Washington, PA 19034

File Name : 44amLycoMalRd and JBD
Site Code : 00000441
Start Date : 7/28/2010
Page No : 2

	Lycoming Mall Dr. Southbound					John Brady Dr. Westbound					Lycoming Mall Dr. Northbound					Legion Rd. Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:15																					
07:15	5	37	1	0	43	31	1	11	0	43	0	29	33	0	62	1	**1**	**2**	0	**4**	152
07:30	8	38	1	0	47	38	**3**	15	0	56	0	**30**	**43**	0	**73**	**3**	0	1	0	4	180
07:45	**18**	**43**	0	0	**61**	**50**	0	**18**	0	**68**	**1**	27	35	0	63	0	0	0	0	0	**192**
08:00	12	33	**2**	0	47	25	2	11	0	38	0	20	43	0	63	2	0	0	0	2	150
Total Volume	43	151	4	0	198	144	6	55	0	205	1	106	154	0	261	6	1	3	0	10	674
% App. Total	21.7	76.3	2	0		70.2	2.9	26.8	0		0.4	40.6	59	0		60	10	30	0		
PHF	.597	.878	.500	.000	.811	.720	.500	.764	.000	.754	.250	.883	.895	.000	.894	.500	.250	.375	.000	.625	.878
Vehicles	30	143	1	0	174	140	6	48	0	194	1	94	145	0	240	2	1	3	0	6	614
% Vehicles	69.8	94.7	25.0	0	87.9	97.2	100	87.3	0	94.6	100	88.7	94.2	0	92.0	33.3	100	100	0	60.0	91.1
Heavy Vehicles																					
% Heavy Vehicles	30.2	5.3	75.0	0	12.1	2.8	0	12.7	0	5.4	0	11.3	5.8	0	8.0	66.7	0	0	0	40.0	8.9



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File Name : 44amLycoMalRd and JBD
Site Code : 00000441
Start Date : 7/28/2010
Page No : 1

Groups Printed- Heavy Vehicles

	Lycoming Mall Dr. Southbound				John Brady Dr. Westbound				Lycoming Mall Dr. Northbound				Legion Rd. Eastbound				
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Int. Total
07:00	0	5	0	0	0	0	0	0	0	2	1	0	0	0	0	0	8
07:15	1	4	0	0	0	0	1	0	0	1	0	0	0	0	0	0	7
07:30	3	2	1	0	0	0	2	0	0	1	2	0	2	0	0	0	13
07:45	6	2	0	0	2	0	1	0	0	7	1	0	0	0	0	0	19
Total	10	13	1	0	2	0	4	0	0	11	4	0	2	0	0	0	47
08:00	3	0	2	0	2	0	3	0	0	3	6	0	2	0	0	0	21
08:15	3	0	2	0	2	0	4	0	1	4	1	0	1	0	0	0	18
08:30	2	4	0	0	4	0	1	0	0	3	1	0	1	0	0	0	16
08:45	2	3	1	0	1	0	2	0	0	0	3	0	1	0	1	0	14
Total	10	7	5	0	9	0	10	0	1	10	11	0	5	0	1	0	69
Grand Total	20	20	6	0	11	0	14	0	1	21	15	0	7	0	1	0	116
Apprch %	43.5	43.5	13	0	44	0	56	0	2.7	56.8	40.5	0	87.5	0	12.5	0	
Total %	17.2	17.2	5.2	0	9.5	0	12.1	0	0.9	18.1	12.9	0	6	0	0.9	0	

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File Name : 44amLycoMalRd and JBD
Site Code : 00000441
Start Date : 7/28/2010
Page No : 1

Groups Printed- Vehicles

	Lycoming Mall Dr. Southbound				John Brady Dr. Westbound				Lycoming Mall Dr. Northbound				Legion Rd. Eastbound				
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Int. Total
07:00	5	25	2	0	31	2	23	0	0	15	20	0	0	0	0	0	123
07:15	4	33	1	0	31	1	10	0	0	28	33	0	1	1	2	0	145
07:30	5	36	0	0	38	3	13	0	0	29	41	0	1	0	1	0	167
07:45	12	41	0	0	48	0	17	0	1	20	34	0	0	0	0	0	173
Total	26	135	3	0	148	6	63	0	1	92	128	0	2	1	3	0	608
08:00	9	33	0	0	23	2	8	0	0	17	37	0	0	0	0	0	129
08:15	6	26	0	0	26	1	10	0	0	25	32	0	0	0	1	0	127
08:30	15	24	2	0	46	0	11	0	0	29	23	0	0	0	1	0	151
08:45	6	38	3	0	49	0	8	0	1	20	23	0	0	1	0	0	149
Total	36	121	5	0	144	3	37	0	1	91	115	0	0	1	2	0	556
Grand Total	62	256	8	0	292	9	100	0	2	183	243	0	2	2	5	0	1164
Apprch %	19	78.5	2.5	0	72.8	2.2	24.9	0	0.5	42.8	56.8	0	22.2	22.2	55.6	0	
Total %	5.3	22	0.7	0	25.1	0.8	8.6	0	0.2	15.7	20.9	0	0.2	0.2	0.4	0	

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File Name : 44amLycoMalRd and JBD
Site Code : 00000441
Start Date : 7/28/2010
Page No : 1

Groups Printed- Peds

	Lycoming Mall Dr. Southbound				John Brady Dr. Westbound				Lycoming Mall Dr. Northbound				Legion Rd. Eastbound				
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Int. Total
08:00	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1
Total	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1
Grand Total	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1
Apprch %	0	0	0	0	100	0	0	0	0	0	0	0	0	0	0	0	
Total %	0	0	0	0	100	0	0	0	0	0	0	0	0	0	0	0	

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File Name : 44pm LycoMalRd
Site Code : 00000442
Start Date : 7/27/2010
Page No : 1

Groups Printed- Vehicles - Heavy Vehicles

	Lycoming Mall Dr. Southbound				John Brady Dr. Westbound				Lycoming Mall Dr. Northbound				Legion Rd. Eastbound				
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Int. Total
16:15	10	40	6	0	45	8	12	0	1	71	68	0	1	7	15	0	284
16:30	11	52	4	0	49	1	10	0	4	58	69	0	4	1	1	0	264
16:45	8	54	1	0	60	0	15	0	0	71	78	0	4	4	4	0	299
Total	29	146	11	0	154	9	37	0	5	200	215	0	9	12	20	0	847
17:00	8	37	1	0	61	0	19	0	1	67	66	0	2	0	1	0	263
17:15	14	72	0	0	67	1	15	0	1	78	65	0	2	2	0	0	317
17:30	12	44	1	0	41	0	12	0	3	64	52	0	7	3	4	0	243
17:45	9	36	3	0	44	1	13	0	1	62	70	0	3	2	5	0	249
Total	43	189	5	0	213	2	59	0	6	271	253	0	14	7	10	0	1072
18:00	6	49	0	0	54	0	9	0	0	48	68	0	6	1	1	0	242
Grand Total	78	384	16	0	421	11	105	0	11	519	536	0	29	20	31	0	2161
Apprch %	16.3	80.3	3.3	0	78.4	2	19.6	0	1	48.7	50.3	0	36.2	25	38.8	0	
Total %	3.6	17.8	0.7	0	19.5	0.5	4.9	0	0.5	24	24.8	0	1.3	0.9	1.4	0	
Vehicles	67	367	11	0	413	10	97	0	9	505	526	0	20	20	30	0	2075
% Vehicles	85.9	95.6	68.8	0	98.1	90.9	92.4	0	81.8	97.3	98.1	0	69	100	96.8	0	96
Heavy Vehicles	11	17	5	0	8	1	8	0	2	14	10	0	9	0	1	0	86
% Heavy Vehicles	14.1	4.4	31.2	0	1.9	9.1	7.6	0	18.2	2.7	1.9	0	31	0	3.2	0	4

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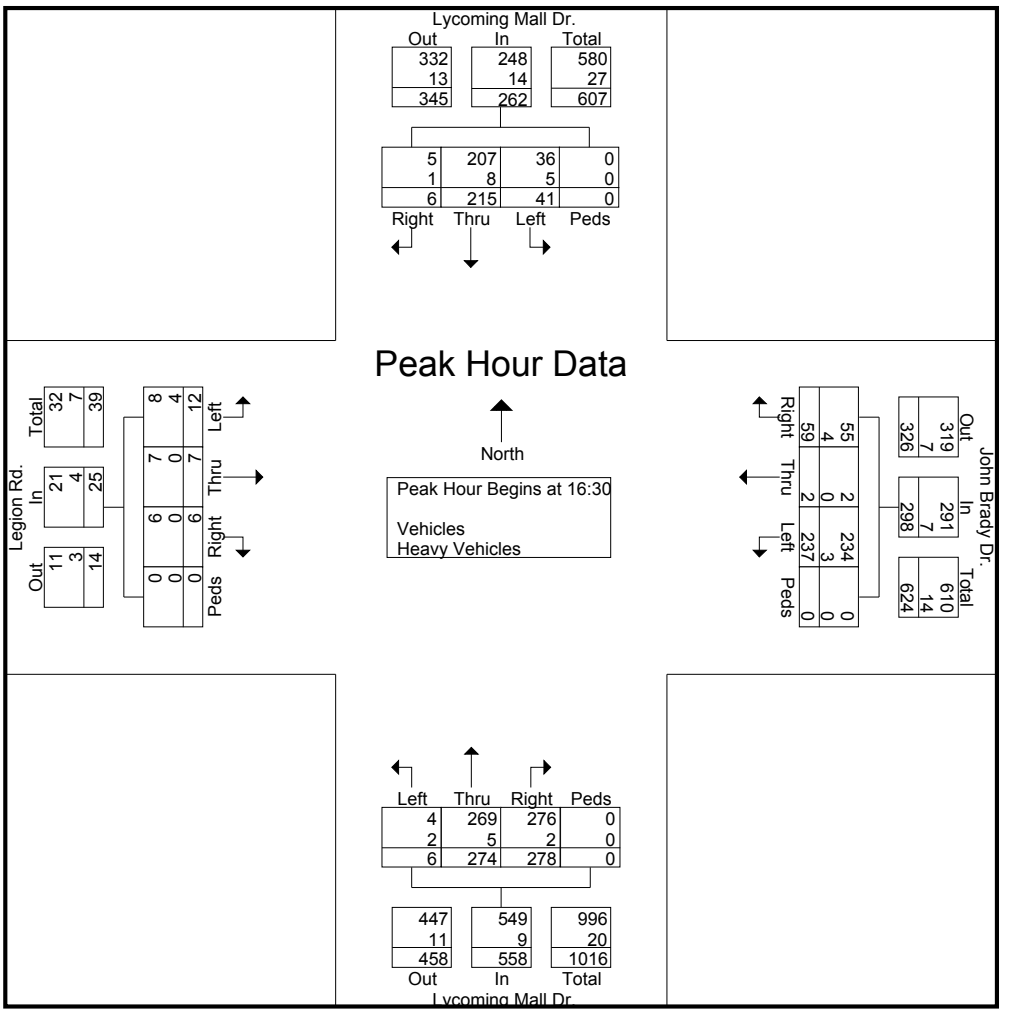
File Name : 44pm LycoMalRd
Site Code : 00000442
Start Date : 7/27/2010
Page No : 2

	Lycoming Mall Dr. Southbound					John Brady Dr. Westbound					Lycoming Mall Dr. Northbound					Legion Rd. Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 16:15 to 18:00 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 16:30																					
16:30	11	52	**4**	0	67	49	**1**	10	0	60	**4**	58	69	0	131	**4**	1	1	0	6	264
16:45	8	54	1	0	63	60	0	15	0	75	0	71	**78**	0	**149**	4	**4**	**4**	0	**12**	299
17:00	8	37	1	0	46	61	0	**19**	0	80	1	67	66	0	134	2	0	1	0	3	263
17:15	**14**	**72**	0	0	**86**	**67**	1	15	0	**83**	1	**78**	65	0	144	2	2	0	0	4	**317**
Total Volume	41	215	6	0	262	237	2	59	0	298	6	274	278	0	558	12	7	6	0	25	1143
% App. Total																					
PHF	.732	.747	.375	.000	.762	.884	.500	.776	.000	.898	.375	.878	.891	.000	.936	.750	.438	.375	.000	.521	.901
Vehicles	36	207	5	0	248	234	2	55	0	291	4	269	276	0	549	8	7	6	0	21	1109
% Vehicles	87.8	96.3	83.3	0	94.7	98.7	100	93.2	0	97.7	66.7	98.2	99.3	0	98.4	66.7	100	100	0	84.0	97.0
Heavy Vehicles	5	8	1	0	14	3	0	4	0	7	2	5	2	0	9	4	0	0	0	4	34
% Heavy Vehicles																					



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File Name : 44pm LycoMalRd
Site Code : 00000442
Start Date : 7/27/2010
Page No : 1

Groups Printed- Heavy Vehicles

	Lycoming Mall Dr. Southbound				John Brady Dr. Westbound				Lycoming Mall Dr. Northbound				Legion Rd. Eastbound				
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Int. Total
16:15	2	3	2	0	2	1	2	0	0	4	1	0	0	0	0	0	17
16:30	1	4	1	0	0	0	1	0	1	2	1	0	1	0	0	0	12
16:45	0	1	0	0	1	0	1	0	0	2	0	0	2	0	0	0	7
Total	3	8	3	0	3	1	4	0	1	8	2	0	3	0	0	0	36
17:00	2	0	0	0	1	0	2	0	1	0	1	0	1	0	0	0	8
17:15	2	3	0	0	1	0	0	0	0	1	0	0	0	0	0	0	7
17:30	1	0	0	0	2	0	0	0	0	0	1	0	1	0	0	0	5
17:45	2	4	2	0	0	0	1	0	0	2	3	0	1	0	1	0	16
Total	7	7	2	0	4	0	3	0	1	3	5	0	3	0	1	0	36
18:00	1	2	0	0	1	0	1	0	0	3	3	0	3	0	0	0	14
Grand Total	11	17	5	0	8	1	8	0	2	14	10	0	9	0	1	0	86
Apprch %	33.3	51.5	15.2	0	47.1	5.9	47.1	0	7.7	53.8	38.5	0	90	0	10	0	
Total %	12.8	19.8	5.8	0	9.3	1.2	9.3	0	2.3	16.3	11.6	0	10.5	0	1.2	0	

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File Name : 44pm LycoMalRd
Site Code : 00000442
Start Date : 7/27/2010
Page No : 1

Groups Printed- Vehicles

	Lycoming Mall Dr. Southbound				John Brady Dr. Westbound				Lycoming Mall Dr. Northbound				Legion Rd. Eastbound				
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Int. Total
16:15	8	37	4	0	43	7	10	0	1	67	67	0	1	7	15	0	267
16:30	10	48	3	0	49	1	9	0	3	56	68	0	3	1	1	0	252
16:45	8	53	1	0	59	0	14	0	0	69	78	0	2	4	4	0	292
Total	26	138	8	0	151	8	33	0	4	192	213	0	6	12	20	0	811
17:00	6	37	1	0	60	0	17	0	0	67	65	0	1	0	1	0	255
17:15	12	69	0	0	66	1	15	0	1	77	65	0	2	2	0	0	310
17:30	11	44	1	0	39	0	12	0	3	64	51	0	6	3	4	0	238
17:45	7	32	1	0	44	1	12	0	1	60	67	0	2	2	4	0	233
Total	36	182	3	0	209	2	56	0	5	268	248	0	11	7	9	0	1036
18:00	5	47	0	0	53	0	8	0	0	45	65	0	3	1	1	0	228
Grand Total	67	367	11	0	413	10	97	0	9	505	526	0	20	20	30	0	2075
Apprch %	15.1	82.5	2.5	0	79.4	1.9	18.7	0	0.9	48.6	50.6	0	28.6	28.6	42.9	0	
Total %	3.2	17.7	0.5	0	19.9	0.5	4.7	0	0.4	24.3	25.3	0	1	1	1.4	0	

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File Name : 44pm LycoMalRd
Site Code : 00000442
Start Date : 7/27/2010
Page No : 1

Groups Printed- Peds

	Lycoming Mall Dr. Southbound				John Brady Dr. Westbound				Lycoming Mall Dr. Northbound				Legion Rd. Eastbound				
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Int. Total
16:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:30	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1
16:45	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
Total	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	2
17:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	2
Apprch %	0	0	0	0	100	0	0	0	0	100	0	0	0	0	0	0	
Total %	0	0	0	0	50	0	0	0	0	50	0	0	0	0	0	0	

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File Name : 45am john brady dr & ind pk rd
Site Code : 00000451
Start Date : 7/13/2010
Page No : 1

Groups Printed- Vehicles - Heavy Vehicles

	-- Southbound				John Brady Dr. Westbound				Industrial Park Rd. Northbound				John Brady Dr. Eastbound				
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Int. Total
07:00	0	0	0	0	0	28	0	0	29	0	0	0	0	28	7	0	92
07:15	0	0	0	0	0	36	0	0	7	0	0	0	0	30	8	0	81
07:30	0	0	0	0	0	41	0	0	1	0	0	0	0	33	8	0	83
07:45	0	0	0	0	0	68	0	0	3	0	0	0	0	49	4	0	124
Total	0	0	0	0	0	173	0	0	40	0	0	0	0	140	27	0	380
08:00	0	0	0	0	0	52	0	0	0	0	0	0	0	42	3	0	97
08:15	0	0	0	0	0	47	0	0	4	0	0	0	0	30	9	0	90
08:30	0	0	0	0	0	53	0	0	0	0	0	0	0	25	4	0	82
08:45	0	0	0	0	0	68	0	0	3	0	2	0	0	33	3	0	109
Total	0	0	0	0	0	220	0	0	7	0	2	0	0	130	19	0	378
Grand Total	0	0	0	0	0	393	0	0	47	0	2	0	0	270	46	0	758
Apprch %	0	0	0	0	0	100	0	0	95.9	0	4.1	0	0	85.4	14.6	0	
Total %	0	0	0	0	0	51.8	0	0	6.2	0	0.3	0	0	35.6	6.1	0	
Vehicles	0	0	0	0	0	360	0	0	39	0	1	0	0	243	38	0	681
% Vehicles	0	0	0	0	0	91.6	0	0	83	0	50	0	0	90	82.6	0	89.8
Heavy Vehicles	0	0	0	0	0	33	0	0	8	0	1	0	0	27	8	0	77
% Heavy Vehicles	0	0	0	0	0	8.4	0	0	17	0	50	0	0	10	17.4	0	10.2

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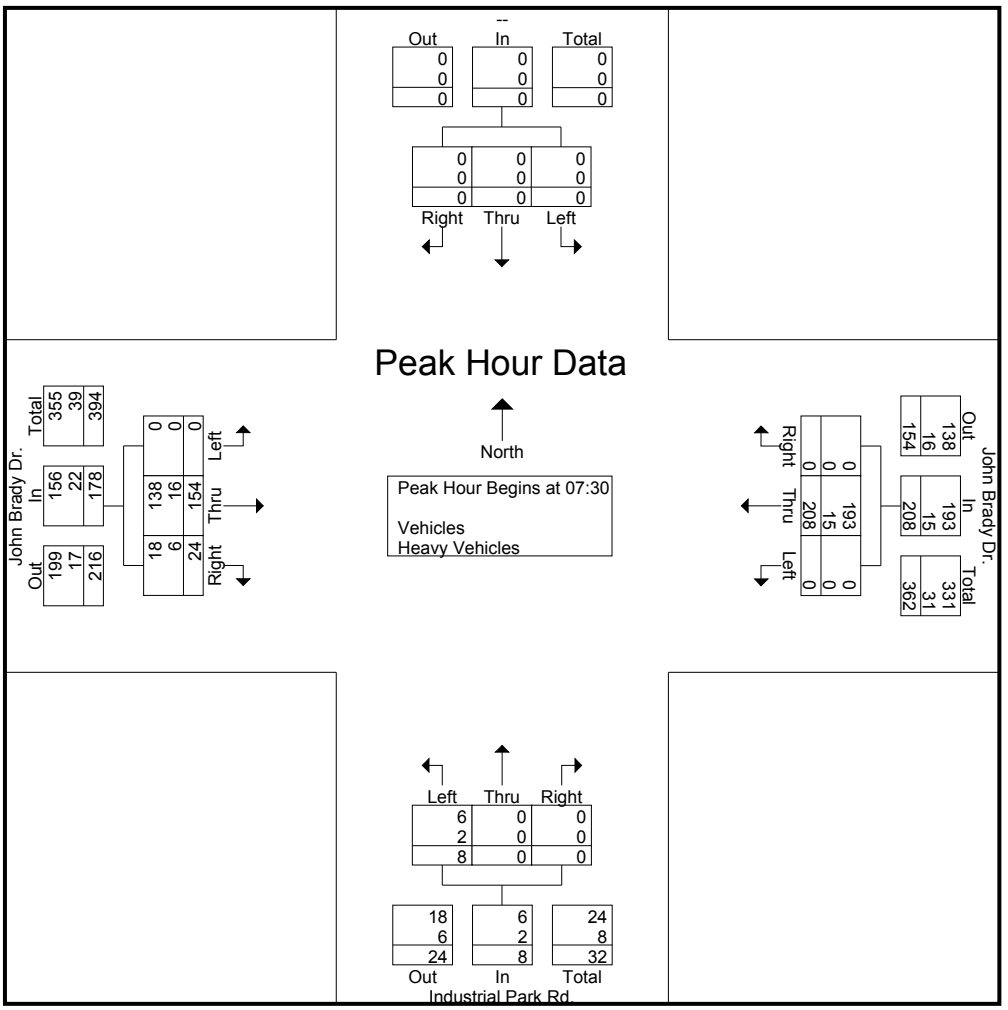
File Name : 45am john brady dr & ind pk rd
Site Code : 00000451
Start Date : 7/13/2010
Page No : 2

	-- Southbound				John Brady Dr. Westbound				Industrial Park Rd. Northbound				John Brady Dr. Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30																	
07:30	0	0	0	0	0	41	0	41	1	0	0	1	0	33	8	41	83
07:45	0	0	0	0	0	**68**	0	**68**	3	0	0	3	0	**49**	4	**53**	**124**
08:00	0	0	0	0	0	52	0	52	0	0	0	0	0	42	3	45	97
08:15	0	0	0	0	0	47	0	47	**4**	0	0	**4**	0	30	**9**	39	90
Total Volume	0	0	0	0	0	208	0	208	8	0	0	8	0	154	24	178	394
% App. Total	0	0	0		0	100	0		100	0	0		0	86.5	13.5		
PHF	.000	.000	.000	.000	.000	.765	.000	.765	.500	.000	.000	.500	.000	.786	.667	.840	.794
Vehicles	0	0	0	0	0	193	0	193	6	0	0	6	0	138	18	156	355
% Vehicles	0	0	0	0	0	92.8	0	92.8	75.0	0	0	75.0	0	89.6	75.0	87.6	90.1
Heavy Vehicles	0	0	0	0	0	15	0	15	2	0	0	2	0	16	6	22	39
% Heavy Vehicles	0	0	0	0	0	7.2	0	7.2	25.0	0	0	25.0	0	10.4	25.0	12.4	9.9



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File Name : 45am john brady dr & ind pk rd
Site Code : 00000451
Start Date : 7/13/2010

Groups Printed- Heavy Vehicles

	-- Southbound				John Brady Dr. Westbound				Industrial Park Rd. Northbound				John Brady Dr. Eastbound				
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Int. Total
07:00	0	0	0	0	0	2	0	0	2	0	0	0	0	4	1	0	9
07:15	0	0	0	0	0	4	0	0	1	0	0	0	0	1	1	0	7
07:30	0	0	0	0	0	3	0	0	0	0	0	0	0	4	2	0	9
07:45	0	0	0	0	0	3	0	0	0	0	0	0	0	6	0	0	9
Total	0	0	0	0	0	12	0	0	3	0	0	0	0	15	4	0	34
08:00	0	0	0	0	0	6	0	0	0	0	0	0	0	2	1	0	9
08:15	0	0	0	0	0	3	0	0	2	0	0	0	0	4	3	0	12
08:30	0	0	0	0	0	7	0	0	0	0	0	0	0	1	0	0	8
08:45	0	0	0	0	0	5	0	0	3	0	1	0	0	5	0	0	14
Total	0	0	0	0	0	21	0	0	5	0	1	0	0	12	4	0	43
Grand Total	0	0	0	0	0	33	0	0	8	0	1	0	0	27	8	0	77
Apprch %	0	0	0	0	0	100	0	0	88.9	0	11.1	0	0	77.1	22.9	0	
Total %	0	0	0	0	0	42.9	0	0	10.4	0	1.3	0	0	35.1	10.4	0	

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File Name : 45am john brady dr & ind pk rd
Site Code : 00000451
Start Date : 7/13/2010
Page No : 1

Groups Printed- Vehicles

	-- Southbound				John Brady Dr. Westbound				Industrial Park Rd. Northbound				John Brady Dr. Eastbound				
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Int. Total
07:00	0	0	0	0	0	26	0	0	27	0	0	0	0	24	6	0	83
07:15	0	0	0	0	0	32	0	0	6	0	0	0	0	29	7	0	74
07:30	0	0	0	0	0	38	0	0	1	0	0	0	0	29	6	0	74
07:45	0	0	0	0	0	65	0	0	3	0	0	0	0	43	4	0	115
Total	0	0	0	0	0	161	0	0	37	0	0	0	0	125	23	0	346
08:00	0	0	0	0	0	46	0	0	0	0	0	0	0	40	2	0	88
08:15	0	0	0	0	0	44	0	0	2	0	0	0	0	26	6	0	78
08:30	0	0	0	0	0	46	0	0	0	0	0	0	0	24	4	0	74
08:45	0	0	0	0	0	63	0	0	0	0	1	0	0	28	3	0	95
Total	0	0	0	0	0	199	0	0	2	0	1	0	0	118	15	0	335
Grand Total	0	0	0	0	0	360	0	0	39	0	1	0	0	243	38	0	681
Apprch %	0	0	0	0	0	100	0	0	97.5	0	2.5	0	0	86.5	13.5	0	
Total %	0	0	0	0	0	52.9	0	0	5.7	0	0.1	0	0	35.7	5.6	0	

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File Name : 45pm john brady dr & ind pk rd
Site Code : 00000452
Start Date : 7/13/2010
Page No : 1

Groups Printed- Vehicles - Heavy Vehicles - Peds

	-- Southbound				John Brady Dr. Westbound				Industrial Park Rd. Northbound				John Brady Dr. Eastbound				
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Int. Total
16:00	0	0	0	0	0	70	0	0	4	0	0	0	0	87	2	0	163
16:15	0	0	0	0	0	53	0	0	1	0	0	0	0	92	2	0	148
16:30	0	0	0	0	0	74	0	0	0	0	0	0	0	94	4	0	172
16:45	0	0	0	0	0	60	0	0	2	0	1	0	0	102	0	0	165
Total	0	0	0	0	0	257	0	0	7	0	1	0	0	375	8	0	648
17:00	0	0	0	0	0	81	0	0	15	0	0	0	0	97	2	0	195
17:15	0	0	0	0	0	78	0	0	2	0	0	0	0	92	6	0	178
17:30	0	0	0	0	0	58	0	0	3	0	0	0	0	91	6	0	158
17:45	0	0	0	0	0	43	0	0	2	0	0	0	0	78	4	0	127
Total	0	0	0	0	0	260	0	0	22	0	0	0	0	358	18	0	658
Grand Total	0	0	0	0	0	517	0	0	29	0	1	0	0	733	26	0	1306
Apprch %	0	0	0	0	0	100	0	0	96.7	0	3.3	0	0	96.6	3.4	0	
Total %	0	0	0	0	0	39.6	0	0	2.2	0	0.1	0	0	56.1	2	0	
Vehicles	0	0	0	0	0	491	0	0	25	0	1	0	0	716	18	0	1251
% Vehicles	0	0	0	0	0	95	0	0	86.2	0	100	0	0	97.7	69.2	0	95.8
Heavy Vehicles	0	0	0	0	0	25	0	0	4	0	0	0	0	17	8	0	54
% Heavy Vehicles	0	0	0	0	0	4.8	0	0	13.8	0	0	0	0	2.3	30.8	0	4.1
Peds	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
% Peds	0	0	0	0	0	0.2	0	0	0	0	0	0	0	0	0	0	0.1

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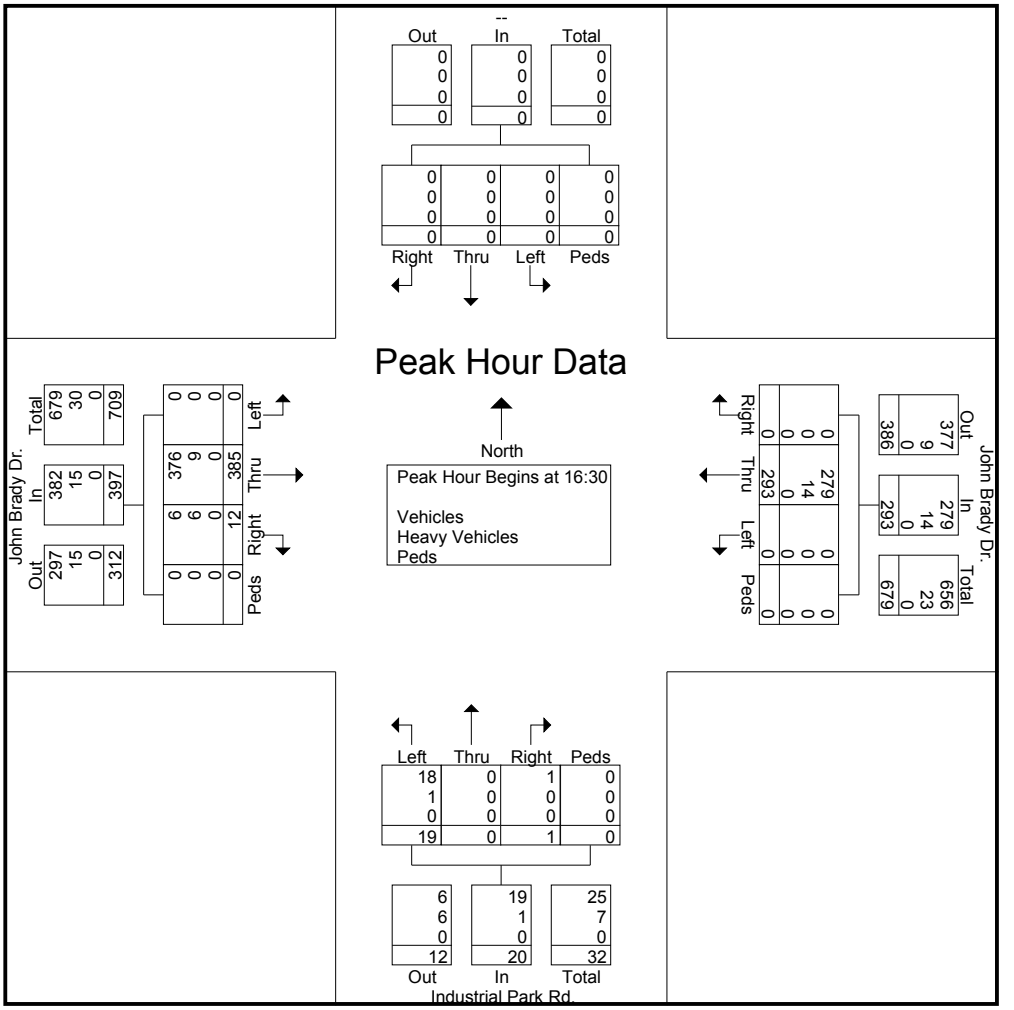
File Name : 45pm john brady dr & ind pk rd
Site Code : 00000452
Start Date : 7/13/2010
Page No : 2

	-- Southbound					John Brady Dr. Westbound					Industrial Park Rd. Northbound					John Brady Dr. Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 16:30																					
16:30	0	0	0	0	0	0	74	0	0	74	0	0	0	0	0	0	94	4	0	98	172
16:45	0	0	0	0	0	0	60	0	0	60	2	0	**1**	0	3	0	**102**	0	0	**102**	165
17:00	0	0	0	0	0	0	**81**	0	0	**81**	**15**	0	0	0	**15**	0	97	2	0	99	**195**
17:15	0	0	0	0	0	0	78	0	0	78	2	0	0	0	2	0	92	**6**	0	98	178
Total Volume	0	0	0	0	0	0	293	0	0	293	19	0	1	0	20	0	385	12	0	397	710
% App. Total	0	0	0	0		0	100	0	0		95	0	5	0		0	97	3	0		
PHF	.000	.000	.000	.000	.000	.000	.904	.000	.000	.904	.317	.000	.250	.000	.333	.000	.944	.500	.000	.973	.910
Vehicles	0	0	0	0	0	0	279	0	0	279	18	0	1	0	19	0	376	6	0	382	680
% Vehicles							95.2	0	0	95.2	94.7	0	100	0	95.0	0	97.7	50.0	0	96.2	95.8
Heavy Vehicles																					
% Heavy Vehicles	0	0	0	0	0	0	4.8	0	0	4.8	5.3	0	0	0	5.0	0	2.3	50.0	0	3.8	4.2
Peds	0	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	0



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File Name : 45pm john brady dr & ind pk rd
Site Code : 00000452
Start Date : 7/13/2010
Page No : 1

Groups Printed- Heavy Vehicles

	-- Southbound				John Brady Dr. Westbound				Industrial Park Rd. Northbound				John Brady Dr. Eastbound				
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Int. Total
16:00	0	0	0	0	0	3	0	0	0	0	0	0	0	1	0	0	4
16:15	0	0	0	0	0	1	0	0	1	0	0	0	0	3	0	0	5
16:30	0	0	0	0	0	6	0	0	0	0	0	0	0	3	3	0	12
16:45	0	0	0	0	0	1	0	0	1	0	0	0	0	4	0	0	6
Total	0	0	0	0	0	11	0	0	2	0	0	0	0	11	3	0	27
17:00	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
17:15	0	0	0	0	0	6	0	0	0	0	0	0	0	2	3	0	11
17:30	0	0	0	0	0	5	0	0	0	0	0	0	0	2	2	0	9
17:45	0	0	0	0	0	2	0	0	2	0	0	0	0	2	0	0	6
Total	0	0	0	0	0	14	0	0	2	0	0	0	0	6	5	0	27
Grand Total	0	0	0	0	0	25	0	0	4	0	0	0	0	17	8	0	54
Apprch %	0	0	0	0	0	100	0	0	100	0	0	0	0	68	32	0	
Total %	0	0	0	0	0	46.3	0	0	7.4	0	0	0	0	31.5	14.8	0	

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File Name : 45pm john brady dr & ind pk rd
Site Code : 00000452
Start Date : 7/13/2010
Page No : 1

Groups Printed- Vehicles

	-- Southbound				John Brady Dr. Westbound				Industrial Park Rd. Northbound				John Brady Dr. Eastbound				
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Int. Total
16:00	0	0	0	0	0	66	0	0	4	0	0	0	0	86	2	0	158
16:15	0	0	0	0	0	52	0	0	0	0	0	0	0	89	2	0	143
16:30	0	0	0	0	0	68	0	0	0	0	0	0	0	91	1	0	160
16:45	0	0	0	0	0	59	0	0	1	0	1	0	0	98	0	0	159
Total	0	0	0	0	0	245	0	0	5	0	1	0	0	364	5	0	620
17:00	0	0	0	0	0	80	0	0	15	0	0	0	0	97	2	0	194
17:15	0	0	0	0	0	72	0	0	2	0	0	0	0	90	3	0	167
17:30	0	0	0	0	0	53	0	0	3	0	0	0	0	89	4	0	149
17:45	0	0	0	0	0	41	0	0	0	0	0	0	0	76	4	0	121
Total	0	0	0	0	0	246	0	0	20	0	0	0	0	352	13	0	631
Grand Total	0	0	0	0	0	491	0	0	25	0	1	0	0	716	18	0	1251
Apprch %	0	0	0	0	0	100	0	0	96.2	0	3.8	0	0	97.5	2.5	0	
Total %	0	0	0	0	0	39.2	0	0	2	0	0.1	0	0	57.2	1.4	0	

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425 Commerce Drive, Suite 200
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PA 405 & PA 442
Lycoming County
AM Peak

File Name : 47am PA405 and PA442
Site Code : 00000471
Start Date : 9/22/2010
Page No : 1

Groups Printed- Vehicles - Heavy Vehicles

	PA 405 Southbound				PA 405 Westbound				PA442 Northbound				E. Penn St. Eastbound				
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Int. Total
07:00	39	15	1	0	4	26	76	0	3	54	5	0	5	11	3	0	242
07:15	39	23	3	0	11	29	85	0	5	57	17	0	4	16	4	0	293
07:30	51	25	9	0	9	18	107	0	3	60	20	0	9	24	3	0	338
07:45	42	30	7	0	18	34	88	0	4	68	17	0	1	21	4	0	334
Total	171	93	20	0	42	107	356	0	15	239	59	0	19	72	14	0	1207
08:00	45	18	5	0	17	34	81	0	4	51	16	0	4	8	2	0	285
08:15	22	17	2	0	17	33	66	0	2	34	17	0	6	14	1	0	231
08:30	56	22	10	0	14	17	64	0	2	32	9	0	7	18	3	0	254
08:45	53	20	8	0	21	14	50	0	3	44	19	0	9	21	2	0	264
Total	176	77	25	0	69	98	261	0	11	161	61	0	26	61	8	0	1034
Grand Total	347	170	45	0	111	205	617	0	26	400	120	0	45	133	22	0	2241
Apprch %	61.7	30.2	8	0	11.9	22	66.1	0	4.8	73.3	22	0	22.5	66.5	11	0	
Total %	15.5	7.6	2	0	5	9.1	27.5	0	1.2	17.8	5.4	0	2	5.9	1	0	
Vehicles	269	144	40	0	90	199	566	0	25	371	111	0	43	126	22	0	2006
% Vehicles	77.5	84.7	88.9	0	81.1	97.1	91.7	0	96.2	92.8	92.5	0	95.6	94.7	100	0	89.5
Heavy Vehicles	78	26	5	0	21	6	51	0	1	29	9	0	2	7	0	0	235
% Heavy Vehicles	22.5	15.3	11.1	0	18.9	2.9	8.3	0	3.8	7.2	7.5	0	4.4	5.3	0	0	10.5

McMahon Associates Inc.

425 Commerce Drive, Suite 200
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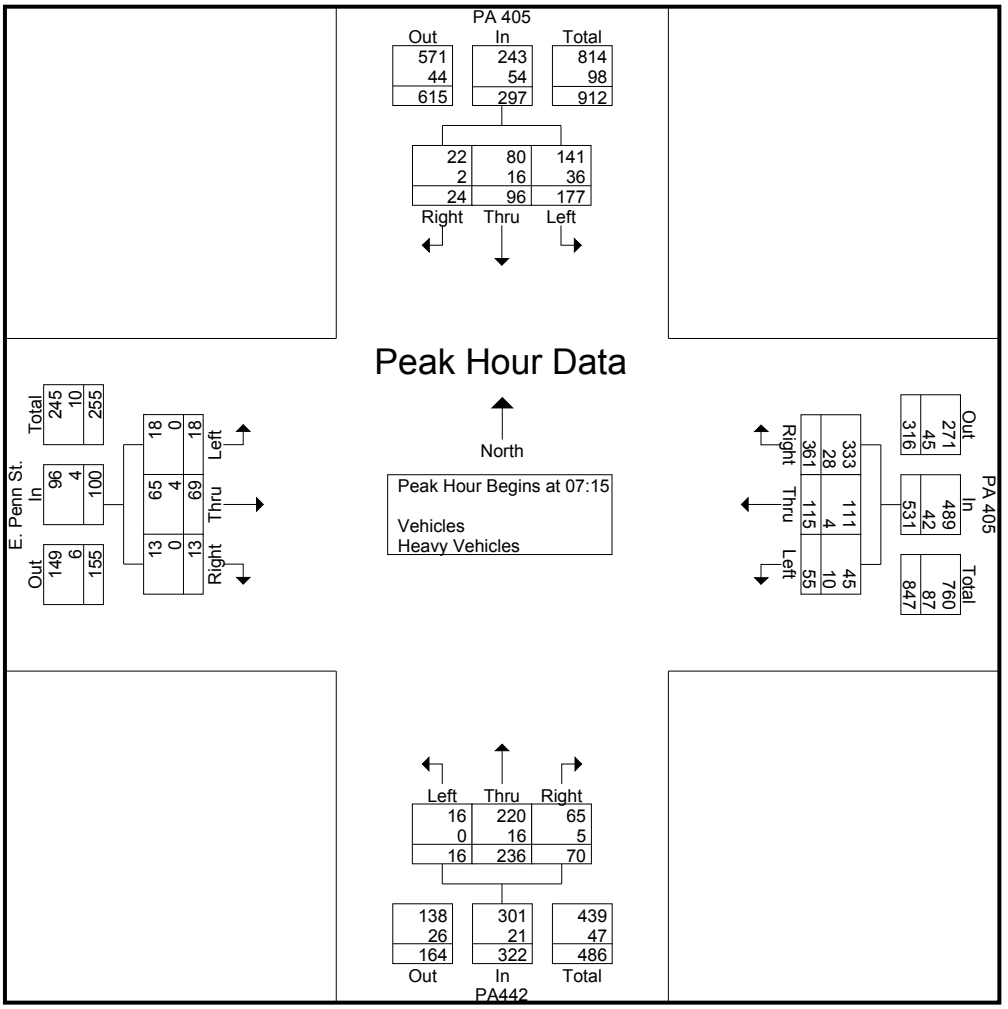
PA 405 & PA 442
Lycoming County
AM Peak

File Name : 47am PA405 and PA442
Site Code : 00000471
Start Date : 9/22/2010
Page No : 2

	PA 405 Southbound				PA 405 Westbound				PA442 Northbound				E. Penn St. Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:15																	
07:15	39	23	3	65	11	29	85	125	**5**	57	17	79	4	16	**4**	24	293
07:30	**51**	25	**9**	**85**	9	18	**107**	134	3	60	**20**	83	**9**	**24**	3	**36**	**338**
07:45	42	**30**	7	79	**18**	**34**	88	**140**	4	**68**	17	**89**	1	21	4	26	334
08:00	45	18	5	68	17	34	81	132	4	51	16	71	4	8	2	14	285
Total Volume	177	96	24	297	55	115	361	531	16	236	70	322	18	69	13	100	1250
% App. Total	59.6	32.3	8.1		10.4	21.7	68		5	73.3	21.7		18	69	13		
PHF	.868	.800	.667	.874	.764	.846	.843	.948	.800	.868	.875	.904	.500	.719	.813	.694	.925
Vehicles	141	80	22	243	45	111	333	489	16	220	65	301	18	65	13	96	1129
% Vehicles	79.7	83.3	91.7	81.8	81.8	96.5	92.2	92.1	100	93.2	92.9	93.5	100	94.2	100	96.0	90.3
Heavy Vehicles	36	16	2	54	10	4	28	42	0	16	5	21	0	4	0	4	121
% Heavy Vehicles	20.3	16.7	8.3	18.2	18.2	3.5	7.8	7.9	0	6.8	7.1	6.5	0	5.8	0	4.0	9.7



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425 Commerce Drive, Suite 200
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PA 405 & PA 442
Lycoming County
AM Peak

File Name : 47am PA405 and PA442
Site Code : 00000471
Start Date : 9/22/2010
Page No : 1

Groups Printed- Heavy Vehicles

	PA 405 Southbound				PA 405 Westbound				PA442 Northbound				E. Penn St. Eastbound				
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Int. Total
07:00	14	3	0	0	0	2	3	0	1	5	0	0	0	0	0	0	28
07:15	7	5	1	0	4	0	4	0	0	1	1	0	0	0	0	0	23
07:30	9	4	0	0	1	0	11	0	0	4	2	0	0	2	0	0	33
07:45	13	4	0	0	2	0	7	0	0	2	1	0	0	1	0	0	30
Total	43	16	1	0	7	2	25	0	1	12	4	0	0	3	0	0	114
08:00	7	3	1	0	3	4	6	0	0	9	1	0	0	1	0	0	35
08:15	3	1	0	0	3	0	3	0	0	4	1	0	2	0	0	0	17
08:30	10	4	3	0	5	0	7	0	0	3	1	0	0	2	0	0	35
08:45	15	2	0	0	3	0	10	0	0	1	2	0	0	1	0	0	34
Total	35	10	4	0	14	4	26	0	0	17	5	0	2	4	0	0	121
Grand Total	78	26	5	0	21	6	51	0	1	29	9	0	2	7	0	0	235
Apprch %	71.6	23.9	4.6	0	26.9	7.7	65.4	0	2.6	74.4	23.1	0	22.2	77.8	0	0	
Total %	33.2	11.1	2.1	0	8.9	2.6	21.7	0	0.4	12.3	3.8	0	0.9	3	0	0	

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425 Commerce Drive, Suite 200
Fort Washington, PA 19034

PA 405 & PA 442
Lycoming County
AM Peak

File Name : 47am PA405 and PA442
Site Code : 00000471
Start Date : 9/22/2010
Page No : 1

Groups Printed- Vehicles

	PA 405 Southbound				PA 405 Westbound				PA442 Northbound				E. Penn St. Eastbound				
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Int. Total
07:00	25	12	1	0	4	24	73	0	2	49	5	0	5	11	3	0	214
07:15	32	18	2	0	7	29	81	0	5	56	16	0	4	16	4	0	270
07:30	42	21	9	0	8	18	96	0	3	56	18	0	9	22	3	0	305
07:45	29	26	7	0	16	34	81	0	4	66	16	0	1	20	4	0	304
Total	128	77	19	0	35	105	331	0	14	227	55	0	19	69	14	0	1093
08:00	38	15	4	0	14	30	75	0	4	42	15	0	4	7	2	0	250
08:15	19	16	2	0	14	33	63	0	2	30	16	0	4	14	1	0	214
08:30	46	18	7	0	9	17	57	0	2	29	8	0	7	16	3	0	219
08:45	38	18	8	0	18	14	40	0	3	43	17	0	9	20	2	0	230
Total	141	67	21	0	55	94	235	0	11	144	56	0	24	57	8	0	913
Grand Total	269	144	40	0	90	199	566	0	25	371	111	0	43	126	22	0	2006
Apprch %	59.4	31.8	8.8	0	10.5	23.3	66.2	0	4.9	73.2	21.9	0	22.5	66	11.5	0	
Total %	13.4	7.2	2	0	4.5	9.9	28.2	0	1.2	18.5	5.5	0	2.1	6.3	1.1	0	

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PA 405 & PA 442
Lycoming County
PM Peak

File Name : 47pm PA405 and PA442
Site Code : 00000472
Start Date : 9/29/2010
Page No : 1

Groups Printed- Vehicles - Heavy Vehicles

	PA 405 Southbound				PA 405 Westbound				PA 442 Northbound				Penn St. Eastbound				
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Int. Total
16:00	73	52	7	0	17	28	76	0	2	37	30	1	2	45	5	0	375
16:15	77	65	10	0	19	23	52	0	3	36	35	0	4	23	7	0	354
16:30	89	62	15	0	21	26	77	0	6	33	30	0	4	36	3	0	402
16:45	96	63	19	0	27	28	47	0	4	39	27	0	7	48	6	0	411
Total	335	242	51	0	84	105	252	0	15	145	122	1	17	152	21	0	1542
17:00	77	55	17	0	25	38	53	0	6	41	26	0	9	40	7	0	394
17:15	103	86	16	0	18	41	40	0	6	44	23	0	12	50	14	0	453
17:30	57	57	8	0	25	51	49	0	2	51	28	0	7	51	6	0	392
17:45	58	49	17	0	28	32	60	0	2	27	32	0	5	36	2	0	348
Total	295	247	58	0	96	162	202	0	16	163	109	0	33	177	29	0	1587
Grand Total	630	489	109	0	180	267	454	0	31	308	231	1	50	329	50	0	3129
Apprch %	51.3	39.8	8.9	0	20	29.6	50.4	0	5.4	53.9	40.5	0.2	11.7	76.7	11.7	0	
Total %	20.1	15.6	3.5	0	5.8	8.5	14.5	0	1	9.8	7.4	0	1.6	10.5	1.6	0	
Vehicles	588	471	107	0	173	263	398	0	30	294	222	1	48	324	48	0	2967
% Vehicles	93.3	96.3	98.2	0	96.1	98.5	87.7	0	96.8	95.5	96.1	100	96	98.5	96	0	94.8
Heavy Vehicles	42	18	2	0	7	4	56	0	1	14	9	0	2	5	2	0	162
% Heavy Vehicles	6.7	3.7	1.8	0	3.9	1.5	12.3	0	3.2	4.5	3.9	0	4	1.5	4	0	5.2

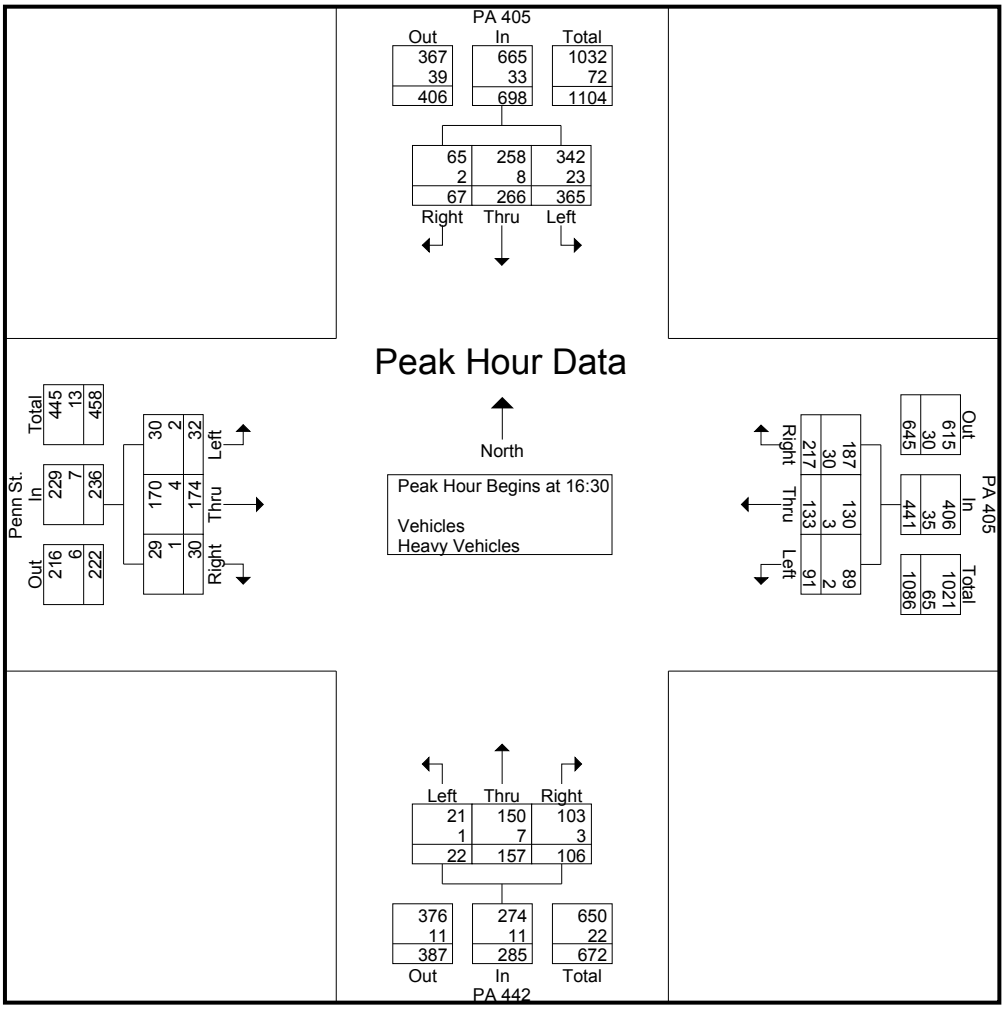
McMahon Associates Inc.

425 Commerce Drive, Suite 200
Fort Washington, PA 19034

PA 405 & PA 442
Lycoming County
PM Peak

File Name : 47pm PA405 and PA442
Site Code : 00000472
Start Date : 9/29/2010
Page No : 2

	PA 405 Southbound				PA 405 Westbound				PA 442 Northbound				Penn St. Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 16:30																	
16:30	89	62	15	166	21	26	**77**	**124**	**6**	33	**30**	69	4	36	3	43	402
16:45	96	63	**19**	178	**27**	28	47	102	4	39	27	70	7	48	6	61	411
17:00	77	55	17	149	25	38	53	116	6	41	26	**73**	9	40	7	56	394
17:15	**103**	**86**	16	**205**	18	**41**	40	99	6	**44**	23	73	**12**	**50**	**14**	**76**	**453**
Total Volume	365	266	67	698	91	133	217	441	22	157	106	285	32	174	30	236	1660
% App. Total	52.3	38.1	9.6		20.6	30.2	49.2		7.7	55.1	37.2		13.6	73.7	12.7		
PHF	.886	.773	.882	.851	.843	.811	.705	.889	.917	.892	.883	.976	.667	.870	.536	.776	.916
Vehicles	342	258	65	665	89	130	187	406	21	150	103	274	30	170	29	229	1574
% Vehicles	93.7	97.0	97.0	95.3	97.8	97.7	86.2	92.1	95.5	95.5	97.2	96.1	93.8	97.7	96.7	97.0	94.8
Heavy Vehicles	23	8	2	33	2	3	30	35	1	7	3	11	2	4	1	7	86
% Heavy Vehicles	6.3	3.0	3.0	4.7	2.2	2.3	13.8	7.9	4.5	4.5	2.8	3.9	6.3	2.3	3.3	3.0	5.2



McMahon Associates Inc.

425 Commerce Drive, Suite 200
Fort Washington, PA 19034

PA 405 & PA 442
Lycoming County
PM Peak

File Name : 47pm PA405 and PA442
Site Code : 00000472
Start Date : 9/29/2010
Page No : 1

Groups Printed- Heavy Vehicles

	PA 405 Southbound				PA 405 Westbound				PA 442 Northbound				Penn St. Eastbound				
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Int. Total
16:00	10	2	0	0	3	0	10	0	0	2	1	0	0	0	0	0	28
16:15	5	4	0	0	1	0	7	0	0	2	0	0	0	1	0	0	20
16:30	5	0	0	0	1	0	9	0	0	1	1	0	0	1	0	0	18
16:45	9	5	0	0	1	0	6	0	1	1	2	0	1	2	0	0	28
Total	29	11	0	0	6	0	32	0	1	6	4	0	1	4	0	0	94
17:00	5	2	2	0	0	3	11	0	0	4	0	0	0	1	0	0	28
17:15	4	1	0	0	0	0	4	0	0	1	0	0	1	0	1	0	12
17:30	2	2	0	0	0	0	6	0	0	2	3	0	0	0	1	0	16
17:45	2	2	0	0	1	1	3	0	0	1	2	0	0	0	0	0	12
Total	13	7	2	0	1	4	24	0	0	8	5	0	1	1	2	0	68
Grand Total	42	18	2	0	7	4	56	0	1	14	9	0	2	5	2	0	162
Apprch %	67.7	29	3.2	0	10.4	6	83.6	0	4.2	58.3	37.5	0	22.2	55.6	22.2	0	
Total %	25.9	11.1	1.2	0	4.3	2.5	34.6	0	0.6	8.6	5.6	0	1.2	3.1	1.2	0	

McMahon Associates Inc.

425 Commerce Drive, Suite 200
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PA 405 & PA 442
Lycoming County
PM Peak

File Name : 47pm PA405 and PA442
Site Code : 00000472
Start Date : 9/29/2010
Page No : 1

Groups Printed- Vehicles

	PA 405 Southbound				PA 405 Westbound				PA 442 Northbound				Penn St. Eastbound				
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Int. Total
16:00	63	50	7	0	14	28	66	0	2	35	29	1	2	45	5	0	347
16:15	72	61	10	0	18	23	45	0	3	34	35	0	4	22	7	0	334
16:30	84	62	15	0	20	26	68	0	6	32	29	0	4	35	3	0	384
16:45	87	58	19	0	26	28	41	0	3	38	25	0	6	46	6	0	383
Total	306	231	51	0	78	105	220	0	14	139	118	1	16	148	21	0	1448
17:00	72	53	15	0	25	35	42	0	6	37	26	0	9	39	7	0	366
17:15	99	85	16	0	18	41	36	0	6	43	23	0	11	50	13	0	441
17:30	55	55	8	0	25	51	43	0	2	49	25	0	7	51	5	0	376
17:45	56	47	17	0	27	31	57	0	2	26	30	0	5	36	2	0	336
Total	282	240	56	0	95	158	178	0	16	155	104	0	32	176	27	0	1519
Grand Total	588	471	107	0	173	263	398	0	30	294	222	1	48	324	48	0	2967
Apprch %	50.4	40.4	9.2	0	20.7	31.5	47.7	0	5.5	53.7	40.6	0.2	11.4	77.1	11.4	0	
Total %	19.8	15.9	3.6	0	5.8	8.9	13.4	0	1	9.9	7.5	0	1.6	10.9	1.6	0	

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File Name : 48am PA405 and PA118
Site Code : 00000481
Start Date : 9/23/2010
Page No : 1

Groups Printed- Vehicles - Heavy Vehicles

	N. Main Street Southbound				PA 118 Westbound				PA 405 Northbound				W. Water Street Eastbound				
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Int. Total
07:00	13	40	2	0	26	11	31	0	2	23	9	0	1	3	3	0	164
07:15	21	51	1	0	22	15	33	0	2	24	12	0	0	7	4	0	192
07:30	30	62	3	0	31	41	37	0	4	29	30	0	7	6	6	0	286
07:45	16	53	5	0	23	52	30	0	3	47	22	0	4	16	8	0	279
Total	80	206	11	0	102	119	131	0	11	123	73	0	12	32	21	0	921
08:00	27	44	5	0	29	15	25	0	7	43	24	0	6	15	4	0	244
08:15	18	31	5	0	22	7	37	0	4	44	24	0	1	5	9	0	207
08:30	23	33	3	0	25	5	47	0	1	53	15	0	2	9	7	0	223
08:45	22	36	2	0	22	7	30	0	3	37	14	0	6	5	13	0	197
Total	90	144	15	0	98	34	139	0	15	177	77	0	15	34	33	0	871
Grand Total	170	350	26	0	200	153	270	0	26	300	150	0	27	66	54	0	1792
Apprch %	31.1	64.1	4.8	0	32.1	24.6	43.3	0	5.5	63	31.5	0	18.4	44.9	36.7	0	
Total %	9.5	19.5	1.5	0	11.2	8.5	15.1	0	1.5	16.7	8.4	0	1.5	3.7	3	0	
Vehicles	125	328	26	0	184	144	232	0	21	267	112	0	26	62	49	0	1576
% Vehicles	73.5	93.7	100	0	92	94.1	85.9	0	80.8	89	74.7	0	96.3	93.9	90.7	0	87.9
Heavy Vehicles	45	22	0	0	16	9	38	0	5	33	38	0	1	4	5	0	216
% Heavy Vehicles	26.5	6.3	0	0	8	5.9	14.1	0	19.2	11	25.3	0	3.7	6.1	9.3	0	12.1

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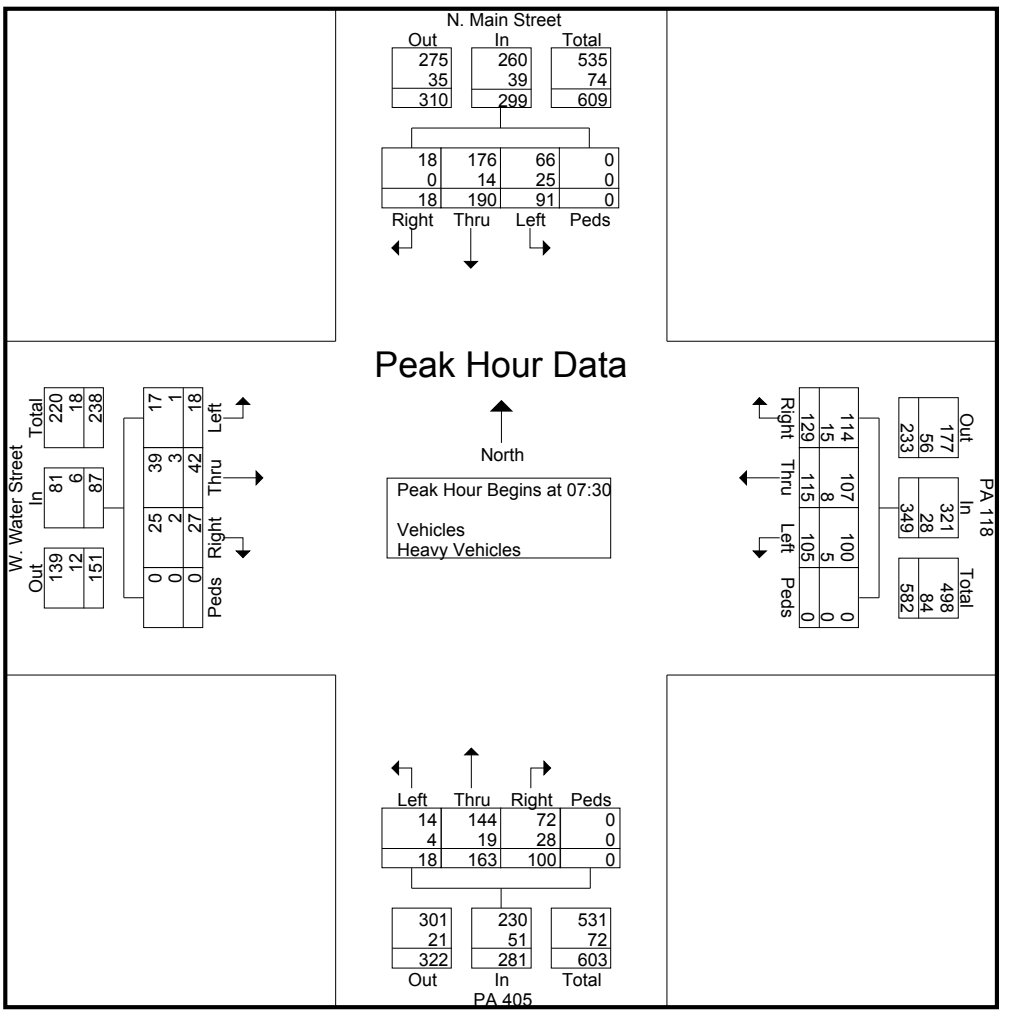
File Name : 48am PA405 and PA118
Site Code : 00000481
Start Date : 9/23/2010
Page No : 2

	N. Main Street Southbound					PA 118 Westbound					PA 405 Northbound					W. Water Street Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:30																					
07:30	**30**	**62**	3	0	**95**	**31**	41	**37**	0	**109**	4	29	**30**	0	63	**7**	6	6	0	19	**286**
07:45	16	53	**5**	0	74	23	**52**	30	0	105	3	**47**	22	0	72	4	**16**	8	0	**28**	279
08:00	27	44	5	0	76	29	15	25	0	69	**7**	43	24	0	**74**	6	15	4	0	25	244
08:15	18	31	5	0	54	22	7	37	0	66	4	44	24	0	72	1	5	**9**	0	15	207
Total Volume	91	190	18	0	299	105	115	129	0	349	18	163	100	0	281	18	42	27	0	87	1016
% App. Total	30.4	63.5	6	0		30.1	33	37	0		6.4	58	35.6	0		20.7	48.3	31	0		
PHF	.758	.766	.900	.000	.787	.847	.553	.872	.000	.800	.643	.867	.833	.000	.949	.643	.656	.750	.000	.777	.888
Vehicles	66	176	18	0	260	100	107	114	0	321	14	144	72	0	230	17	39	25	0	81	892
% Vehicles	72.5	92.6	100	0	87.0	95.2	93.0	88.4	0	92.0	77.8	88.3	72.0	0	81.9	94.4	92.9	92.6	0	93.1	87.8
Heavy Vehicles																					
% Heavy Vehicles	27.5	7.4	0	0	13.0	4.8	7.0	11.6	0	8.0	22.2	11.7	28.0	0	18.1	5.6	7.1	7.4	0	6.9	12.2



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File Name : 48am PA405 and PA118
Site Code : 00000481
Start Date : 9/23/2010
Page No : 1

Groups Printed- Heavy Vehicles

	N. Main Street Southbound				PA 118 Westbound				PA 405 Northbound				W. Water Street Eastbound				
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Int. Total
07:00	2	1	0	0	3	0	6	0	1	3	1	0	0	0	1	0	18
07:15	5	1	0	0	1	0	5	0	0	4	5	0	0	0	0	0	21
07:30	10	4	0	0	2	1	1	0	1	3	9	0	0	0	1	0	32
07:45	4	7	0	0	1	7	1	0	0	4	9	0	0	0	0	0	33
Total	21	13	0	0	7	8	13	0	2	14	24	0	0	0	2	0	104
08:00	5	1	0	0	2	0	5	0	2	10	9	0	1	3	1	0	39
08:15	6	2	0	0	0	0	8	0	1	2	1	0	0	0	0	0	20
08:30	7	5	0	0	4	0	6	0	0	4	1	0	0	1	0	0	28
08:45	6	1	0	0	3	1	6	0	0	3	3	0	0	0	2	0	25
Total	24	9	0	0	9	1	25	0	3	19	14	0	1	4	3	0	112
Grand Total	45	22	0	0	16	9	38	0	5	33	38	0	1	4	5	0	216
Apprch %	67.2	32.8	0	0	25.4	14.3	60.3	0	6.6	43.4	50	0	10	40	50	0	
Total %	20.8	10.2	0	0	7.4	4.2	17.6	0	2.3	15.3	17.6	0	0.5	1.9	2.3	0	

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File Name : 48am PA405 and PA118
Site Code : 00000481
Start Date : 9/23/2010
Page No : 1

Groups Printed- Vehicles

	N. Main Street Southbound				PA 118 Westbound				PA 405 Northbound				W. Water Street Eastbound				
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Int. Total
07:00	11	39	2	0	23	11	25	0	1	20	8	0	1	3	2	0	146
07:15	16	50	1	0	21	15	28	0	2	20	7	0	0	7	4	0	171
07:30	20	58	3	0	29	40	36	0	3	26	21	0	7	6	5	0	254
07:45	12	46	5	0	22	45	29	0	3	43	13	0	4	16	8	0	246
Total	59	193	11	0	95	111	118	0	9	109	49	0	12	32	19	0	817
08:00	22	43	5	0	27	15	20	0	5	33	15	0	5	12	3	0	205
08:15	12	29	5	0	22	7	29	0	3	42	23	0	1	5	9	0	187
08:30	16	28	3	0	21	5	41	0	1	49	14	0	2	8	7	0	195
08:45	16	35	2	0	19	6	24	0	3	34	11	0	6	5	11	0	172
Total	66	135	15	0	89	33	114	0	12	158	63	0	14	30	30	0	759
Grand Total	125	328	26	0	184	144	232	0	21	267	112	0	26	62	49	0	1576
Apprch %	26.1	68.5	5.4	0	32.9	25.7	41.4	0	5.2	66.8	28	0	19	45.3	35.8	0	
Total %	7.9	20.8	1.6	0	11.7	9.1	14.7	0	1.3	16.9	7.1	0	1.6	3.9	3.1	0	

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File Name : 48pm PA405 and PA118
Site Code : 00000482
Start Date : 9/23/2010
Page No : 1

Groups Printed- Vehicles - Heavy Vehicles

	N. Main St. Southbound				PA 118 Westbound				PA 405 Northbound				W. Water St. Eastbound				
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Int. Total
16:00	24	40	2	0	22	10	29	0	3	56	27	0	9	18	6	0	246
16:15	25	45	0	0	15	9	43	0	3	57	23	0	5	20	10	0	255
16:30	18	41	1	0	30	9	29	0	8	73	33	0	11	28	6	0	287
16:45	28	54	4	0	31	13	35	0	3	76	34	0	5	29	6	0	318
Total	95	180	7	0	98	41	136	0	17	262	117	0	30	95	28	0	1106
17:00	27	42	2	0	27	9	32	0	3	80	35	0	14	37	6	0	314
17:15	18	57	2	0	34	17	30	0	8	71	38	0	5	21	14	0	315
17:30	28	41	2	0	41	10	47	0	4	84	32	0	4	24	6	0	323
17:45	21	52	3	0	31	15	37	0	6	58	28	0	8	28	11	0	298
Total	94	192	9	0	133	51	146	0	21	293	133	0	31	110	37	0	1250
Grand Total	189	372	16	0	231	92	282	0	38	555	250	0	61	205	65	0	2356
Apprch %	32.8	64.5	2.8	0	38.2	15.2	46.6	0	4.5	65.8	29.7	0	18.4	61.9	19.6	0	
Total %	8	15.8	0.7	0	9.8	3.9	12	0	1.6	23.6	10.6	0	2.6	8.7	2.8	0	
Vehicles	166	349	16	0	193	87	256	0	38	544	223	0	61	203	65	0	2201
% Vehicles	87.8	93.8	100	0	83.5	94.6	90.8	0	100	98	89.2	0	100	99	100	0	93.4
Heavy Vehicles	23	23	0	0	38	5	26	0	0	11	27	0	0	2	0	0	155
% Heavy Vehicles	12.2	6.2	0	0	16.5	5.4	9.2	0	0	2	10.8	0	0	1	0	0	6.6

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425 Commerce Drive, Suite 200
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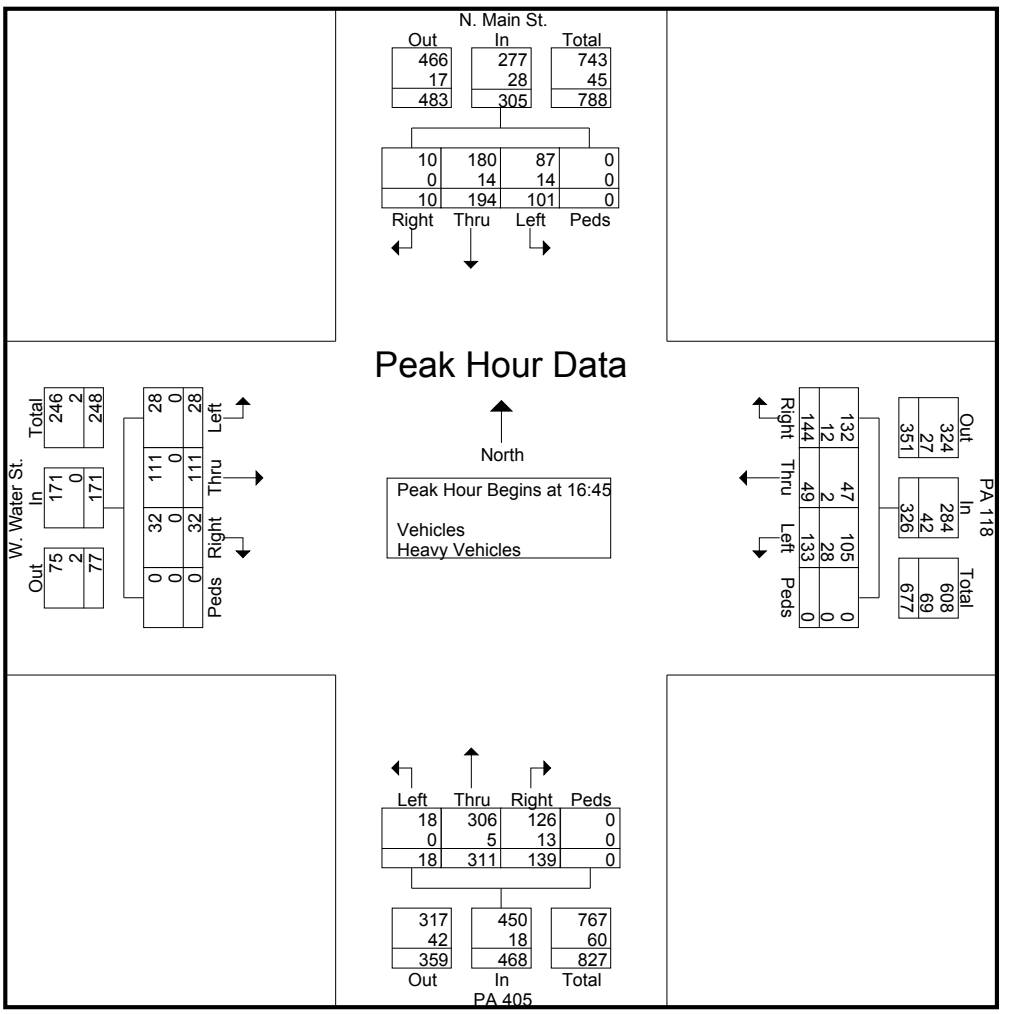
File Name : 48pm PA405 and PA118
Site Code : 00000482
Start Date : 9/23/2010
Page No : 2

	N. Main St. Southbound					PA 118 Westbound					PA 405 Northbound					W. Water St. Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 16:45																					
16:45	**28**	54	**4**	0	**86**	31	13	35	0	79	3	76	34	0	113	5	29	6	0	40	318
17:00	27	42	2	0	71	27	9	32	0	68	3	80	35	0	118	**14**	**37**	6	0	**57**	314
17:15	18	**57**	2	0	77	34	**17**	30	0	81	**8**	71	**38**	0	117	5	21	**14**	0	40	315
17:30	28	41	2	0	71	**41**	10	**47**	0	**98**	4	**84**	32	0	**120**	4	24	6	0	34	**323**
Total Volume	101	194	10	0	305	133	49	144	0	326	18	311	139	0	468	28	111	32	0	171	1270
% App. Total	33.1	63.6	3.3	0		40.8	15	44.2	0		3.8	66.5	29.7	0		16.4	64.9	18.7	0		
PHF	.902	.851	.625	.000	.887	.811	.721	.766	.000	.832	.563	.926	.914	.000	.975	.500	.750	.571	.000	.750	.983
Vehicles	87	180	10	0	277	105	47	132	0	284	18	306	126	0	450	28	111	32	0	171	1182
% Vehicles	86.1	92.8	100	0	90.8	78.9	95.9	91.7	0	87.1	100	98.4	90.6	0	96.2	100	100	100	0	100	93.1
Heavy Vehicles																					
% Heavy Vehicles	13.9	7.2	0	0	9.2	21.1	4.1	8.3	0	12.9	0	1.6	9.4	0	3.8	0	0	0	0	0	6.9



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File Name : 48pm PA405 and PA118
Site Code : 00000482
Start Date : 9/23/2010
Page No : 1

Groups Printed- Heavy Vehicles

	N. Main St. Southbound				PA 118 Westbound				PA 405 Northbound				W. Water St. Eastbound				
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Int. Total
16:00	2	4	0	0	1	2	1	0	0	2	2	0	0	0	0	0	14
16:15	2	4	0	0	2	1	6	0	0	0	3	0	0	1	0	0	19
16:30	0	1	0	0	4	0	3	0	0	3	6	0	0	0	0	0	17
16:45	6	6	0	0	5	0	2	0	0	2	7	0	0	0	0	0	28
Total	10	15	0	0	12	3	12	0	0	7	18	0	0	1	0	0	78
17:00	3	2	0	0	3	0	5	0	0	3	3	0	0	0	0	0	19
17:15	4	1	0	0	12	1	1	0	0	0	0	0	0	0	0	0	19
17:30	1	5	0	0	8	1	4	0	0	0	3	0	0	0	0	0	22
17:45	5	0	0	0	3	0	4	0	0	1	3	0	0	1	0	0	17
Total	13	8	0	0	26	2	14	0	0	4	9	0	0	1	0	0	77
Grand Total	23	23	0	0	38	5	26	0	0	11	27	0	0	2	0	0	155
Apprch %	50	50	0	0	55.1	7.2	37.7	0	0	28.9	71.1	0	0	100	0	0	
Total %	14.8	14.8	0	0	24.5	3.2	16.8	0	0	7.1	17.4	0	0	1.3	0	0	

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File Name : 48pm PA405 and PA118
Site Code : 00000482
Start Date : 9/23/2010
Page No : 1

Groups Printed- Vehicles

	N. Main St. Southbound				PA 118 Westbound				PA 405 Northbound				W. Water St. Eastbound				
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Int. Total
16:00	22	36	2	0	21	8	28	0	3	54	25	0	9	18	6	0	232
16:15	23	41	0	0	13	8	37	0	3	57	20	0	5	19	10	0	236
16:30	18	40	1	0	26	9	26	0	8	70	27	0	11	28	6	0	270
16:45	22	48	4	0	26	13	33	0	3	74	27	0	5	29	6	0	290
Total	85	165	7	0	86	38	124	0	17	255	99	0	30	94	28	0	1028
17:00	24	40	2	0	24	9	27	0	3	77	32	0	14	37	6	0	295
17:15	14	56	2	0	22	16	29	0	8	71	38	0	5	21	14	0	296
17:30	27	36	2	0	33	9	43	0	4	84	29	0	4	24	6	0	301
17:45	16	52	3	0	28	15	33	0	6	57	25	0	8	27	11	0	281
Total	81	184	9	0	107	49	132	0	21	289	124	0	31	109	37	0	1173
Grand Total	166	349	16	0	193	87	256	0	38	544	223	0	61	203	65	0	2201
Apprch %	31.3	65.7	3	0	36	16.2	47.8	0	4.7	67.6	27.7	0	18.5	61.7	19.8	0	
Total %	7.5	15.9	0.7	0	8.8	4	11.6	0	1.7	24.7	10.1	0	2.8	9.2	3	0	

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File Name : lycoming01
Site Code : 00000441
Start Date : 7/28/2010
Page No : 1

Groups Printed- Vehicles - Heavy Vehicles

	Lycoming Mall Dr. Southbound				John Brady Dr. Westbound				Lycoming Mall Dr. Northbound				Legion Rd. Eastbound				
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Int. Total
07:00	5	30	2	0	31	2	23	0	0	17	21	0	0	0	0	0	131
07:15	5	37	1	0	31	1	11	0	0	29	33	0	1	1	2	0	152
07:30	8	38	1	0	38	3	15	0	0	30	43	0	3	0	1	0	180
07:45	18	43	0	0	50	0	18	0	1	27	35	0	0	0	0	0	192
Total	36	148	4	0	150	6	67	0	1	103	132	0	4	1	3	0	655
08:00	12	33	2	0	25	2	11	0	0	20	43	0	2	0	0	0	150
08:15	9	26	2	0	28	1	14	0	1	29	33	0	1	0	1	0	145
08:30	17	28	2	0	50	0	12	0	0	32	24	0	1	0	1	0	167
08:45	8	41	4	0	50	0	10	0	1	20	26	0	1	1	1	0	163
Total	46	128	10	0	153	3	47	0	2	101	126	0	5	1	3	0	625
Grand Total	82	276	14	0	303	9	114	0	3	204	258	0	9	2	6	0	1280
Apprch %	22	74.2	3.8	0	71.1	2.1	26.8	0	0.6	43.9	55.5	0	52.9	11.8	35.3	0	
Total %	6.4	21.6	1.1	0	23.7	0.7	8.9	0	0.2	15.9	20.2	0	0.7	0.2	0.5	0	
Vehicles	62	256	8	0	292	9	100	0	2	183	243	0	2	2	5	0	1164
% Vehicles	75.6	92.8	57.1	0	96.4	100	87.7	0	66.7	89.7	94.2	0	22.2	100	83.3	0	90.9
Heavy Vehicles	20	20	6	0	11	0	14	0	1	21	15	0	7	0	1	0	116
% Heavy Vehicles	24.4	7.2	42.9	0	3.6	0	12.3	0	33.3	10.3	5.8	0	77.8	0	16.7	0	9.1

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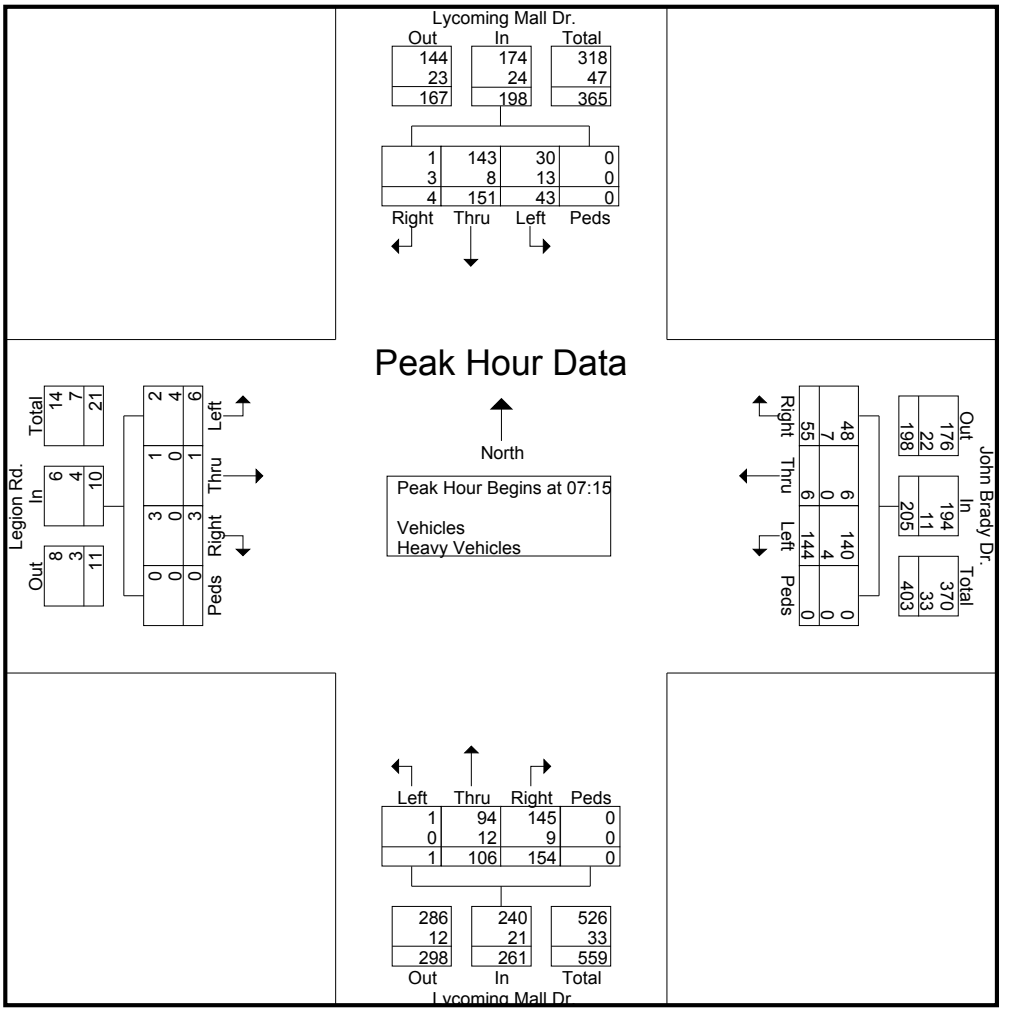
File Name : lycoming01
Site Code : 00000441
Start Date : 7/28/2010
Page No : 2

	Lycoming Mall Dr. Southbound					John Brady Dr. Westbound					Lycoming Mall Dr. Northbound					Legion Rd. Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:15																					
07:15	5	37	1	0	43	31	1	11	0	43	0	29	33	0	62	1	**1**	**2**	0	**4**	152
07:30	8	38	1	0	47	38	**3**	15	0	56	0	**30**	**43**	0	**73**	**3**	0	1	0	4	180
07:45	**18**	**43**	0	0	**61**	**50**	0	**18**	0	**68**	**1**	27	35	0	63	0	0	0	0	0	**192**
08:00	12	33	**2**	0	47	25	2	11	0	38	0	20	43	0	63	2	0	0	0	2	150
Total Volume	43	151	4	0	198	144	6	55	0	205	1	106	154	0	261	6	1	3	0	10	674
% App. Total	21.7	76.3	2	0		70.2	2.9	26.8	0		0.4	40.6	59	0		60	10	30	0		
PHF	.597	.878	.500	.000	.811	.720	.500	.764	.000	.754	.250	.883	.895	.000	.894	.500	.250	.375	.000	.625	.878
Vehicles	30	143	1	0	174	140	6	48	0	194	1	94	145	0	240	2	1	3	0	6	614
% Vehicles																					
Heavy Vehicles	13	8	3	0	24	4	0	7	0	11	0	12	9	0	21	4	0	0	0	4	60
% Heavy Vehicles	30.2	5.3	75.0	0	12.1	2.8	0	12.7	0	5.4	0	11.3	5.8	0	8.0	66.7	0	0	0	40.0	8.9



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File Name : lycoming01
Site Code : 00000441
Start Date : 7/28/2010

Groups Printed- Heavy Vehicles

	Lycoming Mall Dr. Southbound				John Brady Dr. Westbound				Lycoming Mall Dr. Northbound				Legion Rd. Eastbound				
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Int. Total
07:00	0	5	0	0	0	0	0	0	0	2	1	0	0	0	0	0	8
07:15	1	4	0	0	0	0	1	0	0	1	0	0	0	0	0	0	7
07:30	3	2	1	0	0	0	2	0	0	1	2	0	2	0	0	0	13
07:45	6	2	0	0	2	0	1	0	0	7	1	0	0	0	0	0	19
Total	10	13	1	0	2	0	4	0	0	11	4	0	2	0	0	0	47
08:00	3	0	2	0	2	0	3	0	0	3	6	0	2	0	0	0	21
08:15	3	0	2	0	2	0	4	0	1	4	1	0	1	0	0	0	18
08:30	2	4	0	0	4	0	1	0	0	3	1	0	1	0	0	0	16
08:45	2	3	1	0	1	0	2	0	0	0	3	0	1	0	1	0	14
Total	10	7	5	0	9	0	10	0	1	10	11	0	5	0	1	0	69
Grand Total	20	20	6	0	11	0	14	0	1	21	15	0	7	0	1	0	116
Apprch %	43.5	43.5	13	0	44	0	56	0	2.7	56.8	40.5	0	87.5	0	12.5	0	
Total %	17.2	17.2	5.2	0	9.5	0	12.1	0	0.9	18.1	12.9	0	6	0	0.9	0	

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File Name : lycoming01
Site Code : 00000441
Start Date : 7/28/2010
Page No : 1

Groups Printed- Vehicles

	Lycoming Mall Dr. Southbound				John Brady Dr. Westbound				Lycoming Mall Dr. Northbound				Legion Rd. Eastbound				
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Int. Total
07:00	5	25	2	0	31	2	23	0	0	15	20	0	0	0	0	0	123
07:15	4	33	1	0	31	1	10	0	0	28	33	0	1	1	2	0	145
07:30	5	36	0	0	38	3	13	0	0	29	41	0	1	0	1	0	167
07:45	12	41	0	0	48	0	17	0	1	20	34	0	0	0	0	0	173
Total	26	135	3	0	148	6	63	0	1	92	128	0	2	1	3	0	608
08:00	9	33	0	0	23	2	8	0	0	17	37	0	0	0	0	0	129
08:15	6	26	0	0	26	1	10	0	0	25	32	0	0	0	1	0	127
08:30	15	24	2	0	46	0	11	0	0	29	23	0	0	0	1	0	151
08:45	6	38	3	0	49	0	8	0	1	20	23	0	0	1	0	0	149
Total	36	121	5	0	144	3	37	0	1	91	115	0	0	1	2	0	556
Grand Total	62	256	8	0	292	9	100	0	2	183	243	0	2	2	5	0	1164
Apprch %	19	78.5	2.5	0	72.8	2.2	24.9	0	0.5	42.8	56.8	0	22.2	22.2	55.6	0	
Total %	5.3	22	0.7	0	25.1	0.8	8.6	0	0.2	15.7	20.9	0	0.2	0.2	0.4	0	

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File Name : lycoming01
Site Code : 00000441
Start Date : 7/28/2010

Groups Printed- Peds

	Lycoming Mall Dr. Southbound				John Brady Dr. Westbound				Lycoming Mall Dr. Northbound				Legion Rd. Eastbound				
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Int. Total
07:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:00	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1
08:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1
Grand Total	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1
Apprch %	0	0	0	0	100	0	0	0	0	0	0	0	0	0	0	0	
Total %	0	0	0	0	100	0	0	0	0	0	0	0	0	0	0	0	

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File Name : lycoming02
Site Code : 00000442
Start Date : 7/27/2010
Page No : 1

Groups Printed- Vehicles - Heavy Vehicles

	Lycoming Mall Dr. Southbound				John Brady Dr. Westbound				Lycoming Mall Dr. Northbound				Legion Rd. Eastbound				
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Int. Total
16:15	10	40	6	0	45	8	12	0	1	71	68	0	1	7	15	0	284
16:30	11	52	4	0	49	1	10	0	4	58	69	0	4	1	1	0	264
16:45	8	54	1	0	60	0	15	0	0	71	78	0	4	4	4	0	299
Total	29	146	11	0	154	9	37	0	5	200	215	0	9	12	20	0	847
17:00	8	37	1	0	61	0	19	0	1	67	66	0	2	0	1	0	263
17:15	14	72	0	0	67	1	15	0	1	78	65	0	2	2	0	0	317
17:30	12	44	1	0	41	0	12	0	3	64	52	0	7	3	4	0	243
17:45	9	36	3	0	44	1	13	0	1	62	70	0	3	2	5	0	249
Total	43	189	5	0	213	2	59	0	6	271	253	0	14	7	10	0	1072
18:00	6	49	0	0	54	0	9	0	0	48	68	0	6	1	1	0	242
Grand Total	78	384	16	0	421	11	105	0	11	519	536	0	29	20	31	0	2161
Apprch %	16.3	80.3	3.3	0	78.4	2	19.6	0	1	48.7	50.3	0	36.2	25	38.8	0	
Total %	3.6	17.8	0.7	0	19.5	0.5	4.9	0	0.5	24	24.8	0	1.3	0.9	1.4	0	
Vehicles	67	367	11	0	413	10	97	0	9	505	526	0	20	20	30	0	2075
% Vehicles	85.9	95.6	68.8	0	98.1	90.9	92.4	0	81.8	97.3	98.1	0	69	100	96.8	0	96
Heavy Vehicles	11	17	5	0	8	1	8	0	2	14	10	0	9	0	1	0	86
% Heavy Vehicles	14.1	4.4	31.2	0	1.9	9.1	7.6	0	18.2	2.7	1.9	0	31	0	3.2	0	4

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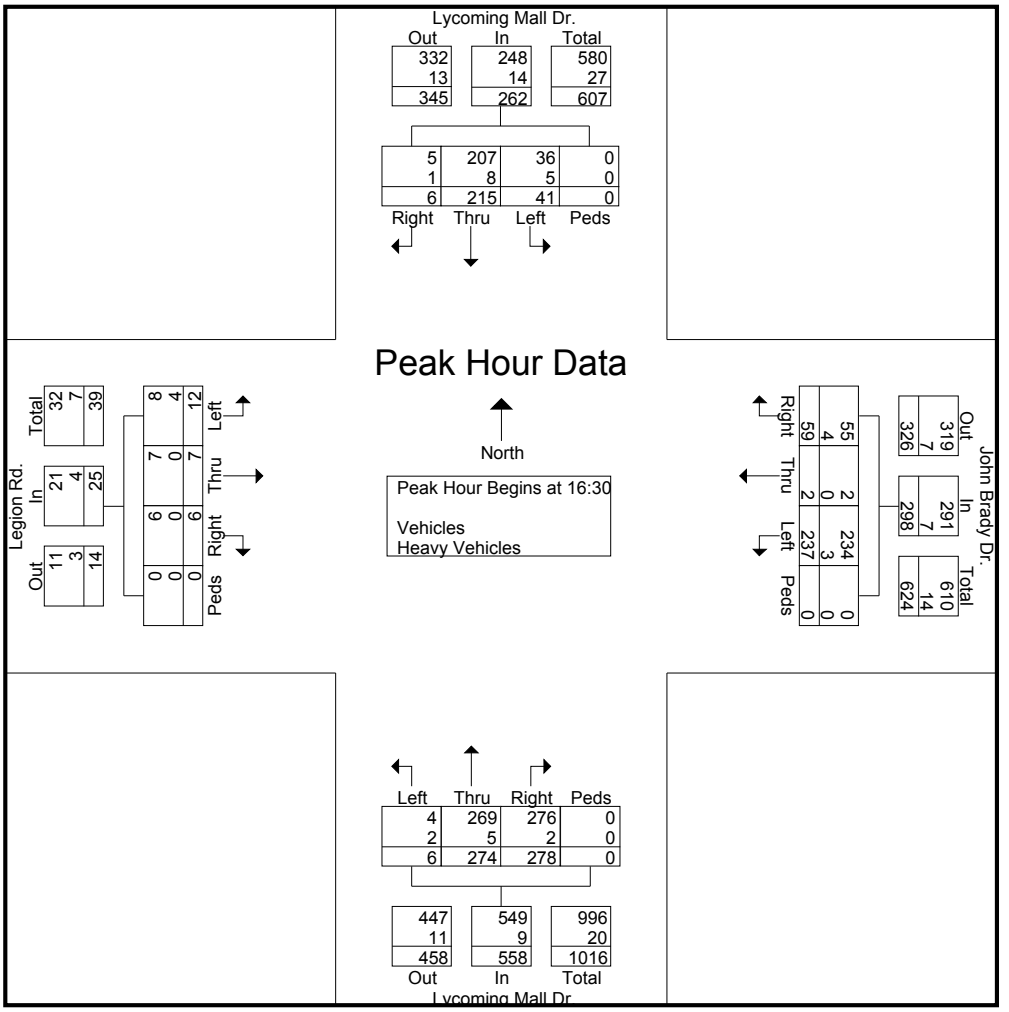
File Name : lycoming02
Site Code : 00000442
Start Date : 7/27/2010
Page No : 2

	Lycoming Mall Dr. Southbound					John Brady Dr. Westbound					Lycoming Mall Dr. Northbound					Legion Rd. Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 16:15 to 18:00 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 16:30																					
16:30	11	52	**4**	0	67	49	**1**	10	0	60	**4**	58	69	0	131	**4**	1	1	0	6	264
16:45	8	54	1	0	63	60	0	15	0	75	0	71	**78**	0	**149**	4	**4**	**4**	0	**12**	299
17:00	8	37	1	0	46	61	0	**19**	0	80	1	67	66	0	134	2	0	1	0	3	263
17:15	**14**	**72**	0	0	**86**	**67**	1	15	0	**83**	1	**78**	65	0	144	2	2	0	0	4	**317**
Total Volume	41	215	6	0	262	237	2	59	0	298	6	274	278	0	558	12	7	6	0	25	1143
% App. Total	15.6	82.1	2.3	0		79.5	0.7	19.8	0		1.1	49.1	49.8	0		48	28	24	0		
PHF	.732	.747	.375	.000	.762	.884	.500	.776	.000	.898	.375	.878	.891	.000	.936	.750	.438	.375	.000	.521	.901
Vehicles	36	207	5	0	248	234	2	55	0	291	4	269	276	0	549	8	7	6	0	21	1109
% Vehicles																					
Heavy Vehicles	5	8	1	0	14	3	0	4	0	7	2	5	2	0	9	4	0	0	0	4	34
% Heavy Vehicles	12.2	3.7	16.7	0	5.3	1.3	0	6.8	0	2.3	33.3	1.8	0.7	0	1.6	33.3	0	0	0	16.0	3.0



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File Name : lycoming02
Site Code : 00000442
Start Date : 7/27/2010
Page No : 1

Groups Printed- Heavy Vehicles

	Lycoming Mall Dr. Southbound				John Brady Dr. Westbound				Lycoming Mall Dr. Northbound				Legion Rd. Eastbound				
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Int. Total
16:15	2	3	2	0	2	1	2	0	0	4	1	0	0	0	0	0	17
16:30	1	4	1	0	0	0	1	0	1	2	1	0	1	0	0	0	12
16:45	0	1	0	0	1	0	1	0	0	2	0	0	2	0	0	0	7
Total	3	8	3	0	3	1	4	0	1	8	2	0	3	0	0	0	36
17:00	2	0	0	0	1	0	2	0	1	0	1	0	1	0	0	0	8
17:15	2	3	0	0	1	0	0	0	0	1	0	0	0	0	0	0	7
17:30	1	0	0	0	2	0	0	0	0	0	1	0	1	0	0	0	5
17:45	2	4	2	0	0	0	1	0	0	2	3	0	1	0	1	0	16
Total	7	7	2	0	4	0	3	0	1	3	5	0	3	0	1	0	36
18:00	1	2	0	0	1	0	1	0	0	3	3	0	3	0	0	0	14
Grand Total	11	17	5	0	8	1	8	0	2	14	10	0	9	0	1	0	86
Apprch %	33.3	51.5	15.2	0	47.1	5.9	47.1	0	7.7	53.8	38.5	0	90	0	10	0	
Total %	12.8	19.8	5.8	0	9.3	1.2	9.3	0	2.3	16.3	11.6	0	10.5	0	1.2	0	

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File Name : lycoming02
Site Code : 00000442
Start Date : 7/27/2010
Page No : 1

Groups Printed- Vehicles

	Lycoming Mall Dr. Southbound				John Brady Dr. Westbound				Lycoming Mall Dr. Northbound				Legion Rd. Eastbound				
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Int. Total
16:15	8	37	4	0	43	7	10	0	1	67	67	0	1	7	15	0	267
16:30	10	48	3	0	49	1	9	0	3	56	68	0	3	1	1	0	252
16:45	8	53	1	0	59	0	14	0	0	69	78	0	2	4	4	0	292
Total	26	138	8	0	151	8	33	0	4	192	213	0	6	12	20	0	811
17:00	6	37	1	0	60	0	17	0	0	67	65	0	1	0	1	0	255
17:15	12	69	0	0	66	1	15	0	1	77	65	0	2	2	0	0	310
17:30	11	44	1	0	39	0	12	0	3	64	51	0	6	3	4	0	238
17:45	7	32	1	0	44	1	12	0	1	60	67	0	2	2	4	0	233
Total	36	182	3	0	209	2	56	0	5	268	248	0	11	7	9	0	1036
18:00	5	47	0	0	53	0	8	0	0	45	65	0	3	1	1	0	228
Grand Total	67	367	11	0	413	10	97	0	9	505	526	0	20	20	30	0	2075
Apprch %	15.1	82.5	2.5	0	79.4	1.9	18.7	0	0.9	48.6	50.6	0	28.6	28.6	42.9	0	
Total %	3.2	17.7	0.5	0	19.9	0.5	4.7	0	0.4	24.3	25.3	0	1	1	1.4	0	

McMahon Associates Inc.

425 Commerce Drive, Suite 200
Fort Washington, PA 19034

Default Comments
Change These in The Preferences Window
Select File/Preference in the Main Scree
Then Click the Comments Tab

File Name : lycoming02
Site Code : 00000442
Start Date : 7/27/2010
Page No : 1

Groups Printed- Peds

	Lycoming Mall Dr. Southbound				John Brady Dr. Westbound				Lycoming Mall Dr. Northbound				Legion Rd. Eastbound				
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Int. Total
16:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:30	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1
16:45	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
Total	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	2
17:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	2
Apprch %	0	0	0	0	100	0	0	0	0	100	0	0	0	0	0	0	
Total %	0	0	0	0	50	0	0	0	0	50	0	0	0	0	0	0	

McMahon Associates Inc.

425 Commerce Drive, Suite 200
Fort Washington, PA 19034

I-180 EB & Lycoming Mall Rd
Lycoming County
AM Peak

File Name : 23am i180 eb and lycoming mall rd
Site Code : 00000231
Start Date : 6/30/2010
Page No : 1

Groups Printed- Vehicles - Heavy Vehicles

	S Lycoming Mall Rd Southbound				I-180 EB Westbound				S Lycoming Mall Rd Northbound				Lycoming Mall Circle Eastbound				
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Int. Total
07:00	3	6	4	0	0	2	6	0	0	7	1	0	2	8	9	0	48
07:15	1	9	4	0	1	1	4	0	2	7	1	0	2	8	17	0	57
07:30	5	12	1	0	1	1	4	0	6	6	4	0	3	14	10	0	67
07:45	7	14	5	0	2	2	9	0	6	6	4	0	4	20	24	0	103
Total	16	41	14	0	4	6	23	0	14	26	10	0	11	50	60	0	275
08:00	3	6	7	0	0	3	9	0	1	12	1	0	2	12	16	0	72
08:15	13	8	5	0	1	2	12	0	3	6	2	0	10	14	11	0	87
08:30	7	13	10	0	1	5	15	0	0	6	4	0	3	17	16	0	97
08:45	2	9	7	0	2	0	6	0	3	7	3	0	9	39	21	0	108
Total	25	36	29	0	4	10	42	0	7	31	10	0	24	82	64	0	364
Grand Total	41	77	43	0	8	16	65	0	21	57	20	0	35	132	124	0	639
Apprch %	25.5	47.8	26.7	0	9	18	73	0	21.4	58.2	20.4	0	12	45.4	42.6	0	
Total %	6.4	12.1	6.7	0	1.3	2.5	10.2	0	3.3	8.9	3.1	0	5.5	20.7	19.4	0	
Vehicles	37	76	40	0	8	14	61	0	19	53	19	0	33	129	118	0	607
% Vehicles	90.2	98.7	93	0	100	87.5	93.8	0	90.5	93	95	0	94.3	97.7	95.2	0	95
Heavy Vehicles	4	1	3	0	0	2	4	0	2	4	1	0	2	3	6	0	32
% Heavy Vehicles	9.8	1.3	7	0	0	12.5	6.2	0	9.5	7	5	0	5.7	2.3	4.8	0	5

McMahon Associates Inc.

425 Commerce Drive, Suite 200
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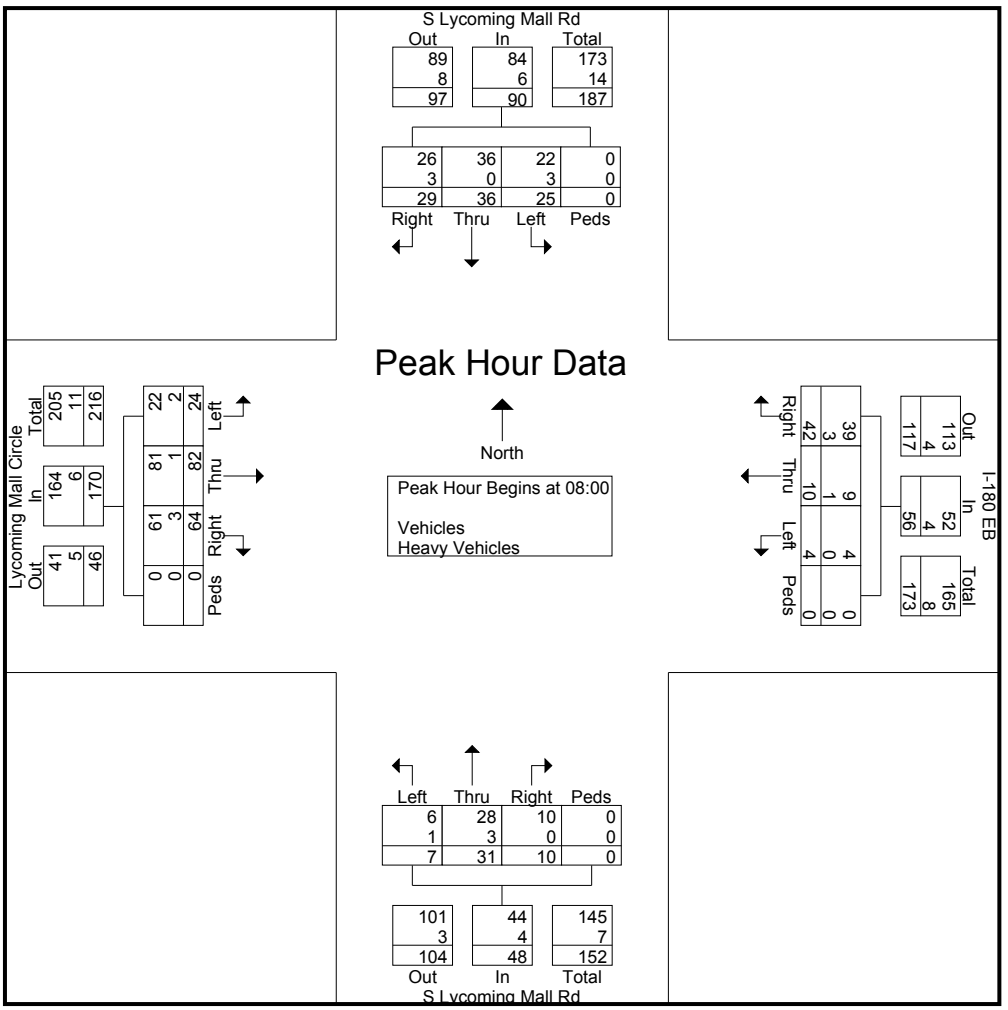
File Name : 23am i180 eb and lycoming mall rd
Site Code : 00000231
Start Date : 6/30/2010
Page No : 2

	S Lycoming Mall Rd Southbound					I-180 EB Westbound					S Lycoming Mall Rd Northbound					Lycoming Mall Circle Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 08:00																					
08:00	3	6	7	0	16	0	3	9	0	12	1	**12**			**14**	2	12	16	0	30	72
08:15	**13**										**3**					**10**					
08:30	**7**	**13**	**10**	**0**	**30**	1	**5**	**15**	**0**	**21**	0	6	**4**	0	10	3	17	16	0	36	97
08:45	2	9	7	0	18	**2**	0	6	0	8	3	7	3	0	13	9	**39**	**21**		**69**	**108**
Total Volume	25	36	29	0	90	4	10	42	0	56	7	31	10	0	48	24	82	64	0	170	364
% App. Total	27.8	40	32.2	0		7.1	17.9	75	0		14.6	64.6	20.8	0		14.1	48.2	37.6	0		
PHF	.481	.692	.725	.000	.750	.500	.500	.700	.000	.667	.583	.646	.625	.000	.857	.600	.526	.762	.000	.616	.843
Vehicles	22	36	26	0	84	4	9	39	0	52	6	28	10	0	44	22	81	61	0	164	344
% Vehicles	88.0	100	89.7	0	93.3	100	90.0	92.9	0	92.9	85.7	90.3	100	0	91.7	91.7	98.8	95.3	0	96.5	94.5
Heavy Vehicles	3	0	3	0	6	0	1	3	0	4	1	3	0	0	4	2	1	3	0	6	20
% Heavy Vehicles	12.0	0	10.3	0	6.7	0	10.0	7.1	0	7.1	14.3	9.7	0	0	8.3	8.3	1.2	4.7	0	3.5	5.5



McMahon Associates Inc.

425 Commerce Drive, Suite 200
Fort Washington, PA 19034

I-180 EB & Lycoming Mall Rd
Lycoming County
PM Peak

File Name : 23pm i180 eb and lycoming mall rd
Site Code : 00000231
Start Date : 6/30/2010
Page No : 1

Groups Printed- Vehicles - Heavy Vehicles

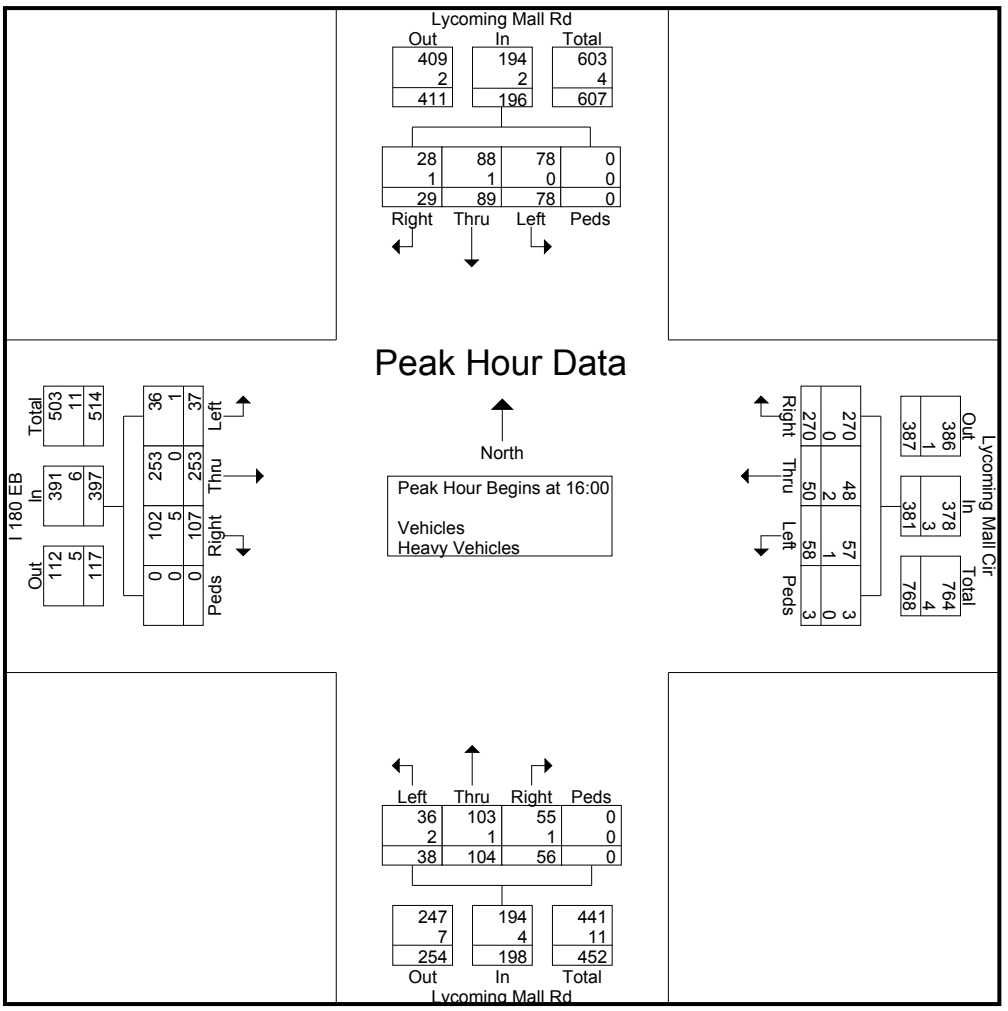
	Lycoming Mall Rd Southbound				Lycoming Mall Cir Westbound				Lycoming Mall Rd Northbound				I 180 EB Eastbound				
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Int. Total
16:00	17	31	10	0	12	15	66	0	11	31	15	0	3	56	19	0	286
16:15	20	20	8	0	14	13	80	1	9	27	11	0	14	77	27	0	321
16:30	16	16	6	0	19	10	65	0	7	21	10	0	11	50	31	0	262
16:45	25	22	5	0	13	12	59	2	11	25	20	0	9	70	30	0	303
Total	78	89	29	0	58	50	270	3	38	104	56	0	37	253	107	0	1172
17:00	15	28	8	0	11	15	86	0	9	26	10	0	1	49	21	0	279
17:15	19	19	3	0	18	10	81	0	6	23	12	0	13	60	28	1	293
17:30	10	14	4	0	13	10	63	0	11	17	13	0	7	59	25	0	246
17:45	10	8	3	0	16	8	47	0	4	15	24	0	8	56	21	1	221
Total	54	69	18	0	58	43	277	0	30	81	59	0	29	224	95	2	1039
Grand Total	132	158	47	0	116	93	547	3	68	185	115	0	66	477	202	2	2211
Apprch %	39.2	46.9	13.9	0	15.3	12.3	72.1	0.4	18.5	50.3	31.2	0	8.8	63.9	27	0.3	
Total %	6	7.1	2.1	0	5.2	4.2	24.7	0.1	3.1	8.4	5.2	0	3	21.6	9.1	0.1	
Vehicles	132	156	45	0	114	91	546	3	65	184	114	0	64	477	194	2	2187
% Vehicles	100	98.7	95.7	0	98.3	97.8	99.8	100	95.6	99.5	99.1	0	97	100	96	100	98.9
Heavy Vehicles	0	2	2	0	2	2	1	0	3	1	1	0	2	0	8	0	24
% Heavy Vehicles	0	1.3	4.3	0	1.7	2.2	0.2	0	4.4	0.5	0.9	0	3	0	4	0	1.1

McMahon Associates Inc.

425 Commerce Drive, Suite 200
Fort Washington, PA 19034

File Name : 23pm i180 eb and lycoming mall rd
Site Code : 00000231
Start Date : 6/30/2010
Page No : 2

	Lycoming Mall Rd Southbound					Lycoming Mall Cir Westbound					Lycoming Mall Rd Northbound					I 180 EB Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 16:00																					
16:00	17	**31**	**10**		**58**	12	**15**				**11**	**31**			**57**	3	56	19	0	78	286
16:15	20	20	8	0	48	14	13	**80**		**108**	9	27	11	0	47	**14**	**77**	27	0	**118**	**321**
16:30	16	16	6	0	38	**19**	10	65	0	94	7	21	10	0	38	11	50	**31**			
16:45	**25**	**22**	**5**	**0**	**52**	**13**	**12**	**59**	**2**	86	11	25	**20**	0	56	9	70	30	0	109	303
Total Volume	78	89	29	0	196	58	50	270	3	381	38	104	56	0	198	37	253	107	0	397	1172
% App. Total	39.8	45.4	14.8	0		15.2	13.1	70.9	0.8		19.2	52.5	28.3	0		9.3	63.7	27	0		
PHF	.780	.718	.725	.000	.845	.763	.833	.844	.375	.882	.864	.839	.700	.000	.868	.661	.821	.863	.000	.841	.913
Vehicles	78	88	28	0	194	57	48	270	3	378	36	103	55	0	194	36	253	102	0	391	1157
% Vehicles	100	98.9	96.6	0	99.0	98.3	96.0	100	100	99.2	94.7	99.0	98.2	0	98.0	97.3	100	95.3	0	98.5	98.7
Heavy Vehicles	0	1	1	0	2	1	2	0	0	3	2	1	1	0	4	1	0	5	0	6	15
% Heavy Vehicles	0	1.1	3.4	0	1.0	1.7	4.0	0	0	0.8	5.3	1.0	1.8	0	2.0	2.7	0	4.7	0	1.5	1.3



McMahon Associates Inc.

425 Commerce Drive, Suite 200
Fort Washington, PA 19034

I-180 WB & Lycoming Mall Rd
Lycoming County
PM Peak

File Name : 24am I180 wb and Lycoming Mall Rd
Site Code : 00000241
Start Date : 7/1/2010
Page No : 1

Groups Printed- Vehicles - Heavy Vehicles

	Lycoming Mall Rd Southbound				I 180 WB Westbound				Lycoming Mall Rd Northbound				Alexander Dr Eastbound				
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Int. Total
07:00	3	3	0	0	5	1	3	0	0	2	2	0	0	0	0	0	19
07:15	1	6	0	0	8	0	0	0	1	3	0	0	0	0	0	0	19
07:30	14	7	0	0	18	1	2	0	6	2	0	0	0	2	0	0	52
07:45	10	10	0	0	13	1	0	0	7	4	5	0	0	0	1	0	51
Total	28	26	0	0	44	3	5	0	14	11	7	0	0	2	1	0	141
08:00	7	6	0	0	20	3	2	0	2	2	12	0	0	1	1	0	56
08:15	4	8	0	0	8	0	1	0	2	4	7	0	0	1	0	0	35
08:30	5	5	0	0	9	1	4	0	3	3	9	0	1	0	1	0	41
08:45	2	14	0	0	25	4	0	0	8	5	12	0	0	0	1	0	71
Total	18	33	0	0	62	8	7	0	15	14	40	0	1	2	3	0	203
Grand Total	46	59	0	0	106	11	12	0	29	25	47	0	1	4	4	0	344
Apprch %	43.8	56.2	0	0	82.2	8.5	9.3	0	28.7	24.8	46.5	0	11.1	44.4	44.4	0	
Total %	13.4	17.2	0	0	30.8	3.2	3.5	0	8.4	7.3	13.7	0	0.3	1.2	1.2	0	
Vehicles	46	58	0	0	102	10	12	0	29	23	44	0	1	4	3	0	332
% Vehicles	100	98.3	0	0	96.2	90.9	100	0	100	92	93.6	0	100	100	75	0	96.5
Heavy Vehicles	0	1	0	0	4	1	0	0	0	2	3	0	0	0	1	0	12
% Heavy Vehicles	0	1.7	0	0	3.8	9.1	0	0	0	8	6.4	0	0	0	25	0	3.5

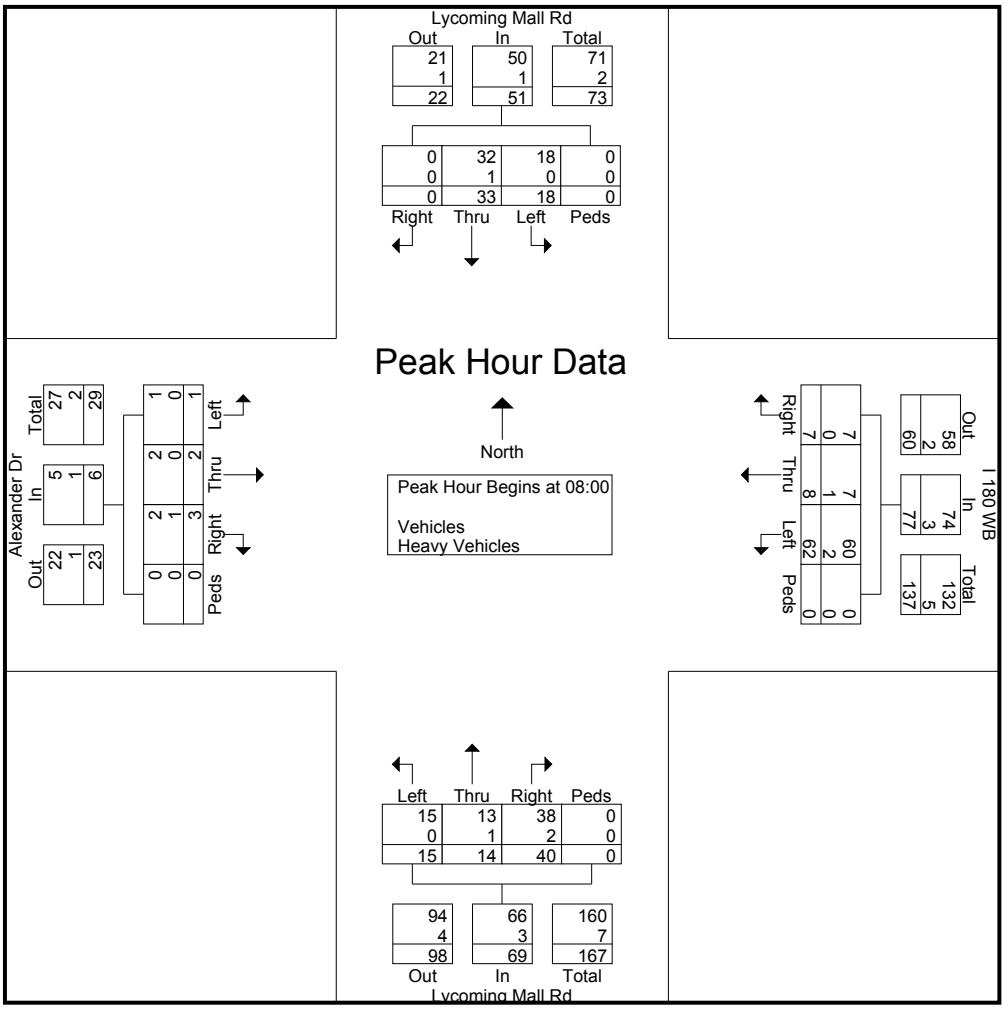
McMahon Associates Inc.

425 Commerce Drive, Suite 200
Fort Washington, PA 19034

I-180 WB & Lycoming Mall Rd
Lycoming County
PM Peak

File Name : 24am I180 wb and Lycoming Mall Rd
Site Code : 00000241
Start Date : 7/1/2010
Page No : 2

	Lycoming Mall Rd Southbound					I 180 WB Westbound					Lycoming Mall Rd Northbound					Alexander Dr Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 08:00																					
08:00	**7**												**12**	0	16	0	**1**	**1**		**2**	56
08:15	4	8	0	0	12	8	0	1	0	9	2	4	7	0	13	0	1	0	0	1	35
08:30	5	5	0	0	10	9	1	**4**								**1**					
08:45	**2**	**14**	0	0	**16**	**25**	**4**	**0**	**0**	**29**	**8**	**5**	**12**	**0**	**25**	0	0	1	0	1	**71**
Total Volume	18	33	0	0	51	62	8	7	0	77	15	14	40	0	69	1	2	3	0	6	203
% App. Total	35.3	64.7	0	0		80.5	10.4	9.1	0		21.7	20.3	58	0		16.7	33.3	50	0		
PHF	.643	.589	.000	.000	.797	.620	.500	.438	.000	.664	.469	.700	.833	.000	.690	.250	.500	.750	.000	.750	.715
Vehicles	18	32	0	0	50	60	7	7	0	74	15	13	38	0	66	1	2	2	0	5	195
% Vehicles	100	97.0	0	0	98.0	96.8	87.5	100	0	96.1	100	92.9	95.0	0	95.7	100	100	66.7	0	83.3	96.1
Heavy Vehicles	0	1	0	0	1	2	1	0	0	3	0	1	2	0	3	0	0	1	0	1	8
% Heavy Vehicles	0	3.0	0	0	2.0	3.2	12.5	0	0	3.9	0	7.1	5.0	0	4.3	0	0	33.3	0	16.7	3.9



McMahon Associates Inc.

425 Commerce Drive, Suite 200
Fort Washington, PA 19034

I-180 WB & Lycoming Mall Rd
Lycoming County
PM Peak

File Name : 24pm I180 wb and Lycoming Mall Rd
Site Code : 00000242
Start Date : 7/1/2010
Page No : 1

Groups Printed- Vehicles - Heavy Vehicles

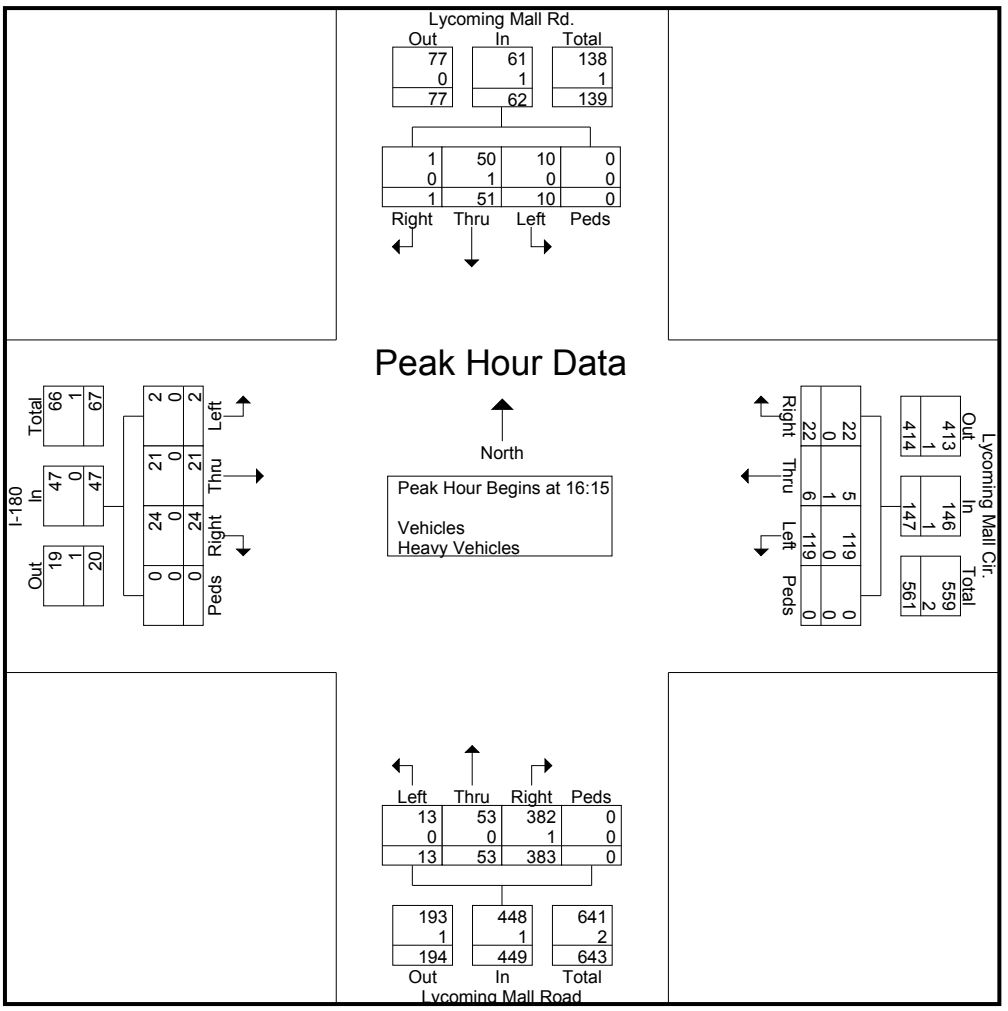
	Lycoming Mall Rd. Southbound				Lycoming Mall Cir. Westbound				Lycoming Mall Road Northbound				I-180 Eastbound				
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Int. Total
16:00	2	3	0	0	31	1	4	0	7	8	81	0	0	0	4	0	141
16:15	1	10	0	0	24	2	4	0	4	12	101	0	1	5	6	0	170
16:30	2	10	1	0	36	3	4	0	2	11	82	0	0	3	5	0	159
16:45	2	11	0	0	33	1	6	0	5	14	101	0	1	5	5	0	184
Total	7	34	1	0	124	7	18	0	18	45	365	0	2	13	20	0	654
17:00	5	20	0	0	26	0	8	0	2	16	99	0	0	8	8	0	192
17:15	2	9	1	0	23	1	7	0	1	23	100	0	0	1	2	0	170
17:30	1	7	0	0	27	0	4	0	1	16	75	0	0	4	2	0	137
17:45	3	9	0	0	26	1	3	0	0	17	71	0	0	0	1	0	131
Total	11	45	1	0	102	2	22	0	4	72	345	0	0	13	13	0	630
Grand Total	18	79	2	0	226	9	40	0	22	117	710	0	2	26	33	0	1284
Apprch %	18.2	79.8	2	0	82.2	3.3	14.5	0	2.6	13.8	83.6	0	3.3	42.6	54.1	0	
Total %	1.4	6.2	0.2	0	17.6	0.7	3.1	0	1.7	9.1	55.3	0	0.2	2	2.6	0	
Vehicles	18	77	2	0	224	8	40	0	22	116	707	0	2	26	33	0	1275
% Vehicles	100	97.5	100	0	99.1	88.9	100	0	100	99.1	99.6	0	100	100	100	0	99.3
Heavy Vehicles	0	2	0	0	2	1	0	0	0	1	3	0	0	0	0	0	9
% Heavy Vehicles	0	2.5	0	0	0.9	11.1	0	0	0	0.9	0.4	0	0	0	0	0	0.7

McMahon Associates Inc.

425 Commerce Drive, Suite 200
Fort Washington, PA 19034

File Name : 24pm I180 wb and Lycoming Mall Rd
Site Code : 00000242
Start Date : 7/1/2010
Page No : 2

	Lycoming Mall Rd. Southbound					Lycoming Mall Cir. Westbound					Lycoming Mall Road Northbound					I-180 Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 16:15																					
16:15	1	10	0	0	11	24	2	4	0	30	4	12	**101**	0	117	**1**					
16:30	**2**	**10**	**1**	**0**	**13**	**36**	**3**	**4**	**0**	**43**	2	11	82	0	95	0	3	5	0	8	159
16:45	2	11	0	0	13	33	1	6	0	40	**5**				**120**	1	5	5	0	11	184
17:00	**5**	**20**	0	0	**25**	26	0	**8**				**16**					**8**	**8**		**16**	**192**
Total Volume	10	51	1	0	62	119	6	22	0	147	13	53	383	0	449	2	21	24	0	47	705
% App. Total	16.1	82.3	1.6	0		81	4.1	15	0		2.9	11.8	85.3	0		4.3	44.7	51.1	0		
PHF	.500	.638	.250	.000	.620	.826	.500	.688	.000	.855	.650	.828	.948	.000	.935	.500	.656	.750	.000	.734	.918
Vehicles	10	50	1	0	61	119	5	22	0	146	13	53	382	0	448	2	21	24	0	47	702
% Vehicles	100	98.0	100	0	98.4	100	83.3	100	0	99.3	100	100	99.7	0	99.8	100	100	100	0	100	99.6
Heavy Vehicles	0	1	0	0	1	0	1	0	0	1	0	0	1	0	1	0	0	0	0	0	3
% Heavy Vehicles	0	2.0	0	0	1.6	0	16.7	0	0	0.7	0	0	0.3	0	0.2	0	0	0	0	0	0.4



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US 220/I-180 EB Ramps
AM Peak
Lycoming County

File Name : 25am 180eb and lycoming mall dr.us220
Site Code : 00000251
Start Date : 7/7/2010
Page No : 1

Groups Printed- Vehicles - Heavy Vehicles

	US220 Southbound				I-180 EB Westbound				Lycoming Mall Dr. Northbound				I-180 EB Eastbound				
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Int. Total
07:00	7	35	0	0	0	0	0	0	0	43	15	0	29	0	20	0	149
07:15	5	40	0	0	0	0	0	0	0	20	20	0	39	1	18	0	143
07:30	4	48	0	0	0	0	0	0	0	29	21	0	27	1	26	0	156
07:45	4	58	0	0	0	0	0	0	0	31	20	0	34	0	33	0	180
Total	20	181	0	0	0	0	0	0	0	123	76	0	129	2	97	0	628
08:00	3	45	0	0	0	0	0	0	0	41	24	0	39	0	24	0	176
08:15	8	35	0	0	0	0	0	0	0	24	18	0	28	0	23	0	136
08:30	3	37	0	0	0	0	0	0	0	36	16	0	41	0	17	0	150
08:45	2	76	0	0	0	0	0	0	0	38	13	0	35	0	22	0	186
Total	16	193	0	0	0	0	0	0	0	139	71	0	143	0	86	0	648
Grand Total	36	374	0	0	0	0	0	0	0	262	147	0	272	2	183	0	1276
Apprch %	8.8	91.2	0	0	0	0	0	0	0	64.1	35.9	0	59.5	0.4	40	0	
Total %	2.8	29.3	0	0	0	0	0	0	0	20.5	11.5	0	21.3	0.2	14.3	0	
Vehicles	34	329	0	0	0	0	0	0	0	212	116	0	221	2	152	0	1066
% Vehicles	94.4	88	0	0	0	0	0	0	0	80.9	78.9	0	81.2	100	83.1	0	83.5
Heavy Vehicles	2	45	0	0	0	0	0	0	0	50	31	0	51	0	31	0	210
% Heavy Vehicles	5.6	12	0	0	0	0	0	0	0	19.1	21.1	0	18.8	0	16.9	0	16.5

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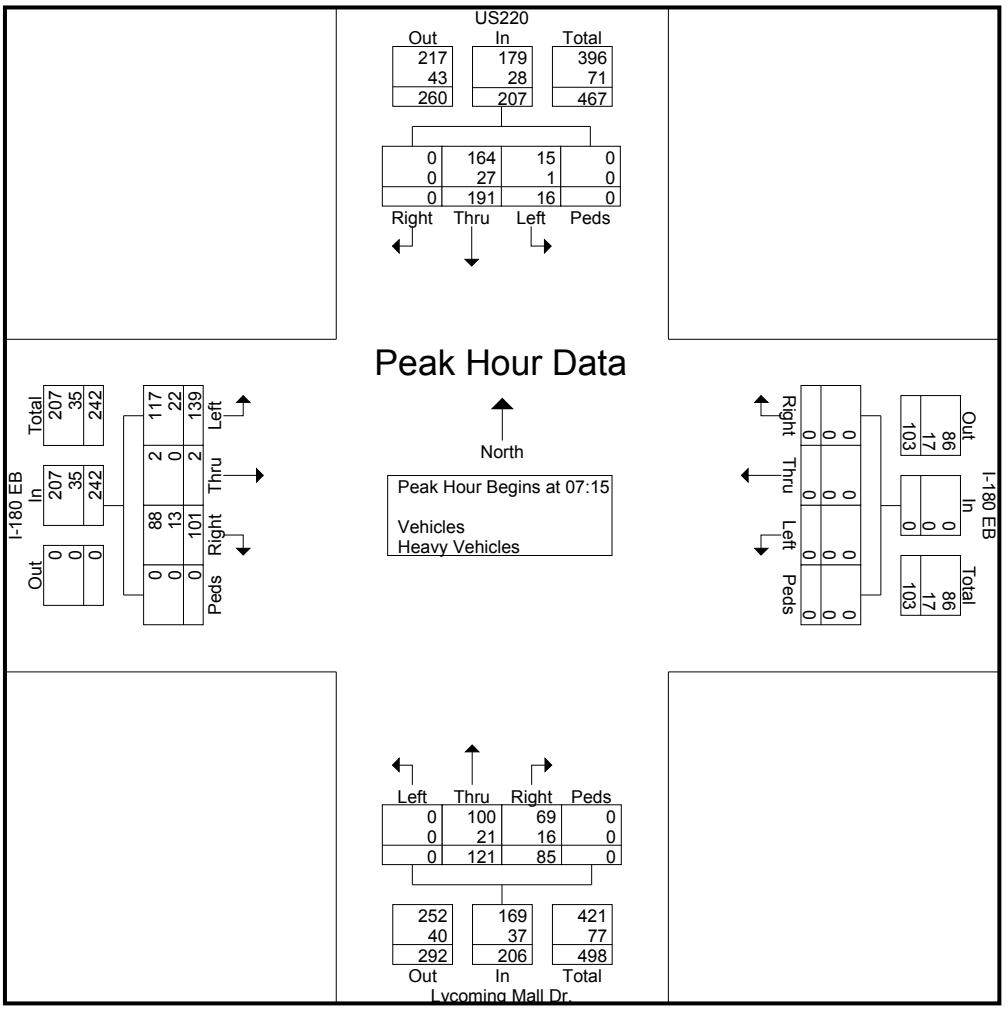
File Name : 25am 180eb and lycoming mall dr.us220
Site Code : 00000251
Start Date : 7/7/2010
Page No : 2

	US220 Southbound					I-180 EB Westbound					Lycoming Mall Dr. Northbound					I-180 EB Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:15																					
07:15	**5**															**39**	**1**	18	0	58	143
07:30	4	48	0	0	52	0	0	0	0	0	0	29	21	0	50	27	1	26	0	54	156
07:45	4	**58**	0	0	**62**	0	0	0	0	0	0	31	20	0	51	34	0	**33**		**67**	**180**
08:00	3	45	0	0	48	0	0	0	0	0	0	**41**	**24**	0	**65**	39	0	24	0	63	176
Total Volume	16	191	0	0	207	0	0	0	0	0	0	121	85	0	206	139	2	101	0	242	655
% App. Total	7.7	92.3	0	0		0	0	0	0		0	58.7	41.3	0		57.4	0.8	41.7	0		
PHF	.800	.823	.000	.000	.835	.000	.000	.000	.000	.000	.000	.738	.885	.000	.792	.891	.500	.765	.000	.903	.910
Vehicles	15	164	0	0	179	0	0	0	0	0	0	100	69	0	169	117	2	88	0	207	555
% Vehicles	93.8	85.9	0	0	86.5	0	0	0	0	0	0	82.6	81.2	0	82.0	84.2	100	87.1	0	85.5	84.7
Heavy Vehicles	1	27	0	0	28	0	0	0	0	0	0	21	16	0	37	22	0	13	0	35	100
% Heavy Vehicles	6.3	14.1	0	0	13.5	0	0	0	0	0	0	17.4	18.8	0	18.0	15.8	0	12.9	0	14.5	15.3



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File Name : 25pm 180eb and lycoming mall dr.us220
Site Code : 00000252
Start Date : 7/7/2010
Page No : 1

Groups Printed- Vehicles - Heavy Vehicles

	US220 Southbound				I-180 EB Westbound				Lycoming Mall Dr. Northbound				I-180 EB Eastbound				
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Int. Total
16:00	5	59	0	0	0	0	0	0	0	83	55	0	71	0	25	1	299
16:15	4	54	0	0	0	0	0	0	0	101	45	0	85	0	25	0	314
16:30	7	54	0	0	0	0	0	0	0	82	47	0	70	0	22	0	282
16:45	9	75	0	0	0	0	0	0	0	70	46	0	100	0	19	0	319
Total	25	242	0	0	0	0	0	0	0	336	193	0	326	0	91	1	1214
17:00	4	74	0	0	0	0	0	0	0	98	39	0	83	0	14	0	312
17:15	7	65	0	0	0	0	0	0	0	76	40	0	109	0	17	0	314
17:30	4	55	0	0	0	0	0	0	0	70	31	0	79	0	16	0	255
Grand Total	40	436	0	0	0	0	0	0	0	580	303	0	597	0	138	1	2095
Apprch %	8.4	91.6	0	0	0	0	0	0	0	65.7	34.3	0	81.1	0	18.8	0.1	
Total %	1.9	20.8	0	0	0	0	0	0	0	27.7	14.5	0	28.5	0	6.6	0	
Vehicles	34	417	0	0	0	0	0	0	0	558	288	0	569	0	115	1	1982
% Vehicles	85	95.6	0	0	0	0	0	0	0	96.2	95	0	95.3	0	83.3	100	94.6
Heavy Vehicles	6	19	0	0	0	0	0	0	0	22	15	0	28	0	23	0	113
% Heavy Vehicles	15	4.4	0	0	0	0	0	0	0	3.8	5	0	4.7	0	16.7	0	5.4

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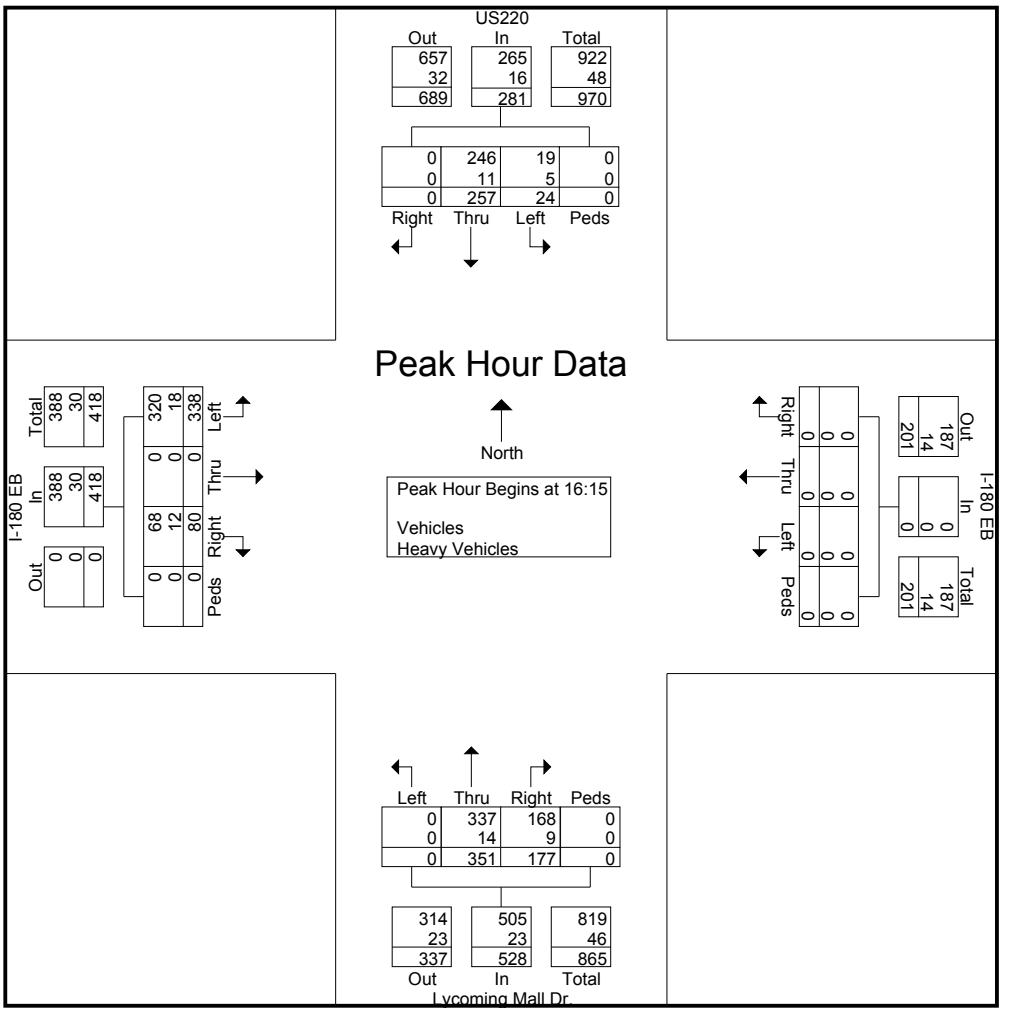
File Name : 25pm 180eb and lycoming mall dr.us220
Site Code : 00000252
Start Date : 7/7/2010

	US220 Southbound					I-180 EB Westbound					Lycoming Mall Dr. Northbound					I-180 EB Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 16:00 to 17:30 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 16:15																					
16:15	4	54	0	0	58	0	0	0	0	0	0	**101**	45	0	**146**	85	0	**25**	0	110	314
16:30	7	54	0	0	61	0	0	0	0	0	0	82	**47**	0	129	70	0	22	0	92	282
16:45	**9**	**75**	0	0	**84**	0	0	0	0	0	0	70	46	0	116	**100**	0	19	0	**119**	**319**
17:00	4	74	0	0	78	0	0	0	0	0	0	98	39	0	137	83	0	14	0	97	312
Total Volume	24	257	0	0	281	0	0	0	0	0	0	351	177	0	528	338	0	80	0	418	1227
% App. Total	8.5	91.5	0	0		0	0	0	0		0	66.5	33.5	0		80.9	0	19.1	0		
PHF	.667	.857	.000	.000	.836	.000	.000	.000	.000	.000	.000	.869	.941	.000	.904	.845	.000	.800	.000	.878	.962
Vehicles	19	246	0	0	265	0	0	0	0	0	0	337	168	0	505	320	0	68	0	388	1158
% Vehicles	79.2	95.7	0	0	94.3	0	0	0	0	0	0	96.0	94.9	0	95.6	94.7	0	85.0	0	92.8	94.4
Heavy Vehicles																					
% Heavy Vehicles	20.8	4.3	0	0	5.7	0	0	0	0	0	0	4.0	5.1	0	4.4	5.3	0	15.0	0	7.2	5.6



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File Name : 25pm 180eb and lycoming mall dr.us220
Site Code : 00000252
Start Date : 7/7/2010
Page No : 1

Groups Printed- Heavy Vehicles

	US220 Southbound				I-180 EB Westbound				Lycoming Mall Dr. Northbound				I-180 EB Eastbound				
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Int. Total
16:00	0	2	0	0	0	0	0	0	0	2	3	0	3	0	5	0	15
16:15	1	3	0	0	0	0	0	0	0	5	2	0	7	0	7	0	25
16:30	1	2	0	0	0	0	0	0	0	2	1	0	1	0	0	0	7
16:45	1	2	0	0	0	0	0	0	0	2	3	0	5	0	2	0	15
Total	3	9	0	0	0	0	0	0	0	11	9	0	16	0	14	0	62
17:00	2	4	0	0	0	0	0	0	0	5	3	0	5	0	3	0	22
17:15	0	4	0	0	0	0	0	0	0	2	3	0	5	0	4	0	18
17:30	1	2	0	0	0	0	0	0	0	4	0	0	2	0	2	0	11
Grand Total	6	19	0	0	0	0	0	0	0	22	15	0	28	0	23	0	113
Apprch %	24	76	0	0	0	0	0	0	0	59.5	40.5	0	54.9	0	45.1	0	
Total %	5.3	16.8	0	0	0	0	0	0	0	19.5	13.3	0	24.8	0	20.4	0	

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File Name : 25pm 180eb and lycoming mall dr.us220
Site Code : 00000252
Start Date : 7/7/2010
Page No : 1

Groups Printed- Vehicles

	US220 Southbound				I-180 EB Westbound				Lycoming Mall Dr. Northbound				I-180 EB Eastbound				
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Int. Total
16:00	5	57	0	0	0	0	0	0	0	81	52	0	68	0	20	1	284
16:15	3	51	0	0	0	0	0	0	0	96	43	0	78	0	18	0	289
16:30	6	52	0	0	0	0	0	0	0	80	46	0	69	0	22	0	275
16:45	8	73	0	0	0	0	0	0	0	68	43	0	95	0	17	0	304
Total	22	233	0	0	0	0	0	0	0	325	184	0	310	0	77	1	1152
17:00	2	70	0	0	0	0	0	0	0	93	36	0	78	0	11	0	290
17:15	7	61	0	0	0	0	0	0	0	74	37	0	104	0	13	0	296
17:30	3	53	0	0	0	0	0	0	0	66	31	0	77	0	14	0	244
Grand Total	34	417	0	0	0	0	0	0	0	558	288	0	569	0	115	1	1982
Apprch %	7.5	92.5	0	0	0	0	0	0	0	66	34	0	83.1	0	16.8	0.1	
Total %	1.7	21	0	0	0	0	0	0	0	28.2	14.5	0	28.7	0	5.8	0.1	

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File Name : 26am 180wb and lycoming mall dr.us220
Site Code : 00000261
Start Date : 7/6/2010
Page No : 1

Groups Printed- Vehicles - Heavy Vehicles

	US 220 Southbound				I-180 WB Westbound				US 220 Northbound				I-180 WB Eastbound				
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Int. Total
07:00	0	21	61	1	11	0	1	0	18	34	0	0	0	0	0	0	147
07:15	0	31	88	0	13	0	5	0	11	50	0	0	0	0	0	0	198
07:30	0	29	100	0	22	0	2	0	9	52	0	0	0	0	0	0	214
07:45	0	49	115	0	25	0	3	0	18	61	0	0	0	0	0	0	271
Total	0	130	364	1	71	0	11	0	56	197	0	0	0	0	0	0	830
08:00	0	42	91	0	21	0	4	0	15	44	0	0	0	0	0	0	217
08:15	0	28	77	0	18	0	1	0	13	56	0	0	0	0	0	0	193
08:30	0	37	66	0	22	0	5	0	21	39	0	0	0	0	0	0	190
08:45	0	43	57	0	27	1	7	0	18	43	0	0	0	0	0	0	196
Total	0	150	291	0	88	1	17	0	67	182	0	0	0	0	0	0	796
Grand Total	0	280	655	1	159	1	28	0	123	379	0	0	0	0	0	0	1626
Apprch %	0	29.9	70	0.1	84.6	0.5	14.9	0	24.5	75.5	0	0	0	0	0	0	
Total %	0	17.2	40.3	0.1	9.8	0.1	1.7	0	7.6	23.3	0	0	0	0	0	0	
Vehicles	0	266	607	0	136	0	19	0	99	327	0	0	0	0	0	0	1454
% Vehicles	0	95	92.7	0	85.5	0	67.9	0	80.5	86.3	0	0	0	0	0	0	89.4
Heavy Vehicles	0	14	48	1	23	1	9	0	24	52	0	0	0	0	0	0	172
% Heavy Vehicles	0	5	7.3	100	14.5	100	32.1	0	19.5	13.7	0	0	0	0	0	0	10.6

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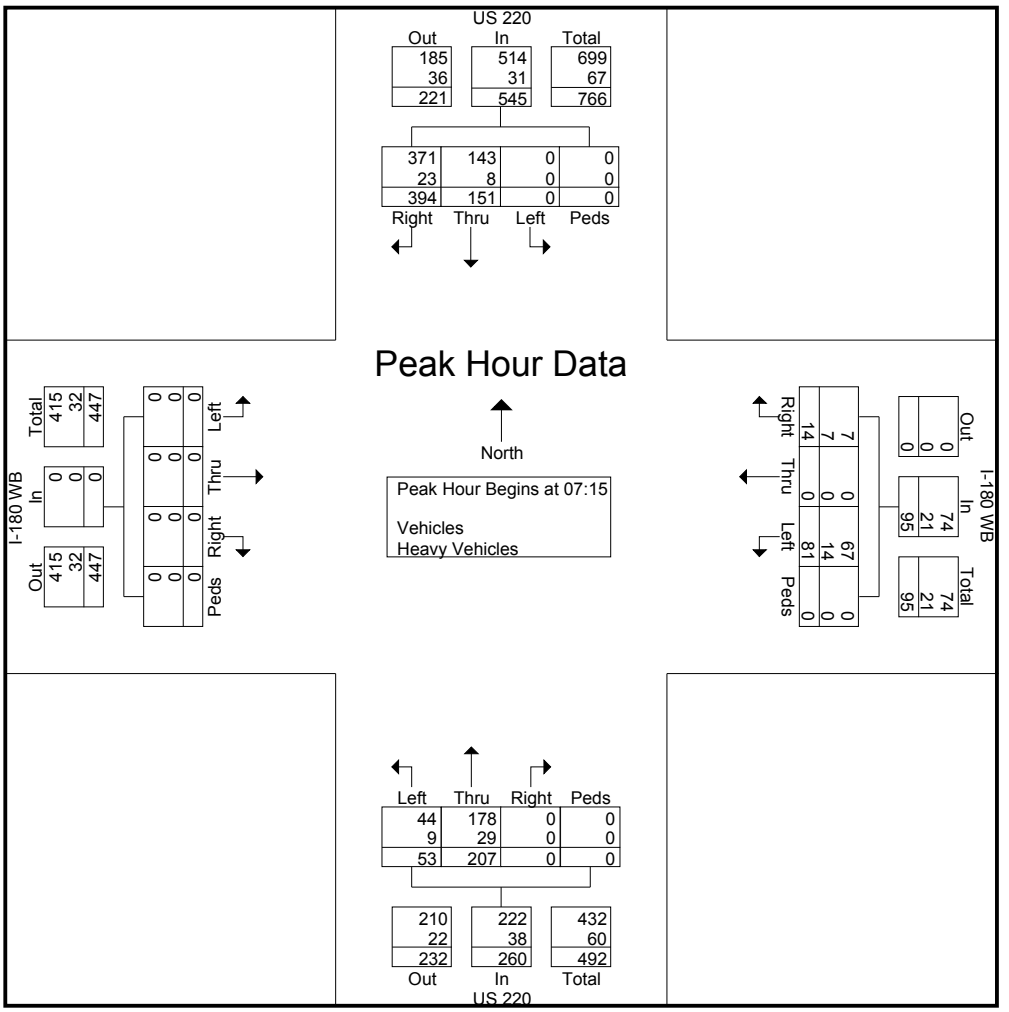
File Name : 26am 180wb and lycoming mall dr.us220
Site Code : 00000261
Start Date : 7/6/2010

	US 220 Southbound					I-180 WB Westbound					US 220 Northbound					I-180 WB Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:15																					
07:15	0	31	88	0	119	13	0	**5**	0	18	11	50	0	0	61	0	0	0	0	0	198
07:30	0	29	100	0	129	22	0	2	0	24	9	52	0	0	61	0	0	0	0	0	214
07:45	0	**49**	**115**	0	**164**	**25**	0	3	0	**28**	**18**	**61**	0	0	**79**	0	0	0	0	0	**271**
08:00	0	42	91	0	133	21	0	4	0	25	15	44	0	0	59	0	0	0	0	0	217
Total Volume	0	151	394	0	545	81	0	14	0	95	53	207	0	0	260	0	0	0	0	0	900
% App. Total	0	27.7	72.3	0		85.3	0	14.7	0		20.4	79.6	0	0		0	0	0	0		
PHF	.000	.770	.857	.000	.831	.810	.000	.700	.000	.848	.736	.848	.000	.000	.823	.000	.000	.000	.000	.000	.830
Vehicles	0	143	371	0	514	67	0	7	0	74	44	178	0	0	222	0	0	0	0	0	810
% Vehicles		94.7	94.2	0	94.3	82.7	0	50.0	0	77.9	83.0	86.0	0	0	85.4	0	0	0	0	0	90.0
Heavy Vehicles																					
% Heavy Vehicles	0	5.3	5.8	0	5.7	17.3	0	50.0	0	22.1	17.0	14.0	0	0	14.6	0	0	0	0	0	10.0



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File Name : 26am 180wb and lycoming mall dr.us220
Site Code : 00000261
Start Date : 7/6/2010
Page No : 1

Groups Printed- Heavy Vehicles

	US 220 Southbound				I-180 WB Westbound				US 220 Northbound				I-180 WB Eastbound				
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Int. Total
07:00	0	1	5	1	3	0	0	0	2	6	0	0	0	0	0	0	18
07:15	0	2	8	0	3	0	4	0	2	6	0	0	0	0	0	0	25
07:30	0	1	5	0	0	0	1	0	2	9	0	0	0	0	0	0	18
07:45	0	1	5	0	5	0	2	0	3	7	0	0	0	0	0	0	23
Total	0	5	23	1	11	0	7	0	9	28	0	0	0	0	0	0	84
08:00	0	4	5	0	6	0	0	0	2	7	0	0	0	0	0	0	24
08:15	0	0	3	0	2	0	1	0	5	6	0	0	0	0	0	0	17
08:30	0	2	10	0	2	0	0	0	3	5	0	0	0	0	0	0	22
08:45	0	3	7	0	2	1	1	0	5	6	0	0	0	0	0	0	25
Total	0	9	25	0	12	1	2	0	15	24	0	0	0	0	0	0	88
Grand Total	0	14	48	1	23	1	9	0	24	52	0	0	0	0	0	0	172
Apprch %	0	22.2	76.2	1.6	69.7	3	27.3	0	31.6	68.4	0	0	0	0	0	0	
Total %	0	8.1	27.9	0.6	13.4	0.6	5.2	0	14	30.2	0	0	0	0	0	0	

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File Name : 26am 180wb and lycoming mall dr.us220
Site Code : 00000261
Start Date : 7/6/2010
Page No : 1

Groups Printed- Vehicles

	US 220 Southbound				I-180 WB Westbound				US 220 Northbound				I-180 WB Eastbound				
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Int. Total
07:00	0	20	56	0	8	0	1	0	16	28	0	0	0	0	0	0	129
07:15	0	29	80	0	10	0	1	0	9	44	0	0	0	0	0	0	173
07:30	0	28	95	0	22	0	1	0	7	43	0	0	0	0	0	0	196
07:45	0	48	110	0	20	0	1	0	15	54	0	0	0	0	0	0	248
Total	0	125	341	0	60	0	4	0	47	169	0	0	0	0	0	0	746
08:00	0	38	86	0	15	0	4	0	13	37	0	0	0	0	0	0	193
08:15	0	28	74	0	16	0	0	0	8	50	0	0	0	0	0	0	176
08:30	0	35	56	0	20	0	5	0	18	34	0	0	0	0	0	0	168
08:45	0	40	50	0	25	0	6	0	13	37	0	0	0	0	0	0	171
Total	0	141	266	0	76	0	15	0	52	158	0	0	0	0	0	0	708
Grand Total	0	266	607	0	136	0	19	0	99	327	0	0	0	0	0	0	1454
Apprch %	0	30.5	69.5	0	87.7	0	12.3	0	23.2	76.8	0	0	0	0	0	0	
Total %	0	18.3	41.7	0	9.4	0	1.3	0	6.8	22.5	0	0	0	0	0	0	

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File Name : 26pm 180wb and lycoming mall dr.us220
Site Code : 00000262
Start Date : 7/6/2010

Groups Printed- Vehicles - Heavy Vehicles

	US220 Southbound				I-180 WB Westbound				US220 Northbound				I-180 WB Eastbound				
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Int. Total
16:00	3	31	39	0	28	5	6	0	34	125	0	0	0	1	0	0	272
16:15	0	45	49	0	28	1	8	0	20	128	0	0	0	0	0	0	279
16:30	0	37	63	0	34	0	5	0	31	142	0	0	0	0	0	0	312
16:45	0	37	43	0	15	0	9	0	30	140	0	0	0	0	0	0	274
Total	3	150	194	0	105	6	28	0	115	535	0	0	0	1	0	0	1137
17:00	0	47	56	0	18	0	6	0	31	152	0	0	0	0	0	0	310
17:15	1	44	50	0	22	0	3	0	24	164	0	0	0	0	0	0	308
17:30	0	48	76	0	30	0	7	0	23	117	0	0	0	0	0	0	301
17:45	0	37	51	0	23	0	5	0	22	115	0	0	0	0	0	0	253
Total	1	176	233	0	93	0	21	0	100	548	0	0	0	0	0	0	1172
Grand Total	4	326	427	0	198	6	49	0	215	1083	0	0	0	1	0	0	2309
Apprch %	0.5	43.1	56.4	0	78.3	2.4	19.4	0	16.6	83.4	0	0	0	100	0	0	
Total %	0.2	14.1	18.5	0	8.6	0.3	2.1	0	9.3	46.9	0	0	0	0	0	0	
Vehicles	4	304	393	0	180	5	46	0	189	1039	0	0	0	1	0	0	2161
% Vehicles	100	93.3	92	0	90.9	83.3	93.9	0	87.9	95.9	0	0	0	100	0	0	93.6
Heavy Vehicles	0	22	34	0	18	1	3	0	26	44	0	0	0	0	0	0	148
% Heavy Vehicles	0	6.7	8	0	9.1	16.7	6.1	0	12.1	4.1	0	0	0	0	0	0	6.4

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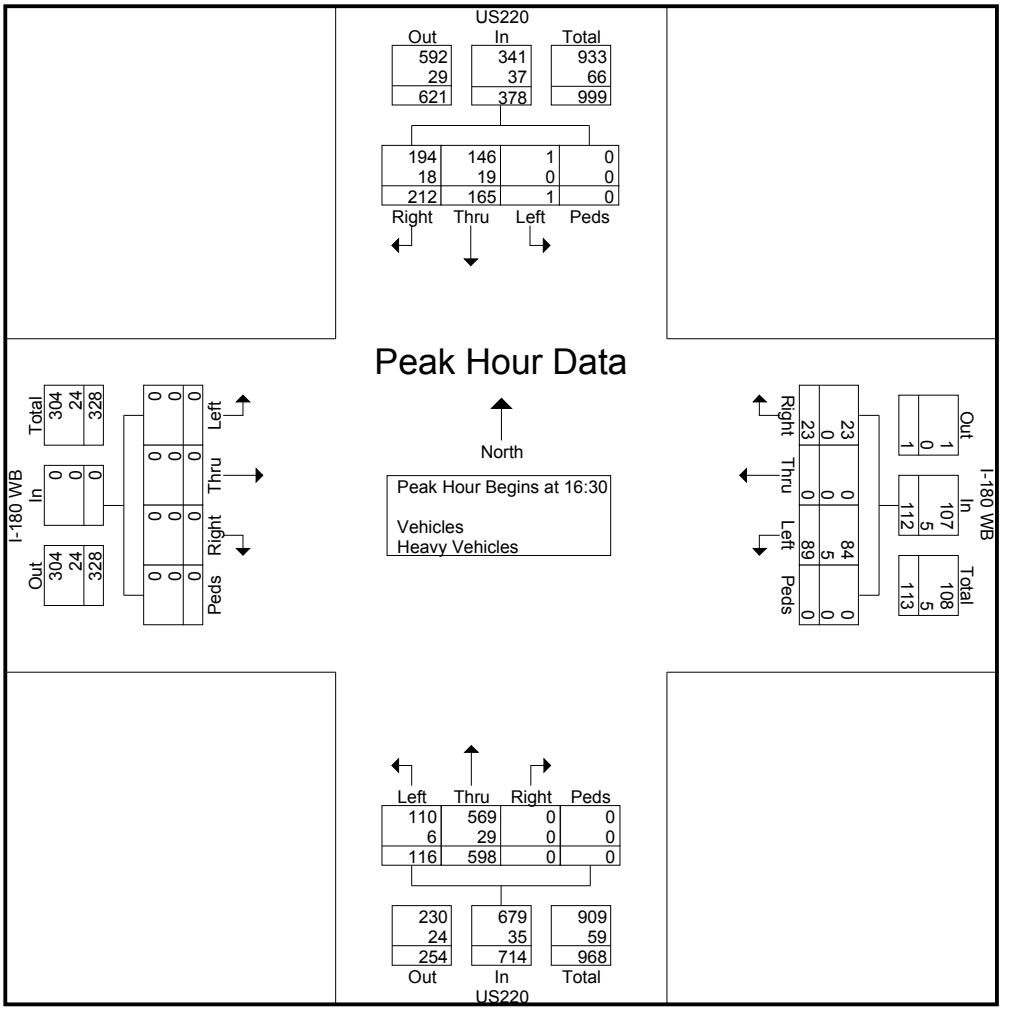
File Name : 26pm 180wb and lycoming mall dr.us220
Site Code : 00000262
Start Date : 7/6/2010

	US220 Southbound					I-180 WB Westbound					US220 Northbound					I-180 WB Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 16:30																					
16:30	0	37	**63**	0	100	**34**	0	5	0	**39**	**31**	142	0	0	173	0	0	0	0	0	**312**
16:45	0	37	43	0	80	15	0	**9**	0	24	30	140	0	0	170	0	0	0	0	0	274
17:00	0	**47**	56	0	**103**	18	0	6	0	24	31	152	0	0	183	0	0	0	0	0	310
17:15	**1**	44	50	0	95	22	0	3	0	25	24	**164**	0	0	**188**	0	0	0	0	0	308
Total Volume	1	165	212	0	378	89	0	23	0	112	116	598	0	0	714	0	0	0	0	0	1204
% App. Total	0.3	43.7	56.1	0		79.5	0	20.5	0		16.2	83.8	0	0		0	0	0	0		
PHF	.250	.878	.841	.000	.917	.654	.000	.639	.000	.718	.935	.912	.000	.000	.949	.000	.000	.000	.000	.000	.965
Vehicles	1	146	194	0	341	84	0	23	0	107	110	569	0	0	679	0	0	0	0	0	1127
% Vehicles		88.5	91.5	0	90.2	94.4	0	100	0	95.5	94.8	95.2	0	0	95.1	0	0	0	0	0	93.6
Heavy Vehicles																					
% Heavy Vehicles	0	11.5	8.5	0	9.8	5.6	0	0	0	4.5	5.2	4.8	0	0	4.9	0	0	0	0	0	6.4



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File Name : 26pm 180wb and lycoming mall dr.us220
Site Code : 00000262
Start Date : 7/6/2010
Page No : 1

Groups Printed- Heavy Vehicles

	US220 Southbound				I-180 WB Westbound				US220 Northbound				I-180 WB Eastbound				
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Int. Total
16:00	0	1	9	0	1	0	0	0	2	3	0	0	0	0	0	0	16
16:15	0	2	2	0	4	1	2	0	7	8	0	0	0	0	0	0	26
16:30	0	2	8	0	2	0	0	0	3	8	0	0	0	0	0	0	23
16:45	0	5	3	0	0	0	0	0	0	5	0	0	0	0	0	0	13
Total	0	10	22	0	7	1	2	0	12	24	0	0	0	0	0	0	78
17:00	0	5	4	0	0	0	0	0	2	8	0	0	0	0	0	0	19
17:15	0	7	3	0	3	0	0	0	1	8	0	0	0	0	0	0	22
17:30	0	0	2	0	5	0	1	0	6	3	0	0	0	0	0	0	17
17:45	0	0	3	0	3	0	0	0	5	1	0	0	0	0	0	0	12
Total	0	12	12	0	11	0	1	0	14	20	0	0	0	0	0	0	70
Grand Total	0	22	34	0	18	1	3	0	26	44	0	0	0	0	0	0	148
Apprch %	0	39.3	60.7	0	81.8	4.5	13.6	0	37.1	62.9	0	0	0	0	0	0	
Total %	0	14.9	23	0	12.2	0.7	2	0	17.6	29.7	0	0	0	0	0	0	

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File Name : 26pm 180wb and lycoming mall dr.us220
Site Code : 00000262
Start Date : 7/6/2010
Page No : 1

Groups Printed- Vehicles

	US220 Southbound				I-180 WB Westbound				US220 Northbound				I-180 WB Eastbound				
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Int. Total
16:00	3	30	30	0	27	5	6	0	32	122	0	0	0	1	0	0	256
16:15	0	43	47	0	24	0	6	0	13	120	0	0	0	0	0	0	253
16:30	0	35	55	0	32	0	5	0	28	134	0	0	0	0	0	0	289
16:45	0	32	40	0	15	0	9	0	30	135	0	0	0	0	0	0	261
Total	3	140	172	0	98	5	26	0	103	511	0	0	0	1	0	0	1059
17:00	0	42	52	0	18	0	6	0	29	144	0	0	0	0	0	0	291
17:15	1	37	47	0	19	0	3	0	23	156	0	0	0	0	0	0	286
17:30	0	48	74	0	25	0	6	0	17	114	0	0	0	0	0	0	284
17:45	0	37	48	0	20	0	5	0	17	114	0	0	0	0	0	0	241
Total	1	164	221	0	82	0	20	0	86	528	0	0	0	0	0	0	1102
Grand Total	4	304	393	0	180	5	46	0	189	1039	0	0	0	1	0	0	2161
Apprch %	0.6	43.4	56.1	0	77.9	2.2	19.9	0	15.4	84.6	0	0	0	100	0	0	
Total %	0.2	14.1	18.2	0	8.3	0.2	2.1	0	8.7	48.1	0	0	0	0	0	0	

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PA 405/I-180 EB Ramps
AM Peak
Lycoming County

File Name : 27ami-180eb and pa405
Site Code : 00000271
Start Date : 7/21/2010
Page No : 1

Groups Printed- Vehicles - Heavy Vehicles - Peds

	I-180 EB Southbound				PA 405 Westbound				I-180 EB Northbound				PA 405 Eastbound				
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Int. Total
07:00	0	0	20	0	30	40	0	0	0	0	10	0	0	38	3	0	141
07:15	0	0	25	0	34	41	0	0	0	0	21	0	0	58	6	0	185
07:30	0	0	20	0	25	44	0	0	0	0	22	0	0	82	9	0	202
07:45	0	0	49	0	20	72	0	0	0	0	31	0	0	70	4	0	246
Total	0	0	114	0	109	197	0	0	0	0	84	0	0	248	22	0	774
08:00	0	0	19	0	23	35	0	0	0	0	22	0	0	67	3	0	169
08:15	0	0	27	0	21	41	0	0	0	0	22	0	0	47	5	0	163
08:30	0	0	16	0	20	34	0	0	0	0	24	0	0	54	8	0	156
08:45	0	0	13	0	27	47	0	0	0	0	24	0	0	45	6	0	162
Total	0	0	75	0	91	157	0	0	0	0	92	0	0	213	22	0	650
Grand Total	0	0	189	0	200	354	0	0	0	0	176	0	0	461	44	0	1424
Apprch %	0	0	100	0	36.1	63.9	0	0	0	0	100	0	0	91.3	8.7	0	
Total %	0	0	13.3	0	14	24.9	0	0	0	0	12.4	0	0	32.4	3.1	0	
Vehicles	0	0	181	0	176	323	0	0	0	0	160	0	0	428	26	0	1294
% Vehicles	0	0	95.8	0	88	91.2	0	0	0	0	90.9	0	0	92.8	59.1	0	90.9
Heavy Vehicles	0	0	8	0	24	31	0	0	0	0	16	0	0	33	18	0	130
% Heavy Vehicles	0	0	4.2	0	12	8.8	0	0	0	0	9.1	0	0	7.2	40.9	0	9.1
Peds	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

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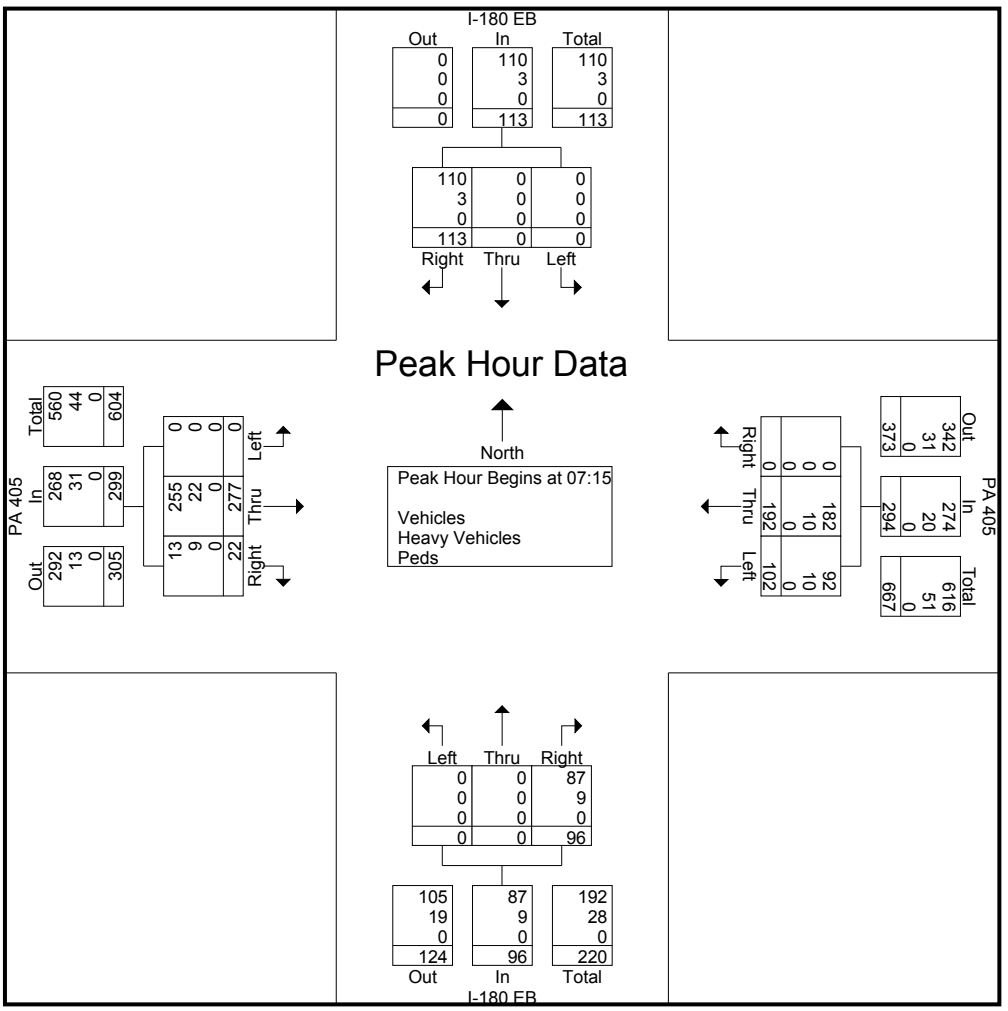
PA 405/I-180 EB Ramps
AM Peak
Lycoming County

File Name : 27ami-180eb and pa405
Site Code : 00000271
Start Date : 7/21/2010
Page No : 2

	I-180 EB Southbound				PA 405 Westbound				I-180 EB Northbound				PA 405 Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:15																	
07:15	0	0	25	25	**34**	41	0	75	0	0	21	21	0	58	6	64	185
07:30	0	0	20	20	25	44	0	69	0	0	22	22	0	**82**	**9**	**91**	202
07:45	0	0	**49**	**49**	20	**72**	0	**92**	0	0	**31**	**31**	0	70	4	74	**246**
08:00	0	0	19	19	23	35	0	58	0	0	22	22	0	67	3	70	169
Total Volume	0	0	113	113	102	192	0	294	0	0	96	96	0	277	22	299	802
% App. Total	0	0	100		34.7	65.3	0		0	0	100		0	92.6	7.4		
PHF	.000	.000	.577	.577	.750	.667	.000	.799	.000	.000	.774	.774	.000	.845	.611	.821	.815
Vehicles	0	0	110	110	92	182	0	274	0	0	87	87	0	255	13	268	739
% Vehicles	0	0	97.3	97.3	90.2	94.8	0	93.2	0	0	90.6	90.6	0	92.1	59.1	89.6	92.1
Heavy Vehicles	0	0	3	3	10	10	0	20	0	0	9	9	0	22	9	31	63
% Heavy Vehicles	0	0	2.7	2.7	9.8	5.2	0	6.8	0	0	9.4	9.4	0	7.9	40.9	10.4	7.9
Peds	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



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File Name : 27ami-180eb and pa405
Site Code : 00000271
Start Date : 7/21/2010
Page No : 1

Groups Printed- Heavy Vehicles

	I-180 EB Southbound				PA 405 Westbound				I-180 EB Northbound				PA 405 Eastbound				
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Int. Total
07:00	0	0	1	0	0	0	1	0	0	0	2	0	4	7	0	0	15
07:15	0	0	4	0	0	6	0	0	0	0	2	0	5	4	0	0	21
07:30	0	0	3	0	0	6	6	0	0	0	0	0	2	2	0	0	19
07:45	0	0	1	0	0	6	2	0	0	0	0	0	1	4	0	0	14
Total	0	0	9	0	0	18	9	0	0	0	4	0	12	17	0	0	69
08:00	0	0	1	0	0	4	1	0	0	0	1	0	2	0	0	0	9
08:15	0	0	0	0	0	5	1	0	0	0	1	0	5	3	0	0	15
08:30	0	0	3	0	0	3	5	0	0	0	2	0	2	5	0	0	20
08:45	0	0	3	0	0	3	2	0	0	0	0	0	3	6	0	0	17
Total	0	0	7	0	0	15	9	0	0	0	4	0	12	14	0	0	61
Grand Total	0	0	16	0	0	33	18	0	0	0	8	0	24	31	0	0	130
Apprch %	0	0	100	0	0	64.7	35.3	0	0	0	100	0	43.6	56.4	0	0	
Total %	0	0	12.3	0	0	25.4	13.8	0	0	0	6.2	0	18.5	23.8	0	0	

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File Name : 27ami-180eb and pa405
Site Code : 00000271
Start Date : 7/21/2010
Page No : 1

Groups Printed- Vehicles

	I-180 EB Southbound				PA 405 Westbound				I-180 EB Northbound				PA 405 Eastbound				
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Int. Total
07:00	0	0	9	0	0	38	2	0	0	0	18	0	26	33	0	0	126
07:15	0	0	17	0	0	52	6	0	0	0	23	0	29	37	0	0	164
07:30	0	0	19	0	0	76	3	0	0	0	20	0	23	42	0	0	183
07:45	0	0	30	0	0	64	2	0	0	0	49	0	19	68	0	0	232
Total	0	0	75	0	0	230	13	0	0	0	110	0	97	180	0	0	705
08:00	0	0	21	0	0	63	2	0	0	0	18	0	21	35	0	0	160
08:15	0	0	22	0	0	42	4	0	0	0	26	0	16	38	0	0	148
08:30	0	0	21	0	0	51	3	0	0	0	14	0	18	29	0	0	136
08:45	0	0	21	0	0	42	4	0	0	0	13	0	24	41	0	0	145
Total	0	0	85	0	0	198	13	0	0	0	71	0	79	143	0	0	589
Grand Total	0	0	160	0	0	428	26	0	0	0	181	0	176	323	0	0	1294
Apprch %	0	0	100	0	0	94.3	5.7	0	0	0	100	0	35.3	64.7	0	0	
Total %	0	0	12.4	0	0	33.1	2	0	0	0	14	0	13.6	25	0	0	

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File Name : 27pmi-180eb and pa405
Site Code : 00000272
Start Date : 8/3/2010
Page No : 1

Groups Printed- Vehicles - Heavy Vehicles

	EB I-180 Southbound				PA 405 Westbound				EB I-180 Northbound				PA 405 Eastbound				
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Int. Total
16:00	0	0	26	0	34	36	0	0	0	0	62	0	1	98	8	0	265
16:15	0	0	31	0	31	34	0	0	0	0	71	0	0	101	9	0	277
16:30	0	0	33	0	15	33	0	0	0	0	66	0	0	102	4	0	253
16:45	0	0	40	0	19	52	0	0	0	0	73	0	0	97	7	0	288
Total	0	0	130	0	99	155	0	0	0	0	272	0	1	398	28	0	1083
17:00	0	0	53	0	22	41	0	0	0	0	73	0	0	94	7	0	290
17:15	0	0	52	0	24	36	0	0	0	0	64	0	0	99	2	0	277
17:30	0	0	37	0	15	27	0	0	0	0	60	0	0	72	2	0	213
17:45	0	0	53	0	29	34	0	0	0	0	44	0	0	80	1	0	241
Total	0	0	195	0	90	138	0	0	0	0	241	0	0	345	12	0	1021
Grand Total	0	0	325	0	189	293	0	0	0	0	513	0	1	743	40	0	2104
Apprch %	0	0	100	0	39.2	60.8	0	0	0	0	100	0	0.1	94.8	5.1	0	
Total %	0	0	15.4	0	9	13.9	0	0	0	0	24.4	0	0	35.3	1.9	0	
Vehicles	0	0	309	0	151	281	0	0	0	0	496	0	1	727	33	0	1998
% Vehicles	0	0	95.1	0	79.9	95.9	0	0	0	0	96.7	0	100	97.8	82.5	0	95
Heavy Vehicles	0	0	16	0	38	12	0	0	0	0	17	0	0	16	7	0	106
% Heavy Vehicles	0	0	4.9	0	20.1	4.1	0	0	0	0	3.3	0	0	2.2	17.5	0	5

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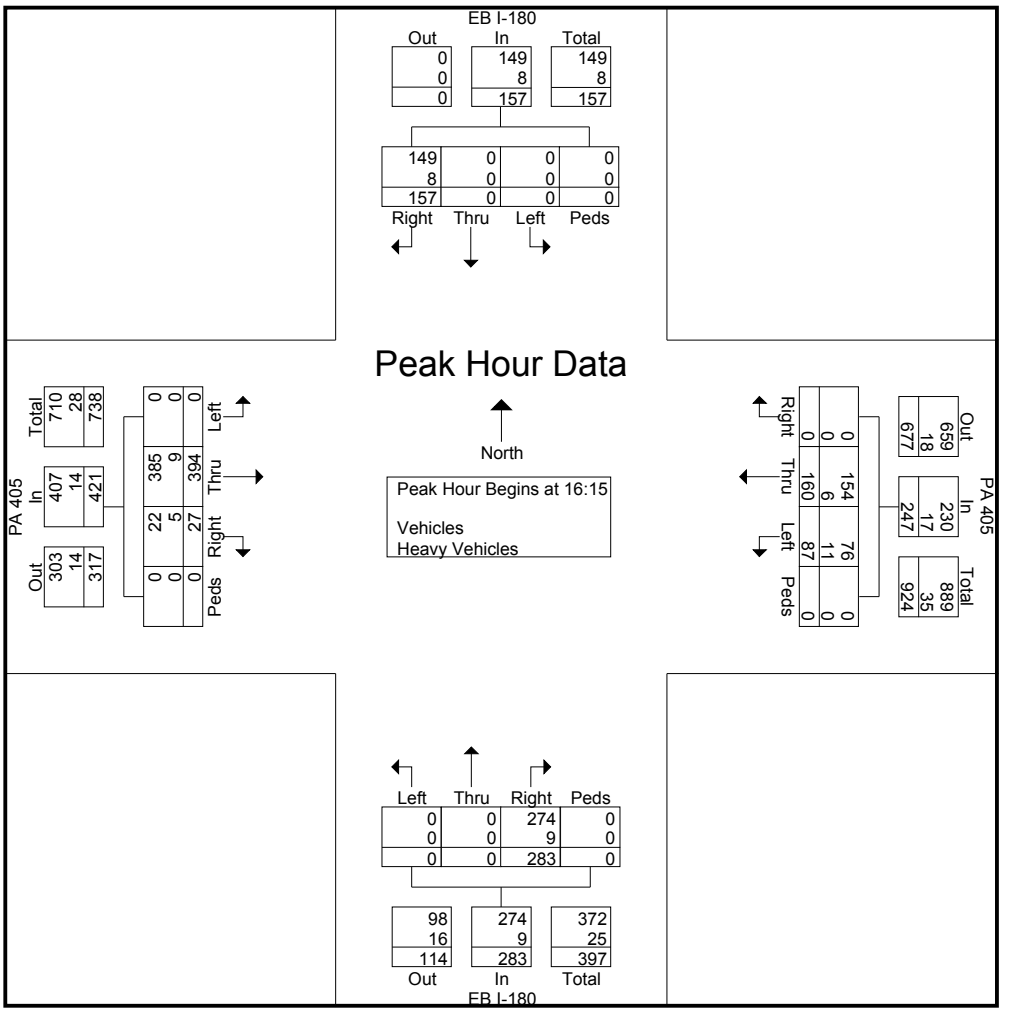
File Name : 27pmi-180eb and pa405
Site Code : 00000272
Start Date : 8/3/2010

	EB I-180 Southbound					PA 405 Westbound					EB I-180 Northbound					PA 405 Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 16:15																					
16:15	0	0	31	0	31	**31**	34	0	0	65	0	0	71	0	71	0	101	**9**	0	**110**	277
16:30	0	0	33	0	33	15	33	0	0	48	0	0	66	0	66	0	**102**	4	0	106	253
16:45	0	0	40	0	40	19	**52**	0	0	**71**	0	0	**73**	0	**73**	0	97	7	0	104	288
17:00	0	0	**53**	0	**53**	22	41	0	0	63	0	0	73	0	73	0	94	7	0	101	**290**
Total Volume	0	0	157	0	157	87	160	0	0	247	0	0	283	0	283	0	394	27	0	421	1108
% App. Total	0	0	100	0		35.2	64.8	0	0		0	0	100	0		0	93.6	6.4	0		
PHF	.000	.000	.741	.000	.741	.702	.769	.000	.000	.870	.000	.000	.969	.000	.969	.000	.966	.750	.000	.957	.955
Vehicles	0	0	149	0	149	76	154	0	0	230	0	0	274	0	274	0	385	22	0	407	1060
% Vehicles			94.9	0	94.9	87.4	96.3	0	0	93.1	0	0	96.8	0	96.8	0	97.7	81.5	0	96.7	95.7
Heavy Vehicles																					
% Heavy Vehicles	0	0	5.1	0	5.1	12.6	3.8	0	0	6.9	0	0	3.2	0	3.2	0	2.3	18.5	0	3.3	4.3



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File Name : 27pmi-180eb and pa405
Site Code : 00000272
Start Date : 8/3/2010
Page No : 1

Groups Printed- Heavy Vehicles

	EB I-180 Southbound				PA 405 Westbound				EB I-180 Northbound				PA 405 Eastbound				
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Int. Total
16:00	0	0	1	0	12	2	0	0	0	0	6	0	0	3	2	0	26
16:15	0	0	2	0	6	2	0	0	0	0	2	0	0	2	2	0	16
16:30	0	0	3	0	1	0	0	0	0	0	2	0	0	5	0	0	11
16:45	0	0	1	0	3	3	0	0	0	0	3	0	0	2	1	0	13
Total	0	0	7	0	22	7	0	0	0	0	13	0	0	12	5	0	66
17:00	0	0	2	0	1	1	0	0	0	0	2	0	0	0	2	0	8
17:15	0	0	1	0	4	1	0	0	0	0	2	0	0	1	0	0	9
17:30	0	0	4	0	3	1	0	0	0	0	0	0	0	1	0	0	9
17:45	0	0	2	0	8	2	0	0	0	0	0	0	0	2	0	0	14
Total	0	0	9	0	16	5	0	0	0	0	4	0	0	4	2	0	40
Grand Total	0	0	16	0	38	12	0	0	0	0	17	0	0	16	7	0	106
Apprch %	0	0	100	0	76	24	0	0	0	0	100	0	0	69.6	30.4	0	
Total %	0	0	15.1	0	35.8	11.3	0	0	0	0	16	0	0	15.1	6.6	0	

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File Name : 27pmi-180eb and pa405
Site Code : 00000272
Start Date : 8/3/2010
Page No : 1

Groups Printed- Vehicles

	EB I-180 Southbound				PA 405 Westbound				EB I-180 Northbound				PA 405 Eastbound				
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Int. Total
16:00	0	0	25	0	22	34	0	0	0	0	56	0	1	95	6	0	239
16:15	0	0	29	0	25	32	0	0	0	0	69	0	0	99	7	0	261
16:30	0	0	30	0	14	33	0	0	0	0	64	0	0	97	4	0	242
16:45	0	0	39	0	16	49	0	0	0	0	70	0	0	95	6	0	275
Total	0	0	123	0	77	148	0	0	0	0	259	0	1	386	23	0	1017
17:00	0	0	51	0	21	40	0	0	0	0	71	0	0	94	5	0	282
17:15	0	0	51	0	20	35	0	0	0	0	62	0	0	98	2	0	268
17:30	0	0	33	0	12	26	0	0	0	0	60	0	0	71	2	0	204
17:45	0	0	51	0	21	32	0	0	0	0	44	0	0	78	1	0	227
Total	0	0	186	0	74	133	0	0	0	0	237	0	0	341	10	0	981
Grand Total	0	0	309	0	151	281	0	0	0	0	496	0	1	727	33	0	1998
Apprch %	0	0	100	0	35	65	0	0	0	0	100	0	0.1	95.5	4.3	0	
Total %	0	0	15.5	0	7.6	14.1	0	0	0	0	24.8	0	0.1	36.4	1.7	0	

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File Name : 28am PA405 and I180
Site Code : 00000281
Start Date : 7/14/2010
Page No : 1

Groups Printed- Vehicles - Heavy Vehicles

	I-180 W Southbound				PA 405 Westbound				I-180 W Northbound				PA 405 Eastbound				
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Int. Total
07:00	0	7	4	0	0	64	29	0	3	2	15	0	0	31	20	0	175
07:15	0	0	0	0	0	74	57	0	0	0	23	0	0	44	33	0	231
07:30	0	0	0	0	0	88	68	0	5	0	17	0	0	57	39	0	274
07:45	0	0	0	0	0	61	59	0	9	0	24	0	0	65	36	0	254
Total	0	7	4	0	0	287	213	0	17	2	79	0	0	197	128	0	934
08:00	0	0	0	0	0	83	39	1	5	0	19	0	0	70	43	0	260
08:15	0	0	0	0	0	74	48	0	5	0	13	0	1	49	24	0	214
08:30	0	0	0	0	0	51	44	0	5	0	23	0	1	47	24	0	195
08:45	0	0	0	0	0	48	43	0	3	0	22	0	1	61	17	0	195
Total	0	0	0	0	0	256	174	1	18	0	77	0	3	227	108	0	864
Grand Total	0	7	4	0	0	543	387	1	35	2	156	0	3	424	236	0	1798
Apprch %	0	63.6	36.4	0	0	58.3	41.6	0.1	18.1	1	80.8	0	0.5	64	35.6	0	
Total %	0	0.4	0.2	0	0	30.2	21.5	0.1	1.9	0.1	8.7	0	0.2	23.6	13.1	0	
Vehicles	0	7	4	0	0	502	369	1	15	2	106	0	3	396	215	0	1620
% Vehicles	0	100	100	0	0	92.4	95.3	100	42.9	100	67.9	0	100	93.4	91.1	0	90.1
Heavy Vehicles	0	0	0	0	0	41	18	0	20	0	50	0	0	28	21	0	178
% Heavy Vehicles	0	0	0	0	0	7.6	4.7	0	57.1	0	32.1	0	0	6.6	8.9	0	9.9

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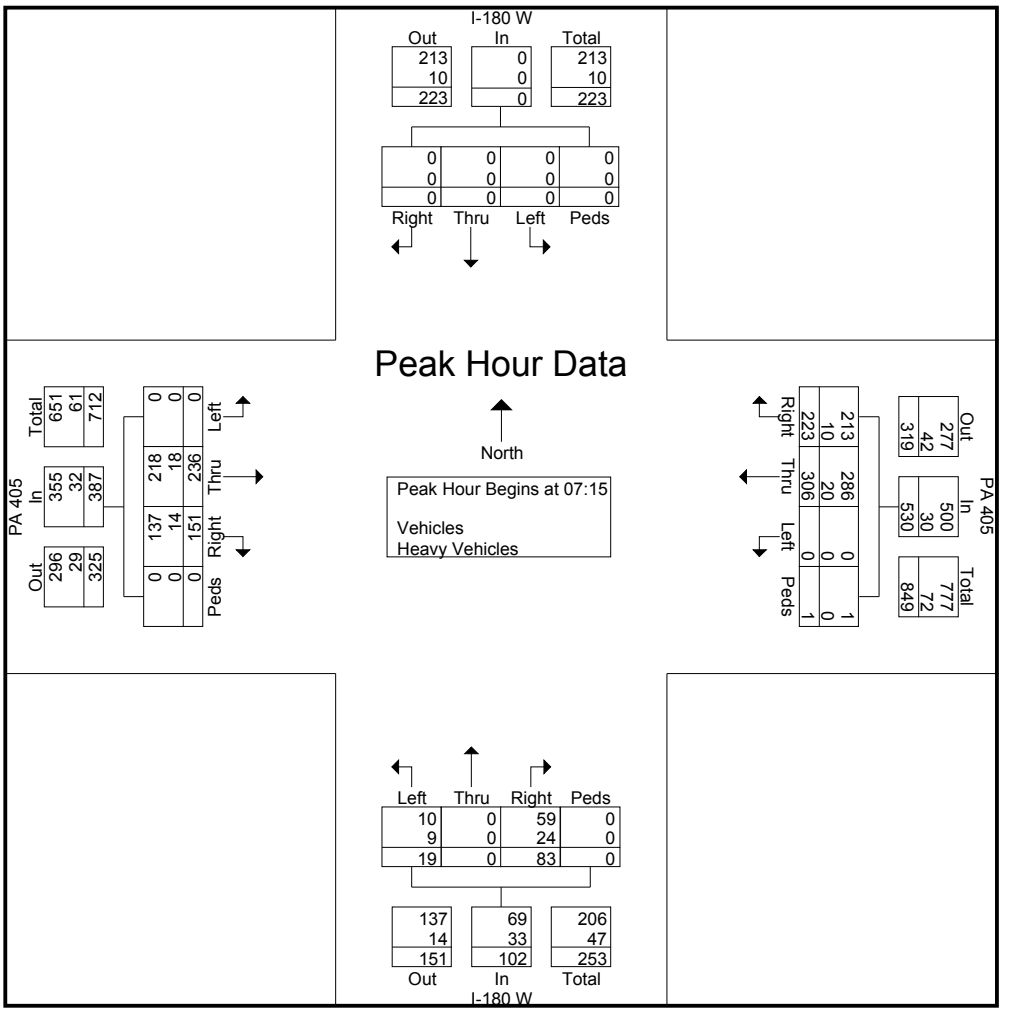
File Name : 28am PA405 and I180
Site Code : 00000281
Start Date : 7/14/2010
Page No : 2

	I-180 W Southbound					PA 405 Westbound					I-180 W Northbound					PA 405 Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:15																					
07:15	0	0	0	0	0	0	74	57	0	131	0	0	23	0	23	0	44	33	0	77	231
07:30	0	0	0	0	0	0	**88**	**68**	0	**156**	5	0	17	0	22	0	57	39	0	96	**274**
07:45	0	0	0	0	0	0	61	59	0	120	**9**	0	**24**	0	**33**	0	65	36	0	101	254
08:00	0	0	0	0	0	0	83	39	**1**	123	5	0	19	0	24	0	**70**	**43**	0	**113**	260
Total Volume	0	0	0	0	0	0	306	223	1	530	19	0	83	0	102	0	236	151	0	387	1019
% App. Total	0	0	0	0		0	57.7	42.1	0.2		18.6	0	81.4	0		0	61	39	0		
PHF	.000	.000	.000	.000	.000	.000	.869	.820	.250	.849	.528	.000	.865	.000	.773	.000	.843	.878	.000	.856	.930
Vehicles	0	0	0	0	0	0	286	213	1	500	10	0	59	0	69	0	218	137	0	355	924
% Vehicles							93.5	95.5	100	94.3	52.6	0	71.1	0	67.6	0	92.4	90.7	0	91.7	90.7
Heavy Vehicles																					
% Heavy Vehicles	0	0	0	0	0	0	6.5	4.5	0	5.7	47.4	0	28.9	0	32.4	0	7.6	9.3	0	8.3	9.3



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File Name : 28am PA405 and I180
Site Code : 00000281
Start Date : 7/14/2010
Page No : 1

Groups Printed- Heavy Vehicles

	I-180 W Southbound				PA 405 Westbound				I-180 W Northbound				PA 405 Eastbound				
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Int. Total
07:00	0	0	0	0	0	8	1	0	1	0	5	0	0	1	1	0	17
07:15	0	0	0	0	0	5	1	0	0	0	7	0	0	2	5	0	20
07:30	0	0	0	0	0	3	1	0	2	0	5	0	0	6	1	0	18
07:45	0	0	0	0	0	5	4	0	4	0	6	0	0	4	3	0	26
Total	0	0	0	0	0	21	7	0	7	0	23	0	0	13	10	0	81
08:00	0	0	0	0	0	7	4	0	3	0	6	0	0	6	5	0	31
08:15	0	0	0	0	0	1	3	0	3	0	3	0	0	4	2	0	16
08:30	0	0	0	0	0	6	3	0	5	0	10	0	0	4	3	0	31
08:45	0	0	0	0	0	6	1	0	2	0	8	0	0	1	1	0	19
Total	0	0	0	0	0	20	11	0	13	0	27	0	0	15	11	0	97
Grand Total	0	0	0	0	0	41	18	0	20	0	50	0	0	28	21	0	178
Apprch %	0	0	0	0	0	69.5	30.5	0	28.6	0	71.4	0	0	57.1	42.9	0	
Total %	0	0	0	0	0	23	10.1	0	11.2	0	28.1	0	0	15.7	11.8	0	

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File Name : 28am PA405 and I180
Site Code : 00000281
Start Date : 7/14/2010
Page No : 1

Groups Printed- Vehicles

	I-180 W Southbound				PA 405 Westbound				I-180 W Northbound				PA 405 Eastbound				
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Int. Total
07:00	0	7	4	0	0	56	28	0	2	2	10	0	0	30	19	0	158
07:15	0	0	0	0	0	69	56	0	0	0	16	0	0	42	28	0	211
07:30	0	0	0	0	0	85	67	0	3	0	12	0	0	51	38	0	256
07:45	0	0	0	0	0	56	55	0	5	0	18	0	0	61	33	0	228
Total	0	7	4	0	0	266	206	0	10	2	56	0	0	184	118	0	853
08:00	0	0	0	0	0	76	35	1	2	0	13	0	0	64	38	0	229
08:15	0	0	0	0	0	73	45	0	2	0	10	0	1	45	22	0	198
08:30	0	0	0	0	0	45	41	0	0	0	13	0	1	43	21	0	164
08:45	0	0	0	0	0	42	42	0	1	0	14	0	1	60	16	0	176
Total	0	0	0	0	0	236	163	1	5	0	50	0	3	212	97	0	767
Grand Total	0	7	4	0	0	502	369	1	15	2	106	0	3	396	215	0	1620
Apprch %	0	63.6	36.4	0	0	57.6	42.3	0.1	12.2	1.6	86.2	0	0.5	64.5	35	0	
Total %	0	0.4	0.2	0	0	31	22.8	0.1	0.9	0.1	6.5	0	0.2	24.4	13.3	0	

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File Name : 28pm PA405 and I180
Site Code : 00000282
Start Date : 9/28/2010
Page No : 1

Groups Printed- Vehicles - Heavy Vehicles

	I-180 Southbound				PA 405 Westbound				I-180 Northbound				PA 405 Eastbound				
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Int. Total
16:00	0	0	0	0	0	57	39	0	2	0	24	0	0	121	33	0	276
16:15	0	0	0	0	0	61	45	0	1	0	20	0	0	102	48	0	277
16:30	0	0	0	0	0	43	34	0	3	0	30	0	0	134	35	0	279
16:45	0	0	0	0	0	57	38	0	1	0	29	0	0	112	39	0	276
Total	0	0	0	0	0	218	156	0	7	0	103	0	0	469	155	0	1108
17:00	0	0	0	0	0	67	52	0	2	0	24	0	0	105	26	0	276
17:15	0	0	0	0	0	58	48	0	0	0	36	0	1	143	49	0	335
17:30	0	0	0	0	0	60	38	0	2	0	24	0	0	138	28	0	290
17:45	0	0	0	0	0	52	31	0	3	0	23	0	1	88	21	0	219
Total	0	0	0	0	0	237	169	0	7	0	107	0	2	474	124	0	1120
Grand Total	0	0	0	0	0	455	325	0	14	0	210	0	2	943	279	0	2228
Apprch %	0	0	0	0	0	58.3	41.7	0	6.2	0	93.8	0	0.2	77	22.8	0	
Total %	0	0	0	0	0	20.4	14.6	0	0.6	0	9.4	0	0.1	42.3	12.5	0	
Vehicles	0	0	0	0	0	419	317	0	11	0	190	0	1	924	265	0	2127
% Vehicles	0	0	0	0	0	92.1	97.5	0	78.6	0	90.5	0	50	98	95	0	95.5
Heavy Vehicles	0	0	0	0	0	36	8	0	3	0	20	0	1	19	14	0	101
% Heavy Vehicles	0	0	0	0	0	7.9	2.5	0	21.4	0	9.5	0	50	2	5	0	4.5

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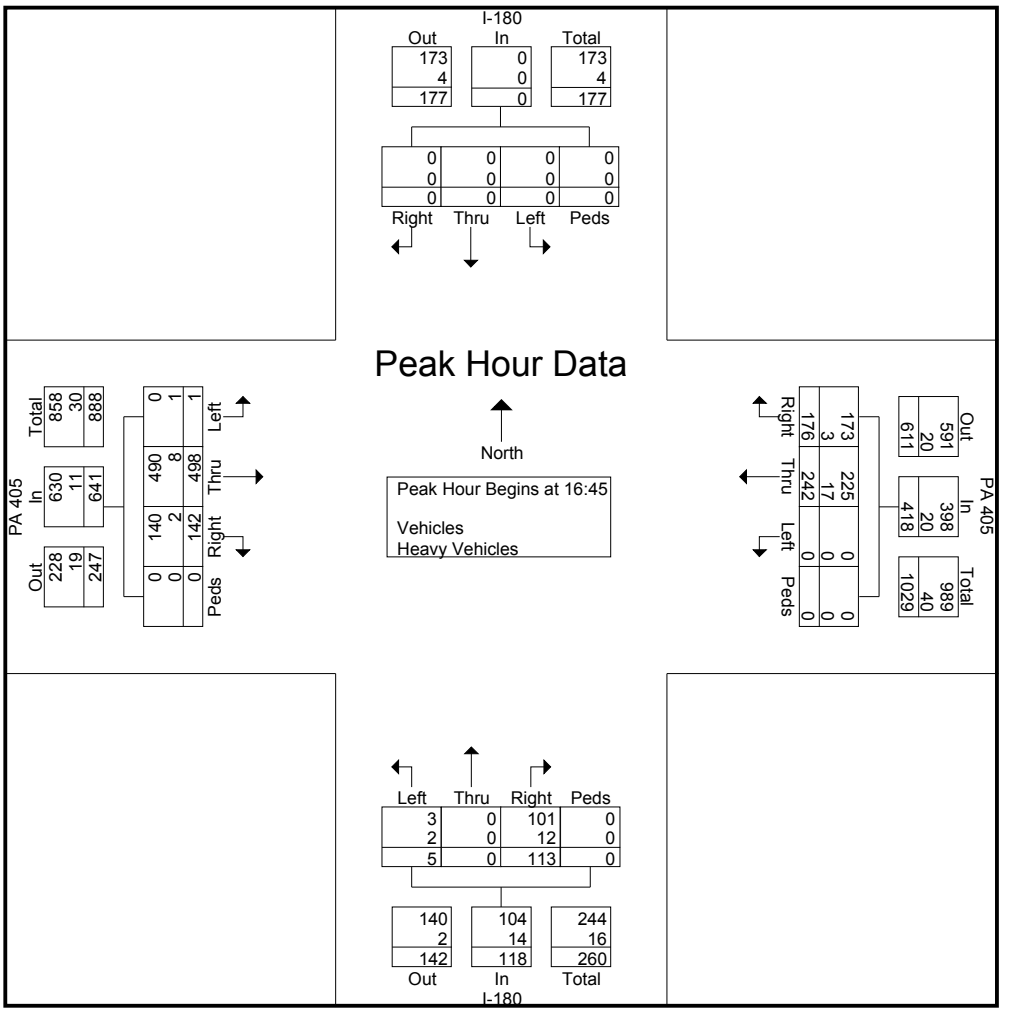
File Name : 28pm PA405 and I180
Site Code : 00000282
Start Date : 9/28/2010
Page No : 2

	I-180 Southbound					PA 405 Westbound					I-180 Northbound					PA 405 Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 16:45																					
16:45	0	0	0	0	0	0	57	38	0	95	1	0	29	0	30	0	112	39	0	151	276
17:00	0	0	0	0	0	0	**67**	**52**	0	**119**	**2**	0	24	0	26	0	105	26	0	131	276
17:15	0	0	0	0	0	0	58	48	0	106	0	0	**36**	0	**36**	**1**	**143**	**49**	0	**193**	**335**
17:30	0	0	0	0	0	0	60	38	0	98	2	0	24	0	26	0	138	28	0	166	290
Total Volume	0	0	0	0	0	0	242	176	0	418	5	0	113	0	118	1	498	142	0	641	1177
% App. Total	0	0	0	0		0	57.9	42.1	0		4.2	0	95.8	0		0.2	77.7	22.2	0		
PHF	.000	.000	.000	.000	.000	.000	.903	.846	.000	.878	.625	.000	.785	.000	.819	.250	.871	.724	.000	.830	.878
Vehicles	0	0	0	0	0	0	225	173	0	398	3	0	101	0	104	0	490	140	0	630	1132
% Vehicles							93.0	98.3	0	95.2	60.0	0	89.4	0	88.1	0	98.4	98.6	0	98.3	96.2
Heavy Vehicles																					
% Heavy Vehicles	0	0	0	0	0	0	7.0	1.7	0	4.8	40.0	0	10.6	0	11.9	100	1.6	1.4	0	1.7	3.8



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File Name : 28pm PA405 and I180
Site Code : 00000282
Start Date : 9/28/2010
Page No : 1

Groups Printed- Heavy Vehicles

	I-180 Southbound				PA 405 Westbound				I-180 Northbound				PA 405 Eastbound				
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Int. Total
16:00	0	0	0	0	0	4	1	0	0	0	3	0	0	4	2	0	14
16:15	0	0	0	0	0	8	3	0	0	0	0	0	0	2	4	0	17
16:30	0	0	0	0	0	4	1	0	0	0	5	0	0	1	6	0	17
16:45	0	0	0	0	0	3	1	0	1	0	6	0	0	1	1	0	13
Total	0	0	0	0	0	19	6	0	1	0	14	0	0	8	13	0	61
17:00	0	0	0	0	0	6	1	0	1	0	3	0	0	1	0	0	12
17:15	0	0	0	0	0	6	0	0	0	0	2	0	1	1	1	0	11
17:30	0	0	0	0	0	2	1	0	0	0	1	0	0	5	0	0	9
17:45	0	0	0	0	0	3	0	0	1	0	0	0	0	4	0	0	8
Total	0	0	0	0	0	17	2	0	2	0	6	0	1	11	1	0	40
Grand Total	0	0	0	0	0	36	8	0	3	0	20	0	1	19	14	0	101
Apprch %	0	0	0	0	0	81.8	18.2	0	13	0	87	0	2.9	55.9	41.2	0	
Total %	0	0	0	0	0	35.6	7.9	0	3	0	19.8	0	1	18.8	13.9	0	

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File Name : 28pm PA405 and I180
Site Code : 00000282
Start Date : 9/28/2010
Page No : 1

Groups Printed- Vehicles

	I-180 Southbound				PA 405 Westbound				I-180 Northbound				PA 405 Eastbound				
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Int. Total
16:00	0	0	0	0	0	53	38	0	2	0	21	0	0	117	31	0	262
16:15	0	0	0	0	0	53	42	0	1	0	20	0	0	100	44	0	260
16:30	0	0	0	0	0	39	33	0	3	0	25	0	0	133	29	0	262
16:45	0	0	0	0	0	54	37	0	0	0	23	0	0	111	38	0	263
Total	0	0	0	0	0	199	150	0	6	0	89	0	0	461	142	0	1047
17:00	0	0	0	0	0	61	51	0	1	0	21	0	0	104	26	0	264
17:15	0	0	0	0	0	52	48	0	0	0	34	0	0	142	48	0	324
17:30	0	0	0	0	0	58	37	0	2	0	23	0	0	133	28	0	281
17:45	0	0	0	0	0	49	31	0	2	0	23	0	1	84	21	0	211
Total	0	0	0	0	0	220	167	0	5	0	101	0	1	463	123	0	1080
Grand Total	0	0	0	0	0	419	317	0	11	0	190	0	1	924	265	0	2127
Apprch %	0	0	0	0	0	56.9	43.1	0	5.5	0	94.5	0	0.1	77.6	22.3	0	
Total %	0	0	0	0	0	19.7	14.9	0	0.5	0	8.9	0	0	43.4	12.5	0	

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Site Code : 00000431
Start Date : 7/8/2010
Page No : 1

Groups Printed- Vehicles - Heavy Vehicles

	Lycoming Mall Rd. Southbound				Lycoming Mall Dr. Westbound				-- Northbound				Lycoming Mall Dr. Eastbound				
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Int. Total
07:00	10	0	4	0	0	39	2	0	0	0	0	0	4	23	0	0	82
07:15	11	0	7	0	0	37	4	0	0	0	0	0	1	39	0	0	99
07:30	13	0	15	0	0	47	2	0	0	0	0	0	8	57	0	0	142
07:45	13	0	14	0	0	70	13	0	0	0	0	0	9	44	0	0	163
Total	47	0	40	0	0	193	21	0	0	0	0	0	22	163	0	0	486
08:00	6	0	6	0	0	50	5	1	0	0	0	0	6	52	0	0	126
08:15	8	0	3	0	0	54	3	0	0	0	0	0	8	51	0	0	127
08:30	10	0	9	0	0	45	3	0	0	0	0	0	7	56	0	0	130
Grand Total	71	0	58	0	0	342	32	1	0	0	0	0	43	322	0	0	869
Apprch %	55	0	45	0	0	91.2	8.5	0.3	0	0	0	0	11.8	88.2	0	0	
Total %	8.2	0	6.7	0	0	39.4	3.7	0.1	0	0	0	0	4.9	37.1	0	0	
Vehicles	59	0	54	0	0	321	32	1	0	0	0	0	42	288	0	0	797
% Vehicles	83.1	0	93.1	0	0	93.9	100	100	0	0	0	0	97.7	89.4	0	0	91.7
Heavy Vehicles	12	0	4	0	0	21	0	0	0	0	0	0	1	34	0	0	72
% Heavy Vehicles	16.9	0	6.9	0	0	6.1	0	0	0	0	0	0	2.3	10.6	0	0	8.3

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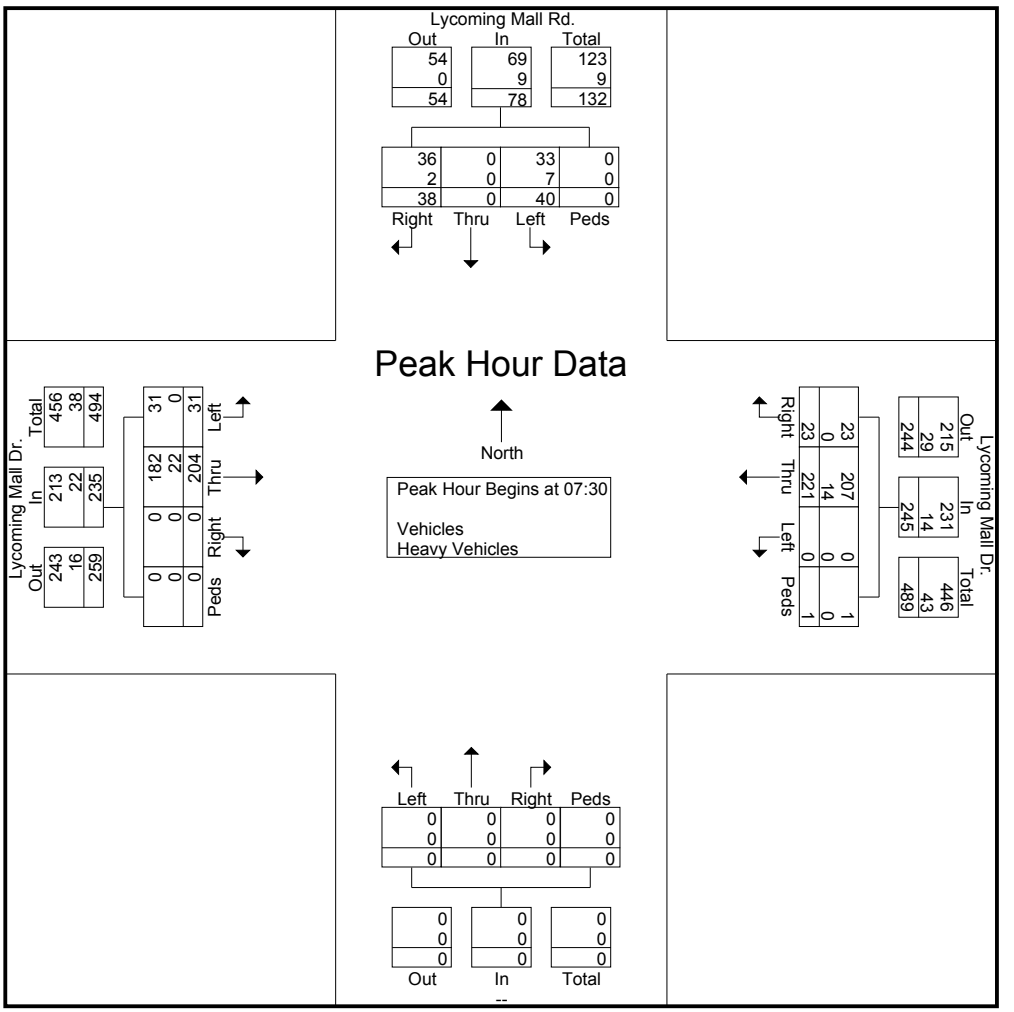
Site Code : 00000431
Start Date : 7/8/2010
Page No : 2

	Lycoming Mall Rd. Southbound					Lycoming Mall Dr. Westbound					-- Northbound					Lycoming Mall Dr. Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 08:30 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:30																					
07:30	**13**	0	**15**	0	**28**	0	47	2	0	49	0	0	0	0	0	8	**57**	0	0	**65**	142
07:45	13	0	14	0	27	0	**70**	**13**	0	**83**	0	0	0	0	0	**9**	44	0	0	53	**163**
08:00	6	0	6	0	12	0	50	5	**1**	56	0	0	0	0	0	6	52	0	0	58	126
08:15	8	0	3	0	11	0	54	3	0	57	0	0	0	0	0	8	51	0	0	59	127
Total Volume	40	0	38	0	78	0	221	23	1	245	0	0	0	0	0	31	204	0	0	235	558
% App. Total	51.3	0	48.7	0		0	90.2	9.4	0.4		0	0	0	0		13.2	86.8	0	0		
PHF	.769	.000	.633	.000	.696	.000	.789	.442	.250	.738	.000	.000	.000	.000	.000	.861	.895	.000	.000	.904	.856
Vehicles	33	0	36	0	69	0	207	23	1	231	0	0	0	0	0	31	182	0	0	213	513
% Vehicles	82.5	0	94.7	0	88.5	0	93.7	100	100	94.3	0	0	0	0	0	100	89.2	0	0	90.6	91.9
Heavy Vehicles	7	0	2	0	9	0	14	0	0	14	0	0	0	0	0	0	22	0	0	22	45
% Heavy Vehicles	17.5	0	5.3	0	11.5	0	6.3	0	0	5.7	0	0	0	0	0	0	10.8	0	0	9.4	8.1



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Site Code : 00000431
Start Date : 7/8/2010
Page No : 1

Groups Printed- Heavy Vehicles

	Lycoming Mall Rd. Southbound				Lycoming Mall Dr. Westbound				-- Northbound				Lycoming Mall Dr. Eastbound				
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Int. Total
07:00	2	0	1	0	0	3	0	0	0	0	0	0	0	3	0	0	9
07:15	2	0	0	0	0	2	0	0	0	0	0	0	0	4	0	0	8
07:30	3	0	2	0	0	4	0	0	0	0	0	0	0	4	0	0	13
07:45	0	0	0	0	0	4	0	0	0	0	0	0	0	2	0	0	6
Total	7	0	3	0	0	13	0	0	0	0	0	0	0	13	0	0	36
08:00	0	0	0	0	0	1	0	0	0	0	0	0	0	9	0	0	10
08:15	4	0	0	0	0	5	0	0	0	0	0	0	0	7	0	0	16
08:30	1	0	1	0	0	2	0	0	0	0	0	0	1	5	0	0	10
Grand Total	12	0	4	0	0	21	0	0	0	0	0	0	1	34	0	0	72
Apprch %	75	0	25	0	0	100	0	0	0	0	0	0	2.9	97.1	0	0	
Total %	16.7	0	5.6	0	0	29.2	0	0	0	0	0	0	1.4	47.2	0	0	

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Site Code : 00000431
Start Date : 7/8/2010
Page No : 1

Groups Printed- Vehicles

	Lycoming Mall Rd. Southbound				Lycoming Mall Dr. Westbound				-- Northbound				Lycoming Mall Dr. Eastbound				
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Int. Total
07:00	8	0	3	0	0	36	2	0	0	0	0	0	4	20	0	0	73
07:15	9	0	7	0	0	35	4	0	0	0	0	0	1	35	0	0	91
07:30	10	0	13	0	0	43	2	0	0	0	0	0	8	53	0	0	129
07:45	13	0	14	0	0	66	13	0	0	0	0	0	9	42	0	0	157
Total	40	0	37	0	0	180	21	0	0	0	0	0	22	150	0	0	450
08:00	6	0	6	0	0	49	5	1	0	0	0	0	6	43	0	0	116
08:15	4	0	3	0	0	49	3	0	0	0	0	0	8	44	0	0	111
08:30	9	0	8	0	0	43	3	0	0	0	0	0	6	51	0	0	120
Grand Total	59	0	54	0	0	321	32	1	0	0	0	0	42	288	0	0	797
Apprch %	52.2	0	47.8	0	0	90.7	9	0.3	0	0	0	0	12.7	87.3	0	0	
Total %	7.4	0	6.8	0	0	40.3	4	0.1	0	0	0	0	5.3	36.1	0	0	

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File Name : 43pm lycoming mall rd and lyco mall dr
Site Code : 00000432
Start Date : 7/8/2010
Page No : 1

Groups Printed- Vehicles - Heavy Vehicles

	Lycoming Mall Rd. Southbound				Lycoming Mall Dr. Westbound				-- Northbound				Lycoming Mall Dr. Eastbound				
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Int. Total
16:00	23	0	11	0	0	70	9	0	0	0	0	0	8	70	0	0	191
16:15	21	0	18	0	0	72	12	0	0	0	0	0	10	74	0	0	207
16:30	25	0	17	0	0	77	11	0	0	0	0	0	10	85	0	0	225
16:45	19	0	19	0	0	78	10	0	0	0	0	0	14	96	0	0	236
Total	88	0	65	0	0	297	42	0	0	0	0	0	42	325	0	0	859
17:00	34	0	32	0	0	94	12	0	0	0	0	0	14	95	0	0	281
17:15	25	0	26	0	0	68	14	0	0	0	0	0	14	95	0	0	242
17:30	20	0	13	0	0	49	17	0	0	0	0	0	15	69	0	0	183
17:45	29	0	19	0	0	57	8	0	0	0	0	0	9	76	0	0	198
Total	108	0	90	0	0	268	51	0	0	0	0	0	52	335	0	0	904
Grand Total	196	0	155	0	0	565	93	0	0	0	0	0	94	660	0	0	1763
Apprch %	55.8	0	44.2	0	0	85.9	14.1	0	0	0	0	0	12.5	87.5	0	0	
Total %	11.1	0	8.8	0	0	32	5.3	0	0	0	0	0	5.3	37.4	0	0	
Vehicles	187	0	149	0	0	549	92	0	0	0	0	0	92	644	0	0	1713
% Vehicles	95.4	0	96.1	0	0	97.2	98.9	0	0	0	0	0	97.9	97.6	0	0	97.2
Heavy Vehicles	9	0	6	0	0	16	1	0	0	0	0	0	2	16	0	0	50
% Heavy Vehicles	4.6	0	3.9	0	0	2.8	1.1	0	0	0	0	0	2.1	2.4	0	0	2.8

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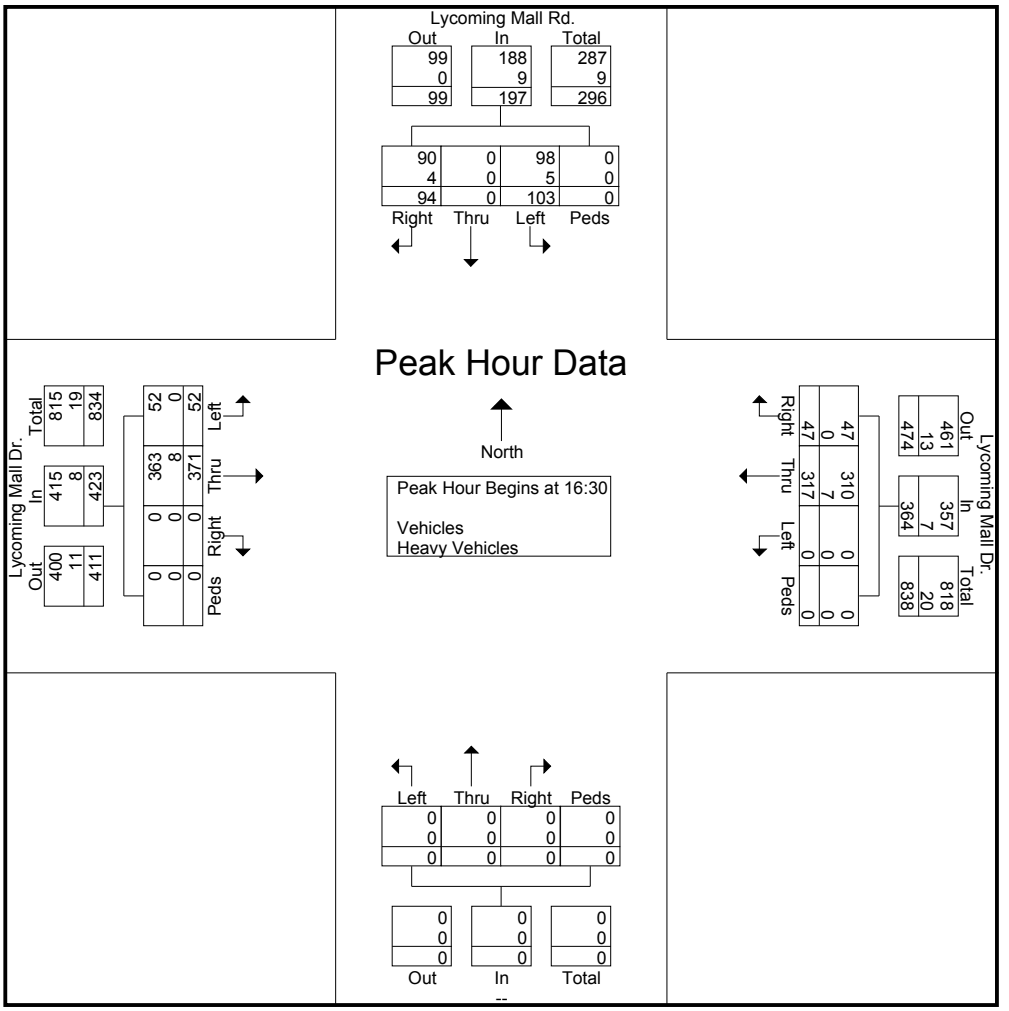
Page No : 2

	Lycoming Mall Rd. Southbound					Lycoming Mall Dr. Westbound					-- Northbound					Lycoming Mall Dr. Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 16:30																					
16:30	25	0	17	0	42	0	77	11	0	88	0	0	0	0	0	10	85	0	0	95	225
16:45	19	0	19	0	38	0	78	10	0	88	0	0	0	0	0	**14**	**96**	0	0	**110**	236
17:00	**34**	0	**32**	0	**66**	0	**94**	12	0	**106**	0	0	0	0	0	14	95	0	0	109	**281**
17:15	25	0	26	0	51	0	68	**14**	0	82	0	0	0	0	0	14	95	0	0	109	242
Total Volume	103	0	94	0	197	0	317	47	0	364	0	0	0	0	0	52	371	0	0	423	984
% App. Total	52.3	0	47.7	0		0	87.1	12.9	0		0	0	0	0		12.3	87.7	0	0		
PHF	.757	.000	.734	.000	.746	.000	.843	.839	.000	.858	.000	.000	.000	.000	.000	.929	.966	.000	.000	.961	.875
Vehicles	98	0	90	0	188	0	310	47	0	357	0	0	0	0	0	52	363	0	0	415	960
% Vehicles	95.1	0	95.7	0	95.4	0	97.8	100	0	98.1	0	0	0	0	0	100	97.8	0	0	98.1	97.6
Heavy Vehicles																					
% Heavy Vehicles	4.9	0	4.3	0	4.6	0	2.2	0	0	1.9	0	0	0	0	0	0	2.2	0	0	1.9	2.4



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Page No : 1

Groups Printed- Heavy Vehicles

	Lycoming Mall Rd. Southbound				Lycoming Mall Dr. Westbound				-- Northbound				Lycoming Mall Dr. Eastbound				
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Int. Total
16:00	2	0	0	0	0	2	0	0	0	0	0	0	1	2	0	0	7
16:15	1	0	1	0	0	3	0	0	0	0	0	0	0	3	0	0	8
16:30	0	0	1	0	0	4	0	0	0	0	0	0	0	0	0	0	5
16:45	2	0	1	0	0	0	0	0	0	0	0	0	0	3	0	0	6
Total	5	0	3	0	0	9	0	0	0	0	0	0	1	8	0	0	26
17:00	2	0	1	0	0	3	0	0	0	0	0	0	0	1	0	0	7
17:15	1	0	1	0	0	0	0	0	0	0	0	0	0	4	0	0	6
17:30	0	0	0	0	0	2	1	0	0	0	0	0	0	1	0	0	4
17:45	1	0	1	0	0	2	0	0	0	0	0	0	1	2	0	0	7
Total	4	0	3	0	0	7	1	0	0	0	0	0	1	8	0	0	24
Grand Total	9	0	6	0	0	16	1	0	0	0	0	0	2	16	0	0	50
Apprch %	60	0	40	0	0	94.1	5.9	0	0	0	0	0	11.1	88.9	0	0	
Total %	18	0	12	0	0	32	2	0	0	0	0	0	4	32	0	0	

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Site Code : 00000432
Start Date : 7/8/2010
Page No : 1

Groups Printed- Vehicles

	Lycoming Mall Rd. Southbound				Lycoming Mall Dr. Westbound				-- Northbound				Lycoming Mall Dr. Eastbound				
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Int. Total
16:00	21	0	11	0	0	68	9	0	0	0	0	0	7	68	0	0	184
16:15	20	0	17	0	0	69	12	0	0	0	0	0	10	71	0	0	199
16:30	25	0	16	0	0	73	11	0	0	0	0	0	10	85	0	0	220
16:45	17	0	18	0	0	78	10	0	0	0	0	0	14	93	0	0	230
Total	83	0	62	0	0	288	42	0	0	0	0	0	41	317	0	0	833
17:00	32	0	31	0	0	91	12	0	0	0	0	0	14	94	0	0	274
17:15	24	0	25	0	0	68	14	0	0	0	0	0	14	91	0	0	236
17:30	20	0	13	0	0	47	16	0	0	0	0	0	15	68	0	0	179
17:45	28	0	18	0	0	55	8	0	0	0	0	0	8	74	0	0	191
Total	104	0	87	0	0	261	50	0	0	0	0	0	51	327	0	0	880
Grand Total	187	0	149	0	0	549	92	0	0	0	0	0	92	644	0	0	1713
Apprch %	55.7	0	44.3	0	0	85.6	14.4	0	0	0	0	0	12.5	87.5	0	0	
Total %	10.9	0	8.7	0	0	32	5.4	0	0	0	0	0	5.4	37.6	0	0	

Traffic Data (Manual Turning Movement Counts)
URS – ARLE Grant Traffic Analysis

Count data from Lycoming County (May/June 2014)

Traffic Volume Summary

Borough of Muncy

June 2014

(Based on data provided by Lycoming County)

	MAIN STREET									WATER STREET									
	NORTHBOUND				**SOUTHBOUND**				**TOTAL**	**EASTBOUND**				**WESTBOUND**				**TOTAL**	**GRAND TOTAL**
	Left	Through	Right	**Total**	Left	Through	Right	**Total**		Left	Through	Right	**Total**	Left	Through	Right	**Total**		
6:00 - 7:00	24	52	18	**94**	9	57	70	**136**	**230**	75	2	12	**89**	17	88	25	**130**	**219**	**449**
7:00 - 8:00	45	92	29	**166**	14	86	117	**217**	**383**	68	125	23	**216**	13	254	17	**284**	**500**	**883**
8:00 - 9:00	19	79	36	**134**	18	110	61	**189**	**323**	90	118	23	**231**	23	205	31	**259**	**490**	**813**
9:00 - 10:00	9	97	24	**130**	20	101	50	**171**	**301**	79	103	28	**210**	40	119	48	**207**	**417**	**718**
10:00 - 11:00	11	159	23	**193**	34	52	82	**168**	**361**	78	95	22	**195**	31	114	46	**191**	**386**	**747**
1:00 - 2:00	9	155	17	**181**	34	68	78	**180**	**361**	72	159	26	**257**	32	225	38	**295**	**552**	**913**
2:00 - 3:00	12	171	36	**219**	33	56	75	**164**	**383**	72	133	26	**231**	24	214	24	**262**	**493**	**876**
3:00 - 4:00	11	228	30	**269**	33	62	114	**209**	**478**	97	144	23	**264**	37	242	22	**301**	**565**	**1043**
4:00 - 5:00	18	282	11	**311**	28	107	116	**251**	**562**	97	195	18	**310**	39	227	30	**296**	**606**	**1168**
5:00 - 6:00	26	227	34	**287**	52	42	118	**212**	**499**	83	191	17	**291**	40	227	19	**286**	**577**	**1076**

Truck Percentage Summary

Borough of Muncy

June 2014

(Based on data provided by Lycoming County)

	Main Street Northbound						Main Street Southbound						Water Street Eastbound						Water Street Westbound					
	Cl 1	Cl 2	Cl 3	Tot Lite	Tot Veh	% Trucks	Cl 1	Cl 2	Cl 3	Tot Lite	Tot Veh	% Trucks	Cl 1	Cl 2	Cl 3	Tot Lite	Tot Veh	% Trucks	Cl 1	Cl 2	Cl 3	Tot Lite	Tot Veh	% Trucks
6:00 - 7:00	0	52	32	84	90	6.7%	2	81	40	123	130	5.4%	1	107	42	150	166	9.6%	0	143	88	231	242	4.5%
7:00 - 8:00	2	110	45	157	170	7.6%	2	165	40	207	223	7.2%	1	210	46	257	279	7.9%	0	246	95	341	368	7.3%
8:00 - 9:00	1	94	43	138	153	9.8%	3	135	64	202	217	6.9%	1	157	53	211	238	11.3%	1	184	54	239	266	10.2%
9:00 - 10:00	1	76	35	112	130	13.8%	2	115	43	160	170	5.9%	2	133	56	191	209	8.6%	0	122	57	179	206	13.1%
0:00 - 11:00	2	118	37	157	173	9.2%	1	109	27	137	150	8.7%	0	147	51	198	228	13.2%	2	129	64	195	224	12.9%
1:00 - 2:00	4	120	45	169	185	8.6%	1	123	48	172	184	6.5%	0	181	54	235	262	10.3%	0	205	65	270	300	10.0%
2:00 - 3:00	3	168	37	208	237	12.2%	4	110	44	158	177	10.7%	0	196	72	268	300	10.7%	1	221	77	299	341	12.3%
3:00 - 4:00	2	193	69	264	276	4.3%	2	153	48	203	215	5.6%	1	227	64	292	320	8.8%	2	257	76	335	366	8.5%
4:00 - 5:00	3	183	59	245	258	5.0%	4	148	43	195	208	6.3%	1	236	78	315	348	9.5%	1	247	67	315	333	5.4%
5:00 - 6:00	6	179	47	232	235	1.3%	0	127	36	163	174	6.3%	3	238	83	324	343	5.5%	0	245	80	325	336	3.3%

Unsignalized Intersection Field Sketches

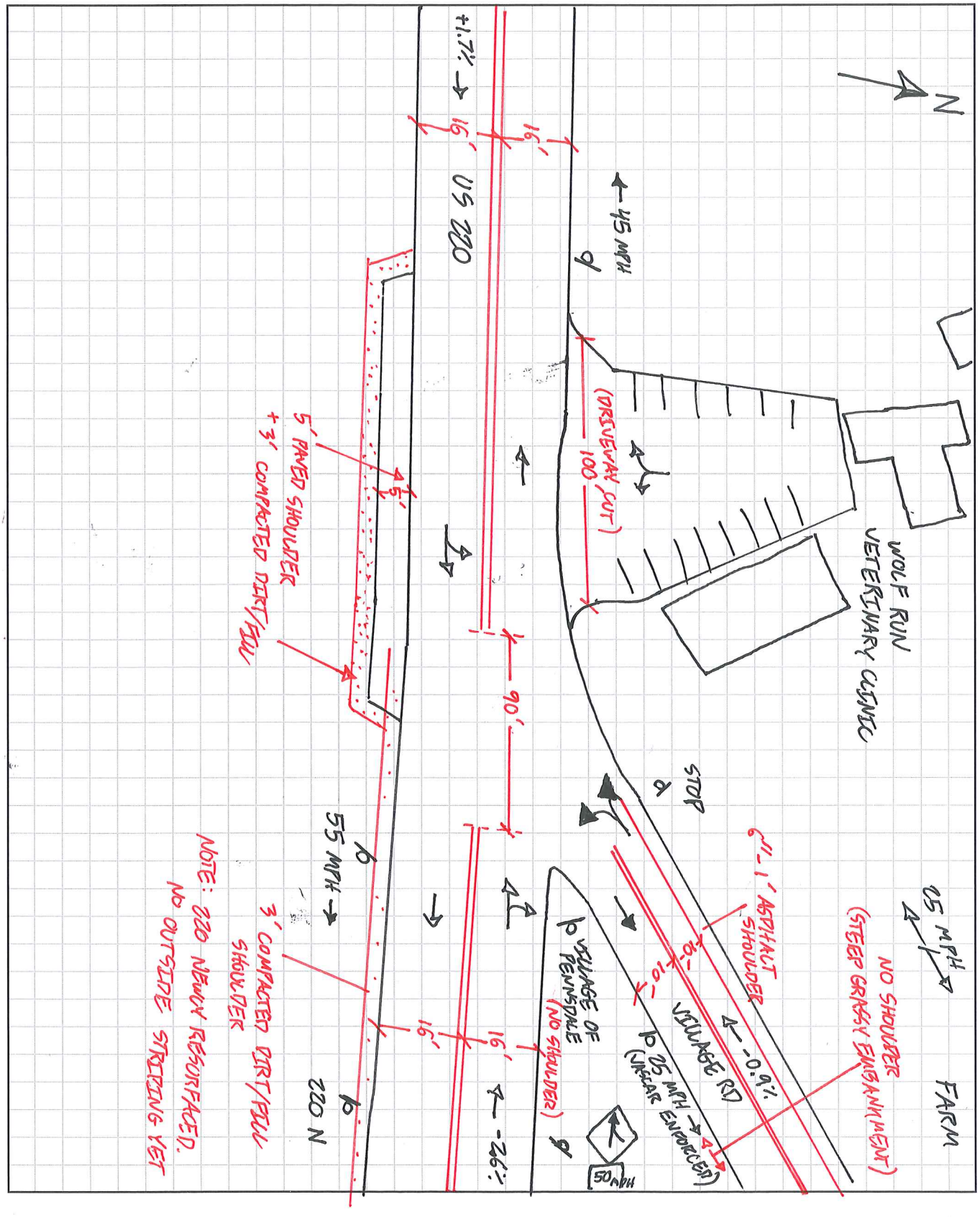
(20)

McMAHON
TRANSPORTATION ENGINEERS & PLANNERS

Job MUNCY | McMahon Project No. 913480.11 | Sheet ____ of ____

Description 20: US220/VILLAGE RD | Designed By JCB | Date 10/14/2014

Checked By ____ | Date ____

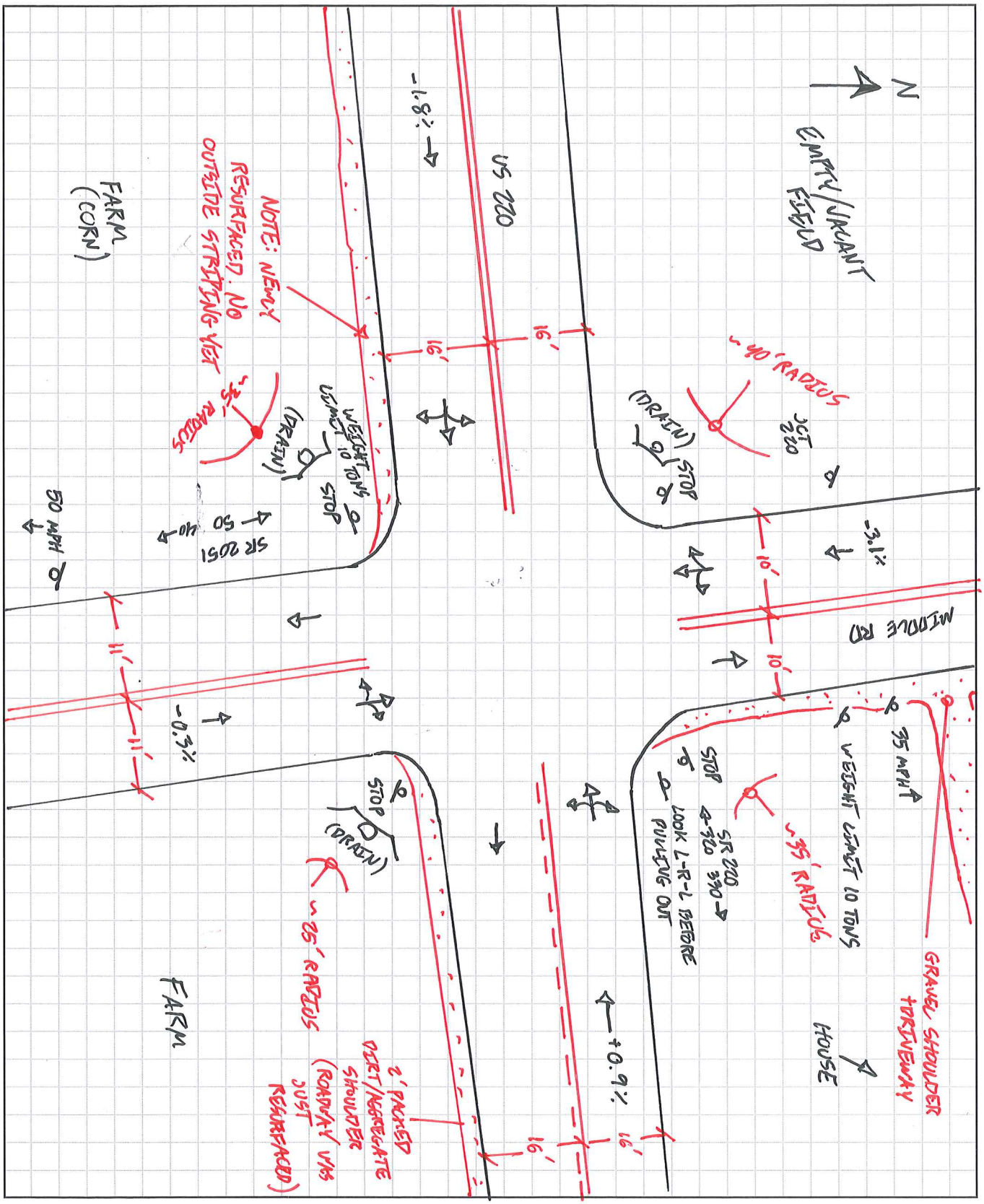


McMAHON
TRANSPORTATION ENGINEERS & PLANNERS

Job MUNCY | McMahon Project No. 913480 | Sheet ____ of ____

Description 11: US 220/Middle Rd. (Quaker Church Rd) | Designed By ICP | Date 10/14/2014

Checked By ____ | Date ____

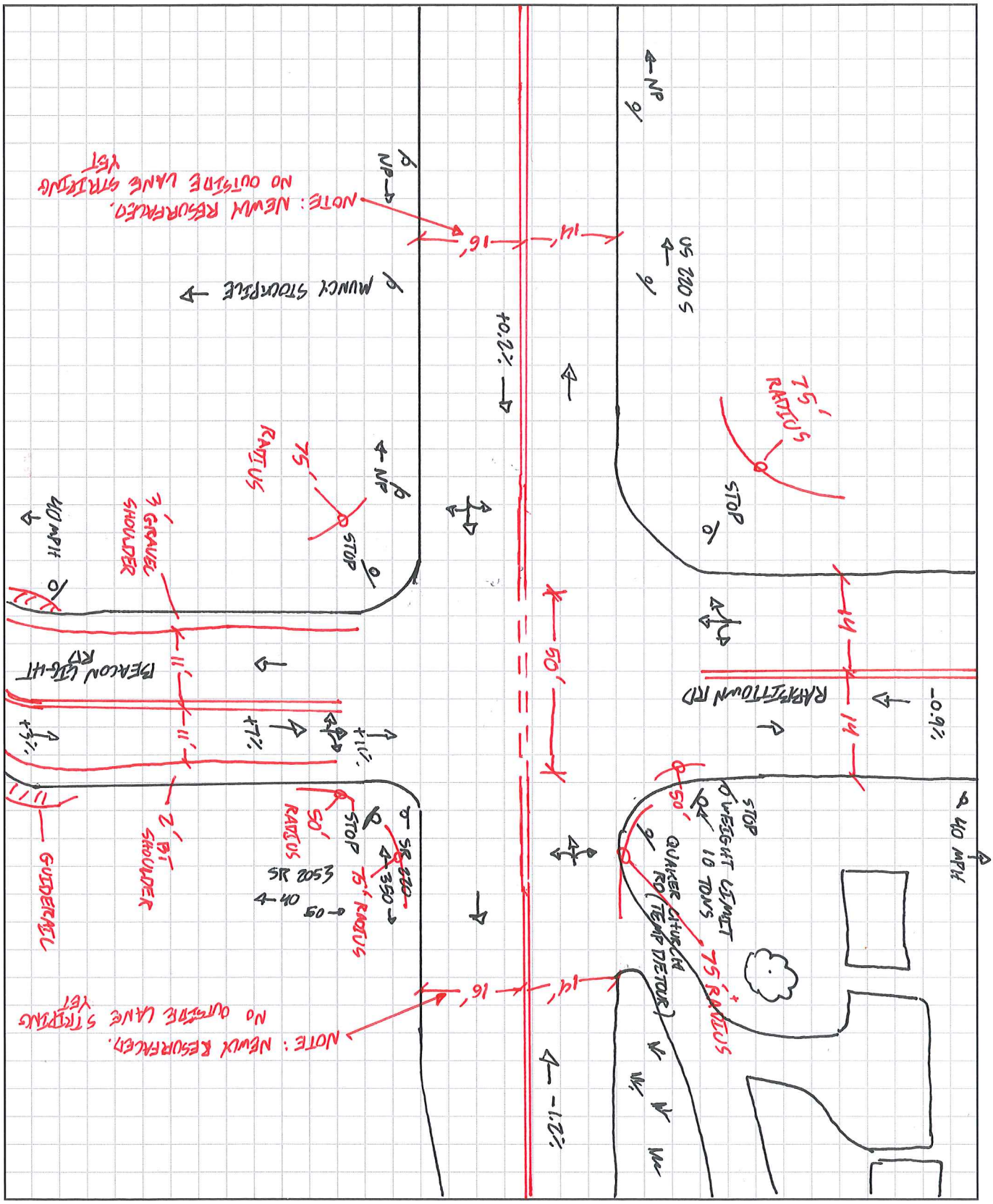


McMAHON
TRANSPORTATION ENGINEERS & PLANNERS

Job MUNCY McMahon Project No. 913480 Sheet ____ of ____

Description 14: US 220/RAPPLETOWN RD Designed By JCP Date 10/14/2014

Checked By ____ Date ____



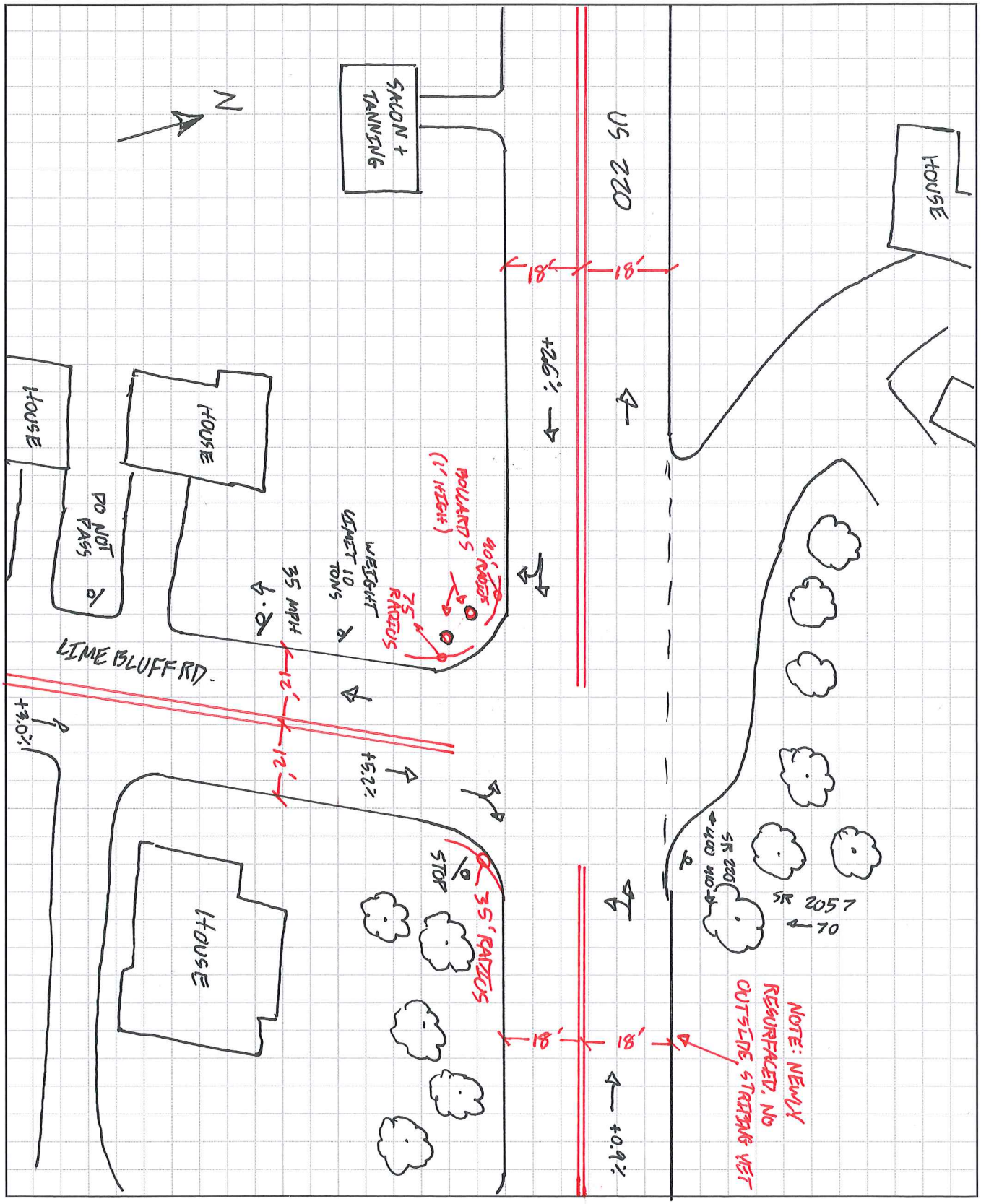
(17)

McMAHON
TRANSPORTATION ENGINEERS & PLANNERS

Job MUNCY | McMahon Project No. 913480 | Sheet ____ of ____

Description 17: US-220/LIME BLUFF RD | Designed By ____ | Date ____

Checked By ____ | Date ____



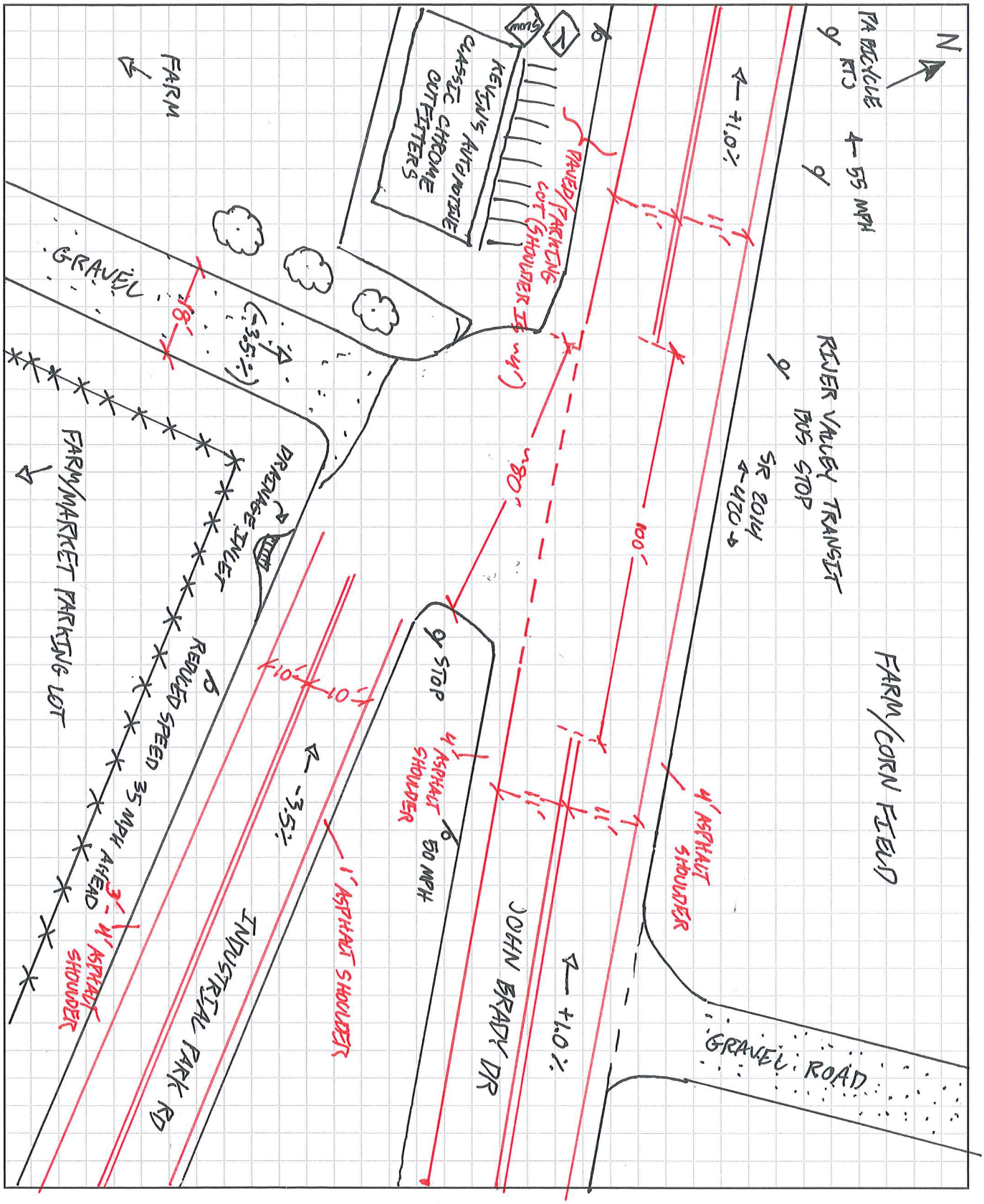
(8)

McMAHON
TRANSPORTATION ENGINEERS & PLANNERS

Job MUNCY | McMahon Project No. 913480.11 | Sheet ____ of ____

Description 8: John Brady Dr / Industrial Park Rd | Designed By ICP | Date 10/14/2014

Checked By ____ | Date ____

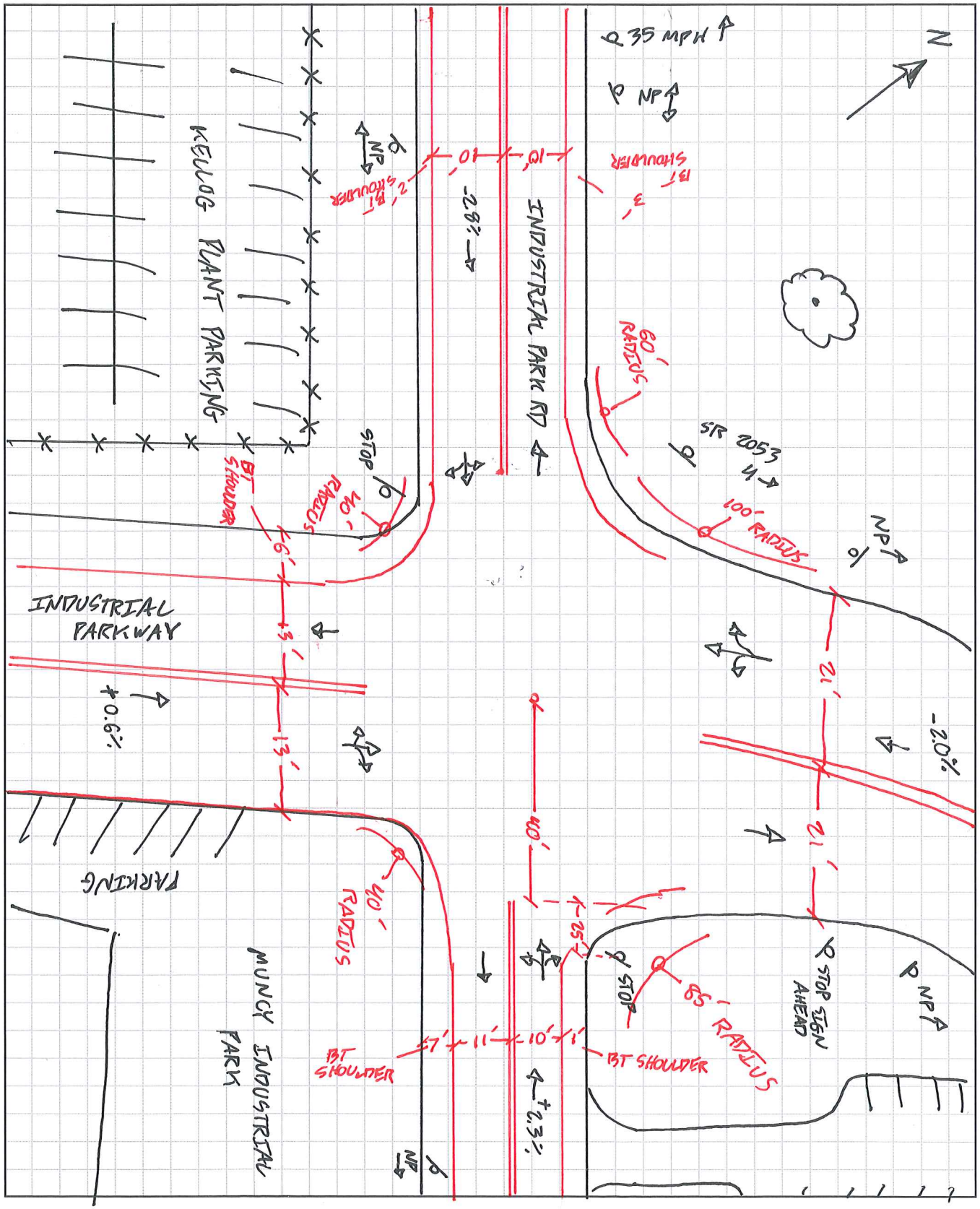


McMAHON
TRANSPORTATION ENGINEERS & PLANNERS

Job MUNCY | McMahon Project No. 913480 | Sheet ____ of ____

Description 12: Industrial Pkwy/Industrial Park Rd. | Designed By ICP | Date 10/14/2014

Checked By ____ | Date ____

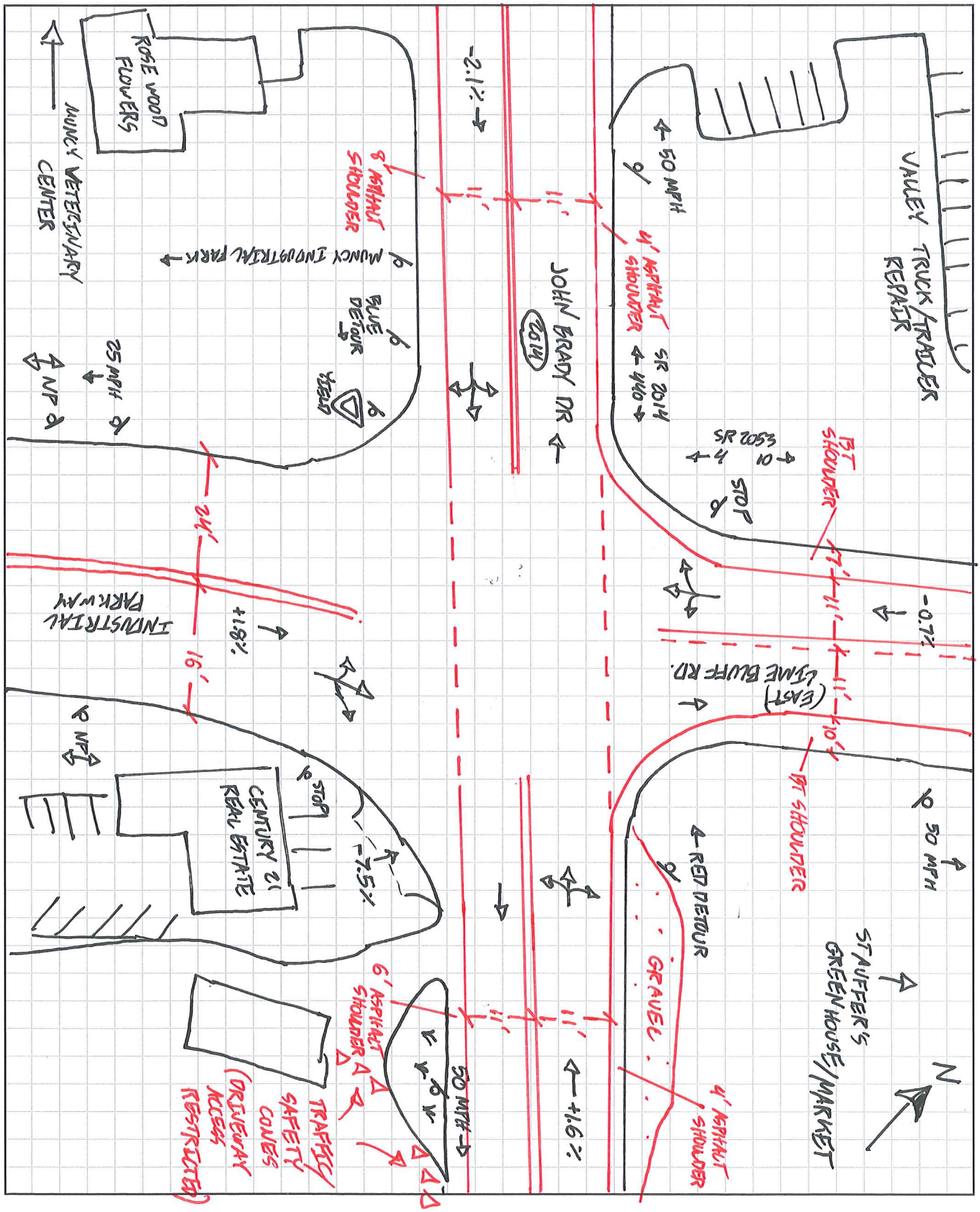


McMAHON
TRANSPORTATION ENGINEERS & PLANNERS

Job MUNCY | McMahon Project No. 913480 | Sheet ____ of ____

Description 19: JOHN BRADY DR/ LIME BLUFF RD | Designed By ICP | Date 10/14/2014

Checked By ____ | Date ____

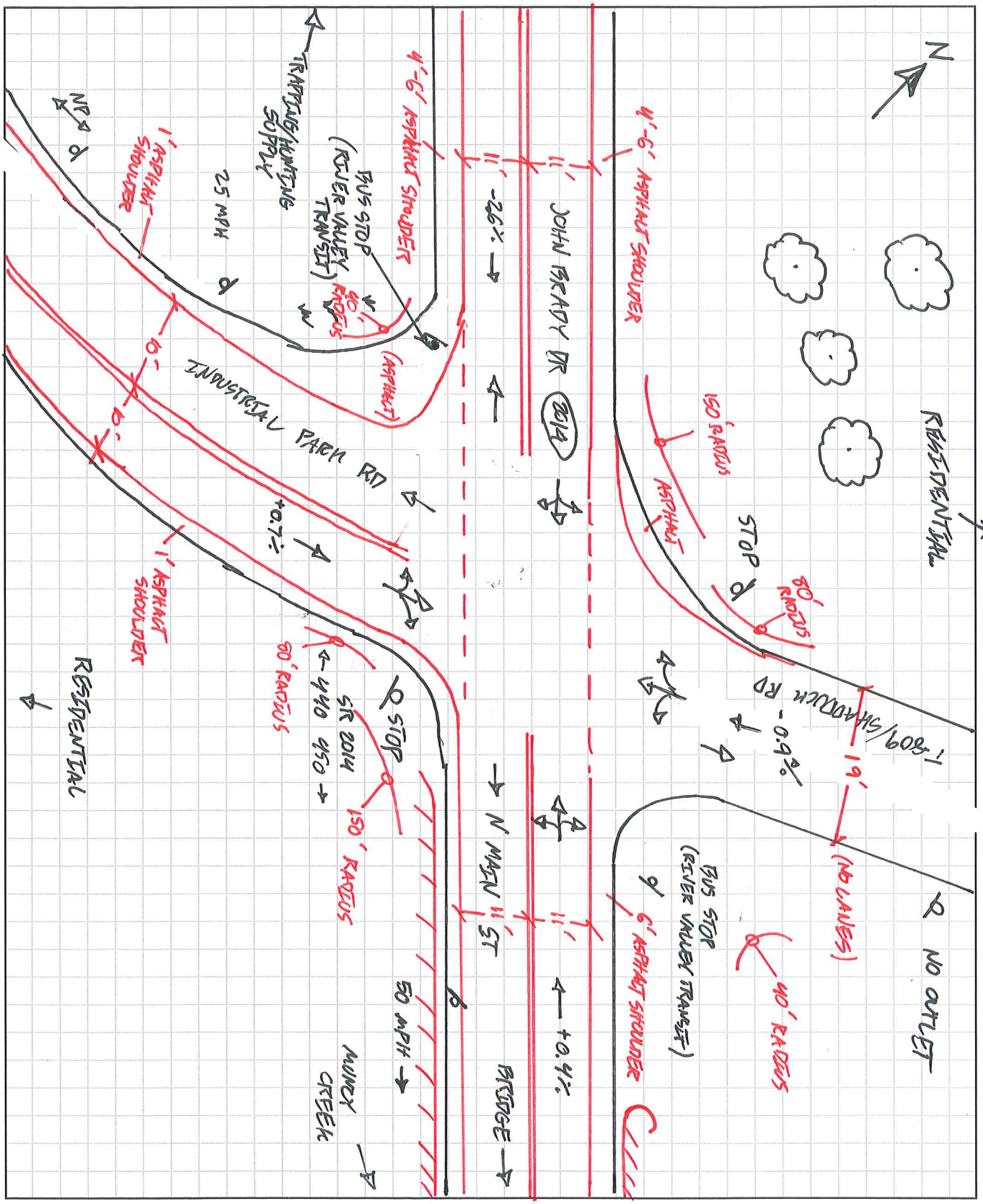


McMAHON
TRANSPORTATION ENGINEERS & PLANNERS

Job MUNOY | McMahon Project No. 93460.11 | Sheet ____ of ____

Description 13: N MAIN ST/ INDUSTRIAL PARK RD | Designed By JCP | Date 10/14/2014

Checked By ____ | Date ____

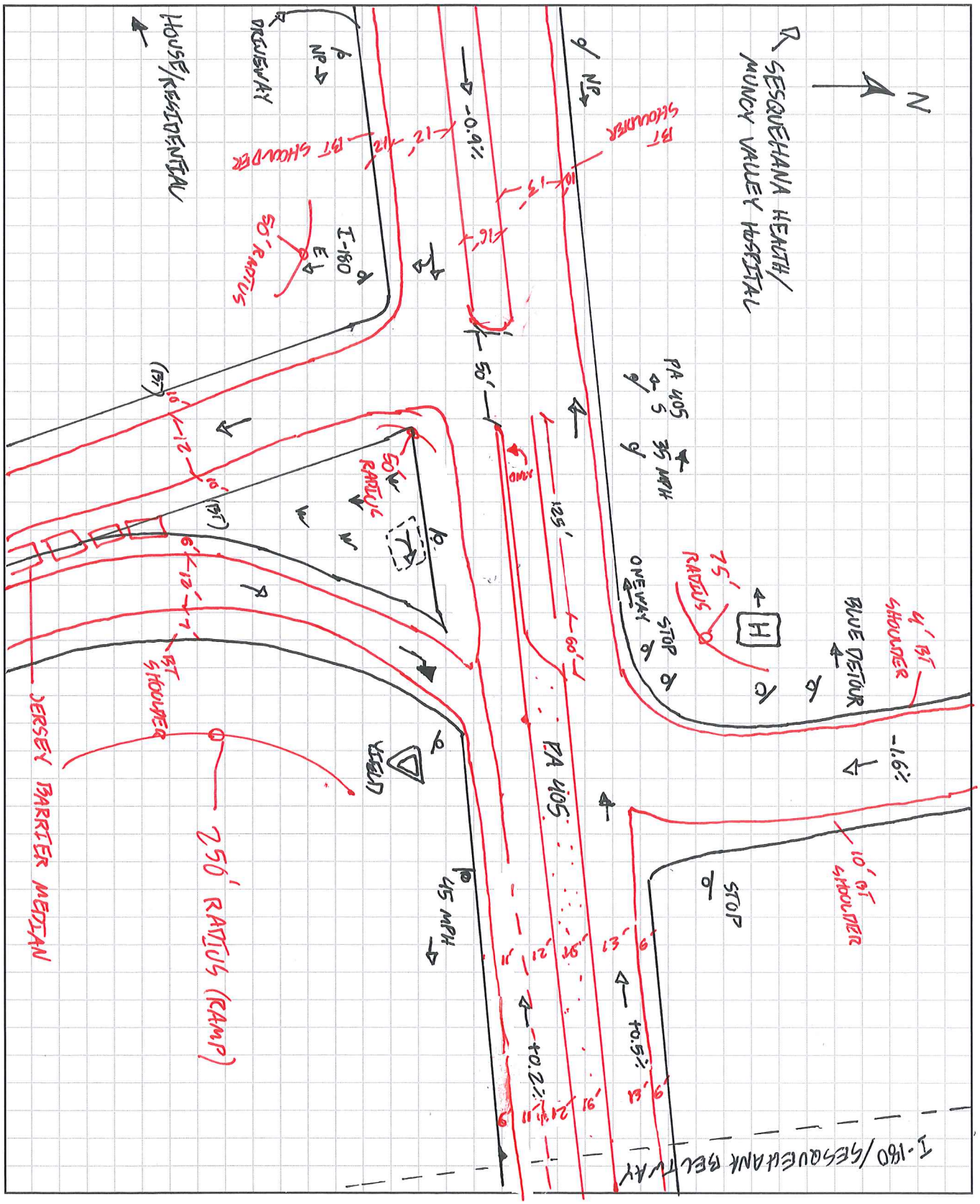


McMAHON
TRANSPORTATION ENGINEERS & PLANNERS

Job MUNCY McMahon Project No. 9:3480 Sheet ____ of ____

Description 5: PA 405/I-180 EB RAMP Designed By JLP Date ____

Checked By ____ Date ____

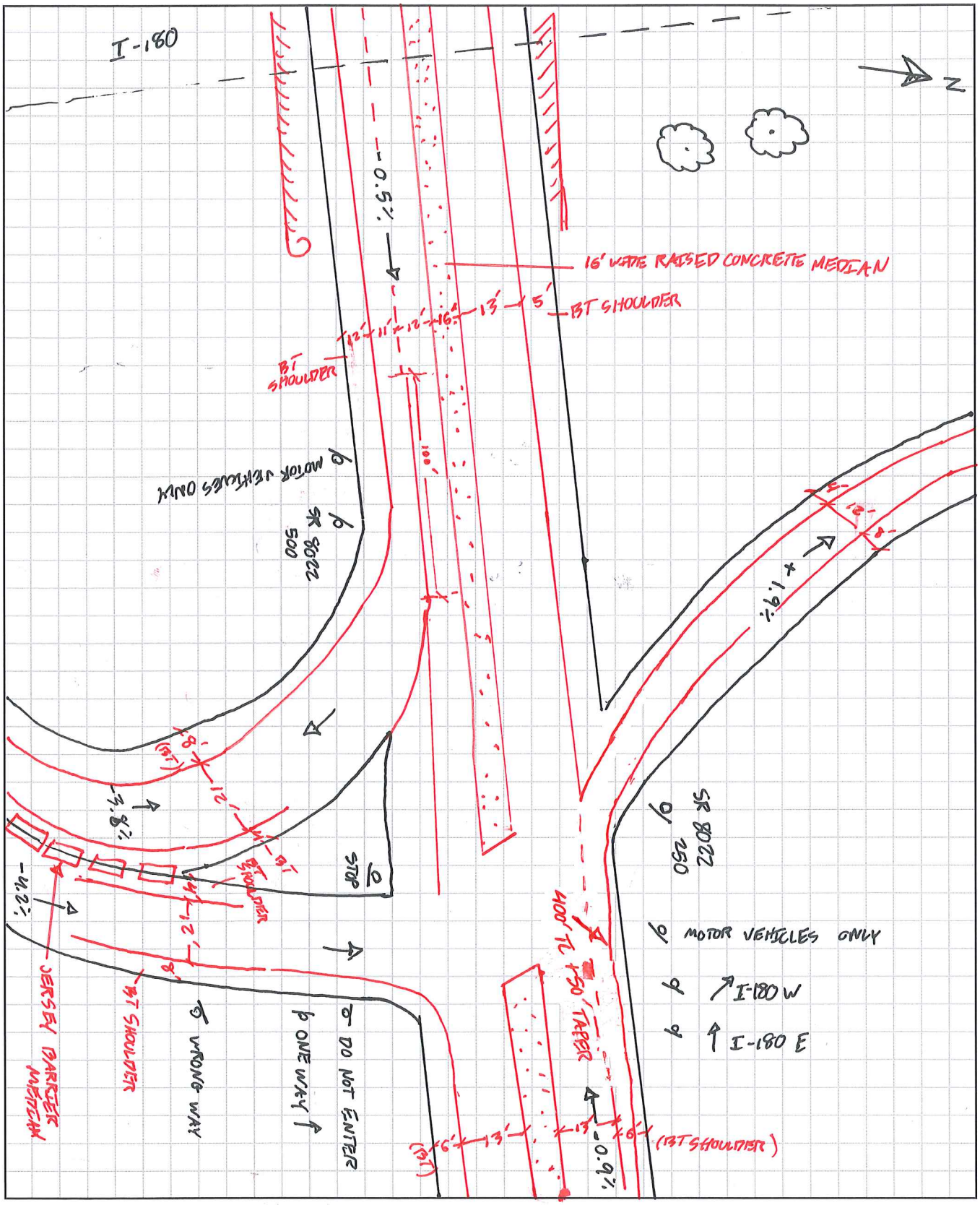


McMAHON
TRANSPORTATION ENGINEERS & PLANNERS

Job MUNCY McMahon Project No. 913480 Sheet ____ of ____

Description 6: PA 405/I-180 WB RAMPS Designed By JCP Date 10/14/2014

Checked By ____ Date ____

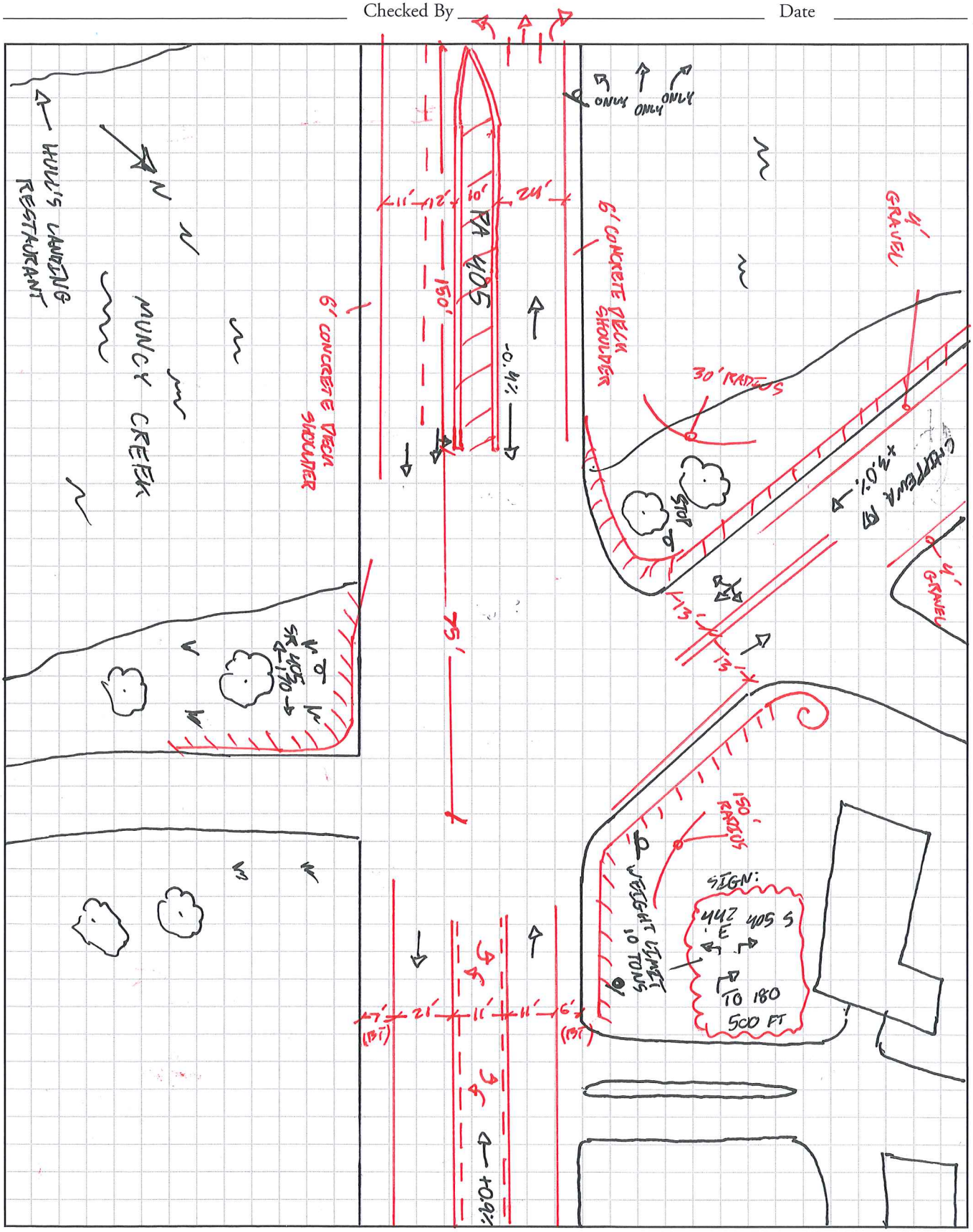


McMAHON
TRANSPORTATION ENGINEERS & PLANNERS

Job MUNCY | McMahon Project No. 913480 | Sheet ____ of ____

Description 15: PA 405/CHIPPEWA RD | Designed By JCP | Date 10/14

Checked By ____ | Date ____

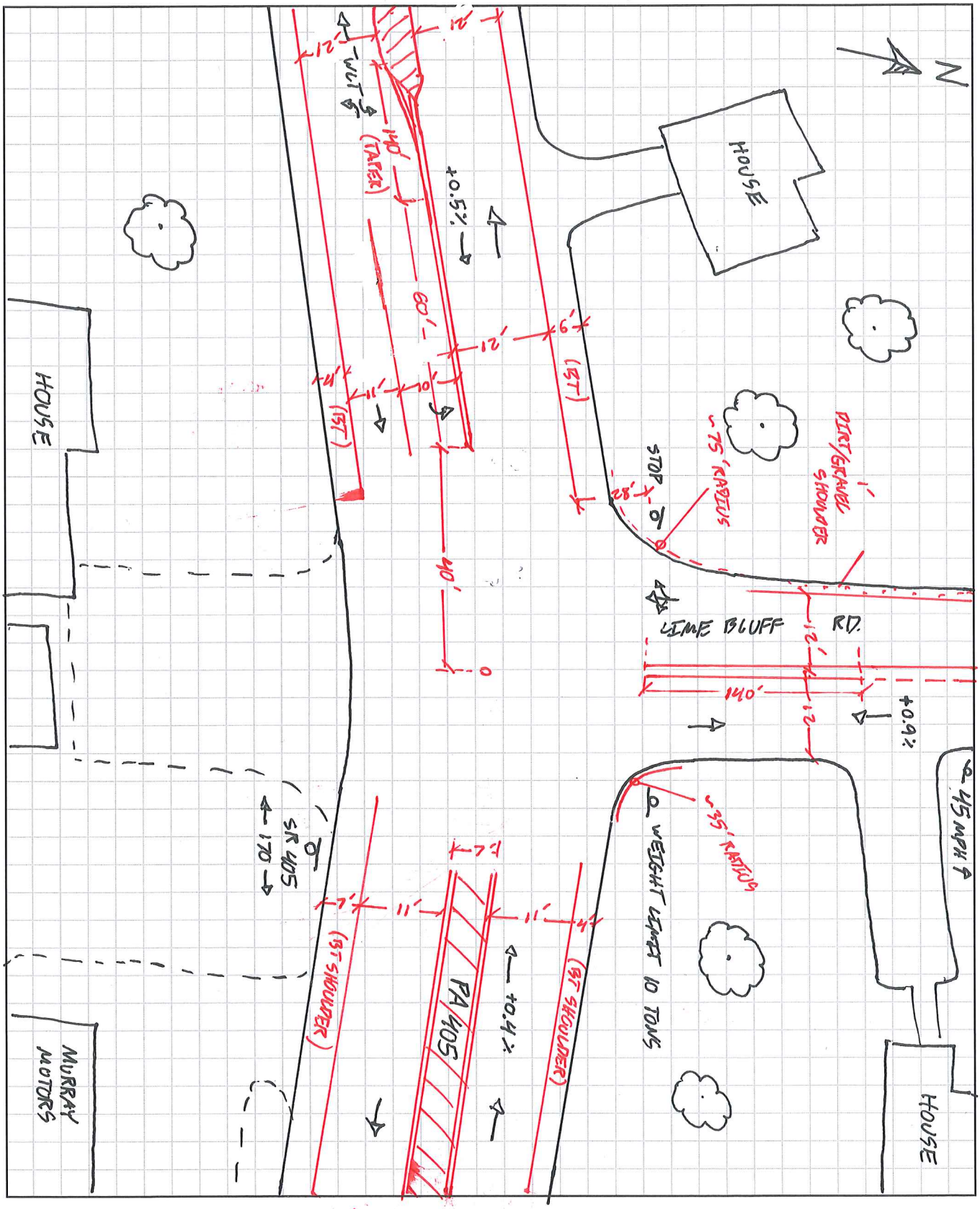


McMAHON
TRANSPORTATION ENGINEERS & PLANNERS

Job MUNCY McMahon Project No. 913480 Sheet ____ of ____

Description 16: PA 405/LIME BLUFF RD Designed By JCP Date 10/14

Checked By ____ Date ____

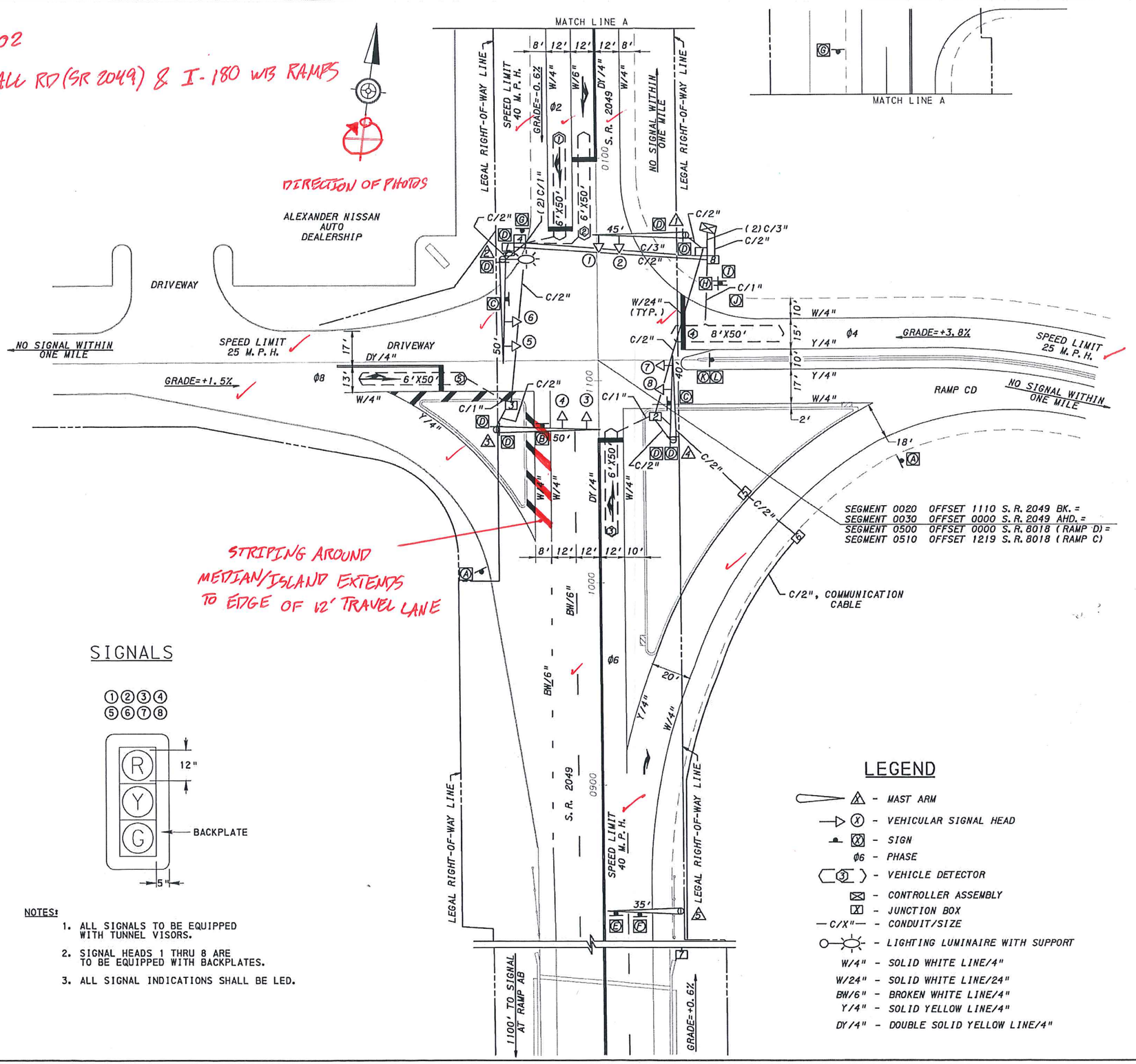


Traffic Signal Plans & Field Notes

913480

STUDY INT # 02

LYCOMING MALL RD (SR 2049) & I-180 WB RAMPS



STRIPING AROUND MEDIAN/ISLAND EXTENDS TO EDGE OF 12' TRAVEL LANE

SIGNALS

NOTES:

1. ALL SIGNALS TO BE EQUIPPED WITH TUNNEL VISORS.
2. SIGNAL HEADS 1 THRU 8 ARE TO BE EQUIPPED WITH BACKPLATES.
3. ALL SIGNAL INDICATIONS SHALL BE LED.

LEGEND

- MAST ARM
- VEHICULAR SIGNAL HEAD
- SIGN
- Ø6 - PHASE
- VEHICLE DETECTOR
- CONTROLLER ASSEMBLY
- JUNCTION BOX
- C/X" - CONDUIT/SIZE
- LIGHTING LUMINAIRE WITH SUPPORT
- W/4" - SOLID WHITE LINE/4"
- W/24" - SOLID WHITE LINE/24"
- BW/6" - BROKEN WHITE LINE/4"
- Y/4" - SOLID YELLOW LINE/4"
- DY/4" - DOUBLE SOLID YELLOW LINE/4"

PERMIT NO. TS262-032 SHEET 2 OF 3

DATE ISSUED: 11-13-2003

DATE REVISED	REASON/COMMENTS
07-13-2005	TIMING CHANGE
02-15-2007	TIMING CHANGE & 5 SEC DELAY FOR RAMP CD

GENERAL NOTES

INSTALL, OPERATE AND MAINTAIN THIS TRAFFIC SIGNAL IN ACCORDANCE WITH ALL PENNSYLVANIA DEPARTMENT OF TRANSPORTATION REGULATIONS, SPECIFICATIONS, AND STANDARD DRAWINGS.

NO MODIFICATION OF THIS INSTALLATION IS PERMITTED UNLESS PRIOR APPROVAL IS GRANTED, IN WRITING, BY THE DEPARTMENT.

ALL MAINTENANCE NECESSARY FOR PROPER VISIBILITY OF THE SIGNALS, INCLUDING TRIMMING TREES, IS THE RESPONSIBILITY OF THE PERMITTEE.

THE PERMITTEE INSTALLS AND MAINTAINS ALL SIGNS AND PAVEMENT MARKINGS INDICATED ON THIS DRAWING WHICH ARE CONSIDERED PART OF THE PERMIT, UNLESS OTHERWISE INDICATED. THE DEPARTMENT MAINTAINS THE LONGITUDINAL PAVEMENT MARKINGS ON STATE HIGHWAYS.

INSTALL POST MOUNTED SIGNALS WITH THE SIGNAL HEADS A MINIMUM OF 2 FEET BEHIND THE FACE OF THE CURB OR EDGE OF THE SHOULDER. ALSO, INSTALL SUPPORT POLES FOR OVERHEAD SIGNALS WITH A MINIMUM HORIZONTAL CLEARANCE OF 2 FEET.

INSTALL SIGNAL HEADS AND SIGNS ERECTED OVER THE ROADWAY WITH THE BOTTOMS NOT LESS THAN 15 FEET NOR MORE THAN 19 FEET ABOVE THE ROADWAY.

INSTALL POST MOUNTED SIGNAL HEADS WITH BOTTOMS NOT LESS THAN 8 FEET NOR MORE THAN 15 FEET ABOVE THE SIDEWALK OR PAVEMENT GRADE.

INSTALL SIGNAL HEADS WITH A MINIMUM HORIZONTAL DISTANCE OF 8 FEET BETWEEN THE HEADS AS MEASURED AT RIGHT ANGLES TO THE APPROACH.

IN ADDITION TO THIS SIGNAL PERMIT, THE PERMITTEE MUST OBTAIN A HIGHWAY OCCUPANCY PERMIT PRIOR TO ANY OPENINGS BEING MADE IN OR UNDER ANY PORTION OF A STATE HIGHWAY.

THREE WORKING DAYS PRIOR TO EXCAVATION THE PERMITTEE MUST CONTACT THE ONE-CALL SYSTEM INC., PHONE 1-800-242-1776.

CONDUIT INSTALLED IN BITUMINOUS ROADWAY LESS THAN 5 YEARS OLD, OR CONCRETE ROADWAY REGARDLESS OF AGE MUST BE BORED OR JACKED UNDER THE ROADWAY. INSTALL IN ACCORDANCE WITH TRAFFIC SIGNAL STANDARDS TC-7800 SERIES.

COUNTY : LYCOMING

MUNICIPALITY : MUNCY TOWNSHIP

INTERSECTION : SR 2049, I-180 RAMP CD AND AUTO DEALERSHIP DRIVE

REVIEWED :

MUNICIPAL OFFICIAL DATE

RECOMMENDED :

DISTRICT TRAFFIC ENGINEER DATE

SCALE : 0' 25' 50' 75'

(2)

OPERATOR:
FILE NAME: L:\rr\PERMIT DRAWINGS\PERMANENT PERMITS\Lycoming County\MUNCY TWP\OLD PERMITS\TS262-032 (SR 2049 & Ramp CD).dgn
D-9012 CADD (02-90) REVISED (10-04) PLOTTED: 05-MAR-2014 09:55

(1)

	PHASE 2+6				PHASE 4+8				FLASHING
	INTERVAL				INTERVAL				
SIGNAL	1	2	3	4	5	6	7	8	
①②③④	G	G	Y	R	R	R	R	R	Y
⑤⑥⑦⑧⑨	R	R	R	R	G	G	Y	R	R
FIXED	X		4	2	X		3	2	
MINIMUM	2				2				
PASSAGE	4				4				
MAX. I	30				25				
MEMORY	NL				MN				

NOTES:
NL = NON-LOCKING
MN = MINIMUM RECALL

SPLITS (SECONDS)

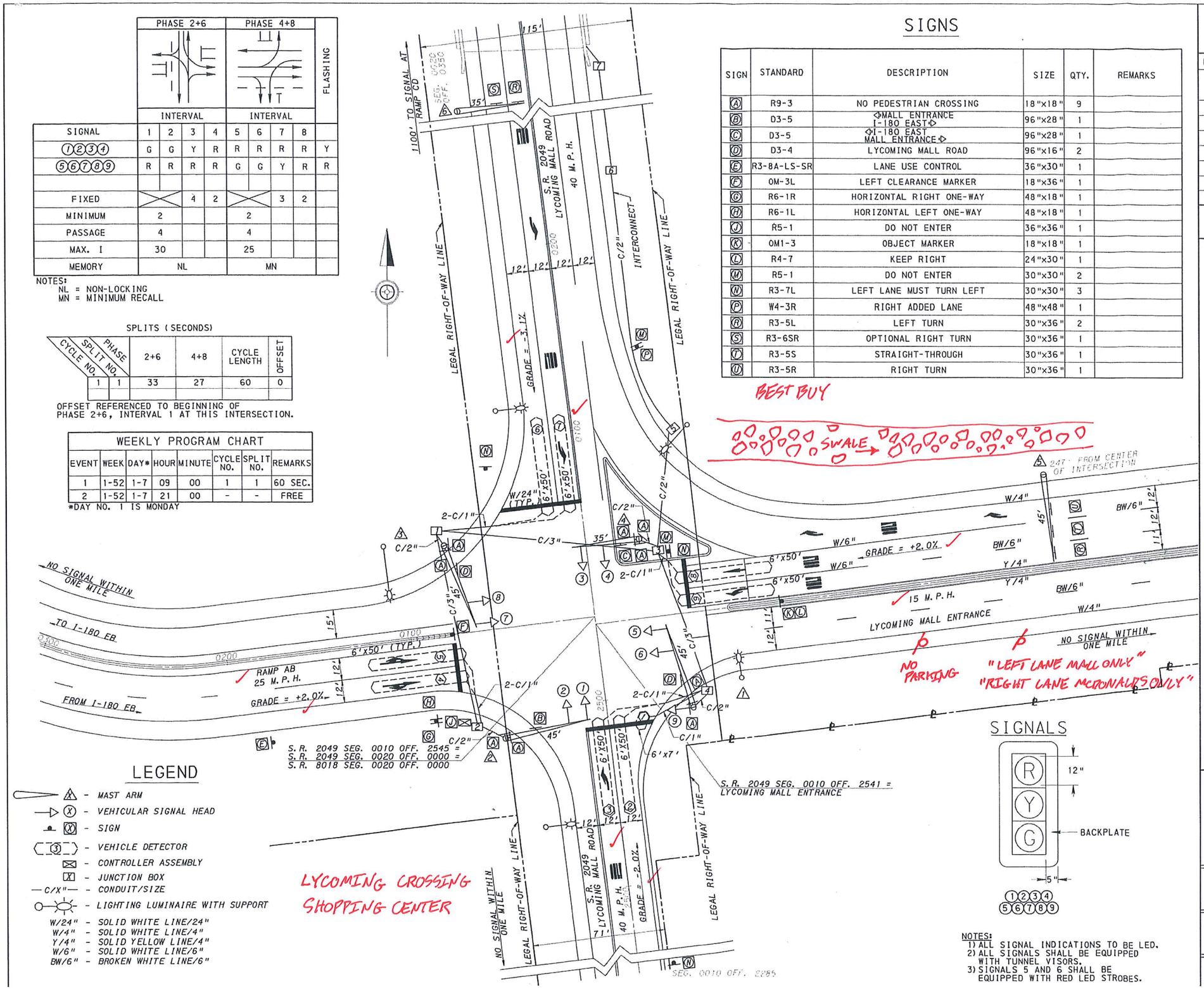
CYCLE NO. / SPLIT NO. / PHASE	2+6	4+8	CYCLE LENGTH	OFFSET
1 / 1	33	27	60	0

OFFSET REFERENCED TO BEGINNING OF PHASE 2+6, INTERVAL 1 AT THIS INTERSECTION.

WEEKLY PROGRAM CHART

EVENT	WEEK	DAY*	HOUR	MINUTE	CYCLE NO.	SPLIT NO.	REMARKS
1	1-52	1-7	09	00	1	1	60 SEC.
2	1-52	1-7	21	00	-	-	FREE

*DAY NO. 1 IS MONDAY



LYCOMING CROSSING SHOPPING CENTER

LEGEND

- MAST ARM
- VEHICULAR SIGNAL HEAD
- SIGN
- VEHICLE DETECTOR
- CONTROLLER ASSEMBLY
- JUNCTION BOX
- C/X"— — CONDUIT/SIZE
- LIGHTING LUMINAIRE WITH SUPPORT

W/24" - SOLID WHITE LINE/24"
W/4" - SOLID WHITE LINE/4"
Y/4" - SOLID YELLOW LINE/4"
W/6" - SOLID WHITE LINE/6"
BW/6" - BROKEN WHITE LINE/6"

SIGNS

SIGN	STANDARD	DESCRIPTION	SIZE	QTY.	REMARKS
A	R9-3	NO PEDESTRIAN CROSSING	18"x18"	9	
B	D3-5	◇MALL ENTRANCE I-180 EAST◇	96"x28"	1	
C	D3-5	◇I-180 EAST MALL ENTRANCE◇	96"x28"	1	
D	D3-4	LYCOMING MALL ROAD	96"x16"	2	
E	R3-8A-LS-SR	LANE USE CONTROL	36"x30"	1	
F	OM-3L	LEFT CLEARANCE MARKER	18"x36"	1	
G	R6-1R	HORIZONTAL RIGHT ONE-WAY	48"x18"	1	
H	R6-1L	HORIZONTAL LEFT ONE-WAY	48"x18"	1	
J	R5-1	DO NOT ENTER	36"x36"	1	
K	OM1-3	OBJECT MARKER	18"x18"	1	
L	R4-7	KEEP RIGHT	24"x30"	1	
M	R5-1	DO NOT ENTER	30"x30"	2	
N	R3-7L	LEFT LANE MUST TURN LEFT	30"x30"	3	
P	W4-3R	RIGHT ADDED LANE	48"x48"	1	
R	R3-5L	LEFT TURN	30"x36"	2	
S	R3-6SR	OPTIONAL RIGHT TURN	30"x36"	1	
T	R3-5S	STRAIGHT-THROUGH	30"x36"	1	
U	R3-5R	RIGHT TURN	30"x36"	1	

SIGNALS

NOTES:
1) ALL SIGNAL INDICATIONS TO BE LED.
2) ALL SIGNALS SHALL BE EQUIPPED WITH TUNNEL VISORS.
3) SIGNALS 5 AND 6 SHALL BE EQUIPPED WITH RED LED STROBES.

PERMIT NO. TS195-032 SHEET 2 OF 2
DATE ISSUED: 10-17-1994

DATE REVISED	REASON/COMMENTS
11-24-2003	REMOVED PED. PUSHBUTTONS, ADDED NO PEDESTRIAN CROSSING SIGNS
02-18-2004	ADDED #9 & ADDED STROBES TO 5 & 6
12-08-2006	LED UPGRADE
11-13-2007	REMOVED FROM COORDINATION

GENERAL NOTES

INSTALL, OPERATE AND MAINTAIN THIS TRAFFIC SIGNAL IN ACCORDANCE WITH ALL PENNSYLVANIA DEPARTMENT OF TRANSPORTATION REGULATIONS, SPECIFICATIONS, AND STANDARD DRAWINGS.

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INSTALL POST MOUNTED SIGNALS WITH THE SIGNAL HEADS A MINIMUM OF 2 FEET BEHIND THE FACE OF THE CURB OR EDGE OF THE SHOULDER. ALSO, INSTALL SUPPORT POLES FOR OVERHEAD SIGNALS WITH A MINIMUM HORIZONTAL CLEARANCE OF 2 FEET.

INSTALL SIGNAL HEADS AND SIGNS ERECTED OVER THE ROADWAY WITH THE BOTTOMS NOT LESS THAN 15 FEET NOR MORE THAN 19 FEET ABOVE THE ROADWAY.

INSTALL POST MOUNTED SIGNAL HEADS WITH BOTTOMS NOT LESS THAN 8 FEET NOR MORE THAN 15 FEET ABOVE THE SIDEWALK OR PAVEMENT GRADE.

INSTALL SIGNAL HEADS WITH A MINIMUM HORIZONTAL DISTANCE OF 8 FEET BETWEEN THE HEADS AS MEASURED AT RIGHT ANGLES TO THE APPROACH.

IN ADDITION TO THIS SIGNAL PERMIT, THE PERMITTEE MUST OBTAIN A HIGHWAY OCCUPANCY PERMIT PRIOR TO ANY OPENINGS BEING MADE IN OR UNDER ANY PORTION OF A STATE HIGHWAY.

THREE WORKING DAYS PRIOR TO EXCAVATION THE PERMITTEE MUST CONTACT THE ONE-CALL SYSTEM INC., PHONE 1-800-242-1776.

CONDUIT INSTALLED IN BITUMINOUS ROADWAY LESS THAN 5 YEARS OLD, OR CONCRETE ROADWAY REGARDLESS OF AGE MUST BE BORED OR JACKED UNDER THE ROADWAY. INSTALL IN ACCORDANCE WITH TRAFFIC SIGNAL STANDARDS TC-7800 SERIES.

913480
STUDY INT #01
S LYCOMING MALL RD & LYCOMING MALL CIRCLE (I-180 EBS RAMPS)

COUNTY : LYCOMING

MUNICIPALITY : MUNCY TOWNSHIP

INTERSECTION : S.R. 2049 (LYCOMING MALL ROAD), RAMP AB AND LYCOMING MALL ENTRANCE

REVIEWED : Paul O. Weitzler 1-20-11
MUNICIPAL OFFICIAL DATE

RECOMMENDED : [signature] 6/10/11
DISTRICT TRAFFIC ENGINEER DATE

SCALE : 0' 25' 50' 75'

OPERATOR:
FILE NAME: L:\rr1\PROJECTS\41-Muncy Twp. Permit updates\TS195-032-SR 2049(LYCOMING MALL RD)-RAMP AB AND LYCOMING MALL ENTRANCE.dgn
0-9012 CADD (02-90) REVISED (10-04) PLOTTED: 10-JAN-2011 13:30

PERMIT NO. TS289-031 SHEET 2 OF 3

DATE ISSUED: 11-13-2007

913480

STUDY INT #07

LYCOMING MALL DR & S. LYCOMING MALL RD.

PHASE	2+5				2+6				4				EMERGENCY FLASHING
INTERVAL	1	2	3		4	5	6	7	8	9	10	11	
SIGNAL	G/-G-	Y①	R②		G	G	Y	R	R	R	R	R	Y
①	G	Y②	R②		G	G	Y	R	R	R	R	R	Y
②③④	R	R	R		G	G	Y	R	R	R	R	R	Y
⑤⑥	R	R	R		R	R	R	R	G	G	Y	R	R
⑦⑧	H	H	H		H	H	H	H	M	FH	H	H	OFF
⑨⑩	H	H	H		M	FH	H	H	H	H	H	H	OFF
FIXED		4	2				4	2			4	2	
MINIMUM	3				15				5				
SEC./ACT.					1.5								
MAX. INITIAL					42								
PASSAGE	3				5				3				
TIME BEFORE REDUCTION					42								
TIME TO REDUCE					10								
MIN. GAP					2								
MAX. I	7				52				20				
MAX. II	7				52				20				
PEDESTRIAN *					7	14			7	14			
MEMORY	NL				MN				NL				

* = UPON PEDESTRIAN ACTUATION ONLY, OTHERWISE HAND SYMBOL AT ALL TIMES.

① G/-Y- IF FOLLOWED BY 2+6.

② G IF FOLLOWED BY 2+6.

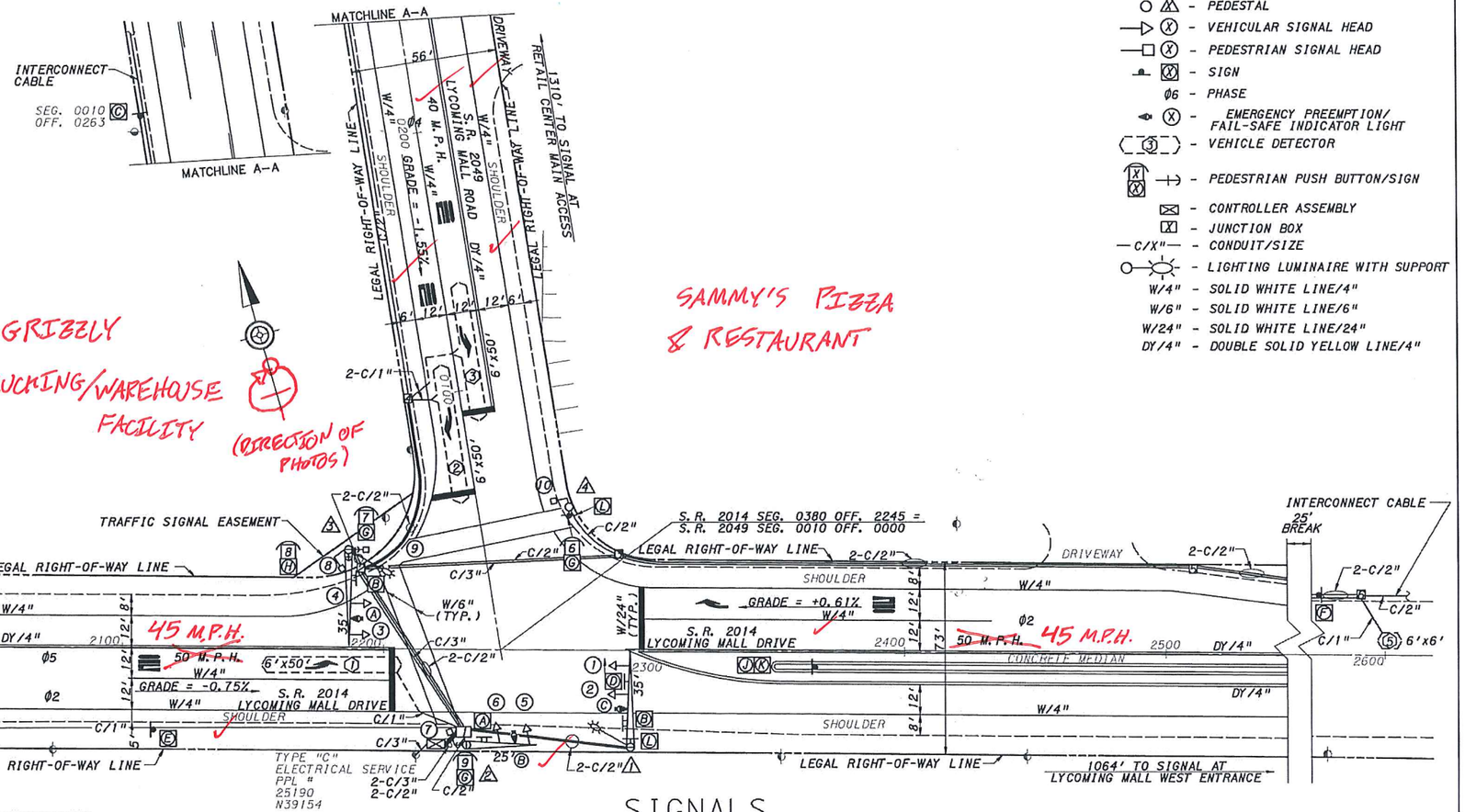
NOTES:

MR = MINIMUM RECALL
NL = NON-LOCKING
FH = DON'T WALK
H = FLASHING DON'T WALK
M = WALK

SPLITS (SECONDS)

CYCLE NO.	SPLIT NO.	PHASE 1	2	3	4	5	6	7	8	CYCLE LENGTH	OFFSET
1	1		45		30	13	32			75 SEC	0
2	1		57		33	16	41			90 SEC	0
3	1		72		43	16	56			115 SEC	0

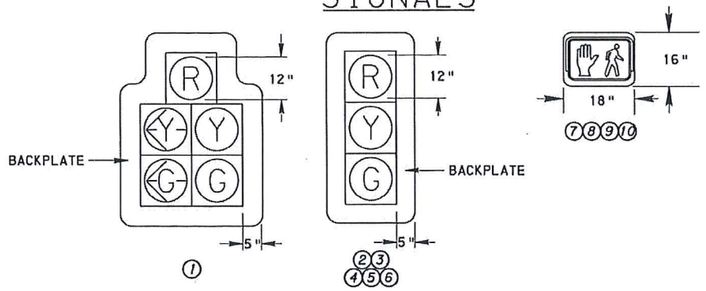
NOTE: 1. OFFSETS REFERENCED TO BEGIN OF YELLOW, PHASE 2+6.



SIGNS

SIGN	STANDARD	DESCRIPTION	SIZE	QTY.	REMARKS
A	D3-4	LYCOMING MALL DR	96"x16"	1	
B	D3-4	LYCOMING MALL RD	96"x16"	2	
C	R3-8A(L-R)	LANE USE CONTROL	30"x30"	1	
D	R10-12	LEFT TURN YIELD ON GREEN	36"x36"	1	
E	R3-7L	LEFT LANE MUST TURN LEFT	30"x30"	1	
F	R3-7R	RIGHT LANE MUST TURN RIGHT	30"x30"	1	
G	R10-3B	EDUCATIONAL PUSH BUTTON FOR WALKING PERSON SIGNAL	9"x12"	3	LEFT
H	R10-3B	EDUCATIONAL PUSH BUTTON FOR WALKING PERSON SIGNAL	9"x12"	1	RIGHT
J	R4-7	KEEP RIGHT	24"x30"	1	
K	OM1-3	OBJECT MARKER	18"x18"	1	
L	R9-3A	NO PEDESTRIAN CROSSING	18"x18"	2	

SIGNALS



NOTES:
1) ALL SIGNAL TO BE EQUIPPED WITH TUNNEL VISORS AND BACKPLATES.
2) ALL SIGNAL INDICATIONS TO BE LED.

LEGEND

- MAST ARM
- PEDESTAL
- VEHICULAR SIGNAL HEAD
- PEDESTRIAN SIGNAL HEAD
- SIGN
- ϕ6 - PHASE
- EMERGENCY PREEMPTION/ FAIL-SAFE INDICATOR LIGHT
- VEHICLE DETECTOR
- PEDESTRIAN PUSH BUTTON/SIGN
- CONTROLLER ASSEMBLY
- JUNCTION BOX
- C/X" - CONDUIT/SIZE
- LIGHTING LUMINAIRE WITH SUPPORT
- W/4" - SOLID WHITE LINE/4"
- W/6" - SOLID WHITE LINE/6"
- W/24" - SOLID WHITE LINE/24"
- DY/4" - DOUBLE SOLID YELLOW LINE/4"

COUNTY: LYCOMING

MUNICIPALITY: MUNCY TOWNSHIP

INTERSECTION: S.R. 2014 (LYCOMING MALL DRIVE) AND S.R. 2049 (LYCOMING MALL ROAD)

REVIEWED:

MUNICIPAL OFFICIAL DATE

RECOMMENDED:

DISTRICT TRAFFIC ENGINEER DATE

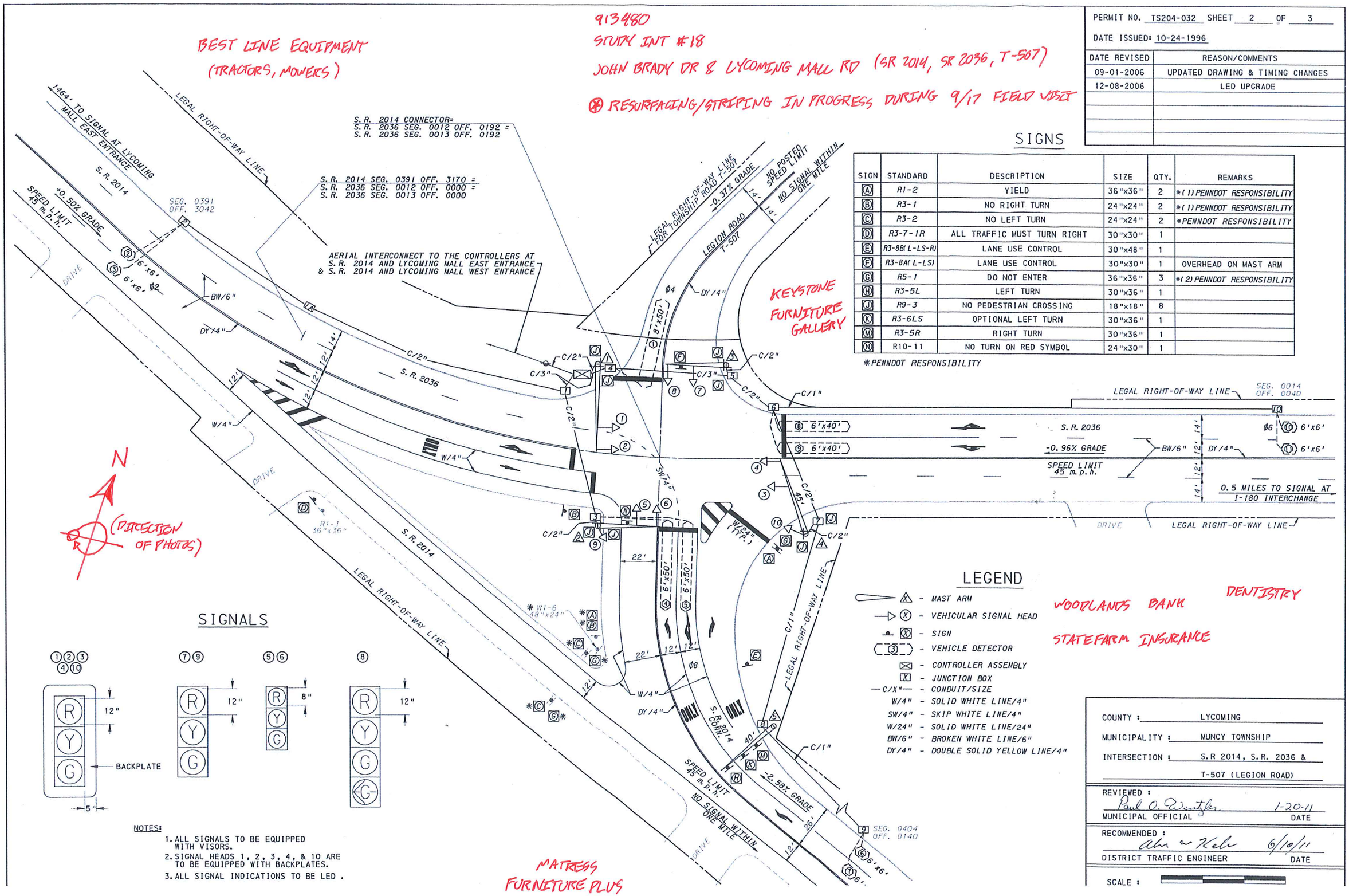
SCALE: 0' 25' 50' 75'

OPERATOR:
FILE NAME: L:\tr1\PERMIT DRAWINGS\PERMANENT PERMITS\Lycoming County\MUNCY TWP\TS289-032-SR 2014(LYCOMING MALL DRIVE) AND SR 2049 (LYCOMING MALL ROAD).dgn
D-9012 CADD (02-90) REVISED (10-04) PLOTTED: 04-DEC-2012 09:28

BEST LINE EQUIPMENT
(TRACTORS, MOWERS)

913480
STUDY INT #18
JOHN BRADY DR & LYCOMING MALL RD (SR 2014, SR 2036, T-507)
* RESURFACING/STRIPING IN PROGRESS DURING 9/17 FIELD VISIT

PERMIT NO. TS204-032 SHEET 2 OF 3	
DATE ISSUED: 10-24-1996	
DATE REVISED	REASON/COMMENTS
09-01-2006	UPDATED DRAWING & TIMING CHANGES
12-08-2006	LED UPGRADE



SIGNS

SIGN	STANDARD	DESCRIPTION	SIZE	QTY.	REMARKS
A	R1-2	YIELD	36"x36"	2	*(1) PENNDOT RESPONSIBILITY
B	R3-1	NO RIGHT TURN	24"x24"	2	*(1) PENNDOT RESPONSIBILITY
C	R3-2	NO LEFT TURN	24"x24"	2	*PENNDOT RESPONSIBILITY
D	R3-7-1R	ALL TRAFFIC MUST TURN RIGHT	30"x30"	1	
E	R3-8B(L-LS-R)	LANE USE CONTROL	30"x48"	1	
F	R3-8A(L-LS)	LANE USE CONTROL	30"x30"	1	OVERHEAD ON MAST ARM
G	R5-1	DO NOT ENTER	36"x36"	3	*(2) PENNDOT RESPONSIBILITY
H	R3-5L	LEFT TURN	30"x36"	1	
J	R9-3	NO PEDESTRIAN CROSSING	18"x18"	8	
K	R3-6LS	OPTIONAL LEFT TURN	30"x36"	1	
M	R3-5R	RIGHT TURN	30"x36"	1	
N	R10-11	NO TURN ON RED SYMBOL	24"x30"	1	

*PENNDOT RESPONSIBILITY

SIGNALS

NOTES:
1. ALL SIGNALS TO BE EQUIPPED WITH VISORS.
2. SIGNAL HEADS 1, 2, 3, 4, & 10 ARE TO BE EQUIPPED WITH BACKPLATES.
3. ALL SIGNAL INDICATIONS TO BE LED .

LEGEND

- MAST ARM
- VEHICULAR SIGNAL HEAD
- SIGN
- VEHICLE DETECTOR
- CONTROLLER ASSEMBLY
- JUNCTION BOX
- C/X" - CONDUIT/SIZE
- W/4" - SOLID WHITE LINE/4"
- SW/4" - SKIP WHITE LINE/4"
- W/24" - SOLID WHITE LINE/24"
- BW/6" - BROKEN WHITE LINE/6"
- DY/4" - DOUBLE SOLID YELLOW LINE/4"

COUNTY : LYCOMING
MUNICIPALITY : MUNCY TOWNSHIP
INTERSECTION : S.R 2014, S.R. 2036 & T-507 (LEGION ROAD)

REVIEWED : Paul O. Winstel 1-20-11
MUNICIPAL OFFICIAL DATE

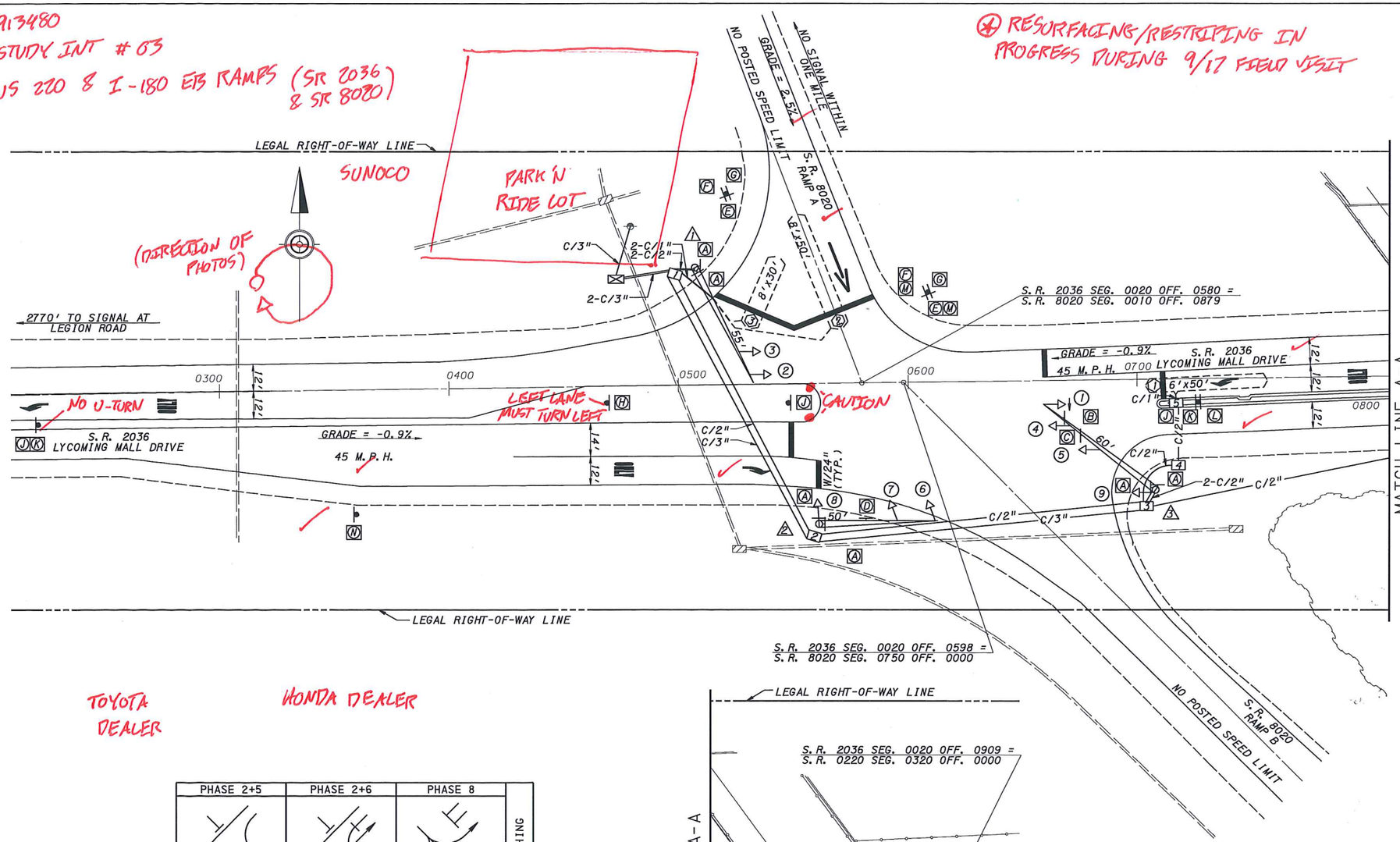
RECOMMENDED : Alan W. Kebe 6/10/11
DISTRICT TRAFFIC ENGINEER DATE

SCALE :

OPERATOR:
FILE NAME: L:\Irl\PROJECTS\41-Muncy Twp. Permit updates\TS204-032 (SR 2014 & SR 2036 & Legion Rd).dgn
D-9012 CADD (02-90) REVISED (10-04) PLOTTED: 10-JAN-2011 13:29

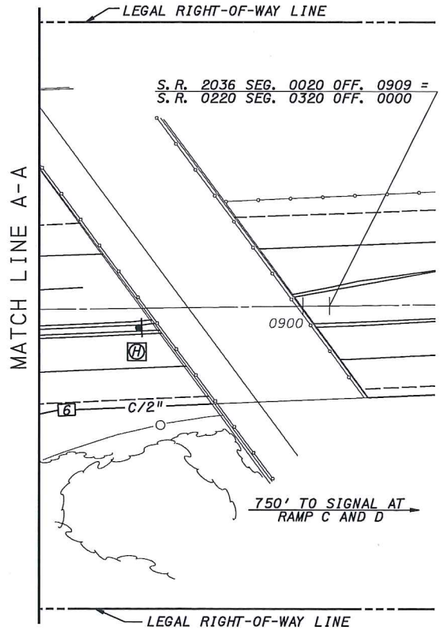
913480
STUDY INT # 03
US 220 & I-180 EB RAMPS (SR 2036 & SR 8020)

* RESURFACING/RESTRIPING IN PROGRESS DURING 9/17 FIELD VISIT



TOYOTA DEALER

HONDA DEALER



	PHASE 2+5			PHASE 2+6			PHASE 8			FLASHING
	INTERVAL			INTERVAL			INTERVAL			
SIGNAL	1	2	3	4	5	6	7	8	9	
①	G/G	G/Y	G	G	Y	R	R	R	R	Y
②③	G	G	G	G	Y	R	R	R	R	Y
④⑤⑨	R	R	R	G	Y	R	R	R	R	Y
⑥⑦⑧	R	R	R	R	R	R	G	Y	R	R
FIXED		4	1		5	3		3	2	
MINIMUM	5			20			5			
PASSAGE	4						4			
MAX. I	10			35			25			
MEMORY	NL			MN			NL			

NOTES:
NL = NON-LOCKING
MN = MINIMUM RECALL

LEGEND

- MAST ARM
- VEHICULAR SIGNAL HEAD
- SIGN
- VEHICLE DETECTOR
- CONTROLLER ASSEMBLY
- JUNCTION BOX
- C/X" — CONDUIT/SIZE
- LIGHTING LUMINAIRE WITH SUPPORT
- W/24" — SOLID WHITE LINE/24"

PERMIT NO. TS263-032 SHEET 2 OF 3

DATE ISSUED: 11-20-2003

DATE REVISED	REASON/COMMENTS
02-18-2004	LEFT TURN SIGNAL CHANGES
12-08-2006	ADDED RIGHT TURN LANE & LED UPGRADE

GENERAL NOTES

INSTALL, OPERATE AND MAINTAIN THIS TRAFFIC SIGNAL IN ACCORDANCE WITH ALL PENNSYLVANIA DEPARTMENT OF TRANSPORTATION REGULATIONS, SPECIFICATIONS, AND STANDARD DRAWINGS.

NO MODIFICATION OF THIS INSTALLATION IS PERMITTED UNLESS PRIOR APPROVAL IS GRANTED, IN WRITING, BY THE DEPARTMENT.

ALL MAINTENANCE NECESSARY FOR PROPER VISIBILITY OF THE SIGNALS, INCLUDING TRIMMING TREES, IS THE RESPONSIBILITY OF THE PERMITTEE.

THE PERMITTEE INSTALLS AND MAINTAINS ALL SIGNS AND PAVEMENT MARKINGS INDICATED ON THIS DRAWING WHICH ARE CONSIDERED PART OF THE PERMIT, UNLESS OTHERWISE INDICATED. THE DEPARTMENT MAINTAINS THE LONGITUDINAL PAVEMENT MARKINGS ON STATE HIGHWAYS.

INSTALL POST MOUNTED SIGNALS WITH THE SIGNAL HEADS A MINIMUM OF 2 FEET BEHIND THE FACE OF THE CURB OR EDGE OF THE SHOULDER. ALSO, INSTALL SUPPORT POLES FOR OVERHEAD SIGNALS WITH A MINIMUM HORIZONTAL CLEARANCE OF 2 FEET.

INSTALL SIGNAL HEADS AND SIGNS ERECTED OVER THE ROADWAY WITH THE BOTTOMS NOT LESS THAN 15 FEET NOR MORE THAN 19 FEET ABOVE THE ROADWAY.

INSTALL POST MOUNTED SIGNAL HEADS WITH BOTTOMS NOT LESS THAN 8 FEET NOR MORE THAN 15 FEET ABOVE THE SIDEWALK OR PAVEMENT GRADE.

INSTALL SIGNAL HEADS WITH A MINIMUM HORIZONTAL DISTANCE OF 8 FEET BETWEEN THE HEADS AS MEASURED AT RIGHT ANGLES TO THE APPROACH.

IN ADDITION TO THIS SIGNAL PERMIT, THE PERMITTEE MUST OBTAIN A HIGHWAY OCCUPANCY PERMIT PRIOR TO ANY OPENINGS BEING MADE IN OR UNDER ANY PORTION OF A STATE HIGHWAY.

THREE WORKING DAYS PRIOR TO EXCAVATION THE PERMITTEE MUST CONTACT THE ONE-CALL SYSTEM INC., PHONE 1-800-242-1776.

CONDUIT INSTALLED IN BITUMINOUS ROADWAY LESS THAN 5 YEARS OLD, OR CONCRETE ROADWAY REGARDLESS OF AGE MUST BE BORED OR JACKED UNDER THE ROADWAY. INSTALL IN ACCORDANCE WITH TRAFFIC SIGNAL STANDARDS TC-7800 SERIES.

COUNTY : LYCOMING

MUNICIPALITY : MUNCY TOWNSHIP

INTERSECTION : S.R. 2036 (LYCOMING MALL DRIVE) AND S.R. 8020 (RAMPS A & B)

REVIEWED :

MUNICIPAL OFFICIAL DATE

RECOMMENDED :

DISTRICT TRAFFIC ENGINEER DATE

SCALE : 0' 25' 50' 75'

OPERATOR:
FILE NAME: L:\tr1\PERMIT DRAWINGS\PERMANENT PERMITS\Lycoming County\MUNCY TWP\TS263-032-SR 2036 and Ramp A&B.dgn
D-9012 CADD (02-90) REVISED (10-04)
PLOTTED: 11-JUL-2011 13:31

PLOTTED: 11-JUL-2011 13:30
D-9012 CADD (02-90) REVISED (10-04)
OPERATOR:
FILE NAME: L:\tr1\PERMIT DRAWINGS\PERMANENT PERMITS\Lycoming County\MUNCY TWP\TS264-032-SR 220 and Ramp C&D.dgn

	PHASE 1+6			PHASE 2+6			PHASE 4			FLASHING
	INTERVAL			INTERVAL			INTERVAL			
SIGNAL	1	2	3	4	5	6	7	8	9	
①	G/G	G/Y	G	G	Y	R	R	R	R	Y
②③	G	G	G	G	Y	R	R	R	R	Y
④⑤	R	R	R	G	Y	R	R	R	R	Y
⑥⑦	R	R	R	R	R	R	G	Y	R	R
FIXED		4	1		5	3		3	2	
MINIMUM	5			20			5			
PASSAGE	4						4			
MAX. I	10			35			25			
MEMORY	NL			MN			MN			

NOTES:
NL = NON-LOCKING
MN = MINIMUM RECALL

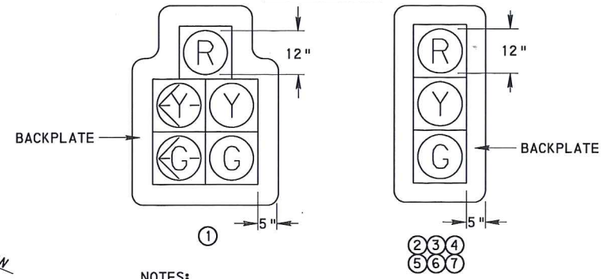
SPLITS (SECONDS)

CYCLE NO. / SPLIT NO. / PHASE	1+6	2+6	4	CYCLE LENGTH	OFFSET
1 1	10	28	22	60	42

OFFSET REFERENCED TO BEGINNING OF PHASE 2+6, INTERVAL 1 AT S.R. 2036 AND RAMP A AND B SIGNAL.

MASTER CONTROLLER TO BE INSTALLED AT RAMP A AND B INTERSECTION.

SIGNALS



NOTES:
1) ALL SIGNAL INDICATIONS TO BE LED.
2) ALL SIGNALS SHALL BE EQUIPPED WITH TUNNEL VISORS.

SIGNS

SIGN	STANDARD	DESCRIPTION	SIZE	QTY.
(A)	R9-3A	NO PEDESTRIAN CROSSING	24"x24"	8
(B)	R3-2	NO LEFT TURN	30"x30"	1
(C)	R10-12	LEFT TURN YIELD ON GREEN ●	30"x36"	1
(D)	D3-4	⇦ LYCOMING MALL DRIVE US 220 NORTH ⇨	96"x28"	1
(E)	R5-1	DO NOT ENTER	36"x36"	2
(F)	R6-1R	HORIZONTAL RIGHT ONE-WAY	48"x18"	2
(G)	R6-1L	HORIZONTAL LEFT ONE-WAY	48"x18"	2
(H)	R1-2	YIELD	36"x36"	2
(J)	OM1-3	OBJECT MARKER	18"x18"	2
(K)	R4-7	KEEP RIGHT	24"x30"	1
(L)	R3-4	NO U-TURN	24"x24"	1
(M)	R3-7L	LEFT LANE MUST TURN LEFT	30"x30"	2

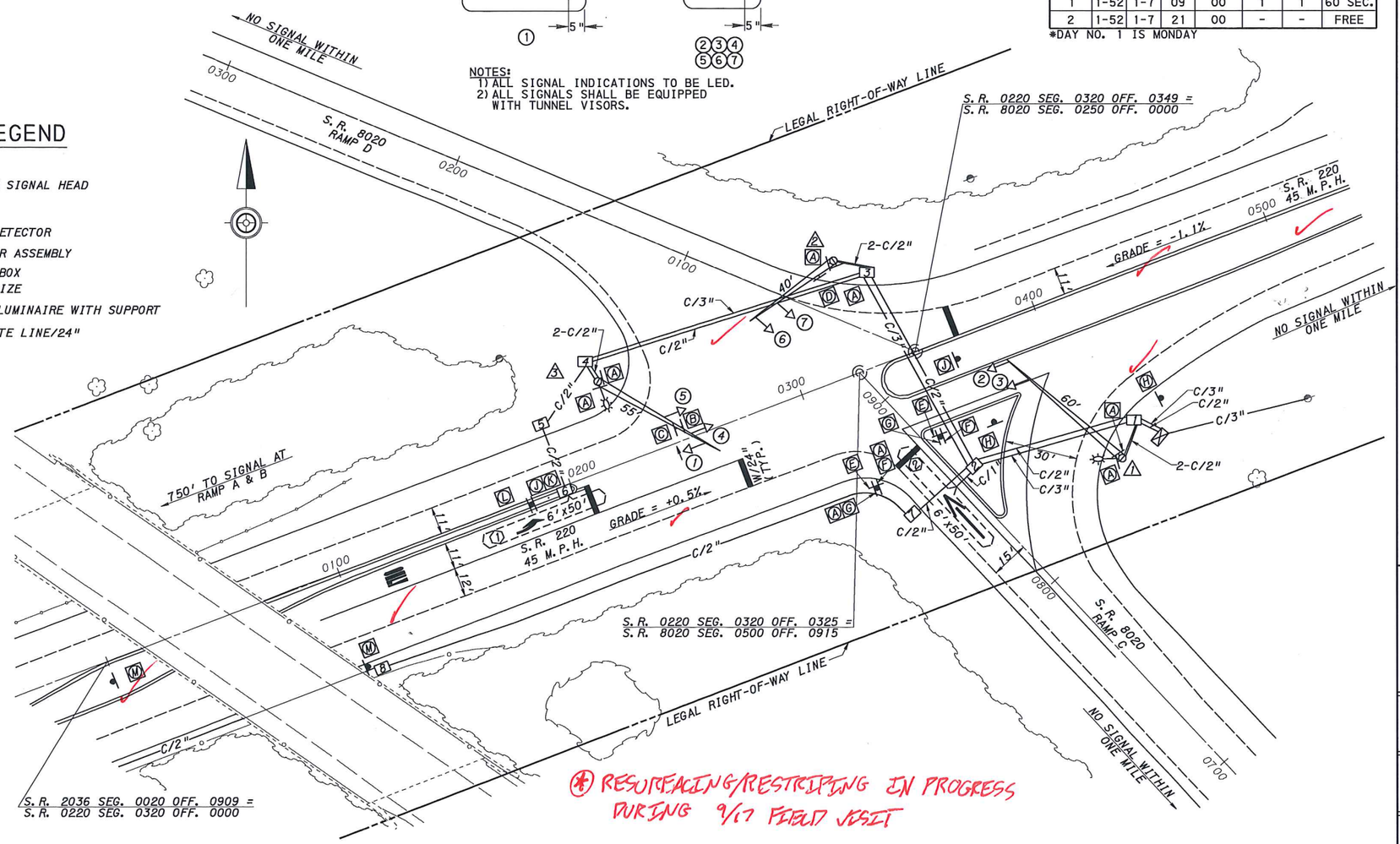
WEEKLY PROGRAM CHART

EVENT	WEEK	DAY*	HOUR	MINUTE	CYCLE NO.	SPLIT NO.	REMARKS
1	1-52	1-7	09	00	1	1	60 SEC.
2	1-52	1-7	21	00	-	-	FREE

*DAY NO. 1 IS MONDAY

LEGEND

- MAST ARM
- VEHICULAR SIGNAL HEAD
- SIGN
- VEHICLE DETECTOR
- CONTROLLER ASSEMBLY
- JUNCTION BOX
- C/X"- CONDUIT/SIZE
- LIGHTING LUMINAIRE WITH SUPPORT
- W/24" - SOLID WHITE LINE/24"



(*) RESURFACING/RESTRIPING IN PROGRESS DURING 9/17 FIELD VISIT

PERMIT NO. TS264-032 SHEET 2 OF 2

DATE ISSUED: 11-20-2003

DATE REVISED	REASON/COMMENTS
02-18-2004	LEFT TURN MOVEMENT CHANGES
12-08-2006	UPDATED PERMIT & LED UPGRADE

GENERAL NOTES

INSTALL, OPERATE AND MAINTAIN THIS TRAFFIC SIGNAL IN ACCORDANCE WITH ALL PENNSYLVANIA DEPARTMENT OF TRANSPORTATION REGULATIONS, SPECIFICATIONS, AND STANDARD DRAWINGS.

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INSTALL POST MOUNTED SIGNALS WITH THE SIGNAL HEADS A MINIMUM OF 2 FEET BEHIND THE FACE OF THE CURB OR EDGE OF THE SHOULDER. ALSO, INSTALL SUPPORT POLES FOR OVERHEAD SIGNALS WITH A MINIMUM HORIZONTAL CLEARANCE OF 2 FEET.

INSTALL SIGNAL HEADS AND SIGNS ERECTED OVER THE ROADWAY WITH THE BOTTOMS NOT LESS THAN 15 FEET NOR MORE THAN 19 FEET ABOVE THE ROADWAY.

INSTALL POST MOUNTED SIGNAL HEADS WITH BOTTOMS NOT LESS THAN 8 FEET NOR MORE THAN 15 FEET ABOVE THE SIDEWALK OR PAVEMENT GRADE.

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9134480
STUDY INT #04
US 220/I-180 WB RAMPS
(SR 220/SR 8020)

COUNTY : LYCOMING

MUNICIPALITY : MUNCY TOWNSHIP

INTERSECTION : S.R. 220 AND S.R. 8020 (RAMP C & D)

REVIEWED :

MUNICIPAL OFFICIAL DATE

RECOMMENDED :

DISTRICT TRAFFIC ENGINEER DATE

SCALE : 0' 25' 50' 75'

(10)

OPERATOR:
FILE NAME: L:\vr1\PROJECTS\41-SR118-004 Traffic Signal - Hughesville Boro\TS162-032 SR 405 & SR 118.dgn
D-8012 CADD (02-90) REVISED (10-04) PLOTTED: 25-JAN-2011 10:26

MOVEMENT, TIMING AND SEQUENCE DIAGRAM

2+6 ⟷ 4+8

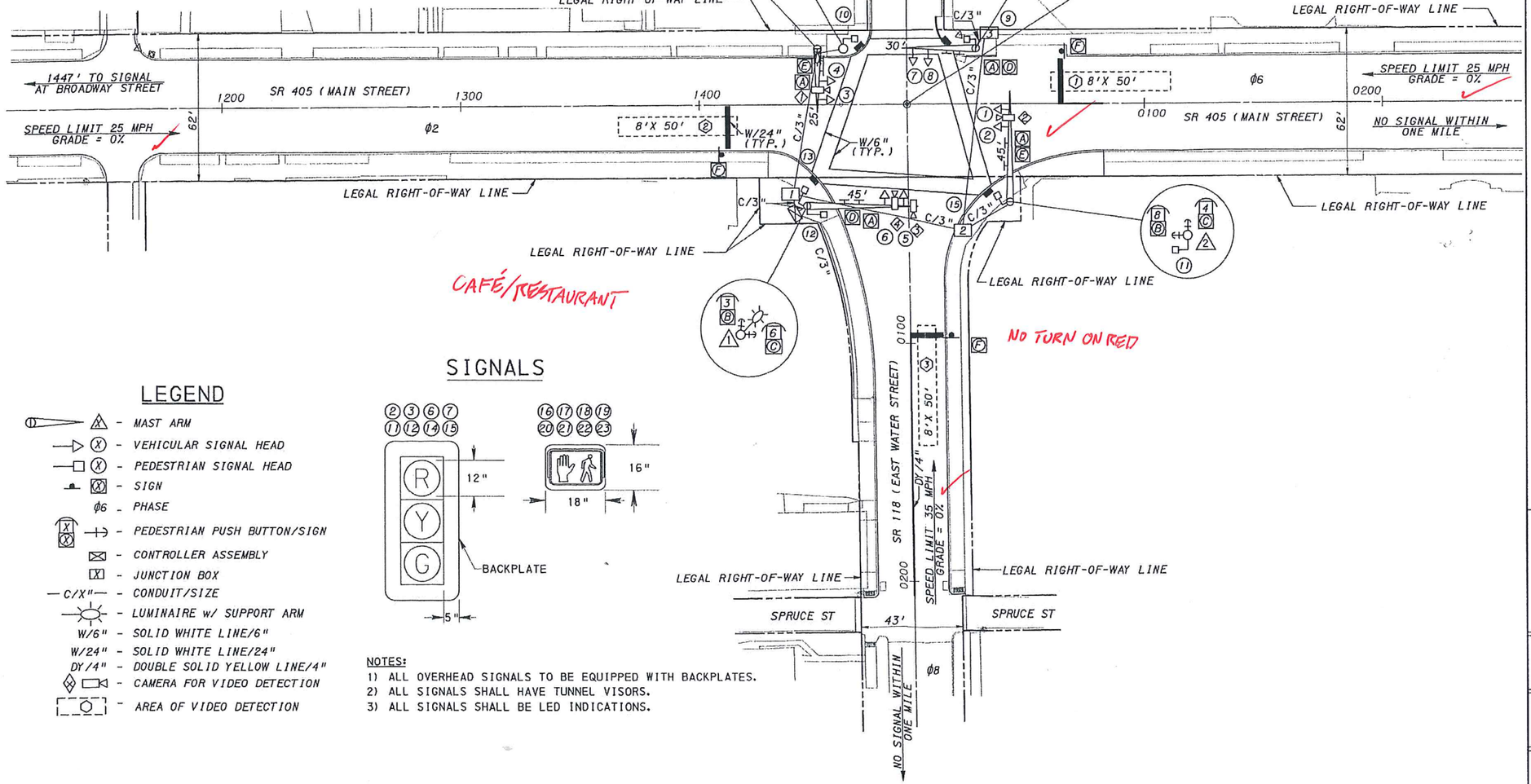
PHASE	2 + 6				4 + 8				FLASHING
SIGNAL \ INTERVAL	1	2	3	4	5	6	7	8	
① ② ③ ④	G	G	Y	R	R	R	R	R	Y
⑤ ⑥ ⑦ ⑧	R	R	R	R	G	G	Y	R	R
⑨ ⑩	M	FH	H	H	H	H	H	H	OFF
⑪ ⑫	M	FH	H	H	H	H	H	H	OFF
⑬ ⑭	H	H	H	H	M	FH	H	H	OFF
⑮ ⑯	H	H	H	H	M	FH	H	H	OFF

FIXED			3	2			3	2	
MINIMUM	10				10				
PASSAGE	3				3				
MAX 1	30				30				
MAX 2									
PEDESTRIAN*	12	18			11	16			
MEMORY	MX				MX				

PROGRAM 1	38	3	2	32	3	2		80 SEC CYCLE
PROGRAM 2	25	3	2	30	3	2		65 SEC CYCLE
PROGRAM 3	19	3	2	31	3	2		60 SEC CYCLE

WEEKLY PROGRAM CHART						
EVENT	DAY	TIME	CYCLE	OFFSET	PROGRAM	REMARKS
1	1-5	06:00	80	-	1	-
2	1-5	10:00	65	-	2	-
3	1-5	15:00	60	-	3	-
4	1-7	00:00	-	-	MAX 1	-
5	6,7	10:00	-	-	MAX 1	-

NOTES:
* - MAN SYMBOL UPON PEDESTRIAN ACTUATION ONLY, OTHERWISE HAND SYMBOL AT ALL TIMES.
MX - MAX RECALL
M - WALKING PERSON
FH - FLASHING HAND
H - HAND



LEGEND

- MAST ARM
- VEHICULAR SIGNAL HEAD
- PEDESTRIAN SIGNAL HEAD
- SIGN
- ϕ6 - PHASE
- PEDESTRIAN PUSH BUTTON/SIGN
- CONTROLLER ASSEMBLY
- JUNCTION BOX
- C/X" - CONDUIT/SIZE
- LUMINAIRE w/ SUPPORT ARM
- W/6" - SOLID WHITE LINE/6"
- W/24" - SOLID WHITE LINE/24"
- DY/4" - DOUBLE SOLID YELLOW LINE/4"
- CAMERA FOR VIDEO DETECTION
- AREA OF VIDEO DETECTION

SIGNALS

NOTES:
1) ALL OVERHEAD SIGNALS TO BE EQUIPPED WITH BACKPLATES.
2) ALL SIGNALS SHALL HAVE TUNNEL VISORS.
3) ALL SIGNALS SHALL BE LED INDICATIONS.

SIGNS

SIGN	STANDARD	DESCRIPTION	SIZE	QTY.	REMARKS
A	R10-11	NO TURN ON RED	30" X 36"	4	
B	R10-3B	EDUCATIONAL PUSH BUTTON FOR WALKING PERSON SIGNAL	9" X 12"	4	LEFT ARROW
C	R10-3B	EDUCATIONAL PUSH BUTTON FOR WALKING PERSON SIGNAL	9" X 12"	4	RIGHT ARROW
D	D3-4	OVERHEAD STREET NAME SIGN	54" X 16"	2	Main St
E	D3-4	OVERHEAD STREET NAME SIGN	66" X 16"	2	Water St
F	R10-6AL	STOP HERE ON RED	24" X 30"	4	

PERMIT NO. TS162-032 SHEET 2 OF 2

DATE ISSUED: 8-23-1989

DATE REVISED	REASON/COMMENTS
07-14-1999	COMPUTERIZED
03-30-2000	FLASHING
11-13-2009	INTERSECTION AND SIGNAL UPGRADE

INSTALL, OPERATE AND MAINTAIN THIS TRAFFIC SIGNAL IN ACCORDANCE WITH ALL PENNSYLVANIA DEPARTMENT OF TRANSPORTATION REGULATIONS, SPECIFICATIONS, AND STANDARD DRAWINGS.

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INSTALL POST MOUNTED SIGNALS WITH THE SIGNAL HEADS A MINIMUM OF 2 FEET BEHIND THE FACE OF THE CURB OR EDGE OF THE SHOULDER. ALSO, INSTALL SUPPORT POLES FOR OVERHEAD SIGNALS WITH A MINIMUM HORIZONTAL CLEARANCE OF 2 FEET.

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THREE WORKING DAYS PRIOR TO EXCAVATION THE PERMITTEE MUST CONTACT THE ONE-CALL SYSTEM INC., PHONE 1-800-242-1776.

CONDUIT INSTALLED IN BITUMINOUS ROADWAY LESS THAN 5 YEARS OLD, OR CONCRETE ROADWAY REGARDLESS OF AGE MUST BE BORED OR JACKED UNDER THE ROADWAY. INSTALL IN ACCORDANCE WITH TRAFFIC SIGNAL STANDARDS TC-7800 SERIES.

913480
STUDY INT #10
PA 405/PA 118

COUNTY : LYCOMING

MUNICIPALITY : BOROUGH OF HUGHESVILLE

INTERSECTION : S.R. 405 (MAIN STREET) AND S.R. 118 (WATER STREET)

REVIEWED :
Jeffrey W Berger 2-2-11
MUNICIPAL OFFICIAL - Council President DATE

RECOMMENDED :
Ann W. Kelly 2/8/2011
DISTRICT TRAFFIC ENGINEER DATE

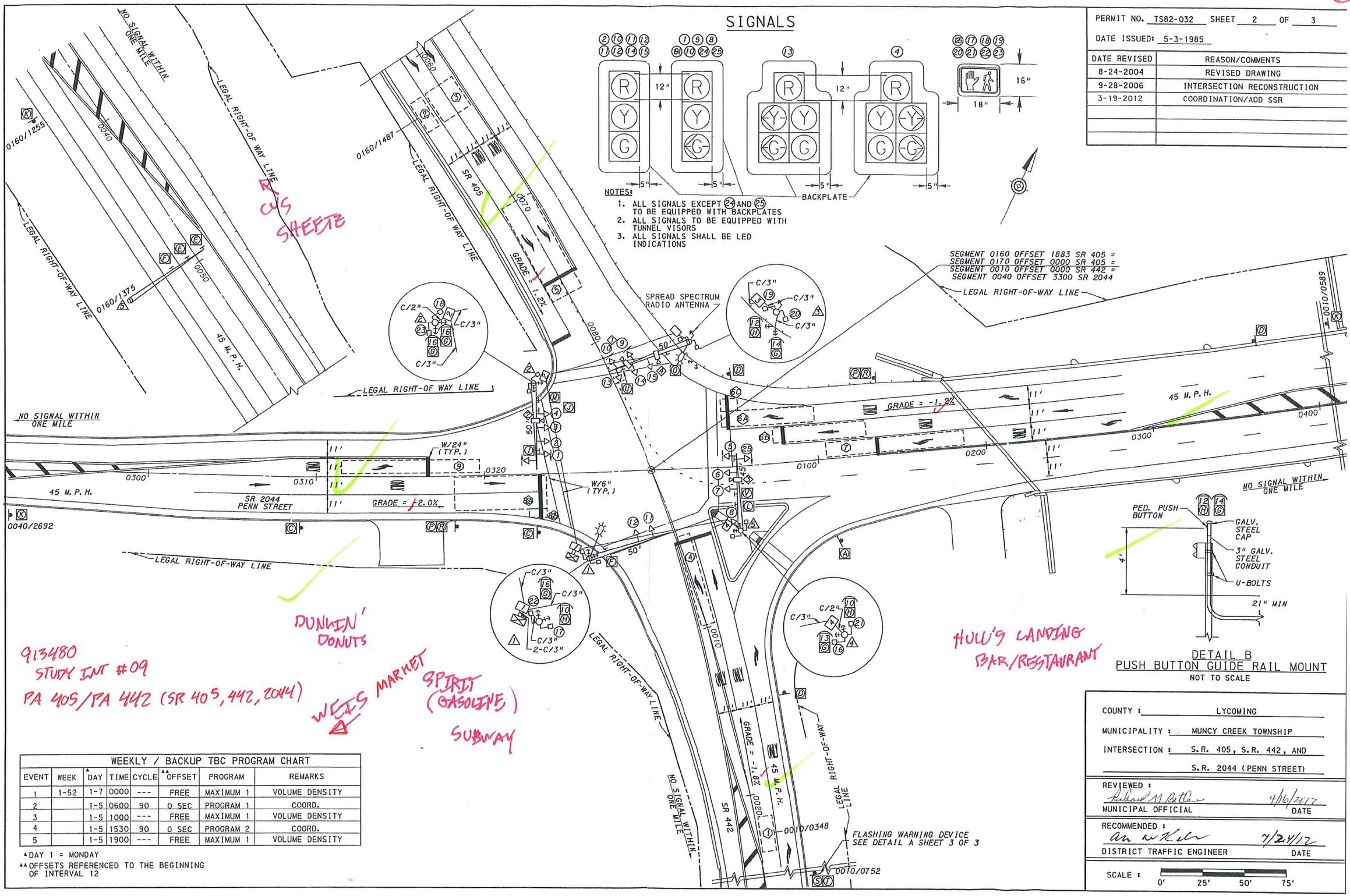
SCALE : 0' 25' 50' 75'

9

PERMIT NO. TS82-032 SHEET 2 OF 3

DATE ISSUED: 5-3-1985

DATE REVISED	REASON/COMMENTS
8-24-2004	REVISED DRAWING
9-28-2006	INTERSECTION RECONSTRUCTION
3-19-2012	COORDINATION/ADD SSR



WEEKLY / BACKUP TBC PROGRAM CHART							
EVENT	WEEK	▲DAY	TIME	CYCLE	▲▲OFFSET	PROGRAM	REMARKS
1	1-52	1-7	0000	---	FREE	MAXIMUM 1	VOLUME DENSITY
2		1-5	0600	90	0 SEC	PROGRAM 1	COORD.
3		1-5	1000	---	FREE	MAXIMUM 1	VOLUME DENSITY
4		1-5	1530	90	0 SEC	PROGRAM 2	COORD.
5		1-5	1900	---	FREE	MAXIMUM 1	VOLUME DENSITY

▲DAY 1 = MONDAY

▲▲OFFSETS REFERENCED TO THE BEGINNING OF INTERVAL 12

COUNTY : LYCOMING

MUNICIPALITY : MUNCY CREEK TOWNSHIP

INTERSECTION : S.R. 405, S.R. 442, AND S.R. 2044 (PENN STREET)

REVIEWED : [signature] 4/16/2012

MUNICIPAL OFFICIAL DATE

RECOMMENDED : [signature] 7/24/12

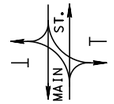
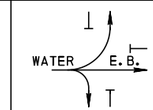
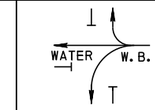
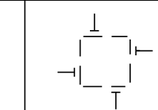
DISTRICT TRAFFIC ENGINEER DATE

SCALE : 0' 25' 50' 75'

PLOTTED: 14-DEC-2009 10:39
D-9012 CADD (02-90) REVISED (10-04)
J:\JCB\00009 (Muncy Commercial Development)\CADD\Signals\3-permit SR 0405 & Penn Street.dgn
3/19/2012 10:35:31 AM Iplott OPERATOR: Planning and Design, Inc.
FILE NAME: L:\tri\1PROJECTS\41-405-063\TS82-032 SR 405 SR 442 & SR 2044 (Muncy Cr. Twp.dgn

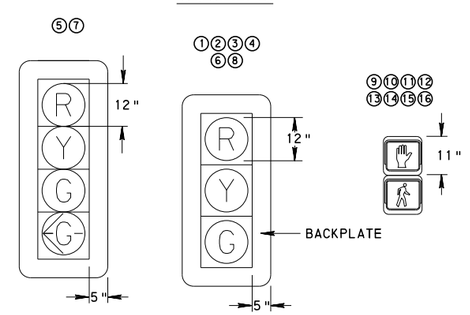
D-9012 CADD (02-90)

16-MAY-2013 09:21

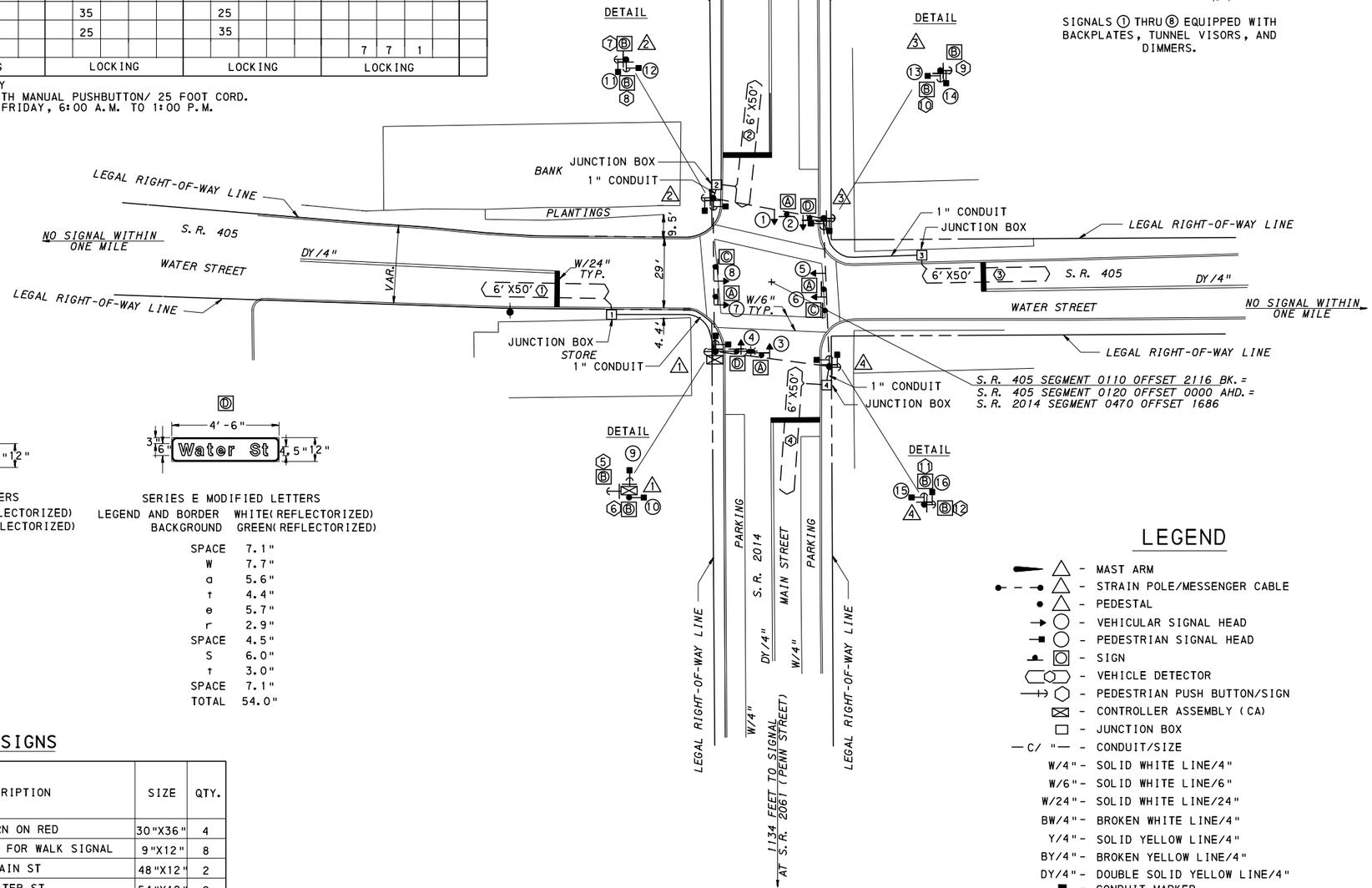
	PHASE 1	PHASE 2	PHASE 3	PHASE 4 *	
					EMERGENCY FLASHING
	INTERVAL	INTERVAL	INTERVAL	INTERVAL	
SIGNAL	1 2 3	1 2 3	1 2 3	1 2 3	
①②③④	G Y R	R R R	R R R	R R R	Y
⑤	R R R	G Y R	R R R	R R R	R
⑥	R R R	G Y R	R R R	R R R	R
⑦	R R R	R R R	G Y R	R R R	R
⑧	R R R	R R R	G Y R	R R R	R
⑨ THRU ⑯	DW DW DW	DW DW DW	DW DW DW	W FL DW DW	OFF
FIXED	3.1 1.0	4.0 1.0	4.0 1.0	7 7 1	
MINIMUM	8	8	8		
PASSAGE	3.5	2.0	2.0		
MAXIMUM I	40	35	25		
MAXIMUM II	40	25	35		
PEDESTRIAN *				7 7 1	
MEMORY	LOCKING	LOCKING	LOCKING	LOCKING	

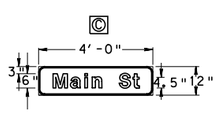
* UPON PEDESTRIAN ACTUATION ONLY
CONTROLLER ASSEMBLY EQUIPPED WITH MANUAL PUSHBUTTON/ 25 FOOT CORD.
MAX. II ENABLED MONDAY THROUGH FRIDAY, 6:00 A.M. TO 1:00 P.M.

SIGNALS



SIGNALS ① THRU ⑧ EQUIPPED WITH BACKPLATES, TUNNEL VISORS, AND DIMMERS.





SERIES E MODIFIED LETTERS

LEGEND AND BORDER	WHITE (REFLECTORIZED)
BACKGROUND	GREEN (REFLECTORIZED)
SPACE	6.8"
M	7.6"
a	6.1"
i	3.4"
n	3.8"
SPACE	4.5"
S	6.0"
t	3.0"
SPACE	6.8"
TOTAL	48.0"

SERIES E MODIFIED LETTERS

LEGEND AND BORDER	WHITE (REFLECTORIZED)
BACKGROUND	GREEN (REFLECTORIZED)
SPACE	7.1"
W	7.7"
a	5.6"
t	4.4"
e	5.7"
r	2.9"
SPACE	4.5"
S	6.0"
t	3.0"
SPACE	7.1"
TOTAL	54.0"

SIGNS

SIGN	STANDARD	DESCRIPTION	SIZE	QTY.
Ⓐ	R10-11	NO TURN ON RED	30"X36"	4
Ⓑ	R10-4	PUSH BUTTON FOR WALK SIGNAL	9"X12"	8
Ⓒ	D3-4	MAIN ST	48"X12"	2
Ⓓ	D3-4	WATER ST	54"X12"	2

LEGEND

- MAST ARM
- STRAIN POLE/MESSENGER CABLE
- PEDESTAL
- VEHICULAR SIGNAL HEAD
- PEDESTRIAN SIGNAL HEAD
- SIGN
- VEHICLE DETECTOR
- PEDESTRIAN PUSH BUTTON/SIGN
- CONTROLLER ASSEMBLY (CA)
- JUNCTION BOX
- C/ " — CONDUIT/SIZE
- W/4" - SOLID WHITE LINE/4"
- W/6" - SOLID WHITE LINE/6"
- W/24" - SOLID WHITE LINE/24"
- BW/4" - BROKEN WHITE LINE/4"
- Y/4" - SOLID YELLOW LINE/4"
- BY/4" - BROKEN YELLOW LINE/4"
- DY/4" - DOUBLE SOLID YELLOW LINE/4"
- CONDUIT MARKER
- LIGHTING LUMINAIRE WITH SUPPORT

PERMIT NO. TS2-032 SHEET 2 OF 2

DATE ISSUED 3/30/81

DATE REVISED	REASON/COMMENTS
4/4/86	RECONSTRUCTION - ECONS
6/4/86	DIAGRAM CHANGES
6/20/97	OPERATIONAL CHANGE

GENERAL NOTES

INSTALL, OPERATE AND MAINTAIN THIS TRAFFIC SIGNAL IN ACCORDANCE WITH ALL PENNSYLVANIA DEPARTMENT OF TRANSPORTATION REGULATIONS, SPECIFICATIONS, AND STANDARD DRAWINGS.

NO MODIFICATION OF THIS INSTALLATION IS PERMITTED UNLESS PRIOR APPROVAL IS GRANTED, IN WRITING, BY THE DEPARTMENT.

ALL MAINTENANCE NECESSARY FOR PROPER VISIBILITY OF THE SIGNALS, INCLUDING TRIMMING TREES, IS THE RESPONSIBILITY OF THE PERMITTEE.

THE PERMITTEE INSTALLS AND MAINTAINS ALL SIGNS AND PAVEMENT MARKINGS INDICATED ON THIS DRAWING WHICH ARE CONSIDERED PART OF THE PERMIT, UNLESS OTHERWISE INDICATED. THE DEPARTMENT MAINTAINS THE LONGITUDINAL PAVEMENT MARKINGS ON STATE HIGHWAYS.

INSTALL POST MOUNTED SIGNALS WITH THE SIGNAL HEADS A MINIMUM OF 2 FEET BEHIND THE FACE OF THE CURB OR EDGE OF THE SHOULDER. ALSO, INSTALL SUPPORT POLES FOR OVERHEAD SIGNALS WITH A MINIMUM HORIZONTAL CLEARANCE OF 2 FEET.

INSTALL SIGNAL HEADS AND SIGNS ERECTED OVER THE ROADWAY WITH THE BOTTOMS NOT LESS THAN 15 FEET NOR MORE THAN 19 FEET ABOVE THE ROADWAY.

INSTALL POST MOUNTED SIGNAL HEADS WITH BOTTOMS NOT LESS THAN 8 FEET NOR MORE THAN 15 FEET ABOVE THE SIDEWALK OR PAVEMENT GRADE.

INSTALL SIGNAL HEADS WITH A MINIMUM HORIZONTAL DISTANCE OF 8 FEET BETWEEN THE HEADS AS MEASURED AT RIGHT ANGLES TO THE APPROACH.

IN ADDITION TO THIS SIGNAL PERMIT, THE PERMITTEE MUST OBTAIN A HIGHWAY OCCUPANCY PERMIT PRIOR TO ANY OPENINGS BEING MADE IN OR UNDER ANY PORTION OF A STATE HIGHWAY.

THIS DRAWING CANNOT BE USED AS A CONSTRUCTION DRAWING UNLESS THE PERMITTEE COMPLIES WITH THE PROVISIONS OF ACT 287, PREVENTION OF DAMAGE TO UNDERGROUND UTILITIES. PRIOR TO CONSTRUCTION CONSULT WITH UTILITY COMPANIES TO RESOLVE ANY PROBLEMS WHICH MAY BE CREATED DUE TO THE LOCATION OF UTILITIES.

COUNTY : LYCOMING

MUNICIPALITY : BOROUGH OF MUNCY

INTERSECTION : S.R. 405 (WATER STREET) AND S.R. 2014 (MAIN STREET)

REVIEWED :

MUNICIPAL OFFICIAL DATE

RECOMMENDED :

DISTRICT TRAFFIC ENGINEER DATE

SCALE : 0' 25' 50' 75'

OPERATOR: O'BRIEN
FILE NAME: TR1:32MNANWAT.MC2

Study Intersection Photographs

1: Lycoming Mall Rd & I-180 WB Ramps

Muncy Area Corridor Access Management Plan














ONLY
ONLY
ONLY




Best Buy
ONLY
Mall
McDonalds
ONLY


ONLY








ONLY

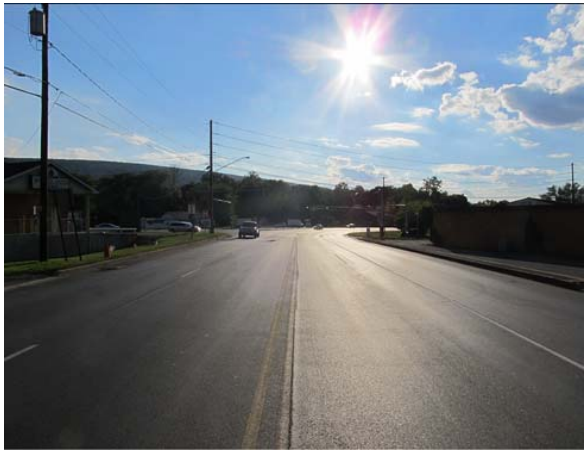






4: Lycoming Mall Dr & John Brady Dr

Muncy Area Corridor Access Management Plan

















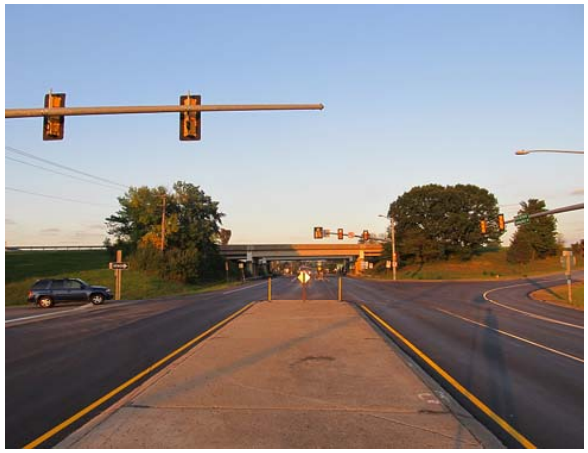

35
M.P.H.







LEFT LANE
MUST
TURN LEFT

























ROAD
WORK
AHEAD











9: US 220 & Rabittown Road

Muncy Area Corridor Access Management Plan























EXXON





















CINTAS
















































weis

FOR LEASE












JC
40






















Water St
NO TURN ON RED

APPENDIX D

Level of Service Methodology

CAPACITY/LEVEL-OF-SERVICE ANALYSIS METHODOLOGY

The detailed capacity/level-of-service analysis contained in this transportation impact study was performed in accordance with the standard techniques contained in the *Highway Capacity Manual 2010.* By definition, capacity represents "the maximum sustainable hourly flow rate at which persons or vehicles reasonably can be expected to traverse a point or a uniform section of a lane or roadway during a given time period under prevailing roadway, environmental, traffic, and control conditions." The level at which an intersection or a uniform section of a lane or roadway function can be expressed in terms of a level of service. Level of service (LOS) is defined as "a quantitative stratification of a performance measure or measures that represent quality of service, measured on an A-F scale, with LOS A representing the best operating conditions from the traveler's perspective and LOS F the worst."

Stop-Controlled Intersections

At unsignalized stop-controlled intersections, such as two-way stop-controlled (TWSC) or all-way stop-controlled (AWSC), a methodology for evaluating the relative functioning of these intersections is based upon the control delay. For these types of unsignalized intersections, the analysis of the control delay is based upon the following data:

- Number and configuration of lanes on each approach;
- Percentage of heavy vehicles on each approach;
- Demand flow rate for each entering vehicular movement and pedestrian crossing movement;
- Unique geometric factors such as, channelization aspects; two-way left-turn lanes, raised or striped median storage; approach grades, flared approaches on the minor street; and upstream signals within 0.25 miles.

At TWSC intersections, only drivers on the minor street approaches are required to stop before proceeding into the intersection and left-turning drivers from the major street may have to yield to on-coming major street through or right-turning traffic, but are not required to stop in the absence of on-coming traffic. The capacity at stop-controlled legs is based primarily on three factors: the distribution of gaps in the major stream, driver judgment in selecting the gaps, and the follow-up headways required by each driver in a queue.

At AWSC intersections, every vehicle is required to stop at the intersection before proceeding, and as a result, the decision to proceed is a function of the traffic conditions on the other approaches. Each driver proceeds only after determining that no vehicles are currently in the intersection and that it is the driver's turn to proceed. Capacity at an AWSC intersection is described by the saturation headway or time between departures of successive vehicles on a given approach for a particular case assuming a continuous queue; departure headway or the average time between departures of successive vehicles on a given approach accounting for the probability of each possible case; and service time or the average time sent by a vehicle in first position waiting to depart.

At both TWSC and AWSC intersections, the level of service is based upon the control delay, as well as the corresponding volume-to-capacity ratio for each movement/lane group. For TWSC intersections, the level of service is not calculated for major-street approaches or for the intersection as a whole; however, the intersection-wide level of service is calculated for AWSC intersections. The following table provides a summary of the relationship between the level of service, control delay, and volume-to-capacity ratio for TWSC and AWSC intersections.

Control Delay (Sec/Veh)	LOS by Volume-to-Capacity Ratio	
	v/c ≤ 1.0	v/c > 1.0
≤ 10	A	F
> 10 – 15	B	F
> 15 – 25	C	F
> 25 – 35	D	F
> 35 – 50	E	F
> 50	F	F

Signalized Intersections

At three or four-legged signalized intersections, a methodology for evaluating the capacity and quality of service provided to road users traveling through the signalized intersection. For signalized intersections, the level of service can be characterized for the entire intersection, each approach, and each lane group. The level of service is based upon the control delay and volume-to-capacity ratio. The delay quantifies the increase in travel time due to the traffic signal control and is a surrogate measure of driver discomfort and fuel consumption, while the volume-to-capacity ratio quantifies the degree to which a phase's capacity is utilized by a lane group. Input data in determining the delay and volume-to-capacity ratio include:

- Demand flow rate for each entering vehicular movement and pedestrian crossing movement, including right-turn on red volumes and percent of heavy vehicles;
- Initial queue for each lane group;
- Number and configuration of lanes on each approach;
- Type of signal control and phase sequence;
- Allocation of minimum/maximum green times and clearance intervals (Yellow plus All Red phases); and
- Phase recall.

At signalized intersections, the level of service is based upon the control delay, as well as the corresponding volume-to-capacity ratio for each movement/lane group. The following table provides a summary of the relationship between the level of service, control delay, and volume-to-capacity ratio for signalized intersections.

Control Delay (Sec/Veh)	LOS by Volume-to-Capacity Ratio	
	v/c ≤ 1.0	v/c > 1.0
≤ 10	A	F
> 10 – 20	B	F
> 20 – 35	C	F
> 35 – 55	D	F
> 55 – 80	E	F
> 80	F	F

APPENDIX E

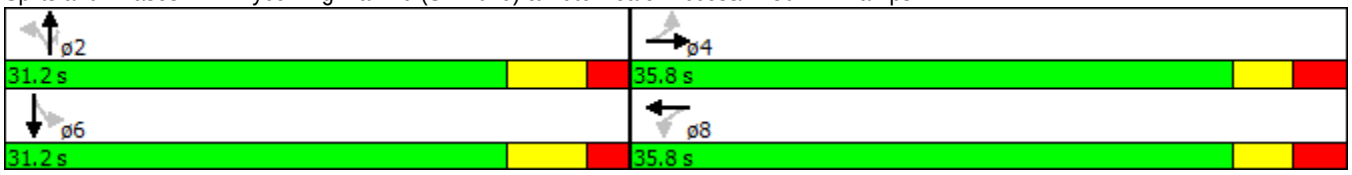
Existing Capacity/Level of Service Analysis Worksheets

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	1	2	3	63	8	7	21	20	57	18	34	0
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	13	13	13	15	15	15	12	12	16	12	12	12
Grade (%)		2%			4%			1%			-1%	
Storage Length (ft)	0		100	0		0	0		0	0		375
Storage Lanes	0		0	0		0	0		1	0		1
Taper Length (ft)	75			75			75			75		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95
Ped Bike Factor												
Frt		0.932			0.988				0.850			
Flt Protected		0.994			0.961			0.975			0.983	
Satd. Flow (prot)	0	1464	0	0	1776	0	0	1688	1643	0	3314	0
Flt Permitted		0.941			0.762			0.869			0.883	
Satd. Flow (perm)	0	1386	0	0	1408	0	0	1505	1643	0	2977	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		4			10				79			
Link Speed (mph)		25			25			40			40	
Link Distance (ft)		187			334			1105			689	
Travel Time (s)		5.1			9.1			18.8			11.7	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	0%	33%	3%	13%	0%	0%	7%	5%	0%	3%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	1	3	4	88	11	10	29	28	79	25	47	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	8	0	0	109	0	0	57	79	0	72	0
Number of Detectors	1	1		1	1		1	1	0	1	1	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left		
Leading Detector (ft)	30	40		30	45		30	45	0	30	45	
Trailing Detector (ft)	-10	-10		-10	-5		-10	-5	0	-10	-5	
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2		2	6		
Detector Phase	4	4		8	8		2	2	2	6	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	10.8	10.8		10.8	10.8		11.2	11.2	11.2	11.2	11.2	
Total Split (s)	35.8	35.8		35.8	35.8		31.2	31.2	31.2	31.2	31.2	
Total Split (%)	53.4%	53.4%		53.4%	53.4%		46.6%	46.6%	46.6%	46.6%	46.6%	
Maximum Green (s)	30.0	30.0		30.0	30.0		25.0	25.0	25.0	25.0	25.0	
Yellow Time (s)	3.0	3.0		3.0	3.0		4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	2.8	2.8		2.8	2.8		2.2	2.2	2.2	2.2	2.2	
Lost Time Adjust (s)		-1.0			-1.0			-1.0	-1.0		-1.0	
Total Lost Time (s)		4.8			4.8			5.2	5.2		5.2	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Minimum Gap (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Time Before Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Time To Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Recall Mode	None	None		None	None		Min	Min	Min	Min	Min	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
v/c Ratio		0.02			0.24			0.06	0.07		0.04	
Control Delay		6.0			9.0			6.9	2.8		6.5	
Queue Delay		0.0			0.0			0.0	0.0		0.0	
Total Delay		6.0			9.0			6.9	2.8		6.5	
Queue Length 50th (ft)		1			16			6	0		3	
Queue Length 95th (ft)		3			21			15	9		8	
Internal Link Dist (ft)		107			254			1025			609	
Turn Bay Length (ft)												
Base Capacity (vph)		1320			1341			1256	1384		2485	
Starvation Cap Reductn		0			0			0	0		0	
Spillback Cap Reductn		0			0			0	0		0	
Storage Cap Reductn		0			0			0	0		0	
Reduced v/c Ratio		0.01			0.08			0.05	0.06		0.03	

Intersection Summary	
Area Type:	Other
Cycle Length: 67	
Actuated Cycle Length: 31.5	
Natural Cycle: 40	
Control Type: Actuated-Uncoordinated	

Splits and Phases: 1: Lycoming Mall Rd (SR 2049) & Auto Dealer Access/I-180 WB Ramps



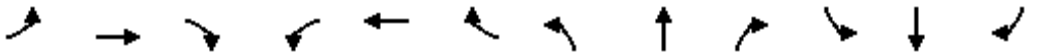
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	1	2	3	63	8	7	21	20	57	18	34	0
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1853	1591	1853	1835	1769	1835	1791	1731	1774	1809	1774	1809
Adj Flow Rate, veh/h	1	3	1	88	11	3	29	28	17	25	47	0
Adj No. of Lanes	0	1	0	0	1	0	0	1	1	0	2	0
Peak Hour Factor	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72
Percent Heavy Veh, %	0	0	0	13	13	13	7	7	5	3	3	3
Cap, veh/h	273	154	50	564	27	7	445	330	472	493	777	0
Arrive On Green	0.11	0.17	0.11	0.11	0.17	0.11	0.26	0.31	0.31	0.26	0.31	0.00
Sat Flow, veh/h	290	928	304	1296	162	44	518	1056	1508	635	2563	0
Grp Volume(v), veh/h	5	0	0	102	0	0	57	0	17	44	28	0
Grp Sat Flow(s),veh/h/ln	1522	0	0	1502	0	0	1574	0	1508	1583	1534	0
Q Serve(g_s), s	0.0	0.0	0.0	0.7	0.0	0.0	0.0	0.0	0.2	0.0	0.2	0.0
Cycle Q Clear(g_c), s	0.1	0.0	0.0	1.2	0.0	0.0	0.5	0.0	0.2	0.3	0.2	0.0
Prop In Lane	0.20		0.20	0.86		0.03	0.51		1.00	0.57		0.00
Lane Grp Cap(c), veh/h	398	0	0	520	0	0	694	0	472	708	480	0
V/C Ratio(X)	0.01	0.00	0.00	0.20	0.00	0.00	0.08	0.00	0.04	0.06	0.06	0.00
Avail Cap(c_a), veh/h	2519	0	0	2616	0	0	2258	0	2045	2287	2080	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	0.00	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	6.9	0.0	0.0	7.6	0.0	0.0	4.9	0.0	4.6	4.8	4.6	0.0
Incr Delay (d2), s/veh	0.0	0.0	0.0	0.3	0.0	0.0	0.1	0.0	0.0	0.1	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.0	0.0	0.0	1.0	0.0	0.0	0.4	0.0	0.1	0.3	0.2	0.0
LnGrp Delay(d),s/veh	6.9	0.0	0.0	7.8	0.0	0.0	4.9	0.0	4.6	4.9	4.7	0.0
LnGrp LOS	A			A			A		A	A	A	
Approach Vol, veh/h		5			102			74			72	
Approach Delay, s/veh		6.9			7.8			4.9			4.8	
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		11.2		8.0		11.2		8.0
Change Period (Y+Rc), s		* 6.2		* 5.8		* 6.2		* 5.8
Max Green Setting (Gmax), s		* 25		* 30		* 25		* 30
Max Q Clear Time (g_c+I1), s		2.5		2.5		2.7		3.2
Green Ext Time (p_c), s		0.5		0.6		0.5		0.5

Intersection Summary	
HCM 2010 Ctrl Delay	6.1
HCM 2010 LOS	A

Notes

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

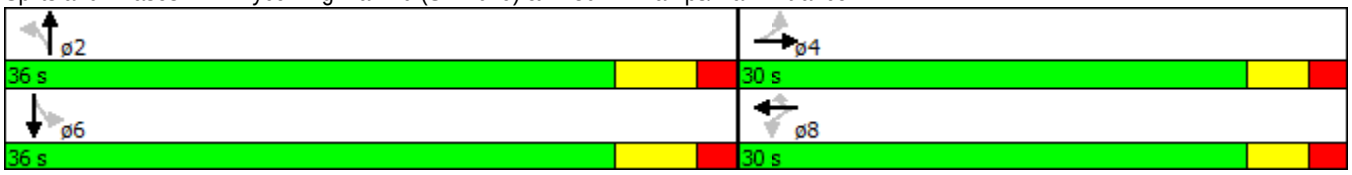


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	24	83	65	4	10	43	7	31	10	27	41	32
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	12	11	12	12	12	12	12	12	12	12
Grade (%)		2%			2%			-2%			-3%	
Storage Length (ft)	0		0	0		0	135		0	0		0
Storage Lanes	0		0	1		1	1		0	1		0
Taper Length (ft)	75			75			75			75		
Lane Util. Factor	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.944				0.850		0.963			0.941	
Flt Protected		0.993		0.950			0.950			0.950		
Satd. Flow (prot)	0	3067	0	1636	1620	1416	1515	1628	0	1550	1654	0
Flt Permitted		0.928		0.623			0.704			0.725		
Satd. Flow (perm)	0	2866	0	1073	1620	1416	1123	1628	0	1183	1654	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		77				51		12			32	
Link Speed (mph)		25			25			40			40	
Link Distance (ft)		279			408			2572			1105	
Travel Time (s)		7.6			11.1			43.8			18.8	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	1.00
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	8%	1%	5%	0%	10%	7%	14%	10%	0%	12%	0%	10%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	29	99	77	5	12	51	8	37	12	32	49	32
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	205	0	5	12	51	8	49	0	32	81	0
Number of Detectors	1	1		1	1	0	1	1		1	1	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (ft)	30	45		45	45	0	45	45		45	45	
Trailing Detector (ft)	-10	-5		-5	-5	0	-5	-5		-5	-5	
Turn Type	Perm	NA		Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8		8	2			6		
Detector Phase	4	4		8	8	8	2	2		6	6	
Switch Phase												
Minimum Initial (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Minimum Split (s)	7.0	7.0		7.0	7.0	7.0	8.0	8.0		8.0	8.0	
Total Split (s)	30.0	30.0		30.0	30.0	30.0	36.0	36.0		36.0	36.0	
Total Split (%)	45.5%	45.5%		45.5%	45.5%	45.5%	54.5%	54.5%		54.5%	54.5%	
Maximum Green (s)	25.0	25.0		25.0	25.0	25.0	30.0	30.0		30.0	30.0	
Yellow Time (s)	3.0	3.0		3.0	3.0	3.0	4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		-1.0		-1.0	-1.0	-1.0	-1.0	-1.0		-1.0	-1.0	
Total Lost Time (s)		4.0		4.0	4.0	4.0	5.0	5.0		5.0	5.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Minimum Gap (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Time Before Reduce (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Time To Reduce (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Recall Mode	Min	Min		Min	Min	Min	None	None		None	None	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
v/c Ratio		0.11		0.01	0.01	0.06	0.02	0.10		0.09	0.16	
Control Delay		4.0		6.0	6.0	2.8	6.9	6.3		7.6	5.7	
Queue Delay		0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay		4.0		6.0	6.0	2.8	6.9	6.3		7.6	5.7	
Queue Length 50th (ft)		5		1	1	0	1	5		4	6	
Queue Length 95th (ft)		14		3	5	8	4	12		10	16	
Internal Link Dist (ft)		199			328			2492			1025	
Turn Bay Length (ft)							135					
Base Capacity (vph)		2643		987	1490	1307	1117	1619		1176	1645	
Starvation Cap Reductn		0		0	0	0	0	0		0	0	
Spillback Cap Reductn		0		0	0	0	0	0		0	0	
Storage Cap Reductn		0		0	0	0	0	0		0	0	
Reduced v/c Ratio		0.08		0.01	0.01	0.04	0.01	0.03		0.03	0.05	

Intersection Summary	
Area Type:	Other
Cycle Length: 66	
Actuated Cycle Length: 28.4	
Natural Cycle: 40	
Control Type: Actuated-Uncoordinated	

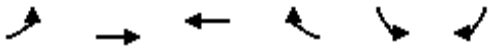
Splits and Phases: 2: Lycoming Mall Rd (SR 2049) & I-180 EB Ramps/Mall Entrance



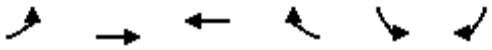
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	24	83	65	4	10	43	7	31	10	27	41	32
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	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	1782	1722	1782	1782	1620	1665	1595	1690	1818	1631	1758	1827
Adj Flow Rate, veh/h	29	99	25	5	12	0	8	37	5	32	49	16
Adj No. of Lanes	0	2	0	1	1	1	1	1	0	1	1	0
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	1.00
Percent Heavy Veh, %	1	1	1	0	10	7	14	10	10	12	0	0
Cap, veh/h	401	593	159	793	452	395	641	247	33	654	215	70
Arrive On Green	0.22	0.28	0.22	0.28	0.28	0.00	0.17	0.17	0.11	0.17	0.17	0.11
Sat Flow, veh/h	388	2126	572	1274	1620	1416	1203	1458	197	1256	1270	415
Grp Volume(v), veh/h	89	0	64	5	12	0	8	0	42	32	0	65
Grp Sat Flow(s),veh/h/ln	1620	0	1466	1274	1620	1416	1203	0	1656	1256	0	1684
Q Serve(g_s), s	0.0	0.0	0.6	0.0	0.1	0.0	0.1	0.0	0.4	0.4	0.0	0.6
Cycle Q Clear(g_c), s	0.7	0.0	0.6	0.1	0.1	0.0	0.1	0.0	0.4	0.4	0.0	0.6
Prop In Lane	0.33		0.39	1.00		1.00	1.00		0.12	1.00		0.25
Lane Grp Cap(c), veh/h	645	0	409	793	452	395	641	0	280	654	0	285
V/C Ratio(X)	0.14	0.00	0.16	0.01	0.03	0.00	0.01	0.00	0.15	0.05	0.00	0.23
Avail Cap(c_a), veh/h	2731	0	2338	2469	2583	2257	2725	0	3148	2830	0	3202
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	1.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	4.6	0.0	4.6	4.3	4.3	0.0	5.7	0.0	5.8	5.8	0.0	6.0
Incr Delay (d2), s/veh	0.1	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.6
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(95%),veh/ln	0.6	0.0	0.4	0.0	0.1	0.0	0.1	0.0	0.3	0.2	0.0	0.5
LnGrp Delay(d),s/veh	4.7	0.0	4.8	4.3	4.3	0.0	5.7	0.0	6.2	5.8	0.0	6.5
LnGrp LOS	A		A	A	A		A		A	A		A
Approach Vol, veh/h		153			17			50			97	
Approach Delay, s/veh		4.8			4.3			6.1			6.3	
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		7.8		8.5		7.8		8.5
Change Period (Y+Rc), s		6.0		5.0		6.0		5.0
Max Green Setting (Gmax), s		30.0		25.0		30.0		25.0
Max Q Clear Time (g_c+I1), s		2.6		2.7		2.9		2.6
Green Ext Time (p_c), s		0.8		0.9		0.8		0.9

Intersection Summary	
HCM 2010 Ctrl Delay	5.4
HCM 2010 LOS	A



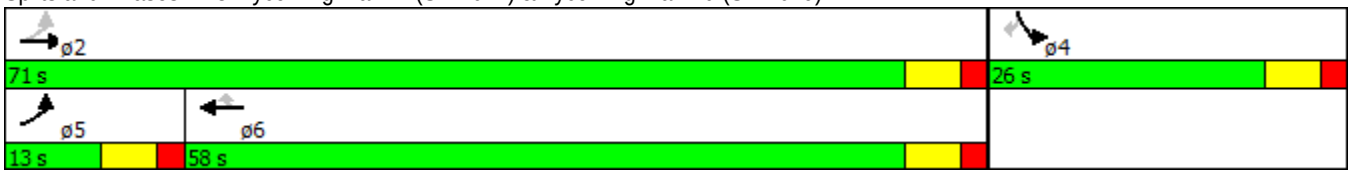
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	31	207	225	23	41	39
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	12	12	12	12
Grade (%)		-1%	1%		-2%	
Storage Length (ft)	165			215	165	0
Storage Lanes	1			1	1	1
Taper Length (ft)	125				75	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt				0.850		0.850
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1719	1630	1690	1522	1464	1472
Flt Permitted	0.489				0.950	
Satd. Flow (perm)	885	1630	1690	1522	1464	1472
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)				27		45
Link Speed (mph)		45	45		40	
Link Distance (ft)		727	1089		2572	
Travel Time (s)		11.0	16.5		43.8	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	11%	6%	0%	18%	5%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)		0%	0%		0%	
Adj. Flow (vph)	36	241	262	27	48	45
Shared Lane Traffic (%)						
Lane Group Flow (vph)	36	241	262	27	48	45
Number of Detectors	1	1	1	1	1	1
Detector Template	Left				Left	Right
Leading Detector (ft)	45	6	6	6	45	45
Trailing Detector (ft)	-5	0	0	0	-5	-5
Turn Type	pm+pt	NA	NA	Perm	Prot	Perm
Protected Phases	5	2	6		4	
Permitted Phases	2			6		4
Detector Phase	5				4	4
Switch Phase						
Minimum Initial (s)	3.0	15.0	15.0	15.0	5.0	5.0
Minimum Split (s)	9.0	21.0	21.0	21.0	11.0	11.0
Total Split (s)	13.0	71.0	58.0	58.0	26.0	26.0
Total Split (%)	13.4%	73.2%	59.8%	59.8%	26.8%	26.8%
Maximum Green (s)	7.0	65.0	52.0	52.0	20.0	20.0
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0

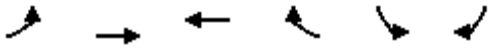


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lead/Lag	Lead		Lag	Lag		
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	5.0	5.0	5.0	3.0	3.0
Minimum Gap (s)	3.0	2.0	2.0	2.0	3.0	3.0
Time Before Reduce (s)	0.0	42.0	42.0	42.0	0.0	0.0
Time To Reduce (s)	0.0	10.0	10.0	10.0	0.0	0.0
Recall Mode	None	Min	Min	Min	None	None
Walk Time (s)		7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)		14.0	14.0	14.0	14.0	14.0
Pedestrian Calls (#/hr)		0	0	0	0	0
v/c Ratio	0.05	0.21	0.24	0.03	0.15	0.13
Control Delay	4.6	5.1	8.4	4.8	14.5	6.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	4.6	5.1	8.4	4.8	14.5	6.8
Queue Length 50th (ft)	3	24	26	0	7	0
Queue Length 95th (ft)	11	50	104	11	32	18
Internal Link Dist (ft)		647	1009		2492	
Turn Bay Length (ft)	165			215	165	
Base Capacity (vph)	754	1150	1102	1002	826	850
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.05	0.21	0.24	0.03	0.06	0.05

Intersection Summary	
Area Type:	Other
Cycle Length: 97	
Actuated Cycle Length: 37.9	
Natural Cycle: 45	
Control Type: Actuated-Uncoordinated	

Splits and Phases: 3: Lycoming Mall Dr (SR 2014) & Lycoming Mall Rd (SR 2049)





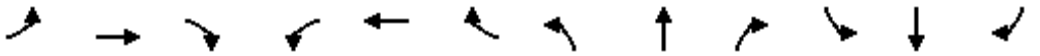
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	31	207	225	23	41	39
Number	5	2	6	16	7	14
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1809	1630	1690	1791	1541	1731
Adj Flow Rate, veh/h	36	241	262	14	48	5
Adj No. of Lanes	1	1	1	1	1	1
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86
Percent Heavy Veh, %	0	11	6	0	18	5
Cap, veh/h	678	1038	752	677	125	125
Arrive On Green	0.05	0.64	0.44	0.44	0.08	0.08
Sat Flow, veh/h	1723	1630	1690	1522	1467	1472
Grp Volume(v), veh/h	36	241	262	14	48	5
Grp Sat Flow(s),veh/h/ln	1723	1630	1690	1522	1467	1472
Q Serve(g_s), s	0.3	2.3	3.7	0.2	1.1	0.1
Cycle Q Clear(g_c), s	0.3	2.3	3.7	0.2	1.1	0.1
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	678	1038	752	677	125	125
V/C Ratio(X)	0.05	0.23	0.35	0.02	0.39	0.04
Avail Cap(c_a), veh/h	970	2991	2490	2244	857	859
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	4.0	2.8	6.6	5.6	15.6	15.1
Incr Delay (d2), s/veh	0.0	0.2	0.6	0.0	1.9	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.3	1.9	3.2	0.1	0.9	0.2
LnGrp Delay(d),s/veh	4.0	3.0	7.1	5.6	17.5	15.2
LnGrp LOS	A	A	A	A	B	B
Approach Vol, veh/h		277	276		53	
Approach Delay, s/veh		3.2	7.1		17.3	
Approach LOS		A	A		B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		27.9		8.1	6.9	21.0		
Change Period (Y+Rc), s		6.0		6.0	6.0	6.0		
Max Green Setting (Gmax), s		65.0		20.0	7.0	52.0		
Max Q Clear Time (g_c+I1), s		4.8		3.6	2.8	6.2		
Green Ext Time (p_c), s		3.7		0.1	0.0	3.7		

Intersection Summary	
HCM 2010 Ctrl Delay	6.2
HCM 2010 LOS	A

Notes

User approved pedestrian interval to be less than phase max green.

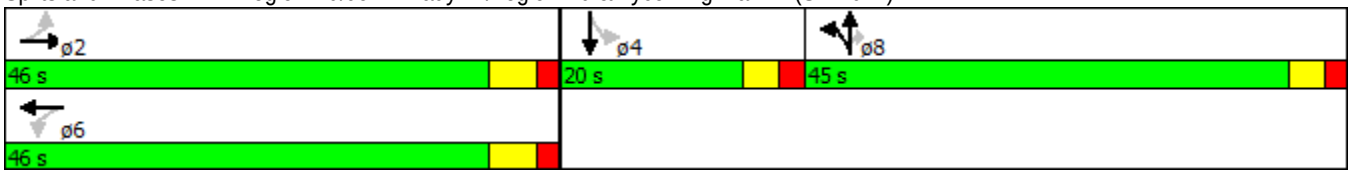


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	1	108	0	44	153	4	146	6	56	6	1	3
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	12	13	13	13	12	12	12	14	14	14
Grade (%)		1%			-1%			-3%			0%	
Storage Length (ft)	1		0	275		0	0		0	0		0
Storage Lanes	0		0	1		0	1		1	0		0
Taper Length (ft)	75			75			75			75		
Lane Util. Factor	0.95	0.95	1.00	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt					0.997				0.850		0.963	
Flt Protected					0.989		0.950	0.956			0.969	
Satd. Flow (prot)	0	3068	0	0	3127	0	1601	1615	1374	0	1256	0
Flt Permitted		0.953			0.876		0.950	0.956				
Satd. Flow (perm)	0	2924	0	0	2770	0	1601	1615	1374	0	1296	0
Right Turn on Red			Yes			Yes			Yes			No
Satd. Flow (RTOR)					2				79			
Link Speed (mph)		45			45			45			25	
Link Distance (ft)		326			418			206			301	
Travel Time (s)		4.9			6.3			3.1			8.2	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	11%	6%	30%	5%	75%	3%	0%	13%	67%	0%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	1	123	0	50	174	5	166	7	64	7	1	3
Shared Lane Traffic (%)							48%					
Lane Group Flow (vph)	0	124	0	0	229	0	86	87	64	0	11	0
Number of Detectors	1	2		1	2		2	2	0	1	1	
Detector Template	Left			Left						Left	Thru	
Leading Detector (ft)	30	306		30	286		206	206	0	30	45	
Trailing Detector (ft)	-10	-5		-10	-5		-5	-5	0	-10	-5	
Turn Type	Perm	NA		Perm	NA		Split	NA	Perm	Perm	NA	
Protected Phases		2			6		8	8			4	
Permitted Phases	2			6					8	4		
Detector Phase	2	2		6	6		8	8	8	4	4	
Switch Phase												
Minimum Initial (s)	15.0	15.0		15.0	15.0		15.0	15.0	15.0	5.0	5.0	
Minimum Split (s)	21.0	21.0		21.0	21.0		20.0	20.0	20.0	10.0	10.0	
Total Split (s)	46.0	46.0		46.0	46.0		45.0	45.0	45.0	20.0	20.0	
Total Split (%)	41.4%	41.4%		41.4%	41.4%		40.5%	40.5%	40.5%	18.0%	18.0%	
Maximum Green (s)	40.0	40.0		40.0	40.0		40.0	40.0	40.0	15.0	15.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)		-1.0			-1.0		-1.0	-1.0	-1.0		-1.0	
Total Lost Time (s)		5.0			5.0		4.0	4.0	4.0		4.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	6.0	6.0		6.0	6.0		6.0	6.0	6.0	3.0	3.0	
Minimum Gap (s)	2.0	2.0		2.0	2.0		2.0	2.0	2.0	2.0	2.0	
Time Before Reduce (s)	40.0	40.0		40.0	40.0		40.0	40.0	40.0	0.0	0.0	
Time To Reduce (s)	20.0	20.0		20.0	20.0		20.0	20.0	20.0	0.0	0.0	
Recall Mode	Min	Min		Min	Min		None	None	None	None	None	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
v/c Ratio		0.09			0.17		0.14	0.14	0.11		0.05	
Control Delay		10.9			10.9		12.2	12.2	4.0		17.7	
Queue Delay		0.0			0.0		0.0	0.0	0.0		0.0	
Total Delay		10.9			10.9		12.2	12.2	4.0		17.7	
Queue Length 50th (ft)		8			17		12	12	0		2	
Queue Length 95th (ft)		32			54		53	54	18		15	
Internal Link Dist (ft)		246			338			126			221	
Turn Bay Length (ft)												
Base Capacity (vph)		2744			2600		1502	1516	1294		488	
Starvation Cap Reductn		0			0		0	0	0		0	
Spillback Cap Reductn		0			0		0	0	0		0	
Storage Cap Reductn		0			0		0	0	0		0	
Reduced v/c Ratio		0.05			0.09		0.06	0.06	0.05		0.02	

Intersection Summary	
Area Type:	Other
Cycle Length: 111	
Actuated Cycle Length: 43.6	
Natural Cycle: 55	
Control Type: Actuated-Uncoordinated	

Splits and Phases: 4: Legion Rd/John Brady Dr/Legion Rd & Lycoming Mall Dr (SR 2014)



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	1	108	0	44	153	4	146	6	56	6	1	3
Number	5	2	12	1	6	16	3	8	18	7	4	14
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	1791	1615	0	1881	1680	1881	1774	1778	1617	1872	1312	1872
Adj Flow Rate, veh/h	1	123	0	50	174	4	171	0	20	7	1	3
Adj No. of Lanes	0	2	0	0	2	0	2	0	1	0	1	0
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	11	11	0	5	5	5	3	0	13	0	0	0
Cap, veh/h	82	1062	0	283	871	20	1092	0	444	28	4	12
Arrive On Green	0.33	0.35	0.00	0.33	0.35	0.33	0.32	0.00	0.32	0.01	0.04	0.01
Sat Flow, veh/h	4	3078	0	484	2465	57	3379	0	1374	773	110	331
Grp Volume(v), veh/h	67	57	0	121	0	107	171	0	20	11	0	0
Grp Sat Flow(s),veh/h/ln	1613	1396	0	1488	0	1519	1689	0	1374	1215	0	0
Q Serve(g_s), s	0.0	1.3	0.0	0.0	0.0	2.2	1.6	0.0	0.5	0.4	0.0	0.0
Cycle Q Clear(g_c), s	1.3	1.3	0.0	2.3	0.0	2.2	1.6	0.0	0.5	0.4	0.0	0.0
Prop In Lane	0.02		0.00	0.41		0.04	1.00		1.00	0.64		0.27
Lane Grp Cap(c), veh/h	615	493	0	605	0	537	1092	0	444	44	0	0
V/C Ratio(X)	0.11	0.12	0.00	0.20	0.00	0.20	0.16	0.00	0.05	0.25	0.00	0.00
Avail Cap(c_a), veh/h	1500	1264	0	1402	0	1375	3059	0	1244	429	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	9.9	9.9	0.0	10.4	0.0	10.2	10.9	0.0	10.5	21.7	0.0	0.0
Incr Delay (d2), s/veh	0.3	0.4	0.0	0.6	0.0	0.7	0.2	0.0	0.2	2.9	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(95%),veh/ln	1.1	1.0	0.0	2.1	0.0	1.8	1.4	0.0	0.3	0.3	0.0	0.0
LnGrp Delay(d),s/veh	10.2	10.3	0.0	11.0	0.0	10.9	11.2	0.0	10.7	24.6	0.0	0.0
LnGrp LOS	B	B		B		B	B		B	C		
Approach Vol, veh/h		124			228			191			11	
Approach Delay, s/veh		10.2			10.9			11.1			24.6	
Approach LOS		B			B			B			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		21.0		5.6		21.0		18.6
Change Period (Y+Rc), s		6.0		5.0		6.0		5.0
Max Green Setting (Gmax), s		40.0		15.0		40.0		40.0
Max Q Clear Time (g_c+I1), s		3.8		2.5		4.3		4.1
Green Ext Time (p_c), s		9.5		0.0		9.5		3.3

Intersection Summary	
HCM 2010 Ctrl Delay	11.1
HCM 2010 LOS	B

Notes

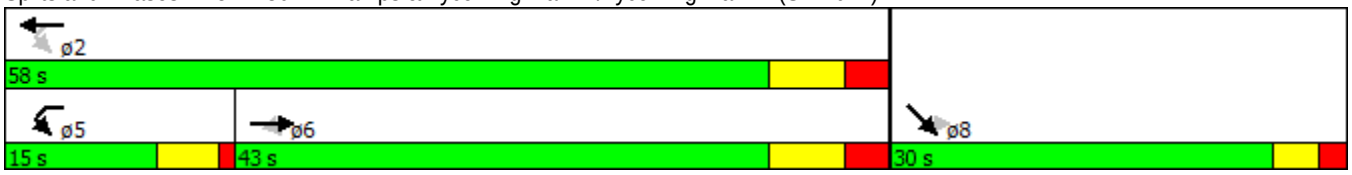
User approved volume balancing among the lanes for turning movement.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Volume (vph)	0	123	86	18	217	0	141	2	103	0	0	0
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	14	12	12	12	12	14	14	14	12	12	12
Grade (%)		-1%			-1%			3%			-4%	
Storage Length (ft)	0		175	150		0	0		0	0		0
Storage Lanes	0		1	1		0	0		0	0		0
Taper Length (ft)	75			75			75			75		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt			0.850					0.943				
Flt Protected				0.950				0.972				
Satd. Flow (prot)	0	1649	1292	1621	1587	0	0	1512	0	0	0	0
Flt Permitted				0.566				0.972				
Satd. Flow (perm)	0	1649	1292	966	1587	0	0	1512	0	0	0	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			95					42				
Link Speed (mph)		45			45			25			25	
Link Distance (ft)		2040			660			376			358	
Travel Time (s)		30.9			10.0			10.3			9.8	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	17%	19%	6%	14%	0%	16%	0%	13%	0%	0%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	0	135	95	20	238	0	155	2	113	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	135	95	20	238	0	0	270	0	0	0	0
Number of Detectors		1	1	1	1		1	1				
Detector Template				Left			Left	Thru				
Leading Detector (ft)		6	6	45	6		30	30				
Trailing Detector (ft)		0	0	-5	0		-10	-10				
Turn Type		NA	Perm	pm+pt	NA		Perm	NA				
Protected Phases		6		5	2			8				
Permitted Phases			6	2			8					
Detector Phase				5			8	8				
Switch Phase												
Minimum Initial (s)		20.0	20.0	5.0	20.0		5.0	5.0				
Minimum Split (s)		28.0	28.0	10.0	38.0		10.0	10.0				
Total Split (s)		43.0	43.0	15.0	58.0		30.0	30.0				
Total Split (%)		48.9%	48.9%	17.0%	65.9%		34.1%	34.1%				
Maximum Green (s)		35.0	35.0	10.0	50.0		25.0	25.0				
Yellow Time (s)		5.0	5.0	4.0	5.0		3.0	3.0				
All-Red Time (s)		3.0	3.0	1.0	3.0		2.0	2.0				
Lost Time Adjust (s)		-1.0	-1.0	-1.0	-1.0			-1.0				
Total Lost Time (s)		7.0	7.0	4.0	7.0			4.0				

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lead/Lag		Lag	Lag	Lead								
Lead-Lag Optimize?												
Vehicle Extension (s)		3.0	3.0	4.0	3.0		4.0	4.0				
Minimum Gap (s)		3.0	3.0	3.0	3.0		3.0	3.0				
Time Before Reduce (s)		0.0	0.0	0.0	0.0		0.0	0.0				
Time To Reduce (s)		0.0	0.0	0.0	0.0		0.0	0.0				
Recall Mode		Min	Min	None	Min		None	None				
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
v/c Ratio		0.19	0.16	0.03	0.32			0.54				
Control Delay		13.2	4.9	7.2	10.8			17.1				
Queue Delay		0.0	0.0	0.0	0.0			0.0				
Total Delay		13.2	4.9	7.2	10.8			17.1				
Queue Length 50th (ft)		20	0	2	38			49				
Queue Length 95th (ft)		84	30	12	99			140				
Internal Link Dist (ft)		1960			580			296			278	
Turn Bay Length (ft)			175	150								
Base Capacity (vph)		705	607	656	740			820				
Starvation Cap Reductn		0	0	0	0			0				
Spillback Cap Reductn		0	0	0	0			0				
Storage Cap Reductn		0	0	0	0			0				
Reduced v/c Ratio		0.19	0.16	0.03	0.32			0.33				

Intersection Summary	
Area Type:	Other
Cycle Length: 88	
Actuated Cycle Length: 50.6	
Natural Cycle: 55	
Control Type: Actuated-Uncoordinated	

Splits and Phases: 5: I-180 EB Ramps & Lycoming Mall Dr/Lycoming Mall Dr (SR 2014)



Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Volume (veh/h)	0	123	86	18	217	0	141	2	103	0	0	0
Number	1	6	16	5	2	12	3	8	18			
Initial Q (Qb), veh	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			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	0	1608	1520	1707	1587	0	1844	1609	1844			
Adj Flow Rate, veh/h	0	135	38	20	238	0	155	2	81			
Adj No. of Lanes	0	1	1	1	1	0	0	1	0			
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91			
Percent Heavy Veh, %	0	17	19	6	14	0	0	0	0			
Cap, veh/h	0	685	550	654	875	0	216	3	113			
Arrive On Green	0.00	0.43	0.43	0.04	0.55	0.00	0.21	0.23	0.21			
Sat Flow, veh/h	0	1608	1292	1625	1587	0	959	12	501			
Grp Volume(v), veh/h	0	135	38	20	238	0	238	0	0			
Grp Sat Flow(s),veh/h/ln	0	1608	1292	1625	1587	0	1472	0	0			
Q Serve(g_s), s	0.0	2.6	0.9	0.3	3.9	0.0	7.4	0.0	0.0			
Cycle Q Clear(g_c), s	0.0	2.6	0.9	0.3	3.9	0.0	7.4	0.0	0.0			
Prop In Lane	0.00		1.00	1.00		0.00	0.65		0.34			
Lane Grp Cap(c), veh/h	0	685	550	654	875	0	332	0	0			
V/C Ratio(X)	0.00	0.20	0.07	0.03	0.27	0.00	0.72	0.00	0.00			
Avail Cap(c_a), veh/h	0	1174	943	944	1641	0	776	0	0			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	0.00			
Uniform Delay (d), s/veh	0.0	8.9	8.4	6.0	5.8	0.0	18.1	0.0	0.0			
Incr Delay (d2), s/veh	0.0	0.1	0.1	0.0	0.2	0.0	4.1	0.0	0.0			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(95%),veh/ln	0.0	2.1	0.6	0.2	3.0	0.0	6.1	0.0	0.0			
LnGrp Delay(d),s/veh	0.0	9.0	8.4	6.0	6.0	0.0	22.2	0.0	0.0			
LnGrp LOS		A	A	A	A		C					
Approach Vol, veh/h		173			258			238				
Approach Delay, s/veh		8.9			6.0			22.2				
Approach LOS		A			A			C				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2			5	6		8
Phs Duration (G+Y+Rc), s		34.2			6.2	28.0		15.1
Change Period (Y+Rc), s		8.0			5.0	8.0		5.0
Max Green Setting (Gmax), s		50.0			10.0	35.0		25.0
Max Q Clear Time (g_c+I1), s		6.4			2.8	5.1		9.4
Green Ext Time (p_c), s		1.0			0.0	1.0		1.1

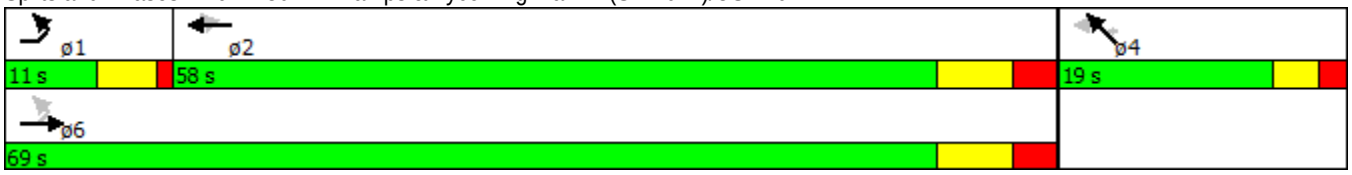
Intersection Summary	
HCM 2010 Ctrl Delay	12.5
HCM 2010 LOS	B

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Volume (vph)	54	210	0	0	153	400	0	0	0	82	0	14
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	11	12	12	11	11	11	12	12	12	15	15	16
Grade (%)		1%			-1%			-3%			-3%	
Storage Length (ft)	115		0	0		165	0		0	0		445
Storage Lanes	1		0	0		1	0		0	0		1
Taper Length (ft)	75			75			75			75		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt						0.850						0.850
Flt Protected	0.950										0.950	
Satd. Flow (prot)	1406	1571	0	0	1665	1402	0	0	0	0	1632	1173
Flt Permitted	0.540										0.950	
Satd. Flow (perm)	799	1571	0	0	1665	1402	0	0	0	0	1632	1173
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						482						124
Link Speed (mph)		45			45			25			25	
Link Distance (ft)		660			1209			327			668	
Travel Time (s)		10.0			18.3			8.9			18.2	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	17%	14%	0%	0%	5%	6%	0%	0%	0%	17%	0%	50%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	65	253	0	0	184	482	0	0	0	99	0	17
Shared Lane Traffic (%)												
Lane Group Flow (vph)	65	253	0	0	184	482	0	0	0	0	99	17
Number of Detectors	1	1			1	1				1	1	0
Detector Template	Left					Right				Left	Thru	
Leading Detector (ft)	45	6			6	30				30	45	0
Trailing Detector (ft)	-5	0			0	-10				-10	-5	0
Turn Type	pm+pt	NA			NA	Perm				Perm	NA	Perm
Protected Phases	1	6			2						4	
Permitted Phases	6					2				4		4
Detector Phase	1					2				4	4	4
Switch Phase												
Minimum Initial (s)	5.0	20.0			20.0	20.0				5.0	5.0	5.0
Minimum Split (s)	10.0	28.0			28.0	28.0				10.0	10.0	10.0
Total Split (s)	11.0	69.0			58.0	58.0				19.0	19.0	19.0
Total Split (%)	12.5%	78.4%			65.9%	65.9%				21.6%	21.6%	21.6%
Maximum Green (s)	6.0	61.0			50.0	50.0				14.0	14.0	14.0
Yellow Time (s)	4.0	5.0			5.0	5.0				3.0	3.0	3.0
All-Red Time (s)	1.0	3.0			3.0	3.0				2.0	2.0	2.0
Lost Time Adjust (s)	-1.0	-1.0			-1.0	0.0					-1.0	-1.0
Total Lost Time (s)	4.0	7.0			7.0	8.0					4.0	4.0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lead/Lag	Lead				Lag	Lag						
Lead-Lag Optimize?												
Vehicle Extension (s)	4.0	3.0			3.0	3.0				4.0	4.0	4.0
Minimum Gap (s)	3.0	3.0			3.0	3.0				3.0	3.0	3.0
Time Before Reduce (s)	0.0	0.0			0.0	0.0				0.0	0.0	0.0
Time To Reduce (s)	0.0	0.0			0.0	0.0				0.0	0.0	0.0
Recall Mode	None	Min			Min	Min				Min	Min	Min
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
v/c Ratio	0.11	0.29			0.25	0.56					0.28	0.05
Control Delay	4.4	7.0			12.3	4.6					19.9	0.3
Queue Delay	0.0	0.0			0.0	0.0					0.0	0.0
Total Delay	4.4	7.0			12.3	4.6					19.9	0.3
Queue Length 50th (ft)	6	33			38	0					27	0
Queue Length 95th (ft)	17	65			75	38					56	0
Internal Link Dist (ft)		580			1129			247			588	
Turn Bay Length (ft)	115					165						445
Base Capacity (vph)	581	872			724	1352					507	450
Starvation Cap Reductn	0	0			0	0					0	0
Spillback Cap Reductn	0	0			0	0					0	0
Storage Cap Reductn	0	0			0	0					0	0
Reduced v/c Ratio	0.11	0.29			0.25	0.36					0.20	0.04

Intersection Summary	
Area Type:	Other
Cycle Length: 88	
Actuated Cycle Length: 49.3	
Natural Cycle: 50	
Control Type: Actuated-Uncoordinated	

Splits and Phases: 6: I-180 WB Ramps & Lycoming Mall Dr (SR 2014)/US 220



Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Volume (veh/h)	54	210	0	0	153	400	0	0	0	82	0	14
Number	1	6	16	5	2	12				7	4	14
Initial Q (Qb), veh	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
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1531	1571	0	0	1723	1707				1900	1624	1267
Adj Flow Rate, veh/h	65	253	0	0	184	363				99	0	3
Adj No. of Lanes	1	1	0	0	1	1				0	1	1
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83				0.83	0.83	0.83
Percent Heavy Veh, %	17	14	0	0	5	6				50	0	50
Cap, veh/h	571	988	0	0	789	633				203	0	141
Arrive On Green	0.08	0.63	0.00	0.00	0.46	0.44				0.11	0.00	0.13
Sat Flow, veh/h	1458	1571	0	0	1723	1451				1547	0	1077
Grp Volume(v), veh/h	65	253	0	0	184	363				99	0	3
Grp Sat Flow(s),veh/h/ln	1458	1571	0	0	1723	1451				1547	0	1077
Q Serve(g_s), s	0.9	3.3	0.0	0.0	3.0	8.6				2.8	0.0	0.1
Cycle Q Clear(g_c), s	0.9	3.3	0.0	0.0	3.0	8.6				2.8	0.0	0.1
Prop In Lane	1.00		0.00	0.00		1.00				1.00		1.00
Lane Grp Cap(c), veh/h	571	988	0	0	789	633				203	0	141
V/C Ratio(X)	0.11	0.26	0.00	0.00	0.23	0.57				0.49	0.00	0.02
Avail Cap(c_a), veh/h	672	2125	0	0	1917	1582				506	0	352
HCM Platoon Ratio	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	0.00	0.00	1.00	1.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	4.3	3.8	0.0	0.0	7.5	9.7				19.0	0.0	17.3
Incr Delay (d2), s/veh	0.1	0.1	0.0	0.0	0.1	0.8				2.6	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
%ile BackOfQ(95%),veh/ln	0.6	2.6	0.0	0.0	2.5	6.4				2.4	0.0	0.1
LnGrp Delay(d),s/veh	4.4	3.9	0.0	0.0	7.7	10.5				21.5	0.0	17.4
LnGrp LOS	A	A			A	B				C		B
Approach Vol, veh/h		318			547						102	
Approach Delay, s/veh		4.0			9.6						21.4	
Approach LOS		A			A						C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6		
Phs Duration (G+Y+Rc), s	7.8	28.0		10.0		35.8		
Change Period (Y+Rc), s	5.0	8.0		5.0		8.0		
Max Green Setting (Gmax), s	6.0	50.0		14.0		61.0		
Max Q Clear Time (g_c+I1), s	3.4	10.6		4.8		5.8		
Green Ext Time (p_c), s	0.0	2.5		0.3		2.5		

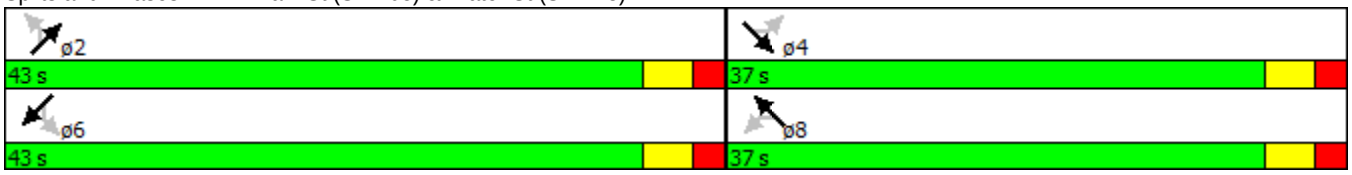
Intersection Summary	
HCM 2010 Ctrl Delay	9.0
HCM 2010 LOS	A

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	18	43	27	107	117	131	18	166	102	92	193	18
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	15	15	15	13	13	13	14	14	14	14	14	14
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (ft)	75			75			75			75		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.959			0.950			0.952			0.992	
Flt Protected		0.990			0.985			0.997			0.985	
Satd. Flow (prot)	0	1760	0	0	1608	0	0	1540	0	0	1661	0
Flt Permitted		0.902			0.873			0.971			0.820	
Satd. Flow (perm)	0	1604	0	0	1425	0	0	1500	0	0	1383	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		25			35			25			25	
Link Distance (ft)		390			506			1477			648	
Travel Time (s)		10.6			9.9			40.3			17.7	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	6%	7%	7%	5%	7%	12%	22%	12%	28%	28%	7%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)							0		0	0		0
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	20	48	30	120	131	147	20	187	115	103	217	20
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	98	0	0	398	0	0	322	0	0	340	0
Number of Detectors	1	1		1	1		1	1		1	1	
Detector Template	Left			Left			Left			Left		
Leading Detector (ft)	30	45		30	45		30	45		30	45	
Trailing Detector (ft)	-10	-5		-10	-5		-10	-5		-10	-5	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	15.0	15.0		15.0	15.0		15.0	15.0		15.0	15.0	
Total Split (s)	37.0	37.0		37.0	37.0		43.0	43.0		43.0	43.0	
Total Split (%)	46.3%	46.3%		46.3%	46.3%		53.8%	53.8%		53.8%	53.8%	
Maximum Green (s)	32.0	32.0		32.0	32.0		38.0	38.0		38.0	38.0	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		-1.0			-1.0			-1.0			-1.0	
Total Lost Time (s)		4.0			4.0			4.0			4.0	

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Minimum Gap (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Time Before Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Time To Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Recall Mode	Max	Max		Max	Max		Max	Max		Max	Max	
Walk Time (s)	11.0	11.0		11.0	11.0		12.0	12.0		12.0	12.0	
Flash Dont Walk (s)	16.0	16.0		16.0	16.0		18.0	18.0		18.0	18.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
v/c Ratio		0.15			0.68			0.44			0.50	
Control Delay		15.5			26.3			15.8			17.2	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		15.5			26.3			15.8			17.2	
Queue Length 50th (ft)		30			157			100			110	
Queue Length 95th (ft)		59			255			163			181	
Internal Link Dist (ft)		310			426			1397			568	
Turn Bay Length (ft)												
Base Capacity (vph)		661			587			731			674	
Starvation Cap Reductn		0			0			0			0	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.15			0.68			0.44			0.50	

Intersection Summary	
Area Type:	Other
Cycle Length: 80	
Actuated Cycle Length: 80	
Natural Cycle: 45	
Control Type: Actuated-Uncoordinated	

Splits and Phases: 11: Main St (SR 405) & Water St (SR 118)



Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (veh/h)	18	43	27	107	117	131	18	166	102	92	193	18
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	0.90	1.00	1.00	0.90
Adj Sat Flow, veh/h/ln	1872	1753	1872	1872	1729	1872	1872	1582	1872	1872	1657	1872
Adj Flow Rate, veh/h	20	48	30	120	131	147	20	187	115	103	217	20
Adj No. of Lanes	0	1	0	0	1	0	0	1	0	0	1	0
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	7	7	7	7	7	7	12	12	12	7	7	7
Cap, veh/h	149	340	192	217	232	229	66	396	230	214	409	35
Arrive On Green	0.40	0.41	0.40	0.40	0.41	0.40	0.47	0.49	0.47	0.47	0.49	0.47
Sat Flow, veh/h	229	824	465	384	563	554	37	812	472	318	839	72
Grp Volume(v), veh/h	98	0	0	398	0	0	322	0	0	340	0	0
Grp Sat Flow(s),veh/h/ln	1519	0	0	1501	0	0	1320	0	0	1229	0	0
Q Serve(g_s), s	0.0	0.0	0.0	12.5	0.0	0.0	0.0	0.0	0.0	2.9	0.0	0.0
Cycle Q Clear(g_c), s	3.0	0.0	0.0	17.0	0.0	0.0	13.2	0.0	0.0	16.1	0.0	0.0
Prop In Lane	0.20		0.31	0.30		0.37	0.06		0.36	0.30		0.06
Lane Grp Cap(c), veh/h	662	0	0	659	0	0	675	0	0	643	0	0
V/C Ratio(X)	0.15	0.00	0.00	0.60	0.00	0.00	0.48	0.00	0.00	0.53	0.00	0.00
Avail Cap(c_a), veh/h	662	0	0	659	0	0	675	0	0	643	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	14.8	0.0	0.0	18.9	0.0	0.0	14.0	0.0	0.0	14.5	0.0	0.0
Incr Delay (d2), s/veh	0.5	0.0	0.0	4.1	0.0	0.0	2.4	0.0	0.0	3.1	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	2.6	0.0	0.0	12.5	0.0	0.0	9.2	0.0	0.0	10.1	0.0	0.0
LnGrp Delay(d),s/veh	15.3	0.0	0.0	23.0	0.0	0.0	16.4	0.0	0.0	17.6	0.0	0.0
LnGrp LOS	B			C			B			B		
Approach Vol, veh/h		98			398			322			340	
Approach Delay, s/veh		15.3			23.0			16.4			17.6	
Approach LOS		B			C			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		43.0		37.0		43.0		37.0
Change Period (Y+Rc), s		5.0		5.0		5.0		5.0
Max Green Setting (Gmax), s		38.0		32.0		38.0		32.0
Max Q Clear Time (g_c+I1), s		15.2		5.0		18.1		19.0
Green Ext Time (p_c), s		3.0		2.1		2.9		1.8

Intersection Summary	
HCM 2010 Ctrl Delay	18.9
HCM 2010 LOS	B

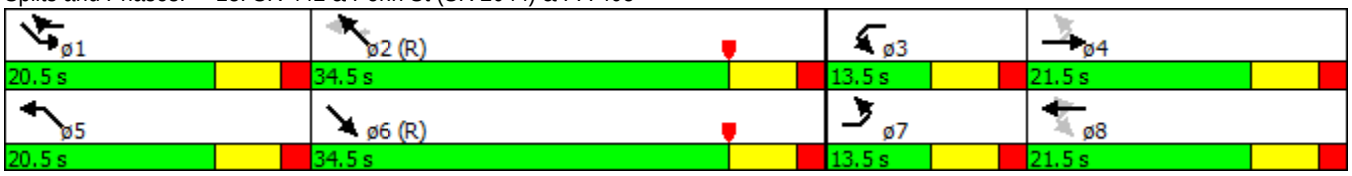
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Volume (vph)	18	72	13	58	122	382	187	98	24	16	240	73
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	11	11	11	11	11	11	11	11	11	11	11	11
Grade (%)		-2%			-1%			1%			-2%	
Storage Length (ft)	195		220	155		425	450		0	125		400
Storage Lanes	2		0	1		1	2		0	1		1
Taper Length (ft)	75			75			75			75		
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00	0.97	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.977				0.850		0.970				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1670	3105	0	1408	1681	1376	2659	1458	0	1670	1642	1396
Flt Permitted	0.673			0.557			0.950			0.673		
Satd. Flow (perm)	1183	3105	0	825	1681	1376	2659	1458	0	1183	1642	1396
Right Turn on Red			No			Yes			Yes			Yes
Satd. Flow (RTOR)						411		15				200
Link Speed (mph)		45			45			40			45	
Link Distance (ft)		670			586			1005			570	
Travel Time (s)		10.2			8.9			17.1			8.6	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	6%	0%	18%	4%	8%	20%	17%	8%	0%	7%	7%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	19	77	14	62	131	411	201	105	26	17	258	78
Shared Lane Traffic (%)												
Lane Group Flow (vph)	19	91	0	62	131	411	201	131	0	17	258	78
Number of Detectors	1	1		1	1	1	2	2		1	2	0
Detector Template	Left	Thru		Left	Thru	Right				Left		
Leading Detector (ft)	40	30		40	30	30	160	160		30	310	0
Trailing Detector (ft)	-10	-5		-10	-5	-5	-10	-10		-10	-10	0
Turn Type	pm+pt	NA		pm+pt	NA	pm+ov	Prot	NA		pm+pt	NA	Perm
Protected Phases	7	4		3	8	1	1	6		5	2	
Permitted Phases	4			8		8				2		2
Detector Phase	7	4		3	8	1	1	6		5	2	2
Switch Phase												
Minimum Initial (s)	3.0	5.0		3.0	5.0	3.0	3.0	5.0		3.0	5.0	5.0
Minimum Split (s)	9.5	11.5		9.5	11.5	9.5	9.5	11.5		9.5	11.5	11.5
Total Split (s)	13.5	21.5		13.5	21.5	20.5	20.5	34.5		20.5	34.5	34.5
Total Split (%)	15.0%	23.9%		15.0%	23.9%	22.8%	22.8%	38.3%		22.8%	38.3%	38.3%
Maximum Green (s)	7.0	15.0		7.0	15.0	14.0	14.0	28.0		14.0	28.0	28.0
Yellow Time (s)	4.5	4.5		4.5	4.5	4.5	4.5	4.5		4.5	4.5	4.5
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)	-1.0	-1.0		-1.0	-1.0	-1.0	-1.0	-1.0		-1.0	-1.0	-1.0
Total Lost Time (s)	5.5	5.5		5.5	5.5	5.5	5.5	5.5		5.5	5.5	5.5

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lead/Lag	Lead	Lag		Lead	Lag	Lead	Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	5.0		3.0	5.0	3.0	3.0	4.0		3.0	4.0	4.0
Minimum Gap (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Time Before Reduce (s)	0.0	0.0		0.0	0.0	0.0	0.0	9.0		0.0	9.0	9.0
Time To Reduce (s)	0.0	0.0		0.0	0.0	0.0	0.0	18.0		0.0	18.0	18.0
Recall Mode	None	None		None	None	None	None	C-Min		None	C-Min	C-Min
Walk Time (s)		12.0			12.0			14.0			14.0	14.0
Flash Dont Walk (s)		18.0			18.0			21.0			21.0	21.0
Pedestrian Calls (#/hr)		0			0			0			0	0
v/c Ratio	0.07	0.21		0.24	0.38	0.50	0.49	0.16		0.03	0.40	0.12
Control Delay	21.9	34.9		24.8	34.2	4.2	38.6	13.1		10.3	24.8	0.4
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	21.9	34.9		24.8	34.2	4.2	38.6	13.1		10.3	24.8	0.4
Queue Length 50th (ft)	8	25		26	57	0	53	27		4	110	0
Queue Length 95th (ft)	23	45		54	123	55	88	82		13	191	0
Internal Link Dist (ft)		590			506			925			490	
Turn Bay Length (ft)	195			155		425	450			125		400
Base Capacity (vph)	289	552		263	369	836	458	811		745	660	680
Starvation Cap Reductn	0	0		0	0	0	0	0		0	0	0
Spillback Cap Reductn	0	0		0	0	0	0	0		0	0	0
Storage Cap Reductn	0	0		0	0	0	0	0		0	0	0
Reduced v/c Ratio	0.07	0.16		0.24	0.36	0.49	0.44	0.16		0.02	0.39	0.11

Intersection Summary

Area Type: Other
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 0 (0%), Referenced to phase 2:NWTL and 6:SET, Start of Yellow
Natural Cycle: 60
Control Type: Actuated-Coordinated

Splits and Phases: 18: SR 442 & Penn St (SR 2044) & PA 405



Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Volume (veh/h)	18	72	13	58	122	382	187	98	24	16	240	73
Number	7	4	14	3	8	18	1	6	16	5	2	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
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	1818	1730	1818	1533	1739	1675	1492	1555	1791	1818	1699	1699
Adj Flow Rate, veh/h	19	77	14	62	131	65	201	105	15	17	258	24
Adj No. of Lanes	1	2	0	1	1	1	2	1	0	1	1	1
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	0	6	6	18	4	8	20	17	17	0	7	7
Cap, veh/h	184	233	41	237	210	335	316	781	112	765	840	714
Arrive On Green	0.03	0.08	0.07	0.06	0.12	0.12	0.11	0.59	0.58	0.02	0.49	0.49
Sat Flow, veh/h	1731	2791	495	1460	1739	1424	2758	1331	190	1731	1699	1444
Grp Volume(v), veh/h	19	45	46	62	131	65	201	0	120	17	258	24
Grp Sat Flow(s),veh/h/ln	1731	1644	1643	1460	1739	1424	1379	0	1521	1731	1699	1444
Q Serve(g_s), s	0.9	2.3	2.4	3.4	6.4	3.3	6.3	0.0	3.2	0.4	8.1	0.8
Cycle Q Clear(g_c), s	0.9	2.3	2.4	3.4	6.4	3.3	6.3	0.0	3.2	0.4	8.1	0.8
Prop In Lane	1.00		0.30	1.00		1.00	1.00		0.13	1.00		1.00
Lane Grp Cap(c), veh/h	184	137	137	237	210	335	316	0	892	765	840	714
V/C Ratio(X)	0.10	0.33	0.34	0.26	0.62	0.19	0.64	0.00	0.13	0.02	0.31	0.03
Avail Cap(c_a), veh/h	294	292	292	275	309	417	460	0	892	1014	840	714
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	1.00	1.00
Uniform Delay (d), s/veh	36.2	38.9	39.1	34.0	37.6	27.6	38.0	0.0	8.4	10.6	13.5	11.7
Incr Delay (d2), s/veh	0.2	2.9	3.1	0.6	6.3	0.6	2.1	0.0	0.3	0.0	0.9	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(95%),veh/ln	0.8	2.1	2.2	2.5	6.2	2.4	4.4	0.0	2.5	0.4	7.2	0.6
LnGrp Delay(d),s/veh	36.4	41.8	42.1	34.6	44.0	28.2	40.1	0.0	8.7	10.6	14.5	11.8
LnGrp LOS	D	D	D	C	D	C	D		A	B	B	B
Approach Vol, veh/h		110			258			321			299	
Approach Delay, s/veh		41.0			37.7			28.4			14.1	
Approach LOS		D			D			C			B	

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	15.8	50.0	11.2	13.0	7.5	58.3	7.8	16.4
Change Period (Y+Rc), s	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5
Max Green Setting (Gmax), s	14.0	28.0	7.0	15.0	14.0	28.0	7.0	15.0
Max Q Clear Time (g_c+I1), s	8.8	10.6	5.9	4.8	2.9	5.2	3.4	8.9
Green Ext Time (p_c), s	0.6	4.7	0.0	1.3	0.0	5.4	0.0	0.9

Intersection Summary	
HCM 2010 Ctrl Delay	27.9
HCM 2010 LOS	C

Notes

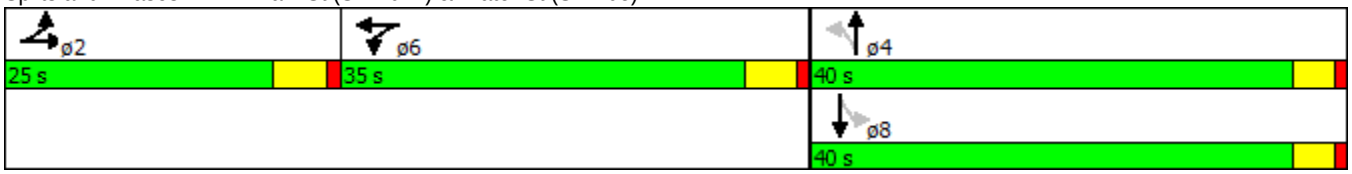
User approved pedestrian interval to be less than phase max green.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	68	125	23	13	254	17	45	92	29	14	86	117
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	16	16	16	12	12	12	10	10	10	10	10	10
Grade (%)		-2%			1%			2%			-1%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (ft)	75			75			75			75		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.99			1.00			0.99			0.97	
Frt		0.985			0.992			0.977			0.927	
Flt Protected		0.984			0.998			0.987			0.997	
Satd. Flow (prot)	0	1838	0	0	1652	0	0	1280	0	0	1231	0
Flt Permitted		0.984			0.998			0.890			0.979	
Satd. Flow (perm)	0	1825	0	0	1650	0	0	1149	0	0	1207	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		463			494			1137			622	
Travel Time (s)		12.6			13.5			31.0			17.0	
Confl. Peds. (#/hr)	10		10	10		10	10		10	10		10
Confl. Bikes (#/hr)												
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	8%	8%	8%	7%	7%	7%	8%	8%	8%	7%	7%	7%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)							6	6	6	6	6	6
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	76	139	26	14	282	19	50	102	32	16	96	130
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	241	0	0	315	0	0	184	0	0	242	0
Number of Detectors	1	1		1	1		1	1		1	1	
Detector Template	Left			Left			Left			Left		
Leading Detector (ft)	30	40		30	40		30	40		30	40	
Trailing Detector (ft)	-10	-10		-10	-10		-10	-10		-10	-10	
Turn Type	Split	NA		Split	NA		Perm	NA		Perm	NA	
Protected Phases	2	2		6	6			4			8	
Permitted Phases							4			8		
Detector Phase	2	2		6	6		4	4		8	8	
Switch Phase												
Minimum Initial (s)	8.0	8.0		8.0	8.0		8.0	8.0		8.0	8.0	
Minimum Split (s)	23.0	23.0		23.0	23.0		22.1	22.1		22.1	22.1	
Total Split (s)	25.0	25.0		35.0	35.0		40.0	40.0		40.0	40.0	
Total Split (%)	25.0%	25.0%		35.0%	35.0%		40.0%	40.0%		40.0%	40.0%	
Maximum Green (s)	20.0	20.0		30.0	30.0		35.9	35.9		35.9	35.9	
Yellow Time (s)	4.0	4.0		4.0	4.0		3.1	3.1		3.1	3.1	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		-0.5			-0.5			-1.0			-1.0	
Total Lost Time (s)		4.5			4.5			3.1			3.1	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0		2.0	2.0		3.5	3.5		3.5	3.5	
Minimum Gap (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Time Before Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Time To Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Recall Mode	None	None		None	None		None	None		None	None	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Pedestrian Calls (#/hr)	10	10		10	10		10	10		10	10	
v/c Ratio		0.62			0.69			0.50			0.63	
Control Delay		35.7			32.9			26.6			30.1	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		35.7			32.9			26.6			30.1	
Queue Length 50th (ft)		88			113			60			82	
Queue Length 95th (ft)		222			261			152			200	
Internal Link Dist (ft)		383			414			1057			542	
Turn Bay Length (ft)												
Base Capacity (vph)		597			798			672			705	
Starvation Cap Reductn		0			0			0			0	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.40			0.39			0.27			0.34	

Intersection Summary	
Area Type:	Other
Cycle Length: 100	
Actuated Cycle Length: 68.8	
Natural Cycle: 70	
Control Type: Semi Act-Uncoord	

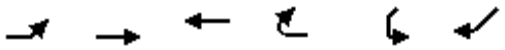
Splits and Phases: 21: Main St (SR 2014) & Water St (SR 405)



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	68	125	23	13	254	17	45	92	29	14	86	117
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.98	0.99		0.98	0.99		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.87	1.00	1.00	0.87
Adj Sat Flow, veh/h/ln	1891	1751	1891	1791	1674	1791	1782	1650	1782	1809	1691	1809
Adj Flow Rate, veh/h	76	139	26	14	282	19	50	102	32	16	96	130
Adj No. of Lanes	0	1	0	0	1	0	0	1	0	0	1	0
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	8	8	8	7	7	7	8	8	8	7	7	7
Cap, veh/h	105	192	36	18	365	25	166	249	66	96	163	202
Arrive On Green	0.19	0.20	0.20	0.24	0.25	0.24	0.26	0.29	0.26	0.26	0.29	0.26
Sat Flow, veh/h	532	973	182	73	1477	100	225	871	231	37	571	706
Grp Volume(v), veh/h	241	0	0	315	0	0	184	0	0	242	0	0
Grp Sat Flow(s),veh/h/ln	1686	0	0	1650	0	0	1328	0	0	1314	0	0
Q Serve(g_s), s	6.0	0.0	0.0	8.0	0.0	0.0	0.0	0.0	0.0	0.7	0.0	0.0
Cycle Q Clear(g_c), s	6.0	0.0	0.0	8.0	0.0	0.0	5.0	0.0	0.0	7.4	0.0	0.0
Prop In Lane	0.32		0.11	0.04		0.06	0.27		0.17	0.07		0.54
Lane Grp Cap(c), veh/h	333	0	0	408	0	0	452	0	0	432	0	0
V/C Ratio(X)	0.72	0.00	0.00	0.77	0.00	0.00	0.41	0.00	0.00	0.56	0.00	0.00
Avail Cap(c_a), veh/h	770	0	0	1120	0	0	1101	0	0	1126	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	17.0	0.0	0.0	15.8	0.0	0.0	13.4	0.0	0.0	14.3	0.0	0.0
Incr Delay (d2), s/veh	1.1	0.0	0.0	1.2	0.0	0.0	0.7	0.0	0.0	1.4	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(95%),veh/ln	5.1	0.0	0.0	6.7	0.0	0.0	3.7	0.0	0.0	5.2	0.0	0.0
LnGrp Delay(d),s/veh	18.1	0.0	0.0	16.9	0.0	0.0	14.1	0.0	0.0	15.7	0.0	0.0
LnGrp LOS	B			B			B			B		
Approach Vol, veh/h		241			315			184			242	
Approach Delay, s/veh		18.1			16.9			14.1			15.7	
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		13.4		16.0		15.6		16.0
Change Period (Y+Rc), s		5.0		4.1		5.0		4.1
Max Green Setting (Gmax), s		20.0		35.9		30.0		35.9
Max Q Clear Time (g_c+I1), s		8.0		7.0		10.0		9.4
Green Ext Time (p_c), s		0.4		2.3		0.6		2.3

Intersection Summary	
HCM 2010 Ctrl Delay	16.4
HCM 2010 LOS	B



Lane Group	EBL	EBT	WBT	WBR	SWL	SWR
Lane Configurations						
Volume (vph)	27	172	367	0	0	54
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	10	10
Grade (%)		2%	-3%		-1%	
Storage Length (ft)	0			0	0	0
Storage Lanes	0			0	1	0
Taper Length (ft)	75				75	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt					0.865	
Flt Protected		0.993				
Satd. Flow (prot)	0	1641	1819	0	1542	0
Flt Permitted		0.993				
Satd. Flow (perm)	0	1641	1819	0	1542	0
Link Speed (mph)		55	45		25	
Link Distance (ft)		1209	517		640	
Travel Time (s)		15.0	7.8		17.5	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	19%	13%	6%	0%	0%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)		0%	0%		0%	
Adj. Flow (vph)	32	205	437	0	0	64
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	237	437	0	64	0
Sign Control		Free	Free		Stop	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

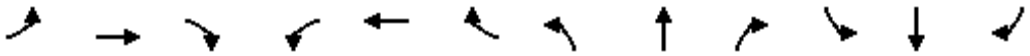
Intersection	
Int Delay, s/veh	1.4

Movement	EBL	EBT	WBT	WBR	SWL	SWR
Vol, veh/h	27	172	367	0	0	54
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, %	-	2	-3	-	-1	-
Peak Hour Factor	84	84	84	84	84	84
Heavy Vehicles, %	19	13	6	0	0	0
Mvmt Flow	32	205	437	0	0	64

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	437	0	-	0	706	437
Stage 1	-	-	-	-	437	-
Stage 2	-	-	-	-	269	-
Critical Hdwy	4.29	-	-	-	7.1	6.2
Critical Hdwy Stg 1	-	-	-	-	5.2	-
Critical Hdwy Stg 2	-	-	-	-	5.2	-
Follow-up Hdwy	3	-	-	-	3	3.1
Pot Cap-1 Maneuver	851	-	-	-	394	657
Stage 1	-	-	-	-	762	-
Stage 2	-	-	-	-	908	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	851	-	-	-	377	657
Mov Cap-2 Maneuver	-	-	-	-	377	-
Stage 1	-	-	-	-	762	-
Stage 2	-	-	-	-	870	-

Approach	EB	WB	SW
HCM Control Delay, s	1.3	0	11.1
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SWLn1
Capacity (veh/h)	851	-	-	-	657
HCM Lane V/C Ratio	0.038	-	-	-	0.098
HCM Control Delay (s)	9.4	0	-	-	11.1
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0.1	-	-	-	0.3



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	1	196	2	2	379	0	4	23	0	5	31	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	11	11	11	10	10	10
Grade (%)		-2%			1%			0%			-3%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (ft)	75			75			75			75		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.999									0.985	
Flt Protected								0.993			0.994	
Satd. Flow (prot)	0	1615	0	0	1784	0	0	1763	0	0	1723	0
Flt Permitted								0.993			0.994	
Satd. Flow (perm)	0	1615	0	0	1784	0	0	1763	0	0	1723	0
Link Speed (mph)		55			55			35			50	
Link Distance (ft)		1494			4148			578			618	
Travel Time (s)		18.5			51.4			11.3			8.4	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	19%	0%	0%	6%	0%	25%	0%	0%	0%	0%	20%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	1	215	2	2	416	0	4	25	0	5	34	5
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	218	0	0	418	0	0	29	0	0	44	0
Sign Control		Free			Free			Stop			Stop	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

Intersection	
Int Delay, s/veh	1.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	1	196	2	2	379	0	4	23	0	5	31	5
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	-2	-	-	1	-	-	0	-	-	-3	-
Peak Hour Factor	91	91	91	91	91	91	91	91	91	91	91	91
Heavy Vehicles, %	0	19	0	0	6	0	25	0	0	0	0	20
Mvmt Flow	1	215	2	2	416	0	4	25	0	5	34	5

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	416	0	0	218	0	0	660	640	216	652	641	416
Stage 1	-	-	-	-	-	-	219	219	-	421	421	-
Stage 2	-	-	-	-	-	-	441	421	-	231	220	-
Critical Hdwy	4.9	-	-	4.9	-	-	8.1	6.5	6.4	8.1	6.5	6.4
Critical Hdwy Stg 1	-	-	-	-	-	-	6.35	5.5	-	5.5	4.9	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.35	5.5	-	5.5	4.9	-
Follow-up Hdwy	3.5	-	-	3.5	-	-	3	4	3.4	3	4	3.4
Pot Cap-1 Maneuver	710	-	-	848	-	-	353	396	797	359	395	611
Stage 1	-	-	-	-	-	-	892	726	-	748	635	-
Stage 2	-	-	-	-	-	-	659	592	-	927	752	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	710	-	-	848	-	-	325	394	797	340	393	611
Mov Cap-2 Maneuver	-	-	-	-	-	-	325	394	-	340	393	-
Stage 1	-	-	-	-	-	-	890	725	-	747	633	-
Stage 2	-	-	-	-	-	-	616	590	-	893	750	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	0	15.2	15.1
HCM LOS			C	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	382	710	-	-	848	-	-	403
HCM Lane V/C Ratio	0.078	0.002	-	-	0.003	-	-	0.112
HCM Control Delay (s)	15.2	10.1	0	-	9.3	0	-	15.1
HCM Lane LOS	C	B	A	-	A	A	-	C
HCM 95th %tile Q(veh)	0.3	0	-	-	0	-	-	0.4

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	8	161	13	6	308	1	33	11	2	0	15	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	11	11	11	14	14	14
Grade (%)		0%			-1%			7%			-1%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (ft)	75			75			75			75		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.990						0.995			0.923	
Flt Protected		0.998			0.999			0.965				
Satd. Flow (prot)	0	1659	0	0	1802	0	0	1599	0	0	1565	0
Flt Permitted		0.998			0.999			0.965				
Satd. Flow (perm)	0	1659	0	0	1802	0	0	1599	0	0	1565	0
Link Speed (mph)		55			55			40			40	
Link Distance (ft)		1228			918			354			317	
Travel Time (s)		15.2			11.4			6.0			5.4	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	63%	11%	8%	0%	6%	0%	3%	18%	0%	0%	27%	15%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	10	196	16	7	376	1	40	13	2	0	18	24
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	222	0	0	384	0	0	55	0	0	42	0
Sign Control		Free			Free			Stop			Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	2.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	8	161	13	6	308	1	33	11	2	0	15	20
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	-1	-	-	7	-	-	-1	-
Peak Hour Factor	82	82	82	82	82	82	82	82	82	82	82	82
Heavy Vehicles, %	63	11	8	0	6	0	3	18	0	0	27	15
Mvmt Flow	10	196	16	7	376	1	40	13	2	0	18	24

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	377	0	0	212	0	0	636	615	204	623	623	376
Stage 1	-	-	-	-	-	-	224	224	-	391	391	-
Stage 2	-	-	-	-	-	-	412	391	-	232	232	-
Critical Hdwy	4.9	-	-	4.9	-	-	8.1	6.5	6.4	8.1	6.5	6.4
Critical Hdwy Stg 1	-	-	-	-	-	-	7.53	7.08	-	5.9	5.57	-
Critical Hdwy Stg 2	-	-	-	-	-	-	7.53	7.08	-	5.9	5.57	-
Follow-up Hdwy	3.5	-	-	3.5	-	-	3	4	3.4	3	4	3.4
Pot Cap-1 Maneuver	735	-	-	853	-	-	370	409	810	379	405	645
Stage 1	-	-	-	-	-	-	823	654	-	741	606	-
Stage 2	-	-	-	-	-	-	599	514	-	902	713	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	735	-	-	853	-	-	337	399	810	361	395	645
Mov Cap-2 Maneuver	-	-	-	-	-	-	337	399	-	361	395	-
Stage 1	-	-	-	-	-	-	811	644	-	730	600	-
Stage 2	-	-	-	-	-	-	553	509	-	867	702	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.4	0.2	16.9	12.8
HCM LOS			C	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	359	735	-	-	853	-	-	507
HCM Lane V/C Ratio	0.156	0.013	-	-	0.009	-	-	0.084
HCM Control Delay (s)	16.9	10	0	-	9.3	0	-	12.8
HCM Lane LOS	C	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.5	0	-	-	0	-	-	0.3

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	128	70	19	277	36	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	13	13	13	13	12	12
Grade (%)	3%			1%	5%	
Storage Length (ft)		0	0		0	0
Storage Lanes		0	0		1	0
Taper Length (ft)			75		75	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.952				0.975	
Flt Protected				0.997	0.961	
Satd. Flow (prot)	1619	0	0	1855	1655	0
Flt Permitted				0.997	0.961	
Satd. Flow (perm)	1619	0	0	1855	1655	0
Link Speed (mph)	55			55	35	
Link Distance (ft)	1476			1319	549	
Travel Time (s)	18.3			16.4	10.7	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	19%	4%	5%	5%	6%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	144	79	21	311	40	9
Shared Lane Traffic (%)						
Lane Group Flow (vph)	223	0	0	332	49	0
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

Intersection	
Int Delay, s/veh	1.3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Vol, veh/h	128	70	19	277	36	8
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, %	3	-	-	1	5	-
Peak Hour Factor	89	89	89	89	89	89
Heavy Vehicles, %	19	4	5	5	6	0
Mvmt Flow	144	79	21	311	40	9

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	222	0	537	183
Stage 1	-	-	-	-	183	-
Stage 2	-	-	-	-	354	-
Critical Hdwy	-	-	4.3	-	7.1	6.2
Critical Hdwy Stg 1	-	-	-	-	6.46	-
Critical Hdwy Stg 2	-	-	-	-	6.46	-
Follow-up Hdwy	-	-	3	-	3	3.1
Pot Cap-1 Maneuver	-	-	1008	-	516	916
Stage 1	-	-	-	-	932	-
Stage 2	-	-	-	-	734	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1008	-	503	916
Mov Cap-2 Maneuver	-	-	-	-	503	-
Stage 1	-	-	-	-	932	-
Stage 2	-	-	-	-	716	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.6	12.2
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	548	-	-	1008	-
HCM Lane V/C Ratio	0.09	-	-	0.021	-
HCM Control Delay (s)	12.2	-	-	8.6	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.3	-	-	0.1	-

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	156	24	0	211	8	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	11	10	10
Grade (%)	-1%			1%	-4%	
Storage Length (ft)		0	0		0	0
Storage Lanes		0	0		1	0
Taper Length (ft)			75		75	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.982					
Flt Protected					0.950	
Satd. Flow (prot)	1619	0	0	1708	1375	0
Flt Permitted					0.950	
Satd. Flow (perm)	1619	0	0	1708	1375	0
Link Speed (mph)	50			55	35	
Link Distance (ft)	420			676	522	
Travel Time (s)	5.7			8.4	10.2	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.79	0.79	0.79	0.79	0.79	0.79
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	10%	25%	0%	7%	25%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	197	30	0	267	10	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	227	0	0	267	10	0
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

Intersection	
Int Delay, s/veh	0.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Vol, veh/h	156	24	0	211	8	0
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, %	-1	-	-	1	-4	-
Peak Hour Factor	79	79	79	79	79	79
Heavy Vehicles, %	10	25	0	7	25	0
Mvmt Flow	197	30	0	267	10	0

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	228	0	480	213
Stage 1	-	-	-	-	213	-
Stage 2	-	-	-	-	267	-
Critical Hdwy	-	-	4.3	-	7.1	6.2
Critical Hdwy Stg 1	-	-	-	-	4.85	-
Critical Hdwy Stg 2	-	-	-	-	4.85	-
Follow-up Hdwy	-	-	3	-	3	3.1
Pot Cap-1 Maneuver	-	-	1003	-	565	881
Stage 1	-	-	-	-	983	-
Stage 2	-	-	-	-	934	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1003	-	565	881
Mov Cap-2 Maneuver	-	-	-	-	565	-
Stage 1	-	-	-	-	983	-
Stage 2	-	-	-	-	934	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	11.5
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	565	-	-	1003	-
HCM Lane V/C Ratio	0.018	-	-	-	-
HCM Control Delay (s)	11.5	-	-	0	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	22	40	12	4	6	3	2	20	2	11	28	28
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	10	10	10	10	10	13	13	13	16	16	16
Grade (%)		-3%			2%			1%			-2%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (ft)	75			75			75			75		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.978			0.969			0.990			0.943	
Flt Protected		0.985			0.984			0.996			0.992	
Satd. Flow (prot)	0	1663	0	0	1551	0	0	1590	0	0	1870	0
Flt Permitted		0.985			0.984			0.996			0.992	
Satd. Flow (perm)	0	1663	0	0	1551	0	0	1590	0	0	1870	0
Link Speed (mph)		35			25			25			25	
Link Distance (ft)		1453			774			205			154	
Travel Time (s)		28.3			21.1			5.6			4.2	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	5%	0%	17%	25%	0%	0%	0%	25%	0%	0%	13%	8%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	37	67	20	7	10	5	3	33	3	18	47	47
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	124	0	0	22	0	0	39	0	0	112	0
Sign Control		Stop			Stop			Free			Free	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

Intersection	
Int Delay, s/veh	5.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	22	40	12	4	6	3	2	20	2	11	28	28
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, %	-	-3	-	-	2	-	-	1	-	-	-2	-
Peak Hour Factor	60	60	60	60	60	60	60	60	60	60	60	60
Heavy Vehicles, %	5	0	17	25	0	0	0	25	0	0	13	8
Mvmt Flow	37	67	20	7	10	5	3	33	3	18	47	47

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	156	150	70	192	172	35	93	0	0	37	0	0
Stage 1	107	107	-	42	42	-	-	-	-	-	-	-
Stage 2	49	43	-	150	130	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.3	-	-	4.3	-	-
Critical Hdwy Stg 1	5.55	4.9	-	6.75	5.9	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.55	4.9	-	6.75	5.9	-	-	-	-	-	-	-
Follow-up Hdwy	3	4	3.1	3	4	3.1	3	-	-	3	-	-
Pot Cap-1 Maneuver	941	745	1061	889	725	1110	1116	-	-	1166	-	-
Stage 1	1064	825	-	1129	860	-	-	-	-	-	-	-
Stage 2	1136	869	-	964	781	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	913	731	1061	800	711	1110	1116	-	-	1166	-	-
Mov Cap-2 Maneuver	913	731	-	800	711	-	-	-	-	-	-	-
Stage 1	1061	812	-	1126	857	-	-	-	-	-	-	-
Stage 2	1114	866	-	854	769	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	10.2	9.6	0.7	1.3
HCM LOS	B	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1116	-	-	821	805	1166	-	-
HCM Lane V/C Ratio	0.003	-	-	0.15	0.027	0.016	-	-
HCM Control Delay (s)	8.2	0	-	10.2	9.6	8.1	0	-
HCM Lane LOS	A	A	-	B	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.5	0.1	0	-	-

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	17	136	30	18	187	31	19	18	8	61	19	37
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	11	11	11	16	16	16	11	11	11
Grade (%)		-2%			2%			2%			-1%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (ft)	75			75			75			75		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.978			0.982			0.976			0.957	
Flt Protected		0.995			0.996			0.979			0.975	
Satd. Flow (prot)	0	1617	0	0	1729	0	0	1481	0	0	1642	0
Flt Permitted		0.995			0.996			0.979			0.975	
Satd. Flow (perm)	0	1617	0	0	1729	0	0	1481	0	0	1642	0
Link Speed (mph)		50			50			25			50	
Link Distance (ft)		832			852			184			234	
Travel Time (s)		11.3			11.6			5.0			3.2	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	9%	30%	6%	3%	0%	55%	27%	20%	3%	5%	8%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	19	153	34	20	210	35	21	20	9	69	21	42
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	206	0	0	265	0	0	50	0	0	132	0
Sign Control		Free			Free			Stop			Stop	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

Intersection	
Int Delay, s/veh	4.2

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Vol, veh/h	17	136	30	18	187	31	19	18	8	61	19	37
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	-2	-	-	2	-	-	2	-	-	-1	-
Peak Hour Factor	89	89	89	89	89	89	89	89	89	89	89	89
Heavy Vehicles, %	0	9	30	6	3	0	55	27	20	3	5	8
Mvmt Flow	19	153	34	20	210	35	21	20	9	69	21	42

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	245	0	0	187	0	0	507	493	170	490	493	228
Stage 1	-	-	-	-	-	-	208	208	-	268	268	-
Stage 2	-	-	-	-	-	-	299	285	-	222	225	-
Critical Hdwy	4.3	-	-	4.3	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	7.05	6.17	-	5.93	5.35	-
Critical Hdwy Stg 2	-	-	-	-	-	-	7.05	6.17	-	5.93	5.35	-
Follow-up Hdwy	3	-	-	3	-	-	3	4	3.1	3	4.045	3.1
Pot Cap-1 Maneuver	990	-	-	1037	-	-	541	480	932	556	476	864
Stage 1	-	-	-	-	-	-	870	706	-	861	692	-
Stage 2	-	-	-	-	-	-	755	644	-	912	721	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	990	-	-	1037	-	-	480	459	932	515	455	864
Mov Cap-2 Maneuver	-	-	-	-	-	-	480	459	-	515	455	-
Stage 1	-	-	-	-	-	-	851	690	-	842	677	-
Stage 2	-	-	-	-	-	-	681	630	-	857	705	-

Approach	SE	NW	NE	SW
HCM Control Delay, s	0.8	0.7	12.8	13.1
HCM LOS			B	B

Minor Lane/Major Mvmt	NELn1	NWL	NWT	NWR	SEL	SET	SER	SWLn1
Capacity (veh/h)	515	1037	-	-	990	-	-	576
HCM Lane V/C Ratio	0.098	0.02	-	-	0.019	-	-	0.228
HCM Control Delay (s)	12.8	8.5	0	-	8.7	0	-	13.1
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.3	0.1	-	-	0.1	-	-	0.9

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Volume (vph)	1	1	38	4	0	0	0	213	0	14	221	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	10	10	9	9	9	11	11	11	11	11	11
Grade (%)		1%			-1%			-3%			0%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (ft)	75			75			75			75		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.871									0.999	
Flt Protected		0.999			0.950						0.997	
Satd. Flow (prot)	0	1535	0	0	1306	0	0	1742	0	0	1781	0
Flt Permitted		0.999			0.950						0.997	
Satd. Flow (perm)	0	1535	0	0	1306	0	0	1742	0	0	1781	0
Link Speed (mph)		25			25			50			50	
Link Distance (ft)		172			263			852			367	
Travel Time (s)		4.7			7.2			11.6			5.0	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	0%	0%	25%	0%	0%	0%	7%	0%	14%	2%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	1	1	40	4	0	0	0	222	0	15	230	1
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	42	0	0	4	0	0	222	0	0	246	0
Sign Control		Stop			Stop			Free			Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	1.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Vol, veh/h	1	1	38	4	0	0	0	213	0	14	221	1
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, %	-	1	-	-	-1	-	-	-3	-	-	0	-
Peak Hour Factor	96	96	96	96	96	96	96	96	96	96	96	96
Heavy Vehicles, %	0	0	0	25	0	0	0	7	0	14	2	0
Mvmt Flow	1	1	40	4	0	0	0	222	0	15	230	1

Major/Minor	Minor1			Minor2			Major1			Major2		
Conflicting Flow All	482	482	222	502	482	231	231	0	0	222	0	0
Stage 1	222	222	-	260	260	-	-	-	-	-	-	-
Stage 2	260	260	-	242	222	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.3	-	-	4.3	-	-
Critical Hdwy Stg 1	6.3	5.7	-	6.15	5.3	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.3	5.7	-	6.15	5.3	-	-	-	-	-	-	-
Follow-up Hdwy	3	4	3.1	3	4	3.1	3	-	-	3	-	-
Pot Cap-1 Maneuver	563	487	870	546	487	860	1001	-	-	1008	-	-
Stage 1	891	715	-	856	707	-	-	-	-	-	-	-
Stage 2	847	687	-	876	732	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	556	479	870	514	479	860	1001	-	-	1008	-	-
Mov Cap-2 Maneuver	556	479	-	514	479	-	-	-	-	-	-	-
Stage 1	891	715	-	856	695	-	-	-	-	-	-	-
Stage 2	833	675	-	835	732	-	-	-	-	-	-	-

Approach	EB	WB	SE	NW
HCM Control Delay, s	9.5	12.1	0	0.5
HCM LOS	A	B		

Minor Lane/Major Mvmt	NWL	NWT	NWR	EBLn1	WBLn1	SEL	SET	SER
Capacity (veh/h)	1008	-	-	841	514	1001	-	-
HCM Lane V/C Ratio	0.014	-	-	0.05	0.008	-	-	-
HCM Control Delay (s)	8.6	0	-	9.5	12.1	0	-	-
HCM Lane LOS	A	A	-	A	B	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.2	0	0	-	-

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	291	22	115	330	0	102
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	13	12	12
Grade (%)	-1%			1%	-3%	
Storage Length (ft)		0	125		0	0
Storage Lanes		0	1		0	1
Taper Length (ft)			60		75	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.990					0.865
Flt Protected			0.950			
Satd. Flow (prot)	1713	0	1633	1860	0	1530
Flt Permitted			0.950			
Satd. Flow (perm)	1713	0	1633	1860	0	1530
Link Speed (mph)	35			35	25	
Link Distance (ft)	496			348	387	
Travel Time (s)	9.7			6.8	10.6	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	8%	41%	10%	5%	0%	9%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	355	27	140	402	0	124
Shared Lane Traffic (%)						
Lane Group Flow (vph)	382	0	140	402	0	124
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

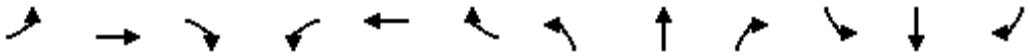
Intersection	
Int Delay, s/veh	2.6

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Vol, veh/h	291	22	115	330	0	102
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	Yield
Storage Length	-	-	125	-	-	0
Veh in Median Storage, #	0	-	-	0	1	-
Grade, %	-1	-	-	1	-3	-
Peak Hour Factor	82	82	82	82	82	82
Heavy Vehicles, %	8	41	10	5	0	9
Mvmt Flow	355	27	140	402	0	124

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	382	0	1051	368
Stage 1	-	-	-	-	368	-
Stage 2	-	-	-	-	683	-
Critical Hdwy	-	-	4.3	-	7.1	6.2
Critical Hdwy Stg 1	-	-	-	-	4.8	-
Critical Hdwy Stg 2	-	-	-	-	4.8	-
Follow-up Hdwy	-	-	3	-	3	3.1
Pot Cap-1 Maneuver	-	-	888	-	227	719
Stage 1	-	-	-	-	853	-
Stage 2	-	-	-	-	633	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	888	-	191	719
Mov Cap-2 Maneuver	-	-	-	-	380	-
Stage 1	-	-	-	-	853	-
Stage 2	-	-	-	-	533	-

Approach	EB	WB	NB
HCM Control Delay, s	0	2.5	11.1
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	719	-	-	888	-
HCM Lane V/C Ratio	0.173	-	-	0.158	-
HCM Control Delay (s)	11.1	-	-	9.8	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0.6	-	-	0.6	-



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	240	153	0	311	227	19	0	84	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	11	12	12	12	12	12	12	12	12	12
Grade (%)		-1%			-1%			-4%			-2%	
Storage Length (ft)	0		0	0		115	0		0	0		0
Storage Lanes	0		1	0		1	0		0	0		0
Taper Length (ft)	75			75			75			75		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt			0.850			0.850		0.890				
Flt Protected								0.991				
Satd. Flow (prot)	0	1768	1439	0	1785	1546	0	1292	0	0	0	0
Flt Permitted								0.991				
Satd. Flow (perm)	0	1768	1439	0	1785	1546	0	1292	0	0	0	0
Link Speed (mph)		45			45			25			25	
Link Distance (ft)		758			636			290			200	
Travel Time (s)		11.5			9.6			7.9			5.5	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	8%	9%	0%	7%	5%	47%	0%	29%	0%	0%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	0	258	165	0	334	244	20	0	90	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	258	165	0	334	244	0	110	0	0	0	0
Sign Control		Free			Free			Stop			Stop	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

Intersection	
Int Delay, s/veh	1.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	0	240	153	0	311	227	19	0	84	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	Free	-	-	None	-	-	None	-	-	None
Storage Length	-	-	0	-	-	115	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	0	-
Grade, %	-	-1	-	-	-1	-	-	-4	-	-	-2	-
Peak Hour Factor	93	93	93	93	93	93	93	93	93	93	93	93
Heavy Vehicles, %	0	8	9	0	7	5	47	0	29	0	0	0
Mvmt Flow	0	258	165	0	334	244	20	0	90	0	0	0

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	334	0	-	258	0	0	592	592	258
Stage 1	-	-	-	-	-	-	258	258	-
Stage 2	-	-	-	-	-	-	334	334	-
Critical Hdwy	4.3	-	-	4.3	-	-	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	5.07	4.7	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.07	4.7	-
Follow-up Hdwy	3	-	-	3	-	-	3	4	3.1
Pot Cap-1 Maneuver	922	-	0	980	-	-	473	422	830
Stage 1	-	-	0	-	-	-	927	739	-
Stage 2	-	-	0	-	-	-	859	697	-
Platoon blocked, %		-			-	-			
Mov Cap-1 Maneuver	922	-	-	980	-	-	473	0	830
Mov Cap-2 Maneuver	-	-	-	-	-	-	622	0	-
Stage 1	-	-	-	-	-	-	927	0	-
Stage 2	-	-	-	-	-	-	859	0	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	10.4
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	WBL	WBT	WBR
Capacity (veh/h)	782	922	-	980	-	-
HCM Lane V/C Ratio	0.142	-	-	-	-	-
HCM Control Delay (s)	10.4	0	-	0	-	-
HCM Lane LOS	B	A	-	A	-	-
HCM 95th %tile Q(veh)	0.5	0	-	0	-	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	3	0	29	0	0	0	25	346	1	0	600	12
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	13	13	13	12	12	12	12	12	11	11	11	11
Grade (%)		3%			2%			0%			1%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (ft)	75			75			75			75		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.877									0.997	
Flt Protected		0.996						0.997				
Satd. Flow (prot)	0	1548	0	0	1881	0	0	3265	0	0	1734	0
Flt Permitted		0.996						0.997				
Satd. Flow (perm)	0	1548	0	0	1881	0	0	3265	0	0	1734	0
Link Speed (mph)		40			35			45			45	
Link Distance (ft)		499			348			586			796	
Travel Time (s)		8.5			6.8			8.9			12.1	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	0%	10%	0%	0%	0%	0%	11%	0%	0%	5%	8%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	3	0	31	0	0	0	27	372	1	0	645	13
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	34	0	0	0	0	0	400	0	0	658	0
Sign Control		Stop			Stop			Free			Free	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

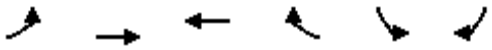
Intersection	
Int Delay, s/veh	0.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Vol, veh/h	3	0	29	0	0	0	25	346	1	0	600	12
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, %	-	3	-	-	2	-	-	0	-	-	1	-
Peak Hour Factor	93	93	93	93	93	93	93	93	93	93	93	93
Heavy Vehicles, %	0	0	10	0	0	0	0	11	0	0	5	8
Mvmt Flow	3	0	31	0	0	0	27	372	1	0	645	13

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	892	1079	652	1093	1084	187	658	0	0	373	0	0
Stage 1	652	652	-	426	426	-	-	-	-	-	-	-
Stage 2	240	427	-	667	658	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.3	-	-	4.3	-	-
Critical Hdwy Stg 1	6.7	6.1	-	6.9	5.9	-	-	-	-	-	-	-
Critical Hdwy Stg 2	7.1	6.1	-	6.5	5.9	-	-	-	-	-	-	-
Follow-up Hdwy	3	4	3.1	3	4	3.1	3	-	-	3	-	-
Pot Cap-1 Maneuver	293	220	494	212	219	911	710	-	-	894	-	-
Stage 1	462	419	-	630	562	-	-	-	-	-	-	-
Stage 2	825	548	-	469	432	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	282	209	494	191	208	911	710	-	-	894	-	-
Mov Cap-2 Maneuver	282	209	-	191	208	-	-	-	-	-	-	-
Stage 1	440	419	-	600	535	-	-	-	-	-	-	-
Stage 2	785	522	-	439	432	-	-	-	-	-	-	-

Approach	EB	WB	NE	SW
HCM Control Delay, s	13.4	0	0.9	0
HCM LOS	B	A		

Minor Lane/Major Mvmt	NEL	NET	NER	EBLn1	WBLn1	SWL	SWT	SWR
Capacity (veh/h)	710	-	-	461	-	894	-	-
HCM Lane V/C Ratio	0.038	-	-	0.075	-	-	-	-
HCM Control Delay (s)	10.3	0.2	-	13.4	0	0	-	-
HCM Lane LOS	B	A	-	B	A	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0.2	-	0	-	-



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	16	368	633	11	14	42
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	11	11	11	12	12
Grade (%)		1%	0%		1%	
Storage Length (ft)	60			0	0	0
Storage Lanes	1			0	1	0
Taper Length (ft)	140				75	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt			0.998		0.899	
Flt Protected	0.950				0.988	
Satd. Flow (prot)	1676	1661	1742	0	1493	0
Flt Permitted	0.950				0.988	
Satd. Flow (perm)	1676	1661	1742	0	1493	0
Link Speed (mph)		45	45		45	
Link Distance (ft)		796	771		413	
Travel Time (s)		12.1	11.7		6.3	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	10%	5%	18%	29%	7%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)		0%	0%		0%	
Adj. Flow (vph)	18	423	728	13	16	48
Shared Lane Traffic (%)						
Lane Group Flow (vph)	18	423	741	0	64	0
Sign Control		Free	Free		Stop	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

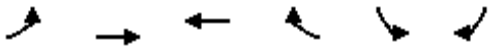
Intersection	
Int Delay, s/veh	1.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Vol, veh/h	16	368	633	11	14	42
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	60	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	1	0	-	1	-
Peak Hour Factor	87	87	87	87	87	87
Heavy Vehicles, %	0	10	5	18	29	7
Mvmt Flow	18	423	728	13	16	48

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	740	0	-	0	1194	734
Stage 1	-	-	-	-	734	-
Stage 2	-	-	-	-	460	-
Critical Hdwy	4.3	-	-	-	7.1	6.2
Critical Hdwy Stg 1	-	-	-	-	5.89	-
Critical Hdwy Stg 2	-	-	-	-	5.89	-
Follow-up Hdwy	3	-	-	-	3	3.1
Pot Cap-1 Maneuver	664	-	-	-	180	443
Stage 1	-	-	-	-	483	-
Stage 2	-	-	-	-	681	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	664	-	-	-	175	443
Mov Cap-2 Maneuver	-	-	-	-	175	-
Stage 1	-	-	-	-	483	-
Stage 2	-	-	-	-	663	-

Approach	EB	WB	SB
HCM Control Delay, s	0.4	0	19.1
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	664	-	-	-	320
HCM Lane V/C Ratio	0.028	-	-	-	0.201
HCM Control Delay (s)	10.6	-	-	-	19.1
HCM Lane LOS	B	-	-	-	C
HCM 95th %tile Q(veh)	0.1	-	-	-	0.7



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	0	393	330	0	0	115
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	13	13	13	13
Grade (%)		-1%	1%		-2%	
Storage Length (ft)	0			0	0	0
Storage Lanes	0			0	0	1
Taper Length (ft)	75				75	
Lane Util. Factor	1.00	0.95	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt						0.865
Flt Protected						
Satd. Flow (prot)	0	3359	1860	0	0	1665
Flt Permitted						
Satd. Flow (perm)	0	3359	1860	0	0	1665
Link Speed (mph)		35	35		25	
Link Distance (ft)		348	758		364	
Travel Time (s)		6.8	14.8		9.9	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	8%	5%	0%	0%	3%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)		0%	0%		0%	
Adj. Flow (vph)	0	479	402	0	0	140
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	479	402	0	0	140
Sign Control		Free	Free		Stop	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

Intersection	
Int Delay, s/veh	1.6

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Vol, veh/h	0	393	330	0	0	115
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	Stop
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	1	-
Grade, %	-	-1	1	-	-2	-
Peak Hour Factor	82	82	82	82	82	82
Heavy Vehicles, %	0	8	5	0	0	3
Mvmt Flow	0	479	402	0	0	140

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	402	0	-	0	642	402
Stage 1	-	-	-	-	402	-
Stage 2	-	-	-	-	240	-
Critical Hdwy	4.3	-	-	-	7.1	6.2
Critical Hdwy Stg 1	-	-	-	-	5	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	3	-	-	-	3	3.1
Pot Cap-1 Maneuver	874	-	-	-	437	687
Stage 1	-	-	-	-	808	-
Stage 2	-	-	-	-	924	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	874	-	-	-	437	687
Mov Cap-2 Maneuver	-	-	-	-	591	-
Stage 1	-	-	-	-	808	-
Stage 2	-	-	-	-	924	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	11.6
HCM LOS			B

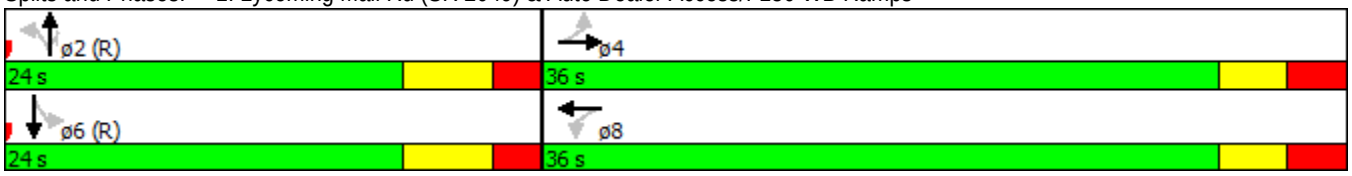
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	874	-	-	-	687
HCM Lane V/C Ratio	-	-	-	-	0.204
HCM Control Delay (s)	0	-	-	-	11.6
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0.8

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	2	21	24	121	6	22	13	54	389	10	52	1
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	13	13	13	15	15	15	12	12	16	12	12	12
Grade (%)		2%			4%			1%			-1%	
Storage Length (ft)	0		100	0		0	0		0	0		375
Storage Lanes	0		0	0		0	0		1	0		1
Taper Length (ft)	75			75			75			75		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95
Ped Bike Factor												
Frt		0.931			0.980				0.850		0.998	
Flt Protected		0.998			0.961			0.991			0.992	
Satd. Flow (prot)	0	1711	0	0	1814	0	0	1775	1725	0	3347	0
Flt Permitted		0.986			0.732			0.962			0.929	
Satd. Flow (perm)	0	1690	0	0	1382	0	0	1723	1725	0	3135	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		26			22				423		1	
Link Speed (mph)		25			25			40			40	
Link Distance (ft)		187			334			1105			689	
Travel Time (s)		5.1			9.1			18.8			11.7	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
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
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	0%	0%	0%	17%	0%	0%	0%	0%	0%	2%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	2	23	26	132	7	24	14	59	423	11	57	1
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	51	0	0	163	0	0	73	423	0	69	0
Number of Detectors	1	1		1	1		1	1	0	1	1	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left		
Leading Detector (ft)	30	40		30	45		30	45	0	30	45	
Trailing Detector (ft)	-10	-10		-10	-5		-10	-5	0	-10	-5	
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2		2	6		
Detector Phase	4	4		8	8		2	2	2	6	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	10.8	10.8		10.8	10.8		11.2	11.2	11.2	11.2	11.2	
Total Split (s)	36.0	36.0		36.0	36.0		24.0	24.0	24.0	24.0	24.0	
Total Split (%)	60.0%	60.0%		60.0%	60.0%		40.0%	40.0%	40.0%	40.0%	40.0%	
Maximum Green (s)	30.2	30.2		30.2	30.2		17.8	17.8	17.8	17.8	17.8	
Yellow Time (s)	3.0	3.0		3.0	3.0		4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	2.8	2.8		2.8	2.8		2.2	2.2	2.2	2.2	2.2	
Lost Time Adjust (s)		-1.0			-1.0			-1.0	-1.0		-1.0	
Total Lost Time (s)		4.8			4.8			5.2	5.2		5.2	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Minimum Gap (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Time Before Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Time To Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Recall Mode	None	None		None	None		C-Min	C-Min	C-Min	C-Min	C-Min	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
v/c Ratio		0.13			0.50			0.06	0.33		0.03	
Control Delay		10.8			21.6			5.3	1.1		6.0	
Queue Delay		0.0			0.0			0.0	0.0		0.0	
Total Delay		10.8			21.6			5.3	1.1		6.0	
Queue Length 50th (ft)		7			44			9	0		4	
Queue Length 95th (ft)		26			82			25	23		14	
Internal Link Dist (ft)		107			254			1025			609	
Turn Bay Length (ft)												
Base Capacity (vph)		891			729			1150	1292		2093	
Starvation Cap Reductn		0			0			0	0		0	
Spillback Cap Reductn		0			0			0	0		0	
Storage Cap Reductn		0			0			0	0		0	
Reduced v/c Ratio		0.06			0.22			0.06	0.33		0.03	

Intersection Summary	
Area Type:	Other
Cycle Length: 60	
Actuated Cycle Length: 60	
Offset: 55 (92%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	
Natural Cycle: 40	
Control Type: Actuated-Coordinated	

Splits and Phases: 1: Lycoming Mall Rd (SR 2049) & Auto Dealer Access/I-180 WB Ramps



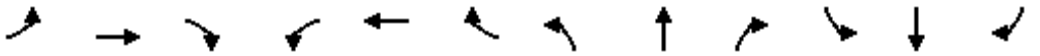
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	2	21	24	121	6	22	13	54	389	10	52	1
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	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	1853	1853	1853	1835	1821	1835	1791	1791	1863	1809	1780	1809
Adj Flow Rate, veh/h	2	23	13	132	7	13	14	59	131	11	57	0
Adj No. of Lanes	0	1	0	0	1	0	0	1	1	0	2	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	17	17	17	0	0	0	2	2	2
Cap, veh/h	68	177	94	313	13	20	244	982	1069	357	1826	0
Arrive On Green	0.14	0.16	0.14	0.14	0.16	0.14	0.66	0.68	0.68	0.66	0.68	0.00
Sat Flow, veh/h	30	1116	596	1271	81	126	256	1454	1583	413	2786	0
Grp Volume(v), veh/h	38	0	0	152	0	0	73	0	131	37	31	0
Grp Sat Flow(s),veh/h/ln	1742	0	0	1478	0	0	1710	0	1583	1579	1538	0
Q Serve(g_s), s	0.0	0.0	0.0	4.7	0.0	0.0	0.0	0.0	1.8	0.0	0.4	0.0
Cycle Q Clear(g_c), s	1.1	0.0	0.0	5.8	0.0	0.0	0.8	0.0	1.8	0.4	0.4	0.0
Prop In Lane	0.05		0.34	0.87		0.09	0.19		1.00	0.30		0.00
Lane Grp Cap(c), veh/h	310	0	0	321	0	0	1198	0	1069	1118	1039	0
V/C Ratio(X)	0.12	0.00	0.00	0.47	0.00	0.00	0.06	0.00	0.12	0.03	0.03	0.00
Avail Cap(c_a), veh/h	934	0	0	841	0	0	1198	0	1069	1118	1039	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	0.00	1.00	0.00	0.00	0.92	0.00	0.92	1.00	1.00	0.00
Uniform Delay (d), s/veh	21.9	0.0	0.0	24.1	0.0	0.0	3.3	0.0	3.5	3.3	3.2	0.0
Incr Delay (d2), s/veh	0.3	0.0	0.0	1.5	0.0	0.0	0.1	0.0	0.2	0.1	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	1.0	0.0	0.0	4.7	0.0	0.0	0.8	0.0	1.5	0.4	0.3	0.0
LnGrp Delay(d),s/veh	22.2	0.0	0.0	25.6	0.0	0.0	3.4	0.0	3.7	3.3	3.3	0.0
LnGrp LOS	C			C			A		A	A	A	
Approach Vol, veh/h		38			152			204			68	
Approach Delay, s/veh		22.2			25.6			3.6			3.3	
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		45.7		14.3		45.7		14.3
Change Period (Y+Rc), s		* 6.2		* 5.8		* 6.2		* 5.8
Max Green Setting (Gmax), s		* 18		* 30		* 18		* 30
Max Q Clear Time (g_c+I1), s		2.8		3.1		2.9		7.8
Green Ext Time (p_c), s		0.3		1.1		0.3		1.0

Intersection Summary	
HCM 2010 Ctrl Delay	12.3
HCM 2010 LOS	B

Notes

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

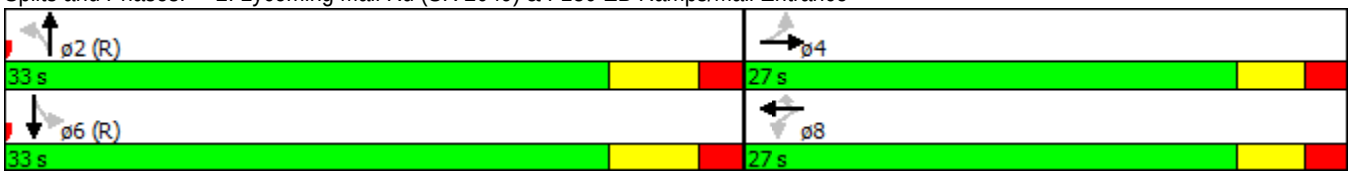


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	41	257	109	59	51	299	39	116	57	79	90	29
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	12	11	12	12	12	12	12	12	12	12
Grade (%)		2%			2%			-2%			-3%	
Storage Length (ft)	0		0	0		0	135		0	0		0
Storage Lanes	0		0	1		1	1		0	1		0
Taper Length (ft)	75			75			75			75		
Lane Util. Factor	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.960				0.850		0.950			0.963	
Flt Protected		0.995		0.950			0.950			0.950		
Satd. Flow (prot)	0	3182	0	1604	1713	1515	1645	1704	0	1736	1734	0
Flt Permitted		0.921		0.404			0.673			0.638		
Satd. Flow (perm)	0	2945	0	682	1713	1515	1165	1704	0	1166	1734	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		102				329		56			32	
Link Speed (mph)		25			25			40			40	
Link Distance (ft)		279			408			2572			1105	
Travel Time (s)		7.6			11.1			43.8			18.8	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	3%	0%	5%	2%	4%	0%	5%	1%	2%	0%	1%	3%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	45	282	120	65	56	329	43	127	63	87	99	32
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	447	0	65	56	329	43	190	0	87	131	0
Number of Detectors	1	1		1	1	0	1	1		1	1	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (ft)	30	45		45	45	0	45	45		45	45	
Trailing Detector (ft)	-10	-5		-5	-5	0	-5	-5		-5	-5	
Turn Type	Perm	NA		Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8		8	2			6		
Detector Phase	4	4		8	8	8	2	2		6	6	
Switch Phase												
Minimum Initial (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Minimum Split (s)	7.0	7.0		7.0	7.0	7.0	8.0	8.0		8.0	8.0	
Total Split (s)	27.0	27.0		27.0	27.0	27.0	33.0	33.0		33.0	33.0	
Total Split (%)	45.0%	45.0%		45.0%	45.0%	45.0%	55.0%	55.0%		55.0%	55.0%	
Maximum Green (s)	22.0	22.0		22.0	22.0	22.0	27.0	27.0		27.0	27.0	
Yellow Time (s)	3.0	3.0		3.0	3.0	3.0	4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		-1.0		-1.0	-1.0	-1.0	-1.0	-1.0		-1.0	-1.0	
Total Lost Time (s)		4.0		4.0	4.0	4.0	5.0	5.0		5.0	5.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Minimum Gap (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Time Before Reduce (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Time To Reduce (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Recall Mode	Min	Min		Min	Min	Min	C-Max	C-Max		C-Max	C-Max	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
v/c Ratio		0.55		0.38	0.13	0.52	0.06	0.18		0.12	0.12	
Control Delay		16.8		23.9	16.3	5.5	6.8	5.2		4.3	2.6	
Queue Delay		0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay		16.8		23.9	16.3	5.5	6.8	5.2		4.3	2.6	
Queue Length 50th (ft)		56		20	16	0	6	18		4	1	
Queue Length 95th (ft)		81		45	34	46	21	54		10	6	
Internal Link Dist (ft)		199			328			2492			1025	
Turn Bay Length (ft)							135					
Base Capacity (vph)		1191		261	656	783	697	1042		697	1050	
Starvation Cap Reductn		0		0	0	0	0	0		0	0	
Spillback Cap Reductn		0		0	0	0	0	0		0	0	
Storage Cap Reductn		0		0	0	0	0	0		0	0	
Reduced v/c Ratio		0.38		0.25	0.09	0.42	0.06	0.18		0.12	0.12	

Intersection Summary	
Area Type:	Other
Cycle Length: 60	
Actuated Cycle Length: 60	
Offset: 40 (67%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	
Natural Cycle: 40	
Control Type: Actuated-Coordinated	

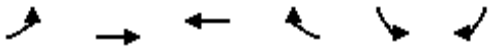
Splits and Phases: 2: Lycoming Mall Rd (SR 2049) & I-180 EB Ramps/Mall Entrance



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	41	257	109	59	51	299	39	116	57	79	90	29
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	1782	1753	1782	1747	1713	1782	1731	1794	1818	1827	1800	1827
Adj Flow Rate, veh/h	45	282	54	65	56	0	43	127	33	87	99	16
Adj No. of Lanes	0	2	0	1	1	1	1	1	0	1	1	0
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	0	0	0	2	4	0	5	1	1	0	1	1
Cap, veh/h	132	612	113	278	421	372	875	831	216	844	914	148
Arrive On Green	0.23	0.25	0.23	0.25	0.25	0.00	0.60	0.60	0.59	1.00	1.00	0.98
Sat Flow, veh/h	238	2493	461	1030	1713	1515	1248	1374	357	1264	1513	244
Grp Volume(v), veh/h	204	0	177	65	56	0	43	0	160	87	0	115
Grp Sat Flow(s),veh/h/ln	1678	0	1514	1030	1713	1515	1248	0	1731	1264	0	1757
Q Serve(g_s), s	1.4	0.0	6.0	3.4	1.5	0.0	0.8	0.0	2.4	0.2	0.0	0.0
Cycle Q Clear(g_c), s	6.1	0.0	6.0	8.9	1.5	0.0	0.8	0.0	2.4	2.2	0.0	0.0
Prop In Lane	0.22		0.30	1.00		1.00	1.00		0.21	1.00		0.14
Lane Grp Cap(c), veh/h	457	0	372	278	421	372	875	0	1047	844	0	1062
V/C Ratio(X)	0.45	0.00	0.48	0.23	0.13	0.00	0.05	0.00	0.15	0.10	0.00	0.11
Avail Cap(c_a), veh/h	683	0	580	420	657	581	875	0	1047	844	0	1062
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.67	1.67	1.67
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	19.5	0.0	19.5	23.0	17.7	0.0	4.9	0.0	5.2	0.1	0.0	0.0
Incr Delay (d2), s/veh	1.0	0.0	1.4	0.6	0.2	0.0	0.1	0.0	0.3	0.2	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(95%),veh/ln	5.6	0.0	4.8	1.8	1.3	0.0	0.6	0.0	2.3	0.2	0.0	0.1
LnGrp Delay(d),s/veh	20.4	0.0	20.8	23.6	17.9	0.0	5.0	0.0	5.5	0.3	0.0	0.2
LnGrp LOS	C		C	C	B		A		A	A		A
Approach Vol, veh/h		381			121			203			202	
Approach Delay, s/veh		20.6			20.9			5.4			0.3	
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		41.3		18.7		41.3		18.7
Change Period (Y+Rc), s		6.0		5.0		6.0		5.0
Max Green Setting (Gmax), s		27.0		22.0		27.0		22.0
Max Q Clear Time (g_c+I1), s		4.4		8.1		4.7		11.4
Green Ext Time (p_c), s		2.3		2.6		2.3		2.3

Intersection Summary	
HCM 2010 Ctrl Delay	12.7
HCM 2010 LOS	B

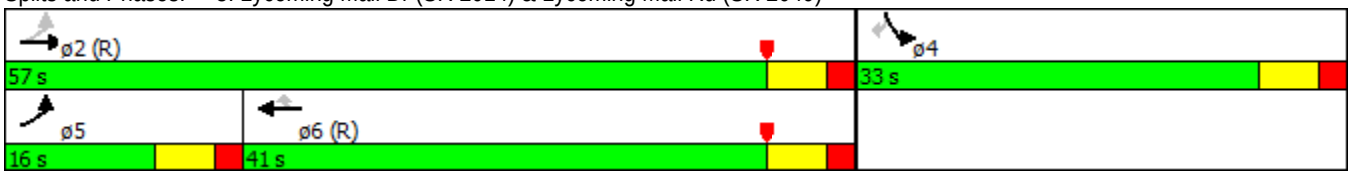


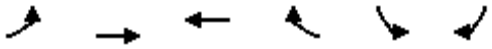
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	53	377	322	48	105	96
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	12	12	12	12
Grade (%)		-1%	1%		-2%	
Storage Length (ft)	165			215	165	0
Storage Lanes	1			1	1	1
Taper Length (ft)	125				75	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt				0.850		0.850
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1719	1774	1756	1522	1645	1486
Flt Permitted	0.465				0.950	
Satd. Flow (perm)	841	1774	1756	1522	1645	1486
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)				55		109
Link Speed (mph)		45	45		40	
Link Distance (ft)		727	1089		2572	
Travel Time (s)		11.0	16.5		43.8	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	2%	2%	0%	5%	4%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)		0%	0%		0%	
Adj. Flow (vph)	60	428	366	55	119	109
Shared Lane Traffic (%)						
Lane Group Flow (vph)	60	428	366	55	119	109
Number of Detectors	1	1	1	1	1	1
Detector Template	Left				Left	Right
Leading Detector (ft)	45	6	6	6	45	45
Trailing Detector (ft)	-5	0	0	0	-5	-5
Turn Type	pm+pt	NA	NA	Perm	Prot	Perm
Protected Phases	5	2	6		4	
Permitted Phases	2			6		4
Detector Phase	5				4	4
Switch Phase						
Minimum Initial (s)	3.0	15.0	15.0	15.0	5.0	5.0
Minimum Split (s)	9.0	21.0	21.0	21.0	11.0	11.0
Total Split (s)	16.0	57.0	41.0	41.0	33.0	33.0
Total Split (%)	17.8%	63.3%	45.6%	45.6%	36.7%	36.7%
Maximum Green (s)	10.0	51.0	35.0	35.0	27.0	27.0
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lead/Lag	Lead		Lag	Lag		
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	5.0	5.0	5.0	3.0	3.0
Minimum Gap (s)	3.0	2.0	2.0	2.0	3.0	3.0
Time Before Reduce (s)	0.0	42.0	42.0	42.0	0.0	0.0
Time To Reduce (s)	0.0	10.0	10.0	10.0	0.0	0.0
Recall Mode	None	C-Min	C-Min	C-Min	None	None
Walk Time (s)		7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)		14.0	14.0	14.0	14.0	14.0
Pedestrian Calls (#/hr)		0	0	0	0	0
v/c Ratio	0.09	0.32	0.33	0.06	0.50	0.36
Control Delay	4.0	5.1	10.3	3.0	42.2	10.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	4.0	5.1	10.3	3.0	42.2	10.1
Queue Length 50th (ft)	7	66	94	0	63	0
Queue Length 95th (ft)	20	125	171	16	107	41
Internal Link Dist (ft)		647	1009		2492	
Turn Bay Length (ft)	165			215	165	
Base Capacity (vph)	734	1322	1109	981	511	537
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.08	0.32	0.33	0.06	0.23	0.20

Intersection Summary	
Area Type:	Other
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 21 (23%), Referenced to phase 2:EBTL and 6:WBT, Start of Yellow	
Natural Cycle: 45	
Control Type: Actuated-Coordinated	

Splits and Phases: 3: Lycoming Mall Dr (SR 2014) & Lycoming Mall Rd (SR 2049)





Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	53	377	322	48	105	96
Number	5	2	6	16	7	14
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	1809	1774	1756	1791	1731	1748
Adj Flow Rate, veh/h	60	428	366	20	119	28
Adj No. of Lanes	1	1	1	1	1	1
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	0	2	2	0	5	4
Cap, veh/h	845	1381	1199	1040	182	164
Arrive On Green	0.04	0.78	1.00	1.00	0.11	0.11
Sat Flow, veh/h	1723	1774	1756	1522	1649	1486
Grp Volume(v), veh/h	60	428	366	20	119	28
Grp Sat Flow(s),veh/h/ln	1723	1774	1756	1522	1649	1486
Q Serve(g_s), s	0.8	6.3	0.0	0.0	6.2	1.5
Cycle Q Clear(g_c), s	0.8	6.3	0.0	0.0	6.2	1.5
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	845	1381	1199	1040	182	164
V/C Ratio(X)	0.07	0.31	0.31	0.02	0.65	0.17
Avail Cap(c_a), veh/h	986	1381	1199	1040	513	462
HCM Platoon Ratio	1.00	1.00	2.00	2.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.99	0.99
Uniform Delay (d), s/veh	2.9	2.9	0.0	0.0	38.4	36.3
Incr Delay (d2), s/veh	0.0	0.6	0.7	0.0	3.9	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.7	6.0	0.4	0.0	5.5	2.4
LnGrp Delay(d),s/veh	3.0	3.5	0.7	0.0	42.3	36.8
LnGrp LOS	A	A	A	A	D	D
Approach Vol, veh/h		488	386		147	
Approach Delay, s/veh		3.4	0.6		41.2	
Approach LOS		A	A		D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		75.1		14.9	8.6	66.5		
Change Period (Y+Rc), s		6.0		6.0	6.0	6.0		
Max Green Setting (Gmax), s		51.0		27.0	10.0	35.0		
Max Q Clear Time (g_c+I1), s		8.8		8.7	3.3	2.5		
Green Ext Time (p_c), s		6.4		0.4	0.1	6.2		

Intersection Summary	
HCM 2010 Ctrl Delay	7.8
HCM 2010 LOS	A

Notes

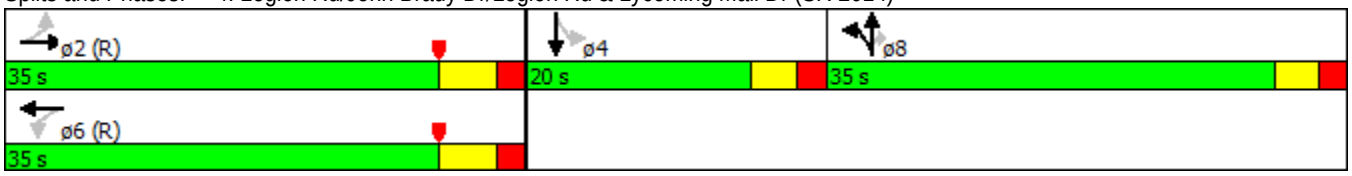
User approved pedestrian interval to be less than phase max green.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	6	278	0	42	218	6	241	2	60	12	7	6
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	12	13	13	13	12	12	12	14	14	14
Grade (%)		1%			-1%			-3%			0%	
Storage Length (ft)	1		0	275		0	0		0	0		0
Storage Lanes	0		0	1		0	1		1	0		0
Taper Length (ft)	75			75			75			75		
Lane Util. Factor	0.95	0.95	1.00	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt					0.996				0.850		0.966	
Flt Protected		0.999			0.992		0.950	0.953			0.977	
Satd. Flow (prot)	0	3311	0	0	3324	0	1633	1638	1451	0	1571	0
Flt Permitted		0.948			0.859		0.950	0.953			0.437	
Satd. Flow (perm)	0	3142	0	0	2878	0	1633	1638	1451	0	703	0
Right Turn on Red			Yes			Yes			Yes			No
Satd. Flow (RTOR)					3				97			
Link Speed (mph)		45			45			45			25	
Link Distance (ft)		326			418			206			301	
Travel Time (s)		4.9			6.3			3.1			8.2	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	33%	2%	0%	12%	4%	17%	1%	0%	7%	33%	0%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	7	309	0	47	242	7	268	2	67	13	8	7
Shared Lane Traffic (%)							50%					
Lane Group Flow (vph)	0	316	0	0	296	0	134	136	67	0	28	0
Number of Detectors	1	2		1	2		2	2	0	1	1	
Detector Template	Left			Left						Left	Thru	
Leading Detector (ft)	30	306		30	286		206	206	0	30	45	
Trailing Detector (ft)	-10	-5		-10	-5		-5	-5	0	-10	-5	
Turn Type	Perm	NA		Perm	NA		Split	NA	Perm	Perm	NA	
Protected Phases		2			6		8	8			4	
Permitted Phases	2			6					8	4		
Detector Phase	2	2		6	6		8	8	8	4	4	
Switch Phase												
Minimum Initial (s)	15.0	15.0		15.0	15.0		15.0	15.0	15.0	5.0	5.0	
Minimum Split (s)	21.0	21.0		21.0	21.0		20.0	20.0	20.0	10.0	10.0	
Total Split (s)	35.0	35.0		35.0	35.0		35.0	35.0	35.0	20.0	20.0	
Total Split (%)	38.9%	38.9%		38.9%	38.9%		38.9%	38.9%	38.9%	22.2%	22.2%	
Maximum Green (s)	29.0	29.0		29.0	29.0		30.0	30.0	30.0	15.0	15.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)		-1.0			-1.0		-1.0	-1.0	-1.0		-1.0	
Total Lost Time (s)		5.0			5.0		4.0	4.0	4.0		4.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	6.0	6.0		6.0	6.0		6.0	6.0	6.0	3.0	3.0	
Minimum Gap (s)	2.0	2.0		2.0	2.0		2.0	2.0	2.0	2.0	2.0	
Time Before Reduce (s)	40.0	40.0		40.0	40.0		40.0	40.0	40.0	0.0	0.0	
Time To Reduce (s)	20.0	20.0		20.0	20.0		20.0	20.0	20.0	0.0	0.0	
Recall Mode	C-Min	C-Min		C-Min	C-Min		None	None	None	None	None	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
v/c Ratio		0.17			0.17		0.38	0.39	0.17		0.32	
Control Delay		11.4			11.5		32.6	32.7	3.5		43.6	
Queue Delay		0.0			0.0		0.0	0.0	0.0		0.0	
Total Delay		11.4			11.5		32.6	32.7	3.5		43.6	
Queue Length 50th (ft)		26			24		70	72	0		15	
Queue Length 95th (ft)		96			91		113	114	17		39	
Internal Link Dist (ft)		246			338			126			221	
Turn Bay Length (ft)												
Base Capacity (vph)		1883			1726		562	564	563		126	
Starvation Cap Reductn		0			0		0	0	0		0	
Spillback Cap Reductn		0			0		0	0	0		0	
Storage Cap Reductn		0			0		0	0	0		0	
Reduced v/c Ratio		0.17			0.17		0.24	0.24	0.12		0.22	

Intersection Summary	
Area Type:	Other
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 41 (46%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow	
Natural Cycle: 55	
Control Type: Actuated-Coordinated	

Splits and Phases: 4: Legion Rd/John Brady Dr/Legion Rd & Lycoming Mall Dr (SR 2014)



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	6	278	0	42	218	6	241	2	60	12	7	6
Number	5	2	12	1	6	16	3	8	18	7	4	14
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	1791	1744	0	1881	1782	1881	1809	1809	1707	1872	1623	1872
Adj Flow Rate, veh/h	7	309	0	47	242	5	269	0	20	13	8	7
Adj No. of Lanes	0	2	0	0	2	0	2	0	1	0	1	0
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	0	4	4	4	1	0	7	0	0	0
Cap, veh/h	61	2047	0	328	1676	35	612	0	258	28	17	15
Arrive On Green	0.63	0.64	0.00	0.63	0.64	0.63	0.18	0.00	0.18	0.03	0.04	0.03
Sat Flow, veh/h	30	3284	0	431	2624	55	3446	0	1451	706	435	380
Grp Volume(v), veh/h	169	147	0	149	0	145	269	0	20	28	0	0
Grp Sat Flow(s),veh/h/ln	1727	1508	0	1499	0	1612	1723	0	1451	1521	0	0
Q Serve(g_s), s	0.0	3.5	0.0	0.0	0.0	3.2	6.3	0.0	1.0	1.6	0.0	0.0
Cycle Q Clear(g_c), s	3.5	3.5	0.0	3.0	0.0	3.2	6.3	0.0	1.0	1.6	0.0	0.0
Prop In Lane	0.04		0.00	0.32		0.03	1.00		1.00	0.46		0.25
Lane Grp Cap(c), veh/h	1126	963	0	994	0	1030	612	0	258	59	0	0
V/C Ratio(X)	0.15	0.15	0.00	0.15	0.00	0.14	0.44	0.00	0.08	0.47	0.00	0.00
Avail Cap(c_a), veh/h	1126	963	0	994	0	1030	1187	0	500	270	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	6.5	6.5	0.0	6.5	0.0	6.5	33.0	0.0	30.9	42.7	0.0	0.0
Incr Delay (d2), s/veh	0.3	0.3	0.0	0.3	0.0	0.3	1.8	0.0	0.5	5.7	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(95%),veh/ln	3.3	2.8	0.0	2.9	0.0	2.7	5.7	0.0	0.8	1.4	0.0	0.0
LnGrp Delay(d),s/veh	6.8	6.8	0.0	6.8	0.0	6.7	34.8	0.0	31.3	48.4	0.0	0.0
LnGrp LOS	A	A		A		A	C		C	D		
Approach Vol, veh/h		316			294			289			28	
Approach Delay, s/veh		6.8			6.8			34.6			48.4	
Approach LOS		A			A			C			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		62.5		7.5		62.5		20.0
Change Period (Y+Rc), s		6.0		5.0		6.0		5.0
Max Green Setting (Gmax), s		29.0		15.0		29.0		30.0
Max Q Clear Time (g_c+I1), s		6.0		3.6		5.2		8.8
Green Ext Time (p_c), s		12.9		0.0		13.2		4.6

Intersection Summary	
HCM 2010 Ctrl Delay	16.7
HCM 2010 LOS	B

Notes

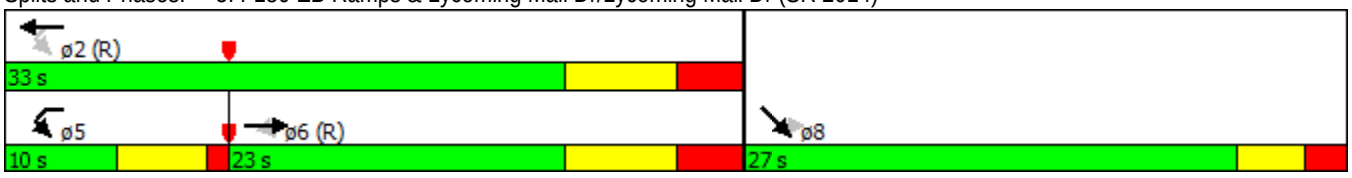
User approved volume balancing among the lanes for turning movement.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Volume (vph)	0	357	180	24	261	0	394	0	81	0	0	0
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	14	12	12	12	12	14	14	14	12	12	12
Grade (%)		-1%			-1%			3%			-4%	
Storage Length (ft)	0		175	150		0	0		0	0		0
Storage Lanes	0		1	1		0	0		0	0		0
Taper Length (ft)	75			75			75			75		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt			0.850					0.977				
Flt Protected				0.950				0.960				
Satd. Flow (prot)	0	1855	1464	1420	1739	0	0	1662	0	0	0	0
Flt Permitted				0.409				0.960				
Satd. Flow (perm)	0	1855	1464	611	1739	0	0	1662	0	0	0	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			188					182				
Link Speed (mph)		45			45			25			25	
Link Distance (ft)		2040			660			376			358	
Travel Time (s)		30.9			10.0			10.3			9.8	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	4%	5%	21%	4%	0%	5%	0%	15%	0%	0%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	0	372	188	25	272	0	410	0	84	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	372	188	25	272	0	0	494	0	0	0	0
Number of Detectors		1	1	1	1		1	1				
Detector Template				Left			Left	Thru				
Leading Detector (ft)		6	6	45	6		30	30				
Trailing Detector (ft)		0	0	-5	0		-10	-10				
Turn Type		NA	Perm	pm+pt	NA		Perm	NA				
Protected Phases		6		5	2			8				
Permitted Phases			6	2			8					
Detector Phase				5			8	8				
Switch Phase												
Minimum Initial (s)		15.0	15.0	5.0	20.0		5.0	5.0				
Minimum Split (s)		23.0	23.0	10.0	28.0		10.0	10.0				
Total Split (s)		23.0	23.0	10.0	33.0		27.0	27.0				
Total Split (%)		38.3%	38.3%	16.7%	55.0%		45.0%	45.0%				
Maximum Green (s)		15.0	15.0	5.0	25.0		22.0	22.0				
Yellow Time (s)		5.0	5.0	4.0	5.0		3.0	3.0				
All-Red Time (s)		3.0	3.0	1.0	3.0		2.0	2.0				
Lost Time Adjust (s)		-1.0	-1.0	-1.0	-1.0			-1.0				
Total Lost Time (s)		7.0	7.0	4.0	7.0			4.0				

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lead/Lag		Lag	Lag	Lead								
Lead-Lag Optimize?												
Vehicle Extension (s)		3.0	3.0	4.0	3.0		4.0	4.0				
Minimum Gap (s)		3.0	3.0	3.0	3.0		3.0	3.0				
Time Before Reduce (s)		0.0	0.0	0.0	0.0		0.0	0.0				
Time To Reduce (s)		0.0	0.0	0.0	0.0		0.0	0.0				
Recall Mode		C-Min	C-Min	None	C-Min		None	None				
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
v/c Ratio		0.46	0.25	0.06	0.31			0.77				
Control Delay		18.8	4.4	9.7	10.9			19.4				
Queue Delay		0.0	0.0	0.0	0.0			0.0				
Total Delay		18.8	4.4	9.7	10.9			19.4				
Queue Length 50th (ft)		83	0	4	40			93				
Queue Length 95th (ft)		#240	41	m12	63			179				
Internal Link Dist (ft)		1960			580			296			278	
Turn Bay Length (ft)			175	150								
Base Capacity (vph)		809	745	433	875			749				
Starvation Cap Reductn		0	0	0	0			0				
Spillback Cap Reductn		0	0	0	0			0				
Storage Cap Reductn		0	0	0	0			0				
Reduced v/c Ratio		0.46	0.25	0.06	0.31			0.66				

Intersection Summary	
Area Type:	Other
Cycle Length: 60	
Actuated Cycle Length: 60	
Offset: 0 (0%), Referenced to phase 2:WBTL and 6:EBT, Start of Green, Master Intersection	
Natural Cycle: 55	
Control Type: Actuated-Coordinated	
# 95th percentile volume exceeds capacity, queue may be longer.	
Queue shown is maximum after two cycles.	
m Volume for 95th percentile queue is metered by upstream signal.	

Splits and Phases: 5: I-180 EB Ramps & Lycoming Mall Dr/Lycoming Mall Dr (SR 2014)



Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Volume (veh/h)	0	357	180	24	261	0	394	0	81	0	0	0
Number	1	6	16	5	2	12	3	8	18			
Initial Q (Qb), veh	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			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	0	1809	1723	1495	1739	0	1844	1728	1844			
Adj Flow Rate, veh/h	0	372	58	25	272	0	410	0	33			
Adj No. of Lanes	0	1	1	1	1	0	0	1	0			
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96			
Percent Heavy Veh, %	0	4	5	21	4	0	0	0	0			
Cap, veh/h	0	692	560	364	860	0	486	0	39			
Arrive On Green	0.00	0.38	0.38	0.03	0.33	0.00	0.31	0.00	0.31			
Sat Flow, veh/h	0	1809	1464	1424	1739	0	1510	0	122			
Grp Volume(v), veh/h	0	372	58	25	272	0	443	0	0			
Grp Sat Flow(s),veh/h/ln	0	1809	1464	1424	1739	0	1631	0	0			
Q Serve(g_s), s	0.0	9.6	1.5	0.6	7.0	0.0	15.2	0.0	0.0			
Cycle Q Clear(g_c), s	0.0	9.6	1.5	0.6	7.0	0.0	15.2	0.0	0.0			
Prop In Lane	0.00		1.00	1.00		0.00	0.93		0.07			
Lane Grp Cap(c), veh/h	0	692	560	364	860	0	526	0	0			
V/C Ratio(X)	0.00	0.54	0.10	0.07	0.32	0.00	0.84	0.00	0.00			
Avail Cap(c_a), veh/h	0	692	560	443	860	0	625	0	0			
HCM Platoon Ratio	1.00	1.00	1.00	0.67	0.67	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.00	1.00	1.00	0.97	0.97	0.00	1.00	0.00	0.00			
Uniform Delay (d), s/veh	0.0	14.4	11.9	10.0	12.5	0.0	19.4	0.0	0.0			
Incr Delay (d2), s/veh	0.0	3.0	0.4	0.1	0.9	0.0	9.6	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			
%ile BackOfQ(95%),veh/ln	0.0	9.1	1.2	0.4	6.5	0.0	12.9	0.0	0.0			
LnGrp Delay(d),s/veh	0.0	17.4	12.3	10.1	13.4	0.0	29.0	0.0	0.0			
LnGrp LOS		B	B	B	B		C					
Approach Vol, veh/h		430			297			443				
Approach Delay, s/veh		16.7			13.1			29.0				
Approach LOS		B			B			C				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2			5	6		8
Phs Duration (G+Y+Rc), s		36.7			6.7	30.0		23.3
Change Period (Y+Rc), s		8.0			5.0	8.0		5.0
Max Green Setting (Gmax), s		25.0			5.0	15.0		22.0
Max Q Clear Time (g_c+I1), s		9.5			3.1	12.1		17.2
Green Ext Time (p_c), s		1.6			0.0	0.6		1.1

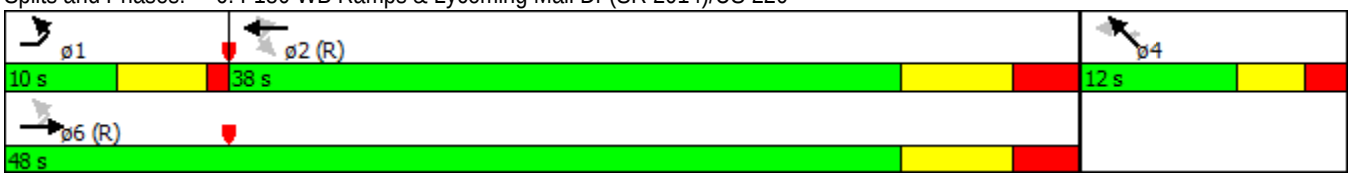
Intersection Summary	
HCM 2010 Ctrl Delay	20.5
HCM 2010 LOS	C

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Volume (vph)	122	629	0	1	186	215	0	0	0	99	0	23
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	11	12	12	11	11	11	12	12	12	15	15	16
Grade (%)		1%			-1%			-3%			-3%	
Storage Length (ft)	115		0	0		165	0		0	0		445
Storage Lanes	1		0	0		1	0		0	0		1
Taper Length (ft)	75			75			75			75		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt						0.850						0.850
Flt Protected	0.950										0.950	
Satd. Flow (prot)	1566	1706	0	0	1562	1364	0	0	0	0	1801	1760
Flt Permitted	0.553				0.997						0.950	
Satd. Flow (perm)	912	1706	0	0	1558	1364	0	0	0	0	1801	1760
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						222						182
Link Speed (mph)		45			45			25			25	
Link Distance (ft)		660			1209			327			668	
Travel Time (s)		10.0			18.3			8.9			18.2	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	5%	5%	0%	0%	12%	9%	0%	0%	0%	6%	0%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	126	648	0	1	192	222	0	0	0	102	0	24
Shared Lane Traffic (%)												
Lane Group Flow (vph)	126	648	0	0	193	222	0	0	0	0	102	24
Number of Detectors	1	1		1	1	1				1	1	0
Detector Template	Left			Left		Right				Left	Thru	
Leading Detector (ft)	45	6		30	6	30				30	45	0
Trailing Detector (ft)	-5	0		-10	0	-10				-10	-5	0
Turn Type	pm+pt	NA		Perm	NA	Perm				Perm	NA	Perm
Protected Phases	1	6			2						4	
Permitted Phases	6			2		2				4		4
Detector Phase	1			2		2				4	4	4
Switch Phase												
Minimum Initial (s)	5.0	20.0		20.0	20.0	20.0				5.0	5.0	5.0
Minimum Split (s)	10.0	28.0		28.0	28.0	28.0				10.0	10.0	10.0
Total Split (s)	10.0	48.0		38.0	38.0	38.0				12.0	12.0	12.0
Total Split (%)	16.7%	80.0%		63.3%	63.3%	63.3%				20.0%	20.0%	20.0%
Maximum Green (s)	5.0	40.0		30.0	30.0	30.0				7.0	7.0	7.0
Yellow Time (s)	4.0	5.0		5.0	5.0	5.0				3.0	3.0	3.0
All-Red Time (s)	1.0	3.0		3.0	3.0	3.0				2.0	2.0	2.0
Lost Time Adjust (s)	-1.0	-1.0			-1.0	0.0					-1.0	-1.0
Total Lost Time (s)	4.0	7.0			7.0	8.0					4.0	4.0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lead/Lag	Lead			Lag	Lag	Lag						
Lead-Lag Optimize?												
Vehicle Extension (s)	4.0	3.0		3.0	3.0	3.0				4.0	4.0	4.0
Minimum Gap (s)	3.0	3.0		3.0	3.0	3.0				3.0	3.0	3.0
Time Before Reduce (s)	0.0	0.0		0.0	0.0	0.0				0.0	0.0	0.0
Time To Reduce (s)	0.0	0.0		0.0	0.0	0.0				0.0	0.0	0.0
Recall Mode	None	C-Min		C-Min	C-Min	C-Min				Min	Min	Min
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
v/c Ratio	0.17	0.60			0.27	0.31					0.32	0.05
Control Delay	5.1	10.4			13.9	3.8					23.3	0.2
Queue Delay	0.0	0.0			0.0	0.0					0.0	0.0
Total Delay	5.1	10.4			13.9	3.8					23.3	0.2
Queue Length 50th (ft)	8	90			44	0					33	0
Queue Length 95th (ft)	m47	307			97	40					66	0
Internal Link Dist (ft)		580			1129			247			588	
Turn Bay Length (ft)	115					165						445
Base Capacity (vph)	725	1086			712	832					325	467
Starvation Cap Reductn	0	0			0	0					0	0
Spillback Cap Reductn	0	0			0	0					0	0
Storage Cap Reductn	0	0			0	0					0	0
Reduced v/c Ratio	0.17	0.60			0.27	0.27					0.31	0.05

Intersection Summary	
Area Type:	Other
Cycle Length: 60	
Actuated Cycle Length: 60	
Offset: 42 (70%), Referenced to phase 2:WBTL and 6:EBTL, Start of Green	
Natural Cycle: 50	
Control Type: Actuated-Coordinated	
m Volume for 95th percentile queue is metered by upstream signal.	

Splits and Phases: 6: I-180 WB Ramps & Lycoming Mall Dr (SR 2014)/US 220



Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Volume (veh/h)	122	629	0	1	186	215	0	0	0	99	0	23
Number	1	6	16	5	2	12				7	4	14
Initial Q (Qb), veh	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
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1706	1706	0	1809	1616	1660				1900	1793	1900
Adj Flow Rate, veh/h	126	648	0	1	192	158				102	0	8
Adj No. of Lanes	1	1	0	0	1	1				0	1	1
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97				0.97	0.97	0.97
Percent Heavy Veh, %	5	5	0	12	12	9				0	0	0
Cap, veh/h	761	1209	0	61	891	755				185	0	175
Arrive On Green	0.18	1.00	0.00	0.54	0.55	0.54				0.09	0.00	0.11
Sat Flow, veh/h	1624	1706	0	1	1614	1411				1707	0	1615
Grp Volume(v), veh/h	126	648	0	193	0	158				102	0	8
Grp Sat Flow(s),veh/h/ln	1624	1706	0	1615	0	1411				1707	0	1615
Q Serve(g_s), s	1.6	0.0	0.0	0.0	0.0	3.5				3.4	0.0	0.3
Cycle Q Clear(g_c), s	1.6	0.0	0.0	3.7	0.0	3.5				3.4	0.0	0.3
Prop In Lane	1.00		0.00	0.01		1.00				1.00		1.00
Lane Grp Cap(c), veh/h	761	1209	0	925	0	755				185	0	175
V/C Ratio(X)	0.17	0.54	0.00	0.21	0.00	0.21				0.55	0.00	0.05
Avail Cap(c_a), veh/h	778	1209	0	925	0	755				228	0	215
HCM Platoon Ratio	2.00	2.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.89	0.89	0.00	1.00	0.00	1.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	3.2	0.0	0.0	6.8	0.0	7.3				25.9	0.0	24.0
Incr Delay (d2), s/veh	0.1	1.5	0.0	0.5	0.0	0.6				3.6	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
%ile BackOfQ(95%),veh/ln	1.3	0.9	0.0	3.2	0.0	2.7				3.2	0.0	0.2
LnGrp Delay(d),s/veh	3.3	1.5	0.0	7.4	0.0	7.9				29.5	0.0	24.1
LnGrp LOS	A	A		A		A				C		C
Approach Vol, veh/h		774			351						110	
Approach Delay, s/veh		1.8			7.6						29.1	
Approach LOS		A			A						C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6		
Phs Duration (G+Y+Rc), s	9.4	40.1		10.5		49.5		
Change Period (Y+Rc), s	5.0	8.0		5.0		8.0		
Max Green Setting (Gmax), s	5.0	30.0		7.0		40.0		
Max Q Clear Time (g_c+I1), s	4.1	5.7		5.4		2.5		
Green Ext Time (p_c), s	0.0	2.8		0.1		2.9		

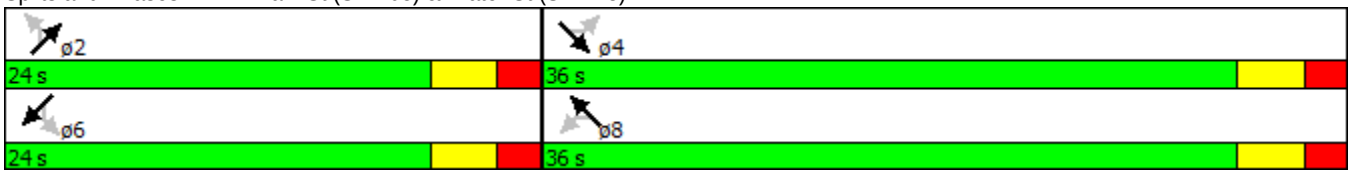
Intersection Summary	
HCM 2010 Ctrl Delay	5.9
HCM 2010 LOS	A

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	28	113	33	135	50	146	18	316	141	103	197	10
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	15	15	15	13	13	13	14	14	14	14	14	14
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (ft)	75			75			75			75		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.974			0.940			0.960			0.996	
Flt Protected		0.992			0.980			0.998			0.984	
Satd. Flow (prot)	0	1913	0	0	1520	0	0	1769	0	0	1725	0
Flt Permitted		0.920			0.814			0.983			0.703	
Satd. Flow (perm)	0	1774	0	0	1263	0	0	1742	0	0	1232	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		25			35			25			25	
Link Distance (ft)		390			506			1477			648	
Travel Time (s)		10.6			9.9			40.3			17.7	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	0%	0%	21%	4%	8%	0%	2%	9%	14%	7%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)							0		0	0		0
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	29	115	34	138	51	149	18	322	144	105	201	10
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	178	0	0	338	0	0	484	0	0	316	0
Number of Detectors	1	1		1	1		1	1		1	1	
Detector Template	Left			Left			Left			Left		
Leading Detector (ft)	30	45		30	45		30	45		30	45	
Trailing Detector (ft)	-10	-5		-10	-5		-10	-5		-10	-5	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	15.0	15.0		15.0	15.0		15.0	15.0		15.0	15.0	
Total Split (s)	36.0	36.0		36.0	36.0		24.0	24.0		24.0	24.0	
Total Split (%)	60.0%	60.0%		60.0%	60.0%		40.0%	40.0%		40.0%	40.0%	
Maximum Green (s)	31.0	31.0		31.0	31.0		19.0	19.0		19.0	19.0	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		-1.0			-1.0			-1.0			-1.0	
Total Lost Time (s)		4.0			4.0			4.0			4.0	

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Minimum Gap (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Time Before Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Time To Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Recall Mode	Max	Max		Max	Max		Max	Max		Max	Max	
Walk Time (s)	11.0	11.0		11.0	11.0		12.0	12.0		12.0	12.0	
Flash Dont Walk (s)	16.0	16.0		16.0	16.0		18.0	18.0		18.0	18.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
v/c Ratio		0.22			0.59			0.64			0.59	
Control Delay		12.9			20.0			20.3			20.7	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		12.9			20.0			20.3			20.7	
Queue Length 50th (ft)		45			106			158			100	
Queue Length 95th (ft)		83			188			256			181	
Internal Link Dist (ft)		310			426			1397			568	
Turn Bay Length (ft)												
Base Capacity (vph)		799			569			760			537	
Starvation Cap Reductn		0			0			0			0	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.22			0.59			0.64			0.59	

Intersection Summary	
Area Type:	Other
Cycle Length: 60	
Actuated Cycle Length: 71	
Natural Cycle: 45	
Control Type: Actuated-Uncoordinated	

Splits and Phases: 11: Main St (SR 405) & Water St (SR 118)



Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (veh/h)	28	113	33	135	50	146	18	316	141	103	197	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	0.90	1.00	1.00	0.90
Adj Sat Flow, veh/h/ln	1872	1872	1872	1872	1661	1872	1872	1800	1872	1872	1716	1872
Adj Flow Rate, veh/h	29	115	34	138	51	149	18	322	144	105	201	10
Adj No. of Lanes	0	1	0	0	1	0	0	1	0	0	1	0
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	0	0	4	4	4	2	2	2	7	7	7
Cap, veh/h	170	641	175	346	140	317	71	355	154	151	230	10
Arrive On Green	0.52	0.53	0.52	0.52	0.53	0.52	0.32	0.33	0.32	0.32	0.33	0.32
Sat Flow, veh/h	189	1203	329	491	262	594	26	1066	462	214	691	30
Grp Volume(v), veh/h	178	0	0	338	0	0	484	0	0	316	0	0
Grp Sat Flow(s),veh/h/ln	1720	0	0	1347	0	0	1553	0	0	935	0	0
Q Serve(g_s), s	0.0	0.0	0.0	6.1	0.0	0.0	0.0	0.0	0.0	0.4	0.0	0.0
Cycle Q Clear(g_c), s	3.1	0.0	0.0	9.2	0.0	0.0	18.6	0.0	0.0	19.0	0.0	0.0
Prop In Lane	0.16		0.19	0.41		0.44	0.04		0.30	0.33		0.03
Lane Grp Cap(c), veh/h	958	0	0	781	0	0	554	0	0	376	0	0
V/C Ratio(X)	0.19	0.00	0.00	0.43	0.00	0.00	0.87	0.00	0.00	0.84	0.00	0.00
Avail Cap(c_a), veh/h	958	0	0	781	0	0	554	0	0	376	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	7.3	0.0	0.0	8.8	0.0	0.0	19.7	0.0	0.0	19.4	0.0	0.0
Incr Delay (d2), s/veh	0.4	0.0	0.0	1.7	0.0	0.0	17.2	0.0	0.0	19.7	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(95%),veh/ln	3.1	0.0	0.0	7.3	0.0	0.0	16.1	0.0	0.0	11.8	0.0	0.0
LnGrp Delay(d),s/veh	7.8	0.0	0.0	10.6	0.0	0.0	36.9	0.0	0.0	39.2	0.0	0.0
LnGrp LOS	A			B			D			D		
Approach Vol, veh/h		178			338			484			316	
Approach Delay, s/veh		7.8			10.6			36.9			39.2	
Approach LOS		A			B			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		24.0		36.0		24.0		36.0
Change Period (Y+Rc), s		5.0		5.0		5.0		5.0
Max Green Setting (Gmax), s		19.0		31.0		19.0		31.0
Max Q Clear Time (g_c+I1), s		20.6		5.1		21.0		11.2
Green Ext Time (p_c), s		0.0		2.2		0.0		2.1

Intersection Summary	
HCM 2010 Ctrl Delay	26.8
HCM 2010 LOS	C

Notes

User approved pedestrian interval to be less than phase max green.

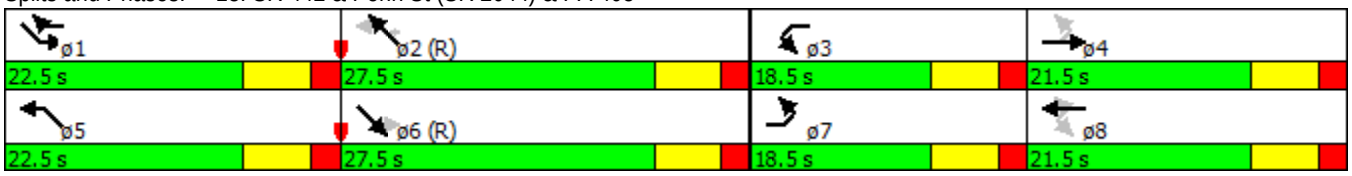
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Volume (vph)	33	193	30	102	149	244	404	270	68	22	160	118
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	11	11	11	11	11	11	11	11	11	11	11	11
Grade (%)		-2%			-1%			1%			-2%	
Storage Length (ft)	195		220	155		425	450		0	125		400
Storage Lanes	2		0	1		1	2		0	1		1
Taper Length (ft)	75			75			75			75		
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00	0.97	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.980				0.850		0.970				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1575	3204	0	1629	1714	1304	3010	1630	0	1590	1674	1450
Flt Permitted	0.654			0.481			0.519			0.543		
Satd. Flow (perm)	1084	3204	0	825	1714	1304	1645	1630	0	909	1674	1450
Right Turn on Red			No			Yes			Yes			Yes
Satd. Flow (RTOR)						265		13				200
Link Speed (mph)		45			45			40			45	
Link Distance (ft)		670			586			1019			570	
Travel Time (s)		10.2			8.9			17.4			8.6	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
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
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	6%	2%	3%	2%	2%	14%	6%	3%	3%	5%	5%	3%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	36	210	33	111	162	265	439	293	74	24	174	128
Shared Lane Traffic (%)												
Lane Group Flow (vph)	36	243	0	111	162	265	439	367	0	24	174	128
Number of Detectors	1	1		1	1	1	2	2		1	2	0
Detector Template	Left	Thru		Left	Thru	Right				Left		
Leading Detector (ft)	40	30		40	30	30	160	160		30	310	0
Trailing Detector (ft)	-10	-5		-10	-5	-5	-10	-10		-10	-10	0
Turn Type	pm+pt	NA		pm+pt	NA	pm+ov	pm+pt	NA		pm+pt	NA	Perm
Protected Phases	7	4		3	8	1	1	6		5	2	
Permitted Phases	4			8		8	6			2		2
Detector Phase	7	4		3	8	1	1	6		5	2	2
Switch Phase												
Minimum Initial (s)	3.0	5.0		3.0	5.0	3.0	3.0	5.0		3.0	5.0	5.0
Minimum Split (s)	9.5	11.5		9.5	11.5	9.5	9.5	11.5		9.5	11.5	11.5
Total Split (s)	18.5	21.5		18.5	21.5	22.5	22.5	27.5		22.5	27.5	27.5
Total Split (%)	20.6%	23.9%		20.6%	23.9%	25.0%	25.0%	30.6%		25.0%	30.6%	30.6%
Maximum Green (s)	12.0	15.0		12.0	15.0	16.0	16.0	21.0		16.0	21.0	21.0
Yellow Time (s)	4.5	4.5		4.5	4.5	4.5	4.5	4.5		4.5	4.5	4.5
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)	-1.0	-1.0		-1.0	-1.0	-1.0	-1.0	-1.0		-1.0	-1.0	-1.0
Total Lost Time (s)	5.5	5.5		5.5	5.5	5.5	5.5	5.5		5.5	5.5	5.5

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lead/Lag	Lead	Lag		Lead	Lag	Lead	Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	5.0		3.0	5.0	3.0	3.0	4.0		3.0	4.0	4.0
Minimum Gap (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Time Before Reduce (s)	0.0	0.0		0.0	0.0	0.0	0.0	9.0		0.0	9.0	9.0
Time To Reduce (s)	0.0	0.0		0.0	0.0	0.0	0.0	18.0		0.0	18.0	18.0
Recall Mode	None	None		None	None	None	None	C-Min		None	C-Min	C-Min
Walk Time (s)		12.0			12.0			14.0			14.0	14.0
Flash Dont Walk (s)		18.0			18.0			21.0			21.0	21.0
Pedestrian Calls (#/hr)		0			0			0			0	0
v/c Ratio	0.12	0.47		0.33	0.44	0.37	0.38	0.44		0.05	0.31	0.21
Control Delay	19.8	37.2		23.2	34.6	3.4	12.5	19.9		12.8	27.7	1.6
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	19.8	37.2		23.2	34.6	3.4	12.5	19.9		12.8	27.7	1.6
Queue Length 50th (ft)	14	66		44	82	0	67	115		6	79	0
Queue Length 95th (ft)	32	102		78	141	41	104	267		20	145	9
Internal Link Dist (ft)		590			506			939			490	
Turn Bay Length (ft)	195			155		425	450			125		400
Base Capacity (vph)	373	571		368	386	750	1191	831		603	568	624
Starvation Cap Reductn	0	0		0	0	0	0	0		0	0	0
Spillback Cap Reductn	0	0		0	0	0	0	0		0	0	0
Storage Cap Reductn	0	0		0	0	0	0	0		0	0	0
Reduced v/c Ratio	0.10	0.43		0.30	0.42	0.35	0.37	0.44		0.04	0.31	0.21

Intersection Summary

Area Type: Other
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 0 (0%), Referenced to phase 2:NWTL and 6:SETL, Start of Green, Master Intersection
Natural Cycle: 60
Control Type: Actuated-Coordinated

Splits and Phases: 18: SR 442 & Penn St (SR 2044) & PA 405



Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Volume (veh/h)	33	193	30	102	149	244	404	270	68	22	160	118
Number	7	4	14	3	8	18	1	6	16	5	2	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
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	1715	1780	1818	1774	1774	1587	1690	1739	1791	1731	1731	1765
Adj Flow Rate, veh/h	36	210	33	111	162	39	439	293	64	24	174	28
Adj No. of Lanes	1	2	0	1	1	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, %	6	2	2	2	2	14	6	3	3	5	5	3
Cap, veh/h	247	363	56	295	308	412	1326	713	156	516	712	617
Arrive On Green	0.04	0.12	0.11	0.09	0.17	0.17	0.13	0.52	0.50	0.03	0.41	0.41
Sat Flow, veh/h	1633	2936	455	1689	1774	1349	3122	1383	302	1649	1731	1500
Grp Volume(v), veh/h	36	120	123	111	162	39	439	0	357	24	174	28
Grp Sat Flow(s),veh/h/ln	1633	1691	1700	1689	1774	1349	1561	0	1686	1649	1731	1500
Q Serve(g_s), s	1.7	6.0	6.2	4.9	7.5	1.9	6.3	0.0	11.8	0.7	5.9	1.0
Cycle Q Clear(g_c), s	1.7	6.0	6.2	4.9	7.5	1.9	6.3	0.0	11.8	0.7	5.9	1.0
Prop In Lane	1.00		0.27	1.00		1.00	1.00		0.18	1.00		1.00
Lane Grp Cap(c), veh/h	247	209	210	295	308	412	1326	0	869	516	712	617
V/C Ratio(X)	0.15	0.57	0.59	0.38	0.53	0.09	0.33	0.00	0.41	0.05	0.24	0.05
Avail Cap(c_a), veh/h	419	301	302	389	315	418	1504	0	869	782	712	617
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	1.00	1.00
Uniform Delay (d), s/veh	32.3	37.2	37.4	29.0	33.8	22.4	10.1	0.0	13.5	14.4	17.3	15.9
Incr Delay (d2), s/veh	0.3	5.2	5.5	0.8	3.1	0.2	0.1	0.0	1.4	0.0	0.8	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(95%),veh/ln	1.4	5.6	5.8	4.2	7.0	1.3	4.9	0.0	9.8	0.6	5.3	0.8
LnGrp Delay(d),s/veh	32.6	42.4	42.9	29.7	36.9	22.6	10.3	0.0	14.9	14.4	18.2	16.0
LnGrp LOS	C	D	D	C	D	C	B		B	B	B	B
Approach Vol, veh/h		279			312			796			226	
Approach Delay, s/veh		41.4			32.6			12.4			17.5	
Approach LOS		D			C			B			B	

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	17.4	42.5	13.5	16.6	8.0	51.9	9.0	21.1
Change Period (Y+Rc), s	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5
Max Green Setting (Gmax), s	16.0	21.0	12.0	15.0	16.0	21.0	12.0	15.0
Max Q Clear Time (g_c+I1), s	8.8	8.4	7.4	8.5	3.2	13.8	4.2	10.0
Green Ext Time (p_c), s	2.0	4.8	0.1	1.6	0.0	3.2	0.0	1.3

Intersection Summary	
HCM 2010 Ctrl Delay	22.0
HCM 2010 LOS	C

Notes

User approved pedestrian interval to be less than phase max green.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	97	195	18	39	227	30	18	282	11	28	107	116
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	16	16	16	12	12	12	10	10	10	10	10	10
Grade (%)		-2%			1%			2%			-1%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (ft)	75			75			75			75		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.99			0.99			1.00			0.98	
Frt		0.992			0.986			0.995			0.938	
Flt Protected		0.985			0.993			0.997			0.994	
Satd. Flow (prot)	0	1826	0	0	1663	0	0	1365	0	0	1272	0
Flt Permitted		0.985			0.993			0.975			0.946	
Satd. Flow (perm)	0	1820	0	0	1659	0	0	1335	0	0	1210	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		463			494			1137			622	
Travel Time (s)		12.6			13.5			31.0			17.0	
Confl. Peds. (#/hr)	10		10	10		10	10		10	10		10
Confl. Bikes (#/hr)												
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	10%	10%	10%	5%	5%	5%	5%	5%	5%	6%	6%	6%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)							6	6	6	6	6	6
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	108	217	20	43	252	33	20	313	12	31	119	129
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	345	0	0	328	0	0	345	0	0	279	0
Number of Detectors	1	1		1	1		1	1		1	1	
Detector Template	Left			Left			Left			Left		
Leading Detector (ft)	30	40		30	40		30	40		30	40	
Trailing Detector (ft)	-10	-10		-10	-10		-10	-10		-10	-10	
Turn Type	Split	NA		Split	NA		Perm	NA		Perm	NA	
Protected Phases	2	2		6	6			4			8	
Permitted Phases							4			8		
Detector Phase	2	2		6	6		4	4		8	8	
Switch Phase												
Minimum Initial (s)	8.0	8.0		8.0	8.0		8.0	8.0		8.0	8.0	
Minimum Split (s)	13.0	13.0		13.0	13.0		12.1	12.1		12.1	12.1	
Total Split (s)	35.0	35.0		25.0	25.0		40.0	40.0		40.0	40.0	
Total Split (%)	35.0%	35.0%		25.0%	25.0%		40.0%	40.0%		40.0%	40.0%	
Maximum Green (s)	30.0	30.0		20.0	20.0		35.9	35.9		35.9	35.9	
Yellow Time (s)	4.0	4.0		4.0	4.0		3.1	3.1		3.1	3.1	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		-0.5			-0.5			-1.0			-1.0	
Total Lost Time (s)		4.5			4.5			3.1			3.1	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0		2.0	2.0		3.5	3.5		3.5	3.5	
Minimum Gap (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Time Before Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Time To Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Recall Mode	None	None		None	None		None	None		None	None	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
v/c Ratio		0.74			0.78			0.78			0.69	
Control Delay		38.9			46.1			38.0			34.1	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		38.9			46.1			38.0			34.1	
Queue Length 50th (ft)		160			154			153			119	
Queue Length 95th (ft)		283			#381			292			237	
Internal Link Dist (ft)		383			414			1057			542	
Turn Bay Length (ft)												
Base Capacity (vph)		718			439			635			575	
Starvation Cap Reductn		0			0			0			0	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.48			0.75			0.54			0.49	

Intersection Summary

Area Type: Other
Cycle Length: 100
Actuated Cycle Length: 80.5
Natural Cycle: 60
Control Type: Actuated-Uncoordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

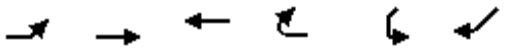
Splits and Phases: 21: Main St (SR 2014) & Water St (SR 405)



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	97	195	18	39	227	30	18	282	11	28	107	116
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	0.99		0.98	0.99		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.87	1.00	1.00	0.87
Adj Sat Flow, veh/h/ln	1891	1719	1891	1791	1706	1791	1782	1697	1782	1809	1707	1809
Adj Flow Rate, veh/h	108	217	20	43	252	33	20	313	12	31	119	129
Adj No. of Lanes	0	1	0	0	1	0	0	1	0	0	1	0
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	10	10	10	5	5	5	5	5	5	6	6	6
Cap, veh/h	129	260	24	51	300	39	75	432	16	92	205	199
Arrive On Green	0.24	0.25	0.24	0.23	0.24	0.23	0.30	0.32	0.30	0.30	0.32	0.30
Sat Flow, veh/h	524	1052	97	218	1276	167	38	1359	50	82	647	626
Grp Volume(v), veh/h	345	0	0	328	0	0	345	0	0	279	0	0
Grp Sat Flow(s),veh/h/ln	1673	0	0	1661	0	0	1447	0	0	1355	0	0
Q Serve(g_s), s	11.9	0.0	0.0	11.4	0.0	0.0	2.3	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	11.9	0.0	0.0	11.4	0.0	0.0	13.0	0.0	0.0	10.7	0.0	0.0
Prop In Lane	0.31		0.06	0.13		0.10	0.06		0.03	0.11		0.46
Lane Grp Cap(c), veh/h	414	0	0	391	0	0	499	0	0	474	0	0
V/C Ratio(X)	0.83	0.00	0.00	0.84	0.00	0.00	0.69	0.00	0.00	0.59	0.00	0.00
Avail Cap(c_a), veh/h	842	0	0	562	0	0	912	0	0	844	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	21.7	0.0	0.0	22.1	0.0	0.0	18.6	0.0	0.0	18.0	0.0	0.0
Incr Delay (d2), s/veh	1.7	0.0	0.0	5.2	0.0	0.0	2.1	0.0	0.0	1.4	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(95%),veh/ln	9.6	0.0	0.0	9.7	0.0	0.0	9.5	0.0	0.0	7.8	0.0	0.0
LnGrp Delay(d),s/veh	23.4	0.0	0.0	27.4	0.0	0.0	20.6	0.0	0.0	19.5	0.0	0.0
LnGrp LOS	C			C			C			B		
Approach Vol, veh/h		345			328			345			279	
Approach Delay, s/veh		23.4			27.4			20.6			19.5	
Approach LOS		C			C			C			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		19.5		22.4		18.8		22.4
Change Period (Y+Rc), s		5.0		4.1		5.0		4.1
Max Green Setting (Gmax), s		30.0		35.9		20.0		35.9
Max Q Clear Time (g_c+I1), s		13.9		15.0		13.4		12.7
Green Ext Time (p_c), s		0.7		3.2		0.4		3.3

Intersection Summary	
HCM 2010 Ctrl Delay	22.8
HCM 2010 LOS	C



Lane Group	EBL	EBT	WBT	WBR	SWL	SWR
Lane Configurations						
Volume (vph)	72	387	255	0	0	45
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	10	10
Grade (%)		2%	-3%		-1%	
Storage Length (ft)	0			0	0	0
Storage Lanes	0			0	1	0
Taper Length (ft)	75				75	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt					0.865	
Flt Protected		0.992				
Satd. Flow (prot)	0	1827	1837	0	1511	0
Flt Permitted		0.992				
Satd. Flow (perm)	0	1827	1837	0	1511	0
Link Speed (mph)		55	45		25	
Link Distance (ft)		1209	517		640	
Travel Time (s)		15.0	7.8		17.5	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	3%	2%	5%	0%	0%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)		0%	0%		0%	
Adj. Flow (vph)	74	399	263	0	0	46
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	473	263	0	46	0
Sign Control		Free	Free		Stop	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

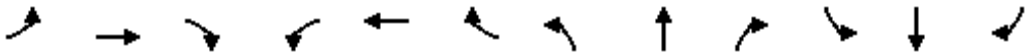
Intersection	
Int Delay, s/veh	1.4

Movement	EBL	EBT	WBT	WBR	SWL	SWR
Vol, veh/h	72	387	255	0	0	45
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, %	-	2	-3	-	-1	-
Peak Hour Factor	97	97	97	97	97	97
Heavy Vehicles, %	3	2	5	0	0	2
Mvmt Flow	74	399	263	0	0	46

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	263	0	-	0	810	263
Stage 1	-	-	-	-	263	-
Stage 2	-	-	-	-	547	-
Critical Hdwy	4.13	-	-	-	7.1	6.2
Critical Hdwy Stg 1	-	-	-	-	5.2	-
Critical Hdwy Stg 2	-	-	-	-	5.2	-
Follow-up Hdwy	3	-	-	-	3	3.1
Pot Cap-1 Maneuver	988	-	-	-	360	825
Stage 1	-	-	-	-	914	-
Stage 2	-	-	-	-	707	-
Platoon blocked, %		-	-	-	1	
Mov Cap-1 Maneuver	988	-	-	-	325	825
Mov Cap-2 Maneuver	-	-	-	-	325	-
Stage 1	-	-	-	-	914	-
Stage 2	-	-	-	-	639	-

Approach	EB	WB	SW
HCM Control Delay, s	1.4	0	9.6
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SWLn1
Capacity (veh/h)	988	-	-	-	825
HCM Lane V/C Ratio	0.075	-	-	-	0.056
HCM Control Delay (s)	8.9	0	-	-	9.6
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0.2	-	-	-	0.2



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	2	389	21	3	252	0	4	33	2	1	27	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	11	11	11	10	10	10
Grade (%)		-2%			1%			0%			-3%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (ft)	75			75			75			75		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.993						0.994			0.996	
Flt Protected					0.999			0.995			0.998	
Satd. Flow (prot)	0	1787	0	0	1783	0	0	1771	0	0	1679	0
Flt Permitted					0.999			0.995			0.998	
Satd. Flow (perm)	0	1787	0	0	1783	0	0	1771	0	0	1679	0
Link Speed (mph)		55			55			35			50	
Link Distance (ft)		1494			4148			578			618	
Travel Time (s)		18.5			51.4			11.3			8.4	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
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
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	7%	0%	0%	6%	0%	0%	3%	0%	0%	7%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	2	423	23	3	274	0	4	36	2	1	29	1
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	448	0	0	277	0	0	42	0	0	31	0
Sign Control		Free			Free			Stop			Stop	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

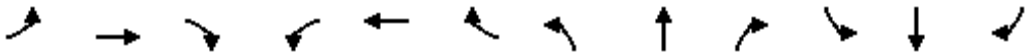
Intersection	
Int Delay, s/veh	1.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	2	389	21	3	252	0	4	33	2	1	27	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	-2	-	-	1	-	-	0	-	-	-3	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	0	7	0	0	6	0	0	3	0	0	7	0
Mvmt Flow	2	423	23	3	274	0	4	36	2	1	29	1

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	274	0	0	446	0	0	735	719	434	738	730	274
Stage 1	-	-	-	-	-	-	439	439	-	280	280	-
Stage 2	-	-	-	-	-	-	296	280	-	458	450	-
Critical Hdwy	4.9	-	-	4.9	-	-	8.1	6.53	6.4	8.1	6.5	6.4
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.53	-	5.5	4.97	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.53	-	5.5	4.97	-
Follow-up Hdwy	3.5	-	-	3.5	-	-	3	4.027	3.4	3	4.063	3.4
Pot Cap-1 Maneuver	807	-	-	691	-	-	307	353	597	305	348	738
Stage 1	-	-	-	-	-	-	681	576	-	877	702	-
Stage 2	-	-	-	-	-	-	820	677	-	717	607	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	807	-	-	691	-	-	285	350	597	278	345	738
Mov Cap-2 Maneuver	-	-	-	-	-	-	285	350	-	278	345	-
Stage 1	-	-	-	-	-	-	679	574	-	874	698	-
Stage 2	-	-	-	-	-	-	780	674	-	668	605	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0.1	16.7	16.3
HCM LOS			C	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	349	807	-	-	691	-	-	349
HCM Lane V/C Ratio	0.121	0.003	-	-	0.005	-	-	0.09
HCM Control Delay (s)	16.7	9.5	0	-	10.2	0	-	16.3
HCM Lane LOS	C	A	A	-	B	A	-	C
HCM 95th %tile Q(veh)	0.4	0	-	-	0	-	-	0.3



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	16	304	49	7	208	1	34	13	6	2	20	18
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	11	11	11	14	14	14
Grade (%)		0%			-1%			7%			-1%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (ft)	75			75			75			75		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.982			0.999			0.984			0.939	
Flt Protected		0.998			0.998			0.969			0.998	
Satd. Flow (prot)	0	1798	0	0	1768	0	0	1658	0	0	1909	0
Flt Permitted		0.998			0.998			0.969			0.998	
Satd. Flow (perm)	0	1798	0	0	1768	0	0	1658	0	0	1909	0
Link Speed (mph)		55			55			40			40	
Link Distance (ft)		1228			918			354			317	
Travel Time (s)		15.2			11.4			6.0			5.4	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	6%	4%	0%	0%	8%	0%	3%	0%	0%	0%	0%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	18	334	54	8	229	1	37	14	7	2	22	20
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	406	0	0	238	0	0	58	0	0	44	0
Sign Control		Free			Free			Stop			Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	2.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	16	304	49	7	208	1	34	13	6	2	20	18
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	-1	-	-	7	-	-	-1	-
Peak Hour Factor	91	91	91	91	91	91	91	91	91	91	91	91
Heavy Vehicles, %	6	4	0	0	8	0	3	0	0	0	0	0
Mvmt Flow	18	334	54	8	229	1	37	14	7	2	22	20

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	230	0	0	388	0	0	661	641	361	652	668	229
Stage 1	-	-	-	-	-	-	396	396	-	245	245	-
Stage 2	-	-	-	-	-	-	265	245	-	407	423	-
Critical Hdwy	4.9	-	-	4.9	-	-	8.1	6.5	6.4	8.1	6.5	6.4
Critical Hdwy Stg 1	-	-	-	-	-	-	7.53	6.9	-	5.9	5.3	-
Critical Hdwy Stg 2	-	-	-	-	-	-	7.53	6.9	-	5.9	5.3	-
Follow-up Hdwy	3.5	-	-	3.5	-	-	3	4	3.4	3	4	3.4
Pot Cap-1 Maneuver	839	-	-	728	-	-	353	395	658	359	382	784
Stage 1	-	-	-	-	-	-	615	521	-	888	717	-
Stage 2	-	-	-	-	-	-	768	643	-	726	605	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	839	-	-	728	-	-	318	379	658	335	366	784
Mov Cap-2 Maneuver	-	-	-	-	-	-	318	379	-	335	366	-
Stage 1	-	-	-	-	-	-	598	506	-	863	708	-
Stage 2	-	-	-	-	-	-	716	635	-	679	588	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.4	0.3	17.2	13.3
HCM LOS			C	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	353	839	-	-	728	-	-	479
HCM Lane V/C Ratio	0.165	0.021	-	-	0.011	-	-	0.092
HCM Control Delay (s)	17.2	9.4	0	-	10	0	-	13.3
HCM Lane LOS	C	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.6	0.1	-	-	0	-	-	0.3

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	304	76	4	198	44	13
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	13	13	13	13	12	12
Grade (%)	3%			1%	5%	
Storage Length (ft)		0	0		0	0
Storage Lanes		0	0		1	0
Taper Length (ft)			75		75	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.973				0.970	
Flt Protected				0.999	0.963	
Satd. Flow (prot)	1827	0	0	1810	1730	0
Flt Permitted				0.999	0.963	
Satd. Flow (perm)	1827	0	0	1810	1730	0
Link Speed (mph)	55			55	35	
Link Distance (ft)	1476			1319	549	
Travel Time (s)	18.3			16.4	10.7	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	3%	3%	0%	8%	0%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	380	95	5	248	55	16
Shared Lane Traffic (%)						
Lane Group Flow (vph)	475	0	0	253	71	0
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

Intersection	
Int Delay, s/veh	1.4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Vol, veh/h	304	76	4	198	44	13
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, %	3	-	-	1	5	-
Peak Hour Factor	80	80	80	80	80	80
Heavy Vehicles, %	3	3	0	8	0	0
Mvmt Flow	380	95	5	248	55	16

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	475	0	686	428
Stage 1	-	-	-	-	428	-
Stage 2	-	-	-	-	258	-
Critical Hdwy	-	-	4.3	-	7.1	6.2
Critical Hdwy Stg 1	-	-	-	-	6.4	-
Critical Hdwy Stg 2	-	-	-	-	6.4	-
Follow-up Hdwy	-	-	3	-	3	3.1
Pot Cap-1 Maneuver	-	-	824	-	407	664
Stage 1	-	-	-	-	667	-
Stage 2	-	-	-	-	843	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	824	-	404	664
Mov Cap-2 Maneuver	-	-	-	-	404	-
Stage 1	-	-	-	-	667	-
Stage 2	-	-	-	-	837	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.2	14.7
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	444	-	-	824	-
HCM Lane V/C Ratio	0.16	-	-	0.006	-
HCM Control Delay (s)	14.7	-	-	9.4	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.6	-	-	0	-



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	391	12	0	298	19	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	11	10	10
Grade (%)	-1%			1%	-4%	
Storage Length (ft)		0	0		0	0
Storage Lanes		0	0		1	0
Taper Length (ft)			75		75	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.996				0.994	
Flt Protected					0.954	
Satd. Flow (prot)	1778	0	0	1740	1637	0
Flt Permitted					0.954	
Satd. Flow (perm)	1778	0	0	1740	1637	0
Link Speed (mph)	50			55	35	
Link Distance (ft)	420			676	522	
Travel Time (s)	5.7			8.4	10.2	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	50%	0%	5%	5%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	430	13	0	327	21	1
Shared Lane Traffic (%)						
Lane Group Flow (vph)	443	0	0	327	22	0
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

Intersection	
Int Delay, s/veh	0.4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Vol, veh/h	391	12	0	298	19	1
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, %	-1	-	-	1	-4	-
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	2	50	0	5	5	0
Mvmt Flow	430	13	0	327	21	1

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	443	0	763	436
Stage 1	-	-	-	-	436	-
Stage 2	-	-	-	-	327	-
Critical Hdwy	-	-	4.3	-	7.1	6.2
Critical Hdwy Stg 1	-	-	-	-	4.65	-
Critical Hdwy Stg 2	-	-	-	-	4.65	-
Follow-up Hdwy	-	-	3	-	3	3.1
Pot Cap-1 Maneuver	-	-	845	-	360	657
Stage 1	-	-	-	-	815	-
Stage 2	-	-	-	-	899	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	845	-	360	657
Mov Cap-2 Maneuver	-	-	-	-	360	-
Stage 1	-	-	-	-	815	-
Stage 2	-	-	-	-	899	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	15.4
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	368	-	-	845	-
HCM Lane V/C Ratio	0.06	-	-	-	-
HCM Control Delay (s)	15.4	-	-	0	-
HCM Lane LOS	C	-	-	A	-
HCM 95th %tile Q(veh)	0.2	-	-	0	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	15	21	7	0	9	1	6	30	6	0	10	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	10	10	10	10	10	13	13	13	16	16	16
Grade (%)		-3%			2%			1%			-2%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (ft)	75			75			75			75		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.977			0.990			0.981			0.970	
Flt Protected		0.983						0.993				
Satd. Flow (prot)	0	1425	0	0	1578	0	0	1600	0	0	1500	0
Flt Permitted		0.983						0.993				
Satd. Flow (perm)	0	1425	0	0	1578	0	0	1600	0	0	1500	0
Link Speed (mph)		35			25			25			25	
Link Distance (ft)		1453			774			205			154	
Travel Time (s)		28.3			21.1			5.6			4.2	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	27%	0%	71%	0%	11%	0%	0%	23%	17%	0%	38%	50%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	21	29	10	0	12	1	8	41	8	0	14	4
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	60	0	0	13	0	0	57	0	0	18	0
Sign Control		Stop			Stop			Free			Free	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

Intersection	
Int Delay, s/veh	5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	15	21	7	0	9	1	6	30	6	0	10	3
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, %	-	-3	-	-	2	-	-	1	-	-	-2	-
Peak Hour Factor	73	73	73	73	73	73	73	73	73	73	73	73
Heavy Vehicles, %	27	0	71	0	11	0	0	23	17	0	38	50
Mvmt Flow	21	29	10	0	12	1	8	41	8	0	14	4

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	84	82	16	97	80	45	18	0	0	49	0	0
Stage 1	16	16	-	62	62	-	-	-	-	-	-	-
Stage 2	68	66	-	35	18	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.3	-	-	4.3	-	-
Critical Hdwy Stg 1	5.77	4.9	-	6.5	6.01	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.77	4.9	-	6.5	6.01	-	-	-	-	-	-	-
Follow-up Hdwy	3	4	3.1	3	4.099	3.1	3	-	-	3	-	-
Pot Cap-1 Maneuver	1053	812	1138	1032	795	1096	1183	-	-	1155	-	-
Stage 1	1177	888	-	1101	820	-	-	-	-	-	-	-
Stage 2	1107	853	-	1143	861	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	1034	806	1138	990	789	1096	1183	-	-	1155	-	-
Mov Cap-2 Maneuver	1034	806	-	990	789	-	-	-	-	-	-	-
Stage 1	1169	888	-	1093	814	-	-	-	-	-	-	-
Stage 2	1081	847	-	1097	861	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	9.2	9.5	1.2	0
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1183	-	-	921	812	1155	-	-
HCM Lane V/C Ratio	0.007	-	-	0.064	0.017	-	-	-
HCM Control Delay (s)	8.1	0	-	9.2	9.5	0	-	-
HCM Lane LOS	A	A	-	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.2	0.1	0	-	-

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	70	356	4	4	249	57	14	27	5	52	5	16
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	11	11	11	16	16	16	11	11	11
Grade (%)		-2%			2%			2%			-1%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (ft)	75			75			75			75		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.999			0.975			0.985			0.971	
Flt Protected		0.992			0.999			0.985			0.966	
Satd. Flow (prot)	0	1810	0	0	1680	0	0	1893	0	0	1707	0
Flt Permitted		0.992			0.999			0.985			0.966	
Satd. Flow (perm)	0	1810	0	0	1680	0	0	1893	0	0	1707	0
Link Speed (mph)		50			50			25			50	
Link Distance (ft)		832			852			184			234	
Travel Time (s)		11.3			11.6			5.0			3.2	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	3%	1%	25%	50%	5%	4%	23%	4%	0%	2%	0%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	80	409	5	5	286	66	16	31	6	60	6	18
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	494	0	0	357	0	0	53	0	0	84	0
Sign Control		Free			Free			Stop			Stop	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

Intersection	
Int Delay, s/veh	4

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Vol, veh/h	70	356	4	4	249	57	14	27	5	52	5	16
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	-2	-	-	2	-	-	2	-	-	-1	-
Peak Hour Factor	87	87	87	87	87	87	87	87	87	87	87	87
Heavy Vehicles, %	3	1	25	50	5	4	23	4	0	2	0	0
Mvmt Flow	80	409	5	5	286	66	16	31	6	60	6	18

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	352	0	0	414	0	0	912	933	411	919	903	319
Stage 1	-	-	-	-	-	-	572	572	-	328	328	-
Stage 2	-	-	-	-	-	-	340	361	-	591	575	-
Critical Hdwy	4.3	-	-	4.3	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.73	5.94	-	5.92	5.3	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.73	5.94	-	5.92	5.3	-
Follow-up Hdwy	3	-	-	3	-	-	3	4	3.1	3	4	3.1
Pot Cap-1 Maneuver	909	-	-	865	-	-	284	268	679	280	279	767
Stage 1	-	-	-	-	-	-	518	473	-	800	663	-
Stage 2	-	-	-	-	-	-	730	602	-	575	522	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	909	-	-	865	-	-	247	236	679	227	245	767
Mov Cap-2 Maneuver	-	-	-	-	-	-	247	236	-	227	245	-
Stage 1	-	-	-	-	-	-	459	419	-	709	658	-
Stage 2	-	-	-	-	-	-	701	598	-	468	462	-

Approach	SE	NW	NE	SW
HCM Control Delay, s	1.5	0.1	22.5	24.2
HCM LOS			C	C

Minor Lane/Major Mvmt	NELn1	NWL	NWT	NWR	SEL	SET	SER	SWLn1
Capacity (veh/h)	258	865	-	-	909	-	-	270
HCM Lane V/C Ratio	0.205	0.005	-	-	0.089	-	-	0.311
HCM Control Delay (s)	22.5	9.2	0	-	9.3	0	-	24.2
HCM Lane LOS	C	A	A	-	A	A	-	C
HCM 95th %tile Q(veh)	0.8	0	-	-	0.3	-	-	1.3

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Volume (vph)	1	0	27	3	0	0	1	372	0	5	316	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	10	10	9	9	9	11	11	11	11	11	11
Grade (%)		1%			-1%			-3%			0%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (ft)	75			75			75			75		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.869										
Flt Protected		0.998			0.950						0.999	
Satd. Flow (prot)	0	1427	0	0	1633	0	0	1828	0	0	1756	0
Flt Permitted		0.998			0.950						0.999	
Satd. Flow (perm)	0	1427	0	0	1633	0	0	1828	0	0	1756	0
Link Speed (mph)		25			25			50			50	
Link Distance (ft)		172			263			852			367	
Travel Time (s)		4.7			7.2			11.6			5.0	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	100%	0%	4%	0%	0%	0%	0%	2%	0%	40%	4%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	1	0	29	3	0	0	1	396	0	5	336	1
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	30	0	0	3	0	0	397	0	0	342	0
Sign Control		Stop			Stop			Free			Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	0.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Vol, veh/h	1	0	27	3	0	0	1	372	0	5	316	1
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, %	-	1	-	-	-1	-	-	-3	-	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	100	0	4	0	0	0	0	2	0	40	4	0
Mvmt Flow	1	0	29	3	0	0	1	396	0	5	336	1

Major/Minor	Minor1			Minor2			Major1			Major2		
Conflicting Flow All	745	746	396	759	745	337	337	0	0	396	0	0
Stage 1	398	398	-	347	347	-	-	-	-	-	-	-
Stage 2	347	348	-	412	398	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.3	-	-	4.3	-	-
Critical Hdwy Stg 1	7.3	5.7	-	5.9	5.3	-	-	-	-	-	-	-
Critical Hdwy Stg 2	7.3	5.7	-	5.9	5.3	-	-	-	-	-	-	-
Follow-up Hdwy	3	4	3.1	3	4	3.1	3	-	-	3	-	-
Pot Cap-1 Maneuver	371	344	693	362	345	749	920	-	-	878	-	-
Stage 1	629	593	-	782	651	-	-	-	-	-	-	-
Stage 2	684	625	-	722	620	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	369	341	693	345	342	749	920	-	-	878	-	-
Mov Cap-2 Maneuver	369	341	-	345	342	-	-	-	-	-	-	-
Stage 1	628	592	-	781	646	-	-	-	-	-	-	-
Stage 2	679	621	-	691	619	-	-	-	-	-	-	-

Approach	EB	WB	SE	NW
HCM Control Delay, s	10.6	15.5	0	0.1
HCM LOS	B	C		

Minor Lane/Major Mvmt	NWL	NWT	NWR	EBLn1	WBLn1	SEL	SET	SER
Capacity (veh/h)	878	-	-	672	345	920	-	-
HCM Lane V/C Ratio	0.006	-	-	0.044	0.009	0.001	-	-
HCM Control Delay (s)	9.1	0	-	10.6	15.5	8.9	0	-
HCM Lane LOS	A	A	-	B	C	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0	0	-	-

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	400	27	88	323	0	288
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	13	12	12
Grade (%)	-1%			1%	-3%	
Storage Length (ft)		0	125		0	0
Storage Lanes		0	1		0	1
Taper Length (ft)			60		75	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.992					0.865
Flt Protected			0.950			
Satd. Flow (prot)	1838	0	1589	1878	0	1620
Flt Permitted			0.950			
Satd. Flow (perm)	1838	0	1589	1878	0	1620
Link Speed (mph)	35			35	25	
Link Distance (ft)	496			348	387	
Travel Time (s)	9.7			6.8	10.6	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	19%	13%	4%	0%	3%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	417	28	92	336	0	300
Shared Lane Traffic (%)						
Lane Group Flow (vph)	445	0	92	336	0	300
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

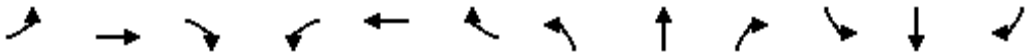
Intersection	
Int Delay, s/veh	4.6

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Vol, veh/h	400	27	88	323	0	288
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	Yield
Storage Length	-	-	125	-	-	0
Veh in Median Storage, #	0	-	-	0	1	-
Grade, %	-1	-	-	1	-3	-
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	2	19	13	4	0	3
Mvmt Flow	417	28	92	336	0	300

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	445	0	951	431
Stage 1	-	-	-	-	431	-
Stage 2	-	-	-	-	520	-
Critical Hdwy	-	-	4.3	-	7.1	6.2
Critical Hdwy Stg 1	-	-	-	-	4.8	-
Critical Hdwy Stg 2	-	-	-	-	4.8	-
Follow-up Hdwy	-	-	3	-	3	3.1
Pot Cap-1 Maneuver	-	-	844	-	266	662
Stage 1	-	-	-	-	804	-
Stage 2	-	-	-	-	739	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	844	-	237	662
Mov Cap-2 Maneuver	-	-	-	-	437	-
Stage 1	-	-	-	-	804	-
Stage 2	-	-	-	-	658	-

Approach	EB	WB	NB
HCM Control Delay, s	0	2.1	14.9
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	662	-	-	844	-
HCM Lane V/C Ratio	0.453	-	-	0.109	-
HCM Control Delay (s)	14.9	-	-	9.8	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	2.4	-	-	0.4	-



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	535	153	0	246	179	5	0	115	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	11	12	12	12	12	12	12	12	12	12
Grade (%)		-1%			-1%			-4%			-2%	
Storage Length (ft)	0		0	0		115	0		0	0		0
Storage Lanes	0		1	0		1	0		0	0		0
Taper Length (ft)	75			75			75			75		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt			0.850			0.850		0.871				
Flt Protected								0.998				
Satd. Flow (prot)	0	1872	1553	0	1785	1591	0	1501	0	0	0	0
Flt Permitted								0.998				
Satd. Flow (perm)	0	1872	1553	0	1785	1591	0	1501	0	0	0	0
Link Speed (mph)		45			45			25			25	
Link Distance (ft)		758			636			290			200	
Travel Time (s)		11.5			9.6			7.9			5.5	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	100%	2%	1%	0%	7%	2%	40%	0%	11%	0%	0%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	0	608	174	0	280	203	6	0	131	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	608	174	0	280	203	0	137	0	0	0	0
Sign Control		Free			Free			Stop			Stop	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

Intersection	
Int Delay, s/veh	1.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	0	535	153	0	246	179	5	0	115	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	Free	-	-	None	-	-	None	-	-	None
Storage Length	-	-	0	-	-	115	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	0	-
Grade, %	-	-1	-	-	-1	-	-	-4	-	-	-2	-
Peak Hour Factor	88	88	88	88	88	88	88	88	88	88	88	88
Heavy Vehicles, %	100	2	1	0	7	2	40	0	11	0	0	0
Mvmt Flow	0	608	174	0	280	203	6	0	131	0	0	0

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	280	0	-	608	0	0	888	888	608
Stage 1	-	-	-	-	-	-	608	608	-
Stage 2	-	-	-	-	-	-	280	280	-
Critical Hdwy	4.3	-	-	4.3	-	-	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	5	4.7	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5	4.7	-
Follow-up Hdwy	3	-	-	3	-	-	3	4	3.1
Pot Cap-1 Maneuver	963	-	0	740	-	-	295	285	524
Stage 1	-	-	0	-	-	-	657	560	-
Stage 2	-	-	0	-	-	-	912	727	-
Platoon blocked, %		-			-	-			
Mov Cap-1 Maneuver	963	-	-	740	-	-	295	0	524
Mov Cap-2 Maneuver	-	-	-	-	-	-	478	0	-
Stage 1	-	-	-	-	-	-	657	0	-
Stage 2	-	-	-	-	-	-	912	0	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	14.3
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	WBL	WBT	WBR
Capacity (veh/h)	522	963	-	740	-	-
HCM Lane V/C Ratio	0.261	-	-	-	-	-
HCM Control Delay (s)	14.3	0	-	0	-	-
HCM Lane LOS	B	A	-	A	-	-
HCM 95th %tile Q(veh)	1	0	-	0	-	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	8	1	46	0	0	0	41	740	7	6	500	17
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	13	13	13	12	12	12	12	12	11	11	11	11
Grade (%)		3%			2%			0%			1%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (ft)	75			75			75			75		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.888						0.999			0.996	
Flt Protected		0.992						0.997			0.999	
Satd. Flow (prot)	0	1704	0	0	1881	0	0	3493	0	0	1735	0
Flt Permitted		0.992						0.997			0.999	
Satd. Flow (perm)	0	1704	0	0	1881	0	0	3493	0	0	1735	0
Link Speed (mph)		40			35			45			45	
Link Distance (ft)		499			348			586			796	
Travel Time (s)		8.5			6.8			8.9			12.1	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	2%	3%	0%	0%	5%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	9	1	49	0	0	0	44	787	7	6	532	18
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	59	0	0	0	0	0	838	0	0	556	0
Sign Control		Stop			Stop			Free			Free	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

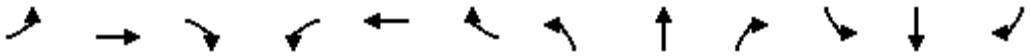
Intersection	
Int Delay, s/veh	1.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Vol, veh/h	8	1	46	0	0	0	41	740	7	6	500	17
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, %	-	3	-	-	2	-	-	0	-	-	1	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	0	0	0	0	0	0	2	3	0	0	5	0
Mvmt Flow	9	1	49	0	0	0	44	787	7	6	532	18

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1035	1436	541	1457	1441	397	550	0	0	795	0	0
Stage 1	554	554	-	878	878	-	-	-	-	-	-	-
Stage 2	481	882	-	579	563	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.3	-	-	4.3	-	-
Critical Hdwy Stg 1	6.7	6.1	-	6.9	5.9	-	-	-	-	-	-	-
Critical Hdwy Stg 2	7.1	6.1	-	6.5	5.9	-	-	-	-	-	-	-
Follow-up Hdwy	3	4	3.1	3	4	3.1	3	-	-	3	-	-
Pot Cap-1 Maneuver	233	135	572	117	134	692	776	-	-	635	-	-
Stage 1	534	471	-	314	334	-	-	-	-	-	-	-
Stage 2	564	317	-	532	481	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	213	120	572	97	119	692	776	-	-	635	-	-
Mov Cap-2 Maneuver	213	120	-	97	119	-	-	-	-	-	-	-
Stage 1	480	464	-	282	300	-	-	-	-	-	-	-
Stage 2	506	285	-	479	474	-	-	-	-	-	-	-

Approach	EB	WB	NE	SW
HCM Control Delay, s	14.6	0	1	0.1
HCM LOS	B	A		

Minor Lane/Major Mvmt	NEL	NET	NER	EBLn1	WBLn1	SWL	SWT	SWR
Capacity (veh/h)	776	-	-	435	-	635	-	-
HCM Lane V/C Ratio	0.056	-	-	0.135	-	0.01	-	-
HCM Control Delay (s)	9.9	0.5	-	14.6	0	10.7	0	-
HCM Lane LOS	A	A	-	B	A	B	A	-
HCM 95th %tile Q(veh)	0.2	-	-	0.5	-	0	-	-



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	56	770	0	2	545	17	0	0	0	26	0	21
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	11	12	12	11	11	12	12	12	12	12	12
Grade (%)		1%			0%			0%			1%	
Storage Length (ft)	60		0	0		0	0		0	0		0
Storage Lanes	1		0	0		0	0		0	0		0
Taper Length (ft)	140			75			75			75		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt					0.996						0.940	
Flt Protected	0.950										0.973	
Satd. Flow (prot)	1612	1757	0	0	1752	0	0	1900	0	0	1621	0
Flt Permitted	0.950										0.973	
Satd. Flow (perm)	1612	1757	0	0	1752	0	0	1900	0	0	1621	0
Link Speed (mph)		45			45			35			45	
Link Distance (ft)		796			771			91			413	
Travel Time (s)		12.1			11.7			1.8			6.3	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	4%	4%	0%	0%	4%	18%	0%	0%	0%	12%	0%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	62	856	0	2	606	19	0	0	0	29	0	23
Shared Lane Traffic (%)												
Lane Group Flow (vph)	62	856	0	0	627	0	0	0	0	0	52	0
Sign Control		Free			Free			Stop			Stop	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

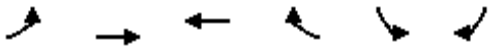
Intersection	
Int Delay, s/veh	1.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	56	770	0	2	545	17	0	0	0	26	0	21
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	60	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	1	-	-	0	-	-	0	-	-	1	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	4	4	0	0	4	18	0	0	0	12	0	0
Mvmt Flow	62	856	0	2	606	19	0	0	0	29	0	23

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	624	0	0	856	0	0	1611	1609	856	1599	1599	615
Stage 1	-	-	-	-	-	-	980	980	-	619	619	-
Stage 2	-	-	-	-	-	-	631	629	-	980	980	-
Critical Hdwy	4.3	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.7	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.42	5.7	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.42	5.7	-
Follow-up Hdwy	3	-	-	2.2	-	-	3.5	4	3.3	3	4	3.1
Pot Cap-1 Maneuver	730	-	-	793	-	-	85	106	360	93	98	519
Stage 1	-	-	-	-	-	-	303	331	-	509	467	-
Stage 2	-	-	-	-	-	-	472	478	-	306	313	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	730	-	-	793	-	-	76	97	360	87	89	519
Mov Cap-2 Maneuver	-	-	-	-	-	-	76	97	-	87	89	-
Stage 1	-	-	-	-	-	-	277	303	-	466	465	-
Stage 2	-	-	-	-	-	-	449	476	-	280	286	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.7	0	0	45.7
HCM LOS			A	E

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	730	-	-	793	-	-	139
HCM Lane V/C Ratio	-	0.085	-	-	0.003	-	-	0.376
HCM Control Delay (s)	0	10.4	-	-	9.6	0	-	45.7
HCM Lane LOS	A	B	-	-	A	A	-	E
HCM 95th %tile Q(veh)	-	0.3	-	-	0	-	-	1.6



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	0	688	251	0	0	160
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	13	13	13	13
Grade (%)		-1%	1%		-2%	
Storage Length (ft)	0			0	0	0
Storage Lanes	0			0	0	1
Taper Length (ft)	75				75	
Lane Util. Factor	1.00	0.95	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt						0.865
Flt Protected						
Satd. Flow (prot)	0	3522	1826	0	0	1634
Flt Permitted						
Satd. Flow (perm)	0	3522	1826	0	0	1634
Link Speed (mph)		35	35		25	
Link Distance (ft)		348	758		364	
Travel Time (s)		6.8	14.8		9.9	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	3%	7%	0%	0%	5%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)		0%	0%		0%	
Adj. Flow (vph)	0	717	261	0	0	167
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	717	261	0	0	167
Sign Control		Free	Free		Stop	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

Intersection	
Int Delay, s/veh	1.5

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Vol, veh/h	0	688	251	0	0	160
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	Stop
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	1	-
Grade, %	-	-1	1	-	-2	-
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	0	3	7	0	0	5
Mvmt Flow	0	717	261	0	0	167

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	261	0	-	0	619	261
Stage 1	-	-	-	-	261	-
Stage 2	-	-	-	-	358	-
Critical Hdwy	4.3	-	-	-	7.1	6.2
Critical Hdwy Stg 1	-	-	-	-	5	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	3	-	-	-	3	3.1
Pot Cap-1 Maneuver	978	-	-	-	453	827
Stage 1	-	-	-	-	929	-
Stage 2	-	-	-	-	811	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	978	-	-	-	453	827
Mov Cap-2 Maneuver	-	-	-	-	600	-
Stage 1	-	-	-	-	929	-
Stage 2	-	-	-	-	811	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	10.4
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	978	-	-	-	827
HCM Lane V/C Ratio	-	-	-	-	0.202
HCM Control Delay (s)	0	-	-	-	10.4
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0.8

APPENDIX F

Trip Generation Estimates

Muncy Area Corridor Access Management Plan

LUAR 1/3 Full Build-Out Growth Assumption

Trip Generation: Subarea 1 - Lycoming Mall (SR 2049 & 2014)

ITE Trip Generation, 9th Edition

New Development					WEEKDAY AM PEAK			WEEKDAY PM PEAK		
Land Use	Size	Developed	Units	Daily	In	Out	Total	In	Out	Total
Shopping Center A (LU 820) *Equations*	1,796,780	598,927	Sq. Ft.	21,739	288	177	465	954	1,034	1,988
- Pass-By Trips	34	% PM		5,217	69	43	112	324	352	676
"New" Trips	24	% AM		16,522	219	134	353	630	682	1,312
Shopping Center B (LU 820) *Equations*	1,203,142	401,047	Sq. Ft.	16,750	226	138	364	729	790	1,519
- Pass-By Trips	34	% PM		4,020	54	33	87	248	268	516
"New" Trips	24	% AM		12,730	172	105	277	481	522	1,003
Ex. Single Family Homes (LU 210) *Equations*	60	20	DU	239	6	18	24	16	9	25
Net New Trips, Area B (Future Shopping Center - Ex. Residential)				12,491	166	87	253	465	513	978
Shopping Center C (LU 820) *Equations*	1,370,476	456,825	Sq. Ft.	18,229	244	150	394	796	862	1,658
- Pass-By Trips	34	% PM		4,375	59	36	95	271	293	564
"New" Trips	24	% AM		13,854	185	114	299	525	569	1,094
Shopping Center D (LU 820) *Equations*	1,190,767	396,922	Sq. Ft.	16,638	224	137	361	724	785	1,509
- Pass-By Trips	34	% PM		3,993	54	33	87	246	267	513
"New" Trips	24	% AM		12,645	170	104	274	478	518	996
Shopping Center E (LU 820) *Equations*	788,317	262,772	Sq. Ft.	12,725	174	107	281	550	595	1,145
- Pass-By Trips	34	% PM		3,054	42	25	67	187	202	389
"New" Trips	24	% AM		9,671	132	82	214	363	393	756
Ex. Industrial Park E (LU 130) *Equations*	561,653	187,218	Sq. Ft.	1,612	127	28	155	37	140	177
Ex. Single Family Homes (LU 210) *Equations*	44	15	DU	183	5	15	20	12	7	19
Net New Trips, Area E (Future Shopping Center - Existing Industrial)				7,876	0	39	39	314	246	560
Shopping Center F (LU 820) *Equations*	214,093	71,364	Sq. Ft.	5,454	79	48	127	229	249	478
- Pass-By Trips	34	% PM		1,309	19	11	30	78	85	163
"New" Trips	24	% AM		4,145	60	37	97	151	164	315
Ex. Industrial Park F (LU 130) *Equations*	214,093	71,364	Sq. Ft.	1,034	59	13	72	18	68	86
Net New Trips, Area F (Future Shopping Center - Existing Industrial)				3,111	1	24	25	133	96	229
Total New Trips, All Shopping Center (Equations)	6,563,575	2,187,857	Sq. Ft.	66,738	747	520	1,267	2,561	2,633	5,194
Single Family Homes (LU 210) *Equations*	178	59	DU	646	13	38	51	41	24	65
Total Trips, All Land Uses				67,384	760	558	1,318	2,602	2,657	5,259

Assumptions: 1/3 of dwelling units built by 2034, 40% building coverage by parcel and 1/3 of non-residential development by 2034

Excess Land Use on Existing Parcels					WEEKDAY AM PEAK			WEEKDAY PM PEAK		
Land Use	Size		Units	Daily	In	Out	Total	In	Out	Total
Single Family Homes A (LU 210) *Equations*	76	25	DU	293	7	20	27	19	11	30
Single Family Homes B (LU 210) *Equations*	252	84	DU	895	17	52	69	57	33	90
Single Family Homes C (LU 210) *Equations*	220	73	DU	786	15	46	61	50	29	79
Light Industrial *Rates*	90,988	30,329	Sq. Ft.	211	25	3	28	3	26	29
Shopping Center (LU 820) *Equations*	2,409,606	803,202	Sq. Ft.	26,307	345	211	556	1,162	1,258	2,420
- Pass-By Trips	34	% PM		6,314	82	51	133	395	428	823
"New" Trips	24	% AM		19,993	263	160	423	767	830	1,597
Total Trips, Excess Land Use on Existing Parcels				22,178	327	281	608	896	929	1,825
Total Trips, New Development (From Above)				67,384	760	558	1,318	2,602	2,657	5,259
Total Trips For Subarea 1, New Development & Excess Land Use on Ex. Parcels				89,562	1,087	839	1,926	3,498	3,586	7,084

Notes:

- New Development Trip Generation by Land Use
- New Development Trip Generation (Total by Subarea)
- Trip Reduction Based on Converted Land Use for 2035 Projections
- Excess Land Use Trip Generation on Existing Parcels
- Excess Land Use Trip Generation on Existing Parcels (Total by Subarea)
- Trip Generation Total for Subarea (New Development + Excess Land Use on Ex. Parcels)

* 34% PM Pass-By Reduction for Land Use 820 as per ITE Trip Generation, 9th Edition
* 24% AM & Daily Pass-By Reduction is PM Pass-By rate - 10% (No ITE Data for AM/Daily)

Muncy Area Corridor Access Management Plan

LUAR 1/3 Full Build-Out Growth Assumption

Trip Generation: Subarea 2 - US 220 Corridor

ITE Trip Generation, 9th Edition

New Development					WEEKDAY AM PEAK			WEEKDAY PM PEAK		
Land Use	Size	Developed	Units	Daily	In	Out	Total	In	Out	Total
Shopping Center (LU 820) *Equations*	950,409	316,803	Sq. Ft.	14,370	195	120	315	623	674	1,297
- Pass-By Trips	34	% PM		3,449	47	29	76	212	229	441
"New" Trips	24	% AM		10,921	148	91	239	411	445	856
Ex. Single Family Homes (LU 210) *Equations*	70	23	DU	272	6	20	26	18	10	28
Net New Trips (Future Shopping Center - Ex. Residential)				10,649	142	71	213	393	435	828
Single Family Homes A (LU 210) *Equations*	75	25	DU	293	7	20	27	19	11	30
Single Family Homes B (LU 210) *Equations*	186	62	DU	677	13	40	53	43	25	68
Single Family Homes C (LU 210) *Equations*	140	47	DU	524	11	32	43	33	20	53
Single Family Homes D (LU 210) *Equations*	192	64	DU	697	14	41	55	44	26	70
Total Trips, All Single Family Homes (Equations)	593	198	DU	2,191	45	133	178	139	82	221
Res Condo/Townhouse (LU 230) *Equations*	13	4	DU	39	1	3	4	3	1	4
Total Trips, All Land Uses (New Development)				12,879	188	207	395	535	518	1,053

Assumptions: 1/3 of dwelling units built by 2034, 40% building coverage by parcel and 1/3 of non-residential development by 2034

Excess Land Use on Existing Parcels					WEEKDAY AM PEAK			WEEKDAY PM PEAK		
Land Use	Size		Units	Daily	In	Out	Total	In	Out	Total
Single Family Homes A (LU 210) *Equations*	46	15	DU	183	5	15	20	12	7	19
Single Family Homes B (LU 210) *Equations*	156	52	DU	575	11	35	46	37	21	58
Total Trips, Excess Land Use on Existing Parcels				758	16	50	66	49	28	77
Total Trips, New Development (From Above)				12,879	188	207	395	535	518	1,053
Total Trips For Subarea 2, New Development & Excess Land Use on Ex. Parcels				13,637	204	257	461	584	546	1,130

Notes:

- New Development Trip Generation by Land Use
- New Development Trip Generation (Total by Subarea)
- Trip Reduction Based on Converted Land Use for 2035 Projections
- Excess Land Use Trip Generation on Existing Parcels
- Excess Land Use Trip Generation on Existing Parcels (Total by Subarea)
- Trip Generation Total for Subarea (New Development + Excess Land Use on Ex. Parcels)

* 34% PM Pass-By Reduction for Land Use 820 as per ITE Trip Generation, 9th Edition
* 24% AM & Daily Pass-By Reduction is PM Pass-By rate - 10% (No ITE Data for AM/Daily)

Muncy Area Corridor Access Management Plan

LUAR 1/3 Full Build-Out Growth Assumption

Trip Generation: Subarea 3 - Hughesville Borough

ITE Trip Generation, 9th Edition

New Development					WEEKDAY AM PEAK			WEEKDAY PM PEAK		
Land Use	Size	Developed	Units	Daily	In	Out	Total	In	Out	Total
Single Family Homes (LU 210) *Equations*	399	133	DU	1,365	26	77	103	86	50	136
General Office (LU 710) *Equations*	45,009	15,003	Sq. Ft.	311	37	5	42	16	79	95
Shopping Center (LU 820) *Equations*	381,685	127,228	Sq. Ft.	7,942	112	69	181	338	366	704
- Pass-By Trips	34	% PM		1,906	27	16	43	115	124	239
"New" Trips	24	% AM		6,036	85	53	138	223	242	465
Ex. Single Family Homes (LU 210) *Equations*	50	17	DU	206	5	17	22	13	8	21
Net New Trips (Future Shopping Center - Ex. Residential)				5,830	80	36	116	210	234	444
Total Trips, All Land Uses (New Development)				7,506	143	118	261	312	363	675

Assumptions: 1/3 of dwelling units built by 2034, 40% building coverage by parcel and 1/3 of non-residential development by 2034

Excess Land Use on Existing Parcels			Daily	WEEKDAY AM PEAK			WEEKDAY PM PEAK		
Land Use	Size	Units		In	Out	Total	In	Out	Total
Single Family Homes (LU 210) *Equations*	200	67 DU	727	14	43	57	46	27	73
Total Trips, Excess Land Use on Existing Parcels			727	14	43	57	46	27	73
Total Trips, New Development (From Above)			7,506	143	118	261	312	363	675
Total Trips For Subarea 3, New Development & Excess Land Use on Ex. Parcels			8,233	157	161	318	358	390	748

Notes:

- New Development Trip Generation by Land Use
- New Development Trip Generation (Total by Subarea)
- Trip Reduction Based on Converted Land Use for 2035 Projections
- Excess Land Use Trip Generation on Existing Parcels
- Excess Land Use Trip Generation on Existing Parcels (Total by Subarea)
- Trip Generation Total for Subarea (New Development + Excess Land Use on Ex. Parcels)

* 34% PM Pass-By Reduction for Land Use 820 as per ITE Trip Generation, 9th Edition
* 24% AM & Daily Pass-By Reduction is PM Pass-By rate - 10% (No ITE Data for AM/Daily)

Muncy Area Corridor Access Management Plan

LUAR 1/3 Full Build-Out Growth Assumption

Trip Generation: Subarea 4 - SR 0405 Corridor

ITE Trip Generation, 9th Edition

New Development Land Use	Size	Developed	Units	Daily	WEEKDAY AM PEAK In	Out	Total	WEEKDAY PM PEAK In	Out	Total
Light Industrial A *Rates*	152,933	50,978	Sq. Ft.	355	41	6	47	6	43	49
Industrial Park B (LU 130) *Equations*	1,413,333	471,111	Sq. Ft.	3,029	263	58	321	84	314	398
Ex. Single Family Homes (LU 210) *Equations*	60	20	DU	239	6	18	24	16	9	25
Net New Trips, Area B (Future Industrial - Ex. Residential)				2,790	257	40	297	68	305	373
Industrial Park C (LU 130) *Equations*	656,440	218,813	Sq. Ft.	1,770	143	32	175	42	159	201
Shopping Center D (LU 820) *Equations*	471,164	157,055	Sq. Ft.	9,107	127	78	205	389	422	811
- Pass-By Trips	34	% PM		2,186	30	19	49	132	144	276
"New" Trips	24	% AM		6,921	97	59	156	257	278	535
Shopping Center E (LU 820) *Equations*	532,875	177,625	Sq. Ft.	9,865	137	84	221	422	458	880
- Pass-By Trips	34	% PM		2,368	33	20	53	144	155	299
"New" Trips	24	% AM		7,497	104	64	168	278	303	581
Ex. Single Family Homes (LU 210) *Equations*	40	13	DU	161	5	14	19	11	6	17
Net New Trips, Area E (Future Shopping Center - Ex. Residential)				7,336	99	50	149	267	297	564
Shopping Center F (LU 820) *Equations*	801,030	267,010	Sq. Ft.	12,858	176	108	284	555	602	1,157
- Pass-By Trips	34	% PM		3,086	42	26	68	189	204	393
"New" Trips	24	% AM		9,772	134	82	216	366	398	764
Shopping Center G (LU 820) *Equations*	1,201,758	400,586	Sq. Ft.	16,737	225	138	363	729	789	1,518
- Pass-By Trips	34	% PM		4,017	54	33	87	248	268	516
"New" Trips	24	% AM		12,720	171	105	276	481	521	1,002
Shopping Center H (LU 820) *Equations*	396,137	132,046	Sq. Ft.	8,136	115	70	185	347	375	722
- Pass-By Trips	34	% PM		1,953	27	17	44	118	127	245
"New" Trips	24	% AM		6,183	88	53	141	229	248	477
Total New Trips, All Shopping Center (Equations)	3,402,964	1,134,322	Sq. Ft.	42,932	589	349	938	1,600	1,742	3,342
Single Family Homes (LU 210) *Equations*	187	62	DU	677	13	40	53	43	25	68
General Office (LU 710) *Equations*	64,080	21,360	Sq. Ft.	406	49	7	56	17	85	102
Total Trips, All Land Uses (New Development)				48,930	1,092	474	1,566	1,776	2,359	4,135

Assumptions: 1/3 of dwelling units built by 2034, 40% building coverage by parcel and 1/3 of non-residential development by 2034

Excess Land Use on Existing Parcels Land Use	Size	Units	Daily	WEEKDAY AM PEAK In	Out	Total	WEEKDAY PM PEAK In	Out	Total
Single Family Homes (LU 210) *Equations*	64	21 DU	250	6	18	24	16	10	26
Shopping Center (LU 820) *Equations*	624,169	208,056 Sq. Ft.	10,933	151	93	244	470	509	979
- Pass-By Trips	34	% PM	2,624	37	22	59	160	173	333
"New" Trips	24	% AM	8,309	114	71	185	310	336	646
High School (LU 530) *Rates*	1,393,588	464,529 Sq. Ft.	5,988	1,009	412	1,421	244	207	451
Total Trips, Excess Land Use on Existing Parcels			14,547	1,129	501	1,630	570	553	1,123
Total Trips, New Development (From Above)			48,930	1,092	474	1,566	1,776	2,359	4,135
Total Trips For Subarea 4, New Development & Excess Land Use on Ex. Parcels			63,477	2,221	975	3,196	2,346	2,912	5,258

Notes:

- New Development Trip Generation by Land Use
- New Development Trip Generation (Total by Subarea)
- Trip Reduction Based on Converted Land Use for 2035 Projections
- Excess Land Use Trip Generation on Existing Parcels
- Excess Land Use Trip Generation on Existing Parcels (Total by Subarea)
- Trip Generation Total for Subarea (New Development + Excess Land Use on Ex. Parcels)

* 34% PM Pass-By Reduction for Land Use 820 as per ITE Trip Generation, 9th Edition
* 24% AM & Daily Pass-By Reduction is PM Pass-By rate - 10% (No ITE Data for AM/Daily)

Muncy Area Corridor Access Management Plan

LUAR 1/3 Full Build-Out Growth Assumption

Trip Generation: Subarea 5 - Muncy Borough

ITE Trip Generation, 9th Edition

New Development					WEEKDAY AM PEAK			WEEKDAY PM PEAK		
Land Use	Size	Developed	Units	Daily	In	Out	Total	In	Out	Total
Single Family Homes A (LU 210) *Equations*	47	16	DU	195	5	16	21	13	7	20
Single Family Homes B (LU 210) *Equations*	37	12	DU	149	4	14	18	10	6	16
Single Family Homes C (LU 210) *Equations*	58	19	DU	228	6	17	23	15	9	24
Total Trips, All Single Family Homes (Equations)	142	47	DU	572	15	47	62	38	22	60
Light Industrial (LU 110) *Rates*	6,637	2,212	Sq. Ft.	15	2	0	2	0	2	2
General Office (LU 710) *Equations*	14,736	4,912	Sq. Ft.	133	15	2	17	14	70	84
Hospital (LU 610) *Equations*	159,809	53,270	Sq. Ft.	3,292	72	42	114	44	73	117
Shopping Center (LU 820) *Equations*	325,179	108,393	Sq. Ft.	7,156	102	62	164	303	329	632
- Pass-By Trips	34	% PM		1,717	24	15	39	103	112	215
"New" Trips	24	% AM		5,439	78	47	125	200	217	417
Total Trips, All Land Uses (New Development)				9,451	182	138	320	296	384	680

Assumptions: 1/3 of dwelling units built by 2034, 40% building coverage by parcel and 1/3 of non-residential development by 2034

Excess Land Use on Existing Parcels				WEEKDAY AM PEAK			WEEKDAY PM PEAK		
Land Use	Size	Units	Daily	In	Out	Total	In	Out	Total
Single Family Homes A (LU 210) *Equations*	90	30 DU	347	8	23	31	23	13	36
Total Trips, Excess Land Use on Existing Parcels			347	8	23	31	23	13	36
Total Trips, New Development (From Above)			9,451	182	138	320	296	384	680
Total Trips For Subarea 5, New Development & Excess Land Use on Ex. Parcels			9,798	190	161	351	319	397	716

Notes:

- New Development Trip Generation by Land Use
- New Development Trip Generation (Total by Subarea)
- Trip Reduction Based on Converted Land Use for 2035 Projections
- Excess Land Use Trip Generation on Existing Parcels
- Excess Land Use Trip Generation on Existing Parcels (Total by Subarea)
- Trip Generation Total for Subarea (New Development + Excess Land Use on Ex. Parcels)

* 34% PM Pass-By Reduction for Land Use 820 as per ITE Trip Generation, 9th Edition
* 24% AM & Daily Pass-By Reduction is PM Pass-By rate - 10% (No ITE Data for AM/Daily)

Muncy Area Corridor Access Management Plan

LUAR 1/3 Full Build-Out Growth Assumption

Trip Generation: Subarea 6 - Industrial/John Brady Drive

ITE Trip Generation, 9th Edition

New Development Land Use	Size	Developed	Units	Daily	WEEKDAY AM PEAK In	Out	Total	WEEKDAY PM PEAK In	Out	Total
Res Condo/Townhouse (LU 230) *Equations*	50	50	DU	352	5	25	30	23	11	34
Industrial Park A (LU 130) *Equations*	1,425,572	475,191	Sq. Ft.	3,049	266	58	324	84	317	401
Industrial Park B (LU 130) *Equations*	993,257	331,086	Sq. Ft.	2,330	199	44	243	61	228	289
Ex. Shopping Center B (LU 820) *Equations*	148,173	49,391	Sq. Ft.	4,293	63	38	101		194	373
- Pass-By Trips	34	% PM		1,030	15	9	24		66	127
"New" Trips	24	% AM		3,263	48	29	77		128	
Net New Trips, Area B (Future Industrial - Existing Shopping Center)				(933)	151	15	166	0	100	100
Industrial Park C (LU 130) *Equations*	555,583	185,194	Sq. Ft.	1,602	126	28	154	37	138	175
Industrial Park D (LU 130) *Equations*	1,527,756	509,252	Sq. Ft.	3,219	280	62	342	90	338	428
Industrial Park E (LU 130) *Equations*	1,253,438	417,813	Sq. Ft.	2,763	239	53	292	75	281	356
Total Trips, All Industrial Park (Equations)	5,755,606	1,918,536	DU	9,700	1,062	216	1,278	286	1,174	1,460
General Office (LU 710) *Equations*	549,010	183,003	Sq. Ft.	2,078	273	37	310	48	235	283
Shopping Center F (LU 820) *Equations*	473,601	157,867	Sq. Ft.	9,137	128	78	206	391	423	814
- Pass-By Trips	34	% PM		2,193	30	19	49	133	144	277
"New" Trips	24	% AM		6,944	98	59	157	258	279	537
Ex. Single Family Homes (LU 210) *Equations*	46	15	DU	183	5	15	20	12	7	19
Net New Trips, Area F (Future Shopping Center - Ex. Residential)				6,761	93	44	137	246	272	518
Shopping Center G (LU 820) *Equations*	241,111	80,370	Sq. Ft.	5,892	84	52	136	249	269	518
- Pass-By Trips	34	% PM		1,414	20	13	33	84	92	176
"New" Trips	24	% AM		4,478	64	39	103	165	177	342
Ex. Single Family Homes (LU 210) *Equations*	43	14	DU	172	5	15	20	11	7	18
Net New Trips, Area G (Future Shopping Center - Ex. Residential)				4,306	59	24	83	154	170	324
Total Trips, All Land Uses (New Development)				23,197	1,492	346	1,838	757	1,862	2,619

Assumptions: 1/3 of dwelling units built by 2034, 40% building coverage by parcel and 1/3 of non-residential development by 2034

Excess Land Use on Existing Parcels Land Use	Size	Units	Daily	WEEKDAY AM PEAK In	Out	Total	WEEKDAY PM PEAK In	Out	Total
Single Family Homes B (LU 210) *Equations*	4	1 DU	15	2	8	10	1	1	2
Shopping Center (LU 820) *Equations*	83,235	27,745 Sq. Ft.	2,951	44	27	71	122	132	254
- Pass-By Trips	34	% PM	708	11	6	17	41	45	86
"New" Trips	24	% AM	2,243	33	21	54	81	87	168
General Office (LU 710) *Equations*	474,749	158,250 Sq. Ft.	1,861	243	33	276	44	212	256
Industrial Park A (LU 130) *Equations*	2,600,740	866,913 Sq. Ft.	5,004	426	94	520	148	559	707
Total Trips, Excess Land Use on Existing Parcels			9,123	704	156	860	274	859	1,133
Total Trips, New Development (From Above)			23,197	1,492	346	1,838	757	1,862	2,619
Total Trips For Subarea 6, New Development & Excess Land Use on Ex. Parcels			32,320	2,196	502	2,698	1,031	2,721	3,752

Notes:

- New Development Trip Generation by Land Use
- New Development Trip Generation (Total by Subarea)
- Trip Reduction Based on Converted Land Use for 2035 Projections
- Excess Land Use Trip Generation on Existing Parcels
- Excess Land Use Trip Generation on Existing Parcels (Total by Subarea)
- Trip Generation Total for Subarea (New Development + Excess Land Use on Ex. Parcels)

* 34% PM Pass-By Reduction for Land Use 820 as per ITE Trip Generation, 9th Edition
* 24% AM & Daily Pass-By Reduction is PM Pass-By rate - 10% (No ITE Data for AM/Daily)

Muncy Area Corridor Access Management Plan

LUAR 1/3 Full Build-Out Growth Assumption

Summary/Totals: Entire Study Area

ITE Trip Generation, 9th Edition

Land Use	Size	Developed	Units	Daily	WEEKDAY AM PEAK In	WEEKDAY AM PEAK Out	WEEKDAY AM PEAK Total	WEEKDAY PM PEAK In	WEEKDAY PM PEAK Out	WEEKDAY PM PEAK Total
Total Trips, Excess Land Use on Existing Parcels				47,680	2,198	1,054	3,252	1,858	2,409	4,267
Total Trips, New Development (From Above)				169,347	3,857	1,841	5,698	6,278	8,143	14,421
Total Trips (Entire Study Area), New Development & Excess Land Use on Ex. Parcels				217,027	6,055	2,895	8,950	8,136	10,552	18,688

Muncy Area Corridor Access Management Plan

20-Year Build-Out Growth Assumptions

Land Use (ITE Code)	LUAR	Alternative
Shopping Center (ITE LU 820)	1/3	15%
Single Family Homes (ITE LU 210)	1/3	15%
Residential Condo/Townhouse (ITE LU 230)	1/3	15%
Light Industrial (ITE LU 110)	1/3	15%
Industrial Park (ITE LU 130)	1/3	15%
General Office (ITE LU 710)	1/3	15%
High School (ITE LU 530)	1/3	15%

*LUAR recommended assuming 1/3 of potential full buildout of the 7-square mile study area along key corridors in Muncy Area Corridor Access Management Plan.

** Due to significant traffic impacts anticipated with the 1/3 assumption for the 20-year projected development based on the LUAR, we have completed an alternate analysis based on a 15% assumption (approximately half of the LUAR projection) for the 20-year projected development based on feasible roadway improvements for this area.

Muncy Area Corridor Access Management Plan

Reduced Growth (15%) Alternative

Trip Generation: Subarea 1 - Lycoming Mall (SR 2049 & 2014)

ITE Trip Generation, 9th Edition

New Development					WEEKDAY AM PEAK			WEEKDAY PM PEAK		
Land Use	Size	Developed	Units	Daily	In	Out	Total	In	Out	Total
Shopping Center A (LU 820) *Equations*	1,796,780	269,517	Sq. Ft.	12,937	177	108	285	559	605	1,164
- Pass-By Trips	34	% PM		3,105	42	26	68	190	206	396
"New" Trips	24	% AM		9,832	135	82	217	369	399	768
Shopping Center B (LU 820) *Equations*	1,203,142	180,471	Sq. Ft.	9,968	138	85	223	427	463	890
- Pass-By Trips	34	% PM		2,392	33	21	54	145	158	303
"New" Trips	24	% AM		7,576	105	64	169	282	305	587
Ex. Single Family Homes (LU 210) *Equations*	60	9	DU	115	4	12	16	8	4	12
Net New Trips, Area B (Future Shopping Center - Ex. Residential)				7,461	101	52	153	274	301	575
Shopping Center C (LU 820) *Equations*	1,370,476	205,571	Sq. Ft.	10,848	150	92	242	466	505	971
- Pass-By Trips	34	% PM		2,604	36	22	58	158	172	330
"New" Trips	24	% AM		8,244	114	70	184	308	333	641
Shopping Center D (LU 820) *Equations*	1,190,767	178,615	Sq. Ft.	9,901	138	84	222	424	460	884
- Pass-By Trips	34	% PM		2,376	33	20	53	144	157	301
"New" Trips	24	% AM		7,525	105	64	169	280	303	583
Shopping Center E (LU 820) *Equations*	788,317	118,248	Sq. Ft.	7,573	107	66	173	322	348	670
- Pass-By Trips	34	% PM		1,818	26	16	42	109	119	228
"New" Trips	24	% AM		5,755	81	50	131	213	229	442
Ex. Industrial Park E (LU 130) *Equations*	561,653	84,248	Sq. Ft.	1,099	67	15	82	20	76	96
Ex. Single Family Homes (LU 210) *Equations*	44	7	DU	91	4	11	15	6	4	10
Net New Trips, Area E (Future Shopping Center - Existing Industrial)				4,565	10	24	34	187	149	336
Shopping Center F (LU 820) *Equations*	214,093	32,114	Sq. Ft.	3,246	48	30	78	134	146	280
- Pass-By Trips	34	% PM		779	12	7	19	46	49	95
"New" Trips	24	% AM		2,467	36	23	59	88	97	185
Ex. Industrial Park F (LU 130) *Equations*	214,093	32,114	Sq. Ft.	838	32	7	39	12	44	56
Net New Trips, Area F (Future Shopping Center - Existing Industrial)				1,629	4	16	20	76	53	129
Total New Trips, All Shopping Center (Equations)	6,563,575	984,536	Sq. Ft.	39,256	469	308	777	1,494	1,538	3,032
Single Family Homes (LU 210) *Equations*	178	27	DU	315	7	22	29	20	12	32
Total Trips, All Land Uses				39,571	476	330	806	1,514	1,550	3,064

Assumptions: 15% of residential & non-residential development by 2034, 40% building coverage by parcel

Excess Land Use on Existing Parcels					WEEKDAY AM PEAK			WEEKDAY PM PEAK		
Land Use	Size		Units	Daily	In	Out	Total	In	Out	Total
Single Family Homes A (LU 210) *Equations*	76	11	DU	138	4	13	17	9	5	14
Single Family Homes B (LU 210) *Equations*	252	38	DU	431	9	27	36	28	16	44
Single Family Homes C (LU 210) *Equations*	220	33	DU	379	8	25	33	25	14	39
Light Industrial *Rates*	90,988	13,648	Sq. Ft.	95	11	2	13	2	11	13
Shopping Center (LU 820) *Equations*	2,409,606	361,441	Sq. Ft.	15,655	211	130	341	680	737	1,417
- Pass-By Trips	34	% PM		3,757	51	31	82	231	251	482
"New" Trips	24	% AM		11,898	160	99	259	449	486	935
Total Trips, Excess Land Use on Existing Parcels				12,941	192	166	358	513	532	1,045
Total Trips, New Development (From Above)				39,571	476	330	806	1,514	1,550	3,064
Total Trips For Subarea 1, New Development & Excess Land Use on Ex. Parcels				52,512	668	496	1,164	2,027	2,082	4,109

Notes:

- New Development Trip Generation by Land Use
- New Development Trip Generation (Total by Subarea)
- Trip Reduction Based on Converted Land Use for 2035 Projections
- Excess Land Use Trip Generation on Existing Parcels
- Excess Land Use Trip Generation on Existing Parcels (Total by Subarea)
- Trip Generation Total for Subarea (New Development + Excess Land Use on Ex. Parcels)

* 34% PM Pass-By Reduction for Land Use 820 as per ITE Trip Generation, 9th Edition
* 24% AM & Daily Pass-By Reduction is PM Pass-By rate - 10% (No ITE Data for AM/Daily)

Muncy Area Corridor Access Management Plan

Reduced Growth (15%) Alternative

Trip Generation: Subarea 2 - US 220 Corridor

ITE Trip Generation, 9th Edition

New Development					WEEKDAY AM PEAK			WEEKDAY PM PEAK		
Land Use	Size	Developed	Units	Daily	In	Out	Total	In	Out	Total
Shopping Center (LU 820) *Equations*	950,409	142,561	Sq. Ft.	8,551	120	74	194	365	395	760
- Pass-By Trips	34	% PM		2,052	29	18	47	124	134	258
"New" Trips	24	% AM		6,499	91	56	147	241	261	502
Ex. Single Family Homes (LU 210) *Equations*	70	11	DU	138	4	13	17	9	5	14
Net New Trips (Future Shopping Center - Ex. Residential)				6,361	87	43	130	232	256	488
Single Family Homes A (LU 210) *Equations*	75	11	DU	138	4	13	17	9	5	14
Single Family Homes B (LU 210) *Equations*	186	28	DU	326	7	22	29	21	12	33
Single Family Homes C (LU 210) *Equations*	140	21	DU	250	6	18	24	16	10	26
Single Family Homes D (LU 210) *Equations*	192	29	DU	336	7	23	30	21	13	34
Total Trips, All Single Family Homes (Equations)	593	89	DU	1,050	24	76	100	67	40	107
Res Condo/Townhouse (LU 230) *Equations*	13	2	DU	21	0	2	2	1	1	2
Total Trips, All Land Uses (New Development)				7,432	111	121	232	300	297	597

Assumptions: 15% of residential & non-residential development by 2034, 40% building coverage by parcel

Excess Land Use on Existing Parcels				WEEKDAY AM PEAK			WEEKDAY PM PEAK		
Land Use	Size	Units	Daily	In	Out	Total	In	Out	Total
Single Family Homes A (LU 210) *Equations*	46	7 DU	91	4	11	15	6	4	10
Single Family Homes B (LU 210) *Equations*	156	23 DU	272	6	20	26	18	10	28
Total Trips, Excess Land Use on Existing Parcels			363	10	31	41	24	14	38
Total Trips, New Development (From Above)			7,432	111	121	232	300	297	597
Total Trips For Subarea 2, New Development & Excess Land Use on Ex. Parcels			7,795	121	152	273	324	311	635

Notes:

- New Development Trip Generation by Land Use
- New Development Trip Generation (Total by Subarea)
- Trip Reduction Based on Converted Land Use for 2035 Projections
- Excess Land Use Trip Generation on Existing Parcels
- Excess Land Use Trip Generation on Existing Parcels (Total by Subarea)
- Trip Generation Total for Subarea (New Development + Excess Land Use on Ex. Parcels)

* 34% PM Pass-By Reduction for Land Use 820 as per ITE Trip Generation, 9th Edition
* 24% AM & Daily Pass-By Reduction is PM Pass-By rate - 10% (No ITE Data for AM/Daily)

Muncy Area Corridor Access Management Plan

Reduced Growth (15%) Alternative

Trip Generation: Subarea 3 - Hughesville Borough

ITE Trip Generation, 9th Edition

New Development Land Use	Size	Developed	Units	Daily	WEEKDAY AM PEAK In	Out	Total	WEEKDAY PM PEAK In	Out	Total
Single Family Homes (LU 210) *Equations*	399	60	DU	656	13	39	52	42	24	66
General Office (LU 710) *Equations*	45,009	6,751	Sq. Ft.	169	19	3	22	15	71	86
Shopping Center (LU 820) *Equations*	381,685	57,253	Sq. Ft.	4,726	69	42	111	198	214	412
- Pass-By Trips	34	% PM		1,134	17	10	27	67	73	140
"New" Trips	24	% AM		3,592	52	32	84	131	141	272
Ex. Single Family Homes (LU 210) *Equations*	50	8	DU	103	4	11	15	7	4	11
Net New Trips (Future Shopping Center - Ex. Residential)				3,489	48	21	69	124	137	261
Total Trips, All Land Uses (New Development)				4,314	80	63	143	181	232	413

Assumptions: 15% of residential & non-residential development by 2034, 40% building coverage by parcel

Excess Land Use on Existing Parcels Land Use	Size	Units	Daily	WEEKDAY AM PEAK In	Out	Total	WEEKDAY PM PEAK In	Out	Total
Single Family Homes (LU 210) *Equations*	200	30 DU	347	8	23	31	23	13	36
Total Trips, Excess Land Use on Existing Parcels			347	8	23	31	23	13	36
Total Trips, New Development (From Above)			4,314	80	63	143	181	232	413
Total Trips For Subarea 3, New Development & Excess Land Use on Ex. Parcels			4,661	88	86	174	204	245	449

Notes:

- New Development Trip Generation by Land Use
- New Development Trip Generation (Total by Subarea)
- Trip Reduction Based on Converted Land Use for 2035 Projections
- Excess Land Use Trip Generation on Existing Parcels
- Excess Land Use Trip Generation on Existing Parcels (Total by Subarea)
- Trip Generation Total for Subarea (New Development + Excess Land Use on Ex. Parcels)

* 34% PM Pass-By Reduction for Land Use 820 as per ITE Trip Generation, 9th Edition
* 24% AM & Daily Pass-By Reduction is PM Pass-By rate - 10% (No ITE Data for AM/Daily)

Muncy Area Corridor Access Management Plan

Reduced Growth (15%) Alternative

Trip Generation: Subarea 4 - SR 0405 Corridor

ITE Trip Generation, 9th Edition

New Development					WEEKDAY AM PEAK			WEEKDAY PM PEAK		
Land Use	Size	Developed	Units	Daily	In	Out	Total	In	Out	Total
Light Industrial A *Rates*	152,933	22,940	Sq. Ft.	160	18	3	21	3	19	22
Industrial Park B (LU 130) *Equations*	1,413,333	212,000	Sq. Ft.	1,736	140	31	171	41	155	196
Ex. Single Family Homes (LU 210) *Equations*	60	9	DU	115	4	12	16	8	4	12
Net New Trips, Area B (Future Industrial - Ex. Residential)				1,621	136	19	155	33	151	184
Industrial Park C (LU 130) *Equations*	656,440	98,466	Sq. Ft.	1,170	76	17	93	22	85	107
Shopping Center D (LU 820) *Equations*	471,164	70,675	Sq. Ft.	5,420	78	48	126	228	247	475
- Pass-By Trips	34	% PM		1,301	19	11	30	78	84	162
"New" Trips	24	% AM		4,119	59	37	96	150	163	313
Shopping Center E (LU 820) *Equations*	532,875	79,931	Sq. Ft.	5,871	84	52	136	248	268	516
- Pass-By Trips	34	% PM		1,409	20	13	33	84	91	175
"New" Trips	24	% AM		4,462	64	39	103	164	177	341
Ex. Single Family Homes (LU 210) *Equations*	40	6	DU	79	3	11	14	5	3	8
Net New Trips, Area E (Future Shopping Center - Ex. Residential)				4,383	61	28	89	159	174	333
Shopping Center F (LU 820) *Equations*	801,030	120,155	Sq. Ft.	7,652	108	66	174	325	353	678
- Pass-By Trips	34	% PM		1,836	26	16	42	111	120	231
"New" Trips	24	% AM		5,816	82	50	132	214	233	447
Shopping Center G (LU 820) *Equations*	1,201,758	180,264	Sq. Ft.	9,960	138	85	223	427	462	889
- Pass-By Trips	34	% PM		2,390	33	21	54	145	157	302
"New" Trips	24	% AM		7,570	105	64	169	282	305	587
Shopping Center H (LU 820) *Equations*	396,137	59,421	Sq. Ft.	4,842	70	43	113	203	220	423
- Pass-By Trips	34	% PM		1,162	17	10	27	69	75	144
"New" Trips	24	% AM		3,680	53	33	86	134	145	279
Total New Trips, All Shopping Center (Equations)	3,402,964	510,446	Sq. Ft.	25,568	360	212	572	939	1,020	1,959
Single Family Homes (LU 210) *Equations*	187	28	DU	326	7	22	29	21	12	33
General Office (LU 710) *Equations*	64,080	9,612	Sq. Ft.	221	26	3	29	15	74	89
Total Trips, All Land Uses (New Development)				29,066	623	276	899	1,033	1,361	2,394

Assumptions: 15% of residential & non-residential development by 2034, 40% building coverage by parcel

Excess Land Use on Existing Parcels					WEEKDAY AM PEAK			WEEKDAY PM PEAK		
Land Use	Size		Units	Daily	In	Out	Total	In	Out	Total
Single Family Homes (LU 210) *Equations*	64	10	DU	126	4	13	17	8	5	13
Shopping Center (LU 820) *Equations*	624,169	93,625	Sq. Ft.	6,506	93	57	150	275	298	573
- Pass-By Trips	34	% PM		1,561	22	14	36	94	101	195
"New" Trips	24	% AM		4,945	71	43	114	181	197	378
High School (LU 530) *Rates*	1,393,588	209,038	Sq. Ft.	2,694	454	186	640	110	93	203
Total Trips, Excess Land Use on Existing Parcels				7,765	529	242	771	299	295	594
Total Trips, New Development (From Above)				29,066	623	276	899	1,033	1,361	2,394
Total Trips For Subarea 4, New Development & Excess Land Use on Ex. Parcels				36,831	1,152	518	1,670	1,332	1,656	2,988

Notes:

- New Development Trip Generation by Land Use
- New Development Trip Generation (Total by Subarea)
- Trip Reduction Based on Converted Land Use for 2035 Projections
- Excess Land Use Trip Generation on Existing Parcels
- Excess Land Use Trip Generation on Existing Parcels (Total by Subarea)
- Trip Generation Total for Subarea (New Development + Excess Land Use on Ex. Parcels)

* 34% PM Pass-By Reduction for Land Use 820 as per ITE Trip Generation, 9th Edition
* 24% AM & Daily Pass-By Reduction is PM Pass-By rate - 10% (No ITE Data for AM/Daily)

Muncy Area Corridor Access Management Plan

Reduced Growth (15%) Alternative

Trip Generation: Subarea 5 - Muncy Borough

ITE Trip Generation, 9th Edition

New Development					WEEKDAY AM PEAK			WEEKDAY PM PEAK		
Land Use	Size	Developed	Units	Daily	In	Out	Total	In	Out	Total
Single Family Homes A (LU 210) *Equations*	47	7	DU	91	4	11	15	6	4	10
Single Family Homes B (LU 210) *Equations*	37	6	DU	79	3	11	14	5	3	8
Single Family Homes C (LU 210) *Equations*	58	9	DU	115	4	12	16	8	4	12
Total Trips, All Single Family Homes (Equations)	142	22	DU	285	11	34	45	19	11	30
Light Industrial (LU 110) *Rates*	6,637	996	Sq. Ft.	7	1	0	1	0	1	1
General Office (LU 710) *Equations*	14,736	2,210	Sq. Ft.	72	8	1	9	14	67	81
Hospital (LU 610) *Equations*	159,809	53,270	Sq. Ft.	3,292	72	42	114	44	73	117
Shopping Center (LU 820) *Equations*	325,179	48,777	Sq. Ft.	4,259	63	38	101	178	192	370
- Pass-By Trips	34 % PM			1,022	15	9	24	60	66	126
"New" Trips	24 % AM			3,237	48	29	77	118	126	244
Total Trips, All Land Uses (New Development)				6,893	140	106	246	195	278	473

Assumptions: 15% of residential & non-residential development by 2034, 40% building coverage by parcel

Excess Land Use on Existing Parcels				WEEKDAY AM PEAK			WEEKDAY PM PEAK		
Land Use	Size	Units	Daily	In	Out	Total	In	Out	Total
Single Family Homes A (LU 210) *Equations*	90	14 DU	172	5	15	20	11	7	18
Total Trips, Excess Land Use on Existing Parcels			172	5	15	20	11	7	18
Total Trips, New Development (From Above)			6,893	140	106	246	195	278	473
Total Trips For Subarea 5, New Development & Excess Land Use on Ex. Parcels			7,065	145	121	266	206	285	491

Notes:

- New Development Trip Generation by Land Use
- New Development Trip Generation (Total by Subarea)
- Trip Reduction Based on Converted Land Use for 2035 Projections
- Excess Land Use Trip Generation on Existing Parcels
- Excess Land Use Trip Generation on Existing Parcels (Total by Subarea)
- Trip Generation Total for Subarea (New Development + Excess Land Use on Ex. Parcels)

* 34% PM Pass-By Reduction for Land Use 820 as per ITE Trip Generation, 9th Edition
* 24% AM & Daily Pass-By Reduction is PM Pass-By rate - 10% (No ITE Data for AM/Daily)

Muncy Area Corridor Access Management Plan

Reduced Growth (15%) Alternative

Trip Generation: Subarea 6 - Industrial/John Brady Drive

ITE Trip Generation, 9th Edition

New Development					WEEKDAY AM PEAK			WEEKDAY PM PEAK		
Land Use	Size	Developed	Units	Daily	In	Out	Total	In	Out	Total
Res Condo/Townhouse (LU 230) *Equations*	50	50	DU	352	5	25	30	23	11	34
Industrial Park A (LU 130) *Equations*	1,425,572	213,836	Sq. Ft.	1,745	141	31	172	41	156	197
Industrial Park B (LU 130) *Equations*	993,257	148,989	Sq. Ft.	1,422	106	23	129	31	116	147
Ex. Shopping Center B (LU 820) *Equations*	148,173	22,226	Sq. Ft.	2,555	38	24	62		114	219
- Pass-By Trips	34	% PM		613	9	6	15		38	74
"New" Trips	24	% AM		1,942	29	18	47		76	
Net New Trips, Area B (Future Industrial - Existing Shopping Center)				(520)	77	5	82	0	40	100
Industrial Park C (LU 130) *Equations*	555,583	83,337	Sq. Ft.	1,094	67	15	82	20	75	95
- Pass-By Trips										
"New" Trips				1,094	67	15	82	20	75	95
Industrial Park D (LU 130) *Equations*	1,527,756	229,163	Sq. Ft.	1,822	149	33	182	44	165	209
- Pass-By Trips										
"New" Trips				1,822	149	33	182	44	165	209
Industrial Park E (LU 130) *Equations*	1,253,438	188,016	Sq. Ft.	1,616	128	28	156	37	140	177
- Pass-By Trips										
"New" Trips				1,616	128	28	156	37	140	177
Total Trips, All Industrial Park (Equations)	5,755,606	863,341	DU	5,757	562	112	674	142	576	778
Industrial Park - Total (LU 130) *Rates*	5,755,606	1,918,535	Sq. Ft.	13,104	1,290	283	1,573	343	1,288	1,631
- Pass-By Trips										
"New" Trips				13,104	1,290	283	1,573	343	1,288	1,631
General Office (LU 710) *Equations*	549,010	82,352	Sq. Ft.	1,133	144	20	164	29	142	171
- Pass-By Trips										
"New" Trips				1,133	144	20	164	29	142	171
General Office (LU 710) *Rates*	549,010	183,003	Sq. Ft.	2,019	251	34	285	46	227	273
- Pass-By Trips										
"New" Trips				2,019	251	34	285	46	227	273
Shopping Center F (LU 820) *Equations*	473,601	71,040	Sq. Ft.	5,438	79	48	127	228	248	476
- Pass-By Trips	34	% PM		1,305	19	11	30	78	84	162
"New" Trips	24	% AM		4,133	60	37	97	150	164	314
Ex. Single Family Homes (LU 210) *Equations*	46	7	DU	91	4	11	15	6	4	10
Net New Trips, Area F (Future Shopping Center - Ex. Residential)				4,042	56	26	82	144	160	304
Shopping Center G (LU 820) *Equations*	241,111	36,167	Sq. Ft.	3,506	52	32	84	145	158	303
- Pass-By Trips	34	% PM		841	12	8	20	49	54	103
"New" Trips	24	% AM		2,665	40	24	64	96	104	200
Ex. Single Family Homes (LU 210) *Equations*	43	6	DU	79	3	11	14	5	3	8
Net New Trips, Area G (Future Shopping Center - Ex. Residential)				2,586	37	13	50	91	101	192
Total Trips, All Land Uses (New Development)				13,870	804	196	1,000	429	990	1,479

Assumptions: 15% of residential & non-residential development by 2034, 40% building coverage by parcel

Excess Land Use on Existing Parcels					WEEKDAY AM PEAK			WEEKDAY PM PEAK		
Land Use	Size		Units	Daily	In	Out	Total	In	Out	Total
Single Family Homes B (LU 210) *Equations*	4	1	DU	15	2	8	10	1	1	2
Shopping Center (LU 820) *Equations*	83,235	12,485	Sq. Ft.	1,756	27	17	44	72	77	149
- Pass-By Trips	34	% PM		421	7	4	11	24	27	51
"New" Trips	24	% AM		1,335	20	13	33	48	50	98
General Office (LU 710) *Equations*	474,749	71,212	Sq. Ft.	1,014	128	18	146	27	131	158
Industrial Park A (LU 130) *Equations*	2,600,740	390,111	Sq. Ft.	2,625	227	50	277	70	265	335
Total Trips, Excess Land Use on Existing Parcels				4,989	377	89	466	146	447	593
Total Trips, New Development (From Above)				13,870	804	196	1,000	429	990	1,479
Total Trips For Subarea 6, New Development & Excess Land Use on Ex. Parcels				18,859	1,181	285	1,466	575	1,437	2,072

Notes:

- New Development Trip Generation by Land Use
- New Development Trip Generation (Total by Subarea)
- Trip Reduction Based on Converted Land Use for 2035 Projections
- Excess Land Use Trip Generation on Existing Parcels
- Excess Land Use Trip Generation on Existing Parcels (Total by Subarea)
- Trip Generation Total for Subarea (New Development + Excess Land Use on Ex. Parcels)

* 34% PM Pass-By Reduction for Land Use 820 as per ITE Trip Generation, 9th Edition
* 24% AM & Daily Pass-By Reduction is PM Pass-By rate - 10% (No ITE Data for AM/Daily)

Muncy Area Corridor Access Management Plan

Reduced Growth (15%) Alternative

Summary/Totals: Entire Study Area

ITE Trip Generation, 9th Edition

Land Use	Size	Developed	Units	Daily	WEEKDAY AM PEAK In	WEEKDAY AM PEAK Out	WEEKDAY AM PEAK Total	WEEKDAY PM PEAK In	WEEKDAY PM PEAK Out	WEEKDAY PM PEAK Total
Total Trips, Excess Land Use on Existing Parcels				26,577	1,121	566	1,687	1,016	1,308	2,324
Total Trips, New Development (From Above)				101,146	2,234	1,092	3,326	3,652	4,708	8,420
Total Trips (Entire Study Area), New Development & Excess Land Use on Ex. Parcels				127,723	3,355	1,658	5,013	4,668	6,016	10,744

APPENDIX G

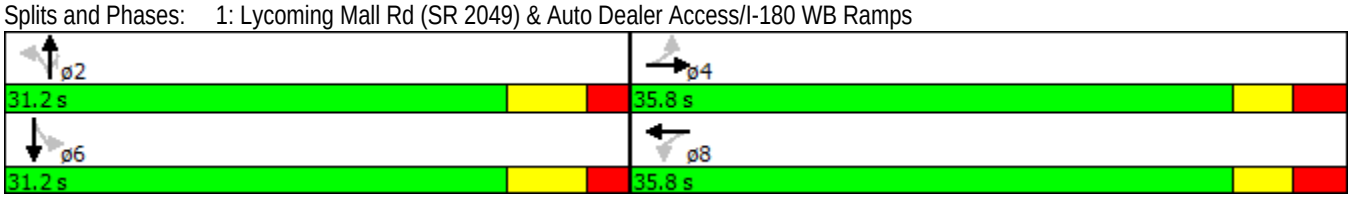
Future (2034) Pass-Through Capacity/ Level of Service Analysis Worksheets

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	1	2	3	68	9	8	23	22	62	19	37	0
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	13	13	13	15	15	15	12	12	16	12	12	12
Grade (%)		2%			4%			1%			-1%	
Storage Length (ft)	0		100	0		0	0		0	0		375
Storage Lanes	0		0	0		0	0		1	0		1
Taper Length (ft)	75			75			75			75		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95
Ped Bike Factor												
Frt		0.932			0.987				0.850			
Flt Protected		0.994			0.961			0.975			0.983	
Satd. Flow (prot)	0	1464	0	0	1774	0	0	1688	1643	0	3313	0
Flt Permitted		0.952			0.763			0.861			0.880	
Satd. Flow (perm)	0	1402	0	0	1409	0	0	1491	1643	0	2966	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		4			10				86			
Link Speed (mph)		25			25			40			40	
Link Distance (ft)		187			334			1105			689	
Travel Time (s)		5.1			9.1			18.8			11.7	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	0%	33%	3%	13%	0%	0%	7%	5%	0%	3%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	1	3	4	94	12	11	32	31	86	26	51	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	8	0	0	117	0	0	63	86	0	77	0
Number of Detectors	1	1		1	1		1	1	0	1	1	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left		
Leading Detector (ft)	30	40		30	45		30	45	0	30	45	
Trailing Detector (ft)	-10	-10		-10	-5		-10	-5	0	-10	-5	
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2		2	6		
Detector Phase	4	4		8	8		2	2	2	6	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	10.8	10.8		10.8	10.8		11.2	11.2	11.2	11.2	11.2	
Total Split (s)	35.8	35.8		35.8	35.8		31.2	31.2	31.2	31.2	31.2	
Total Split (%)	53.4%	53.4%		53.4%	53.4%		46.6%	46.6%	46.6%	46.6%	46.6%	
Maximum Green (s)	30.0	30.0		30.0	30.0		25.0	25.0	25.0	25.0	25.0	
Yellow Time (s)	3.0	3.0		3.0	3.0		4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	2.8	2.8		2.8	2.8		2.2	2.2	2.2	2.2	2.2	
Lost Time Adjust (s)		-1.0			-1.0			-1.0	-1.0		-1.0	
Total Lost Time (s)		4.8			4.8			5.2	5.2		5.2	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Minimum Gap (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Time Before Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Time To Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Recall Mode	None	None		None	None		Min	Min	Min	Min	Min	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
v/c Ratio		0.02			0.28			0.08	0.09		0.05	
Control Delay		5.8			9.9			7.4	2.9		7.0	
Queue Delay		0.0			0.0			0.0	0.0		0.0	
Total Delay		5.8			9.9			7.4	2.9		7.0	
Queue Length 50th (ft)		1			16			6	0		4	
Queue Length 95th (ft)		3			23			16	9		9	
Internal Link Dist (ft)		107			254			1025			609	
Turn Bay Length (ft)												
Base Capacity (vph)		1265			1272			1157	1295		2302	
Starvation Cap Reductn		0			0			0	0		0	
Spillback Cap Reductn		0			0			0	0		0	
Storage Cap Reductn		0			0			0	0		0	
Reduced v/c Ratio		0.01			0.09			0.05	0.07		0.03	

Intersection Summary	
Area Type:	Other
Cycle Length: 67	
Actuated Cycle Length: 34.2	
Natural Cycle: 40	
Control Type: Actuated-Uncoordinated	

Splits and Phases: 1: Lycoming Mall Rd (SR 2049) & Auto Dealer Access/I-180 WB Ramps



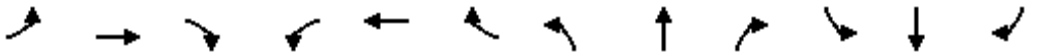
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	1	2	3	68	9	8	23	22	62	19	37	0
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1853	1591	1853	1835	1768	1835	1791	1731	1774	1809	1774	1809
Adj Flow Rate, veh/h	1	3	1	94	12	4	32	31	24	26	51	0
Adj No. of Lanes	0	1	0	0	1	0	0	1	1	0	2	0
Peak Hour Factor	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72
Percent Heavy Veh, %	0	0	0	13	13	13	7	7	5	3	3	3
Cap, veh/h	271	161	52	565	28	9	442	328	469	479	780	0
Arrive On Green	0.12	0.17	0.12	0.12	0.17	0.12	0.26	0.31	0.31	0.26	0.31	0.00
Sat Flow, veh/h	274	944	304	1281	164	55	516	1056	1508	608	2589	0
Grp Volume(v), veh/h	5	0	0	110	0	0	63	0	24	47	30	0
Grp Sat Flow(s),veh/h/ln	1522	0	0	1499	0	0	1572	0	1508	1583	1533	0
Q Serve(g_s), s	0.0	0.0	0.0	0.8	0.0	0.0	0.0	0.0	0.2	0.0	0.3	0.0
Cycle Q Clear(g_c), s	0.1	0.0	0.0	1.3	0.0	0.0	0.5	0.0	0.2	0.4	0.3	0.0
Prop In Lane	0.20		0.20	0.85		0.04	0.51		1.00	0.56		0.00
Lane Grp Cap(c), veh/h	405	0	0	525	0	0	689	0	469	700	477	0
V/C Ratio(X)	0.01	0.00	0.00	0.21	0.00	0.00	0.09	0.00	0.05	0.07	0.06	0.00
Avail Cap(c_a), veh/h	2502	0	0	2598	0	0	2239	0	2031	2265	2066	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	0.00	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	6.8	0.0	0.0	7.5	0.0	0.0	4.9	0.0	4.7	4.9	4.7	0.0
Incr Delay (d2), s/veh	0.0	0.0	0.0	0.3	0.0	0.0	0.1	0.0	0.1	0.1	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.0	0.0	0.0	1.1	0.0	0.0	0.5	0.0	0.2	0.3	0.2	0.0
LnGrp Delay(d),s/veh	6.8	0.0	0.0	7.8	0.0	0.0	5.0	0.0	4.7	5.0	4.8	0.0
LnGrp LOS	A			A			A		A	A	A	
Approach Vol, veh/h		5			110			87			77	
Approach Delay, s/veh		6.8			7.8			4.9			4.9	
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		11.2		8.1		11.2		8.1
Change Period (Y+Rc), s		* 6.2		* 5.8		* 6.2		* 5.8
Max Green Setting (Gmax), s		* 25		* 30		* 25		* 30
Max Q Clear Time (g_c+I1), s		2.5		2.5		2.8		3.3
Green Ext Time (p_c), s		0.6		0.6		0.6		0.6

Intersection Summary	
HCM 2010 Ctrl Delay	6.1
HCM 2010 LOS	A

Notes

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

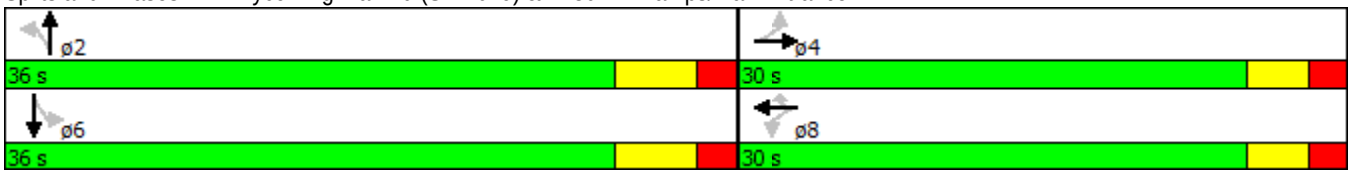


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	26	90	70	7	11	46	8	34	18	29	44	35
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	12	11	12	12	12	12	12	12	12	12
Grade (%)		2%			2%			-2%			-3%	
Storage Length (ft)	0		0	0		0	135		0	0		0
Storage Lanes	0		0	1		1	1		0	1		0
Taper Length (ft)	75			75			75			75		
Lane Util. Factor	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.944				0.850		0.948			0.940	
Flt Protected		0.993		0.950			0.950			0.950		
Satd. Flow (prot)	0	3067	0	1636	1620	1416	1515	1617	0	1550	1651	0
Flt Permitted		0.927		0.614			0.702			0.717		
Satd. Flow (perm)	0	2863	0	1058	1620	1416	1120	1617	0	1170	1651	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		83				55		21			35	
Link Speed (mph)		25			25			40			40	
Link Distance (ft)		279			408			2572			1105	
Travel Time (s)		7.6			11.1			43.8			18.8	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	1.00
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	8%	1%	5%	0%	10%	7%	14%	10%	0%	12%	0%	10%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	31	107	83	8	13	55	10	40	21	35	52	35
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	221	0	8	13	55	10	61	0	35	87	0
Number of Detectors	1	1		1	1	0	1	1		1	1	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (ft)	30	45		45	45	0	45	45		45	45	
Trailing Detector (ft)	-10	-5		-5	-5	0	-5	-5		-5	-5	
Turn Type	Perm	NA		Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8		8	2			6		
Detector Phase	4	4		8	8	8	2	2		6	6	
Switch Phase												
Minimum Initial (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Minimum Split (s)	7.0	7.0		7.0	7.0	7.0	8.0	8.0		8.0	8.0	
Total Split (s)	30.0	30.0		30.0	30.0	30.0	36.0	36.0		36.0	36.0	
Total Split (%)	45.5%	45.5%		45.5%	45.5%	45.5%	54.5%	54.5%		54.5%	54.5%	
Maximum Green (s)	25.0	25.0		25.0	25.0	25.0	30.0	30.0		30.0	30.0	
Yellow Time (s)	3.0	3.0		3.0	3.0	3.0	4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		-1.0		-1.0	-1.0	-1.0	-1.0	-1.0		-1.0	-1.0	
Total Lost Time (s)		4.0		4.0	4.0	4.0	5.0	5.0		5.0	5.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Minimum Gap (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Time Before Reduce (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Time To Reduce (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Recall Mode	Min	Min		Min	Min	Min	None	None		None	None	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
v/c Ratio		0.12		0.01	0.01	0.06	0.03	0.12		0.10	0.17	
Control Delay		4.0		6.1	6.1	2.7	6.9	5.7		7.6	5.6	
Queue Delay		0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay		4.0		6.1	6.1	2.7	6.9	5.7		7.6	5.6	
Queue Length 50th (ft)		6		1	1	0	1	5		4	6	
Queue Length 95th (ft)		15		4	5	9	5	13		11	17	
Internal Link Dist (ft)		199			328			2492			1025	
Turn Bay Length (ft)							135					
Base Capacity (vph)		2667		983	1505	1319	1120	1617		1170	1651	
Starvation Cap Reductn		0		0	0	0	0	0		0	0	
Spillback Cap Reductn		0		0	0	0	0	0		0	0	
Storage Cap Reductn		0		0	0	0	0	0		0	0	
Reduced v/c Ratio		0.08		0.01	0.01	0.04	0.01	0.04		0.03	0.05	

Intersection Summary	
Area Type:	Other
Cycle Length: 66	
Actuated Cycle Length: 28	
Natural Cycle: 40	
Control Type: Actuated-Uncoordinated	

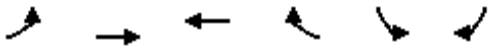
Splits and Phases: 2: Lycoming Mall Rd (SR 2049) & I-180 EB Ramps/Mall Entrance



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	26	90	70	7	11	46	8	34	18	29	44	35
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	1782	1722	1782	1782	1620	1665	1595	1706	1818	1631	1756	1827
Adj Flow Rate, veh/h	31	107	31	8	13	0	10	40	14	35	52	19
Adj No. of Lanes	0	2	0	1	1	1	1	1	0	1	1	0
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	1.00
Percent Heavy Veh, %	1	1	1	0	10	7	14	10	10	12	0	0
Cap, veh/h	386	588	179	772	458	400	638	222	78	655	225	82
Arrive On Green	0.22	0.28	0.22	0.28	0.28	0.00	0.18	0.18	0.12	0.18	0.18	0.12
Sat Flow, veh/h	368	2080	632	1258	1620	1416	1196	1209	423	1243	1228	449
Grp Volume(v), veh/h	98	0	71	8	13	0	10	0	54	35	0	71
Grp Sat Flow(s),veh/h/ln	1624	0	1456	1258	1620	1416	1196	0	1631	1243	0	1677
Q Serve(g_s), s	0.0	0.0	0.6	0.1	0.1	0.0	0.1	0.0	0.5	0.4	0.0	0.6
Cycle Q Clear(g_c), s	0.8	0.0	0.6	0.2	0.1	0.0	0.2	0.0	0.5	0.4	0.0	0.6
Prop In Lane	0.32		0.43	1.00		1.00	1.00		0.26	1.00		0.27
Lane Grp Cap(c), veh/h	644	0	411	772	458	400	638	0	299	655	0	308
V/C Ratio(X)	0.15	0.00	0.17	0.01	0.03	0.00	0.02	0.00	0.18	0.05	0.00	0.23
Avail Cap(c_a), veh/h	2645	0	2245	2357	2499	2184	2619	0	3001	2713	0	3085
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	1.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	4.7	0.0	4.7	4.5	4.4	0.0	5.8	0.0	5.9	5.8	0.0	6.0
Incr Delay (d2), s/veh	0.2	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.4	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(95%),veh/ln	0.7	0.0	0.5	0.1	0.1	0.0	0.1	0.0	0.4	0.3	0.0	0.6
LnGrp Delay(d),s/veh	4.9	0.0	5.0	4.5	4.4	0.0	5.8	0.0	6.3	5.8	0.0	6.5
LnGrp LOS	A		A	A	A		A		A	A		A
Approach Vol, veh/h		169			21			64			106	
Approach Delay, s/veh		4.9			4.4			6.2			6.3	
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		8.1		8.8		8.1		8.8
Change Period (Y+Rc), s		6.0		5.0		6.0		5.0
Max Green Setting (Gmax), s		30.0		25.0		30.0		25.0
Max Q Clear Time (g_c+I1), s		2.7		2.8		2.9		2.7
Green Ext Time (p_c), s		0.9		1.0		0.9		1.0

Intersection Summary	
HCM 2010 Ctrl Delay	5.5
HCM 2010 LOS	A

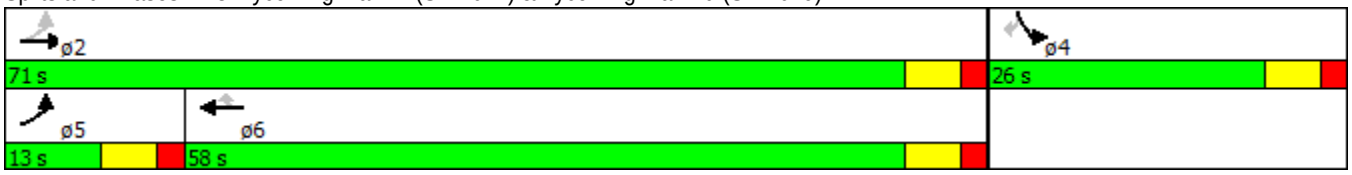


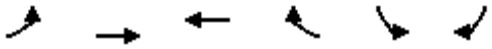
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	41	294	300	25	44	45
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	12	12	12	12
Grade (%)		-1%	1%		-2%	
Storage Length (ft)	165			215	165	0
Storage Lanes	1			1	1	1
Taper Length (ft)	125				75	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt				0.850		0.850
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1719	1630	1690	1522	1464	1472
Flt Permitted	0.439				0.950	
Satd. Flow (perm)	794	1630	1690	1522	1464	1472
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)				29		52
Link Speed (mph)		45	45		40	
Link Distance (ft)		727	1089		2572	
Travel Time (s)		11.0	16.5		43.8	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	11%	6%	0%	18%	5%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)		0%	0%		0%	
Adj. Flow (vph)	48	342	349	29	51	52
Shared Lane Traffic (%)						
Lane Group Flow (vph)	48	342	349	29	51	52
Number of Detectors	1	1	1	1	1	1
Detector Template	Left				Left	Right
Leading Detector (ft)	45	6	6	6	45	45
Trailing Detector (ft)	-5	0	0	0	-5	-5
Turn Type	pm+pt	NA	NA	Perm	Prot	Perm
Protected Phases	5	2	6		4	
Permitted Phases	2			6		4
Detector Phase	5				4	4
Switch Phase						
Minimum Initial (s)	3.0	15.0	15.0	15.0	5.0	5.0
Minimum Split (s)	9.0	21.0	21.0	21.0	11.0	11.0
Total Split (s)	13.0	71.0	58.0	58.0	26.0	26.0
Total Split (%)	13.4%	73.2%	59.8%	59.8%	26.8%	26.8%
Maximum Green (s)	7.0	65.0	52.0	52.0	20.0	20.0
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lead/Lag	Lead		Lag	Lag		
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	5.0	5.0	5.0	3.0	3.0
Minimum Gap (s)	3.0	2.0	2.0	2.0	3.0	3.0
Time Before Reduce (s)	0.0	42.0	42.0	42.0	0.0	0.0
Time To Reduce (s)	0.0	10.0	10.0	10.0	0.0	0.0
Recall Mode	None	Min	Min	Min	None	None
Walk Time (s)		7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)		14.0	14.0	14.0	14.0	14.0
Pedestrian Calls (#/hr)		0	0	0	0	0
v/c Ratio	0.07	0.29	0.33	0.03	0.17	0.15
Control Delay	4.3	5.1	11.0	5.5	16.7	7.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	4.3	5.1	11.0	5.5	16.7	7.4
Queue Length 50th (ft)	4	36	37	0	7	0
Queue Length 95th (ft)	13	74	143	12	33	19
Internal Link Dist (ft)		647	1009		2492	
Turn Bay Length (ft)	165			215	165	
Base Capacity (vph)	725	1196	1058	964	780	809
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.07	0.29	0.33	0.03	0.07	0.06

Intersection Summary	
Area Type:	Other
Cycle Length: 97	
Actuated Cycle Length: 40.4	
Natural Cycle: 45	
Control Type: Actuated-Uncoordinated	

Splits and Phases: 3: Lycoming Mall Dr (SR 2014) & Lycoming Mall Rd (SR 2049)





Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	41	294	300	25	44	45
Number	5	2	6	16	7	14
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	1809	1630	1690	1791	1541	1731
Adj Flow Rate, veh/h	48	342	349	16	51	12
Adj No. of Lanes	1	1	1	1	1	1
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86
Percent Heavy Veh, %	0	11	6	0	18	5
Cap, veh/h	602	1033	740	667	135	135
Arrive On Green	0.06	0.63	0.44	0.44	0.09	0.09
Sat Flow, veh/h	1723	1630	1690	1522	1467	1472
Grp Volume(v), veh/h	48	342	349	16	51	12
Grp Sat Flow(s),veh/h/ln	1723	1630	1690	1522	1467	1472
Q Serve(g_s), s	0.5	3.5	5.3	0.2	1.2	0.3
Cycle Q Clear(g_c), s	0.5	3.5	5.3	0.2	1.2	0.3
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	602	1033	740	667	135	135
V/C Ratio(X)	0.08	0.33	0.47	0.02	0.38	0.09
Avail Cap(c_a), veh/h	878	2945	2452	2209	844	846
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	4.4	3.1	7.3	5.8	15.6	15.2
Incr Delay (d2), s/veh	0.1	0.4	1.0	0.0	1.7	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.4	2.9	4.7	0.2	1.0	0.4
LnGrp Delay(d),s/veh	4.5	3.5	8.3	5.9	17.3	15.5
LnGrp LOS	A	A	A	A	B	B
Approach Vol, veh/h		390	365		63	
Approach Delay, s/veh		3.6	8.2		17.0	
Approach LOS		A	A		B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		28.2		8.4	7.2	21.0		
Change Period (Y+Rc), s		6.0		6.0	6.0	6.0		
Max Green Setting (Gmax), s		65.0		20.0	7.0	52.0		
Max Q Clear Time (g_c+I1), s		6.0		3.7	3.0	7.8		
Green Ext Time (p_c), s		5.5		0.1	0.0	5.4		

Intersection Summary	
HCM 2010 Ctrl Delay	6.7
HCM 2010 LOS	A

Notes

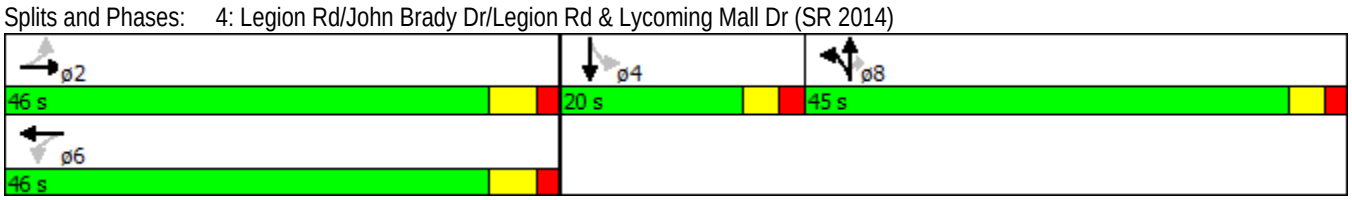
User approved pedestrian interval to be less than phase max green.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	1	117	0	49	165	4	185	6	62	6	1	3
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	12	13	13	13	12	12	12	14	14	14
Grade (%)		1%			-1%			-3%			0%	
Storage Length (ft)	1		0	275		0	0		0	0		0
Storage Lanes	0		0	1		0	1		1	0		0
Taper Length (ft)	75			75			75			75		
Lane Util. Factor	0.95	0.95	1.00	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt					0.997				0.850		0.963	
Flt Protected					0.989		0.950	0.955			0.969	
Satd. Flow (prot)	0	3068	0	0	3126	0	1601	1612	1374	0	1256	0
Flt Permitted		0.953			0.866		0.950	0.955				
Satd. Flow (perm)	0	2924	0	0	2737	0	1601	1612	1374	0	1296	0
Right Turn on Red			Yes			Yes			Yes			No
Satd. Flow (RTOR)					2				79			
Link Speed (mph)		45			45			45			25	
Link Distance (ft)		326			418			206			301	
Travel Time (s)		4.9			6.3			3.1			8.2	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	11%	6%	30%	5%	75%	3%	0%	13%	67%	0%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	1	133	0	56	188	5	210	7	70	7	1	3
Shared Lane Traffic (%)							48%					
Lane Group Flow (vph)	0	134	0	0	249	0	109	108	70	0	11	0
Number of Detectors	1	2		1	2		2	2	0	1	1	
Detector Template	Left			Left						Left	Thru	
Leading Detector (ft)	30	306		30	286		206	206	0	30	45	
Trailing Detector (ft)	-10	-5		-10	-5		-5	-5	0	-10	-5	
Turn Type	Perm	NA		Perm	NA		Split	NA	Perm	Perm	NA	
Protected Phases		2			6		8	8			4	
Permitted Phases	2			6					8	4		
Detector Phase	2	2		6	6		8	8	8	4	4	
Switch Phase												
Minimum Initial (s)	15.0	15.0		15.0	15.0		15.0	15.0	15.0	5.0	5.0	
Minimum Split (s)	21.0	21.0		21.0	21.0		20.0	20.0	20.0	10.0	10.0	
Total Split (s)	46.0	46.0		46.0	46.0		45.0	45.0	45.0	20.0	20.0	
Total Split (%)	41.4%	41.4%		41.4%	41.4%		40.5%	40.5%	40.5%	18.0%	18.0%	
Maximum Green (s)	40.0	40.0		40.0	40.0		40.0	40.0	40.0	15.0	15.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)		-1.0			-1.0		-1.0	-1.0	-1.0		-1.0	
Total Lost Time (s)		5.0			5.0		4.0	4.0	4.0		4.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	6.0	6.0		6.0	6.0		6.0	6.0	6.0	3.0	3.0	
Minimum Gap (s)	2.0	2.0		2.0	2.0		2.0	2.0	2.0	2.0	2.0	
Time Before Reduce (s)	40.0	40.0		40.0	40.0		40.0	40.0	40.0	0.0	0.0	
Time To Reduce (s)	20.0	20.0		20.0	20.0		20.0	20.0	20.0	0.0	0.0	
Recall Mode	Min	Min		Min	Min		None	None	None	None	None	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
v/c Ratio		0.11			0.23		0.19	0.19	0.13		0.05	
Control Delay		11.4			11.8		12.4	12.4	4.3		18.9	
Queue Delay		0.0			0.0		0.0	0.0	0.0		0.0	
Total Delay		11.4			11.8		12.4	12.4	4.3		18.9	
Queue Length 50th (ft)		10			18		15	15	0		2	
Queue Length 95th (ft)		37			63		66	65	20		16	
Internal Link Dist (ft)		246			338			126			221	
Turn Bay Length (ft)												
Base Capacity (vph)		2591			2426		1419	1428	1227		448	
Starvation Cap Reductn		0			0		0	0	0		0	
Spillback Cap Reductn		0			0		0	0	0		0	
Storage Cap Reductn		0			0		0	0	0		0	
Reduced v/c Ratio		0.05			0.10		0.08	0.08	0.06		0.02	

Intersection Summary	
Area Type:	Other
Cycle Length: 111	
Actuated Cycle Length: 47.8	
Natural Cycle: 55	
Control Type: Actuated-Uncoordinated	

Splits and Phases: 4: Legion Rd/John Brady Dr/Legion Rd & Lycoming Mall Dr (SR 2014)



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	1	117	0	49	165	4	185	6	62	6	1	3
Number	5	2	12	1	6	16	3	8	18	7	4	14
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	1791	1615	0	1881	1679	1881	1774	1777	1617	1872	1312	1872
Adj Flow Rate, veh/h	1	133	0	56	188	4	215	0	26	7	1	3
Adj No. of Lanes	0	2	0	0	2	0	2	0	1	0	1	0
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	11	11	0	5	5	5	3	0	13	0	0	0
Cap, veh/h	81	1046	0	286	850	18	1125	0	458	28	4	12
Arrive On Green	0.33	0.35	0.00	0.33	0.35	0.33	0.33	0.00	0.33	0.01	0.04	0.01
Sat Flow, veh/h	4	3078	0	500	2441	52	3379	0	1374	773	110	331
Grp Volume(v), veh/h	72	62	0	132	0	116	215	0	26	11	0	0
Grp Sat Flow(s),veh/h/ln	1613	1396	0	1474	0	1519	1689	0	1374	1215	0	0
Q Serve(g_s), s	0.0	1.4	0.0	0.0	0.0	2.5	2.1	0.0	0.6	0.4	0.0	0.0
Cycle Q Clear(g_c), s	1.4	1.4	0.0	2.6	0.0	2.5	2.1	0.0	0.6	0.4	0.0	0.0
Prop In Lane	0.01		0.00	0.43		0.03	1.00		1.00	0.64		0.27
Lane Grp Cap(c), veh/h	606	486	0	593	0	529	1125	0	458	44	0	0
V/C Ratio(X)	0.12	0.13	0.00	0.22	0.00	0.22	0.19	0.00	0.06	0.25	0.00	0.00
Avail Cap(c_a), veh/h	1478	1245	0	1371	0	1355	3014	0	1226	423	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	10.2	10.2	0.0	10.8	0.0	10.6	10.9	0.0	10.4	22.0	0.0	0.0
Incr Delay (d2), s/veh	0.3	0.4	0.0	0.7	0.0	0.8	0.3	0.0	0.2	3.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	1.2	1.1	0.0	2.4	0.0	2.1	1.8	0.0	0.4	0.3	0.0	0.0
LnGrp Delay(d),s/veh	10.5	10.6	0.0	11.4	0.0	11.3	11.2	0.0	10.6	25.0	0.0	0.0
LnGrp LOS	B	B		B		B	B		B	C		
Approach Vol, veh/h		134			248			241			11	
Approach Delay, s/veh		10.6			11.4			11.1			25.0	
Approach LOS		B			B			B			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		21.0		5.7		21.0		19.3
Change Period (Y+Rc), s		6.0		5.0		6.0		5.0
Max Green Setting (Gmax), s		40.0		15.0		40.0		40.0
Max Q Clear Time (g_c+I1), s		3.9		2.5		4.6		4.6
Green Ext Time (p_c), s		10.4		0.0		10.3		4.3

Intersection Summary	
HCM 2010 Ctrl Delay	11.4
HCM 2010 LOS	B

Notes

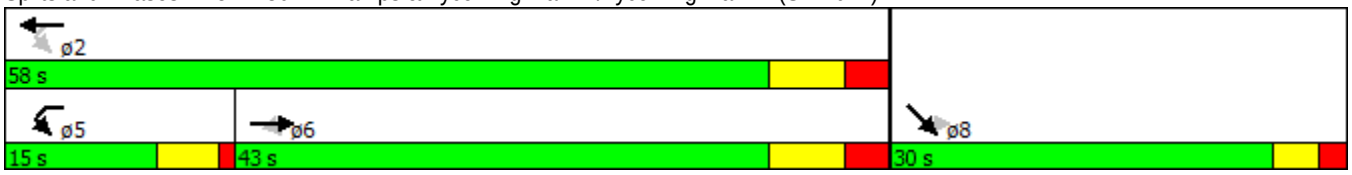
User approved volume balancing among the lanes for turning movement.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Volume (vph)	0	134	93	19	236	0	152	2	111	0	0	0
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	14	12	12	12	12	14	14	14	12	12	12
Grade (%)		-1%			-1%			3%			-4%	
Storage Length (ft)	0		175	150		0	0		0	0		0
Storage Lanes	0		1	1		0	0		0	0		0
Taper Length (ft)	75			75			75			75		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt			0.850					0.943				
Flt Protected				0.950				0.972				
Satd. Flow (prot)	0	1649	1292	1621	1587	0	0	1512	0	0	0	0
Flt Permitted				0.560				0.972				
Satd. Flow (perm)	0	1649	1292	956	1587	0	0	1512	0	0	0	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			102					42				
Link Speed (mph)		45			45			25			25	
Link Distance (ft)		2040			660			376			358	
Travel Time (s)		30.9			10.0			10.3			9.8	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	17%	19%	6%	14%	0%	16%	0%	13%	0%	0%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	0	147	102	21	259	0	167	2	122	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	147	102	21	259	0	0	291	0	0	0	0
Number of Detectors		1	1	1	1		1	1				
Detector Template				Left			Left	Thru				
Leading Detector (ft)		6	6	45	6		30	30				
Trailing Detector (ft)		0	0	-5	0		-10	-10				
Turn Type		NA	Perm	pm+pt	NA		Perm	NA				
Protected Phases		6		5	2			8				
Permitted Phases			6	2			8					
Detector Phase				5			8	8				
Switch Phase												
Minimum Initial (s)		20.0	20.0	5.0	20.0		5.0	5.0				
Minimum Split (s)		28.0	28.0	10.0	38.0		10.0	10.0				
Total Split (s)		43.0	43.0	15.0	58.0		30.0	30.0				
Total Split (%)		48.9%	48.9%	17.0%	65.9%		34.1%	34.1%				
Maximum Green (s)		35.0	35.0	10.0	50.0		25.0	25.0				
Yellow Time (s)		5.0	5.0	4.0	5.0		3.0	3.0				
All-Red Time (s)		3.0	3.0	1.0	3.0		2.0	2.0				
Lost Time Adjust (s)		-1.0	-1.0	-1.0	-1.0			-1.0				
Total Lost Time (s)		7.0	7.0	4.0	7.0			4.0				

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lead/Lag		Lag	Lag	Lead								
Lead-Lag Optimize?												
Vehicle Extension (s)		3.0	3.0	4.0	3.0		4.0	4.0				
Minimum Gap (s)		3.0	3.0	3.0	3.0		3.0	3.0				
Time Before Reduce (s)		0.0	0.0	0.0	0.0		0.0	0.0				
Time To Reduce (s)		0.0	0.0	0.0	0.0		0.0	0.0				
Recall Mode		Min	Min	None	Min		None	None				
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
v/c Ratio		0.21	0.17	0.03	0.36			0.57				
Control Delay		13.9	5.0	7.7	11.7			17.5				
Queue Delay		0.0	0.0	0.0	0.0			0.0				
Total Delay		13.9	5.0	7.7	11.7			17.5				
Queue Length 50th (ft)		22	0	3	43			54				
Queue Length 95th (ft)		94	32	13	113			153				
Internal Link Dist (ft)		1960			580			296			278	
Turn Bay Length (ft)			175	150								
Base Capacity (vph)		694	602	642	728			808				
Starvation Cap Reductn		0	0	0	0			0				
Spillback Cap Reductn		0	0	0	0			0				
Storage Cap Reductn		0	0	0	0			0				
Reduced v/c Ratio		0.21	0.17	0.03	0.36			0.36				

Intersection Summary	
Area Type:	Other
Cycle Length: 88	
Actuated Cycle Length: 51.5	
Natural Cycle: 55	
Control Type: Actuated-Uncoordinated	

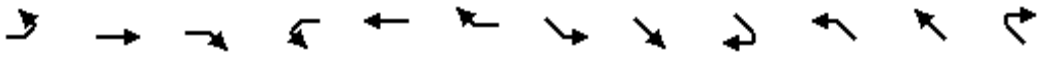
Splits and Phases: 5: I-180 EB Ramps & Lycoming Mall Dr/Lycoming Mall Dr (SR 2014)



Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Volume (veh/h)	0	134	93	19	236	0	152	2	111	0	0	0
Number	1	6	16	5	2	12	3	8	18			
Initial Q (Qb), veh	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			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	0	1608	1520	1707	1587	0	1844	1609	1844			
Adj Flow Rate, veh/h	0	147	45	21	259	0	167	2	90			
Adj No. of Lanes	0	1	1	1	1	0	0	1	0			
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91			
Percent Heavy Veh, %	0	17	19	6	14	0	0	0	0			
Cap, veh/h	0	670	538	627	859	0	228	3	123			
Arrive On Green	0.00	0.42	0.42	0.05	0.54	0.00	0.22	0.24	0.22			
Sat Flow, veh/h	0	1608	1292	1625	1587	0	948	11	511			
Grp Volume(v), veh/h	0	147	45	21	259	0	259	0	0			
Grp Sat Flow(s),veh/h/ln	0	1608	1292	1625	1587	0	1471	0	0			
Q Serve(g_s), s	0.0	3.0	1.1	0.3	4.5	0.0	8.2	0.0	0.0			
Cycle Q Clear(g_c), s	0.0	3.0	1.1	0.3	4.5	0.0	8.2	0.0	0.0			
Prop In Lane	0.00		1.00	1.00		0.00	0.64		0.35			
Lane Grp Cap(c), veh/h	0	670	538	627	859	0	354	0	0			
V/C Ratio(X)	0.00	0.22	0.08	0.03	0.30	0.00	0.73	0.00	0.00			
Avail Cap(c_a), veh/h	0	1148	923	908	1606	0	759	0	0			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	0.00			
Uniform Delay (d), s/veh	0.0	9.4	8.9	6.4	6.3	0.0	18.1	0.0	0.0			
Incr Delay (d2), s/veh	0.0	0.2	0.1	0.0	0.2	0.0	4.1	0.0	0.0			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(95%),veh/ln	0.0	2.4	0.7	0.3	3.6	0.0	6.7	0.0	0.0			
LnGrp Delay(d),s/veh	0.0	9.6	9.0	6.4	6.5	0.0	22.2	0.0	0.0			
LnGrp LOS		A	A	A	A		C					
Approach Vol, veh/h		192			280			259				
Approach Delay, s/veh		9.5			6.5			22.2				
Approach LOS		A			A			C				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2			5	6		8
Phs Duration (G+Y+Rc), s		34.3			6.3	28.0		16.1
Change Period (Y+Rc), s		8.0			5.0	8.0		5.0
Max Green Setting (Gmax), s		50.0			10.0	35.0		25.0
Max Q Clear Time (g_c+I1), s		7.0			2.8	5.5		10.2
Green Ext Time (p_c), s		1.1			0.0	1.1		1.2

Intersection Summary	
HCM 2010 Ctrl Delay	12.9
HCM 2010 LOS	B

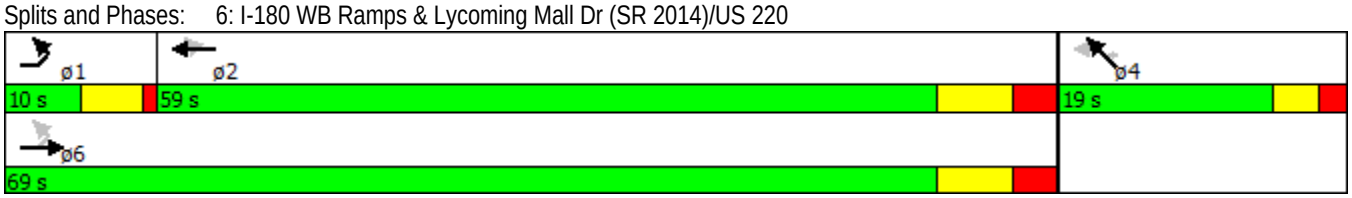


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Volume (vph)	58	228	0	0	166	432	0	0	0	89	0	15
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	11	12	12	11	11	11	12	12	12	15	15	16
Grade (%)		1%			-1%			-3%			-3%	
Storage Length (ft)	115		0	0		165	0		0	0		445
Storage Lanes	1		0	0		1	0		0	0		1
Taper Length (ft)	75			75			75			75		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt						0.850						0.850
Flt Protected	0.950										0.950	
Satd. Flow (prot)	1406	1571	0	0	1665	1402	0	0	0	0	1632	1173
Flt Permitted	0.533										0.950	
Satd. Flow (perm)	789	1571	0	0	1665	1402	0	0	0	0	1632	1173
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						520						124
Link Speed (mph)		45			45			25			25	
Link Distance (ft)		660			1209			327			668	
Travel Time (s)		10.0			18.3			8.9			18.2	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	17%	14%	0%	0%	5%	6%	0%	0%	0%	17%	0%	50%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	70	275	0	0	200	520	0	0	0	107	0	18
Shared Lane Traffic (%)												
Lane Group Flow (vph)	70	275	0	0	200	520	0	0	0	0	107	18
Number of Detectors	1	1			1	1				1	1	0
Detector Template	Left					Right				Left	Thru	
Leading Detector (ft)	45	6			6	30				30	45	0
Trailing Detector (ft)	-5	0			0	-10				-10	-5	0
Turn Type	pm+pt	NA			NA	Perm				Perm	NA	Perm
Protected Phases	1	6			2						4	
Permitted Phases	6					2				4		4
Detector Phase	1					2				4	4	4
Switch Phase												
Minimum Initial (s)	5.0	20.0			20.0	20.0				5.0	5.0	5.0
Minimum Split (s)	10.0	28.0			28.0	28.0				10.0	10.0	10.0
Total Split (s)	10.0	69.0			59.0	59.0				19.0	19.0	19.0
Total Split (%)	11.4%	78.4%			67.0%	67.0%				21.6%	21.6%	21.6%
Maximum Green (s)	5.0	61.0			51.0	51.0				14.0	14.0	14.0
Yellow Time (s)	4.0	5.0			5.0	5.0				3.0	3.0	3.0
All-Red Time (s)	1.0	3.0			3.0	3.0				2.0	2.0	2.0
Lost Time Adjust (s)	-1.0	-1.0			-1.0	0.0					-1.0	-1.0
Total Lost Time (s)	4.0	7.0			7.0	8.0					4.0	4.0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lead/Lag	Lead				Lag	Lag						
Lead-Lag Optimize?												
Vehicle Extension (s)	4.0	3.0			3.0	3.0				4.0	4.0	4.0
Minimum Gap (s)	3.0	3.0			3.0	3.0				3.0	3.0	3.0
Time Before Reduce (s)	0.0	0.0			0.0	0.0				0.0	0.0	0.0
Time To Reduce (s)	0.0	0.0			0.0	0.0				0.0	0.0	0.0
Recall Mode	None	Min			Min	Min				Min	Min	Min
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
v/c Ratio	0.13	0.32			0.27	0.59					0.30	0.05
Control Delay	4.7	7.4			12.2	4.7					19.6	0.3
Queue Delay	0.0	0.0			0.0	0.0					0.0	0.0
Total Delay	4.7	7.4			12.2	4.7					19.6	0.3
Queue Length 50th (ft)	7	37			41	0					29	0
Queue Length 95th (ft)	18	72			79	38					58	0
Internal Link Dist (ft)		580			1129			247			588	
Turn Bay Length (ft)	115					165						445
Base Capacity (vph)	559	862			729	1371					510	452
Starvation Cap Reductn	0	0			0	0					0	0
Spillback Cap Reductn	0	0			0	0					0	0
Storage Cap Reductn	0	0			0	0					0	0
Reduced v/c Ratio	0.13	0.32			0.27	0.38					0.21	0.04

Intersection Summary	
Area Type:	Other
Cycle Length: 88	
Actuated Cycle Length: 48.9	
Natural Cycle: 50	
Control Type: Actuated-Uncoordinated	

Splits and Phases: 6: I-180 WB Ramps & Lycoming Mall Dr (SR 2014)/US 220



Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Volume (veh/h)	58	228	0	0	166	432	0	0	0	89	0	15
Number	1	6	16	5	2	12				7	4	14
Initial Q (Qb), veh	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
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1531	1571	0	0	1723	1707				1900	1624	1267
Adj Flow Rate, veh/h	70	275	0	0	200	401				107	0	4
Adj No. of Lanes	1	1	0	0	1	1				0	1	1
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83				0.83	0.83	0.83
Percent Heavy Veh, %	17	14	0	0	5	6				50	0	50
Cap, veh/h	551	984	0	0	782	627				210	0	146
Arrive On Green	0.09	0.63	0.00	0.00	0.45	0.43				0.11	0.00	0.14
Sat Flow, veh/h	1458	1571	0	0	1723	1451				1547	0	1077
Grp Volume(v), veh/h	70	275	0	0	200	401				107	0	4
Grp Sat Flow(s),veh/h/ln	1458	1571	0	0	1723	1451				1547	0	1077
Q Serve(g_s), s	0.9	3.7	0.0	0.0	3.3	10.0				3.0	0.0	0.1
Cycle Q Clear(g_c), s	0.9	3.7	0.0	0.0	3.3	10.0				3.0	0.0	0.1
Prop In Lane	1.00		0.00	0.00		1.00				1.00		1.00
Lane Grp Cap(c), veh/h	551	984	0	0	782	627				210	0	146
V/C Ratio(X)	0.13	0.28	0.00	0.00	0.26	0.64				0.51	0.00	0.03
Avail Cap(c_a), veh/h	615	2106	0	0	1937	1599				502	0	349
HCM Platoon Ratio	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	0.00	0.00	1.00	1.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	4.4	3.9	0.0	0.0	7.8	10.3				19.0	0.0	17.3
Incr Delay (d2), s/veh	0.1	0.2	0.0	0.0	0.2	1.1				2.7	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
%ile BackOfQ(95%),veh/ln	0.7	2.8	0.0	0.0	2.9	7.4				2.6	0.0	0.1
LnGrp Delay(d),s/veh	4.6	4.1	0.0	0.0	8.0	11.4				21.7	0.0	17.4
LnGrp LOS	A	A			A	B				C		B
Approach Vol, veh/h		345			601						111	
Approach Delay, s/veh		4.2			10.3						21.6	
Approach LOS		A			B						C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6		
Phs Duration (G+Y+Rc), s	8.0	28.0		10.3		36.0		
Change Period (Y+Rc), s	5.0	8.0		5.0		8.0		
Max Green Setting (Gmax), s	5.0	51.0		14.0		61.0		
Max Q Clear Time (g_c+I1), s	3.4	12.0		5.0		6.2		
Green Ext Time (p_c), s	0.0	2.8		0.3		2.8		

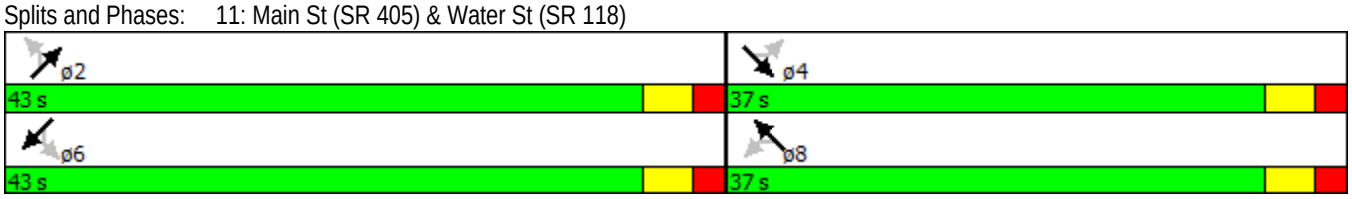
Intersection Summary	
HCM 2010 Ctrl Delay	9.5
HCM 2010 LOS	A

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	19	46	29	116	126	142	19	180	110	99	210	19
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	15	15	15	13	13	13	14	14	14	14	14	14
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (ft)	75			75			75			75		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.958			0.950			0.952			0.992	
Flt Protected		0.990			0.985			0.997			0.985	
Satd. Flow (prot)	0	1758	0	0	1608	0	0	1540	0	0	1661	0
Flt Permitted		0.898			0.869			0.969			0.805	
Satd. Flow (perm)	0	1595	0	0	1418	0	0	1497	0	0	1358	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		25			35			25			25	
Link Distance (ft)		390			506			1477			648	
Travel Time (s)		10.6			9.9			40.3			17.7	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	6%	7%	7%	5%	7%	12%	22%	12%	28%	28%	7%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)							0		0	0		0
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	21	52	33	130	142	160	21	202	124	111	236	21
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	106	0	0	432	0	0	347	0	0	368	0
Number of Detectors	1	1		1	1		1	1		1	1	
Detector Template	Left			Left			Left			Left		
Leading Detector (ft)	30	45		30	45		30	45		30	45	
Trailing Detector (ft)	-10	-5		-10	-5		-10	-5		-10	-5	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	15.0	15.0		15.0	15.0		15.0	15.0		15.0	15.0	
Total Split (s)	37.0	37.0		37.0	37.0		43.0	43.0		43.0	43.0	
Total Split (%)	46.3%	46.3%		46.3%	46.3%		53.8%	53.8%		53.8%	53.8%	
Maximum Green (s)	32.0	32.0		32.0	32.0		38.0	38.0		38.0	38.0	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		-1.0			-1.0			-1.0			-1.0	
Total Lost Time (s)		4.0			4.0			4.0			4.0	

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Minimum Gap (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Time Before Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Time To Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Recall Mode	Max	Max		Max	Max		Max	Max		Max	Max	
Walk Time (s)	11.0	11.0		11.0	11.0		12.0	12.0		12.0	12.0	
Flash Dont Walk (s)	16.0	16.0		16.0	16.0		18.0	18.0		18.0	18.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
v/c Ratio		0.16			0.74			0.48			0.56	
Control Delay		15.7			29.3			16.4			18.5	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		15.7			29.3			16.4			18.5	
Queue Length 50th (ft)		32			177			110			123	
Queue Length 95th (ft)		64			#289			178			203	
Internal Link Dist (ft)		310			426			1397			568	
Turn Bay Length (ft)												
Base Capacity (vph)		657			584			729			662	
Starvation Cap Reductn		0			0			0			0	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.16			0.74			0.48			0.56	

Intersection Summary	
Area Type:	Other
Cycle Length: 80	
Actuated Cycle Length: 80	
Natural Cycle: 45	
Control Type: Actuated-Uncoordinated	
# 95th percentile volume exceeds capacity, queue may be longer.	
Queue shown is maximum after two cycles.	

Splits and Phases: 11: Main St (SR 405) & Water St (SR 118)



Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (veh/h)	19	46	29	116	126	142	19	180	110	99	210	19
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	0.90	1.00	1.00	0.90
Adj Sat Flow, veh/h/ln	1872	1753	1872	1872	1729	1872	1872	1582	1872	1872	1658	1872
Adj Flow Rate, veh/h	21	52	33	130	142	160	21	202	124	111	236	21
Adj No. of Lanes	0	1	0	0	1	0	0	1	0	0	1	0
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	7	7	7	7	7	7	12	12	12	7	7	7
Cap, veh/h	143	337	192	219	228	228	66	396	230	208	401	33
Arrive On Green	0.40	0.41	0.40	0.40	0.41	0.40	0.47	0.49	0.47	0.47	0.49	0.47
Sat Flow, veh/h	216	816	467	389	552	554	37	811	472	307	823	68
Grp Volume(v), veh/h	106	0	0	432	0	0	347	0	0	368	0	0
Grp Sat Flow(s),veh/h/ln	1499	0	0	1495	0	0	1320	0	0	1199	0	0
Q Serve(g_s), s	0.0	0.0	0.0	15.2	0.0	0.0	0.0	0.0	0.0	4.5	0.0	0.0
Cycle Q Clear(g_c), s	3.2	0.0	0.0	19.2	0.0	0.0	14.6	0.0	0.0	19.1	0.0	0.0
Prop In Lane	0.20		0.31	0.30		0.37	0.06		0.36	0.30		0.06
Lane Grp Cap(c), veh/h	653	0	0	657	0	0	675	0	0	628	0	0
V/C Ratio(X)	0.16	0.00	0.00	0.66	0.00	0.00	0.51	0.00	0.00	0.59	0.00	0.00
Avail Cap(c_a), veh/h	653	0	0	657	0	0	675	0	0	628	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	14.9	0.0	0.0	19.6	0.0	0.0	14.4	0.0	0.0	15.2	0.0	0.0
Incr Delay (d2), s/veh	0.5	0.0	0.0	5.1	0.0	0.0	2.8	0.0	0.0	4.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	2.9	0.0	0.0	14.0	0.0	0.0	10.0	0.0	0.0	11.3	0.0	0.0
LnGrp Delay(d),s/veh	15.5	0.0	0.0	24.7	0.0	0.0	17.2	0.0	0.0	19.2	0.0	0.0
LnGrp LOS	B			C			B			B		
Approach Vol, veh/h		106			432			347			368	
Approach Delay, s/veh		15.5			24.7			17.2			19.2	
Approach LOS		B			C			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		43.0		37.0		43.0		37.0
Change Period (Y+Rc), s		5.0		5.0		5.0		5.0
Max Green Setting (Gmax), s		38.0		32.0		38.0		32.0
Max Q Clear Time (g_c+I1), s		16.6		5.2		21.1		21.2
Green Ext Time (p_c), s		3.3		2.4		3.1		1.8

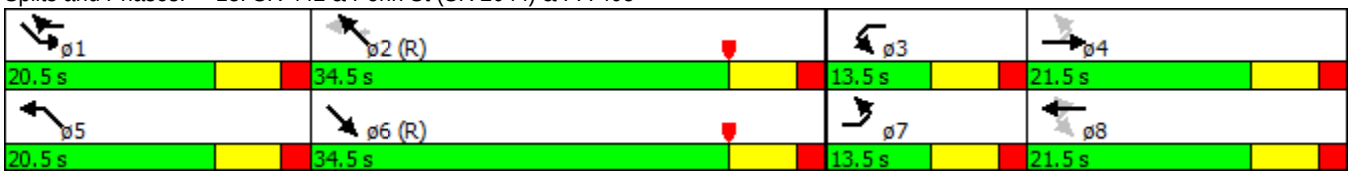
Intersection Summary	
HCM 2010 Ctrl Delay	20.2
HCM 2010 LOS	C

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Volume (vph)	19	78	14	63	132	415	204	108	26	17	261	79
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	11	11	11	11	11	11	11	11	11	11	11	11
Grade (%)		-2%			-1%			1%			-2%	
Storage Length (ft)	195		220	155		425	450		0	125		400
Storage Lanes	2		0	1		1	2		0	1		1
Taper Length (ft)	75			75			75			75		
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00	0.97	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.977				0.850		0.971				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1670	3104	0	1408	1681	1376	2659	1459	0	1670	1642	1396
Flt Permitted	0.666			0.556			0.950			0.665		
Satd. Flow (perm)	1170	3104	0	824	1681	1376	2659	1459	0	1169	1642	1396
Right Turn on Red			No			Yes			Yes			Yes
Satd. Flow (RTOR)						446		14				200
Link Speed (mph)		45			45			40			45	
Link Distance (ft)		670			586			1005			570	
Travel Time (s)		10.2			8.9			17.1			8.6	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	6%	0%	18%	4%	8%	20%	17%	8%	0%	7%	7%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	20	84	15	68	142	446	219	116	28	18	281	85
Shared Lane Traffic (%)												
Lane Group Flow (vph)	20	99	0	68	142	446	219	144	0	18	281	85
Number of Detectors	1	1		1	1	1	2	2		1	2	0
Detector Template	Left	Thru		Left	Thru	Right				Left		
Leading Detector (ft)	40	30		40	30	30	160	160		30	310	0
Trailing Detector (ft)	-10	-5		-10	-5	-5	-10	-10		-10	-10	0
Turn Type	pm+pt	NA		pm+pt	NA	pm+ov	Prot	NA		pm+pt	NA	Perm
Protected Phases	7	4		3	8	1	1	6		5	2	
Permitted Phases	4			8		8				2		2
Detector Phase	7	4		3	8	1	1	6		5	2	2
Switch Phase												
Minimum Initial (s)	3.0	5.0		3.0	5.0	3.0	3.0	5.0		3.0	5.0	5.0
Minimum Split (s)	9.5	11.5		9.5	11.5	9.5	9.5	11.5		9.5	11.5	11.5
Total Split (s)	13.5	21.5		13.5	21.5	20.5	20.5	34.5		20.5	34.5	34.5
Total Split (%)	15.0%	23.9%		15.0%	23.9%	22.8%	22.8%	38.3%		22.8%	38.3%	38.3%
Maximum Green (s)	7.0	15.0		7.0	15.0	14.0	14.0	28.0		14.0	28.0	28.0
Yellow Time (s)	4.5	4.5		4.5	4.5	4.5	4.5	4.5		4.5	4.5	4.5
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)	-1.0	-1.0		-1.0	-1.0	-1.0	-1.0	-1.0		-1.0	-1.0	-1.0
Total Lost Time (s)	5.5	5.5		5.5	5.5	5.5	5.5	5.5		5.5	5.5	5.5

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lead/Lag	Lead	Lag		Lead	Lag	Lead	Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	5.0		3.0	5.0	3.0	3.0	4.0		3.0	4.0	4.0
Minimum Gap (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Time Before Reduce (s)	0.0	0.0		0.0	0.0	0.0	0.0	9.0		0.0	9.0	9.0
Time To Reduce (s)	0.0	0.0		0.0	0.0	0.0	0.0	18.0		0.0	18.0	18.0
Recall Mode	None	None		None	None	None	None	C-Min		None	C-Min	C-Min
Walk Time (s)		12.0			12.0			14.0			14.0	14.0
Flash Dont Walk (s)		18.0			18.0			21.0			21.0	21.0
Pedestrian Calls (#/hr)		0			0			0			0	0
v/c Ratio	0.07	0.23		0.26	0.40	0.53	0.54	0.18		0.03	0.44	0.13
Control Delay	21.7	34.7		24.9	34.4	4.4	40.0	13.6		10.4	25.5	0.4
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	21.7	34.7		24.9	34.4	4.4	40.0	13.6		10.4	25.5	0.4
Queue Length 50th (ft)	8	27		29	62	0	58	31		4	124	0
Queue Length 95th (ft)	24	48		58	132	57	94	90		14	209	0
Internal Link Dist (ft)		590			506			925			490	
Turn Bay Length (ft)	195			155		425	450			125		400
Base Capacity (vph)	293	551		265	375	856	449	805		735	650	673
Starvation Cap Reductn	0	0		0	0	0	0	0		0	0	0
Spillback Cap Reductn	0	0		0	0	0	0	0		0	0	0
Storage Cap Reductn	0	0		0	0	0	0	0		0	0	0
Reduced v/c Ratio	0.07	0.18		0.26	0.38	0.52	0.49	0.18		0.02	0.43	0.13

Intersection Summary	
Area Type:	Other
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 0 (0%), Referenced to phase 2:NWTL and 6:SET, Start of Yellow	
Natural Cycle: 60	
Control Type: Actuated-Coordinated	

Splits and Phases: 18: SR 442 & Penn St (SR 2044) & PA 405



Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Volume (veh/h)	19	78	14	63	132	415	204	108	26	17	261	79
Number	7	4	14	3	8	18	1	6	16	5	2	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
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	1818	1730	1818	1533	1739	1675	1492	1554	1791	1818	1699	1699
Adj Flow Rate, veh/h	20	84	15	68	142	100	219	116	17	18	281	31
Adj No. of Lanes	1	2	0	1	1	1	2	1	0	1	1	1
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	0	6	6	18	4	8	20	17	17	0	7	7
Cap, veh/h	185	244	42	245	223	355	335	766	112	739	815	693
Arrive On Green	0.03	0.09	0.08	0.07	0.13	0.13	0.12	0.58	0.57	0.02	0.48	0.48
Sat Flow, veh/h	1731	2799	488	1460	1739	1424	2758	1325	194	1731	1699	1444
Grp Volume(v), veh/h	20	48	51	68	142	100	219	0	133	18	281	31
Grp Sat Flow(s),veh/h/ln	1731	1643	1644	1460	1739	1424	1379	0	1520	1731	1699	1444
Q Serve(g_s), s	0.9	2.5	2.6	3.7	7.0	5.1	6.8	0.0	3.7	0.5	9.3	1.0
Cycle Q Clear(g_c), s	0.9	2.5	2.6	3.7	7.0	5.1	6.8	0.0	3.7	0.5	9.3	1.0
Prop In Lane	1.00		0.30	1.00		1.00	1.00		0.13	1.00		1.00
Lane Grp Cap(c), veh/h	185	143	143	245	223	355	335	0	878	739	815	693
V/C Ratio(X)	0.11	0.34	0.35	0.28	0.64	0.28	0.65	0.00	0.15	0.02	0.34	0.04
Avail Cap(c_a), veh/h	293	292	292	276	309	426	460	0	878	987	815	693
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	1.00	1.00
Uniform Delay (d), s/veh	35.9	38.6	38.8	33.2	37.2	27.3	37.7	0.0	8.8	11.2	14.6	12.4
Incr Delay (d2), s/veh	0.3	3.0	3.1	0.6	6.3	0.9	2.2	0.0	0.4	0.0	1.2	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(95%),veh/ln	0.8	2.2	2.4	2.7	6.7	3.8	4.8	0.0	2.9	0.4	8.1	0.8
LnGrp Delay(d),s/veh	36.1	41.6	42.0	33.8	43.5	28.2	39.9	0.0	9.2	11.2	15.7	12.6
LnGrp LOS	D	D	D	C	D	C	D		A	B	B	B
Approach Vol, veh/h		119			310			352			330	
Approach Delay, s/veh		40.8			36.4			28.3			15.2	
Approach LOS		D			D			C			B	

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	16.4	48.7	11.6	13.3	7.6	57.5	7.9	17.0
Change Period (Y+Rc), s	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5
Max Green Setting (Gmax), s	14.0	28.0	7.0	15.0	14.0	28.0	7.0	15.0
Max Q Clear Time (g_c+I1), s	9.3	11.8	6.2	5.0	3.0	5.7	3.4	9.5
Green Ext Time (p_c), s	0.6	5.0	0.0	1.6	0.0	5.9	0.0	1.1

Intersection Summary	
HCM 2010 Ctrl Delay	28.0
HCM 2010 LOS	C

Notes

User approved pedestrian interval to be less than phase max green.

Lane Group	EBL	EBT	WBT	WBR	SWL	SWR
Lane Configurations						
Volume (vph)	29	187	398	0	0	58
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	10	10
Grade (%)		2%	-3%		-1%	
Storage Length (ft)	0			0	0	0
Storage Lanes	0			0	1	0
Taper Length (ft)	75				75	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt					0.865	
Flt Protected		0.993				
Satd. Flow (prot)	0	1641	1819	0	1542	0
Flt Permitted		0.993				
Satd. Flow (perm)	0	1641	1819	0	1542	0
Link Speed (mph)		55	45		25	
Link Distance (ft)		1209	517		640	
Travel Time (s)		15.0	7.8		17.5	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	19%	13%	6%	0%	0%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)		0%	0%		0%	
Adj. Flow (vph)	35	223	474	0	0	69
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	258	474	0	69	0
Sign Control		Free	Free		Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	1.4

Movement	EBL	EBT	WBT	WBR	SWL	SWR
Vol, veh/h	29	187	398	0	0	58
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, %	-	2	-3	-	-1	-
Peak Hour Factor	84	84	84	84	84	84
Heavy Vehicles, %	19	13	6	0	0	0
Mvmt Flow	35	223	474	0	0	69

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	474	0	-	0	766	474
Stage 1	-	-	-	-	474	-
Stage 2	-	-	-	-	292	-
Critical Hdwy	4.29	-	-	-	7.1	6.2
Critical Hdwy Stg 1	-	-	-	-	5.2	-
Critical Hdwy Stg 2	-	-	-	-	5.2	-
Follow-up Hdwy	3	-	-	-	3	3.1
Pot Cap-1 Maneuver	826	-	-	-	358	625
Stage 1	-	-	-	-	732	-
Stage 2	-	-	-	-	887	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	826	-	-	-	341	625
Mov Cap-2 Maneuver	-	-	-	-	341	-
Stage 1	-	-	-	-	732	-
Stage 2	-	-	-	-	844	-

Approach	EB	WB	SW
HCM Control Delay, s	1.3	0	11.5
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SWLn1
Capacity (veh/h)	826	-	-	-	625
HCM Lane V/C Ratio	0.042	-	-	-	0.11
HCM Control Delay (s)	9.5	0	-	-	11.5
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0.1	-	-	-	0.4

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	1	213	2	2	411	0	4	25	0	5	34	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	11	11	11	10	10	10
Grade (%)		-2%			1%			0%			-3%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (ft)	75			75			75			75		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.999									0.986	
Flt Protected								0.994			0.995	
Satd. Flow (prot)	0	1614	0	0	1784	0	0	1769	0	0	1729	0
Flt Permitted								0.994			0.995	
Satd. Flow (perm)	0	1614	0	0	1784	0	0	1769	0	0	1729	0
Link Speed (mph)		55			55			35			50	
Link Distance (ft)		1494			4148			578			618	
Travel Time (s)		18.5			51.4			11.3			8.4	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	19%	0%	0%	6%	0%	25%	0%	0%	0%	0%	20%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	1	234	2	2	452	0	4	27	0	5	37	5
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	237	0	0	454	0	0	31	0	0	47	0
Sign Control		Free			Free			Stop			Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	1.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	1	213	2	2	411	0	4	25	0	5	34	5
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	-2	-	-	1	-	-	0	-	-	-3	-
Peak Hour Factor	91	91	91	91	91	91	91	91	91	91	91	91
Heavy Vehicles, %	0	19	0	0	6	0	25	0	0	0	0	20
Mvmt Flow	1	234	2	2	452	0	4	27	0	5	37	5

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	452	0	0	236	0	0	714	693	235	707	694	452
Stage 1	-	-	-	-	-	-	237	237	-	456	456	-
Stage 2	-	-	-	-	-	-	477	456	-	251	238	-
Critical Hdwy	4.9	-	-	4.9	-	-	8.1	6.5	6.4	8.1	6.5	6.4
Critical Hdwy Stg 1	-	-	-	-	-	-	6.35	5.5	-	5.5	4.9	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.35	5.5	-	5.5	4.9	-
Follow-up Hdwy	3.5	-	-	3.5	-	-	3	4	3.4	3	4	3.4
Pot Cap-1 Maneuver	687	-	-	835	-	-	319	369	777	324	369	582
Stage 1	-	-	-	-	-	-	871	713	-	719	617	-
Stage 2	-	-	-	-	-	-	627	572	-	906	741	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	687	-	-	835	-	-	290	367	777	304	367	582
Mov Cap-2 Maneuver	-	-	-	-	-	-	290	367	-	304	367	-
Stage 1	-	-	-	-	-	-	869	712	-	718	615	-
Stage 2	-	-	-	-	-	-	582	570	-	869	740	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0	16.2	16.1
HCM LOS			C	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	354	687	-	-	835	-	-	374
HCM Lane V/C Ratio	0.09	0.002	-	-	0.003	-	-	0.129
HCM Control Delay (s)	16.2	10.2	0	-	9.3	0	-	16.1
HCM Lane LOS	C	B	A	-	A	A	-	C
HCM 95th %tile Q(veh)	0.3	0	-	-	0	-	-	0.4

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	9	174	14	6	333	1	36	12	2	0	16	22
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	11	11	11	14	14	14
Grade (%)		0%			-1%			7%			-1%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (ft)	75			75			75			75		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.990						0.996			0.922	
Flt Protected		0.998			0.999			0.965				
Satd. Flow (prot)	0	1659	0	0	1802	0	0	1598	0	0	1564	0
Flt Permitted		0.998			0.999			0.965				
Satd. Flow (perm)	0	1659	0	0	1802	0	0	1598	0	0	1564	0
Link Speed (mph)		55			55			40			40	
Link Distance (ft)		1228			918			354			317	
Travel Time (s)		15.2			11.4			6.0			5.4	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	63%	11%	8%	0%	6%	0%	3%	18%	0%	0%	27%	15%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	11	212	17	7	406	1	44	15	2	0	20	27
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	240	0	0	414	0	0	61	0	0	47	0
Sign Control		Free			Free			Stop			Stop	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

Intersection	
Int Delay, s/veh	2.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	9	174	14	6	333	1	36	12	2	0	16	22
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	-1	-	-	7	-	-	-1	-
Peak Hour Factor	82	82	82	82	82	82	82	82	82	82	82	82
Heavy Vehicles, %	63	11	8	0	6	0	3	18	0	0	27	15
Mvmt Flow	11	212	17	7	406	1	44	15	2	0	20	27

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	407	0	0	229	0	0	688	665	221	672	672	407
Stage 1	-	-	-	-	-	-	243	243	-	421	421	-
Stage 2	-	-	-	-	-	-	445	422	-	251	251	-
Critical Hdwy	4.9	-	-	4.9	-	-	8.1	6.5	6.4	8.1	6.5	6.4
Critical Hdwy Stg 1	-	-	-	-	-	-	7.53	7.08	-	5.9	5.57	-
Critical Hdwy Stg 2	-	-	-	-	-	-	7.53	7.08	-	5.9	5.57	-
Follow-up Hdwy	3.5	-	-	3.5	-	-	3	4	3.4	3	4	3.4
Pot Cap-1 Maneuver	716	-	-	840	-	-	335	383	792	346	380	619
Stage 1	-	-	-	-	-	-	797	637	-	714	587	-
Stage 2	-	-	-	-	-	-	566	492	-	881	699	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	716	-	-	840	-	-	301	372	792	327	369	619
Mov Cap-2 Maneuver	-	-	-	-	-	-	301	372	-	327	369	-
Stage 1	-	-	-	-	-	-	783	626	-	701	581	-
Stage 2	-	-	-	-	-	-	518	487	-	842	686	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.5	0.2	18.7	13.3
HCM LOS			C	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	324	716	-	-	840	-	-	482
HCM Lane V/C Ratio	0.188	0.015	-	-	0.009	-	-	0.096
HCM Control Delay (s)	18.7	10.1	0	-	9.3	0	-	13.3
HCM Lane LOS	C	B	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.7	0	-	-	0	-	-	0.3



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	138	76	21	299	39	9
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	13	13	13	13	12	12
Grade (%)	3%			1%	5%	
Storage Length (ft)		0	0		0	0
Storage Lanes		0	0		1	0
Taper Length (ft)			75		75	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.952				0.975	
Flt Protected				0.997	0.961	
Satd. Flow (prot)	1619	0	0	1855	1655	0
Flt Permitted				0.997	0.961	
Satd. Flow (perm)	1619	0	0	1855	1655	0
Link Speed (mph)	55			55	35	
Link Distance (ft)	1476			1319	549	
Travel Time (s)	18.3			16.4	10.7	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	19%	4%	5%	5%	6%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	155	85	24	336	44	10
Shared Lane Traffic (%)						
Lane Group Flow (vph)	240	0	0	360	54	0
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	1.4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Vol, veh/h	138	76	21	299	39	9
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, %	3	-	-	1	5	-
Peak Hour Factor	89	89	89	89	89	89
Heavy Vehicles, %	19	4	5	5	6	0
Mvmt Flow	155	85	24	336	44	10

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	240	0	581	198
Stage 1	-	-	-	-	198	-
Stage 2	-	-	-	-	383	-
Critical Hdwy	-	-	4.3	-	7.1	6.2
Critical Hdwy Stg 1	-	-	-	-	6.46	-
Critical Hdwy Stg 2	-	-	-	-	6.46	-
Follow-up Hdwy	-	-	3	-	3	3.1
Pot Cap-1 Maneuver	-	-	994	-	481	898
Stage 1	-	-	-	-	912	-
Stage 2	-	-	-	-	705	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	994	-	467	898
Mov Cap-2 Maneuver	-	-	-	-	467	-
Stage 1	-	-	-	-	912	-
Stage 2	-	-	-	-	684	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.6	12.8
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	513	-	-	994	-
HCM Lane V/C Ratio	0.105	-	-	0.024	-
HCM Control Delay (s)	12.8	-	-	8.7	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.4	-	-	0.1	-

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	194	32	0	250	14	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	11	10	10
Grade (%)	-1%			1%	-4%	
Storage Length (ft)		0	0		0	0
Storage Lanes		0	0		1	0
Taper Length (ft)			75		75	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.981					
Flt Protected					0.950	
Satd. Flow (prot)	1615	0	0	1708	1375	0
Flt Permitted					0.950	
Satd. Flow (perm)	1615	0	0	1708	1375	0
Link Speed (mph)	50			55	35	
Link Distance (ft)	420			676	522	
Travel Time (s)	5.7			8.4	10.2	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.79	0.79	0.79	0.79	0.79	0.79
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	10%	25%	0%	7%	25%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	246	41	0	316	18	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	287	0	0	316	18	0
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

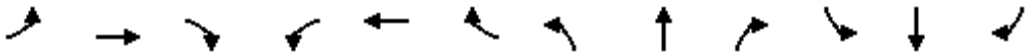
Intersection	
Int Delay, s/veh	0.4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Vol, veh/h	194	32	0	250	14	0
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, %	-1	-	-	1	-4	-
Peak Hour Factor	79	79	79	79	79	79
Heavy Vehicles, %	10	25	0	7	25	0
Mvmt Flow	246	41	0	316	18	0

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	286	0	582	266
Stage 1	-	-	-	-	266	-
Stage 2	-	-	-	-	316	-
Critical Hdwy	-	-	4.3	-	7.1	6.2
Critical Hdwy Stg 1	-	-	-	-	4.85	-
Critical Hdwy Stg 2	-	-	-	-	4.85	-
Follow-up Hdwy	-	-	3	-	3	3.1
Pot Cap-1 Maneuver	-	-	958	-	481	822
Stage 1	-	-	-	-	935	-
Stage 2	-	-	-	-	892	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	958	-	481	822
Mov Cap-2 Maneuver	-	-	-	-	481	-
Stage 1	-	-	-	-	935	-
Stage 2	-	-	-	-	892	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	12.8
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	481	-	-	958	-
HCM Lane V/C Ratio	0.037	-	-	-	-
HCM Control Delay (s)	12.8	-	-	0	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0	-



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	24	43	13	4	6	3	2	22	2	12	30	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	10	10	10	10	10	13	13	13	16	16	16
Grade (%)		-3%			2%			1%			-2%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (ft)	75			75			75			75		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.978			0.969			0.991			0.944	
Flt Protected		0.985			0.984			0.997			0.992	
Satd. Flow (prot)	0	1663	0	0	1551	0	0	1588	0	0	1873	0
Flt Permitted		0.985			0.984			0.997			0.992	
Satd. Flow (perm)	0	1663	0	0	1551	0	0	1588	0	0	1873	0
Link Speed (mph)		35			25			25			25	
Link Distance (ft)		1453			774			205			154	
Travel Time (s)		28.3			21.1			5.6			4.2	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	5%	0%	17%	25%	0%	0%	0%	25%	0%	0%	13%	8%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	40	72	22	7	10	5	3	37	3	20	50	50
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	134	0	0	22	0	0	43	0	0	120	0
Sign Control		Stop			Stop			Free			Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	5.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	24	43	13	4	6	3	2	22	2	12	30	30
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, %	-	-3	-	-	2	-	-	1	-	-	-2	-
Peak Hour Factor	60	60	60	60	60	60	60	60	60	60	60	60
Heavy Vehicles, %	5	0	17	25	0	0	0	25	0	0	13	8
Mvmt Flow	40	72	22	7	10	5	3	37	3	20	50	50

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	168	162	75	207	185	38	100	0	0	40	0	0
Stage 1	115	115	-	45	45	-	-	-	-	-	-	-
Stage 2	53	47	-	162	140	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.3	-	-	4.3	-	-
Critical Hdwy Stg 1	5.55	4.9	-	6.75	5.9	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.55	4.9	-	6.75	5.9	-	-	-	-	-	-	-
Follow-up Hdwy	3	4	3.1	3	4	3.1	3	-	-	3	-	-
Pot Cap-1 Maneuver	923	734	1054	869	713	1106	1110	-	-	1163	-	-
Stage 1	1054	820	-	1124	857	-	-	-	-	-	-	-
Stage 2	1130	866	-	947	773	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	894	719	1054	774	698	1106	1110	-	-	1163	-	-
Mov Cap-2 Maneuver	894	719	-	774	698	-	-	-	-	-	-	-
Stage 1	1051	805	-	1121	854	-	-	-	-	-	-	-
Stage 2	1108	863	-	830	759	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	10.3	9.7	0.6	1.4
HCM LOS	B	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1110	-	-	808	789	1163	-	-
HCM Lane V/C Ratio	0.003	-	-	0.165	0.027	0.017	-	-
HCM Control Delay (s)	8.3	0	-	10.3	9.7	8.2	0	-
HCM Lane LOS	A	A	-	B	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.6	0.1	0.1	-	-

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	18	172	32	19	224	34	21	19	9	66	21	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	11	11	11	16	16	16	11	11	11
Grade (%)		-2%			2%			2%			-1%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (ft)	75			75			75			75		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.980			0.984			0.975			0.958	
Flt Protected		0.996			0.997			0.979			0.975	
Satd. Flow (prot)	0	1627	0	0	1735	0	0	1475	0	0	1643	0
Flt Permitted		0.996			0.997			0.979			0.975	
Satd. Flow (perm)	0	1627	0	0	1735	0	0	1475	0	0	1643	0
Link Speed (mph)		50			50			25			50	
Link Distance (ft)		832			852			184			234	
Travel Time (s)		11.3			11.6			5.0			3.2	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	9%	30%	6%	3%	0%	55%	27%	20%	3%	5%	8%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	20	193	36	21	252	38	24	21	10	74	24	45
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	249	0	0	311	0	0	55	0	0	143	0
Sign Control		Free			Free			Stop			Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	4.3

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Vol, veh/h	18	172	32	19	224	34	21	19	9	66	21	40
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	-2	-	-	2	-	-	2	-	-	-1	-
Peak Hour Factor	89	89	89	89	89	89	89	89	89	89	89	89
Heavy Vehicles, %	0	9	30	6	3	0	55	27	20	3	5	8
Mvmt Flow	20	193	36	21	252	38	24	21	10	74	24	45

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	290	0	0	229	0	0	600	585	211	580	583	271
Stage 1	-	-	-	-	-	-	252	252	-	313	313	-
Stage 2	-	-	-	-	-	-	348	333	-	267	270	-
Critical Hdwy	4.3	-	-	4.3	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	7.05	6.17	-	5.93	5.35	-
Critical Hdwy Stg 2	-	-	-	-	-	-	7.05	6.17	-	5.93	5.35	-
Follow-up Hdwy	3	-	-	3	-	-	3	4	3.1	3	4.045	3.1
Pot Cap-1 Maneuver	955	-	-	1003	-	-	467	426	883	482	423	816
Stage 1	-	-	-	-	-	-	812	670	-	814	663	-
Stage 2	-	-	-	-	-	-	699	608	-	862	691	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	955	-	-	1003	-	-	406	405	883	441	403	816
Mov Cap-2 Maneuver	-	-	-	-	-	-	406	405	-	441	403	-
Stage 1	-	-	-	-	-	-	793	654	-	794	646	-
Stage 2	-	-	-	-	-	-	620	593	-	805	674	-

Approach	SE	NW	NE	SW
HCM Control Delay, s	0.7	0.6	14.1	14.9
HCM LOS			B	B

Minor Lane/Major Mvmt	NELn1	NWL	NWT	NWR	SEL	SET	SER	SWLn1
Capacity (veh/h)	450	1003	-	-	955	-	-	506
HCM Lane V/C Ratio	0.122	0.021	-	-	0.021	-	-	0.282
HCM Control Delay (s)	14.1	8.7	0	-	8.9	0	-	14.9
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.4	0.1	-	-	0.1	-	-	1.1

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Volume (vph)	1	1	41	4	0	0	0	255	0	15	261	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	10	10	9	9	9	11	11	11	11	11	11
Grade (%)		1%			-1%			-3%			0%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (ft)	75			75			75			75		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.871										
Flt Protected		0.999			0.950						0.997	
Satd. Flow (prot)	0	1535	0	0	1306	0	0	1742	0	0	1784	0
Flt Permitted		0.999			0.950						0.997	
Satd. Flow (perm)	0	1535	0	0	1306	0	0	1742	0	0	1784	0
Link Speed (mph)		25			25			50			50	
Link Distance (ft)		172			263			852			367	
Travel Time (s)		4.7			7.2			11.6			5.0	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	0%	0%	25%	0%	0%	0%	7%	0%	14%	2%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	1	1	43	4	0	0	0	266	0	16	272	1
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	45	0	0	4	0	0	266	0	0	289	0
Sign Control		Stop			Stop			Free			Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

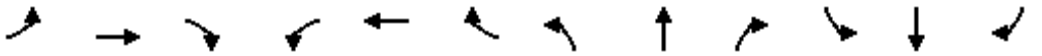
Intersection	
Int Delay, s/veh	1.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Vol, veh/h	1	1	41	4	0	0	0	255	0	15	261	1
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, %	-	1	-	-	-1	-	-	-3	-	-	0	-
Peak Hour Factor	96	96	96	96	96	96	96	96	96	96	96	96
Heavy Vehicles, %	0	0	0	25	0	0	0	7	0	14	2	0
Mvmt Flow	1	1	43	4	0	0	0	266	0	16	272	1

Major/Minor	Minor1			Minor2			Major1			Major2		
Conflicting Flow All	570	570	266	592	570	272	273	0	0	266	0	0
Stage 1	266	266	-	304	304	-	-	-	-	-	-	-
Stage 2	304	304	-	288	266	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.3	-	-	4.3	-	-
Critical Hdwy Stg 1	6.3	5.7	-	6.15	5.3	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.3	5.7	-	6.15	5.3	-	-	-	-	-	-	-
Follow-up Hdwy	3	4	3.1	3	4	3.1	3	-	-	3	-	-
Pot Cap-1 Maneuver	490	434	822	473	434	815	968	-	-	974	-	-
Stage 1	840	682	-	808	678	-	-	-	-	-	-	-
Stage 2	798	655	-	825	703	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	483	426	822	441	426	815	968	-	-	974	-	-
Mov Cap-2 Maneuver	483	426	-	441	426	-	-	-	-	-	-	-
Stage 1	840	682	-	808	665	-	-	-	-	-	-	-
Stage 2	783	643	-	781	703	-	-	-	-	-	-	-

Approach	EB	WB	SE	NW
HCM Control Delay, s	9.8	13.2	0	0.5
HCM LOS	A	B		

Minor Lane/Major Mvmt	NWL	NWT	NWR	EBLn1	WBLn1	SEL	SET	SER
Capacity (veh/h)	974	-	-	792	441	968	-	-
HCM Lane V/C Ratio	0.016	-	-	0.057	0.009	-	-	-
HCM Control Delay (s)	8.8	0	-	9.8	13.2	0	-	-
HCM Lane LOS	A	A	-	A	B	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.2	0	0	-	-



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	74	304	20	124	301	74	0	0	110	19	10	29
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	13	12	12	12	12	12	12	12
Grade (%)		-1%			1%			-3%			0%	
Storage Length (ft)	125		0	125		125	0		0	0		100
Storage Lanes	1		0	1		1	0		1	0		1
Taper Length (ft)	75			60			75			75		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.991				0.850			0.865			0.850
Flt Protected	0.950			0.950							0.968	
Satd. Flow (prot)	1778	1720	0	1633	1860	1575	0	0	1530	0	1803	1583
Flt Permitted	0.950			0.950							0.968	
Satd. Flow (perm)	1778	1720	0	1633	1860	1575	0	0	1530	0	1803	1583
Link Speed (mph)		35			35			25			35	
Link Distance (ft)		496			348			387			241	
Travel Time (s)		9.7			6.8			10.6			4.7	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.90	0.82	0.82	0.82	0.82	0.90	0.82	0.90	0.82	0.90	0.90	0.90
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	8%	41%	10%	5%	2%	0%	2%	9%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	82	371	24	151	367	82	0	0	134	21	11	32
Shared Lane Traffic (%)												
Lane Group Flow (vph)	82	395	0	151	367	82	0	0	134	0	32	32
Sign Control		Free			Free			Stop			Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	3.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	74	304	20	124	301	74	0	0	110	19	10	29
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	Yield	-	-	Yield
Storage Length	125	-	-	125	-	125	-	-	0	-	-	100
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	1	-
Grade, %	-	-1	-	-	1	-	-	-3	-	-	0	-
Peak Hour Factor	90	82	82	82	82	90	82	90	82	90	90	90
Heavy Vehicles, %	2	8	41	10	5	2	0	2	9	2	2	2
Mvmt Flow	82	371	24	151	367	82	0	0	134	21	11	32

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	367	0	0	395	0	0	1222	1217	383	1217	1230	367
Stage 1	-	-	-	-	-	-	547	547	-	670	670	-
Stage 2	-	-	-	-	-	-	675	670	-	547	560	-
Critical Hdwy	4.12	-	-	4.3	-	-	7.1	5.92	6.2	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	5.5	4.92	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.5	4.92	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	3	-	-	3	4.018	3.1	3.518	4.018	3.318
Pot Cap-1 Maneuver	1192	-	-	879	-	-	172	221	705	158	178	678
Stage 1	-	-	-	-	-	-	648	567	-	446	455	-
Stage 2	-	-	-	-	-	-	559	509	-	521	511	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1192	-	-	879	-	-	130	170	705	105	137	678
Mov Cap-2 Maneuver	-	-	-	-	-	-	254	260	-	183	221	-
Stage 1	-	-	-	-	-	-	603	528	-	415	377	-
Stage 2	-	-	-	-	-	-	428	422	-	393	476	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.4	2.5	11.3	18.9
HCM LOS			B	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	705	1192	-	-	879	-	-	195	678
HCM Lane V/C Ratio	0.19	0.069	-	-	0.172	-	-	0.165	0.048
HCM Control Delay (s)	11.3	8.2	-	-	9.9	-	-	27.1	10.6
HCM Lane LOS	B	A	-	-	A	-	-	D	B
HCM 95th %tile Q(veh)	0.7	0.2	-	-	0.6	-	-	0.6	0.1

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	262	170	0	339	245	27	0	91	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	11	12	12	12	12	12	12	12	12	12
Grade (%)		-1%			-1%			-4%			-2%	
Storage Length (ft)	0		0	0		115	0		0	0		0
Storage Lanes	0		1	0		1	0		0	0		0
Taper Length (ft)	75			75			75			75		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt			0.850			0.850		0.896				
Flt Protected								0.989				
Satd. Flow (prot)	0	1768	1439	0	1785	1546	0	1290	0	0	0	0
Flt Permitted								0.989				
Satd. Flow (perm)	0	1768	1439	0	1785	1546	0	1290	0	0	0	0
Link Speed (mph)		45			45			25			25	
Link Distance (ft)		758			636			290			200	
Travel Time (s)		11.5			9.6			7.9			5.5	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	8%	9%	0%	7%	5%	47%	0%	29%	0%	0%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	0	282	183	0	365	263	29	0	98	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	282	183	0	365	263	0	127	0	0	0	0
Sign Control		Free			Free			Stop			Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	1.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	0	262	170	0	339	245	27	0	91	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	Free	-	-	None	-	-	None	-	-	None
Storage Length	-	-	0	-	-	115	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	0	-
Grade, %	-	-1	-	-	-1	-	-	-4	-	-	-2	-
Peak Hour Factor	93	93	93	93	93	93	93	93	93	93	93	93
Heavy Vehicles, %	0	8	9	0	7	5	47	0	29	0	0	0
Mvmt Flow	0	282	183	0	365	263	29	0	98	0	0	0

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	365	0	-	282	0	0	647	647	282
Stage 1	-	-	-	-	-	-	282	282	-
Stage 2	-	-	-	-	-	-	365	365	-
Critical Hdwy	4.3	-	-	4.3	-	-	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	5.07	4.7	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.07	4.7	-
Follow-up Hdwy	3	-	-	3	-	-	3	4	3.1
Pot Cap-1 Maneuver	900	-	0	961	-	-	433	392	805
Stage 1	-	-	0	-	-	-	905	725	-
Stage 2	-	-	0	-	-	-	832	680	-
Platoon blocked, %		-			-	-			
Mov Cap-1 Maneuver	900	-	-	961	-	-	433	0	805
Mov Cap-2 Maneuver	-	-	-	-	-	-	593	0	-
Stage 1	-	-	-	-	-	-	905	0	-
Stage 2	-	-	-	-	-	-	832	0	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	10.8
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	WBL	WBT	WBR
Capacity (veh/h)	744	900	-	961	-	-
HCM Lane V/C Ratio	0.171	-	-	-	-	-
HCM Control Delay (s)	10.8	0	-	0	-	-
HCM Lane LOS	B	A	-	A	-	-
HCM 95th %tile Q(veh)	0.6	0	-	0	-	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	3	0	31	0	0	0	27	376	1	0	651	13
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	13	13	13	12	12	12	12	12	11	11	11	11
Grade (%)		3%			2%			0%			1%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (ft)	75			75			75			75		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.876									0.997	
Flt Protected		0.996						0.997				
Satd. Flow (prot)	0	1546	0	0	1881	0	0	3265	0	0	1734	0
Flt Permitted		0.996						0.997				
Satd. Flow (perm)	0	1546	0	0	1881	0	0	3265	0	0	1734	0
Link Speed (mph)		40			35			45			45	
Link Distance (ft)		499			348			586			796	
Travel Time (s)		8.5			6.8			8.9			12.1	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	0%	10%	0%	0%	0%	0%	11%	0%	0%	5%	8%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	3	0	33	0	0	0	29	404	1	0	700	14
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	36	0	0	0	0	0	434	0	0	714	0
Sign Control		Stop			Stop			Free			Free	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

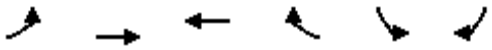
Intersection	
Int Delay, s/veh	0.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Vol, veh/h	3	0	31	0	0	0	27	376	1	0	651	13
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, %	-	3	-	-	2	-	-	0	-	-	1	-
Peak Hour Factor	93	93	93	93	93	93	93	93	93	93	93	93
Heavy Vehicles, %	0	0	10	0	0	0	0	11	0	0	5	8
Mvmt Flow	3	0	33	0	0	0	29	404	1	0	700	14

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	967	1170	707	1187	1177	203	714	0	0	405	0	0
Stage 1	707	707	-	463	463	-	-	-	-	-	-	-
Stage 2	260	463	-	724	714	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.3	-	-	4.3	-	-
Critical Hdwy Stg 1	6.7	6.1	-	6.9	5.9	-	-	-	-	-	-	-
Critical Hdwy Stg 2	7.1	6.1	-	6.5	5.9	-	-	-	-	-	-	-
Follow-up Hdwy	3	4	3.1	3	4	3.1	3	-	-	3	-	-
Pot Cap-1 Maneuver	260	195	459	182	193	892	679	-	-	872	-	-
Stage 1	426	392	-	595	539	-	-	-	-	-	-	-
Stage 2	799	525	-	432	405	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	249	184	459	162	182	892	679	-	-	872	-	-
Mov Cap-2 Maneuver	249	184	-	162	182	-	-	-	-	-	-	-
Stage 1	403	392	-	562	509	-	-	-	-	-	-	-
Stage 2	755	496	-	401	405	-	-	-	-	-	-	-

Approach	EB	WB	NE	SW
HCM Control Delay, s	14.2	0	1	0
HCM LOS	B	A		

Minor Lane/Major Mvmt	NEL	NET	NER	EBLn1	WBLn1	SWL	SWT	SWR
Capacity (veh/h)	679	-	-	427	-	872	-	-
HCM Lane V/C Ratio	0.043	-	-	0.086	-	-	-	-
HCM Control Delay (s)	10.5	0.3	-	14.2	0	0	-	-
HCM Lane LOS	B	A	-	B	A	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0.3	-	0	-	-



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	17	400	686	12	15	45
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	11	11	11	12	12
Grade (%)		1%	0%		1%	
Storage Length (ft)	60			0	0	0
Storage Lanes	1			0	1	0
Taper Length (ft)	140				75	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt			0.998		0.898	
Flt Protected	0.950				0.988	
Satd. Flow (prot)	1676	1661	1742	0	1492	0
Flt Permitted	0.950				0.988	
Satd. Flow (perm)	1676	1661	1742	0	1492	0
Link Speed (mph)		45	45		45	
Link Distance (ft)		796	771		413	
Travel Time (s)		12.1	11.7		6.3	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	10%	5%	18%	29%	7%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)		0%	0%		0%	
Adj. Flow (vph)	20	460	789	14	17	52
Shared Lane Traffic (%)						
Lane Group Flow (vph)	20	460	803	0	69	0
Sign Control		Free	Free		Stop	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

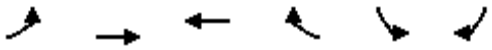
Intersection	
Int Delay, s/veh	1.3

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Vol, veh/h	17	400	686	12	15	45
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	60	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	1	0	-	1	-
Peak Hour Factor	87	87	87	87	87	87
Heavy Vehicles, %	0	10	5	18	29	7
Mvmt Flow	20	460	789	14	17	52

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	802	0	-	0	1294	795
Stage 1	-	-	-	-	795	-
Stage 2	-	-	-	-	499	-
Critical Hdwy	4.3	-	-	-	7.1	6.2
Critical Hdwy Stg 1	-	-	-	-	5.89	-
Critical Hdwy Stg 2	-	-	-	-	5.89	-
Follow-up Hdwy	3	-	-	-	3	3.1
Pot Cap-1 Maneuver	631	-	-	-	153	408
Stage 1	-	-	-	-	447	-
Stage 2	-	-	-	-	648	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	631	-	-	-	148	408
Mov Cap-2 Maneuver	-	-	-	-	148	-
Stage 1	-	-	-	-	447	-
Stage 2	-	-	-	-	627	-

Approach	EB	WB	SB
HCM Control Delay, s	0.4	0	21.8
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	631	-	-	-	283
HCM Lane V/C Ratio	0.031	-	-	-	0.244
HCM Control Delay (s)	10.9	-	-	-	21.8
HCM Lane LOS	B	-	-	-	C
HCM 95th %tile Q(veh)	0.1	-	-	-	0.9



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	0	433	370	0	0	129
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	13	13	13	13
Grade (%)		-1%	1%		-2%	
Storage Length (ft)	0			0	0	0
Storage Lanes	0			0	0	1
Taper Length (ft)	75				75	
Lane Util. Factor	1.00	0.95	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt						0.865
Flt Protected						
Satd. Flow (prot)	0	3359	1860	0	0	1665
Flt Permitted						
Satd. Flow (perm)	0	3359	1860	0	0	1665
Link Speed (mph)		35	35		25	
Link Distance (ft)		348	758		364	
Travel Time (s)		6.8	14.8		9.9	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	8%	5%	0%	0%	3%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)		0%	0%		0%	
Adj. Flow (vph)	0	528	451	0	0	157
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	528	451	0	0	157
Sign Control		Free	Free		Stop	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

Intersection	
Int Delay, s/veh	1.7

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Vol, veh/h	0	433	370	0	0	129
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	Stop
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	1	-
Grade, %	-	-1	1	-	-2	-
Peak Hour Factor	82	82	82	82	82	82
Heavy Vehicles, %	0	8	5	0	0	3
Mvmt Flow	0	528	451	0	0	157

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	451	0	-	0	715	451
Stage 1	-	-	-	-	451	-
Stage 2	-	-	-	-	264	-
Critical Hdwy	4.3	-	-	-	7.1	6.2
Critical Hdwy Stg 1	-	-	-	-	5	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	3	-	-	-	3	3.1
Pot Cap-1 Maneuver	840	-	-	-	389	644
Stage 1	-	-	-	-	769	-
Stage 2	-	-	-	-	900	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	840	-	-	-	389	644
Mov Cap-2 Maneuver	-	-	-	-	554	-
Stage 1	-	-	-	-	769	-
Stage 2	-	-	-	-	900	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	12.4
HCM LOS			B

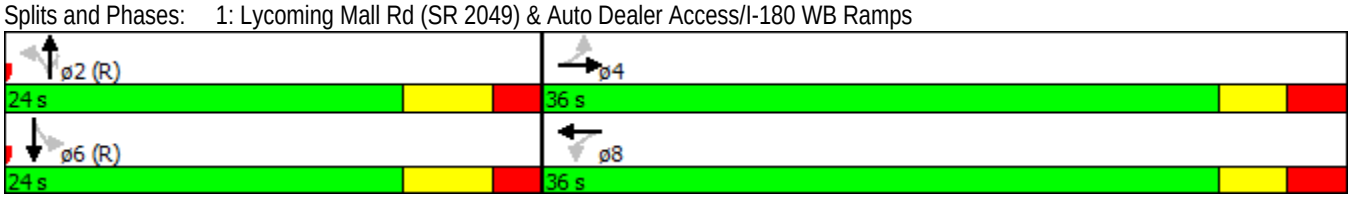
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	840	-	-	-	644
HCM Lane V/C Ratio	-	-	-	-	0.244
HCM Control Delay (s)	0	-	-	-	12.4
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	1

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	2	23	26	131	6	24	14	58	420	11	56	1
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	13	13	13	15	15	15	12	12	16	12	12	12
Grade (%)		2%			4%			1%			-1%	
Storage Length (ft)	0		100	0		0	0		0	0		375
Storage Lanes	0		0	0		0	0		1	0		1
Taper Length (ft)	75			75			75			75		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95
Ped Bike Factor												
Frt		0.931			0.980				0.850		0.998	
Flt Protected		0.998			0.961			0.990			0.992	
Satd. Flow (prot)	0	1711	0	0	1815	0	0	1773	1725	0	3348	0
Flt Permitted		0.987			0.729			0.960			0.927	
Satd. Flow (perm)	0	1692	0	0	1377	0	0	1719	1725	0	3128	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		28			22				457		1	
Link Speed (mph)		25			25			40			40	
Link Distance (ft)		187			334			1105			689	
Travel Time (s)		5.1			9.1			18.8			11.7	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
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
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	0%	0%	0%	17%	0%	0%	0%	0%	0%	2%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	2	25	28	142	7	26	15	63	457	12	61	1
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	55	0	0	175	0	0	78	457	0	74	0
Number of Detectors	1	1		1	1		1	1	0	1	1	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left		
Leading Detector (ft)	30	40		30	45		30	45	0	30	45	
Trailing Detector (ft)	-10	-10		-10	-5		-10	-5	0	-10	-5	
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2		2	6		
Detector Phase	4	4		8	8		2	2	2	6	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	10.8	10.8		10.8	10.8		11.2	11.2	11.2	11.2	11.2	
Total Split (s)	36.0	36.0		36.0	36.0		24.0	24.0	24.0	24.0	24.0	
Total Split (%)	60.0%	60.0%		60.0%	60.0%		40.0%	40.0%	40.0%	40.0%	40.0%	
Maximum Green (s)	30.2	30.2		30.2	30.2		17.8	17.8	17.8	17.8	17.8	
Yellow Time (s)	3.0	3.0		3.0	3.0		4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	2.8	2.8		2.8	2.8		2.2	2.2	2.2	2.2	2.2	
Lost Time Adjust (s)		-1.0			-1.0			-1.0	-1.0		-1.0	
Total Lost Time (s)		4.8			4.8			5.2	5.2		5.2	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Minimum Gap (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Time Before Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Time To Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Recall Mode	None	None		None	None		C-Min	C-Min	C-Min	C-Min	C-Min	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
v/c Ratio		0.13			0.51			0.07	0.35		0.04	
Control Delay		10.4			21.8			5.7	1.2		6.3	
Queue Delay		0.0			0.0			0.0	0.0		0.0	
Total Delay		10.4			21.8			5.7	1.2		6.3	
Queue Length 50th (ft)		8			48			10	0		4	
Queue Length 95th (ft)		27			87			30	46		15	
Internal Link Dist (ft)		107			254			1025			609	
Turn Bay Length (ft)												
Base Capacity (vph)		893			726			1134	1293		2063	
Starvation Cap Reductn		0			0			0	0		0	
Spillback Cap Reductn		0			0			0	0		0	
Storage Cap Reductn		0			0			0	0		0	
Reduced v/c Ratio		0.06			0.24			0.07	0.35		0.04	

Intersection Summary	
Area Type:	Other
Cycle Length: 60	
Actuated Cycle Length: 60	
Offset: 55 (92%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	
Natural Cycle: 40	
Control Type: Actuated-Coordinated	

Splits and Phases: 1: Lycoming Mall Rd (SR 2049) & Auto Dealer Access/I-180 WB Ramps



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	2	23	26	131	6	24	14	58	420	11	56	1
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	1853	1853	1853	1835	1822	1835	1791	1791	1863	1809	1780	1809
Adj Flow Rate, veh/h	2	25	15	142	7	15	15	63	165	12	61	0
Adj No. of Lanes	0	1	0	0	1	0	0	1	1	0	2	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	17	17	17	0	0	0	2	2	2
Cap, veh/h	67	184	105	325	13	23	241	966	1052	353	1783	0
Arrive On Green	0.15	0.17	0.15	0.15	0.17	0.15	0.65	0.66	0.66	0.65	0.66	0.00
Sat Flow, veh/h	26	1091	620	1264	76	135	255	1454	1583	414	2763	0
Grp Volume(v), veh/h	42	0	0	164	0	0	78	0	165	39	34	0
Grp Sat Flow(s),veh/h/ln	1737	0	0	1475	0	0	1709	0	1583	1557	1539	0
Q Serve(g_s), s	0.0	0.0	0.0	5.0	0.0	0.0	0.0	0.0	2.3	0.0	0.5	0.0
Cycle Q Clear(g_c), s	1.2	0.0	0.0	6.3	0.0	0.0	0.9	0.0	2.3	0.5	0.5	0.0
Prop In Lane	0.05		0.36	0.87		0.09	0.19		1.00	0.31		0.00
Lane Grp Cap(c), veh/h	327	0	0	336	0	0	1179	0	1052	1088	1023	0
V/C Ratio(X)	0.13	0.00	0.00	0.49	0.00	0.00	0.07	0.00	0.16	0.04	0.03	0.00
Avail Cap(c_a), veh/h	932	0	0	839	0	0	1179	0	1052	1088	1023	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	0.00	1.00	0.00	0.00	0.92	0.00	0.92	1.00	1.00	0.00
Uniform Delay (d), s/veh	21.4	0.0	0.0	23.7	0.0	0.0	3.6	0.0	3.8	3.5	3.4	0.0
Incr Delay (d2), s/veh	0.3	0.0	0.0	1.6	0.0	0.0	0.1	0.0	0.3	0.1	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	1.1	0.0	0.0	5.0	0.0	0.0	0.9	0.0	2.0	0.5	0.4	0.0
LnGrp Delay(d),s/veh	21.7	0.0	0.0	25.3	0.0	0.0	3.7	0.0	4.1	3.6	3.5	0.0
LnGrp LOS	C			C			A		A	A	A	
Approach Vol, veh/h		42			164			243			73	
Approach Delay, s/veh		21.7			25.3			3.9			3.5	
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		45.1		14.9		45.1		14.9
Change Period (Y+Rc), s		* 6.2		* 5.8		* 6.2		* 5.8
Max Green Setting (Gmax), s		* 18		* 30		* 18		* 30
Max Q Clear Time (g_c+I1), s		2.9		3.2		3.0		8.3
Green Ext Time (p_c), s		0.3		1.2		0.3		1.1

Intersection Summary	
HCM 2010 Ctrl Delay	12.0
HCM 2010 LOS	B

Notes

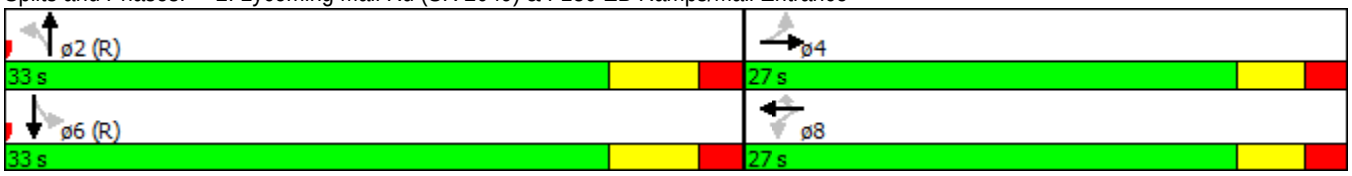
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	44	278	118	77	55	323	42	125	74	85	97	31
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	12	11	12	12	12	12	12	12	12	12
Grade (%)		2%			2%			-2%			-3%	
Storage Length (ft)	0		0	0		0	135		0	0		0
Storage Lanes	0		0	1		1	1		0	1		0
Taper Length (ft)	75			75			75			75		
Lane Util. Factor	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.960				0.850		0.944			0.964	
Flt Protected		0.995		0.950			0.950			0.950		
Satd. Flow (prot)	0	3182	0	1604	1713	1515	1645	1693	0	1736	1736	0
Flt Permitted		0.921		0.385			0.667			0.622		
Satd. Flow (perm)	0	2945	0	650	1713	1515	1155	1693	0	1136	1736	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		102				355		67			34	
Link Speed (mph)		25			25			40			40	
Link Distance (ft)		279			408			2572			1105	
Travel Time (s)		7.6			11.1			43.8			18.8	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	3%	0%	5%	2%	4%	0%	5%	1%	2%	0%	1%	3%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	48	305	130	85	60	355	46	137	81	93	107	34
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	483	0	85	60	355	46	218	0	93	141	0
Number of Detectors	1	1		1	1	0	1	1		1	1	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (ft)	30	45		45	45	0	45	45		45	45	
Trailing Detector (ft)	-10	-5		-5	-5	0	-5	-5		-5	-5	
Turn Type	Perm	NA		Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8		8	2			6		
Detector Phase	4	4		8	8	8	2	2		6	6	
Switch Phase												
Minimum Initial (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Minimum Split (s)	7.0	7.0		7.0	7.0	7.0	8.0	8.0		8.0	8.0	
Total Split (s)	27.0	27.0		27.0	27.0	27.0	33.0	33.0		33.0	33.0	
Total Split (%)	45.0%	45.0%		45.0%	45.0%	45.0%	55.0%	55.0%		55.0%	55.0%	
Maximum Green (s)	22.0	22.0		22.0	22.0	22.0	27.0	27.0		27.0	27.0	
Yellow Time (s)	3.0	3.0		3.0	3.0	3.0	4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		-1.0		-1.0	-1.0	-1.0	-1.0	-1.0		-1.0	-1.0	
Total Lost Time (s)		4.0		4.0	4.0	4.0	5.0	5.0		5.0	5.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Minimum Gap (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Time Before Reduce (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Time To Reduce (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Recall Mode	Min	Min		Min	Min	Min	C-Max	C-Max		C-Max	C-Max	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
v/c Ratio		0.55		0.48	0.13	0.53	0.07	0.22		0.14	0.14	
Control Delay		16.1		26.0	15.0	5.0	7.8	6.0		5.3	3.3	
Queue Delay		0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay		16.1		26.0	15.0	5.0	7.8	6.0		5.3	3.3	
Queue Length 50th (ft)		60		26	16	0	6	22		5	2	
Queue Length 95th (ft)		83		54	34	44	24	65		27	7	
Internal Link Dist (ft)		199			328			2492			1025	
Turn Bay Length (ft)							135					
Base Capacity (vph)		1191		249	656	799	664	1002		654	1013	
Starvation Cap Reductn		0		0	0	0	0	0		0	0	
Spillback Cap Reductn		0		0	0	0	0	0		0	0	
Storage Cap Reductn		0		0	0	0	0	0		0	0	
Reduced v/c Ratio		0.41		0.34	0.09	0.44	0.07	0.22		0.14	0.14	

Intersection Summary	
Area Type:	Other
Cycle Length: 60	
Actuated Cycle Length: 60	
Offset: 40 (67%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	
Natural Cycle: 40	
Control Type: Actuated-Coordinated	

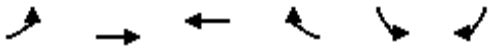
Splits and Phases: 2: Lycoming Mall Rd (SR 2049) & I-180 EB Ramps/Mall Entrance



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	44	278	118	77	55	323	42	125	74	85	97	31
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	1782	1753	1782	1747	1713	1782	1731	1793	1818	1827	1800	1827
Adj Flow Rate, veh/h	48	305	64	85	60	0	46	137	51	93	107	18
Adj No. of Lanes	0	2	0	1	1	1	1	1	0	1	1	0
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	0	0	0	2	4	0	5	1	1	0	1	1
Cap, veh/h	137	673	136	294	469	415	833	718	267	775	866	146
Arrive On Green	0.26	0.27	0.26	0.27	0.27	0.00	0.58	0.58	0.56	0.96	0.96	0.93
Sat Flow, veh/h	232	2457	497	999	1713	1515	1237	1247	464	1233	1503	253
Grp Volume(v), veh/h	223	0	194	85	60	0	46	0	188	93	0	125
Grp Sat Flow(s),veh/h/ln	1679	0	1508	999	1713	1515	1237	0	1711	1233	0	1756
Q Serve(g_s), s	1.2	0.0	6.5	4.6	1.6	0.0	1.0	0.0	3.2	0.6	0.0	0.2
Cycle Q Clear(g_c), s	6.5	0.0	6.5	10.6	1.6	0.0	1.0	0.0	3.2	3.3	0.0	0.2
Prop In Lane	0.22		0.33	1.00		1.00	1.00		0.27	1.00		0.14
Lane Grp Cap(c), veh/h	505	0	413	294	469	415	833	0	986	775	0	1011
V/C Ratio(X)	0.44	0.00	0.47	0.29	0.13	0.00	0.06	0.00	0.19	0.12	0.00	0.12
Avail Cap(c_a), veh/h	684	0	578	404	657	581	833	0	986	775	0	1011
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.67	1.67	1.67
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	18.2	0.0	18.3	22.3	16.4	0.0	5.6	0.0	6.1	0.7	0.0	0.5
Incr Delay (d2), s/veh	0.9	0.0	1.2	0.8	0.2	0.0	0.1	0.0	0.4	0.3	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(95%),veh/ln	6.0	0.0	5.0	2.4	1.4	0.0	0.7	0.0	2.9	0.4	0.0	0.3
LnGrp Delay(d),s/veh	19.1	0.0	19.5	23.1	16.6	0.0	5.7	0.0	6.6	1.0	0.0	0.8
LnGrp LOS	B		B	C	B		A		A	A		A
Approach Vol, veh/h		417			145			234			218	
Approach Delay, s/veh		19.3			20.4			6.4			0.9	
Approach LOS		B			C			A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		39.6		20.4		39.6		20.4
Change Period (Y+Rc), s		6.0		5.0		6.0		5.0
Max Green Setting (Gmax), s		27.0		22.0		27.0		22.0
Max Q Clear Time (g_c+I1), s		5.2		8.5		5.8		13.1
Green Ext Time (p_c), s		2.6		3.0		2.6		2.4

Intersection Summary	
HCM 2010 Ctrl Delay	12.5
HCM 2010 LOS	B

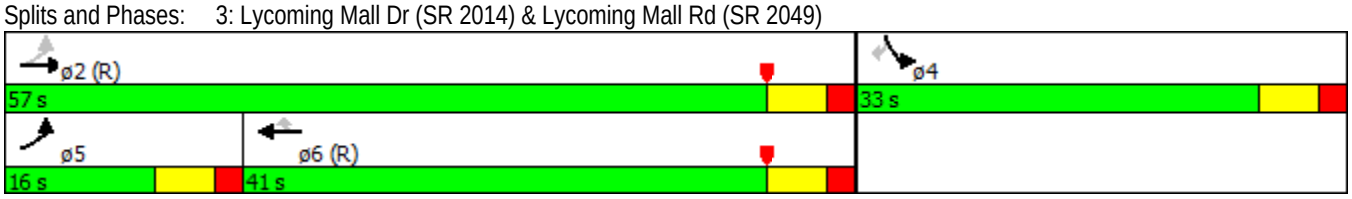


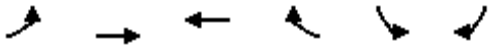
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	69	521	466	52	114	117
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	12	12	12	12
Grade (%)		-1%	1%		-2%	
Storage Length (ft)	165			215	165	0
Storage Lanes	1			1	1	1
Taper Length (ft)	125				75	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt				0.850		0.850
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1719	1774	1756	1522	1645	1486
Flt Permitted	0.352				0.950	
Satd. Flow (perm)	637	1774	1756	1522	1645	1486
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)				59		133
Link Speed (mph)		45	45		40	
Link Distance (ft)		727	1089		2572	
Travel Time (s)		11.0	16.5		43.8	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	2%	2%	0%	5%	4%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)		0%	0%		0%	
Adj. Flow (vph)	78	592	530	59	130	133
Shared Lane Traffic (%)						
Lane Group Flow (vph)	78	592	530	59	130	133
Number of Detectors	1	1	1	1	1	1
Detector Template	Left				Left	Right
Leading Detector (ft)	45	6	6	6	45	45
Trailing Detector (ft)	-5	0	0	0	-5	-5
Turn Type	pm+pt	NA	NA	Perm	Prot	Perm
Protected Phases	5	2	6		4	
Permitted Phases	2			6		4
Detector Phase	5				4	4
Switch Phase						
Minimum Initial (s)	3.0	15.0	15.0	15.0	5.0	5.0
Minimum Split (s)	9.0	21.0	21.0	21.0	11.0	11.0
Total Split (s)	16.0	57.0	41.0	41.0	33.0	33.0
Total Split (%)	17.8%	63.3%	45.6%	45.6%	36.7%	36.7%
Maximum Green (s)	10.0	51.0	35.0	35.0	27.0	27.0
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lead/Lag	Lead		Lag	Lag		
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	5.0	5.0	5.0	3.0	3.0
Minimum Gap (s)	3.0	2.0	2.0	2.0	3.0	3.0
Time Before Reduce (s)	0.0	42.0	42.0	42.0	0.0	0.0
Time To Reduce (s)	0.0	10.0	10.0	10.0	0.0	0.0
Recall Mode	None	C-Min	C-Min	C-Min	None	None
Walk Time (s)		7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)		14.0	14.0	14.0	14.0	14.0
Pedestrian Calls (#/hr)		0	0	0	0	0
v/c Ratio	0.14	0.45	0.49	0.06	0.53	0.40
Control Delay	4.5	6.5	13.0	3.1	42.2	9.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	4.5	6.5	13.0	3.1	42.2	9.6
Queue Length 50th (ft)	10	108	159	0	69	0
Queue Length 95th (ft)	26	200	282	17	115	44
Internal Link Dist (ft)		647	1009		2492	
Turn Bay Length (ft)	165			215	165	
Base Capacity (vph)	602	1310	1092	969	511	553
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.13	0.45	0.49	0.06	0.25	0.24

Intersection Summary	
Area Type:	Other
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 21 (23%), Referenced to phase 2:EBTL and 6:WBT, Start of Yellow	
Natural Cycle: 45	
Control Type: Actuated-Coordinated	

Splits and Phases: 3: Lycoming Mall Dr (SR 2014) & Lycoming Mall Rd (SR 2049)





Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	69	521	466	52	114	117
Number	5	2	6	16	7	14
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	1809	1774	1756	1791	1731	1748
Adj Flow Rate, veh/h	78	592	530	24	130	52
Adj No. of Lanes	1	1	1	1	1	1
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	0	2	2	0	5	4
Cap, veh/h	742	1365	1173	1017	197	177
Arrive On Green	0.05	0.77	1.00	1.00	0.12	0.12
Sat Flow, veh/h	1723	1774	1756	1522	1649	1486
Grp Volume(v), veh/h	78	592	530	24	130	52
Grp Sat Flow(s),veh/h/ln	1723	1774	1756	1522	1649	1486
Q Serve(g_s), s	1.1	10.4	0.0	0.0	6.8	2.9
Cycle Q Clear(g_c), s	1.1	10.4	0.0	0.0	6.8	2.9
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	742	1365	1173	1017	197	177
V/C Ratio(X)	0.11	0.43	0.45	0.02	0.66	0.29
Avail Cap(c_a), veh/h	873	1365	1173	1017	513	462
HCM Platoon Ratio	1.00	1.00	2.00	2.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.97	0.97
Uniform Delay (d), s/veh	3.2	3.6	0.0	0.0	37.9	36.2
Incr Delay (d2), s/veh	0.1	1.0	1.3	0.0	3.7	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.9	9.1	0.7	0.0	6.0	4.5
LnGrp Delay(d),s/veh	3.2	4.6	1.3	0.0	41.6	37.1
LnGrp LOS	A	A	A	A	D	D
Approach Vol, veh/h		670	554		182	
Approach Delay, s/veh		4.4	1.2		40.3	
Approach LOS		A	A		D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		74.3		15.7	9.2	65.1		
Change Period (Y+Rc), s		6.0		6.0	6.0	6.0		
Max Green Setting (Gmax), s		51.0		27.0	10.0	35.0		
Max Q Clear Time (g_c+I1), s		12.9		9.3	3.6	2.5		
Green Ext Time (p_c), s		10.3		0.6	0.1	9.9		

Intersection Summary	
HCM 2010 Ctrl Delay	7.8
HCM 2010 LOS	A

Notes

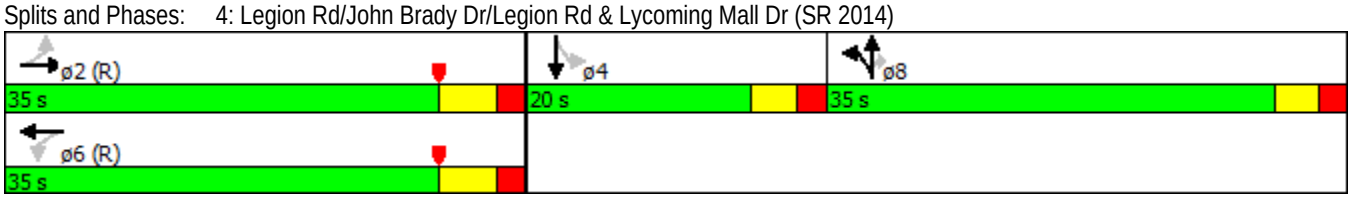
User approved pedestrian interval to be less than phase max green.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	6	301	0	46	236	6	310	2	66	13	8	6
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	12	13	13	13	12	12	12	14	14	14
Grade (%)		1%			-1%			-3%			0%	
Storage Length (ft)	1		0	275		0	0		0	0		0
Storage Lanes	0		0	1		0	1		1	0		0
Taper Length (ft)	75			75			75			75		
Lane Util. Factor	0.95	0.95	1.00	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt					0.997				0.850		0.968	
Flt Protected		0.999			0.992		0.950	0.953			0.977	
Satd. Flow (prot)	0	3312	0	0	3328	0	1633	1638	1451	0	1573	0
Flt Permitted		0.948			0.850		0.950	0.953			0.419	
Satd. Flow (perm)	0	3143	0	0	2851	0	1633	1638	1451	0	675	0
Right Turn on Red			Yes			Yes			Yes			No
Satd. Flow (RTOR)					3				97			
Link Speed (mph)		45			45			45			25	
Link Distance (ft)		326			418			206			301	
Travel Time (s)		4.9			6.3			3.1			8.2	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	33%	2%	0%	12%	4%	17%	1%	0%	7%	33%	0%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	7	334	0	51	262	7	344	2	73	14	9	7
Shared Lane Traffic (%)							50%					
Lane Group Flow (vph)	0	341	0	0	320	0	172	174	73	0	30	0
Number of Detectors	1	2		1	2		2	2	0	1	1	
Detector Template	Left			Left						Left	Thru	
Leading Detector (ft)	30	306		30	286		206	206	0	30	45	
Trailing Detector (ft)	-10	-5		-10	-5		-5	-5	0	-10	-5	
Turn Type	Perm	NA		Perm	NA		Split	NA	Perm	Perm	NA	
Protected Phases		2			6		8	8			4	
Permitted Phases	2			6					8	4		
Detector Phase	2	2		6	6		8	8	8	4	4	
Switch Phase												
Minimum Initial (s)	15.0	15.0		15.0	15.0		15.0	15.0	15.0	5.0	5.0	
Minimum Split (s)	21.0	21.0		21.0	21.0		20.0	20.0	20.0	10.0	10.0	
Total Split (s)	35.0	35.0		35.0	35.0		35.0	35.0	35.0	20.0	20.0	
Total Split (%)	38.9%	38.9%		38.9%	38.9%		38.9%	38.9%	38.9%	22.2%	22.2%	
Maximum Green (s)	29.0	29.0		29.0	29.0		30.0	30.0	30.0	15.0	15.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)		-1.0			-1.0		-1.0	-1.0	-1.0		-1.0	
Total Lost Time (s)		5.0			5.0		4.0	4.0	4.0		4.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	6.0	6.0		6.0	6.0		6.0	6.0	6.0	3.0	3.0	
Minimum Gap (s)	2.0	2.0		2.0	2.0		2.0	2.0	2.0	2.0	2.0	
Time Before Reduce (s)	40.0	40.0		40.0	40.0		40.0	40.0	40.0	0.0	0.0	
Time To Reduce (s)	20.0	20.0		20.0	20.0		20.0	20.0	20.0	0.0	0.0	
Recall Mode	C-Min	C-Min		C-Min	C-Min		None	None	None	None	None	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
v/c Ratio		0.19			0.20		0.44	0.44	0.17		0.34	
Control Delay		13.6			13.6		31.2	31.3	3.7		44.4	
Queue Delay		0.0			0.0		0.0	0.0	0.0		0.0	
Total Delay		13.6			13.6		31.2	31.3	3.7		44.4	
Queue Length 50th (ft)		32			30		89	90	0		16	
Queue Length 95th (ft)		115			109		130	131	19		40	
Internal Link Dist (ft)		246			338			126			221	
Turn Bay Length (ft)												
Base Capacity (vph)		1801			1635		562	564	563		123	
Starvation Cap Reductn		0			0		0	0	0		0	
Spillback Cap Reductn		0			0		0	0	0		0	
Storage Cap Reductn		0			0		0	0	0		0	
Reduced v/c Ratio		0.19			0.20		0.31	0.31	0.13		0.24	

Intersection Summary	
Area Type:	Other
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 41 (46%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow	
Natural Cycle: 55	
Control Type: Actuated-Coordinated	

Splits and Phases: 4: Legion Rd/John Brady Dr/Legion Rd & Lycoming Mall Dr (SR 2014)



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	6	301	0	46	236	6	310	2	66	13	8	6
Number	5	2	12	1	6	16	3	8	18	7	4	14
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	1791	1745	0	1881	1782	1881	1809	1809	1707	1872	1622	1872
Adj Flow Rate, veh/h	7	334	0	51	262	5	345	0	26	14	9	7
Adj No. of Lanes	0	2	0	0	2	0	2	0	1	0	1	0
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	0	4	4	4	1	0	7	0	0	0
Cap, veh/h	58	2002	0	320	1628	32	661	0	278	29	18	14
Arrive On Green	0.61	0.62	0.00	0.61	0.62	0.61	0.19	0.00	0.19	0.03	0.04	0.03
Sat Flow, veh/h	26	3291	0	428	2612	51	3446	0	1451	711	457	356
Grp Volume(v), veh/h	183	158	0	160	0	158	345	0	26	30	0	0
Grp Sat Flow(s),veh/h/ln	1729	1509	0	1478	0	1613	1723	0	1451	1524	0	0
Q Serve(g_s), s	0.0	4.0	0.0	0.0	0.0	3.7	8.1	0.0	1.3	1.7	0.0	0.0
Cycle Q Clear(g_c), s	4.0	4.0	0.0	4.5	0.0	3.7	8.1	0.0	1.3	1.7	0.0	0.0
Prop In Lane	0.04		0.00	0.32		0.03	1.00		1.00	0.47		0.23
Lane Grp Cap(c), veh/h	1100	940	0	958	0	1005	661	0	278	62	0	0
V/C Ratio(X)	0.17	0.17	0.00	0.17	0.00	0.16	0.52	0.00	0.09	0.49	0.00	0.00
Avail Cap(c_a), veh/h	1100	940	0	958	0	1005	1187	0	500	271	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	7.1	7.1	0.0	7.1	0.0	7.1	32.7	0.0	29.9	42.6	0.0	0.0
Incr Delay (d2), s/veh	0.3	0.4	0.0	0.4	0.0	0.3	2.3	0.0	0.5	5.8	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(95%),veh/ln	3.7	3.1	0.0	3.2	0.0	3.1	7.3	0.0	1.0	1.5	0.0	0.0
LnGrp Delay(d),s/veh	7.5	7.5	0.0	7.5	0.0	7.4	35.0	0.0	30.5	48.5	0.0	0.0
LnGrp LOS	A	A		A		A	C		C	D		
Approach Vol, veh/h		341			318			371			30	
Approach Delay, s/veh		7.5			7.4			34.7			48.5	
Approach LOS		A			A			C			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		61.1		7.6		61.1		21.3
Change Period (Y+Rc), s		6.0		5.0		6.0		5.0
Max Green Setting (Gmax), s		29.0		15.0		29.0		30.0
Max Q Clear Time (g_c+I1), s		6.5		3.7		6.5		10.6
Green Ext Time (p_c), s		13.5		0.0		13.5		5.7

Intersection Summary	
HCM 2010 Ctrl Delay	18.1
HCM 2010 LOS	B

Notes

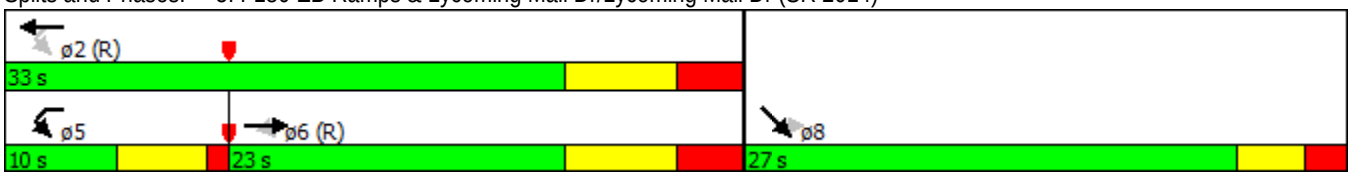
User approved volume balancing among the lanes for turning movement.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Volume (vph)	0	387	195	26	283	0	426	0	88	0	0	0
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	14	12	12	12	12	14	14	14	12	12	12
Grade (%)		-1%			-1%			3%			-4%	
Storage Length (ft)	0		175	150		0	0		0	0		0
Storage Lanes	0		1	1		0	0		0	0		0
Taper Length (ft)	75			75			75			75		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt			0.850					0.977				
Flt Protected				0.950				0.960				
Satd. Flow (prot)	0	1855	1464	1420	1739	0	0	1662	0	0	0	0
Flt Permitted				0.367				0.960				
Satd. Flow (perm)	0	1855	1464	549	1739	0	0	1662	0	0	0	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			203					182				
Link Speed (mph)		45			45			25			25	
Link Distance (ft)		2040			660			376			358	
Travel Time (s)		30.9			10.0			10.3			9.8	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	4%	5%	21%	4%	0%	5%	0%	15%	0%	0%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	0	403	203	27	295	0	444	0	92	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	403	203	27	295	0	0	536	0	0	0	0
Number of Detectors		1	1	1	1		1	1				
Detector Template				Left			Left	Thru				
Leading Detector (ft)		6	6	45	6		30	30				
Trailing Detector (ft)		0	0	-5	0		-10	-10				
Turn Type		NA	Perm	pm+pt	NA		Perm	NA				
Protected Phases		6		5	2			8				
Permitted Phases			6	2			8					
Detector Phase				5			8	8				
Switch Phase												
Minimum Initial (s)		15.0	15.0	5.0	20.0		5.0	5.0				
Minimum Split (s)		23.0	23.0	10.0	28.0		10.0	10.0				
Total Split (s)		23.0	23.0	10.0	33.0		27.0	27.0				
Total Split (%)		38.3%	38.3%	16.7%	55.0%		45.0%	45.0%				
Maximum Green (s)		15.0	15.0	5.0	25.0		22.0	22.0				
Yellow Time (s)		5.0	5.0	4.0	5.0		3.0	3.0				
All-Red Time (s)		3.0	3.0	1.0	3.0		2.0	2.0				
Lost Time Adjust (s)		-1.0	-1.0	-1.0	-1.0			-1.0				
Total Lost Time (s)		7.0	7.0	4.0	7.0			4.0				

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lead/Lag		Lag	Lag	Lead								
Lead-Lag Optimize?												
Vehicle Extension (s)		3.0	3.0	4.0	3.0		4.0	4.0				
Minimum Gap (s)		3.0	3.0	3.0	3.0		3.0	3.0				
Time Before Reduce (s)		0.0	0.0	0.0	0.0		0.0	0.0				
Time To Reduce (s)		0.0	0.0	0.0	0.0		0.0	0.0				
Recall Mode		C-Min	C-Min	None	C-Min		None	None				
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
v/c Ratio		0.52	0.28	0.07	0.35			0.80				
Control Delay		20.5	4.4	9.7	12.1			21.5				
Queue Delay		0.0	0.0	0.0	0.0			0.0				
Total Delay		20.5	4.4	9.7	12.1			21.5				
Queue Length 50th (ft)		97	0	4	43			105				
Queue Length 95th (ft)		#269	42	m12	68			209				
Internal Link Dist (ft)		1960			580			296			278	
Turn Bay Length (ft)			175	150								
Base Capacity (vph)		780	733	394	847			749				
Starvation Cap Reductn		0	0	0	0			0				
Spillback Cap Reductn		0	0	0	0			0				
Storage Cap Reductn		0	0	0	0			0				
Reduced v/c Ratio		0.52	0.28	0.07	0.35			0.72				

Intersection Summary	
Area Type:	Other
Cycle Length: 60	
Actuated Cycle Length: 60	
Offset: 0 (0%), Referenced to phase 2:WBTL and 6:EBT, Start of Green, Master Intersection	
Natural Cycle: 60	
Control Type: Actuated-Coordinated	
# 95th percentile volume exceeds capacity, queue may be longer.	
Queue shown is maximum after two cycles.	
m Volume for 95th percentile queue is metered by upstream signal.	

Splits and Phases: 5: I-180 EB Ramps & Lycoming Mall Dr/Lycoming Mall Dr (SR 2014)



Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Volume (veh/h)	0	387	195	26	283	0	426	0	88	0	0	0
Number	1	6	16	5	2	12	3	8	18			
Initial Q (Qb), veh	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			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	0	1809	1723	1495	1739	0	1844	1728	1844			
Adj Flow Rate, veh/h	0	403	73	27	295	0	444	0	41			
Adj No. of Lanes	0	1	1	1	1	0	0	1	0			
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96			
Percent Heavy Veh, %	0	4	5	21	4	0	0	0	0			
Cap, veh/h	0	649	525	322	822	0	513	0	47			
Arrive On Green	0.00	0.36	0.36	0.05	0.47	0.00	0.33	0.00	0.33			
Sat Flow, veh/h	0	1809	1464	1424	1739	0	1491	0	138			
Grp Volume(v), veh/h	0	403	73	27	295	0	485	0	0			
Grp Sat Flow(s),veh/h/ln	0	1809	1464	1424	1739	0	1629	0	0			
Q Serve(g_s), s	0.0	11.0	2.0	0.6	6.5	0.0	16.8	0.0	0.0			
Cycle Q Clear(g_c), s	0.0	11.0	2.0	0.6	6.5	0.0	16.8	0.0	0.0			
Prop In Lane	0.00		1.00	1.00		0.00	0.92		0.08			
Lane Grp Cap(c), veh/h	0	649	525	322	822	0	561	0	0			
V/C Ratio(X)	0.00	0.62	0.14	0.08	0.36	0.00	0.86	0.00	0.00			
Avail Cap(c_a), veh/h	0	649	525	398	822	0	624	0	0			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.00	1.00	1.00	0.97	0.97	0.00	1.00	0.00	0.00			
Uniform Delay (d), s/veh	0.0	15.9	13.0	10.9	10.1	0.0	18.9	0.0	0.0			
Incr Delay (d2), s/veh	0.0	4.4	0.6	0.2	1.2	0.0	11.9	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			
%ile BackOfQ(95%),veh/ln	0.0	10.4	1.6	0.5	5.9	0.0	14.3	0.0	0.0			
LnGrp Delay(d),s/veh	0.0	20.3	13.5	11.1	11.2	0.0	30.7	0.0	0.0			
LnGrp LOS		C	B	B	B		C					
Approach Vol, veh/h		476			322			485				
Approach Delay, s/veh		19.3			11.2			30.7				
Approach LOS		B			B			C				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2			5	6		8
Phs Duration (G+Y+Rc), s		35.3			6.8	28.5		24.7
Change Period (Y+Rc), s		8.0			5.0	8.0		5.0
Max Green Setting (Gmax), s		25.0			5.0	15.0		22.0
Max Q Clear Time (g_c+I1), s		9.0			3.1	13.5		18.8
Green Ext Time (p_c), s		1.8			0.0	0.4		0.9

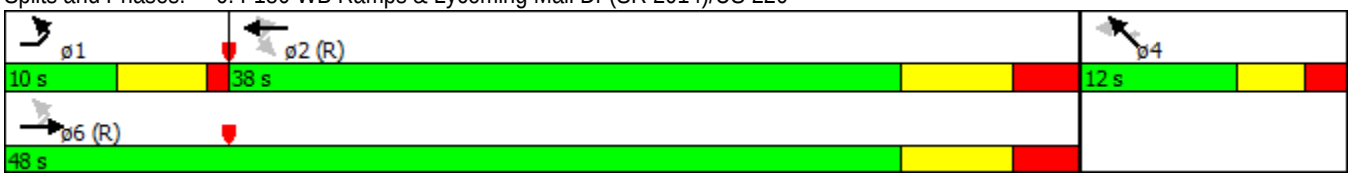
Intersection Summary	
HCM 2010 Ctrl Delay	21.6
HCM 2010 LOS	C

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Volume (vph)	132	681	0	1	202	232	0	0	0	107	0	25
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	11	12	12	11	11	11	12	12	12	15	15	16
Grade (%)		1%			-1%			-3%			-3%	
Storage Length (ft)	115		0	0		165	0		0	0		445
Storage Lanes	1		0	0		1	0		0	0		1
Taper Length (ft)	75			75			75			75		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt						0.850						0.850
Flt Protected	0.950										0.950	
Satd. Flow (prot)	1566	1706	0	0	1562	1364	0	0	0	0	1801	1760
Flt Permitted	0.544				0.997						0.950	
Satd. Flow (perm)	897	1706	0	0	1557	1364	0	0	0	0	1801	1760
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						239						182
Link Speed (mph)		45			45			25			25	
Link Distance (ft)		660			1209			327			668	
Travel Time (s)		10.0			18.3			8.9			18.2	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	5%	5%	0%	0%	12%	9%	0%	0%	0%	6%	0%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	136	702	0	1	208	239	0	0	0	110	0	26
Shared Lane Traffic (%)												
Lane Group Flow (vph)	136	702	0	0	209	239	0	0	0	0	110	26
Number of Detectors	1	1		1	1	1				1	1	0
Detector Template	Left			Left		Right				Left	Thru	
Leading Detector (ft)	45	6		30	6	30				30	45	0
Trailing Detector (ft)	-5	0		-10	0	-10				-10	-5	0
Turn Type	pm+pt	NA		Perm	NA	Perm				Perm	NA	Perm
Protected Phases	1	6			2						4	
Permitted Phases	6			2		2				4		4
Detector Phase	1			2		2				4	4	4
Switch Phase												
Minimum Initial (s)	5.0	20.0		20.0	20.0	20.0				5.0	5.0	5.0
Minimum Split (s)	10.0	28.0		28.0	28.0	28.0				10.0	10.0	10.0
Total Split (s)	10.0	48.0		38.0	38.0	38.0				12.0	12.0	12.0
Total Split (%)	16.7%	80.0%		63.3%	63.3%	63.3%				20.0%	20.0%	20.0%
Maximum Green (s)	5.0	40.0		30.0	30.0	30.0				7.0	7.0	7.0
Yellow Time (s)	4.0	5.0		5.0	5.0	5.0				3.0	3.0	3.0
All-Red Time (s)	1.0	3.0		3.0	3.0	3.0				2.0	2.0	2.0
Lost Time Adjust (s)	-1.0	-1.0			-1.0	0.0					-1.0	-1.0
Total Lost Time (s)	4.0	7.0			7.0	8.0					4.0	4.0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lead/Lag	Lead			Lag	Lag	Lag						
Lead-Lag Optimize?												
Vehicle Extension (s)	4.0	3.0		3.0	3.0	3.0				4.0	4.0	4.0
Minimum Gap (s)	3.0	3.0		3.0	3.0	3.0				3.0	3.0	3.0
Time Before Reduce (s)	0.0	0.0		0.0	0.0	0.0				0.0	0.0	0.0
Time To Reduce (s)	0.0	0.0		0.0	0.0	0.0				0.0	0.0	0.0
Recall Mode	None	C-Min		C-Min	C-Min	C-Min				Min	Min	Min
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
v/c Ratio	0.19	0.65			0.30	0.33					0.33	0.06
Control Delay	5.4	11.6			14.3	3.9					23.3	0.2
Queue Delay	0.0	0.0			0.0	0.0					0.0	0.0
Total Delay	5.4	11.6			14.3	3.9					23.3	0.2
Queue Length 50th (ft)	12	120			49	0					35	0
Queue Length 95th (ft)	m48	358			105	41					69	0
Internal Link Dist (ft)		580			1129			247			588	
Turn Bay Length (ft)	115					165						445
Base Capacity (vph)	714	1079			705	839					332	473
Starvation Cap Reductn	0	0			0	0					0	0
Spillback Cap Reductn	0	0			0	0					0	0
Storage Cap Reductn	0	0			0	0					0	0
Reduced v/c Ratio	0.19	0.65			0.30	0.28					0.33	0.05

Intersection Summary	
Area Type:	Other
Cycle Length: 60	
Actuated Cycle Length: 60	
Offset: 42 (70%), Referenced to phase 2:WBTL and 6:EBTL, Start of Green	
Natural Cycle: 50	
Control Type: Actuated-Coordinated	
m Volume for 95th percentile queue is metered by upstream signal.	

Splits and Phases: 6: I-180 WB Ramps & Lycoming Mall Dr (SR 2014)/US 220



Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Volume (veh/h)	132	681	0	1	202	232	0	0	0	107	0	25
Number	1	6	16	5	2	12				7	4	14
Initial Q (Qb), veh	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
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1706	1706	0	1809	1616	1660				1900	1793	1900
Adj Flow Rate, veh/h	136	702	0	1	208	175				110	0	10
Adj No. of Lanes	1	1	0	0	1	1				0	1	1
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97				0.97	0.97	0.97
Percent Heavy Veh, %	5	5	0	12	12	9				0	0	0
Cap, veh/h	737	1201	0	61	881	747				192	0	182
Arrive On Green	0.18	1.00	0.00	0.53	0.55	0.53				0.10	0.00	0.11
Sat Flow, veh/h	1624	1706	0	1	1614	1411				1707	0	1615
Grp Volume(v), veh/h	136	702	0	209	0	175				110	0	10
Grp Sat Flow(s),veh/h/ln	1624	1706	0	1615	0	1411				1707	0	1615
Q Serve(g_s), s	1.7	0.0	0.0	0.0	0.0	4.0				3.7	0.0	0.3
Cycle Q Clear(g_c), s	1.7	0.0	0.0	4.1	0.0	4.0				3.7	0.0	0.3
Prop In Lane	1.00		0.00	0.00		1.00				1.00		1.00
Lane Grp Cap(c), veh/h	737	1201	0	915	0	747				192	0	182
V/C Ratio(X)	0.18	0.58	0.00	0.23	0.00	0.23				0.57	0.00	0.06
Avail Cap(c_a), veh/h	751	1201	0	915	0	747				228	0	215
HCM Platoon Ratio	2.00	2.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.84	0.84	0.00	1.00	0.00	1.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	3.3	0.0	0.0	7.1	0.0	7.6				25.7	0.0	23.8
Incr Delay (d2), s/veh	0.1	1.8	0.0	0.6	0.0	0.7				3.8	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
%ile BackOfQ(95%),veh/ln	1.4	1.1	0.0	3.6	0.0	3.1				3.5	0.0	0.3
LnGrp Delay(d),s/veh	3.5	1.8	0.0	7.7	0.0	8.3				29.5	0.0	24.0
LnGrp LOS	A	A		A		A				C		C
Approach Vol, veh/h		838			384						120	
Approach Delay, s/veh		2.0			8.0						29.1	
Approach LOS		A			A						C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6		
Phs Duration (G+Y+Rc), s	9.5	39.8		10.8		49.2		
Change Period (Y+Rc), s	5.0	8.0		5.0		8.0		
Max Green Setting (Gmax), s	5.0	30.0		7.0		40.0		
Max Q Clear Time (g_c+I1), s	4.2	6.1		5.7		2.5		
Green Ext Time (p_c), s	0.0	3.2		0.1		3.3		

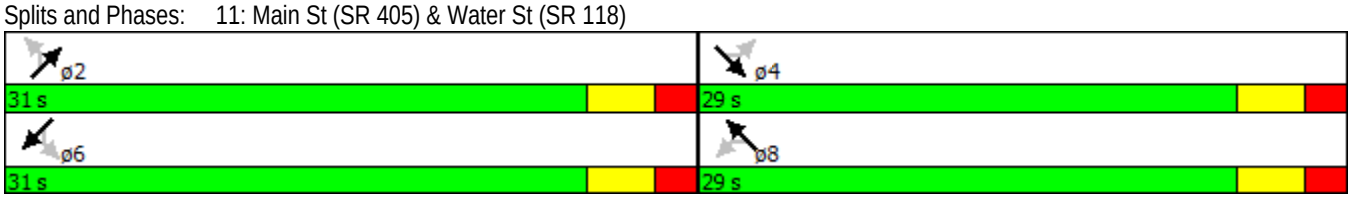
Intersection Summary	
HCM 2010 Ctrl Delay	6.2
HCM 2010 LOS	A

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	30	122	36	146	54	158	19	343	152	111	214	11
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	15	15	15	13	13	13	14	14	14	14	14	14
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (ft)	75			75			75			75		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.974			0.940			0.960			0.996	
Flt Protected		0.992			0.980			0.998			0.984	
Satd. Flow (prot)	0	1913	0	0	1520	0	0	1769	0	0	1725	0
Flt Permitted		0.913			0.807			0.983			0.699	
Satd. Flow (perm)	0	1761	0	0	1252	0	0	1742	0	0	1225	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		25			35			25			25	
Link Distance (ft)		390			506			1477			648	
Travel Time (s)		10.6			9.9			40.3			17.7	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	0%	0%	21%	4%	8%	0%	2%	9%	14%	7%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)							0		0	0		0
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	31	124	37	149	55	161	19	350	155	113	218	11
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	192	0	0	365	0	0	524	0	0	342	0
Number of Detectors	1	1		1	1		1	1		1	1	
Detector Template	Left			Left			Left			Left		
Leading Detector (ft)	30	45		30	45		30	45		30	45	
Trailing Detector (ft)	-10	-5		-10	-5		-10	-5		-10	-5	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	15.0	15.0		15.0	15.0		15.0	15.0		15.0	15.0	
Total Split (s)	29.0	29.0		29.0	29.0		31.0	31.0		31.0	31.0	
Total Split (%)	48.3%	48.3%		48.3%	48.3%		51.7%	51.7%		51.7%	51.7%	
Maximum Green (s)	24.0	24.0		24.0	24.0		26.0	26.0		26.0	26.0	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		-1.0			-1.0			-1.0			-1.0	
Total Lost Time (s)		4.0			4.0			4.0			4.0	

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Minimum Gap (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Time Before Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Time To Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Recall Mode	Max	Max		Max	Max		Max	Max		Max	Max	
Walk Time (s)	11.0	11.0		11.0	11.0		12.0	12.0		12.0	12.0	
Flash Dont Walk (s)	16.0	16.0		16.0	16.0		18.0	18.0		18.0	18.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
v/c Ratio		0.26			0.70			0.65			0.60	
Control Delay		14.0			24.9			18.6			19.0	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		14.0			24.9			18.6			19.0	
Queue Length 50th (ft)		49			118			156			99	
Queue Length 95th (ft)		91			#224			256			182	
Internal Link Dist (ft)		310			426			1397			568	
Turn Bay Length (ft)												
Base Capacity (vph)		735			523			806			566	
Starvation Cap Reductn		0			0			0			0	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.26			0.70			0.65			0.60	

Intersection Summary	
Area Type:	Other
Cycle Length: 60	
Actuated Cycle Length: 67	
Natural Cycle: 50	
Control Type: Actuated-Uncoordinated	
# 95th percentile volume exceeds capacity, queue may be longer.	
Queue shown is maximum after two cycles.	

Splits and Phases: 11: Main St (SR 405) & Water St (SR 118)



Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (veh/h)	30	122	36	146	54	158	19	343	152	111	214	11
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	0.90	1.00	1.00	0.90
Adj Sat Flow, veh/h/ln	1872	1872	1872	1872	1661	1872	1872	1800	1872	1872	1716	1872
Adj Flow Rate, veh/h	31	124	37	149	55	161	19	350	155	113	218	11
Adj No. of Lanes	0	1	0	0	1	0	0	1	0	0	1	0
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	0	0	4	4	4	2	2	2	7	7	7
Cap, veh/h	141	518	141	285	117	250	73	477	205	202	339	15
Arrive On Green	0.40	0.42	0.40	0.40	0.42	0.40	0.43	0.45	0.43	0.43	0.45	0.43
Sat Flow, veh/h	172	1243	338	480	281	601	23	1059	455	271	753	34
Grp Volume(v), veh/h	192	0	0	365	0	0	524	0	0	342	0	0
Grp Sat Flow(s),veh/h/ln	1753	0	0	1362	0	0	1537	0	0	1059	0	0
Q Serve(g_s), s	0.0	0.0	0.0	8.4	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0
Cycle Q Clear(g_c), s	4.2	0.0	0.0	12.7	0.0	0.0	17.3	0.0	0.0	17.4	0.0	0.0
Prop In Lane	0.16		0.19	0.41		0.44	0.04		0.30	0.33		0.03
Lane Grp Cap(c), veh/h	771	0	0	629	0	0	728	0	0	539	0	0
V/C Ratio(X)	0.25	0.00	0.00	0.58	0.00	0.00	0.72	0.00	0.00	0.64	0.00	0.00
Avail Cap(c_a), veh/h	771	0	0	629	0	0	728	0	0	539	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	11.6	0.0	0.0	14.0	0.0	0.0	14.0	0.0	0.0	13.1	0.0	0.0
Incr Delay (d2), s/veh	0.8	0.0	0.0	3.9	0.0	0.0	6.1	0.0	0.0	5.6	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(95%),veh/ln	4.2	0.0	0.0	9.5	0.0	0.0	13.6	0.0	0.0	9.7	0.0	0.0
LnGrp Delay(d),s/veh	12.3	0.0	0.0	17.9	0.0	0.0	20.1	0.0	0.0	18.7	0.0	0.0
LnGrp LOS	B			B			C			B		
Approach Vol, veh/h		192			365			524			342	
Approach Delay, s/veh		12.3			17.9			20.1			18.7	
Approach LOS		B			B			C			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		31.0		29.0		31.0		29.0
Change Period (Y+Rc), s		5.0		5.0		5.0		5.0
Max Green Setting (Gmax), s		26.0		24.0		26.0		24.0
Max Q Clear Time (g_c+I1), s		19.3		6.2		19.4		14.7
Green Ext Time (p_c), s		2.4		2.3		2.4		1.7

Intersection Summary	
HCM 2010 Ctrl Delay	18.1
HCM 2010 LOS	B

Notes

User approved pedestrian interval to be less than phase max green.

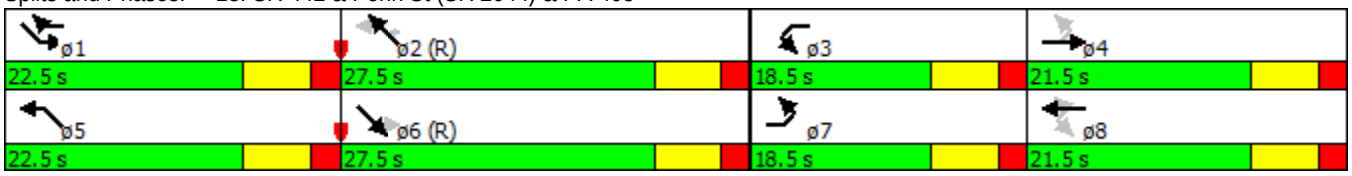
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Volume (vph)	36	209	32	110	161	266	439	294	74	24	175	128
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	11	11	11	11	11	11	11	11	11	11	11	11
Grade (%)		-2%			-1%			1%			-2%	
Storage Length (ft)	195		220	155		425	450		0	125		400
Storage Lanes	2		0	1		1	2		0	1		1
Taper Length (ft)	75			75			75			75		
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00	0.97	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.980				0.850		0.970				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1575	3204	0	1629	1714	1304	3010	1630	0	1590	1674	1450
Flt Permitted	0.647			0.441			0.469			0.526		
Satd. Flow (perm)	1073	3204	0	756	1714	1304	1486	1630	0	880	1674	1450
Right Turn on Red			No			Yes			Yes			Yes
Satd. Flow (RTOR)						289		13				200
Link Speed (mph)		45			45			40			45	
Link Distance (ft)		670			586			1005			570	
Travel Time (s)		10.2			8.9			17.1			8.6	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
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
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	6%	2%	3%	2%	2%	14%	6%	3%	3%	5%	5%	3%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	39	227	35	120	175	289	477	320	80	26	190	139
Shared Lane Traffic (%)												
Lane Group Flow (vph)	39	262	0	120	175	289	477	400	0	26	190	139
Number of Detectors	1	1		1	1	1	2	2		1	2	0
Detector Template	Left	Thru		Left	Thru	Right				Left		
Leading Detector (ft)	40	30		40	30	30	160	160		30	310	0
Trailing Detector (ft)	-10	-5		-10	-5	-5	-10	-10		-10	-10	0
Turn Type	pm+pt	NA		pm+pt	NA	pm+ov	pm+pt	NA		pm+pt	NA	Perm
Protected Phases	7	4		3	8	1	1	6		5	2	
Permitted Phases	4			8		8	6			2		2
Detector Phase	7	4		3	8	1	1	6		5	2	2
Switch Phase												
Minimum Initial (s)	3.0	5.0		3.0	5.0	3.0	3.0	5.0		3.0	5.0	5.0
Minimum Split (s)	9.5	11.5		9.5	11.5	9.5	9.5	11.5		9.5	11.5	11.5
Total Split (s)	18.5	21.5		18.5	21.5	22.5	22.5	27.5		22.5	27.5	27.5
Total Split (%)	20.6%	23.9%		20.6%	23.9%	25.0%	25.0%	30.6%		25.0%	30.6%	30.6%
Maximum Green (s)	12.0	15.0		12.0	15.0	16.0	16.0	21.0		16.0	21.0	21.0
Yellow Time (s)	4.5	4.5		4.5	4.5	4.5	4.5	4.5		4.5	4.5	4.5
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)	-1.0	-1.0		-1.0	-1.0	-1.0	-1.0	-1.0		-1.0	-1.0	-1.0
Total Lost Time (s)	5.5	5.5		5.5	5.5	5.5	5.5	5.5		5.5	5.5	5.5

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lead/Lag	Lead	Lag		Lead	Lag	Lead	Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	5.0		3.0	5.0	3.0	3.0	4.0		3.0	4.0	4.0
Minimum Gap (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Time Before Reduce (s)	0.0	0.0		0.0	0.0	0.0	0.0	9.0		0.0	9.0	9.0
Time To Reduce (s)	0.0	0.0		0.0	0.0	0.0	0.0	18.0		0.0	18.0	18.0
Recall Mode	None	None		None	None	None	None	C-Min		None	C-Min	C-Min
Walk Time (s)		12.0			12.0			14.0			14.0	14.0
Flash Dont Walk (s)		18.0			18.0			21.0			21.0	21.0
Pedestrian Calls (#/hr)		0			0			0			0	0
v/c Ratio	0.12	0.50		0.34	0.41	0.37	0.45	0.52		0.07	0.38	0.24
Control Delay	19.6	37.5		22.5	32.9	3.3	13.9	22.2		13.1	30.0	2.4
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	19.6	37.5		22.5	32.9	3.3	13.9	22.2		13.1	30.0	2.4
Queue Length 50th (ft)	14	71		47	89	0	75	132		7	90	0
Queue Length 95th (ft)	34	109		83	152	43	113	298		20	157	16
Internal Link Dist (ft)		590			506			925			490	
Turn Bay Length (ft)	195			155		425	450			125		400
Base Capacity (vph)	403	573		380	429	799	1079	772		560	494	569
Starvation Cap Reductn	0	0		0	0	0	0	0		0	0	0
Spillback Cap Reductn	0	0		0	0	0	0	0		0	0	0
Storage Cap Reductn	0	0		0	0	0	0	0		0	0	0
Reduced v/c Ratio	0.10	0.46		0.32	0.41	0.36	0.44	0.52		0.05	0.38	0.24

Intersection Summary

Area Type: Other
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 0 (0%), Referenced to phase 2:NWTL and 6:SETL, Start of Green, Master Intersection
Natural Cycle: 60
Control Type: Actuated-Coordinated

Splits and Phases: 18: SR 442 & Penn St (SR 2044) & PA 405



Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Volume (veh/h)	36	209	32	110	161	266	439	294	74	24	175	128
Number	7	4	14	3	8	18	1	6	16	5	2	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
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	1715	1780	1818	1774	1774	1587	1690	1739	1791	1731	1731	1765
Adj Flow Rate, veh/h	39	227	35	120	175	63	477	320	70	26	190	39
Adj No. of Lanes	1	2	0	1	1	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, %	6	2	2	2	2	14	6	3	3	5	5	3
Cap, veh/h	248	376	57	301	320	433	1277	698	153	478	681	590
Arrive On Green	0.04	0.13	0.12	0.09	0.18	0.18	0.14	0.50	0.49	0.03	0.39	0.39
Sat Flow, veh/h	1633	2944	448	1689	1774	1349	3122	1383	303	1649	1731	1500
Grp Volume(v), veh/h	39	129	133	120	175	63	477	0	390	26	190	39
Grp Sat Flow(s),veh/h/ln	1633	1691	1701	1689	1774	1349	1561	0	1685	1649	1731	1500
Q Serve(g_s), s	1.8	6.5	6.7	5.2	8.1	3.0	7.1	0.0	13.5	0.8	6.7	1.5
Cycle Q Clear(g_c), s	1.8	6.5	6.7	5.2	8.1	3.0	7.1	0.0	13.5	0.8	6.7	1.5
Prop In Lane	1.00		0.26	1.00		1.00	1.00		0.18	1.00		1.00
Lane Grp Cap(c), veh/h	248	216	217	301	320	433	1277	0	851	478	681	590
V/C Ratio(X)	0.16	0.60	0.61	0.40	0.55	0.15	0.37	0.00	0.46	0.05	0.28	0.07
Avail Cap(c_a), veh/h	416	301	302	386	320	433	1428	0	851	742	681	590
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	1.00	1.00
Uniform Delay (d), s/veh	31.9	37.1	37.3	28.3	33.5	21.8	10.8	0.0	14.4	15.3	18.6	17.0
Incr Delay (d2), s/veh	0.3	5.5	5.8	0.9	3.4	0.3	0.2	0.0	1.8	0.0	1.0	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(95%),veh/ln	1.5	6.0	6.3	4.4	7.6	2.1	5.5	0.0	10.8	0.7	6.1	1.1
LnGrp Delay(d),s/veh	32.2	42.6	43.1	29.2	37.0	22.1	11.0	0.0	16.2	15.4	19.6	17.2
LnGrp LOS	C	D	D	C	D	C	B		B	B	B	B
Approach Vol, veh/h		301			358			867			255	
Approach Delay, s/veh		41.5			31.7			13.3			18.8	
Approach LOS		D			C			B			B	

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	18.2	40.9	13.9	17.0	8.1	50.9	9.2	21.7
Change Period (Y+Rc), s	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5
Max Green Setting (Gmax), s	16.0	21.0	12.0	15.0	16.0	21.0	12.0	15.0
Max Q Clear Time (g_c+I1), s	9.6	9.2	7.7	9.0	3.3	15.5	4.3	10.6
Green Ext Time (p_c), s	2.0	5.0	0.1	1.5	0.0	2.8	0.0	1.4

Intersection Summary	
HCM 2010 Ctrl Delay	22.6
HCM 2010 LOS	C

Notes

User approved pedestrian interval to be less than phase max green.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	105	211	19	42	245	32	19	305	12	30	116	125
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	16	16	16	12	12	12	10	10	10	10	10	10
Grade (%)		-2%			1%			2%			-1%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (ft)	75			75			75			75		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.99			0.99			1.00			0.98	
Frt		0.992			0.986			0.995			0.938	
Flt Protected		0.985			0.993			0.997			0.995	
Satd. Flow (prot)	0	1827	0	0	1663	0	0	1365	0	0	1273	0
Flt Permitted		0.985			0.993			0.974			0.940	
Satd. Flow (perm)	0	1821	0	0	1659	0	0	1333	0	0	1202	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		463			494			1137			622	
Travel Time (s)		12.6			13.5			31.0			17.0	
Confl. Peds. (#/hr)	10		10	10		10	10		10	10		10
Confl. Bikes (#/hr)												
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	10%	10%	10%	5%	5%	5%	5%	5%	5%	6%	6%	6%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)							6	6	6	6	6	6
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	117	234	21	47	272	36	21	339	13	33	129	139
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	372	0	0	355	0	0	373	0	0	301	0
Number of Detectors	1	1		1	1		1	1		1	1	
Detector Template	Left			Left			Left			Left		
Leading Detector (ft)	30	40		30	40		30	40		30	40	
Trailing Detector (ft)	-10	-10		-10	-10		-10	-10		-10	-10	
Turn Type	Split	NA		Split	NA		Perm	NA		Perm	NA	
Protected Phases	2	2		6	6			4			8	
Permitted Phases							4			8		
Detector Phase	2	2		6	6		4	4		8	8	
Switch Phase												
Minimum Initial (s)	8.0	8.0		8.0	8.0		8.0	8.0		8.0	8.0	
Minimum Split (s)	13.0	13.0		13.0	13.0		12.1	12.1		12.1	12.1	
Total Split (s)	35.0	35.0		25.0	25.0		40.0	40.0		40.0	40.0	
Total Split (%)	35.0%	35.0%		25.0%	25.0%		40.0%	40.0%		40.0%	40.0%	
Maximum Green (s)	30.0	30.0		20.0	20.0		35.9	35.9		35.9	35.9	
Yellow Time (s)	4.0	4.0		4.0	4.0		3.1	3.1		3.1	3.1	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		-0.5			-0.5			-1.0			-1.0	
Total Lost Time (s)		4.5			4.5			3.1			3.1	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.5	3.5		3.5	3.5		3.5	3.5		2.0	2.0	
Minimum Gap (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Time Before Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Time To Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Recall Mode	None	None		None	None		None	None		None	None	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
v/c Ratio		0.75			0.88			0.82			0.73	
Control Delay		40.1			59.2			42.5			37.3	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		40.1			59.2			42.5			37.3	
Queue Length 50th (ft)		190			196			184			142	
Queue Length 95th (ft)		309			#422			#350			261	
Internal Link Dist (ft)		383			414			1057			542	
Turn Bay Length (ft)												
Base Capacity (vph)		661			404			583			526	
Starvation Cap Reductn		0			0			0			0	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.56			0.88			0.64			0.57	

Intersection Summary

Area Type: Other
Cycle Length: 100
Actuated Cycle Length: 86.4
Natural Cycle: 80
Control Type: Actuated-Uncoordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 21: Main St (SR 2014) & Water St (SR 405)



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	105	211	19	42	245	32	19	305	12	30	116	125
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	0.99		0.98	0.99		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.87	1.00	1.00	0.87
Adj Sat Flow, veh/h/ln	1891	1719	1891	1791	1706	1791	1782	1697	1782	1809	1707	1809
Adj Flow Rate, veh/h	117	234	21	47	272	36	21	339	13	33	129	139
Adj No. of Lanes	0	1	0	0	1	0	0	1	0	0	1	0
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	10	10	10	5	5	5	5	5	5	6	6	6
Cap, veh/h	140	280	25	54	315	42	66	430	16	82	200	193
Arrive On Green	0.26	0.27	0.26	0.24	0.25	0.24	0.30	0.32	0.30	0.30	0.32	0.30
Sat Flow, veh/h	526	1053	94	220	1272	168	39	1362	51	82	632	613
Grp Volume(v), veh/h	372	0	0	355	0	0	373	0	0	301	0	0
Grp Sat Flow(s),veh/h/ln	1674	0	0	1661	0	0	1451	0	0	1328	0	0
Q Serve(g_s), s	14.9	0.0	0.0	14.5	0.0	0.0	2.7	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	14.9	0.0	0.0	14.5	0.0	0.0	17.0	0.0	0.0	14.2	0.0	0.0
Prop In Lane	0.31		0.06	0.13		0.10	0.06		0.03	0.11		0.46
Lane Grp Cap(c), veh/h	446	0	0	411	0	0	491	0	0	456	0	0
V/C Ratio(X)	0.83	0.00	0.00	0.86	0.00	0.00	0.76	0.00	0.00	0.66	0.00	0.00
Avail Cap(c_a), veh/h	719	0	0	480	0	0	781	0	0	715	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	24.7	0.0	0.0	25.6	0.0	0.0	22.4	0.0	0.0	21.7	0.0	0.0
Incr Delay (d2), s/veh	5.4	0.0	0.0	13.8	0.0	0.0	2.9	0.0	0.0	0.6	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(95%),veh/ln	12.0	0.0	0.0	12.9	0.0	0.0	11.8	0.0	0.0	9.2	0.0	0.0
LnGrp Delay(d),s/veh	30.1	0.0	0.0	39.4	0.0	0.0	25.4	0.0	0.0	22.3	0.0	0.0
LnGrp LOS	C			D			C			C		
Approach Vol, veh/h		372			355			373			301	
Approach Delay, s/veh		30.1			39.4			25.4			22.3	
Approach LOS		C			D			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		23.4		25.5		22.1		25.5
Change Period (Y+Rc), s		5.0		4.1		5.0		4.1
Max Green Setting (Gmax), s		30.0		35.9		20.0		35.9
Max Q Clear Time (g_c+I1), s		16.9		19.0		16.5		16.2
Green Ext Time (p_c), s		1.5		2.4		0.6		2.5

Intersection Summary	
HCM 2010 Ctrl Delay	29.5
HCM 2010 LOS	C

Lane Group	EBL	EBT	WBT	WBR	SWL	SWR
Lane Configurations						
Volume (vph)	78	419	277	0	0	49
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	10	10
Grade (%)		2%	-3%		-1%	
Storage Length (ft)	0			0	0	0
Storage Lanes	0			0	1	0
Taper Length (ft)	75				75	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt					0.865	
Flt Protected		0.992				
Satd. Flow (prot)	0	1827	1837	0	1511	0
Flt Permitted		0.992				
Satd. Flow (perm)	0	1827	1837	0	1511	0
Link Speed (mph)		55	45		25	
Link Distance (ft)		1209	517		640	
Travel Time (s)		15.0	7.8		17.5	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	3%	2%	5%	0%	0%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)		0%	0%		0%	
Adj. Flow (vph)	80	432	286	0	0	51
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	512	286	0	51	0
Sign Control		Free	Free		Stop	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

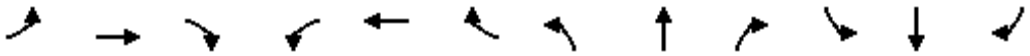
Intersection	
Int Delay, s/veh	1.4

Movement	EBL	EBT	WBT	WBR	SWL	SWR
Vol, veh/h	78	419	277	0	0	49
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, %	-	2	-3	-	-1	-
Peak Hour Factor	97	97	97	97	97	97
Heavy Vehicles, %	3	2	5	0	0	2
Mvmt Flow	80	432	286	0	0	51

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	286	0	-	0	879	286
Stage 1	-	-	-	-	286	-
Stage 2	-	-	-	-	593	-
Critical Hdwy	4.13	-	-	-	7.1	6.2
Critical Hdwy Stg 1	-	-	-	-	5.2	-
Critical Hdwy Stg 2	-	-	-	-	5.2	-
Follow-up Hdwy	3	-	-	-	3	3.1
Pot Cap-1 Maneuver	971	-	-	-	318	801
Stage 1	-	-	-	-	892	-
Stage 2	-	-	-	-	676	-
Platoon blocked, %		-	-	-	1	
Mov Cap-1 Maneuver	971	-	-	-	284	801
Mov Cap-2 Maneuver	-	-	-	-	284	-
Stage 1	-	-	-	-	892	-
Stage 2	-	-	-	-	603	-

Approach	EB	WB	SW
HCM Control Delay, s	1.4	0	9.8
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SWLn1
Capacity (veh/h)	971	-	-	-	801
HCM Lane V/C Ratio	0.083	-	-	-	0.063
HCM Control Delay (s)	9	0	-	-	9.8
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0.3	-	-	-	0.2



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	2	421	23	3	273	0	4	36	2	1	29	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	11	11	11	10	10	10
Grade (%)		-2%			1%			0%			-3%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (ft)	75			75			75			75		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.993						0.994			0.996	
Flt Protected								0.996			0.999	
Satd. Flow (prot)	0	1787	0	0	1785	0	0	1772	0	0	1680	0
Flt Permitted								0.996			0.999	
Satd. Flow (perm)	0	1787	0	0	1785	0	0	1772	0	0	1680	0
Link Speed (mph)		55			55			35			50	
Link Distance (ft)		1494			4148			578			618	
Travel Time (s)		18.5			51.4			11.3			8.4	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
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
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	7%	0%	0%	6%	0%	0%	3%	0%	0%	7%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	2	458	25	3	297	0	4	39	2	1	32	1
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	485	0	0	300	0	0	45	0	0	34	0
Sign Control		Free			Free			Stop			Stop	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

Intersection	
Int Delay, s/veh	1.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	2	421	23	3	273	0	4	36	2	1	29	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	-2	-	-	1	-	-	0	-	-	-3	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	0	7	0	0	6	0	0	3	0	0	7	0
Mvmt Flow	2	458	25	3	297	0	4	39	2	1	32	1

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	297	0	0	483	0	0	794	777	470	798	790	297
Stage 1	-	-	-	-	-	-	474	474	-	303	303	-
Stage 2	-	-	-	-	-	-	320	303	-	495	487	-
Critical Hdwy	4.9	-	-	4.9	-	-	8.1	6.53	6.4	8.1	6.5	6.4
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.53	-	5.5	4.97	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.53	-	5.5	4.97	-
Follow-up Hdwy	3.5	-	-	3.5	-	-	3	4.027	3.4	3	4.063	3.4
Pot Cap-1 Maneuver	790	-	-	668	-	-	275	327	569	273	322	716
Stage 1	-	-	-	-	-	-	651	556	-	855	689	-
Stage 2	-	-	-	-	-	-	795	662	-	687	588	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	790	-	-	668	-	-	252	324	569	245	319	716
Mov Cap-2 Maneuver	-	-	-	-	-	-	252	324	-	245	319	-
Stage 1	-	-	-	-	-	-	649	554	-	852	686	-
Stage 2	-	-	-	-	-	-	754	659	-	634	586	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0.1	18	17.5
HCM LOS			C	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	322	790	-	-	668	-	-	322
HCM Lane V/C Ratio	0.142	0.003	-	-	0.005	-	-	0.105
HCM Control Delay (s)	18	9.6	0	-	10.4	0	-	17.5
HCM Lane LOS	C	A	A	-	B	A	-	C
HCM 95th %tile Q(veh)	0.5	0	-	-	0	-	-	0.3

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	17	329	53	8	225	1	37	14	6	2	22	19
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	11	11	11	14	14	14
Grade (%)		0%			-1%			7%			-1%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (ft)	75			75			75			75		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.982			0.999			0.985			0.940	
Flt Protected		0.998			0.998			0.968			0.998	
Satd. Flow (prot)	0	1798	0	0	1768	0	0	1658	0	0	1911	0
Flt Permitted		0.998			0.998			0.968			0.998	
Satd. Flow (perm)	0	1798	0	0	1768	0	0	1658	0	0	1911	0
Link Speed (mph)		55			55			40			40	
Link Distance (ft)		1228			918			354			317	
Travel Time (s)		15.2			11.4			6.0			5.4	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	6%	4%	0%	0%	8%	0%	3%	0%	0%	0%	0%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	19	362	58	9	247	1	41	15	7	2	24	21
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	439	0	0	257	0	0	63	0	0	47	0
Sign Control		Free			Free			Stop			Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	2.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	17	329	53	8	225	1	37	14	6	2	22	19
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	-1	-	-	7	-	-	-1	-
Peak Hour Factor	91	91	91	91	91	91	91	91	91	91	91	91
Heavy Vehicles, %	6	4	0	0	8	0	3	0	0	0	0	0
Mvmt Flow	19	362	58	9	247	1	41	15	7	2	24	21

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	248	0	0	420	0	0	716	694	391	704	722	248
Stage 1	-	-	-	-	-	-	428	428	-	265	265	-
Stage 2	-	-	-	-	-	-	288	266	-	439	457	-
Critical Hdwy	4.9	-	-	4.9	-	-	8.1	6.5	6.4	8.1	6.5	6.4
Critical Hdwy Stg 1	-	-	-	-	-	-	7.53	6.9	-	5.9	5.3	-
Critical Hdwy Stg 2	-	-	-	-	-	-	7.53	6.9	-	5.9	5.3	-
Follow-up Hdwy	3.5	-	-	3.5	-	-	3	4	3.4	3	4	3.4
Pot Cap-1 Maneuver	826	-	-	707	-	-	318	369	632	325	355	764
Stage 1	-	-	-	-	-	-	583	498	-	866	703	-
Stage 2	-	-	-	-	-	-	739	624	-	698	586	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	826	-	-	707	-	-	283	353	632	300	339	764
Mov Cap-2 Maneuver	-	-	-	-	-	-	283	353	-	300	339	-
Stage 1	-	-	-	-	-	-	566	483	-	840	692	-
Stage 2	-	-	-	-	-	-	683	615	-	649	568	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.4	0.3	19.1	14
HCM LOS			C	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	317	826	-	-	707	-	-	446
HCM Lane V/C Ratio	0.198	0.023	-	-	0.012	-	-	0.106
HCM Control Delay (s)	19.1	9.5	0	-	10.2	0	-	14
HCM Lane LOS	C	A	A	-	B	A	-	B
HCM 95th %tile Q(veh)	0.7	0.1	-	-	0	-	-	0.4



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	329	82	4	214	48	14
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	13	13	13	13	12	12
Grade (%)	3%			1%	5%	
Storage Length (ft)		0	0		0	0
Storage Lanes		0	0		1	0
Taper Length (ft)			75		75	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.973				0.969	
Flt Protected				0.999	0.963	
Satd. Flow (prot)	1827	0	0	1809	1729	0
Flt Permitted				0.999	0.963	
Satd. Flow (perm)	1827	0	0	1809	1729	0
Link Speed (mph)	55			55	35	
Link Distance (ft)	1476			1319	549	
Travel Time (s)	18.3			16.4	10.7	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	3%	3%	0%	8%	0%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	411	103	5	268	60	18
Shared Lane Traffic (%)						
Lane Group Flow (vph)	513	0	0	273	78	0
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

Intersection	
Int Delay, s/veh	1.5

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Vol, veh/h	329	82	4	214	48	14
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, %	3	-	-	1	5	-
Peak Hour Factor	80	80	80	80	80	80
Heavy Vehicles, %	3	3	0	8	0	0
Mvmt Flow	411	102	5	268	60	18

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	514	0	741	463
Stage 1	-	-	-	-	463	-
Stage 2	-	-	-	-	278	-
Critical Hdwy	-	-	4.3	-	7.1	6.2
Critical Hdwy Stg 1	-	-	-	-	6.4	-
Critical Hdwy Stg 2	-	-	-	-	6.4	-
Follow-up Hdwy	-	-	3	-	3	3.1
Pot Cap-1 Maneuver	-	-	798	-	373	634
Stage 1	-	-	-	-	635	-
Stage 2	-	-	-	-	820	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	798	-	370	634
Mov Cap-2 Maneuver	-	-	-	-	370	-
Stage 1	-	-	-	-	635	-
Stage 2	-	-	-	-	814	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.2	15.9
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	408	-	-	798	-
HCM Lane V/C Ratio	0.19	-	-	0.006	-
HCM Control Delay (s)	15.9	-	-	9.5	0
HCM Lane LOS	C	-	-	A	A
HCM 95th %tile Q(veh)	0.7	-	-	0	-



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	462	22	0	362	31	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	11	10	10
Grade (%)	-1%			1%	-4%	
Storage Length (ft)		0	0		0	0
Storage Lanes		0	0		1	0
Taper Length (ft)			75		75	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.994				0.996	
Flt Protected					0.954	
Satd. Flow (prot)	1761	0	0	1740	1639	0
Flt Permitted					0.954	
Satd. Flow (perm)	1761	0	0	1740	1639	0
Link Speed (mph)	50			55	35	
Link Distance (ft)	420			676	522	
Travel Time (s)	5.7			8.4	10.2	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	50%	0%	5%	5%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	508	24	0	398	34	1
Shared Lane Traffic (%)						
Lane Group Flow (vph)	532	0	0	398	35	0
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

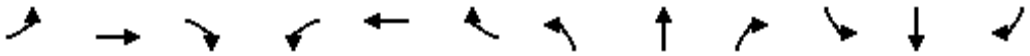
Intersection	
Int Delay, s/veh	0.7

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Vol, veh/h	462	22	0	362	31	1
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, %	-1	-	-	1	-4	-
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	2	50	0	5	5	0
Mvmt Flow	508	24	0	398	34	1

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	532	0	918	520
Stage 1	-	-	-	-	520	-
Stage 2	-	-	-	-	398	-
Critical Hdwy	-	-	4.3	-	7.1	6.2
Critical Hdwy Stg 1	-	-	-	-	4.65	-
Critical Hdwy Stg 2	-	-	-	-	4.65	-
Follow-up Hdwy	-	-	3	-	3	3.1
Pot Cap-1 Maneuver	-	-	787	-	281	588
Stage 1	-	-	-	-	755	-
Stage 2	-	-	-	-	843	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	787	-	281	588
Mov Cap-2 Maneuver	-	-	-	-	281	-
Stage 1	-	-	-	-	755	-
Stage 2	-	-	-	-	843	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	19.3
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	286	-	-	787	-
HCM Lane V/C Ratio	0.123	-	-	-	-
HCM Control Delay (s)	19.3	-	-	0	-
HCM Lane LOS	C	-	-	A	-
HCM 95th %tile Q(veh)	0.4	-	-	0	-



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	16	23	8	0	10	1	6	32	6	0	11	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	10	10	10	10	10	13	13	13	16	16	16
Grade (%)		-3%			2%			1%			-2%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (ft)	75			75			75			75		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.977			0.991			0.982			0.972	
Flt Protected		0.983						0.993				
Satd. Flow (prot)	0	1427	0	0	1578	0	0	1599	0	0	1504	0
Flt Permitted		0.983						0.993				
Satd. Flow (perm)	0	1427	0	0	1578	0	0	1599	0	0	1504	0
Link Speed (mph)		35			25			25			25	
Link Distance (ft)		1453			774			205			154	
Travel Time (s)		28.3			21.1			5.6			4.2	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	27%	0%	71%	0%	11%	0%	0%	23%	17%	0%	38%	50%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	22	32	11	0	14	1	8	44	8	0	15	4
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	65	0	0	15	0	0	60	0	0	19	0
Sign Control		Stop			Stop			Free			Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	5.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	16	23	8	0	10	1	6	32	6	0	11	3
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, %	-	-3	-	-	2	-	-	1	-	-	-2	-
Peak Hour Factor	73	73	73	73	73	73	73	73	73	73	73	73
Heavy Vehicles, %	27	0	71	0	11	0	0	23	17	0	38	50
Mvmt Flow	22	32	11	0	14	1	8	44	8	0	15	4

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	89	85	17	102	83	48	19	0	0	52	0	0
Stage 1	17	17	-	64	64	-	-	-	-	-	-	-
Stage 2	72	68	-	38	19	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.3	-	-	4.3	-	-
Critical Hdwy Stg 1	5.77	4.9	-	6.5	6.01	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.77	4.9	-	6.5	6.01	-	-	-	-	-	-	-
Follow-up Hdwy	3	4	3.1	3	4.099	3.1	3	-	-	3	-	-
Pot Cap-1 Maneuver	1045	809	1136	1024	792	1091	1182	-	-	1152	-	-
Stage 1	1176	888	-	1098	818	-	-	-	-	-	-	-
Stage 2	1102	852	-	1138	860	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	1024	803	1136	979	786	1091	1182	-	-	1152	-	-
Mov Cap-2 Maneuver	1024	803	-	979	786	-	-	-	-	-	-	-
Stage 1	1168	888	-	1090	812	-	-	-	-	-	-	-
Stage 2	1074	846	-	1087	860	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	9.2	9.6	1.1	0
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1182	-	-	916	806	1152	-	-
HCM Lane V/C Ratio	0.007	-	-	0.07	0.019	-	-	-
HCM Control Delay (s)	8.1	0	-	9.2	9.6	0	-	-
HCM Lane LOS	A	A	-	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.2	0.1	0	-	-

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	76	424	4	4	309	62	15	29	5	56	5	17
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	11	11	11	16	16	16	11	11	11
Grade (%)		-2%			2%			2%			-1%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (ft)	75			75			75			75		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.999			0.978			0.986			0.970	
Flt Protected		0.993			0.999			0.985			0.966	
Satd. Flow (prot)	0	1813	0	0	1686	0	0	1894	0	0	1705	0
Flt Permitted		0.993			0.999			0.985			0.966	
Satd. Flow (perm)	0	1813	0	0	1686	0	0	1894	0	0	1705	0
Link Speed (mph)		50			50			25			50	
Link Distance (ft)		832			852			184			234	
Travel Time (s)		11.3			11.6			5.0			3.2	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	3%	1%	25%	50%	5%	4%	23%	4%	0%	2%	0%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	87	487	5	5	355	71	17	33	6	64	6	20
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	579	0	0	431	0	0	56	0	0	90	0
Sign Control		Free			Free			Stop			Stop	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

Intersection	
Int Delay, s/veh	5.2

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Vol, veh/h	76	424	4	4	309	62	15	29	5	56	5	17
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	-2	-	-	2	-	-	2	-	-	-1	-
Peak Hour Factor	87	87	87	87	87	87	87	87	87	87	87	87
Heavy Vehicles, %	3	1	25	50	5	4	23	4	0	2	0	0
Mvmt Flow	87	487	5	5	355	71	17	33	6	64	6	20

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	426	0	0	492	0	0	1077	1100	490	1084	1067	391
Stage 1	-	-	-	-	-	-	664	664	-	400	400	-
Stage 2	-	-	-	-	-	-	413	436	-	684	667	-
Critical Hdwy	4.3	-	-	4.3	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.73	5.94	-	5.92	5.3	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.73	5.94	-	5.92	5.3	-
Follow-up Hdwy	3	-	-	3	-	-	3	4	3.1	3	4	3.1
Pot Cap-1 Maneuver	857	-	-	813	-	-	217	214	612	215	224	698
Stage 1	-	-	-	-	-	-	452	425	-	731	619	-
Stage 2	-	-	-	-	-	-	655	553	-	511	477	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	857	-	-	813	-	-	183	183	612	163	191	698
Mov Cap-2 Maneuver	-	-	-	-	-	-	183	183	-	163	191	-
Stage 1	-	-	-	-	-	-	389	366	-	629	614	-
Stage 2	-	-	-	-	-	-	626	549	-	396	410	-

Approach	SE	NW	NE	SW
HCM Control Delay, s	1.5	0.1	30.4	37.4
HCM LOS			D	E

Minor Lane/Major Mvmt	NELn1	NWL	NWT	NWR	SEL	SET	SER	SWLn1
Capacity (veh/h)	197	813	-	-	857	-	-	198
HCM Lane V/C Ratio	0.286	0.006	-	-	0.102	-	-	0.453
HCM Control Delay (s)	30.4	9.5	0	-	9.7	0	-	37.4
HCM Lane LOS	D	A	A	-	A	A	-	E
HCM 95th %tile Q(veh)	1.1	0	-	-	0.3	-	-	2.1

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Volume (vph)	1	0	29	3	0	0	1	441	0	5	382	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	10	10	9	9	9	11	11	11	11	11	11
Grade (%)		1%			-1%			-3%			0%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (ft)	75			75			75			75		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.869										
Flt Protected		0.998			0.950						0.999	
Satd. Flow (prot)	0	1430	0	0	1633	0	0	1828	0	0	1757	0
Flt Permitted		0.998			0.950						0.999	
Satd. Flow (perm)	0	1430	0	0	1633	0	0	1828	0	0	1757	0
Link Speed (mph)		25			25			50			50	
Link Distance (ft)		172			263			852			367	
Travel Time (s)		4.7			7.2			11.6			5.0	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	100%	0%	4%	0%	0%	0%	0%	2%	0%	40%	4%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	1	0	31	3	0	0	1	469	0	5	406	1
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	32	0	0	3	0	0	470	0	0	412	0
Sign Control		Stop			Stop			Free			Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

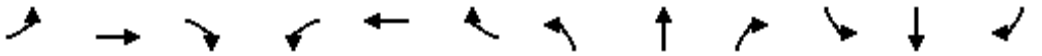
Intersection	
Int Delay, s/veh	0.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Vol, veh/h	1	0	29	3	0	0	1	441	0	5	382	1
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, %	-	1	-	-	-1	-	-	-3	-	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	100	0	4	0	0	0	0	2	0	40	4	0
Mvmt Flow	1	0	31	3	0	0	1	469	0	5	406	1

Major/Minor	Minor1			Minor2			Major1			Major2		
Conflicting Flow All	889	889	469	905	889	407	407	0	0	469	0	0
Stage 1	471	471	-	418	418	-	-	-	-	-	-	-
Stage 2	418	418	-	487	471	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.3	-	-	4.3	-	-
Critical Hdwy Stg 1	7.3	5.7	-	5.9	5.3	-	-	-	-	-	-	-
Critical Hdwy Stg 2	7.3	5.7	-	5.9	5.3	-	-	-	-	-	-	-
Follow-up Hdwy	3	4	3.1	3	4	3.1	3	-	-	3	-	-
Pot Cap-1 Maneuver	294	285	629	287	285	683	870	-	-	828	-	-
Stage 1	558	548	-	716	608	-	-	-	-	-	-	-
Stage 2	609	580	-	657	578	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	292	282	629	271	282	683	870	-	-	828	-	-
Mov Cap-2 Maneuver	292	282	-	271	282	-	-	-	-	-	-	-
Stage 1	557	547	-	715	603	-	-	-	-	-	-	-
Stage 2	604	575	-	624	577	-	-	-	-	-	-	-

Approach	EB	WB	SE	NW
HCM Control Delay, s	11.3	18.4	0	0.1
HCM LOS	B	C		

Minor Lane/Major Mvmt	NWL	NWT	NWR	EBLn1	WBLn1	SEL	SET	SER
Capacity (veh/h)	828	-	-	606	271	870	-	-
HCM Lane V/C Ratio	0.006	-	-	0.053	0.012	0.001	-	-
HCM Control Delay (s)	9.4	0	-	11.3	18.4	9.1	0	-
HCM Lane LOS	A	A	-	B	C	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.2	0	0	-	-



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	37	390	10	95	332	36	0	0	311	50	25	74
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	13	12	12	12	12	12	12	12
Grade (%)		-1%			1%			-3%			0%	
Storage Length (ft)	125		0	125		125	0		0	0		100
Storage Lanes	1		0	1		1	0		1	0		1
Taper Length (ft)	75			60			75			75		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.996				0.850			0.865			0.850
Flt Protected	0.950			0.950							0.968	
Satd. Flow (prot)	1778	1857	0	1589	1878	1575	0	0	1620	0	1803	1583
Flt Permitted	0.950			0.950							0.968	
Satd. Flow (perm)	1778	1857	0	1589	1878	1575	0	0	1620	0	1803	1583
Link Speed (mph)		35			35			25			35	
Link Distance (ft)		496			348			387			259	
Travel Time (s)		9.7			6.8			10.6			5.0	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.90	0.96	0.96	0.96	0.96	0.90	0.96	0.90	0.96	0.90	0.90	0.90
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	19%	13%	4%	2%	0%	2%	3%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	41	406	10	99	346	40	0	0	324	56	28	82
Shared Lane Traffic (%)												
Lane Group Flow (vph)	41	416	0	99	346	40	0	0	324	0	84	82
Sign Control		Free			Free			Stop			Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	7.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	37	390	10	95	332	36	0	0	311	50	25	74
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	Yield	-	-	Yield
Storage Length	125	-	-	125	-	125	-	-	0	-	-	100
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	1	-
Grade, %	-	-1	-	-	1	-	-	-3	-	-	0	-
Peak Hour Factor	90	96	96	96	96	90	96	90	96	90	90	90
Heavy Vehicles, %	2	2	19	13	4	2	0	2	3	2	2	2
Mvmt Flow	41	406	10	99	346	40	0	0	324	56	28	82

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	346	0	0	417	0	0	1052	1038	411	1038	1043	346
Stage 1	-	-	-	-	-	-	494	494	-	544	544	-
Stage 2	-	-	-	-	-	-	558	544	-	494	499	-
Critical Hdwy	4.12	-	-	4.3	-	-	7.1	5.92	6.2	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	5.5	4.92	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.5	4.92	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	3	-	-	3	4.018	3.1	3.518	4.018	3.318
Pot Cap-1 Maneuver	1213	-	-	863	-	-	226	274	679	209	229	697
Stage 1	-	-	-	-	-	-	688	593	-	523	519	-
Stage 2	-	-	-	-	-	-	640	568	-	557	544	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1213	-	-	863	-	-	165	234	679	97	196	697
Mov Cap-2 Maneuver	-	-	-	-	-	-	308	338	-	153	291	-
Stage 1	-	-	-	-	-	-	665	573	-	505	459	-
Stage 2	-	-	-	-	-	-	470	503	-	281	526	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.7	2	15	25.8
HCM LOS			C	D

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	679	1213	-	-	863	-	-	182	697
HCM Lane V/C Ratio	0.477	0.034	-	-	0.115	-	-	0.458	0.118
HCM Control Delay (s)	15	8.1	-	-	9.7	-	-	40.5	10.9
HCM Lane LOS	C	A	-	-	A	-	-	E	B
HCM 95th %tile Q(veh)	2.6	0.1	-	-	0.4	-	-	2.2	0.4

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	581	170	0	269	193	11	0	124	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	11	12	12	12	12	12	12	12	12	12
Grade (%)		-1%			-1%			-4%			-2%	
Storage Length (ft)	0		0	0		115	0		0	0		0
Storage Lanes	0		1	0		1	0		0	0		0
Taper Length (ft)	75			75			75			75		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt			0.850			0.850		0.876				
Flt Protected								0.996				
Satd. Flow (prot)	0	1872	1553	0	1785	1591	0	1493	0	0	0	0
Flt Permitted								0.996				
Satd. Flow (perm)	0	1872	1553	0	1785	1591	0	1493	0	0	0	0
Link Speed (mph)		45			45			25			25	
Link Distance (ft)		758			636			290			200	
Travel Time (s)		11.5			9.6			7.9			5.5	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	100%	2%	1%	0%	7%	2%	40%	0%	11%	0%	0%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	0	660	193	0	306	219	13	0	141	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	660	193	0	306	219	0	153	0	0	0	0
Sign Control		Free			Free			Stop			Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	1.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	0	581	170	0	269	193	11	0	124	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	Free	-	-	None	-	-	None	-	-	None
Storage Length	-	-	0	-	-	115	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	0	-
Grade, %	-	-1	-	-	-1	-	-	-4	-	-	-2	-
Peak Hour Factor	88	88	88	88	88	88	88	88	88	88	88	88
Heavy Vehicles, %	100	2	1	0	7	2	40	0	11	0	0	0
Mvmt Flow	0	660	193	0	306	219	12	0	141	0	0	0

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	306	0	-	660	0	0	966	966	660
Stage 1	-	-	-	-	-	-	660	660	-
Stage 2	-	-	-	-	-	-	306	306	-
Critical Hdwy	4.3	-	-	4.3	-	-	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	5	4.7	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5	4.7	-
Follow-up Hdwy	3	-	-	3	-	-	3	4	3.1
Pot Cap-1 Maneuver	943	-	0	709	-	-	260	257	489
Stage 1	-	-	0	-	-	-	624	537	-
Stage 2	-	-	0	-	-	-	889	712	-
Platoon blocked, %		-			-	-			
Mov Cap-1 Maneuver	943	-	-	709	-	-	260	0	489
Mov Cap-2 Maneuver	-	-	-	-	-	-	448	0	-
Stage 1	-	-	-	-	-	-	624	0	-
Stage 2	-	-	-	-	-	-	889	0	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	15.8
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	WBL	WBT	WBR
Capacity (veh/h)	485	943	-	709	-	-
HCM Lane V/C Ratio	0.316	-	-	-	-	-
HCM Control Delay (s)	15.8	0	-	0	-	-
HCM Lane LOS	C	A	-	A	-	-
HCM 95th %tile Q(veh)	1.3	0	-	0	-	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	9	1	50	0	0	0	44	802	8	6	542	18
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	13	13	13	12	12	12	12	12	11	11	11	11
Grade (%)		3%			2%			0%			1%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (ft)	75			75			75			75		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.888						0.999			0.996	
Flt Protected		0.992						0.997				
Satd. Flow (prot)	0	1704	0	0	1881	0	0	3494	0	0	1737	0
Flt Permitted		0.992						0.997				
Satd. Flow (perm)	0	1704	0	0	1881	0	0	3494	0	0	1737	0
Link Speed (mph)		40			35			45			45	
Link Distance (ft)		499			348			586			796	
Travel Time (s)		8.5			6.8			8.9			12.1	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	2%	3%	0%	0%	5%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	10	1	53	0	0	0	47	853	9	6	577	19
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	64	0	0	0	0	0	909	0	0	602	0
Sign Control		Stop			Stop			Free			Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	1.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Vol, veh/h	9	1	50	0	0	0	44	802	8	6	542	18
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, %	-	3	-	-	2	-	-	0	-	-	1	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	0	0	0	0	0	0	2	3	0	0	5	0
Mvmt Flow	10	1	53	0	0	0	47	853	9	6	577	19

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1119	1554	586	1577	1560	431	596	0	0	862	0	0
Stage 1	599	599	-	951	951	-	-	-	-	-	-	-
Stage 2	520	955	-	626	609	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.3	-	-	4.3	-	-
Critical Hdwy Stg 1	6.7	6.1	-	6.9	5.9	-	-	-	-	-	-	-
Critical Hdwy Stg 2	7.1	6.1	-	6.5	5.9	-	-	-	-	-	-	-
Follow-up Hdwy	3	4	3.1	3	4	3.1	3	-	-	3	-	-
Pot Cap-1 Maneuver	203	114	539	96	113	662	747	-	-	601	-	-
Stage 1	500	447	-	281	307	-	-	-	-	-	-	-
Stage 2	530	290	-	497	457	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	182	99	539	77	98	662	747	-	-	601	-	-
Mov Cap-2 Maneuver	182	99	-	77	98	-	-	-	-	-	-	-
Stage 1	440	440	-	247	270	-	-	-	-	-	-	-
Stage 2	466	255	-	440	450	-	-	-	-	-	-	-

Approach	EB	WB	NE	SW
HCM Control Delay, s	15.9	0	1.1	0.1
HCM LOS	C	A		

Minor Lane/Major Mvmt	NEL	NET	NER	EBLn1	WBLn1	SWL	SWT	SWR
Capacity (veh/h)	747	-	-	394	-	601	-	-
HCM Lane V/C Ratio	0.063	-	-	0.162	-	0.011	-	-
HCM Control Delay (s)	10.1	0.6	-	15.9	0	11.1	0	-
HCM Lane LOS	B	A	-	C	A	B	A	-
HCM 95th %tile Q(veh)	0.2	-	-	0.6	-	0	-	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	61	834	0	2	591	18	0	0	0	28	0	23
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	11	12	12	11	11	12	12	12	12	12	12
Grade (%)		1%			0%			0%			1%	
Storage Length (ft)	60		0	0		0	0		0	0		0
Storage Lanes	1		0	0		0	0		0	0		0
Taper Length (ft)	140			75			75			75		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt					0.996						0.938	
Flt Protected	0.950										0.974	
Satd. Flow (prot)	1612	1757	0	0	1752	0	0	1900	0	0	1621	0
Flt Permitted	0.950										0.974	
Satd. Flow (perm)	1612	1757	0	0	1752	0	0	1900	0	0	1621	0
Link Speed (mph)		45			45			35			45	
Link Distance (ft)		796			771			91			413	
Travel Time (s)		12.1			11.7			1.8			6.3	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	4%	4%	0%	0%	4%	18%	0%	0%	0%	12%	0%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	68	927	0	2	657	20	0	0	0	31	0	26
Shared Lane Traffic (%)												
Lane Group Flow (vph)	68	927	0	0	679	0	0	0	0	0	57	0
Sign Control		Free			Free			Stop			Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

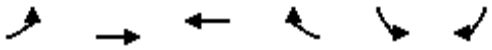
Intersection	
Int Delay, s/veh	2.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	61	834	0	2	591	18	0	0	0	28	0	23
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	60	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	1	-	-	0	-	-	0	-	-	1	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	4	4	0	0	4	18	0	0	0	12	0	0
Mvmt Flow	68	927	0	2	657	20	0	0	0	31	0	26

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	677	0	0	927	0	0	1746	1743	927	1733	1733	667
Stage 1	-	-	-	-	-	-	1062	1062	-	671	671	-
Stage 2	-	-	-	-	-	-	684	681	-	1062	1062	-
Critical Hdwy	4.3	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.7	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.42	5.7	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.42	5.7	-
Follow-up Hdwy	3	-	-	2.2	-	-	3.5	4	3.3	3	4	3.1
Pot Cap-1 Maneuver	699	-	-	746	-	-	68	88	328	74	81	484
Stage 1	-	-	-	-	-	-	273	303	-	473	441	-
Stage 2	-	-	-	-	-	-	442	453	-	272	285	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	699	-	-	746	-	-	59	79	328	68	73	484
Mov Cap-2 Maneuver	-	-	-	-	-	-	59	79	-	68	73	-
Stage 1	-	-	-	-	-	-	246	274	-	427	439	-
Stage 2	-	-	-	-	-	-	417	451	-	246	257	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.7	0	0	67.2
HCM LOS			A	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	699	-	-	746	-	-	111
HCM Lane V/C Ratio	-	0.097	-	-	0.003	-	-	0.511
HCM Control Delay (s)	0	10.7	-	-	9.8	0	-	67.2
HCM Lane LOS	A	B	-	-	A	A	-	F
HCM 95th %tile Q(veh)	-	0.3	-	-	0	-	-	2.3



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	0	751	285	0	0	178
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	13	13	13	13
Grade (%)		-1%	1%		-2%	
Storage Length (ft)	0			0	0	0
Storage Lanes	0			0	0	1
Taper Length (ft)	75				75	
Lane Util. Factor	1.00	0.95	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt						0.865
Flt Protected						
Satd. Flow (prot)	0	3522	1826	0	0	1634
Flt Permitted						
Satd. Flow (perm)	0	3522	1826	0	0	1634
Link Speed (mph)		35	35		25	
Link Distance (ft)		348	758		364	
Travel Time (s)		6.8	14.8		9.9	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	3%	7%	0%	0%	5%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)		0%	0%		0%	
Adj. Flow (vph)	0	782	297	0	0	185
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	782	297	0	0	185
Sign Control		Free	Free		Stop	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

Intersection	
Int Delay, s/veh	1.6

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Vol, veh/h	0	751	285	0	0	178
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	Stop
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	1	-
Grade, %	-	-1	1	-	-2	-
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	0	3	7	0	0	5
Mvmt Flow	0	782	297	0	0	185

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	297	0	-	0	688	297
Stage 1	-	-	-	-	297	-
Stage 2	-	-	-	-	391	-
Critical Hdwy	4.3	-	-	-	7.1	6.2
Critical Hdwy Stg 1	-	-	-	-	5	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	3	-	-	-	3	3.1
Pot Cap-1 Maneuver	950	-	-	-	406	789
Stage 1	-	-	-	-	897	-
Stage 2	-	-	-	-	782	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	950	-	-	-	406	789
Mov Cap-2 Maneuver	-	-	-	-	565	-
Stage 1	-	-	-	-	897	-
Stage 2	-	-	-	-	782	-

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

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	950	-	-	-	789
HCM Lane V/C Ratio	-	-	-	-	0.235
HCM Control Delay (s)	0	-	-	-	11
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0.9

APPENDIX H

Future (2034) Development Capacity/ Level of Service Analysis Worksheets

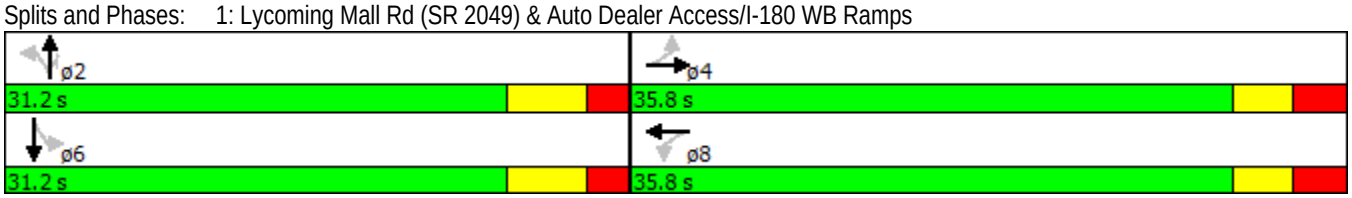
Future (2034) Development
1/3 Full Build-Out

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	1	2	3	269	9	153	23	405	142	87	501	0
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	13	13	13	15	15	15	12	12	16	12	12	12
Grade (%)		2%			4%			1%			-1%	
Storage Length (ft)	0		100	0		0	0		0	0		375
Storage Lanes	0		0	0		0	0		1	0		1
Taper Length (ft)	75			75			75			75		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95
Ped Bike Factor												
Frt		0.932			0.952				0.850			
Flt Protected		0.994			0.970			0.997			0.993	
Satd. Flow (prot)	0	1464	0	0	1754	0	0	1675	1643	0	3328	0
Flt Permitted		0.957			0.805			0.927			0.584	
Satd. Flow (perm)	0	1410	0	0	1456	0	0	1557	1643	0	1957	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		4			55				197			
Link Speed (mph)		25			25			40			40	
Link Distance (ft)		187			334			1105			689	
Travel Time (s)		5.1			9.1			18.8			11.7	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	0%	33%	3%	13%	0%	0%	7%	5%	0%	3%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	1	3	4	374	12	212	32	562	197	121	696	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	8	0	0	598	0	0	594	197	0	817	0
Number of Detectors	1	1		1	1		1	1	0	1	1	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left		
Leading Detector (ft)	30	40		30	45		30	45	0	30	45	
Trailing Detector (ft)	-10	-10		-10	-5		-10	-5	0	-10	-5	
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2		2	6		
Detector Phase	4	4		8	8		2	2	2	6	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	10.8	10.8		10.8	10.8		11.2	11.2	11.2	11.2	11.2	
Total Split (s)	35.8	35.8		35.8	35.8		31.2	31.2	31.2	31.2	31.2	
Total Split (%)	53.4%	53.4%		53.4%	53.4%		46.6%	46.6%	46.6%	46.6%	46.6%	
Maximum Green (s)	30.0	30.0		30.0	30.0		25.0	25.0	25.0	25.0	25.0	
Yellow Time (s)	3.0	3.0		3.0	3.0		4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	2.8	2.8		2.8	2.8		2.2	2.2	2.2	2.2	2.2	
Lost Time Adjust (s)		-1.0			-1.0			-1.0	-1.0		-1.0	
Total Lost Time (s)		4.8			4.8			5.2	5.2		5.2	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Minimum Gap (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Time Before Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Time To Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Recall Mode	None	None		None	None		Min	Min	Min	Min	Min	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
v/c Ratio		0.01			0.89			0.95	0.25		1.04	
Control Delay		8.0			32.5			48.3	3.4		66.1	
Queue Delay		0.0			0.0			0.0	0.0		0.0	
Total Delay		8.0			32.5			48.3	3.4		66.1	
Queue Length 50th (ft)		1			188			233	0		~201	
Queue Length 95th (ft)		6			216			#295	17		#210	
Internal Link Dist (ft)		107			254			1025			609	
Turn Bay Length (ft)												
Base Capacity (vph)		678			727			626	778		787	
Starvation Cap Reductn		0			0			0	0		0	
Spillback Cap Reductn		0			0			0	0		0	
Storage Cap Reductn		0			0			0	0		0	
Reduced v/c Ratio		0.01			0.82			0.95	0.25		1.04	

Intersection Summary	
Area Type:	Other
Cycle Length: 67	
Actuated Cycle Length: 64.9	
Natural Cycle: 70	
Control Type: Actuated-Uncoordinated	
~	Volume exceeds capacity, queue is theoretically infinite.
	Queue shown is maximum after two cycles.
#	95th percentile volume exceeds capacity, queue may be longer.
	Queue shown is maximum after two cycles.

Splits and Phases: 1: Lycoming Mall Rd (SR 2049) & Auto Dealer Access/I-180 WB Ramps



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	1	2	3	269	9	153	23	405	142	87	501	0
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1853	1591	1853	1835	1796	1835	1791	1680	1774	1809	1764	1809
Adj Flow Rate, veh/h	1	3	1	374	12	205	32	562	135	121	696	0
Adj No. of Lanes	0	1	0	0	1	0	0	1	1	0	2	0
Peak Hour Factor	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72
Percent Heavy Veh, %	0	0	0	13	13	13	7	7	5	3	3	3
Cap, veh/h	159	427	130	507	13	228	70	529	603	73	704	0
Arrive On Green	0.43	0.45	0.43	0.43	0.45	0.43	0.38	0.40	0.40	0.38	0.40	0.00
Sat Flow, veh/h	207	957	291	933	30	511	30	1322	1508	0	1840	0
Grp Volume(v), veh/h	5	0	0	591	0	0	594	0	135	383	434	0
Grp Sat Flow(s),veh/h/ln	1454	0	0	1474	0	0	1353	0	1508	235	1525	0
Q Serve(g_s), s	0.0	0.0	0.0	24.2	0.0	0.0	9.0	0.0	3.8	0.0	15.5	0.0
Cycle Q Clear(g_c), s	0.1	0.0	0.0	24.7	0.0	0.0	25.0	0.0	3.8	25.0	15.5	0.0
Prop In Lane	0.20		0.20	0.63		0.35	0.05		1.00	0.32		0.00
Lane Grp Cap(c), veh/h	693	0	0	726	0	0	578	0	603	163	610	0
V/C Ratio(X)	0.01	0.00	0.00	0.81	0.00	0.00	1.03	0.00	0.22	2.34	0.71	0.00
Avail Cap(c_a), veh/h	736	0	0	771	0	0	578	0	603	163	610	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	0.00	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	10.1	0.0	0.0	17.2	0.0	0.0	20.0	0.0	12.9	18.9	16.4	0.0
Incr Delay (d2), s/veh	0.0	0.0	0.0	6.8	0.0	0.0	44.4	0.0	0.3	622.6	4.3	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(95%),veh/ln	0.1	0.0	0.0	17.1	0.0	0.0	31.4	0.0	2.9	56.1	11.7	0.0
LnGrp Delay(d),s/veh	10.1	0.0	0.0	24.0	0.0	0.0	64.4	0.0	13.1	641.5	20.6	0.0
LnGrp LOS	B			C			F		B	F	C	
Approach Vol, veh/h		5			591			729			817	
Approach Delay, s/veh		10.1			24.0			54.9			311.4	
Approach LOS		B			C			D			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		31.2		33.8		31.2		33.8
Change Period (Y+Rc), s		* 6.2		* 5.8		* 6.2		* 5.8
Max Green Setting (Gmax), s		* 25		* 30		* 25		* 30
Max Q Clear Time (g_c+I1), s		27.0		2.5		27.0		26.7
Green Ext Time (p_c), s		0.0		4.7		0.0		1.3

Intersection Summary	
HCM 2010 Ctrl Delay	144.1
HCM 2010 LOS	F

Notes

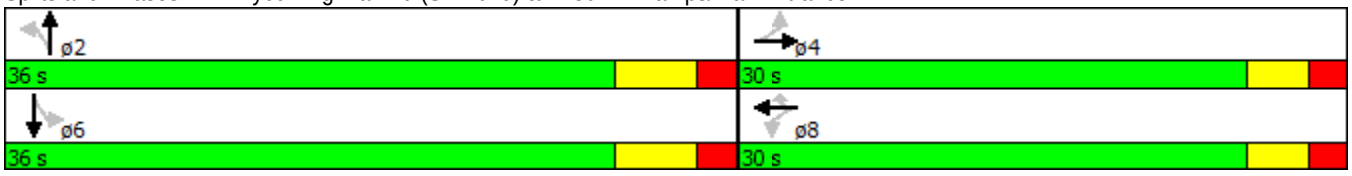
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	104	90	186	7	11	46	301	419	18	29	572	174
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	12	11	12	12	12	12	12	12	12	12
Grade (%)		2%			2%			-2%			-3%	
Storage Length (ft)	0		0	150		275	135		0	0		0
Storage Lanes	0		0	1		1	1		0	1		0
Taper Length (ft)	75			75			75			75		
Lane Util. Factor	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.927				0.850		0.994			0.969	
Flt Protected		0.986		0.950			0.950			0.950		
Satd. Flow (prot)	0	2951	0	1636	1620	1416	1515	1649	0	1550	1735	0
Flt Permitted		0.867		0.417			0.169			0.405		
Satd. Flow (perm)	0	2595	0	718	1620	1416	270	1649	0	661	1735	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		162				55		4			26	
Link Speed (mph)		25			25			40			40	
Link Distance (ft)		279			408			2572			1105	
Travel Time (s)		7.6			11.1			43.8			18.8	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	1.00
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	8%	1%	5%	0%	10%	7%	14%	10%	0%	12%	0%	10%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	124	107	221	8	13	55	358	499	21	35	681	174
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	452	0	8	13	55	358	520	0	35	855	0
Number of Detectors	1	1		1	1	0	1	1		1	1	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (ft)	30	45		45	45	0	45	45		45	45	
Trailing Detector (ft)	-10	-5		-5	-5	0	-5	-5		-5	-5	
Turn Type	Perm	NA		Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8		8	2			6		
Detector Phase	4	4		8	8	8	2	2		6	6	
Switch Phase												
Minimum Initial (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Minimum Split (s)	7.0	7.0		7.0	7.0	7.0	8.0	8.0		8.0	8.0	
Total Split (s)	30.0	30.0		30.0	30.0	30.0	36.0	36.0		36.0	36.0	
Total Split (%)	45.5%	45.5%		45.5%	45.5%	45.5%	54.5%	54.5%		54.5%	54.5%	
Maximum Green (s)	25.0	25.0		25.0	25.0	25.0	30.0	30.0		30.0	30.0	
Yellow Time (s)	3.0	3.0		3.0	3.0	3.0	4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		-1.0		-1.0	-1.0	-1.0	-1.0	-1.0		-1.0	-1.0	
Total Lost Time (s)		4.0		4.0	4.0	4.0	5.0	5.0		5.0	5.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Minimum Gap (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Time Before Reduce (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Time To Reduce (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Recall Mode	Min	Min		Min	Min	Min	None	None		None	None	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
v/c Ratio		0.57		0.04	0.03	0.13	2.32	0.55		0.09	0.85	
Control Delay		13.6		14.7	14.2	5.7	631.5	11.0		7.5	22.1	
Queue Delay		0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay		13.6		14.7	14.2	5.7	631.5	11.0		7.5	22.1	
Queue Length 50th (ft)		40		2	3	0	~147	86		4	185	
Queue Length 95th (ft)		67		9	12	17	#301	189		18	#455	
Internal Link Dist (ft)		199			328			2492			1025	
Turn Bay Length (ft)				150		275	135					
Base Capacity (vph)		1332		345	779	709	154	947		379	1005	
Starvation Cap Reductn		0		0	0	0	0	0		0	0	
Spillback Cap Reductn		0		0	0	0	0	0		0	0	
Storage Cap Reductn		0		0	0	0	0	0		0	0	
Reduced v/c Ratio		0.34		0.02	0.02	0.08	2.32	0.55		0.09	0.85	

Intersection Summary
Area Type: Other
Cycle Length: 66
Actuated Cycle Length: 54.3
Natural Cycle: 90
Control Type: Actuated-Uncoordinated
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

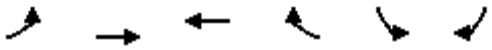
Splits and Phases: 2: Lycoming Mall Rd (SR 2049) & I-180 EB Ramps/Mall Entrance



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	104	90	186	7	11	46	301	419	18	29	572	174
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	1782	1699	1782	1782	1620	1665	1595	1659	1818	1631	1791	1827
Adj Flow Rate, veh/h	124	107	169	8	13	0	358	499	14	35	681	158
Adj No. of Lanes	0	2	0	1	1	1	1	1	0	1	1	0
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	1.00
Percent Heavy Veh, %	1	1	1	0	10	7	14	10	10	12	0	0
Cap, veh/h	283	189	308	283	386	338	263	948	27	476	830	193
Arrive On Green	0.22	0.24	0.22	0.24	0.24	0.00	0.59	0.59	0.57	0.59	0.59	0.57
Sat Flow, veh/h	740	791	1290	1109	1620	1416	590	1606	45	817	1407	326
Grp Volume(v), veh/h	227	0	173	8	13	0	358	0	513	35	0	839
Grp Sat Flow(s),veh/h/ln	1503	0	1319	1109	1620	1416	590	0	1651	817	0	1733
Q Serve(g_s), s	6.2	0.0	6.1	0.3	0.3	0.0	11.2	0.0	9.7	1.4	0.0	20.3
Cycle Q Clear(g_c), s	7.2	0.0	6.1	5.9	0.3	0.0	31.0	0.0	9.7	10.6	0.0	20.3
Prop In Lane	0.55		0.98	1.00		1.00	1.00		0.03	1.00		0.19
Lane Grp Cap(c), veh/h	436	0	314	283	386	338	263	0	974	476	0	1023
V/C Ratio(X)	0.52	0.00	0.55	0.03	0.03	0.00	1.36	0.00	0.53	0.07	0.00	0.82
Avail Cap(c_a), veh/h	817	0	653	568	802	701	263	0	974	476	0	1023
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	1.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	18.2	0.0	18.0	19.9	15.4	0.0	23.6	0.0	6.4	9.4	0.0	8.6
Incr Delay (d2), s/veh	1.4	0.0	2.1	0.1	0.0	0.0	184.7	0.0	0.7	0.1	0.0	5.6
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(95%),veh/ln	5.8	0.0	4.3	0.2	0.3	0.0	31.0	0.0	7.9	0.6	0.0	16.7
LnGrp Delay(d),s/veh	19.5	0.0	20.1	20.0	15.4	0.0	208.3	0.0	7.1	9.5	0.0	14.3
LnGrp LOS	B		C	B	B		F		A	A		B
Approach Vol, veh/h		400			21			871			874	
Approach Delay, s/veh		19.8			17.2			89.8			14.1	
Approach LOS		B			B			F			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		36.0		16.5		36.0		16.5
Change Period (Y+Rc), s		6.0		5.0		6.0		5.0
Max Green Setting (Gmax), s		30.0		25.0		30.0		25.0
Max Q Clear Time (g_c+I1), s		33.5		9.2		22.3		8.4
Green Ext Time (p_c), s		0.0		2.3		6.4		2.4

Intersection Summary	
HCM 2010 Ctrl Delay	45.6
HCM 2010 LOS	D



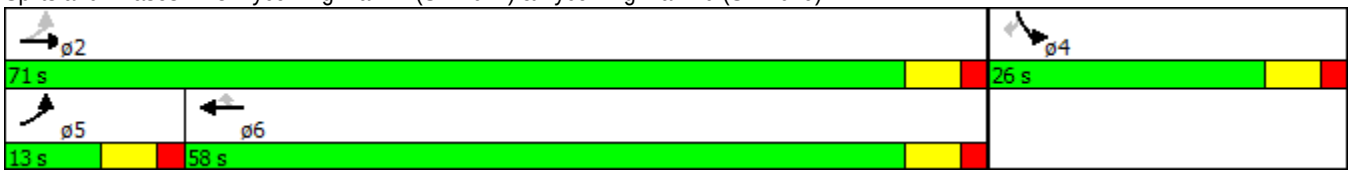
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	249	628	444	438	641	227
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	12	12	12	12
Grade (%)		-1%	1%		-2%	
Storage Length (ft)	165			215	165	0
Storage Lanes	1			1	1	1
Taper Length (ft)	125				75	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt				0.850		0.850
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1719	1630	1690	1522	1464	1472
Flt Permitted	0.190				0.950	
Satd. Flow (perm)	344	1630	1690	1522	1464	1472
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)				509		185
Link Speed (mph)		45	45		40	
Link Distance (ft)		727	1089		2572	
Travel Time (s)		11.0	16.5		43.8	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	11%	6%	0%	18%	5%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)		0%	0%		0%	
Adj. Flow (vph)	290	730	516	509	745	264
Shared Lane Traffic (%)						
Lane Group Flow (vph)	290	730	516	509	745	264
Number of Detectors	1	1	1	1	1	1
Detector Template	Left				Left	Right
Leading Detector (ft)	45	6	6	6	45	45
Trailing Detector (ft)	-5	0	0	0	-5	-5
Turn Type	pm+pt	NA	NA	Perm	Prot	Perm
Protected Phases	5	2	6		4	
Permitted Phases	2			6		4
Detector Phase	5				4	4
Switch Phase						
Minimum Initial (s)	3.0	15.0	15.0	15.0	5.0	5.0
Minimum Split (s)	9.0	21.0	21.0	21.0	11.0	11.0
Total Split (s)	13.0	71.0	58.0	58.0	26.0	26.0
Total Split (%)	13.4%	73.2%	59.8%	59.8%	26.8%	26.8%
Maximum Green (s)	7.0	65.0	52.0	52.0	20.0	20.0
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0

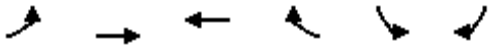
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lead/Lag	Lead		Lag	Lag		
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	5.0	5.0	5.0	3.0	3.0
Minimum Gap (s)	3.0	2.0	2.0	2.0	3.0	3.0
Time Before Reduce (s)	0.0	42.0	42.0	42.0	0.0	0.0
Time To Reduce (s)	0.0	10.0	10.0	10.0	0.0	0.0
Recall Mode	None	Min	Min	Min	None	None
Walk Time (s)		7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)		14.0	14.0	14.0	14.0	14.0
Pedestrian Calls (#/hr)		0	0	0	0	0
v/c Ratio	0.83	0.93	1.15	0.65	1.46	0.42
Control Delay	34.0	36.2	114.6	6.7	237.8	7.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	34.0	36.2	114.6	6.7	237.8	7.3
Queue Length 50th (ft)	61	230	~226	0	~381	19
Queue Length 95th (ft)	#156	#413	#363	53	#532	59
Internal Link Dist (ft)		647	1009		2492	
Turn Bay Length (ft)	165			215	165	
Base Capacity (vph)	349	787	450	779	512	635
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.83	0.93	1.15	0.65	1.46	0.42

Intersection Summary	
Area Type:	Other
Cycle Length: 97	
Actuated Cycle Length: 60	
Natural Cycle: 110	
Control Type: Actuated-Uncoordinated	

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

Splits and Phases: 3: Lycoming Mall Dr (SR 2014) & Lycoming Mall Rd (SR 2049)





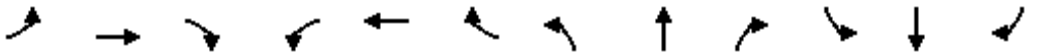
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	249	628	444	438	641	227
Number	5	2	6	16	7	14
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1809	1630	1690	1791	1541	1731
Adj Flow Rate, veh/h	290	730	516	496	745	224
Adj No. of Lanes	1	1	1	1	1	1
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86
Percent Heavy Veh, %	0	11	6	0	18	5
Cap, veh/h	391	1034	813	733	363	364
Arrive On Green	0.09	0.63	0.48	0.48	0.25	0.25
Sat Flow, veh/h	1723	1630	1690	1522	1467	1472
Grp Volume(v), veh/h	290	730	516	496	745	224
Grp Sat Flow(s),veh/h/ln	1723	1630	1690	1522	1467	1472
Q Serve(g_s), s	6.8	25.2	19.3	21.3	21.0	11.5
Cycle Q Clear(g_c), s	6.8	25.2	19.3	21.3	21.0	11.5
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	391	1034	813	733	363	364
V/C Ratio(X)	0.74	0.71	0.63	0.68	2.05	0.61
Avail Cap(c_a), veh/h	391	1268	1056	951	363	364
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	13.7	10.3	16.4	16.9	31.9	28.3
Incr Delay (d2), s/veh	7.4	2.2	1.8	2.5	482.2	3.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	7.6	17.4	14.3	14.3	102.7	0.6
LnGrp Delay(d),s/veh	21.0	12.5	18.2	19.4	514.1	31.4
LnGrp LOS	C	B	B	B	F	C
Approach Vol, veh/h		1020	1012		969	
Approach Delay, s/veh		14.9	18.8		402.5	
Approach LOS		B	B		F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		58.8		26.0	13.0	45.8		
Change Period (Y+Rc), s		6.0		6.0	6.0	6.0		
Max Green Setting (Gmax), s		65.0		20.0	7.0	52.0		
Max Q Clear Time (g_c+I1), s		27.7		23.5	9.3	23.8		
Green Ext Time (p_c), s		18.6		0.0	0.0	16.0		

Intersection Summary	
HCM 2010 Ctrl Delay	141.4
HCM 2010 LOS	F

Notes

User approved pedestrian interval to be less than phase max green.



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	1	283	0	556	372	4	724	6	206	6	1	3
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	12	13	13	13	12	12	12	14	14	14
Grade (%)		1%			-1%			-3%			0%	
Storage Length (ft)	1		0	275		0	0		0	0		0
Storage Lanes	0		0	1		0	1		1	0		0
Taper Length (ft)	75			75			75			75		
Lane Util. Factor	0.95	0.95	1.00	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt					0.999				0.850		0.963	
Flt Protected					0.971		0.950	0.953			0.969	
Satd. Flow (prot)	0	3067	0	0	2865	0	1601	1607	1374	0	1256	0
Flt Permitted		0.953			0.651		0.950	0.953				
Satd. Flow (perm)	0	2922	0	0	1921	0	1601	1607	1374	0	1296	0
Right Turn on Red			Yes			Yes			Yes			No
Satd. Flow (RTOR)									234			
Link Speed (mph)		45			45			45			25	
Link Distance (ft)		326			418			206			301	
Travel Time (s)		4.9			6.3			3.1			8.2	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	11%	6%	30%	5%	75%	3%	0%	13%	67%	0%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	1	322	0	632	423	5	823	7	234	7	1	3
Shared Lane Traffic (%)							50%					
Lane Group Flow (vph)	0	323	0	0	1060	0	411	419	234	0	11	0
Number of Detectors	1	2		1	2		2	2	0	1	1	
Detector Template	Left			Left						Left	Thru	
Leading Detector (ft)	30	306		30	286		206	206	0	30	45	
Trailing Detector (ft)	-10	-5		-10	-5		-5	-5	0	-10	-5	
Turn Type	Perm	NA		Perm	NA		Split	NA	Perm	Perm	NA	
Protected Phases		2			6		8	8			4	
Permitted Phases	2			6					8	4		
Detector Phase	2	2		6	6		8	8	8	4	4	
Switch Phase												
Minimum Initial (s)	15.0	15.0		15.0	15.0		15.0	15.0	15.0	5.0	5.0	
Minimum Split (s)	21.0	21.0		21.0	21.0		20.0	20.0	20.0	10.0	10.0	
Total Split (s)	46.0	46.0		46.0	46.0		45.0	45.0	45.0	20.0	20.0	
Total Split (%)	41.4%	41.4%		41.4%	41.4%		40.5%	40.5%	40.5%	18.0%	18.0%	
Maximum Green (s)	40.0	40.0		40.0	40.0		40.0	40.0	40.0	15.0	15.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)		-1.0			-1.0		-1.0	-1.0	-1.0		-1.0	
Total Lost Time (s)		5.0			5.0		4.0	4.0	4.0		4.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	6.0	6.0		6.0	6.0		6.0	6.0	6.0	3.0	3.0	
Minimum Gap (s)	2.0	2.0		2.0	2.0		2.0	2.0	2.0	2.0	2.0	
Time Before Reduce (s)	40.0	40.0		40.0	40.0		40.0	40.0	40.0	0.0	0.0	
Time To Reduce (s)	20.0	20.0		20.0	20.0		20.0	20.0	20.0	0.0	0.0	
Recall Mode	Min	Min		Min	Min		None	None	None	None	None	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
v/c Ratio		0.24			1.77dl		0.62	0.63	0.33		0.09	
Control Delay		17.8			134.0		26.8	27.1	4.2		41.4	
Queue Delay		0.0			0.0		0.0	0.0	0.0		0.0	
Total Delay		17.8			134.0		26.8	27.1	4.2		41.4	
Queue Length 50th (ft)		58			~398		177	182	0		6	
Queue Length 95th (ft)		114			#641		355	363	46		24	
Internal Link Dist (ft)		246			338			126			221	
Turn Bay Length (ft)												
Base Capacity (vph)		1326			872		727	730	751		229	
Starvation Cap Reductn		0			0		0	0	0		0	
Spillback Cap Reductn		0			0		0	0	0		0	
Storage Cap Reductn		0			0		0	0	0		0	
Reduced v/c Ratio		0.24			1.22		0.57	0.57	0.31		0.05	

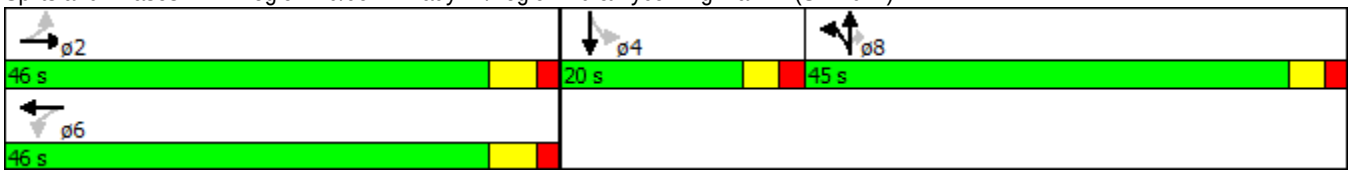
Intersection Summary	
Area Type:	Other
Cycle Length: 111	
Actuated Cycle Length: 91.3	
Natural Cycle: 100	
Control Type: Actuated-Uncoordinated	

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

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

dl Defacto Left Lane. Recode with 1 though lane as a left lane.

Splits and Phases: 4: Legion Rd/John Brady Dr/Legion Rd & Lycoming Mall Dr (SR 2014)



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	1	283	0	556	372	4	724	6	206	6	1	3
Number	5	2	12	1	6	16	3	8	18	7	4	14
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	1791	1614	0	1881	1565	1881	1774	1775	1617	1872	1312	1872
Adj Flow Rate, veh/h	1	322	0	632	423	4	828	0	190	7	1	3
Adj No. of Lanes	0	2	0	0	2	0	2	0	1	0	1	0
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	11	11	0	5	5	5	3	0	13	0	0	0
Cap, veh/h	41	1365	0	435	639	6	1277	0	519	19	3	8
Arrive On Green	0.44	0.45	0.00	0.44	0.45	0.44	0.38	0.00	0.38	0.01	0.02	0.01
Sat Flow, veh/h	1	3081	0	784	1408	13	3379	0	1374	773	110	331
Grp Volume(v), veh/h	173	150	0	632	0	427	828	0	190	11	0	0
Grp Sat Flow(s),veh/h/ln	1613	1395	0	784	0	1422	1689	0	1374	1215	0	0
Q Serve(g_s), s	0.0	5.9	0.0	33.6	0.0	21.2	18.2	0.0	9.0	0.8	0.0	0.0
Cycle Q Clear(g_c), s	6.0	5.9	0.0	40.0	0.0	21.2	18.2	0.0	9.0	0.8	0.0	0.0
Prop In Lane	0.01		0.00	1.00		0.01	1.00		1.00	0.64		0.27
Lane Grp Cap(c), veh/h	754	633	0	427	0	645	1277	0	519	30	0	0
V/C Ratio(X)	0.23	0.24	0.00	1.48	0.00	0.66	0.65	0.00	0.37	0.37	0.00	0.00
Avail Cap(c_a), veh/h	754	633	0	427	0	645	1533	0	624	215	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	15.1	15.1	0.0	31.3	0.0	19.3	23.2	0.0	20.3	43.8	0.0	0.0
Incr Delay (d2), s/veh	0.6	0.7	0.0	228.9	0.0	4.5	2.1	0.0	1.6	7.5	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(95%),veh/ln	5.0	4.3	0.0	67.9	0.0	14.1	13.8	0.0	6.6	0.6	0.0	0.0
LnGrp Delay(d),s/veh	15.7	15.8	0.0	260.2	0.0	23.8	25.2	0.0	21.8	51.4	0.0	0.0
LnGrp LOS	B	B		F		C	C		C	D		
Approach Vol, veh/h		323			1059			1018			11	
Approach Delay, s/veh		15.7			164.9			24.6			51.4	
Approach LOS		B			F			C			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		46.0		6.2		46.0		38.2
Change Period (Y+Rc), s		6.0		5.0		6.0		5.0
Max Green Setting (Gmax), s		40.0		15.0		40.0		40.0
Max Q Clear Time (g_c+I1), s		8.4		2.8		42.0		20.7
Green Ext Time (p_c), s		29.2		0.0		0.0		12.4

Intersection Summary	
HCM 2010 Ctrl Delay	85.1
HCM 2010 LOS	F

Notes

User approved volume balancing among the lanes for turning movement.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Volume (vph)	0	443	93	50	555	0	217	2	506	0	0	0
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	14	12	12	12	12	14	14	14	12	12	12
Grade (%)		-1%			-1%			3%			-4%	
Storage Length (ft)	0		175	150		0	0		0	0		0
Storage Lanes	0		1	1		0	0		0	0		0
Taper Length (ft)	75			75			75			75		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt			0.850					0.906				
Flt Protected				0.950				0.985				
Satd. Flow (prot)	0	1649	1292	1621	1587	0	0	1482	0	0	0	0
Flt Permitted				0.205				0.985				
Satd. Flow (perm)	0	1649	1292	350	1587	0	0	1482	0	0	0	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			102					135				
Link Speed (mph)		45			45			25			25	
Link Distance (ft)		2040			660			376			358	
Travel Time (s)		30.9			10.0			10.3			9.8	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	17%	19%	6%	14%	0%	16%	0%	13%	0%	0%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	0	487	102	55	610	0	238	2	556	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	487	102	55	610	0	0	796	0	0	0	0
Number of Detectors		1	1	1	1		1	1				
Detector Template				Left			Left	Thru				
Leading Detector (ft)		6	6	45	6		30	30				
Trailing Detector (ft)		0	0	-5	0		-10	-10				
Turn Type		NA	Perm	pm+pt	NA		Perm	NA				
Protected Phases		6		5	2			8				
Permitted Phases			6	2			8					
Detector Phase				5			8	8				
Switch Phase												
Minimum Initial (s)		20.0	20.0	5.0	20.0		5.0	5.0				
Minimum Split (s)		28.0	28.0	10.0	38.0		10.0	10.0				
Total Split (s)		43.0	43.0	15.0	58.0		30.0	30.0				
Total Split (%)		48.9%	48.9%	17.0%	65.9%		34.1%	34.1%				
Maximum Green (s)		35.0	35.0	10.0	50.0		25.0	25.0				
Yellow Time (s)		5.0	5.0	4.0	5.0		3.0	3.0				
All-Red Time (s)		3.0	3.0	1.0	3.0		2.0	2.0				
Lost Time Adjust (s)		-1.0	-1.0	-1.0	-1.0			-1.0				
Total Lost Time (s)		7.0	7.0	4.0	7.0			4.0				

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lead/Lag		Lag	Lag	Lead								
Lead-Lag Optimize?												
Vehicle Extension (s)		3.0	3.0	4.0	3.0		4.0	4.0				
Minimum Gap (s)		3.0	3.0	3.0	3.0		3.0	3.0				
Time Before Reduce (s)		0.0	0.0	0.0	0.0		0.0	0.0				
Time To Reduce (s)		0.0	0.0	0.0	0.0		0.0	0.0				
Recall Mode		Min	Min	None	Min		None	None				
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
v/c Ratio		0.92	0.21	0.16	0.88			1.19				
Control Delay		51.3	6.1	9.6	32.7			122.2				
Queue Delay		0.0	0.0	0.0	0.0			0.0				
Total Delay		51.3	6.1	9.6	32.7			122.2				
Queue Length 50th (ft)		~213	0	11	214			~413				
Queue Length 95th (ft)		#413	33	27	#398			#641				
Internal Link Dist (ft)		1960			580			296			278	
Turn Bay Length (ft)			175	150								
Base Capacity (vph)		527	482	381	693			667				
Starvation Cap Reductn		0	0	0	0			0				
Spillback Cap Reductn		0	0	0	0			0				
Storage Cap Reductn		0	0	0	0			0				
Reduced v/c Ratio		0.92	0.21	0.14	0.88			1.19				

Intersection Summary	
Area Type:	Other
Cycle Length: 88	
Actuated Cycle Length: 66.4	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
~	Volume exceeds capacity, queue is theoretically infinite.
	Queue shown is maximum after two cycles.
#	95th percentile volume exceeds capacity, queue may be longer.
	Queue shown is maximum after two cycles.

Splits and Phases: 5: I-180 EB Ramps & Lycoming Mall Dr/Lycoming Mall Dr (SR 2014)



Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Volume (veh/h)	0	443	93	50	555	0	217	2	506	0	0	0
Number	1	6	16	5	2	12	3	8	18			
Initial Q (Qb), veh	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			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	0	1608	1520	1707	1587	0	1844	1619	1844			
Adj Flow Rate, veh/h	0	487	45	55	610	0	238	2	524			
Adj No. of Lanes	0	1	1	1	1	0	0	1	0			
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91			
Percent Heavy Veh, %	0	17	19	6	14	0	0	0	0			
Cap, veh/h	0	586	471	273	763	0	162	1	356			
Arrive On Green	0.00	0.36	0.36	0.06	0.48	0.00	0.35	0.36	0.35			
Sat Flow, veh/h	0	1608	1292	1625	1587	0	444	4	977			
Grp Volume(v), veh/h	0	487	45	55	610	0	764	0	0			
Grp Sat Flow(s),veh/h/ln	0	1608	1292	1625	1587	0	1425	0	0			
Q Serve(g_s), s	0.0	19.7	1.6	1.3	23.1	0.0	26.0	0.0	0.0			
Cycle Q Clear(g_c), s	0.0	19.7	1.6	1.3	23.1	0.0	26.0	0.0	0.0			
Prop In Lane	0.00		1.00	1.00		0.00	0.31		0.69			
Lane Grp Cap(c), veh/h	0	586	471	273	763	0	520	0	0			
V/C Ratio(X)	0.00	0.83	0.10	0.20	0.80	0.00	1.47	0.00	0.00			
Avail Cap(c_a), veh/h	0	812	653	426	1135	0	520	0	0			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	0.00			
Uniform Delay (d), s/veh	0.0	20.7	14.9	14.5	15.6	0.0	23.1	0.0	0.0			
Incr Delay (d2), s/veh	0.0	5.3	0.1	0.5	2.5	0.0	222.0	0.0	0.0			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(95%),veh/ln	0.0	14.6	1.1	1.1	15.9	0.0	75.9	0.0	0.0			
LnGrp Delay(d),s/veh	0.0	25.9	15.0	15.0	18.1	0.0	245.1	0.0	0.0			
LnGrp LOS		C	B	B	B		F					
Approach Vol, veh/h		532			665			764				
Approach Delay, s/veh		25.0			17.8			245.1				
Approach LOS		C			B			F				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2			5	6		8
Phs Duration (G+Y+Rc), s		41.3			8.3	33.0		30.0
Change Period (Y+Rc), s		8.0			5.0	8.0		5.0
Max Green Setting (Gmax), s		50.0			10.0	35.0		25.0
Max Q Clear Time (g_c+I1), s		25.6			3.8	22.2		28.0
Green Ext Time (p_c), s		3.2			0.1	2.8		0.0

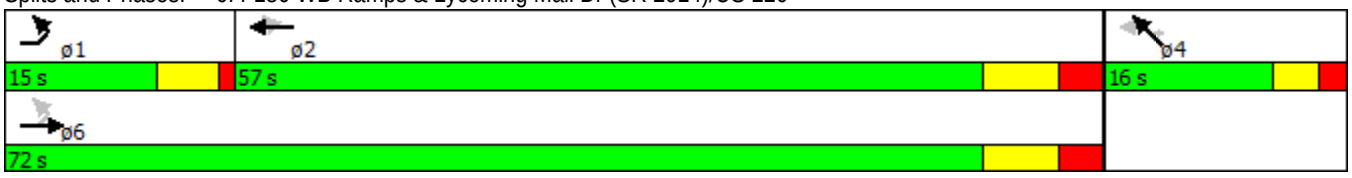
Intersection Summary	
HCM 2010 Ctrl Delay	108.3
HCM 2010 LOS	F

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Volume (vph)	148	513	0	0	515	507	0	0	0	89	0	51
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	11	12	12	11	11	11	12	12	12	15	15	16
Grade (%)		1%			-1%			-3%			-3%	
Storage Length (ft)	115		0	0		165	0		0	0		445
Storage Lanes	1		0	0		1	0		0	0		1
Taper Length (ft)	75			75			75			75		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt						0.850						0.850
Flt Protected	0.950										0.950	
Satd. Flow (prot)	1406	1571	0	0	1665	1402	0	0	0	0	1632	1173
Flt Permitted	0.161										0.950	
Satd. Flow (perm)	238	1571	0	0	1665	1402	0	0	0	0	1632	1173
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						611						124
Link Speed (mph)		45			45			25			25	
Link Distance (ft)		660			1209			327			668	
Travel Time (s)		10.0			18.3			8.9			18.2	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	17%	14%	0%	0%	5%	6%	0%	0%	0%	17%	0%	50%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	178	618	0	0	620	611	0	0	0	107	0	61
Shared Lane Traffic (%)												
Lane Group Flow (vph)	178	618	0	0	620	611	0	0	0	0	107	61
Number of Detectors	1	1			1	1				1	1	0
Detector Template	Left					Right				Left	Thru	
Leading Detector (ft)	45	6			6	30				30	45	0
Trailing Detector (ft)	-5	0			0	-10				-10	-5	0
Turn Type	pm+pt	NA			NA	Perm				Perm	NA	Perm
Protected Phases	1	6			2						4	
Permitted Phases	6					2				4		4
Detector Phase	1					2				4	4	4
Switch Phase												
Minimum Initial (s)	5.0	20.0			20.0	20.0				5.0	5.0	5.0
Minimum Split (s)	10.0	28.0			28.0	28.0				10.0	10.0	10.0
Total Split (s)	15.0	72.0			57.0	57.0				16.0	16.0	16.0
Total Split (%)	17.0%	81.8%			64.8%	64.8%				18.2%	18.2%	18.2%
Maximum Green (s)	10.0	64.0			49.0	49.0				11.0	11.0	11.0
Yellow Time (s)	4.0	5.0			5.0	5.0				3.0	3.0	3.0
All-Red Time (s)	1.0	3.0			3.0	3.0				2.0	2.0	2.0
Lost Time Adjust (s)	-1.0	-1.0			-1.0	0.0					-1.0	-1.0
Total Lost Time (s)	4.0	7.0			7.0	8.0					4.0	4.0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lead/Lag	Lead				Lag	Lag						
Lead-Lag Optimize?												
Vehicle Extension (s)	4.0	3.0			3.0	3.0				4.0	4.0	4.0
Minimum Gap (s)	3.0	3.0			3.0	3.0				3.0	3.0	3.0
Time Before Reduce (s)	0.0	0.0			0.0	0.0				0.0	0.0	0.0
Time To Reduce (s)	0.0	0.0			0.0	0.0				0.0	0.0	0.0
Recall Mode	None	Min			Min	Min				Min	Min	Min
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
v/c Ratio	0.49	0.64			1.00	0.69					0.35	0.19
Control Delay	10.1	10.8			59.0	6.3					24.0	2.2
Queue Delay	0.0	0.0			0.0	0.0					0.0	0.0
Total Delay	10.1	10.8			59.0	6.3					24.0	2.2
Queue Length 50th (ft)	19	115			~217	0					32	0
Queue Length 95th (ft)	48	181			#369	41					66	3
Internal Link Dist (ft)		580			1129			247			588	
Turn Bay Length (ft)	115					165						445
Base Capacity (vph)	386	973			620	1293					344	345
Starvation Cap Reductn	0	0			0	0					0	0
Spillback Cap Reductn	0	0			0	0					0	0
Storage Cap Reductn	0	0			0	0					0	0
Reduced v/c Ratio	0.46	0.64			1.00	0.47					0.31	0.18

Intersection Summary	
Area Type:	Other
Cycle Length: 88	
Actuated Cycle Length: 56.9	
Natural Cycle: 60	
Control Type: Actuated-Uncoordinated	
~	Volume exceeds capacity, queue is theoretically infinite.
	Queue shown is maximum after two cycles.
#	95th percentile volume exceeds capacity, queue may be longer.
	Queue shown is maximum after two cycles.

Splits and Phases: 6: I-180 WB Ramps & Lycoming Mall Dr (SR 2014)/US 220



Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Volume (veh/h)	148	513	0	0	515	507	0	0	0	89	0	51
Number	1	6	16	5	2	12				7	4	14
Initial Q (Qb), veh	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
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1531	1571	0	0	1723	1707				1900	1624	1267
Adj Flow Rate, veh/h	178	618	0	0	620	492				107	0	47
Adj No. of Lanes	1	1	0	0	1	1				0	1	1
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83				0.83	0.83	0.83
Percent Heavy Veh, %	17	14	0	0	5	6				50	0	50
Cap, veh/h	384	1049	0	0	822	665				194	0	135
Arrive On Green	0.12	0.67	0.00	0.00	0.48	0.46				0.11	0.00	0.13
Sat Flow, veh/h	1458	1571	0	0	1723	1451				1547	0	1077
Grp Volume(v), veh/h	178	618	0	0	620	492				107	0	47
Grp Sat Flow(s),veh/h/ln	1458	1571	0	0	1723	1451				1547	0	1077
Q Serve(g_s), s	2.7	11.4	0.0	0.0	15.6	14.8				3.5	0.0	2.1
Cycle Q Clear(g_c), s	2.7	11.4	0.0	0.0	15.6	14.8				3.5	0.0	2.1
Prop In Lane	1.00		0.00	0.00		1.00				1.00		1.00
Lane Grp Cap(c), veh/h	384	1049	0	0	822	665				194	0	135
V/C Ratio(X)	0.46	0.59	0.00	0.00	0.75	0.74				0.55	0.00	0.35
Avail Cap(c_a), veh/h	518	1923	0	0	1622	1339				350	0	243
HCM Platoon Ratio	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	0.00	0.00	1.00	1.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	9.0	4.8	0.0	0.0	11.3	11.8				22.3	0.0	21.2
Incr Delay (d2), s/veh	1.2	0.5	0.0	0.0	1.4	1.6				3.5	0.0	2.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	2.6	8.6	0.0	0.0	12.1	10.3				3.0	0.0	1.3
LnGrp Delay(d),s/veh	10.3	5.4	0.0	0.0	12.8	13.4				25.8	0.0	23.4
LnGrp LOS	B	A			B	B				C		C
Approach Vol, veh/h		796			1112						154	
Approach Delay, s/veh		6.5			13.1						25.1	
Approach LOS		A			B						C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6		
Phs Duration (G+Y+Rc), s	10.1	32.3		10.7		42.4		
Change Period (Y+Rc), s	5.0	8.0		5.0		8.0		
Max Green Setting (Gmax), s	10.0	49.0		11.0		64.0		
Max Q Clear Time (g_c+I1), s	5.2	18.1		5.5		13.9		
Green Ext Time (p_c), s	0.3	6.2		0.2		6.4		

Intersection Summary	
HCM 2010 Ctrl Delay	11.4
HCM 2010 LOS	B

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	19	46	29	212	126	179	19	293	144	151	496	19
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	15	15	15	13	13	13	14	14	14	14	14	14
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (ft)	75			75			75			75		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.958			0.953			0.957			0.996	
Flt Protected		0.990			0.980			0.998			0.989	
Satd. Flow (prot)	0	1758	0	0	1610	0	0	1561	0	0	1695	0
Flt Permitted		0.884			0.832			0.961			0.716	
Satd. Flow (perm)	0	1570	0	0	1367	0	0	1503	0	0	1227	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		25			35			25			25	
Link Distance (ft)		390			506			1477			648	
Travel Time (s)		10.6			9.9			40.3			17.7	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	6%	7%	7%	5%	7%	12%	22%	12%	28%	28%	7%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)							0		0	0		0
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	21	52	33	238	142	201	21	329	162	170	557	21
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	106	0	0	581	0	0	512	0	0	748	0
Number of Detectors	1	1		1	1		1	1		1	1	
Detector Template	Left			Left			Left			Left		
Leading Detector (ft)	30	45		30	45		30	45		30	45	
Trailing Detector (ft)	-10	-5		-10	-5		-10	-5		-10	-5	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	15.0	15.0		15.0	15.0		15.0	15.0		15.0	15.0	
Total Split (s)	37.0	37.0		37.0	37.0		43.0	43.0		43.0	43.0	
Total Split (%)	46.3%	46.3%		46.3%	46.3%		53.8%	53.8%		53.8%	53.8%	
Maximum Green (s)	32.0	32.0		32.0	32.0		38.0	38.0		38.0	38.0	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		-1.0			-1.0			-1.0			-1.0	
Total Lost Time (s)		4.0			4.0			4.0			4.0	

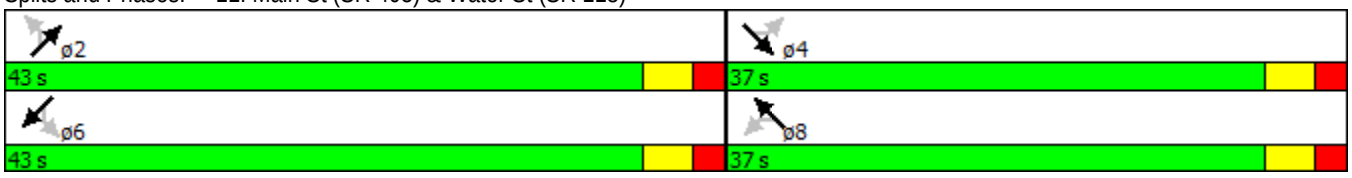
Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Minimum Gap (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Time Before Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Time To Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Recall Mode	Max	Max		Max	Max		Max	Max		Max	Max	
Walk Time (s)	11.0	11.0		11.0	11.0		12.0	12.0		12.0	12.0	
Flash Dont Walk (s)	16.0	16.0		16.0	16.0		18.0	18.0		18.0	18.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
v/c Ratio		0.16			1.03			0.70			1.25	
Control Delay		15.7			72.5			22.3			149.4	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		15.7			72.5			22.3			149.4	
Queue Length 50th (ft)		32			~316			189			~474	
Queue Length 95th (ft)		64			#499			301			#672	
Internal Link Dist (ft)		310			426			1397			568	
Turn Bay Length (ft)												
Base Capacity (vph)		647			563			732			598	
Starvation Cap Reductn		0			0			0			0	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.16			1.03			0.70			1.25	

Intersection Summary	
Area Type:	Other
Cycle Length: 80	
Actuated Cycle Length: 80	
Natural Cycle: 80	
Control Type: Actuated-Uncoordinated	

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

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

Splits and Phases: 11: Main St (SR 405) & Water St (SR 118)



Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (veh/h)	19	46	29	212	126	179	19	293	144	151	496	19
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	0.90	1.00	1.00	0.90
Adj Sat Flow, veh/h/ln	1872	1753	1872	1872	1735	1872	1872	1594	1872	1872	1678	1872
Adj Flow Rate, veh/h	21	52	33	238	142	201	21	329	162	170	557	21
Adj No. of Lanes	0	1	0	0	1	0	0	1	0	0	1	0
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	7	7	7	7	7	7	12	12	12	7	7	7
Cap, veh/h	139	327	186	304	154	209	59	434	207	148	365	13
Arrive On Green	0.40	0.41	0.40	0.40	0.41	0.40	0.47	0.49	0.47	0.47	0.49	0.47
Sat Flow, veh/h	206	792	451	584	374	507	25	890	424	191	749	27
Grp Volume(v), veh/h	106	0	0	581	0	0	512	0	0	748	0	0
Grp Sat Flow(s),veh/h/ln	1450	0	0	1465	0	0	1339	0	0	967	0	0
Q Serve(g_s), s	0.0	0.0	0.0	28.3	0.0	0.0	0.0	0.0	0.0	12.5	0.0	0.0
Cycle Q Clear(g_c), s	3.2	0.0	0.0	31.5	0.0	0.0	25.5	0.0	0.0	38.0	0.0	0.0
Prop In Lane	0.20		0.31	0.41		0.35	0.04		0.32	0.23		0.03
Lane Grp Cap(c), veh/h	634	0	0	649	0	0	683	0	0	515	0	0
V/C Ratio(X)	0.17	0.00	0.00	0.89	0.00	0.00	0.75	0.00	0.00	1.45	0.00	0.00
Avail Cap(c_a), veh/h	634	0	0	649	0	0	683	0	0	515	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	14.9	0.0	0.0	23.2	0.0	0.0	17.1	0.0	0.0	23.3	0.0	0.0
Incr Delay (d2), s/veh	0.6	0.0	0.0	17.2	0.0	0.0	7.4	0.0	0.0	214.5	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(95%),veh/ln	2.9	0.0	0.0	5.6	0.0	0.0	16.5	0.0	0.0	75.8	0.0	0.0
LnGrp Delay(d),s/veh	15.5	0.0	0.0	40.4	0.0	0.0	24.5	0.0	0.0	237.8	0.0	0.0
LnGrp LOS	B			D			C			F		
Approach Vol, veh/h		106			581			512			748	
Approach Delay, s/veh		15.5			40.4			24.5			237.8	
Approach LOS		B			D			C			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		43.0		37.0		43.0		37.0
Change Period (Y+Rc), s		5.0		5.0		5.0		5.0
Max Green Setting (Gmax), s		38.0		32.0		38.0		32.0
Max Q Clear Time (g_c+I1), s		27.5		5.2		40.0		33.5
Green Ext Time (p_c), s		5.0		3.3		0.0		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	110.7
HCM 2010 LOS	F

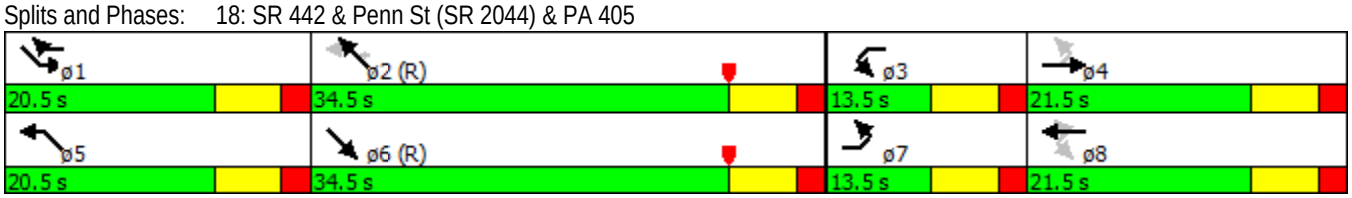
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Volume (vph)	19	122	14	122	152	1051	1376	136	26	17	297	227
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	11	11	11	11	11	11	11	11	11	11	11	11
Grade (%)		-2%			-1%			1%			-2%	
Storage Length (ft)	195		220	155		425	450		0	125		400
Storage Lanes	2		0	1		1	2		0	1		1
Taper Length (ft)	75			75			75			75		
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00	0.97	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.985				0.850		0.976				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1670	3121	0	1408	1681	1376	2659	1462	0	1670	1642	1396
Flt Permitted	0.654			0.507			0.950			0.647		
Satd. Flow (perm)	1149	3121	0	751	1681	1376	2659	1462	0	1137	1642	1396
Right Turn on Red			No			Yes			Yes			Yes
Satd. Flow (RTOR)						435		11				244
Link Speed (mph)		45			45			40			45	
Link Distance (ft)		670			586			1005			570	
Travel Time (s)		10.2			8.9			17.1			8.6	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	6%	0%	18%	4%	8%	20%	17%	8%	0%	7%	7%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	20	131	15	131	163	1130	1480	146	28	18	319	244
Shared Lane Traffic (%)												
Lane Group Flow (vph)	20	146	0	131	163	1130	1480	174	0	18	319	244
Number of Detectors	1	1		1	1	1	2	2		1	2	0
Detector Template	Left	Thru		Left	Thru	Right				Left		
Leading Detector (ft)	40	30		40	30	30	160	160		30	310	0
Trailing Detector (ft)	-10	-5		-10	-5	-5	-10	-10		-10	-10	0
Turn Type	pm+pt	NA		pm+pt	NA	pm+ov	Prot	NA		pm+pt	NA	Perm
Protected Phases	7	4		3	8	1	1	6		5	2	
Permitted Phases	4			8		8				2		2
Detector Phase	7	4		3	8	1	1	6		5	2	2
Switch Phase												
Minimum Initial (s)	3.0	5.0		3.0	5.0	3.0	3.0	5.0		3.0	5.0	5.0
Minimum Split (s)	9.5	11.5		9.5	11.5	9.5	9.5	11.5		9.5	11.5	11.5
Total Split (s)	13.5	21.5		13.5	21.5	20.5	20.5	34.5		20.5	34.5	34.5
Total Split (%)	15.0%	23.9%		15.0%	23.9%	22.8%	22.8%	38.3%		22.8%	38.3%	38.3%
Maximum Green (s)	7.0	15.0		7.0	15.0	14.0	14.0	28.0		14.0	28.0	28.0
Yellow Time (s)	4.5	4.5		4.5	4.5	4.5	4.5	4.5		4.5	4.5	4.5
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)	-1.0	-1.0		-1.0	-1.0	-1.0	-1.0	-1.0		-1.0	-1.0	-1.0
Total Lost Time (s)	5.5	5.5		5.5	5.5	5.5	5.5	5.5		5.5	5.5	5.5

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lead/Lag	Lead	Lag		Lead	Lag	Lead	Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	5.0		3.0	5.0	3.0	3.0	4.0		3.0	4.0	4.0
Minimum Gap (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Time Before Reduce (s)	0.0	0.0		0.0	0.0	0.0	0.0	9.0		0.0	9.0	9.0
Time To Reduce (s)	0.0	0.0		0.0	0.0	0.0	0.0	18.0		0.0	18.0	18.0
Recall Mode	None	None		None	None	None	None	C-Min		None	C-Min	C-Min
Walk Time (s)		12.0			12.0			14.0			14.0	14.0
Flash Dont Walk (s)		18.0			18.0			21.0			21.0	21.0
Pedestrian Calls (#/hr)		0			0			0			0	0
v/c Ratio	0.07	0.32		0.47	0.40	1.20	2.38	0.23		0.04	0.70	0.43
Control Delay	21.7	35.7		30.4	33.4	116.1	646.5	14.7		10.5	37.5	5.8
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	21.7	35.7		30.4	33.4	116.1	646.5	14.7		10.5	37.5	5.8
Queue Length 50th (ft)	8	40		56	70	~654	~742	42		4	157	0
Queue Length 95th (ft)	24	66		102	149	#956	#905	110		14	240	51
Internal Link Dist (ft)		590			506			925			490	
Turn Bay Length (ft)	195			155		425	450			125		400
Base Capacity (vph)	315	554		276	412	943	622	756		593	529	615
Starvation Cap Reductn	0	0		0	0	0	0	0		0	0	0
Spillback Cap Reductn	0	0		0	0	0	0	0		0	0	0
Storage Cap Reductn	0	0		0	0	0	0	0		0	0	0
Reduced v/c Ratio	0.06	0.26		0.47	0.40	1.20	2.38	0.23		0.03	0.60	0.40

Intersection Summary

Area Type: Other
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 0 (0%), Referenced to phase 2:NWTL and 6:SET, Start of Yellow
Natural Cycle: 120
Control Type: Actuated-Coordinated
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 18: SR 442 & Penn St (SR 2044) & PA 405



Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Volume (veh/h)	19	122	14	122	152	1051	1376	136	26	17	297	227
Number	7	4	14	3	8	18	1	6	16	5	2	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
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	1818	1725	1818	1533	1739	1675	1492	1550	1791	1818	1699	1699
Adj Flow Rate, veh/h	20	131	15	131	163	784	1480	146	17	18	319	190
Adj No. of Lanes	1	2	0	1	1	1	2	1	0	1	1	1
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	0	6	6	18	4	8	20	17	17	0	7	7
Cap, veh/h	183	350	40	293	315	495	460	716	83	600	649	552
Arrive On Green	0.03	0.12	0.11	0.09	0.18	0.18	0.17	0.53	0.51	0.02	0.38	0.38
Sat Flow, veh/h	1731	2969	335	1460	1739	1424	2758	1363	159	1731	1699	1444
Grp Volume(v), veh/h	20	71	75	131	163	784	1480	0	163	18	319	190
Grp Sat Flow(s),veh/h/ln	1731	1639	1666	1460	1739	1424	1379	0	1522	1731	1699	1444
Q Serve(g_s), s	0.9	3.6	3.7	6.8	7.6	16.3	15.0	0.0	5.1	0.6	12.9	8.4
Cycle Q Clear(g_c), s	0.9	3.6	3.7	6.8	7.6	16.3	15.0	0.0	5.1	0.6	12.9	8.4
Prop In Lane	1.00		0.20	1.00		1.00	1.00		0.10	1.00		1.00
Lane Grp Cap(c), veh/h	183	193	196	293	315	495	460	0	799	600	649	552
V/C Ratio(X)	0.11	0.37	0.38	0.45	0.52	1.58	3.22	0.00	0.20	0.03	0.49	0.34
Avail Cap(c_a), veh/h	292	291	296	293	315	495	460	0	799	848	649	552
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	1.00	1.00
Uniform Delay (d), s/veh	33.4	36.6	36.7	29.2	33.3	29.4	37.5	0.0	11.4	16.1	21.2	19.8
Incr Delay (d2), s/veh	0.3	2.5	2.6	1.1	2.9	272.6	1004.7	0.0	0.6	0.0	2.6	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(95%),veh/ln	0.8	3.2	3.3	5.0	7.1	89.4	125.7	0.0	4.1	0.5	10.7	6.5
LnGrp Delay(d),s/veh	33.6	39.1	39.3	30.3	36.2	302.0	1042.2	0.0	12.0	16.1	23.8	21.5
LnGrp LOS	C	D	D	C	D	F	F		B	B	C	C
Approach Vol, veh/h		166			1078			1643			527	
Approach Delay, s/veh		38.5			228.8			940.0			22.7	
Approach LOS		D			F			F			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	20.5	39.9	13.5	16.1	7.6	52.8	7.8	21.8
Change Period (Y+Rc), s	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5
Max Green Setting (Gmax), s	14.0	28.0	7.0	15.0	14.0	28.0	7.0	15.0
Max Q Clear Time (g_c+I1), s	17.5	15.4	9.3	6.1	3.1	7.1	3.4	18.8
Green Ext Time (p_c), s	0.0	4.3	0.0	3.5	0.0	5.6	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	530.0
HCM 2010 LOS	F

Notes

User approved pedestrian interval to be less than phase max green.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	378	283	42	123	360	75	63	387	184	63	230	267
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	16	16	16	12	12	12	10	10	10	10	10	10
Grade (%)		-2%			1%			2%			-1%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (ft)	75			75			75			75		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.99			0.99			0.98			0.97	
Frt		0.992			0.982			0.961			0.936	
Flt Protected		0.974			0.989			0.995			0.994	
Satd. Flow (prot)	0	1837	0	0	1614	0	0	1261	0	0	1244	0
Flt Permitted		0.974			0.989			0.796			0.738	
Satd. Flow (perm)	0	1822	0	0	1609	0	0	1009	0	0	923	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		463			494			1137			622	
Travel Time (s)		12.6			13.5			31.0			17.0	
Confl. Peds. (#/hr)	10		10	10		10	10		10	10		10
Confl. Bikes (#/hr)												
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	8%	8%	8%	7%	7%	7%	8%	8%	8%	7%	7%	7%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)							6	6	6	6	6	6
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	420	314	47	137	400	83	70	430	204	70	256	297
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	781	0	0	620	0	0	704	0	0	623	0
Number of Detectors	1	1		1	1		1	1		1	1	
Detector Template	Left			Left			Left			Left		
Leading Detector (ft)	30	40		30	40		30	40		30	40	
Trailing Detector (ft)	-10	-10		-10	-10		-10	-10		-10	-10	
Turn Type	Split	NA		Split	NA		Perm	NA		Perm	NA	
Protected Phases	2	2		6	6			4			8	
Permitted Phases							4			8		
Detector Phase	2	2		6	6		4	4		8	8	
Switch Phase												
Minimum Initial (s)	8.0	8.0		8.0	8.0		7.0	7.0		7.1	7.1	
Minimum Split (s)	23.0	23.0		23.0	23.0		22.1	22.1		22.1	22.1	
Total Split (s)	25.0	25.0		35.0	35.0		40.0	40.0		40.0	40.0	
Total Split (%)	25.0%	25.0%		35.0%	35.0%		40.0%	40.0%		40.0%	40.0%	
Maximum Green (s)	20.0	20.0		30.0	30.0		35.9	35.9		35.9	35.9	
Yellow Time (s)	4.0	4.0		4.0	4.0		3.1	3.1		3.1	3.1	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		5.0			5.0			4.1			4.1	

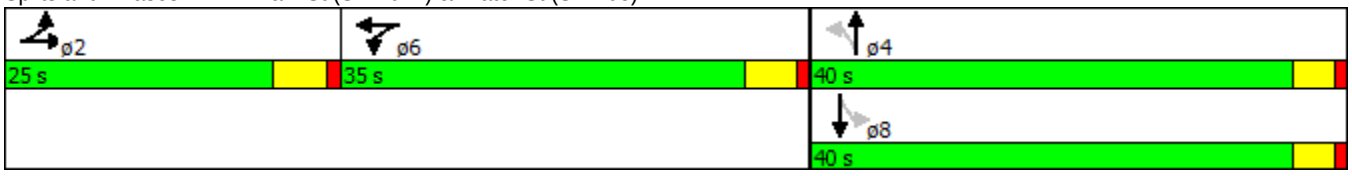
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0		2.0	2.0		3.5	3.5		3.5	3.5	
Minimum Gap (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Time Before Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Time To Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Recall Mode	None	None		None	None		None	None		None	None	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Pedestrian Calls (#/hr)	10	10		10	10		10	10		10	10	
v/c Ratio		2.13			1.28			1.94			1.88	
Control Delay		540.5			173.3			458.6			432.2	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		540.5			173.3			458.6			432.2	
Queue Length 50th (ft)		~797			~504			~698			~610	
Queue Length 95th (ft)		#1024			#716			#918			#822	
Internal Link Dist (ft)		383			414			1057			542	
Turn Bay Length (ft)												
Base Capacity (vph)		367			484			362			331	
Starvation Cap Reductn		0			0			0			0	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		2.13			1.28			1.94			1.88	

Intersection Summary	
Area Type:	Other
Cycle Length: 100	
Actuated Cycle Length: 100	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	

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

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

Splits and Phases: 21: Main St (SR 2014) & Water St (SR 405)



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	378	283	42	123	360	75	63	387	184	63	230	267
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.87	1.00	1.00	0.87
Adj Sat Flow, veh/h/ln	1891	1751	1891	1791	1674	1791	1782	1650	1782	1809	1691	1809
Adj Flow Rate, veh/h	420	314	47	137	400	83	70	430	204	70	256	297
Adj No. of Lanes	0	1	0	0	1	0	0	1	0	0	1	0
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	8	8	8	7	7	7	8	8	8	7	7	7
Cap, veh/h	181	135	20	107	312	65	68	246	112	71	166	180
Arrive On Green	0.20	0.20	0.20	0.30	0.30	0.30	0.36	0.36	0.36	0.36	0.36	0.36
Sat Flow, veh/h	906	677	101	357	1041	216	78	686	312	85	464	500
Grp Volume(v), veh/h	781	0	0	620	0	0	704	0	0	623	0	0
Grp Sat Flow(s),veh/h/ln	1684	0	0	1614	0	0	1076	0	0	1049	0	0
Q Serve(g_s), s	20.0	0.0	0.0	30.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	20.0	0.0	0.0	30.0	0.0	0.0	35.9	0.0	0.0	35.9	0.0	0.0
Prop In Lane	0.54		0.06	0.22		0.13	0.10		0.29	0.11		0.48
Lane Grp Cap(c), veh/h	337	0	0	484	0	0	426	0	0	417	0	0
V/C Ratio(X)	2.32	0.00	0.00	1.28	0.00	0.00	1.65	0.00	0.00	1.49	0.00	0.00
Avail Cap(c_a), veh/h	337	0	0	484	0	0	426	0	0	417	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	40.0	0.0	0.0	35.0	0.0	0.0	32.8	0.0	0.0	32.8	0.0	0.0
Incr Delay (d2), s/veh	602.5	0.0	0.0	141.5	0.0	0.0	304.1	0.0	0.0	235.1	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	118.2	0.0	0.0	58.2	0.0	0.0	85.8	0.0	0.0	69.6	0.0	0.0
LnGrp Delay(d),s/veh	642.5	0.0	0.0	176.5	0.0	0.0	336.9	0.0	0.0	267.9	0.0	0.0
LnGrp LOS	F			F			F			F		
Approach Vol, veh/h		781			620			704			623	
Approach Delay, s/veh		642.5			176.5			336.9			267.9	
Approach LOS		F			F			F			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		25.0		40.0		35.0		40.0
Change Period (Y+Rc), s		5.0		4.1		5.0		4.1
Max Green Setting (Gmax), s		20.0		35.9		30.0		35.9
Max Q Clear Time (g_c+I1), s		22.0		37.9		32.0		37.9
Green Ext Time (p_c), s		0.0		0.0		0.0		0.0

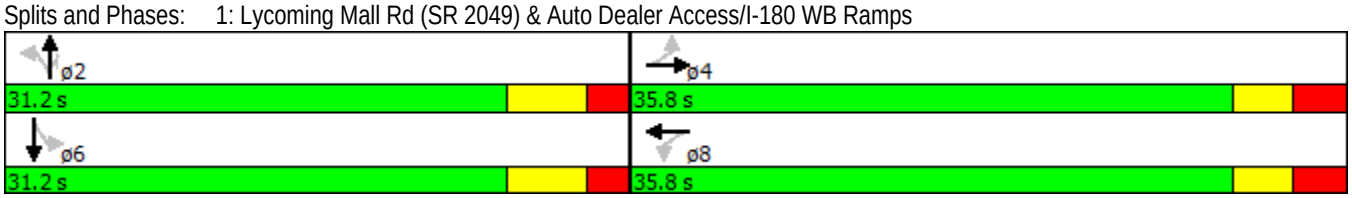
Intersection Summary	
HCM 2010 Ctrl Delay	372.2
HCM 2010 LOS	F

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	1	2	3	269	9	153	23	405	142	87	501	0
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	13	13	13	15	15	15	12	12	16	12	12	12
Grade (%)		2%			4%			1%			-1%	
Storage Length (ft)	0		100	0		0	0		0	0		375
Storage Lanes	0		0	0		0	0		1	0		1
Taper Length (ft)	75			75			75			75		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95
Ped Bike Factor												
Frt		0.932			0.952				0.850			
Flt Protected		0.994			0.970			0.997			0.993	
Satd. Flow (prot)	0	1464	0	0	1754	0	0	1675	1643	0	3328	0
Flt Permitted		0.957			0.805			0.927			0.584	
Satd. Flow (perm)	0	1410	0	0	1456	0	0	1557	1643	0	1957	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		4			55				197			
Link Speed (mph)		25			25			40			40	
Link Distance (ft)		187			334			1105			689	
Travel Time (s)		5.1			9.1			18.8			11.7	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	0%	33%	3%	13%	0%	0%	7%	5%	0%	3%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	1	3	4	374	12	212	32	562	197	121	696	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	8	0	0	598	0	0	594	197	0	817	0
Number of Detectors	1	1		1	1		1	1	0	1	1	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left		
Leading Detector (ft)	30	40		30	45		30	45	0	30	45	
Trailing Detector (ft)	-10	-10		-10	-5		-10	-5	0	-10	-5	
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2		2	6		
Detector Phase	4	4		8	8		2	2	2	6	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	10.8	10.8		10.8	10.8		11.2	11.2	11.2	11.2	11.2	
Total Split (s)	35.8	35.8		35.8	35.8		31.2	31.2	31.2	31.2	31.2	
Total Split (%)	53.4%	53.4%		53.4%	53.4%		46.6%	46.6%	46.6%	46.6%	46.6%	
Maximum Green (s)	30.0	30.0		30.0	30.0		25.0	25.0	25.0	25.0	25.0	
Yellow Time (s)	3.0	3.0		3.0	3.0		4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	2.8	2.8		2.8	2.8		2.2	2.2	2.2	2.2	2.2	
Lost Time Adjust (s)		-1.0			-1.0			-1.0	-1.0		-1.0	
Total Lost Time (s)		4.8			4.8			5.2	5.2		5.2	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Minimum Gap (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Time Before Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Time To Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Recall Mode	None	None		None	None		Min	Min	Min	Min	Min	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
v/c Ratio		0.01			0.89			0.95	0.25		1.04	
Control Delay		8.0			32.5			48.3	3.4		66.1	
Queue Delay		0.0			0.0			0.0	0.0		0.0	
Total Delay		8.0			32.5			48.3	3.4		66.1	
Queue Length 50th (ft)		1			188			233	0		~201	
Queue Length 95th (ft)		6			216			#295	17		#210	
Internal Link Dist (ft)		107			254			1025			609	
Turn Bay Length (ft)												
Base Capacity (vph)		678			727			626	778		787	
Starvation Cap Reductn		0			0			0	0		0	
Spillback Cap Reductn		0			0			0	0		0	
Storage Cap Reductn		0			0			0	0		0	
Reduced v/c Ratio		0.01			0.82			0.95	0.25		1.04	

Intersection Summary	
Area Type:	Other
Cycle Length: 67	
Actuated Cycle Length: 64.9	
Natural Cycle: 70	
Control Type: Actuated-Uncoordinated	
~	Volume exceeds capacity, queue is theoretically infinite.
	Queue shown is maximum after two cycles.
#	95th percentile volume exceeds capacity, queue may be longer.
	Queue shown is maximum after two cycles.

Splits and Phases: 1: Lycoming Mall Rd (SR 2049) & Auto Dealer Access/I-180 WB Ramps

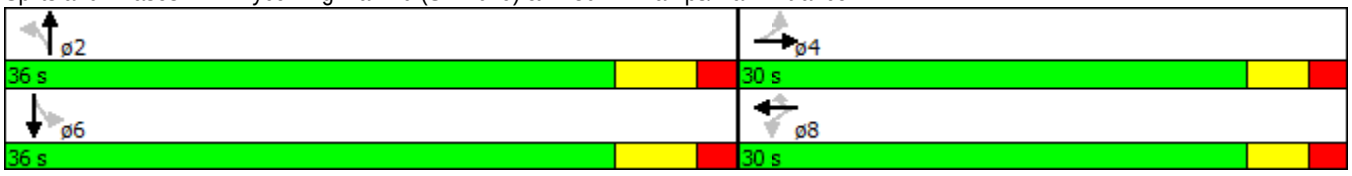


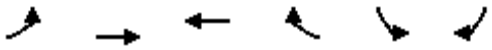
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	104	90	186	7	11	46	301	419	18	29	572	174
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	12	11	12	12	12	12	12	12	12	12
Grade (%)		2%			2%			-2%			-3%	
Storage Length (ft)	0		0	150		275	135		0	0		0
Storage Lanes	0		0	1		1	1		0	1		0
Taper Length (ft)	75			75			75			75		
Lane Util. Factor	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.927				0.850		0.994			0.969	
Flt Protected		0.986		0.950			0.950			0.950		
Satd. Flow (prot)	0	2951	0	1636	1620	1416	1515	1649	0	1550	1735	0
Flt Permitted		0.867		0.417			0.169			0.405		
Satd. Flow (perm)	0	2595	0	718	1620	1416	270	1649	0	661	1735	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		162				55		4			26	
Link Speed (mph)		25			25			40			40	
Link Distance (ft)		279			408			2572			1105	
Travel Time (s)		7.6			11.1			43.8			18.8	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	1.00
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	8%	1%	5%	0%	10%	7%	14%	10%	0%	12%	0%	10%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	124	107	221	8	13	55	358	499	21	35	681	174
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	452	0	8	13	55	358	520	0	35	855	0
Number of Detectors	1	1		1	1	0	1	1		1	1	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (ft)	30	45		45	45	0	45	45		45	45	
Trailing Detector (ft)	-10	-5		-5	-5	0	-5	-5		-5	-5	
Turn Type	Perm	NA		Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8		8	2			6		
Detector Phase	4	4		8	8	8	2	2		6	6	
Switch Phase												
Minimum Initial (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Minimum Split (s)	7.0	7.0		7.0	7.0	7.0	8.0	8.0		8.0	8.0	
Total Split (s)	30.0	30.0		30.0	30.0	30.0	36.0	36.0		36.0	36.0	
Total Split (%)	45.5%	45.5%		45.5%	45.5%	45.5%	54.5%	54.5%		54.5%	54.5%	
Maximum Green (s)	25.0	25.0		25.0	25.0	25.0	30.0	30.0		30.0	30.0	
Yellow Time (s)	3.0	3.0		3.0	3.0	3.0	4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		-1.0		-1.0	-1.0	-1.0	-1.0	-1.0		-1.0	-1.0	
Total Lost Time (s)		4.0		4.0	4.0	4.0	5.0	5.0		5.0	5.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Minimum Gap (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Time Before Reduce (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Time To Reduce (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Recall Mode	Min	Min		Min	Min	Min	None	None		None	None	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
v/c Ratio		0.57		0.04	0.03	0.13	2.32	0.55		0.09	0.85	
Control Delay		13.6		14.7	14.2	5.7	631.5	11.0		7.5	22.1	
Queue Delay		0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay		13.6		14.7	14.2	5.7	631.5	11.0		7.5	22.1	
Queue Length 50th (ft)		40		2	3	0	~147	86		4	185	
Queue Length 95th (ft)		67		9	12	17	#301	189		18	#455	
Internal Link Dist (ft)		199			328			2492			1025	
Turn Bay Length (ft)				150		275	135					
Base Capacity (vph)		1332		345	779	709	154	947		379	1005	
Starvation Cap Reductn		0		0	0	0	0	0		0	0	
Spillback Cap Reductn		0		0	0	0	0	0		0	0	
Storage Cap Reductn		0		0	0	0	0	0		0	0	
Reduced v/c Ratio		0.34		0.02	0.02	0.08	2.32	0.55		0.09	0.85	

Intersection Summary
Area Type: Other
Cycle Length: 66
Actuated Cycle Length: 54.3
Natural Cycle: 90
Control Type: Actuated-Uncoordinated
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 2: Lycoming Mall Rd (SR 2049) & I-180 EB Ramps/Mall Entrance





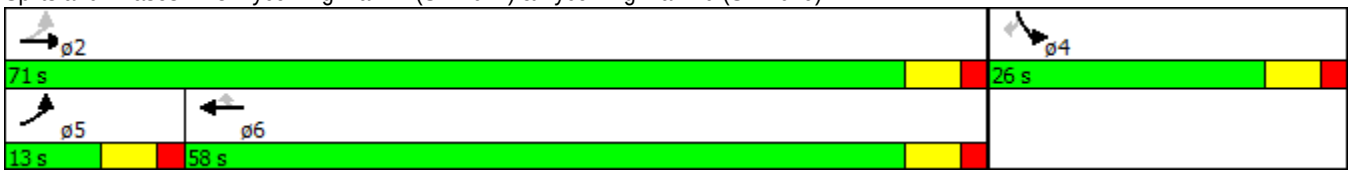
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	249	628	444	438	641	227
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	12	12	12	12
Grade (%)		-1%	1%		-2%	
Storage Length (ft)	165			215	165	0
Storage Lanes	1			1	1	1
Taper Length (ft)	125				75	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt				0.850		0.850
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1719	1630	1690	1522	1464	1472
Flt Permitted	0.190				0.950	
Satd. Flow (perm)	344	1630	1690	1522	1464	1472
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)				509		185
Link Speed (mph)		45	45		40	
Link Distance (ft)		727	1089		2572	
Travel Time (s)		11.0	16.5		43.8	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	11%	6%	0%	18%	5%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)		0%	0%		0%	
Adj. Flow (vph)	290	730	516	509	745	264
Shared Lane Traffic (%)						
Lane Group Flow (vph)	290	730	516	509	745	264
Number of Detectors	1	1	1	1	1	1
Detector Template	Left				Left	Right
Leading Detector (ft)	45	6	6	6	45	45
Trailing Detector (ft)	-5	0	0	0	-5	-5
Turn Type	pm+pt	NA	NA	Perm	Prot	Perm
Protected Phases	5	2	6		4	
Permitted Phases	2			6		4
Detector Phase	5				4	4
Switch Phase						
Minimum Initial (s)	3.0	15.0	15.0	15.0	5.0	5.0
Minimum Split (s)	9.0	21.0	21.0	21.0	11.0	11.0
Total Split (s)	13.0	71.0	58.0	58.0	26.0	26.0
Total Split (%)	13.4%	73.2%	59.8%	59.8%	26.8%	26.8%
Maximum Green (s)	7.0	65.0	52.0	52.0	20.0	20.0
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0

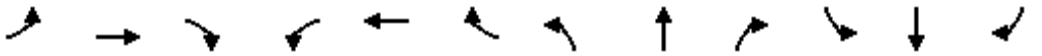
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lead/Lag	Lead		Lag	Lag		
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	5.0	5.0	5.0	3.0	3.0
Minimum Gap (s)	3.0	2.0	2.0	2.0	3.0	3.0
Time Before Reduce (s)	0.0	42.0	42.0	42.0	0.0	0.0
Time To Reduce (s)	0.0	10.0	10.0	10.0	0.0	0.0
Recall Mode	None	Min	Min	Min	None	None
Walk Time (s)		7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)		14.0	14.0	14.0	14.0	14.0
Pedestrian Calls (#/hr)		0	0	0	0	0
v/c Ratio	0.83	0.93	1.15	0.65	1.46	0.42
Control Delay	34.0	36.2	114.6	6.7	237.8	7.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	34.0	36.2	114.6	6.7	237.8	7.3
Queue Length 50th (ft)	61	230	~226	0	~381	19
Queue Length 95th (ft)	#156	#413	#363	53	#532	59
Internal Link Dist (ft)		647	1009		2492	
Turn Bay Length (ft)	165			215	165	
Base Capacity (vph)	349	787	450	779	512	635
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.83	0.93	1.15	0.65	1.46	0.42

Intersection Summary	
Area Type:	Other
Cycle Length: 97	
Actuated Cycle Length: 60	
Natural Cycle: 110	
Control Type: Actuated-Uncoordinated	

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

Splits and Phases: 3: Lycoming Mall Dr (SR 2014) & Lycoming Mall Rd (SR 2049)





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	1	283	0	556	372	4	724	6	206	6	1	3
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	12	13	13	13	12	12	12	14	14	14
Grade (%)		1%			-1%			-3%			0%	
Storage Length (ft)	1		0	275		0	0		0	0		0
Storage Lanes	0		0	1		0	1		1	0		0
Taper Length (ft)	75			75			75			75		
Lane Util. Factor	0.95	0.95	1.00	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt					0.999				0.850		0.963	
Flt Protected					0.971		0.950	0.953			0.969	
Satd. Flow (prot)	0	3067	0	0	2865	0	1601	1607	1374	0	1256	0
Flt Permitted		0.953			0.651		0.950	0.953				
Satd. Flow (perm)	0	2922	0	0	1921	0	1601	1607	1374	0	1296	0
Right Turn on Red			Yes			Yes			Yes			No
Satd. Flow (RTOR)									234			
Link Speed (mph)		45			45			45			25	
Link Distance (ft)		326			418			206			301	
Travel Time (s)		4.9			6.3			3.1			8.2	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	11%	6%	30%	5%	75%	3%	0%	13%	67%	0%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	1	322	0	632	423	5	823	7	234	7	1	3
Shared Lane Traffic (%)							50%					
Lane Group Flow (vph)	0	323	0	0	1060	0	411	419	234	0	11	0
Number of Detectors	1	2		1	2		2	2	0	1	1	
Detector Template	Left			Left						Left	Thru	
Leading Detector (ft)	30	306		30	286		206	206	0	30	45	
Trailing Detector (ft)	-10	-5		-10	-5		-5	-5	0	-10	-5	
Turn Type	Perm	NA		Perm	NA		Split	NA	Perm	Perm	NA	
Protected Phases		2			6		8	8			4	
Permitted Phases	2			6					8	4		
Detector Phase	2	2		6	6		8	8	8	4	4	
Switch Phase												
Minimum Initial (s)	15.0	15.0		15.0	15.0		15.0	15.0	15.0	5.0	5.0	
Minimum Split (s)	21.0	21.0		21.0	21.0		20.0	20.0	20.0	10.0	10.0	
Total Split (s)	46.0	46.0		46.0	46.0		45.0	45.0	45.0	20.0	20.0	
Total Split (%)	41.4%	41.4%		41.4%	41.4%		40.5%	40.5%	40.5%	18.0%	18.0%	
Maximum Green (s)	40.0	40.0		40.0	40.0		40.0	40.0	40.0	15.0	15.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)		-1.0			-1.0		-1.0	-1.0	-1.0		-1.0	
Total Lost Time (s)		5.0			5.0		4.0	4.0	4.0		4.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	6.0	6.0		6.0	6.0		6.0	6.0	6.0	3.0	3.0	
Minimum Gap (s)	2.0	2.0		2.0	2.0		2.0	2.0	2.0	2.0	2.0	
Time Before Reduce (s)	40.0	40.0		40.0	40.0		40.0	40.0	40.0	0.0	0.0	
Time To Reduce (s)	20.0	20.0		20.0	20.0		20.0	20.0	20.0	0.0	0.0	
Recall Mode	Min	Min		Min	Min		None	None	None	None	None	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
v/c Ratio		0.24			1.77dl		0.62	0.63	0.33		0.09	
Control Delay		17.8			134.0		26.8	27.1	4.2		41.4	
Queue Delay		0.0			0.0		0.0	0.0	0.0		0.0	
Total Delay		17.8			134.0		26.8	27.1	4.2		41.4	
Queue Length 50th (ft)		58			~398		177	182	0		6	
Queue Length 95th (ft)		114			#641		355	363	46		24	
Internal Link Dist (ft)		246			338			126			221	
Turn Bay Length (ft)												
Base Capacity (vph)		1326			872		727	730	751		229	
Starvation Cap Reductn		0			0		0	0	0		0	
Spillback Cap Reductn		0			0		0	0	0		0	
Storage Cap Reductn		0			0		0	0	0		0	
Reduced v/c Ratio		0.24			1.22		0.57	0.57	0.31		0.05	

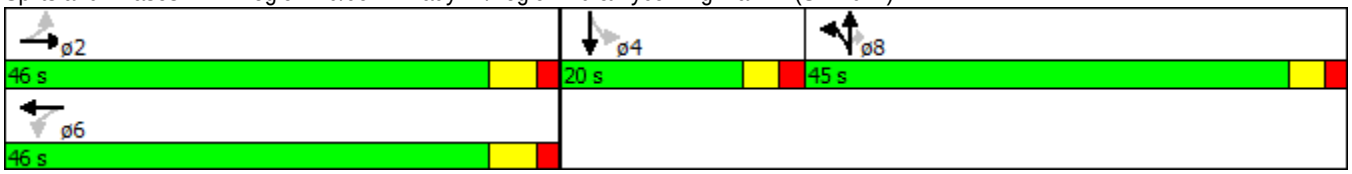
Intersection Summary	
Area Type:	Other
Cycle Length: 111	
Actuated Cycle Length: 91.3	
Natural Cycle: 100	
Control Type: Actuated-Uncoordinated	

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

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

dl Defacto Left Lane. Recode with 1 though lane as a left lane.

Splits and Phases: 4: Legion Rd/John Brady Dr/Legion Rd & Lycoming Mall Dr (SR 2014)



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Volume (vph)	0	443	93	50	555	0	217	2	506	0	0	0
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	14	12	12	12	12	14	14	14	12	12	12
Grade (%)		-1%			-1%			3%			-4%	
Storage Length (ft)	0		175	150		0	0		0	0		0
Storage Lanes	0		1	1		0	0		0	0		0
Taper Length (ft)	75			75			75			75		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt			0.850					0.906				
Flt Protected				0.950				0.985				
Satd. Flow (prot)	0	1649	1292	1621	1587	0	0	1482	0	0	0	0
Flt Permitted				0.205				0.985				
Satd. Flow (perm)	0	1649	1292	350	1587	0	0	1482	0	0	0	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			102					135				
Link Speed (mph)		45			45			25			25	
Link Distance (ft)		2040			660			376			358	
Travel Time (s)		30.9			10.0			10.3			9.8	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	17%	19%	6%	14%	0%	16%	0%	13%	0%	0%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	0	487	102	55	610	0	238	2	556	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	487	102	55	610	0	0	796	0	0	0	0
Number of Detectors		1	1	1	1		1	1				
Detector Template				Left			Left	Thru				
Leading Detector (ft)		6	6	45	6		30	30				
Trailing Detector (ft)		0	0	-5	0		-10	-10				
Turn Type		NA	Perm	pm+pt	NA		Perm	NA				
Protected Phases		6		5	2			8				
Permitted Phases			6	2			8					
Detector Phase				5			8	8				
Switch Phase												
Minimum Initial (s)		20.0	20.0	5.0	20.0		5.0	5.0				
Minimum Split (s)		28.0	28.0	10.0	38.0		10.0	10.0				
Total Split (s)		43.0	43.0	15.0	58.0		30.0	30.0				
Total Split (%)		48.9%	48.9%	17.0%	65.9%		34.1%	34.1%				
Maximum Green (s)		35.0	35.0	10.0	50.0		25.0	25.0				
Yellow Time (s)		5.0	5.0	4.0	5.0		3.0	3.0				
All-Red Time (s)		3.0	3.0	1.0	3.0		2.0	2.0				
Lost Time Adjust (s)		-1.0	-1.0	-1.0	-1.0			-1.0				
Total Lost Time (s)		7.0	7.0	4.0	7.0			4.0				

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lead/Lag		Lag	Lag	Lead								
Lead-Lag Optimize?												
Vehicle Extension (s)		3.0	3.0	4.0	3.0		4.0	4.0				
Minimum Gap (s)		3.0	3.0	3.0	3.0		3.0	3.0				
Time Before Reduce (s)		0.0	0.0	0.0	0.0		0.0	0.0				
Time To Reduce (s)		0.0	0.0	0.0	0.0		0.0	0.0				
Recall Mode		Min	Min	None	Min		None	None				
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
v/c Ratio		0.92	0.21	0.16	0.88			1.19				
Control Delay		51.3	6.1	9.6	32.7			122.2				
Queue Delay		0.0	0.0	0.0	0.0			0.0				
Total Delay		51.3	6.1	9.6	32.7			122.2				
Queue Length 50th (ft)		~213	0	11	214			~413				
Queue Length 95th (ft)		#413	33	27	#398			#641				
Internal Link Dist (ft)		1960			580			296			278	
Turn Bay Length (ft)			175	150								
Base Capacity (vph)		527	482	381	693			667				
Starvation Cap Reductn		0	0	0	0			0				
Spillback Cap Reductn		0	0	0	0			0				
Storage Cap Reductn		0	0	0	0			0				
Reduced v/c Ratio		0.92	0.21	0.14	0.88			1.19				

Intersection Summary	
Area Type:	Other
Cycle Length: 88	
Actuated Cycle Length: 66.4	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
~	Volume exceeds capacity, queue is theoretically infinite.
	Queue shown is maximum after two cycles.
#	95th percentile volume exceeds capacity, queue may be longer.
	Queue shown is maximum after two cycles.

Splits and Phases: 5: I-180 EB Ramps & Lycoming Mall Dr/Lycoming Mall Dr (SR 2014)

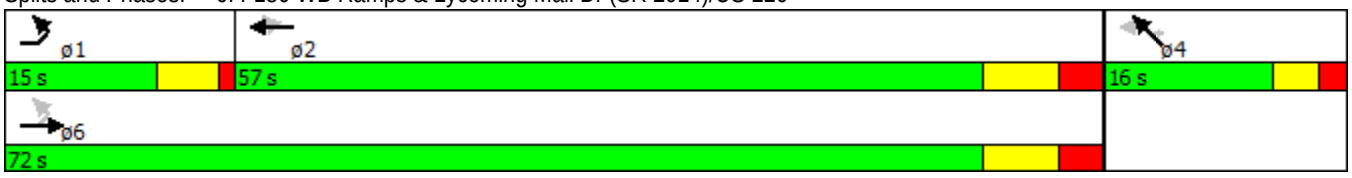


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Volume (vph)	148	513	0	0	515	507	0	0	0	89	0	51
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	11	12	12	11	11	11	12	12	12	15	15	16
Grade (%)		1%			-1%			-3%			-3%	
Storage Length (ft)	115		0	0		165	0		0	0		445
Storage Lanes	1		0	0		1	0		0	0		1
Taper Length (ft)	75			75			75			75		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt						0.850						0.850
Flt Protected	0.950										0.950	
Satd. Flow (prot)	1406	1571	0	0	1665	1402	0	0	0	0	1632	1173
Flt Permitted	0.161										0.950	
Satd. Flow (perm)	238	1571	0	0	1665	1402	0	0	0	0	1632	1173
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						611						124
Link Speed (mph)		45			45			25			25	
Link Distance (ft)		660			1209			327			668	
Travel Time (s)		10.0			18.3			8.9			18.2	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	17%	14%	0%	0%	5%	6%	0%	0%	0%	17%	0%	50%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	178	618	0	0	620	611	0	0	0	107	0	61
Shared Lane Traffic (%)												
Lane Group Flow (vph)	178	618	0	0	620	611	0	0	0	0	107	61
Number of Detectors	1	1			1	1				1	1	0
Detector Template	Left					Right				Left	Thru	
Leading Detector (ft)	45	6			6	30				30	45	0
Trailing Detector (ft)	-5	0			0	-10				-10	-5	0
Turn Type	pm+pt	NA			NA	Perm				Perm	NA	Perm
Protected Phases	1	6			2						4	
Permitted Phases	6					2				4		4
Detector Phase	1					2				4	4	4
Switch Phase												
Minimum Initial (s)	5.0	20.0			20.0	20.0				5.0	5.0	5.0
Minimum Split (s)	10.0	28.0			28.0	28.0				10.0	10.0	10.0
Total Split (s)	15.0	72.0			57.0	57.0				16.0	16.0	16.0
Total Split (%)	17.0%	81.8%			64.8%	64.8%				18.2%	18.2%	18.2%
Maximum Green (s)	10.0	64.0			49.0	49.0				11.0	11.0	11.0
Yellow Time (s)	4.0	5.0			5.0	5.0				3.0	3.0	3.0
All-Red Time (s)	1.0	3.0			3.0	3.0				2.0	2.0	2.0
Lost Time Adjust (s)	-1.0	-1.0			-1.0	0.0					-1.0	-1.0
Total Lost Time (s)	4.0	7.0			7.0	8.0					4.0	4.0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lead/Lag	Lead				Lag	Lag						
Lead-Lag Optimize?												
Vehicle Extension (s)	4.0	3.0			3.0	3.0				4.0	4.0	4.0
Minimum Gap (s)	3.0	3.0			3.0	3.0				3.0	3.0	3.0
Time Before Reduce (s)	0.0	0.0			0.0	0.0				0.0	0.0	0.0
Time To Reduce (s)	0.0	0.0			0.0	0.0				0.0	0.0	0.0
Recall Mode	None	Min			Min	Min				Min	Min	Min
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
v/c Ratio	0.49	0.64			1.00	0.69					0.35	0.19
Control Delay	10.1	10.8			59.0	6.3					24.0	2.2
Queue Delay	0.0	0.0			0.0	0.0					0.0	0.0
Total Delay	10.1	10.8			59.0	6.3					24.0	2.2
Queue Length 50th (ft)	19	115			~217	0					32	0
Queue Length 95th (ft)	48	181			#369	41					66	3
Internal Link Dist (ft)		580			1129			247			588	
Turn Bay Length (ft)	115					165						445
Base Capacity (vph)	386	973			620	1293					344	345
Starvation Cap Reductn	0	0			0	0					0	0
Spillback Cap Reductn	0	0			0	0					0	0
Storage Cap Reductn	0	0			0	0					0	0
Reduced v/c Ratio	0.46	0.64			1.00	0.47					0.31	0.18

Intersection Summary	
Area Type:	Other
Cycle Length: 88	
Actuated Cycle Length: 56.9	
Natural Cycle: 60	
Control Type: Actuated-Uncoordinated	
~	Volume exceeds capacity, queue is theoretically infinite.
	Queue shown is maximum after two cycles.
#	95th percentile volume exceeds capacity, queue may be longer.
	Queue shown is maximum after two cycles.

Splits and Phases: 6: I-180 WB Ramps & Lycoming Mall Dr (SR 2014)/US 220



Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	19	46	29	212	126	179	19	293	144	151	496	19
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	15	15	15	13	13	13	14	14	14	14	14	14
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (ft)	75			75			75			75		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.958			0.953			0.957			0.996	
Flt Protected		0.990			0.980			0.998			0.989	
Satd. Flow (prot)	0	1758	0	0	1610	0	0	1561	0	0	1695	0
Flt Permitted		0.884			0.832			0.961			0.716	
Satd. Flow (perm)	0	1570	0	0	1367	0	0	1503	0	0	1227	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		25			35			25			25	
Link Distance (ft)		390			506			1477			648	
Travel Time (s)		10.6			9.9			40.3			17.7	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	6%	7%	7%	5%	7%	12%	22%	12%	28%	28%	7%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)							0		0	0		0
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	21	52	33	238	142	201	21	329	162	170	557	21
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	106	0	0	581	0	0	512	0	0	748	0
Number of Detectors	1	1		1	1		1	1		1	1	
Detector Template	Left			Left			Left			Left		
Leading Detector (ft)	30	45		30	45		30	45		30	45	
Trailing Detector (ft)	-10	-5		-10	-5		-10	-5		-10	-5	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	15.0	15.0		15.0	15.0		15.0	15.0		15.0	15.0	
Total Split (s)	37.0	37.0		37.0	37.0		43.0	43.0		43.0	43.0	
Total Split (%)	46.3%	46.3%		46.3%	46.3%		53.8%	53.8%		53.8%	53.8%	
Maximum Green (s)	32.0	32.0		32.0	32.0		38.0	38.0		38.0	38.0	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		-1.0			-1.0			-1.0			-1.0	
Total Lost Time (s)		4.0			4.0			4.0			4.0	

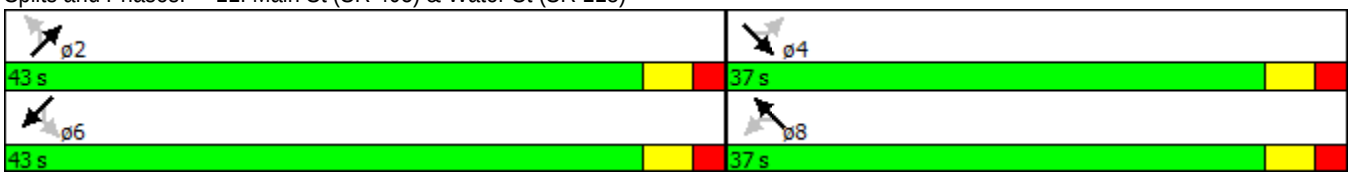
Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Minimum Gap (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Time Before Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Time To Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Recall Mode	Max	Max		Max	Max		Max	Max		Max	Max	
Walk Time (s)	11.0	11.0		11.0	11.0		12.0	12.0		12.0	12.0	
Flash Dont Walk (s)	16.0	16.0		16.0	16.0		18.0	18.0		18.0	18.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
v/c Ratio		0.16			1.03			0.70			1.25	
Control Delay		15.7			72.5			22.3			149.4	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		15.7			72.5			22.3			149.4	
Queue Length 50th (ft)		32			~316			189			~474	
Queue Length 95th (ft)		64			#499			301			#672	
Internal Link Dist (ft)		310			426			1397			568	
Turn Bay Length (ft)												
Base Capacity (vph)		647			563			732			598	
Starvation Cap Reductn		0			0			0			0	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.16			1.03			0.70			1.25	

Intersection Summary	
Area Type:	Other
Cycle Length: 80	
Actuated Cycle Length: 80	
Natural Cycle: 80	
Control Type: Actuated-Uncoordinated	

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

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

Splits and Phases: 11: Main St (SR 405) & Water St (SR 118)

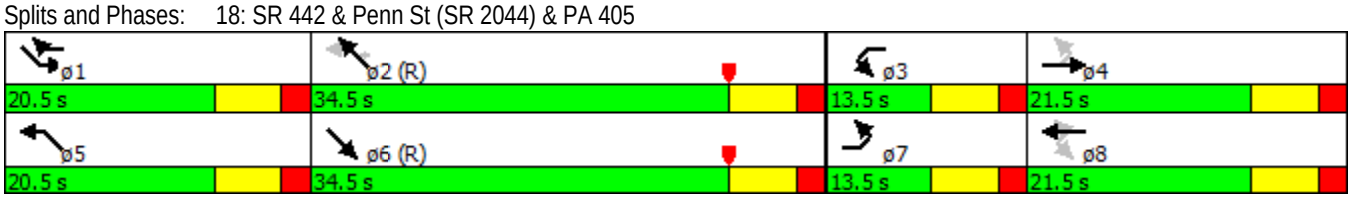


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Volume (vph)	19	122	14	122	152	1051	1376	136	26	17	297	227
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	11	11	11	11	11	11	11	11	11	11	11	11
Grade (%)		-2%			-1%			1%			-2%	
Storage Length (ft)	195		220	155		425	450		0	125		400
Storage Lanes	2		0	1		1	2		0	1		1
Taper Length (ft)	75			75			75			75		
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00	0.97	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.985				0.850		0.976				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1670	3121	0	1408	1681	1376	2659	1462	0	1670	1642	1396
Flt Permitted	0.654			0.507			0.950			0.647		
Satd. Flow (perm)	1149	3121	0	751	1681	1376	2659	1462	0	1137	1642	1396
Right Turn on Red			No			Yes			Yes			Yes
Satd. Flow (RTOR)						435		11				244
Link Speed (mph)		45			45			40			45	
Link Distance (ft)		670			586			1005			570	
Travel Time (s)		10.2			8.9			17.1			8.6	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	6%	0%	18%	4%	8%	20%	17%	8%	0%	7%	7%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	20	131	15	131	163	1130	1480	146	28	18	319	244
Shared Lane Traffic (%)												
Lane Group Flow (vph)	20	146	0	131	163	1130	1480	174	0	18	319	244
Number of Detectors	1	1		1	1	1	2	2		1	2	0
Detector Template	Left	Thru		Left	Thru	Right				Left		
Leading Detector (ft)	40	30		40	30	30	160	160		30	310	0
Trailing Detector (ft)	-10	-5		-10	-5	-5	-10	-10		-10	-10	0
Turn Type	pm+pt	NA		pm+pt	NA	pm+ov	Prot	NA		pm+pt	NA	Perm
Protected Phases	7	4		3	8	1	1	6		5	2	
Permitted Phases	4			8		8				2		2
Detector Phase	7	4		3	8	1	1	6		5	2	2
Switch Phase												
Minimum Initial (s)	3.0	5.0		3.0	5.0	3.0	3.0	5.0		3.0	5.0	5.0
Minimum Split (s)	9.5	11.5		9.5	11.5	9.5	9.5	11.5		9.5	11.5	11.5
Total Split (s)	13.5	21.5		13.5	21.5	20.5	20.5	34.5		20.5	34.5	34.5
Total Split (%)	15.0%	23.9%		15.0%	23.9%	22.8%	22.8%	38.3%		22.8%	38.3%	38.3%
Maximum Green (s)	7.0	15.0		7.0	15.0	14.0	14.0	28.0		14.0	28.0	28.0
Yellow Time (s)	4.5	4.5		4.5	4.5	4.5	4.5	4.5		4.5	4.5	4.5
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)	-1.0	-1.0		-1.0	-1.0	-1.0	-1.0	-1.0		-1.0	-1.0	-1.0
Total Lost Time (s)	5.5	5.5		5.5	5.5	5.5	5.5	5.5		5.5	5.5	5.5

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lead/Lag	Lead	Lag		Lead	Lag	Lead	Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	5.0		3.0	5.0	3.0	3.0	4.0		3.0	4.0	4.0
Minimum Gap (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Time Before Reduce (s)	0.0	0.0		0.0	0.0	0.0	0.0	9.0		0.0	9.0	9.0
Time To Reduce (s)	0.0	0.0		0.0	0.0	0.0	0.0	18.0		0.0	18.0	18.0
Recall Mode	None	None		None	None	None	None	C-Min		None	C-Min	C-Min
Walk Time (s)		12.0			12.0			14.0			14.0	14.0
Flash Dont Walk (s)		18.0			18.0			21.0			21.0	21.0
Pedestrian Calls (#/hr)		0			0			0			0	0
v/c Ratio	0.07	0.32		0.47	0.40	1.20	2.38	0.23		0.04	0.70	0.43
Control Delay	21.7	35.7		30.4	33.4	116.1	646.5	14.7		10.5	37.5	5.8
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	21.7	35.7		30.4	33.4	116.1	646.5	14.7		10.5	37.5	5.8
Queue Length 50th (ft)	8	40		56	70	~654	~742	42		4	157	0
Queue Length 95th (ft)	24	66		102	149	#956	#905	110		14	240	51
Internal Link Dist (ft)		590			506			925			490	
Turn Bay Length (ft)	195			155		425	450			125		400
Base Capacity (vph)	315	554		276	412	943	622	756		593	529	615
Starvation Cap Reductn	0	0		0	0	0	0	0		0	0	0
Spillback Cap Reductn	0	0		0	0	0	0	0		0	0	0
Storage Cap Reductn	0	0		0	0	0	0	0		0	0	0
Reduced v/c Ratio	0.06	0.26		0.47	0.40	1.20	2.38	0.23		0.03	0.60	0.40

Intersection Summary	
Area Type:	Other
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 0 (0%), Referenced to phase 2:NWTL and 6:SET, Start of Yellow	
Natural Cycle: 120	
Control Type: Actuated-Coordinated	
~ Volume exceeds capacity, queue is theoretically infinite.	
Queue shown is maximum after two cycles.	
# 95th percentile volume exceeds capacity, queue may be longer.	
Queue shown is maximum after two cycles.	

Splits and Phases: 18: SR 442 & Penn St (SR 2044) & PA 405



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	378	283	42	123	360	75	63	387	184	63	230	267
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	16	16	16	12	12	12	10	10	10	10	10	10
Grade (%)		-2%			1%			2%			-1%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (ft)	75			75			75			75		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.99			0.99			0.98			0.97	
Frt		0.992			0.982			0.961			0.936	
Flt Protected		0.974			0.989			0.995			0.994	
Satd. Flow (prot)	0	1837	0	0	1614	0	0	1261	0	0	1244	0
Flt Permitted		0.974			0.989			0.796			0.738	
Satd. Flow (perm)	0	1822	0	0	1609	0	0	1009	0	0	923	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		463			494			1137			622	
Travel Time (s)		12.6			13.5			31.0			17.0	
Confl. Peds. (#/hr)	10		10	10		10	10		10	10		10
Confl. Bikes (#/hr)												
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	8%	8%	8%	7%	7%	7%	8%	8%	8%	7%	7%	7%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)							6	6	6	6	6	6
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	420	314	47	137	400	83	70	430	204	70	256	297
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	781	0	0	620	0	0	704	0	0	623	0
Number of Detectors	1	1		1	1		1	1		1	1	
Detector Template	Left			Left			Left			Left		
Leading Detector (ft)	30	40		30	40		30	40		30	40	
Trailing Detector (ft)	-10	-10		-10	-10		-10	-10		-10	-10	
Turn Type	Split	NA		Split	NA		Perm	NA		Perm	NA	
Protected Phases	2	2		6	6			4			8	
Permitted Phases							4			8		
Detector Phase	2	2		6	6		4	4		8	8	
Switch Phase												
Minimum Initial (s)	8.0	8.0		8.0	8.0		7.0	7.0		7.1	7.1	
Minimum Split (s)	23.0	23.0		23.0	23.0		22.1	22.1		22.1	22.1	
Total Split (s)	25.0	25.0		35.0	35.0		40.0	40.0		40.0	40.0	
Total Split (%)	25.0%	25.0%		35.0%	35.0%		40.0%	40.0%		40.0%	40.0%	
Maximum Green (s)	20.0	20.0		30.0	30.0		35.9	35.9		35.9	35.9	
Yellow Time (s)	4.0	4.0		4.0	4.0		3.1	3.1		3.1	3.1	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		5.0			5.0			4.1			4.1	

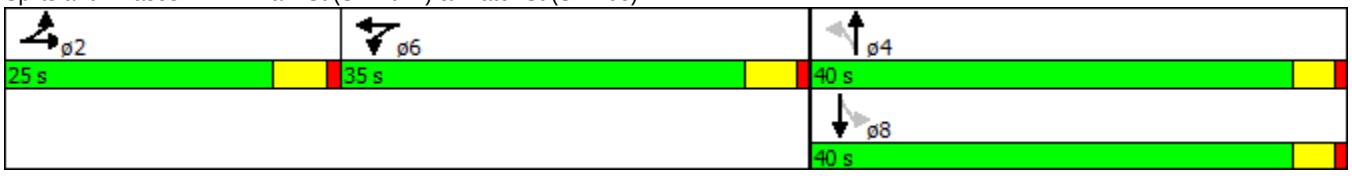
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0		2.0	2.0		3.5	3.5		3.5	3.5	
Minimum Gap (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Time Before Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Time To Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Recall Mode	None	None		None	None		None	None		None	None	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Pedestrian Calls (#/hr)	10	10		10	10		10	10		10	10	
v/c Ratio		2.13			1.28			1.94			1.88	
Control Delay		540.5			173.3			458.6			432.2	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		540.5			173.3			458.6			432.2	
Queue Length 50th (ft)		~797			~504			~698			~610	
Queue Length 95th (ft)		#1024			#716			#918			#822	
Internal Link Dist (ft)		383			414			1057			542	
Turn Bay Length (ft)												
Base Capacity (vph)		367			484			362			331	
Starvation Cap Reductn		0			0			0			0	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		2.13			1.28			1.94			1.88	

Intersection Summary	
Area Type:	Other
Cycle Length: 100	
Actuated Cycle Length: 100	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	

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

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

Splits and Phases: 21: Main St (SR 2014) & Water St (SR 405)

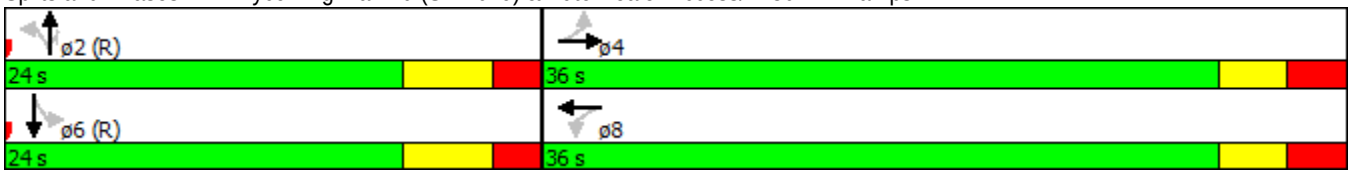


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	2	23	26	777	6	444	14	1345	831	243	1525	1
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	13	13	13	15	15	15	12	12	16	12	12	12
Grade (%)		2%			4%			1%			-1%	
Storage Length (ft)	0		100	0		0	0		0	0		375
Storage Lanes	0		0	0		0	0		1	0		1
Taper Length (ft)	75			75			75			75		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95
Ped Bike Factor												
Frt		0.931			0.951				0.850			
Flt Protected		0.998			0.969			0.999			0.993	
Satd. Flow (prot)	0	1711	0	0	1787	0	0	1789	1725	0	3355	0
Flt Permitted		0.964			0.775			0.384			0.548	
Satd. Flow (perm)	0	1653	0	0	1429	0	0	688	1725	0	1852	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		1			2				588			
Link Speed (mph)		25			25			40			40	
Link Distance (ft)		187			334			1105			689	
Travel Time (s)		5.1			9.1			18.8			11.7	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
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
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	0%	0%	0%	17%	0%	0%	0%	0%	0%	2%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	2	25	28	845	7	483	15	1462	903	264	1658	1
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	55	0	0	1335	0	0	1477	903	0	1923	0
Number of Detectors	1	1		1	1		1	1	0	1	1	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left		
Leading Detector (ft)	30	40		30	45		30	45	0	30	45	
Trailing Detector (ft)	-10	-10		-10	-5		-10	-5	0	-10	-5	
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2		2	6		
Detector Phase	4	4		8	8		2	2	2	6	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	10.8	10.8		10.8	10.8		11.2	11.2	11.2	11.2	11.2	
Total Split (s)	36.0	36.0		36.0	36.0		24.0	24.0	24.0	24.0	24.0	
Total Split (%)	60.0%	60.0%		60.0%	60.0%		40.0%	40.0%	40.0%	40.0%	40.0%	
Maximum Green (s)	30.2	30.2		30.2	30.2		17.8	17.8	17.8	17.8	17.8	
Yellow Time (s)	3.0	3.0		3.0	3.0		4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	2.8	2.8		2.8	2.8		2.2	2.2	2.2	2.2	2.2	
Lost Time Adjust (s)		-1.0			-1.0			-1.0	-1.0		-1.0	
Total Lost Time (s)		4.8			4.8			5.2	5.2		5.2	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Minimum Gap (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Time Before Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Time To Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Recall Mode	None	None		None	None		C-Min	C-Min	C-Min	C-Min	C-Min	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
v/c Ratio		0.06			1.79			6.87	0.96		3.32	
Control Delay		7.4			382.1			2650.2	13.4		1060.9	
Queue Delay		0.0			0.0			0.0	0.0		0.0	
Total Delay		7.4			382.1			2650.2	13.4		1060.9	
Queue Length 50th (ft)		9			~765			~1078	76		~668	
Queue Length 95th (ft)		23			#996			m#627	m18		#796	
Internal Link Dist (ft)		107			254			1025			609	
Turn Bay Length (ft)												
Base Capacity (vph)		860			744			215	944		580	
Starvation Cap Reductn		0			0			0	0		0	
Spillback Cap Reductn		0			0			0	0		0	
Storage Cap Reductn		0			0			0	0		0	
Reduced v/c Ratio		0.06			1.79			6.87	0.96		3.32	

Intersection Summary	
Area Type:	Other
Cycle Length: 60	
Actuated Cycle Length: 60	
Offset: 55 (92%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	
Natural Cycle: 120	
Control Type: Actuated-Coordinated	
~ Volume exceeds capacity, queue is theoretically infinite.	
Queue shown is maximum after two cycles.	
# 95th percentile volume exceeds capacity, queue may be longer.	
Queue shown is maximum after two cycles.	
m Volume for 95th percentile queue is metered by upstream signal.	

Splits and Phases: 1: Lycoming Mall Rd (SR 2049) & Auto Dealer Access/I-180 WB Ramps



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	2	23	26	777	6	444	14	1345	831	243	1525	1
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	1853	1853	1853	1835	1833	1835	1791	1791	1863	1809	1778	1809
Adj Flow Rate, veh/h	2	25	15	845	7	472	15	1462	611	264	1658	0
Adj No. of Lanes	0	1	0	0	1	0	0	1	1	0	2	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	17	17	17	0	0	0	2	2	2
Cap, veh/h	77	576	328	587	4	273	61	342	496	108	482	0
Arrive On Green	0.50	0.52	0.50	0.50	0.52	0.50	0.30	0.31	0.31	0.30	0.31	0.00
Sat Flow, veh/h	27	1108	630	939	8	525	0	1091	1583	0	1618	0
Grp Volume(v), veh/h	42	0	0	1324	0	0	1477	0	611	332	1590	0
Grp Sat Flow(s),veh/h/ln	1765	0	0	1472	0	0	1091	0	1583	0	1537	0
Q Serve(g_s), s	0.0	0.0	0.0	29.5	0.0	0.0	0.0	0.0	18.8	0.0	18.8	0.0
Cycle Q Clear(g_c), s	0.7	0.0	0.0	30.2	0.0	0.0	17.8	0.0	18.8	17.8	18.8	0.0
Prop In Lane	0.05		0.36	0.64		0.36	0.01		1.00	0.80		0.00
Lane Grp Cap(c), veh/h	951	0	0	839	0	0	384	0	496	108	482	0
V/C Ratio(X)	0.04	0.00	0.00	1.58	0.00	0.00	3.84	0.00	1.23	3.08	3.30	0.00
Avail Cap(c_a), veh/h	951	0	0	839	0	0	384	0	496	108	482	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	0.00	1.00	0.00	0.00	0.09	0.00	0.09	1.00	1.00	0.00
Uniform Delay (d), s/veh	7.2	0.0	0.0	16.4	0.0	0.0	18.7	0.0	20.6	29.5	20.6	0.0
Incr Delay (d2), s/veh	0.0	0.0	0.0	265.8	0.0	0.0	1280.3	0.0	106.0	959.8	1040.9	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(95%),veh/ln	0.7	0.0	0.0	111.5	0.0	0.0	241.9	0.0	40.2	51.7	262.8	0.0
LnGrp Delay(d),s/veh	7.2	0.0	0.0	282.2	0.0	0.0	1299.0	0.0	126.6	989.4	1061.5	0.0
LnGrp LOS	A			F			F		F	F	F	
Approach Vol, veh/h		42			1324			2088			1922	
Approach Delay, s/veh		7.2			282.2			955.9			1049.0	
Approach LOS		A			F			F			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		24.0		36.0		24.0		36.0
Change Period (Y+Rc), s		* 6.2		* 5.8		* 6.2		* 5.8
Max Green Setting (Gmax), s		* 18		* 30		* 18		* 30
Max Q Clear Time (g_c+I1), s		19.8		2.7		21.3		32.2
Green Ext Time (p_c), s		0.0		18.0		0.0		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	815.9
HCM 2010 LOS	F

Notes

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

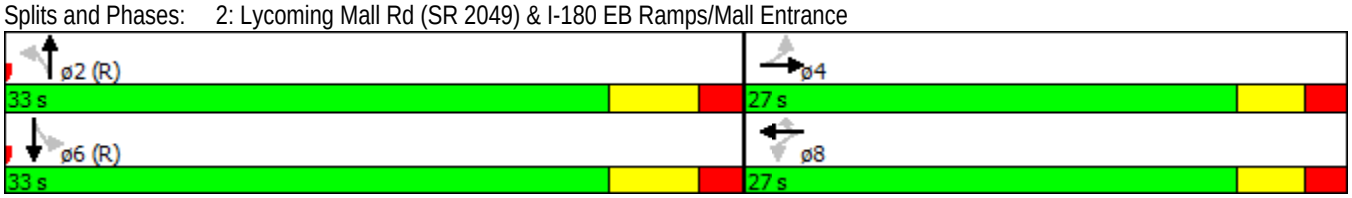
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	271	278	518	77	55	323	643	1597	74	85	1790	454
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	12	11	12	12	12	12	12	12	12	12
Grade (%)		2%			2%			-2%			-3%	
Storage Length (ft)	0		0	0		0	135		0	0		0
Storage Lanes	0		0	1		1	1		0	1		0
Taper Length (ft)	75			75			75			75		
Lane Util. Factor	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.927				0.850		0.993			0.970	
Flt Protected		0.987		0.950			0.950			0.950		
Satd. Flow (prot)	0	3002	0	1604	1713	1515	1645	1787	0	1736	1748	0
Flt Permitted		0.853		0.174			0.143			0.143		
Satd. Flow (perm)	0	2594	0	294	1713	1515	248	1787	0	261	1748	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		3				55		5			29	
Link Speed (mph)		25			25			40			40	
Link Distance (ft)		279			408			2572			1105	
Travel Time (s)		7.6			11.1			43.8			18.8	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	3%	0%	5%	2%	4%	0%	5%	1%	2%	0%	1%	3%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	298	305	569	85	60	355	707	1755	81	93	1967	499
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1172	0	85	60	355	707	1836	0	93	2466	0
Number of Detectors	1	1		1	1	0	1	1		1	1	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (ft)	30	45		45	45	0	45	45		45	45	
Trailing Detector (ft)	-10	-5		-5	-5	0	-5	-5		-5	-5	
Turn Type	Perm	NA		Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8		8	2			6		
Detector Phase	4	4		8	8	8	2	2		6	6	
Switch Phase												
Minimum Initial (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Minimum Split (s)	7.0	7.0		7.0	7.0	7.0	8.0	8.0		8.0	8.0	
Total Split (s)	27.0	27.0		27.0	27.0	27.0	33.0	33.0		33.0	33.0	
Total Split (%)	45.0%	45.0%		45.0%	45.0%	45.0%	55.0%	55.0%		55.0%	55.0%	
Maximum Green (s)	22.0	22.0		22.0	22.0	22.0	27.0	27.0		27.0	27.0	
Yellow Time (s)	3.0	3.0		3.0	3.0	3.0	4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		-1.0		-1.0	-1.0	-1.0	-1.0	-1.0		-1.0	-1.0	
Total Lost Time (s)		4.0		4.0	4.0	4.0	5.0	5.0		5.0	5.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Minimum Gap (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Time Before Reduce (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Time To Reduce (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Recall Mode	Min	Min		Min	Min	Min	C-Max	C-Max		C-Max	C-Max	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
v/c Ratio		1.18		0.76	0.09	0.58	6.15	2.20		0.77	2.97	
Control Delay		111.9		62.2	12.4	16.8	2343.7	560.4		30.5	901.4	
Queue Delay		0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay		111.9		62.2	12.4	16.8	2343.7	560.4		30.5	901.4	
Queue Length 50th (ft)		~278		26	13	81	~480	~1130		32	~1659	
Queue Length 95th (ft)		#394		#98	34	157	#669	#1378		m11	m#460	
Internal Link Dist (ft)		199			328			2492			1025	
Turn Bay Length (ft)							135					
Base Capacity (vph)		996		112	656	614	115	836		121	831	
Starvation Cap Reductn		0		0	0	0	0	0		0	0	
Spillback Cap Reductn		0		0	0	0	0	0		0	0	
Storage Cap Reductn		0		0	0	0	0	0		0	0	
Reduced v/c Ratio		1.18		0.76	0.09	0.58	6.15	2.20		0.77	2.97	

Intersection Summary

Area Type: Other
Cycle Length: 60
Actuated Cycle Length: 60
Offset: 40 (67%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 45
Control Type: Actuated-Coordinated
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

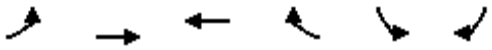
Splits and Phases: 2: Lycoming Mall Rd (SR 2049) & I-180 EB Ramps/Mall Entrance



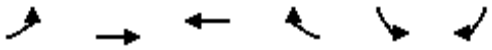
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	271	278	518	77	55	323	643	1597	74	85	1790	454
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking 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	1782	1727	1782	1747	1713	1782	1731	1799	1818	1827	1802	1827
Adj Flow Rate, veh/h	298	305	503	85	60	0	707	1755	51	93	1967	483
Adj No. of Lanes	0	2	0	1	1	1	1	1	0	1	1	0
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	0	0	0	2	4	0	5	1	1	0	1	1
Cap, veh/h	349	265	512	133	657	581	121	812	24	122	652	160
Arrive On Green	0.37	0.38	0.37	0.38	0.38	0.00	0.47	0.47	0.45	0.47	0.47	0.45
Sat Flow, veh/h	675	691	1336	665	1713	1515	135	1740	51	268	1398	343
Grp Volume(v), veh/h	603	0	503	85	60	0	707	0	1806	93	0	2450
Grp Sat Flow(s),veh/h/ln	1366	0	1336	665	1713	1515	135	0	1790	268	0	1741
Q Serve(g_s), s	20.2	0.0	22.4	1.1	1.3	0.0	0.5	0.0	28.0	0.5	0.0	28.0
Cycle Q Clear(g_c), s	22.0	0.0	22.4	23.0	1.3	0.0	28.0	0.0	28.0	28.0	0.0	28.0
Prop In Lane	0.49		1.00	1.00		1.00	1.00		0.03	1.00		0.20
Lane Grp Cap(c), veh/h	591	0	512	133	657	581	121	0	835	122	0	813
V/C Ratio(X)	1.02	0.00	0.98	0.64	0.09	0.00	5.84	0.00	2.16	0.76	0.00	3.02
Avail Cap(c_a), veh/h	591	0	512	133	657	581	121	0	835	122	0	813
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	1.00	0.00	0.09	0.00	0.09	0.09	0.00	0.09
Uniform Delay (d), s/veh	20.9	0.0	18.8	29.9	11.8	0.0	30.0	0.0	16.0	30.0	0.0	16.1
Incr Delay (d2), s/veh	42.4	0.0	35.2	11.4	0.1	0.0	2178.3	0.0	523.1	4.1	0.0	907.2
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(95%),veh/ln	30.2	0.0	19.1	3.3	1.2	0.0	129.1	0.0	229.8	2.3	0.0	368.7
LnGrp Delay(d),s/veh	63.3	0.0	54.0	41.3	11.9	0.0	2208.3	0.0	539.1	34.1	0.0	923.3
LnGrp LOS	F		D	D	B		F		F	C		F
Approach Vol, veh/h		1106			145			2513			2543	
Approach Delay, s/veh		59.1			29.1			1008.7			890.8	
Approach LOS		E			C			F			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		33.0		27.0		33.0		27.0
Change Period (Y+Rc), s		6.0		5.0		6.0		5.0
Max Green Setting (Gmax), s		27.0		22.0		27.0		22.0
Max Q Clear Time (g_c+I1), s		30.5		24.4		30.5		25.5
Green Ext Time (p_c), s		0.0		0.0		0.0		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	772.1
HCM 2010 LOS	F



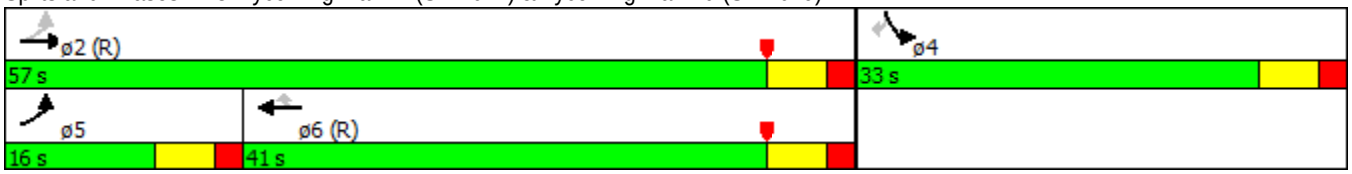
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	657	888	998	1402	1296	721
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	12	12	12	12
Grade (%)		-1%	1%		-2%	
Storage Length (ft)	165			215	165	0
Storage Lanes	1			1	1	1
Taper Length (ft)	125				75	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt				0.850		0.850
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1719	1774	1756	1522	1645	1486
Flt Permitted	0.190				0.950	
Satd. Flow (perm)	344	1774	1756	1522	1645	1486
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)				798		260
Link Speed (mph)		45	45		40	
Link Distance (ft)		727	1089		2572	
Travel Time (s)		11.0	16.5		43.8	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	2%	2%	0%	5%	4%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)		0%	0%		0%	
Adj. Flow (vph)	747	1009	1134	1593	1473	819
Shared Lane Traffic (%)						
Lane Group Flow (vph)	747	1009	1134	1593	1473	819
Number of Detectors	1	1	1	1	1	1
Detector Template	Left				Left	Right
Leading Detector (ft)	45	6	6	6	45	45
Trailing Detector (ft)	-5	0	0	0	-5	-5
Turn Type	pm+pt	NA	NA	Perm	Prot	Perm
Protected Phases	5	2	6		4	
Permitted Phases	2			6		4
Detector Phase	5				4	4
Switch Phase						
Minimum Initial (s)	3.0	15.0	15.0	15.0	5.0	5.0
Minimum Split (s)	9.0	21.0	21.0	21.0	11.0	11.0
Total Split (s)	16.0	57.0	41.0	41.0	33.0	33.0
Total Split (%)	17.8%	63.3%	45.6%	45.6%	36.7%	36.7%
Maximum Green (s)	10.0	51.0	35.0	35.0	27.0	27.0
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0

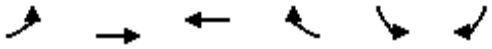


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lead/Lag	Lead		Lag	Lag		
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	5.0	5.0	5.0	3.0	3.0
Minimum Gap (s)	3.0	2.0	2.0	2.0	3.0	3.0
Time Before Reduce (s)	0.0	42.0	42.0	42.0	0.0	0.0
Time To Reduce (s)	0.0	10.0	10.0	10.0	0.0	0.0
Recall Mode	None	C-Min	C-Min	C-Min	None	None
Walk Time (s)		7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)		14.0	14.0	14.0	14.0	14.0
Pedestrian Calls (#/hr)		0	0	0	0	0
v/c Ratio	2.58	1.60	3.63	1.72	1.68	0.90
Control Delay	736.8	303.5	1208.2	345.0	332.7	27.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	736.8	303.5	1208.2	345.0	332.7	27.4
Queue Length 50th (ft)	~682	~829	~1169	~958	~1236	287
Queue Length 95th (ft)	#877	#1031	#1374	#1171	#1444	#555
Internal Link Dist (ft)		647	1009		2492	
Turn Bay Length (ft)	165			215	165	
Base Capacity (vph)	290	630	312	926	877	913
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	2.58	1.60	3.63	1.72	1.68	0.90

Intersection Summary	
Area Type:	Other
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 21 (23%), Referenced to phase 2:EBTL and 6:WBT, Start of Yellow	
Natural Cycle: 100	
Control Type: Actuated-Coordinated	
~ Volume exceeds capacity, queue is theoretically infinite.	
Queue shown is maximum after two cycles.	
# 95th percentile volume exceeds capacity, queue may be longer.	
Queue shown is maximum after two cycles.	

Splits and Phases: 3: Lycoming Mall Dr (SR 2014) & Lycoming Mall Rd (SR 2049)





Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	657	888	998	1402	1296	721
Number	5	2	6	16	7	14
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	1809	1774	1756	1791	1731	1748
Adj Flow Rate, veh/h	747	1009	1134	1558	1473	738
Adj No. of Lanes	1	1	1	1	1	1
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	0	2	2	0	5	4
Cap, veh/h	291	1025	702	609	513	462
Arrive On Green	0.12	0.58	0.27	0.27	0.31	0.31
Sat Flow, veh/h	1723	1774	1756	1522	1649	1486
Grp Volume(v), veh/h	747	1009	1134	1558	1473	738
Grp Sat Flow(s),veh/h/ln	1723	1774	1756	1522	1649	1486
Q Serve(g_s), s	11.0	50.2	36.0	36.0	28.0	28.0
Cycle Q Clear(g_c), s	11.0	50.2	36.0	36.0	28.0	28.0
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	291	1025	702	609	513	462
V/C Ratio(X)	2.57	0.98	1.61	2.56	2.87	1.60
Avail Cap(c_a), veh/h	291	1025	702	609	513	462
HCM Platoon Ratio	1.00	1.00	0.67	0.67	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.09	0.09
Uniform Delay (d), s/veh	26.8	18.6	32.9	32.9	31.0	31.0
Incr Delay (d2), s/veh	716.9	24.7	283.1	706.2	842.5	269.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	117.1	40.3	130.8	241.8	224.8	93.1
LnGrp Delay(d),s/veh	743.7	43.3	316.1	739.1	873.5	300.3
LnGrp LOS	F	D	F	F	F	F
Approach Vol, veh/h		1756	2692		2211	
Approach Delay, s/veh		341.2	560.9		682.2	
Approach LOS		F	F		F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		57.0		33.0	16.0	41.0		
Change Period (Y+Rc), s		6.0		6.0	6.0	6.0		
Max Green Setting (Gmax), s		51.0		27.0	10.0	35.0		
Max Q Clear Time (g_c+I1), s		52.7		30.5	13.5	38.5		
Green Ext Time (p_c), s		0.0		0.0	0.0	0.0		

Intersection Summary	
HCM 2010 Ctrl Delay	543.3
HCM 2010 LOS	F

Notes

User approved pedestrian interval to be less than phase max green.

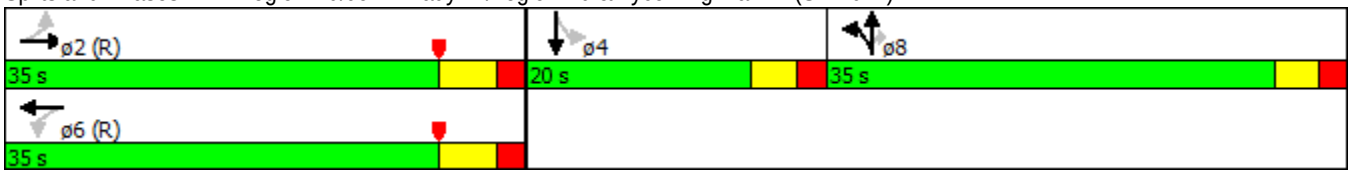
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	6	891	0	368	815	6	2250	2	756	13	8	6
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	12	13	13	13	12	12	12	14	14	14
Grade (%)		1%			-1%			-3%			0%	
Storage Length (ft)	1		0	275		0	0		0	0		0
Storage Lanes	0		0	1		0	1		1	0		0
Taper Length (ft)	75			75			75			75		
Lane Util. Factor	0.95	0.95	1.00	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt					0.999				0.850		0.968	
Flt Protected					0.985		0.950	0.952			0.977	
Satd. Flow (prot)	0	3329	0	0	3280	0	1633	1636	1451	0	1573	0
Flt Permitted		0.736			0.557		0.950	0.952			0.444	
Satd. Flow (perm)	0	2450	0	0	1855	0	1633	1636	1451	0	715	0
Right Turn on Red			Yes			Yes			Yes			No
Satd. Flow (RTOR)					1				349			
Link Speed (mph)		45			45			45			25	
Link Distance (ft)		326			418			206			301	
Travel Time (s)		4.9			6.3			3.1			8.2	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	33%	2%	0%	12%	4%	17%	1%	0%	7%	33%	0%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	7	990	0	409	906	7	2500	2	840	14	9	7
Shared Lane Traffic (%)							50%					
Lane Group Flow (vph)	0	997	0	0	1322	0	1250	1252	840	0	30	0
Number of Detectors	1	2		1	2		2	2	0	1	1	
Detector Template	Left			Left						Left	Thru	
Leading Detector (ft)	30	306		30	286		206	206	0	30	45	
Trailing Detector (ft)	-10	-5		-10	-5		-5	-5	0	-10	-5	
Turn Type	Perm	NA		Perm	NA		Split	NA	Perm	Perm	NA	
Protected Phases		2			6		8	8			4	
Permitted Phases	2			6					8	4		
Detector Phase	2	2		6	6		8	8	8	4	4	
Switch Phase												
Minimum Initial (s)	15.0	15.0		15.0	15.0		15.0	15.0	15.0	5.0	5.0	
Minimum Split (s)	21.0	21.0		21.0	21.0		20.0	20.0	20.0	10.0	10.0	
Total Split (s)	35.0	35.0		35.0	35.0		35.0	35.0	35.0	20.0	20.0	
Total Split (%)	38.9%	38.9%		38.9%	38.9%		38.9%	38.9%	38.9%	22.2%	22.2%	
Maximum Green (s)	29.0	29.0		29.0	29.0		30.0	30.0	30.0	15.0	15.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)		-1.0			-1.0		-1.0	-1.0	-1.0		-1.0	
Total Lost Time (s)		5.0			5.0		4.0	4.0	4.0		4.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	6.0	6.0		6.0	6.0		6.0	6.0	6.0	3.0	3.0	
Minimum Gap (s)	2.0	2.0		2.0	2.0		2.0	2.0	2.0	2.0	2.0	
Time Before Reduce (s)	40.0	40.0		40.0	40.0		40.0	40.0	40.0	0.0	0.0	
Time To Reduce (s)	20.0	20.0		20.0	20.0		20.0	20.0	20.0	0.0	0.0	
Recall Mode	C-Min	C-Min		C-Min	C-Min		None	None	None	None	None	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
v/c Ratio		1.22			4.93dl		1.59	1.59	0.95		0.34	
Control Delay		140.0			538.0		293.6	293.3	37.8		44.5	
Queue Delay		0.0			0.0		0.0	0.0	0.0		0.0	
Total Delay		140.0			538.0		293.6	293.3	37.8		44.5	
Queue Length 50th (ft)		~370			~646		~990	~991	233		16	
Queue Length 95th (ft)		#493			#780		#1477	#1480	#658		41	
Internal Link Dist (ft)		246			338			126			221	
Turn Bay Length (ft)												
Base Capacity (vph)		816			619		787	789	880		127	
Starvation Cap Reductn		0			0		0	0	0		0	
Spillback Cap Reductn		0			0		0	0	0		0	
Storage Cap Reductn		0			0		0	0	0		0	
Reduced v/c Ratio		1.22			2.14		1.59	1.59	0.95		0.24	

Intersection Summary

Area Type: Other
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 41 (46%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow
Natural Cycle: 120
Control Type: Actuated-Coordinated
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
dl Defacto Left Lane. Recode with 1 though lane as a left lane.

Splits and Phases: 4: Legion Rd/John Brady Dr/Legion Rd & Lycoming Mall Dr (SR 2014)



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	6	891	0	368	815	6	2250	2	756	13	8	6
Number	5	2	12	1	6	16	3	8	18	7	4	14
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	1791	1752	0	1881	1766	1881	1809	1809	1707	1872	1622	1872
Adj Flow Rate, veh/h	7	990	0	409	906	5	2501	0	793	14	9	7
Adj No. of Lanes	0	2	0	0	2	0	2	0	1	0	1	0
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	0	4	4	4	1	0	7	0	0	0
Cap, veh/h	41	1314	0	205	756	4	1187	0	500	29	18	14
Arrive On Green	0.46	0.47	0.00	0.46	0.47	0.46	0.34	0.00	0.34	0.03	0.04	0.03
Sat Flow, veh/h	0	2871	0	269	1606	9	3446	0	1451	711	457	356
Grp Volume(v), veh/h	533	464	0	423	0	897	2501	0	793	30	0	0
Grp Sat Flow(s),veh/h/ln	1276	1515	0	278	0	1605	1723	0	1451	1524	0	0
Q Serve(g_s), s	0.0	21.0	0.0	19.8	0.0	42.4	31.0	0.0	31.0	1.7	0.0	0.0
Cycle Q Clear(g_c), s	41.4	21.0	0.0	41.4	0.0	42.4	31.0	0.0	31.0	1.7	0.0	0.0
Prop In Lane	0.01		0.00	0.97		0.01	1.00		1.00	0.47		0.23
Lane Grp Cap(c), veh/h	627	713	0	206	0	756	1187	0	500	62	0	0
V/C Ratio(X)	0.85	0.65	0.00	2.05	0.00	1.19	2.11	0.00	1.59	0.49	0.00	0.00
Avail Cap(c_a), veh/h	627	713	0	206	0	756	1187	0	500	271	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	22.5	18.2	0.0	38.6	0.0	23.8	29.5	0.0	29.5	42.6	0.0	0.0
Incr Delay (d2), s/veh	13.6	4.6	0.0	488.6	0.0	97.2	501.2	0.0	273.2	5.8	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(95%),veh/ln	19.7	14.8	0.0	50.4	0.0	70.3	175.1	0.0	90.5	1.5	0.0	0.0
LnGrp Delay(d),s/veh	36.1	22.7	0.0	527.2	0.0	121.0	530.7	0.0	302.7	48.5	0.0	0.0
LnGrp LOS	D	C		F		F	F		F	D		
Approach Vol, veh/h		997			1320			3294			30	
Approach Delay, s/veh		29.9			251.2			475.8			48.5	
Approach LOS		C			F			F			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		47.4		7.6		47.4		35.0
Change Period (Y+Rc), s		6.0		5.0		6.0		5.0
Max Green Setting (Gmax), s		29.0		15.0		29.0		30.0
Max Q Clear Time (g_c+I1), s		43.4		3.7		44.4		33.5
Green Ext Time (p_c), s		0.0		0.0		0.0		0.0

Intersection Summary		
HCM 2010 Ctrl Delay		342.2
HCM 2010 LOS		F

Notes

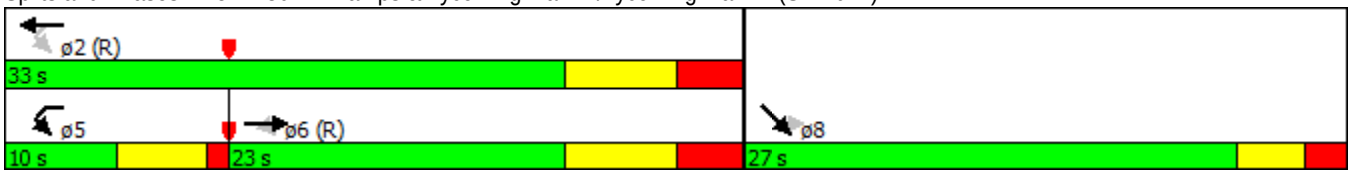
User approved volume balancing among the lanes for turning movement.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Volume (vph)	0	1667	195	130	998	0	596	0	274	0	0	0
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	14	12	12	12	12	14	14	14	12	12	12
Grade (%)		-1%			-1%			3%			-4%	
Storage Length (ft)	0		175	150		0	0		0	0		0
Storage Lanes	0		1	1		0	0		0	0		0
Taper Length (ft)	75			75			75			75		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt			0.850					0.958				
Flt Protected				0.950				0.967				
Satd. Flow (prot)	0	1855	1464	1420	1739	0	0	1620	0	0	0	0
Flt Permitted				0.190				0.967				
Satd. Flow (perm)	0	1855	1464	284	1739	0	0	1620	0	0	0	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			127					182				
Link Speed (mph)		45			45			25			25	
Link Distance (ft)		2040			660			376			358	
Travel Time (s)		30.9			10.0			10.3			9.8	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	4%	5%	21%	4%	0%	5%	0%	15%	0%	0%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	0	1736	203	135	1040	0	621	0	285	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1736	203	135	1040	0	0	906	0	0	0	0
Number of Detectors		1	1	1	1		1	1				
Detector Template				Left			Left	Thru				
Leading Detector (ft)		6	6	45	6		30	30				
Trailing Detector (ft)		0	0	-5	0		-10	-10				
Turn Type		NA	Perm	pm+pt	NA		Perm	NA				
Protected Phases		6		5	2			8				
Permitted Phases			6	2			8					
Detector Phase				5			8	8				
Switch Phase												
Minimum Initial (s)		15.0	15.0	5.0	20.0		5.0	5.0				
Minimum Split (s)		23.0	23.0	10.0	28.0		10.0	10.0				
Total Split (s)		23.0	23.0	10.0	33.0		27.0	27.0				
Total Split (%)		38.3%	38.3%	16.7%	55.0%		45.0%	45.0%				
Maximum Green (s)		15.0	15.0	5.0	25.0		22.0	22.0				
Yellow Time (s)		5.0	5.0	4.0	5.0		3.0	3.0				
All-Red Time (s)		3.0	3.0	1.0	3.0		2.0	2.0				
Lost Time Adjust (s)		-1.0	-1.0	-1.0	-1.0			-1.0				
Total Lost Time (s)		7.0	7.0	4.0	7.0			4.0				

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lead/Lag		Lag	Lag	Lead								
Lead-Lag Optimize?												
Vehicle Extension (s)		3.0	3.0	4.0	3.0		4.0	4.0				
Minimum Gap (s)		3.0	3.0	3.0	3.0		3.0	3.0				
Time Before Reduce (s)		0.0	0.0	0.0	0.0		0.0	0.0				
Time To Reduce (s)		0.0	0.0	0.0	0.0		0.0	0.0				
Recall Mode		C-Min	C-Min	None	C-Min		None	None				
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
v/c Ratio		3.12	0.38	0.54	1.38			1.24				
Control Delay		975.4	10.2	11.7	186.9			136.9				
Queue Delay		0.0	0.0	0.0	0.0			0.0				
Total Delay		975.4	10.2	11.7	186.9			136.9				
Queue Length 50th (ft)		~1159	21	6	~537			~378				
Queue Length 95th (ft)		#1396	69	m3	m17			#583				
Internal Link Dist (ft)		1960			580			296			278	
Turn Bay Length (ft)			175	150								
Base Capacity (vph)		556	528	250	753			733				
Starvation Cap Reductn		0	0	0	0			0				
Spillback Cap Reductn		0	0	0	0			0				
Storage Cap Reductn		0	0	0	0			0				
Reduced v/c Ratio		3.12	0.38	0.54	1.38			1.24				

Intersection Summary	
Area Type:	Other
Cycle Length: 60	
Actuated Cycle Length: 60	
Offset: 0 (0%), Referenced to phase 2:WBTL and 6:EBT, Start of Green, Master Intersection	
Natural Cycle: 120	
Control Type: Actuated-Coordinated	
~ Volume exceeds capacity, queue is theoretically infinite.	
Queue shown is maximum after two cycles.	
# 95th percentile volume exceeds capacity, queue may be longer.	
Queue shown is maximum after two cycles.	
m Volume for 95th percentile queue is metered by upstream signal.	

Splits and Phases: 5: I-180 EB Ramps & Lycoming Mall Dr/Lycoming Mall Dr (SR 2014)



Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Volume (veh/h)	0	1667	195	130	998	0	596	0	274	0	0	0
Number	1	6	16	5	2	12	3	8	18			
Initial Q (Qb), veh	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			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	0	1809	1723	1495	1739	0	1844	1705	1844			
Adj Flow Rate, veh/h	0	1736	73	135	1040	0	621	0	234			
Adj No. of Lanes	0	1	1	1	1	0	0	1	0			
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96			
Percent Heavy Veh, %	0	4	5	21	4	0	0	0	0			
Cap, veh/h	0	482	391	262	754	0	438	0	165			
Arrive On Green	0.00	0.27	0.27	0.20	0.87	0.00	0.37	0.00	0.37			
Sat Flow, veh/h	0	1809	1464	1424	1739	0	1142	0	430			
Grp Volume(v), veh/h	0	1736	73	135	1040	0	855	0	0			
Grp Sat Flow(s),veh/h/ln	0	1809	1464	1424	1739	0	1572	0	0			
Q Serve(g_s), s	0.0	16.0	2.3	3.7	26.0	0.0	23.0	0.0	0.0			
Cycle Q Clear(g_c), s	0.0	16.0	2.3	3.7	26.0	0.0	23.0	0.0	0.0			
Prop In Lane	0.00		1.00	1.00		0.00	0.73		0.27			
Lane Grp Cap(c), veh/h	0	482	391	262	754	0	603	0	0			
V/C Ratio(X)	0.00	3.60	0.19	0.51	1.38	0.00	1.42	0.00	0.00			
Avail Cap(c_a), veh/h	0	482	391	262	754	0	603	0	0			
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.00	1.00	1.00	0.09	0.09	0.00	1.00	0.00	0.00			
Uniform Delay (d), s/veh	0.0	22.0	17.0	12.8	4.0	0.0	19.0	0.0	0.0			
Incr Delay (d2), s/veh	0.0	1174.5	1.1	0.2	171.7	0.0	198.1	0.0	0.0			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(95%),veh/ln	0.0	293.5	1.9	2.0	79.2	0.0	77.5	0.0	0.0			
LnGrp Delay(d),s/veh	0.0	1196.5	18.0	13.1	175.7	0.0	217.1	0.0	0.0			
LnGrp LOS		F	B	B	F		F					
Approach Vol, veh/h		1809			1175			855				
Approach Delay, s/veh		1149.0			157.0			217.1				
Approach LOS		F			F			F				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2			5	6		8
Phs Duration (G+Y+Rc), s		33.0			10.0	23.0		27.0
Change Period (Y+Rc), s		8.0			5.0	8.0		5.0
Max Green Setting (Gmax), s		25.0			5.0	15.0		22.0
Max Q Clear Time (g_c+I1), s		28.5			6.2	18.5		25.0
Green Ext Time (p_c), s		0.0			0.0	0.0		0.0

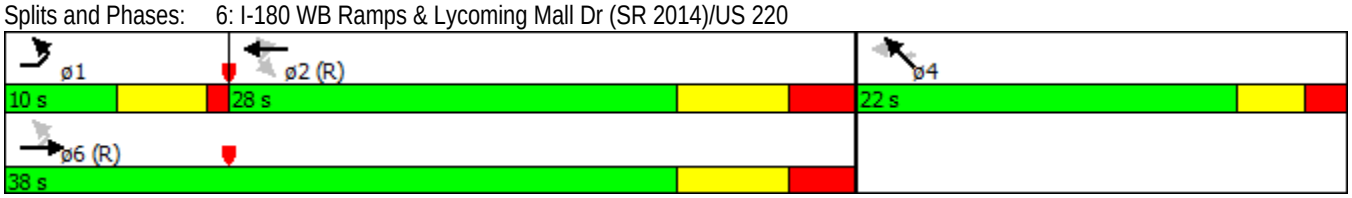
Intersection Summary	
HCM 2010 Ctrl Delay	637.8
HCM 2010 LOS	F

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Volume (vph)	622	1641	0	1	1021	400	0	0	0	107	0	126
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	11	12	12	11	11	11	12	12	12	15	15	16
Grade (%)		1%			-1%			-3%			-3%	
Storage Length (ft)	115		0	0		260	0		0	0		445
Storage Lanes	1		0	0		1	0		0	0		1
Taper Length (ft)	75			75			75			75		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt						0.850						0.850
Flt Protected	0.950										0.950	
Satd. Flow (prot)	1566	1706	0	0	1561	1364	0	0	0	0	1801	1760
Flt Permitted	0.160				0.559						0.950	
Satd. Flow (perm)	264	1706	0	0	873	1364	0	0	0	0	1801	1760
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						401						182
Link Speed (mph)		45			45			25			25	
Link Distance (ft)		660			1209			327			668	
Travel Time (s)		10.0			18.3			8.9			18.2	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	5%	5%	0%	0%	12%	9%	0%	0%	0%	6%	0%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	641	1692	0	1	1053	412	0	0	0	110	0	130
Shared Lane Traffic (%)												
Lane Group Flow (vph)	641	1692	0	0	1054	412	0	0	0	0	110	130
Number of Detectors	1	1		1	1	1				1	1	0
Detector Template	Left			Left		Right				Left	Thru	
Leading Detector (ft)	45	6		30	6	30				30	45	0
Trailing Detector (ft)	-5	0		-10	0	-10				-10	-5	0
Turn Type	pm+pt	NA		Perm	NA	Perm				Perm	NA	Perm
Protected Phases	1	6			2						4	
Permitted Phases	6			2		2				4		4
Detector Phase	1			2		2				4	4	4
Switch Phase												
Minimum Initial (s)	5.0	20.0		20.0	20.0	20.0				5.0	5.0	5.0
Minimum Split (s)	10.0	28.0		28.0	28.0	28.0				10.0	10.0	10.0
Total Split (s)	10.0	38.0		28.0	28.0	28.0				22.0	22.0	22.0
Total Split (%)	16.7%	63.3%		46.7%	46.7%	46.7%				36.7%	36.7%	36.7%
Maximum Green (s)	5.0	30.0		20.0	20.0	20.0				17.0	17.0	17.0
Yellow Time (s)	4.0	5.0		5.0	5.0	5.0				3.0	3.0	3.0
All-Red Time (s)	1.0	3.0		3.0	3.0	3.0				2.0	2.0	2.0
Lost Time Adjust (s)	-1.0	-1.0			-1.0	0.0					-1.0	-1.0
Total Lost Time (s)	4.0	7.0			7.0	8.0					4.0	4.0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lead/Lag	Lead			Lag	Lag	Lag						
Lead-Lag Optimize?												
Vehicle Extension (s)	4.0	3.0		3.0	3.0	3.0				4.0	4.0	4.0
Minimum Gap (s)	3.0	3.0		3.0	3.0	3.0				3.0	3.0	3.0
Time Before Reduce (s)	0.0	0.0		0.0	0.0	0.0				0.0	0.0	0.0
Time To Reduce (s)	0.0	0.0		0.0	0.0	0.0				0.0	0.0	0.0
Recall Mode	None	C-Min		C-Min	C-Min	C-Min				Min	Min	Min
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
v/c Ratio	1.39	1.57			3.46	0.57					0.33	0.27
Control Delay	198.8	278.9			1127.3	5.8					23.2	3.1
Queue Delay	0.0	0.0			0.0	0.0					0.0	0.0
Total Delay	198.8	278.9			1127.3	5.8					23.2	3.1
Queue Length 50th (ft)	~282	~960			~619	3					35	0
Queue Length 95th (ft)	m92	m286			#834	56					69	19
Internal Link Dist (ft)		580			1129			247			588	
Turn Bay Length (ft)	115					260						445
Base Capacity (vph)	460	1078			305	722					540	655
Starvation Cap Reductn	0	0			0	0					0	0
Spillback Cap Reductn	0	0			0	0					0	0
Storage Cap Reductn	0	0			0	0					0	0
Reduced v/c Ratio	1.39	1.57			3.46	0.57					0.20	0.20

Intersection Summary	
Area Type:	Other
Cycle Length: 60	
Actuated Cycle Length: 60	
Offset: 42 (70%), Referenced to phase 2:WBTL and 6:EBTL, Start of Green	
Natural Cycle: 120	
Control Type: Actuated-Coordinated	
~	Volume exceeds capacity, queue is theoretically infinite.
	Queue shown is maximum after two cycles.
#	95th percentile volume exceeds capacity, queue may be longer.
	Queue shown is maximum after two cycles.
m	Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 6: I-180 WB Ramps & Lycoming Mall Dr (SR 2014)/US 220



Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Volume (veh/h)	622	1641	0	1	1021	400	0	0	0	107	0	126
Number	1	6	16	5	2	12				7	4	14
Initial Q (Qb), veh	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
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1706	1706	0	1809	1615	1660				1900	1793	1900
Adj Flow Rate, veh/h	641	1692	0	1	1053	348				110	0	114
Adj No. of Lanes	1	1	0	0	1	1				0	1	1
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97				0.97	0.97	0.97
Percent Heavy Veh, %	5	5	0	12	12	9				0	0	0
Cap, veh/h	292	1197	0	60	769	731				196	0	186
Arrive On Green	0.07	0.47	0.00	0.52	0.54	0.52				0.10	0.00	0.11
Sat Flow, veh/h	1624	1706	0	0	1438	1411				1707	0	1615
Grp Volume(v), veh/h	641	1692	0	1054	0	348				110	0	114
Grp Sat Flow(s),veh/h/ln	1624	1706	0	1438	0	1411				1707	0	1615
Q Serve(g_s), s	6.0	42.1	0.0	0.0	0.0	9.5				3.7	0.0	4.0
Cycle Q Clear(g_c), s	6.0	42.1	0.0	31.1	0.0	9.5				3.7	0.0	4.0
Prop In Lane	1.00		0.00	0.00		1.00				1.00		1.00
Lane Grp Cap(c), veh/h	292	1197	0	805	0	731				196	0	186
V/C Ratio(X)	2.20	1.41	0.00	1.31	0.00	0.48				0.56	0.00	0.61
Avail Cap(c_a), veh/h	292	1197	0	805	0	731				512	0	485
HCM Platoon Ratio	0.67	0.67	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.09	0.09	0.00	1.00	0.00	1.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	18.0	15.9	0.0	13.3	0.0	9.2				25.6	0.0	25.3
Incr Delay (d2), s/veh	539.8	186.5	0.0	147.8	0.0	2.2				3.5	0.0	4.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	82.9	141.0	0.0	83.7	0.0	7.4				3.5	0.0	3.7
LnGrp Delay(d),s/veh	557.9	202.4	0.0	161.1	0.0	11.4				29.2	0.0	29.9
LnGrp LOS	F	F		F		B				C		C
Approach Vol, veh/h		2333			1402						224	
Approach Delay, s/veh		300.1			124.0						29.5	
Approach LOS		F			F						C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6		
Phs Duration (G+Y+Rc), s	10.0	39.1		10.9		49.1		
Change Period (Y+Rc), s	5.0	8.0		5.0		8.0		
Max Green Setting (Gmax), s	5.0	20.0		17.0		30.0		
Max Q Clear Time (g_c+I1), s	8.5	33.1		5.7		44.6		
Green Ext Time (p_c), s	0.0	0.0		0.2		0.0		

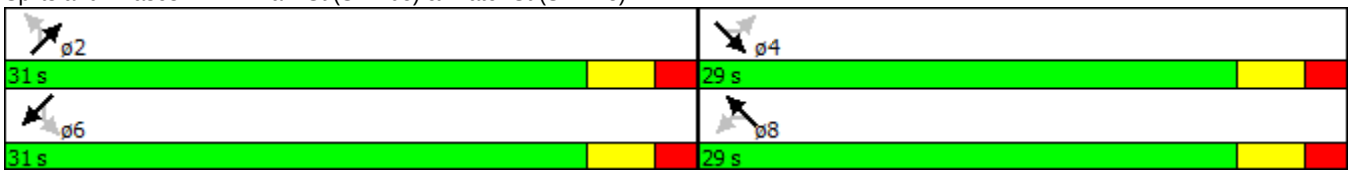
Intersection Summary	
HCM 2010 Ctrl Delay	222.4
HCM 2010 LOS	F

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	30	122	36	237	54	319	19	796	278	253	526	11
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	15	15	15	13	13	13	14	14	14	14	14	14
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (ft)	75			75			75			75		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.974			0.929			0.966			0.998	
Flt Protected		0.992			0.981			0.999			0.984	
Satd. Flow (prot)	0	1913	0	0	1504	0	0	1786	0	0	1728	0
Flt Permitted		0.890			0.793			0.984			0.329	
Satd. Flow (perm)	0	1716	0	0	1216	0	0	1759	0	0	578	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		25			35			25			25	
Link Distance (ft)		390			506			1477			648	
Travel Time (s)		10.6			9.9			40.3			17.7	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	0%	0%	21%	4%	8%	0%	2%	9%	14%	7%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)							0		0	0		0
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	31	124	37	242	55	326	19	812	284	258	537	11
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	192	0	0	623	0	0	1115	0	0	806	0
Number of Detectors	1	1		1	1		1	1		1	1	
Detector Template	Left			Left			Left			Left		
Leading Detector (ft)	30	45		30	45		30	45		30	45	
Trailing Detector (ft)	-10	-5		-10	-5		-10	-5		-10	-5	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	15.0	15.0		15.0	15.0		15.0	15.0		15.0	15.0	
Total Split (s)	29.0	29.0		29.0	29.0		31.0	31.0		31.0	31.0	
Total Split (%)	48.3%	48.3%		48.3%	48.3%		51.7%	51.7%		51.7%	51.7%	
Maximum Green (s)	24.0	24.0		24.0	24.0		26.0	26.0		26.0	26.0	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		-1.0			-1.0			-1.0			-1.0	
Total Lost Time (s)		4.0			4.0			4.0			4.0	

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Minimum Gap (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Time Before Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Time To Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Recall Mode	Max	Max		Max	Max		Max	Max		Max	Max	
Walk Time (s)	11.0	11.0		11.0	11.0		12.0	12.0		12.0	12.0	
Flash Dont Walk (s)	16.0	16.0		16.0	16.0		18.0	18.0		18.0	18.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
v/c Ratio		0.27			1.23			1.37			3.02	
Control Delay		14.1			141.4			196.4			933.7	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		14.1			141.4			196.4			933.7	
Queue Length 50th (ft)		50			~323			~620			~495	
Queue Length 95th (ft)		91			#506			#840			#700	
Internal Link Dist (ft)		310			426			1397			568	
Turn Bay Length (ft)												
Base Capacity (vph)		717			508			813			267	
Starvation Cap Reductn		0			0			0			0	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.27			1.23			1.37			3.02	

Intersection Summary	
Area Type:	Other
Cycle Length: 60	
Actuated Cycle Length: 67	
Natural Cycle: 110	
Control Type: Actuated-Uncoordinated	
~ Volume exceeds capacity, queue is theoretically infinite.	
Queue shown is maximum after two cycles.	
# 95th percentile volume exceeds capacity, queue may be longer.	
Queue shown is maximum after two cycles.	

Splits and Phases: 11: Main St (SR 405) & Water St (SR 118)



Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (veh/h)	30	122	36	237	54	319	19	796	278	253	526	11
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	0.90	1.00	1.00	0.90
Adj Sat Flow, veh/h/ln	1872	1872	1872	1872	1661	1872	1872	1804	1872	1872	1715	1872
Adj Flow Rate, veh/h	31	124	37	242	55	326	19	812	284	258	537	11
Adj No. of Lanes	0	1	0	0	1	0	0	1	0	0	1	0
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	0	0	4	4	4	2	2	2	7	7	7
Cap, veh/h	135	492	133	293	61	297	66	522	180	156	186	4
Arrive On Green	0.40	0.42	0.40	0.40	0.42	0.40	0.43	0.45	0.43	0.43	0.45	0.43
Sat Flow, veh/h	156	1180	319	504	146	713	11	1159	400	170	414	8
Grp Volume(v), veh/h	192	0	0	623	0	0	1115	0	0	806	0	0
Grp Sat Flow(s),veh/h/ln	1656	0	0	1363	0	0	1570	0	0	592	0	0
Q Serve(g_s), s	0.0	0.0	0.0	19.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	4.2	0.0	0.0	24.0	0.0	0.0	26.0	0.0	0.0	26.0	0.0	0.0
Prop In Lane	0.16		0.19	0.39		0.52	0.02		0.25	0.32		0.01
Lane Grp Cap(c), veh/h	732	0	0	629	0	0	741	0	0	336	0	0
V/C Ratio(X)	0.26	0.00	0.00	0.99	0.00	0.00	1.50	0.00	0.00	2.40	0.00	0.00
Avail Cap(c_a), veh/h	732	0	0	629	0	0	741	0	0	336	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	11.6	0.0	0.0	18.8	0.0	0.0	17.5	0.0	0.0	18.8	0.0	0.0
Incr Delay (d2), s/veh	0.9	0.0	0.0	33.8	0.0	0.0	233.7	0.0	0.0	639.8	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(95%),veh/ln	4.2	0.0	0.0	9.9	0.0	0.0	108.9	0.0	0.0	117.4	0.0	0.0
LnGrp Delay(d),s/veh	12.4	0.0	0.0	52.6	0.0	0.0	251.2	0.0	0.0	658.6	0.0	0.0
LnGrp LOS	B			D			F			F		
Approach Vol, veh/h		192			623			1115			806	
Approach Delay, s/veh		12.4			52.6			251.2			658.6	
Approach LOS		B			D			F			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		31.0		29.0		31.0		29.0
Change Period (Y+Rc), s		5.0		5.0		5.0		5.0
Max Green Setting (Gmax), s		26.0		24.0		26.0		24.0
Max Q Clear Time (g_c+I1), s		28.0		6.2		28.0		26.0
Green Ext Time (p_c), s		0.0		3.8		0.0		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	309.3
HCM 2010 LOS	F

Notes

User approved pedestrian interval to be less than phase max green.

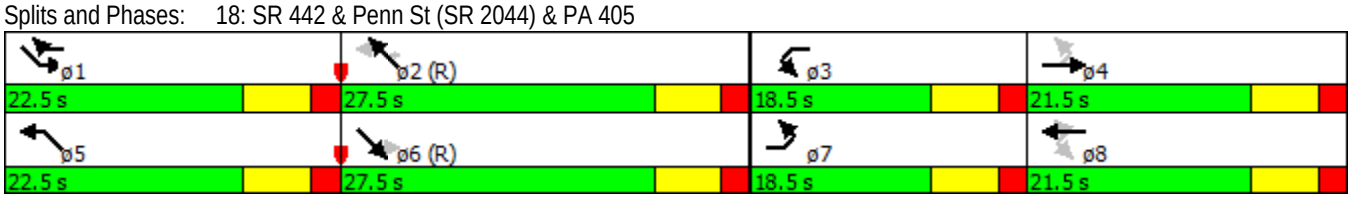
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Volume (vph)	36	256	32	320	219	2116	2057	400	74	24	275	271
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	11	11	11	11	11	11	11	11	11	11	11	11
Grade (%)		-2%			-1%			1%			-2%	
Storage Length (ft)	195		220	155		425	450		0	125		400
Storage Lanes	2		0	1		1	2		0	1		1
Taper Length (ft)	75			75			75			75		
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00	0.97	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.983				0.850		0.977				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1575	3214	0	1629	1714	1304	3010	1642	0	1590	1674	1450
Flt Permitted	0.611			0.387			0.250			0.391		
Satd. Flow (perm)	1013	3214	0	663	1714	1304	792	1642	0	654	1674	1450
Right Turn on Red			No			Yes			Yes			Yes
Satd. Flow (RTOR)						468		10				295
Link Speed (mph)		45			45			40			45	
Link Distance (ft)		670			586			1005			570	
Travel Time (s)		10.2			8.9			17.1			8.6	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
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
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	6%	2%	3%	2%	2%	14%	6%	3%	3%	5%	5%	3%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	39	278	35	348	238	2300	2236	435	80	26	299	295
Shared Lane Traffic (%)												
Lane Group Flow (vph)	39	313	0	348	238	2300	2236	515	0	26	299	295
Number of Detectors	1	1		1	1	1	2	2		1	2	0
Detector Template	Left	Thru		Left	Thru	Right				Left		
Leading Detector (ft)	40	30		40	30	30	160	160		30	310	0
Trailing Detector (ft)	-10	-5		-10	-5	-5	-10	-10		-10	-10	0
Turn Type	pm+pt	NA		pm+pt	NA	pm+ov	pm+pt	NA		pm+pt	NA	Perm
Protected Phases	7	4		3	8	1	1	6		5	2	
Permitted Phases	4			8		8	6			2		2
Detector Phase	7	4		3	8	1	1	6		5	2	2
Switch Phase												
Minimum Initial (s)	3.0	5.0		3.0	5.0	3.0	3.0	5.0		3.0	5.0	5.0
Minimum Split (s)	9.5	11.5		9.5	11.5	9.5	9.5	11.5		9.5	11.5	11.5
Total Split (s)	18.5	21.5		18.5	21.5	22.5	22.5	27.5		22.5	27.5	27.5
Total Split (%)	20.6%	23.9%		20.6%	23.9%	25.0%	25.0%	30.6%		25.0%	30.6%	30.6%
Maximum Green (s)	12.0	15.0		12.0	15.0	16.0	16.0	21.0		16.0	21.0	21.0
Yellow Time (s)	4.5	4.5		4.5	4.5	4.5	4.5	4.5		4.5	4.5	4.5
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)	-1.0	-1.0		-1.0	-1.0	-1.0	-1.0	-1.0		-1.0	-1.0	-1.0
Total Lost Time (s)	5.5	5.5		5.5	5.5	5.5	5.5	5.5		5.5	5.5	5.5

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lead/Lag	Lead	Lag		Lead	Lag	Lead	Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	5.0		3.0	5.0	3.0	3.0	4.0		3.0	4.0	4.0
Minimum Gap (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Time Before Reduce (s)	0.0	0.0		0.0	0.0	0.0	0.0	9.0		0.0	9.0	9.0
Time To Reduce (s)	0.0	0.0		0.0	0.0	0.0	0.0	18.0		0.0	18.0	18.0
Recall Mode	None	None		None	None	None	None	C-Min		None	C-Min	C-Min
Walk Time (s)		12.0			12.0			14.0			14.0	14.0
Flash Dont Walk (s)		18.0			18.0			21.0			21.0	21.0
Pedestrian Calls (#/hr)		0			0			0			0	0
v/c Ratio	0.12	0.58		0.91	0.50	2.51	2.68	0.70		0.09	0.73	0.51
Control Delay	19.2	38.9		54.6	33.7	698.6	774.2	29.4		13.7	43.3	7.0
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	19.2	38.9		54.6	33.7	698.6	774.2	29.4		13.7	43.3	7.0
Queue Length 50th (ft)	14	86		152	121	~2116	~1070	201		7	157	0
Queue Length 95th (ft)	34	128		#271	205	#2389	#1208	#472		20	#271	63
Internal Link Dist (ft)		590			506			925			490	
Turn Bay Length (ft)	195			155		425	450			125		400
Base Capacity (vph)	398	571		381	477	916	835	731		460	409	577
Starvation Cap Reductn	0	0		0	0	0	0	0		0	0	0
Spillback Cap Reductn	0	0		0	0	0	0	0		0	0	0
Storage Cap Reductn	0	0		0	0	0	0	0		0	0	0
Reduced v/c Ratio	0.10	0.55		0.91	0.50	2.51	2.68	0.70		0.06	0.73	0.51

Intersection Summary

Area Type: Other
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 0 (0%), Referenced to phase 2:NWTL and 6:SETL, Start of Green, Master Intersection
Natural Cycle: 120
Control Type: Actuated-Coordinated
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 18: SR 442 & Penn St (SR 2044) & PA 405



Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Volume (veh/h)	36	256	32	320	219	2116	2057	400	74	24	275	271
Number	7	4	14	3	8	18	1	6	16	5	2	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
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	1715	1780	1818	1774	1774	1587	1690	1739	1791	1731	1731	1765
Adj Flow Rate, veh/h	39	278	35	348	238	2074	2236	435	70	26	299	195
Adj No. of Lanes	1	2	0	1	1	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, %	6	2	2	2	2	14	6	3	3	5	5	3
Cap, veh/h	165	388	48	367	410	567	995	663	107	327	509	441
Arrive On Green	0.04	0.13	0.12	0.14	0.23	0.23	0.19	0.45	0.44	0.03	0.29	0.29
Sat Flow, veh/h	1633	3028	378	1689	1774	1349	3122	1462	235	1649	1731	1500
Grp Volume(v), veh/h	39	154	159	348	238	2074	2236	0	505	26	299	195
Grp Sat Flow(s),veh/h/ln	1633	1691	1714	1689	1774	1349	1561	0	1697	1649	1731	1500
Q Serve(g_s), s	1.8	7.9	8.0	13.0	10.7	20.8	17.0	0.0	20.9	1.0	13.3	9.5
Cycle Q Clear(g_c), s	1.8	7.9	8.0	13.0	10.7	20.8	17.0	0.0	20.9	1.0	13.3	9.5
Prop In Lane	1.00		0.22	1.00		1.00	1.00		0.14	1.00		1.00
Lane Grp Cap(c), veh/h	165	217	219	367	410	567	995	0	770	327	509	441
V/C Ratio(X)	0.24	0.71	0.72	0.95	0.58	3.66	2.25	0.00	0.66	0.08	0.59	0.44
Avail Cap(c_a), veh/h	333	301	305	367	410	567	995	0	770	590	509	441
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	1.00	1.00
Uniform Delay (d), s/veh	31.8	37.6	37.8	30.4	30.7	26.1	21.2	0.0	19.2	21.1	27.1	25.8
Incr Delay (d2), s/veh	0.7	9.1	9.7	33.5	3.3	1201.6	564.5	0.0	4.3	0.1	4.9	3.2
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(95%),veh/ln	1.5	7.6	7.8	10.0	9.5	357.7	140.4	0.0	16.0	0.8	11.3	7.7
LnGrp Delay(d),s/veh	32.6	46.8	47.5	63.9	34.0	1227.6	585.6	0.0	23.5	21.2	32.0	29.0
LnGrp LOS	C	D	D	E	C	F	F		C	C	C	C
Approach Vol, veh/h		352			2660			2741			520	
Approach Delay, s/veh		45.5			968.6			482.1			30.3	
Approach LOS		D			F			F			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	22.5	32.0	18.5	17.0	8.2	46.3	9.2	26.3
Change Period (Y+Rc), s	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5
Max Green Setting (Gmax), s	16.0	21.0	12.0	15.0	16.0	21.0	12.0	15.0
Max Q Clear Time (g_c+I1), s	19.5	15.8	15.5	10.4	3.5	22.9	4.3	23.3
Green Ext Time (p_c), s	0.0	3.4	0.0	0.2	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	626.4
HCM 2010 LOS	F

Notes

User approved pedestrian interval to be less than phase max green.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	523	432	48	295	490	127	55	648	266	144	593	695
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	16	16	16	12	12	12	10	10	10	10	10	10
Grade (%)		-2%			1%			2%			-1%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (ft)	75			75			75			75		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00			0.99			0.99			0.98	
Frt		0.994			0.981			0.963			0.934	
Flt Protected		0.975			0.984			0.997			0.995	
Satd. Flow (prot)	0	1812	0	0	1636	0	0	1311	0	0	1267	0
Flt Permitted		0.975			0.984			0.780			0.499	
Satd. Flow (perm)	0	1808	0	0	1634	0	0	1026	0	0	635	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		463			494			1137			622	
Travel Time (s)		12.6			13.5			31.0			17.0	
Confl. Peds. (#/hr)	10		10	10		10	10		10	10		10
Confl. Bikes (#/hr)												
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	10%	10%	10%	5%	5%	5%	5%	5%	5%	6%	6%	6%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)							6	6	6	6	6	6
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	581	480	53	328	544	141	61	720	296	160	659	772
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1114	0	0	1013	0	0	1077	0	0	1591	0
Number of Detectors	1	1		1	1		1	1		1	1	
Detector Template	Left			Left			Left			Left		
Leading Detector (ft)	30	40		30	40		30	40		30	40	
Trailing Detector (ft)	-10	-10		-10	-10		-10	-10		-10	-10	
Turn Type	Split	NA		Split	NA		Perm	NA		Perm	NA	
Protected Phases	2	2		6	6			4			8	
Permitted Phases							4			8		
Detector Phase	2	2		6	6		4	4		8	8	
Switch Phase												
Minimum Initial (s)	8.0	8.0		8.0	8.0		7.1	7.1		7.1	7.1	
Minimum Split (s)	13.0	13.0		13.0	13.0		12.1	12.1		12.1	12.1	
Total Split (s)	35.0	35.0		25.0	25.0		40.0	40.0		40.0	40.0	
Total Split (%)	35.0%	35.0%		25.0%	25.0%		40.0%	40.0%		40.0%	40.0%	
Maximum Green (s)	30.0	30.0		20.0	20.0		35.9	35.9		35.9	35.9	
Yellow Time (s)	4.0	4.0		4.0	4.0		3.1	3.1		3.1	3.1	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		-0.5			-0.5			-1.0			-1.0	
Total Lost Time (s)		4.5			4.5			3.1			3.1	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.5	3.5		3.5	3.5		2.0	2.0		2.0	2.0	
Minimum Gap (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Time Before Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Time To Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Recall Mode	None	None		None	None		None	None		None	None	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
v/c Ratio		2.02			3.02			2.85			6.80	
Control Delay		488.0			936.3			857.0			2626.8	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		488.0			936.3			857.0			2626.8	
Queue Length 50th (ft)		~1118			~1128			~1184			~1858	
Queue Length 95th (ft)		#1364			#1369			#1430			#2125	
Internal Link Dist (ft)		383			414			1057			542	
Turn Bay Length (ft)												
Base Capacity (vph)		552			335			378			234	
Starvation Cap Reductn		0			0			0			0	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		2.02			3.02			2.85			6.80	

Intersection Summary	
Area Type:	Other
Cycle Length: 100	
Actuated Cycle Length: 100	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
~ Volume exceeds capacity, queue is theoretically infinite.	
Queue shown is maximum after two cycles.	
# 95th percentile volume exceeds capacity, queue may be longer.	
Queue shown is maximum after two cycles.	

Splits and Phases: 53: Main St (SR 2014) & Water St (SR 405)



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	523	432	48	295	490	127	55	648	266	144	593	695
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.87	1.00	1.00	0.87
Adj Sat Flow, veh/h/ln	1891	1719	1891	1791	1706	1791	1782	1697	1782	1809	1707	1809
Adj Flow Rate, veh/h	581	480	53	328	544	141	61	720	296	160	659	772
Adj No. of Lanes	0	1	0	0	1	0	0	1	0	0	1	0
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	10	10	10	5	5	5	5	5	5	6	6	6
Cap, veh/h	264	218	24	108	180	47	57	312	125	71	144	166
Arrive On Green	0.30	0.31	0.30	0.20	0.20	0.20	0.36	0.37	0.36	0.36	0.37	0.36
Sat Flow, veh/h	866	715	79	529	877	227	50	844	339	85	391	449
Grp Volume(v), veh/h	1114	0	0	1013	0	0	1077	0	0	1591	0	0
Grp Sat Flow(s),veh/h/ln	1660	0	0	1632	0	0	1234	0	0	925	0	0
Q Serve(g_s), s	30.5	0.0	0.0	20.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	30.5	0.0	0.0	20.5	0.0	0.0	35.9	0.0	0.0	35.9	0.0	0.0
Prop In Lane	0.52		0.05	0.32		0.14	0.06		0.27	0.10		0.49
Lane Grp Cap(c), veh/h	506	0	0	335	0	0	481	0	0	372	0	0
V/C Ratio(X)	2.20	0.00	0.00	3.03	0.00	0.00	2.24	0.00	0.00	4.28	0.00	0.00
Avail Cap(c_a), veh/h	506	0	0	335	0	0	481	0	0	372	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	34.9	0.0	0.0	39.9	0.0	0.0	32.3	0.0	0.0	33.0	0.0	0.0
Incr Delay (d2), s/veh	546.5	0.0	0.0	920.2	0.0	0.0	564.5	0.0	0.0	1482.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	163.4	0.0	0.0	170.5	0.0	0.0	159.8	0.0	0.0	291.0	0.0	0.0
LnGrp Delay(d),s/veh	581.4	0.0	0.0	960.1	0.0	0.0	596.7	0.0	0.0	1515.0	0.0	0.0
LnGrp LOS	F			F			F			F		
Approach Vol, veh/h		1114			1013			1077			1591	
Approach Delay, s/veh		581.4			960.1			596.7			1515.0	
Approach LOS		F			F			F			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		35.0		40.0		25.0		40.0
Change Period (Y+Rc), s		5.0		4.1		5.0		4.1
Max Green Setting (Gmax), s		30.0		35.9		20.0		35.9
Max Q Clear Time (g_c+I1), s		32.5		37.9		22.5		37.9
Green Ext Time (p_c), s		0.0		0.0		0.0		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	974.6
HCM 2010 LOS	F

Lane Group	EBL	EBT	WBT	WBR	SWL	SWR
Lane Configurations						
Volume (vph)	149	1091	910	0	0	101
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	10	10
Grade (%)		2%	-3%		-1%	
Storage Length (ft)	0			0	0	0
Storage Lanes	0			0	1	0
Taper Length (ft)	75				75	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt					0.865	
Flt Protected		0.994				
Satd. Flow (prot)	0	1831	1837	0	1511	0
Flt Permitted		0.994				
Satd. Flow (perm)	0	1831	1837	0	1511	0
Link Speed (mph)		55	45		25	
Link Distance (ft)		1209	517		640	
Travel Time (s)		15.0	7.8		17.5	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	3%	2%	5%	0%	0%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)		0%	0%		0%	
Adj. Flow (vph)	154	1125	938	0	0	104
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	1279	938	0	104	0
Sign Control		Free	Free		Stop	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

Intersection	
Int Delay, s/veh	1.8

Movement	EBL	EBT	WBT	WBR	SWL	SWR
Vol, veh/h	149	1091	910	0	0	101
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, %	-	2	-3	-	-1	-
Peak Hour Factor	97	97	97	97	97	97
Heavy Vehicles, %	3	2	5	0	0	2
Mvmt Flow	154	1125	938	0	0	104

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	938	0	-	0	2370	938
Stage 1	-	-	-	-	938	-
Stage 2	-	-	-	-	1432	-
Critical Hdwy	4.13	-	-	-	7.1	6.2
Critical Hdwy Stg 1	-	-	-	-	5.2	-
Critical Hdwy Stg 2	-	-	-	-	5.2	-
Follow-up Hdwy	3	-	-	-	3	3.1
Pot Cap-1 Maneuver	590	-	-	-	0	337
Stage 1	-	-	-	-	446	-
Stage 2	-	-	-	-	70	-
Platoon blocked, %		-	-	-	1	
Mov Cap-1 Maneuver	590	-	-	-	0	337
Mov Cap-2 Maneuver	-	-	-	-	0	-
Stage 1	-	-	-	-	446	-
Stage 2	-	-	-	-	21	-

Approach	EB	WB	SW
HCM Control Delay, s	1.6	0	20.4
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SWLn1
Capacity (veh/h)	590	-	-	-	337
HCM Lane V/C Ratio	0.26	-	-	-	0.309
HCM Control Delay (s)	13.2	0	-	-	20.4
HCM Lane LOS	B	A	-	-	C
HCM 95th %tile Q(veh)	1	-	-	-	1.3

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	2	1057	59	3	873	34	37	36	2	29	29	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	11	11	11	10	10	10
Grade (%)		-2%			1%			0%			-3%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (ft)	75			75			75			75		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.993			0.995			0.997			0.998	
Flt Protected								0.976			0.976	
Satd. Flow (prot)	0	1787	0	0	1779	0	0	1762	0	0	1695	0
Flt Permitted								0.976			0.976	
Satd. Flow (perm)	0	1787	0	0	1779	0	0	1762	0	0	1695	0
Link Speed (mph)		55			55			35			50	
Link Distance (ft)		1494			4148			578			618	
Travel Time (s)		18.5			51.4			11.3			8.4	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
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
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	7%	0%	0%	6%	0%	0%	3%	0%	0%	7%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	2	1149	64	3	949	37	40	39	2	32	32	1
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1215	0	0	989	0	0	81	0	0	65	0
Sign Control		Free			Free			Stop			Stop	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

Intersection	
Int Delay, s/veh	222.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	2	1057	59	3	873	34	37	36	2	29	29	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	-2	-	-	1	-	-	0	-	-	-3	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	0	7	0	0	6	0	0	3	0	0	7	0
Mvmt Flow	2	1149	64	3	949	37	40	39	2	32	32	1

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	986	0	0	1213	0	0	2175	2177	1181	2180	2191	967
Stage 1	-	-	-	-	-	-	1185	1185	-	974	974	-
Stage 2	-	-	-	-	-	-	990	992	-	1206	1217	-
Critical Hdwy	4.9	-	-	4.9	-	-	8.1	6.53	6.4	8.1	6.5	6.4
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.53	-	5.5	4.97	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.53	-	5.5	4.97	-
Follow-up Hdwy	3.5	-	-	3.5	-	-	3	4.027	3.4	3	4.063	3.4
Pot Cap-1 Maneuver	418	-	-	336	-	-	~ 19	46	215	~ 19	46	289
Stage 1	-	-	-	-	-	-	254	261	-	396	381	-
Stage 2	-	-	-	-	-	-	329	322	-	301	304	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	418	-	-	336	-	-	~ 8	44	215	~ 4	44	289
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ 8	44	-	~ 4	44	-
Stage 1	-	-	-	-	-	-	250	257	-	390	373	-
Stage 2	-	-	-	-	-	-	294	316	-	249	299	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0.1	$ 2708	$ 4699.2
HCM LOS			F	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	14	418	-	-	336	-	-	7
HCM Lane V/C Ratio	5.823	0.005	-	-	0.01	-	-	9.161
HCM Control Delay (s)	$ 2708	13.7	0	-	15.8	0	-	$ 4699.2
HCM Lane LOS	F	B	A	-	C	A	-	F
HCM 95th %tile Q(veh)	11.2	0	-	-	0	-	-	9.6

Notes

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

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	84	851	127	8	717	6	128	47	6	7	48	68
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	11	11	11	14	14	14
Grade (%)		0%			-1%			7%			-1%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (ft)	75			75			75			75		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.984			0.999			0.995			0.926	
Flt Protected		0.996			0.999			0.966			0.997	
Satd. Flow (prot)	0	1796	0	0	1767	0	0	1668	0	0	1880	0
Flt Permitted		0.996			0.999			0.966			0.997	
Satd. Flow (perm)	0	1796	0	0	1767	0	0	1668	0	0	1880	0
Link Speed (mph)		55			55			40			40	
Link Distance (ft)		1228			918			354			317	
Travel Time (s)		15.2			11.4			6.0			5.4	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	6%	4%	0%	0%	8%	0%	3%	0%	0%	0%	0%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	92	935	140	9	788	7	141	52	7	8	53	75
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1167	0	0	804	0	0	200	0	0	136	0
Sign Control		Free			Free			Stop			Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	0.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	84	851	127	8	717	6	128	47	6	7	48	68
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	-1	-	-	7	-	-	-1	-
Peak Hour Factor	91	91	91	91	91	91	91	91	91	91	91	91
Heavy Vehicles, %	6	4	0	0	8	0	3	0	0	0	0	0
Mvmt Flow	92	935	140	9	788	7	141	52	7	8	53	75

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	795	0	0	1075	0	0	2063	2002	1005	2028	2068	791
Stage 1	-	-	-	-	-	-	1190	1190	-	809	809	-
Stage 2	-	-	-	-	-	-	873	812	-	1219	1259	-
Critical Hdwy	4.9	-	-	4.9	-	-	8.1	6.5	6.4	8.1	6.5	6.4
Critical Hdwy Stg 1	-	-	-	-	-	-	7.53	6.9	-	5.9	5.3	-
Critical Hdwy Stg 2	-	-	-	-	-	-	7.53	6.9	-	5.9	5.3	-
Follow-up Hdwy	3.5	-	-	3.5	-	-	3	4	3.4	3	4	3.4
Pot Cap-1 Maneuver	500	-	-	384	-	-	~ 24	60	275	26	55	368
Stage 1	-	-	-	-	-	-	157	166	-	438	415	-
Stage 2	-	-	-	-	-	-	272	288	-	259	262	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	500	-	-	384	-	-	-	~ 30	275	-	~ 28	368
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	~ 30	-	-	~ 28	-
Stage 1	-	-	-	-	-	-	~ 82	87	-	230	398	-
Stage 2	-	-	-	-	-	-	180	276	-	54	138	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.1	0.2		
HCM LOS			-	-

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	500	-	-	384	-	-	-
HCM Lane V/C Ratio	-	0.185	-	-	0.023	-	-	-
HCM Control Delay (s)	-	13.8	0	-	14.6	0	-	-
HCM Lane LOS	-	B	A	-	B	A	-	-
HCM 95th %tile Q(veh)	-	0.7	-	-	0.1	-	-	-

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

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	788	110	136	694	95	136
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	13	13	13	13	12	12
Grade (%)	3%			1%	5%	
Storage Length (ft)		0	0		0	0
Storage Lanes		0	0		1	0
Taper Length (ft)			75		75	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.983				0.921	
Flt Protected				0.992	0.980	
Satd. Flow (prot)	1846	0	0	1816	1672	0
Flt Permitted				0.992	0.980	
Satd. Flow (perm)	1846	0	0	1816	1672	0
Link Speed (mph)	55			55	35	
Link Distance (ft)	1476			1319	549	
Travel Time (s)	18.3			16.4	10.7	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	3%	3%	0%	8%	0%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	985	138	170	868	119	170
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1123	0	0	1038	289	0
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

Intersection	
Int Delay, s/veh	652.7

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Vol, veh/h	788	110	136	694	95	136
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, %	3	-	-	1	5	-
Peak Hour Factor	80	80	80	80	80	80
Heavy Vehicles, %	3	3	0	8	0	0
Mvmt Flow	985	138	170	868	119	170

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	1123	0	2262	1054
Stage 1	-	-	-	-	1054	-
Stage 2	-	-	-	-	1208	-
Critical Hdwy	-	-	4.3	-	7.1	6.2
Critical Hdwy Stg 1	-	-	-	-	6.4	-
Critical Hdwy Stg 2	-	-	-	-	6.4	-
Follow-up Hdwy	-	-	3	-	3	3.1
Pot Cap-1 Maneuver	-	-	483	-	~ 31	288
Stage 1	-	-	-	-	277	-
Stage 2	-	-	-	-	222	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	483	-	~ 10	288
Mov Cap-2 Maneuver	-	-	-	-	~ 10	-
Stage 1	-	-	-	-	277	-
Stage 2	-	-	-	-	~ 71	-

Approach	EB	WB	NB
HCM Control Delay, s	0	2.7	$ 5525.8
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	23	-	-	483	-
HCM Lane V/C Ratio	12.554	-	-	0.352	-
HCM Control Delay (s)	$ 5525.8	-	-	16.4	0
HCM Lane LOS	F	-	-	C	A
HCM 95th %tile Q(veh)	36.2	-	-	1.6	-

Notes

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

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	3027	292	116	2268	229	95
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	11	10	10
Grade (%)	-1%			1%	-4%	
Storage Length (ft)		0	0		0	0
Storage Lanes		0	0		1	0
Taper Length (ft)			75		75	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.988				0.961	
Flt Protected				0.998	0.966	
Satd. Flow (prot)	1717	0	0	1741	1622	0
Flt Permitted				0.998	0.966	
Satd. Flow (perm)	1717	0	0	1741	1622	0
Link Speed (mph)	50			55	35	
Link Distance (ft)	420			676	522	
Travel Time (s)	5.7			8.4	10.2	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	50%	0%	5%	5%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	3326	321	127	2492	252	104
Shared Lane Traffic (%)						
Lane Group Flow (vph)	3647	0	0	2619	356	0
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

Intersection	
Int Delay, s/veh	993.6

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Vol, veh/h	3027	292	116	2268	229	95
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, %	-1	-	-	1	-4	-
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	2	50	0	5	5	0
Mvmt Flow	3326	321	127	2492	252	104

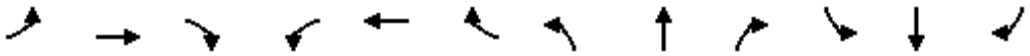
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	3647	0	6234	3487
Stage 1	-	-	-	-	3487	-
Stage 2	-	-	-	-	2747	-
Critical Hdwy	-	-	4.3	-	7.1	6.2
Critical Hdwy Stg 1	-	-	-	-	4.65	-
Critical Hdwy Stg 2	-	-	-	-	4.65	-
Follow-up Hdwy	-	-	3	-	3	3.1
Pot Cap-1 Maneuver	-	-	~ 49	-	0	~ 9
Stage 1	-	-	-	-	~ 41	-
Stage 2	-	-	-	-	~ 88	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	~ 49	-	0	~ 9
Mov Cap-2 Maneuver	-	-	-	-	0	-
Stage 1	-	-	-	-	~ 41	-
Stage 2	-	-	-	-	~ 88	-

Approach	EB	WB	NB
HCM Control Delay, s	0	44	$ 18158.3
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	9	-	-	~ 49	-
HCM Lane V/C Ratio	39.56	-	-	2.601	-
HCM Control Delay (s)	$ 18158.3	-	-	$ 903.4	0
HCM Lane LOS	F	-	-	F	A
HCM 95th %tile Q(veh)	46.3	-	-	13.4	-

Notes

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



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	61	23	8	0	10	1	6	32	6	0	11	49
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	10	10	10	10	10	13	13	13	16	16	16
Grade (%)		-3%			2%			1%			-2%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (ft)	75			75			75			75		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.988			0.991			0.982			0.890	
Flt Protected		0.968						0.993				
Satd. Flow (prot)	0	1388	0	0	1578	0	0	1599	0	0	1310	0
Flt Permitted		0.968						0.993				
Satd. Flow (perm)	0	1388	0	0	1578	0	0	1599	0	0	1310	0
Link Speed (mph)		35			25			25			25	
Link Distance (ft)		1453			774			205			154	
Travel Time (s)		28.3			21.1			5.6			4.2	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	27%	0%	71%	0%	11%	0%	0%	23%	17%	0%	38%	50%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	84	32	11	0	14	1	8	44	8	0	15	67
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	127	0	0	15	0	0	60	0	0	82	0
Sign Control		Stop			Stop			Free			Free	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

Intersection	
Int Delay, s/veh	5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	61	23	8	0	10	1	6	32	6	0	11	49
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, %	-	-3	-	-	2	-	-	1	-	-	-2	-
Peak Hour Factor	73	73	73	73	73	73	73	73	73	73	73	73
Heavy Vehicles, %	27	0	71	0	11	0	0	23	17	0	38	50
Mvmt Flow	84	32	11	0	14	1	8	44	8	0	15	67

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	121	117	49	134	146	48	82	0	0	52	0	0
Stage 1	49	49	-	64	64	-	-	-	-	-	-	-
Stage 2	72	68	-	70	82	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.3	-	-	4.3	-	-
Critical Hdwy Stg 1	5.77	4.9	-	6.5	6.01	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.77	4.9	-	6.5	6.01	-	-	-	-	-	-	-
Follow-up Hdwy	3	4	3.1	3	4.099	3.1	3	-	-	3	-	-
Pot Cap-1 Maneuver	994	777	1090	974	732	1091	1126	-	-	1152	-	-
Stage 1	1132	865	-	1098	818	-	-	-	-	-	-	-
Stage 2	1102	852	-	1089	802	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	973	772	1090	929	727	1091	1126	-	-	1152	-	-
Mov Cap-2 Maneuver	973	772	-	929	727	-	-	-	-	-	-	-
Stage 1	1124	865	-	1090	812	-	-	-	-	-	-	-
Stage 2	1074	846	-	1039	802	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	9.5	9.9	1.1	0
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1126	-	-	922	750	1152	-	-
HCM Lane V/C Ratio	0.007	-	-	0.137	0.02	-	-	-
HCM Control Delay (s)	8.2	0	-	9.5	9.9	0	-	-
HCM Lane LOS	A	A	-	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.5	0.1	0	-	-

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	1537	1462	4	4	1039	134	15	61	5	123	35	1156
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	11	11	11	16	16	16	11	11	11
Grade (%)		-2%			2%			2%			-1%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (ft)	75			75			75			75		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt					0.985			0.991			0.881	
Flt Protected		0.975						0.991			0.995	
Satd. Flow (prot)	0	1772	0	0	1705	0	0	1953	0	0	1615	0
Flt Permitted		0.975						0.991			0.995	
Satd. Flow (perm)	0	1772	0	0	1705	0	0	1953	0	0	1615	0
Link Speed (mph)		50			50			25			50	
Link Distance (ft)		832			852			184			234	
Travel Time (s)		11.3			11.6			5.0			3.2	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	3%	1%	25%	50%	5%	4%	23%	4%	0%	2%	0%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	1767	1680	5	5	1194	154	17	70	6	141	40	1329
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	3452	0	0	1353	0	0	93	0	0	1510	0
Sign Control		Free			Free			Stop			Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	1084.6

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Vol, veh/h	1537	1462	4	4	1039	134	15	61	5	123	35	1156
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	-2	-	-	2	-	-	2	-	-	-1	-
Peak Hour Factor	87	87	87	87	87	87	87	87	87	87	87	87
Heavy Vehicles, %	3	1	25	50	5	4	23	4	0	2	0	0
Mvmt Flow	1767	1680	5	5	1194	154	17	70	6	141	40	1329

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1348	0	0	1685	0	0	7181	6573	1683	6534	6498	1271
Stage 1	-	-	-	-	-	-	5216	5216	-	1280	1280	-
Stage 2	-	-	-	-	-	-	1965	1357	-	5254	5218	-
Critical Hdwy	4.3	-	-	4.3	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.73	5.94	-	5.92	5.3	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.73	5.94	-	5.92	5.3	-
Follow-up Hdwy	3	-	-	3	-	-	3	4	3.1	3	4	3.1
Pot Cap-1 Maneuver	~ 399	-	-	298	-	-	0	0	121	0	0	~ 214
Stage 1	-	-	-	-	-	-	0	~ 1	-	238	256	-
Stage 2	-	-	-	-	-	-	62	186	-	~ 1	~ 2	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	~ 399	-	-	298	-	-	-	0	121	0	0	~ 214
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	0	-	0	0	-
Stage 1	-	-	-	-	-	-	0	~ 1	-	238	238	-
Stage 2	-	-	-	-	-	-	-	173	-	-	~ 2	-

Approach	SE	NW	NE	SW
HCM Control Delay, s	$ 802.6	0.1		$ 2767.2
HCM LOS			-	F

Minor Lane/Major Mvmt	NELn1	NWL	NWT	NWR	SEL	SET	SERSWLn1
Capacity (veh/h)	-	298	-	-	~ 399	-	- 214
HCM Lane V/C Ratio	-	0.015	-	-	4.428	-	- 7.058
HCM Control Delay (s)	-	17.3	0		$ 1568.1	0	$ 2767.2
HCM Lane LOS	-	C	A	-	F	A	- F
HCM 95th %tile Q(veh)	-	0	-	-	174.7	-	- 165.5

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

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Volume (vph)	1	0	42	3	0	0	1	1546	0	21	1184	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	10	10	9	9	9	11	11	11	11	11	11
Grade (%)		1%			-1%			-3%			0%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (ft)	75			75			75			75		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.868										
Flt Protected		0.999			0.950						0.999	
Satd. Flow (prot)	0	1442	0	0	1633	0	0	1828	0	0	1754	0
Flt Permitted		0.999			0.950						0.999	
Satd. Flow (perm)	0	1442	0	0	1633	0	0	1828	0	0	1754	0
Link Speed (mph)		25			25			50			50	
Link Distance (ft)		172			263			852			367	
Travel Time (s)		4.7			7.2			11.6			5.0	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	100%	0%	4%	0%	0%	0%	0%	2%	0%	40%	4%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	1	0	45	3	0	0	1	1645	0	22	1260	1
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	46	0	0	3	0	0	1646	0	0	1283	0
Sign Control		Stop			Stop			Free			Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	2.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Vol, veh/h	1	0	42	3	0	0	1	1546	0	21	1184	1
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, %	-	1	-	-	-1	-	-	-3	-	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	100	0	4	0	0	0	0	2	0	40	4	0
Mvmt Flow	1	0	45	3	0	0	1	1645	0	22	1260	1

Major/Minor	Minor1			Minor2			Major1			Major2		
Conflicting Flow All	2952	2952	1645	2974	2952	1260	1261	0	0	1645	0	0
Stage 1	1647	1647	-	1305	1305	-	-	-	-	-	-	-
Stage 2	1305	1305	-	1669	1647	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.3	-	-	4.3	-	-
Critical Hdwy Stg 1	7.3	5.7	-	5.9	5.3	-	-	-	-	-	-	-
Critical Hdwy Stg 2	7.3	5.7	-	5.9	5.3	-	-	-	-	-	-	-
Follow-up Hdwy	3	4	3.1	3	4	3.1	3	-	-	3	-	-
Pot Cap-1 Maneuver	10	15	128	9	15	217	430	-	-	309	-	-
Stage 1	78	145	-	232	250	-	-	-	-	-	-	-
Stage 2	140	216	-	144	174	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	8	11	128	5	11	217	430	-	-	309	-	-
Mov Cap-2 Maneuver	8	11	-	5	11	-	-	-	-	-	-	-
Stage 1	76	141	-	226	191	-	-	-	-	-	-	-
Stage 2	107	165	-	91	169	-	-	-	-	-	-	-

Approach	EB	WB	SE	NW
HCM Control Delay, s	74	$ 1105.6	0	0.3
HCM LOS	F	F		

Minor Lane/Major Mvmt	NWL	NWT	NWR	EBLn1	WBLn1	SEL	SET	SER
Capacity (veh/h)	309	-	-	95	5	430	-	-
HCM Lane V/C Ratio	0.072	-	-	0.482	0.638	0.002	-	-
HCM Control Delay (s)	17.6	0	-	74	$ 1105.6	13.4	0	-
HCM Lane LOS	C	A	-	F	F	B	A	-
HCM 95th %tile Q(veh)	0.2	-	-	2.1	1	0	-	-

Notes

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

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	10	974	59	294	1115	22	0	0	1510	42	1	21
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	13	12	12	12	12	12	12	12
Grade (%)		-1%			1%			-3%			0%	
Storage Length (ft)	125		0	125		125	0		0	0		100
Storage Lanes	1		0	1		1	0		1	0		1
Taper Length (ft)	75			60			75			75		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.991				0.850			0.865			0.850
Flt Protected	0.950			0.950							0.953	
Satd. Flow (prot)	1778	1838	0	1589	1878	1575	0	0	1620	0	1775	1583
Flt Permitted	0.950			0.950							0.953	
Satd. Flow (perm)	1778	1838	0	1589	1878	1575	0	0	1620	0	1775	1583
Link Speed (mph)		35			35			25			35	
Link Distance (ft)		496			348			387			259	
Travel Time (s)		9.7			6.8			10.6			5.0	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.90	0.96	0.96	0.96	0.96	0.90	0.96	0.90	0.96	0.90	0.90	0.90
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	19%	13%	4%	2%	0%	2%	3%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	11	1015	61	306	1161	24	0	0	1573	47	1	23
Shared Lane Traffic (%)												
Lane Group Flow (vph)	11	1076	0	306	1161	24	0	0	1573	0	48	23
Sign Control		Free			Free			Stop			Stop	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

Intersection	
Int Delay, s/veh	752.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	10	974	59	294	1115	22	0	0	1510	42	1	21
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	Yield	-	-	Yield
Storage Length	125	-	-	125	-	125	-	-	0	-	-	100
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	1	-
Grade, %	-	-1	-	-	1	-	-	-3	-	-	0	-
Peak Hour Factor	90	96	96	96	96	90	96	90	96	90	90	90
Heavy Vehicles, %	2	2	19	13	4	2	0	2	3	2	2	2
Mvmt Flow	11	1015	61	306	1161	24	0	0	1573	47	1	23

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1161	0	0	1076	0	0	2843	2842	1045	2842	2872	1161
Stage 1	-	-	-	-	-	-	1068	1068	-	1774	1774	-
Stage 2	-	-	-	-	-	-	1775	1774	-	1068	1098	-
Critical Hdwy	4.12	-	-	4.3	-	-	7.1	5.92	6.2	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	5.5	4.92	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.5	4.92	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	3	-	-	3	4.018	3.1	3.518	4.018	3.318
Pot Cap-1 Maneuver	602	-	-	503	-	-	12	28	~ 291	~ 11	16	238
Stage 1	-	-	-	-	-	-	354	356	-	106	136	-
Stage 2	-	-	-	-	-	-	153	182	-	268	289	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	602	-	-	503	-	-	6	11	~ 291	-	6	238
Mov Cap-2 Maneuver	-	-	-	-	-	-	35	49	-	145	~ -58	-
Stage 1	-	-	-	-	-	-	348	349	-	104	53	-
Stage 2	-	-	-	-	-	-	53	71	-	-	284	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	4.7	$ 2014.8	
HCM LOS			F	-

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	291	602	-	-	503	-	-	-	238
HCM Lane V/C Ratio	5.405	0.018	-	-	0.609	-	-	-	0.098
HCM Control Delay (s)	$ 2014.8	11.1	-	-	22.7	-	-	-	21.8
HCM Lane LOS	F	B	-	-	C	-	-	-	C
HCM 95th %tile Q(veh)	163.8	0.1	-	-	4	-	-	-	0.3

Notes

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

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	2141	342	0	871	1541	30	0	287	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	11	12	12	12	12	12	12	12	12	12
Grade (%)		-1%			-1%			-4%			-2%	
Storage Length (ft)	0		0	0		115	0		0	0		0
Storage Lanes	0		1	0		1	0		0	0		0
Taper Length (ft)	75			75			75			75		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt			0.850			0.850		0.878				
Flt Protected								0.995				
Satd. Flow (prot)	0	1872	1553	0	1785	1591	0	1489	0	0	0	0
Flt Permitted								0.995				
Satd. Flow (perm)	0	1872	1553	0	1785	1591	0	1489	0	0	0	0
Link Speed (mph)		45			45			25			25	
Link Distance (ft)		758			636			290			200	
Travel Time (s)		11.5			9.6			7.9			5.5	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	100%	2%	1%	0%	7%	2%	40%	0%	11%	0%	0%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	0	2433	389	0	990	1751	34	0	326	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	2433	389	0	990	1751	0	360	0	0	0	0
Sign Control		Free			Free			Stop			Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	222.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	0	2141	342	0	871	1541	30	0	287	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	Free	-	-	None	-	-	None	-	-	None
Storage Length	-	-	0	-	-	115	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	0	-
Grade, %	-	-1	-	-	-1	-	-	-4	-	-	-2	-
Peak Hour Factor	88	88	88	88	88	88	88	88	88	88	88	88
Heavy Vehicles, %	100	2	1	0	7	2	40	0	11	0	0	0
Mvmt Flow	0	2433	389	0	990	1751	34	0	326	0	0	0

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	990	0	-	2433	0	0	3423	3423	2433
Stage 1	-	-	-	-	-	-	2433	2433	-
Stage 2	-	-	-	-	-	-	990	990	-
Critical Hdwy	4.3	-	-	4.3	-	-	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	5	4.7	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5	4.7	-
Follow-up Hdwy	3	-	-	3	-	-	3	4	3.1
Pot Cap-1 Maneuver	540	-	0	153	-	-	~ 4	7	~ 42
Stage 1	-	-	0	-	-	-	95	109	-
Stage 2	-	-	0	-	-	-	446	407	-
Platoon blocked, %		-			-	-			
Mov Cap-1 Maneuver	540	-	-	153	-	-	~ 4	0	~ 42
Mov Cap-2 Maneuver	-	-	-	-	-	-	73	0	-
Stage 1	-	-	-	-	-	-	95	0	-
Stage 2	-	-	-	-	-	-	446	0	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	$ 3411.6
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	WBL	WBT	WBR
Capacity (veh/h)	44	540	-	153	-	-
HCM Lane V/C Ratio	8.187	-	-	-	-	-
HCM Control Delay (s)	$ 3411.6	0	-	0	-	-
HCM Lane LOS	F	A	-	A	-	-
HCM 95th %tile Q(veh)	42.7	0	-	0	-	-

Notes

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

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	1464	1	159	0	0	0	79	2929	8	6	3017	1223
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	13	13	13	12	12	12	12	12	11	11	11	11
Grade (%)		3%			2%			0%			1%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (ft)	75			75			75			75		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.987									0.961	
Flt Protected		0.957						0.999				
Satd. Flow (prot)	0	1827	0	0	1881	0	0	3503	0	0	1696	0
Flt Permitted		0.957						0.999				
Satd. Flow (perm)	0	1827	0	0	1881	0	0	3503	0	0	1696	0
Link Speed (mph)		40			35			45			45	
Link Distance (ft)		499			348			586			796	
Travel Time (s)		8.5			6.8			8.9			12.1	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	2%	3%	0%	0%	5%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	1557	1	169	0	0	0	84	3116	9	6	3210	1301
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1727	0	0	0	0	0	3209	0	0	4517	0
Sign Control		Stop			Stop			Free			Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	28884.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Vol, veh/h	1464	1	159	0	0	0	79	2929	8	6	3017	1223
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, %	-	3	-	-	2	-	-	0	-	-	1	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	0	0	0	0	0	0	2	3	0	0	5	0
Mvmt Flow	1557	1	169	0	0	0	84	3116	9	6	3210	1301

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	5599	7166	3860	7246	7811	1562	4511	0	0	3124	0	0
Stage 1	3873	3873	-	3288	3288	-	-	-	-	-	-	-
Stage 2	1726	3293	-	3958	4523	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.3	-	-	4.3	-	-
Critical Hdwy Stg 1	6.7	6.1	-	6.9	5.9	-	-	-	-	-	-	-
Critical Hdwy Stg 2	7.1	6.1	-	6.5	5.9	-	-	-	-	-	-	-
Follow-up Hdwy	3	4	3.1	3	4	3.1	3	-	-	3	-	-
Pot Cap-1 Maneuver	0	0	~ 5	0	0	143	~ 21	-	-	81	-	-
Stage 1	~ 3	6	-	6	15	-	-	-	-	-	-	-
Stage 2	~ 75	13	-	3	3	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	0	0	~ 5	-	0	143	~ 21	-	-	81	-	-
Mov Cap-2 Maneuver	0	0	-	-	0	-	-	-	-	-	-	-
Stage 1	~ 3	6	-	6	15	-	-	-	-	-	-	-
Stage 2	~ 75	13	-	-	3	-	-	-	-	-	-	-

Approach	EB	WB	NE	SW
HCM Control Delay, s	$ 156483.1	0	$ 840.7	0.1
HCM LOS	F	A		

Minor Lane/Major Mvmt	NEL	NET	NER	EBLn1	WBLn1	SWL	SWT	SWR
Capacity (veh/h)	~ 21	-	-	5	-	81	-	-
HCM Lane V/C Ratio	4.002	-	-	345.532	-	0.079	-	-
HCM Control Delay (s)	$ 1726.5	$ 819.1	$ 156483.1	0	53.2	0	-	
HCM Lane LOS	F	F	-	F	A	F	A	-
HCM 95th %tile Q(veh)	10.8	-	-	218.3	-	0.2	-	-

Notes

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

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	98	4378	0	2	4232	18	0	0	0	28	0	61
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	11	12	12	11	11	12	12	12	12	12	12
Grade (%)		1%			0%			0%			1%	
Storage Length (ft)	60		0	0		0	0		0	0		0
Storage Lanes	1		0	0		0	0		0	0		0
Taper Length (ft)	140			75			75			75		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt					0.999						0.907	
Flt Protected	0.950										0.985	
Satd. Flow (prot)	1612	1757	0	0	1763	0	0	1900	0	0	1628	0
Flt Permitted	0.950										0.985	
Satd. Flow (perm)	1612	1757	0	0	1763	0	0	1900	0	0	1628	0
Link Speed (mph)		45			45			35			45	
Link Distance (ft)		796			771			91			413	
Travel Time (s)		12.1			11.7			1.8			6.3	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	4%	4%	0%	0%	4%	18%	0%	0%	0%	12%	0%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	109	4864	0	2	4702	20	0	0	0	31	0	68
Shared Lane Traffic (%)												
Lane Group Flow (vph)	109	4864	0	0	4724	0	0	0	0	0	99	0
Sign Control		Free			Free			Stop			Stop	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

Intersection	
Int Delay, s/veh	547.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	98	4378	0	2	4232	18	0	0	0	28	0	61
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	60	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	1	-	-	0	-	-	0	-	-	1	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	4	4	0	0	4	18	0	0	0	12	0	0
Mvmt Flow	109	4864	0	2	4702	20	0	0	0	31	0	68

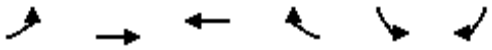
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	4722	0	0	4864	0	0	9833	9809	4864	9799	9799	4712
Stage 1	-	-	-	-	-	-	5082	5082	-	4717	4717	-
Stage 2	-	-	-	-	-	-	4751	4727	-	5082	5082	-
Critical Hdwy	4.3	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.7	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.42	5.7	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.42	5.7	-
Follow-up Hdwy	3	-	-	2.2	-	-	3.5	4	3.3	3	4	3.1
Pot Cap-1 Maneuver	~ 17	-	-	20	-	-	0	0	1	0	0	~ 1
Stage 1	-	-	-	-	-	-	1	2	-	~ 1	3	-
Stage 2	-	-	-	-	-	-	2	3	-	~ 1	2	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	~ 17	-	-	20	-	-	-	0	1	0	0	~ 1
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	0	-	0	0	-
Stage 1	-	-	-	-	-	-	1	2	-	~ 1	3	-
Stage 2	-	-	-	-	-	-	-	3	-	~ 1	2	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	63	0.1	0	$ 51032.8
HCM LOS			A	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	~ 17	-	-	20	-	-	1
HCM Lane V/C Ratio	-	6.405	-	-	0.111	-	-	98.889
HCM Control Delay (s)	$	2878.4	-	-	206.4	0	$	51032.8
HCM Lane LOS	A	F	-	-	F	A	-	F
HCM 95th %tile Q(veh)	-	14.3	-	-	0.3	-	-	14.8

Notes

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



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	0	2484	1069	0	0	340
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	13	13	13	13
Grade (%)		-1%	1%		-2%	
Storage Length (ft)	0			0	0	0
Storage Lanes	0			0	0	1
Taper Length (ft)	75				75	
Lane Util. Factor	1.00	0.95	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt						0.865
Flt Protected						
Satd. Flow (prot)	0	3522	1826	0	0	1634
Flt Permitted						
Satd. Flow (perm)	0	3522	1826	0	0	1634
Link Speed (mph)		35	35		25	
Link Distance (ft)		348	758		364	
Travel Time (s)		6.8	14.8		9.9	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	3%	7%	0%	0%	5%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)		0%	0%		0%	
Adj. Flow (vph)	0	2588	1114	0	0	354
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	2588	1114	0	0	354
Sign Control		Free	Free		Stop	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

Intersection	
Int Delay, s/veh	18.5

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Vol, veh/h	0	2484	1069	0	0	340
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	Stop
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	1	-
Grade, %	-	-1	1	-	-2	-
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	0	3	7	0	0	5
Mvmt Flow	0	2588	1114	0	0	354

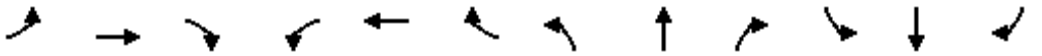
Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	1114	0	-	0	2408	1114
Stage 1	-	-	-	-	1114	-
Stage 2	-	-	-	-	1294	-
Critical Hdwy	4.3	-	-	-	7.1	6.2
Critical Hdwy Stg 1	-	-	-	-	5	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	3	-	-	-	3	3.1
Pot Cap-1 Maneuver	487	-	-	-	24	~ 265
Stage 1	-	-	-	-	392	-
Stage 2	-	-	-	-	282	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	487	-	-	-	24	~ 265
Mov Cap-2 Maneuver	-	-	-	-	160	-
Stage 1	-	-	-	-	392	-
Stage 2	-	-	-	-	282	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	212.2
HCM LOS			F

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	487	-	-	-	265
HCM Lane V/C Ratio	-	-	-	-	1.336
HCM Control Delay (s)	0	-	-	-	212.2
HCM Lane LOS	A	-	-	-	F
HCM 95th %tile Q(veh)	0	-	-	-	18.4

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

Future (2034) Development
1/3 Full Build-Out
With Improvements

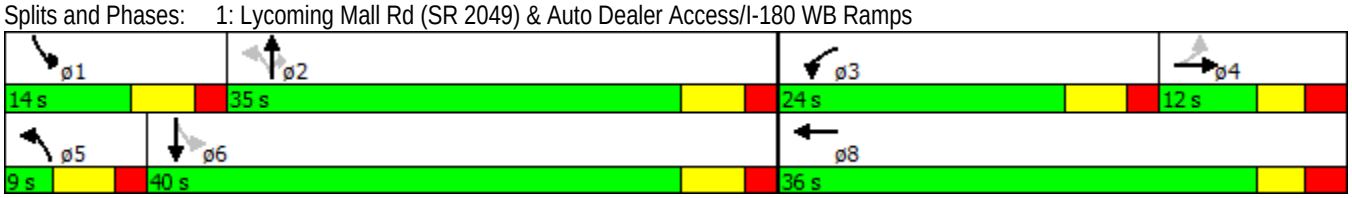


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	1	2	3	269	9	153	23	405	142	87	501	0
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	13	13	13	15	15	15	12	12	16	12	12	12
Grade (%)		2%			4%			1%			-1%	
Storage Length (ft)	0		100	125		0	125		0	125		0
Storage Lanes	0		0	2		0	1		1	1		0
Taper Length (ft)	75			75			75			75		
Lane Util. Factor	1.00	1.00	1.00	0.97	1.00	1.00	1.00	0.95	1.00	1.00	0.95	0.95
Ped Bike Factor												
Frt		0.932			0.858				0.850			
Flt Protected		0.994		0.950			0.950			0.950		
Satd. Flow (prot)	0	1464	0	3472	1653	0	1701	3180	1643	1719	3337	0
Flt Permitted				0.950			0.387			0.316		
Satd. Flow (perm)	0	1473	0	3472	1653	0	693	3180	1643	572	3337	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		4			212				197			
Link Speed (mph)		25			25			40			40	
Link Distance (ft)		187			334			1105			689	
Travel Time (s)		5.1			9.1			18.8			11.7	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	0%	33%	3%	13%	0%	0%	7%	5%	0%	3%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	1	3	4	374	12	212	32	562	197	121	696	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	8	0	374	224	0	32	562	197	121	696	0
Number of Detectors	1	1		1	1		1	1	0	1	1	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left		
Leading Detector (ft)	30	40		30	45		30	45	0	30	45	
Trailing Detector (ft)	-10	-10		-10	-5		-10	-5	0	-10	-5	
Turn Type	Perm	NA		Prot	NA		pm+pt	NA	Perm	pm+pt	NA	
Protected Phases		4		3	8		5	2		1	6	
Permitted Phases	4						2		2	6		
Detector Phase	4	4		3	8		5	2	2	1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		3.0	5.0		3.0	5.0	5.0	3.0	5.0	
Minimum Split (s)	10.8	10.8		9.0	10.8		9.0	11.2	11.2	9.0	11.2	
Total Split (s)	12.0	12.0		24.0	36.0		9.0	35.0	35.0	14.0	40.0	
Total Split (%)	14.1%	14.1%		28.2%	42.4%		10.6%	41.2%	41.2%	16.5%	47.1%	
Maximum Green (s)	6.2	6.2		18.0	30.2		3.0	28.8	28.8	8.0	33.8	
Yellow Time (s)	3.0	3.0		4.0	3.0		4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	2.8	2.8		2.0	2.8		2.0	2.2	2.2	2.0	2.2	
Lost Time Adjust (s)		-1.0		-1.0	-1.0		-1.0	-1.0	-1.0	-1.0	-1.0	
Total Lost Time (s)		4.8		5.0	4.8		5.0	5.2	5.2	5.0	5.2	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead/Lag	Lag	Lag		Lead			Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	4.0	4.0		3.0	4.0		3.0	4.0	4.0	3.0	4.0	
Minimum Gap (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Time Before Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Time To Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Recall Mode	None	None		None	None		None	Min	Min	None	Min	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
v/c Ratio		0.04		0.45	0.37		0.09	0.51	0.28	0.25	0.44	
Control Delay		25.0		23.0	5.6		8.7	18.0	4.3	8.7	12.3	
Queue Delay		0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay		25.0		23.0	5.6		8.7	18.0	4.3	8.7	12.3	
Queue Length 50th (ft)		1		54	3		4	76	0	15	54	
Queue Length 95th (ft)		12		102	22		17	129	19	47	144	
Internal Link Dist (ft)		107			254			1025			609	
Turn Bay Length (ft)				125			125			125		
Base Capacity (vph)		213		1306	1096		361	1876	1050	508	2208	
Starvation Cap Reductn		0		0	0		0	0	0	0	0	
Spillback Cap Reductn		0		0	0		0	0	0	0	0	
Storage Cap Reductn		0		0	0		0	0	0	0	0	
Reduced v/c Ratio		0.04		0.29	0.20		0.09	0.30	0.19	0.24	0.32	

Intersection Summary	
Area Type:	Other
Cycle Length: 85	
Actuated Cycle Length: 56.3	
Natural Cycle: 55	
Control Type: Actuated-Uncoordinated	

Splits and Phases: 1: Lycoming Mall Rd (SR 2049) & Auto Dealer Access/I-180 WB Ramps



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	1	2	3	269	9	153	23	405	142	87	501	0
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1853	1591	1853	1781	1822	1835	1791	1674	1774	1809	1756	1809
Adj Flow Rate, veh/h	1	3	1	374	12	205	32	562	135	121	696	0
Adj No. of Lanes	0	1	0	2	1	0	1	2	1	1	2	0
Peak Hour Factor	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72
Percent Heavy Veh, %	0	0	0	3	13	13	0	7	5	0	3	3
Cap, veh/h	82	98	28	584	30	519	335	1011	479	402	1235	0
Arrive On Green	0.08	0.09	0.08	0.18	0.35	0.34	0.04	0.32	0.32	0.09	0.37	0.00
Sat Flow, veh/h	132	1044	294	3291	86	1475	1706	3180	1508	1723	3425	0
Grp Volume(v), veh/h	5	0	0	374	0	217	32	562	135	121	696	0
Grp Sat Flow(s),veh/h/ln	1470	0	0	1645	0	1562	1706	1590	1508	1723	1668	0
Q Serve(g_s), s	0.0	0.0	0.0	6.6	0.0	6.7	0.8	9.2	4.2	2.7	10.4	0.0
Cycle Q Clear(g_c), s	0.2	0.0	0.0	6.6	0.0	6.7	0.8	9.2	4.2	2.7	10.4	0.0
Prop In Lane	0.20		0.20	1.00		0.94	1.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	184	0	0	584	0	549	335	1011	479	402	1235	0
V/C Ratio(X)	0.03	0.00	0.00	0.64	0.00	0.40	0.10	0.56	0.28	0.30	0.56	0.00
Avail Cap(c_a), veh/h	213	0	0	1000	0	779	379	1515	718	494	1856	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	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	25.9	0.0	0.0	23.9	0.0	15.7	13.6	17.7	16.0	12.2	15.7	0.0
Incr Delay (d2), s/veh	0.1	0.0	0.0	1.2	0.0	0.7	0.1	0.7	0.5	0.4	0.6	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.2	0.0	0.0	5.5	0.0	5.4	0.7	7.3	3.3	2.4	8.4	0.0
LnGrp Delay(d),s/veh	26.0	0.0	0.0	25.0	0.0	16.3	13.8	18.4	16.4	12.6	16.3	0.0
LnGrp LOS	C			C		B	B	B	B	B	B	
Approach Vol, veh/h		5			591			729			817	
Approach Delay, s/veh		26.0			21.8			17.8			15.7	
Approach LOS		C			C			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6		8
Phs Duration (G+Y+Rc), s	10.7	25.1	16.1	10.7	7.4	28.4		26.8
Change Period (Y+Rc), s	6.0	* 6.2	6.0	* 5.8	6.0	* 6.2		* 5.8
Max Green Setting (Gmax), s	8.0	* 29	18.0	* 6.2	3.0	* 34		* 30
Max Q Clear Time (g_c+I1), s	5.2	11.7	9.1	2.5	3.3	12.9		8.7
Green Ext Time (p_c), s	0.1	7.2	1.0	0.4	0.0	7.9		1.4

Intersection Summary	
HCM 2010 Ctrl Delay	18.1
HCM 2010 LOS	B

Notes

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

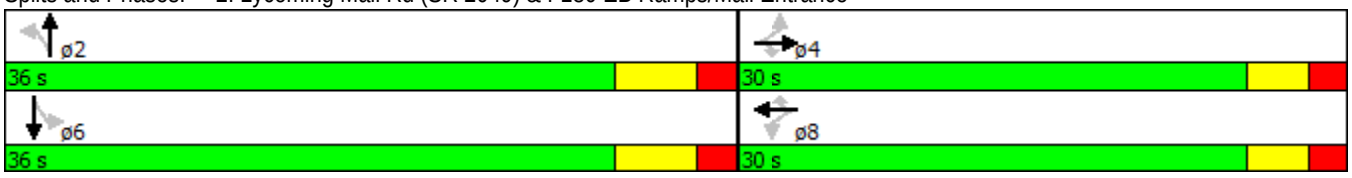
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	104	90	186	7	11	46	301	419	18	29	572	174
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	12	11	12	12	12	12	12	12	12	12
Grade (%)		2%			2%			-2%			-3%	
Storage Length (ft)	150		0	125		300	135		0	125		0
Storage Lanes	1		1	1		1	1		0	1		0
Taper Length (ft)	75			75			75			75		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.91	0.91
Ped Bike Factor												
Frt			0.850			0.850		0.994			0.969	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1568	1764	1443	1636	1620	1416	1515	3133	0	1550	4737	0
Flt Permitted	0.749			0.688			0.319			0.460		
Satd. Flow (perm)	1236	1764	1443	1185	1620	1416	509	3133	0	750	4737	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			162			55		9			129	
Link Speed (mph)		25			25			40			40	
Link Distance (ft)		279			408			1296			1105	
Travel Time (s)		7.6			11.1			22.1			18.8	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	1.00
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	8%	1%	5%	0%	10%	7%	14%	10%	0%	12%	0%	10%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	124	107	221	8	13	55	358	499	21	35	681	174
Shared Lane Traffic (%)												
Lane Group Flow (vph)	124	107	221	8	13	55	358	520	0	35	855	0
Number of Detectors	1	1	1	1	1	0	1	1		1	1	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (ft)	30	45	30	45	45	0	45	45		45	45	
Trailing Detector (ft)	-10	-5	-10	-5	-5	0	-5	-5		-5	-5	
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2			6		
Detector Phase	4	4	4	8	8	8	2	2		6	6	
Switch Phase												
Minimum Initial (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Minimum Split (s)	7.0	7.0	7.0	7.0	7.0	7.0	8.0	8.0		8.0	8.0	
Total Split (s)	30.0	30.0	30.0	30.0	30.0	30.0	36.0	36.0		36.0	36.0	
Total Split (%)	45.5%	45.5%	45.5%	45.5%	45.5%	45.5%	54.5%	54.5%		54.5%	54.5%	
Maximum Green (s)	25.0	25.0	25.0	25.0	25.0	25.0	30.0	30.0		30.0	30.0	
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0		-1.0	-1.0	
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	5.0	5.0		5.0	5.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Minimum Gap (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Time Before Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Time To Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Recall Mode	Min	Min	Min	Min	Min	Min	None	None		None	None	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
v/c Ratio	0.41	0.25	0.46	0.03	0.03	0.14	1.21	0.28		0.08	0.30	
Control Delay	20.6	16.9	8.8	14.3	14.4	5.8	141.4	6.7		7.0	5.6	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	20.6	16.9	8.8	14.3	14.4	5.8	141.4	6.7		7.0	5.6	
Queue Length 50th (ft)	33	27	15	2	3	0	~140	34		4	34	
Queue Length 95th (ft)	64	53	49	9	12	17	#292	73		17	66	
Internal Link Dist (ft)		199			328			1216			1025	
Turn Bay Length (ft)	150			125		300	135			125		
Base Capacity (vph)	604	862	788	579	792	720	296	1830		437	2816	
Starvation Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Reduced v/c Ratio	0.21	0.12	0.28	0.01	0.02	0.08	1.21	0.28		0.08	0.30	

Intersection Summary	
Area Type:	Other
Cycle Length: 66	
Actuated Cycle Length: 53.5	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	

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

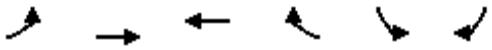
Splits and Phases: 2: Lycoming Mall Rd (SR 2049) & I-180 EB Ramps/Mall Entrance



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	104	90	186	7	11	46	301	419	18	29	572	174
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	1650	1764	1697	1782	1620	1665	1595	1659	1818	1631	1791	1827
Adj Flow Rate, veh/h	124	107	169	8	13	0	358	499	14	35	681	158
Adj No. of Lanes	1	1	1	1	1	1	1	2	0	1	3	0
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	1.00
Percent Heavy Veh, %	8	1	5	0	10	7	14	10	10	12	0	0
Cap, veh/h	415	382	312	325	351	307	451	1901	53	576	2415	553
Arrive On Green	0.22	0.22	0.22	0.22	0.22	0.00	0.61	0.61	0.59	0.61	0.61	0.59
Sat Flow, veh/h	1305	1764	1443	1109	1620	1416	590	3131	88	817	3978	911
Grp Volume(v), veh/h	124	107	169	8	13	0	358	251	262	35	556	283
Grp Sat Flow(s),veh/h/ln	1305	1764	1443	1109	1620	1416	590	1576	1643	817	1629	1630
Q Serve(g_s), s	4.2	2.6	5.3	0.3	0.3	0.0	26.9	3.8	3.8	1.1	4.1	4.3
Cycle Q Clear(g_c), s	4.6	2.6	5.3	2.9	0.3	0.0	31.0	3.8	3.8	4.9	4.1	4.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.05	1.00		0.56
Lane Grp Cap(c), veh/h	415	382	312	325	351	307	451	957	998	576	1979	990
V/C Ratio(X)	0.30	0.28	0.54	0.02	0.04	0.00	0.79	0.26	0.26	0.06	0.28	0.29
Avail Cap(c_a), veh/h	797	898	735	650	825	721	451	957	998	576	1979	990
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	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	17.6	16.7	17.7	17.9	15.8	0.0	13.9	4.7	4.7	5.8	4.8	4.9
Incr Delay (d2), s/veh	0.6	0.6	2.1	0.0	0.1	0.0	9.9	0.2	0.2	0.1	0.1	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(95%),veh/ln	2.8	2.4	4.1	0.2	0.3	0.0	10.3	3.0	3.1	0.4	3.4	3.6
LnGrp Delay(d),s/veh	18.2	17.2	19.8	17.9	15.9	0.0	23.7	4.9	4.9	5.9	4.9	5.1
LnGrp LOS	B	B	B	B	B		C	A	A	A	A	A
Approach Vol, veh/h		400			21			871			874	
Approach Delay, s/veh		18.6			16.6			12.6			5.0	
Approach LOS		B			B			B			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		36.0		15.1		36.0		15.1
Change Period (Y+Rc), s		6.0		5.0		6.0		5.0
Max Green Setting (Gmax), s		30.0		25.0		30.0		25.0
Max Q Clear Time (g_c+I1), s		33.5		7.8		7.4		5.4
Green Ext Time (p_c), s		0.0		2.3		14.5		2.4

Intersection Summary	
HCM 2010 Ctrl Delay	10.7
HCM 2010 LOS	B

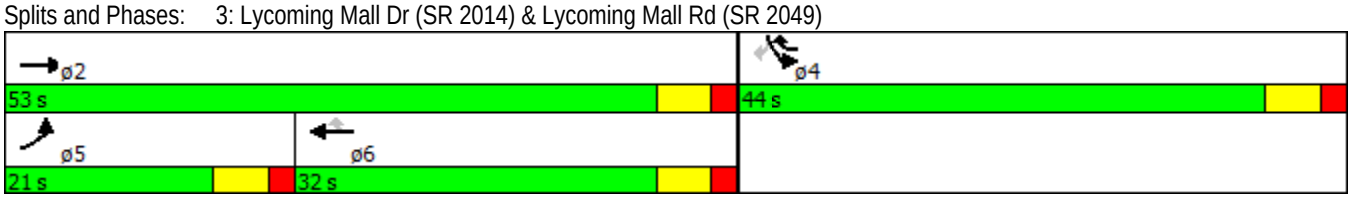


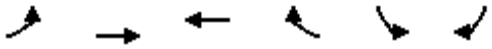
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	249	628	444	438	641	227
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	12	12	12	12
Grade (%)		-1%	1%		-2%	
Storage Length (ft)	165			215	165	0
Storage Lanes	2			1	1	1
Taper Length (ft)	125				75	
Lane Util. Factor	0.97	0.95	0.95	1.00	0.97	1.00
Ped Bike Factor						
Frt				0.850		0.850
Flt Protected	0.950				0.950	
Satd. Flow (prot)	3334	3096	3210	1522	2839	1472
Flt Permitted	0.950				0.950	
Satd. Flow (perm)	3334	3096	3210	1522	2839	1472
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)				106		264
Link Speed (mph)		45	45		40	
Link Distance (ft)		727	1089		1264	
Travel Time (s)		11.0	16.5		21.5	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	11%	6%	0%	18%	5%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)		0%	0%		0%	
Adj. Flow (vph)	290	730	516	509	745	264
Shared Lane Traffic (%)						
Lane Group Flow (vph)	290	730	516	509	745	264
Number of Detectors	1	1	1	1	1	1
Detector Template	Left				Left	Right
Leading Detector (ft)	45	6	6	6	45	45
Trailing Detector (ft)	-5	0	0	0	-5	-5
Turn Type	Prot	NA	NA	pm+ov	Prot	Perm
Protected Phases	5	2	6	4	4	
Permitted Phases				6		4
Detector Phase	5				4	4
Switch Phase						
Minimum Initial (s)	3.0	15.0	15.0	5.0	5.0	5.0
Minimum Split (s)	9.0	21.0	21.0	11.0	11.0	11.0
Total Split (s)	21.0	53.0	32.0	44.0	44.0	44.0
Total Split (%)	21.6%	54.6%	33.0%	45.4%	45.4%	45.4%
Maximum Green (s)	15.0	47.0	26.0	38.0	38.0	38.0
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lead/Lag	Lead		Lag			
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	5.0	5.0	3.0	3.0	3.0
Minimum Gap (s)	3.0	2.0	2.0	3.0	3.0	3.0
Time Before Reduce (s)	0.0	42.0	42.0	0.0	0.0	0.0
Time To Reduce (s)	0.0	10.0	10.0	0.0	0.0	0.0
Recall Mode	None	Min	Min	None	None	None
Walk Time (s)		7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)		14.0	14.0	14.0	14.0	14.0
Pedestrian Calls (#/hr)		0	0	0	0	0
v/c Ratio	0.48	0.49	0.70	0.48	0.71	0.37
Control Delay	29.9	14.7	32.9	6.0	22.8	3.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	29.9	14.7	32.9	6.0	22.8	3.7
Queue Length 50th (ft)	58	105	107	64	136	0
Queue Length 95th (ft)	102	180	#201	124	191	35
Internal Link Dist (ft)		647	1009		1184	
Turn Bay Length (ft)	165			215	165	
Base Capacity (vph)	770	1496	742	1062	1600	944
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.38	0.49	0.70	0.48	0.47	0.28

Intersection Summary	
Area Type:	Other
Cycle Length: 97	
Actuated Cycle Length: 70.3	
Natural Cycle: 60	
Control Type: Actuated-Uncoordinated	
# 95th percentile volume exceeds capacity, queue may be longer.	
Queue shown is maximum after two cycles.	

Splits and Phases: 3: Lycoming Mall Dr (SR 2014) & Lycoming Mall Rd (SR 2049)





Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	249	628	444	438	641	227
Number	5	2	6	16	7	14
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	1809	1630	1690	1791	1541	1731
Adj Flow Rate, veh/h	290	730	516	0	745	224
Adj No. of Lanes	2	2	2	1	2	1
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86
Percent Heavy Veh, %	0	11	6	0	18	5
Cap, veh/h	472	1573	946	977	988	511
Arrive On Green	0.14	0.51	0.29	0.00	0.35	0.35
Sat Flow, veh/h	3342	3178	3295	1522	2847	1472
Grp Volume(v), veh/h	290	730	516	0	745	224
Grp Sat Flow(s),veh/h/ln	1671	1548	1605	1522	1423	1472
Q Serve(g_s), s	5.6	10.5	9.3	0.0	16.0	8.1
Cycle Q Clear(g_c), s	5.6	10.5	9.3	0.0	16.0	8.1
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	472	1573	946	977	988	511
V/C Ratio(X)	0.61	0.46	0.55	0.00	0.75	0.44
Avail Cap(c_a), veh/h	775	2154	1256	1124	1609	832
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	27.9	10.9	20.5	0.0	19.9	17.4
Incr Delay (d2), s/veh	1.3	0.5	1.1	0.0	1.2	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	4.8	8.1	7.6	0.0	10.5	0.2
LnGrp Delay(d),s/veh	29.2	11.4	21.5	0.0	21.1	18.0
LnGrp LOS	C	B	C		C	B
Approach Vol, veh/h		1020	516		969	
Approach Delay, s/veh		16.4	21.5		20.4	
Approach LOS		B	C		C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		40.1		28.9	14.7	25.3		
Change Period (Y+Rc), s		6.0		6.0	6.0	6.0		
Max Green Setting (Gmax), s		47.0		38.0	15.0	26.0		
Max Q Clear Time (g_c+I1), s		13.0		18.5	8.1	11.8		
Green Ext Time (p_c), s		11.5		4.5	0.6	7.5		

Intersection Summary	
HCM 2010 Ctrl Delay	19.0
HCM 2010 LOS	B

Notes

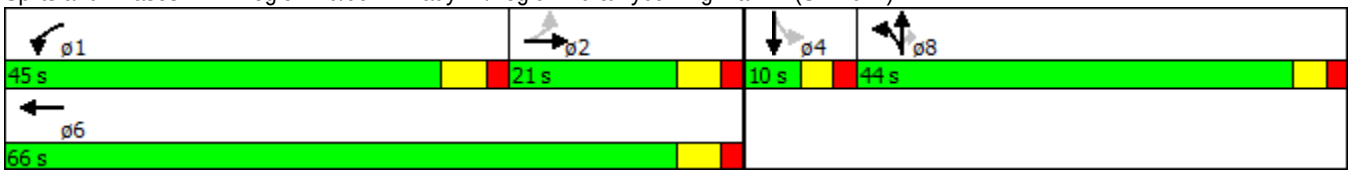
User approved pedestrian interval to be less than phase max green.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	1	283	0	556	372	4	724	6	206	6	1	3
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	12	13	13	13	12	12	12	14	14	14
Grade (%)		1%			-1%			-3%			0%	
Storage Length (ft)	1		0	275		0	0		0	0		0
Storage Lanes	1		0	2		0	2		1	0		0
Taper Length (ft)	75			75			75			75		
Lane Util. Factor	1.00	0.91	1.00	0.97	0.95	0.95	0.97	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt					0.998				0.850		0.963	
Flt Protected	0.950			0.950			0.950				0.969	
Satd. Flow (prot)	1701	4405	0	2650	3350	0	3269	1827	1374	0	1256	0
Flt Permitted	0.503			0.950			0.950					
Satd. Flow (perm)	901	4405	0	2650	3350	0	3269	1827	1374	0	1296	0
Right Turn on Red			Yes			Yes			Yes			No
Satd. Flow (RTOR)					1				234			
Link Speed (mph)		45			45			45			25	
Link Distance (ft)		361			418			198			301	
Travel Time (s)		5.5			6.3			3.0			8.2	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	11%	6%	30%	5%	75%	3%	0%	13%	67%	0%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	1	322	0	632	423	5	823	7	234	7	1	3
Shared Lane Traffic (%)												
Lane Group Flow (vph)	1	322	0	632	428	0	823	7	234	0	11	0
Number of Detectors	1	2		1	2		2	2	0	1	1	
Detector Template	Left			Left						Left	Thru	
Leading Detector (ft)	30	306		30	286		206	206	0	30	45	
Trailing Detector (ft)	-10	-5		-10	-5		-5	-5	0	-10	-5	
Turn Type	Perm	NA		Prot	NA		Split	NA	Perm	Perm	NA	
Protected Phases		2		1	6		8	8			4	
Permitted Phases	2								8	4		
Detector Phase	2	2		1	6		8	8	8	4	4	
Switch Phase												
Minimum Initial (s)	15.0	15.0		3.0	15.0		15.0	15.0	15.0	5.0	5.0	
Minimum Split (s)	21.0	21.0		9.0	21.0		20.0	20.0	20.0	10.0	10.0	
Total Split (s)	21.0	21.0		45.0	66.0		44.0	44.0	44.0	10.0	10.0	
Total Split (%)	17.5%	17.5%		37.5%	55.0%		36.7%	36.7%	36.7%	8.3%	8.3%	
Maximum Green (s)	15.0	15.0		39.0	60.0		39.0	39.0	39.0	5.0	5.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	-1.0	-1.0		-1.0	-1.0		-1.0	-1.0	-1.0		-1.0	
Total Lost Time (s)	5.0	5.0		5.0	5.0		4.0	4.0	4.0		4.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead/Lag	Lag	Lag		Lead								
Lead-Lag Optimize?												
Vehicle Extension (s)	6.0	6.0		3.0	6.0		6.0	6.0	6.0	3.0	3.0	
Minimum Gap (s)	2.0	2.0		3.0	2.0		2.0	2.0	2.0	2.0	2.0	
Time Before Reduce (s)	40.0	40.0		0.0	40.0		40.0	40.0	40.0	0.0	0.0	
Time To Reduce (s)	20.0	20.0		0.0	20.0		20.0	20.0	20.0	0.0	0.0	
Recall Mode	Min	Min		None	Min		None	None	None	None	None	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
v/c Ratio	0.01	0.45		0.80	0.25		0.66	0.01	0.35		0.14	
Control Delay	42.0	42.7		41.6	14.7		29.9	23.5	5.0		54.8	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0		0.0	
Total Delay	42.0	42.7		41.6	14.7		29.9	23.5	5.0		54.8	
Queue Length 50th (ft)	1	68		190	76		211	3	0		7	
Queue Length 95th (ft)	6	117		280	124		355	14	51		28	
Internal Link Dist (ft)		281			338			118			221	
Turn Bay Length (ft)	1			275								
Base Capacity (vph)	145	710		1067	2058		1317	736	693		78	
Starvation Cap Reductn	0	0		0	0		0	0	0		0	
Spillback Cap Reductn	0	0		0	0		0	0	0		0	
Storage Cap Reductn	0	0		0	0		0	0	0		0	
Reduced v/c Ratio	0.01	0.45		0.59	0.21		0.62	0.01	0.34		0.14	

Intersection Summary	
Area Type:	Other
Cycle Length: 120	
Actuated Cycle Length: 100.7	
Natural Cycle: 80	
Control Type: Actuated-Uncoordinated	

Splits and Phases: 4: Legion Rd/John Brady Dr/Legion Rd & Lycoming Mall Dr (SR 2014)



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	1	283	0	556	372	4	724	6	206	6	1	3
Number	5	2	12	1	6	16	3	8	18	7	4	14
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	1791	1614	0	1447	1778	1881	1774	1827	1617	1872	1312	1872
Adj Flow Rate, veh/h	1	322	0	632	423	4	823	7	190	7	1	3
Adj No. of Lanes	1	3	0	2	2	0	2	1	1	0	1	0
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	0	11	0	30	5	5	3	0	13	0	0	0
Cap, veh/h	228	708	0	751	1686	16	1162	648	487	18	3	8
Arrive On Green	0.16	0.16	0.00	0.28	0.49	0.48	0.35	0.35	0.35	0.01	0.02	0.01
Sat Flow, veh/h	971	4550	0	2674	3429	32	3277	1827	1374	773	110	331
Grp Volume(v), veh/h	1	322	0	632	208	219	823	7	190	11	0	0
Grp Sat Flow(s),veh/h/ln	971	1468	0	1337	1689	1772	1639	1827	1374	1215	0	0
Q Serve(g_s), s	0.1	6.6	0.0	22.2	7.1	7.1	21.5	0.2	10.3	0.9	0.0	0.0
Cycle Q Clear(g_c), s	0.1	6.6	0.0	22.2	7.1	7.1	21.5	0.2	10.3	0.9	0.0	0.0
Prop In Lane	1.00		0.00	1.00		0.02	1.00		1.00	0.64		0.27
Lane Grp Cap(c), veh/h	228	708	0	751	830	871	1162	648	487	28	0	0
V/C Ratio(X)	0.00	0.45	0.00	0.84	0.25	0.25	0.71	0.01	0.39	0.39	0.00	0.00
Avail Cap(c_a), veh/h	228	708	0	1075	1035	1086	1317	734	552	73	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	35.1	37.8	0.0	33.7	14.7	14.7	27.7	20.8	24.1	48.4	0.0	0.0
Incr Delay (d2), s/veh	0.0	1.7	0.0	4.3	0.6	0.5	3.1	0.0	1.8	8.5	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(95%),veh/ln	0.0	5.0	0.0	13.4	6.2	6.5	15.5	0.2	7.5	0.7	0.0	0.0
LnGrp Delay(d),s/veh	35.1	39.5	0.0	38.0	15.2	15.2	30.8	20.8	25.9	56.9	0.0	0.0
LnGrp LOS	D	D		D	B	B	C	C	C	E		
Approach Vol, veh/h		323			1059			1020			11	
Approach Delay, s/veh		39.5			28.8			29.8			56.9	
Approach LOS		D			C			C			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6		8
Phs Duration (G+Y+Rc), s	32.9	21.0		6.3		53.9		39.3
Change Period (Y+Rc), s	6.0	6.0		5.0		6.0		5.0
Max Green Setting (Gmax), s	39.0	15.0		5.0		60.0		39.0
Max Q Clear Time (g_c+I1), s	24.7	9.1		2.9		9.6		24.0
Green Ext Time (p_c), s	2.3	4.7		0.0		25.7		10.2

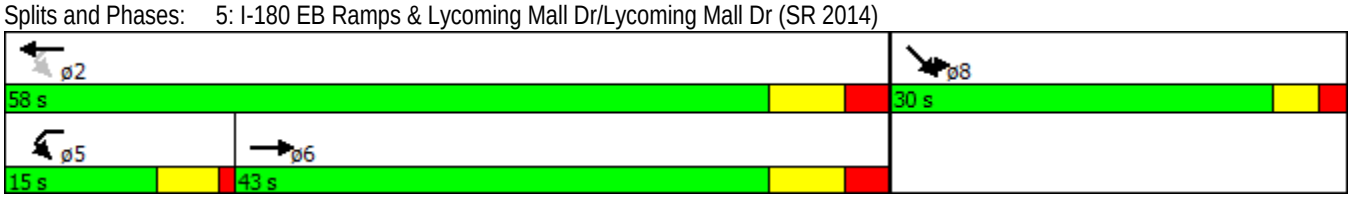
Intersection Summary	
HCM 2010 Ctrl Delay	30.8
HCM 2010 LOS	C

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Volume (vph)	0	443	93	50	555	0	217	2	506	0	0	0
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	14	12	12	12	12	14	14	14	12	12	12
Grade (%)		-1%			-1%			3%			-4%	
Storage Length (ft)	0		175	150		0	200		0	0		0
Storage Lanes	0		0	1		0	1		0	0		0
Taper Length (ft)	75			75			75			75		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.974						0.857				
Flt Protected				0.950			0.950	0.998				
Satd. Flow (prot)	0	3043	0	1621	3015	0	1471	1359	0	0	0	0
Flt Permitted				0.315			0.950	0.998				
Satd. Flow (perm)	0	3043	0	538	3015	0	1471	1359	0	0	0	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		34						277				
Link Speed (mph)		45			45			25			25	
Link Distance (ft)		2040			660			376			358	
Travel Time (s)		30.9			10.0			10.3			9.8	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	17%	19%	6%	14%	0%	16%	0%	13%	0%	0%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	0	487	102	55	610	0	238	2	556	0	0	0
Shared Lane Traffic (%)							10%					
Lane Group Flow (vph)	0	589	0	55	610	0	214	582	0	0	0	0
Number of Detectors		1		1	1		1	1				
Detector Template				Left			Left	Thru				
Leading Detector (ft)		6		45	6		30	30				
Trailing Detector (ft)		0		-5	0		-10	-10				
Turn Type		NA		pm+pt	NA		Split	NA				
Protected Phases		6		5	2		8	8				
Permitted Phases				2								
Detector Phase				5			8	8				
Switch Phase												
Minimum Initial (s)		20.0		5.0	20.0		5.0	5.0				
Minimum Split (s)		28.0		10.0	38.0		10.0	10.0				
Total Split (s)		43.0		15.0	58.0		30.0	30.0				
Total Split (%)		48.9%		17.0%	65.9%		34.1%	34.1%				
Maximum Green (s)		35.0		10.0	50.0		25.0	25.0				
Yellow Time (s)		5.0		4.0	5.0		3.0	3.0				
All-Red Time (s)		3.0		1.0	3.0		2.0	2.0				
Lost Time Adjust (s)		-1.0		-1.0	-1.0		-1.0	-1.0				
Total Lost Time (s)		7.0		4.0	7.0		4.0	4.0				

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lead/Lag		Lag		Lead								
Lead-Lag Optimize?												
Vehicle Extension (s)		3.0		4.0	3.0		4.0	4.0				
Minimum Gap (s)		3.0		3.0	3.0		3.0	3.0				
Time Before Reduce (s)		0.0		0.0	0.0		0.0	0.0				
Time To Reduce (s)		0.0		0.0	0.0		0.0	0.0				
Recall Mode		Min		None	Min		None	None				
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
v/c Ratio		0.59		0.13	0.46		0.37	0.83				
Control Delay		21.9		9.3	14.0		18.4	23.2				
Queue Delay		0.0		0.0	0.0		0.0	0.0				
Total Delay		21.9		9.3	14.0		18.4	23.2				
Queue Length 50th (ft)		110		11	86		71	131				
Queue Length 95th (ft)		168		27	124		135	#355				
Internal Link Dist (ft)		1960			580			296			278	
Turn Bay Length (ft)				150			200					
Base Capacity (vph)		1001		443	1322		585	707				
Starvation Cap Reductn		0		0	0		0	0				
Spillback Cap Reductn		0		0	0		0	0				
Storage Cap Reductn		0		0	0		0	0				
Reduced v/c Ratio		0.59		0.12	0.46		0.37	0.82				

Intersection Summary	
Area Type:	Other
Cycle Length: 88	
Actuated Cycle Length: 66.1	
Natural Cycle: 70	
Control Type: Actuated-Uncoordinated	
# 95th percentile volume exceeds capacity, queue may be longer.	
Queue shown is maximum after two cycles.	

Splits and Phases: 5: I-180 EB Ramps & Lycoming Mall Dr/Lycoming Mall Dr (SR 2014)



Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Volume (veh/h)	0	443	93	50	555	0	217	2	506	0	0	0
Number	1	6	16	5	2	12	3	8	18			
Initial Q (Qb), veh	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			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	0	1603	1809	1707	1587	0	1590	1631	1844			
Adj Flow Rate, veh/h	0	487	45	55	610	0	238	2	524			
Adj No. of Lanes	0	2	0	1	2	0	1	1	0			
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91			
Percent Heavy Veh, %	0	17	17	6	14	0	16	0	16			
Cap, veh/h	0	895	82	358	1329	0	595	2	543			
Arrive On Green	0.00	0.32	0.32	0.06	0.44	0.00	0.39	0.39	0.38			
Sat Flow, veh/h	0	2901	260	1625	3094	0	1514	5	1382			
Grp Volume(v), veh/h	0	262	270	55	610	0	238	0	526			
Grp Sat Flow(s),veh/h/ln	0	1523	1557	1625	1508	0	1514	0	1387			
Q Serve(g_s), s	0.0	9.4	9.5	1.3	9.4	0.0	7.5	0.0	24.6			
Cycle Q Clear(g_c), s	0.0	9.4	9.5	1.3	9.4	0.0	7.5	0.0	24.6			
Prop In Lane	0.00		0.17	1.00		0.00	1.00		1.00			
Lane Grp Cap(c), veh/h	0	483	494	358	1329	0	595	0	545			
V/C Ratio(X)	0.00	0.54	0.55	0.15	0.46	0.00	0.40	0.00	0.97			
Avail Cap(c_a), veh/h	0	829	847	525	2323	0	595	0	545			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	0.0	18.6	18.7	12.7	13.0	0.0	14.5	0.0	20.1			
Incr Delay (d2), s/veh	0.0	1.0	0.9	0.3	0.2	0.0	0.6	0.0	30.0			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(95%),veh/ln	0.0	7.3	7.5	1.1	7.1	0.0	5.8	0.0	20.0			
LnGrp Delay(d),s/veh	0.0	19.6	19.6	13.0	13.2	0.0	15.1	0.0	50.1			
LnGrp LOS		B	B	B	B		B		D			
Approach Vol, veh/h		532			665			764				
Approach Delay, s/veh		19.6			13.2			39.2				
Approach LOS		B			B			D				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2			5	6		8
Phs Duration (G+Y+Rc), s		36.2			8.2	28.0		30.0
Change Period (Y+Rc), s		8.0			5.0	8.0		5.0
Max Green Setting (Gmax), s		50.0			10.0	35.0		25.0
Max Q Clear Time (g_c+I1), s		11.9			3.8	12.0		26.6
Green Ext Time (p_c), s		3.4			0.1	3.3		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	25.1
HCM 2010 LOS	C

Notes

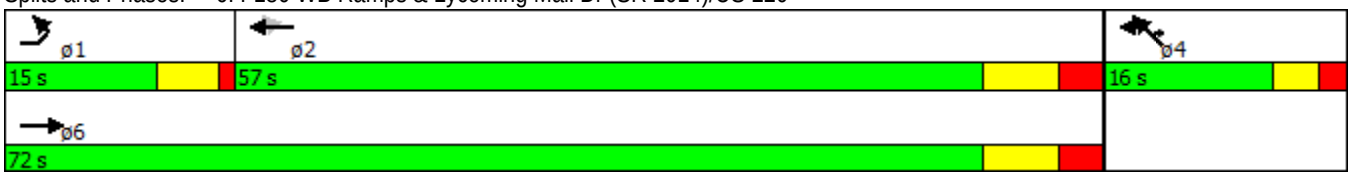
User approved volume balancing among the lanes for turning movement.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Volume (vph)	148	513	0	0	515	507	0	0	0	89	0	51
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	11	12	12	11	11	11	12	12	12	15	15	16
Grade (%)		1%			-1%			-3%			-3%	
Storage Length (ft)	115		0	0		260	0		0	0		445
Storage Lanes	2		0	0		1	0		0	1		1
Taper Length (ft)	75			75			75			75		
Lane Util. Factor	0.97	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt						0.850						0.850
Flt Protected	0.950									0.950		
Satd. Flow (prot)	2727	2985	0	0	1665	1402	0	0	0	1632	2010	1173
Flt Permitted	0.950									0.950		
Satd. Flow (perm)	2727	2985	0	0	1665	1402	0	0	0	1632	2010	1173
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						611						370
Link Speed (mph)		45			45			25			25	
Link Distance (ft)		660			608			327			668	
Travel Time (s)		10.0			9.2			8.9			18.2	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	17%	14%	0%	0%	5%	6%	0%	0%	0%	17%	0%	50%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	178	618	0	0	620	611	0	0	0	107	0	61
Shared Lane Traffic (%)												
Lane Group Flow (vph)	178	618	0	0	620	611	0	0	0	107	0	61
Number of Detectors	1	1			1	1				1	1	0
Detector Template	Left					Right				Left	Thru	
Leading Detector (ft)	45	6			6	30				30	45	0
Trailing Detector (ft)	-5	0			0	-10				-10	-5	0
Turn Type	Prot	NA			NA	Perm				Split		Prot
Protected Phases	1	6			2					4	4	4
Permitted Phases						2						
Detector Phase	1					2				4	4	4
Switch Phase												
Minimum Initial (s)	5.0	20.0			20.0	20.0				5.0	5.0	5.0
Minimum Split (s)	10.0	28.0			28.0	28.0				10.0	10.0	10.0
Total Split (s)	15.0	72.0			57.0	57.0				16.0	16.0	16.0
Total Split (%)	17.0%	81.8%			64.8%	64.8%				18.2%	18.2%	18.2%
Maximum Green (s)	10.0	64.0			49.0	49.0				11.0	11.0	11.0
Yellow Time (s)	4.0	5.0			5.0	5.0				3.0	3.0	3.0
All-Red Time (s)	1.0	3.0			3.0	3.0				2.0	2.0	2.0
Lost Time Adjust (s)	-1.0	-1.0			-1.0	-1.0				-1.0	-1.0	-1.0
Total Lost Time (s)	4.0	7.0			7.0	7.0				4.0	4.0	4.0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lead/Lag	Lead				Lag	Lag						
Lead-Lag Optimize?												
Vehicle Extension (s)	4.0	3.0			3.0	3.0				4.0	4.0	4.0
Minimum Gap (s)	3.0	3.0			3.0	3.0				3.0	3.0	3.0
Time Before Reduce (s)	0.0	0.0			0.0	0.0				0.0	0.0	0.0
Time To Reduce (s)	0.0	0.0			0.0	0.0				0.0	0.0	0.0
Recall Mode	None	Min			Min	Min				Min	Min	Min
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
v/c Ratio	0.36	0.33			1.01	0.68				0.35		0.12
Control Delay	23.3	6.0			61.1	5.9				24.1		0.5
Queue Delay	0.0	0.0			0.0	0.0				0.0		0.0
Total Delay	23.3	6.0			61.1	5.9				24.1		0.5
Queue Length 50th (ft)	28	46			~227	0				33		0
Queue Length 95th (ft)	49	65			#369	40				66		0
Internal Link Dist (ft)		580			528			247			588	
Turn Bay Length (ft)	115					260						445
Base Capacity (vph)	523	1853			615	1302				341		538
Starvation Cap Reductn	0	0			0	0				0		0
Spillback Cap Reductn	0	0			0	0				0		0
Storage Cap Reductn	0	0			0	0				0		0
Reduced v/c Ratio	0.34	0.33			1.01	0.47				0.31		0.11

Intersection Summary	
Area Type:	Other
Cycle Length: 88	
Actuated Cycle Length: 57.3	
Natural Cycle: 60	
Control Type: Actuated-Uncoordinated	
~ Volume exceeds capacity, queue is theoretically infinite.	
Queue shown is maximum after two cycles.	
# 95th percentile volume exceeds capacity, queue may be longer.	
Queue shown is maximum after two cycles.	

Splits and Phases: 6: I-180 WB Ramps & Lycoming Mall Dr (SR 2014)/US 220



Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Volume (veh/h)	148	513	0	0	515	507	0	0	0	89	0	51
Number	1	6	16	5	2	12				7	4	14
Initial Q (Qb), veh	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
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1531	1571	0	0	1723	1707				1624	1900	1267
Adj Flow Rate, veh/h	178	618	0	0	620	492				107	0	47
Adj No. of Lanes	2	2	0	0	1	1				1	1	1
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83				0.83	0.83	0.83
Percent Heavy Veh, %	17	14	0	0	5	6				17	0	50
Cap, veh/h	343	2000	0	0	820	691				202	248	141
Arrive On Green	0.12	0.67	0.00	0.00	0.48	0.48				0.13	0.00	0.13
Sat Flow, veh/h	2828	3064	0	0	1723	1451				1547	1900	1077
Grp Volume(v), veh/h	178	618	0	0	620	492				107	0	47
Grp Sat Flow(s),veh/h/ln	1414	1493	0	0	1723	1451				1547	1900	1077
Q Serve(g_s), s	3.3	4.8	0.0	0.0	16.2	14.8				3.6	0.0	2.2
Cycle Q Clear(g_c), s	3.3	4.8	0.0	0.0	16.2	14.8				3.6	0.0	2.2
Prop In Lane	1.00		0.00	0.00		1.00				1.00		1.00
Lane Grp Cap(c), veh/h	343	2000	0	0	820	691				202	248	141
V/C Ratio(X)	0.52	0.31	0.00	0.00	0.76	0.71				0.53	0.00	0.33
Avail Cap(c_a), veh/h	564	3518	0	0	1562	1315				337	413	234
HCM Platoon Ratio	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	0.00	0.00	1.00	1.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	22.7	3.8	0.0	0.0	11.8	11.5				22.4	0.0	21.8
Incr Delay (d2), s/veh	1.7	0.1	0.0	0.0	1.4	1.4				3.0	0.0	2.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	2.4	3.4	0.0	0.0	12.5	10.2				3.0	0.0	1.3
LnGrp Delay(d),s/veh	24.4	3.9	0.0	0.0	13.3	12.8				25.4	0.0	23.8
LnGrp LOS	C	A			B	B				C		C
Approach Vol, veh/h		796			1112						154	
Approach Delay, s/veh		8.5			13.1						24.9	
Approach LOS		A			B						C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6		
Phs Duration (G+Y+Rc), s	10.7	33.3		11.2		43.9		
Change Period (Y+Rc), s	5.0	8.0		5.0		8.0		
Max Green Setting (Gmax), s	10.0	49.0		11.0		64.0		
Max Q Clear Time (g_c+I1), s	5.8	18.7		6.1		7.3		
Green Ext Time (p_c), s	0.3	6.5		0.1		6.8		

Intersection Summary	
HCM 2010 Ctrl Delay	12.2
HCM 2010 LOS	B

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	1	427	10	2	700	13	16	25	0	29	34	5
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	12	12	12	12	11	11	11	10	10	10
Grade (%)		-2%			1%			0%			-3%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (ft)	75			75			75			75		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.997			0.998						0.991	
Flt Protected								0.980			0.979	
Satd. Flow (prot)	0	1529	0	0	1688	0	0	1550	0	0	1632	0
Flt Permitted		0.999			0.999			0.837			0.839	
Satd. Flow (perm)	0	1528	0	0	1687	0	0	1324	0	0	1399	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		4			3						5	
Link Speed (mph)		55			55			35			50	
Link Distance (ft)		1494			4148			578			618	
Travel Time (s)		18.5			51.4			11.3			8.4	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	19%	0%	0%	6%	0%	25%	0%	0%	0%	0%	20%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	1	469	11	2	769	14	18	27	0	32	37	5
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	481	0	0	785	0	0	45	0	0	74	0
Number of Detectors	1	1		1	1		1	1		1	1	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	30	30		30	30		30	30		30	30	
Trailing Detector (ft)	-10	-10		-10	-10		-10	-10		-10	-10	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Minimum Split (s)	15.0	15.0		15.0	15.0		15.0	15.0		15.0	15.0	
Total Split (s)	40.0	40.0		40.0	40.0		15.0	15.0		15.0	15.0	
Total Split (%)	72.7%	72.7%		72.7%	72.7%		27.3%	27.3%		27.3%	27.3%	
Maximum Green (s)	34.0	34.0		34.0	34.0		9.0	9.0		9.0	9.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		-1.0			-1.0			-1.0			-1.0	
Total Lost Time (s)		5.0			5.0			5.0			5.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Minimum Gap (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Time Before Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Time To Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Recall Mode	Min	Min		Min	Min		None	None		None	None	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
v/c Ratio		0.40			0.59			0.18			0.27	
Control Delay		5.3			7.6			21.7			21.8	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		5.3			7.6			21.7			21.8	
Queue Length 50th (ft)		64			135			14			21	
Queue Length 95th (ft)		123			265			36			50	
Internal Link Dist (ft)		1414			4068			498			538	
Turn Bay Length (ft)												
Base Capacity (vph)		1211			1337			306			328	
Starvation Cap Reductn		0			0			0			0	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.40			0.59			0.15			0.23	

Intersection Summary	
Area Type:	Other
Cycle Length: 55	
Actuated Cycle Length: 46.9	
Natural Cycle: 55	
Control Type: Actuated-Uncoordinated	

Splits and Phases: 8: Middle Rd & US 220



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	1	427	10	2	700	13	16	25	0	29	34	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	1818	1534	1818	1791	1692	1791	1800	1636	1800	1827	1803	1827
Adj Flow Rate, veh/h	1	469	11	2	769	14	18	27	0	32	37	5
Adj No. of Lanes	0	1	0	0	1	0	0	1	0	0	1	0
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	19	19	19	6	6	6	0	0	0	0	0	0
Cap, veh/h	109	890	21	110	987	18	215	94	0	228	83	11
Arrive On Green	0.57	0.60	0.57	0.57	0.60	0.57	0.07	0.10	0.00	0.07	0.10	0.07
Sat Flow, veh/h	0	1492	35	1	1655	30	619	928	0	716	828	112
Grp Volume(v), veh/h	481	0	0	785	0	0	45	0	0	74	0	0
Grp Sat Flow(s),veh/h/ln	1527	0	0	1686	0	0	1547	0	0	1656	0	0
Q Serve(g_s), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.0
Cycle Q Clear(g_c), s	6.3	0.0	0.0	12.2	0.0	0.0	0.9	0.0	0.0	1.4	0.0	0.0
Prop In Lane	0.00		0.02	0.00		0.02	0.40		0.00	0.43		0.07
Lane Grp Cap(c), veh/h	974	0	0	1064	0	0	262	0	0	273	0	0
V/C Ratio(X)	0.49	0.00	0.00	0.74	0.00	0.00	0.17	0.00	0.00	0.27	0.00	0.00
Avail Cap(c_a), veh/h	1679	0	0	1842	0	0	557	0	0	594	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	4.0	0.0	0.0	5.2	0.0	0.0	13.9	0.0	0.0	14.2	0.0	0.0
Incr Delay (d2), s/veh	0.4	0.0	0.0	1.0	0.0	0.0	0.3	0.0	0.0	0.5	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(95%),veh/ln	5.1	0.0	0.0	10.2	0.0	0.0	0.7	0.0	0.0	1.2	0.0	0.0
LnGrp Delay(d),s/veh	4.4	0.0	0.0	6.2	0.0	0.0	14.2	0.0	0.0	14.7	0.0	0.0
LnGrp LOS	A			A			B			B		
Approach Vol, veh/h		481			785			45			74	
Approach Delay, s/veh		4.4			6.2			14.2			14.7	
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		8.3		24.7		8.3		24.7
Change Period (Y+Rc), s		6.0		6.0		6.0		6.0
Max Green Setting (Gmax), s		9.0		34.0		9.0		34.0
Max Q Clear Time (g_c+I1), s		2.9		8.3		3.4		14.2
Green Ext Time (p_c), s		0.1		4.8		0.1		4.5

Intersection Summary	
HCM 2010 Ctrl Delay	6.3
HCM 2010 LOS	A

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	23	331	82	6	568	4	67	24	2	2	40	57
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	12	12	12	12	11	11	11	14	14	14
Grade (%)		0%			-1%			7%			-1%	
Storage Length (ft)	175		0	0		0	0		0	0		0
Storage Lanes	1		0	0		0	0		0	0		0
Taper Length (ft)	75			75			75			75		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.970			0.999			0.998			0.922	
Flt Protected	0.950							0.965			0.999	
Satd. Flow (prot)	1049	1581	0	0	1707	0	0	1514	0	0	1486	0
Flt Permitted	0.407				0.995			0.710			0.992	
Satd. Flow (perm)	449	1581	0	0	1698	0	0	1114	0	0	1475	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		41			1			2			70	
Link Speed (mph)		55			55			40			40	
Link Distance (ft)		1228			918			354			317	
Travel Time (s)		15.2			11.4			6.0			5.4	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	63%	11%	8%	0%	6%	0%	3%	18%	0%	0%	27%	15%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	28	404	100	7	693	5	82	29	2	2	49	70
Shared Lane Traffic (%)												
Lane Group Flow (vph)	28	504	0	0	705	0	0	113	0	0	121	0
Number of Detectors	1	1		1	1		1	1		1	1	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	30	30		30	30		30	30		30	30	
Trailing Detector (ft)	-10	-10		-10	-10		-10	-10		-10	-10	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Minimum Split (s)	15.0	15.0		15.0	15.0		15.0	15.0		15.0	15.0	
Total Split (s)	34.0	34.0		34.0	34.0		16.0	16.0		16.0	16.0	
Total Split (%)	68.0%	68.0%		68.0%	68.0%		32.0%	32.0%		32.0%	32.0%	
Maximum Green (s)	28.0	28.0		28.0	28.0		10.0	10.0		10.0	10.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0			0.0			0.0			0.0	
Total Lost Time (s)	6.0	6.0			6.0			6.0			6.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Minimum Gap (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Time Before Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Time To Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Recall Mode	Min	Min		Min	Min		None	None		None	None	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
v/c Ratio	0.10	0.49			0.65			0.51			0.35	
Control Delay	6.4	8.1			11.8			26.9			12.1	
Queue Delay	0.0	0.0			0.0			0.0			0.0	
Total Delay	6.4	8.1			11.8			26.9			12.1	
Queue Length 50th (ft)	3	73			134			26			11	
Queue Length 95th (ft)	12	119			204			62			41	
Internal Link Dist (ft)		1148			838			274			237	
Turn Bay Length (ft)	175											
Base Capacity (vph)	292	1042			1104			260			396	
Starvation Cap Reductn	0	0			0			0			0	
Spillback Cap Reductn	0	0			0			0			0	
Storage Cap Reductn	0	0			0			0			0	
Reduced v/c Ratio	0.10	0.48			0.64			0.43			0.31	

Intersection Summary	
Area Type:	Other
Cycle Length: 50	
Actuated Cycle Length: 44.7	
Natural Cycle: 50	
Control Type: Actuated-Uncoordinated	

Splits and Phases: 9: Beacon Light Rd/Rabbittown Rd & US 220



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	23	331	82	6	568	4	67	24	2	2	40	57
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	1104	1630	1800	1809	1708	1809	1737	1626	1737	1881	1573	1881
Adj Flow Rate, veh/h	28	404	100	7	693	5	82	29	2	2	49	70
Adj No. of Lanes	1	1	0	0	1	0	0	1	0	0	1	0
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82
Percent Heavy Veh, %	63	11	11	6	6	6	18	18	18	27	27	27
Cap, veh/h	410	655	162	108	874	6	314	55	3	108	78	109
Arrive On Green	0.52	0.52	0.52	0.52	0.52	0.52	0.13	0.13	0.13	0.13	0.13	0.13
Sat Flow, veh/h	466	1263	313	4	1685	12	1007	418	26	12	589	825
Grp Volume(v), veh/h	28	0	504	705	0	0	113	0	0	121	0	0
Grp Sat Flow(s),veh/h/ln	466	0	1575	1702	0	0	1451	0	0	1426	0	0
Q Serve(g_s), s	0.0	0.0	7.8	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.0	0.0
Cycle Q Clear(g_c), s	1.5	0.0	7.8	11.7	0.0	0.0	2.3	0.0	0.0	2.8	0.0	0.0
Prop In Lane	1.00		0.20	0.01		0.01	0.73		0.02	0.02		0.58
Lane Grp Cap(c), veh/h	410	0	817	988	0	0	373	0	0	295	0	0
V/C Ratio(X)	0.07	0.00	0.62	0.71	0.00	0.00	0.30	0.00	0.00	0.41	0.00	0.00
Avail Cap(c_a), veh/h	548	0	1283	1489	0	0	573	0	0	521	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	4.3	0.0	5.9	6.8	0.0	0.0	13.9	0.0	0.0	14.1	0.0	0.0
Incr Delay (d2), s/veh	0.1	0.0	0.8	1.0	0.0	0.0	0.5	0.0	0.0	0.9	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(95%),veh/ln	0.3	0.0	6.1	9.4	0.0	0.0	1.9	0.0	0.0	2.1	0.0	0.0
LnGrp Delay(d),s/veh	4.4	0.0	6.6	7.8	0.0	0.0	14.4	0.0	0.0	15.0	0.0	0.0
LnGrp LOS	A		A	A			B			B		
Approach Vol, veh/h		532			705			113			121	
Approach Delay, s/veh		6.5			7.8			14.4			15.0	
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		10.6		23.8		10.6		23.8
Change Period (Y+Rc), s		6.0		6.0		6.0		6.0
Max Green Setting (Gmax), s		10.0		28.0		10.0		28.0
Max Q Clear Time (g_c+I1), s		4.3		9.8		4.8		13.7
Green Ext Time (p_c), s		0.4		4.5		0.3		4.2

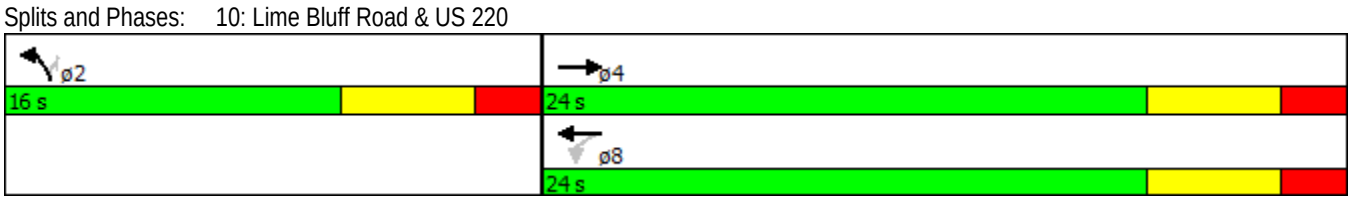
Intersection Summary	
HCM 2010 Ctrl Delay	8.4
HCM 2010 LOS	A

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	306	122	76	468	54	63
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	13	13	13	13	12	12
Grade (%)	3%			1%	5%	
Storage Length (ft)		0	125		75	0
Storage Lanes		0	1		1	1
Taper Length (ft)			75		75	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.962					0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	1622	0	1767	1860	1660	1575
Flt Permitted			0.476		0.950	
Satd. Flow (perm)	1622	0	886	1860	1660	1575
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	68					71
Link Speed (mph)	55			55	35	
Link Distance (ft)	1476			1319	549	
Travel Time (s)	18.3			16.4	10.7	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	19%	4%	5%	5%	6%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	344	137	85	526	61	71
Shared Lane Traffic (%)						
Lane Group Flow (vph)	481	0	85	526	61	71
Number of Detectors	1		1	1	1	1
Detector Template	Thru		Left	Thru	Left	Right
Leading Detector (ft)	30		30	30	30	30
Trailing Detector (ft)	-10		-10	-10	-10	-10
Turn Type	NA		Perm	NA	Prot	Perm
Protected Phases	4			8	2	
Permitted Phases			8			2
Detector Phase	4		8	8	2	2
Switch Phase						
Minimum Initial (s)	3.0		3.0	3.0	3.0	3.0
Minimum Split (s)	15.0		15.0	15.0	15.0	15.0
Total Split (s)	24.0		24.0	24.0	16.0	16.0
Total Split (%)	60.0%		60.0%	60.0%	40.0%	40.0%
Maximum Green (s)	18.0		18.0	18.0	10.0	10.0
Yellow Time (s)	4.0		4.0	4.0	4.0	4.0
All-Red Time (s)	2.0		2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-1.0		-1.0	-1.0	-1.0	-1.0
Total Lost Time (s)	5.0		5.0	5.0	5.0	5.0

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Minimum Gap (s)	3.0		3.0	3.0	3.0	3.0
Time Before Reduce (s)	0.0		0.0	0.0	0.0	0.0
Time To Reduce (s)	0.0		0.0	0.0	0.0	0.0
Recall Mode	Min		Min	Min	None	None
Walk Time (s)						
Flash Dont Walk (s)						
Pedestrian Calls (#/hr)						
v/c Ratio	0.41		0.13	0.39	0.16	0.17
Control Delay	6.0		5.6	6.4	13.3	5.3
Queue Delay	0.0		0.0	0.0	0.0	0.0
Total Delay	6.0		5.6	6.4	13.3	5.3
Queue Length 50th (ft)	47		8	62	12	0
Queue Length 95th (ft)	113		26	133	29	19
Internal Link Dist (ft)	1396			1239	469	
Turn Bay Length (ft)			125		75	
Base Capacity (vph)	1182		635	1334	526	548
Starvation Cap Reductn	0		0	0	0	0
Spillback Cap Reductn	0		0	0	0	0
Storage Cap Reductn	0		0	0	0	0
Reduced v/c Ratio	0.41		0.13	0.39	0.12	0.13

Intersection Summary	
Area Type:	Other
Cycle Length: 40	
Actuated Cycle Length: 35.7	
Natural Cycle: 40	
Control Type: Actuated-Uncoordinated	

Splits and Phases: 10: Lime Bluff Road & US 220



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	306	122	76	468	54	63
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	1697	1946	1872	1872	1748	1852
Adj Flow Rate, veh/h	344	137	85	526	61	71
Adj No. of Lanes	1	0	1	1	1	1
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	19	19	5	5	6	0
Cap, veh/h	575	229	562	933	210	198
Arrive On Green	0.50	0.46	0.50	0.50	0.13	0.13
Sat Flow, veh/h	1155	460	966	1872	1664	1575
Grp Volume(v), veh/h	0	481	85	526	61	71
Grp Sat Flow(s),veh/h/ln	0	1615	966	1872	1664	1575
Q Serve(g_s), s	0.0	5.7	1.8	5.2	0.9	1.1
Cycle Q Clear(g_c), s	0.0	5.7	7.0	5.2	0.9	1.1
Prop In Lane		0.28	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	0	804	562	933	210	198
V/C Ratio(X)	0.00	0.60	0.15	0.56	0.29	0.36
Avail Cap(c_a), veh/h	0	1154	771	1338	688	651
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	4.9	7.1	4.7	10.5	10.6
Incr Delay (d2), s/veh	0.0	0.7	0.1	0.5	0.8	1.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.0	4.7	0.9	5.0	0.8	1.0
LnGrp Delay(d),s/veh	0.0	5.6	7.2	5.2	11.3	11.7
LnGrp LOS		A	A	A	B	B
Approach Vol, veh/h	481			611	132	
Approach Delay, s/veh	5.6			5.5	11.5	
Approach LOS	A			A	B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4				8
Phs Duration (G+Y+Rc), s		8.4		18.2				18.2
Change Period (Y+Rc), s		6.0		6.0				6.0
Max Green Setting (Gmax), s		10.0		18.0				18.0
Max Q Clear Time (g_c+I1), s		3.6		7.7				9.5
Green Ext Time (p_c), s		0.2		3.0				2.7

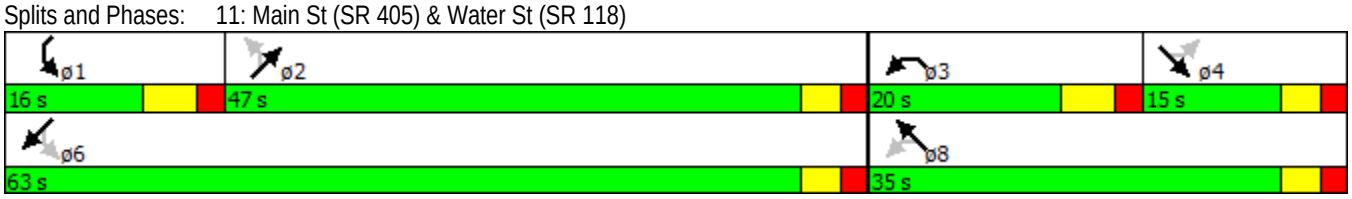
Intersection Summary	
HCM 2010 Ctrl Delay	6.2
HCM 2010 LOS	A

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	19	46	29	212	126	179	19	293	144	151	496	19
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	15	15	15	13	13	13	14	14	14	14	14	14
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	75		0	125		0	75		0	75		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	75			75			75			75		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.942			0.912			0.951			0.995	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1775	1743	0	1683	1543	0	1346	1557	0	1282	1790	0
Flt Permitted	0.555			0.590			0.381			0.206		
Satd. Flow (perm)	1037	1743	0	1045	1543	0	540	1557	0	278	1790	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		25			35			25			25	
Link Distance (ft)		390			506			1477			648	
Travel Time (s)		10.6			9.9			40.3			17.7	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	6%	7%	7%	5%	7%	12%	22%	12%	28%	28%	7%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)							0		0	0		0
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	21	52	33	238	142	201	21	329	162	170	557	21
Shared Lane Traffic (%)												
Lane Group Flow (vph)	21	85	0	238	343	0	21	491	0	170	578	0
Number of Detectors	1	1		1	1		1	1		1	1	
Detector Template	Left			Left			Left			Left		
Leading Detector (ft)	30	45		30	45		30	45		30	45	
Trailing Detector (ft)	-10	-5		-10	-5		-10	-5		-10	-5	
Turn Type	Perm	NA		pm+pt	NA		Perm	NA		pm+pt	NA	
Protected Phases		4		3	8			2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		3	8		2	2		1	6	
Switch Phase												
Minimum Initial (s)	10.0	10.0		3.0	10.0		10.0	10.0		3.0	10.0	
Minimum Split (s)	15.0	15.0		9.0	15.0		15.0	15.0		9.0	15.0	
Total Split (s)	15.0	15.0		20.0	35.0		47.0	47.0		16.0	63.0	
Total Split (%)	15.3%	15.3%		20.4%	35.7%		48.0%	48.0%		16.3%	64.3%	
Maximum Green (s)	10.0	10.0		14.0	30.0		42.0	42.0		10.0	58.0	
Yellow Time (s)	3.0	3.0		4.0	3.0		3.0	3.0		4.0	3.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	-1.0	-1.0		-1.0	-1.0		-1.0	-1.0		-1.0	-1.0	
Total Lost Time (s)	4.0	4.0		5.0	4.0		4.0	4.0		5.0	4.0	

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lead/Lag	Lag	Lag		Lead			Lag	Lag		Lead		
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Minimum Gap (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Time Before Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Time To Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Recall Mode	Max	Max		None	Max		Max	Max		None	Max	
Walk Time (s)	11.0	11.0			11.0		12.0	12.0			12.0	
Flash Dont Walk (s)	16.0	16.0			16.0		18.0	18.0			18.0	
Pedestrian Calls (#/hr)	0	0			0		0	0			0	
v/c Ratio	0.08	0.20		0.47	0.54		0.10	0.83		0.72	0.63	
Control Delay	34.8	36.1		27.1	29.0		25.3	46.7		35.8	23.7	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	34.8	36.1		27.1	29.0		25.3	46.7		35.8	23.7	
Queue Length 50th (ft)	12	50		119	187		10	329		70	297	
Queue Length 95th (ft)	33	93		182	275		29	#506		#134	410	
Internal Link Dist (ft)		310			426			1397			568	
Turn Bay Length (ft)	75			125			75			75		
Base Capacity (vph)	253	426		507	639		203	589		237	923	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.08	0.20		0.47	0.54		0.10	0.83		0.72	0.63	

Intersection Summary	
Area Type:	Other
Cycle Length: 98	
Actuated Cycle Length: 114.4	
Natural Cycle: 60	
Control Type: Actuated-Uncoordinated	
# 95th percentile volume exceeds capacity, queue may be longer.	
Queue shown is maximum after two cycles.	

Splits and Phases: 11: Main St (SR 405) & Water St (SR 118)



Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (veh/h)	19	46	29	212	126	179	19	293	144	151	496	19
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	0.90	1.00	1.00	0.90
Adj Sat Flow, veh/h/ln	1766	1750	1872	1783	1703	1872	1534	1596	1872	1462	1754	1872
Adj Flow Rate, veh/h	21	52	33	238	142	201	21	329	162	170	557	21
Adj No. of Lanes	1	1	0	1	1	0	1	1	0	1	1	0
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	6	7	7	5	7	7	22	12	12	28	7	7
Cap, veh/h	191	114	73	423	202	286	345	415	204	320	910	34
Arrive On Green	0.11	0.11	0.10	0.15	0.32	0.31	0.46	0.46	0.45	0.09	0.60	0.59
Sat Flow, veh/h	1034	1002	636	1698	639	904	724	910	448	1393	1511	57
Grp Volume(v), veh/h	21	0	85	238	0	343	21	0	491	170	0	578
Grp Sat Flow(s),veh/h/ln	1034	0	1637	1698	0	1543	724	0	1358	1393	0	1568
Q Serve(g_s), s	1.8	0.0	4.8	11.3	0.0	19.2	1.8	0.0	30.2	5.8	0.0	22.8
Cycle Q Clear(g_c), s	1.8	0.0	4.8	11.3	0.0	19.2	9.8	0.0	30.2	5.8	0.0	22.8
Prop In Lane	1.00		0.39	1.00		0.59	1.00		0.33	1.00		0.04
Lane Grp Cap(c), veh/h	191	0	187	423	0	488	345	0	620	320	0	944
V/C Ratio(X)	0.11	0.00	0.46	0.56	0.00	0.70	0.06	0.00	0.79	0.53	0.00	0.61
Avail Cap(c_a), veh/h	191	0	187	427	0	488	345	0	620	344	0	944
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	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	39.3	0.0	40.8	28.9	0.0	29.7	19.7	0.0	22.8	16.9	0.0	12.3
Incr Delay (d2), s/veh	1.2	0.0	7.8	1.7	0.0	8.2	0.3	0.0	10.0	1.4	0.0	3.0
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(95%),veh/ln	1.0	0.0	4.6	9.3	0.0	14.2	0.7	0.0	19.0	4.1	0.0	15.9
LnGrp Delay(d),s/veh	40.4	0.0	48.6	30.6	0.0	37.9	20.1	0.0	32.9	18.3	0.0	15.3
LnGrp LOS	D		D	C		D	C		C	B		B
Approach Vol, veh/h		106			581			512			748	
Approach Delay, s/veh		46.9			34.9			32.3			15.9	
Approach LOS		D			C			C			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4		6		8
Phs Duration (G+Y+Rc), s	14.3	48.7	19.8	15.2		63.0		35.0
Change Period (Y+Rc), s	6.0	5.0	6.0	5.0		5.0		5.0
Max Green Setting (Gmax), s	10.0	42.0	14.0	10.0		58.0		30.0
Max Q Clear Time (g_c+I1), s	8.3	32.2	13.8	6.8		24.8		21.2
Green Ext Time (p_c), s	0.1	3.7	0.0	0.6		5.7		1.3

Intersection Summary	
HCM 2010 Ctrl Delay	27.6
HCM 2010 LOS	C

Notes

User approved pedestrian interval to be less than phase max green.

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	1059	89	39	1717	151	89
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	11	10	10
Grade (%)	-1%			1%	-4%	
Storage Length (ft)		225	150		150	0
Storage Lanes		1	1		1	1
Taper Length (ft)			75		75	
Lane Util. Factor	0.91	1.00	1.00	0.95	1.00	1.00
Ped Bike Factor						
Frt		0.850				0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	4581	1255	1736	3245	1375	1537
Flt Permitted			0.148		0.950	
Satd. Flow (perm)	4581	1255	270	3245	1375	1537
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		113				109
Link Speed (mph)	50			55	35	
Link Distance (ft)	420			676	522	
Travel Time (s)	5.7			8.4	10.2	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.79	0.79	0.79	0.79	0.79	0.79
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	10%	25%	0%	7%	25%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	1341	113	49	2173	191	113
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1341	113	49	2173	191	113
Number of Detectors	1	1	1	1	1	1
Detector Template	Thru	Right	Left	Thru	Left	Right
Leading Detector (ft)	30	30	30	30	30	30
Trailing Detector (ft)	-10	-10	-10	-10	-10	-10
Turn Type	NA	Perm	pm+pt	NA	Prot	Perm
Protected Phases	4		3	8	2	
Permitted Phases		4	8			2
Detector Phase	4	4	3	8	2	2
Switch Phase						
Minimum Initial (s)	3.0	3.0	3.0	3.0	3.0	3.0
Minimum Split (s)	15.0	15.0	9.0	15.0	15.0	15.0
Total Split (s)	60.0	60.0	9.0	69.0	21.0	21.0
Total Split (%)	66.7%	66.7%	10.0%	76.7%	23.3%	23.3%
Maximum Green (s)	54.0	54.0	3.0	63.0	15.0	15.0
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lead/Lag	Lag	Lag	Lead			
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Minimum Gap (s)	3.0	3.0	3.0	3.0	3.0	3.0
Time Before Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0
Time To Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0
Recall Mode	Min	Min	Min	None	None	None
Walk Time (s)						
Flash Dont Walk (s)						
Pedestrian Calls (#/hr)						
v/c Ratio	0.49	0.14	0.21	0.96	0.85	0.33
Control Delay	10.9	2.0	6.2	25.0	68.5	10.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	10.9	2.0	6.2	25.0	68.5	10.4
Queue Length 50th (ft)	145	0	7	505	106	2
Queue Length 95th (ft)	147	14	15	458	#180	34
Internal Link Dist (ft)	340			596	442	
Turn Bay Length (ft)		225	150		150	
Base Capacity (vph)	2850	823	238	2355	237	356
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.47	0.14	0.21	0.92	0.81	0.32

Intersection Summary	
Area Type:	Other
Cycle Length: 90	
Actuated Cycle Length: 87.2	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
# 95th percentile volume exceeds capacity, queue may be longer.	
Queue shown is maximum after two cycles.	

Splits and Phases: 12: Industrial Park Rd & John Brady Dr



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	1059	89	39	1717	151	89
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	1736	1528	1890	1767	1550	1938
Adj Flow Rate, veh/h	1341	113	49	2173	191	113
Adj No. of Lanes	3	1	1	2	1	1
Peak Hour Factor	0.79	0.79	0.79	0.79	0.79	0.79
Percent Heavy Veh, %	10	25	0	7	25	0
Cap, veh/h	2861	784	321	2378	224	250
Arrive On Green	0.60	0.60	0.03	0.71	0.15	0.15
Sat Flow, veh/h	4895	1298	1800	3445	1477	1647
Grp Volume(v), veh/h	1341	113	49	2173	191	113
Grp Sat Flow(s),veh/h/ln	1580	1298	1800	1678	1477	1647
Q Serve(g_s), s	13.4	3.2	0.8	46.0	10.8	5.4
Cycle Q Clear(g_c), s	13.4	3.2	0.8	46.0	10.8	5.4
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	2861	784	321	2378	224	250
V/C Ratio(X)	0.47	0.14	0.15	0.91	0.85	0.45
Avail Cap(c_a), veh/h	2977	816	321	2460	258	287
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	9.4	7.4	6.6	10.4	35.5	33.2
Incr Delay (d2), s/veh	0.1	0.1	0.2	5.7	20.8	1.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	9.8	2.1	0.7	30.5	9.6	4.6
LnGrp Delay(d),s/veh	9.5	7.5	6.9	16.1	56.3	34.5
LnGrp LOS	A	A	A	B	E	C
Approach Vol, veh/h	1454			2222	304	
Approach Delay, s/veh	9.4			15.9	48.2	
Approach LOS	A			B	D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4				8
Phs Duration (G+Y+Rc), s		19.1	9.0	57.9				66.9
Change Period (Y+Rc), s		6.0	6.0	6.0				6.0
Max Green Setting (Gmax), s		15.0	3.0	54.0				63.0
Max Q Clear Time (g_c+I1), s		12.8	2.8	15.4				48.0
Green Ext Time (p_c), s		0.2	0.0	27.5				12.9

Intersection Summary	
HCM 2010 Ctrl Delay	16.0
HCM 2010 LOS	B

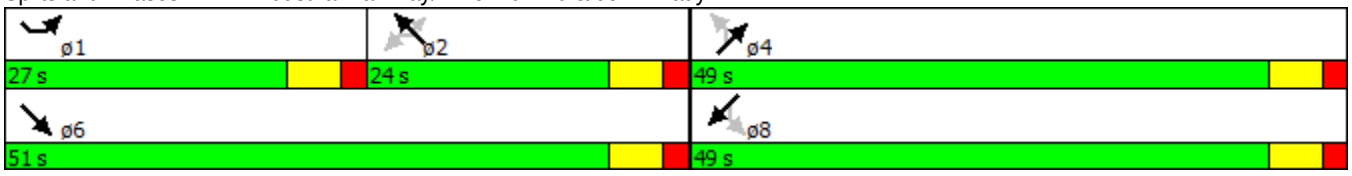
Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	690	419	32	19	819	63	21	31	9	110	40	903
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	11	11	11	11	11	11	16	16	16	11	11	11
Grade (%)		-2%			2%			2%			-1%	
Storage Length (ft)	275		0	0		150	0		0	150		0
Storage Lanes	2		0	1		1	0		0	1		0
Taper Length (ft)	75			75			75			75		
Lane Util. Factor	0.97	0.95	0.95	1.00	0.91	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.989				0.850		0.980			0.856	
Flt Protected	0.950			0.950				0.983		0.950		
Satd. Flow (prot)	3239	2989	0	1544	4566	1464	0	1433	0	1613	1388	0
Flt Permitted	0.950			0.465				0.388		0.712		
Satd. Flow (perm)	3239	2989	0	756	4566	1464	0	566	0	1209	1388	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		10				98		10			588	
Link Speed (mph)		50			50			25			50	
Link Distance (ft)		832			468			184			234	
Travel Time (s)		11.3			6.4			5.0			3.2	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	9%	30%	6%	3%	0%	55%	27%	20%	3%	5%	8%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	775	471	36	21	920	71	24	35	10	124	45	1015
Shared Lane Traffic (%)												
Lane Group Flow (vph)	775	507	0	21	920	71	0	69	0	124	1060	0
Number of Detectors	1	1		1	1	1	1	1		1	1	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (ft)	30	30		30	30	30	30	30		30	30	
Trailing Detector (ft)	-10	-10		-10	-10	-10	-10	-10		-10	-10	
Turn Type	Prot	NA		Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases	1	6			2			4			8	
Permitted Phases				2		2	4			8		
Detector Phase	1	6		2	2	2	4	4		8	8	
Switch Phase												
Minimum Initial (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Minimum Split (s)	9.0	15.0		15.0	15.0	15.0	15.0	15.0		15.0	15.0	
Total Split (s)	27.0	51.0		24.0	24.0	24.0	49.0	49.0		49.0	49.0	
Total Split (%)	27.0%	51.0%		24.0%	24.0%	24.0%	49.0%	49.0%		49.0%	49.0%	
Maximum Green (s)	21.0	45.0		18.0	18.0	18.0	43.0	43.0		43.0	43.0	
Yellow Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	-1.0	-1.0		-1.0	-1.0	-1.0		-1.0		-1.0	-1.0	
Total Lost Time (s)	5.0	5.0		5.0	5.0	5.0		5.0		5.0	5.0	

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lead/Lag	Lead			Lag	Lag	Lag						
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Minimum Gap (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Time Before Reduce (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Time To Reduce (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Recall Mode	None	Min		Min	Min	Min	None	None		None	None	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
v/c Ratio	1.09	0.37		0.15	1.06	0.20		0.27		0.23	1.13	
Control Delay	98.2	18.1		36.8	87.9	4.9		19.0		19.0	85.8	
Queue Delay	0.0	0.0		0.0	0.0	0.0		0.0		0.0	0.0	
Total Delay	98.2	18.1		36.8	87.9	4.9		19.0		19.0	85.8	
Queue Length 50th (ft)	~288	104		11	~237	0		23		48	~562	
Queue Length 95th (ft)	#397	143		33	#318	21		56		87	#792	
Internal Link Dist (ft)		752			388			104			154	
Turn Bay Length (ft)	275					150				150		
Base Capacity (vph)	712	1380		143	867	357		254		531	940	
Starvation Cap Reductn	0	0		0	0	0		0		0	0	
Spillback Cap Reductn	0	0		0	0	0		0		0	0	
Storage Cap Reductn	0	0		0	0	0		0		0	0	
Reduced v/c Ratio	1.09	0.37		0.15	1.06	0.20		0.27		0.23	1.13	

Intersection Summary	
Area Type:	Other
Cycle Length: 100	
Actuated Cycle Length: 100	
Natural Cycle: 100	
Control Type: Actuated-Uncoordinated	

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

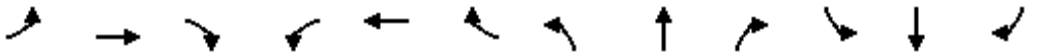
Splits and Phases: 14: Industrial Parkway/Lime Bluff Rd & John Brady Dr



Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (veh/h)	690	419	32	19	819	63	21	31	9	110	40	903
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1818	1645	1818	1681	1730	1782	1853	1365	1853	1756	1677	1809
Adj Flow Rate, veh/h	775	471	36	21	920	71	24	35	10	124	45	0
Adj No. of Lanes	2	2	0	1	3	1	0	1	0	1	1	0
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	0	9	9	6	3	0	27	27	27	3	5	5
Cap, veh/h	1017	1993	152	369	1351	433	125	118	27	338	247	0
Arrive On Green	0.30	0.68	0.66	0.29	0.29	0.29	0.13	0.15	0.13	0.15	0.15	0.00
Sat Flow, veh/h	3359	2944	224	847	4723	1515	270	800	181	1349	1677	0
Grp Volume(v), veh/h	775	249	258	21	920	71	69	0	0	124	45	0
Grp Sat Flow(s),veh/h/ln	1679	1563	1606	847	1574	1515	1252	0	0	1349	1677	0
Q Serve(g_s), s	11.9	3.5	3.5	1.0	9.8	2.0	0.1	0.0	0.0	2.1	1.3	0.0
Cycle Q Clear(g_c), s	11.9	3.5	3.5	1.0	9.8	2.0	2.7	0.0	0.0	4.3	1.3	0.0
Prop In Lane	1.00		0.14	1.00		1.00	0.35		0.14	1.00		0.00
Lane Grp Cap(c), veh/h	1017	1058	1087	369	1351	433	248	0	0	338	247	0
V/C Ratio(X)	0.76	0.24	0.24	0.06	0.68	0.16	0.28	0.00	0.00	0.37	0.18	0.00
Avail Cap(c_a), veh/h	1298	1263	1298	409	1577	506	1004	0	0	1182	1296	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	18.0	3.5	3.6	14.9	18.0	15.2	22.0	0.0	0.0	22.4	21.2	0.0
Incr Delay (d2), s/veh	2.0	0.1	0.1	0.1	1.0	0.2	0.6	0.0	0.0	0.7	0.3	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(95%),veh/ln	9.7	2.7	2.8	0.4	7.8	1.5	1.9	0.0	0.0	3.3	1.1	0.0
LnGrp Delay(d),s/veh	20.0	3.7	3.7	14.9	19.0	15.4	22.6	0.0	0.0	23.1	21.6	0.0
LnGrp LOS	C	A	A	B	B	B	C			C	C	
Approach Vol, veh/h		1282			1012			69			169	
Approach Delay, s/veh		13.6			18.7			22.6			22.7	
Approach LOS		B			B			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6		8
Phs Duration (G+Y+Rc), s	22.2	21.3		13.4		43.5		13.4
Change Period (Y+Rc), s	6.0	6.0		6.0		6.0		6.0
Max Green Setting (Gmax), s	21.0	18.0		43.0		45.0		43.0
Max Q Clear Time (g_c+I1), s	14.4	12.3		4.7		6.0		6.8
Green Ext Time (p_c), s	1.8	2.9		0.7		6.5		0.7

Intersection Summary	
HCM 2010 Ctrl Delay	16.5
HCM 2010 LOS	B



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	35	673	40	192	667	61	0	0	879	14	1	10
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1900	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	12	12	13	12	12	12	12	12	12	12
Grade (%)		-1%			1%			-3%			0%	
Storage Length (ft)	125		0	125		125	0		0	0		100
Storage Lanes	1		0	1		1	0		1	0		1
Taper Length (ft)	75			60			75			75		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.992				0.850			0.850			0.850
Flt Protected	0.950			0.950							0.955	
Satd. Flow (prot)	1685	1633	0	1547	1763	1492	0	1791	1425	0	1685	1500
Flt Permitted	0.152			0.114							0.851	
Satd. Flow (perm)	270	1633	0	186	1763	1492	0	1791	1425	0	1502	1500
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		4				34			158			27
Link Speed (mph)		35			35			25			35	
Link Distance (ft)		496			348			387			241	
Travel Time (s)		9.7			6.8			10.6			4.7	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.90	0.82	0.82	0.82	0.82	0.90	0.82	0.90	0.82	0.90	0.90	0.90
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	8%	41%	10%	5%	2%	0%	2%	9%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	39	821	49	234	813	68	0	0	1072	16	1	11
Shared Lane Traffic (%)												
Lane Group Flow (vph)	39	870	0	234	813	68	0	0	1072	0	17	11
Number of Detectors	1	1		1	1	1		1	1	1	1	1
Detector Template	Left	Thru		Left	Thru	Right		Thru	Right	Left	Thru	Right
Leading Detector (ft)	30	30		30	30	30		30	30	30	30	30
Trailing Detector (ft)	-10	-10		-10	-10	-10		-10	-10	-10	-10	-10
Turn Type	Perm	NA		Perm	NA	Perm			Perm	Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8		8			2	6		6
Detector Phase	4	4		8	8	8		2	2	6	6	6
Switch Phase												
Minimum Initial (s)	3.0	3.0		3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0
Minimum Split (s)	15.0	15.0		15.0	15.0	15.0		15.0	15.0	15.0	15.0	15.0
Total Split (s)	72.0	72.0		72.0	72.0	72.0		48.0	48.0	48.0	48.0	48.0
Total Split (%)	60.0%	60.0%		60.0%	60.0%	60.0%		40.0%	40.0%	40.0%	40.0%	40.0%
Maximum Green (s)	66.0	66.0		66.0	66.0	66.0		42.0	42.0	42.0	42.0	42.0
Yellow Time (s)	4.0	4.0		4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0		2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-1.0	-1.0		-1.0	-1.0	-1.0		-1.0	-1.0		-1.0	-1.0
Total Lost Time (s)	5.0	5.0		5.0	5.0	5.0		5.0	5.0		5.0	5.0

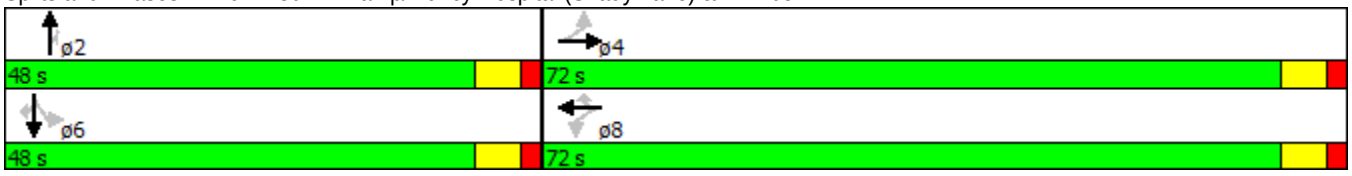
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0
Minimum Gap (s)	3.0	3.0		3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0
Time Before Reduce (s)	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0
Time To Reduce (s)	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0
Recall Mode	None	None		None	None	None		Min	Min	Min	Min	Min
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
v/c Ratio	0.26	0.95		2.27	0.83	0.08			1.75		0.03	0.02
Control Delay	19.4	46.2		621.9	30.6	7.2			369.0		25.4	2.7
Queue Delay	0.0	0.0		0.0	0.0	0.0			0.0		0.0	0.0
Total Delay	19.4	46.2		621.9	30.6	7.2			369.0		25.4	2.7
Queue Length 50th (ft)	15	605		~216	493	11			~1163		8	0
Queue Length 95th (ft)	41	#765		#332	570	33			#1243		25	5
Internal Link Dist (ft)		416			268			307			161	
Turn Bay Length (ft)	125			125		125						100
Base Capacity (vph)	150	913		103	984	848			612		538	554
Starvation Cap Reductn	0	0		0	0	0			0		0	0
Spillback Cap Reductn	0	0		0	0	0			0		0	0
Storage Cap Reductn	0	0		0	0	0			0		0	0
Reduced v/c Ratio	0.26	0.95		2.27	0.83	0.08			1.75		0.03	0.02

Intersection Summary	
Area Type:	Other
Cycle Length: 120	
Actuated Cycle Length: 120	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	

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

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

Splits and Phases: 16: I-180 EB Ramp/Muncy Hospital (Shady Lane) & PA 405



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	35	673	40	192	667	61	0	0	879	14	1	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	1774	1647	1809	1628	1774	1756	0	1791	1676	1800	1765	1765
Adj Flow Rate, veh/h	39	821	49	234	813	68	0	0	0	16	1	0
Adj No. of Lanes	1	1	0	1	1	1	0	1	1	0	1	1
Peak Hour Factor	0.90	0.82	0.82	0.82	0.82	0.90	0.82	0.90	0.82	0.90	0.90	0.90
Percent Heavy Veh, %	2	8	8	10	5	2	0	2	9	2	2	2
Cap, veh/h	490	1209	72	429	1394	1173	0	112	89	177	9	94
Arrive On Green	0.79	0.79	0.77	0.79	0.79	0.79	0.00	0.00	0.00	0.05	0.06	0.00
Sat Flow, veh/h	631	1539	92	585	1774	1492	0	1791	1425	1130	140	1500
Grp Volume(v), veh/h	39	0	870	234	813	68	0	0	0	17	0	0
Grp Sat Flow(s),veh/h/ln	631	0	1630	585	1774	1492	0	1791	1425	1270	0	1500
Q Serve(g_s), s	1.7	0.0	16.2	19.9	12.0	0.7	0.0	0.0	0.0	0.6	0.0	0.0
Cycle Q Clear(g_c), s	13.7	0.0	16.2	35.6	12.0	0.7	0.0	0.0	0.0	1.1	0.0	0.0
Prop In Lane	1.00		0.06	1.00		1.00	0.00		1.00	0.94		1.00
Lane Grp Cap(c), veh/h	490	0	1281	429	1394	1173	0	112	89	166	0	94
V/C Ratio(X)	0.08	0.00	0.68	0.54	0.58	0.06	0.00	0.00	0.00	0.10	0.00	0.00
Avail Cap(c_a), veh/h	635	0	1655	564	1801	1515	0	1167	928	1008	0	977
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	1.00	1.00	0.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	5.5	0.0	3.3	11.3	2.8	1.6	0.0	0.0	0.0	30.1	0.0	0.0
Incr Delay (d2), s/veh	0.1	0.0	0.8	1.1	0.4	0.0	0.0	0.0	0.0	0.3	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(95%),veh/ln	0.5	0.0	11.7	6.0	9.7	0.5	0.0	0.0	0.0	0.6	0.0	0.0
LnGrp Delay(d),s/veh	5.6	0.0	4.0	12.3	3.2	1.6	0.0	0.0	0.0	30.3	0.0	0.0
LnGrp LOS	A		A	B	A	A				C		
Approach Vol, veh/h		909			1115			0			17	
Approach Delay, s/veh		4.1			5.0			0.0			30.3	
Approach LOS		A			A						C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		9.1		56.9		9.1		56.9
Change Period (Y+Rc), s		6.0		6.0		6.0		6.0
Max Green Setting (Gmax), s		42.0		66.0		42.0		66.0
Max Q Clear Time (g_c+I1), s		0.0		18.2		3.1		38.1
Green Ext Time (p_c), s		0.0		15.2		0.0		12.7

Intersection Summary	
HCM 2010 Ctrl Delay	4.8
HCM 2010 LOS	A

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	1317	234	0	563	690	38	0	233	0	0	0
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	11	12	12	12	12	12	12	12	12	12
Grade (%)		-1%			-1%			-4%			-2%	
Storage Length (ft)	0		0	0		115	0		0	0		0
Storage Lanes	0		1	0		1	1		0	0		0
Taper Length (ft)	75			75			75			75		
Lane Util. Factor	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt			0.850			0.850		0.850				
Flt Protected							0.950					
Satd. Flow (prot)	0	3183	1364	0	1691	1464	1187	1210	0	0	0	0
Flt Permitted							0.950					
Satd. Flow (perm)	0	3183	1364	0	1691	1464	1187	1210	0	0	0	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			216			339		480				
Link Speed (mph)		45			45			25			25	
Link Distance (ft)		758			636			290			200	
Travel Time (s)		11.5			9.6			7.9			5.5	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	8%	9%	0%	7%	5%	47%	0%	29%	0%	0%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	0	1416	252	0	605	742	41	0	251	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1416	252	0	605	742	41	251	0	0	0	0
Number of Detectors		1	1		1	1	1	1				
Detector Template		Thru	Right		Thru	Right	Left	Thru				
Leading Detector (ft)		30	30		30	30	30	30				
Trailing Detector (ft)		-10	-10		-10	-10	-10	-10				
Turn Type		NA	Perm		NA	Perm	Perm	NA				
Protected Phases		2			6			4				
Permitted Phases			2			6	4					
Detector Phase		2	2		6	6	4	4				
Switch Phase												
Minimum Initial (s)		3.0	3.0		3.0	3.0	3.0	3.0				
Minimum Split (s)		15.0	15.0		15.0	15.0	15.0	15.0				
Total Split (s)		53.0	53.0		42.0	42.0	15.0	15.0				
Total Split (%)		48.2%	48.2%		38.2%	38.2%	13.6%	13.6%				
Maximum Green (s)		47.0	47.0		36.0	36.0	9.0	9.0				
Yellow Time (s)		4.0	4.0		4.0	4.0	4.0	4.0				
All-Red Time (s)		2.0	2.0		2.0	2.0	2.0	2.0				
Lost Time Adjust (s)		-1.0	-1.0		-1.0	-1.0	0.0	-1.0				
Total Lost Time (s)		5.0	5.0		5.0	5.0	6.0	5.0				

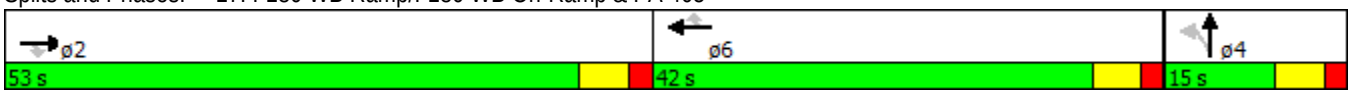
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)		3.0	3.0		3.0	3.0	3.0	3.0				
Minimum Gap (s)		3.0	3.0		3.0	3.0	3.0	3.0				
Time Before Reduce (s)		0.0	0.0		0.0	0.0	0.0	0.0				
Time To Reduce (s)		0.0	0.0		0.0	0.0	0.0	0.0				
Recall Mode		Min	Min		Min	Min	None	None				
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
v/c Ratio		1.01	0.35		1.06	1.03	0.47	0.46				
Control Delay		58.1	5.5		89.4	62.3	65.8	2.9				
Queue Delay		0.0	0.0		0.0	0.0	0.0	0.0				
Total Delay		58.1	5.5		89.4	62.3	65.8	2.9				
Queue Length 50th (ft)		~559	14		~472	~393	28	0				
Queue Length 95th (ft)		#696	65		#689	#627	65	0				
Internal Link Dist (ft)		678			556			210			120	
Turn Bay Length (ft)						115						
Base Capacity (vph)		1400	720		573	720	98	547				
Starvation Cap Reductn		0	0		0	0	0	0				
Spillback Cap Reductn		0	0		0	0	0	0				
Storage Cap Reductn		0	0		0	0	0	0				
Reduced v/c Ratio		1.01	0.35		1.06	1.03	0.42	0.46				

Intersection Summary	
Area Type:	Other
Cycle Length: 110	
Actuated Cycle Length: 109.1	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	

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

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

Splits and Phases: 17: I-180 WB Ramp/I-180 WB On-Ramp & PA 405



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	1317	234	0	563	690	38	0	233	0	0	0
Number	5	2	12	1	6	16	7	4	14			
Initial Q (Qb), veh	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			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	0	1675	1660	0	1691	1723	1249	1423	1836			
Adj Flow Rate, veh/h	0	1416	0	0	605	0	41	0	208			
Adj No. of Lanes	0	2	1	0	1	1	1	1	0			
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93			
Percent Heavy Veh, %	0	8	9	0	7	5	47	0	47			
Cap, veh/h	0	1905	844	0	1012	877	215	0	243			
Arrive On Green	0.00	0.60	0.00	0.00	0.60	0.00	0.18	0.00	0.18			
Sat Flow, veh/h	0	3266	1411	0	1691	1464	1190	0	1210			
Grp Volume(v), veh/h	0	1416	0	0	605	0	41	0	208			
Grp Sat Flow(s),veh/h/ln	0	1591	1411	0	1691	1464	1190	0	1210			
Q Serve(g_s), s	0.0	16.0	0.0	0.0	11.1	0.0	1.5	0.0	8.3			
Cycle Q Clear(g_c), s	0.0	16.0	0.0	0.0	11.1	0.0	1.5	0.0	8.3			
Prop In Lane	0.00		1.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	0	1905	844	0	1012	877	215	0	243			
V/C Ratio(X)	0.00	0.74	0.00	0.00	0.60	0.00	0.19	0.00	0.86			
Avail Cap(c_a), veh/h	0	3066	1359	0	1256	1088	215	0	243			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.00	1.00	0.00	0.00	1.00	0.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	0.0	7.2	0.0	0.0	6.3	0.0	17.3	0.0	19.7			
Incr Delay (d2), s/veh	0.0	0.6	0.0	0.0	0.6	0.0	0.4	0.0	24.8			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(95%),veh/ln	0.0	11.4	0.0	0.0	8.9	0.0	0.9	0.0	7.9			
LnGrp Delay(d),s/veh	0.0	7.8	0.0	0.0	6.8	0.0	17.7	0.0	44.5			
LnGrp LOS		A			A		B		D			
Approach Vol, veh/h		1416			605			249				
Approach Delay, s/veh		7.8			6.8			40.1				
Approach LOS		A			A			D				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		
Phs Duration (G+Y+Rc), s		34.8		15.0		34.8		
Change Period (Y+Rc), s		6.0		6.0		6.0		
Max Green Setting (Gmax), s		47.0		9.0		36.0		
Max Q Clear Time (g_c+I1), s		18.5		10.3		13.6		
Green Ext Time (p_c), s		10.3		0.0		9.4		

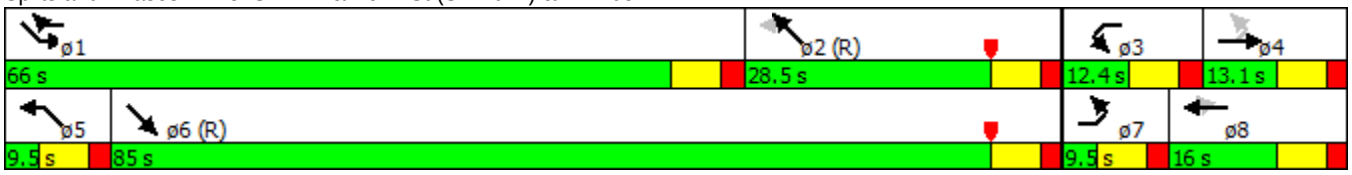
Intersection Summary	
HCM 2010 Ctrl Delay	11.1
HCM 2010 LOS	B

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Volume (vph)	19	122	14	122	152	1051	1376	136	26	17	297	227
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	11	11	11	11	11	11	11	11	11	11	11	11
Grade (%)		-2%			-1%			1%			-2%	
Storage Length (ft)	195		220	155		425	450		0	125		400
Storage Lanes	2		0	2		1	2		0	1		0
Taper Length (ft)	75			75			75			75		
Lane Util. Factor	1.00	0.95	0.95	0.97	1.00	1.00	0.97	1.00	1.00	1.00	0.95	0.95
Ped Bike Factor												
Frt		0.985				0.850		0.976			0.935	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1670	3121	0	2731	1681	1376	2659	1462	0	1670	2918	0
Flt Permitted	0.646			0.950			0.950			0.647		
Satd. Flow (perm)	1135	3121	0	2731	1681	1376	2659	1462	0	1137	2918	0
Right Turn on Red			No			Yes			Yes			Yes
Satd. Flow (RTOR)						200		17			76	
Link Speed (mph)		45			45			40			45	
Link Distance (ft)		670			586			1005			570	
Travel Time (s)		10.2			8.9			17.1			8.6	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	6%	0%	18%	4%	8%	20%	17%	8%	0%	7%	7%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	20	131	15	131	163	1130	1480	146	28	18	319	244
Shared Lane Traffic (%)												
Lane Group Flow (vph)	20	146	0	131	163	1130	1480	174	0	18	563	0
Number of Detectors	1	1		1	1	1	2	2		1	2	
Detector Template	Left	Thru		Left	Thru	Right				Left		
Leading Detector (ft)	40	30		40	30	30	160	160		30	310	
Trailing Detector (ft)	-10	-5		-10	-5	-5	-10	-10		-10	-10	
Turn Type	pm+pt	NA		Prot	NA	pm+ov	Prot	NA		pm+pt	NA	
Protected Phases	7	4		3	8	1	1	6		5	2	
Permitted Phases	4					8				2		
Detector Phase	7	4		3	8	1	1	6		5	2	
Switch Phase												
Minimum Initial (s)	3.0	5.0		3.0	5.0	3.0	3.0	5.0		3.0	5.0	
Minimum Split (s)	9.5	11.5		9.5	11.5	9.5	9.5	11.5		9.5	11.5	
Total Split (s)	9.5	13.1		12.4	16.0	66.0	66.0	85.0		9.5	28.5	
Total Split (%)	7.9%	10.9%		10.3%	13.3%	55.0%	55.0%	70.8%		7.9%	23.8%	
Maximum Green (s)	3.0	6.6		5.9	9.5	59.5	59.5	78.5		3.0	22.0	
Yellow Time (s)	4.5	4.5		4.5	4.5	4.5	4.5	4.5		4.5	4.5	
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	-1.0	-1.0		-1.0	-1.0	-1.0	-1.0	-1.0		-1.0	-1.0	
Total Lost Time (s)	5.5	5.5		5.5	5.5	5.5	5.5	5.5		5.5	5.5	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lead/Lag	Lead	Lag		Lead	Lag	Lead	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	5.0		3.0	5.0	3.0	3.0	4.0		3.0	4.0	
Minimum Gap (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Time Before Reduce (s)	0.0	0.0		0.0	0.0	0.0	0.0	9.0		0.0	9.0	
Time To Reduce (s)	0.0	0.0		0.0	0.0	0.0	0.0	18.0		0.0	18.0	
Recall Mode	None	None		None	None	None	None	C-Min		None	C-Min	
Walk Time (s)		12.0			12.0			14.0			14.0	
Flash Dont Walk (s)		18.0			18.0			21.0			21.0	
Pedestrian Calls (#/hr)		0			0			0			0	
v/c Ratio	0.16	0.74		0.83	0.72	1.12	1.10	0.17		0.07	0.91	
Control Delay	45.5	77.6		76.6	66.7	100.8	88.0	6.2		21.1	60.8	
Queue Delay	0.0	0.0		0.0	0.0	0.1	0.1	0.0		0.0	0.0	
Total Delay	45.5	77.6		76.6	66.7	100.9	88.1	6.2		21.1	60.8	
Queue Length 50th (ft)	13	59		56	135	~672	~672	31		7	198	
Queue Length 95th (ft)	36	#111		m#98	m#279	#1230	#808	71		20	#303	
Internal Link Dist (ft)		590			506			925			490	
Turn Bay Length (ft)	195			155		425	450			125		
Base Capacity (vph)	127	197		157	227	1005	1340	1042		273	620	
Starvation Cap Reductn	0	0		0	0	25	0	0		0	0	
Spillback Cap Reductn	0	0		0	0	0	19	0		0	0	
Storage Cap Reductn	0	0		0	0	0	0	0		0	0	
Reduced v/c Ratio	0.16	0.74		0.83	0.72	1.15	1.12	0.17		0.07	0.91	

Intersection Summary	
Area Type:	Other
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 0 (0%), Referenced to phase 2:NWTL and 6:SET, Start of Yellow, Master Intersection	
Natural Cycle: 120	
Control Type: Actuated-Coordinated	
~ Volume exceeds capacity, queue is theoretically infinite.	
Queue shown is maximum after two cycles.	
# 95th percentile volume exceeds capacity, queue may be longer.	
Queue shown is maximum after two cycles.	
m Volume for 95th percentile queue is metered by upstream signal.	

Splits and Phases: 18: SR 442 & Penn St (SR 2044) & PA 405



Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Volume (veh/h)	19	122	14	122	152	1051	1376	136	26	17	297	227
Number	7	4	14	3	8	18	1	6	16	5	2	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
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	1818	1725	1818	1533	1739	1675	1492	1550	1791	1818	1699	1818
Adj Flow Rate, veh/h	20	131	15	131	163	784	1480	146	17	18	319	190
Adj No. of Lanes	1	2	0	2	1	1	2	1	0	1	2	0
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	0	6	6	18	4	8	20	17	17	0	7	7
Cap, veh/h	103	188	21	163	169	856	1390	919	107	338	377	219
Arrive On Green	0.02	0.06	0.06	0.06	0.10	0.10	0.50	0.67	0.67	0.02	0.19	0.19
Sat Flow, veh/h	1731	2969	335	2832	1739	1424	2758	1363	159	1731	1966	1145
Grp Volume(v), veh/h	20	71	75	131	163	784	1480	0	163	18	261	248
Grp Sat Flow(s),veh/h/ln	1731	1639	1666	1416	1739	1424	1379	0	1522	1731	1614	1497
Q Serve(g_s), s	1.3	5.1	5.3	5.5	11.2	11.7	60.5	0.0	4.7	1.0	18.7	19.3
Cycle Q Clear(g_c), s	1.3	5.1	5.3	5.5	11.2	11.7	60.5	0.0	4.7	1.0	18.7	19.3
Prop In Lane	1.00		0.20	1.00		1.00	1.00		0.10	1.00		0.76
Lane Grp Cap(c), veh/h	103	104	106	163	169	856	1390	0	1026	338	309	287
V/C Ratio(X)	0.19	0.69	0.71	0.80	0.96	0.92	1.06	0.00	0.16	0.05	0.84	0.87
Avail Cap(c_a), veh/h	120	104	106	163	169	856	1390	0	1026	358	309	287
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.68	0.68	0.68	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	50.8	55.0	55.2	55.9	54.0	21.2	29.8	0.0	7.1	37.5	46.8	47.0
Incr Delay (d2), s/veh	0.9	22.1	23.8	17.8	47.6	11.0	43.3	0.0	0.3	0.1	23.4	27.7
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(95%),veh/ln	1.1	5.3	5.6	4.6	11.4	32.3	56.1	0.0	3.7	0.9	15.6	15.5
LnGrp Delay(d),s/veh	51.7	77.1	79.0	73.7	101.5	32.2	73.1	0.0	7.5	37.6	70.1	74.7
LnGrp LOS	D	E	E	E	F	C	F		A	D	E	E
Approach Vol, veh/h		166			1078			1643			527	
Approach Delay, s/veh		74.9			47.7			66.6			71.2	
Approach LOS		E			D			E			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	66.0	28.5	12.4	13.1	8.1	86.4	8.3	17.2
Change Period (Y+Rc), s	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5
Max Green Setting (Gmax), s	59.5	22.0	5.9	6.6	3.0	78.5	3.0	9.5
Max Q Clear Time (g_c+I1), s	63.0	21.8	8.0	7.6	3.5	6.7	3.8	14.2
Green Ext Time (p_c), s	0.0	0.1	0.0	0.0	0.0	16.3	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	61.7
HCM 2010 LOS	E

Notes

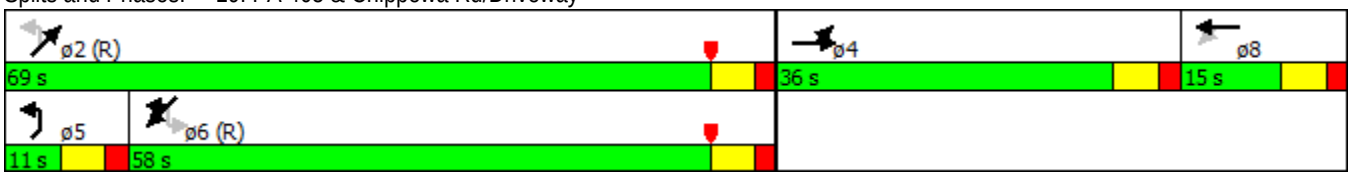
User approved pedestrian interval to be less than phase max green.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	739	0	51	0	0	0	95	2022	1	0	1502	836
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	13	13	13	12	12	12	12	12	11	11	11	11
Grade (%)		3%			2%			0%			1%	
Storage Length (ft)	225		0	0		0	100		0	75		225
Storage Lanes	2		0	0		0	1		0	1		1
Taper Length (ft)	75			75			75			75		
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	1.00	0.91	0.91	1.00	0.91	1.00
Ped Bike Factor												
Frt		0.850										0.850
Flt Protected	0.950						0.950					
Satd. Flow (prot)	3377	1416	0	0	1782	0	1710	4427	0	1731	4501	1363
Flt Permitted	0.950						0.086					
Satd. Flow (perm)	3377	1416	0	0	1782	0	155	4427	0	1731	4501	1363
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		237										816
Link Speed (mph)		40			35			45			45	
Link Distance (ft)		499			348			586			796	
Travel Time (s)		8.5			6.8			8.9			12.1	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	0%	10%	0%	0%	0%	0%	11%	0%	0%	5%	8%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	795	0	55	0	0	0	102	2174	1	0	1615	899
Shared Lane Traffic (%)												
Lane Group Flow (vph)	795	55	0	0	0	0	102	2175	0	0	1615	899
Number of Detectors	1	1		1	1		1	1		1	1	1
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (ft)	30	30		30	30		30	30		30	30	30
Trailing Detector (ft)	-10	-10		-10	-10		-10	-10		-10	-10	-10
Turn Type	Split	NA					pm+pt	NA		Perm	NA	Prot
Protected Phases	4	4			8		5	2			6	6
Permitted Phases				8			2			6		
Detector Phase	4	4		8	8		5	2		6	6	6
Switch Phase												
Minimum Initial (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Minimum Split (s)	15.0	15.0		15.0	15.0		9.0	15.0		15.0	15.0	15.0
Total Split (s)	36.0	36.0		15.0	15.0		11.0	69.0		58.0	58.0	58.0
Total Split (%)	30.0%	30.0%		12.5%	12.5%		9.2%	57.5%		48.3%	48.3%	48.3%
Maximum Green (s)	30.0	30.0		9.0	9.0		5.0	63.0		52.0	52.0	52.0
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)	-1.0	-1.0			-1.0		-1.0	-1.0		-1.0	-1.0	-1.0
Total Lost Time (s)	5.0	5.0			5.0		5.0	5.0		5.0	5.0	5.0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Lead/Lag							Lead			Lag	Lag	Lag
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Minimum Gap (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Time Before Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Time To Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Recall Mode	None	None		None	None		None	C-Min		C-Min	C-Min	C-Min
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
v/c Ratio	0.90	0.10					0.44	0.75			0.68	0.81
Control Delay	57.8	0.4					14.7	7.3			15.3	12.8
Queue Delay	0.0	0.5					0.0	2.9			0.3	7.3
Total Delay	57.8	0.8					14.7	10.2			15.7	20.1
Queue Length 50th (ft)	309	0					14	168			264	459
Queue Length 95th (ft)	#421	0					m14	m159			313	761
Internal Link Dist (ft)		419			268			506			716	
Turn Bay Length (ft)	225						100					225
Base Capacity (vph)	891	547					232	2905			2386	1106
Starvation Cap Reductn	0	0					0	598			0	171
Spillback Cap Reductn	0	286					0	0			273	0
Storage Cap Reductn	0	0					0	0			0	0
Reduced v/c Ratio	0.89	0.21					0.44	0.94			0.76	0.96

Intersection Summary	
Area Type:	Other
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 116 (97%), Referenced to phase 2:NETL and 6:SWTL, Start of Yellow	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
# 95th percentile volume exceeds capacity, queue may be longer.	
Queue shown is maximum after two cycles.	
m Volume for 95th percentile queue is metered by upstream signal.	

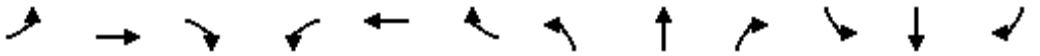
Splits and Phases: 19: PA 405 & Chippewa Rd/Driveway



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (veh/h)	739	0	51	0	0	0	95	2022	1	0	1502	836
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	1676	1844	1782	1782	1782	1800	1622	1800	1791	1706	1658
Adj Flow Rate, veh/h	795	0	55	0	0	0	102	2174	1	0	1615	576
Adj No. of Lanes	2	1	0	0	1	0	1	3	0	1	3	1
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	0	0	0	0	0	0	0	11	11	0	5	8
Cap, veh/h	875	0	366	0	1	0	207	3016	1	60	2646	801
Arrive On Green	0.26	0.00	0.25	0.00	0.00	0.00	0.05	0.66	0.65	0.00	0.57	0.57
Sat Flow, veh/h	3407	0	1425	0	1782	0	1714	4571	2	183	4657	1410
Grp Volume(v), veh/h	795	0	55	0	0	0	102	1404	771	0	1615	576
Grp Sat Flow(s),veh/h/ln	1703	0	1425	0	1782	0	1714	1476	1621	183	1552	1410
Q Serve(g_s), s	27.1	0.0	3.6	0.0	0.0	0.0	2.7	37.0	37.0	0.0	27.5	35.8
Cycle Q Clear(g_c), s	27.1	0.0	3.6	0.0	0.0	0.0	2.7	37.0	37.0	0.0	27.5	35.8
Prop In Lane	1.00		1.00	0.00		0.00	1.00		0.00	1.00		1.00
Lane Grp Cap(c), veh/h	875	0	366	0	1	0	207	1948	1070	60	2646	801
V/C Ratio(X)	0.91	0.00	0.15	0.00	0.00	0.00	0.49	0.72	0.72	0.00	0.61	0.72
Avail Cap(c_a), veh/h	880	0	368	0	149	0	207	1948	1070	60	2646	801
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	0.00	0.09	0.09	0.09	0.00	0.61	0.61
Uniform Delay (d), s/veh	43.2	0.0	34.9	0.0	0.0	0.0	16.9	13.2	13.2	0.0	17.1	18.9
Incr Delay (d2), s/veh	13.2	0.0	0.2	0.0	0.0	0.0	0.2	0.2	0.4	0.0	0.6	3.4
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(95%),veh/ln	20.6	0.0	2.6	0.0	0.0	0.0	2.6	17.0	18.6	0.0	16.2	19.6
LnGrp Delay(d),s/veh	56.4	0.0	35.1	0.0	0.0	0.0	17.1	13.4	13.6	0.0	17.8	22.3
LnGrp LOS	E		D				B	B	B		B	C
Approach Vol, veh/h		850			0			2277			2191	
Approach Delay, s/veh		55.0			0.0			13.7			19.0	
Approach LOS		E						B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		8
Phs Duration (G+Y+Rc), s		84.2		35.8	11.0	73.2		0.0
Change Period (Y+Rc), s		6.0		6.0	6.0	6.0		6.0
Max Green Setting (Gmax), s		63.0		30.0	5.0	52.0		9.0
Max Q Clear Time (g_c+I1), s		39.5		29.6	5.2	38.3		0.0
Green Ext Time (p_c), s		20.5		0.2	0.0	12.6		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	22.5
HCM 2010 LOS	C



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	34	2764	0	0	2339	12	0	0	0	15	0	65
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	10	11	12	12	11	11	12	12	12	12	12	12
Grade (%)		1%			0%			0%			1%	
Storage Length (ft)	60		0	75		0	0		0	125		0
Storage Lanes	1		0	1		0	0		0	1		0
Taper Length (ft)	140			75			75			75		
Lane Util. Factor	1.00	0.91	0.91	1.00	0.91	0.91	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt					0.999						0.850	
Flt Protected	0.950									0.950		
Satd. Flow (prot)	1588	4297	0	1765	4517	0	0	1765	0	1319	1423	0
Flt Permitted	0.041									0.757		
Satd. Flow (perm)	69	4297	0	1765	4517	0	0	1765	0	1051	1423	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					2						82	
Link Speed (mph)		45			45			35			45	
Link Distance (ft)		796			771			139			413	
Travel Time (s)		12.1			11.7			2.7			6.3	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.87	0.87	0.90	0.90	0.87	0.87	0.90	0.90	0.90	0.87	0.90	0.87
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	10%	2%	2%	5%	18%	2%	2%	2%	29%	2%	7%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	39	3177	0	0	2689	14	0	0	0	17	0	75
Shared Lane Traffic (%)												
Lane Group Flow (vph)	39	3177	0	0	2703	0	0	0	0	17	75	0
Number of Detectors	1	1		1	1		1	1		1	1	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	30	30		30	30		30	30		30	30	
Trailing Detector (ft)	-10	-10		-10	-10		-10	-10		-10	-10	
Turn Type	pm+pt	NA		Perm	NA					Perm	NA	
Protected Phases	5	2			6			8			4	
Permitted Phases	2			6			8			4		
Detector Phase	5	2		6	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Minimum Split (s)	9.0	15.0		15.0	15.0		15.0	15.0		15.0	15.0	
Total Split (s)	11.0	105.0		94.0	94.0		15.0	15.0		15.0	15.0	
Total Split (%)	9.2%	87.5%		78.3%	78.3%		12.5%	12.5%		12.5%	12.5%	
Maximum Green (s)	5.0	99.0		88.0	88.0		9.0	9.0		9.0	9.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	-1.0	-1.0		-1.0	-1.0			-1.0		-1.0	-1.0	
Total Lost Time (s)	5.0	5.0		5.0	5.0			5.0		5.0	5.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead/Lag	Lead			Lag	Lag							
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Minimum Gap (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Time Before Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Time To Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Recall Mode	None	C-Min		C-Min	C-Min		None	None		None	None	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
v/c Ratio	0.27	0.85			0.73					0.23	0.43	
Control Delay	10.3	4.2			8.9					59.9	17.5	
Queue Delay	0.0	0.0			0.0					0.0	0.0	
Total Delay	10.3	4.2			8.9					59.9	17.6	
Queue Length 50th (ft)	2	56			417					13	0	
Queue Length 95th (ft)	m2	54			451					36	42	
Internal Link Dist (ft)		716			691			59			333	
Turn Bay Length (ft)	60									125		
Base Capacity (vph)	142	3757			3693					87	193	
Starvation Cap Reductn	0	0			0					0	0	
Spillback Cap Reductn	0	0			59					0	1	
Storage Cap Reductn	0	0			0					0	0	
Reduced v/c Ratio	0.27	0.85			0.74					0.20	0.39	

Intersection Summary	
Area Type:	Other
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 114 (95%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
m Volume for 95th percentile queue is metered by upstream signal.	

Splits and Phases: 20: PA 405 & Lime Bluff Rd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	34	2764	0	0	2339	12	0	0	0	15	0	65
Number	5	2	12	1	6	16	3	8	18	7	4	14
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	1791	1628	1791	1765	1713	1800	1800	1765	1800	1388	1674	1791
Adj Flow Rate, veh/h	39	3177	0	0	2689	14	0	0	0	17	0	75
Adj No. of Lanes	1	3	0	1	3	0	0	1	0	1	1	0
Peak Hour Factor	0.87	0.87	0.90	0.90	0.87	0.87	0.90	0.90	0.90	0.87	0.90	0.87
Percent Heavy Veh, %	0	10	10	2	5	5	2	2	2	29	2	2
Cap, veh/h	158	3747	0	60	3720	19	0	130	0	157	0	105
Arrive On Green	0.03	0.84	0.00	0.00	0.77	0.77	0.00	0.00	0.00	0.07	0.00	0.07
Sat Flow, veh/h	1706	4591	0	66	4802	25	0	1765	0	1322	0	1423
Grp Volume(v), veh/h	39	3177	0	0	1745	958	0	0	0	17	0	75
Grp Sat Flow(s),veh/h/ln	1706	1482	0	66	1559	1709	0	1765	0	1322	0	1423
Q Serve(g_s), s	0.5	47.2	0.0	0.0	34.3	34.5	0.0	0.0	0.0	1.4	0.0	6.2
Cycle Q Clear(g_c), s	0.5	47.2	0.0	0.0	34.3	34.5	0.0	0.0	0.0	1.4	0.0	6.2
Prop In Lane	1.00		0.00	1.00		0.01	0.00		0.00	1.00		1.00
Lane Grp Cap(c), veh/h	158	3747	0	60	2416	1324	0	130	0	157	0	105
V/C Ratio(X)	0.25	0.85	0.00	0.00	0.72	0.72	0.00	0.00	0.00	0.11	0.00	0.72
Avail Cap(c_a), veh/h	198	3747	0	60	2416	1324	0	147	0	170	0	119
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)	0.52	0.52	0.00	0.00	1.00	1.00	0.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	10.8	5.2	0.0	0.0	6.9	6.9	0.0	0.0	0.0	52.2	0.0	54.9
Incr Delay (d2), s/veh	0.4	1.4	0.0	0.0	1.9	3.5	0.0	0.0	0.0	0.3	0.0	16.3
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(95%),veh/ln	1.1	24.1	0.0	0.0	21.6	24.1	0.0	0.0	0.0	1.0	0.0	5.3
LnGrp Delay(d),s/veh	11.2	6.5	0.0	0.0	8.8	10.4	0.0	0.0	0.0	52.5	0.0	71.1
LnGrp LOS	B	A			A	B				D		E
Approach Vol, veh/h		3216			2703			0			92	
Approach Delay, s/veh		6.6			9.4			0.0			67.7	
Approach LOS		A			A						E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		8
Phs Duration (G+Y+Rc), s		106.2		13.8	8.2	98.0		13.8
Change Period (Y+Rc), s		6.0		6.0	6.0	6.0		6.0
Max Green Setting (Gmax), s		99.0		9.0	5.0	88.0		9.0
Max Q Clear Time (g_c+I1), s		49.7		8.2	3.0	36.8		0.0
Green Ext Time (p_c), s		47.5		0.0	0.0	49.2		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	8.8
HCM 2010 LOS	A

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	378	283	42	123	360	75	63	387	184	63	230	267
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	16	16	16	12	12	12	10	10	10	10	10	10
Grade (%)		-2%			1%			2%			-1%	
Storage Length (ft)	0		0	0		0	125		0	125		0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (ft)	75			75			75			75		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.99			0.99			0.98			0.97	
Frt		0.992			0.982			0.952			0.919	
Flt Protected		0.974			0.989		0.950			0.950		
Satd. Flow (prot)	0	1836	0	0	1612	0	1273	1250	0	1304	1220	0
Flt Permitted		0.974			0.989		0.207			0.095		
Satd. Flow (perm)	0	1819	0	0	1607	0	277	1250	0	130	1220	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		463			494			1137			622	
Travel Time (s)		12.6			13.5			31.0			17.0	
Confl. Peds. (#/hr)	10		10	10		10	10		10	10		10
Confl. Bikes (#/hr)												
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	8%	8%	8%	7%	7%	7%	8%	8%	8%	7%	7%	7%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)							6	6	6	6	6	6
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	420	314	47	137	400	83	70	430	204	70	256	297
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	781	0	0	620	0	70	634	0	70	553	0
Number of Detectors	1	1		1	1		1	1		1	1	
Detector Template	Left			Left			Left			Left		
Leading Detector (ft)	30	40		30	40		30	40		30	40	
Trailing Detector (ft)	-10	-10		-10	-10		-10	-10		-10	-10	
Turn Type	Split	NA		Split	NA		Perm	NA		pm+pt	NA	
Protected Phases	2	2		6	6			4		3	8	
Permitted Phases							4			8		
Detector Phase	2	2		6	6		4	4		3	8	
Switch Phase												
Minimum Initial (s)	8.0	8.0		8.0	8.0		7.0	7.0		3.0	7.1	
Minimum Split (s)	23.0	23.0		23.0	23.0		22.1	22.1		9.0	22.1	
Total Split (s)	37.0	37.0		34.0	34.0		40.0	40.0		9.0	49.0	
Total Split (%)	30.8%	30.8%		28.3%	28.3%		33.3%	33.3%		7.5%	40.8%	
Maximum Green (s)	32.0	32.0		29.0	29.0		35.9	35.9		3.0	44.9	
Yellow Time (s)	4.0	4.0		4.0	4.0		3.1	3.1		4.0	3.1	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		2.0	1.0	
Lost Time Adjust (s)		-1.0			-1.0		-1.0	-1.0		-1.0	0.0	
Total Lost Time (s)		4.0			4.0		3.1	3.1		5.0	4.1	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead/Lag							Lag	Lag		Lead		
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0		2.0	2.0		3.5	3.5		3.0	3.5	
Minimum Gap (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Time Before Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Time To Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Recall Mode	None	None		None	None		None	None		None	None	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0			7.0	
Flash Dont Walk (s)	7.0	7.0		7.0	7.0		7.0	7.0			7.0	
Pedestrian Calls (#/hr)	10	10		10	10		10	10			10	
v/c Ratio		1.55			1.54		0.82	1.65		0.81	1.21	
Control Delay		288.8			287.1		99.8	334.0		87.2	148.8	
Queue Delay		0.0			0.0		0.0	0.0		0.0	0.0	
Total Delay		288.8			287.1		99.8	334.0		87.2	148.8	
Queue Length 50th (ft)		~852			~675		50	~712		36	~523	
Queue Length 95th (ft)		#1092			#900		#143	#939		#109	#743	
Internal Link Dist (ft)		383			414			1057			542	
Turn Bay Length (ft)							125			125		
Base Capacity (vph)		504			403		85	384		86	456	
Starvation Cap Reductn		0			0		0	0		0	0	
Spillback Cap Reductn		0			0		0	0		0	0	
Storage Cap Reductn		0			0		0	0		0	0	
Reduced v/c Ratio		1.55			1.54		0.82	1.65		0.81	1.21	

Intersection Summary	
Area Type:	Other
Cycle Length: 120	
Actuated Cycle Length: 120	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
~ Volume exceeds capacity, queue is theoretically infinite.	
Queue shown is maximum after two cycles.	
# 95th percentile volume exceeds capacity, queue may be longer.	
Queue shown is maximum after two cycles.	

Splits and Phases: 21: Main St (SR 2014) & Water St (SR 405)



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	378	283	42	123	360	75	63	387	184	63	230	267
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	1.00		0.98	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.87	1.00	1.00	0.87
Adj Sat Flow, veh/h/ln	1891	1751	1891	1791	1674	1791	1650	1650	1782	1691	1691	1809
Adj Flow Rate, veh/h	420	314	47	137	400	83	70	430	204	70	256	297
Adj No. of Lanes	0	1	0	0	1	0	1	1	0	1	1	0
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	8	8	8	7	7	7	8	8	8	7	7	7
Cap, veh/h	249	186	28	89	260	54	70	282	134	117	231	268
Arrive On Green	0.27	0.28	0.27	0.24	0.25	0.24	0.31	0.31	0.30	0.03	0.37	0.37
Sat Flow, veh/h	906	678	101	356	1040	216	796	916	434	1610	617	716
Grp Volume(v), veh/h	781	0	0	620	0	0	70	0	634	70	0	553
Grp Sat Flow(s),veh/h/ln	1685	0	0	1613	0	0	796	0	1350	1610	0	1333
Q Serve(g_s), s	33.0	0.0	0.0	30.0	0.0	0.0	1.5	0.0	36.9	3.5	0.0	44.9
Cycle Q Clear(g_c), s	33.0	0.0	0.0	30.0	0.0	0.0	36.9	0.0	36.9	3.5	0.0	44.9
Prop In Lane	0.54		0.06	0.22		0.13	1.00		0.32	1.00		0.54
Lane Grp Cap(c), veh/h	463	0	0	403	0	0	70	0	415	117	0	499
V/C Ratio(X)	1.69	0.00	0.00	1.54	0.00	0.00	1.00	0.00	1.53	0.60	0.00	1.11
Avail Cap(c_a), veh/h	463	0	0	403	0	0	70	0	415	117	0	499
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	0.00	1.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	43.8	0.0	0.0	45.2	0.0	0.0	59.9	0.0	41.7	32.0	0.0	37.6
Incr Delay (d2), s/veh	317.6	0.0	0.0	254.2	0.0	0.0	107.8	0.0	249.1	8.2	0.0	73.4
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(95%),veh/ln	101.2	0.0	0.0	75.2	0.0	0.0	7.9	0.0	76.4	3.2	0.0	48.0
LnGrp Delay(d),s/veh	361.4	0.0	0.0	299.4	0.0	0.0	167.7	0.0	290.9	40.2	0.0	111.0
LnGrp LOS	F			F			F		F	D		F
Approach Vol, veh/h		781			620			704			623	
Approach Delay, s/veh		361.4			299.4			278.6			103.0	
Approach LOS		F			F			F			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4		6		8
Phs Duration (G+Y+Rc), s		37.0	9.0	40.0		34.0		49.0
Change Period (Y+Rc), s		5.0	6.0	4.1		5.0		4.1
Max Green Setting (Gmax), s		32.0	3.0	35.9		29.0		44.9
Max Q Clear Time (g_c+I1), s		35.0	6.0	39.4		32.0		46.9
Green Ext Time (p_c), s		0.0	0.0	0.0		0.0		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	266.9
HCM 2010 LOS	F

Lane Group	EBL	EBT	WBT	WBR	SWL	SWR
Lane Configurations						
Volume (vph)	45	409	699	0	0	95
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	10	10
Grade (%)		2%	-3%		-1%	
Storage Length (ft)	0			0	0	0
Storage Lanes	0			0	1	0
Taper Length (ft)	75				75	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt					0.865	
Flt Protected		0.995				
Satd. Flow (prot)	0	1648	1819	0	1542	0
Flt Permitted		0.995				
Satd. Flow (perm)	0	1648	1819	0	1542	0
Link Speed (mph)		55	45		25	
Link Distance (ft)		601	517		640	
Travel Time (s)		7.5	7.8		17.5	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	19%	13%	6%	0%	0%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)		0%	0%		0%	
Adj. Flow (vph)	54	487	832	0	0	113
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	541	832	0	113	0
Sign Control		Free	Free		Stop	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

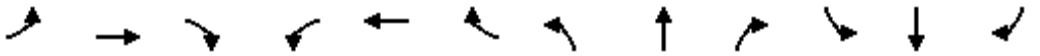
Intersection	
Int Delay, s/veh	1.8

Movement	EBL	EBT	WBT	WBR	SWL	SWR
Vol, veh/h	45	409	699	0	0	95
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, %	-	2	-3	-	-1	-
Peak Hour Factor	84	84	84	84	84	84
Heavy Vehicles, %	19	13	6	0	0	0
Mvmt Flow	54	487	832	0	0	113

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	832	0	-	0	1426	832
Stage 1	-	-	-	-	832	-
Stage 2	-	-	-	-	594	-
Critical Hdwy	4.29	-	-	-	7.1	6.2
Critical Hdwy Stg 1	-	-	-	-	5.2	-
Critical Hdwy Stg 2	-	-	-	-	5.2	-
Follow-up Hdwy	3	-	-	-	3	3.1
Pot Cap-1 Maneuver	617	-	-	-	123	388
Stage 1	-	-	-	-	500	-
Stage 2	-	-	-	-	645	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	617	-	-	-	108	388
Mov Cap-2 Maneuver	-	-	-	-	108	-
Stage 1	-	-	-	-	500	-
Stage 2	-	-	-	-	568	-

Approach	EB	WB	SW
HCM Control Delay, s	1.1	0	18.1
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SWLn1
Capacity (veh/h)	617	-	-	-	388
HCM Lane V/C Ratio	0.087	-	-	-	0.291
HCM Control Delay (s)	11.4	0	-	-	18.1
HCM Lane LOS	B	A	-	-	C
HCM 95th %tile Q(veh)	0.3	-	-	-	1.2



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	44	43	13	4	6	3	2	22	2	12	30	55
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	10	10	10	10	10	13	13	13	16	16	16
Grade (%)		-3%			2%			1%			-2%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (ft)	75			75			75			75		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.982			0.969			0.991			0.923	
Flt Protected		0.979			0.984			0.997			0.994	
Satd. Flow (prot)	0	1657	0	0	1551	0	0	1588	0	0	1838	0
Flt Permitted		0.979			0.984			0.997			0.994	
Satd. Flow (perm)	0	1657	0	0	1551	0	0	1588	0	0	1838	0
Link Speed (mph)		35			25			25			25	
Link Distance (ft)		1453			774			205			154	
Travel Time (s)		28.3			21.1			5.6			4.2	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	5%	0%	17%	25%	0%	0%	0%	25%	0%	0%	13%	8%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	73	72	22	7	10	5	3	37	3	20	50	92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	167	0	0	22	0	0	43	0	0	162	0
Sign Control		Stop			Stop			Free			Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	5.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	44	43	13	4	6	3	2	22	2	12	30	55
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, %	-	-3	-	-	2	-	-	1	-	-	-2	-
Peak Hour Factor	60	60	60	60	60	60	60	60	60	60	60	60
Heavy Vehicles, %	5	0	17	25	0	0	0	25	0	0	13	8
Mvmt Flow	73	72	22	7	10	5	3	37	3	20	50	92

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	189	183	96	228	227	38	142	0	0	40	0	0
Stage 1	136	136	-	45	45	-	-	-	-	-	-	-
Stage 2	53	47	-	183	182	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.3	-	-	4.3	-	-
Critical Hdwy Stg 1	5.55	4.9	-	6.75	5.9	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.55	4.9	-	6.75	5.9	-	-	-	-	-	-	-
Follow-up Hdwy	3	4	3.1	3	4	3.1	3	-	-	3	-	-
Pot Cap-1 Maneuver	893	715	1026	840	676	1106	1074	-	-	1163	-	-
Stage 1	1029	806	-	1124	857	-	-	-	-	-	-	-
Stage 2	1130	866	-	918	738	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	864	699	1026	745	661	1106	1074	-	-	1163	-	-
Mov Cap-2 Maneuver	864	699	-	745	661	-	-	-	-	-	-	-
Stage 1	1026	791	-	1121	854	-	-	-	-	-	-	-
Stage 2	1108	863	-	802	724	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	10.7	9.9	0.6	1
HCM LOS	B	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1074	-	-	799	758	1163	-	-
HCM Lane V/C Ratio	0.003	-	-	0.209	0.029	0.017	-	-
HCM Control Delay (s)	8.4	0	-	10.7	9.9	8.2	0	-
HCM Lane LOS	A	A	-	B	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.8	0.1	0.1	-	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Volume (vph)	1	1	49	4	0	0	0	546	0	21	884	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	10	10	9	9	9	11	11	11	11	11	11
Grade (%)		1%			-1%			-3%			0%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (ft)	75			75			75			75		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.870										
Flt Protected		0.999			0.950						0.999	
Satd. Flow (prot)	0	1534	0	0	1306	0	0	1742	0	0	1794	0
Flt Permitted		0.999			0.950						0.999	
Satd. Flow (perm)	0	1534	0	0	1306	0	0	1742	0	0	1794	0
Link Speed (mph)		25			25			50			50	
Link Distance (ft)		172			263			384			367	
Travel Time (s)		4.7			7.2			5.2			5.0	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	0%	0%	25%	0%	0%	0%	7%	0%	14%	2%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	1	1	51	4	0	0	0	569	0	22	921	1
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	53	0	0	4	0	0	569	0	0	944	0
Sign Control		Stop			Stop			Free			Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

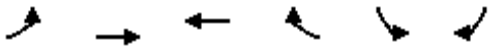
Intersection	
Int Delay, s/veh	0.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Vol, veh/h	1	1	49	4	0	0	0	546	0	21	884	1
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, %	-	1	-	-	-1	-	-	-3	-	-	0	-
Peak Hour Factor	96	96	96	96	96	96	96	96	96	96	96	96
Heavy Vehicles, %	0	0	0	25	0	0	0	7	0	14	2	0
Mvmt Flow	1	1	51	4	0	0	0	569	0	22	921	1

Major/Minor	Minor1			Minor2			Major1			Major2		
Conflicting Flow All	1534	1535	569	1560	1534	921	922	0	0	569	0	0
Stage 1	569	569	-	965	965	-	-	-	-	-	-	-
Stage 2	965	966	-	595	569	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.3	-	-	4.3	-	-
Critical Hdwy Stg 1	6.3	5.7	-	6.15	5.3	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.3	5.7	-	6.15	5.3	-	-	-	-	-	-	-
Follow-up Hdwy	3	4	3.1	3	4	3.1	3	-	-	3	-	-
Pot Cap-1 Maneuver	103	117	551	99	118	344	572	-	-	764	-	-
Stage 1	557	493	-	336	354	-	-	-	-	-	-	-
Stage 2	323	318	-	551	525	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	98	110	551	85	111	344	572	-	-	764	-	-
Mov Cap-2 Maneuver	98	110	-	85	111	-	-	-	-	-	-	-
Stage 1	557	493	-	336	333	-	-	-	-	-	-	-
Stage 2	304	299	-	499	525	-	-	-	-	-	-	-

Approach	EB	WB	SE	NW
HCM Control Delay, s	13.6	49.5	0	0.2
HCM LOS	B	E		

Minor Lane/Major Mvmt	NWL	NWT	NWR	EBLn1	WBLn1	SEL	SET	SER
Capacity (veh/h)	764	-	-	471	85	572	-	-
HCM Lane V/C Ratio	0.029	-	-	0.113	0.049	-	-	-
HCM Control Delay (s)	9.9	0	-	13.6	49.5	0	-	-
HCM Lane LOS	A	A	-	B	E	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0.4	0.2	0	-	-



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	0	1552	668	0	0	191
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	13	13	13	13
Grade (%)		-1%	1%		-2%	
Storage Length (ft)	0			0	0	0
Storage Lanes	0			0	0	1
Taper Length (ft)	75				75	
Lane Util. Factor	1.00	0.95	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt						0.865
Flt Protected						
Satd. Flow (prot)	0	3359	1860	0	0	1665
Flt Permitted						
Satd. Flow (perm)	0	3359	1860	0	0	1665
Link Speed (mph)		35	35		25	
Link Distance (ft)		348	758		364	
Travel Time (s)		6.8	14.8		9.9	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	8%	5%	0%	0%	3%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)		0%	0%		0%	
Adj. Flow (vph)	0	1893	815	0	0	233
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	1893	815	0	0	233
Sign Control		Free	Free		Stop	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

Intersection	
Int Delay, s/veh	2.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Vol, veh/h	0	1552	668	0	0	191
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	Stop
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	1	-
Grade, %	-	-1	1	-	-2	-
Peak Hour Factor	82	82	82	82	82	82
Heavy Vehicles, %	0	8	5	0	0	3
Mvmt Flow	0	1893	815	0	0	233

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	815	0	-	0	1761	815
Stage 1	-	-	-	-	815	-
Stage 2	-	-	-	-	946	-
Critical Hdwy	4.3	-	-	-	7.1	6.2
Critical Hdwy Stg 1	-	-	-	-	5	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	3	-	-	-	3	3.1
Pot Cap-1 Maneuver	625	-	-	-	71	397
Stage 1	-	-	-	-	533	-
Stage 2	-	-	-	-	420	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	625	-	-	-	71	397
Mov Cap-2 Maneuver	-	-	-	-	246	-
Stage 1	-	-	-	-	533	-
Stage 2	-	-	-	-	420	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	26.2
HCM LOS			D

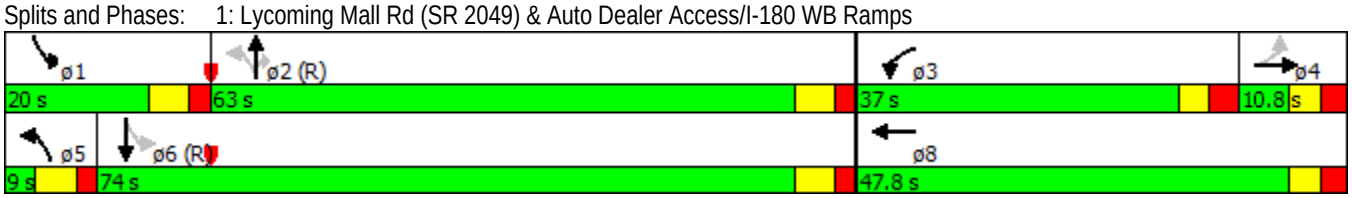
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	625	-	-	-	397
HCM Lane V/C Ratio	-	-	-	-	0.587
HCM Control Delay (s)	0	-	-	-	26.2
HCM Lane LOS	A	-	-	-	D
HCM 95th %tile Q(veh)	0	-	-	-	3.6

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	2	23	26	777	6	444	14	1345	831	243	1525	1
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	13	13	13	15	15	15	12	12	16	12	12	12
Grade (%)		2%			4%			1%			-1%	
Storage Length (ft)	0		100	125		0	125		350	125		0
Storage Lanes	0		0	2		0	1		1	1		0
Taper Length (ft)	75			75			75			75		
Lane Util. Factor	1.00	1.00	1.00	0.97	1.00	1.00	1.00	0.95	1.00	1.00	0.95	0.95
Ped Bike Factor												
Frt		0.931			0.852				0.850			
Flt Protected		0.998		0.950			0.950			0.950		
Satd. Flow (prot)	0	1711	0	3576	1649	0	1701	3403	1725	1719	3370	0
Flt Permitted		0.956		0.950			0.071			0.065		
Satd. Flow (perm)	0	1639	0	3576	1649	0	127	3403	1725	118	3370	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		28			145				850			
Link Speed (mph)		25			25			40			40	
Link Distance (ft)		187			334			650			689	
Travel Time (s)		5.1			9.1			11.1			11.7	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
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
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	0%	0%	0%	17%	0%	0%	0%	0%	0%	2%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	2	25	28	845	7	483	15	1462	903	264	1658	1
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	55	0	845	490	0	15	1462	903	264	1659	0
Number of Detectors	1	1		1	1		1	1	0	1	1	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left		
Leading Detector (ft)	30	40		30	45		30	45	0	30	45	
Trailing Detector (ft)	-10	-10		-10	-5		-10	-5	0	-10	-5	
Turn Type	Perm	NA		Prot	NA		pm+pt	NA	Perm	pm+pt	NA	
Protected Phases		4		3	8		5	2		1	6	
Permitted Phases	4						2		2	6		
Detector Phase	4	4		3	8		5	2	2	1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		3.0	5.0	5.0	3.0	5.0	
Minimum Split (s)	10.8	10.8		10.8	10.8		9.0	11.2	11.2	9.0	11.2	
Total Split (s)	10.8	10.8		37.0	47.8		9.0	63.0	63.0	20.0	74.0	
Total Split (%)	8.3%	8.3%		28.3%	36.5%		6.9%	48.2%	48.2%	15.3%	56.6%	
Maximum Green (s)	5.0	5.0		31.2	42.0		3.0	56.8	56.8	14.0	67.8	
Yellow Time (s)	3.0	3.0		3.0	3.0		4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	2.8	2.8		2.8	2.8		2.0	2.2	2.2	2.0	2.2	
Lost Time Adjust (s)		-1.0		-1.0	-1.0		-1.0	-1.0	-1.0	-1.0	-1.0	
Total Lost Time (s)		4.8		4.8	4.8		5.0	5.2	5.2	5.0	5.2	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead/Lag	Lag	Lag		Lead			Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	4.0	4.0		4.0	4.0		3.0	4.0	4.0	3.0	4.0	
Minimum Gap (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Time Before Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Time To Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Recall Mode	None	None		None	None		None	C-Max	C-Max	None	C-Max	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
v/c Ratio		0.54		0.96	0.80		0.13	0.97	0.73	0.94	0.84	
Control Delay		54.8		70.8	38.9		14.5	53.1	6.4	78.1	28.9	
Queue Delay		0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay		54.8		70.8	38.9		14.5	53.1	6.4	78.1	28.9	
Queue Length 50th (ft)		23		367	270		5	627	26	~190	561	
Queue Length 95th (ft)		#75		#495	414		14	#798	143	#369	#856	
Internal Link Dist (ft)		107			254			570			609	
Turn Bay Length (ft)				125			125		350	125		
Base Capacity (vph)		101		880	639		115	1506	1237	280	1967	
Starvation Cap Reductn		0		0	0		0	0	0	0	0	
Spillback Cap Reductn		0		0	0		0	0	0	0	0	
Storage Cap Reductn		0		0	0		0	0	0	0	0	
Reduced v/c Ratio		0.54		0.96	0.77		0.13	0.97	0.73	0.94	0.84	

Intersection Summary	
Area Type:	Other
Cycle Length: 130.8	
Actuated Cycle Length: 130.8	
Offset: 15 (11%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	
Natural Cycle: 120	
Control Type: Actuated-Coordinated	
~ Volume exceeds capacity, queue is theoretically infinite.	
Queue shown is maximum after two cycles.	
# 95th percentile volume exceeds capacity, queue may be longer.	
Queue shown is maximum after two cycles.	

Splits and Phases: 1: Lycoming Mall Rd (SR 2049) & Auto Dealer Access/I-180 WB Ramps



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	2	23	26	777	6	444	14	1345	831	243	1525	1
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	1853	1853	1853	1835	1830	1835	1791	1791	1863	1809	1774	1809
Adj Flow Rate, veh/h	2	25	14	845	7	373	15	1462	468	264	1658	0
Adj No. of Lanes	0	1	0	2	1	0	1	2	1	1	2	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	17	17	0	0	0	0	2	2
Cap, veh/h	31	50	27	833	9	503	114	1507	701	258	1818	0
Arrive On Green	0.04	0.05	0.04	0.25	0.33	0.32	0.02	0.44	0.44	0.11	0.54	0.00
Sat Flow, veh/h	46	1084	586	3390	29	1531	1706	3403	1583	1723	3458	0
Grp Volume(v), veh/h	41	0	0	845	0	380	15	1462	468	264	1658	0
Grp Sat Flow(s),veh/h/ln	1715	0	0	1695	0	1560	1706	1701	1583	1723	1685	0
Q Serve(g_s), s	0.8	0.0	0.0	32.2	0.0	28.4	0.6	55.0	30.6	15.0	58.4	0.0
Cycle Q Clear(g_c), s	3.0	0.0	0.0	32.2	0.0	28.4	0.6	55.0	30.6	15.0	58.4	0.0
Prop In Lane	0.05		0.34	1.00		0.98	1.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	94	0	0	833	0	512	114	1507	701	258	1818	0
V/C Ratio(X)	0.43	0.00	0.00	1.01	0.00	0.74	0.13	0.97	0.67	1.02	0.91	0.00
Avail Cap(c_a), veh/h	94	0	0	833	0	512	135	1507	701	258	1818	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	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	61.3	0.0	0.0	49.4	0.0	39.5	27.6	35.7	28.9	43.2	27.3	0.0
Incr Delay (d2), s/veh	4.4	0.0	0.0	34.8	0.0	6.2	0.5	17.1	5.0	62.6	8.4	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	0.1	0.0	0.0
%ile BackOfQ(95%),veh/ln	2.9	0.0	0.0	34.3	0.0	19.1	0.6	38.3	20.6	24.8	37.9	0.0
LnGrp Delay(d),s/veh	65.7	0.0	0.0	84.2	0.0	45.7	28.2	52.8	33.9	105.9	35.8	0.0
LnGrp LOS	E			F		D	C	D	C	F	D	
Approach Vol, veh/h		41			1225			1945			1922	
Approach Delay, s/veh		65.7			72.2			48.0			45.4	
Approach LOS		E			E			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6		8
Phs Duration (G+Y+Rc), s	20.0	63.2	37.0	10.8	7.3	75.9		47.8
Change Period (Y+Rc), s	6.0	* 6.2	* 5.8	* 5.8	6.0	* 6.2		* 5.8
Max Green Setting (Gmax), s	14.0	* 57	* 31	* 5	3.0	* 68		* 42
Max Q Clear Time (g_c+I1), s	17.5	57.5	34.7	5.0	3.1	60.9		30.4
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	6.6		2.2

Intersection Summary	
HCM 2010 Ctrl Delay	53.0
HCM 2010 LOS	D

Notes

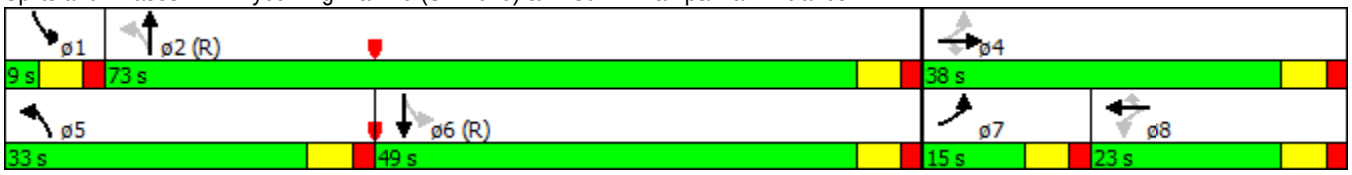
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	271	278	518	77	55	323	643	1597	74	85	1790	454
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	12	11	12	12	12	12	12	12	12	12
Grade (%)		2%			2%			-2%			-3%	
Storage Length (ft)	150		0	125		300	135		0	125		0
Storage Lanes	1		1	1		1	1		0	1		0
Taper Length (ft)	75			75			75			75		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.91	0.91
Ped Bike Factor												
Frt			0.850			0.850		0.993			0.970	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1644	1782	1443	1604	1713	1515	1645	3395	0	1736	4771	0
Flt Permitted	0.555			0.574			0.082			0.091		
Satd. Flow (perm)	960	1782	1443	969	1713	1515	142	3395	0	166	4771	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			358			191		6			59	
Link Speed (mph)		25			25			40			40	
Link Distance (ft)		971			408			1322			455	
Travel Time (s)		26.5			11.1			22.5			7.8	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	3%	0%	5%	2%	4%	0%	5%	1%	2%	0%	1%	3%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	298	305	569	85	60	355	707	1755	81	93	1967	499
Shared Lane Traffic (%)												
Lane Group Flow (vph)	298	305	569	85	60	355	707	1836	0	93	2466	0
Number of Detectors	1	1	1	1	1	0	1	1		1	1	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (ft)	30	45	30	45	45	0	45	45		45	45	
Trailing Detector (ft)	-10	-5	-10	-5	-5	0	-5	-5		-5	-5	
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	pm+pt	NA		pm+pt	NA	
Protected Phases	7	4			8		5	2		1	6	
Permitted Phases	4		4	8		8	2			6		
Detector Phase	7	4	4	8	8	8	5	2		1	6	
Switch Phase												
Minimum Initial (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Minimum Split (s)	15.0	15.0	15.0	15.0	15.0	15.0	9.0	15.0		9.0	15.0	
Total Split (s)	15.0	38.0	38.0	23.0	23.0	23.0	33.0	73.0		9.0	49.0	
Total Split (%)	12.5%	31.7%	31.7%	19.2%	19.2%	19.2%	27.5%	60.8%		7.5%	40.8%	
Maximum Green (s)	9.0	32.0	32.0	17.0	17.0	17.0	27.0	67.0		3.0	43.0	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0		-1.0	-1.0	
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead/Lag	Lead			Lag	Lag	Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Minimum Gap (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Time Before Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Time To Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Recall Mode	None	None	None	None	None	None	None	C-Max		None	C-Max	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
v/c Ratio	0.95	0.64	0.88	0.62	0.25	0.94	1.56	0.95		0.72	1.38	
Control Delay	81.6	45.7	31.4	68.2	48.0	56.6	280.5	23.1		51.8	206.2	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	81.6	45.7	31.4	68.2	48.0	56.6	280.5	23.1		51.8	206.2	
Queue Length 50th (ft)	205	207	172	62	42	133	~744	577		25	~923	
Queue Length 95th (ft)	#401	305	#394	#126	84	#315	m#484	m357		#80	#1017	
Internal Link Dist (ft)		891			328			1242			375	
Turn Bay Length (ft)	150			125		300	135			125		
Base Capacity (vph)	313	490	656	145	256	389	454	1929		130	1786	
Starvation Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Reduced v/c Ratio	0.95	0.62	0.87	0.59	0.23	0.91	1.56	0.95		0.72	1.38	

Intersection Summary	
Area Type:	Other
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 29 (24%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	
Natural Cycle: 120	
Control Type: Actuated-Coordinated	
~ Volume exceeds capacity, queue is theoretically infinite.	
Queue shown is maximum after two cycles.	
# 95th percentile volume exceeds capacity, queue may be longer.	
Queue shown is maximum after two cycles.	
m Volume for 95th percentile queue is metered by upstream signal.	

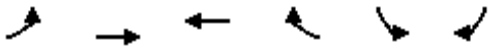
Splits and Phases: 2: Lycoming Mall Rd (SR 2049) & I-180 EB Ramps/Mall Entrance



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	271	278	518	77	55	323	643	1597	74	85	1790	454
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	1730	1782	1697	1747	1713	1782	1731	1799	1818	1827	1802	1827
Adj Flow Rate, veh/h	298	305	413	85	60	0	707	1755	43	93	1967	334
Adj No. of Lanes	1	1	1	1	1	1	1	2	0	1	3	0
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	3	0	5	2	4	0	5	1	1	0	1	1
Cap, veh/h	354	490	397	151	257	227	445	1933	47	147	1557	260
Arrive On Green	0.08	0.28	0.28	0.15	0.15	0.00	0.23	0.57	0.56	0.03	0.37	0.36
Sat Flow, veh/h	1648	1782	1443	723	1713	1515	1649	3410	83	1740	4247	708
Grp Volume(v), veh/h	298	305	413	85	60	0	707	877	921	93	1510	791
Grp Sat Flow(s),veh/h/ln	1648	1782	1443	723	1713	1515	1649	1709	1785	1740	1640	1677
Q Serve(g_s), s	10.0	18.0	33.0	14.0	3.7	0.0	28.0	54.8	55.5	4.0	44.0	44.0
Cycle Q Clear(g_c), s	10.0	18.0	33.0	16.9	3.7	0.0	28.0	54.8	55.5	4.0	44.0	44.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.05	1.00		0.42
Lane Grp Cap(c), veh/h	354	490	397	151	257	227	445	969	1011	147	1202	615
V/C Ratio(X)	0.84	0.62	1.04	0.56	0.23	0.00	1.59	0.91	0.91	0.63	1.26	1.29
Avail Cap(c_a), veh/h	354	490	397	151	257	227	445	969	1011	147	1202	615
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	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	44.5	38.0	43.5	52.0	44.9	0.0	38.0	23.1	23.3	29.3	38.0	38.2
Incr Delay (d2), s/veh	16.7	2.4	56.3	4.8	0.5	0.0	275.8	13.5	13.6	8.4	122.2	140.7
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(95%),veh/ln	11.3	14.1	34.8	5.4	3.2	0.0	87.8	38.1	40.1	2.7	72.5	79.8
LnGrp Delay(d),s/veh	61.2	40.5	99.8	56.8	45.4	0.0	313.8	36.6	36.9	37.6	160.2	178.9
LnGrp LOS	E	D	F	E	D		F	D	D	D	F	F
Approach Vol, veh/h		1016			145			2505			2394	
Approach Delay, s/veh		70.6			52.1			115.0			161.6	
Approach LOS		E			D			F			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.0	73.0		38.0	33.0	49.0	15.0	23.0
Change Period (Y+Rc), s	6.0	6.0		6.0	6.0	6.0	6.0	6.0
Max Green Setting (Gmax), s	3.0	67.0		32.0	27.0	43.0	9.0	17.0
Max Q Clear Time (g_c+I1), s	6.5	57.5		35.5	30.5	46.5	12.5	19.4
Green Ext Time (p_c), s	0.0	9.0		0.0	0.0	0.0	0.0	0.0

Intersection Summary		
HCM 2010 Ctrl Delay		124.5
HCM 2010 LOS		F



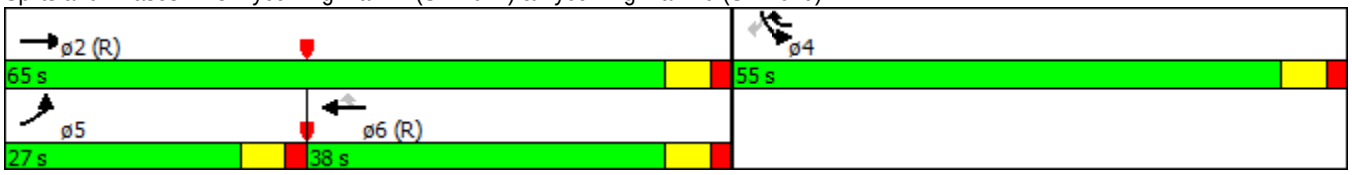
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	657	888	998	1402	1296	721
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	12	12	12	12
Grade (%)		-1%	1%		-2%	
Storage Length (ft)	165			215	165	0
Storage Lanes	2			1	1	1
Taper Length (ft)	125				75	
Lane Util. Factor	0.97	0.95	0.95	1.00	0.97	1.00
Ped Bike Factor						
Frt				0.850		0.850
Flt Protected	0.950				0.950	
Satd. Flow (prot)	3334	3370	3336	1522	3191	1486
Flt Permitted	0.950				0.950	
Satd. Flow (perm)	3334	3370	3336	1522	3191	1486
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)				4		434
Link Speed (mph)		45	45		40	
Link Distance (ft)		727	1089		1238	
Travel Time (s)		11.0	16.5		21.1	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	2%	2%	0%	5%	4%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)		0%	0%		0%	
Adj. Flow (vph)	747	1009	1134	1593	1473	819
Shared Lane Traffic (%)						
Lane Group Flow (vph)	747	1009	1134	1593	1473	819
Number of Detectors	1	1	1	1	1	1
Detector Template	Left				Left	Right
Leading Detector (ft)	45	6	6	6	45	45
Trailing Detector (ft)	-5	0	0	0	-5	-5
Turn Type	Prot	NA	NA	pm+ov	Prot	Perm
Protected Phases	5	2	6	4	4	
Permitted Phases				6		4
Detector Phase	5			4	4	4
Switch Phase						
Minimum Initial (s)	15.0	15.0	15.0	5.0	5.0	5.0
Minimum Split (s)	21.0	21.0	21.0	11.0	11.0	11.0
Total Split (s)	27.0	65.0	38.0	55.0	55.0	55.0
Total Split (%)	22.5%	54.2%	31.7%	45.8%	45.8%	45.8%
Maximum Green (s)	21.0	59.0	32.0	49.0	49.0	49.0
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0

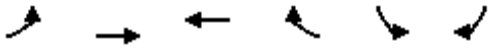
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lead/Lag	Lead		Lag			
Lead-Lag Optimize?						
Vehicle Extension (s)	5.0	5.0	5.0	3.0	3.0	3.0
Minimum Gap (s)	2.0	2.0	2.0	3.0	3.0	3.0
Time Before Reduce (s)	42.0	42.0	42.0	0.0	0.0	0.0
Time To Reduce (s)	10.0	10.0	10.0	0.0	0.0	0.0
Recall Mode	None	C-Max	C-Max	None	None	None
Walk Time (s)	7.0	7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)	14.0	14.0	14.0	14.0	14.0	14.0
Pedestrian Calls (#/hr)	0	0	0	0	0	0
v/c Ratio	1.22	0.60	1.24	1.43	1.11	0.94
Control Delay	156.0	23.3	153.6	217.4	70.7	12.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	156.0	23.3	153.6	217.4	70.7	12.9
Queue Length 50th (ft)	~366	284	~572	~1679	~684	530
Queue Length 95th (ft)	#472	340	#684	#1886	m458	m5
Internal Link Dist (ft)		647	1009		1158	
Turn Bay Length (ft)	165			215	165	
Base Capacity (vph)	611	1685	917	1117	1329	872
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	1.22	0.60	1.24	1.43	1.11	0.94

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 40 (33%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 120
Control Type: Actuated-Coordinated
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 3: Lycoming Mall Dr (SR 2014) & Lycoming Mall Rd (SR 2049)





Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	657	888	998	1402	1296	721
Number	5	2	6	16	7	14
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	1809	1774	1756	1791	1731	1748
Adj Flow Rate, veh/h	747	1009	1134	0	1473	592
Adj No. of Lanes	2	2	2	1	2	1
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	0	2	2	0	5	4
Cap, veh/h	613	1685	917	1053	1333	619
Arrive On Green	0.18	0.50	0.28	0.00	0.42	0.42
Sat Flow, veh/h	3342	3458	3424	1522	3199	1486
Grp Volume(v), veh/h	747	1009	1134	0	1473	592
Grp Sat Flow(s),veh/h/ln	1671	1685	1668	1522	1600	1486
Q Serve(g_s), s	22.0	25.6	33.0	0.0	50.0	46.4
Cycle Q Clear(g_c), s	22.0	25.6	33.0	0.0	50.0	46.4
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	613	1685	917	1053	1333	619
V/C Ratio(X)	1.22	0.60	1.24	0.00	1.11	0.96
Avail Cap(c_a), veh/h	613	1685	917	1053	1333	619
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	49.0	21.4	43.5	0.0	35.0	33.9
Incr Delay (d2), s/veh	112.9	1.6	115.7	0.0	58.7	25.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	35.5	18.0	53.8	0.0	59.2	45.3
LnGrp Delay(d),s/veh	161.9	23.0	159.2	0.0	93.7	59.6
LnGrp LOS	F	C	F		F	E
Approach Vol, veh/h		1756	1134		2065	
Approach Delay, s/veh		82.1	159.2		83.9	
Approach LOS		F	F		F	

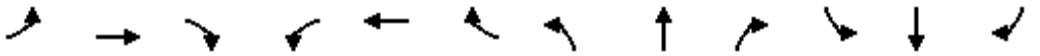
Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		65.0		55.0	27.0	38.0		
Change Period (Y+Rc), s		6.0		6.0	6.0	6.0		
Max Green Setting (Gmax), s		59.0		49.0	21.0	32.0		
Max Q Clear Time (g_c+I1), s		28.1		52.5	24.5	35.5		
Green Ext Time (p_c), s		21.2		0.0	0.0	0.0		

Intersection Summary	
HCM 2010 Ctrl Delay	100.5
HCM 2010 LOS	F

Notes

User approved pedestrian interval to be less than phase max green.

User approved changes to right turn type.



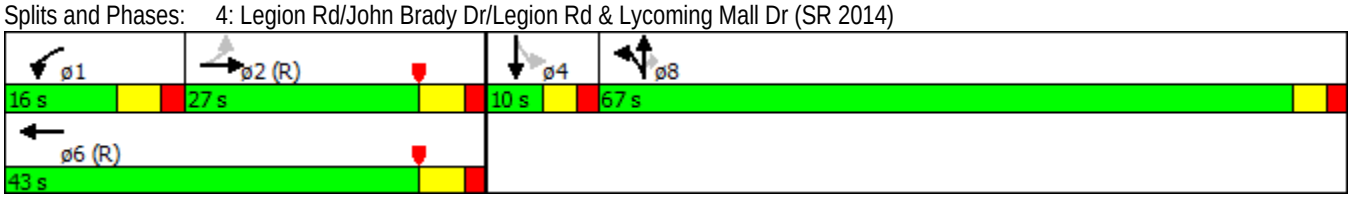
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	6	891	0	368	815	6	2250	2	756	13	8	6
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	12	13	13	13	12	12	12	14	14	14
Grade (%)		1%			-1%			-3%			0%	
Storage Length (ft)	1		0	275		0	0		0	0		0
Storage Lanes	1		0	2		0	2		1	0		0
Taper Length (ft)	75			75			75			75		
Lane Util. Factor	1.00	0.91	1.00	0.97	0.95	0.95	0.97	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt					0.999				0.850		0.968	
Flt Protected	0.950			0.950			0.950				0.977	
Satd. Flow (prot)	1279	4794	0	3076	3408	0	3334	1827	1451	0	1573	0
Flt Permitted	0.190			0.950			0.950				0.587	
Satd. Flow (perm)	256	4794	0	3076	3408	0	3334	1827	1451	0	945	0
Right Turn on Red			Yes			Yes			Yes			No
Satd. Flow (RTOR)					1				409			
Link Speed (mph)		45			45			45			25	
Link Distance (ft)		326			418			200			327	
Travel Time (s)		4.9			6.3			3.0			8.9	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	33%	2%	0%	12%	4%	17%	1%	0%	7%	33%	0%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	7	990	0	409	906	7	2500	2	840	14	9	7
Shared Lane Traffic (%)												
Lane Group Flow (vph)	7	990	0	409	913	0	2500	2	840	0	30	0
Number of Detectors	1	2		1	2		2	2	0	1	1	
Detector Template	Left			Left						Left	Thru	
Leading Detector (ft)	30	306		30	286		206	206	0	30	45	
Trailing Detector (ft)	-10	-5		-10	-5		-5	-5	0	-10	-5	
Turn Type	Perm	NA		Prot	NA		Split	NA	Perm	Perm	NA	
Protected Phases		2		1	6		8	8			4	
Permitted Phases	2								8	4		
Detector Phase	2	2		1	6		8	8	8	4	4	
Switch Phase												
Minimum Initial (s)	15.0	15.0		3.0	15.0		15.0	15.0	15.0	5.0	5.0	
Minimum Split (s)	21.0	21.0		9.0	21.0		20.0	20.0	20.0	10.0	10.0	
Total Split (s)	27.0	27.0		16.0	43.0		67.0	67.0	67.0	10.0	10.0	
Total Split (%)	22.5%	22.5%		13.3%	35.8%		55.8%	55.8%	55.8%	8.3%	8.3%	
Maximum Green (s)	21.0	21.0		10.0	37.0		62.0	62.0	62.0	5.0	5.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	-1.0	-1.0		-1.0	-1.0		-1.0	-1.0	-1.0		-1.0	
Total Lost Time (s)	5.0	5.0		5.0	5.0		4.0	4.0	4.0		4.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead/Lag	Lag	Lag		Lead								
Lead-Lag Optimize?												
Vehicle Extension (s)	6.0	6.0		3.0	6.0		6.0	6.0	6.0	3.0	3.0	
Minimum Gap (s)	2.0	2.0		3.0	2.0		2.0	2.0	2.0	2.0	2.0	
Time Before Reduce (s)	40.0	40.0		0.0	40.0		40.0	40.0	40.0	0.0	0.0	
Time To Reduce (s)	20.0	20.0		0.0	20.0		20.0	20.0	20.0	0.0	0.0	
Recall Mode	C-Min	C-Min		None	C-Min		None	None	None	None	None	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
v/c Ratio	0.15	1.13		1.46	0.85		1.38	0.00	0.86		0.64	
Control Delay	50.3	116.4		259.7	53.9		202.9	13.5	22.9		108.3	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0		0.0	
Total Delay	50.3	116.4		259.7	53.9		202.9	13.5	22.9		108.3	
Queue Length 50th (ft)	5	~324		~228	346		~1350	1	323		23	
Queue Length 95th (ft)	20	#417		#332	437		#1479	5	#666		#76	
Internal Link Dist (ft)		246			338			120			247	
Turn Bay Length (ft)	1			275								
Base Capacity (vph)	46	878		281	1079		1806	989	973		47	
Starvation Cap Reductn	0	0		0	0		0	0	0		0	
Spillback Cap Reductn	0	0		0	0		0	0	0		0	
Storage Cap Reductn	0	0		0	0		0	0	0		0	
Reduced v/c Ratio	0.15	1.13		1.46	0.85		1.38	0.00	0.86		0.64	

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 72 (60%), Referenced to phase 2:EBTL and 6:WBT, Start of Yellow
Natural Cycle: 120
Control Type: Actuated-Coordinated
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 4: Legion Rd/John Brady Dr/Legion Rd & Lycoming Mall Dr (SR 2014)



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	6	891	0	368	815	6	2250	2	756	13	8	6
Number	5	2	12	1	6	16	3	8	18	7	4	14
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	1347	1756	0	1680	1807	1881	1809	1827	1707	1872	1622	1872
Adj Flow Rate, veh/h	7	990	0	409	906	5	2500	2	546	14	9	7
Adj No. of Lanes	1	3	0	2	2	0	2	1	1	0	1	0
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	33	2	0	12	4	4	1	0	7	0	0	0
Cap, veh/h	106	952	0	284	1162	6	1755	959	762	25	16	12
Arrive On Green	0.20	0.20	0.00	0.09	0.33	0.32	0.52	0.52	0.52	0.03	0.03	0.03
Sat Flow, veh/h	466	4952	0	3104	3501	19	3342	1827	1451	711	457	356
Grp Volume(v), veh/h	7	990	0	409	444	467	2500	2	546	30	0	0
Grp Sat Flow(s),veh/h/ln	466	1598	0	1552	1717	1804	1671	1827	1451	1524	0	0
Q Serve(g_s), s	1.7	23.8	0.0	11.0	28.0	28.0	63.0	0.1	34.4	2.3	0.0	0.0
Cycle Q Clear(g_c), s	13.6	23.8	0.0	11.0	28.0	28.0	63.0	0.1	34.4	2.3	0.0	0.0
Prop In Lane	1.00		0.00	1.00		0.01	1.00		1.00	0.47		0.23
Lane Grp Cap(c), veh/h	106	952	0	284	570	599	1755	959	762	53	0	0
V/C Ratio(X)	0.07	1.04	0.00	1.44	0.78	0.78	1.42	0.00	0.72	0.57	0.00	0.00
Avail Cap(c_a), veh/h	106	952	0	284	570	599	1755	959	762	76	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	49.5	48.1	0.0	54.5	36.1	36.1	28.5	13.6	21.7	57.4	0.0	0.0
Incr Delay (d2), s/veh	1.2	40.0	0.0	215.9	10.1	9.7	194.5	0.0	5.0	9.2	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(95%),veh/ln	0.4	25.2	0.0	23.8	21.1	21.9	137.1	0.1	21.0	2.0	0.0	0.0
LnGrp Delay(d),s/veh	50.7	88.0	0.0	270.4	46.2	45.8	223.0	13.6	26.8	66.6	0.0	0.0
LnGrp LOS	D	F		F	D	D	F	B	C	E		
Approach Vol, veh/h		997			1320			3048			30	
Approach Delay, s/veh		87.8			115.5			187.7			66.6	
Approach LOS		F			F			F			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6		8
Phs Duration (G+Y+Rc), s	16.0	28.8		8.2		44.8		67.0
Change Period (Y+Rc), s	6.0	6.0		5.0		6.0		5.0
Max Green Setting (Gmax), s	10.0	21.0		5.0		37.0		62.0
Max Q Clear Time (g_c+I1), s	13.5	26.3		4.3		30.5		65.5
Green Ext Time (p_c), s	0.0	0.0		0.0		6.5		0.0

Intersection Summary		
HCM 2010 Ctrl Delay		150.9
HCM 2010 LOS		F

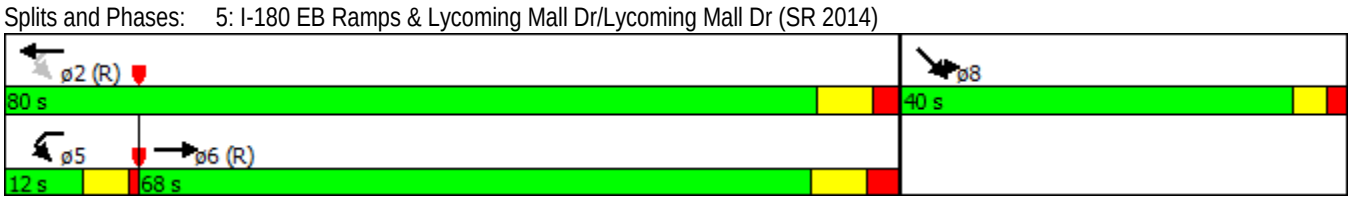
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Volume (vph)	0	1667	195	130	998	0	596	0	274	0	0	0
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	14	12	12	12	12	14	14	14	12	12	12
Grade (%)		-1%			-1%			3%			-4%	
Storage Length (ft)	0		175	150		0	200		0	0		0
Storage Lanes	0		0	1		0	1		0	0		0
Taper Length (ft)	75			75			75			75		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.984						0.901				
Flt Protected				0.950			0.950	0.983				
Satd. Flow (prot)	0	3465	0	1420	3305	0	1626	1426	0	0	0	0
Flt Permitted				0.085			0.950	0.983				
Satd. Flow (perm)	0	3465	0	127	3305	0	1626	1426	0	0	0	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		15						91				
Link Speed (mph)		45			45			25			25	
Link Distance (ft)		2040			311			376			358	
Travel Time (s)		30.9			4.7			10.3			9.8	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	4%	5%	21%	4%	0%	5%	0%	15%	0%	0%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	0	1736	203	135	1040	0	621	0	285	0	0	0
Shared Lane Traffic (%)							24%					
Lane Group Flow (vph)	0	1939	0	135	1040	0	472	434	0	0	0	0
Number of Detectors		1		1	1		1	1				
Detector Template				Left			Left	Thru				
Leading Detector (ft)		6		45	6		30	30				
Trailing Detector (ft)		0		-5	0		-10	-10				
Turn Type		NA		pm+pt	NA		Split	NA				
Protected Phases		6		5	2		8	8				
Permitted Phases				2								
Detector Phase				5			8	8				
Switch Phase												
Minimum Initial (s)		15.0		5.0	20.0		5.0	5.0				
Minimum Split (s)		23.0		10.0	28.0		10.0	10.0				
Total Split (s)		68.0		12.0	80.0		40.0	40.0				
Total Split (%)		56.7%		10.0%	66.7%		33.3%	33.3%				
Maximum Green (s)		60.0		7.0	72.5		35.0	35.0				
Yellow Time (s)		5.0		4.0	5.0		3.0	3.0				
All-Red Time (s)		3.0		1.0	2.5		2.0	2.0				
Lost Time Adjust (s)		-1.0		-1.0	-1.0		-1.0	-1.0				
Total Lost Time (s)		7.0		4.0	6.5		4.0	4.0				

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lead/Lag		Lag		Lead								
Lead-Lag Optimize?												
Vehicle Extension (s)		3.0		4.0	3.0		4.0	4.0				
Minimum Gap (s)		3.0		3.0	3.0		3.0	3.0				
Time Before Reduce (s)		0.0		0.0	0.0		0.0	0.0				
Time To Reduce (s)		0.0		0.0	0.0		0.0	0.0				
Recall Mode		C-Min		None	C-Min		None	None				
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
v/c Ratio		1.57		0.52	0.58		0.78	0.74				
Control Delay		292.8		44.0	21.3		43.0	33.4				
Queue Delay		0.0		0.0	0.0		0.0	0.0				
Total Delay		292.8		44.0	21.3		43.0	33.4				
Queue Length 50th (ft)		~1165		75	155		330	238				
Queue Length 95th (ft)		m#1225		m63	m197		458	364				
Internal Link Dist (ft)		1960			231			296			278	
Turn Bay Length (ft)				150			200					
Base Capacity (vph)		1238		262	1785		605	587				
Starvation Cap Reductn		0		0	0		0	0				
Spillback Cap Reductn		0		0	0		0	0				
Storage Cap Reductn		0		0	0		0	0				
Reduced v/c Ratio		1.57		0.52	0.58		0.78	0.74				

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 72 (60%), Referenced to phase 2:WBTL and 6:EBT, Start of Green
Natural Cycle: 100
Control Type: Actuated-Coordinated
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 5: I-180 EB Ramps & Lycoming Mall Dr/Lycoming Mall Dr (SR 2014)



Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Volume (veh/h)	0	1667	195	130	998	0	596	0	274	0	0	0
Number	1	6	16	5	2	12	3	8	18			
Initial Q (Qb), veh	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			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	0	1807	1809	1495	1739	0	1756	1653	1844			
Adj Flow Rate, veh/h	0	1736	0	135	1040	0	453	235	285			
Adj No. of Lanes	0	2	0	1	2	0	1	1	0			
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96			
Percent Heavy Veh, %	0	4	4	21	4	0	5	0	5			
Cap, veh/h	0	1745	0	156	2010	0	502	204	248			
Arrive On Green	0.00	0.51	0.00	0.07	0.61	0.00	0.30	0.30	0.29			
Sat Flow, veh/h	0	3614	0	1424	3392	0	1672	681	826			
Grp Volume(v), veh/h	0	1736	0	135	1040	0	453	0	520			
Grp Sat Flow(s),veh/h/ln	0	1717	0	1424	1652	0	1672	0	1507			
Q Serve(g_s), s	0.0	60.3	0.0	6.0	21.6	0.0	31.2	0.0	36.0			
Cycle Q Clear(g_c), s	0.0	60.3	0.0	6.0	21.6	0.0	31.2	0.0	36.0			
Prop In Lane	0.00		0.00	1.00		0.00	1.00		0.55			
Lane Grp Cap(c), veh/h	0	1745	0	156	2010	0	502	0	452			
V/C Ratio(X)	0.00	0.99	0.00	0.86	0.52	0.00	0.90	0.00	1.15			
Avail Cap(c_a), veh/h	0	1745	0	156	2024	0	502	0	452			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.00	1.00	0.00	1.00	1.00	0.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	0.0	29.3	0.0	31.7	13.4	0.0	40.3	0.0	42.3			
Incr Delay (d2), s/veh	0.0	20.3	0.0	37.0	1.0	0.0	19.8	0.0	90.4			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(95%),veh/ln	0.0	42.8	0.0	10.0	15.3	0.0	23.9	0.0	47.3			
LnGrp Delay(d),s/veh	0.0	49.6	0.0	68.7	14.4	0.0	60.2	0.0	132.7			
LnGrp LOS		D		E	B		E		F			
Approach Vol, veh/h		1736			1175			973				
Approach Delay, s/veh		49.6			20.6			98.9				
Approach LOS		D			C			F				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2			5	6		8
Phs Duration (G+Y+Rc), s		80.0			12.0	68.0		40.0
Change Period (Y+Rc), s		* 8			5.0	8.0		5.0
Max Green Setting (Gmax), s		* 73			7.0	60.0		35.0
Max Q Clear Time (g_c+I1), s		24.1			8.5	62.8		38.0
Green Ext Time (p_c), s		15.9			0.0	0.0		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	53.2
HCM 2010 LOS	D

Notes

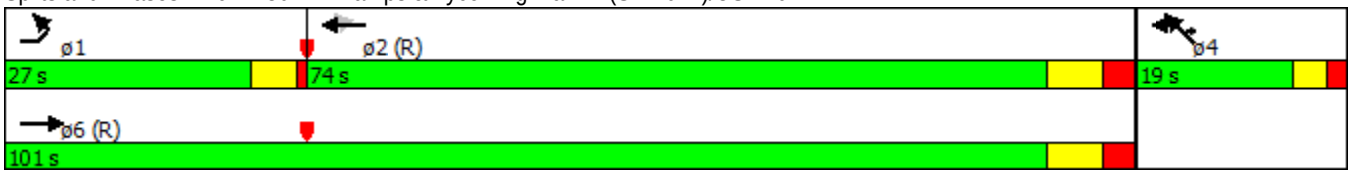
User approved volume balancing among the lanes for turning movement.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Volume (vph)	622	1641	0	0	1021	400	0	0	0	107	0	126
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	11	12	12	11	11	11	12	12	12	15	15	16
Grade (%)		1%			-1%			-3%			-3%	
Storage Length (ft)	115		0	0		0	0		0	0		445
Storage Lanes	2		0	0		1	0		0	1		1
Taper Length (ft)	75			75			75			75		
Lane Util. Factor	0.97	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt						0.850						0.850
Flt Protected	0.950									0.950		
Satd. Flow (prot)	3039	3241	0	0	1561	1364	0	0	0	1801	2010	1760
Flt Permitted	0.950									0.950		
Satd. Flow (perm)	3039	3241	0	0	1561	1364	0	0	0	1801	2010	1760
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						292						91
Link Speed (mph)		45			45			25			25	
Link Distance (ft)		350			600			327			668	
Travel Time (s)		5.3			9.1			8.9			18.2	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	5%	5%	0%	0%	12%	9%	0%	0%	0%	6%	0%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	641	1692	0	0	1053	412	0	0	0	110	0	130
Shared Lane Traffic (%)												
Lane Group Flow (vph)	641	1692	0	0	1053	412	0	0	0	110	0	130
Number of Detectors	1	1			1	1				1	1	0
Detector Template	Left					Right				Left	Thru	
Leading Detector (ft)	45	6			6	30				30	45	0
Trailing Detector (ft)	-5	0			0	-10				-10	-5	0
Turn Type	Prot	NA			NA	Perm				Split		Prot
Protected Phases	1	6			2					4	4	4
Permitted Phases						2						
Detector Phase	1					2				4	4	4
Switch Phase												
Minimum Initial (s)	5.0	20.0			20.0	20.0				5.0	5.0	5.0
Minimum Split (s)	10.0	28.0			28.0	28.0				10.0	10.0	10.0
Total Split (s)	27.0	101.0			74.0	74.0				19.0	19.0	19.0
Total Split (%)	22.5%	84.2%			61.7%	61.7%				15.8%	15.8%	15.8%
Maximum Green (s)	22.0	93.0			66.0	66.0				14.0	14.0	14.0
Yellow Time (s)	4.0	5.0			5.0	5.0				3.0	3.0	3.0
All-Red Time (s)	1.0	3.0			3.0	3.0				2.0	2.0	2.0
Lost Time Adjust (s)	-1.0	-1.0			-1.0	-1.0				-1.0	-1.0	-1.0
Total Lost Time (s)	4.0	7.0			7.0	7.0				4.0	4.0	4.0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lead/Lag	Lead				Lag	Lag						
Lead-Lag Optimize?												
Vehicle Extension (s)	4.0	3.0			3.0	3.0				4.0	4.0	4.0
Minimum Gap (s)	3.0	3.0			3.0	3.0				3.0	3.0	3.0
Time Before Reduce (s)	0.0	0.0			0.0	0.0				0.0	0.0	0.0
Time To Reduce (s)	0.0	0.0			0.0	0.0				0.0	0.0	0.0
Recall Mode	None	C-Min			C-Min	C-Min				None	None	None
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
v/c Ratio	0.66	0.67			1.55	0.54				0.50		0.44
Control Delay	47.2	11.4			284.3	10.3				56.1		21.4
Queue Delay	0.0	0.7			0.0	0.0				0.0		0.0
Total Delay	47.2	12.1			284.3	10.3				56.1		21.4
Queue Length 50th (ft)	266	287			~1135	55				81		27
Queue Length 95th (ft)	m216	m108			#1453	166				135		84
Internal Link Dist (ft)		270			520			247			588	
Turn Bay Length (ft)	115											445
Base Capacity (vph)	964	2544			678	890				243		316
Starvation Cap Reductn	0	474			0	0				0		0
Spillback Cap Reductn	0	0			0	0				0		0
Storage Cap Reductn	0	0			0	0				0		0
Reduced v/c Ratio	0.66	0.82			1.55	0.46				0.45		0.41

Intersection Summary	
Area Type:	Other
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 72 (60%), Referenced to phase 2:WBT and 6:EBT, Start of Green	
Natural Cycle: 120	
Control Type: Actuated-Coordinated	
~ Volume exceeds capacity, queue is theoretically infinite.	
Queue shown is maximum after two cycles.	
# 95th percentile volume exceeds capacity, queue may be longer.	
Queue shown is maximum after two cycles.	
m Volume for 95th percentile queue is metered by upstream signal.	

Splits and Phases: 6: I-180 WB Ramps & Lycoming Mall Dr (SR 2014)/US 220



Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Volume (veh/h)	622	1641	0	0	1021	400	0	0	0	107	0	126
Number	1	6	16	5	2	12				7	4	14
Initial Q (Qb), veh	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
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1706	1706	0	0	1615	1660				1793	1900	1900
Adj Flow Rate, veh/h	641	1692	0	0	1053	293				110	0	86
Adj No. of Lanes	2	2	0	0	1	1				1	1	1
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97				0.97	0.97	0.97
Percent Heavy Veh, %	5	5	0	0	12	9				6	0	0
Cap, veh/h	604	2644	0	0	954	834				158	176	149
Arrive On Green	0.19	0.82	0.00	0.00	0.59	0.59				0.09	0.00	0.09
Sat Flow, veh/h	3152	3326	0	0	1615	1411				1707	1900	1615
Grp Volume(v), veh/h	641	1692	0	0	1053	293				110	0	86
Grp Sat Flow(s),veh/h/ln	1576	1620	0	0	1615	1411				1707	1900	1615
Q Serve(g_s), s	23.0	24.1	0.0	0.0	70.9	12.9				7.5	0.0	6.1
Cycle Q Clear(g_c), s	23.0	24.1	0.0	0.0	70.9	12.9				7.5	0.0	6.1
Prop In Lane	1.00		0.00	0.00		1.00				1.00		1.00
Lane Grp Cap(c), veh/h	604	2644	0	0	954	834				158	176	149
V/C Ratio(X)	1.06	0.64	0.00	0.00	1.10	0.35				0.70	0.00	0.58
Avail Cap(c_a), veh/h	604	2644	0	0	954	834				213	238	202
HCM Platoon Ratio	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	0.00	0.00	1.00	1.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	48.5	4.3	0.0	0.0	24.5	12.7				52.8	0.0	52.2
Incr Delay (d2), s/veh	53.9	1.2	0.0	0.0	61.7	1.2				8.2	0.0	4.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	26.1	16.5	0.0	0.0	85.7	9.0				7.0	0.0	5.3
LnGrp Delay(d),s/veh	102.4	5.5	0.0	0.0	86.2	13.8				61.0	0.0	57.1
LnGrp LOS	F	A			F	B				E		E
Approach Vol, veh/h		2333			1346						196	
Approach Delay, s/veh		32.1			70.5						59.3	
Approach LOS		C			E						E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6		
Phs Duration (G+Y+Rc), s	27.0	77.9		15.1		104.9		
Change Period (Y+Rc), s	5.0	8.0		5.0		8.0		
Max Green Setting (Gmax), s	22.0	66.0		14.0		93.0		
Max Q Clear Time (g_c+I1), s	25.5	73.4		10.0		26.6		
Green Ext Time (p_c), s	0.0	0.0		0.1		20.7		

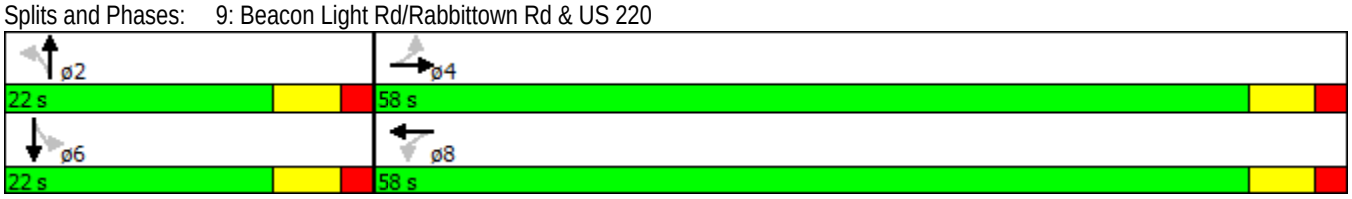
Intersection Summary	
HCM 2010 Ctrl Delay	46.8
HCM 2010 LOS	D

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	84	851	127	8	717	6	128	47	6	7	48	68
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	12	12	12	12	11	11	11	14	14	14
Grade (%)		0%			-1%			7%			-1%	
Storage Length (ft)	175		0	0		0	0		0	0		0
Storage Lanes	1		0	0		0	0		0	0		0
Taper Length (ft)	75			75			75			75		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.980			0.999			0.995			0.926	
Flt Protected	0.950				0.999			0.966			0.997	
Satd. Flow (prot)	1613	1705	0	0	1674	0	0	1580	0	0	1781	0
Flt Permitted	0.341				0.969			0.683			0.978	
Satd. Flow (perm)	579	1705	0	0	1624	0	0	1117	0	0	1747	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		20			1			2			70	
Link Speed (mph)		55			55			40			40	
Link Distance (ft)		1228			918			567			578	
Travel Time (s)		15.2			11.4			9.7			9.9	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	6%	4%	0%	0%	8%	0%	3%	0%	0%	0%	0%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	92	935	140	9	788	7	141	52	7	8	53	75
Shared Lane Traffic (%)												
Lane Group Flow (vph)	92	1075	0	0	804	0	0	200	0	0	136	0
Number of Detectors	1	1		1	1		1	1		1	1	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	30	30		30	30		30	30		30	30	
Trailing Detector (ft)	-10	-10		-10	-10		-10	-10		-10	-10	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Minimum Split (s)	15.0	15.0		15.0	15.0		15.0	15.0		15.0	15.0	
Total Split (s)	58.0	58.0		58.0	58.0		22.0	22.0		22.0	22.0	
Total Split (%)	72.5%	72.5%		72.5%	72.5%		27.5%	27.5%		27.5%	27.5%	
Maximum Green (s)	52.0	52.0		52.0	52.0		16.0	16.0		16.0	16.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	-1.0	-1.0			-1.0			-1.0			-1.0	
Total Lost Time (s)	5.0	5.0			5.0			5.0			5.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Minimum Gap (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Time Before Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Time To Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Recall Mode	Min	Min		Min	Min		None	None		None	None	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
v/c Ratio	0.24	0.94			0.74			0.87			0.33	
Control Delay	7.3	29.4			14.2			65.3			16.5	
Queue Delay	0.0	0.0			0.0			0.0			0.0	
Total Delay	7.3	29.4			14.2			65.3			16.5	
Queue Length 50th (ft)	16	415			232			95			27	
Queue Length 95th (ft)	38	#766			385			#213			74	
Internal Link Dist (ft)		1148			838			487			498	
Turn Bay Length (ft)	175											
Base Capacity (vph)	387	1147			1087			240			429	
Starvation Cap Reductn	0	0			0			0			0	
Spillback Cap Reductn	0	0			0			0			0	
Storage Cap Reductn	0	0			0			0			0	
Reduced v/c Ratio	0.24	0.94			0.74			0.83			0.32	

Intersection Summary	
Area Type:	Other
Cycle Length: 80	
Actuated Cycle Length: 79.4	
Natural Cycle: 75	
Control Type: Actuated-Uncoordinated	
# 95th percentile volume exceeds capacity, queue may be longer.	
Queue shown is maximum after two cycles.	

Splits and Phases: 9: Beacon Light Rd/Rabbittown Rd & US 220



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	84	851	127	8	717	6	128	47	6	7	48	68
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	1698	1739	1800	1809	1677	1809	1737	1701	1737	1881	1881	1881
Adj Flow Rate, veh/h	92	935	140	9	788	7	141	52	7	8	53	75
Adj No. of Lanes	1	1	0	0	1	0	0	1	0	0	1	0
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	6	4	4	8	8	8	0	0	0	0	0	0
Cap, veh/h	220	1010	151	49	993	9	250	72	9	57	139	181
Arrive On Green	0.68	0.68	0.67	0.67	0.68	0.67	0.17	0.19	0.17	0.17	0.19	0.17
Sat Flow, veh/h	654	1479	221	3	1454	13	906	383	47	42	741	963
Grp Volume(v), veh/h	92	0	1075	804	0	0	200	0	0	136	0	0
Grp Sat Flow(s),veh/h/ln	654	0	1700	1470	0	0	1336	0	0	1746	0	0
Q Serve(g_s), s	0.2	0.0	42.1	6.1	0.0	0.0	5.7	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	48.0	0.0	42.1	48.3	0.0	0.0	11.2	0.0	0.0	5.5	0.0	0.0
Prop In Lane	1.00		0.13	0.01		0.01	0.70		0.03	0.06		0.55
Lane Grp Cap(c), veh/h	220	0	1161	1032	0	0	313	0	0	355	0	0
V/C Ratio(X)	0.42	0.00	0.93	0.78	0.00	0.00	0.64	0.00	0.00	0.38	0.00	0.00
Avail Cap(c_a), veh/h	222	0	1168	1038	0	0	356	0	0	409	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	11.8	0.0	10.6	8.0	0.0	0.0	30.3	0.0	0.0	27.9	0.0	0.0
Incr Delay (d2), s/veh	1.3	0.0	12.4	3.8	0.0	0.0	3.1	0.0	0.0	0.7	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(95%),veh/ln	3.5	0.0	31.0	17.4	0.0	0.0	7.8	0.0	0.0	4.8	0.0	0.0
LnGrp Delay(d),s/veh	13.1	0.0	23.0	11.9	0.0	0.0	33.4	0.0	0.0	28.6	0.0	0.0
LnGrp LOS	B		C	B			C			C		
Approach Vol, veh/h		1167			804			200			136	
Approach Delay, s/veh		22.2			11.9			33.4			28.6	
Approach LOS		C			B			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		19.5		57.7		19.5		57.7
Change Period (Y+Rc), s		6.0		6.0		6.0		6.0
Max Green Setting (Gmax), s		16.0		52.0		16.0		52.0
Max Q Clear Time (g_c+I1), s		13.2		50.5		7.5		50.3
Green Ext Time (p_c), s		0.3		1.2		0.7		1.4

Intersection Summary	
HCM 2010 Ctrl Delay	20.0
HCM 2010 LOS	B

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	788	110	136	694	95	136
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	13	13	13	13	12	12
Grade (%)	3%			1%	5%	
Storage Length (ft)		0	125		75	0
Storage Lanes		0	1		1	1
Taper Length (ft)			75		75	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.983					0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	1748	0	1758	1714	1667	1492
Flt Permitted			0.135		0.950	
Satd. Flow (perm)	1748	0	250	1714	1667	1492
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	25					170
Link Speed (mph)	55			55	35	
Link Distance (ft)	1476			1319	549	
Travel Time (s)	18.3			16.4	10.7	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	3%	3%	0%	8%	0%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	985	138	170	868	119	170
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1123	0	170	868	119	170
Number of Detectors	1		1	1	1	1
Detector Template	Thru		Left	Thru	Left	Right
Leading Detector (ft)	30		30	30	30	30
Trailing Detector (ft)	-10		-10	-10	-10	-10
Turn Type	NA		Perm	NA	Prot	Perm
Protected Phases	4			8	2	
Permitted Phases			8			2
Detector Phase	4		8	8	2	2
Switch Phase						
Minimum Initial (s)	3.0		3.0	3.0	3.0	3.0
Minimum Split (s)	15.0		15.0	15.0	15.0	15.0
Total Split (s)	65.0		65.0	65.0	15.0	15.0
Total Split (%)	81.3%		81.3%	81.3%	18.8%	18.8%
Maximum Green (s)	59.0		59.0	59.0	9.0	9.0
Yellow Time (s)	4.0		4.0	4.0	4.0	4.0
All-Red Time (s)	2.0		2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-1.0		-1.0	-1.0	-1.0	-1.0
Total Lost Time (s)	5.0		5.0	5.0	5.0	5.0

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Minimum Gap (s)	3.0		3.0	3.0	3.0	3.0
Time Before Reduce (s)	0.0		0.0	0.0	0.0	0.0
Time To Reduce (s)	0.0		0.0	0.0	0.0	0.0
Recall Mode	Min		Min	Min	None	None
Walk Time (s)						
Flash Dont Walk (s)						
Pedestrian Calls (#/hr)						
v/c Ratio	0.87		0.92	0.69	0.56	0.50
Control Delay	16.2		65.1	8.6	43.7	11.5
Queue Delay	0.0		0.0	0.0	0.0	0.0
Total Delay	16.2		65.1	8.6	43.7	11.5
Queue Length 50th (ft)	297		52	172	57	0
Queue Length 95th (ft)	357		#71	210	96	38
Internal Link Dist (ft)	1396			1239	469	
Turn Bay Length (ft)			125		75	
Base Capacity (vph)	1421		202	1388	225	348
Starvation Cap Reductn	0		0	0	0	0
Spillback Cap Reductn	0		0	0	0	0
Storage Cap Reductn	0		0	0	0	0
Reduced v/c Ratio	0.79		0.84	0.63	0.53	0.49

Intersection Summary	
Area Type:	Other
Cycle Length: 80	
Actuated Cycle Length: 74.9	
Natural Cycle: 80	
Control Type: Actuated-Uncoordinated	
# 95th percentile volume exceeds capacity, queue may be longer.	
Queue shown is maximum after two cycles.	

Splits and Phases: 10: Lime Bluff Road & US 220



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	788	110	136	694	95	136
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	1790	1844	1863	1725	1755	1755
Adj Flow Rate, veh/h	985	138	170	868	119	120
Adj No. of Lanes	1	0	1	1	1	1
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80
Percent Heavy Veh, %	3	3	0	8	0	0
Cap, veh/h	1158	162	259	1300	202	180
Arrive On Green	0.75	0.74	0.75	0.75	0.12	0.12
Sat Flow, veh/h	1537	215	527	1725	1671	1492
Grp Volume(v), veh/h	0	1123	170	868	119	120
Grp Sat Flow(s),veh/h/ln	0	1752	527	1725	1671	1492
Q Serve(g_s), s	0.0	35.1	25.4	19.9	5.4	6.1
Cycle Q Clear(g_c), s	0.0	35.1	60.0	19.9	5.4	6.1
Prop In Lane		0.12	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	0	1321	259	1300	202	180
V/C Ratio(X)	0.00	0.85	0.66	0.67	0.59	0.67
Avail Cap(c_a), veh/h	0	1321	259	1300	210	187
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	6.8	27.2	4.9	33.1	33.5
Incr Delay (d2), s/veh	0.0	5.5	5.9	1.3	4.0	8.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.0	25.6	7.4	14.7	4.9	5.3
LnGrp Delay(d),s/veh	0.0	12.3	33.2	6.2	37.2	41.7
LnGrp LOS		B	C	A	D	D
Approach Vol, veh/h	1123			1038	239	
Approach Delay, s/veh	12.3			10.6	39.4	
Approach LOS	B			B	D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4				8
Phs Duration (G+Y+Rc), s		14.6		65.0				65.0
Change Period (Y+Rc), s		6.0		6.0				6.0
Max Green Setting (Gmax), s		9.0		59.0				59.0
Max Q Clear Time (g_c+I1), s		8.6		37.1				62.5
Green Ext Time (p_c), s		0.0		11.7				0.0

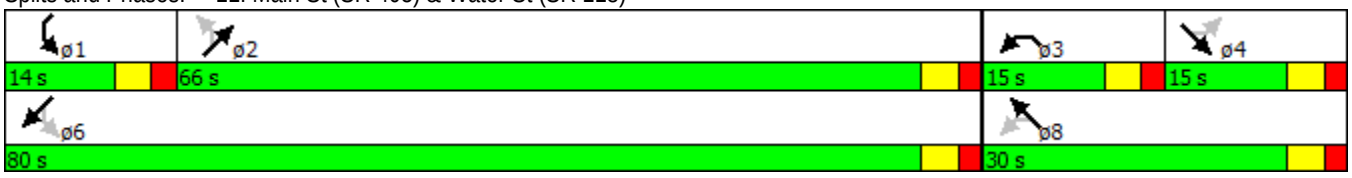
Intersection Summary	
HCM 2010 Ctrl Delay	14.3
HCM 2010 LOS	B

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	30	122	36	237	54	319	19	796	278	253	526	11
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	11	12	12	11	12	12	12	12	12	11	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	75		0	125		0	75		0	75		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	75			75			75			75		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.966			0.872			0.961			0.997	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1653	1739	0	1366	1461	0	1710	1666	0	1450	1679	0
Flt Permitted	0.364			0.267			0.459			0.061		
Satd. Flow (perm)	633	1739	0	384	1461	0	826	1666	0	93	1679	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		25			35			25			25	
Link Distance (ft)		390			506			1477			648	
Travel Time (s)		10.6			9.9			40.3			17.7	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	0%	0%	21%	4%	8%	0%	2%	9%	14%	7%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	31	124	37	242	55	326	19	812	284	258	537	11
Shared Lane Traffic (%)												
Lane Group Flow (vph)	31	161	0	242	381	0	19	1096	0	258	548	0
Number of Detectors	1	1		1	1		1	1		1	1	
Detector Template	Left			Left			Left			Left		
Leading Detector (ft)	30	45		30	45		30	45		30	45	
Trailing Detector (ft)	-10	-5		-10	-5		-10	-5		-10	-5	
Turn Type	Perm	NA		pm+pt	NA		Perm	NA		pm+pt	NA	
Protected Phases		4		3	8			2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		3	8		2	2		1	6	
Switch Phase												
Minimum Initial (s)	10.0	10.0		3.0	10.0		10.0	10.0		3.0	10.0	
Minimum Split (s)	15.0	15.0		9.0	15.0		15.0	15.0		9.0	15.0	
Total Split (s)	15.0	15.0		15.0	30.0		66.0	66.0		14.0	80.0	
Total Split (%)	13.6%	13.6%		13.6%	27.3%		60.0%	60.0%		12.7%	72.7%	
Maximum Green (s)	10.0	10.0		10.0	25.0		61.0	61.0		9.0	75.0	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	-1.0	-1.0		-1.0	-1.0		-1.0	-1.0		-1.0	-1.0	
Total Lost Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lead/Lag	Lag	Lag		Lead			Lag	Lag		Lead		
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Minimum Gap (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Time Before Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Time To Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Recall Mode	None	None		None	None		Max	Max		None	Max	
Walk Time (s)	11.0	11.0			11.0		12.0	12.0			12.0	
Flash Dont Walk (s)	16.0	16.0			16.0		18.0	18.0			18.0	
Pedestrian Calls (#/hr)	0	0			0		0	0			0	
v/c Ratio	0.49	0.93		1.29	1.10		0.04	1.17		1.38	0.47	
Control Delay	73.8	102.5		197.2	119.7		11.1	111.9		227.8	9.4	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	73.8	102.5		197.2	119.7		11.1	111.9		227.8	9.4	
Queue Length 50th (ft)	21	115		~178	~307		6	~923		~201	158	
Queue Length 95th (ft)	#64	#243		#334	#495		17	#1175		#366	228	
Internal Link Dist (ft)		310			426			1397			568	
Turn Bay Length (ft)	75			125			75			75		
Base Capacity (vph)	63	173		188	345		465	939		187	1160	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.49	0.93		1.29	1.10		0.04	1.17		1.38	0.47	

Intersection Summary	
Area Type:	Other
Cycle Length: 110	
Actuated Cycle Length: 110	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
~	Volume exceeds capacity, queue is theoretically infinite.
	Queue shown is maximum after two cycles.
#	95th percentile volume exceeds capacity, queue may be longer.
	Queue shown is maximum after two cycles.

Splits and Phases: 11: Main St (SR 405) & Water St (SR 118)



Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (veh/h)	30	122	36	237	54	319	19	796	278	253	526	11
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	1800	1800	1800	1488	1676	1800	1800	1734	1800	1579	1684	1800
Adj Flow Rate, veh/h	31	124	37	242	55	326	19	812	284	258	537	11
Adj No. of Lanes	1	1	0	1	1	0	1	1	0	1	1	0
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	0	0	21	4	4	0	2	2	14	7	7
Cap, veh/h	70	133	40	220	50	294	542	692	242	204	1136	23
Arrive On Green	0.10	0.10	0.09	0.10	0.24	0.23	0.56	0.56	0.55	0.09	0.69	0.68
Sat Flow, veh/h	1018	1332	398	1417	210	1246	873	1228	430	1504	1645	34
Grp Volume(v), veh/h	31	0	161	242	0	381	19	0	1096	258	0	548
Grp Sat Flow(s),veh/h/ln	1018	0	1730	1417	0	1456	873	0	1658	1504	0	1679
Q Serve(g_s), s	0.5	0.0	10.2	11.0	0.0	26.0	1.1	0.0	62.0	10.0	0.0	16.5
Cycle Q Clear(g_c), s	11.0	0.0	10.2	11.0	0.0	26.0	3.1	0.0	62.0	10.0	0.0	16.5
Prop In Lane	1.00		0.23	1.00		0.86	1.00		0.26	1.00		0.02
Lane Grp Cap(c), veh/h	70	0	173	220	0	344	542	0	935	204	0	1160
V/C Ratio(X)	0.44	0.00	0.93	1.10	0.00	1.11	0.04	0.00	1.17	1.26	0.00	0.47
Avail Cap(c_a), veh/h	70	0	173	220	0	344	542	0	935	204	0	1160
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	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	55.0	0.0	49.2	42.7	0.0	42.4	11.6	0.0	24.1	36.6	0.0	7.8
Incr Delay (d2), s/veh	4.3	0.0	48.7	90.6	0.0	80.6	0.1	0.0	89.1	151.5	0.0	1.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	1.8	0.0	11.6	20.4	0.0	32.6	0.5	0.0	92.1	26.6	0.0	12.7
LnGrp Delay(d),s/veh	59.3	0.0	97.9	133.3	0.0	123.0	11.7	0.0	113.3	188.1	0.0	9.2
LnGrp LOS	E		F	F		F	B		F	F		A
Approach Vol, veh/h		192			623			1115			806	
Approach Delay, s/veh		91.7			127.0			111.5			66.5	
Approach LOS		F			F			F			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4		6		8
Phs Duration (G+Y+Rc), s	14.0	66.0	15.0	15.0		80.0		30.0
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0		5.0		5.0
Max Green Setting (Gmax), s	9.0	61.0	10.0	10.0		75.0		25.0
Max Q Clear Time (g_c+I1), s	12.5	64.0	13.5	13.5		18.5		28.0
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0		13.7		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	100.4
HCM 2010 LOS	F

Notes

User approved pedestrian interval to be less than phase max green.

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	3027	292	116	2268	229	95
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	11	11	11	11	10	10
Grade (%)	-1%			1%	-4%	
Storage Length (ft)		225	150		150	0
Storage Lanes		1	1		1	1
Taper Length (ft)			75		75	
Lane Util. Factor	0.91	1.00	1.00	0.95	1.00	1.00
Ped Bike Factor						
Frt		0.850				0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	4680	991	1645	3133	1550	1457
Flt Permitted			0.046		0.950	
Satd. Flow (perm)	4680	991	80	3133	1550	1457
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		243				104
Link Speed (mph)	50			55	35	
Link Distance (ft)	420			676	522	
Travel Time (s)	5.7			8.4	10.2	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	50%	0%	5%	5%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	3326	321	127	2492	252	104
Shared Lane Traffic (%)						
Lane Group Flow (vph)	3326	321	127	2492	252	104
Number of Detectors	1	1	1	1	1	1
Detector Template	Thru	Right	Left	Thru	Left	Right
Leading Detector (ft)	30	30	30	30	30	30
Trailing Detector (ft)	-10	-10	-10	-10	-10	-10
Turn Type	NA	Perm	pm+pt	NA	Prot	Perm
Protected Phases	4		3	8	2	
Permitted Phases		4	8			2
Detector Phase	4	4	3	8	2	2
Switch Phase						
Minimum Initial (s)	3.0	3.0	3.0	3.0	3.0	3.0
Minimum Split (s)	15.0	15.0	9.0	15.0	15.0	15.0
Total Split (s)	86.0	86.0	15.0	101.0	19.0	19.0
Total Split (%)	71.7%	71.7%	12.5%	84.2%	15.8%	15.8%
Maximum Green (s)	80.0	80.0	9.0	95.0	13.0	13.0
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lead/Lag	Lag	Lag	Lead			
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Minimum Gap (s)	3.0	3.0	3.0	3.0	3.0	3.0
Time Before Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0
Time To Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0
Recall Mode	Min	Min	Min	None	None	None
Walk Time (s)						
Flash Dont Walk (s)						
Pedestrian Calls (#/hr)						
v/c Ratio	1.04	0.43	0.69	0.99	1.40	0.40
Control Delay	49.2	3.9	43.3	29.2	249.3	14.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	49.2	3.9	43.3	29.2	249.3	14.0
Queue Length 50th (ft)	~1031	19	48	804	~260	0
Queue Length 95th (ft)	#1110	60	#128	#1183	#428	53
Internal Link Dist (ft)	340			596	442	
Turn Bay Length (ft)		225	150		150	
Base Capacity (vph)	3185	751	194	2506	180	261
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	1.04	0.43	0.65	0.99	1.40	0.40

Intersection Summary	
Area Type:	Other
Cycle Length: 120	
Actuated Cycle Length: 120	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	

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

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

Splits and Phases: 12: Industrial Park Rd & John Brady Dr



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	3027	292	116	2268	229	95
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	1774	1206	1791	1706	1749	1836
Adj Flow Rate, veh/h	3326	321	127	2492	252	82
Adj No. of Lanes	3	1	1	2	1	1
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	2	50	0	5	5	0
Cap, veh/h	3337	707	174	2586	196	184
Arrive On Green	0.69	0.69	0.07	0.80	0.12	0.12
Sat Flow, veh/h	5001	1025	1706	3326	1665	1561
Grp Volume(v), veh/h	3326	321	127	2492	252	82
Grp Sat Flow(s),veh/h/ln	1614	1025	1706	1620	1665	1561
Q Serve(g_s), s	80.9	16.8	4.3	79.9	14.0	5.8
Cycle Q Clear(g_c), s	80.9	16.8	4.3	79.9	14.0	5.8
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	3337	707	174	2586	196	184
V/C Ratio(X)	1.00	0.45	0.73	0.96	1.28	0.45
Avail Cap(c_a), veh/h	3337	707	205	2621	196	184
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	18.3	8.3	40.0	10.5	52.4	48.7
Incr Delay (d2), s/veh	14.8	0.5	10.4	10.4	160.5	1.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	50.3	8.4	8.1	48.5	27.2	4.7
LnGrp Delay(d),s/veh	33.1	8.8	50.3	20.9	212.8	50.4
LnGrp LOS	C	A	D	C	F	D
Approach Vol, veh/h	3647			2619	334	
Approach Delay, s/veh	30.9			22.3	172.9	
Approach LOS	C			C	F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4				8
Phs Duration (G+Y+Rc), s		19.0	12.9	86.8				99.7
Change Period (Y+Rc), s		6.0	6.0	6.0				6.0
Max Green Setting (Gmax), s		13.0	9.0	80.0				95.0
Max Q Clear Time (g_c+I1), s		16.5	6.8	83.4				82.4
Green Ext Time (p_c), s		0.0	0.1	0.0				11.4

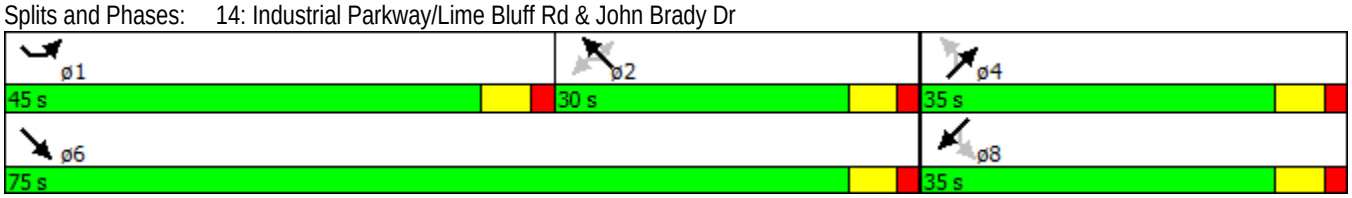
Intersection Summary	
HCM 2010 Ctrl Delay	34.7
HCM 2010 LOS	C

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	1537	1462	4	4	1039	134	15	61	5	123	35	1156
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	11	11	11	11	11	11	16	16	16	11	11	11
Grade (%)		-2%			2%			2%			-1%	
Storage Length (ft)	275		0	0		150	0		0	150		0
Storage Lanes	2		0	1		1	0		0	1		0
Taper Length (ft)	75			75			75			75		
Lane Util. Factor	0.97	0.95	0.95	1.00	0.91	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt						0.850		0.991			0.854	
Flt Protected	0.950			0.950				0.991		0.950		
Satd. Flow (prot)	3145	3304	0	1091	4479	1408	0	1850	0	1629	1493	0
Flt Permitted	0.950			0.167				0.380		0.701		
Satd. Flow (perm)	3145	3304	0	192	4479	1408	0	709	0	1202	1493	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		1				103		3			676	
Link Speed (mph)		50			50			25			50	
Link Distance (ft)		832			462			184			527	
Travel Time (s)		11.3			6.3			5.0			7.2	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	3%	1%	25%	50%	5%	4%	23%	4%	0%	2%	0%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	1767	1680	5	5	1194	154	17	70	6	141	40	1329
Shared Lane Traffic (%)												
Lane Group Flow (vph)	1767	1685	0	5	1194	154	0	93	0	141	1369	0
Number of Detectors	1	1		1	1	1	1	1		1	1	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (ft)	30	30		30	30	30	30	30		30	30	
Trailing Detector (ft)	-10	-10		-10	-10	-10	-10	-10		-10	-10	
Turn Type	Prot	NA		Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases	1	6			2			4			8	
Permitted Phases				2		2	4			8		
Detector Phase	1	6		2	2	2	4	4		8	8	
Switch Phase												
Minimum Initial (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Minimum Split (s)	15.0	15.0		15.0	15.0	15.0	15.0	15.0		15.0	15.0	
Total Split (s)	45.0	75.0		30.0	30.0	30.0	35.0	35.0		35.0	35.0	
Total Split (%)	40.9%	68.2%		27.3%	27.3%	27.3%	31.8%	31.8%		31.8%	31.8%	
Maximum Green (s)	39.0	69.0		24.0	24.0	24.0	29.0	29.0		29.0	29.0	
Yellow Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	-1.0	-1.0		0.0	-1.0	0.0		-1.0		-1.0	-1.0	
Total Lost Time (s)	5.0	5.0		6.0	5.0	6.0		5.0		5.0	5.0	

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lead/Lag	Lead			Lag	Lag	Lag						
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Minimum Gap (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Time Before Reduce (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Time To Reduce (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Recall Mode	Min	Min		Min	Min	Min	None	None		None	None	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
v/c Ratio	1.55	0.80		0.12	1.17	0.40		0.48		0.43	1.52	
Control Delay	278.4	18.6		42.8	127.3	17.1		42.0		37.9	259.5	
Queue Delay	0.0	0.0		0.0	0.0	0.0		0.0		0.0	0.0	
Total Delay	278.4	18.6		42.8	127.3	17.1		42.0		37.9	259.5	
Queue Length 50th (ft)	~907	427		3	~369	29		53		82	~992	
Queue Length 95th (ft)	#994	492		15	#438	84		104		139	#1179	
Internal Link Dist (ft)		752			382			104			447	
Turn Bay Length (ft)	275					150				150		
Base Capacity (vph)	1143	2102		41	1017	387		195		327	898	
Starvation Cap Reductn	0	0		0	0	0		0		0	0	
Spillback Cap Reductn	0	0		0	0	0		0		0	0	
Storage Cap Reductn	0	0		0	0	0		0		0	0	
Reduced v/c Ratio	1.55	0.80		0.12	1.17	0.40		0.48		0.43	1.52	

Intersection Summary	
Area Type:	Other
Cycle Length: 110	
Actuated Cycle Length: 110	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
~	Volume exceeds capacity, queue is theoretically infinite.
	Queue shown is maximum after two cycles.
#	95th percentile volume exceeds capacity, queue may be longer.
	Queue shown is maximum after two cycles.

Splits and Phases: 14: Industrial Parkway/Lime Bluff Rd & John Brady Dr



Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (veh/h)	1537	1462	4	4	1039	134	15	61	5	123	35	1156
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1765	1799	1818	1188	1697	1713	1853	1729	1853	1774	1809	1809
Adj Flow Rate, veh/h	1767	1680	5	5	1194	98	17	70	4	141	40	0
Adj No. of Lanes	2	2	0	1	3	1	0	1	0	1	1	0
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %	3	1	1	50	5	4	4	4	4	2	0	0
Cap, veh/h	1406	2637	8	128	1248	377	70	196	10	273	249	0
Arrive On Green	0.43	0.75	0.74	0.26	0.27	0.26	0.13	0.14	0.13	0.14	0.14	0.00
Sat Flow, veh/h	3261	3495	10	196	4633	1456	173	1418	73	1327	1809	0
Grp Volume(v), veh/h	1767	821	864	5	1194	98	91	0	0	141	40	0
Grp Sat Flow(s),veh/h/ln	1631	1709	1797	196	1544	1456	1664	0	0	1327	1809	0
Q Serve(g_s), s	40.0	21.1	21.1	1.8	23.5	5.0	0.0	0.0	0.0	4.5	1.8	0.0
Cycle Q Clear(g_c), s	40.0	21.1	21.1	1.8	23.5	5.0	4.5	0.0	0.0	8.6	1.8	0.0
Prop In Lane	1.00		0.01	1.00		1.00	0.19		0.04	1.00		0.00
Lane Grp Cap(c), veh/h	1406	1289	1355	128	1248	377	258	0	0	273	249	0
V/C Ratio(X)	1.26	0.64	0.64	0.04	0.96	0.26	0.35	0.00	0.00	0.52	0.16	0.00
Avail Cap(c_a), veh/h	1406	1289	1355	128	1248	377	559	0	0	519	585	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	26.4	5.4	5.4	26.2	33.4	27.3	36.5	0.0	0.0	38.0	35.3	0.0
Incr Delay (d2), s/veh	121.6	1.0	1.0	0.1	16.2	0.4	0.8	0.0	0.0	1.5	0.3	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(95%),veh/ln	74.7	15.1	15.8	0.2	17.5	3.6	4.0	0.0	0.0	6.4	1.7	0.0
LnGrp Delay(d),s/veh	148.0	6.4	6.4	26.3	49.6	27.7	37.4	0.0	0.0	39.5	35.6	0.0
LnGrp LOS	F	A	A	C	D	C	D			D	D	
Approach Vol, veh/h		3452			1297			91			181	
Approach Delay, s/veh		78.9			47.8			37.4			38.6	
Approach LOS		E			D			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6		8
Phs Duration (G+Y+Rc), s	45.0	30.0		17.8		75.0		17.8
Change Period (Y+Rc), s	6.0	6.0		6.0		6.0		6.0
Max Green Setting (Gmax), s	39.0	24.0		29.0		69.0		29.0
Max Q Clear Time (g_c+I1), s	42.5	26.0		6.5		23.6		11.1
Green Ext Time (p_c), s	0.0	0.0		0.8		20.2		0.8

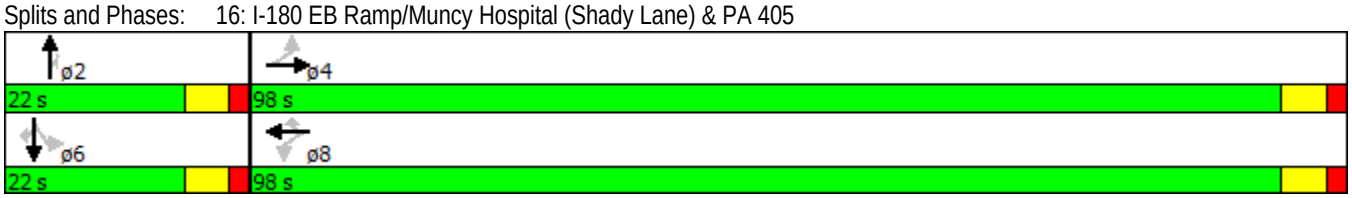
Intersection Summary	
HCM 2010 Ctrl Delay	68.7
HCM 2010 LOS	E

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	10	974	59	294	1115	22	0	0	1510	42	1	21
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1900	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	12	12	13	12	12	12	12	12	12	12
Grade (%)		-1%			1%			-3%			0%	
Storage Length (ft)	125		0	125		125	0		0	0		100
Storage Lanes	1		0	1		1	0		1	0		1
Taper Length (ft)	75			60			75			75		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.991				0.850			0.850			0.850
Flt Protected	0.950			0.950							0.953	
Satd. Flow (prot)	1685	1741	0	1506	1780	1492	0	1791	1508	0	1682	1500
Flt Permitted	0.132			0.172							0.731	
Satd. Flow (perm)	234	1741	0	273	1780	1492	0	1791	1508	0	1290	1500
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		8				27			192			27
Link Speed (mph)		35			35			25			35	
Link Distance (ft)		496			348			387			259	
Travel Time (s)		9.7			6.8			10.6			5.0	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	19%	13%	4%	2%	0%	2%	3%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	10	1015	61	306	1161	23	0	0	1573	44	1	22
Shared Lane Traffic (%)												
Lane Group Flow (vph)	10	1076	0	306	1161	23	0	0	1573	0	45	22
Number of Detectors	1	1		1	1	1		1	1	1	1	1
Detector Template	Left	Thru		Left	Thru	Right		Thru	Right	Left	Thru	Right
Leading Detector (ft)	30	30		30	30	30		30	30	30	30	30
Trailing Detector (ft)	-10	-10		-10	-10	-10		-10	-10	-10	-10	-10
Turn Type	Perm	NA		Perm	NA	Perm			Perm	Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8		8			2	6		6
Detector Phase	4	4		8	8	8		2	2	6	6	6
Switch Phase												
Minimum Initial (s)	3.0	3.0		3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0
Minimum Split (s)	15.0	15.0		15.0	15.0	15.0		15.0	15.0	15.0	15.0	15.0
Total Split (s)	98.0	98.0		98.0	98.0	98.0		22.0	22.0	22.0	22.0	22.0
Total Split (%)	81.7%	81.7%		81.7%	81.7%	81.7%		18.3%	18.3%	18.3%	18.3%	18.3%
Maximum Green (s)	92.0	92.0		92.0	92.0	92.0		16.0	16.0	16.0	16.0	16.0
Yellow Time (s)	4.0	4.0		4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0		2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0		0.0	0.0		0.0	0.0
Total Lost Time (s)	6.0	6.0		6.0	6.0	6.0		6.0	6.0		6.0	6.0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0
Minimum Gap (s)	3.0	3.0		3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0
Time Before Reduce (s)	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0
Time To Reduce (s)	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0
Recall Mode	None	None		None	None	None		Min	Min	Min	Min	Min
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
v/c Ratio	0.06	0.81		1.46	0.85	0.02			4.29		0.26	0.10
Control Delay	4.2	14.6		252.9	17.4	1.1			1497.2		51.2	14.5
Queue Delay	0.0	0.0		0.0	0.6	0.0			0.0		0.0	0.0
Total Delay	4.2	14.6		252.9	17.9	1.1			1497.2		51.2	14.5
Queue Length 50th (ft)	2	427		~160	512	0			~2134		32	0
Queue Length 95th (ft)	6	645		#344	784	5			#2402		70	22
Internal Link Dist (ft)		416			268			307			179	
Turn Bay Length (ft)	125			125		125						100
Base Capacity (vph)	179	1336		209	1364	1150			367		172	223
Starvation Cap Reductn	0	0		0	40	0			0		0	0
Spillback Cap Reductn	0	0		0	0	0			0		0	0
Storage Cap Reductn	0	0		0	0	0			0		0	0
Reduced v/c Ratio	0.06	0.81		1.46	0.88	0.02			4.29		0.26	0.10

Intersection Summary	
Area Type:	Other
Cycle Length: 120	
Actuated Cycle Length: 120	
Natural Cycle: 80	
Control Type: Actuated-Uncoordinated	
~	Volume exceeds capacity, queue is theoretically infinite.
	Queue shown is maximum after two cycles.
#	95th percentile volume exceeds capacity, queue may be longer.
	Queue shown is maximum after two cycles.

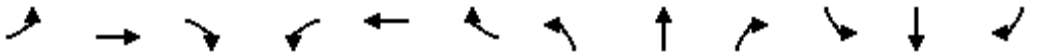
Splits and Phases: 16: I-180 EB Ramp/Muncy Hospital (Shady Lane) & PA 405



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	10	974	59	294	1115	22	0	0	1510	42	1	21
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	1774	1757	1809	1585	1791	1756	0	1791	1774	1800	1765	1765
Adj Flow Rate, veh/h	10	1015	61	306	1161	23	0	0	0	44	1	0
Adj No. of Lanes	1	1	0	1	1	1	0	1	1	0	1	1
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	13	4	2	0	2	3	2	2	2
Cap, veh/h	319	1373	83	336	1498	1249	0	97	82	134	2	81
Arrive On Green	0.84	0.84	0.84	0.84	0.84	0.84	0.00	0.00	0.00	0.05	0.05	0.00
Sat Flow, veh/h	474	1641	99	469	1791	1492	0	1791	1508	1270	30	1500
Grp Volume(v), veh/h	10	0	1076	306	1161	23	0	0	0	45	0	0
Grp Sat Flow(s),veh/h/ln	474	0	1740	469	1791	1492	0	1791	1508	1301	0	1500
Q Serve(g_s), s	1.1	0.0	29.1	63.4	33.1	0.3	0.0	0.0	0.0	3.4	0.0	0.0
Cycle Q Clear(g_c), s	34.2	0.0	29.1	92.0	33.1	0.3	0.0	0.0	0.0	3.9	0.0	0.0
Prop In Lane	1.00		0.06	1.00		1.00	0.00		1.00	0.98		1.00
Lane Grp Cap(c), veh/h	319	0	1455	336	1498	1249	0	97	82	135	0	81
V/C Ratio(X)	0.03	0.00	0.74	0.91	0.77	0.02	0.00	0.00	0.00	0.33	0.00	0.00
Avail Cap(c_a), veh/h	319	0	1455	336	1498	1249	0	261	219	265	0	218
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	1.00	1.00	0.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	12.1	0.0	3.8	27.0	4.2	1.5	0.0	0.0	0.0	51.3	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.0	2.0	27.9	2.6	0.0	0.0	0.0	0.0	1.4	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(95%),veh/ln	0.3	0.0	20.5	17.5	23.6	0.2	0.0	0.0	0.0	2.5	0.0	0.0
LnGrp Delay(d),s/veh	12.2	0.0	5.9	54.9	6.8	1.5	0.0	0.0	0.0	52.7	0.0	0.0
LnGrp LOS	B		A	D	A	A				D		
Approach Vol, veh/h		1086			1490			0			45	
Approach Delay, s/veh		5.9			16.6			0.0			52.7	
Approach LOS		A			B						D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		12.0		98.0		12.0		98.0
Change Period (Y+Rc), s		6.0		6.0		6.0		6.0
Max Green Setting (Gmax), s		16.0		92.0		16.0		92.0
Max Q Clear Time (g_c+I1), s		0.0		36.7		5.9		94.5
Green Ext Time (p_c), s		0.0		29.8		0.0		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	12.8
HCM 2010 LOS	B

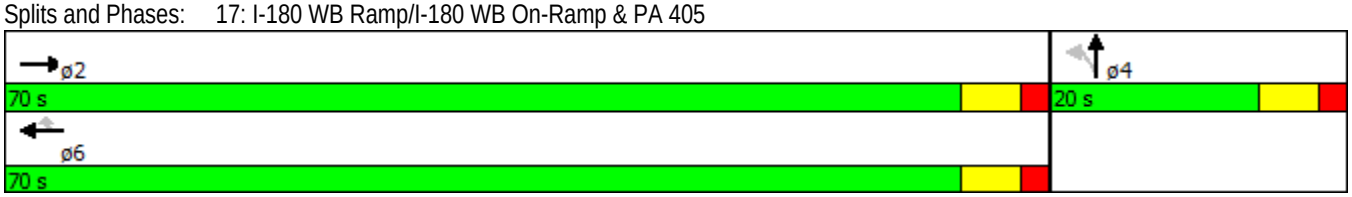


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	2141	342	0	871	1541	30	0	287	0	0	0
Ideal Flow (vphpl)	1900	1800	1800	1900	1800	1800	1800	1800	1800	1900	1900	1900
Lane Width (ft)	12	12	11	12	12	12	12	12	12	12	12	12
Grade (%)		-1%			-1%			-4%			-2%	
Storage Length (ft)	0		0	0		115	0		0	0		0
Storage Lanes	0		0	0		1	1		0	0		0
Taper Length (ft)	75			75			75			75		
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.979				0.850		0.850				
Flt Protected							0.950					
Satd. Flow (prot)	0	3303	0	0	1691	1507	1246	1406	0	0	0	0
Flt Permitted							0.950					
Satd. Flow (perm)	0	3303	0	0	1691	1507	1246	1406	0	0	0	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		51				1091		36				
Link Speed (mph)		45			45			25			25	
Link Distance (ft)		758			636			290			200	
Travel Time (s)		11.5			9.6			7.9			5.5	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	100%	2%	1%	0%	7%	2%	40%	0%	11%	0%	0%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	0	2433	389	0	990	1751	34	0	326	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	2822	0	0	990	1751	34	326	0	0	0	0
Number of Detectors		1			1	1	1	1				
Detector Template		Thru			Thru	Right	Left	Thru				
Leading Detector (ft)		30			30	30	30	30				
Trailing Detector (ft)		-10			-10	-10	-10	-10				
Turn Type		NA			NA	Perm	Perm	NA				
Protected Phases		2			6			4				
Permitted Phases						6	4					
Detector Phase		2			6	6	4	4				
Switch Phase												
Minimum Initial (s)		3.0			3.0	3.0	3.0	3.0				
Minimum Split (s)		15.0			15.0	15.0	15.0	15.0				
Total Split (s)		70.0			70.0	70.0	20.0	20.0				
Total Split (%)		77.8%			77.8%	77.8%	22.2%	22.2%				
Maximum Green (s)		64.0			64.0	64.0	14.0	14.0				
Yellow Time (s)		4.0			4.0	4.0	4.0	4.0				
All-Red Time (s)		2.0			2.0	2.0	2.0	2.0				
Lost Time Adjust (s)		-1.0			-1.0	-1.0	0.0	-1.0				
Total Lost Time (s)		5.0			5.0	5.0	6.0	5.0				

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)		3.0			3.0	3.0	3.0	3.0				
Minimum Gap (s)		3.0			3.0	3.0	3.0	3.0				
Time Before Reduce (s)		0.0			0.0	0.0	0.0	0.0				
Time To Reduce (s)		0.0			0.0	0.0	0.0	0.0				
Recall Mode		Min			Min	Min	None	None				
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
v/c Ratio		1.17			0.81	1.26	0.18	1.24				
Control Delay		98.9			15.2	133.6	35.7	169.0				
Queue Delay		0.0			0.0	0.0	0.0	0.0				
Total Delay		98.9			15.2	133.6	35.7	169.0				
Queue Length 50th (ft)		~1021			316	~1082	17	~215				
Queue Length 95th (ft)		#1116			487	#1293	44	#369				
Internal Link Dist (ft)		678			556			210			120	
Turn Bay Length (ft)						115						
Base Capacity (vph)		2407			1225	1392	191	262				
Starvation Cap Reductn		0			0	0	0	0				
Spillback Cap Reductn		0			0	0	0	0				
Storage Cap Reductn		0			0	0	0	0				
Reduced v/c Ratio		1.17			0.81	1.26	0.18	1.24				

Intersection Summary	
Area Type:	Other
Cycle Length: 90	
Actuated Cycle Length: 90.8	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
~ Volume exceeds capacity, queue is theoretically infinite.	
Queue shown is maximum after two cycles.	
# 95th percentile volume exceeds capacity, queue may be longer.	
Queue shown is maximum after two cycles.	

Splits and Phases: 17: I-180 WB Ramp/I-180 WB On-Ramp & PA 405



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	2141	342	0	871	1541	30	0	287	0	0	0
Number	5	2	12	1	6	16	7	4	14			
Initial Q (Qb), veh	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			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	0	1776	1809	0	1691	1774	1311	1654	1836			
Adj Flow Rate, veh/h	0	2433	0	0	990	0	34	0	315			
Adj No. of Lanes	0	2	0	0	1	1	1	1	0			
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88			
Percent Heavy Veh, %	0	2	2	0	7	2	40	0	40			
Cap, veh/h	0	2437	0	0	1221	1089	194	0	234			
Arrive On Green	0.00	0.72	0.00	0.00	0.72	0.00	0.16	0.00	0.16			
Sat Flow, veh/h	0	3552	0	0	1691	1508	1249	0	1406			
Grp Volume(v), veh/h	0	2433	0	0	990	0	34	0	315			
Grp Sat Flow(s),veh/h/ln	0	1687	0	0	1691	1508	1249	0	1406			
Q Serve(g_s), s	0.0	64.6	0.0	0.0	35.3	0.0	2.1	0.0	15.0			
Cycle Q Clear(g_c), s	0.0	64.6	0.0	0.0	35.3	0.0	2.1	0.0	15.0			
Prop In Lane	0.00		0.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	0	2437	0	0	1221	1089	194	0	234			
V/C Ratio(X)	0.00	1.00	0.00	0.00	0.81	0.00	0.17	0.00	1.34			
Avail Cap(c_a), veh/h	0	2437	0	0	1221	1089	194	0	234			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.00	1.00	0.00	0.00	1.00	0.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	0.0	12.4	0.0	0.0	8.4	0.0	33.0	0.0	38.0			
Incr Delay (d2), s/veh	0.0	17.8	0.0	0.0	4.2	0.0	0.4	0.0	180.7			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(95%),veh/ln	0.0	45.2	0.0	0.0	24.2	0.0	1.4	0.0	31.6			
LnGrp Delay(d),s/veh	0.0	30.3	0.0	0.0	12.6	0.0	33.4	0.0	218.7			
LnGrp LOS		C			B		C		F			
Approach Vol, veh/h		2433			990			349				
Approach Delay, s/veh		30.3			12.6			200.6				
Approach LOS		C			B			F				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		
Phs Duration (G+Y+Rc), s		70.0		20.0		70.0		
Change Period (Y+Rc), s		6.0		6.0		6.0		
Max Green Setting (Gmax), s		64.0		14.0		64.0		
Max Q Clear Time (g_c+I1), s		67.1		17.0		37.8		
Green Ext Time (p_c), s		0.0		0.0		20.7		

Intersection Summary	
HCM 2010 Ctrl Delay	41.4
HCM 2010 LOS	D

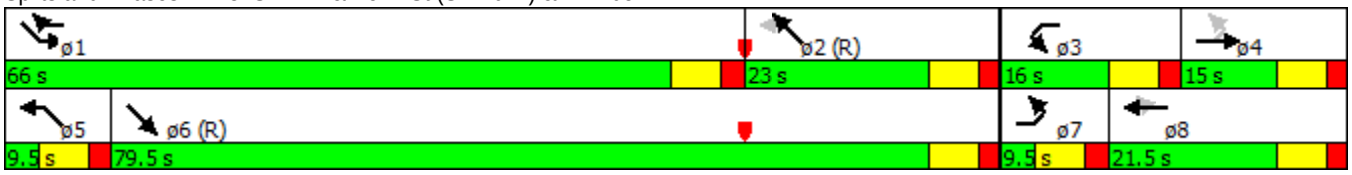
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Volume (vph)	36	256	32	320	219	2116	2057	400	74	24	275	271
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	11	11	11	11	11	11	11	11	11	11	11	11
Grade (%)		-2%			-1%			1%			-2%	
Storage Length (ft)	195		220	155		425	275		0	125		400
Storage Lanes	2		0	2		2	2		0	1		0
Taper Length (ft)	75			75			75			75		
Lane Util. Factor	1.00	0.95	0.95	0.97	1.00	0.88	0.97	1.00	1.00	1.00	0.95	0.95
Ped Bike Factor												
Frt		0.983				0.850		0.977			0.926	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1575	3214	0	3160	1714	2295	3010	1642	0	1590	2973	0
Flt Permitted	0.506			0.950			0.950			0.474		
Satd. Flow (perm)	839	3214	0	3160	1714	2295	3010	1642	0	793	2973	0
Right Turn on Red			No			Yes			Yes			Yes
Satd. Flow (RTOR)						257		14			54	
Link Speed (mph)		45			45			40			45	
Link Distance (ft)		670			586			554			570	
Travel Time (s)		10.2			8.9			9.4			8.6	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
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
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	6%	2%	3%	2%	2%	14%	6%	3%	3%	5%	5%	3%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	39	278	35	348	238	2300	2236	435	80	26	299	295
Shared Lane Traffic (%)												
Lane Group Flow (vph)	39	313	0	348	238	2300	2236	515	0	26	594	0
Number of Detectors	1	1		1	1	1	2	2		1	2	
Detector Template	Left	Thru		Left	Thru	Right				Left		
Leading Detector (ft)	40	30		40	30	30	160	160		30	310	
Trailing Detector (ft)	-10	-5		-10	-5	-5	-10	-10		-10	-10	
Turn Type	pm+pt	NA		Prot	NA	pm+ov	Prot	NA		pm+pt	NA	
Protected Phases	7	4		3	8	1	1	6		5	2	
Permitted Phases	4					8				2		
Detector Phase	7	4		3	8	1	1	6		5	2	
Switch Phase												
Minimum Initial (s)	3.0	5.0		3.0	5.0	3.0	3.0	5.0		3.0	5.0	
Minimum Split (s)	9.5	11.5		9.5	11.5	9.5	9.5	11.5		9.5	11.5	
Total Split (s)	9.5	15.0		16.0	21.5	66.0	66.0	79.5		9.5	23.0	
Total Split (%)	7.9%	12.5%		13.3%	17.9%	55.0%	55.0%	66.3%		7.9%	19.2%	
Maximum Green (s)	3.0	8.5		9.5	15.0	59.5	59.5	73.0		3.0	16.5	
Yellow Time (s)	4.5	4.5		4.5	4.5	4.5	4.5	4.5		4.5	4.5	
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	-1.0	-1.0		-1.0	-1.0	-1.0	-1.0	-1.0		-1.0	-1.0	
Total Lost Time (s)	5.5	5.5		5.5	5.5	5.5	5.5	5.5		5.5	5.5	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lead/Lag	Lead	Lag		Lead	Lag	Lead	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	5.0		3.0	5.0	3.0	3.0	4.0		3.0	4.0	
Minimum Gap (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Time Before Reduce (s)	0.0	0.0		0.0	0.0	0.0	0.0	9.0		0.0	9.0	
Time To Reduce (s)	0.0	0.0		0.0	0.0	0.0	0.0	18.0		0.0	18.0	
Recall Mode	None	None		None	None	None	None	C-Min		None	C-Min	
Walk Time (s)		12.0			12.0			14.0			14.0	
Flash Dont Walk (s)		18.0			18.0			21.0			21.0	
Pedestrian Calls (#/hr)		0			0			0			0	
v/c Ratio	0.33	1.23		1.26	0.84	1.34	1.47	0.48		0.15	1.24	
Control Delay	47.8	179.5		159.4	57.8	181.2	243.7	13.0		24.6	163.8	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.3	0.0		0.0	0.0	
Total Delay	47.8	179.5		159.4	57.8	181.2	244.0	13.0		24.6	163.8	
Queue Length 50th (ft)	25	~157		~179	~206	~1310	~1227	202		10	~282	
Queue Length 95th (ft)	56	#252		m111	m149	m#426	#1360	289		26	#401	
Internal Link Dist (ft)		590			506			474			490	
Turn Bay Length (ft)	195			155		425	275			125		
Base Capacity (vph)	118	254		276	282	1713	1517	1069		168	479	
Starvation Cap Reductn	0	0		0	0	8	0	0		0	0	
Spillback Cap Reductn	0	0		0	0	0	127	0		0	0	
Storage Cap Reductn	0	0		0	0	0	0	0		0	0	
Reduced v/c Ratio	0.33	1.23		1.26	0.84	1.35	1.61	0.48		0.15	1.24	

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:NWTL and 6:SET, Start of Green, Master Intersection
Natural Cycle: 120
Control Type: Actuated-Coordinated
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 18: SR 442 & Penn St (SR 2044) & PA 405



Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Volume (veh/h)	36	256	32	320	219	2116	2057	400	74	24	275	271
Number	7	4	14	3	8	18	1	6	16	5	2	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
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	1715	1780	1818	1774	1774	1587	1690	1739	1791	1731	1748	1818
Adj Flow Rate, veh/h	39	278	35	348	238	1430	2236	435	70	26	299	132
Adj No. of Lanes	1	2	0	2	1	2	2	1	0	1	2	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, %	6	2	2	2	2	14	6	3	3	5	5	5
Cap, veh/h	114	240	30	287	236	1513	1574	909	146	234	330	142
Arrive On Green	0.03	0.08	0.07	0.09	0.13	0.13	0.50	0.62	0.61	0.03	0.15	0.15
Sat Flow, veh/h	1633	3028	378	3277	1774	2374	3122	1462	235	1649	2261	976
Grp Volume(v), veh/h	39	154	159	348	238	1430	2236	0	505	26	218	213
Grp Sat Flow(s),veh/h/ln	1633	1691	1714	1638	1774	1187	1561	0	1697	1649	1661	1576
Q Serve(g_s), s	2.6	9.5	9.5	10.5	16.0	16.0	60.5	0.0	19.3	1.6	15.5	16.0
Cycle Q Clear(g_c), s	2.6	9.5	9.5	10.5	16.0	16.0	60.5	0.0	19.3	1.6	15.5	16.0
Prop In Lane	1.00		0.22	1.00		1.00	1.00		0.14	1.00		0.62
Lane Grp Cap(c), veh/h	114	134	136	287	236	1513	1574	0	1056	234	242	230
V/C Ratio(X)	0.34	1.15	1.17	1.21	1.01	0.94	1.42	0.00	0.48	0.11	0.90	0.93
Avail Cap(c_a), veh/h	114	134	136	287	236	1513	1574	0	1056	242	242	230
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.09	0.09	0.09	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	48.8	55.3	55.4	54.8	52.0	19.8	29.8	0.0	12.3	41.6	50.4	50.6
Incr Delay (d2), s/veh	1.7	124.0	130.6	99.3	19.1	1.6	193.1	0.0	1.6	0.2	36.7	43.2
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(95%),veh/ln	2.2	16.3	16.9	15.6	16.3	24.0	122.4	0.0	14.5	1.3	14.6	14.9
LnGrp Delay(d),s/veh	50.5	179.3	185.9	154.0	71.2	21.5	222.8	0.0	13.8	41.8	87.1	93.8
LnGrp LOS	D	F	F	F	F	C	F		B	D	F	F
Approach Vol, veh/h		352			2016			2741			457	
Approach Delay, s/veh		168.0			50.2			184.3			87.6	
Approach LOS		F			D			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	66.0	23.0	16.0	15.0	8.9	80.1	9.5	21.5
Change Period (Y+Rc), s	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5
Max Green Setting (Gmax), s	59.5	16.5	9.5	8.5	3.0	73.0	3.0	15.0
Max Q Clear Time (g_c+I1), s	63.0	18.5	13.0	12.0	4.1	21.3	5.1	18.5
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	19.9	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	126.8
HCM 2010 LOS	F

Notes

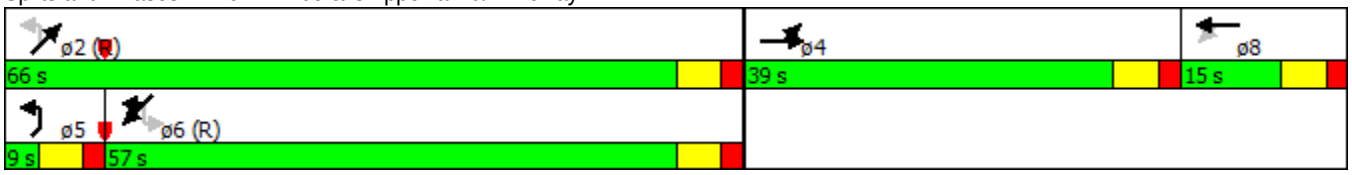
User approved pedestrian interval to be less than phase max green.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	1464	1	159	0	0	0	79	2929	8	6	3017	1223
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	13	13	13	12	12	12	12	12	11	11	11	11
Grade (%)		3%			2%			0%			1%	
Storage Length (ft)	225		0	0		0	100		0	75		225
Storage Lanes	2		0	0		0	1		0	1		1
Taper Length (ft)	75			75			75			75		
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	1.00	0.91	0.91	1.00	0.91	1.00
Ped Bike Factor												
Frt		0.851										0.850
Flt Protected	0.950						0.950			0.950		
Satd. Flow (prot)	3377	1559	0	0	1782	0	1676	4771	0	1645	4501	1472
Flt Permitted	0.950						0.060			0.065		
Satd. Flow (perm)	3377	1559	0	0	1782	0	106	4771	0	113	4501	1472
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		169										586
Link Speed (mph)		40			35			45			45	
Link Distance (ft)		499			348			586			796	
Travel Time (s)		8.5			6.8			8.9			12.1	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	2%	3%	0%	0%	5%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	1557	1	169	0	0	0	84	3116	9	6	3210	1301
Shared Lane Traffic (%)												
Lane Group Flow (vph)	1557	170	0	0	0	0	84	3125	0	6	3210	1301
Number of Detectors	1	1		1	1		1	1		1	1	1
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (ft)	30	30		30	30		30	30		30	30	30
Trailing Detector (ft)	-10	-10		-10	-10		-10	-10		-10	-10	-10
Turn Type	Split	NA					pm+pt	NA		Perm	NA	Prot
Protected Phases	4	4			8		5	2			6	6
Permitted Phases				8			2			6		
Detector Phase	4	4		8	8		5	2		6	6	6
Switch Phase												
Minimum Initial (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Minimum Split (s)	15.0	15.0		15.0	15.0		9.0	15.0		15.0	15.0	15.0
Total Split (s)	39.0	39.0		15.0	15.0		9.0	66.0		57.0	57.0	57.0
Total Split (%)	32.5%	32.5%		12.5%	12.5%		7.5%	55.0%		47.5%	47.5%	47.5%
Maximum Green (s)	33.0	33.0		9.0	9.0		3.0	60.0		51.0	51.0	51.0
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)	-1.0	-1.0			-1.0		-1.0	-1.0		-1.0	-1.0	-1.0
Total Lost Time (s)	5.0	5.0			5.0		5.0	5.0		5.0	5.0	5.0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Lead/Lag							Lead			Lag	Lag	Lag
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Minimum Gap (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Time Before Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Time To Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Recall Mode	None	None		None	None		None	C-Min		C-Min	C-Min	C-Min
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
v/c Ratio	1.63	0.30					0.44	1.03		0.11	1.40	1.25
Control Delay	318.1	6.4					23.0	25.8		17.8	207.8	138.4
Queue Delay	6.7	5.0					0.0	27.4		0.0	0.2	0.1
Total Delay	324.8	11.5					23.0	53.2		17.8	208.0	138.5
Queue Length 50th (ft)	~895	1					17	~945		2	~1256	~1065
Queue Length 95th (ft)	#1032	52					m8	m128		m2	m#783	m605
Internal Link Dist (ft)		419			268			506			716	
Turn Bay Length (ft)	225						100			75		225
Base Capacity (vph)	956	562					193	3021		57	2299	1038
Starvation Cap Reductn	0	0					0	380		0	0	15
Spillback Cap Reductn	574	324					0	5		0	174	0
Storage Cap Reductn	0	0					0	0		0	0	0
Reduced v/c Ratio	4.08	0.71					0.44	1.18		0.11	1.51	1.27

Intersection Summary	
Area Type:	Other
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 72 (60%), Referenced to phase 2:NETL and 6:SWTL, Start of Green	
Natural Cycle: 120	
Control Type: Actuated-Coordinated	
~ Volume exceeds capacity, queue is theoretically infinite.	
Queue shown is maximum after two cycles.	
# 95th percentile volume exceeds capacity, queue may be longer.	
Queue shown is maximum after two cycles.	
m Volume for 95th percentile queue is metered by upstream signal.	

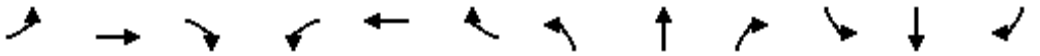
Splits and Phases: 19: PA 405 & Chippewa Rd/Driveway



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (veh/h)	1464	1	159	0	0	0	79	2929	8	6	3017	1223
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	1782	1782	1782	1765	1748	1800	1791	1706	1791
Adj Flow Rate, veh/h	1557	1	63	0	0	0	84	3116	9	6	3210	769
Adj No. of Lanes	2	1	0	0	1	0	1	3	0	1	3	1
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0	0	0	0	2	3	3	0	5	0
Cap, veh/h	965	7	438	0	1	0	116	3111	9	60	2600	850
Arrive On Green	0.28	0.28	0.28	0.00	0.00	0.00	0.03	0.63	0.63	0.56	0.56	0.56
Sat Flow, veh/h	3407	25	1546	0	1782	0	1681	4912	14	71	4657	1522
Grp Volume(v), veh/h	1557	0	64	0	0	0	84	2017	1108	6	3210	769
Grp Sat Flow(s),veh/h/ln	1703	0	1571	0	1782	0	1681	1590	1745	71	1552	1522
Q Serve(g_s), s	34.0	0.0	3.7	0.0	0.0	0.0	2.4	76.0	76.0	0.0	67.0	54.1
Cycle Q Clear(g_c), s	34.0	0.0	3.7	0.0	0.0	0.0	2.4	76.0	76.0	67.0	67.0	54.1
Prop In Lane	1.00		0.98	0.00		0.00	1.00		0.01	1.00		1.00
Lane Grp Cap(c), veh/h	965	0	445	0	1	0	116	2015	1105	60	2600	850
V/C Ratio(X)	1.61	0.00	0.14	0.00	0.00	0.00	0.72	1.00	1.00	0.10	1.23	0.90
Avail Cap(c_a), veh/h	965	0	445	0	149	0	116	2015	1105	60	2600	850
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	0.00	0.09	0.09	0.09	0.09	0.09	0.09
Uniform Delay (d), s/veh	43.0	0.0	32.5	0.0	0.0	0.0	29.6	22.0	22.0	60.0	26.5	23.7
Incr Delay (d2), s/veh	280.7	0.0	0.1	0.0	0.0	0.0	2.0	6.3	8.7	0.3	105.9	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(95%),veh/ln	96.4	0.0	2.9	0.0	0.0	0.0	2.3	61.2	68.3	0.4	93.6	25.4
LnGrp Delay(d),s/veh	323.7	0.0	32.7	0.0	0.0	0.0	31.7	28.3	30.7	60.3	132.4	25.4
LnGrp LOS	F		C				C	F	F	E	F	C
Approach Vol, veh/h		1621			0			3209			3985	
Approach Delay, s/veh		312.2			0.0			29.2			111.7	
Approach LOS		F						C			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		8
Phs Duration (G+Y+Rc), s		81.0		39.0	9.0	72.0		0.0
Change Period (Y+Rc), s		6.0		6.0	6.0	6.0		6.0
Max Green Setting (Gmax), s		60.0		33.0	3.0	51.0		9.0
Max Q Clear Time (g_c+I1), s		78.5		36.5	4.9	69.5		0.0
Green Ext Time (p_c), s		0.0		0.0	0.0	0.0		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	118.5
HCM 2010 LOS	F

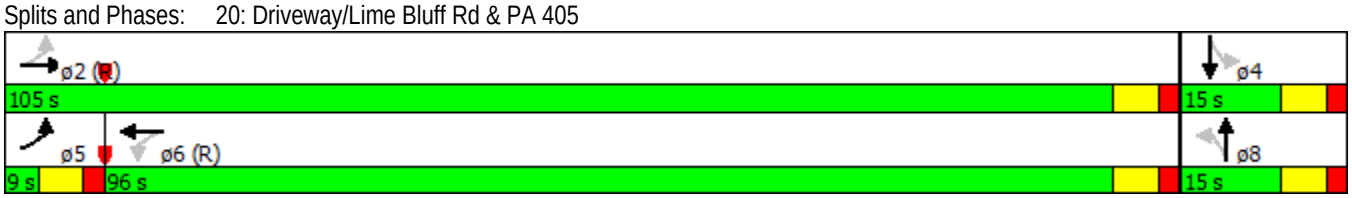


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	98	4378	0	2	4232	18	0	0	0	28	0	61
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	10	11	12	12	11	11	12	12	12	12	12	12
Grade (%)		1%			0%			0%			1%	
Storage Length (ft)	60		0	75		0	0		0	125		0
Storage Lanes	1		0	1		0	0		0	1		0
Taper Length (ft)	140			75			75			75		
Lane Util. Factor	1.00	0.91	0.91	1.00	0.91	0.91	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt					0.999						0.850	
Flt Protected	0.950			0.950						0.950		
Satd. Flow (prot)	1527	4545	0	1710	4560	0	0	1800	0	1519	1522	0
Flt Permitted	0.042			0.044						0.757		
Satd. Flow (perm)	68	4545	0	79	4560	0	0	1800	0	1211	1522	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					1						82	
Link Speed (mph)		45			45			35			45	
Link Distance (ft)		796			771			91			413	
Travel Time (s)		12.1			11.7			1.8			6.3	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	4%	4%	0%	0%	4%	18%	0%	0%	0%	12%	0%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	109	4864	0	2	4702	20	0	0	0	31	0	68
Shared Lane Traffic (%)												
Lane Group Flow (vph)	109	4864	0	2	4722	0	0	0	0	31	68	0
Number of Detectors	1	1		1	1		1	1		1	1	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	30	30		30	30		30	30		30	30	
Trailing Detector (ft)	-10	-10		-10	-10		-10	-10		-10	-10	
Turn Type	pm+pt	NA		Perm	NA					Perm	NA	
Protected Phases	5	2			6			8			4	
Permitted Phases	2			6			8			4		
Detector Phase	5	2		6	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Minimum Split (s)	9.0	15.0		15.0	15.0		15.0	15.0		15.0	15.0	
Total Split (s)	9.0	105.0		96.0	96.0		15.0	15.0		15.0	15.0	
Total Split (%)	7.5%	87.5%		80.0%	80.0%		12.5%	12.5%		12.5%	12.5%	
Maximum Green (s)	3.0	99.0		90.0	90.0		9.0	9.0		9.0	9.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	-1.0	-1.0		0.0	-1.0			-1.0		-1.0	-1.0	
Total Lost Time (s)	5.0	5.0		6.0	5.0			5.0		5.0	5.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead/Lag	Lead			Lag	Lag							
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Minimum Gap (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Time Before Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Time To Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Recall Mode	None	C-Min		C-Min	C-Min		None	None		None	None	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
v/c Ratio	0.80	1.23		0.03	1.35					0.35	0.36	
Control Delay	30.4	118.0		5.5	178.6					63.6	13.6	
Queue Delay	0.0	0.0		0.0	0.1					0.0	1.5	
Total Delay	30.4	118.0		5.5	178.7					63.6	15.0	
Queue Length 50th (ft)	41	~1757		0	~1779					23	0	
Queue Length 95th (ft)	m31	m#1353		3	#1830					56	34	
Internal Link Dist (ft)		716			691			11			333	
Turn Bay Length (ft)	60			75						125		
Base Capacity (vph)	136	3958		60	3498					100	202	
Starvation Cap Reductn	0	2		0	0					0	0	
Spillback Cap Reductn	0	0		0	248					0	50	
Storage Cap Reductn	0	0		0	0					0	0	
Reduced v/c Ratio	0.80	1.23		0.03	1.45					0.31	0.45	

Intersection Summary	
Area Type:	Other
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 3 (3%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green	
Natural Cycle: 120	
Control Type: Actuated-Coordinated	
~ Volume exceeds capacity, queue is theoretically infinite.	
Queue shown is maximum after two cycles.	
# 95th percentile volume exceeds capacity, queue may be longer.	
Queue shown is maximum after two cycles.	
m Volume for 95th percentile queue is metered by upstream signal.	

Splits and Phases: 20: Driveway/Lime Bluff Rd & PA 405



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	98	4378	0	2	4232	18	0	0	0	28	0	61
Number	5	2	12	1	6	16	3	8	18	7	4	14
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	1722	1722	1791	1800	1730	1800	1800	1800	1800	1599	1791	1791
Adj Flow Rate, veh/h	109	4864	0	2	4702	20	0	0	0	31	0	68
Adj No. of Lanes	1	3	0	1	3	0	0	1	0	1	1	0
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	4	4	4	0	4	4	0	0	0	12	0	0
Cap, veh/h	115	3995	0	60	3761	16	0	120	0	162	0	102
Arrive On Green	0.03	0.85	0.00	0.77	0.77	0.77	0.00	0.00	0.00	0.07	0.00	0.06
Sat Flow, veh/h	1640	4856	0	12	4854	21	0	1800	0	1523	0	1522
Grp Volume(v), veh/h	109	4864	0	2	3048	1674	0	0	0	31	0	68
Grp Sat Flow(s),veh/h/ln	1640	1567	0	12	1574	1726	0	1800	0	1523	0	1522
Q Serve(g_s), s	3.6	102.0	0.0	0.0	93.0	93.0	0.0	0.0	0.0	2.3	0.0	5.3
Cycle Q Clear(g_c), s	3.6	102.0	0.0	92.0	93.0	93.0	0.0	0.0	0.0	2.3	0.0	5.3
Prop In Lane	1.00		0.00	1.00		0.01	0.00		0.00	1.00		1.00
Lane Grp Cap(c), veh/h	115	3995	0	60	2439	1337	0	120	0	162	0	102
V/C Ratio(X)	0.95	1.22	0.00	0.03	1.25	1.25	0.00	0.00	0.00	0.19	0.00	0.67
Avail Cap(c_a), veh/h	115	3995	0	60	2439	1337	0	150	0	187	0	127
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	1.00	1.00	1.00	0.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	45.5	9.0	0.0	60.0	13.5	13.5	0.0	0.0	0.0	53.3	0.0	55.2
Incr Delay (d2), s/veh	15.0	98.1	0.0	1.0	115.8	119.7	0.0	0.0	0.0	0.6	0.0	9.2
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(95%),veh/ln	5.1	135.7	0.0	0.1	141.3	157.6	0.0	0.0	0.0	1.8	0.0	4.5
LnGrp Delay(d),s/veh	60.5	107.1	0.0	61.0	129.3	133.2	0.0	0.0	0.0	53.9	0.0	64.3
LnGrp LOS	E	F		E	F	F				D		E
Approach Vol, veh/h		4973			4724			0			99	
Approach Delay, s/veh		106.0			130.6			0.0			61.1	
Approach LOS		F			F						E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		8
Phs Duration (G+Y+Rc), s		107.0		13.0	9.0	98.0		13.0
Change Period (Y+Rc), s		6.0		6.0	6.0	6.0		6.0
Max Green Setting (Gmax), s		99.0		9.0	3.0	90.0		9.0
Max Q Clear Time (g_c+I1), s		104.5		7.3	6.1	95.5		0.0
Green Ext Time (p_c), s		0.0		0.0	0.0	0.0		0.0

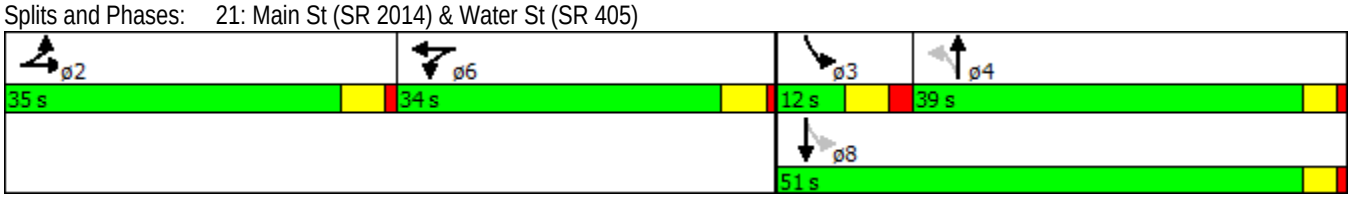
Intersection Summary	
HCM 2010 Ctrl Delay	117.5
HCM 2010 LOS	F

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	523	432	48	295	490	127	55	648	266	144	593	695
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	16	16	16	12	12	12	10	10	10	10	10	10
Grade (%)		-2%			1%			2%			-1%	
Storage Length (ft)	0		0	0		0	125		0	125		0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (ft)	75			75			75			75		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00			0.99		1.00	0.99		1.00	0.98	
Frt		0.994			0.981			0.956			0.919	
Flt Protected		0.975			0.984		0.950			0.950		
Satd. Flow (prot)	0	1812	0	0	1637	0	1309	1303	0	1316	1251	0
Flt Permitted		0.975			0.984		0.115			0.098		
Satd. Flow (perm)	0	1807	0	0	1635	0	158	1303	0	136	1251	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		463			494			1137			622	
Travel Time (s)		12.6			13.5			31.0			17.0	
Confl. Peds. (#/hr)	10		10	10		10	10		10	10		10
Confl. Bikes (#/hr)												
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	10%	10%	10%	5%	5%	5%	5%	5%	5%	6%	6%	6%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)							6	6	6	6	6	6
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	581	480	53	328	544	141	61	720	296	160	659	772
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1114	0	0	1013	0	61	1016	0	160	1431	0
Number of Detectors	1	1		1	1		1	1		1	1	
Detector Template	Left			Left			Left			Left		
Leading Detector (ft)	30	40		30	40		30	40		30	40	
Trailing Detector (ft)	-10	-10		-10	-10		-10	-10		-10	-10	
Turn Type	Split	NA		Split	NA		Perm	NA		pm+pt	NA	
Protected Phases	2	2		6	6			4		3	8	
Permitted Phases							4			8		
Detector Phase	2	2		6	6		4	4		3	8	
Switch Phase												
Minimum Initial (s)	8.0	8.0		8.0	8.0		7.1	7.1		3.0	7.1	
Minimum Split (s)	13.0	13.0		13.0	13.0		12.1	12.1		9.0	12.1	
Total Split (s)	35.0	35.0		34.0	34.0		39.0	39.0		12.0	51.0	
Total Split (%)	29.2%	29.2%		28.3%	28.3%		32.5%	32.5%		10.0%	42.5%	
Maximum Green (s)	30.0	30.0		29.0	29.0		34.9	34.9		6.0	46.9	
Yellow Time (s)	4.0	4.0		4.0	4.0		3.1	3.1		4.0	3.1	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		2.0	1.0	
Lost Time Adjust (s)		-0.5			-0.5		0.0	-1.0		0.0	-1.0	
Total Lost Time (s)		4.5			4.5		4.1	3.1		6.0	3.1	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead/Lag							Lag	Lag		Lead		
Lead-Lag Optimize?												
Vehicle Extension (s)	3.5	3.5		3.5	3.5		2.0	2.0		3.0	2.0	
Minimum Gap (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Time Before Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Time To Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Recall Mode	None	None		None	None		None	None		None	None	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
v/c Ratio		2.42			2.52		1.36	2.61		1.45	2.87	
Control Delay		668.5			712.8		291.6	753.1		274.4	864.0	
Queue Delay		0.0			0.0		0.0	0.0		0.0	0.0	
Total Delay		668.5			712.8		291.6	753.1		274.4	864.0	
Queue Length 50th (ft)		~1424			~1308		~61	~1323		~134	~1904	
Queue Length 95th (ft)		#1682			#1562		#153	#1577		#276	#2168	
Internal Link Dist (ft)		383			414			1057			542	
Turn Bay Length (ft)							125			125		
Base Capacity (vph)		460			402		45	389		110	499	
Starvation Cap Reductn		0			0		0	0		0	0	
Spillback Cap Reductn		0			0		0	0		0	0	
Storage Cap Reductn		0			0		0	0		0	0	
Reduced v/c Ratio		2.42			2.52		1.36	2.61		1.45	2.87	

Intersection Summary	
Area Type:	Other
Cycle Length: 120	
Actuated Cycle Length: 120	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
~ Volume exceeds capacity, queue is theoretically infinite.	
Queue shown is maximum after two cycles.	
# 95th percentile volume exceeds capacity, queue may be longer.	
Queue shown is maximum after two cycles.	

Splits and Phases: 21: Main St (SR 2014) & Water St (SR 405)



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	523	432	48	295	490	127	55	648	266	144	593	695
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	1.00		0.98	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.87	1.00	1.00	0.87
Adj Sat Flow, veh/h/ln	1891	1719	1891	1791	1706	1791	1697	1697	1782	1707	1707	1809
Adj Flow Rate, veh/h	581	480	53	328	544	141	61	720	296	160	659	772
Adj No. of Lanes	0	1	0	0	1	0	1	1	0	1	1	0
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	10	10	10	5	5	5	5	5	5	6	6	6
Cap, veh/h	220	182	20	130	216	56	60	296	122	141	247	290
Arrive On Green	0.25	0.25	0.25	0.24	0.25	0.24	0.29	0.30	0.29	0.05	0.40	0.39
Sat Flow, veh/h	866	715	79	529	877	227	358	990	407	1625	620	726
Grp Volume(v), veh/h	1114	0	0	1013	0	0	61	0	1016	160	0	1431
Grp Sat Flow(s),veh/h/ln	1660	0	0	1633	0	0	358	0	1396	1625	0	1346
Q Serve(g_s), s	30.5	0.0	0.0	29.5	0.0	0.0	0.0	0.0	35.9	6.0	0.0	47.9
Cycle Q Clear(g_c), s	30.5	0.0	0.0	29.5	0.0	0.0	34.9	0.0	35.9	6.0	0.0	47.9
Prop In Lane	0.52		0.05	0.32		0.14	1.00		0.29	1.00		0.54
Lane Grp Cap(c), veh/h	422	0	0	402	0	0	60	0	418	141	0	537
V/C Ratio(X)	2.64	0.00	0.00	2.52	0.00	0.00	1.02	0.00	2.43	1.13	0.00	2.66
Avail Cap(c_a), veh/h	422	0	0	402	0	0	60	0	418	141	0	537
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	0.00	1.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	44.9	0.0	0.0	45.4	0.0	0.0	60.0	0.0	42.2	37.0	0.0	36.3
Incr Delay (d2), s/veh	745.2	0.0	0.0	692.5	0.0	0.0	121.0	0.0	651.7	115.8	0.0	754.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	182.3	0.0	0.0	162.9	0.0	0.0	7.2	0.0	161.0	11.7	0.0	234.4
LnGrp Delay(d),s/veh	790.0	0.0	0.0	737.9	0.0	0.0	181.1	0.0	693.9	152.8	0.0	790.6
LnGrp LOS	F			F			F		F	F		F
Approach Vol, veh/h		1114			1013			1077			1591	
Approach Delay, s/veh		790.0			737.9			664.8			726.4	
Approach LOS		F			F			F			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4		6		8
Phs Duration (G+Y+Rc), s		35.0	12.0	39.0		34.0		51.0
Change Period (Y+Rc), s		5.0	6.0	4.1		5.0		4.1
Max Green Setting (Gmax), s		30.0	6.0	34.9		29.0		46.9
Max Q Clear Time (g_c+I1), s		32.5	8.0	37.9		31.5		49.9
Green Ext Time (p_c), s		0.0	0.0	0.0		0.0		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	729.8
HCM 2010 LOS	F

Lane Group	EBL	EBT	WBT	WBR	SWL	SWR
Lane Configurations						
Volume (vph)	149	1091	910	0	0	101
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	10	10
Grade (%)		2%	-3%		-1%	
Storage Length (ft)	0			0	0	0
Storage Lanes	0			0	1	0
Taper Length (ft)	75				75	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt					0.865	
Flt Protected		0.994				
Satd. Flow (prot)	0	1831	1837	0	1511	0
Flt Permitted		0.994				
Satd. Flow (perm)	0	1831	1837	0	1511	0
Link Speed (mph)		55	45		25	
Link Distance (ft)		609	517		640	
Travel Time (s)		7.5	7.8		17.5	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	3%	2%	5%	0%	0%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)		0%	0%		0%	
Adj. Flow (vph)	154	1125	938	0	0	104
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	1279	938	0	104	0
Sign Control		Free	Free		Stop	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

Intersection	
Int Delay, s/veh	1.8

Movement	EBL	EBT	WBT	WBR	SWL	SWR
Vol, veh/h	149	1091	910	0	0	101
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, %	-	2	-3	-	-1	-
Peak Hour Factor	97	97	97	97	97	97
Heavy Vehicles, %	3	2	5	0	0	2
Mvmt Flow	154	1125	938	0	0	104

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	938	0	-	0	2370	938
Stage 1	-	-	-	-	938	-
Stage 2	-	-	-	-	1432	-
Critical Hdwy	4.13	-	-	-	7.1	6.2
Critical Hdwy Stg 1	-	-	-	-	5.2	-
Critical Hdwy Stg 2	-	-	-	-	5.2	-
Follow-up Hdwy	3	-	-	-	3	3.1
Pot Cap-1 Maneuver	590	-	-	-	26	337
Stage 1	-	-	-	-	446	-
Stage 2	-	-	-	-	260	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	590	-	-	-	8	337
Mov Cap-2 Maneuver	-	-	-	-	8	-
Stage 1	-	-	-	-	446	-
Stage 2	-	-	-	-	79	-

Approach	EB	WB	SW
HCM Control Delay, s	1.6	0	20.4
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SWLn1
Capacity (veh/h)	590	-	-	-	337
HCM Lane V/C Ratio	0.26	-	-	-	0.309
HCM Control Delay (s)	13.2	0	-	-	20.4
HCM Lane LOS	B	A	-	-	C
HCM 95th %tile Q(veh)	1	-	-	-	1.3

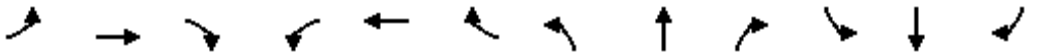
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	2	1057	59	3	873	34	37	36	2	29	29	1
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	12	12	12	12	11	11	11	10	10	10
Grade (%)		-2%			1%			0%			-3%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (ft)	75			75			75			75		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.993			0.995			0.997			0.998	
Flt Protected								0.976			0.976	
Satd. Flow (prot)	0	1693	0	0	1685	0	0	1669	0	0	1606	0
Flt Permitted		0.999			0.997			0.883			0.867	
Satd. Flow (perm)	0	1691	0	0	1680	0	0	1510	0	0	1426	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		11			8			1			1	
Link Speed (mph)		55			55			35			50	
Link Distance (ft)		1494			4148			578			618	
Travel Time (s)		18.5			51.4			11.3			8.4	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
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
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	7%	0%	0%	6%	0%	0%	3%	0%	0%	7%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	2	1149	64	3	949	37	40	39	2	32	32	1
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1215	0	0	989	0	0	81	0	0	65	0
Number of Detectors	1	1		1	1		1	1		1	1	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	30	30		30	30		30	30		30	30	
Trailing Detector (ft)	-10	-10		-10	-10		-10	-10		-10	-10	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Minimum Split (s)	15.0	15.0		15.0	15.0		15.0	15.0		15.0	15.0	
Total Split (s)	67.0	67.0		67.0	67.0		13.0	13.0		13.0	13.0	
Total Split (%)	83.8%	83.8%		83.8%	83.8%		16.3%	16.3%		16.3%	16.3%	
Maximum Green (s)	61.0	61.0		61.0	61.0		7.0	7.0		7.0	7.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		-1.0			-1.0			-1.0			-1.0	
Total Lost Time (s)		5.0			5.0			5.0			5.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Minimum Gap (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Time Before Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Time To Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Recall Mode	Min	Min		Min	Min		None	None		None	None	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
v/c Ratio		0.86			0.71			0.51			0.44	
Control Delay		15.6			8.0			48.1			45.2	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		15.6			8.0			48.1			45.2	
Queue Length 50th (ft)		357			199			43			34	
Queue Length 95th (ft)		#830			350			#91			70	
Internal Link Dist (ft)		1414			4068			498			538	
Turn Bay Length (ft)												
Base Capacity (vph)		1406			1396			166			157	
Starvation Cap Reductn		0			0			0			0	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.86			0.71			0.49			0.41	

Intersection Summary	
Area Type:	Other
Cycle Length: 80	
Actuated Cycle Length: 77.4	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
# 95th percentile volume exceeds capacity, queue may be longer.	
Queue shown is maximum after two cycles.	

Splits and Phases: 8: Middle Rd & US 220





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	61	23	8	0	10	1	6	32	6	0	11	49
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	10	10	10	10	10	13	13	13	16	16	16
Grade (%)		-3%			2%			1%			-2%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (ft)	75			75			75			75		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.988			0.991			0.982			0.890	
Flt Protected		0.968						0.993				
Satd. Flow (prot)	0	1388	0	0	1578	0	0	1599	0	0	1310	0
Flt Permitted		0.968						0.993				
Satd. Flow (perm)	0	1388	0	0	1578	0	0	1599	0	0	1310	0
Link Speed (mph)		35			25			25			25	
Link Distance (ft)		1453			774			301			154	
Travel Time (s)		28.3			21.1			8.2			4.2	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	27%	0%	71%	0%	11%	0%	0%	23%	17%	0%	38%	50%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	84	32	11	0	14	1	8	44	8	0	15	67
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	127	0	0	15	0	0	60	0	0	82	0
Sign Control		Stop			Stop			Free			Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	61	23	8	0	10	1	6	32	6	0	11	49
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, %	-	-3	-	-	2	-	-	1	-	-	-2	-
Peak Hour Factor	73	73	73	73	73	73	73	73	73	73	73	73
Heavy Vehicles, %	27	0	71	0	11	0	0	23	17	0	38	50
Mvmt Flow	84	32	11	0	14	1	8	44	8	0	15	67

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	121	117	49	134	146	48	82	0	0	52	0	0
Stage 1	49	49	-	64	64	-	-	-	-	-	-	-
Stage 2	72	68	-	70	82	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.3	-	-	4.3	-	-
Critical Hdwy Stg 1	5.77	4.9	-	6.5	6.01	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.77	4.9	-	6.5	6.01	-	-	-	-	-	-	-
Follow-up Hdwy	3	4	3.1	3	4.099	3.1	3	-	-	3	-	-
Pot Cap-1 Maneuver	994	777	1090	974	732	1091	1126	-	-	1152	-	-
Stage 1	1132	865	-	1098	818	-	-	-	-	-	-	-
Stage 2	1102	852	-	1089	802	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	973	772	1090	929	727	1091	1126	-	-	1152	-	-
Mov Cap-2 Maneuver	973	772	-	929	727	-	-	-	-	-	-	-
Stage 1	1124	865	-	1090	812	-	-	-	-	-	-	-
Stage 2	1074	846	-	1039	802	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	9.5	9.9	1.1	0
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1126	-	-	922	750	1152	-	-
HCM Lane V/C Ratio	0.007	-	-	0.137	0.02	-	-	-
HCM Control Delay (s)	8.2	0	-	9.5	9.9	0	-	-
HCM Lane LOS	A	A	-	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.5	0.1	0	-	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Volume (vph)	1	0	42	3	0	0	1	1546	0	21	1184	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	10	10	9	9	9	11	11	11	11	11	11
Grade (%)		1%			-1%			-3%			0%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (ft)	75			75			75			75		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95
Ped Bike Factor												
Frt		0.868										
Flt Protected		0.999			0.950						0.999	
Satd. Flow (prot)	0	1442	0	0	1633	0	0	1828	0	0	3332	0
Flt Permitted		0.999			0.950						0.999	
Satd. Flow (perm)	0	1442	0	0	1633	0	0	1828	0	0	3332	0
Link Speed (mph)		25			25			50			50	
Link Distance (ft)		172			263			390			367	
Travel Time (s)		4.7			7.2			5.3			5.0	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	100%	0%	4%	0%	0%	0%	0%	2%	0%	40%	4%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	1	0	45	3	0	0	1	1645	0	22	1260	1
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	46	0	0	3	0	0	1646	0	0	1283	0
Sign Control		Stop			Stop			Free			Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Vol, veh/h	1	0	42	3	0	0	1	1546	0	21	1184	1
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, %	-	1	-	-	-1	-	-	-3	-	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	100	0	4	0	0	0	0	2	0	40	4	0
Mvmt Flow	1	0	45	3	0	0	1	1645	0	22	1260	1

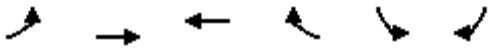
Major/Minor	Minor1			Minor2			Major1			Major2		
Conflicting Flow All	2321	2952	1645	2974	2952	630	1261	0	0	1645	0	0
Stage 1	1647	1647	-	1305	1305	-	-	-	-	-	-	-
Stage 2	674	1305	-	1669	1647	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.3	-	-	4.3	-	-
Critical Hdwy Stg 1	7.8	5.7	-	6.3	5.3	-	-	-	-	-	-	-
Critical Hdwy Stg 2	8.2	5.7	-	5.9	5.3	-	-	-	-	-	-	-
Follow-up Hdwy	3	4	3.1	3	4	3.1	3	-	-	3	-	-
Pot Cap-1 Maneuver	28	15	128	9	15	508	430	-	-	309	-	-
Stage 1	62	145	-	201	250	-	-	-	-	-	-	-
Stage 2	338	216	-	144	174	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	22	11	128	5	11	508	430	-	-	309	-	-
Mov Cap-2 Maneuver	22	11	-	5	11	-	-	-	-	-	-	-
Stage 1	60	141	-	196	191	-	-	-	-	-	-	-
Stage 2	258	165	-	91	169	-	-	-	-	-	-	-

Approach	EB	WB	SE	NW
HCM Control Delay, s	55.6	$ 1105.6	0	2.3
HCM LOS	F	F		

Minor Lane/Major Mvmt	NWL	NWT	NWR	EBLn1	WBLn1	SEL	SET	SER
Capacity (veh/h)	309	-	-	115	5	430	-	-
HCM Lane V/C Ratio	0.072	-	-	0.398	0.638	0.002	-	-
HCM Control Delay (s)	17.6	2	-	55.6	$ 1105.6	13.4	0	-
HCM Lane LOS	C	A	-	F	F	B	A	-
HCM 95th %tile Q(veh)	0.2	-	-	1.7	1	0	-	-

Notes

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



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	0	2484	1069	0	0	340
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	13	13	13	13
Grade (%)		-1%	1%		-2%	
Storage Length (ft)	0			0	0	0
Storage Lanes	0			0	0	1
Taper Length (ft)	75				75	
Lane Util. Factor	1.00	0.95	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt						0.865
Flt Protected						
Satd. Flow (prot)	0	3522	1826	0	0	1634
Flt Permitted						
Satd. Flow (perm)	0	3522	1826	0	0	1634
Link Speed (mph)		35	35		25	
Link Distance (ft)		348	758		364	
Travel Time (s)		6.8	14.8		9.9	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	3%	7%	0%	0%	5%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)		0%	0%		0%	
Adj. Flow (vph)	0	2588	1114	0	0	354
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	2588	1114	0	0	354
Sign Control		Free	Free		Stop	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

Intersection	
Int Delay, s/veh	18.5

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Vol, veh/h	0	2484	1069	0	0	340
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	Stop
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	1	-
Grade, %	-	-1	1	-	-2	-
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	0	3	7	0	0	5
Mvmt Flow	0	2588	1114	0	0	354

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	1114	0	-	0	2408	1114
Stage 1	-	-	-	-	1114	-
Stage 2	-	-	-	-	1294	-
Critical Hdwy	4.3	-	-	-	7.1	6.2
Critical Hdwy Stg 1	-	-	-	-	5	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	3	-	-	-	3	3.1
Pot Cap-1 Maneuver	487	-	-	-	24	~ 265
Stage 1	-	-	-	-	392	-
Stage 2	-	-	-	-	282	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	487	-	-	-	24	~ 265
Mov Cap-2 Maneuver	-	-	-	-	160	-
Stage 1	-	-	-	-	392	-
Stage 2	-	-	-	-	282	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	212.2
HCM LOS			F

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	487	-	-	-	265
HCM Lane V/C Ratio	-	-	-	-	1.336
HCM Control Delay (s)	0	-	-	-	212.2
HCM Lane LOS	A	-	-	-	F
HCM 95th %tile Q(veh)	0	-	-	-	18.4

Notes

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

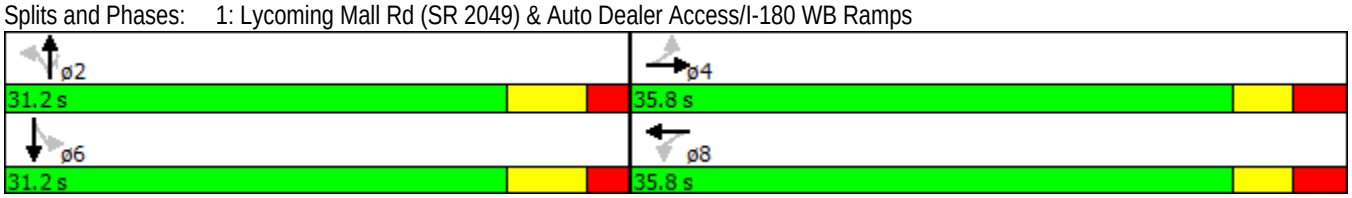
Future (2034) Development
15% Full Build-Out

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	1	2	3	185	9	95	23	255	112	59	312	0
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	13	13	13	15	15	15	12	12	16	12	12	12
Grade (%)		2%			4%			1%			-1%	
Storage Length (ft)	0		100	0		0	0		0	0		375
Storage Lanes	0		0	0		0	0		1	0		1
Taper Length (ft)	75			75			75			75		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95
Ped Bike Factor												
Frt		0.932			0.956				0.850			
Flt Protected		0.994			0.969			0.996			0.992	
Satd. Flow (prot)	0	1464	0	0	1757	0	0	1676	1643	0	3326	0
Flt Permitted		0.959			0.801			0.927			0.802	
Satd. Flow (perm)	0	1413	0	0	1452	0	0	1560	1643	0	2689	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		4			49				156			
Link Speed (mph)		25			25			40			40	
Link Distance (ft)		187			334			1105			689	
Travel Time (s)		5.1			9.1			18.8			11.7	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	0%	33%	3%	13%	0%	0%	7%	5%	0%	3%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	1	3	4	257	12	132	32	354	156	82	433	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	8	0	0	401	0	0	386	156	0	515	0
Number of Detectors	1	1		1	1		1	1	0	1	1	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left		
Leading Detector (ft)	30	40		30	45		30	45	0	30	45	
Trailing Detector (ft)	-10	-10		-10	-5		-10	-5	0	-10	-5	
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2		2	6		
Detector Phase	4	4		8	8		2	2	2	6	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	10.8	10.8		10.8	10.8		11.2	11.2	11.2	11.2	11.2	
Total Split (s)	35.8	35.8		35.8	35.8		31.2	31.2	31.2	31.2	31.2	
Total Split (%)	53.4%	53.4%		53.4%	53.4%		46.6%	46.6%	46.6%	46.6%	46.6%	
Maximum Green (s)	30.0	30.0		30.0	30.0		25.0	25.0	25.0	25.0	25.0	
Yellow Time (s)	3.0	3.0		3.0	3.0		4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	2.8	2.8		2.8	2.8		2.2	2.2	2.2	2.2	2.2	
Lost Time Adjust (s)		-1.0			-1.0			-1.0	-1.0		-1.0	
Total Lost Time (s)		4.8			4.8			5.2	5.2		5.2	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Minimum Gap (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Time Before Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Time To Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Recall Mode	None	None		None	None		Min	Min	Min	Min	Min	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
v/c Ratio		0.01			0.65			0.65	0.21		0.50	
Control Delay		8.0			16.8			19.8	3.6		14.6	
Queue Delay		0.0			0.0			0.0	0.0		0.0	
Total Delay		8.0			16.8			19.8	3.6		14.6	
Queue Length 50th (ft)		1			77			85	0		55	
Queue Length 95th (ft)		6			123			153	16		92	
Internal Link Dist (ft)		107			254			1025			609	
Turn Bay Length (ft)												
Base Capacity (vph)		934			976			864	979		1490	
Starvation Cap Reductn		0			0			0	0		0	
Spillback Cap Reductn		0			0			0	0		0	
Storage Cap Reductn		0			0			0	0		0	
Reduced v/c Ratio		0.01			0.41			0.45	0.16		0.35	

Intersection Summary	
Area Type:	Other
Cycle Length: 67	
Actuated Cycle Length: 50.2	
Natural Cycle: 45	
Control Type: Actuated-Uncoordinated	

Splits and Phases: 1: Lycoming Mall Rd (SR 2049) & Auto Dealer Access/I-180 WB Ramps



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	1	2	3	185	9	95	23	255	112	59	312	0
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1853	1591	1853	1835	1793	1835	1791	1683	1774	1809	1764	1809
Adj Flow Rate, veh/h	1	3	1	257	12	125	32	354	94	82	433	0
Adj No. of Lanes	0	1	0	0	1	0	0	1	1	0	2	0
Peak Hour Factor	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72
Percent Heavy Veh, %	0	0	0	13	13	13	7	7	5	3	3	3
Cap, veh/h	164	382	111	479	33	171	118	617	594	200	974	0
Arrive On Green	0.34	0.37	0.34	0.34	0.37	0.34	0.37	0.39	0.39	0.37	0.39	0.00
Sat Flow, veh/h	165	1044	302	918	90	469	63	1567	1508	219	2551	0
Grp Volume(v), veh/h	5	0	0	394	0	0	386	0	94	260	255	0
Grp Sat Flow(s),veh/h/ln	1512	0	0	1477	0	0	1629	0	1508	1164	1525	0
Q Serve(g_s), s	0.0	0.0	0.0	9.4	0.0	0.0	0.0	0.0	1.7	1.3	5.1	0.0
Cycle Q Clear(g_c), s	0.1	0.0	0.0	9.9	0.0	0.0	7.7	0.0	1.7	9.0	5.1	0.0
Prop In Lane	0.20		0.20	0.65		0.32	0.08		1.00	0.32		0.00
Lane Grp Cap(c), veh/h	621	0	0	648	0	0	697	0	594	544	601	0
V/C Ratio(X)	0.01	0.00	0.00	0.61	0.00	0.00	0.55	0.00	0.16	0.48	0.42	0.00
Avail Cap(c_a), veh/h	1158	0	0	1202	0	0	1058	0	941	862	952	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	0.00	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	8.5	0.0	0.0	11.9	0.0	0.0	10.0	0.0	8.2	9.5	9.2	0.0
Incr Delay (d2), s/veh	0.0	0.0	0.0	1.3	0.0	0.0	1.0	0.0	0.2	0.9	0.7	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(95%),veh/ln	0.1	0.0	0.0	7.8	0.0	0.0	6.8	0.0	1.3	4.9	4.0	0.0
LnGrp Delay(d),s/veh	8.5	0.0	0.0	13.2	0.0	0.0	11.0	0.0	8.3	10.4	9.9	0.0
LnGrp LOS	A			B			B		A	B	A	
Approach Vol, veh/h		5			394			480			515	
Approach Delay, s/veh		8.5			13.2			10.5			10.2	
Approach LOS		A			B			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		21.6		20.0		21.6		20.0
Change Period (Y+Rc), s		* 6.2		* 5.8		* 6.2		* 5.8
Max Green Setting (Gmax), s		* 25		* 30		* 25		* 30
Max Q Clear Time (g_c+I1), s		9.7		2.5		11.0		11.9
Green Ext Time (p_c), s		4.6		2.8		4.4		2.5

Intersection Summary	
HCM 2010 Ctrl Delay	11.1
HCM 2010 LOS	B

Notes

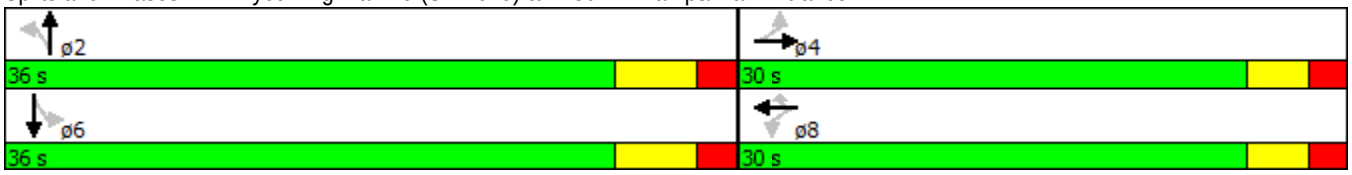
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	73	90	143	7	11	46	167	269	18	29	355	116
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	12	11	12	12	12	12	12	12	12	12
Grade (%)		2%			2%			-2%			-3%	
Storage Length (ft)	0		0	150		275	135		0	0		0
Storage Lanes	0		0	1		1	1		0	1		0
Taper Length (ft)	75			75			75			75		
Lane Util. Factor	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.930				0.850		0.991			0.968	
Flt Protected		0.988		0.950			0.950			0.950		
Satd. Flow (prot)	0	2976	0	1636	1620	1416	1515	1647	0	1550	1731	0
Flt Permitted		0.878		0.524			0.397			0.556		
Satd. Flow (perm)	0	2645	0	903	1620	1416	633	1647	0	907	1731	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		170				55		7			28	
Link Speed (mph)		25			25			40			40	
Link Distance (ft)		279			408			2572			1105	
Travel Time (s)		7.6			11.1			43.8			18.8	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	1.00
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	8%	1%	5%	0%	10%	7%	14%	10%	0%	12%	0%	10%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	87	107	170	8	13	55	199	320	21	35	423	116
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	364	0	8	13	55	199	341	0	35	539	0
Number of Detectors	1	1		1	1	0	1	1		1	1	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (ft)	30	45		45	45	0	45	45		45	45	
Trailing Detector (ft)	-10	-5		-5	-5	0	-5	-5		-5	-5	
Turn Type	Perm	NA		Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8		8	2			6		
Detector Phase	4	4		8	8	8	2	2		6	6	
Switch Phase												
Minimum Initial (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Minimum Split (s)	7.0	7.0		7.0	7.0	7.0	8.0	8.0		8.0	8.0	
Total Split (s)	30.0	30.0		30.0	30.0	30.0	36.0	36.0		36.0	36.0	
Total Split (%)	45.5%	45.5%		45.5%	45.5%	45.5%	54.5%	54.5%		54.5%	54.5%	
Maximum Green (s)	25.0	25.0		25.0	25.0	25.0	30.0	30.0		30.0	30.0	
Yellow Time (s)	3.0	3.0		3.0	3.0	3.0	4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		-1.0		-1.0	-1.0	-1.0	-1.0	-1.0		-1.0	-1.0	
Total Lost Time (s)		4.0		4.0	4.0	4.0	5.0	5.0		5.0	5.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Minimum Gap (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Time Before Reduce (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Time To Reduce (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Recall Mode	Min	Min		Min	Min	Min	None	None		None	None	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
v/c Ratio		0.47		0.04	0.03	0.14	0.56	0.37		0.07	0.55	
Control Delay		11.0		15.4	15.2	6.4	14.9	7.3		5.7	9.1	
Queue Delay		0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay		11.0		15.4	15.2	6.4	14.9	7.3		5.7	9.1	
Queue Length 50th (ft)		26		2	3	0	29	42		4	72	
Queue Length 95th (ft)		49		9	12	18	89	93		14	154	
Internal Link Dist (ft)		199			328			2492			1025	
Turn Bay Length (ft)				150		275	135					
Base Capacity (vph)		1576		513	920	828	428	1118		614	1181	
Starvation Cap Reductn		0		0	0	0	0	0		0	0	
Spillback Cap Reductn		0		0	0	0	0	0		0	0	
Storage Cap Reductn		0		0	0	0	0	0		0	0	
Reduced v/c Ratio		0.23		0.02	0.01	0.07	0.46	0.31		0.06	0.46	

Intersection Summary	
Area Type:	Other
Cycle Length: 66	
Actuated Cycle Length: 47.4	
Natural Cycle: 40	
Control Type: Actuated-Uncoordinated	

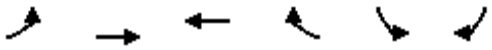
Splits and Phases: 2: Lycoming Mall Rd (SR 2049) & I-180 EB Ramps/Mall Entrance



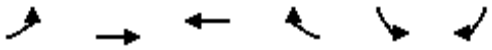
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	73	90	143	7	11	46	167	269	18	29	355	116
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	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	1782	1705	1782	1782	1620	1665	1595	1662	1818	1631	1789	1827
Adj Flow Rate, veh/h	87	107	118	8	13	0	199	320	14	35	423	100
Adj No. of Lanes	0	2	0	1	1	1	1	1	0	1	1	0
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	1.00
Percent Heavy Veh, %	1	1	1	0	10	7	14	10	10	12	0	0
Cap, veh/h	255	232	255	326	348	304	487	915	40	631	810	192
Arrive On Green	0.19	0.21	0.19	0.21	0.21	0.00	0.58	0.58	0.56	0.58	0.58	0.56
Sat Flow, veh/h	616	1078	1189	1162	1620	1416	791	1581	69	963	1399	331
Grp Volume(v), veh/h	179	0	133	8	13	0	199	0	334	35	0	523
Grp Sat Flow(s),veh/h/ln	1541	0	1341	1162	1620	1416	791	0	1650	963	0	1730
Q Serve(g_s), s	3.2	0.0	3.8	0.3	0.3	0.0	8.7	0.0	4.7	0.9	0.0	8.0
Cycle Q Clear(g_c), s	4.5	0.0	3.8	3.6	0.3	0.0	16.2	0.0	4.7	5.0	0.0	8.0
Prop In Lane	0.49		0.89	1.00		1.00	1.00		0.04	1.00		0.19
Lane Grp Cap(c), veh/h	418	0	288	326	348	304	487	0	955	631	0	1002
V/C Ratio(X)	0.43	0.00	0.46	0.02	0.04	0.00	0.41	0.00	0.35	0.06	0.00	0.52
Avail Cap(c_a), veh/h	993	0	799	768	965	843	590	0	1171	757	0	1228
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	1.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	15.4	0.0	15.4	16.3	13.6	0.0	10.3	0.0	4.9	6.0	0.0	5.6
Incr Delay (d2), s/veh	1.0	0.0	1.6	0.0	0.1	0.0	0.8	0.0	0.3	0.1	0.0	0.6
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(95%),veh/ln	3.8	0.0	2.8	0.2	0.2	0.0	3.6	0.0	3.8	0.4	0.0	7.1
LnGrp Delay(d),s/veh	16.4	0.0	17.0	16.4	13.6	0.0	11.0	0.0	5.2	6.1	0.0	6.2
LnGrp LOS	B		B	B	B		B		A	A		A
Approach Vol, veh/h		312			21			533			558	
Approach Delay, s/veh		16.6			14.7			7.4			6.2	
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		30.3		13.4		30.3		13.4
Change Period (Y+Rc), s		6.0		5.0		6.0		5.0
Max Green Setting (Gmax), s		30.0		25.0		30.0		25.0
Max Q Clear Time (g_c+I1), s		18.7		6.5		10.0		6.1
Green Ext Time (p_c), s		5.6		1.9		7.7		1.9

Intersection Summary	
HCM 2010 Ctrl Delay	9.1
HCM 2010 LOS	A



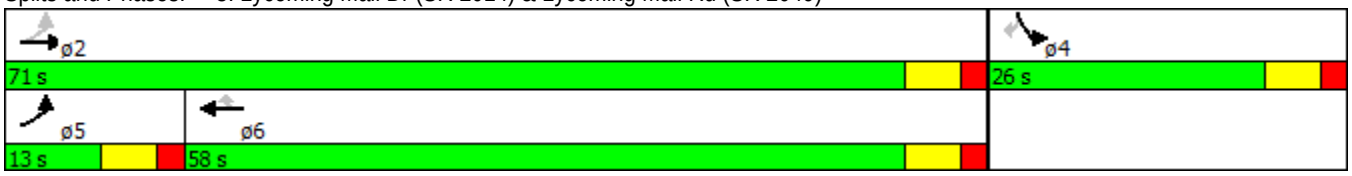
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	159	478	385	269	383	153
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	12	12	12	12
Grade (%)		-1%	1%		-2%	
Storage Length (ft)	165			215	165	0
Storage Lanes	1			1	1	1
Taper Length (ft)	125				75	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt				0.850		0.850
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1719	1630	1690	1522	1464	1472
Flt Permitted	0.190				0.950	
Satd. Flow (perm)	344	1630	1690	1522	1464	1472
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)				313		178
Link Speed (mph)		45	45		40	
Link Distance (ft)		727	1089		2572	
Travel Time (s)		11.0	16.5		43.8	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	11%	6%	0%	18%	5%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)		0%	0%		0%	
Adj. Flow (vph)	185	556	448	313	445	178
Shared Lane Traffic (%)						
Lane Group Flow (vph)	185	556	448	313	445	178
Number of Detectors	1	1	1	1	1	1
Detector Template	Left				Left	Right
Leading Detector (ft)	45	6	6	6	45	45
Trailing Detector (ft)	-5	0	0	0	-5	-5
Turn Type	pm+pt	NA	NA	Perm	Prot	Perm
Protected Phases	5	2	6		4	
Permitted Phases	2			6		4
Detector Phase	5				4	4
Switch Phase						
Minimum Initial (s)	3.0	15.0	15.0	15.0	5.0	5.0
Minimum Split (s)	9.0	21.0	21.0	21.0	11.0	11.0
Total Split (s)	13.0	71.0	58.0	58.0	26.0	26.0
Total Split (%)	13.4%	73.2%	59.8%	59.8%	26.8%	26.8%
Maximum Green (s)	7.0	65.0	52.0	52.0	20.0	20.0
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0

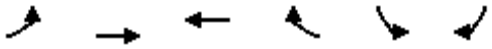


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lead/Lag	Lead		Lag	Lag		
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	5.0	5.0	5.0	3.0	3.0
Minimum Gap (s)	3.0	2.0	2.0	2.0	3.0	3.0
Time Before Reduce (s)	0.0	42.0	42.0	42.0	0.0	0.0
Time To Reduce (s)	0.0	10.0	10.0	10.0	0.0	0.0
Recall Mode	None	Min	Min	Min	None	None
Walk Time (s)		7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)		14.0	14.0	14.0	14.0	14.0
Pedestrian Calls (#/hr)		0	0	0	0	0
v/c Ratio	0.53	0.71	1.00	0.49	0.87	0.28
Control Delay	14.9	18.3	67.7	5.6	39.2	4.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	14.9	18.3	67.7	5.6	39.2	4.0
Queue Length 50th (ft)	36	147	161	0	147	0
Queue Length 95th (ft)	65	233	#305	44	#279	30
Internal Link Dist (ft)		647	1009		2492	
Turn Bay Length (ft)	165			215	165	
Base Capacity (vph)	349	787	450	635	512	630
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.53	0.71	1.00	0.49	0.87	0.28

Intersection Summary	
Area Type:	Other
Cycle Length: 97	
Actuated Cycle Length: 60	
Natural Cycle: 60	
Control Type: Actuated-Uncoordinated	
# 95th percentile volume exceeds capacity, queue may be longer.	
Queue shown is maximum after two cycles.	

Splits and Phases: 3: Lycoming Mall Dr (SR 2014) & Lycoming Mall Rd (SR 2049)





Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	159	478	385	269	383	153
Number	5	2	6	16	7	14
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	1809	1630	1690	1791	1541	1731
Adj Flow Rate, veh/h	185	556	448	300	445	138
Adj No. of Lanes	1	1	1	1	1	1
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86
Percent Heavy Veh, %	0	11	6	0	18	5
Cap, veh/h	418	950	702	633	415	416
Arrive On Green	0.10	0.58	0.42	0.42	0.28	0.28
Sat Flow, veh/h	1723	1630	1690	1522	1467	1472
Grp Volume(v), veh/h	185	556	448	300	445	138
Grp Sat Flow(s),veh/h/ln	1723	1630	1690	1522	1467	1472
Q Serve(g_s), s	4.0	16.1	15.7	10.7	21.0	5.5
Cycle Q Clear(g_c), s	4.0	16.1	15.7	10.7	21.0	5.5
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	418	950	702	633	415	416
V/C Ratio(X)	0.44	0.59	0.64	0.47	1.07	0.33
Avail Cap(c_a), veh/h	432	1448	1206	1086	415	416
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	11.4	9.8	17.3	15.8	26.6	21.1
Incr Delay (d2), s/veh	0.7	1.2	2.1	1.2	64.9	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	3.5	11.9	12.1	8.2	28.6	8.6
LnGrp Delay(d),s/veh	12.2	11.0	19.3	17.0	91.6	21.5
LnGrp LOS	B	B	B	B	F	C
Approach Vol, veh/h		741	748		583	
Approach Delay, s/veh		11.3	18.4		75.0	
Approach LOS		B	B		E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		48.3		26.0	12.4	35.9		
Change Period (Y+Rc), s		6.0		6.0	6.0	6.0		
Max Green Setting (Gmax), s		65.0		20.0	7.0	52.0		
Max Q Clear Time (g_c+I1), s		18.6		23.5	6.5	18.2		
Green Ext Time (p_c), s		12.7		0.0	0.0	11.7		

Intersection Summary	
HCM 2010 Ctrl Delay	31.8
HCM 2010 LOS	C

Notes

User approved pedestrian interval to be less than phase max green.

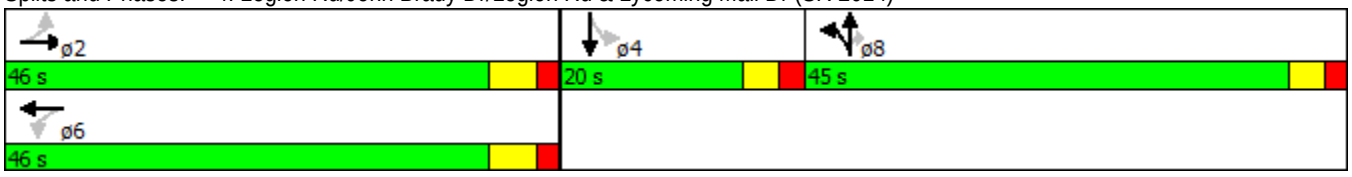
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	1	215	0	324	288	4	509	6	146	6	1	3
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	12	13	13	13	12	12	12	14	14	14
Grade (%)		1%			-1%			-3%			0%	
Storage Length (ft)	1		0	275		0	0		0	0		0
Storage Lanes	0		0	1		0	1		1	0		0
Taper Length (ft)	75			75			75			75		
Lane Util. Factor	0.95	0.95	1.00	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt					0.999				0.850		0.963	
Flt Protected					0.974		0.950	0.953			0.969	
Satd. Flow (prot)	0	3067	0	0	2913	0	1601	1607	1374	0	1256	0
Flt Permitted		0.953			0.698		0.950	0.953				
Satd. Flow (perm)	0	2923	0	0	2087	0	1601	1607	1374	0	1296	0
Right Turn on Red			Yes			Yes			Yes			No
Satd. Flow (RTOR)					1				166			
Link Speed (mph)		45			45			45			25	
Link Distance (ft)		326			418			206			301	
Travel Time (s)		4.9			6.3			3.1			8.2	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	11%	6%	30%	5%	75%	3%	0%	13%	67%	0%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	1	244	0	368	327	5	578	7	166	7	1	3
Shared Lane Traffic (%)							49%					
Lane Group Flow (vph)	0	245	0	0	700	0	295	290	166	0	11	0
Number of Detectors	1	2		1	2		2	2	0	1	1	
Detector Template	Left			Left						Left	Thru	
Leading Detector (ft)	30	306		30	286		206	206	0	30	45	
Trailing Detector (ft)	-10	-5		-10	-5		-5	-5	0	-10	-5	
Turn Type	Perm	NA		Perm	NA		Split	NA	Perm	Perm	NA	
Protected Phases		2			6		8	8			4	
Permitted Phases	2			6					8	4		
Detector Phase	2	2		6	6		8	8	8	4	4	
Switch Phase												
Minimum Initial (s)	15.0	15.0		15.0	15.0		15.0	15.0	15.0	5.0	5.0	
Minimum Split (s)	21.0	21.0		21.0	21.0		20.0	20.0	20.0	10.0	10.0	
Total Split (s)	46.0	46.0		46.0	46.0		45.0	45.0	45.0	20.0	20.0	
Total Split (%)	41.4%	41.4%		41.4%	41.4%		40.5%	40.5%	40.5%	18.0%	18.0%	
Maximum Green (s)	40.0	40.0		40.0	40.0		40.0	40.0	40.0	15.0	15.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)		-1.0			-1.0		-1.0	-1.0	-1.0		-1.0	
Total Lost Time (s)		5.0			5.0		4.0	4.0	4.0		4.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	6.0	6.0		6.0	6.0		6.0	6.0	6.0	3.0	3.0	
Minimum Gap (s)	2.0	2.0		2.0	2.0		2.0	2.0	2.0	2.0	2.0	
Time Before Reduce (s)	40.0	40.0		40.0	40.0		40.0	40.0	40.0	0.0	0.0	
Time To Reduce (s)	20.0	20.0		20.0	20.0		20.0	20.0	20.0	0.0	0.0	
Recall Mode	Min	Min		Min	Min		None	None	None	None	None	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
v/c Ratio		0.17			0.89dl		0.49	0.48	0.27		0.08	
Control Delay		15.2			24.4		23.9	23.7	4.6		39.9	
Queue Delay		0.0			0.0		0.0	0.0	0.0		0.0	
Total Delay		15.2			24.4		23.9	23.7	4.6		39.9	
Queue Length 50th (ft)		33			128		116	113	0		5	
Queue Length 95th (ft)		87			#337		241	236	40		24	
Internal Link Dist (ft)		246			338			126			221	
Turn Bay Length (ft)												
Base Capacity (vph)		1552			1108		850	853	807		268	
Starvation Cap Reductn		0			0		0	0	0		0	
Spillback Cap Reductn		0			0		0	0	0		0	
Storage Cap Reductn		0			0		0	0	0		0	
Reduced v/c Ratio		0.16			0.63		0.35	0.34	0.21		0.04	

Intersection Summary	
Area Type:	Other
Cycle Length: 111	
Actuated Cycle Length: 81.1	
Natural Cycle: 60	
Control Type: Actuated-Uncoordinated	

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
dl Defacto Left Lane. Recode with 1 though lane as a left lane.

Splits and Phases: 4: Legion Rd/John Brady Dr/Legion Rd & Lycoming Mall Dr (SR 2014)



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	1	215	0	324	288	4	509	6	146	6	1	3
Number	5	2	12	1	6	16	3	8	18	7	4	14
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	1791	1614	0	1881	1586	1881	1774	1775	1617	1872	1312	1872
Adj Flow Rate, veh/h	1	244	0	368	327	4	583	0	122	7	1	3
Adj No. of Lanes	0	2	0	0	2	0	2	0	1	0	1	0
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	11	11	0	5	5	5	3	0	13	0	0	0
Cap, veh/h	45	1488	0	539	704	9	1077	0	438	20	3	9
Arrive On Green	0.48	0.49	0.00	0.48	0.49	0.48	0.32	0.00	0.32	0.01	0.03	0.01
Sat Flow, veh/h	1	3081	0	909	1423	17	3379	0	1374	773	110	331
Grp Volume(v), veh/h	131	114	0	368	0	331	583	0	122	11	0	0
Grp Sat Flow(s),veh/h/ln	1613	1395	0	909	0	1440	1689	0	1374	1215	0	0
Q Serve(g_s), s	0.0	3.6	0.0	26.1	0.0	12.2	11.5	0.0	5.4	0.7	0.0	0.0
Cycle Q Clear(g_c), s	3.6	3.6	0.0	30.2	0.0	12.2	11.5	0.0	5.4	0.7	0.0	0.0
Prop In Lane	0.01		0.00	1.00		0.01	1.00		1.00	0.64		0.27
Lane Grp Cap(c), veh/h	823	690	0	527	0	712	1077	0	438	31	0	0
V/C Ratio(X)	0.16	0.16	0.00	0.70	0.00	0.46	0.54	0.00	0.28	0.35	0.00	0.00
Avail Cap(c_a), veh/h	842	707	0	540	0	730	1712	0	696	240	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	11.3	11.2	0.0	20.2	0.0	13.4	22.7	0.0	20.6	39.2	0.0	0.0
Incr Delay (d2), s/veh	0.3	0.4	0.0	6.5	0.0	1.7	1.5	0.0	1.2	6.5	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(95%),veh/ln	3.1	2.6	0.0	13.2	0.0	8.8	9.4	0.0	3.9	0.5	0.0	0.0
LnGrp Delay(d),s/veh	11.6	11.7	0.0	26.7	0.0	15.1	24.2	0.0	21.8	45.7	0.0	0.0
LnGrp LOS	B	B		C		B	C		C	D		
Approach Vol, veh/h		245			699			705			11	
Approach Delay, s/veh		11.6			21.2			23.8			45.7	
Approach LOS		B			C			C			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		45.0		6.1		45.0		29.8
Change Period (Y+Rc), s		6.0		5.0		6.0		5.0
Max Green Setting (Gmax), s		40.0		15.0		40.0		40.0
Max Q Clear Time (g_c+I1), s		6.1		2.7		32.2		14.0
Green Ext Time (p_c), s		24.8		0.0		6.8		10.8

Intersection Summary	
HCM 2010 Ctrl Delay	21.1
HCM 2010 LOS	C

Notes

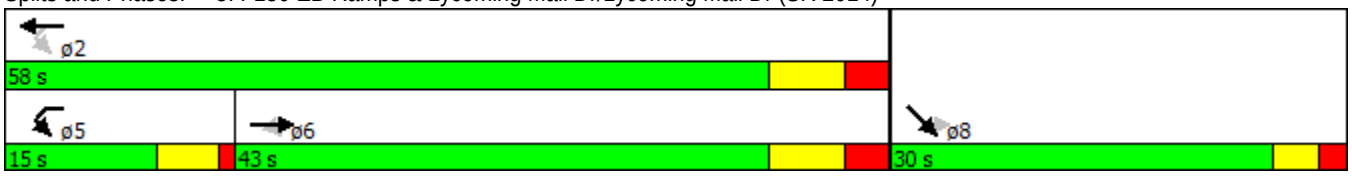
User approved volume balancing among the lanes for turning movement.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Volume (vph)	0	316	93	38	421	0	189	2	324	0	0	0
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	14	12	12	12	12	14	14	14	12	12	12
Grade (%)		-1%			-1%			3%			-4%	
Storage Length (ft)	0		175	150		0	0		0	0		0
Storage Lanes	0		1	1		0	0		0	0		0
Taper Length (ft)	75			75			75			75		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt			0.850					0.915				
Flt Protected				0.950				0.982				
Satd. Flow (prot)	0	1649	1292	1621	1587	0	0	1490	0	0	0	0
Flt Permitted				0.372				0.982				
Satd. Flow (perm)	0	1649	1292	635	1587	0	0	1490	0	0	0	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			102					98				
Link Speed (mph)		45			45			25			25	
Link Distance (ft)		2040			660			376			358	
Travel Time (s)		30.9			10.0			10.3			9.8	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	17%	19%	6%	14%	0%	16%	0%	13%	0%	0%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	0	347	102	42	463	0	208	2	356	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	347	102	42	463	0	0	566	0	0	0	0
Number of Detectors		1	1	1	1		1	1				
Detector Template				Left			Left	Thru				
Leading Detector (ft)		6	6	45	6		30	30				
Trailing Detector (ft)		0	0	-5	0		-10	-10				
Turn Type		NA	Perm	pm+pt	NA		Perm	NA				
Protected Phases		6		5	2			8				
Permitted Phases			6	2			8					
Detector Phase				5			8	8				
Switch Phase												
Minimum Initial (s)		20.0	20.0	5.0	20.0		5.0	5.0				
Minimum Split (s)		28.0	28.0	10.0	38.0		10.0	10.0				
Total Split (s)		43.0	43.0	15.0	58.0		30.0	30.0				
Total Split (%)		48.9%	48.9%	17.0%	65.9%		34.1%	34.1%				
Maximum Green (s)		35.0	35.0	10.0	50.0		25.0	25.0				
Yellow Time (s)		5.0	5.0	4.0	5.0		3.0	3.0				
All-Red Time (s)		3.0	3.0	1.0	3.0		2.0	2.0				
Lost Time Adjust (s)		-1.0	-1.0	-1.0	-1.0			-1.0				
Total Lost Time (s)		7.0	7.0	4.0	7.0			4.0				

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lead/Lag		Lag	Lag	Lead								
Lead-Lag Optimize?												
Vehicle Extension (s)		3.0	3.0	4.0	3.0		4.0	4.0				
Minimum Gap (s)		3.0	3.0	3.0	3.0		3.0	3.0				
Time Before Reduce (s)		0.0	0.0	0.0	0.0		0.0	0.0				
Time To Reduce (s)		0.0	0.0	0.0	0.0		0.0	0.0				
Recall Mode		Min	Min	None	Min		None	None				
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
v/c Ratio		0.66	0.21	0.10	0.67			0.87				
Control Delay		28.5	6.0	9.0	20.0			34.1				
Queue Delay		0.0	0.0	0.0	0.0			0.0				
Total Delay		28.5	6.0	9.0	20.0			34.1				
Queue Length 50th (ft)		134	0	8	141			197				
Queue Length 95th (ft)		#255	32	22	232			#410				
Internal Link Dist (ft)		1960			580			296			278	
Turn Bay Length (ft)			175	150								
Base Capacity (vph)		529	483	470	689			651				
Starvation Cap Reductn		0	0	0	0			0				
Spillback Cap Reductn		0	0	0	0			0				
Storage Cap Reductn		0	0	0	0			0				
Reduced v/c Ratio		0.66	0.21	0.09	0.67			0.87				

Intersection Summary	
Area Type:	Other
Cycle Length: 88	
Actuated Cycle Length: 66.2	
Natural Cycle: 65	
Control Type: Actuated-Uncoordinated	
# 95th percentile volume exceeds capacity, queue may be longer.	
Queue shown is maximum after two cycles.	

Splits and Phases: 5: I-180 EB Ramps & Lycoming Mall Dr/Lycoming Mall Dr (SR 2014)



Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Volume (veh/h)	0	316	93	38	421	0	189	2	324	0	0	0
Number	1	6	16	5	2	12	3	8	18			
Initial Q (Qb), veh	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			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	0	1608	1520	1707	1587	0	1844	1617	1844			
Adj Flow Rate, veh/h	0	347	45	42	463	0	208	2	324			
Adj No. of Lanes	0	1	1	1	1	0	0	1	0			
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91			
Percent Heavy Veh, %	0	17	19	6	14	0	0	0	0			
Cap, veh/h	0	514	413	327	693	0	221	2	345			
Arrive On Green	0.00	0.32	0.32	0.06	0.44	0.00	0.38	0.40	0.38			
Sat Flow, veh/h	0	1608	1292	1625	1587	0	559	5	871			
Grp Volume(v), veh/h	0	347	45	42	463	0	534	0	0			
Grp Sat Flow(s),veh/h/ln	0	1608	1292	1625	1587	0	1435	0	0			
Q Serve(g_s), s	0.0	12.3	1.6	1.0	15.2	0.0	23.6	0.0	0.0			
Cycle Q Clear(g_c), s	0.0	12.3	1.6	1.0	15.2	0.0	23.6	0.0	0.0			
Prop In Lane	0.00		1.00	1.00		0.00	0.39		0.61			
Lane Grp Cap(c), veh/h	0	514	413	327	693	0	568	0	0			
V/C Ratio(X)	0.00	0.67	0.11	0.13	0.67	0.00	0.94	0.00	0.00			
Avail Cap(c_a), veh/h	0	881	708	509	1232	0	568	0	0			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	0.00			
Uniform Delay (d), s/veh	0.0	19.4	15.7	13.3	14.7	0.0	19.6	0.0	0.0			
Incr Delay (d2), s/veh	0.0	1.6	0.1	0.2	1.1	0.0	24.1	0.0	0.0			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(95%),veh/ln	0.0	9.5	1.1	0.8	11.0	0.0	18.9	0.0	0.0			
LnGrp Delay(d),s/veh	0.0	20.9	15.9	13.6	15.8	0.0	43.6	0.0	0.0			
LnGrp LOS		C	B	B	B		D					
Approach Vol, veh/h		392			505			534				
Approach Delay, s/veh		20.3			15.7			43.6				
Approach LOS		C			B			D				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2			5	6		8
Phs Duration (G+Y+Rc), s		35.7			7.7	28.0		30.0
Change Period (Y+Rc), s		8.0			5.0	8.0		5.0
Max Green Setting (Gmax), s		50.0			10.0	35.0		25.0
Max Q Clear Time (g_c+I1), s		17.7			3.5	14.8		25.6
Green Ext Time (p_c), s		2.2			0.0	2.2		0.0

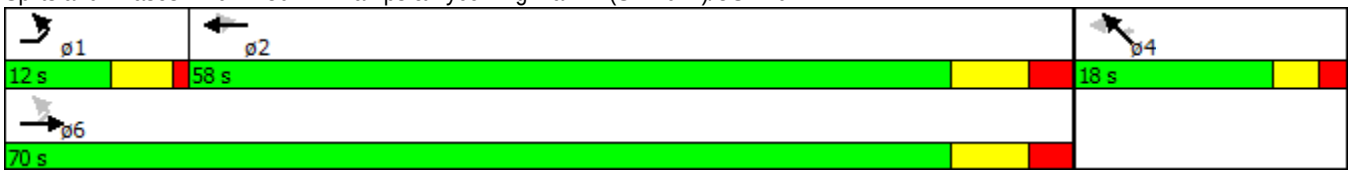
Intersection Summary	
HCM 2010 Ctrl Delay	27.4
HCM 2010 LOS	C

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Volume (vph)	109	397	0	0	369	474	0	0	0	89	0	37
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	11	12	12	11	11	11	12	12	12	15	15	16
Grade (%)		1%			-1%			-3%			-3%	
Storage Length (ft)	115		0	0		260	0		0	0		445
Storage Lanes	1		0	0		1	0		0	0		1
Taper Length (ft)	75			75			75			75		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt						0.850						0.850
Flt Protected	0.950										0.950	
Satd. Flow (prot)	1406	1571	0	0	1665	1402	0	0	0	0	1632	1173
Flt Permitted	0.354										0.950	
Satd. Flow (perm)	524	1571	0	0	1665	1402	0	0	0	0	1632	1173
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						571						124
Link Speed (mph)		45			45			25			25	
Link Distance (ft)		660			1209			327			668	
Travel Time (s)		10.0			18.3			8.9			18.2	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	17%	14%	0%	0%	5%	6%	0%	0%	0%	17%	0%	50%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	131	478	0	0	445	571	0	0	0	107	0	45
Shared Lane Traffic (%)												
Lane Group Flow (vph)	131	478	0	0	445	571	0	0	0	0	107	45
Number of Detectors	1	1			1	1				1	1	0
Detector Template	Left					Right				Left	Thru	
Leading Detector (ft)	45	6			6	30				30	45	0
Trailing Detector (ft)	-5	0			0	-10				-10	-5	0
Turn Type	pm+pt	NA			NA	Perm				Perm	NA	Perm
Protected Phases	1	6			2						4	
Permitted Phases	6					2				4		4
Detector Phase	1					2				4	4	4
Switch Phase												
Minimum Initial (s)	5.0	20.0			20.0	20.0				5.0	5.0	5.0
Minimum Split (s)	10.0	28.0			28.0	28.0				10.0	10.0	10.0
Total Split (s)	12.0	70.0			58.0	58.0				18.0	18.0	18.0
Total Split (%)	13.6%	79.5%			65.9%	65.9%				20.5%	20.5%	20.5%
Maximum Green (s)	7.0	62.0			50.0	50.0				13.0	13.0	13.0
Yellow Time (s)	4.0	5.0			5.0	5.0				3.0	3.0	3.0
All-Red Time (s)	1.0	3.0			3.0	3.0				2.0	2.0	2.0
Lost Time Adjust (s)	-1.0	-1.0			-1.0	0.0					-1.0	-1.0
Total Lost Time (s)	4.0	7.0			7.0	8.0					4.0	4.0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lead/Lag	Lead				Lag	Lag						
Lead-Lag Optimize?												
Vehicle Extension (s)	4.0	3.0			3.0	3.0				4.0	4.0	4.0
Minimum Gap (s)	3.0	3.0			3.0	3.0				3.0	3.0	3.0
Time Before Reduce (s)	0.0	0.0			0.0	0.0				0.0	0.0	0.0
Time To Reduce (s)	0.0	0.0			0.0	0.0				0.0	0.0	0.0
Recall Mode	None	Min			Min	Min				Min	Min	Min
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
v/c Ratio	0.28	0.53			0.66	0.64					0.31	0.13
Control Delay	5.7	9.5			21.0	5.5					21.4	0.8
Queue Delay	0.0	0.0			0.0	0.0					0.0	0.0
Total Delay	5.7	9.5			21.0	5.5					21.4	0.8
Queue Length 50th (ft)	13	77			118	0					30	0
Queue Length 95th (ft)	31	140			200	40					60	0
Internal Link Dist (ft)		580			1129			247			588	
Turn Bay Length (ft)	115					260						445
Base Capacity (vph)	469	908			675	1357					441	407
Starvation Cap Reductn	0	0			0	0					0	0
Spillback Cap Reductn	0	0			0	0					0	0
Storage Cap Reductn	0	0			0	0					0	0
Reduced v/c Ratio	0.28	0.53			0.66	0.42					0.24	0.11

Intersection Summary	
Area Type:	Other
Cycle Length: 88	
Actuated Cycle Length: 52.7	
Natural Cycle: 50	
Control Type: Actuated-Uncoordinated	

Splits and Phases: 6: I-180 WB Ramps & Lycoming Mall Dr (SR 2014)/US 220



Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Volume (veh/h)	109	397	0	0	369	474	0	0	0	89	0	37
Number	1	6	16	5	2	12				7	4	14
Initial Q (Qb), veh	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
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1531	1571	0	0	1723	1707				1900	1624	1267
Adj Flow Rate, veh/h	131	478	0	0	445	452				107	0	31
Adj No. of Lanes	1	1	0	0	1	1				0	1	1
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83				0.83	0.83	0.83
Percent Heavy Veh, %	17	14	0	0	5	6				50	0	50
Cap, veh/h	442	997	0	0	763	612				206	0	144
Arrive On Green	0.11	0.63	0.00	0.00	0.44	0.42				0.11	0.00	0.13
Sat Flow, veh/h	1458	1571	0	0	1723	1451				1547	0	1077
Grp Volume(v), veh/h	131	478	0	0	445	452				107	0	31
Grp Sat Flow(s),veh/h/ln	1458	1571	0	0	1723	1451				1547	0	1077
Q Serve(g_s), s	1.9	7.6	0.0	0.0	9.2	12.4				3.1	0.0	1.2
Cycle Q Clear(g_c), s	1.9	7.6	0.0	0.0	9.2	12.4				3.1	0.0	1.2
Prop In Lane	1.00		0.00	0.00		1.00				1.00		1.00
Lane Grp Cap(c), veh/h	442	997	0	0	763	612				206	0	144
V/C Ratio(X)	0.30	0.48	0.00	0.00	0.58	0.74				0.52	0.00	0.22
Avail Cap(c_a), veh/h	531	2087	0	0	1852	1529				456	0	318
HCM Platoon Ratio	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	0.00	0.00	1.00	1.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	6.0	4.5	0.0	0.0	9.9	11.5				19.6	0.0	18.3
Incr Delay (d2), s/veh	0.5	0.4	0.0	0.0	0.7	1.8				2.9	0.0	1.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	1.4	5.9	0.0	0.0	7.9	8.9				2.7	0.0	0.7
LnGrp Delay(d),s/veh	6.5	4.9	0.0	0.0	10.6	13.3				22.5	0.0	19.4
LnGrp LOS	A	A			B	B				C		B
Approach Vol, veh/h		609			897						138	
Approach Delay, s/veh		5.3			12.0						21.8	
Approach LOS		A			B						C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6		
Phs Duration (G+Y+Rc), s	9.1	28.0		10.3		37.1		
Change Period (Y+Rc), s	5.0	8.0		5.0		8.0		
Max Green Setting (Gmax), s	7.0	50.0		13.0		62.0		
Max Q Clear Time (g_c+I1), s	4.4	14.4		5.1		10.1		
Green Ext Time (p_c), s	0.1	4.6		0.2		4.6		

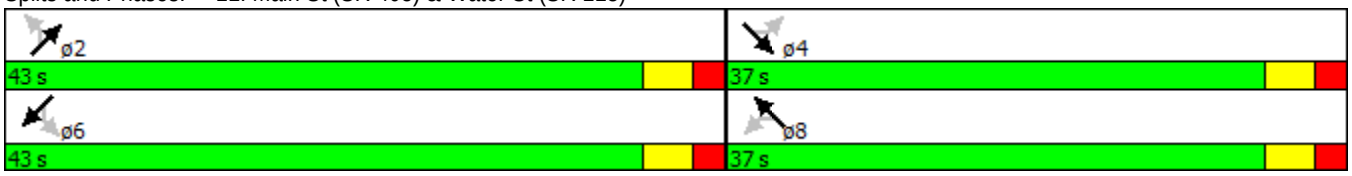
Intersection Summary	
HCM 2010 Ctrl Delay	10.3
HCM 2010 LOS	B

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	19	46	29	168	126	165	19	244	128	131	367	19
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	15	15	15	13	13	13	14	14	14	14	14	14
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (ft)	75			75			75			75		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor								1.00				
Frt		0.958			0.952			0.956			0.995	
Flt Protected		0.990			0.982			0.998			0.987	
Satd. Flow (prot)	0	1758	0	0	1609	0	0	1556	0	0	1683	0
Flt Permitted		0.885			0.847			0.965			0.753	
Satd. Flow (perm)	0	1572	0	0	1388	0	0	1504	0	0	1284	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		25			35			25			25	
Link Distance (ft)		390			506			1477			648	
Travel Time (s)		10.6			9.9			40.3			17.7	
Confl. Peds. (#/hr)							3					
Confl. Bikes (#/hr)												
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	6%	7%	7%	5%	7%	12%	22%	12%	28%	28%	7%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)							0		0	0		0
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	21	52	33	189	142	185	21	274	144	147	412	21
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	106	0	0	516	0	0	439	0	0	580	0
Number of Detectors	1	1		1	1		1	1		1	1	
Detector Template	Left			Left			Left			Left		
Leading Detector (ft)	30	45		30	45		30	45		30	45	
Trailing Detector (ft)	-10	-5		-10	-5		-10	-5		-10	-5	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	15.0	15.0		15.0	15.0		15.0	15.0		15.0	15.0	
Total Split (s)	37.0	37.0		37.0	37.0		43.0	43.0		43.0	43.0	
Total Split (%)	46.3%	46.3%		46.3%	46.3%		53.8%	53.8%		53.8%	53.8%	
Maximum Green (s)	32.0	32.0		32.0	32.0		38.0	38.0		38.0	38.0	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		-1.0			-1.0			-1.0			-1.0	
Total Lost Time (s)		4.0			4.0			4.0			4.0	

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Minimum Gap (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Time Before Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Time To Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Recall Mode	Max	Max		Max	Max		Max	Max		Max	Max	
Walk Time (s)	11.0	11.0		11.0	11.0		12.0	12.0		12.0	12.0	
Flash Dont Walk (s)	16.0	16.0		16.0	16.0		18.0	18.0		18.0	18.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
v/c Ratio		0.16			0.90			0.60			0.93	
Control Delay		15.7			44.2			19.1			43.7	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		15.7			44.2			19.1			43.7	
Queue Length 50th (ft)		32			234			151			257	
Queue Length 95th (ft)		64			#419			240			#465	
Internal Link Dist (ft)		310			426			1397			568	
Turn Bay Length (ft)												
Base Capacity (vph)		648			572			733			625	
Starvation Cap Reductn		0			0			0			0	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.16			0.90			0.60			0.93	

Intersection Summary	
Area Type:	Other
Cycle Length: 80	
Actuated Cycle Length: 80	
Natural Cycle: 70	
Control Type: Actuated-Uncoordinated	
# 95th percentile volume exceeds capacity, queue may be longer.	
Queue shown is maximum after two cycles.	

Splits and Phases: 11: Main St (SR 405) & Water St (SR 118)



Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (veh/h)	19	46	29	168	126	165	19	244	128	131	367	19
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	0.90	1.00	1.00	0.90
Adj Sat Flow, veh/h/ln	1872	1753	1872	1872	1732	1872	1872	1590	1872	1872	1670	1872
Adj Flow Rate, veh/h	21	52	33	189	142	185	21	274	144	147	412	21
Adj No. of Lanes	0	1	0	0	1	0	0	1	0	0	1	0
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	7	7	7	7	7	7	12	12	12	7	7	7
Cap, veh/h	140	328	187	270	182	218	61	422	213	172	402	19
Arrive On Green	0.40	0.41	0.40	0.40	0.41	0.40	0.47	0.49	0.47	0.47	0.49	0.47
Sat Flow, veh/h	208	796	454	506	440	529	29	865	436	237	825	40
Grp Volume(v), veh/h	106	0	0	516	0	0	439	0	0	580	0	0
Grp Sat Flow(s),veh/h/ln	1458	0	0	1475	0	0	1330	0	0	1102	0	0
Q Serve(g_s), s	0.0	0.0	0.0	22.4	0.0	0.0	0.0	0.0	0.0	17.9	0.0	0.0
Cycle Q Clear(g_c), s	3.2	0.0	0.0	25.7	0.0	0.0	20.1	0.0	0.0	38.0	0.0	0.0
Prop In Lane	0.20		0.31	0.37		0.36	0.05		0.33	0.25		0.04
Lane Grp Cap(c), veh/h	637	0	0	651	0	0	679	0	0	580	0	0
V/C Ratio(X)	0.17	0.00	0.00	0.79	0.00	0.00	0.65	0.00	0.00	1.00	0.00	0.00
Avail Cap(c_a), veh/h	637	0	0	651	0	0	679	0	0	580	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	14.9	0.0	0.0	21.5	0.0	0.0	15.8	0.0	0.0	22.8	0.0	0.0
Incr Delay (d2), s/veh	0.6	0.0	0.0	9.6	0.0	0.0	4.7	0.0	0.0	37.5	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(95%),veh/ln	2.9	0.0	0.0	18.1	0.0	0.0	13.3	0.0	0.0	34.1	0.0	0.0
LnGrp Delay(d),s/veh	15.5	0.0	0.0	31.0	0.0	0.0	20.5	0.0	0.0	60.3	0.0	0.0
LnGrp LOS	B			C			C			F		
Approach Vol, veh/h		106			516			439			580	
Approach Delay, s/veh		15.5			31.0			20.5			60.3	
Approach LOS		B			C			C			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		43.0		37.0		43.0		37.0
Change Period (Y+Rc), s		5.0		5.0		5.0		5.0
Max Green Setting (Gmax), s		38.0		32.0		38.0		32.0
Max Q Clear Time (g_c+I1), s		22.1		5.2		40.0		27.7
Green Ext Time (p_c), s		4.7		2.9		0.0		1.2

Intersection Summary	
HCM 2010 Ctrl Delay	37.5
HCM 2010 LOS	D

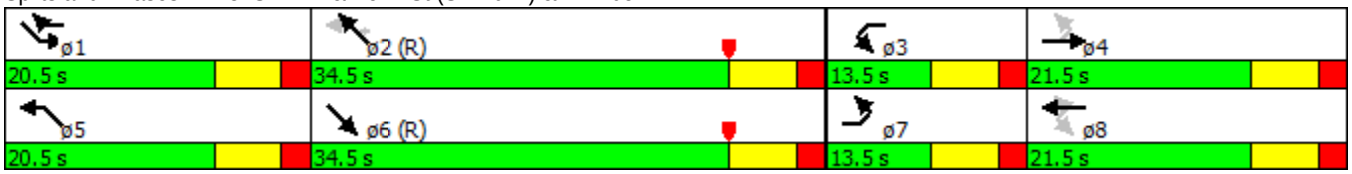
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Volume (vph)	19	101	14	98	142	772	829	126	26	17	283	158
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	11	11	11	11	11	11	11	11	11	11	11	11
Grade (%)		-2%			-1%			1%			-2%	
Storage Length (ft)	195		220	155		425	450		0	125		400
Storage Lanes	2		0	1		1	2		0	1		1
Taper Length (ft)	75			75			75			75		
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00	0.97	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.982				0.850		0.974				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1670	3115	0	1408	1681	1376	2659	1461	0	1670	1642	1396
Flt Permitted	0.660			0.548			0.950			0.654		
Satd. Flow (perm)	1160	3115	0	812	1681	1376	2659	1461	0	1149	1642	1396
Right Turn on Red			No			Yes			Yes			Yes
Satd. Flow (RTOR)						450		12				200
Link Speed (mph)		45			45			40			45	
Link Distance (ft)		670			586			1005			570	
Travel Time (s)		10.2			8.9			17.1			8.6	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	6%	0%	18%	4%	8%	20%	17%	8%	0%	7%	7%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	20	109	15	105	153	830	891	135	28	18	304	170
Shared Lane Traffic (%)												
Lane Group Flow (vph)	20	124	0	105	153	830	891	163	0	18	304	170
Number of Detectors	1	1		1	1	1	2	2		1	2	0
Detector Template	Left	Thru		Left	Thru	Right				Left		
Leading Detector (ft)	40	30		40	30	30	160	160		30	310	0
Trailing Detector (ft)	-10	-5		-10	-5	-5	-10	-10		-10	-10	0
Turn Type	pm+pt	NA		pm+pt	NA	pm+ov	Prot	NA		pm+pt	NA	Perm
Protected Phases	7	4		3	8	1	1	6		5	2	
Permitted Phases	4			8		8				2		2
Detector Phase	7	4		3	8	1	1	6		5	2	2
Switch Phase												
Minimum Initial (s)	3.0	5.0		3.0	5.0	3.0	3.0	5.0		3.0	5.0	5.0
Minimum Split (s)	9.5	11.5		9.5	11.5	9.5	9.5	11.5		9.5	11.5	11.5
Total Split (s)	13.5	21.5		13.5	21.5	20.5	20.5	34.5		20.5	34.5	34.5
Total Split (%)	15.0%	23.9%		15.0%	23.9%	22.8%	22.8%	38.3%		22.8%	38.3%	38.3%
Maximum Green (s)	7.0	15.0		7.0	15.0	14.0	14.0	28.0		14.0	28.0	28.0
Yellow Time (s)	4.5	4.5		4.5	4.5	4.5	4.5	4.5		4.5	4.5	4.5
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)	-1.0	-1.0		-1.0	-1.0	-1.0	-1.0	-1.0		-1.0	-1.0	-1.0
Total Lost Time (s)	5.5	5.5		5.5	5.5	5.5	5.5	5.5		5.5	5.5	5.5

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lead/Lag	Lead	Lag		Lead	Lag	Lead	Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	5.0		3.0	5.0	3.0	3.0	4.0		3.0	4.0	4.0
Minimum Gap (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Time Before Reduce (s)	0.0	0.0		0.0	0.0	0.0	0.0	9.0		0.0	9.0	9.0
Time To Reduce (s)	0.0	0.0		0.0	0.0	0.0	0.0	18.0		0.0	18.0	18.0
Recall Mode	None	None		None	None	None	None	C-Min		None	C-Min	C-Min
Walk Time (s)		12.0			12.0			14.0			14.0	14.0
Flash Dont Walk (s)		18.0			18.0			21.0			21.0	21.0
Pedestrian Calls (#/hr)		0			0			0			0	0
v/c Ratio	0.07	0.27		0.40	0.42	0.87	1.23	0.20		0.04	0.69	0.33
Control Delay	21.7	35.1		28.7	34.9	22.0	147.5	14.0		10.6	37.5	4.0
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	21.7	35.1		28.7	34.9	22.0	147.5	14.0		10.6	37.5	4.0
Queue Length 50th (ft)	8	34		44	65	155	~367	39		4	152	0
Queue Length 95th (ft)	24	57		84	141	#560	#529	103		14	227	30
Internal Link Dist (ft)		590			506			925			490	
Turn Bay Length (ft)	195			155		425	450			125		400
Base Capacity (vph)	297	553		262	379	958	726	800		586	529	585
Starvation Cap Reductn	0	0		0	0	0	0	0		0	0	0
Spillback Cap Reductn	0	0		0	0	0	0	0		0	0	0
Storage Cap Reductn	0	0		0	0	0	0	0		0	0	0
Reduced v/c Ratio	0.07	0.22		0.40	0.40	0.87	1.23	0.20		0.03	0.57	0.29

Intersection Summary

Area Type: Other
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 0 (0%), Referenced to phase 2:NWTL and 6:SET, Start of Yellow
Natural Cycle: 90
Control Type: Actuated-Coordinated
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 18: SR 442 & Penn St (SR 2044) & PA 405



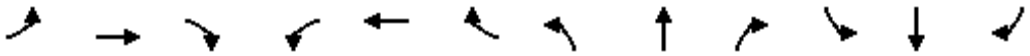
Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Volume (veh/h)	19	101	14	98	142	772	829	126	26	17	283	158
Number	7	4	14	3	8	18	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, 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	1818	1727	1818	1533	1739	1675	1492	1551	1791	1818	1699	1699
Adj Flow Rate, veh/h	20	109	15	105	153	484	891	135	17	18	304	116
Adj No. of Lanes	1	2	0	1	1	1	2	1	0	1	1	1
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	0	6	6	18	4	8	20	17	17	0	7	7
Cap, veh/h	205	335	45	299	310	491	460	713	90	608	654	556
Arrive On Green	0.03	0.12	0.10	0.09	0.18	0.18	0.17	0.53	0.52	0.02	0.38	0.38
Sat Flow, veh/h	1731	2905	393	1460	1739	1424	2758	1351	170	1731	1699	1444
Grp Volume(v), veh/h	20	61	63	105	153	484	891	0	152	18	304	116
Grp Sat Flow(s),veh/h/ln	1731	1641	1658	1460	1739	1424	1379	0	1521	1731	1699	1444
Q Serve(g_s), s	0.9	3.1	3.2	5.4	7.1	16.0	15.0	0.0	4.7	0.6	12.1	4.8
Cycle Q Clear(g_c), s	0.9	3.1	3.2	5.4	7.1	16.0	15.0	0.0	4.7	0.6	12.1	4.8
Prop In Lane	1.00		0.24	1.00		1.00	1.00		0.11	1.00		1.00
Lane Grp Cap(c), veh/h	205	189	191	299	310	491	460	0	803	608	654	556
V/C Ratio(X)	0.10	0.32	0.33	0.35	0.49	0.99	1.94	0.00	0.19	0.03	0.47	0.21
Avail Cap(c_a), veh/h	314	292	295	299	310	491	460	0	803	856	654	556
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	1.00	1.00
Uniform Delay (d), s/veh	33.6	36.6	36.7	28.8	33.3	29.3	37.5	0.0	11.2	15.9	20.7	18.5
Incr Delay (d2), s/veh	0.2	2.1	2.1	0.7	2.6	37.0	430.3	0.0	0.5	0.0	2.4	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(95%),veh/ln	0.8	2.7	2.8	4.0	6.6	23.6	59.7	0.0	3.8	0.5	10.1	3.7
LnGrp Delay(d),s/veh	33.8	38.6	38.9	29.5	35.9	66.2	467.8	0.0	11.7	15.9	23.1	19.4
LnGrp LOS	C	D	D	C	D	E	F		B	B	C	B
Approach Vol, veh/h		144			742			1043			438	
Approach Delay, s/veh		38.1			54.8			401.4			21.8	
Approach LOS		D			D			F			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	20.5	40.1	13.5	15.9	7.6	53.0	7.8	21.5
Change Period (Y+Rc), s	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5
Max Green Setting (Gmax), s	14.0	28.0	7.0	15.0	14.0	28.0	7.0	15.0
Max Q Clear Time (g_c+I1), s	17.5	14.6	7.9	5.6	3.1	6.7	3.4	18.5
Green Ext Time (p_c), s	0.0	4.5	0.0	3.8	0.0	5.7	0.0	0.0

Intersection Summary		
HCM 2010 Ctrl Delay		200.4
HCM 2010 LOS		F

Notes

User approved pedestrian interval to be less than phase max green.

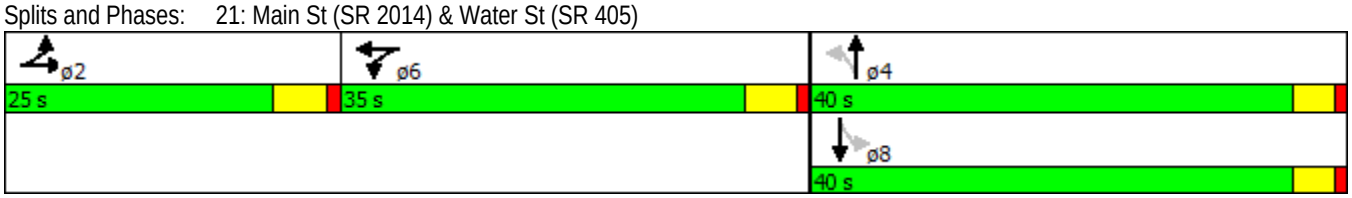


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	245	218	38	87	324	53	60	267	124	46	182	210
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	16	16	16	12	12	12	10	10	10	10	10	10
Grade (%)		-2%			1%			2%			-1%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (ft)	75			75			75			75		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.99			0.99			0.98			0.97	
Frt		0.990			0.985			0.963			0.935	
Flt Protected		0.976			0.991			0.993			0.995	
Satd. Flow (prot)	0	1836	0	0	1624	0	0	1262	0	0	1243	0
Flt Permitted		0.976			0.991			0.815			0.872	
Satd. Flow (perm)	0	1820	0	0	1619	0	0	1036	0	0	1090	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		463			494			1137			622	
Travel Time (s)		12.6			13.5			31.0			17.0	
Confl. Peds. (#/hr)	10		10	10		10	10		10	10		10
Confl. Bikes (#/hr)												
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	8%	8%	8%	7%	7%	7%	8%	8%	8%	7%	7%	7%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)							6	6	6	6	6	6
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	272	242	42	97	360	59	67	297	138	51	202	233
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	556	0	0	516	0	0	502	0	0	486	0
Number of Detectors	1	1		1	1		1	1		1	1	
Detector Template	Left			Left			Left			Left		
Leading Detector (ft)	30	40		30	40		30	40		30	40	
Trailing Detector (ft)	-10	-10		-10	-10		-10	-10		-10	-10	
Turn Type	Split	NA		Split	NA		Perm	NA		Perm	NA	
Protected Phases	2	2		6	6			4			8	
Permitted Phases							4			8		
Detector Phase	2	2		6	6		4	4		8	8	
Switch Phase												
Minimum Initial (s)	8.0	8.0		8.0	8.0		7.0	7.0		7.1	7.1	
Minimum Split (s)	23.0	23.0		23.0	23.0		22.1	22.1		22.1	22.1	
Total Split (s)	25.0	25.0		35.0	35.0		40.0	40.0		40.0	40.0	
Total Split (%)	25.0%	25.0%		35.0%	35.0%		40.0%	40.0%		40.0%	40.0%	
Maximum Green (s)	20.0	20.0		30.0	30.0		35.9	35.9		35.9	35.9	
Yellow Time (s)	4.0	4.0		4.0	4.0		3.1	3.1		3.1	3.1	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		5.0			5.0			4.1			4.1	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0		2.0	2.0		3.5	3.5		3.5	3.5	
Minimum Gap (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Time Before Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Time To Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Recall Mode	None	None		None	None		None	None		None	None	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Pedestrian Calls (#/hr)	10	10		10	10		10	10		10	10	
v/c Ratio		1.51			1.06			1.35			1.24	
Control Delay		276.2			92.8			204.9			159.8	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		276.2			92.8			204.9			159.8	
Queue Length 50th (ft)		~497			~363			~422			~387	
Queue Length 95th (ft)		#702			#564			#620			#585	
Internal Link Dist (ft)		383			414			1057			542	
Turn Bay Length (ft)												
Base Capacity (vph)		367			487			371			391	
Starvation Cap Reductn		0			0			0			0	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		1.51			1.06			1.35			1.24	

Intersection Summary	
Area Type:	Other
Cycle Length: 100	
Actuated Cycle Length: 100	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
~ Volume exceeds capacity, queue is theoretically infinite.	
Queue shown is maximum after two cycles.	
# 95th percentile volume exceeds capacity, queue may be longer.	
Queue shown is maximum after two cycles.	

Splits and Phases: 21: Main St (SR 2014) & Water St (SR 405)



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	245	218	38	87	324	53	60	267	124	46	182	210
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.87	1.00	1.00	0.87
Adj Sat Flow, veh/h/ln	1891	1751	1891	1791	1674	1791	1782	1650	1782	1809	1691	1809
Adj Flow Rate, veh/h	272	242	42	97	360	59	67	297	138	51	202	233
Adj No. of Lanes	0	1	0	0	1	0	0	1	0	0	1	0
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	8	8	8	7	7	7	8	8	8	7	7	7
Cap, veh/h	165	147	25	91	340	56	74	228	99	68	184	196
Arrive On Green	0.20	0.20	0.20	0.30	0.30	0.30	0.36	0.36	0.36	0.36	0.36	0.36
Sat Flow, veh/h	823	733	127	305	1132	185	93	634	276	79	513	545
Grp Volume(v), veh/h	556	0	0	516	0	0	502	0	0	486	0	0
Grp Sat Flow(s),veh/h/ln	1683	0	0	1622	0	0	1003	0	0	1137	0	0
Q Serve(g_s), s	20.0	0.0	0.0	30.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	20.0	0.0	0.0	30.0	0.0	0.0	35.9	0.0	0.0	35.9	0.0	0.0
Prop In Lane	0.49		0.08	0.19		0.11	0.13		0.27	0.10		0.48
Lane Grp Cap(c), veh/h	337	0	0	487	0	0	401	0	0	448	0	0
V/C Ratio(X)	1.65	0.00	0.00	1.06	0.00	0.00	1.25	0.00	0.00	1.08	0.00	0.00
Avail Cap(c_a), veh/h	337	0	0	487	0	0	401	0	0	448	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	40.0	0.0	0.0	35.0	0.0	0.0	32.6	0.0	0.0	32.8	0.0	0.0
Incr Delay (d2), s/veh	306.2	0.0	0.0	57.7	0.0	0.0	132.8	0.0	0.0	67.4	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(95%),veh/ln	68.2	0.0	0.0	38.1	0.0	0.0	46.4	0.0	0.0	37.3	0.0	0.0
LnGrp Delay(d),s/veh	346.2	0.0	0.0	92.7	0.0	0.0	165.4	0.0	0.0	100.2	0.0	0.0
LnGrp LOS	F			F			F			F		
Approach Vol, veh/h		556			516			502			486	
Approach Delay, s/veh		346.2			92.7			165.4			100.2	
Approach LOS		F			F			F			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		25.0		40.0		35.0		40.0
Change Period (Y+Rc), s		5.0		4.1		5.0		4.1
Max Green Setting (Gmax), s		20.0		35.9		30.0		35.9
Max Q Clear Time (g_c+I1), s		22.0		37.9		32.0		37.9
Green Ext Time (p_c), s		0.0		0.0		0.0		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	180.6
HCM 2010 LOS	F

Lane Group	EBL	EBT	WBT	WBR	SWL	SWR
Lane Configurations						
Volume (vph)	39	314	569	0	0	78
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	10	10
Grade (%)		2%	-3%		-1%	
Storage Length (ft)	0			0	0	0
Storage Lanes	0			0	1	0
Taper Length (ft)	75				75	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt					0.865	
Flt Protected		0.995				
Satd. Flow (prot)	0	1647	1819	0	1542	0
Flt Permitted		0.995				
Satd. Flow (perm)	0	1647	1819	0	1542	0
Link Speed (mph)		55	45		25	
Link Distance (ft)		1209	517		640	
Travel Time (s)		15.0	7.8		17.5	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	19%	13%	6%	0%	0%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)		0%	0%		0%	
Adj. Flow (vph)	46	374	677	0	0	93
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	420	677	0	93	0
Sign Control		Free	Free		Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	1.5

Movement	EBL	EBT	WBT	WBR	SWL	SWR
Vol, veh/h	39	314	569	0	0	78
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, %	-	2	-3	-	-1	-
Peak Hour Factor	84	84	84	84	84	84
Heavy Vehicles, %	19	13	6	0	0	0
Mvmt Flow	46	374	677	0	0	93

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	677	0	-	0	1144	677
Stage 1	-	-	-	-	677	-
Stage 2	-	-	-	-	467	-
Critical Hdwy	4.29	-	-	-	7.1	6.2
Critical Hdwy Stg 1	-	-	-	-	5.2	-
Critical Hdwy Stg 2	-	-	-	-	5.2	-
Follow-up Hdwy	3	-	-	-	3	3.1
Pot Cap-1 Maneuver	701	-	-	-	195	478
Stage 1	-	-	-	-	591	-
Stage 2	-	-	-	-	738	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	701	-	-	-	179	478
Mov Cap-2 Maneuver	-	-	-	-	179	-
Stage 1	-	-	-	-	591	-
Stage 2	-	-	-	-	677	-

Approach	EB	WB	SW
HCM Control Delay, s	1.2	0	14.3
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SWLn1
Capacity (veh/h)	701	-	-	-	478
HCM Lane V/C Ratio	0.066	-	-	-	0.194
HCM Control Delay (s)	10.5	0	-	-	14.3
HCM Lane LOS	B	A	-	-	B
HCM 95th %tile Q(veh)	0.2	-	-	-	0.7

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	1	335	7	2	575	7	11	25	0	18	34	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	11	11	11	10	10	10
Grade (%)		-2%			1%			0%			-3%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (ft)	75			75			75			75		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.997			0.998						0.989	
Flt Protected								0.985			0.984	
Satd. Flow (prot)	0	1614	0	0	1781	0	0	1680	0	0	1724	0
Flt Permitted								0.985			0.984	
Satd. Flow (perm)	0	1614	0	0	1781	0	0	1680	0	0	1724	0
Link Speed (mph)		55			55			35			50	
Link Distance (ft)		1494			4148			578			618	
Travel Time (s)		18.5			51.4			11.3			8.4	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	19%	0%	0%	6%	0%	25%	0%	0%	0%	0%	20%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	1	368	8	2	632	8	12	27	0	20	37	5
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	377	0	0	642	0	0	39	0	0	62	0
Sign Control		Free			Free			Stop			Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	2.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	1	335	7	2	575	7	11	25	0	18	34	5
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	-2	-	-	1	-	-	0	-	-	-3	-
Peak Hour Factor	91	91	91	91	91	91	91	91	91	91	91	91
Heavy Vehicles, %	0	19	0	0	6	0	25	0	0	0	0	20
Mvmt Flow	1	368	8	2	632	8	12	27	0	20	37	5

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	640	0	0	376	0	0	1036	1018	372	1028	1018	636
Stage 1	-	-	-	-	-	-	374	374	-	640	640	-
Stage 2	-	-	-	-	-	-	662	644	-	388	378	-
Critical Hdwy	4.9	-	-	4.9	-	-	8.1	6.5	6.4	8.1	6.5	6.4
Critical Hdwy Stg 1	-	-	-	-	-	-	6.35	5.5	-	5.5	4.9	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.35	5.5	-	5.5	4.9	-
Follow-up Hdwy	3.5	-	-	3.5	-	-	3	4	3.4	3	4	3.4
Pot Cap-1 Maneuver	578	-	-	736	-	-	174	239	648	177	239	455
Stage 1	-	-	-	-	-	-	722	621	-	582	526	-
Stage 2	-	-	-	-	-	-	486	471	-	776	659	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	578	-	-	736	-	-	151	238	648	161	238	455
Mov Cap-2 Maneuver	-	-	-	-	-	-	151	238	-	161	238	-
Stage 1	-	-	-	-	-	-	721	620	-	581	524	-
Stage 2	-	-	-	-	-	-	444	469	-	740	658	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0	27.1	28.5
HCM LOS			D	D

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	202	578	-	-	736	-	-	215
HCM Lane V/C Ratio	0.196	0.002	-	-	0.003	-	-	0.291
HCM Control Delay (s)	27.1	11.2	0	-	9.9	0	-	28.5
HCM Lane LOS	D	B	A	-	A	A	-	D
HCM 95th %tile Q(veh)	0.7	0	-	-	0	-	-	1.2

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	18	264	50	6	469	3	53	18	2	1	29	41
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	11	11	11	14	14	14
Grade (%)		0%			-1%			7%			-1%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (ft)	75			75			75			75		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.980			0.999			0.997			0.922	
Flt Protected		0.997			0.999			0.965			0.999	
Satd. Flow (prot)	0	1637	0	0	1800	0	0	1599	0	0	1567	0
Flt Permitted		0.997			0.999			0.965			0.999	
Satd. Flow (perm)	0	1637	0	0	1800	0	0	1599	0	0	1567	0
Link Speed (mph)		55			55			40			40	
Link Distance (ft)		1228			918			354			317	
Travel Time (s)		15.2			11.4			6.0			5.4	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	63%	11%	8%	0%	6%	0%	3%	18%	0%	0%	27%	15%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	22	322	61	7	572	4	65	22	2	1	35	50
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	405	0	0	583	0	0	89	0	0	86	0
Sign Control		Free			Free			Stop			Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	18	264	50	6	469	3	53	18	2	1	29	41
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	-1	-	-	7	-	-	-1	-
Peak Hour Factor	82	82	82	82	82	82	82	82	82	82	82	82
Heavy Vehicles, %	63	11	8	0	6	0	3	18	0	0	27	15
Mvmt Flow	22	322	61	7	572	4	65	22	2	1	35	50

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	576	0	0	383	0	0	1027	986	352	997	1015	574
Stage 1	-	-	-	-	-	-	396	396	-	588	588	-
Stage 2	-	-	-	-	-	-	631	590	-	409	427	-
Critical Hdwy	4.9	-	-	4.9	-	-	8.1	6.5	6.4	8.1	6.5	6.4
Critical Hdwy Stg 1	-	-	-	-	-	-	7.53	7.08	-	5.9	5.57	-
Critical Hdwy Stg 2	-	-	-	-	-	-	7.53	7.08	-	5.9	5.57	-
Follow-up Hdwy	3.5	-	-	3.5	-	-	3	4	3.4	3	4	3.4
Pot Cap-1 Maneuver	613	-	-	731	-	-	177	250	666	187	240	494
Stage 1	-	-	-	-	-	-	615	511	-	579	494	-
Stage 2	-	-	-	-	-	-	412	385	-	724	584	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	613	-	-	731	-	-	134	235	666	165	226	494
Mov Cap-2 Maneuver	-	-	-	-	-	-	134	235	-	165	226	-
Stage 1	-	-	-	-	-	-	587	487	-	552	487	-
Stage 2	-	-	-	-	-	-	339	380	-	657	557	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.6	0.1	56.3	19.9
HCM LOS			F	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	154	613	-	-	731	-	-	327
HCM Lane V/C Ratio	0.578	0.036	-	-	0.01	-	-	0.265
HCM Control Delay (s)	56.3	11.1	0	-	10	0	-	19.9
HCM Lane LOS	F	B	A	-	A	A	-	C
HCM 95th %tile Q(veh)	3	0.1	-	-	0	-	-	1

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	236	102	50	396	47	39
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	13	13	13	13	12	12
Grade (%)	3%			1%	5%	
Storage Length (ft)		0	0		0	0
Storage Lanes		0	0		1	0
Taper Length (ft)			75		75	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.959				0.939	
Flt Protected				0.994	0.973	
Satd. Flow (prot)	1620	0	0	1849	1639	0
Flt Permitted				0.994	0.973	
Satd. Flow (perm)	1620	0	0	1849	1639	0
Link Speed (mph)	55			55	35	
Link Distance (ft)	1476			1319	549	
Travel Time (s)	18.3			16.4	10.7	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	19%	4%	5%	5%	6%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	265	115	56	445	53	44
Shared Lane Traffic (%)						
Lane Group Flow (vph)	380	0	0	501	97	0
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

Intersection	
Int Delay, s/veh	2.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Vol, veh/h	236	102	50	396	47	39
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, %	3	-	-	1	5	-
Peak Hour Factor	89	89	89	89	89	89
Heavy Vehicles, %	19	4	5	5	6	0
Mvmt Flow	265	115	56	445	53	44

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	380	0	879	322
Stage 1	-	-	-	-	322	-
Stage 2	-	-	-	-	557	-
Critical Hdwy	-	-	4.3	-	7.1	6.2
Critical Hdwy Stg 1	-	-	-	-	6.46	-
Critical Hdwy Stg 2	-	-	-	-	6.46	-
Follow-up Hdwy	-	-	3	-	3	3.1
Pot Cap-1 Maneuver	-	-	889	-	299	764
Stage 1	-	-	-	-	768	-
Stage 2	-	-	-	-	552	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	889	-	274	764
Mov Cap-2 Maneuver	-	-	-	-	274	-
Stage 1	-	-	-	-	768	-
Stage 2	-	-	-	-	506	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1	17.4
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	386	-	-	889	-
HCM Lane V/C Ratio	0.25	-	-	0.063	-
HCM Control Delay (s)	17.4	-	-	9.3	0
HCM Lane LOS	C	-	-	A	A
HCM 95th %tile Q(veh)	1	-	-	0.2	-



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	685	64	21	1068	91	46
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	11	10	10
Grade (%)	-1%			1%	-4%	
Storage Length (ft)		0	0		0	0
Storage Lanes		0	0		1	0
Taper Length (ft)			75		75	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.988				0.955	
Flt Protected				0.999	0.968	
Satd. Flow (prot)	1639	0	0	1708	1434	0
Flt Permitted				0.999	0.968	
Satd. Flow (perm)	1639	0	0	1708	1434	0
Link Speed (mph)	50			55	35	
Link Distance (ft)	420			676	522	
Travel Time (s)	5.7			8.4	10.2	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.79	0.79	0.79	0.79	0.79	0.79
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	10%	25%	0%	7%	25%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	867	81	27	1352	115	58
Shared Lane Traffic (%)						
Lane Group Flow (vph)	948	0	0	1379	173	0
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

Intersection	
Int Delay, s/veh	144.4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Vol, veh/h	685	64	21	1068	91	46
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, %	-1	-	-	1	-4	-
Peak Hour Factor	79	79	79	79	79	79
Heavy Vehicles, %	10	25	0	7	25	0
Mvmt Flow	867	81	27	1352	115	58

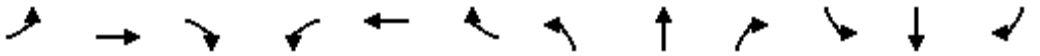
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	948	0	2313	908
Stage 1	-	-	-	-	908	-
Stage 2	-	-	-	-	1405	-
Critical Hdwy	-	-	4.3	-	7.1	6.2
Critical Hdwy Stg 1	-	-	-	-	4.85	-
Critical Hdwy Stg 2	-	-	-	-	4.85	-
Follow-up Hdwy	-	-	3	-	3	3.1
Pot Cap-1 Maneuver	-	-	559	-	~ 28	350
Stage 1	-	-	-	-	503	-
Stage 2	-	-	-	-	307	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	559	-	~ 23	350
Mov Cap-2 Maneuver	-	-	-	-	~ 23	-
Stage 1	-	-	-	-	503	-
Stage 2	-	-	-	-	247	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.2	$ 2079.6
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	34	-	-	559	-
HCM Lane V/C Ratio	5.101	-	-	0.048	-
HCM Control Delay (s)	$ 2079.6	-	-	11.8	0
HCM Lane LOS	F	-	-	B	A
HCM 95th %tile Q(veh)	20.6	-	-	0.1	-

Notes

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



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	37	43	13	4	6	3	2	22	2	12	30	46
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	10	10	10	10	10	13	13	13	16	16	16
Grade (%)		-3%			2%			1%			-2%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (ft)	75			75			75			75		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.981			0.969			0.991			0.929	
Flt Protected		0.981			0.984			0.997			0.993	
Satd. Flow (prot)	0	1659	0	0	1551	0	0	1588	0	0	1847	0
Flt Permitted		0.981			0.984			0.997			0.993	
Satd. Flow (perm)	0	1659	0	0	1551	0	0	1588	0	0	1847	0
Link Speed (mph)		35			25			25			25	
Link Distance (ft)		1453			774			205			154	
Travel Time (s)		28.3			21.1			5.6			4.2	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	5%	0%	17%	25%	0%	0%	0%	25%	0%	0%	13%	8%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	62	72	22	7	10	5	3	37	3	20	50	77
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	156	0	0	22	0	0	43	0	0	147	0
Sign Control		Stop			Stop			Free			Free	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

Intersection	
Int Delay, s/veh	5.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	37	43	13	4	6	3	2	22	2	12	30	46
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, %	-	-3	-	-	2	-	-	1	-	-	-2	-
Peak Hour Factor	60	60	60	60	60	60	60	60	60	60	60	60
Heavy Vehicles, %	5	0	17	25	0	0	0	25	0	0	13	8
Mvmt Flow	62	72	22	7	10	5	3	37	3	20	50	77

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	181	175	88	220	212	38	127	0	0	40	0	0
Stage 1	128	128	-	45	45	-	-	-	-	-	-	-
Stage 2	53	47	-	175	167	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.3	-	-	4.3	-	-
Critical Hdwy Stg 1	5.55	4.9	-	6.75	5.9	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.55	4.9	-	6.75	5.9	-	-	-	-	-	-	-
Follow-up Hdwy	3	4	3.1	3	4	3.1	3	-	-	3	-	-
Pot Cap-1 Maneuver	905	722	1036	851	689	1106	1087	-	-	1163	-	-
Stage 1	1039	811	-	1124	857	-	-	-	-	-	-	-
Stage 2	1130	866	-	929	750	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	876	706	1036	756	674	1106	1087	-	-	1163	-	-
Mov Cap-2 Maneuver	876	706	-	756	674	-	-	-	-	-	-	-
Stage 1	1036	796	-	1121	854	-	-	-	-	-	-	-
Stage 2	1108	863	-	812	736	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	10.5	9.8	0.6	1.1
HCM LOS	B	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1087	-	-	804	769	1163	-	-
HCM Lane V/C Ratio	0.003	-	-	0.193	0.028	0.017	-	-
HCM Control Delay (s)	8.3	0	-	10.5	9.8	8.2	0	-
HCM Lane LOS	A	A	-	B	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.7	0.1	0.1	-	-

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	377	327	32	19	565	51	21	26	9	90	32	508
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	11	11	11	16	16	16	11	11	11
Grade (%)		-2%			2%			2%			-1%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (ft)	75			75			75			75		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.994			0.989			0.979			0.891	
Flt Protected		0.975			0.999			0.981			0.993	
Satd. Flow (prot)	0	1707	0	0	1747	0	0	1499	0	0	1524	0
Flt Permitted		0.975			0.999			0.981			0.993	
Satd. Flow (perm)	0	1707	0	0	1747	0	0	1499	0	0	1524	0
Link Speed (mph)		50			50			25			50	
Link Distance (ft)		832			852			184			234	
Travel Time (s)		11.3			11.6			5.0			3.2	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	9%	30%	6%	3%	0%	55%	27%	20%	3%	5%	8%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	424	367	36	21	635	57	24	29	10	101	36	571
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	827	0	0	713	0	0	63	0	0	708	0
Sign Control		Free			Free			Stop			Stop	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

Intersection	
Int Delay, s/veh	3.4

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Vol, veh/h	377	327	32	19	565	51	21	26	9	90	32	508
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	-2	-	-	2	-	-	2	-	-	-1	-
Peak Hour Factor	89	89	89	89	89	89	89	89	89	89	89	89
Heavy Vehicles, %	0	9	30	6	3	0	55	27	20	3	5	8
Mvmt Flow	424	367	36	21	635	57	24	29	10	101	36	571

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	692	0	0	403	0	0	2243	1968	385	1958	1957	663
Stage 1	-	-	-	-	-	-	1233	1233	-	706	706	-
Stage 2	-	-	-	-	-	-	1010	735	-	1252	1251	-
Critical Hdwy	4.3	-	-	4.3	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	7.05	6.17	-	5.93	5.35	-
Critical Hdwy Stg 2	-	-	-	-	-	-	7.05	6.17	-	5.93	5.35	-
Follow-up Hdwy	3	-	-	3	-	-	3	4	3.1	3	4.045	3.1
Pot Cap-1 Maneuver	691	-	-	873	-	-	32	63	703	~ 51	64	~ 487
Stage 1	-	-	-	-	-	-	172	200	-	496	451	-
Stage 2	-	-	-	-	-	-	246	374	-	246	258	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	691	-	-	873	-	-	-	~ 12	703	-	~ 13	~ 487
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	~ 12	-	-	~ 13	-
Stage 1	-	-	-	-	-	-	35	41	-	102	433	-
Stage 2	-	-	-	-	-	-	-	359	-	~ 14	53	-

Approach	SE	NW	NE	SW
HCM Control Delay, s	9.3	0.3		
HCM LOS			-	-

Minor Lane/Major Mvmt	NELn1	NWL	NWT	NWR	SEL	SET	SER	SWLn1
Capacity (veh/h)	-	873	-	-	691	-	-	-
HCM Lane V/C Ratio	-	0.024	-	-	0.613	-	-	-
HCM Control Delay (s)	-	9.2	0	-	18.1	0	-	-
HCM Lane LOS	-	A	A	-	C	A	-	-
HCM 95th %tile Q(veh)	-	0.1	-	-	4.2	-	-	-

Notes

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

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Volume (vph)	1	1	47	4	0	0	0	435	0	20	619	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	10	10	9	9	9	11	11	11	11	11	11
Grade (%)		1%			-1%			-3%			0%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (ft)	75			75			75			75		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.870										
Flt Protected		0.999			0.950						0.998	
Satd. Flow (prot)	0	1534	0	0	1306	0	0	1742	0	0	1790	0
Flt Permitted		0.999			0.950						0.998	
Satd. Flow (perm)	0	1534	0	0	1306	0	0	1742	0	0	1790	0
Link Speed (mph)		25			25			50			50	
Link Distance (ft)		172			263			852			367	
Travel Time (s)		4.7			7.2			11.6			5.0	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	0%	0%	25%	0%	0%	0%	7%	0%	14%	2%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	1	1	49	4	0	0	0	453	0	21	645	1
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	51	0	0	4	0	0	453	0	0	667	0
Sign Control		Stop			Stop			Free			Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

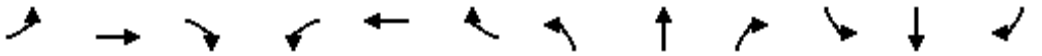
Intersection	
Int Delay, s/veh	0.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Vol, veh/h	1	1	47	4	0	0	0	435	0	20	619	1
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, %	-	1	-	-	-1	-	-	-3	-	-	0	-
Peak Hour Factor	96	96	96	96	96	96	96	96	96	96	96	96
Heavy Vehicles, %	0	0	0	25	0	0	0	7	0	14	2	0
Mvmt Flow	1	1	49	4	0	0	0	453	0	21	645	1

Major/Minor	Minor1			Minor2			Major1			Major2		
Conflicting Flow All	1140	1141	453	1165	1140	645	646	0	0	453	0	0
Stage 1	453	453	-	687	687	-	-	-	-	-	-	-
Stage 2	687	688	-	478	453	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.3	-	-	4.3	-	-
Critical Hdwy Stg 1	6.3	5.7	-	6.15	5.3	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.3	5.7	-	6.15	5.3	-	-	-	-	-	-	-
Follow-up Hdwy	3	4	3.1	3	4	3.1	3	-	-	3	-	-
Pot Cap-1 Maneuver	196	202	643	188	203	498	717	-	-	839	-	-
Stage 1	652	559	-	487	468	-	-	-	-	-	-	-
Stage 2	474	433	-	643	588	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	190	194	643	168	195	498	717	-	-	839	-	-
Mov Cap-2 Maneuver	190	194	-	168	195	-	-	-	-	-	-	-
Stage 1	652	559	-	487	450	-	-	-	-	-	-	-
Stage 2	456	416	-	593	588	-	-	-	-	-	-	-

Approach	EB	WB	SE	NW
HCM Control Delay, s	11.7	27	0	0.3
HCM LOS	B	D		

Minor Lane/Major Mvmt	NWL	NWT	NWR	EBLn1	WBLn1	SEL	SET	SER
Capacity (veh/h)	839	-	-	587	168	717	-	-
HCM Lane V/C Ratio	0.025	-	-	0.087	0.025	-	-	-
HCM Control Delay (s)	9.4	0	-	11.7	27	0	-	-
HCM Lane LOS	A	A	-	B	D	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0.3	0.1	0	-	-



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	35	524	37	160	563	61	0	0	520	14	1	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	13	12	12	12	12	12	12	12
Grade (%)		-1%			1%			-3%			0%	
Storage Length (ft)	125		0	125		125	0		0	0		100
Storage Lanes	1		0	1		1	0		1	0		1
Taper Length (ft)	75			60			75			75		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.990				0.850			0.865			0.850
Flt Protected	0.950			0.950							0.955	
Satd. Flow (prot)	1778	1716	0	1633	1860	1575	0	0	1530	0	1779	1583
Flt Permitted	0.950			0.950							0.955	
Satd. Flow (perm)	1778	1716	0	1633	1860	1575	0	0	1530	0	1779	1583
Link Speed (mph)		35			35			25			35	
Link Distance (ft)		496			348			387			241	
Travel Time (s)		9.7			6.8			10.6			4.7	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.90	0.82	0.82	0.82	0.82	0.90	0.82	0.90	0.82	0.90	0.90	0.90
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	8%	41%	10%	5%	2%	0%	2%	9%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	39	639	45	195	687	68	0	0	634	16	1	11
Shared Lane Traffic (%)												
Lane Group Flow (vph)	39	684	0	195	687	68	0	0	634	0	17	11
Sign Control		Free			Free			Stop			Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	48.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	35	524	37	160	563	61	0	0	520	14	1	10
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	Yield	-	-	Yield
Storage Length	125	-	-	125	-	125	-	-	0	-	-	100
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	1	-
Grade, %	-	-1	-	-	1	-	-	-3	-	-	0	-
Peak Hour Factor	90	82	82	82	82	90	82	90	82	90	90	90
Heavy Vehicles, %	2	8	41	10	5	2	0	2	9	2	2	2
Mvmt Flow	39	639	45	195	687	68	0	0	634	16	1	11

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	687	0	0	684	0	0	1816	1816	662	1816	1839	687
Stage 1	-	-	-	-	-	-	739	739	-	1077	1077	-
Stage 2	-	-	-	-	-	-	1077	1077	-	739	762	-
Critical Hdwy	4.12	-	-	4.3	-	-	7.1	5.92	6.2	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	5.5	4.92	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.5	4.92	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	3	-	-	3	4.018	3.1	3.518	4.018	3.318
Pot Cap-1 Maneuver	907	-	-	695	-	-	65	106	~ 487	60	75	447
Stage 1	-	-	-	-	-	-	520	479	-	265	295	-
Stage 2	-	-	-	-	-	-	351	353	-	409	414	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	907	-	-	695	-	-	48	73	~ 487	-	52	447
Mov Cap-2 Maneuver	-	-	-	-	-	-	151	161	-	~ -757	118	-
Stage 1	-	-	-	-	-	-	498	458	-	254	212	-
Stage 2	-	-	-	-	-	-	245	254	-	-	396	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.5	2.5	175	
HCM LOS			F	-

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	487	907	-	-	695	-	-	-	447
HCM Lane V/C Ratio	1.302	0.043	-	-	0.281	-	-	-	0.025
HCM Control Delay (s)	175	9.1	-	-	12.2	-	-	-	13.3
HCM Lane LOS	F	A	-	-	B	-	-	-	B
HCM 95th %tile Q(veh)	27.2	0.1	-	-	1.2	-	-	-	0.1

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

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	830	213	0	470	494	36	0	165	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	11	12	12	12	12	12	12	12	12	12
Grade (%)		-1%			-1%			-4%			-2%	
Storage Length (ft)	0		0	0		115	0		0	0		0
Storage Lanes	0		1	0		1	0		0	0		0
Taper Length (ft)	75			75			75			75		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt			0.850			0.850		0.889				
Flt Protected								0.991				
Satd. Flow (prot)	0	1768	1439	0	1785	1546	0	1291	0	0	0	0
Flt Permitted								0.991				
Satd. Flow (perm)	0	1768	1439	0	1785	1546	0	1291	0	0	0	0
Link Speed (mph)		45			45			25			25	
Link Distance (ft)		758			636			290			200	
Travel Time (s)		11.5			9.6			7.9			5.5	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	8%	9%	0%	7%	5%	47%	0%	29%	0%	0%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	0	892	229	0	505	531	39	0	177	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	892	229	0	505	531	0	216	0	0	0	0
Sign Control		Free			Free			Stop			Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	3.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	0	830	213	0	470	494	36	0	165	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	Free	-	-	None	-	-	None	-	-	None
Storage Length	-	-	0	-	-	115	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	0	-
Grade, %	-	-1	-	-	-1	-	-	-4	-	-	-2	-
Peak Hour Factor	93	93	93	93	93	93	93	93	93	93	93	93
Heavy Vehicles, %	0	8	9	0	7	5	47	0	29	0	0	0
Mvmt Flow	0	892	229	0	505	531	39	0	177	0	0	0

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	505	0	-	892	0	0	1397	1397	892
Stage 1	-	-	-	-	-	-	892	892	-
Stage 2	-	-	-	-	-	-	505	505	-
Critical Hdwy	4.3	-	-	4.3	-	-	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	5.07	4.7	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.07	4.7	-
Follow-up Hdwy	3	-	-	3	-	-	3	4	3.1
Pot Cap-1 Maneuver	804	-	0	586	-	-	129	142	358
Stage 1	-	-	0	-	-	-	484	443	-
Stage 2	-	-	0	-	-	-	722	608	-
Platoon blocked, %		-			-	-			
Mov Cap-1 Maneuver	804	-	-	586	-	-	129	0	358
Mov Cap-2 Maneuver	-	-	-	-	-	-	320	0	-
Stage 1	-	-	-	-	-	-	484	0	-
Stage 2	-	-	-	-	-	-	722	0	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	30.4
HCM LOS			D

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	WBL	WBT	WBR
Capacity (veh/h)	351	804	-	586	-	-
HCM Lane V/C Ratio	0.616	-	-	-	-	-
HCM Control Delay (s)	30.4	0	-	0	-	-
HCM Lane LOS	D	A	-	A	-	-
HCM 95th %tile Q(veh)	3.9	0	-	0	-	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	396	0	44	0	0	0	63	1247	1	0	1123	459
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	13	13	13	12	12	12	12	12	11	11	11	11
Grade (%)		3%			2%			0%			1%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (ft)	75			75			75			75		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.987									0.961	
Flt Protected		0.957						0.998				
Satd. Flow (prot)	0	1809	0	0	1881	0	0	3262	0	0	1659	0
Flt Permitted		0.957						0.998				
Satd. Flow (perm)	0	1809	0	0	1881	0	0	3262	0	0	1659	0
Link Speed (mph)		40			35			45			45	
Link Distance (ft)		499			348			586			796	
Travel Time (s)		8.5			6.8			8.9			12.1	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	0%	10%	0%	0%	0%	0%	11%	0%	0%	5%	8%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	426	0	47	0	0	0	68	1341	1	0	1208	494
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	473	0	0	0	0	0	1410	0	0	1702	0
Sign Control		Stop			Stop			Free			Free	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

Intersection	
Int Delay, s/veh	3576.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Vol, veh/h	396	0	44	0	0	0	63	1247	1	0	1123	459
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, %	-	3	-	-	2	-	-	0	-	-	1	-
Peak Hour Factor	93	93	93	93	93	93	93	93	93	93	93	93
Heavy Vehicles, %	0	0	10	0	0	0	0	11	0	0	5	8
Mvmt Flow	426	0	47	0	0	0	68	1341	1	0	1208	494

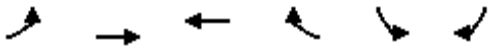
Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2260	2931	1454	2955	3178	671	1701	0	0	1342	0	0
Stage 1	1454	1454	-	1477	1477	-	-	-	-	-	-	-
Stage 2	806	1477	-	1478	1701	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.3	-	-	4.3	-	-
Critical Hdwy Stg 1	6.7	6.1	-	6.9	5.9	-	-	-	-	-	-	-
Critical Hdwy Stg 2	7.1	6.1	-	6.5	5.9	-	-	-	-	-	-	-
Follow-up Hdwy	3	4	3.1	3	4	3.1	3	-	-	3	-	-
Pot Cap-1 Maneuver	~ 31	15	166	10	11	481	294	-	-	401	-	-
Stage 1	~ 138	154	-	123	163	-	-	-	-	-	-	-
Stage 2	~ 336	150	-	145	123	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	~ 7	1	166	2	1	481	294	-	-	401	-	-
Mov Cap-2 Maneuver	~ 7	1	-	2	1	-	-	-	-	-	-	-
Stage 1	~ 13	154	-	11	15	-	-	-	-	-	-	-
Stage 2	~ 31	14	-	104	123	-	-	-	-	-	-	-

Approach	EB	WB	NE	SW
HCM Control Delay, s	$ 27067.9	0	9.2	0
HCM LOS	F	A		

Minor Lane/Major Mvmt	NEL	NET	NER	EBLn1	WBLn1	SWL	SWT	SWR
Capacity (veh/h)	294	-	-	8	-	401	-	-
HCM Lane V/C Ratio	0.23	-	-	59.14	-	-	-	-
HCM Control Delay (s)	20.9	8.6	$ 27067.9		0	0	-	-
HCM Lane LOS	C	A	-	F	A	A	-	-
HCM 95th %tile Q(veh)	0.9	-	-	61	-	0	-	-

Notes

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



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	26	1653	1595	12	15	56
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	11	11	11	12	12
Grade (%)		1%	0%		1%	
Storage Length (ft)	60			0	0	0
Storage Lanes	1			0	1	0
Taper Length (ft)	140				75	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt			0.999		0.893	
Flt Protected	0.950				0.990	
Satd. Flow (prot)	1676	1661	1746	0	1497	0
Flt Permitted	0.950				0.990	
Satd. Flow (perm)	1676	1661	1746	0	1497	0
Link Speed (mph)		45	45		45	
Link Distance (ft)		796	771		413	
Travel Time (s)		12.1	11.7		6.3	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	10%	5%	18%	29%	7%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)		0%	0%		0%	
Adj. Flow (vph)	30	1900	1833	14	17	64
Shared Lane Traffic (%)						
Lane Group Flow (vph)	30	1900	1847	0	81	0
Sign Control		Free	Free		Stop	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

Intersection	
Int Delay, s/veh	94.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Vol, veh/h	26	1653	1595	12	15	56
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	60	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	1	0	-	1	-
Peak Hour Factor	87	87	87	87	87	87
Heavy Vehicles, %	0	10	5	18	29	7
Mvmt Flow	30	1900	1833	14	17	64

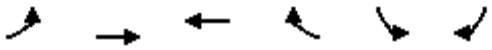
Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	1847	0	-	0	3800	1840
Stage 1	-	-	-	-	1840	-
Stage 2	-	-	-	-	1960	-
Critical Hdwy	4.3	-	-	-	7.1	6.2
Critical Hdwy Stg 1	-	-	-	-	5.89	-
Critical Hdwy Stg 2	-	-	-	-	5.89	-
Follow-up Hdwy	3	-	-	-	3	3.1
Pot Cap-1 Maneuver	259	-	-	-	~ 2	97
Stage 1	-	-	-	-	116	-
Stage 2	-	-	-	-	99	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	259	-	-	-	~ 2	97
Mov Cap-2 Maneuver	-	-	-	-	~ 2	-
Stage 1	-	-	-	-	116	-
Stage 2	-	-	-	-	88	-

Approach	EB	WB	SB
HCM Control Delay, s	0.3	0	$ 4440
HCM LOS			F

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	259	-	-	-	9
HCM Lane V/C Ratio	0.115	-	-	-	9.068
HCM Control Delay (s)	20.7	-	-	-	$ 4440
HCM Lane LOS	C	-	-	-	F
HCM 95th %tile Q(veh)	0.4	-	-	-	11.7

Notes

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



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	0	1058	613	0	0	171
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	13	13	13	13
Grade (%)		-1%	1%		-2%	
Storage Length (ft)	0			0	0	0
Storage Lanes	0			0	0	1
Taper Length (ft)	75				75	
Lane Util. Factor	1.00	0.95	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt						0.865
Flt Protected						
Satd. Flow (prot)	0	3359	1860	0	0	1665
Flt Permitted						
Satd. Flow (perm)	0	3359	1860	0	0	1665
Link Speed (mph)		35	35		25	
Link Distance (ft)		348	758		364	
Travel Time (s)		6.8	14.8		9.9	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	8%	5%	0%	0%	3%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)		0%	0%		0%	
Adj. Flow (vph)	0	1290	748	0	0	209
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	1290	748	0	0	209
Sign Control		Free	Free		Stop	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

Intersection	
Int Delay, s/veh	1.9

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Vol, veh/h	0	1058	613	0	0	171
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	Stop
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	1	-
Grade, %	-	-1	1	-	-2	-
Peak Hour Factor	82	82	82	82	82	82
Heavy Vehicles, %	0	8	5	0	0	3
Mvmt Flow	0	1290	748	0	0	209

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	748	0	-	0	1393	748
Stage 1	-	-	-	-	748	-
Stage 2	-	-	-	-	645	-
Critical Hdwy	4.3	-	-	-	7.1	6.2
Critical Hdwy Stg 1	-	-	-	-	5	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	3	-	-	-	3	3.1
Pot Cap-1 Maneuver	660	-	-	-	130	434
Stage 1	-	-	-	-	571	-
Stage 2	-	-	-	-	590	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	660	-	-	-	130	434
Mov Cap-2 Maneuver	-	-	-	-	324	-
Stage 1	-	-	-	-	571	-
Stage 2	-	-	-	-	590	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	20.7
HCM LOS			C

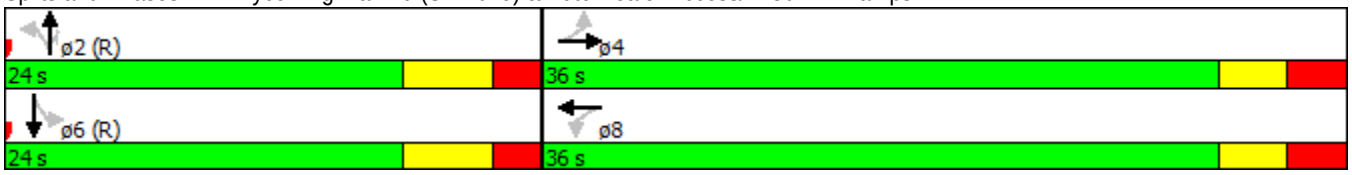
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	660	-	-	-	434
HCM Lane V/C Ratio	-	-	-	-	0.48
HCM Control Delay (s)	0	-	-	-	20.7
HCM Lane LOS	A	-	-	-	C
HCM 95th %tile Q(veh)	0	-	-	-	2.5

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	2	23	26	505	6	265	14	800	660	145	908	1
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	13	13	13	15	15	15	12	12	16	12	12	12
Grade (%)		2%			4%			1%			-1%	
Storage Length (ft)	0		100	0		0	0		0	0		375
Storage Lanes	0		0	0		0	0		1	0		1
Taper Length (ft)	75			75			75			75		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95
Ped Bike Factor												
Frt		0.931			0.954				0.850			
Flt Protected		0.998			0.969			0.999			0.993	
Satd. Flow (prot)	0	1711	0	0	1791	0	0	1789	1725	0	3355	0
Flt Permitted		0.979			0.770			0.547			0.548	
Satd. Flow (perm)	0	1678	0	0	1423	0	0	980	1725	0	1852	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		15			25				717			
Link Speed (mph)		25			25			40			40	
Link Distance (ft)		187			334			1105			689	
Travel Time (s)		5.1			9.1			18.8			11.7	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
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
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	0%	0%	0%	17%	0%	0%	0%	0%	0%	2%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	2	25	28	549	7	288	15	870	717	158	987	1
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	55	0	0	844	0	0	885	717	0	1146	0
Number of Detectors	1	1		1	1		1	1	0	1	1	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left		
Leading Detector (ft)	30	40		30	45		30	45	0	30	45	
Trailing Detector (ft)	-10	-10		-10	-5		-10	-5	0	-10	-5	
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2		2	6		
Detector Phase	4	4		8	8		2	2	2	6	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	10.8	10.8		10.8	10.8		11.2	11.2	11.2	11.2	11.2	
Total Split (s)	36.0	36.0		36.0	36.0		24.0	24.0	24.0	24.0	24.0	
Total Split (%)	60.0%	60.0%		60.0%	60.0%		40.0%	40.0%	40.0%	40.0%	40.0%	
Maximum Green (s)	30.2	30.2		30.2	30.2		17.8	17.8	17.8	17.8	17.8	
Yellow Time (s)	3.0	3.0		3.0	3.0		4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	2.8	2.8		2.8	2.8		2.2	2.2	2.2	2.2	2.2	
Lost Time Adjust (s)		-1.0			-1.0			-1.0	-1.0		-1.0	
Total Lost Time (s)		4.8			4.8			5.2	5.2		5.2	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Minimum Gap (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Time Before Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Time To Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Recall Mode	None	None		None	None		C-Min	C-Min	C-Min	C-Min	C-Min	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
v/c Ratio		0.06			1.12			2.88	0.69		1.98	
Control Delay		5.9			91.0			864.1	2.9		465.6	
Queue Delay		0.0			0.0			0.0	0.0		0.0	
Total Delay		5.9			91.0			864.1	2.9		465.6	
Queue Length 50th (ft)		7			~362			~575	19		~350	
Queue Length 95th (ft)		20			#563			m#509	m13		#462	
Internal Link Dist (ft)		107			254			1025			609	
Turn Bay Length (ft)												
Base Capacity (vph)		879			751			307	1032		580	
Starvation Cap Reductn		0			0			0	0		0	
Spillback Cap Reductn		0			0			0	0		0	
Storage Cap Reductn		0			0			0	0		0	
Reduced v/c Ratio		0.06			1.12			2.88	0.69		1.98	

Intersection Summary	
Area Type:	Other
Cycle Length: 60	
Actuated Cycle Length: 60	
Offset: 55 (92%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	
Natural Cycle: 120	
Control Type: Actuated-Coordinated	
~ Volume exceeds capacity, queue is theoretically infinite.	
Queue shown is maximum after two cycles.	
# 95th percentile volume exceeds capacity, queue may be longer.	
Queue shown is maximum after two cycles.	
m Volume for 95th percentile queue is metered by upstream signal.	

Splits and Phases: 1: Lycoming Mall Rd (SR 2049) & Auto Dealer Access/I-180 WB Ramps



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	2	23	26	505	6	265	14	800	660	145	908	1
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	1853	1853	1853	1835	1832	1835	1791	1791	1863	1809	1778	1809
Adj Flow Rate, veh/h	2	25	15	549	7	277	15	870	425	158	987	0
Adj No. of Lanes	0	1	0	0	1	0	0	1	1	0	2	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	17	17	17	0	0	0	2	2	2
Cap, veh/h	77	576	328	603	6	254	61	342	496	81	514	0
Arrive On Green	0.50	0.52	0.50	0.50	0.52	0.50	0.39	0.42	0.42	0.30	0.31	0.00
Sat Flow, veh/h	27	1109	631	968	12	488	0	1091	1583	0	1723	0
Grp Volume(v), veh/h	42	0	0	833	0	0	885	0	425	445	700	0
Grp Sat Flow(s),veh/h/ln	1766	0	0	1469	0	0	1091	0	1583	104	1537	0
Q Serve(g_s), s	0.0	0.0	0.0	29.5	0.0	0.0	0.0	0.0	14.6	0.0	18.8	0.0
Cycle Q Clear(g_c), s	0.7	0.0	0.0	30.2	0.0	0.0	17.8	0.0	14.6	17.8	18.8	0.0
Prop In Lane	0.05		0.36	0.66		0.33	0.02		1.00	0.35		0.00
Lane Grp Cap(c), veh/h	952	0	0	839	0	0	385	0	496	112	482	0
V/C Ratio(X)	0.04	0.00	0.00	0.99	0.00	0.00	2.30	0.00	0.86	3.97	1.45	0.00
Avail Cap(c_a), veh/h	952	0	0	839	0	0	385	0	496	112	482	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.33	1.33	1.33	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	0.09	0.00	0.09	1.00	1.00	0.00
Uniform Delay (d), s/veh	7.2	0.0	0.0	16.3	0.0	0.0	15.9	0.0	16.3	24.6	20.6	0.0
Incr Delay (d2), s/veh	0.0	0.0	0.0	29.3	0.0	0.0	586.1	0.0	1.9	1357.0	214.9	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(95%),veh/ln	0.7	0.0	0.0	11.1	0.0	0.0	116.2	0.0	7.8	79.5	66.0	0.0
LnGrp Delay(d),s/veh	7.2	0.0	0.0	45.6	0.0	0.0	602.0	0.0	18.2	1381.6	235.5	0.0
LnGrp LOS	A			D			F		B	F	F	
Approach Vol, veh/h		42			833			1310			1145	
Approach Delay, s/veh		7.2			45.6			412.6			681.3	
Approach LOS		A			D			F			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		24.0		36.0		24.0		36.0
Change Period (Y+Rc), s		* 6.2		* 5.8		* 6.2		* 5.8
Max Green Setting (Gmax), s		* 18		* 30		* 18		* 30
Max Q Clear Time (g_c+I1), s		19.8		2.7		21.3		32.2
Green Ext Time (p_c), s		0.0		8.2		0.0		0.0

Intersection Summary		
HCM 2010 Ctrl Delay		408.1
HCM 2010 LOS		F

Notes

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

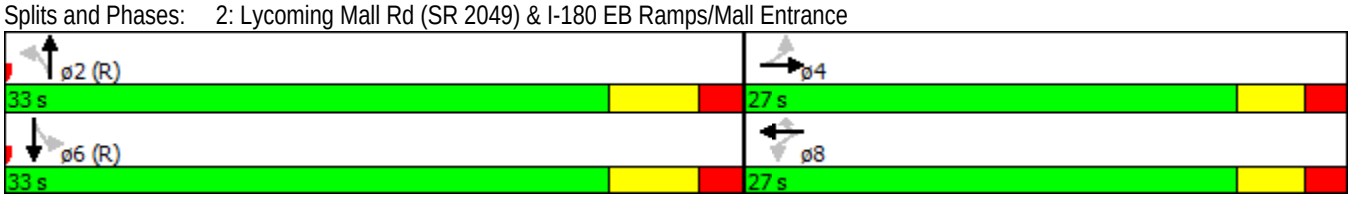
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	175	278	352	77	55	323	389	977	74	85	1080	276
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	12	11	12	12	12	12	12	12	12	12
Grade (%)		2%			2%			-2%			-3%	
Storage Length (ft)	0		0	150		275	135		0	0		0
Storage Lanes	0		0	1		1	1		0	1		0
Taper Length (ft)	75			75			75			75		
Lane Util. Factor	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.934				0.850		0.989			0.969	
Flt Protected		0.989		0.950			0.950			0.950		
Satd. Flow (prot)	0	3041	0	1604	1713	1515	1645	1779	0	1736	1746	0
Flt Permitted		0.866		0.193			0.141			0.141		
Satd. Flow (perm)	0	2663	0	326	1713	1515	244	1779	0	258	1746	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		35				55		8			29	
Link Speed (mph)		25			25			40			40	
Link Distance (ft)		279			408			2572			1105	
Travel Time (s)		7.6			11.1			43.8			18.8	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	3%	0%	5%	2%	4%	0%	5%	1%	2%	0%	1%	3%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	192	305	387	85	60	355	427	1074	81	93	1187	303
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	884	0	85	60	355	427	1155	0	93	1490	0
Number of Detectors	1	1		1	1	0	1	1		1	1	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (ft)	30	45		45	45	0	45	45		45	45	
Trailing Detector (ft)	-10	-5		-5	-5	0	-5	-5		-5	-5	
Turn Type	Perm	NA		Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8		8	2			6		
Detector Phase	4	4		8	8	8	2	2		6	6	
Switch Phase												
Minimum Initial (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Minimum Split (s)	7.0	7.0		7.0	7.0	7.0	8.0	8.0		8.0	8.0	
Total Split (s)	27.0	27.0		27.0	27.0	27.0	33.0	33.0		33.0	33.0	
Total Split (%)	45.0%	45.0%		45.0%	45.0%	45.0%	55.0%	55.0%		55.0%	55.0%	
Maximum Green (s)	22.0	22.0		22.0	22.0	22.0	27.0	27.0		27.0	27.0	
Yellow Time (s)	3.0	3.0		3.0	3.0	3.0	4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		-1.0		-1.0	-1.0	-1.0	-1.0	-1.0		-1.0	-1.0	
Total Lost Time (s)		4.0		4.0	4.0	4.0	5.0	5.0		5.0	5.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Minimum Gap (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Time Before Reduce (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Time To Reduce (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Recall Mode	Min	Min		Min	Min	Min	C-Max	C-Max		C-Max	C-Max	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
v/c Ratio		0.86		0.70	0.09	0.59	3.71	1.37		0.76	1.77	
Control Delay		27.3		50.3	12.4	17.1	1260.7	193.4		30.4	369.6	
Queue Delay		0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay		27.3		50.3	12.4	17.1	1260.7	193.4		30.4	369.6	
Queue Length 50th (ft)		143		25	13	81	~256	~581		31	~862	
Queue Length 95th (ft)		#248		#93	34	157	#412	#802		m19	m#449	
Internal Link Dist (ft)		199			328			2492			1025	
Turn Bay Length (ft)				150		275	135					
Base Capacity (vph)		1042		124	656	614	115	845		122	840	
Starvation Cap Reductn		0		0	0	0	0	0		0	0	
Spillback Cap Reductn		0		0	0	0	0	0		0	0	
Storage Cap Reductn		0		0	0	0	0	0		0	0	
Reduced v/c Ratio		0.85		0.69	0.09	0.58	3.71	1.37		0.76	1.77	

Intersection Summary

Area Type: Other
Cycle Length: 60
Actuated Cycle Length: 60
Offset: 40 (67%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 45
Control Type: Actuated-Coordinated
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

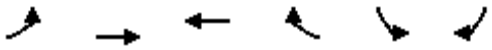
Splits and Phases: 2: Lycoming Mall Rd (SR 2049) & I-180 EB Ramps/Mall Entrance



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	175	278	352	77	55	323	389	977	74	85	1080	276
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	1782	1733	1782	1747	1713	1782	1731	1799	1818	1827	1802	1827
Adj Flow Rate, veh/h	192	305	321	85	60	0	427	1074	51	93	1187	287
Adj No. of Lanes	0	2	0	1	1	1	1	1	0	1	1	0
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	0	0	0	2	4	0	5	1	1	0	1	1
Cap, veh/h	317	404	451	245	657	581	123	795	38	124	655	158
Arrive On Green	0.37	0.38	0.37	0.38	0.38	0.00	0.47	0.47	0.45	0.15	0.15	0.15
Sat Flow, veh/h	603	1055	1177	788	1713	1515	351	1704	81	516	1403	339
Grp Volume(v), veh/h	445	0	373	85	60	0	427	0	1125	93	0	1474
Grp Sat Flow(s),veh/h/ln	1465	0	1369	788	1713	1515	351	0	1784	516	0	1742
Q Serve(g_s), s	14.9	0.0	14.0	6.1	1.3	0.0	0.5	0.0	28.0	0.5	0.0	28.0
Cycle Q Clear(g_c), s	16.8	0.0	14.0	19.6	1.3	0.0	28.0	0.0	28.0	28.0	0.0	28.0
Prop In Lane	0.43		0.86	1.00		1.00	1.00		0.05	1.00		0.19
Lane Grp Cap(c), veh/h	623	0	525	245	657	581	123	0	833	124	0	813
V/C Ratio(X)	0.71	0.00	0.71	0.35	0.09	0.00	3.47	0.00	1.35	0.75	0.00	1.81
Avail Cap(c_a), veh/h	623	0	525	245	657	581	123	0	833	124	0	813
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	0.00	0.09	0.00	0.09	0.09	0.00	0.09
Uniform Delay (d), s/veh	17.1	0.0	16.1	23.8	11.8	0.0	30.0	0.0	16.0	39.4	0.0	25.4
Incr Delay (d2), s/veh	4.2	0.0	4.9	1.2	0.1	0.0	1115.0	0.0	158.7	3.7	0.0	366.5
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(95%),veh/ln	12.0	0.0	9.9	2.5	1.2	0.0	69.6	0.0	87.4	2.3	0.0	164.6
LnGrp Delay(d),s/veh	21.3	0.0	21.0	25.0	11.9	0.0	1145.0	0.0	174.7	43.1	0.0	391.9
LnGrp LOS	C		C	C	B		F		F	D		F
Approach Vol, veh/h		818			145			1552			1567	
Approach Delay, s/veh		21.2			19.6			441.7			371.2	
Approach LOS		C			B			F			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		33.0		27.0		33.0		27.0
Change Period (Y+Rc), s		6.0		5.0		6.0		5.0
Max Green Setting (Gmax), s		27.0		22.0		27.0		22.0
Max Q Clear Time (g_c+I1), s		30.5		18.8		30.5		22.1
Green Ext Time (p_c), s		0.0		1.9		0.0		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	315.3
HCM 2010 LOS	F

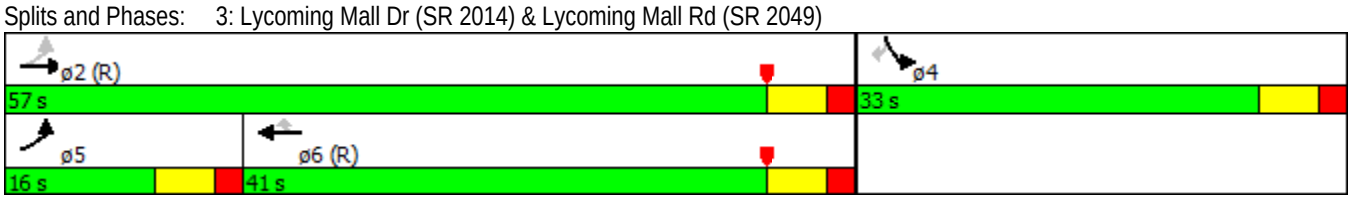


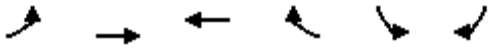
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	409	730	768	825	798	468
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	12	12	12	12
Grade (%)		-1%	1%		-2%	
Storage Length (ft)	165			215	165	0
Storage Lanes	1			1	1	1
Taper Length (ft)	125				75	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt				0.850		0.850
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1719	1774	1756	1522	1645	1486
Flt Permitted	0.190				0.950	
Satd. Flow (perm)	344	1774	1756	1522	1645	1486
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)				688		288
Link Speed (mph)		45	45		40	
Link Distance (ft)		727	1089		2572	
Travel Time (s)		11.0	16.5		43.8	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	2%	2%	0%	5%	4%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)		0%	0%		0%	
Adj. Flow (vph)	465	830	873	938	907	532
Shared Lane Traffic (%)						
Lane Group Flow (vph)	465	830	873	938	907	532
Number of Detectors	1	1	1	1	1	1
Detector Template	Left				Left	Right
Leading Detector (ft)	45	6	6	6	45	45
Trailing Detector (ft)	-5	0	0	0	-5	-5
Turn Type	pm+pt	NA	NA	Perm	Prot	Perm
Protected Phases	5	2	6		4	
Permitted Phases	2			6		4
Detector Phase	5				4	4
Switch Phase						
Minimum Initial (s)	3.0	15.0	15.0	15.0	5.0	5.0
Minimum Split (s)	9.0	21.0	21.0	21.0	11.0	11.0
Total Split (s)	16.0	57.0	41.0	41.0	33.0	33.0
Total Split (%)	17.8%	63.3%	45.6%	45.6%	36.7%	36.7%
Maximum Green (s)	10.0	51.0	35.0	35.0	27.0	27.0
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lead/Lag	Lead		Lag	Lag		
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	5.0	5.0	5.0	3.0	3.0
Minimum Gap (s)	3.0	2.0	2.0	2.0	3.0	3.0
Time Before Reduce (s)	0.0	42.0	42.0	42.0	0.0	0.0
Time To Reduce (s)	0.0	10.0	10.0	10.0	0.0	0.0
Recall Mode	None	C-Min	C-Min	C-Min	None	None
Walk Time (s)		7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)		14.0	14.0	14.0	14.0	14.0
Pedestrian Calls (#/hr)		0	0	0	0	0
v/c Ratio	1.60	1.32	2.80	1.12	1.03	0.57
Control Delay	310.1	181.6	836.5	82.0	62.5	8.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	310.1	181.6	836.5	82.0	62.5	8.7
Queue Length 50th (ft)	~337	~615	~857	~271	~560	77
Queue Length 95th (ft)	#509	#811	#1054	#476	#759	158
Internal Link Dist (ft)		647	1009		2492	
Turn Bay Length (ft)	165			215	165	
Base Capacity (vph)	290	630	312	836	877	926
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	1.60	1.32	2.80	1.12	1.03	0.57

Intersection Summary	
Area Type:	Other
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 21 (23%), Referenced to phase 2:EBTL and 6:WBT, Start of Yellow	
Natural Cycle: 110	
Control Type: Actuated-Coordinated	
~ Volume exceeds capacity, queue is theoretically infinite.	
Queue shown is maximum after two cycles.	
# 95th percentile volume exceeds capacity, queue may be longer.	
Queue shown is maximum after two cycles.	

Splits and Phases: 3: Lycoming Mall Dr (SR 2014) & Lycoming Mall Rd (SR 2049)





Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	409	730	768	825	798	468
Number	5	2	6	16	7	14
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	1809	1774	1756	1791	1731	1748
Adj Flow Rate, veh/h	465	830	873	903	907	451
Adj No. of Lanes	1	1	1	1	1	1
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	0	2	2	0	5	4
Cap, veh/h	291	1025	702	609	513	462
Arrive On Green	0.12	0.58	0.27	0.27	0.31	0.31
Sat Flow, veh/h	1723	1774	1756	1522	1649	1486
Grp Volume(v), veh/h	465	830	873	903	907	451
Grp Sat Flow(s),veh/h/ln	1723	1774	1756	1522	1649	1486
Q Serve(g_s), s	11.0	33.4	36.0	36.0	28.0	27.0
Cycle Q Clear(g_c), s	11.0	33.4	36.0	36.0	28.0	27.0
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	291	1025	702	609	513	462
V/C Ratio(X)	1.60	0.81	1.24	1.48	1.77	0.98
Avail Cap(c_a), veh/h	291	1025	702	609	513	462
HCM Platoon Ratio	1.00	1.00	0.67	0.67	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.09	0.09
Uniform Delay (d), s/veh	26.8	15.1	32.9	32.9	31.0	30.7
Incr Delay (d2), s/veh	285.7	6.9	121.2	226.0	346.3	7.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	54.4	25.1	73.9	96.0	106.5	22.1
LnGrp Delay(d),s/veh	312.6	22.0	154.1	259.0	377.3	38.5
LnGrp LOS	F	C	F	F	F	D
Approach Vol, veh/h		1295	1776		1358	
Approach Delay, s/veh		126.3	207.4		264.8	
Approach LOS		F	F		F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		57.0		33.0	16.0	41.0		
Change Period (Y+Rc), s		6.0		6.0	6.0	6.0		
Max Green Setting (Gmax), s		51.0		27.0	10.0	35.0		
Max Q Clear Time (g_c+I1), s		35.9		30.5	13.5	38.5		
Green Ext Time (p_c), s		13.7		0.0	0.0	0.0		

Intersection Summary	
HCM 2010 Ctrl Delay	201.3
HCM 2010 LOS	F

Notes

User approved pedestrian interval to be less than phase max green.

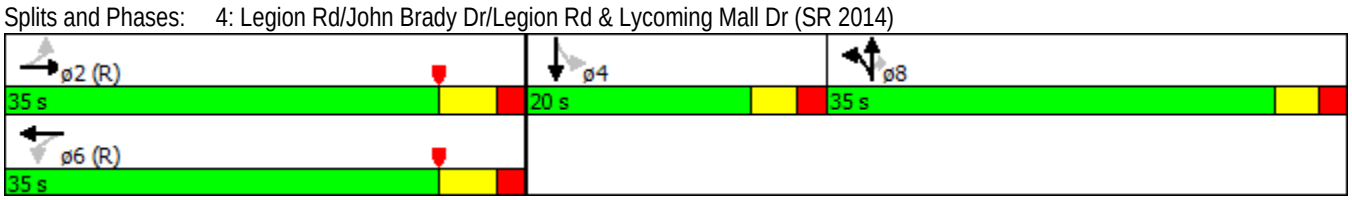
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	6	641	0	229	576	6	1419	2	437	13	8	6
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	12	13	13	13	12	12	12	14	14	14
Grade (%)		1%			-1%			-3%			0%	
Storage Length (ft)	1		0	275		0	0		0	0		0
Storage Lanes	0		0	1		0	1		1	0		0
Taper Length (ft)	75			75			75			75		
Lane Util. Factor	0.95	0.95	1.00	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt					0.999				0.850		0.968	
Flt Protected					0.986		0.950	0.952			0.977	
Satd. Flow (prot)	0	3326	0	0	3289	0	1633	1636	1451	0	1573	0
Flt Permitted		0.902			0.545		0.950	0.952			0.444	
Satd. Flow (perm)	0	3000	0	0	1818	0	1633	1636	1451	0	715	0
Right Turn on Red			Yes			Yes			Yes			No
Satd. Flow (RTOR)					1				378			
Link Speed (mph)		45			45			45			25	
Link Distance (ft)		326			418			206			301	
Travel Time (s)		4.9			6.3			3.1			8.2	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	33%	2%	0%	12%	4%	17%	1%	0%	7%	33%	0%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	7	712	0	254	640	7	1577	2	486	14	9	7
Shared Lane Traffic (%)							50%					
Lane Group Flow (vph)	0	719	0	0	901	0	788	791	486	0	30	0
Number of Detectors	1	2		1	2		2	2	0	1	1	
Detector Template	Left			Left						Left	Thru	
Leading Detector (ft)	30	306		30	286		206	206	0	30	45	
Trailing Detector (ft)	-10	-5		-10	-5		-5	-5	0	-10	-5	
Turn Type	Perm	NA		Perm	NA		Split	NA	Perm	Perm	NA	
Protected Phases		2			6		8	8			4	
Permitted Phases	2			6					8	4		
Detector Phase	2	2		6	6		8	8	8	4	4	
Switch Phase												
Minimum Initial (s)	15.0	15.0		15.0	15.0		15.0	15.0	15.0	5.0	5.0	
Minimum Split (s)	21.0	21.0		21.0	21.0		20.0	20.0	20.0	10.0	10.0	
Total Split (s)	35.0	35.0		35.0	35.0		35.0	35.0	35.0	20.0	20.0	
Total Split (%)	38.9%	38.9%		38.9%	38.9%		38.9%	38.9%	38.9%	22.2%	22.2%	
Maximum Green (s)	29.0	29.0		29.0	29.0		30.0	30.0	30.0	15.0	15.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)		-1.0			-1.0		-1.0	-1.0	-1.0		-1.0	
Total Lost Time (s)		5.0			5.0		4.0	4.0	4.0		4.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	6.0	6.0		6.0	6.0		6.0	6.0	6.0	3.0	3.0	
Minimum Gap (s)	2.0	2.0		2.0	2.0		2.0	2.0	2.0	2.0	2.0	
Time Before Reduce (s)	40.0	40.0		40.0	40.0		40.0	40.0	40.0	0.0	0.0	
Time To Reduce (s)	20.0	20.0		20.0	20.0		20.0	20.0	20.0	0.0	0.0	
Recall Mode	C-Min	C-Min		C-Min	C-Min		None	None	None	None	None	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
v/c Ratio		0.72			2.13dl		1.00	1.00	0.54		0.34	
Control Delay		31.2			254.5		59.8	60.2	7.6		44.5	
Queue Delay		0.0			0.0		0.0	0.0	0.0		0.0	
Total Delay		31.2			254.5		59.8	60.2	7.6		44.5	
Queue Length 50th (ft)		186			~380		367	369	27		16	
Queue Length 95th (ft)		253			#502		#869	#873	148		41	
Internal Link Dist (ft)		246			338			126			221	
Turn Bay Length (ft)												
Base Capacity (vph)		1000			606		787	789	895		127	
Starvation Cap Reductn		0			0		0	0	0		0	
Spillback Cap Reductn		0			0		0	0	0		0	
Storage Cap Reductn		0			0		0	0	0		0	
Reduced v/c Ratio		0.72			1.49		1.00	1.00	0.54		0.24	

Intersection Summary

Area Type: Other
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 41 (46%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow
Natural Cycle: 120
Control Type: Actuated-Coordinated
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
dl Defacto Left Lane. Recode with 1 though lane as a left lane.

Splits and Phases: 4: Legion Rd/John Brady Dr/Legion Rd & Lycoming Mall Dr (SR 2014)



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	6	641	0	229	576	6	1419	2	437	13	8	6
Number	5	2	12	1	6	16	3	8	18	7	4	14
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	1791	1751	0	1881	1769	1881	1809	1809	1707	1872	1622	1872
Adj Flow Rate, veh/h	7	712	0	254	640	5	1578	0	439	14	9	7
Adj No. of Lanes	0	2	0	0	2	0	2	0	1	0	1	0
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	0	4	4	4	1	0	7	0	0	0
Cap, veh/h	45	1527	0	271	818	7	1187	0	500	29	18	14
Arrive On Green	0.46	0.47	0.00	0.46	0.47	0.46	0.34	0.00	0.34	0.03	0.04	0.03
Sat Flow, veh/h	8	3325	0	427	1738	14	3446	0	1451	711	457	356
Grp Volume(v), veh/h	385	334	0	340	0	559	1578	0	439	30	0	0
Grp Sat Flow(s),veh/h/ln	1740	1513	0	572	0	1607	1723	0	1451	1524	0	0
Q Serve(g_s), s	0.0	13.5	0.0	27.4	0.0	25.4	31.0	0.0	25.6	1.7	0.0	0.0
Cycle Q Clear(g_c), s	13.5	13.5	0.0	41.4	0.0	25.4	31.0	0.0	25.6	1.7	0.0	0.0
Prop In Lane	0.02		0.00	0.75		0.01	1.00		1.00	0.47		0.23
Lane Grp Cap(c), veh/h	840	712	0	333	0	756	1187	0	500	62	0	0
V/C Ratio(X)	0.46	0.47	0.00	1.02	0.00	0.74	1.33	0.00	0.88	0.49	0.00	0.00
Avail Cap(c_a), veh/h	840	712	0	333	0	756	1187	0	500	271	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	16.2	16.2	0.0	33.8	0.0	19.3	29.5	0.0	27.7	42.6	0.0	0.0
Incr Delay (d2), s/veh	1.8	2.2	0.0	55.3	0.0	6.4	154.2	0.0	18.4	5.8	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(95%),veh/ln	11.4	10.0	0.0	9.2	0.0	18.3	72.2	0.0	18.7	1.5	0.0	0.0
LnGrp Delay(d),s/veh	18.0	18.4	0.0	89.1	0.0	25.7	183.7	0.0	46.1	48.5	0.0	0.0
LnGrp LOS	B	B		F		C	F		D	D		
Approach Vol, veh/h		719			899			2017			30	
Approach Delay, s/veh		18.2			49.7			153.8			48.5	
Approach LOS		B			D			F			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		47.4		7.6		47.4		35.0
Change Period (Y+Rc), s		6.0		5.0		6.0		5.0
Max Green Setting (Gmax), s		29.0		15.0		29.0		30.0
Max Q Clear Time (g_c+I1), s		16.0		3.7		43.4		33.5
Green Ext Time (p_c), s		12.7		0.0		0.0		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	100.8
HCM 2010 LOS	F

Notes

User approved volume balancing among the lanes for turning movement.

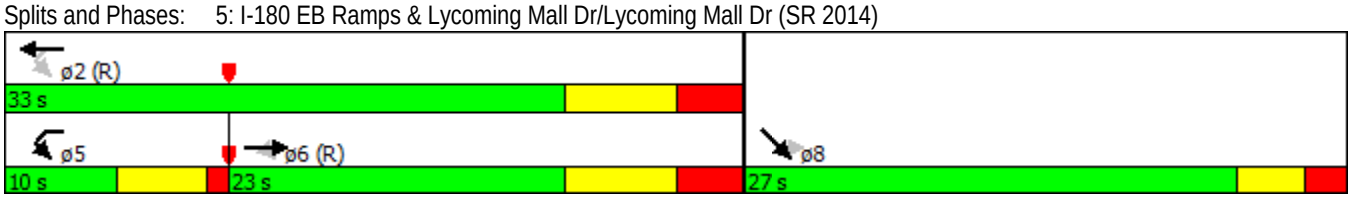
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Volume (vph)	0	1098	195	87	702	0	522	0	192	0	0	0
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	14	12	12	12	12	14	14	14	12	12	12
Grade (%)		-1%			-1%			3%			-4%	
Storage Length (ft)	0		175	150		0	0		0	0		0
Storage Lanes	0		1	1		0	0		0	0		0
Taper Length (ft)	75			75			75			75		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt			0.850					0.964				
Flt Protected				0.950				0.965				
Satd. Flow (prot)	0	1855	1464	1420	1739	0	0	1634	0	0	0	0
Flt Permitted				0.190				0.965				
Satd. Flow (perm)	0	1855	1464	284	1739	0	0	1634	0	0	0	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			127					182				
Link Speed (mph)		45			45			25			25	
Link Distance (ft)		2040			660			376			358	
Travel Time (s)		30.9			10.0			10.3			9.8	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	4%	5%	21%	4%	0%	5%	0%	15%	0%	0%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	0	1144	203	91	731	0	544	0	200	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1144	203	91	731	0	0	744	0	0	0	0
Number of Detectors		1	1	1	1		1	1				
Detector Template				Left			Left	Thru				
Leading Detector (ft)		6	6	45	6		30	30				
Trailing Detector (ft)		0	0	-5	0		-10	-10				
Turn Type		NA	Perm	pm+pt	NA		Perm	NA				
Protected Phases		6		5	2			8				
Permitted Phases			6	2			8					
Detector Phase				5			8	8				
Switch Phase												
Minimum Initial (s)		15.0	15.0	5.0	20.0		5.0	5.0				
Minimum Split (s)		23.0	23.0	10.0	28.0		10.0	10.0				
Total Split (s)		23.0	23.0	10.0	33.0		27.0	27.0				
Total Split (%)		38.3%	38.3%	16.7%	55.0%		45.0%	45.0%				
Maximum Green (s)		15.0	15.0	5.0	25.0		22.0	22.0				
Yellow Time (s)		5.0	5.0	4.0	5.0		3.0	3.0				
All-Red Time (s)		3.0	3.0	1.0	3.0		2.0	2.0				
Lost Time Adjust (s)		-1.0	-1.0	-1.0	-1.0			-1.0				
Total Lost Time (s)		7.0	7.0	4.0	7.0			4.0				

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lead/Lag		Lag	Lag	Lead								
Lead-Lag Optimize?												
Vehicle Extension (s)		3.0	3.0	4.0	3.0		4.0	4.0				
Minimum Gap (s)		3.0	3.0	3.0	3.0		3.0	3.0				
Time Before Reduce (s)		0.0	0.0	0.0	0.0		0.0	0.0				
Time To Reduce (s)		0.0	0.0	0.0	0.0		0.0	0.0				
Recall Mode		C-Min	C-Min	None	C-Min		None	None				
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
v/c Ratio		2.06	0.38	0.36	0.97			1.01				
Control Delay		502.3	10.2	7.2	15.6			52.9				
Queue Delay		0.0	0.0	0.0	0.0			0.0				
Total Delay		502.3	10.2	7.2	15.6			52.9				
Queue Length 50th (ft)		~698	21	5	43			~213				
Queue Length 95th (ft)		#911	69	m4	m24			#438				
Internal Link Dist (ft)		1960			580			296			278	
Turn Bay Length (ft)			175	150								
Base Capacity (vph)		556	528	250	753			738				
Starvation Cap Reductn		0	0	0	0			0				
Spillback Cap Reductn		0	0	0	0			0				
Storage Cap Reductn		0	0	0	0			0				
Reduced v/c Ratio		2.06	0.38	0.36	0.97			1.01				

Intersection Summary

Area Type: Other
Cycle Length: 60
Actuated Cycle Length: 60
Offset: 0 (0%), Referenced to phase 2:WBTL and 6:EBT, Start of Green, Master Intersection
Natural Cycle: 120
Control Type: Actuated-Coordinated
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 5: I-180 EB Ramps & Lycoming Mall Dr/Lycoming Mall Dr (SR 2014)



Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Volume (veh/h)	0	1098	195	87	702	0	522	0	192	0	0	0
Number	1	6	16	5	2	12	3	8	18			
Initial Q (Qb), veh	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			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	0	1809	1723	1495	1739	0	1844	1712	1844			
Adj Flow Rate, veh/h	0	1144	73	91	731	0	544	0	149			
Adj No. of Lanes	0	1	1	1	1	0	0	1	0			
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96			
Percent Heavy Veh, %	0	4	5	21	4	0	0	0	0			
Cap, veh/h	0	515	417	236	754	0	478	0	131			
Arrive On Green	0.00	0.28	0.28	0.16	0.87	0.00	0.37	0.00	0.37			
Sat Flow, veh/h	0	1809	1464	1424	1739	0	1248	0	342			
Grp Volume(v), veh/h	0	1144	73	91	731	0	693	0	0			
Grp Sat Flow(s),veh/h/ln	0	1809	1464	1424	1739	0	1590	0	0			
Q Serve(g_s), s	0.0	17.1	2.3	2.4	21.1	0.0	23.0	0.0	0.0			
Cycle Q Clear(g_c), s	0.0	17.1	2.3	2.4	21.1	0.0	23.0	0.0	0.0			
Prop In Lane	0.00		1.00	1.00		0.00	0.78		0.22			
Lane Grp Cap(c), veh/h	0	515	417	236	754	0	609	0	0			
V/C Ratio(X)	0.00	2.22	0.17	0.39	0.97	0.00	1.14	0.00	0.00			
Avail Cap(c_a), veh/h	0	515	417	262	754	0	609	0	0			
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.00	1.00	1.00	0.09	0.09	0.00	1.00	0.00	0.00			
Uniform Delay (d), s/veh	0.0	21.5	16.1	13.1	3.7	0.0	19.0	0.0	0.0			
Incr Delay (d2), s/veh	0.0	555.0	0.9	0.1	5.0	0.0	80.6	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			
%ile BackOfQ(95%),veh/ln	0.0	158.2	1.8	1.4	10.2	0.0	42.5	0.0	0.0			
LnGrp Delay(d),s/veh	0.0	576.4	17.1	13.3	8.7	0.0	99.6	0.0	0.0			
LnGrp LOS		F	B	B	A		F					
Approach Vol, veh/h		1217			822			693				
Approach Delay, s/veh		542.9			9.2			99.6				
Approach LOS		F			A			F				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2			5	6		8
Phs Duration (G+Y+Rc), s		33.0			8.9	24.1		27.0
Change Period (Y+Rc), s		8.0			5.0	8.0		5.0
Max Green Setting (Gmax), s		25.0			5.0	15.0		22.0
Max Q Clear Time (g_c+I1), s		23.6			4.9	19.6		25.0
Green Ext Time (p_c), s		1.0			0.0	0.0		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	269.8
HCM 2010 LOS	F

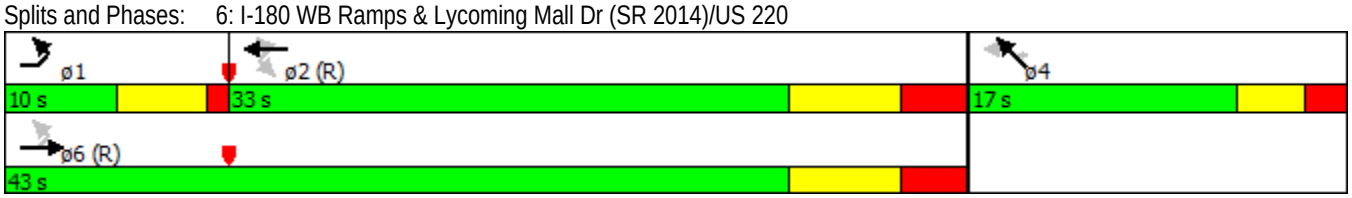
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Volume (vph)	391	1227	0	1	681	332	0	0	0	107	0	83
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	11	12	12	11	11	11	12	12	12	15	15	16
Grade (%)		1%			-1%			-3%			-3%	
Storage Length (ft)	115		0	0		260	0		0	0		445
Storage Lanes	1		0	0		1	0		0	0		1
Taper Length (ft)	75			75			75			75		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt						0.850						0.850
Flt Protected	0.950										0.950	
Satd. Flow (prot)	1566	1706	0	0	1562	1364	0	0	0	0	1801	1760
Flt Permitted	0.160				0.559						0.950	
Satd. Flow (perm)	264	1706	0	0	873	1364	0	0	0	0	1801	1760
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						342						182
Link Speed (mph)		45			45			25			25	
Link Distance (ft)		660			1209			327			668	
Travel Time (s)		10.0			18.3			8.9			18.2	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	5%	5%	0%	0%	12%	9%	0%	0%	0%	6%	0%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	403	1265	0	1	702	342	0	0	0	110	0	86
Shared Lane Traffic (%)												
Lane Group Flow (vph)	403	1265	0	0	703	342	0	0	0	0	110	86
Number of Detectors	1	1		1	1	1				1	1	0
Detector Template	Left			Left		Right				Left	Thru	
Leading Detector (ft)	45	6		30	6	30				30	45	0
Trailing Detector (ft)	-5	0		-10	0	-10				-10	-5	0
Turn Type	pm+pt	NA		Perm	NA	Perm				Perm	NA	Perm
Protected Phases	1	6			2						4	
Permitted Phases	6			2		2				4		4
Detector Phase	1			2		2				4	4	4
Switch Phase												
Minimum Initial (s)	5.0	20.0		20.0	20.0	20.0				5.0	5.0	5.0
Minimum Split (s)	10.0	28.0		28.0	28.0	28.0				10.0	10.0	10.0
Total Split (s)	10.0	43.0		33.0	33.0	33.0				17.0	17.0	17.0
Total Split (%)	16.7%	71.7%		55.0%	55.0%	55.0%				28.3%	28.3%	28.3%
Maximum Green (s)	5.0	35.0		25.0	25.0	25.0				12.0	12.0	12.0
Yellow Time (s)	4.0	5.0		5.0	5.0	5.0				3.0	3.0	3.0
All-Red Time (s)	1.0	3.0		3.0	3.0	3.0				2.0	2.0	2.0
Lost Time Adjust (s)	-1.0	-1.0			-1.0	0.0					-1.0	-1.0
Total Lost Time (s)	4.0	7.0			7.0	8.0					4.0	4.0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lead/Lag	Lead			Lag	Lag	Lag						
Lead-Lag Optimize?												
Vehicle Extension (s)	4.0	3.0		3.0	3.0	3.0				4.0	4.0	4.0
Minimum Gap (s)	3.0	3.0		3.0	3.0	3.0				3.0	3.0	3.0
Time Before Reduce (s)	0.0	0.0		0.0	0.0	0.0				0.0	0.0	0.0
Time To Reduce (s)	0.0	0.0		0.0	0.0	0.0				0.0	0.0	0.0
Recall Mode	None	C-Min		C-Min	C-Min	C-Min				Min	Min	Min
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
v/c Ratio	0.88	1.17			2.30	0.50					0.33	0.18
Control Delay	19.5	101.0			615.9	5.0					23.2	0.8
Queue Delay	0.0	0.0			0.0	0.0					0.0	0.0
Total Delay	19.5	101.0			615.9	5.0					23.2	0.8
Queue Length 50th (ft)	119	~604			~428	0					35	0
Queue Length 95th (ft)	m78	m309			#524	48					69	1
Internal Link Dist (ft)		580			1129			247			588	
Turn Bay Length (ft)	115					260						445
Base Capacity (vph)	460	1078			305	767					398	530
Starvation Cap Reductn	0	0			0	0					0	0
Spillback Cap Reductn	0	0			0	0					0	0
Storage Cap Reductn	0	0			0	0					0	0
Reduced v/c Ratio	0.88	1.17			2.30	0.45					0.28	0.16

Intersection Summary

Area Type: Other
Cycle Length: 60
Actuated Cycle Length: 60
Offset: 42 (70%), Referenced to phase 2:WBTL and 6:EBTL, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 6: I-180 WB Ramps & Lycoming Mall Dr (SR 2014)/US 220



Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Volume (veh/h)	391	1227	0	1	681	332	0	0	0	107	0	83
Number	1	6	16	5	2	12				7	4	14
Initial Q (Qb), veh	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
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1706	1706	0	1809	1615	1660				1900	1793	1900
Adj Flow Rate, veh/h	403	1265	0	1	702	278				110	0	70
Adj No. of Lanes	1	1	0	0	1	1				0	1	1
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97				0.97	0.97	0.97
Percent Heavy Veh, %	5	5	0	12	12	9				0	0	0
Cap, veh/h	296	1198	0	60	770	732				195	0	185
Arrive On Green	0.10	0.70	0.00	0.52	0.54	0.52				0.10	0.00	0.11
Sat Flow, veh/h	1624	1706	0	0	1438	1411				1707	0	1615
Grp Volume(v), veh/h	403	1265	0	703	0	278				110	0	70
Grp Sat Flow(s),veh/h/ln	1624	1706	0	1438	0	1411				1707	0	1615
Q Serve(g_s), s	6.0	42.1	0.0	0.0	0.0	7.1				3.7	0.0	2.4
Cycle Q Clear(g_c), s	6.0	42.1	0.0	31.1	0.0	7.1				3.7	0.0	2.4
Prop In Lane	1.00		0.00	0.00		1.00				1.00		1.00
Lane Grp Cap(c), veh/h	296	1198	0	806	0	732				195	0	185
V/C Ratio(X)	1.36	1.06	0.00	0.87	0.00	0.38				0.56	0.00	0.38
Avail Cap(c_a), veh/h	296	1198	0	806	0	732				370	0	350
HCM Platoon Ratio	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	1.00	0.00	1.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	16.9	8.9	0.0	11.7	0.0	8.6				25.6	0.0	24.6
Incr Delay (d2), s/veh	164.2	27.6	0.0	12.5	0.0	1.5				3.6	0.0	1.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	32.4	49.7	0.0	18.5	0.0	5.4				3.5	0.0	2.1
LnGrp Delay(d),s/veh	181.0	36.5	0.0	24.2	0.0	10.1				29.2	0.0	26.4
LnGrp LOS	F	F		C		B				C		C
Approach Vol, veh/h		1668			981						180	
Approach Delay, s/veh		71.4			20.2						28.1	
Approach LOS		E			C						C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6		
Phs Duration (G+Y+Rc), s	10.0	39.1		10.9		49.1		
Change Period (Y+Rc), s	5.0	8.0		5.0		8.0		
Max Green Setting (Gmax), s	5.0	25.0		12.0		35.0		
Max Q Clear Time (g_c+I1), s	8.5	33.1		5.7		44.6		
Green Ext Time (p_c), s	0.0	0.0		0.2		0.0		

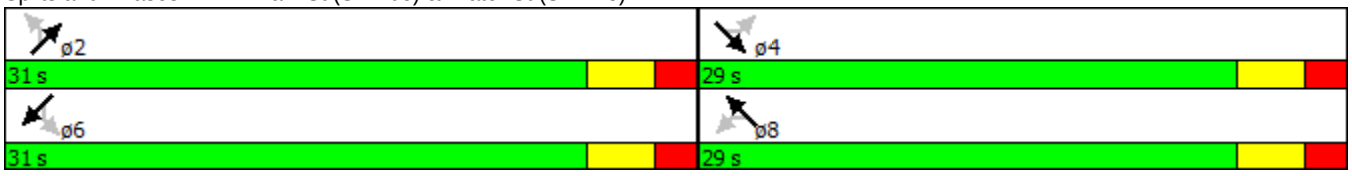
Intersection Summary	
HCM 2010 Ctrl Delay	50.9
HCM 2010 LOS	D

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	30	122	36	200	54	259	19	604	224	195	393	11
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	15	15	15	13	13	13	14	14	14	14	14	14
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (ft)	75			75			75			75		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.974			0.932			0.964			0.998	
Flt Protected		0.992			0.981			0.999			0.984	
Satd. Flow (prot)	0	1913	0	0	1510	0	0	1781	0	0	1727	0
Flt Permitted		0.899			0.792			0.983			0.432	
Satd. Flow (perm)	0	1734	0	0	1219	0	0	1753	0	0	758	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		25			35			25			25	
Link Distance (ft)		390			506			1477			648	
Travel Time (s)		10.6			9.9			40.3			17.7	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	0%	0%	21%	4%	8%	0%	2%	9%	14%	7%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)							0		0	0		0
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	31	124	37	204	55	264	19	616	229	199	401	11
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	192	0	0	523	0	0	864	0	0	611	0
Number of Detectors	1	1		1	1		1	1		1	1	
Detector Template	Left			Left			Left			Left		
Leading Detector (ft)	30	45		30	45		30	45		30	45	
Trailing Detector (ft)	-10	-5		-10	-5		-10	-5		-10	-5	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	15.0	15.0		15.0	15.0		15.0	15.0		15.0	15.0	
Total Split (s)	29.0	29.0		29.0	29.0		31.0	31.0		31.0	31.0	
Total Split (%)	48.3%	48.3%		48.3%	48.3%		51.7%	51.7%		51.7%	51.7%	
Maximum Green (s)	24.0	24.0		24.0	24.0		26.0	26.0		26.0	26.0	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		-1.0			-1.0			-1.0			-1.0	
Total Lost Time (s)		4.0			4.0			4.0			4.0	

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Minimum Gap (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Time Before Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Time To Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Recall Mode	Max	Max		Max	Max		Max	Max		Max	Max	
Walk Time (s)	11.0	11.0		11.0	11.0		12.0	12.0		12.0	12.0	
Flash Dont Walk (s)	16.0	16.0		16.0	16.0		18.0	18.0		18.0	18.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
v/c Ratio		0.27			1.03			1.07			1.75	
Control Delay		14.0			70.5			71.7			367.8	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		14.0			70.5			71.7			367.8	
Queue Length 50th (ft)		50			~220			~401			~382	
Queue Length 95th (ft)		91			#407			#605			#433	
Internal Link Dist (ft)		310			426			1397			568	
Turn Bay Length (ft)												
Base Capacity (vph)		724			509			811			350	
Starvation Cap Reductn		0			0			0			0	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.27			1.03			1.07			1.75	

Intersection Summary	
Area Type:	Other
Cycle Length: 60	
Actuated Cycle Length: 67	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
~ Volume exceeds capacity, queue is theoretically infinite.	
Queue shown is maximum after two cycles.	
# 95th percentile volume exceeds capacity, queue may be longer.	
Queue shown is maximum after two cycles.	

Splits and Phases: 11: Main St (SR 405) & Water St (SR 118)



Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (veh/h)	30	122	36	200	54	259	19	604	224	195	393	11
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	0.90	1.00	1.00	0.90
Adj Sat Flow, veh/h/ln	1872	1872	1872	1872	1662	1872	1872	1803	1872	1872	1715	1872
Adj Flow Rate, veh/h	31	124	37	204	55	264	19	616	229	199	401	11
Adj No. of Lanes	0	1	0	0	1	0	0	1	0	0	1	0
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	0	0	4	4	4	2	2	2	7	7	7
Cap, veh/h	136	496	134	287	78	287	68	511	187	156	212	5
Arrive On Green	0.40	0.42	0.40	0.40	0.42	0.40	0.43	0.45	0.43	0.43	0.45	0.43
Sat Flow, veh/h	159	1191	322	488	187	688	15	1135	415	171	470	12
Grp Volume(v), veh/h	192	0	0	523	0	0	864	0	0	611	0	0
Grp Sat Flow(s),veh/h/ln	1672	0	0	1363	0	0	1564	0	0	653	0	0
Q Serve(g_s), s	0.0	0.0	0.0	18.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	4.2	0.0	0.0	22.3	0.0	0.0	26.0	0.0	0.0	26.0	0.0	0.0
Prop In Lane	0.16		0.19	0.39		0.50	0.02		0.27	0.33		0.02
Lane Grp Cap(c), veh/h	738	0	0	629	0	0	739	0	0	362	0	0
V/C Ratio(X)	0.26	0.00	0.00	0.83	0.00	0.00	1.17	0.00	0.00	1.69	0.00	0.00
Avail Cap(c_a), veh/h	738	0	0	629	0	0	739	0	0	362	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	11.6	0.0	0.0	16.8	0.0	0.0	17.5	0.0	0.0	18.1	0.0	0.0
Incr Delay (d2), s/veh	0.9	0.0	0.0	12.2	0.0	0.0	90.2	0.0	0.0	320.6	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(95%),veh/ln	4.2	0.0	0.0	16.1	0.0	0.0	55.5	0.0	0.0	69.0	0.0	0.0
LnGrp Delay(d),s/veh	12.4	0.0	0.0	29.0	0.0	0.0	107.7	0.0	0.0	338.7	0.0	0.0
LnGrp LOS	B			C			F			F		
Approach Vol, veh/h		192			523			864			611	
Approach Delay, s/veh		12.4			29.0			107.7			338.7	
Approach LOS		B			C			F			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		31.0		29.0		31.0		29.0
Change Period (Y+Rc), s		5.0		5.0		5.0		5.0
Max Green Setting (Gmax), s		26.0		24.0		26.0		24.0
Max Q Clear Time (g_c+I1), s		28.0		6.2		28.0		24.3
Green Ext Time (p_c), s		0.0		3.2		0.0		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	145.0
HCM 2010 LOS	F

Notes

User approved pedestrian interval to be less than phase max green.

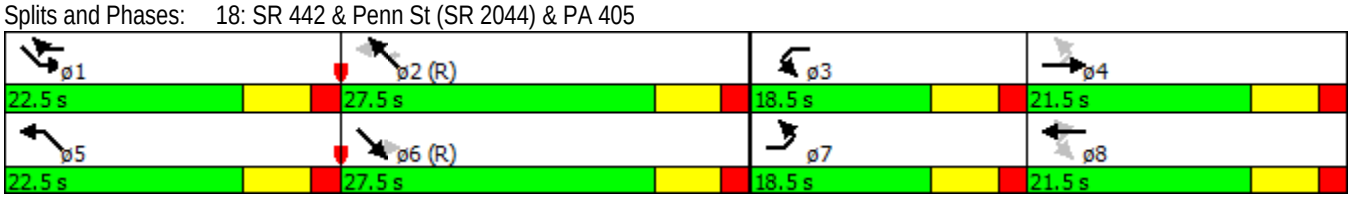
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Volume (vph)	36	236	32	227	194	1328	1378	357	74	24	233	208
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	11	11	11	11	11	11	11	11	11	11	11	11
Grade (%)		-2%			-1%			1%			-2%	
Storage Length (ft)	195		220	155		425	450		0	125		400
Storage Lanes	2		0	1		1	2		0	1		1
Taper Length (ft)	75			75			75			75		
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00	0.97	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.982				0.850		0.974				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1575	3211	0	1629	1714	1304	3010	1637	0	1590	1674	1450
Flt Permitted	0.626			0.406			0.322			0.495		
Satd. Flow (perm)	1038	3211	0	696	1714	1304	1020	1637	0	828	1674	1450
Right Turn on Red			No			Yes			Yes			Yes
Satd. Flow (RTOR)						509		11				226
Link Speed (mph)		45			45			40			45	
Link Distance (ft)		670			586			1005			570	
Travel Time (s)		10.2			8.9			17.1			8.6	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
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
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	6%	2%	3%	2%	2%	14%	6%	3%	3%	5%	5%	3%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	39	257	35	247	211	1443	1498	388	80	26	253	226
Shared Lane Traffic (%)												
Lane Group Flow (vph)	39	292	0	247	211	1443	1498	468	0	26	253	226
Number of Detectors	1	1		1	1	1	2	2		1	2	0
Detector Template	Left	Thru		Left	Thru	Right				Left		
Leading Detector (ft)	40	30		40	30	30	160	160		30	310	0
Trailing Detector (ft)	-10	-5		-10	-5	-5	-10	-10		-10	-10	0
Turn Type	pm+pt	NA		pm+pt	NA	pm+ov	pm+pt	NA		pm+pt	NA	Perm
Protected Phases	7	4		3	8	1	1	6		5	2	
Permitted Phases	4			8		8	6			2		2
Detector Phase	7	4		3	8	1	1	6		5	2	2
Switch Phase												
Minimum Initial (s)	3.0	5.0		3.0	5.0	3.0	3.0	5.0		3.0	5.0	5.0
Minimum Split (s)	9.5	11.5		9.5	11.5	9.5	9.5	11.5		9.5	11.5	11.5
Total Split (s)	18.5	21.5		18.5	21.5	22.5	22.5	27.5		22.5	27.5	27.5
Total Split (%)	20.6%	23.9%		20.6%	23.9%	25.0%	25.0%	30.6%		25.0%	30.6%	30.6%
Maximum Green (s)	12.0	15.0		12.0	15.0	16.0	16.0	21.0		16.0	21.0	21.0
Yellow Time (s)	4.5	4.5		4.5	4.5	4.5	4.5	4.5		4.5	4.5	4.5
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)	-1.0	-1.0		-1.0	-1.0	-1.0	-1.0	-1.0		-1.0	-1.0	-1.0
Total Lost Time (s)	5.5	5.5		5.5	5.5	5.5	5.5	5.5		5.5	5.5	5.5

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lead/Lag	Lead	Lag		Lead	Lag	Lead	Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	5.0		3.0	5.0	3.0	3.0	4.0		3.0	4.0	4.0
Minimum Gap (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Time Before Reduce (s)	0.0	0.0		0.0	0.0	0.0	0.0	9.0		0.0	9.0	9.0
Time To Reduce (s)	0.0	0.0		0.0	0.0	0.0	0.0	18.0		0.0	18.0	18.0
Recall Mode	None	None		None	None	None	None	C-Min		None	C-Min	C-Min
Walk Time (s)		12.0			12.0			14.0			14.0	14.0
Flash Dont Walk (s)		18.0			18.0			21.0			21.0	21.0
Pedestrian Calls (#/hr)		0			0			0			0	0
v/c Ratio	0.12	0.54		0.65	0.45	1.54	1.62	0.63		0.08	0.62	0.43
Control Delay	19.2	38.3		29.9	32.8	267.1	306.4	26.5		13.5	37.9	6.8
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	19.2	38.3		29.9	32.8	267.1	306.4	26.5		13.5	37.9	6.8
Queue Length 50th (ft)	14	80		100	106	~1042	~560	175		7	128	0
Queue Length 95th (ft)	34	121		165	182	#1303	#694	#408		20	209	55
Internal Link Dist (ft)		590			506			925			490	
Turn Bay Length (ft)	195			155		425	450			125		400
Base Capacity (vph)	401	570		384	467	935	922	738		502	409	525
Starvation Cap Reductn	0	0		0	0	0	0	0		0	0	0
Spillback Cap Reductn	0	0		0	0	0	0	0		0	0	0
Storage Cap Reductn	0	0		0	0	0	0	0		0	0	0
Reduced v/c Ratio	0.10	0.51		0.64	0.45	1.54	1.62	0.63		0.05	0.62	0.43

Intersection Summary

Area Type: Other
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 0 (0%), Referenced to phase 2:NWTL and 6:SETL, Start of Green, Master Intersection
Natural Cycle: 120
Control Type: Actuated-Coordinated
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 18: SR 442 & Penn St (SR 2044) & PA 405



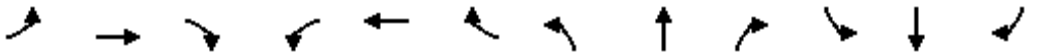
Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Volume (veh/h)	36	236	32	227	194	1328	1378	357	74	24	233	208
Number	7	4	14	3	8	18	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking 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	1715	1780	1818	1774	1774	1587	1690	1739	1791	1731	1731	1765
Adj Flow Rate, veh/h	39	257	35	247	211	1217	1498	388	70	26	253	126
Adj No. of Lanes	1	2	0	1	1	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, %	6	2	2	2	2	14	6	3	3	5	5	3
Cap, veh/h	193	380	51	374	408	565	1074	652	118	364	512	443
Arrive On Green	0.04	0.13	0.12	0.14	0.23	0.23	0.19	0.45	0.44	0.03	0.30	0.30
Sat Flow, veh/h	1633	2997	404	1689	1774	1349	3122	1434	259	1649	1731	1500
Grp Volume(v), veh/h	39	144	148	247	211	1217	1498	0	458	26	253	126
Grp Sat Flow(s),veh/h/ln	1633	1691	1709	1689	1774	1349	1561	0	1693	1649	1731	1500
Q Serve(g_s), s	1.8	7.3	7.5	10.8	9.4	20.7	17.0	0.0	18.2	1.0	10.9	5.8
Cycle Q Clear(g_c), s	1.8	7.3	7.5	10.8	9.4	20.7	17.0	0.0	18.2	1.0	10.9	5.8
Prop In Lane	1.00		0.24	1.00		1.00	1.00		0.15	1.00		1.00
Lane Grp Cap(c), veh/h	193	214	217	374	408	565	1074	0	770	364	512	443
V/C Ratio(X)	0.20	0.67	0.68	0.66	0.52	2.15	1.39	0.00	0.59	0.07	0.49	0.28
Avail Cap(c_a), veh/h	362	301	304	374	408	565	1074	0	770	627	512	443
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	1.00	1.00
Uniform Delay (d), s/veh	31.9	37.5	37.7	26.6	30.3	26.2	22.0	0.0	18.4	20.9	26.2	24.4
Incr Delay (d2), s/veh	0.5	7.5	7.9	4.3	2.3	525.4	183.1	0.0	3.4	0.1	3.4	1.6
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(95%),veh/ln	1.5	6.9	7.2	9.2	8.4	173.3	65.0	0.0	14.1	0.8	9.6	4.7
LnGrp Delay(d),s/veh	32.4	45.0	45.6	30.9	32.5	551.5	205.1	0.0	21.8	21.0	29.6	26.0
LnGrp LOS	C	D	D	C	C	F	F		C	C	C	C
Approach Vol, veh/h		331			1675			1956			405	
Approach Delay, s/veh		43.8			409.4			162.2			27.9	
Approach LOS		D			F			F			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	22.5	32.1	18.5	16.9	8.2	46.4	9.2	26.2
Change Period (Y+Rc), s	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5
Max Green Setting (Gmax), s	16.0	21.0	12.0	15.0	16.0	21.0	12.0	15.0
Max Q Clear Time (g_c+I1), s	19.5	13.4	13.3	9.8	3.5	20.2	4.3	23.2
Green Ext Time (p_c), s	0.0	4.3	0.0	0.6	0.0	0.5	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	235.6
HCM 2010 LOS	F

Notes

User approved pedestrian interval to be less than phase max green.

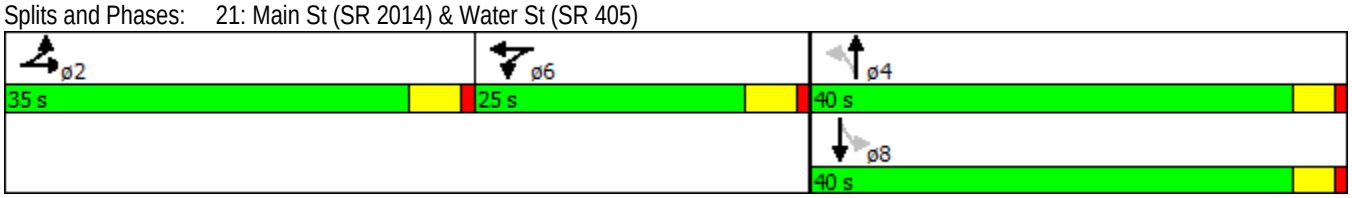


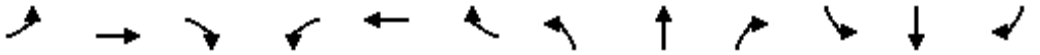
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	346	343	38	194	387	90	45	518	176	98	385	445
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	16	16	16	12	12	12	10	10	10	10	10	10
Grade (%)		-2%			1%			2%			-1%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (ft)	75			75			75			75		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00			0.99			0.99			0.98	
Frt		0.993			0.982			0.968			0.935	
Flt Protected		0.977			0.986			0.997			0.995	
Satd. Flow (prot)	0	1814	0	0	1642	0	0	1319	0	0	1269	0
Flt Permitted		0.977			0.986			0.796			0.629	
Satd. Flow (perm)	0	1809	0	0	1638	0	0	1053	0	0	802	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		463			494			1137			622	
Travel Time (s)		12.6			13.5			31.0			17.0	
Confl. Peds. (#/hr)	10		10	10		10	10		10	10		10
Confl. Bikes (#/hr)												
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	10%	10%	10%	5%	5%	5%	5%	5%	5%	6%	6%	6%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)							6	6	6	6	6	6
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	384	381	42	216	430	100	50	576	196	109	428	494
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	807	0	0	746	0	0	822	0	0	1031	0
Number of Detectors	1	1		1	1		1	1		1	1	
Detector Template	Left			Left			Left			Left		
Leading Detector (ft)	30	40		30	40		30	40		30	40	
Trailing Detector (ft)	-10	-10		-10	-10		-10	-10		-10	-10	
Turn Type	Split	NA		Split	NA		Perm	NA		Perm	NA	
Protected Phases	2	2		6	6			4			8	
Permitted Phases							4			8		
Detector Phase	2	2		6	6		4	4		8	8	
Switch Phase												
Minimum Initial (s)	8.0	8.0		8.0	8.0		7.1	7.1		7.1	7.1	
Minimum Split (s)	13.0	13.0		13.0	13.0		12.1	12.1		12.1	12.1	
Total Split (s)	35.0	35.0		25.0	25.0		40.0	40.0		40.0	40.0	
Total Split (%)	35.0%	35.0%		25.0%	25.0%		40.0%	40.0%		40.0%	40.0%	
Maximum Green (s)	30.0	30.0		20.0	20.0		35.9	35.9		35.9	35.9	
Yellow Time (s)	4.0	4.0		4.0	4.0		3.1	3.1		3.1	3.1	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		-0.5			-0.5			-1.0			-1.0	
Total Lost Time (s)		4.5			4.5			3.1			3.1	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.5	3.5		3.5	3.5		2.0	2.0		2.0	2.0	
Minimum Gap (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Time Before Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Time To Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Recall Mode	None	None		None	None		None	None		None	None	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
v/c Ratio		1.46			2.22			2.12			3.49	
Control Delay		245.8			581.6			534.0			1146.0	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		245.8			581.6			534.0			1146.0	
Queue Length 50th (ft)		~708			~771			~837			~1015	
Queue Length 95th (ft)		#936			#995			#1068			#1262	
Internal Link Dist (ft)		383			414			1057			542	
Turn Bay Length (ft)												
Base Capacity (vph)		553			336			388			295	
Starvation Cap Reductn		0			0			0			0	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		1.46			2.22			2.12			3.49	

Intersection Summary	
Area Type:	Other
Cycle Length: 100	
Actuated Cycle Length: 100	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
~ Volume exceeds capacity, queue is theoretically infinite.	
Queue shown is maximum after two cycles.	
# 95th percentile volume exceeds capacity, queue may be longer.	
Queue shown is maximum after two cycles.	

Splits and Phases: 21: Main St (SR 2014) & Water St (SR 405)





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	346	343	38	194	387	90	45	518	176	98	385	445
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.87	1.00	1.00	0.87
Adj Sat Flow, veh/h/ln	1891	1719	1891	1791	1706	1791	1782	1697	1782	1809	1707	1809
Adj Flow Rate, veh/h	384	381	42	216	430	100	50	576	196	109	428	494
Adj No. of Lanes	0	1	0	0	1	0	0	1	0	0	1	0
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	10	10	10	5	5	5	5	5	5	6	6	6
Cap, veh/h	241	239	26	97	193	45	57	331	110	71	154	171
Arrive On Green	0.30	0.31	0.30	0.20	0.20	0.20	0.36	0.37	0.36	0.36	0.37	0.36
Sat Flow, veh/h	791	785	87	474	943	219	51	898	297	84	418	463
Grp Volume(v), veh/h	807	0	0	746	0	0	822	0	0	1031	0	0
Grp Sat Flow(s),veh/h/ln	1662	0	0	1637	0	0	1246	0	0	965	0	0
Q Serve(g_s), s	30.5	0.0	0.0	20.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	30.5	0.0	0.0	20.5	0.0	0.0	35.9	0.0	0.0	35.9	0.0	0.0
Prop In Lane	0.48		0.05	0.29		0.13	0.06		0.24	0.11		0.48
Lane Grp Cap(c), veh/h	507	0	0	336	0	0	485	0	0	386	0	0
V/C Ratio(X)	1.59	0.00	0.00	2.22	0.00	0.00	1.69	0.00	0.00	2.67	0.00	0.00
Avail Cap(c_a), veh/h	507	0	0	336	0	0	485	0	0	386	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	34.9	0.0	0.0	39.9	0.0	0.0	32.2	0.0	0.0	32.6	0.0	0.0
Incr Delay (d2), s/veh	275.5	0.0	0.0	560.1	0.0	0.0	320.8	0.0	0.0	758.2	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(95%),veh/ln	94.9	0.0	0.0	110.6	0.0	0.0	102.1	0.0	0.0	165.8	0.0	0.0
LnGrp Delay(d),s/veh	310.4	0.0	0.0	600.0	0.0	0.0	352.9	0.0	0.0	790.8	0.0	0.0
LnGrp LOS	F			F			F			F		
Approach Vol, veh/h		807			746			822			1031	
Approach Delay, s/veh		310.4			600.0			352.9			790.8	
Approach LOS		F			F			F			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		35.0		40.0		25.0		40.0
Change Period (Y+Rc), s		5.0		4.1		5.0		4.1
Max Green Setting (Gmax), s		30.0		35.9		20.0		35.9
Max Q Clear Time (g_c+I1), s		32.5		37.9		22.5		37.9
Green Ext Time (p_c), s		0.0		0.0		0.0		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	529.5
HCM 2010 LOS	F

Lane Group	EBL	EBT	WBT	WBR	SWL	SWR
Lane Configurations						
Volume (vph)	118	800	647	0	0	79
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	10	10
Grade (%)		2%	-3%		-1%	
Storage Length (ft)	0			0	0	0
Storage Lanes	0			0	1	0
Taper Length (ft)	75				75	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt					0.865	
Flt Protected		0.994				
Satd. Flow (prot)	0	1831	1837	0	1511	0
Flt Permitted		0.994				
Satd. Flow (perm)	0	1831	1837	0	1511	0
Link Speed (mph)		55	45		25	
Link Distance (ft)		1209	517		640	
Travel Time (s)		15.0	7.8		17.5	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	3%	2%	5%	0%	0%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)		0%	0%		0%	
Adj. Flow (vph)	122	825	667	0	0	81
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	947	667	0	81	0
Sign Control		Free	Free		Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

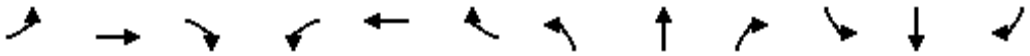
Intersection	
Int Delay, s/veh	1.4

Movement	EBL	EBT	WBT	WBR	SWL	SWR
Vol, veh/h	118	800	647	0	0	79
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, %	-	2	-3	-	-1	-
Peak Hour Factor	97	97	97	97	97	97
Heavy Vehicles, %	3	2	5	0	0	2
Mvmt Flow	122	825	667	0	0	81

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	667	0	-	0	1735	667
Stage 1	-	-	-	-	667	-
Stage 2	-	-	-	-	1068	-
Critical Hdwy	4.13	-	-	-	7.1	6.2
Critical Hdwy Stg 1	-	-	-	-	5.2	-
Critical Hdwy Stg 2	-	-	-	-	5.2	-
Follow-up Hdwy	3	-	-	-	3	3.1
Pot Cap-1 Maneuver	728	-	-	-	19	484
Stage 1	-	-	-	-	597	-
Stage 2	-	-	-	-	308	-
Platoon blocked, %		-	-	-	1	
Mov Cap-1 Maneuver	728	-	-	-	13	484
Mov Cap-2 Maneuver	-	-	-	-	13	-
Stage 1	-	-	-	-	597	-
Stage 2	-	-	-	-	213	-

Approach	EB	WB	SW
HCM Control Delay, s	1.4	0	13.9
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SWLn1
Capacity (veh/h)	728	-	-	-	484
HCM Lane V/C Ratio	0.167	-	-	-	0.168
HCM Control Delay (s)	10.9	0	-	-	13.9
HCM Lane LOS	B	A	-	-	B
HCM 95th %tile Q(veh)	0.6	-	-	-	0.6



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	2	781	44	3	624	19	23	36	2	17	29	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	11	11	11	10	10	10
Grade (%)		-2%			1%			0%			-3%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (ft)	75			75			75			75		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.993			0.996			0.996			0.997	
Flt Protected								0.981			0.983	
Satd. Flow (prot)	0	1787	0	0	1780	0	0	1763	0	0	1690	0
Flt Permitted								0.981			0.983	
Satd. Flow (perm)	0	1787	0	0	1780	0	0	1763	0	0	1690	0
Link Speed (mph)		55			55			35			50	
Link Distance (ft)		1494			4148			578			618	
Travel Time (s)		18.5			51.4			11.3			8.4	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
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
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	7%	0%	0%	6%	0%	0%	3%	0%	0%	7%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	2	849	48	3	678	21	25	39	2	18	32	1
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	899	0	0	702	0	0	66	0	0	51	0
Sign Control		Free			Free			Stop			Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	11.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	2	781	44	3	624	19	23	36	2	17	29	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	-2	-	-	1	-	-	0	-	-	-3	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	0	7	0	0	6	0	0	3	0	0	7	0
Mvmt Flow	2	849	48	3	678	21	25	39	2	18	32	1

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	699	0	0	897	0	0	1588	1582	873	1593	1596	689
Stage 1	-	-	-	-	-	-	877	877	-	695	695	-
Stage 2	-	-	-	-	-	-	711	705	-	898	901	-
Critical Hdwy	4.9	-	-	4.9	-	-	8.1	6.53	6.4	8.1	6.5	6.4
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.53	-	5.5	4.97	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.53	-	5.5	4.97	-
Follow-up Hdwy	3.5	-	-	3.5	-	-	3	4.027	3.4	3	4.063	3.4
Pot Cap-1 Maneuver	547	-	-	455	-	-	61	108	329	60	107	423
Stage 1	-	-	-	-	-	-	383	365	-	547	490	-
Stage 2	-	-	-	-	-	-	477	438	-	432	407	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	547	-	-	455	-	-	46	106	329	42	105	423
Mov Cap-2 Maneuver	-	-	-	-	-	-	46	106	-	42	105	-
Stage 1	-	-	-	-	-	-	380	362	-	543	485	-
Stage 2	-	-	-	-	-	-	440	433	-	380	404	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0.1	182.2	143
HCM LOS			F	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	72	547	-	-	455	-	-	69
HCM Lane V/C Ratio	0.921	0.004	-	-	0.007	-	-	0.74
HCM Control Delay (s)	182.2	11.6	0	-	13	0	-	143
HCM Lane LOS	F	B	A	-	B	A	-	F
HCM 95th %tile Q(veh)	4.6	0	-	-	0	-	-	3.4

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	54	622	96	8	516	3	89	34	6	5	37	47
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	11	11	11	14	14	14
Grade (%)		0%			-1%			7%			-1%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (ft)	75			75			75			75		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.983			0.999			0.993			0.928	
Flt Protected		0.997			0.999			0.967			0.997	
Satd. Flow (prot)	0	1797	0	0	1767	0	0	1667	0	0	1884	0
Flt Permitted		0.997			0.999			0.967			0.997	
Satd. Flow (perm)	0	1797	0	0	1767	0	0	1667	0	0	1884	0
Link Speed (mph)		55			55			40			40	
Link Distance (ft)		1228			918			354			317	
Travel Time (s)		15.2			11.4			6.0			5.4	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	6%	4%	0%	0%	8%	0%	3%	0%	0%	0%	0%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	59	684	105	9	567	3	98	37	7	5	41	52
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	848	0	0	579	0	0	142	0	0	98	0
Sign Control		Free			Free			Stop			Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	91.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	54	622	96	8	516	3	89	34	6	5	37	47
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	-1	-	-	7	-	-	-1	-
Peak Hour Factor	91	91	91	91	91	91	91	91	91	91	91	91
Heavy Vehicles, %	6	4	0	0	8	0	3	0	0	0	0	0
Mvmt Flow	59	684	105	9	567	3	98	37	7	5	41	52

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	570	0	0	789	0	0	1487	1443	736	1463	1494	569
Stage 1	-	-	-	-	-	-	855	855	-	586	586	-
Stage 2	-	-	-	-	-	-	632	588	-	877	908	-
Critical Hdwy	4.9	-	-	4.9	-	-	8.1	6.5	6.4	8.1	6.5	6.4
Critical Hdwy Stg 1	-	-	-	-	-	-	7.53	6.9	-	5.9	5.3	-
Critical Hdwy Stg 2	-	-	-	-	-	-	7.53	6.9	-	5.9	5.3	-
Follow-up Hdwy	3.5	-	-	3.5	-	-	3	4	3.4	3	4	3.4
Pot Cap-1 Maneuver	617	-	-	503	-	-	~ 74	133	397	77	124	498
Stage 1	-	-	-	-	-	-	281	271	-	581	517	-
Stage 2	-	-	-	-	-	-	412	397	-	402	375	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	617	-	-	503	-	-	~ 39	107	397	47	100	498
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ 39	107	-	47	100	-
Stage 1	-	-	-	-	-	-	232	224	-	480	504	-
Stage 2	-	-	-	-	-	-	331	387	-	272	310	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.8	0.2	$ 1030.8	60.6
HCM LOS			F	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	49	617	-	-	503	-	-	156
HCM Lane V/C Ratio	2.893	0.096	-	-	0.017	-	-	0.627
HCM Control Delay (s)	$ 1030.8	11.5	0	-	12.3	0	-	60.6
HCM Lane LOS	F	B	A	-	B	A	-	F
HCM 95th %tile Q(veh)	15.1	0.3	-	-	0.1	-	-	3.4

Notes

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

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	591	96	88	497	71	83
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	13	13	13	13	12	12
Grade (%)	3%			1%	5%	
Storage Length (ft)		0	0		0	0
Storage Lanes		0	0		1	0
Taper Length (ft)			75		75	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.981				0.927	
Flt Protected				0.993	0.977	
Satd. Flow (prot)	1842	0	0	1816	1678	0
Flt Permitted				0.993	0.977	
Satd. Flow (perm)	1842	0	0	1816	1678	0
Link Speed (mph)	55			55	35	
Link Distance (ft)	1476			1319	549	
Travel Time (s)	18.3			16.4	10.7	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	3%	3%	0%	8%	0%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	739	120	110	621	89	104
Shared Lane Traffic (%)						
Lane Group Flow (vph)	859	0	0	731	193	0
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	43.7

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Vol, veh/h	591	96	88	497	71	83
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, %	3	-	-	1	5	-
Peak Hour Factor	80	80	80	80	80	80
Heavy Vehicles, %	3	3	0	8	0	0
Mvmt Flow	739	120	110	621	89	104

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	859	0	1640	799
Stage 1	-	-	-	-	799	-
Stage 2	-	-	-	-	841	-
Critical Hdwy	-	-	4.3	-	7.1	6.2
Critical Hdwy Stg 1	-	-	-	-	6.4	-
Critical Hdwy Stg 2	-	-	-	-	6.4	-
Follow-up Hdwy	-	-	3	-	3	3.1
Pot Cap-1 Maneuver	-	-	602	-	~ 87	406
Stage 1	-	-	-	-	397	-
Stage 2	-	-	-	-	374	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	602	-	~ 63	406
Mov Cap-2 Maneuver	-	-	-	-	~ 63	-
Stage 1	-	-	-	-	397	-
Stage 2	-	-	-	-	270	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1.9	$ 397
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	116	-	-	602	-
HCM Lane V/C Ratio	1.659	-	-	0.183	-
HCM Control Delay (s)	$ 397	-	-	12.3	0
HCM Lane LOS	F	-	-	B	A
HCM 95th %tile Q(veh)	14.5	-	-	0.7	-

Notes

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

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	1890	172	66	1473	145	54
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	11	10	10
Grade (%)	-1%			1%	-4%	
Storage Length (ft)		0	0		0	0
Storage Lanes		0	0		1	0
Taper Length (ft)			75		75	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.989				0.963	
Flt Protected				0.998	0.965	
Satd. Flow (prot)	1722	0	0	1741	1622	0
Flt Permitted				0.998	0.965	
Satd. Flow (perm)	1722	0	0	1741	1622	0
Link Speed (mph)	50			55	35	
Link Distance (ft)	420			676	522	
Travel Time (s)	5.7			8.4	10.2	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	50%	0%	5%	5%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	2077	189	73	1619	159	59
Shared Lane Traffic (%)						
Lane Group Flow (vph)	2266	0	0	1692	218	0
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	1819.5

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Vol, veh/h	1890	172	66	1473	145	54
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, %	-1	-	-	1	-4	-
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	2	50	0	5	5	0
Mvmt Flow	2077	189	73	1619	159	59

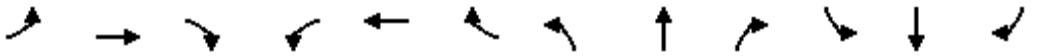
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	2266	0	3935	2171
Stage 1	-	-	-	-	2171	-
Stage 2	-	-	-	-	1764	-
Critical Hdwy	-	-	4.3	-	7.1	6.2
Critical Hdwy Stg 1	-	-	-	-	4.65	-
Critical Hdwy Stg 2	-	-	-	-	4.65	-
Follow-up Hdwy	-	-	3	-	3	3.1
Pot Cap-1 Maneuver	-	-	178	-	~ 2	61
Stage 1	-	-	-	-	~ 157	-
Stage 2	-	-	-	-	235	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	178	-	~ 2	61
Mov Cap-2 Maneuver	-	-	-	-	~ 2	-
Stage 1	-	-	-	-	~ 157	-
Stage 2	-	-	-	-	235	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1.6	$ 34731.3
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	3	-	-	178	-
HCM Lane V/C Ratio	72.894	-	-	0.407	-
HCM Control Delay (s)	$ 34731.3	-	-	38.5	0
HCM Lane LOS	F	-	-	E	A
HCM 95th %tile Q(veh)	29.7	-	-	1.8	-

Notes

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



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	41	23	8	0	10	1	6	32	6	0	11	31
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	10	10	10	10	10	13	13	13	16	16	16
Grade (%)		-3%			2%			1%			-2%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (ft)	75			75			75			75		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.985			0.991			0.982			0.901	
Flt Protected		0.972						0.993				
Satd. Flow (prot)	0	1399	0	0	1578	0	0	1599	0	0	1334	0
Flt Permitted		0.972						0.993				
Satd. Flow (perm)	0	1399	0	0	1578	0	0	1599	0	0	1334	0
Link Speed (mph)		35			25			25			25	
Link Distance (ft)		1453			774			205			154	
Travel Time (s)		28.3			21.1			5.6			4.2	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	27%	0%	71%	0%	11%	0%	0%	23%	17%	0%	38%	50%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	56	32	11	0	14	1	8	44	8	0	15	42
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	99	0	0	15	0	0	60	0	0	57	0
Sign Control		Stop			Stop			Free			Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	4.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	41	23	8	0	10	1	6	32	6	0	11	31
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, %	-	-3	-	-	2	-	-	1	-	-	-2	-
Peak Hour Factor	73	73	73	73	73	73	73	73	73	73	73	73
Heavy Vehicles, %	27	0	71	0	11	0	0	23	17	0	38	50
Mvmt Flow	56	32	11	0	14	1	8	44	8	0	15	42

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	108	104	36	122	122	48	58	0	0	52	0	0
Stage 1	36	36	-	64	64	-	-	-	-	-	-	-
Stage 2	72	68	-	58	58	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.3	-	-	4.3	-	-
Critical Hdwy Stg 1	5.77	4.9	-	6.5	6.01	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.77	4.9	-	6.5	6.01	-	-	-	-	-	-	-
Follow-up Hdwy	3	4	3.1	3	4.099	3.1	3	-	-	3	-	-
Pot Cap-1 Maneuver	1014	790	1108	992	755	1091	1147	-	-	1152	-	-
Stage 1	1150	874	-	1098	818	-	-	-	-	-	-	-
Stage 2	1102	852	-	1107	824	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	993	784	1108	947	750	1091	1147	-	-	1152	-	-
Mov Cap-2 Maneuver	993	784	-	947	750	-	-	-	-	-	-	-
Stage 1	1142	874	-	1090	812	-	-	-	-	-	-	-
Stage 2	1074	846	-	1057	824	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	9.4	9.8	1.1	0
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1147	-	-	925	772	1152	-	-
HCM Lane V/C Ratio	0.007	-	-	0.107	0.02	-	-	-
HCM Control Delay (s)	8.2	0	-	9.4	9.8	0	-	-
HCM Lane LOS	A	A	-	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.4	0.1	0	-	-

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	880	1007	4	4	746	102	15	46	5	96	22	665
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	11	11	11	16	16	16	11	11	11
Grade (%)		-2%			2%			2%			-1%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (ft)	75			75			75			75		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt					0.984			0.989			0.885	
Flt Protected		0.977						0.989			0.994	
Satd. Flow (prot)	0	1777	0	0	1702	0	0	1932	0	0	1620	0
Flt Permitted		0.977						0.989			0.994	
Satd. Flow (perm)	0	1777	0	0	1702	0	0	1932	0	0	1620	0
Link Speed (mph)		50			50			25			50	
Link Distance (ft)		832			852			184			234	
Travel Time (s)		11.3			11.6			5.0			3.2	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	3%	1%	25%	50%	5%	4%	23%	4%	0%	2%	0%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	1011	1157	5	5	857	117	17	53	6	110	25	764
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	2173	0	0	979	0	0	76	0	0	899	0
Sign Control		Free			Free			Stop			Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	99.9

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Vol, veh/h	880	1007	4	4	746	102	15	46	5	96	22	665
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	-2	-	-	2	-	-	2	-	-	-1	-
Peak Hour Factor	87	87	87	87	87	87	87	87	87	87	87	87
Heavy Vehicles, %	3	1	25	50	5	4	23	4	0	2	0	0
Mvmt Flow	1011	1157	5	5	857	117	17	53	6	110	25	764

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	975	0	0	1162	0	0	4503	4167	1160	4137	4110	916
Stage 1	-	-	-	-	-	-	3183	3183	-	925	925	-
Stage 2	-	-	-	-	-	-	1320	984	-	3212	3185	-
Critical Hdwy	4.3	-	-	4.3	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.73	5.94	-	5.92	5.3	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.73	5.94	-	5.92	5.3	-
Follow-up Hdwy	3	-	-	3	-	-	3	4	3.1	3	4	3.1
Pot Cap-1 Maneuver	~ 547	-	-	468	-	-	~ 1	~ 2	249	~ 1	~ 2	~ 347
Stage 1	-	-	-	-	-	-	~ 9	~ 17	-	376	369	-
Stage 2	-	-	-	-	-	-	168	292	-	~ 18	30	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	~ 547	-	-	468	-	-	-	~ 2	249	-	~ 2	~ 347
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	~ 2	-	-	~ 2	-
Stage 1	-	-	-	-	-	-	~ 9	~ 17	-	376	360	-
Stage 2	-	-	-	-	-	-	-	285	-	-	30	-

Approach	SE	NW	NE	SW
HCM Control Delay, s	189.7	0.1		
HCM LOS			-	-

Minor Lane/Major Mvmt	NELn1	NWL	NWT	NWR	SEL	SET	SER	SWLn1
Capacity (veh/h)	-	468	-	-	~ 547	-	-	-
HCM Lane V/C Ratio	-	0.01	-	-	1.849	-	-	-
HCM Control Delay (s)	-	12.8	0	-	$ 407.5	0	-	-
HCM Lane LOS	-	B	A	-	F	A	-	-
HCM 95th %tile Q(veh)	-	0	-	-	64	-	-	-

Notes

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

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Volume (vph)	1	0	37	3	0	0	1	1064	0	16	859	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	10	10	9	9	9	11	11	11	11	11	11
Grade (%)		1%			-1%			-3%			0%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (ft)	75			75			75			75		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.868										
Flt Protected		0.999			0.950						0.999	
Satd. Flow (prot)	0	1438	0	0	1633	0	0	1828	0	0	1753	0
Flt Permitted		0.999			0.950						0.999	
Satd. Flow (perm)	0	1438	0	0	1633	0	0	1828	0	0	1753	0
Link Speed (mph)		25			25			50			50	
Link Distance (ft)		172			263			852			367	
Travel Time (s)		4.7			7.2			11.6			5.0	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	100%	0%	4%	0%	0%	0%	0%	2%	0%	40%	4%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	1	0	39	3	0	0	1	1132	0	17	914	1
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	40	0	0	3	0	0	1133	0	0	932	0
Sign Control		Stop			Stop			Free			Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	0.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Vol, veh/h	1	0	37	3	0	0	1	1064	0	16	859	1
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, %	-	1	-	-	-1	-	-	-3	-	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	100	0	4	0	0	0	0	2	0	40	4	0
Mvmt Flow	1	0	39	3	0	0	1	1132	0	17	914	1

Major/Minor	Minor1			Minor2			Major1			Major2		
Conflicting Flow All	2082	2083	1132	2102	2082	914	915	0	0	1132	0	0
Stage 1	1134	1134	-	948	948	-	-	-	-	-	-	-
Stage 2	948	949	-	1154	1134	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.3	-	-	4.3	-	-
Critical Hdwy Stg 1	7.3	5.7	-	5.9	5.3	-	-	-	-	-	-	-
Critical Hdwy Stg 2	7.3	5.7	-	5.9	5.3	-	-	-	-	-	-	-
Follow-up Hdwy	3	4	3.1	3	4	3.1	3	-	-	3	-	-
Pot Cap-1 Maneuver	42	54	259	40	54	348	575	-	-	480	-	-
Stage 1	186	263	-	367	361	-	-	-	-	-	-	-
Stage 2	254	324	-	282	298	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	40	50	259	32	50	348	575	-	-	480	-	-
Mov Cap-2 Maneuver	40	50	-	32	50	-	-	-	-	-	-	-
Stage 1	185	262	-	365	335	-	-	-	-	-	-	-
Stage 2	236	301	-	238	297	-	-	-	-	-	-	-

Approach	EB	WB	SE	NW
HCM Control Delay, s	24.4	129.6	0	0.2
HCM LOS	C	F		

Minor Lane/Major Mvmt	NWL	NWT	NWR	EBLn1	WBLn1	SEL	SET	SER
Capacity (veh/h)	480	-	-	226	32	575	-	-
HCM Lane V/C Ratio	0.035	-	-	0.179	0.1	0.002	-	-
HCM Control Delay (s)	12.8	0	-	24.4	129.6	11.3	0	-
HCM Lane LOS	B	A	-	C	F	B	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0.6	0.3	0	-	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	10	771	52	208	812	22	0	0	999	42	1	21
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	13	12	12	12	12	12	12	12
Grade (%)		-1%			1%			-3%			0%	
Storage Length (ft)	125		0	125		125	0		0	0		100
Storage Lanes	1		0	1		1	0		1	0		1
Taper Length (ft)	75			60			75			75		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.991				0.850			0.865			0.850
Flt Protected	0.950			0.950							0.953	
Satd. Flow (prot)	1778	1836	0	1589	1878	1575	0	0	1620	0	1775	1583
Flt Permitted	0.950			0.950							0.953	
Satd. Flow (perm)	1778	1836	0	1589	1878	1575	0	0	1620	0	1775	1583
Link Speed (mph)		35			35			25			35	
Link Distance (ft)		496			348			387			259	
Travel Time (s)		9.7			6.8			10.6			5.0	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.90	0.96	0.96	0.96	0.96	0.90	0.96	0.90	0.96	0.90	0.90	0.90
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	19%	13%	4%	2%	0%	2%	3%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	11	803	54	217	846	24	0	0	1041	47	1	23
Shared Lane Traffic (%)												
Lane Group Flow (vph)	11	857	0	217	846	24	0	0	1041	0	48	23
Sign Control		Free			Free			Stop			Stop	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

Intersection	
Int Delay, s/veh	266.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	10	771	52	208	812	22	0	0	999	42	1	21
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	Yield	-	-	Yield
Storage Length	125	-	-	125	-	125	-	-	0	-	-	100
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	1	-
Grade, %	-	-1	-	-	1	-	-	-3	-	-	0	-
Peak Hour Factor	90	96	96	96	96	90	96	90	96	90	90	90
Heavy Vehicles, %	2	2	19	13	4	2	0	2	3	2	2	2
Mvmt Flow	11	803	54	217	846	24	0	0	1041	47	1	23

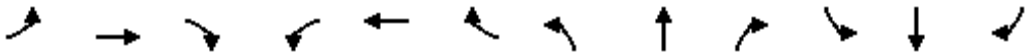
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	846	0	0	857	0	0	2132	2131	830	2131	2159	846
Stage 1	-	-	-	-	-	-	852	852	-	1279	1279	-
Stage 2	-	-	-	-	-	-	1280	1279	-	852	880	-
Critical Hdwy	4.12	-	-	4.3	-	-	7.1	5.92	6.2	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	5.5	4.92	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.5	4.92	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	3	-	-	3	4.018	3.1	3.518	4.018	3.318
Pot Cap-1 Maneuver	791	-	-	603	-	-	38	71	~ 389	~ 36	48	362
Stage 1	-	-	-	-	-	-	456	433	-	204	237	-
Stage 2	-	-	-	-	-	-	276	293	-	354	365	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	791	-	-	603	-	-	25	45	~ 389	-	30	362
Mov Cap-2 Maneuver	-	-	-	-	-	-	113	131	-	2667	81	-
Stage 1	-	-	-	-	-	-	450	427	-	201	152	-
Stage 2	-	-	-	-	-	-	164	188	-	-	360	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	2.8	$ 782.6	
HCM LOS			F	-

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	389	791	-	-	603	-	-	-	362
HCM Lane V/C Ratio	2.675	0.014	-	-	0.359	-	-	-	0.064
HCM Control Delay (s)	$ 782.6	9.6	-	-	14.3	-	-	-	15.6
HCM Lane LOS	F	A	-	-	B	-	-	-	C
HCM 95th %tile Q(veh)	86	0	-	-	1.6	-	-	-	0.2

Notes

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



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	1490	280	0	619	965	23	0	216	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	11	12	12	12	12	12	12	12	12	12
Grade (%)		-1%			-1%			-4%			-2%	
Storage Length (ft)	0		0	0		115	0		0	0		0
Storage Lanes	0		1	0		1	0		0	0		0
Taper Length (ft)	75			75			75			75		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt			0.850			0.850		0.878				
Flt Protected								0.995				
Satd. Flow (prot)	0	1872	1553	0	1785	1591	0	1488	0	0	0	0
Flt Permitted								0.995				
Satd. Flow (perm)	0	1872	1553	0	1785	1591	0	1488	0	0	0	0
Link Speed (mph)		45			45			25			25	
Link Distance (ft)		758			636			290			200	
Travel Time (s)		11.5			9.6			7.9			5.5	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	100%	2%	1%	0%	7%	2%	40%	0%	11%	0%	0%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	0	1693	318	0	703	1097	26	0	245	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1693	318	0	703	1097	0	271	0	0	0	0
Sign Control		Free			Free			Stop			Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	45.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	0	1490	280	0	619	965	23	0	216	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	Free	-	-	None	-	-	None	-	-	None
Storage Length	-	-	0	-	-	115	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	0	-
Grade, %	-	-1	-	-	-1	-	-	-4	-	-	-2	-
Peak Hour Factor	88	88	88	88	88	88	88	88	88	88	88	88
Heavy Vehicles, %	100	2	1	0	7	2	40	0	11	0	0	0
Mvmt Flow	0	1693	318	0	703	1097	26	0	245	0	0	0

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	703	0	-	1693	0	0	2396	2396	1693
Stage 1	-	-	-	-	-	-	1693	1693	-
Stage 2	-	-	-	-	-	-	703	703	-
Critical Hdwy	4.3	-	-	4.3	-	-	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	5	4.7	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5	4.7	-
Follow-up Hdwy	3	-	-	3	-	-	3	4	3.1
Pot Cap-1 Maneuver	685	-	0	296	-	-	~ 25	34	~ 120
Stage 1	-	-	0	-	-	-	213	219	-
Stage 2	-	-	0	-	-	-	597	518	-
Platoon blocked, %		-			-	-			
Mov Cap-1 Maneuver	685	-	-	296	-	-	~ 25	0	~ 120
Mov Cap-2 Maneuver	-	-	-	-	-	-	152	0	-
Stage 1	-	-	-	-	-	-	213	0	-
Stage 2	-	-	-	-	-	-	597	0	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	$ 635.5
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	WBL	WBT	WBR
Capacity (veh/h)	122	685	-	296	-	-
HCM Lane V/C Ratio	2.226	-	-	-	-	-
HCM Control Delay (s)	$ 635.5	0	-	0	-	-
HCM Lane LOS	F	A	-	A	-	-
HCM 95th %tile Q(veh)	23.1	0	-	0	-	-

Notes

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

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	814	1	109	0	0	0	63	2029	8	6	1961	704
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	13	13	13	12	12	12	12	12	11	11	11	11
Grade (%)		3%			2%			0%			1%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (ft)	75			75			75			75		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.984						0.999			0.964	
Flt Protected		0.958						0.999				
Satd. Flow (prot)	0	1823	0	0	1881	0	0	3499	0	0	1699	0
Flt Permitted		0.958						0.999				
Satd. Flow (perm)	0	1823	0	0	1881	0	0	3499	0	0	1699	0
Link Speed (mph)		40			35			45			45	
Link Distance (ft)		499			348			586			796	
Travel Time (s)		8.5			6.8			8.9			12.1	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	2%	3%	0%	0%	5%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	866	1	116	0	0	0	67	2159	9	6	2086	749
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	983	0	0	0	0	0	2235	0	0	2841	0
Sign Control		Stop			Stop			Free			Free	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

Intersection	
Int Delay, s/veh	24240.1

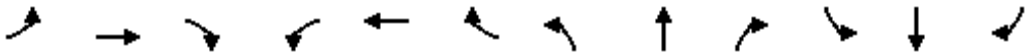
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Vol, veh/h	814	1	109	0	0	0	63	2029	8	6	1961	704
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	3	-	-	2	-	-	0	-	-	1	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	0	0	0	0	0	0	2	3	0	0	5	0
Mvmt Flow	866	1	116	0	0	0	67	2159	9	6	2086	749

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	3686	4774	2461	4829	5145	1084	2835	0	0	2167	0	0
Stage 1	2473	2473	-	2297	2297	-	-	-	-	-	-	-
Stage 2	1213	2301	-	2532	2848	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.3	-	-	4.3	-	-
Critical Hdwy Stg 1	6.7	6.1	-	6.9	5.9	-	-	-	-	-	-	-
Critical Hdwy Stg 2	7.1	6.1	-	6.5	5.9	-	-	-	-	-	-	-
Follow-up Hdwy	3	4	3.1	3	4	3.1	3	-	-	3	-	-
Pot Cap-1 Maneuver	~ 3	~ 1	~ 40	0	0	276	106	-	-	195	-	-
Stage 1	~ 28	40	-	33	58	-	-	-	-	-	-	-
Stage 2	~ 174	51	-	30	28	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	~ 3	~ 1	~ 40	-	0	276	106	-	-	195	-	-
Mov Cap-2 Maneuver	~ 3	~ 1	-	-	0	-	-	-	-	-	-	-
Stage 1	~ 28	40	-	33	58	-	-	-	-	-	-	-
Stage 2	~ 174	51	-	-	28	-	-	-	-	-	-	-

Approach	EB	WB	NE	SW
HCM Control Delay, s	$ 149395.8	0	2.5	0.1
HCM LOS	F	A		

Minor Lane/Major Mvmt	NEL	NET	NER	EBLn1	WBLn1	SWL	SWT	SWR
Capacity (veh/h)	106	-	-	3	-	195	-	-
HCM Lane V/C Ratio	0.632	-	-	327.66	-	0.033	-	-
HCM Control Delay (s)	84.7	0	-	$ 149395.8	0	24.1	0	-
HCM Lane LOS	F	A	-	F	A	C	A	-
HCM 95th %tile Q(veh)	3.1	-	-	125.4	-	0.1	-	-

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



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	82	2846	0	2	2673	18	0	0	0	28	0	46
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	11	12	12	11	11	12	12	12	12	12	12
Grade (%)		1%			0%			0%			1%	
Storage Length (ft)	60		0	0		0	0		0	0		0
Storage Lanes	1		0	0		0	0		0	0		0
Taper Length (ft)	140			75			75			75		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt					0.999						0.916	
Flt Protected	0.950										0.981	
Satd. Flow (prot)	1612	1757	0	0	1763	0	0	1900	0	0	1625	0
Flt Permitted	0.950										0.981	
Satd. Flow (perm)	1612	1757	0	0	1763	0	0	1900	0	0	1625	0
Link Speed (mph)		45			45			35			45	
Link Distance (ft)		796			771			91			413	
Travel Time (s)		12.1			11.7			1.8			6.3	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	4%	4%	0%	0%	4%	18%	0%	0%	0%	12%	0%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	91	3162	0	2	2970	20	0	0	0	31	0	51
Shared Lane Traffic (%)												
Lane Group Flow (vph)	91	3162	0	0	2992	0	0	0	0	0	82	0
Sign Control		Free			Free			Stop			Stop	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

Intersection	
Int Delay, s/veh	27.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	82	2846	0	2	2673	18	0	0	0	28	0	46
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	60	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	1	-	-	0	-	-	0	-	-	1	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	4	4	0	0	4	18	0	0	0	12	0	0
Mvmt Flow	91	3162	0	2	2970	20	0	0	0	31	0	51

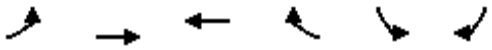
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	2990	0	0	3162	0	0	6354	6338	3162	6328	6328	2980
Stage 1	-	-	-	-	-	-	3344	3344	-	2984	2984	-
Stage 2	-	-	-	-	-	-	3010	2994	-	3344	3344	-
Critical Hdwy	4.3	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.7	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.42	5.7	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.42	5.7	-
Follow-up Hdwy	3	-	-	2.2	-	-	3.5	4	3.3	3	4	3.1
Pot Cap-1 Maneuver	92	-	-	101	-	-	0	0	14	0	0	~ 19
Stage 1	-	-	-	-	-	-	12	21	-	~ 16	27	-
Stage 2	-	-	-	-	-	-	19	32	-	~ 9	17	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	92	-	-	101	-	-	-	0	14	0	0	~ 19
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	0	-	0	0	-
Stage 1	-	-	-	-	-	-	0	0	-	0	27	-
Stage 2	-	-	-	-	-	-	-	32	-	0	0	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	4.9	0	0	$ 1907.3
HCM LOS			A	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	92	-	-	101	-	-	19
HCM Lane V/C Ratio	-	0.99	-	-	0.022	-	-	4.327
HCM Control Delay (s)	0	174	-	-	41.4	0	$	1907.3
HCM Lane LOS	A	F	-	-	E	A	-	F
HCM 95th %tile Q(veh)	-	5.8	-	-	0.1	-	-	10.8

Notes

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



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	0	1812	766	0	0	276
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	13	13	13	13
Grade (%)		-1%	1%		-2%	
Storage Length (ft)	0			0	0	0
Storage Lanes	0			0	0	1
Taper Length (ft)	75				75	
Lane Util. Factor	1.00	0.95	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt						0.865
Flt Protected						
Satd. Flow (prot)	0	3522	1826	0	0	1634
Flt Permitted						
Satd. Flow (perm)	0	3522	1826	0	0	1634
Link Speed (mph)		35	35		25	
Link Distance (ft)		348	758		364	
Travel Time (s)		6.8	14.8		9.9	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	3%	7%	0%	0%	5%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)		0%	0%		0%	
Adj. Flow (vph)	0	1888	798	0	0	288
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	1888	798	0	0	288
Sign Control		Free	Free		Stop	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

Intersection	
Int Delay, s/veh	3.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Vol, veh/h	0	1812	766	0	0	276
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	Stop
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	1	-
Grade, %	-	-1	1	-	-2	-
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	0	3	7	0	0	5
Mvmt Flow	0	1888	798	0	0	288

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	798	0	-	0	1742	798
Stage 1	-	-	-	-	798	-
Stage 2	-	-	-	-	944	-
Critical Hdwy	4.3	-	-	-	7.1	6.2
Critical Hdwy Stg 1	-	-	-	-	5	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	3	-	-	-	3	3.1
Pot Cap-1 Maneuver	633	-	-	-	73	406
Stage 1	-	-	-	-	542	-
Stage 2	-	-	-	-	421	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	633	-	-	-	73	406
Mov Cap-2 Maneuver	-	-	-	-	249	-
Stage 1	-	-	-	-	542	-
Stage 2	-	-	-	-	421	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	32.7
HCM LOS			D

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	633	-	-	-	406
HCM Lane V/C Ratio	-	-	-	-	0.708
HCM Control Delay (s)	0	-	-	-	32.7
HCM Lane LOS	A	-	-	-	D
HCM 95th %tile Q(veh)	0	-	-	-	5.3

Future (2034) Development
15% Full Build-Out
With Improvements

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	1	2	3	185	9	95	23	255	112	59	312	0
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	13	13	13	15	15	15	12	12	16	12	12	12
Grade (%)		2%			4%			1%			-1%	
Storage Length (ft)	0		100	150		0	125		0	0		375
Storage Lanes	0		0	2		0	1		1	1		1
Taper Length (ft)	75			75			75			75		
Lane Util. Factor	1.00	1.00	1.00	0.97	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95
Ped Bike Factor												
Frt		0.932			0.862				0.850			
Flt Protected		0.994		0.950			0.950			0.950		
Satd. Flow (prot)	0	1464	0	3472	1655	0	1701	1674	1643	1719	3337	0
Flt Permitted				0.950			0.500			0.367		
Satd. Flow (perm)	0	1473	0	3472	1655	0	896	1674	1643	664	3337	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		4			132				265			
Link Speed (mph)		25			25			40			40	
Link Distance (ft)		187			334			1105			689	
Travel Time (s)		5.1			9.1			18.8			11.7	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	0%	33%	3%	13%	0%	0%	7%	5%	0%	3%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	1	3	4	257	12	132	32	354	156	82	433	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	8	0	257	144	0	32	354	156	82	433	0
Number of Detectors	1	1		1	1		1	1	0	1	1	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left		
Leading Detector (ft)	30	40		30	45		30	45	0	30	45	
Trailing Detector (ft)	-10	-10		-10	-5		-10	-5	0	-10	-5	
Turn Type	Perm	NA		Split	NA		Perm	NA	Perm	pm+pt	NA	
Protected Phases		4		8	8			2		1	6	
Permitted Phases	4						2		2	6		
Detector Phase	4	4		8	8		2	2	2	1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	3.0	5.0	
Minimum Split (s)	10.8	10.8		10.8	10.8		11.2	11.2	11.2	9.0	11.2	
Total Split (s)	11.0	11.0		13.0	13.0		27.0	27.0	27.0	9.0	36.0	
Total Split (%)	18.3%	18.3%		21.7%	21.7%		45.0%	45.0%	45.0%	15.0%	60.0%	
Maximum Green (s)	5.2	5.2		7.2	7.2		20.8	20.8	20.8	3.0	29.8	
Yellow Time (s)	3.0	3.0		3.0	3.0		4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	2.8	2.8		2.8	2.8		2.2	2.2	2.2	2.0	2.2	
Lost Time Adjust (s)		-1.0		-1.0	-1.0		-1.0	-1.0	-1.0	-1.0	-1.0	
Total Lost Time (s)		4.8		4.8	4.8		5.2	5.2	5.2	5.0	5.2	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead/Lag							Lag	Lag	Lag	Lead		
Lead-Lag Optimize?												
Vehicle Extension (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	3.0	4.0	
Minimum Gap (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Time Before Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Time To Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Recall Mode	None	None		None	None		Min	Min	Min	None	Min	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
v/c Ratio		0.04		0.38	0.34		0.09	0.50	0.18	0.18	0.25	
Control Delay		18.2		20.0	8.6		11.3	14.4	0.7	6.4	6.2	
Queue Delay		0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay		18.2		20.0	8.6		11.3	14.4	0.7	6.4	6.2	
Queue Length 50th (ft)		1		29	3		5	66	0	7	22	
Queue Length 95th (ft)		10		60	27		18	129	0	25	50	
Internal Link Dist (ft)		107			254			1025			609	
Turn Bay Length (ft)				150			125					
Base Capacity (vph)		221		678	429		465	869	980	455	2449	
Starvation Cap Reductn		0		0	0		0	0	0	0	0	
Spillback Cap Reductn		0		0	0		0	0	0	0	0	
Storage Cap Reductn		0		0	0		0	0	0	0	0	
Reduced v/c Ratio		0.04		0.38	0.34		0.07	0.41	0.16	0.18	0.18	

Intersection Summary	
Area Type:	Other
Cycle Length: 60	
Actuated Cycle Length: 44	
Natural Cycle: 60	
Control Type: Actuated-Uncoordinated	

Splits and Phases: 1: Lycoming Mall Rd (SR 2049) & Auto Dealer Access/I-180 WB Ramps



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	1	2	3	185	9	95	23	255	112	59	312	0
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1853	1591	1853	1781	1815	1835	1791	1674	1774	1809	1756	1809
Adj Flow Rate, veh/h	1	3	1	257	12	125	32	354	94	82	433	0
Adj No. of Lanes	0	1	0	2	1	0	1	1	1	1	2	0
Peak Hour Factor	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72
Percent Heavy Veh, %	0	0	0	3	13	13	0	7	5	0	3	3
Cap, veh/h	9	26	9	501	21	217	467	545	491	420	1688	0
Arrive On Green	0.01	0.03	0.01	0.15	0.15	0.13	0.33	0.33	0.33	0.07	0.51	0.00
Sat Flow, veh/h	304	913	304	3291	137	1426	966	1674	1508	1723	3425	0
Grp Volume(v), veh/h	5	0	0	257	0	137	32	354	94	82	433	0
Grp Sat Flow(s),veh/h/ln	1522	0	0	1645	0	1563	966	1674	1508	1723	1668	0
Q Serve(g_s), s	0.2	0.0	0.0	3.4	0.0	3.9	1.1	8.5	2.1	1.3	3.5	0.0
Cycle Q Clear(g_c), s	0.2	0.0	0.0	3.4	0.0	3.9	1.1	8.5	2.1	1.3	3.5	0.0
Prop In Lane	0.20		0.20	1.00		0.91	1.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	43	0	0	501	0	238	467	545	491	420	1688	0
V/C Ratio(X)	0.12	0.00	0.00	0.51	0.00	0.58	0.07	0.65	0.19	0.20	0.26	0.00
Avail Cap(c_a), veh/h	200	0	0	573	0	272	599	774	697	438	2181	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	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	22.5	0.0	0.0	18.4	0.0	19.0	11.1	13.6	11.4	8.8	6.6	0.0
Incr Delay (d2), s/veh	1.7	0.0	0.0	1.2	0.0	3.2	0.1	1.9	0.3	0.2	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.2	0.0	0.0	2.9	0.0	3.4	0.5	7.6	1.6	1.1	2.9	0.0
LnGrp Delay(d),s/veh	24.3	0.0	0.0	19.5	0.0	22.2	11.2	15.5	11.7	9.0	6.7	0.0
LnGrp LOS	C			B		C	B	B	B	A	A	
Approach Vol, veh/h		5			394			480			515	
Approach Delay, s/veh		24.3			20.4			14.4			7.1	
Approach LOS		C			C			B			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6		8
Phs Duration (G+Y+Rc), s	8.5	20.5		6.1		29.0		12.0
Change Period (Y+Rc), s	6.0	* 6.2		* 5.8		* 6.2		5.8
Max Green Setting (Gmax), s	3.0	* 21		* 5.2		* 30		7.2
Max Q Clear Time (g_c+I1), s	3.8	11.0		2.5		6.0		5.9
Green Ext Time (p_c), s	0.0	3.3		0.0		4.8		0.3

Intersection Summary	
HCM 2010 Ctrl Delay	13.5
HCM 2010 LOS	B

Notes

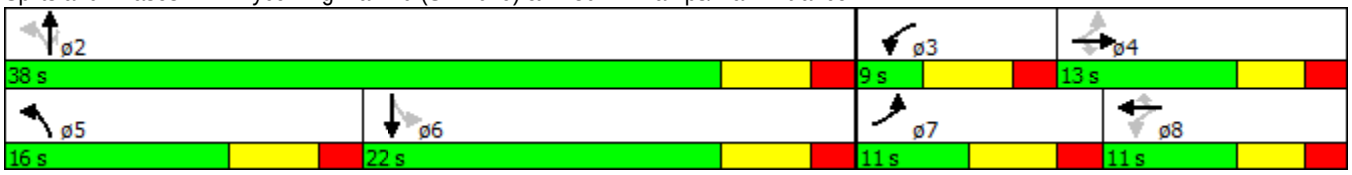
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	73	90	143	7	11	46	167	269	18	29	355	116
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	12	11	12	12	12	12	12	12	12	12
Grade (%)		2%			2%			-2%			-3%	
Storage Length (ft)	175		0	175		0	225		0	175		0
Storage Lanes	1		1	1		1	1		1	1		0
Taper Length (ft)	75			75			75			75		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95
Ped Bike Factor												
Frt			0.850			0.850			0.850		0.968	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1568	1764	1443	1636	1620	1416	1515	1653	1545	1550	3289	0
Flt Permitted	0.586			0.688			0.273			0.567		
Satd. Flow (perm)	967	1764	1443	1185	1620	1416	435	1653	1545	925	3289	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			273			273			145		58	
Link Speed (mph)		25			25			40			40	
Link Distance (ft)		279			408			2572			1105	
Travel Time (s)		7.6			11.1			43.8			18.8	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	1.00
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	8%	1%	5%	0%	10%	7%	14%	10%	0%	12%	0%	10%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	87	107	170	8	13	55	199	320	21	35	423	116
Shared Lane Traffic (%)												
Lane Group Flow (vph)	87	107	170	8	13	55	199	320	21	35	539	0
Number of Detectors	1	1	1	1	1	0	1	1	1	1	1	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	
Leading Detector (ft)	30	45	30	45	45	0	45	45	30	45	45	
Trailing Detector (ft)	-10	-5	-10	-5	-5	0	-5	-5	-10	-5	-5	
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA	
Protected Phases	7	4		3	8		5	2			6	
Permitted Phases	4		4	8		8	2		2	6		
Detector Phase	7	4	4	3	8	8	5	2	2	6	6	
Switch Phase												
Minimum Initial (s)	3.0	2.0	2.0	3.0	2.0	2.0	3.0	2.0	2.0	2.0	2.0	
Minimum Split (s)	9.0	7.0	7.0	9.0	7.0	7.0	9.0	8.0	8.0	8.0	8.0	
Total Split (s)	11.0	13.0	13.0	9.0	11.0	11.0	16.0	38.0	38.0	22.0	22.0	
Total Split (%)	18.3%	21.7%	21.7%	15.0%	18.3%	18.3%	26.7%	63.3%	63.3%	36.7%	36.7%	
Maximum Green (s)	5.0	8.0	8.0	3.0	6.0	6.0	10.0	32.0	32.0	16.0	16.0	
Yellow Time (s)	4.0	3.0	3.0	4.0	3.0	3.0	4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	
Total Lost Time (s)	5.0	4.0	4.0	5.0	4.0	4.0	5.0	5.0	5.0	5.0	5.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead			Lag	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0	4.0	4.0	
Minimum Gap (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Time Before Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Time To Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Recall Mode	None	Min	Min	None	Min	Min	None	None	None	None	None	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
v/c Ratio	0.26	0.22	0.29	0.03	0.05	0.12	0.45	0.38	0.02	0.13	0.54	
Control Delay	18.5	20.1	1.9	16.3	24.4	0.6	10.6	9.2	0.1	17.7	17.9	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	18.5	20.1	1.9	16.3	24.4	0.6	10.6	9.2	0.1	17.7	17.9	
Queue Length 50th (ft)	23	28	0	2	4	0	33	58	0	9	76	
Queue Length 95th (ft)	50	71	3	10	17	0	59	93	0	26	108	
Internal Link Dist (ft)		199			328			2492			1025	
Turn Bay Length (ft)	175			175			225			175		
Base Capacity (vph)	336	495	601	257	246	446	473	1070	1051	329	1209	
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.26	0.22	0.28	0.03	0.05	0.12	0.42	0.30	0.02	0.11	0.45	

Intersection Summary	
Area Type:	Other
Cycle Length: 60	
Actuated Cycle Length: 52.6	
Natural Cycle: 50	
Control Type: Actuated-Uncoordinated	

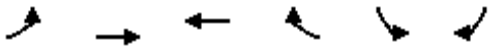
Splits and Phases: 2: Lycoming Mall Rd (SR 2049) & I-180 EB Ramps/Mall Entrance



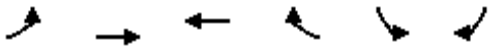
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	73	90	143	7	11	46	167	269	18	29	355	116
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	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	1650	1764	1697	1782	1620	1665	1595	1653	1818	1631	1789	1827
Adj Flow Rate, veh/h	87	107	118	8	13	0	199	320	14	35	423	100
Adj No. of Lanes	1	1	1	1	1	1	1	1	1	1	2	0
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	1.00
Percent Heavy Veh, %	8	1	5	0	10	7	14	10	0	12	0	0
Cap, veh/h	403	272	222	305	149	130	486	866	809	412	739	173
Arrive On Green	0.09	0.15	0.15	0.03	0.09	0.00	0.15	0.52	0.52	0.27	0.27	0.25
Sat Flow, veh/h	1571	1764	1443	1697	1620	1416	1519	1653	1545	963	2734	641
Grp Volume(v), veh/h	87	107	118	8	13	0	199	320	14	35	262	261
Grp Sat Flow(s),veh/h/ln	1571	1764	1443	1697	1620	1416	1519	1653	1545	963	1699	1675
Q Serve(g_s), s	2.3	2.6	3.6	0.2	0.3	0.0	3.8	5.4	0.2	1.3	6.3	6.4
Cycle Q Clear(g_c), s	2.3	2.6	3.6	0.2	0.3	0.0	3.8	5.4	0.2	1.3	6.3	6.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.38
Lane Grp Cap(c), veh/h	403	272	222	305	149	130	486	866	809	412	459	453
V/C Ratio(X)	0.22	0.39	0.53	0.03	0.09	0.00	0.41	0.37	0.02	0.08	0.57	0.58
Avail Cap(c_a), veh/h	461	334	273	402	239	209	612	1149	1074	497	608	600
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	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	16.5	18.1	18.5	18.5	19.7	0.0	8.7	6.7	5.4	13.1	14.9	15.2
Incr Delay (d2), s/veh	0.3	1.3	2.8	0.0	0.4	0.0	0.6	0.4	0.0	0.1	1.6	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(95%),veh/ln	1.8	2.4	2.9	0.2	0.3	0.0	2.9	4.5	0.2	0.6	5.6	5.6
LnGrp Delay(d),s/veh	16.7	19.4	21.3	18.5	20.1	0.0	9.3	7.1	5.4	13.2	16.5	16.8
LnGrp LOS	B	B	C	B	C		A	A	A	B	B	B
Approach Vol, veh/h		312			21			533			558	
Approach Delay, s/veh		19.4			19.5			7.8			16.5	
Approach LOS		B			B			A			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s		29.9	6.3	11.3	12.0	17.8	9.2	8.4
Change Period (Y+Rc), s		6.0	6.0	5.0	6.0	6.0	6.0	5.0
Max Green Setting (Gmax), s		32.0	3.0	8.0	10.0	16.0	5.0	6.0
Max Q Clear Time (g_c+I1), s		7.9	2.7	6.1	6.3	8.8	4.8	2.8
Green Ext Time (p_c), s		5.6	0.0	0.2	0.2	3.0	0.0	0.4

Intersection Summary	
HCM 2010 Ctrl Delay	13.9
HCM 2010 LOS	B



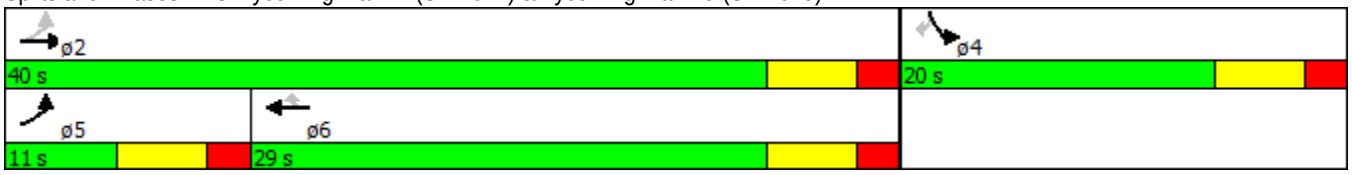
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	159	478	385	269	383	153
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	12	12	12	12
Grade (%)		-1%	1%		-2%	
Storage Length (ft)	165			215	165	0
Storage Lanes	1			1	1	1
Taper Length (ft)	125				75	
Lane Util. Factor	1.00	1.00	0.95	1.00	0.97	1.00
Ped Bike Factor						
Frt				0.850		0.850
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1719	1630	3210	1522	2839	1472
Flt Permitted	0.377				0.950	
Satd. Flow (perm)	682	1630	3210	1522	2839	1472
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)				313		178
Link Speed (mph)		45	45		40	
Link Distance (ft)		899	1089		2572	
Travel Time (s)		13.6	16.5		43.8	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	11%	6%	0%	18%	5%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)		0%	0%		0%	
Adj. Flow (vph)	185	556	448	313	445	178
Shared Lane Traffic (%)						
Lane Group Flow (vph)	185	556	448	313	445	178
Number of Detectors	1	1	1	1	1	1
Detector Template	Left				Left	Right
Leading Detector (ft)	45	6	6	6	45	45
Trailing Detector (ft)	-5	0	0	0	-5	-5
Turn Type	pm+pt	NA	NA	Perm	Prot	Perm
Protected Phases	5	2	6		4	
Permitted Phases	2			6		4
Detector Phase	5				4	4
Switch Phase						
Minimum Initial (s)	3.0	15.0	15.0	15.0	5.0	5.0
Minimum Split (s)	9.0	21.0	21.0	21.0	11.0	11.0
Total Split (s)	11.0	40.0	29.0	29.0	20.0	20.0
Total Split (%)	18.3%	66.7%	48.3%	48.3%	33.3%	33.3%
Maximum Green (s)	5.0	34.0	23.0	23.0	14.0	14.0
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0

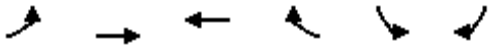


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lead/Lag	Lead		Lag	Lag		
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	5.0	5.0	5.0	3.0	3.0
Minimum Gap (s)	3.0	2.0	2.0	2.0	3.0	3.0
Time Before Reduce (s)	0.0	42.0	42.0	42.0	0.0	0.0
Time To Reduce (s)	0.0	10.0	10.0	10.0	0.0	0.0
Recall Mode	None	Min	Min	Min	None	None
Walk Time (s)		7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)		14.0	14.0	14.0	14.0	14.0
Pedestrian Calls (#/hr)		0	0	0	0	0
v/c Ratio	0.39	0.67	0.41	0.43	0.57	0.33
Control Delay	9.1	13.7	15.0	4.4	18.8	5.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	9.1	13.7	15.0	4.4	18.8	5.0
Queue Length 50th (ft)	26	106	55	0	58	0
Queue Length 95th (ft)	52	186	86	38	90	31
Internal Link Dist (ft)		819	1009		2492	
Turn Bay Length (ft)	165			215	165	
Base Capacity (vph)	480	833	1087	722	901	589
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.39	0.67	0.41	0.43	0.49	0.30

Intersection Summary	
Area Type:	Other
Cycle Length: 60	
Actuated Cycle Length: 48.1	
Natural Cycle: 45	
Control Type: Actuated-Uncoordinated	

Splits and Phases: 3: Lycoming Mall Dr (SR 2014) & Lycoming Mall Rd (SR 2049)





Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	159	478	385	269	383	153
Number	5	2	6	16	7	14
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	1809	1630	1690	1791	1541	1731
Adj Flow Rate, veh/h	185	556	448	300	445	138
Adj No. of Lanes	1	1	2	1	2	1
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86
Percent Heavy Veh, %	0	11	6	0	18	5
Cap, veh/h	528	937	1160	550	658	340
Arrive On Green	0.12	0.57	0.36	0.36	0.23	0.23
Sat Flow, veh/h	1723	1630	3295	1522	2847	1472
Grp Volume(v), veh/h	185	556	448	300	445	138
Grp Sat Flow(s),veh/h/ln	1723	1630	1605	1522	1423	1472
Q Serve(g_s), s	2.9	11.3	5.3	8.1	7.3	4.1
Cycle Q Clear(g_c), s	2.9	11.3	5.3	8.1	7.3	4.1
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	528	937	1160	550	658	340
V/C Ratio(X)	0.35	0.59	0.39	0.55	0.68	0.41
Avail Cap(c_a), veh/h	528	1107	1495	709	829	428
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	7.3	7.1	12.2	13.1	18.1	16.8
Incr Delay (d2), s/veh	0.4	1.3	0.5	1.8	1.6	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	2.5	9.0	4.4	6.5	5.4	6.4
LnGrp Delay(d),s/veh	7.7	8.4	12.7	14.9	19.6	17.6
LnGrp LOS	A	A	B	B	B	B
Approach Vol, veh/h		741	748		583	
Approach Delay, s/veh		8.2	13.6		19.1	
Approach LOS		A	B		B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		34.6		16.9	11.0	23.6		
Change Period (Y+Rc), s		6.0		6.0	6.0	6.0		
Max Green Setting (Gmax), s		34.0		14.0	5.0	23.0		
Max Q Clear Time (g_c+I1), s		13.8		9.8	5.4	10.6		
Green Ext Time (p_c), s		9.5		1.1	0.0	7.0		

Intersection Summary	
HCM 2010 Ctrl Delay	13.2
HCM 2010 LOS	B

Notes

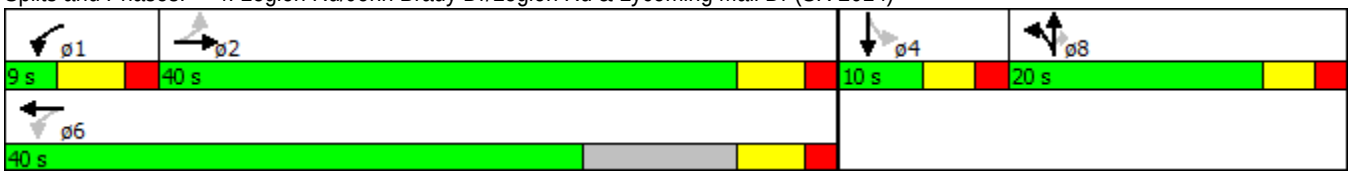
User approved pedestrian interval to be less than phase max green.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	1	215	0	324	288	4	509	6	146	6	1	3
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	12	13	13	13	12	12	12	14	14	14
Grade (%)		1%			-1%			-3%			0%	
Storage Length (ft)	1		0	275		0	0		0	0		0
Storage Lanes	0		0	1		0	1		1	0		0
Taper Length (ft)	75			75			75			75		
Lane Util. Factor	0.95	0.95	1.00	1.00	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt					0.998				0.850		0.963	
Flt Protected				0.950			0.950	0.953			0.969	
Satd. Flow (prot)	0	3067	0	1366	3342	0	1601	1607	1374	0	1256	0
Flt Permitted		0.953		0.462			0.950	0.953				
Satd. Flow (perm)	0	2923	0	664	3342	0	1601	1607	1374	0	1296	0
Right Turn on Red			Yes			Yes			Yes			No
Satd. Flow (RTOR)					3				193			
Link Speed (mph)		45			45			45			25	
Link Distance (ft)		326			418			206			301	
Travel Time (s)		4.9			6.3			3.1			8.2	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	11%	6%	30%	5%	75%	3%	0%	13%	67%	0%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	1	244	0	368	327	5	578	7	166	7	1	3
Shared Lane Traffic (%)							49%					
Lane Group Flow (vph)	0	245	0	368	332	0	295	290	166	0	11	0
Number of Detectors	1	2		1	2		2	2	0	1	1	
Detector Template	Left			Left						Left	Thru	
Leading Detector (ft)	30	306		30	286		206	206	0	30	45	
Trailing Detector (ft)	-10	-5		-10	-5		-5	-5	0	-10	-5	
Turn Type	Perm	NA		pm+pt	NA		Split	NA	Perm	Perm	NA	
Protected Phases		2		1	6		8	8			4	
Permitted Phases	2			6					8	4		
Detector Phase	2	2		1	6		8	8	8	4	4	
Switch Phase												
Minimum Initial (s)	15.0	15.0		3.0	15.0		15.0	15.0	15.0	5.0	5.0	
Minimum Split (s)	21.0	21.0		9.0	21.0		20.0	20.0	20.0	10.0	10.0	
Total Split (s)	40.0	40.0		9.0	40.0		20.0	20.0	20.0	10.0	10.0	
Total Split (%)	50.6%	50.6%		11.4%	50.6%		25.3%	25.3%	25.3%	12.7%	12.7%	
Maximum Green (s)	34.0	34.0		3.0	34.0		15.0	15.0	15.0	5.0	5.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)		-1.0		-1.0	-1.0		-1.0	-1.0	-1.0		-1.0	
Total Lost Time (s)		5.0		5.0	5.0		4.0	4.0	4.0		4.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead/Lag	Lag	Lag		Lead								
Lead-Lag Optimize?												
Vehicle Extension (s)	6.0	6.0		3.0	6.0		6.0	6.0	6.0	3.0	3.0	
Minimum Gap (s)	2.0	2.0		3.0	2.0		2.0	2.0	2.0	2.0	2.0	
Time Before Reduce (s)	40.0	40.0		0.0	40.0		40.0	40.0	40.0	0.0	0.0	
Time To Reduce (s)	20.0	20.0		0.0	20.0		20.0	20.0	20.0	0.0	0.0	
Recall Mode	Min	Min		None	Min		None	None	None	None	None	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
v/c Ratio		0.26		0.97	0.20		0.60	0.59	0.30		0.07	
Control Delay		14.9		58.1	8.5		24.0	23.5	4.1		24.6	
Queue Delay		0.0		0.0	0.0		0.0	0.0	0.0		0.0	
Total Delay		14.9		58.1	8.5		24.0	23.5	4.1		24.6	
Queue Length 50th (ft)		27		67	25		73	72	0		3	
Queue Length 95th (ft)		61		#299	60		#213	#208	29		17	
Internal Link Dist (ft)		246			338			126			221	
Turn Bay Length (ft)				275								
Base Capacity (vph)		1958		379	2815		490	492	554		148	
Starvation Cap Reductn		0		0	0		0	0	0		0	
Spillback Cap Reductn		0		0	0		0	0	0		0	
Storage Cap Reductn		0		0	0		0	0	0		0	
Reduced v/c Ratio		0.13		0.97	0.12		0.60	0.59	0.30		0.07	

Intersection Summary
Area Type: Other
Cycle Length: 79
Actuated Cycle Length: 52.7
Natural Cycle: 65
Control Type: Actuated-Uncoordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 4: Legion Rd/John Brady Dr/Legion Rd & Lycoming Mall Dr (SR 2014)



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	1	215	0	324	288	4	509	6	146	6	1	3
Number	5	2	12	1	6	16	3	8	18	7	4	14
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	1791	1614	0	1447	1774	1881	1774	1775	1617	1872	1312	1872
Adj Flow Rate, veh/h	1	244	0	368	327	4	583	0	122	7	1	3
Adj No. of Lanes	0	2	0	1	2	0	2	0	1	0	1	0
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	11	11	0	30	5	5	3	0	13	0	0	0
Cap, veh/h	60	1031	0	474	1676	20	891	0	363	24	3	10
Arrive On Green	0.33	0.34	0.00	0.07	0.49	0.47	0.26	0.00	0.26	0.01	0.03	0.01
Sat Flow, veh/h	2	3080	0	1378	3410	42	3379	0	1374	773	110	331
Grp Volume(v), veh/h	131	114	0	368	161	170	583	0	122	11	0	0
Grp Sat Flow(s),veh/h/ln	1613	1395	0	1378	1685	1767	1689	0	1374	1215	0	0
Q Serve(g_s), s	0.0	3.5	0.0	4.0	3.3	3.3	9.3	0.0	4.3	0.5	0.0	0.0
Cycle Q Clear(g_c), s	3.5	3.5	0.0	4.0	3.3	3.3	9.3	0.0	4.3	0.5	0.0	0.0
Prop In Lane	0.01		0.00	1.00		0.02	1.00		1.00	0.64		0.27
Lane Grp Cap(c), veh/h	586	479	0	474	828	868	891	0	363	37	0	0
V/C Ratio(X)	0.22	0.24	0.00	0.78	0.19	0.20	0.65	0.00	0.34	0.30	0.00	0.00
Avail Cap(c_a), veh/h	962	805	0	474	973	1020	891	0	363	120	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	14.3	14.2	0.0	17.9	8.7	8.7	19.9	0.0	18.0	29.2	0.0	0.0
Incr Delay (d2), s/veh	0.7	0.9	0.0	8.0	0.4	0.4	3.2	0.0	2.0	4.4	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(95%),veh/ln	3.1	2.7	0.0	9.6	2.9	3.1	8.2	0.0	3.3	0.4	0.0	0.0
LnGrp Delay(d),s/veh	15.0	15.2	0.0	25.8	9.1	9.1	23.0	0.0	20.0	33.6	0.0	0.0
LnGrp LOS	B	B		C	A	A	C		C	C		
Approach Vol, veh/h		245			699			705			11	
Approach Delay, s/veh		15.1			17.9			22.5			33.6	
Approach LOS		B			B			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6		8
Phs Duration (G+Y+Rc), s	9.0	25.8		5.8		34.8		20.0
Change Period (Y+Rc), s	6.0	6.0		5.0		6.0		5.0
Max Green Setting (Gmax), s	3.0	34.0		5.0		34.0		15.0
Max Q Clear Time (g_c+I1), s	6.5	6.0		2.5		5.8		11.8
Green Ext Time (p_c), s	0.0	13.8		0.0		13.8		2.1

Intersection Summary	
HCM 2010 Ctrl Delay	19.5
HCM 2010 LOS	B

Notes

User approved volume balancing among the lanes for turning movement.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Volume (vph)	0	316	93	38	421	0	189	2	324	0	0	0
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	14	12	12	12	12	14	14	14	12	12	12
Grade (%)		-1%			-1%			3%			-4%	
Storage Length (ft)	0		175	150		0	0		0	0		0
Storage Lanes	0		0	1		0	1		0	0		0
Taper Length (ft)	75			75			75			75		
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.966						0.851				
Flt Protected				0.950			0.950					
Satd. Flow (prot)	0	3015	0	1621	1587	0	1549	1425	0	0	0	0
Flt Permitted				0.492			0.950					
Satd. Flow (perm)	0	3015	0	840	1587	0	1549	1425	0	0	0	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		86						356				
Link Speed (mph)		45			45			25			25	
Link Distance (ft)		2040			660			376			358	
Travel Time (s)		30.9			10.0			10.3			9.8	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	17%	19%	6%	14%	0%	16%	0%	13%	0%	0%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	0	347	102	42	463	0	208	2	356	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	449	0	42	463	0	208	358	0	0	0	0
Number of Detectors		1		1	1		1	1				
Detector Template				Left			Left	Thru				
Leading Detector (ft)		6		45	6		30	30				
Trailing Detector (ft)		0		-5	0		-10	-10				
Turn Type		NA		Perm	NA		Perm	NA				
Protected Phases		6			2			8				
Permitted Phases				2			8					
Detector Phase				2			8	8				
Switch Phase												
Minimum Initial (s)		20.0		20.0	20.0		5.0	5.0				
Minimum Split (s)		28.0		38.0	38.0		10.0	10.0				
Total Split (s)		45.0		45.0	45.0		25.0	25.0				
Total Split (%)		64.3%		64.3%	64.3%		35.7%	35.7%				
Maximum Green (s)		37.0		37.0	37.0		20.0	20.0				
Yellow Time (s)		5.0		5.0	5.0		3.0	3.0				
All-Red Time (s)		3.0		3.0	3.0		2.0	2.0				
Lost Time Adjust (s)		-1.0		-1.0	-1.0		-1.0	-1.0				
Total Lost Time (s)		7.0		7.0	7.0		4.0	4.0				

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)		3.0		3.0	3.0		4.0	4.0				
Minimum Gap (s)		3.0		3.0	3.0		3.0	3.0				
Time Before Reduce (s)		0.0		0.0	0.0		0.0	0.0				
Time To Reduce (s)		0.0		0.0	0.0		0.0	0.0				
Recall Mode		C-Min		C-Min	C-Min		None	None				
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
v/c Ratio		0.25		0.08	0.49		0.54	0.57				
Control Delay		6.7		4.7	6.3		26.8	6.4				
Queue Delay		0.0		0.0	0.0		0.0	0.0				
Total Delay		6.7		4.7	6.3		26.8	6.4				
Queue Length 50th (ft)		34		4	44		78	1				
Queue Length 95th (ft)		71		m8	61		120	52				
Internal Link Dist (ft)		1960			580			296			278	
Turn Bay Length (ft)				150								
Base Capacity (vph)		1819		505	939		479	686				
Starvation Cap Reductn		0		0	0		0	0				
Spillback Cap Reductn		0		0	0		0	0				
Storage Cap Reductn		0		0	0		0	0				
Reduced v/c Ratio		0.25		0.08	0.49		0.43	0.52				

Intersection Summary
Area Type: Other
Cycle Length: 70
Actuated Cycle Length: 70
Offset: 11 (16%), Referenced to phase 2:WBTL and 6:EBT, Start of Green
Natural Cycle: 55
Control Type: Actuated-Coordinated
m Volume for 95th percentile queue is metered by upstream signal.

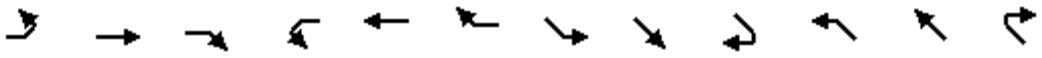
Splits and Phases: 5: I-180 EB Ramps & Lycoming Mall Dr/Lycoming Mall Dr (SR 2014)



Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Volume (veh/h)	0	316	93	38	421	0	189	2	324	0	0	0
Number	1	6	16	5	2	12	3	8	18			
Initial Q (Qb), veh	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			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	0	1602	1809	1707	1587	0	1590	1633	1844			
Adj Flow Rate, veh/h	0	347	45	42	463	0	208	2	324			
Adj No. of Lanes	0	2	0	1	1	0	1	1	0			
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91			
Percent Heavy Veh, %	0	17	17	6	14	0	16	0	16			
Cap, veh/h	0	1536	198	583	899	0	419	2	382			
Arrive On Green	0.00	0.57	0.57	0.19	0.19	0.00	0.28	0.28	0.26			
Sat Flow, veh/h	0	2793	349	955	1587	0	1514	9	1381			
Grp Volume(v), veh/h	0	193	199	42	463	0	208	0	326			
Grp Sat Flow(s),veh/h/ln	0	1522	1540	955	1587	0	1514	0	1389			
Q Serve(g_s), s	0.0	4.4	4.5	2.6	18.4	0.0	8.1	0.0	15.6			
Cycle Q Clear(g_c), s	0.0	4.4	4.5	7.1	18.4	0.0	8.1	0.0	15.6			
Prop In Lane	0.00		0.23	1.00		0.00	1.00		0.99			
Lane Grp Cap(c), veh/h	0	862	872	583	899	0	419	0	384			
V/C Ratio(X)	0.00	0.22	0.23	0.07	0.52	0.00	0.50	0.00	0.85			
Avail Cap(c_a), veh/h	0	862	872	583	899	0	454	0	417			
HCM Platoon Ratio	1.00	1.00	1.00	0.33	0.33	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.00	1.00	1.00	0.84	0.84	0.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	0.0	7.5	7.6	17.1	19.8	0.0	21.2	0.0	24.4			
Incr Delay (d2), s/veh	0.0	0.6	0.6	0.2	1.8	0.0	1.3	0.0	15.0			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(95%),veh/ln	0.0	3.5	3.6	1.3	12.9	0.0	6.3	0.0	12.1			
LnGrp Delay(d),s/veh	0.0	8.1	8.2	17.3	21.6	0.0	22.5	0.0	39.4			
LnGrp LOS		A	A	B	C		C		D			
Approach Vol, veh/h		392			505			534				
Approach Delay, s/veh		8.2			21.2			32.9				
Approach LOS		A			C			C				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2				6		8
Phs Duration (G+Y+Rc), s		46.6				46.6		23.4
Change Period (Y+Rc), s		8.0				8.0		5.0
Max Green Setting (Gmax), s		37.0				37.0		20.0
Max Q Clear Time (g_c+I1), s		20.9				7.0		17.6
Green Ext Time (p_c), s		2.3				2.4		0.8

Intersection Summary	
HCM 2010 Ctrl Delay	22.0
HCM 2010 LOS	C

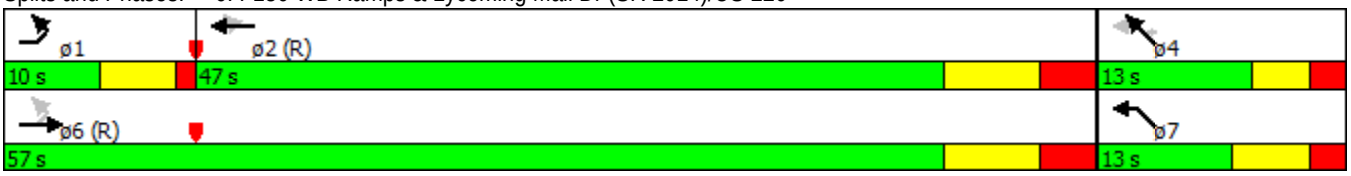


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Volume (vph)	109	397	0	0	369	474	0	0	0	89	0	37
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	11	12	12	11	11	11	12	12	12	15	15	16
Grade (%)		1%			-1%			-3%			-3%	
Storage Length (ft)	115		0	0		260	0		0	0		445
Storage Lanes	1		0	0		1	0		0	0		1
Taper Length (ft)	75			75			75			75		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt						0.850						0.850
Flt Protected	0.950										0.950	
Satd. Flow (prot)	1406	1571	0	0	1665	1402	0	0	0	0	1632	1173
Flt Permitted	0.391										0.950	
Satd. Flow (perm)	579	1571	0	0	1665	1402	0	0	0	0	1632	1173
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						571						156
Link Speed (mph)		45			45			25			25	
Link Distance (ft)		660			1209			327			668	
Travel Time (s)		10.0			18.3			8.9			18.2	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	17%	14%	0%	0%	5%	6%	0%	0%	0%	17%	0%	50%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	131	478	0	0	445	571	0	0	0	107	0	45
Shared Lane Traffic (%)												
Lane Group Flow (vph)	131	478	0	0	445	571	0	0	0	0	107	45
Number of Detectors	1	1			1	1				1	1	0
Detector Template	Left					Right				Left	Thru	
Leading Detector (ft)	45	6			6	30				30	45	0
Trailing Detector (ft)	-5	0			0	-10				-10	-5	0
Turn Type	pm+pt	NA			NA	Perm				pm+pt	NA	Perm
Protected Phases	1	6			2					7	4	
Permitted Phases	6					2				4		4
Detector Phase	1					2				7	4	4
Switch Phase												
Minimum Initial (s)	5.0	20.0			20.0	20.0				3.0	5.0	5.0
Minimum Split (s)	10.0	28.0			28.0	28.0				9.0	10.0	10.0
Total Split (s)	10.0	57.0			47.0	47.0				13.0	13.0	13.0
Total Split (%)	14.3%	81.4%			67.1%	67.1%				18.6%	18.6%	18.6%
Maximum Green (s)	5.0	49.0			39.0	39.0				7.0	8.0	8.0
Yellow Time (s)	4.0	5.0			5.0	5.0				4.0	3.0	3.0
All-Red Time (s)	1.0	3.0			3.0	3.0				2.0	2.0	2.0
Lost Time Adjust (s)	-1.0	-1.0			-1.0	-1.0					-1.0	-1.0
Total Lost Time (s)	4.0	7.0			7.0	7.0					4.0	4.0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lead/Lag	Lead				Lag	Lag						
Lead-Lag Optimize?												
Vehicle Extension (s)	4.0	3.0			3.0	3.0				3.0	4.0	4.0
Minimum Gap (s)	3.0	3.0			3.0	3.0				3.0	3.0	3.0
Time Before Reduce (s)	0.0	0.0			0.0	0.0				0.0	0.0	0.0
Time To Reduce (s)	0.0	0.0			0.0	0.0				0.0	0.0	0.0
Recall Mode	None	C-Min			C-Min	C-Min				None	Min	Min
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
v/c Ratio	0.25	0.45			0.53	0.58					0.38	0.14
Control Delay	3.5	5.2			17.3	4.2					28.7	0.9
Queue Delay	0.0	0.0			0.0	0.0					0.0	0.0
Total Delay	3.5	5.2			17.3	4.2					28.7	0.9
Queue Length 50th (ft)	9	46			129	0					41	0
Queue Length 95th (ft)	18	61			229	40					72	0
Internal Link Dist (ft)		580			1129			247			588	
Turn Bay Length (ft)	115					260						445
Base Capacity (vph)	529	1052			843	1071					285	334
Starvation Cap Reductn	0	0			0	0					0	0
Spillback Cap Reductn	0	0			0	0					0	0
Storage Cap Reductn	0	0			0	0					0	0
Reduced v/c Ratio	0.25	0.45			0.53	0.53					0.38	0.13

Intersection Summary	
Area Type:	Other
Cycle Length: 70	
Actuated Cycle Length: 70	
Offset: 0 (0%), Referenced to phase 2:WBT and 6:EBTL, Start of Green, Master Intersection	
Natural Cycle: 50	
Control Type: Actuated-Coordinated	

Splits and Phases: 6: I-180 WB Ramps & Lycoming Mall Dr (SR 2014)/US 220



Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Volume (veh/h)	109	397	0	0	369	474	0	0	0	89	0	37
Number	1	6	16	5	2	12				7	4	14
Initial Q (Qb), veh	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
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1531	1571	0	0	1723	1707				1900	1624	1267
Adj Flow Rate, veh/h	131	478	0	0	445	452				107	0	31
Adj No. of Lanes	1	1	0	0	1	1				0	1	1
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83				0.83	0.83	0.83
Percent Heavy Veh, %	17	14	0	0	5	6				50	0	50
Cap, veh/h	458	1139	0	0	1013	853				160	0	111
Arrive On Green	0.11	0.96	0.00	0.00	0.59	0.59				0.09	0.00	0.10
Sat Flow, veh/h	1458	1571	0	0	1723	1451				1547	0	1077
Grp Volume(v), veh/h	131	478	0	0	445	452				107	0	31
Grp Sat Flow(s),veh/h/ln	1458	1571	0	0	1723	1451				1547	0	1077
Q Serve(g_s), s	2.1	1.3	0.0	0.0	10.0	13.1				4.7	0.0	1.9
Cycle Q Clear(g_c), s	2.1	1.3	0.0	0.0	10.0	13.1				4.7	0.0	1.9
Prop In Lane	1.00		0.00	0.00		1.00				1.00		1.00
Lane Grp Cap(c), veh/h	458	1139	0	0	1013	853				160	0	111
V/C Ratio(X)	0.29	0.42	0.00	0.00	0.44	0.53				0.67	0.00	0.28
Avail Cap(c_a), veh/h	466	1139	0	0	1013	853				177	0	123
HCM Platoon Ratio	1.33	1.33	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.95	0.95	0.00	0.00	1.00	1.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	4.7	0.4	0.0	0.0	8.0	8.6				30.7	0.0	29.0
Incr Delay (d2), s/veh	0.5	1.1	0.0	0.0	1.4	2.4				8.2	0.0	1.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	1.5	1.4	0.0	0.0	8.8	9.6				4.3	0.0	1.1
LnGrp Delay(d),s/veh	5.2	1.4	0.0	0.0	9.4	11.0				38.9	0.0	30.3
LnGrp LOS	A	A			A	B				D		C
Approach Vol, veh/h		609			897						138	
Approach Delay, s/veh		2.2			10.2						37.0	
Approach LOS		A			B						D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6		
Phs Duration (G+Y+Rc), s	9.6	48.2		12.2		57.8		
Change Period (Y+Rc), s	5.0	8.0		6.0		8.0		
Max Green Setting (Gmax), s	5.0	39.0		7.0		49.0		
Max Q Clear Time (g_c+I1), s	4.6	15.6		6.7		3.8		
Green Ext Time (p_c), s	0.0	4.4		0.0		4.6		

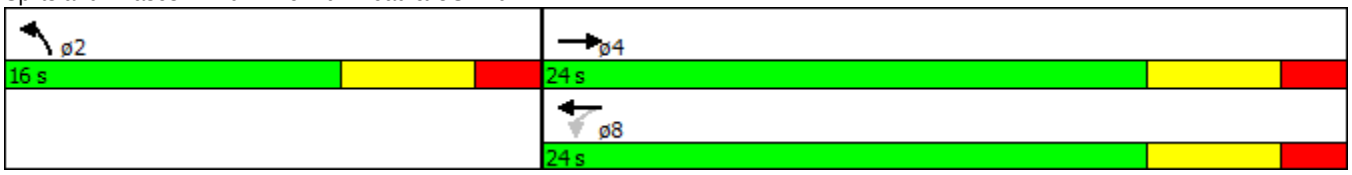
Intersection Summary	
HCM 2010 Ctrl Delay	9.5
HCM 2010 LOS	A

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	236	102	50	396	47	39
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	13	13	13	13	12	12
Grade (%)	3%			1%	5%	
Storage Length (ft)		0	0		0	0
Storage Lanes		0	1		1	0
Taper Length (ft)			75		75	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.959				0.939	
Flt Protected			0.950		0.973	
Satd. Flow (prot)	1535	0	1674	1763	1553	0
Flt Permitted			0.536		0.973	
Satd. Flow (perm)	1535	0	945	1763	1553	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	74				44	
Link Speed (mph)	55			55	35	
Link Distance (ft)	1476			1319	549	
Travel Time (s)	18.3			16.4	10.7	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	19%	4%	5%	5%	6%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	265	115	56	445	53	44
Shared Lane Traffic (%)						
Lane Group Flow (vph)	380	0	56	445	97	0
Number of Detectors	1		1	1	1	
Detector Template	Thru		Left	Thru	Left	
Leading Detector (ft)	30		30	30	30	
Trailing Detector (ft)	-10		-10	-10	-10	
Turn Type	NA		Perm	NA	Prot	
Protected Phases	4			8	2	
Permitted Phases			8			
Detector Phase	4		8	8	2	
Switch Phase						
Minimum Initial (s)	3.0		3.0	3.0	3.0	
Minimum Split (s)	15.0		15.0	15.0	15.0	
Total Split (s)	24.0		24.0	24.0	16.0	
Total Split (%)	60.0%		60.0%	60.0%	40.0%	
Maximum Green (s)	18.0		18.0	18.0	10.0	
Yellow Time (s)	4.0		4.0	4.0	4.0	
All-Red Time (s)	2.0		2.0	2.0	2.0	
Lost Time Adjust (s)	-1.0		0.0	-1.0	-1.0	
Total Lost Time (s)	5.0		6.0	5.0	5.0	

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0		3.0	3.0	3.0	
Minimum Gap (s)	3.0		3.0	3.0	3.0	
Time Before Reduce (s)	0.0		0.0	0.0	0.0	
Time To Reduce (s)	0.0		0.0	0.0	0.0	
Recall Mode	Min		Min	Min	None	
Walk Time (s)						
Flash Dont Walk (s)						
Pedestrian Calls (#/hr)						
v/c Ratio	0.33		0.08	0.34	0.25	
Control Delay	5.1		5.7	5.9	10.6	
Queue Delay	0.0		0.0	0.0	0.0	
Total Delay	5.1		5.7	5.9	10.6	
Queue Length 50th (ft)	32		6	51	13	
Queue Length 95th (ft)	86		20	116	34	
Internal Link Dist (ft)	1396			1239	469	
Turn Bay Length (ft)						
Base Capacity (vph)	1145		679	1292	505	
Starvation Cap Reductn	0		0	0	0	
Spillback Cap Reductn	0		0	0	0	
Storage Cap Reductn	0		0	0	0	
Reduced v/c Ratio	0.33		0.08	0.34	0.19	

Intersection Summary	
Area Type:	Other
Cycle Length: 40	
Actuated Cycle Length: 37.8	
Natural Cycle: 40	
Control Type: Actuated-Uncoordinated	

Splits and Phases: 10: Lime Bluff Road & US 220



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	236	102	50	396	47	39
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	1611	1844	1774	1774	1699	1755
Adj Flow Rate, veh/h	265	115	56	445	53	44
Adj No. of Lanes	1	0	1	1	0	0
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	19	19	5	5	0	0
Cap, veh/h	485	210	534	806	102	85
Arrive On Green	0.45	0.41	0.41	0.45	0.12	0.08
Sat Flow, veh/h	1066	463	1004	1774	831	690
Grp Volume(v), veh/h	0	380	56	445	98	0
Grp Sat Flow(s),veh/h/ln	0	1529	1004	1774	1536	0
Q Serve(g_s), s	0.0	4.3	1.1	4.3	1.4	0.0
Cycle Q Clear(g_c), s	0.0	4.3	5.4	4.3	1.4	0.0
Prop In Lane		0.30	1.00		0.54	0.45
Lane Grp Cap(c), veh/h	0	695	534	806	189	0
V/C Ratio(X)	0.00	0.55	0.10	0.55	0.52	0.00
Avail Cap(c_a), veh/h	0	1227	884	1423	714	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	0.0	4.8	7.4	4.7	9.9	0.0
Incr Delay (d2), s/veh	0.0	0.7	0.1	0.6	2.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.0	3.5	0.6	4.0	1.3	0.0
LnGrp Delay(d),s/veh	0.0	5.5	7.5	5.3	12.1	0.0
LnGrp LOS		A	A	A	B	
Approach Vol, veh/h	380			501	98	
Approach Delay, s/veh	5.5			5.5	12.1	
Approach LOS	A			A	B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4				8
Phs Duration (G+Y+Rc), s		7.9		15.8				15.8
Change Period (Y+Rc), s		6.0		6.0				6.0
Max Green Setting (Gmax), s		10.0		18.0				18.0
Max Q Clear Time (g_c+I1), s		3.9		6.3				7.4
Green Ext Time (p_c), s		0.1		2.4				2.4

Intersection Summary	
HCM 2010 Ctrl Delay	6.2
HCM 2010 LOS	A

Notes

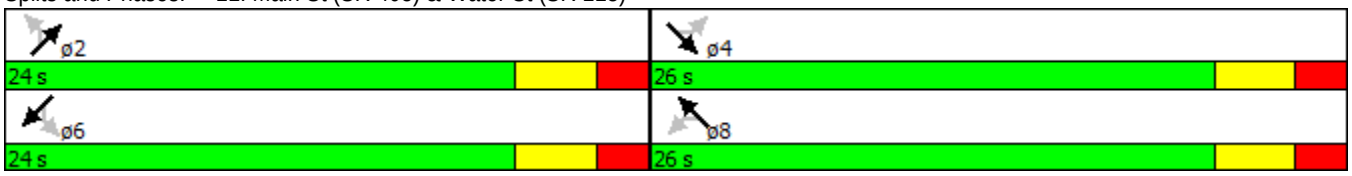
User approved volume balancing among the lanes for turning movement.

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	19	46	29	168	126	165	19	244	128	131	367	19
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	15	15	15	13	13	13	14	14	14	14	14	14
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	100		0	100		0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (ft)	75			75			75			75		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.958			0.952			0.948			0.993	
Flt Protected		0.990			0.982		0.950			0.950		
Satd. Flow (prot)	0	1758	0	0	1609	0	1346	1549	0	1282	1788	0
Flt Permitted		0.886			0.846		0.389			0.403		
Satd. Flow (perm)	0	1574	0	0	1386	0	551	1549	0	544	1788	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		25			35			25			25	
Link Distance (ft)		390			506			1477			648	
Travel Time (s)		10.6			9.9			40.3			17.7	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	6%	7%	7%	5%	7%	12%	22%	12%	28%	28%	7%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)							0		0	0		0
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	21	52	33	189	142	185	21	274	144	147	412	21
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	106	0	0	516	0	21	418	0	147	433	0
Number of Detectors	1	1		1	1		1	1		1	1	
Detector Template	Left			Left			Left			Left		
Leading Detector (ft)	30	45		30	45		30	45		30	45	
Trailing Detector (ft)	-10	-5		-10	-5		-10	-5		-10	-5	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	15.0	15.0		15.0	15.0		15.0	15.0		15.0	15.0	
Total Split (s)	26.0	26.0		26.0	26.0		24.0	24.0		24.0	24.0	
Total Split (%)	52.0%	52.0%		52.0%	52.0%		48.0%	48.0%		48.0%	48.0%	
Maximum Green (s)	21.0	21.0		21.0	21.0		19.0	19.0		19.0	19.0	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		-1.0			-1.0		-1.0	-1.0		-1.0	-1.0	
Total Lost Time (s)		4.0			4.0		4.0	4.0		4.0	4.0	

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Minimum Gap (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Time Before Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Time To Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Recall Mode	Max	Max		Max	Max		Max	Max		Max	Max	
Walk Time (s)	11.0	11.0		11.0	11.0		12.0	12.0		12.0	12.0	
Flash Dont Walk (s)	16.0	16.0		16.0	16.0		18.0	18.0		18.0	18.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
v/c Ratio		0.16			0.89		0.08	0.58		0.59	0.52	
Control Delay		13.1			39.3		11.2	17.4		25.3	15.6	
Queue Delay		0.0			0.0		0.0	0.0		0.0	0.0	
Total Delay		13.1			39.3		11.2	17.4		25.3	15.6	
Queue Length 50th (ft)		26			189		5	119		42	119	
Queue Length 95th (ft)		54			#362		16	200		#118	192	
Internal Link Dist (ft)		310			426			1397			568	
Turn Bay Length (ft)							100			100		
Base Capacity (vph)		657			579		254	716		251	827	
Starvation Cap Reductn		0			0		0	0		0	0	
Spillback Cap Reductn		0			0		0	0		0	0	
Storage Cap Reductn		0			0		0	0		0	0	
Reduced v/c Ratio		0.16			0.89		0.08	0.58		0.59	0.52	

Intersection Summary	
Area Type:	Other
Cycle Length: 50	
Actuated Cycle Length: 67	
Natural Cycle: 55	
Control Type: Actuated-Uncoordinated	
# 95th percentile volume exceeds capacity, queue may be longer.	
Queue shown is maximum after two cycles.	

Splits and Phases: 11: Main St (SR 405) & Water St (SR 118)



Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (veh/h)	19	46	29	168	126	165	19	244	128	131	367	19
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	0.90	1.00	1.00	0.90
Adj Sat Flow, veh/h/ln	1872	1753	1872	1872	1732	1872	1534	1593	1872	1462	1755	1872
Adj Flow Rate, veh/h	21	52	33	189	142	185	21	274	144	147	412	21
Adj No. of Lanes	0	1	0	0	1	0	1	1	0	1	1	0
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	7	7	7	7	7	7	22	12	12	28	7	7
Cap, veh/h	172	387	213	307	208	232	293	354	186	256	596	30
Arrive On Green	0.42	0.44	0.42	0.42	0.44	0.42	0.40	0.40	0.38	0.40	0.40	0.38
Sat Flow, veh/h	194	879	485	473	472	528	827	886	466	799	1490	76
Grp Volume(v), veh/h	106	0	0	516	0	0	21	0	418	147	0	433
Grp Sat Flow(s),veh/h/ln	1558	0	0	1474	0	0	827	0	1352	799	0	1566
Q Serve(g_s), s	0.0	0.0	0.0	13.1	0.0	0.0	1.1	0.0	13.5	7.0	0.0	11.5
Cycle Q Clear(g_c), s	1.9	0.0	0.0	15.5	0.0	0.0	12.0	0.0	13.5	20.0	0.0	11.5
Prop In Lane	0.20		0.31	0.37		0.36	1.00		0.34	1.00		0.05
Lane Grp Cap(c), veh/h	741	0	0	717	0	0	293	0	541	256	0	626
V/C Ratio(X)	0.14	0.00	0.00	0.72	0.00	0.00	0.07	0.00	0.77	0.57	0.00	0.69
Avail Cap(c_a), veh/h	741	0	0	717	0	0	293	0	541	256	0	626
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	0.00	1.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	8.5	0.0	0.0	12.4	0.0	0.0	17.2	0.0	13.2	22.3	0.0	12.5
Incr Delay (d2), s/veh	0.4	0.0	0.0	6.1	0.0	0.0	0.5	0.0	10.3	9.0	0.0	6.2
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(95%),veh/ln	1.8	0.0	0.0	12.2	0.0	0.0	0.5	0.0	10.8	4.8	0.0	10.0
LnGrp Delay(d),s/veh	8.9	0.0	0.0	18.5	0.0	0.0	17.7	0.0	23.5	31.4	0.0	18.6
LnGrp LOS	A			B			B		C	C		B
Approach Vol, veh/h		106			516			439			580	
Approach Delay, s/veh		8.9			18.5			23.2			21.8	
Approach LOS		A			B			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		24.0		26.0		24.0		26.0
Change Period (Y+Rc), s		5.0		5.0		5.0		5.0
Max Green Setting (Gmax), s		19.0		21.0		19.0		21.0
Max Q Clear Time (g_c+I1), s		15.5		3.9		22.5		17.5
Green Ext Time (p_c), s		1.7		2.6		0.0		1.0

Intersection Summary	
HCM 2010 Ctrl Delay	20.3
HCM 2010 LOS	C

Notes

User approved pedestrian interval to be less than phase max green.

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	685	64	21	1091	68	46
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	11	11	11	11	10	10
Grade (%)	-1%			1%	-4%	
Storage Length (ft)		0	225		0	0
Storage Lanes		0	0		1	0
Taper Length (ft)			75		75	
Lane Util. Factor	0.95	0.95	0.95	0.95	1.00	1.00
Ped Bike Factor						
Frt	0.987				0.946	
Flt Protected				0.999	0.971	
Satd. Flow (prot)	2947	0	0	3020	1574	0
Flt Permitted				0.926	0.971	
Satd. Flow (perm)	2947	0	0	2799	1574	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	33				58	
Link Speed (mph)	50			55	35	
Link Distance (ft)	420			676	522	
Travel Time (s)	5.7			8.4	10.2	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.79	0.79	0.79	0.79	0.79	0.79
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	10%	25%	0%	9%	0%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	867	81	27	1381	86	58
Shared Lane Traffic (%)						
Lane Group Flow (vph)	948	0	0	1408	144	0
Number of Detectors	1		1	1	1	
Detector Template	Thru		Left	Thru	Left	
Leading Detector (ft)	30		30	30	30	
Trailing Detector (ft)	-10		-10	-10	-10	
Turn Type	NA		Perm	NA	Prot	
Protected Phases	4			8	2	
Permitted Phases			8			
Detector Phase	4		8	8	2	
Switch Phase						
Minimum Initial (s)	3.0		3.0	3.0	3.0	
Minimum Split (s)	15.0		15.0	15.0	15.0	
Total Split (s)	34.0		34.0	34.0	16.0	
Total Split (%)	68.0%		68.0%	68.0%	32.0%	
Maximum Green (s)	28.0		28.0	28.0	10.0	
Yellow Time (s)	4.0		4.0	4.0	4.0	
All-Red Time (s)	2.0		2.0	2.0	2.0	
Lost Time Adjust (s)	-1.0			-1.0	-1.0	
Total Lost Time (s)	5.0			5.0	5.0	

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0		3.0	3.0	3.0	
Minimum Gap (s)	3.0		3.0	3.0	3.0	
Time Before Reduce (s)	0.0		0.0	0.0	0.0	
Time To Reduce (s)	0.0		0.0	0.0	0.0	
Recall Mode	Min		Min	Min	None	
Walk Time (s)						
Flash Dont Walk (s)						
Pedestrian Calls (#/hr)						
v/c Ratio	0.45			0.71	0.43	
Control Delay	5.8			10.6	16.6	
Queue Delay	0.0			0.0	0.0	
Total Delay	5.8			10.6	16.6	
Queue Length 50th (ft)	66			142	26	
Queue Length 95th (ft)	91			184	49	
Internal Link Dist (ft)	340			596	442	
Turn Bay Length (ft)						
Base Capacity (vph)	2096			1981	396	
Starvation Cap Reductn	0			0	0	
Spillback Cap Reductn	0			0	0	
Storage Cap Reductn	0			0	0	
Reduced v/c Ratio	0.45			0.71	0.36	

Intersection Summary	
Area Type:	Other
Cycle Length: 50	
Actuated Cycle Length: 51.1	
Natural Cycle: 55	
Control Type: Actuated-Uncoordinated	

Splits and Phases: 12: Industrial Park Rd & John Brady Dr



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	685	64	21	1091	68	46
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	1626	1809	1791	1646	1836	1836
Adj Flow Rate, veh/h	867	81	27	1381	86	58
Adj No. of Lanes	2	0	0	2	0	0
Peak Hour Factor	0.79	0.79	0.79	0.79	0.79	0.79
Percent Heavy Veh, %	10	10	9	9	0	0
Cap, veh/h	1728	161	109	1813	142	96
Arrive On Green	0.61	0.58	0.61	0.61	0.14	0.12
Sat Flow, veh/h	2937	267	25	3070	990	667
Grp Volume(v), veh/h	469	479	748	660	145	0
Grp Sat Flow(s),veh/h/ln	1544	1579	1597	1423	1669	0
Q Serve(g_s), s	6.9	6.9	0.0	13.6	3.3	0.0
Cycle Q Clear(g_c), s	6.9	6.9	13.1	13.6	3.3	0.0
Prop In Lane		0.17	0.04		0.59	0.40
Lane Grp Cap(c), veh/h	935	955	1060	861	240	0
V/C Ratio(X)	0.50	0.50	0.71	0.77	0.60	0.00
Avail Cap(c_a), veh/h	1125	1150	1249	1036	461	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	4.5	4.5	5.7	5.8	16.2	0.0
Incr Delay (d2), s/veh	0.4	0.4	1.5	2.9	2.5	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	5.4	5.5	10.4	9.8	3.0	0.0
LnGrp Delay(d),s/veh	4.9	4.9	7.2	8.7	18.6	0.0
LnGrp LOS	A	A	A	A	B	
Approach Vol, veh/h	948			1408	145	
Approach Delay, s/veh	4.9			7.9	18.6	
Approach LOS	A			A	B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4				8
Phs Duration (G+Y+Rc), s		10.7		29.1				29.1
Change Period (Y+Rc), s		6.0		6.0				6.0
Max Green Setting (Gmax), s		10.0		28.0				28.0
Max Q Clear Time (g_c+I1), s		5.8		9.4				16.1
Green Ext Time (p_c), s		0.1		9.1				7.0

Intersection Summary	
HCM 2010 Ctrl Delay	7.4
HCM 2010 LOS	A

Notes

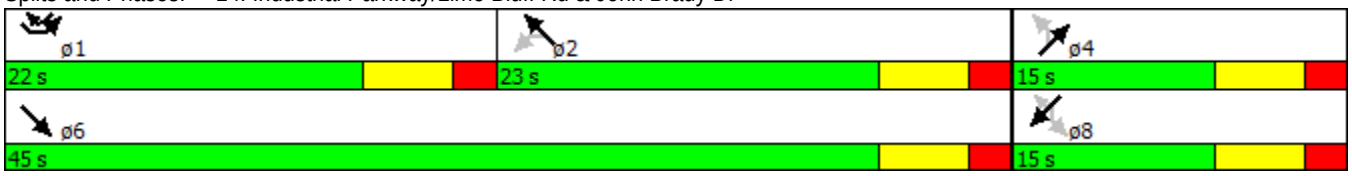
User approved volume balancing among the lanes for turning movement.

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	377	327	32	19	565	51	44	26	9	90	32	508
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	11	11	11	11	11	11	16	16	16	11	11	11
Grade (%)		-2%			2%			2%			-1%	
Storage Length (ft)	150		0	75		0	0		0	75		150
Storage Lanes	1		0	1		0	0		0	0		1
Taper Length (ft)	75			75			75			75		
Lane Util. Factor	0.97	1.00	1.00	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.987			0.988			0.985				0.850
Flt Protected	0.950			0.950				0.973			0.964	
Satd. Flow (prot)	3239	1564	0	1544	3147	0	0	1243	0	0	1628	1376
Flt Permitted	0.950			0.525				0.753			0.794	
Satd. Flow (perm)	3239	1564	0	853	3147	0	0	962	0	0	1341	1376
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		18			16			9				65
Link Speed (mph)		50			50			25			50	
Link Distance (ft)		832			852			184			627	
Travel Time (s)		11.3			11.6			5.0			8.6	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	9%	30%	6%	3%	0%	80%	27%	20%	3%	5%	8%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	424	367	36	21	635	57	49	29	10	101	36	571
Shared Lane Traffic (%)												
Lane Group Flow (vph)	424	403	0	21	692	0	0	88	0	0	137	571
Number of Detectors	1	1		1	1		1	1		1	1	1
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (ft)	30	30		30	30		30	30		30	30	30
Trailing Detector (ft)	-10	-10		-10	-10		-10	-10		-10	-10	-10
Turn Type	Prot	NA		Perm	NA		Perm	NA		Perm	NA	pm+ov
Protected Phases	1	6			2			4			8	1
Permitted Phases				2			4			8		8
Detector Phase	1	6		2	2		4	4		8	8	1
Switch Phase												
Minimum Initial (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Minimum Split (s)	9.0	15.0		15.0	15.0		15.0	15.0		15.0	15.0	9.0
Total Split (s)	22.0	45.0		23.0	23.0		15.0	15.0		15.0	15.0	22.0
Total Split (%)	36.7%	75.0%		38.3%	38.3%		25.0%	25.0%		25.0%	25.0%	36.7%
Maximum Green (s)	16.0	39.0		17.0	17.0		9.0	9.0		9.0	9.0	16.0
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)	-1.0	-1.0		-1.0	-1.0			-1.0			-1.0	-1.0
Total Lost Time (s)	5.0	5.0		5.0	5.0			5.0			5.0	5.0

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lead/Lag	Lead			Lag	Lag							Lead
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Minimum Gap (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Time Before Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Time To Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Recall Mode	None	Min		Min	Min		None	None		None	None	None
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
v/c Ratio	0.43	0.35		0.08	0.73			0.50			0.57	0.78
Control Delay	18.6	5.1		16.2	22.8			32.5			34.8	18.9
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0	0.0
Total Delay	18.6	5.1		16.2	22.8			32.5			34.8	18.9
Queue Length 50th (ft)	64	50		5	113			26			47	128
Queue Length 95th (ft)	99	87		19	166			#76			#112	#261
Internal Link Dist (ft)		752			772			104			547	
Turn Bay Length (ft)	150			75								150
Base Capacity (vph)	1070	1168		298	1111			194			260	766
Starvation Cap Reductn	0	0		0	0			0			0	0
Spillback Cap Reductn	0	0		0	0			0			0	0
Storage Cap Reductn	0	0		0	0			0			0	0
Reduced v/c Ratio	0.40	0.35		0.07	0.62			0.45			0.53	0.75

Intersection Summary	
Area Type:	Other
Cycle Length: 60	
Actuated Cycle Length: 53.9	
Natural Cycle: 55	
Control Type: Actuated-Uncoordinated	
# 95th percentile volume exceeds capacity, queue may be longer.	
Queue shown is maximum after two cycles.	

Splits and Phases: 14: Industrial Parkway/Lime Bluff Rd & John Brady Dr



Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (veh/h)	377	327	32	19	565	51	44	26	9	90	32	508
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1818	1640	1818	1681	1734	1782	1853	1190	1853	1809	1747	1675
Adj Flow Rate, veh/h	424	367	36	21	635	57	49	29	10	101	36	571
Adj No. of Lanes	2	1	0	1	2	0	0	1	0	0	1	1
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	0	9	9	6	3	3	27	27	27	5	5	8
Cap, veh/h	687	880	86	418	900	81	147	56	12	312	81	577
Arrive On Green	0.20	0.60	0.58	0.29	0.29	0.27	0.18	0.20	0.18	0.20	0.20	0.20
Sat Flow, veh/h	3359	1470	144	932	3059	274	173	280	58	929	406	1424
Grp Volume(v), veh/h	424	0	403	21	342	350	88	0	0	137	0	571
Grp Sat Flow(s),veh/h/ln	1679	0	1614	932	1648	1686	511	0	0	1335	0	1424
Q Serve(g_s), s	5.7	0.0	6.7	0.8	9.2	9.3	3.6	0.0	0.0	0.0	0.0	10.0
Cycle Q Clear(g_c), s	5.7	0.0	6.7	0.8	9.2	9.3	8.7	0.0	0.0	4.6	0.0	10.0
Prop In Lane	1.00		0.09	1.00		0.16	0.56		0.11	0.74		1.00
Lane Grp Cap(c), veh/h	687	0	967	418	485	496	205	0	0	393	0	577
V/C Ratio(X)	0.62	0.00	0.42	0.05	0.70	0.71	0.43	0.00	0.00	0.35	0.00	0.99
Avail Cap(c_a), veh/h	1145	0	1295	481	595	608	205	0	0	393	0	577
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	1.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	18.1	0.0	5.4	12.7	15.7	15.8	19.7	0.0	0.0	17.7	0.0	14.7
Incr Delay (d2), s/veh	0.9	0.0	0.3	0.0	2.9	2.9	1.4	0.0	0.0	0.5	0.0	34.8
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(95%),veh/ln	4.9	0.0	5.4	0.4	8.1	8.2	2.3	0.0	0.0	3.1	0.0	19.3
LnGrp Delay(d),s/veh	19.0	0.0	5.7	12.8	18.6	18.6	21.2	0.0	0.0	18.2	0.0	49.6
LnGrp LOS	B		A	B	B	B	C			B		D
Approach Vol, veh/h		827			713			88			708	
Approach Delay, s/veh		12.5			18.4			21.2			43.5	
Approach LOS		B			B			C			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6		8
Phs Duration (G+Y+Rc), s	15.2	19.7		15.0		34.9		15.0
Change Period (Y+Rc), s	6.0	6.0		6.0		6.0		6.0
Max Green Setting (Gmax), s	16.0	17.0		9.0		39.0		9.0
Max Q Clear Time (g_c+I1), s	8.2	11.7		10.7		8.7		12.5
Green Ext Time (p_c), s	1.0	2.0		0.0		3.8		0.0

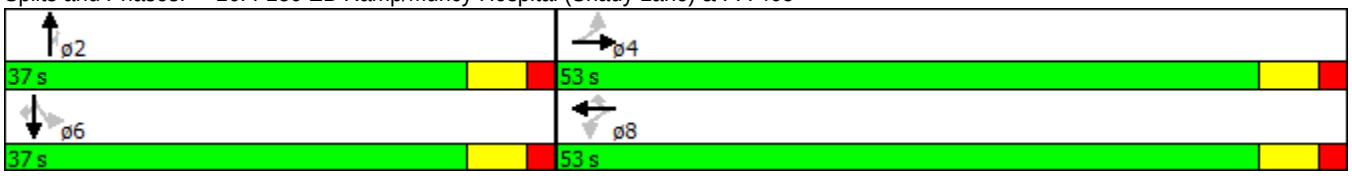
Intersection Summary	
HCM 2010 Ctrl Delay	24.0
HCM 2010 LOS	C

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	35	524	37	160	563	61	0	0	520	14	1	10
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1900	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	12	12	13	12	12	12	12	12	12	12
Grade (%)		-1%			1%			-3%			0%	
Storage Length (ft)	125		0	125		125	0		0	0		100
Storage Lanes	1		0	1		1	0		1	0		1
Taper Length (ft)	75			60			75			75		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.990				0.850			0.850			0.850
Flt Protected	0.950			0.950							0.955	
Satd. Flow (prot)	1685	1626	0	1547	1763	1492	0	1791	1425	0	1685	1500
Flt Permitted	0.229			0.231							0.854	
Satd. Flow (perm)	406	1626	0	376	1763	1492	0	1791	1425	0	1507	1500
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		6				51			228			36
Link Speed (mph)		35			35			25			35	
Link Distance (ft)		496			348			387			241	
Travel Time (s)		9.7			6.8			10.6			4.7	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.90	0.82	0.82	0.82	0.82	0.90	0.82	0.90	0.82	0.90	0.90	0.90
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	8%	41%	10%	5%	2%	0%	2%	9%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	39	639	45	195	687	68	0	0	634	16	1	11
Shared Lane Traffic (%)												
Lane Group Flow (vph)	39	684	0	195	687	68	0	0	634	0	17	11
Number of Detectors	1	1		1	1	1		1	1	1	1	1
Detector Template	Left	Thru		Left	Thru	Right		Thru	Right	Left	Thru	Right
Leading Detector (ft)	30	30		30	30	30		30	30	30	30	30
Trailing Detector (ft)	-10	-10		-10	-10	-10		-10	-10	-10	-10	-10
Turn Type	Perm	NA		Perm	NA	Perm			Perm	Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8		8			2	6		6
Detector Phase	4	4		8	8	8		2	2	6	6	6
Switch Phase												
Minimum Initial (s)	3.0	3.0		3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0
Minimum Split (s)	15.0	15.0		15.0	15.0	15.0		15.0	15.0	15.0	15.0	15.0
Total Split (s)	53.0	53.0		53.0	53.0	53.0		37.0	37.0	37.0	37.0	37.0
Total Split (%)	58.9%	58.9%		58.9%	58.9%	58.9%		41.1%	41.1%	41.1%	41.1%	41.1%
Maximum Green (s)	47.0	47.0		47.0	47.0	47.0		31.0	31.0	31.0	31.0	31.0
Yellow Time (s)	4.0	4.0		4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0		2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-1.0	-1.0		-1.0	-1.0	-1.0		-1.0	-1.0		-1.0	-1.0
Total Lost Time (s)	5.0	5.0		5.0	5.0	5.0		5.0	5.0		5.0	5.0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0
Minimum Gap (s)	3.0	3.0		3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0
Time Before Reduce (s)	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0
Time To Reduce (s)	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0
Recall Mode	None	None		None	None	None		Min	Min	Min	Min	Min
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
v/c Ratio	0.18	0.78		0.97	0.73	0.08			0.97		0.03	0.02
Control Delay	13.5	24.7		82.0	21.7	4.6			49.6		19.3	0.6
Queue Delay	0.0	0.0		0.0	0.0	0.0			0.0		0.0	0.0
Total Delay	13.5	24.7		82.0	21.7	4.6			49.6		19.3	0.6
Queue Length 50th (ft)	11	293		101	282	4			247		6	0
Queue Length 95th (ft)	31	376		#214	356	23			#398		20	2
Internal Link Dist (ft)		416			268			307			161	
Turn Bay Length (ft)	125			125		125						100
Base Capacity (vph)	217	872		201	942	821			654		537	557
Starvation Cap Reductn	0	0		0	0	0			0		0	0
Spillback Cap Reductn	0	0		0	0	0			0		0	0
Storage Cap Reductn	0	0		0	0	0			0		0	0
Reduced v/c Ratio	0.18	0.78		0.97	0.73	0.08			0.97		0.03	0.02

Intersection Summary	
Area Type:	Other
Cycle Length: 90	
Actuated Cycle Length: 89.8	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
# 95th percentile volume exceeds capacity, queue may be longer.	
Queue shown is maximum after two cycles.	

Splits and Phases: 16: I-180 EB Ramp/Muncy Hospital (Shady Lane) & PA 405



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	35	524	37	160	563	61	0	0	520	14	1	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	1774	1642	1809	1628	1774	1756	0	1791	1676	1800	1765	1765
Adj Flow Rate, veh/h	39	639	45	195	687	68	0	0	0	16	1	11
Adj No. of Lanes	1	1	0	1	1	1	0	1	1	0	1	1
Peak Hour Factor	0.90	0.82	0.82	0.82	0.82	0.90	0.82	0.90	0.82	0.90	0.90	0.90
Percent Heavy Veh, %	2	8	8	10	5	2	0	2	9	2	2	2
Cap, veh/h	510	1046	74	490	1224	1030	0	159	126	254	13	133
Arrive On Green	0.69	0.69	0.67	0.69	0.69	0.69	0.00	0.00	0.00	0.07	0.09	0.09
Sat Flow, veh/h	709	1516	107	696	1774	1492	0	1791	1425	1120	143	1500
Grp Volume(v), veh/h	39	0	684	195	687	68	0	0	0	17	0	11
Grp Sat Flow(s),veh/h/ln	709	0	1623	696	1774	1492	0	1791	1425	1263	0	1500
Q Serve(g_s), s	1.3	0.0	10.2	9.2	8.8	0.7	0.0	0.0	0.0	0.4	0.0	0.3
Cycle Q Clear(g_c), s	10.2	0.0	10.2	19.0	8.8	0.7	0.0	0.0	0.0	0.9	0.0	0.3
Prop In Lane	1.00		0.07	1.00		1.00	0.00		1.00	0.94		1.00
Lane Grp Cap(c), veh/h	510	0	1120	490	1224	1030	0	159	126	239	0	133
V/C Ratio(X)	0.08	0.00	0.61	0.40	0.56	0.07	0.00	0.00	0.00	0.07	0.00	0.08
Avail Cap(c_a), veh/h	775	0	1726	749	1886	1587	0	1270	1010	1125	0	1063
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	1.00	1.00	0.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	6.1	0.0	3.8	8.7	3.5	2.3	0.0	0.0	0.0	19.6	0.0	18.9
Incr Delay (d2), s/veh	0.1	0.0	0.5	0.5	0.4	0.0	0.0	0.0	0.0	0.1	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(95%),veh/ln	0.5	0.0	8.0	3.2	7.8	0.5	0.0	0.0	0.0	0.4	0.0	0.2
LnGrp Delay(d),s/veh	6.2	0.0	4.3	9.2	3.9	2.3	0.0	0.0	0.0	19.8	0.0	19.2
LnGrp LOS	A		A	A	A	A				B		B
Approach Vol, veh/h		723			950			0			28	
Approach Delay, s/veh		4.4			4.9			0.0			19.5	
Approach LOS		A			A						B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		9.0		36.1		9.0		36.1
Change Period (Y+Rc), s		6.0		6.0		6.0		6.0
Max Green Setting (Gmax), s		31.0		47.0		31.0		47.0
Max Q Clear Time (g_c+I1), s		0.0		12.7		2.9		21.5
Green Ext Time (p_c), s		0.0		9.4		0.0		8.7

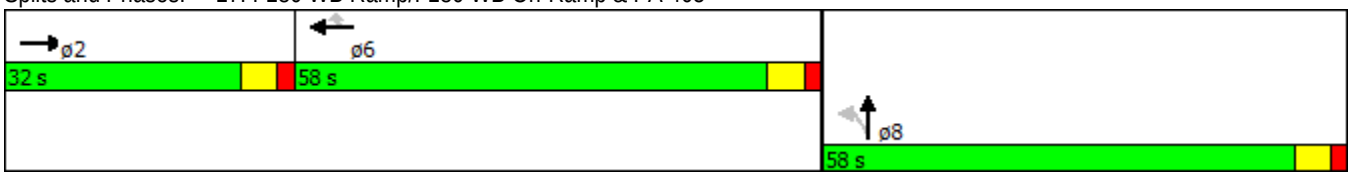
Intersection Summary	
HCM 2010 Ctrl Delay	4.9
HCM 2010 LOS	A

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	830	213	0	470	494	36	0	165	0	0	0
Ideal Flow (vphpl)	1900	1800	1800	1900	1800	1800	1800	1800	1800	1900	1900	1900
Lane Width (ft)	12	12	11	12	12	12	12	12	12	12	12	12
Grade (%)		-1%			-1%			-4%			-2%	
Storage Length (ft)	0		0	0		115	0		0	0		0
Storage Lanes	0		0	0		1	0		0	0		0
Taper Length (ft)	75			75			75			75		
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.969				0.850		0.889				
Flt Protected								0.991				
Satd. Flow (prot)	0	3078	0	0	1691	1464	0	1223	0	0	0	0
Flt Permitted								0.991				
Satd. Flow (perm)	0	3078	0	0	1691	1464	0	1223	0	0	0	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		19				223		172				
Link Speed (mph)		45			45			25			25	
Link Distance (ft)		758			636			290			200	
Travel Time (s)		11.5			9.6			7.9			5.5	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	8%	9%	0%	7%	5%	47%	0%	29%	0%	0%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	0	892	229	0	505	531	39	0	177	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1121	0	0	505	531	0	216	0	0	0	0
Number of Detectors		1			1	1	1	1				
Detector Template		Thru			Thru	Right	Left	Thru				
Leading Detector (ft)		30			30	30	30	30				
Trailing Detector (ft)		-10			-10	-10	-10	-10				
Turn Type		NA			NA	Perm	Perm	NA				
Protected Phases		2			6			8				
Permitted Phases						6	8					
Detector Phase		2			6	6	8	8				
Switch Phase												
Minimum Initial (s)		3.0			3.0	3.0	3.0	3.0				
Minimum Split (s)		15.0			15.0	15.0	15.0	15.0				
Total Split (s)		32.0			58.0	58.0	58.0	58.0				
Total Split (%)		21.6%			39.2%	39.2%	39.2%	39.2%				
Maximum Green (s)		26.0			52.0	52.0	52.0	52.0				
Yellow Time (s)		4.0			4.0	4.0	4.0	4.0				
All-Red Time (s)		2.0			2.0	2.0	2.0	2.0				
Lost Time Adjust (s)		-1.0			-1.0	-1.0		-1.0				
Total Lost Time (s)		5.0			5.0	5.0		5.0				

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)		3.0			3.0	3.0	3.0	3.0				
Minimum Gap (s)		3.0			3.0	3.0	3.0	3.0				
Time Before Reduce (s)		0.0			0.0	0.0	0.0	0.0				
Time To Reduce (s)		0.0			0.0	0.0	0.0	0.0				
Recall Mode		None			Min	Min	Min	Min				
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
v/c Ratio		1.16			0.77	0.76		0.70				
Control Delay		114.2			33.2	21.1		23.3				
Queue Delay		0.0			0.0	0.0		0.0				
Total Delay		114.2			33.2	21.1		23.3				
Queue Length 50th (ft)		~384			235	143		22				
Queue Length 95th (ft)		#743			412	311		109				
Internal Link Dist (ft)		678			556			210			120	
Turn Bay Length (ft)						115						
Base Capacity (vph)		967			1029	978		811				
Starvation Cap Reductn		0			0	0		0				
Spillback Cap Reductn		0			0	0		0				
Storage Cap Reductn		0			0	0		0				
Reduced v/c Ratio		1.16			0.49	0.54		0.27				

Intersection Summary	
Area Type:	Other
Cycle Length: 148	
Actuated Cycle Length: 89.6	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
~ Volume exceeds capacity, queue is theoretically infinite.	
Queue shown is maximum after two cycles.	
# 95th percentile volume exceeds capacity, queue may be longer.	
Queue shown is maximum after two cycles.	

Splits and Phases: 17: I-180 WB Ramp/I-180 WB On-Ramp & PA 405



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	830	213	0	470	494	36	0	165	0	0	0
Number	5	2	12	1	6	16	3	8	18			
Initial Q (Qb), veh	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			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	0	1672	1809	0	1691	1723	1836	1388	1836			
Adj Flow Rate, veh/h	0	892	0	0	505	531	39	0	177			
Adj No. of Lanes	0	2	0	0	1	1	0	1	0			
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93			
Percent Heavy Veh, %	0	8	8	0	7	5	0	0	0			
Cap, veh/h	0	1716	0	0	913	791	54	0	244			
Arrive On Green	0.00	0.54	0.00	0.00	0.54	0.54	0.23	0.00	0.23			
Sat Flow, veh/h	0	3344	0	0	1691	1464	217	0	986			
Grp Volume(v), veh/h	0	892	0	0	505	531	216	0	0			
Grp Sat Flow(s),veh/h/ln	0	1588	0	0	1691	1464	1203	0	0			
Q Serve(g_s), s	0.0	8.5	0.0	0.0	9.2	12.3	7.8	0.0	0.0			
Cycle Q Clear(g_c), s	0.0	8.5	0.0	0.0	9.2	12.3	7.8	0.0	0.0			
Prop In Lane	0.00		0.00	0.00		1.00	0.18		0.82			
Lane Grp Cap(c), veh/h	0	1716	0	0	913	791	298	0	0			
V/C Ratio(X)	0.00	0.52	0.00	0.00	0.55	0.67	0.72	0.00	0.00			
Avail Cap(c_a), veh/h	0	1820	0	0	1902	1647	1354	0	0			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.00	1.00	0.00	0.00	1.00	1.00	1.00	0.00	0.00			
Uniform Delay (d), s/veh	0.0	6.9	0.0	0.0	7.1	7.8	16.7	0.0	0.0			
Incr Delay (d2), s/veh	0.0	0.2	0.0	0.0	0.5	1.0	3.3	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			
%ile BackOfQ(95%),veh/ln	0.0	6.6	0.0	0.0	7.8	8.8	5.2	0.0	0.0			
LnGrp Delay(d),s/veh	0.0	7.2	0.0	0.0	7.6	8.8	20.1	0.0	0.0			
LnGrp LOS		A			A	A	C					
Approach Vol, veh/h		892			1036			216				
Approach Delay, s/veh		7.2			8.2			20.1				
Approach LOS		A			A			C				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2				6		8
Phs Duration (G+Y+Rc), s		30.5				30.5		16.7
Change Period (Y+Rc), s		6.0				6.0		6.0
Max Green Setting (Gmax), s		26.0				52.0		52.0
Max Q Clear Time (g_c+I1), s		11.0				14.8		9.8
Green Ext Time (p_c), s		7.1				9.6		0.8

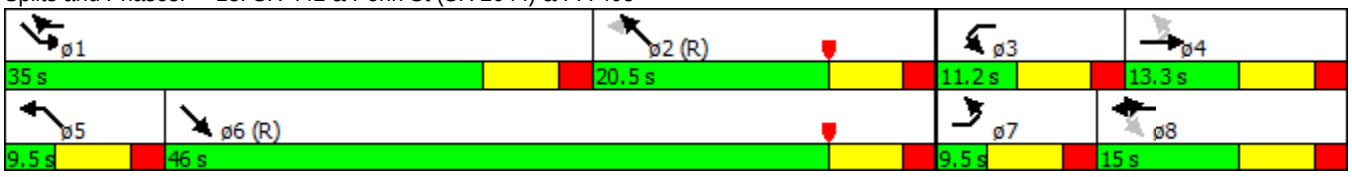
Intersection Summary	
HCM 2010 Ctrl Delay	9.0
HCM 2010 LOS	A

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Volume (vph)	19	101	14	98	142	772	829	126	26	17	283	158
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	11	11	11	11	11	11	11	11	11	11	11	11
Grade (%)		-2%			-1%			1%			-2%	
Storage Length (ft)	195		0	155		225	225		0	125		0
Storage Lanes	1		0	1		2	2		0	1		0
Taper Length (ft)	75			75			75			75		
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	0.88	0.97	1.00	1.00	1.00	0.95	0.95
Ped Bike Factor												
Frt		0.982				0.850		0.974			0.946	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1670	3115	0	1408	1681	2422	2659	1461	0	1670	2952	0
Flt Permitted	0.660			0.549			0.950			0.654		
Satd. Flow (perm)	1160	3115	0	814	1681	2422	2659	1461	0	1149	2952	0
Right Turn on Red			No			Yes			Yes			Yes
Satd. Flow (RTOR)						459		19			119	
Link Speed (mph)		45			45			40			45	
Link Distance (ft)		670			586			1005			570	
Travel Time (s)		10.2			8.9			17.1			8.6	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	6%	0%	18%	4%	8%	20%	17%	8%	0%	7%	7%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	20	109	15	105	153	830	891	135	28	18	304	170
Shared Lane Traffic (%)												
Lane Group Flow (vph)	20	124	0	105	153	830	891	163	0	18	474	0
Number of Detectors	1	1		1	1	1	2	2		1	2	
Detector Template	Left	Thru		Left	Thru	Right				Left		
Leading Detector (ft)	40	30		40	30	30	160	160		30	310	
Trailing Detector (ft)	-10	-5		-10	-5	-5	-10	-10		-10	-10	
Turn Type	pm+pt	NA		pm+pt	NA	pt+ov	Prot	NA		pm+pt	NA	
Protected Phases	7	4		3	8	8 1	1	6		5	2	
Permitted Phases	4			8						2		
Detector Phase	7	4		3	8	8 1	1	6		5	2	
Switch Phase												
Minimum Initial (s)	3.0	5.0		3.0	5.0		3.0	5.0		3.0	5.0	
Minimum Split (s)	9.5	11.5		9.5	11.5		9.5	11.5		9.5	11.5	
Total Split (s)	9.5	13.3		11.2	15.0		35.0	46.0		9.5	20.5	
Total Split (%)	11.9%	16.6%		14.0%	18.8%		43.8%	57.5%		11.9%	25.6%	
Maximum Green (s)	3.0	6.8		4.7	8.5		28.5	39.5		3.0	14.0	
Yellow Time (s)	4.5	4.5		4.5	4.5		4.5	4.5		4.5	4.5	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	-1.0	-1.0		-1.0	-1.0		-1.0	-1.0		-1.0	-1.0	
Total Lost Time (s)	5.5	5.5		5.5	5.5		5.5	5.5		5.5	5.5	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	5.0		3.0	5.0		3.0	4.0		3.0	4.0	
Minimum Gap (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Time Before Reduce (s)	0.0	0.0		0.0	0.0		0.0	9.0		0.0	9.0	
Time To Reduce (s)	0.0	0.0		0.0	0.0		0.0	18.0		0.0	18.0	
Recall Mode	None	None		None	None		None	C-Min		None	C-Min	
Walk Time (s)		12.0			12.0			14.0			14.0	
Flash Dont Walk (s)		18.0			18.0			21.0			21.0	
Pedestrian Calls (#/hr)		0			0			0			0	
v/c Ratio	0.10	0.36		0.50	0.52	0.49	0.89	0.19		0.06	0.71	
Control Delay	25.2	36.9		35.2	39.7	4.9	36.3	8.8		12.4	29.6	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	25.2	36.9		35.2	39.7	4.9	36.3	8.8		12.4	29.6	
Queue Length 50th (ft)	8	31		43	64	34	213	27		3	88	
Queue Length 95th (ft)	25	57		87	#169	97	#330	72		11	141	
Internal Link Dist (ft)		590			506			925			490	
Turn Bay Length (ft)	195			155		225	225			125		
Base Capacity (vph)	203	347		211	295	1681	1005	872		314	663	
Starvation Cap Reductn	0	0		0	0	0	0	0		0	0	
Spillback Cap Reductn	0	0		0	0	0	0	0		0	0	
Storage Cap Reductn	0	0		0	0	0	0	0		0	0	
Reduced v/c Ratio	0.10	0.36		0.50	0.52	0.49	0.89	0.19		0.06	0.71	

Intersection Summary	
Area Type:	Other
Cycle Length: 80	
Actuated Cycle Length: 80	
Offset: 0 (0%), Referenced to phase 2:NWTL and 6:SET, Start of Yellow	
Natural Cycle: 80	
Control Type: Actuated-Coordinated	
# 95th percentile volume exceeds capacity, queue may be longer.	
Queue shown is maximum after two cycles.	

Splits and Phases: 18: SR 442 & Penn St (SR 2044) & PA 405



Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Volume (veh/h)	19	101	14	98	142	772	829	126	26	17	283	158
Number	7	4	14	3	8	18	1	6	16	5	2	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
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	1818	1727	1818	1533	1739	1675	1492	1551	1791	1818	1699	1818
Adj Flow Rate, veh/h	20	109	15	105	153	484	891	135	17	18	304	116
Adj No. of Lanes	1	2	0	1	1	2	2	1	0	1	2	0
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	0	6	6	18	4	8	20	17	17	0	7	7
Cap, veh/h	170	235	32	244	217	1219	998	740	93	401	486	182
Arrive On Green	0.03	0.08	0.07	0.07	0.12	0.12	0.36	0.55	0.54	0.03	0.21	0.21
Sat Flow, veh/h	1731	2905	393	1460	1739	2506	2758	1351	170	1731	2301	860
Grp Volume(v), veh/h	20	61	63	105	153	484	891	0	152	18	211	209
Grp Sat Flow(s),veh/h/ln	1731	1641	1658	1460	1739	1253	1379	0	1521	1731	1614	1547
Q Serve(g_s), s	0.8	2.8	2.9	5.2	6.8	9.8	24.4	0.0	4.0	0.6	9.5	9.8
Cycle Q Clear(g_c), s	0.8	2.8	2.9	5.2	6.8	9.8	24.4	0.0	4.0	0.6	9.5	9.8
Prop In Lane	1.00		0.24	1.00		1.00	1.00		0.11	1.00		0.56
Lane Grp Cap(c), veh/h	170	132	134	244	217	1219	998	0	833	401	341	326
V/C Ratio(X)	0.12	0.46	0.47	0.43	0.71	0.40	0.89	0.00	0.18	0.04	0.62	0.64
Avail Cap(c_a), veh/h	209	160	162	244	217	1219	1017	0	833	444	341	326
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.72	0.72	0.72	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	32.3	35.1	35.3	30.6	33.6	13.1	24.1	0.0	9.1	23.6	28.7	28.8
Incr Delay (d2), s/veh	0.3	5.2	5.5	0.9	9.2	0.3	10.0	0.0	0.5	0.0	8.2	9.2
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(95%),veh/ln	0.7	2.7	2.8	3.8	6.5	6.0	16.0	0.0	3.2	0.6	8.7	8.7
LnGrp Delay(d),s/veh	32.6	40.3	40.7	31.5	42.8	13.4	34.0	0.0	9.6	23.6	36.9	38.0
LnGrp LOS	C	D	D	C	D	B	C		A	C	D	D
Approach Vol, veh/h		144			742			1043			438	
Approach Delay, s/veh		39.4			22.0			30.5			36.9	
Approach LOS		D			C			C			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	34.5	22.4	11.2	12.0	7.5	49.3	7.7	15.5
Change Period (Y+Rc), s	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5
Max Green Setting (Gmax), s	28.5	14.0	4.7	6.8	3.0	39.5	3.0	8.5
Max Q Clear Time (g_c+I1), s	26.9	12.3	7.7	5.3	3.1	6.0	3.3	12.3
Green Ext Time (p_c), s	1.1	1.0	0.0	0.1	0.0	10.6	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	29.6
HCM 2010 LOS	C

Notes

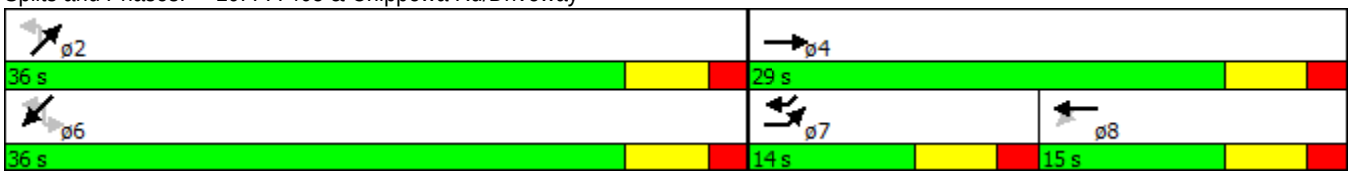
User approved pedestrian interval to be less than phase max green.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	396	0	44	0	0	0	63	1247	1	0	1123	459
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	13	13	13	12	12	12	12	12	11	11	11	11
Grade (%)		3%			2%			0%			1%	
Storage Length (ft)	200		0	0		0	175		0	75		225
Storage Lanes	2		0	0		0	1		0	1		1
Taper Length (ft)	75			75			75			75		
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	1.00
Ped Bike Factor												
Frt		0.850										0.850
Flt Protected	0.950						0.950					
Satd. Flow (prot)	3377	1416	0	0	1782	0	1710	3081	0	1731	3133	1363
Flt Permitted	0.950						0.188					
Satd. Flow (perm)	3377	1416	0	0	1782	0	338	3081	0	1731	3133	1363
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		50										494
Link Speed (mph)		40			35			45			45	
Link Distance (ft)		499			348			586			796	
Travel Time (s)		8.5			6.8			8.9			12.1	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	0%	10%	0%	0%	0%	0%	11%	0%	0%	5%	8%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	426	0	47	0	0	0	68	1341	1	0	1208	494
Shared Lane Traffic (%)												
Lane Group Flow (vph)	426	47	0	0	0	0	68	1342	0	0	1208	494
Number of Detectors	1	1		1	1		1	1		1	1	1
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (ft)	30	30		30	30		30	30		30	30	30
Trailing Detector (ft)	-10	-10		-10	-10		-10	-10		-10	-10	-10
Turn Type	Prot	NA					Perm	NA		Perm	NA	pm+ov
Protected Phases	7	4			8			2			6	7
Permitted Phases				8			2			6		6
Detector Phase	7	4		8	8		2	2		6	6	7
Switch Phase												
Minimum Initial (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Minimum Split (s)	9.0	15.0		15.0	15.0		15.0	15.0		15.0	15.0	9.0
Total Split (s)	14.0	29.0		15.0	15.0		36.0	36.0		36.0	36.0	14.0
Total Split (%)	21.5%	44.6%		23.1%	23.1%		55.4%	55.4%		55.4%	55.4%	21.5%
Maximum Green (s)	8.0	23.0		9.0	9.0		30.0	30.0		30.0	30.0	8.0
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)	-1.0	-1.0			-1.0		-1.0	-1.0		-1.0	-1.0	-1.0
Total Lost Time (s)	5.0	5.0			5.0		5.0	5.0		5.0	5.0	5.0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Lead/Lag	Lead			Lag	Lag							Lead
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Minimum Gap (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Time Before Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Time To Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Recall Mode	None	None		None	None		Min	Min		Min	Min	None
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
v/c Ratio	0.66	0.15					0.34	0.73			0.65	0.36
Control Delay	24.8	7.7					10.2	9.6			8.1	0.7
Queue Delay	0.0	0.0					0.0	0.0			0.0	0.0
Total Delay	24.8	7.7					10.2	9.6			8.1	0.7
Queue Length 50th (ft)	60	0					8	113			93	0
Queue Length 95th (ft)	#111	20					29	173			141	0
Internal Link Dist (ft)		419			268			506			716	
Turn Bay Length (ft)	200						175					225
Base Capacity (vph)	647	748					223	2035			2069	1363
Starvation Cap Reductn	0	0					0	0			0	0
Spillback Cap Reductn	0	0					0	0			0	0
Storage Cap Reductn	0	0					0	0			0	0
Reduced v/c Ratio	0.66	0.06					0.30	0.66			0.58	0.36

Intersection Summary	
Area Type:	Other
Cycle Length: 65	
Actuated Cycle Length: 47.2	
Natural Cycle: 65	
Control Type: Actuated-Uncoordinated	
# 95th percentile volume exceeds capacity, queue may be longer.	
Queue shown is maximum after two cycles.	

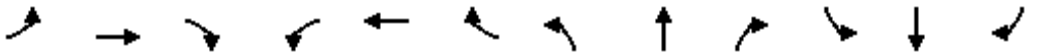
Splits and Phases: 19: PA 405 & Chippewa Rd/Driveway



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (veh/h)	396	0	44	0	0	0	63	1247	1	0	1123	459
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	1676	1844	1782	1782	1782	1800	1622	1800	1791	1706	1658
Adj Flow Rate, veh/h	426	0	47	0	0	0	68	1341	1	0	1208	494
Adj No. of Lanes	2	1	0	0	1	0	1	2	0	1	2	1
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	0	0	0	0	0	0	0	11	11	0	5	8
Cap, veh/h	626	0	262	0	4	0	259	1935	1	147	1985	1122
Arrive On Green	0.18	0.00	0.16	0.00	0.00	0.00	0.61	0.61	0.59	0.00	0.61	0.61
Sat Flow, veh/h	3407	0	1425	0	-89100	0	292	3160	2	412	3241	1410
Grp Volume(v), veh/h	426	0	47	0	0	0	68	654	688	0	1208	494
Grp Sat Flow(s),veh/h/ln	1703	0	1425	0	1782	0	292	1541	1621	412	1620	1410
Q Serve(g_s), s	5.7	0.0	1.4	0.0	0.0	0.0	9.2	14.0	14.0	0.0	11.3	5.4
Cycle Q Clear(g_c), s	5.7	0.0	1.4	0.0	0.0	0.0	20.5	14.0	14.0	0.0	11.3	5.4
Prop In Lane	1.00		1.00	0.00		0.00	1.00		0.00	1.00		1.00
Lane Grp Cap(c), veh/h	626	0	262	0	4	0	259	943	993	147	1985	1122
V/C Ratio(X)	0.68	0.00	0.18	0.00	0.00	0.00	0.26	0.69	0.69	0.00	0.61	0.44
Avail Cap(c_a), veh/h	626	0	698	0	364	0	264	974	1025	155	2050	1150
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	0.00	1.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	18.7	0.0	17.3	0.0	0.0	0.0	12.2	6.4	6.4	0.0	5.9	1.6
Incr Delay (d2), s/veh	3.0	0.0	0.3	0.0	0.0	0.0	0.5	2.1	2.0	0.0	0.5	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(95%),veh/ln	5.3	0.0	1.0	0.0	0.0	0.0	1.4	10.5	10.9	0.0	8.7	3.6
LnGrp Delay(d),s/veh	21.7	0.0	17.7	0.0	0.0	0.0	12.7	8.5	8.4	0.0	6.4	1.8
LnGrp LOS	C		B				B	A	A		A	A
Approach Vol, veh/h		473			0			1410			1702	
Approach Delay, s/veh		21.3			0.0			8.6			5.1	
Approach LOS		C						A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6	7	8
Phs Duration (G+Y+Rc), s		35.0		14.0		35.0	14.0	0.0
Change Period (Y+Rc), s		6.0		6.0		6.0	6.0	6.0
Max Green Setting (Gmax), s		30.0		23.0		30.0	8.0	9.0
Max Q Clear Time (g_c+I1), s		23.0		3.4		13.8	8.2	0.0
Green Ext Time (p_c), s		6.1		0.1		12.3	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	8.6
HCM 2010 LOS	A



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	26	1653	0	0	1595	12	0	0	0	15	0	56
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	10	11	12	12	11	11	12	12	12	12	12	12
Grade (%)		1%			0%			0%			1%	
Storage Length (ft)	60		0	175		0	0		0	75		0
Storage Lanes	1		0	1		0	0		0	1		0
Taper Length (ft)	140			75			75			75		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt					0.999						0.850	
Flt Protected	0.950									0.950		
Satd. Flow (prot)	1588	2990	0	1765	3142	0	0	1765	0	1319	1423	0
Flt Permitted	0.090									0.757		
Satd. Flow (perm)	150	2990	0	1765	3142	0	0	1765	0	1051	1423	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					3						55	
Link Speed (mph)		45			45			35			45	
Link Distance (ft)		796			773			118			413	
Travel Time (s)		12.1			11.7			2.3			6.3	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.87	0.87	0.90	0.90	0.87	0.87	0.90	0.90	0.90	0.87	0.90	0.87
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	10%	2%	2%	5%	18%	2%	2%	2%	29%	2%	7%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	30	1900	0	0	1833	14	0	0	0	17	0	64
Shared Lane Traffic (%)												
Lane Group Flow (vph)	30	1900	0	0	1847	0	0	0	0	17	64	0
Number of Detectors	1	1		1	1		1	1		1	1	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	30	30		30	30		30	30		30	30	
Trailing Detector (ft)	-10	-10		-10	-10		-10	-10		-10	-10	
Turn Type	Perm	NA		Perm	NA					Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Detector Phase	2	2		6	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Minimum Split (s)	15.0	15.0		15.0	15.0		15.0	15.0		15.0	15.0	
Total Split (s)	45.0	45.0		45.0	45.0		15.0	15.0		15.0	15.0	
Total Split (%)	75.0%	75.0%		75.0%	75.0%		25.0%	25.0%		25.0%	25.0%	
Maximum Green (s)	39.0	39.0		39.0	39.0		9.0	9.0		9.0	9.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	-1.0	-1.0		-1.0	-1.0			-1.0		-1.0	-1.0	
Total Lost Time (s)	5.0	5.0		5.0	5.0			5.0		5.0	5.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Minimum Gap (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Time Before Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Time To Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Recall Mode	C-Max	C-Max		C-Max	C-Max		None	None		None	None	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
v/c Ratio	0.25	0.78			0.72					0.12	0.27	
Control Delay	10.2	10.2			8.2					24.4	12.2	
Queue Delay	0.0	0.0			0.0					0.0	0.0	
Total Delay	10.2	10.2			8.2					24.4	12.2	
Queue Length 50th (ft)	3	220			188					6	3	
Queue Length 95th (ft)	20	#466			317					20	31	
Internal Link Dist (ft)		716			693			38			333	
Turn Bay Length (ft)	60									75		
Base Capacity (vph)	122	2433			2557					175	283	
Starvation Cap Reductn	0	0			0					0	0	
Spillback Cap Reductn	0	0			0					0	0	
Storage Cap Reductn	0	0			0					0	0	
Reduced v/c Ratio	0.25	0.78			0.72					0.10	0.23	

Intersection Summary	
Area Type:	Other
Cycle Length: 60	
Actuated Cycle Length: 60	
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow	
Natural Cycle: 60	
Control Type: Actuated-Coordinated	
# 95th percentile volume exceeds capacity, queue may be longer.	
Queue shown is maximum after two cycles.	

Splits and Phases: 20: PA 405 & Lime Bluff Rd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	26	1653	0	0	1595	12	0	0	0	15	0	56
Number	5	2	12	1	6	16	3	8	18	7	4	14
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	1791	1628	1791	1765	1713	1800	1800	1765	1800	1388	1674	1791
Adj Flow Rate, veh/h	30	1900	0	0	1833	14	0	0	0	17	0	64
Adj No. of Lanes	1	2	0	1	2	0	0	1	0	1	1	0
Peak Hour Factor	0.87	0.87	0.90	0.90	0.87	0.87	0.90	0.90	0.90	0.87	0.90	0.87
Percent Heavy Veh, %	0	10	10	2	5	5	2	2	2	29	2	2
Cap, veh/h	236	2347	0	120	2511	19	0	132	0	219	0	106
Arrive On Green	0.76	0.76	0.00	0.00	0.76	0.74	0.00	0.00	0.00	0.07	0.00	0.06
Sat Flow, veh/h	253	3175	0	236	3310	25	0	1765	0	1322	0	1423
Grp Volume(v), veh/h	30	1900	0	0	900	947	0	0	0	17	0	64
Grp Sat Flow(s),veh/h/ln	253	1547	0	236	1627	1708	0	1765	0	1322	0	1423
Q Serve(g_s), s	4.4	23.1	0.0	0.0	17.9	18.0	0.0	0.0	0.0	0.7	0.0	2.6
Cycle Q Clear(g_c), s	22.3	23.1	0.0	0.0	17.9	18.0	0.0	0.0	0.0	0.7	0.0	2.6
Prop In Lane	1.00		0.00	1.00		0.01	0.00		0.00	1.00		1.00
Lane Grp Cap(c), veh/h	236	2347	0	120	1234	1296	0	132	0	219	0	106
V/C Ratio(X)	0.13	0.81	0.00	0.00	0.73	0.73	0.00	0.00	0.00	0.08	0.00	0.60
Avail Cap(c_a), veh/h	236	2347	0	120	1234	1296	0	294	0	340	0	237
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)	0.63	0.63	0.00	0.00	1.00	1.00	0.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	9.9	4.5	0.0	0.0	3.9	3.9	0.0	0.0	0.0	26.0	0.0	27.4
Incr Delay (d2), s/veh	0.7	2.0	0.0	0.0	3.8	3.7	0.0	0.0	0.0	0.1	0.0	5.4
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(95%),veh/ln	0.6	14.0	0.0	0.0	14.0	14.5	0.0	0.0	0.0	0.5	0.0	2.2
LnGrp Delay(d),s/veh	10.6	6.5	0.0	0.0	7.7	7.6	0.0	0.0	0.0	26.2	0.0	32.8
LnGrp LOS	B	A			A	A				C		C
Approach Vol, veh/h		1930			1847			0			81	
Approach Delay, s/veh		6.6			7.6			0.0			31.4	
Approach LOS		A			A						C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		50.5		9.5		50.5		9.5
Change Period (Y+Rc), s		6.0		6.0		6.0		6.0
Max Green Setting (Gmax), s		39.0		9.0		39.0		9.0
Max Q Clear Time (g_c+I1), s		25.6		4.6		20.4		0.0
Green Ext Time (p_c), s		12.0		0.1		16.0		0.0

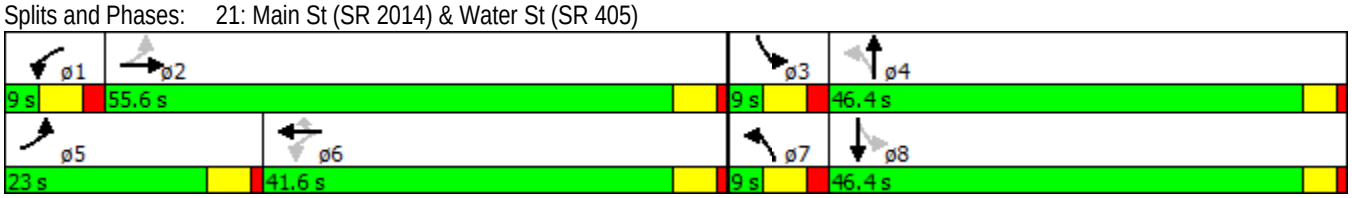
Intersection Summary	
HCM 2010 Ctrl Delay	7.6
HCM 2010 LOS	A

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	245	218	38	87	324	53	60	267	124	46	182	210
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	16	16	16	12	12	12	10	10	10	10	10	10
Grade (%)		-2%			1%			2%			-1%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	0		0	0		1	1		0	1		0
Taper Length (ft)	75			75			75			75		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.99			1.00	0.94		0.98			0.97	
Frt		0.990				0.850		0.952			0.920	
Flt Protected		0.976			0.989		0.950			0.950		
Satd. Flow (prot)	0	1835	0	0	1655	1423	1273	1250	0	1304	1221	0
Flt Permitted		0.346			0.795		0.288			0.288		
Satd. Flow (perm)	0	644	0	0	1325	1335	386	1250	0	395	1221	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		463			494			1137			622	
Travel Time (s)		12.6			13.5			31.0			17.0	
Confl. Peds. (#/hr)	10		10	10		10	10		10	10		10
Confl. Bikes (#/hr)												
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	8%	8%	8%	7%	7%	7%	8%	8%	8%	7%	7%	7%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)							6	6	6	6	6	6
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	272	242	42	97	360	59	67	297	138	51	202	233
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	556	0	0	457	59	67	435	0	51	435	0
Number of Detectors	1	1		1	1	1	1	1		1	1	
Detector Template	Left			Left		Right	Left			Left		
Leading Detector (ft)	30	40		30	40	30	30	40		30	40	
Trailing Detector (ft)	-10	-10		-10	-10	-10	-10	-10		-10	-10	
Turn Type	pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases	2			6		6	4			8		
Detector Phase	5	2		1	6	6	7	4		3	8	
Switch Phase												
Minimum Initial (s)	8.0	8.0		3.0	8.0	8.0	3.0	7.0		3.0	7.1	
Minimum Split (s)	23.0	23.0		9.0	23.0	23.0	9.0	22.1		9.0	22.1	
Total Split (s)	23.0	55.6		9.0	41.6	41.6	9.0	46.4		9.0	46.4	
Total Split (%)	19.2%	46.3%		7.5%	34.7%	34.7%	7.5%	38.7%		7.5%	38.7%	
Maximum Green (s)	18.0	50.6		3.0	36.6	36.6	3.0	42.3		3.0	42.3	
Yellow Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	3.1		4.0	3.1	
All-Red Time (s)	1.0	1.0		2.0	1.0	1.0	2.0	1.0		2.0	1.0	
Lost Time Adjust (s)		0.0			0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)		5.0			5.0	5.0	6.0	4.1		6.0	4.1	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0		3.0	2.0	2.0	3.0	3.5		3.0	3.5	
Minimum Gap (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Time Before Reduce (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Time To Reduce (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Recall Mode	None	None		None	None	None	None	None		None	None	
Walk Time (s)	7.0	7.0			7.0	7.0		7.0			7.0	
Flash Dont Walk (s)	7.0	7.0			7.0	7.0		7.0			7.0	
Pedestrian Calls (#/hr)	10	10			10	10		10			10	
v/c Ratio		1.72			0.81	0.10	0.38	0.89		0.28	0.91	
Control Delay		361.2			42.1	22.5	28.3	53.7		24.5	57.2	
Queue Delay		0.0			0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay		361.2			42.1	22.5	28.3	53.7		24.5	57.2	
Queue Length 50th (ft)		~608			264	23	27	290		21	294	
Queue Length 95th (ft)		#730			#590	65	60	#522		48	#530	
Internal Link Dist (ft)		383			414			1057			542	
Turn Bay Length (ft)												
Base Capacity (vph)		337			563	567	177	491		182	480	
Starvation Cap Reductn		0			0	0	0	0		0	0	
Spillback Cap Reductn		0			0	0	0	0		0	0	
Storage Cap Reductn		0			0	0	0	0		0	0	
Reduced v/c Ratio		1.65			0.81	0.10	0.38	0.89		0.28	0.91	

Intersection Summary	
Area Type:	Other
Cycle Length: 120	
Actuated Cycle Length: 108.2	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
~ Volume exceeds capacity, queue is theoretically infinite.	
Queue shown is maximum after two cycles.	
# 95th percentile volume exceeds capacity, queue may be longer.	
Queue shown is maximum after two cycles.	

Splits and Phases: 21: Main St (SR 2014) & Water St (SR 405)



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	245	218	38	87	324	53	60	267	124	46	182	210
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.87	1.00	1.00	0.87
Adj Sat Flow, veh/h/ln	1891	1751	1891	1791	1674	1674	1650	1650	1782	1691	1691	1809
Adj Flow Rate, veh/h	272	242	42	97	360	59	67	297	138	51	202	233
Adj No. of Lanes	0	1	0	0	1	1	1	1	0	1	1	0
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	8	8	8	7	7	7	8	8	8	7	7	7
Cap, veh/h	51	2	0	169	532	667	151	329	153	159	221	254
Arrive On Green	0.47	0.47	0.47	0.47	0.47	0.47	0.03	0.36	0.36	0.03	0.36	0.36
Sat Flow, veh/h	2	4	0	270	1122	1408	1571	923	429	1610	619	714
Grp Volume(v), veh/h	556	0	0	457	0	59	67	0	435	51	0	435
Grp Sat Flow(s),veh/h/ln	6	0	0	1392	0	1408	1571	0	1353	1610	0	1333
Q Serve(g_s), s	49.6	0.0	0.0	33.2	0.0	2.5	2.9	0.0	32.6	2.1	0.0	33.3
Cycle Q Clear(g_c), s	49.6	0.0	0.0	33.2	0.0	2.5	2.9	0.0	32.6	2.1	0.0	33.3
Prop In Lane	0.49		0.08	0.21		1.00	1.00		0.32	1.00		0.54
Lane Grp Cap(c), veh/h	0	0	0	0	0	667	151	0	482	159	0	475
V/C Ratio(X)	0.00	0.00	0.00	0.00	0.00	0.09	0.44	0.00	0.90	0.32	0.00	0.92
Avail Cap(c_a), veh/h	0	0	0	0	0	667	151	0	536	159	0	528
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	0.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	0.0	0.0	0.0	0.0	15.4	26.7	0.0	32.6	26.1	0.0	32.8
Incr Delay (d2), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	17.7	1.1	0.0	19.9
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(95%),veh/ln	0.0	0.0	0.0	0.0	0.0	1.7	2.4	0.0	20.7	1.8	0.0	21.2
LnGrp Delay(d),s/veh	0.0	0.0	0.0	0.0	0.0	15.4	28.8	0.0	50.3	27.3	0.0	52.8
LnGrp LOS						B	C		D	C		D
Approach Vol, veh/h		556			516			502			486	
Approach Delay, s/veh		0.0			1.8			47.4			50.1	
Approach LOS		A			A			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		55.6	9.0	42.1		55.6	9.0	42.1
Change Period (Y+Rc), s		5.0	6.0	4.1		5.0	6.0	4.1
Max Green Setting (Gmax), s		50.6	3.0	42.3		36.6	3.0	42.3
Max Q Clear Time (g_c+I1), s		51.6	4.1	34.6		35.2	4.9	35.3
Green Ext Time (p_c), s		0.0	0.0	3.0		0.6	0.0	2.8

Intersection Summary	
HCM 2010 Ctrl Delay	23.8
HCM 2010 LOS	C

Lane Group	EBL	EBT	WBT	WBR	SWL	SWR
Lane Configurations						
Volume (vph)	39	314	569	0	0	78
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	10	10
Grade (%)		2%	-3%		-1%	
Storage Length (ft)	0			0	0	0
Storage Lanes	0			0	1	0
Taper Length (ft)	75				75	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt					0.865	
Flt Protected		0.995				
Satd. Flow (prot)	0	1647	1819	0	1542	0
Flt Permitted		0.995				
Satd. Flow (perm)	0	1647	1819	0	1542	0
Link Speed (mph)		55	45		25	
Link Distance (ft)		1209	517		640	
Travel Time (s)		15.0	7.8		17.5	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	19%	13%	6%	0%	0%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)		0%	0%		0%	
Adj. Flow (vph)	46	374	677	0	0	93
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	420	677	0	93	0
Sign Control		Free	Free		Stop	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

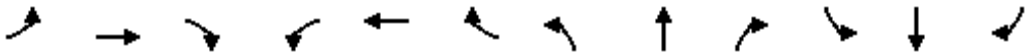
Intersection	
Int Delay, s/veh	1.5

Movement	EBL	EBT	WBT	WBR	SWL	SWR
Vol, veh/h	39	314	569	0	0	78
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, %	-	2	-3	-	-1	-
Peak Hour Factor	84	84	84	84	84	84
Heavy Vehicles, %	19	13	6	0	0	0
Mvmt Flow	46	374	677	0	0	93

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	677	0	-	0	1144	677
Stage 1	-	-	-	-	677	-
Stage 2	-	-	-	-	467	-
Critical Hdwy	4.29	-	-	-	7.1	6.2
Critical Hdwy Stg 1	-	-	-	-	5.2	-
Critical Hdwy Stg 2	-	-	-	-	5.2	-
Follow-up Hdwy	3	-	-	-	3	3.1
Pot Cap-1 Maneuver	701	-	-	-	180	478
Stage 1	-	-	-	-	591	-
Stage 2	-	-	-	-	776	-
Platoon blocked, %		-	-	-	1	
Mov Cap-1 Maneuver	701	-	-	-	165	478
Mov Cap-2 Maneuver	-	-	-	-	165	-
Stage 1	-	-	-	-	591	-
Stage 2	-	-	-	-	712	-

Approach	EB	WB	SW
HCM Control Delay, s	1.2	0	14.3
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SWLn1
Capacity (veh/h)	701	-	-	-	478
HCM Lane V/C Ratio	0.066	-	-	-	0.194
HCM Control Delay (s)	10.5	0	-	-	14.3
HCM Lane LOS	B	A	-	-	B
HCM 95th %tile Q(veh)	0.2	-	-	-	0.7



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	1	335	7	2	575	7	11	25	0	18	34	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	11	11	11	10	10	10
Grade (%)		-2%			1%			0%			-3%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (ft)	75			75			75			75		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.997			0.998						0.989	
Flt Protected								0.985			0.984	
Satd. Flow (prot)	0	1614	0	0	1781	0	0	1680	0	0	1724	0
Flt Permitted								0.985			0.984	
Satd. Flow (perm)	0	1614	0	0	1781	0	0	1680	0	0	1724	0
Link Speed (mph)		55			55			35			50	
Link Distance (ft)		1494			4148			578			618	
Travel Time (s)		18.5			51.4			11.3			8.4	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	19%	0%	0%	6%	0%	25%	0%	0%	0%	0%	20%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	1	368	8	2	632	8	12	27	0	20	37	5
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	377	0	0	642	0	0	39	0	0	62	0
Sign Control		Free			Free			Stop			Stop	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

Intersection	
Int Delay, s/veh	2.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	1	335	7	2	575	7	11	25	0	18	34	5
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	-2	-	-	1	-	-	0	-	-	-3	-
Peak Hour Factor	91	91	91	91	91	91	91	91	91	91	91	91
Heavy Vehicles, %	0	19	0	0	6	0	25	0	0	0	0	20
Mvmt Flow	1	368	8	2	632	8	12	27	0	20	37	5

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	640	0	0	376	0	0	1036	1018	372	1028	1018	636
Stage 1	-	-	-	-	-	-	374	374	-	640	640	-
Stage 2	-	-	-	-	-	-	662	644	-	388	378	-
Critical Hdwy	4.9	-	-	4.9	-	-	8.1	6.5	6.4	8.1	6.5	6.4
Critical Hdwy Stg 1	-	-	-	-	-	-	6.35	5.5	-	5.5	4.9	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.35	5.5	-	5.5	4.9	-
Follow-up Hdwy	3.5	-	-	3.5	-	-	3	4	3.4	3	4	3.4
Pot Cap-1 Maneuver	578	-	-	736	-	-	174	239	648	177	239	455
Stage 1	-	-	-	-	-	-	722	621	-	582	526	-
Stage 2	-	-	-	-	-	-	486	471	-	776	659	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	578	-	-	736	-	-	151	238	648	161	238	455
Mov Cap-2 Maneuver	-	-	-	-	-	-	151	238	-	161	238	-
Stage 1	-	-	-	-	-	-	721	620	-	581	524	-
Stage 2	-	-	-	-	-	-	444	469	-	740	658	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0	27.1	28.5
HCM LOS			D	D

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	202	578	-	-	736	-	-	215
HCM Lane V/C Ratio	0.196	0.002	-	-	0.003	-	-	0.291
HCM Control Delay (s)	27.1	11.2	0	-	9.9	0	-	28.5
HCM Lane LOS	D	B	A	-	A	A	-	D
HCM 95th %tile Q(veh)	0.7	0	-	-	0	-	-	1.2

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	18	264	50	6	469	3	53	18	2	1	29	41
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	12	12	12	12	11	11	11	14	14	14
Grade (%)		0%			-1%			7%			-1%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (ft)	75			75			75			75		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.980			0.999			0.997			0.922	
Flt Protected		0.997			0.999			0.965			0.999	
Satd. Flow (prot)	0	1551	0	0	1705	0	0	1515	0	0	1485	0
Flt Permitted		0.997			0.999			0.965			0.999	
Satd. Flow (perm)	0	1551	0	0	1705	0	0	1515	0	0	1485	0
Link Speed (mph)		55			55			40			40	
Link Distance (ft)		1228			918			354			317	
Travel Time (s)		15.2			11.4			6.0			5.4	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	63%	11%	8%	0%	6%	0%	3%	18%	0%	0%	27%	15%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	22	322	61	7	572	4	65	22	2	1	35	50
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	405	0	0	583	0	0	89	0	0	86	0
Sign Control		Free			Free			Stop			Stop	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

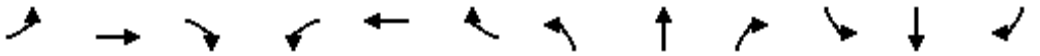
Intersection	
Int Delay, s/veh	6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	18	264	50	6	469	3	53	18	2	1	29	41
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	-1	-	-	7	-	-	-1	-
Peak Hour Factor	82	82	82	82	82	82	82	82	82	82	82	82
Heavy Vehicles, %	63	11	8	0	6	0	3	18	0	0	27	15
Mvmt Flow	22	322	61	7	572	4	65	22	2	1	35	50

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	576	0	0	383	0	0	1027	986	352	997	1015	574
Stage 1	-	-	-	-	-	-	396	396	-	588	588	-
Stage 2	-	-	-	-	-	-	631	590	-	409	427	-
Critical Hdwy	4.9	-	-	4.9	-	-	8.1	6.5	6.4	8.1	6.5	6.4
Critical Hdwy Stg 1	-	-	-	-	-	-	7.53	7.08	-	5.9	5.57	-
Critical Hdwy Stg 2	-	-	-	-	-	-	7.53	7.08	-	5.9	5.57	-
Follow-up Hdwy	3.5	-	-	3.5	-	-	3	4	3.4	3	4	3.4
Pot Cap-1 Maneuver	613	-	-	731	-	-	177	250	666	187	240	494
Stage 1	-	-	-	-	-	-	615	511	-	579	494	-
Stage 2	-	-	-	-	-	-	412	385	-	724	584	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	613	-	-	731	-	-	134	235	666	165	226	494
Mov Cap-2 Maneuver	-	-	-	-	-	-	134	235	-	165	226	-
Stage 1	-	-	-	-	-	-	587	487	-	552	487	-
Stage 2	-	-	-	-	-	-	339	380	-	657	557	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.6	0.1	56.3	19.9
HCM LOS			F	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	154	613	-	-	731	-	-	327
HCM Lane V/C Ratio	0.578	0.036	-	-	0.01	-	-	0.265
HCM Control Delay (s)	56.3	11.1	0	-	10	0	-	19.9
HCM Lane LOS	F	B	A	-	A	A	-	C
HCM 95th %tile Q(veh)	3	0.1	-	-	0	-	-	1



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	60	43	13	4	6	3	2	22	2	12	30	46
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	10	10	10	10	10	13	13	13	16	16	16
Grade (%)		-3%			2%			1%			-2%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (ft)	75			75			75			75		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.985			0.969			0.991			0.929	
Flt Protected		0.975			0.984			0.997			0.993	
Satd. Flow (prot)	0	1399	0	0	1551	0	0	1588	0	0	1847	0
Flt Permitted		0.975			0.984			0.997			0.993	
Satd. Flow (perm)	0	1399	0	0	1551	0	0	1588	0	0	1847	0
Link Speed (mph)		35			25			25			25	
Link Distance (ft)		1453			774			205			154	
Travel Time (s)		28.3			21.1			5.6			4.2	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	42%	0%	17%	25%	0%	0%	0%	25%	0%	0%	13%	8%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	100	72	22	7	10	5	3	37	3	20	50	77
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	194	0	0	22	0	0	43	0	0	147	0
Sign Control		Stop			Stop			Free			Free	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

Intersection	
Int Delay, s/veh	6.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	60	43	13	4	6	3	2	22	2	12	30	46
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, %	-	-3	-	-	2	-	-	1	-	-	-2	-
Peak Hour Factor	60	60	60	60	60	60	60	60	60	60	60	60
Heavy Vehicles, %	42	0	17	25	0	0	0	25	0	0	13	8
Mvmt Flow	100	72	22	7	10	5	3	37	3	20	50	77

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	181	175	88	220	212	38	127	0	0	40	0	0
Stage 1	128	128	-	45	45	-	-	-	-	-	-	-
Stage 2	53	47	-	175	167	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.3	-	-	4.3	-	-
Critical Hdwy Stg 1	5.92	4.9	-	6.75	5.9	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.92	4.9	-	6.75	5.9	-	-	-	-	-	-	-
Follow-up Hdwy	3	4	3.1	3	4	3.1	3	-	-	3	-	-
Pot Cap-1 Maneuver	905	722	1036	851	689	1106	1087	-	-	1163	-	-
Stage 1	1025	811	-	1124	857	-	-	-	-	-	-	-
Stage 2	1124	866	-	929	750	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	876	706	1036	756	674	1106	1087	-	-	1163	-	-
Mov Cap-2 Maneuver	876	706	-	756	674	-	-	-	-	-	-	-
Stage 1	1022	796	-	1121	854	-	-	-	-	-	-	-
Stage 2	1102	863	-	812	736	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	10.8	9.8	0.6	1.1
HCM LOS	B	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1087	-	-	817	769	1163	-	-
HCM Lane V/C Ratio	0.003	-	-	0.237	0.028	0.017	-	-
HCM Control Delay (s)	8.3	0	-	10.8	9.8	8.2	0	-
HCM Lane LOS	A	A	-	B	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.9	0.1	0.1	-	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Volume (vph)	1	1	47	4	0	0	0	435	0	20	619	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	10	10	9	9	9	11	11	11	11	11	11
Grade (%)		1%			-1%			-3%			0%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (ft)	75			75			75			75		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.870										
Flt Protected		0.999			0.950						0.998	
Satd. Flow (prot)	0	1534	0	0	1306	0	0	1742	0	0	1790	0
Flt Permitted		0.999			0.950						0.998	
Satd. Flow (perm)	0	1534	0	0	1306	0	0	1742	0	0	1790	0
Link Speed (mph)		25			25			50			50	
Link Distance (ft)		172			263			852			367	
Travel Time (s)		4.7			7.2			11.6			5.0	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	0%	0%	25%	0%	0%	0%	7%	0%	14%	2%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	1	1	49	4	0	0	0	453	0	21	645	1
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	51	0	0	4	0	0	453	0	0	667	0
Sign Control		Stop			Stop			Free			Free	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

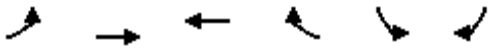
Intersection	
Int Delay, s/veh	0.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Vol, veh/h	1	1	47	4	0	0	0	435	0	20	619	1
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, %	-	1	-	-	-1	-	-	-3	-	-	0	-
Peak Hour Factor	96	96	96	96	96	96	96	96	96	96	96	96
Heavy Vehicles, %	0	0	0	25	0	0	0	7	0	14	2	0
Mvmt Flow	1	1	49	4	0	0	0	453	0	21	645	1

Major/Minor	Minor1			Minor2			Major1			Major2		
Conflicting Flow All	1140	1141	453	1165	1140	645	646	0	0	453	0	0
Stage 1	453	453	-	687	687	-	-	-	-	-	-	-
Stage 2	687	688	-	478	453	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.3	-	-	4.3	-	-
Critical Hdwy Stg 1	6.3	5.7	-	6.15	5.3	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.3	5.7	-	6.15	5.3	-	-	-	-	-	-	-
Follow-up Hdwy	3	4	3.1	3	4	3.1	3	-	-	3	-	-
Pot Cap-1 Maneuver	196	202	643	188	203	498	717	-	-	839	-	-
Stage 1	652	559	-	487	468	-	-	-	-	-	-	-
Stage 2	474	433	-	643	588	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	190	194	643	168	195	498	717	-	-	839	-	-
Mov Cap-2 Maneuver	190	194	-	168	195	-	-	-	-	-	-	-
Stage 1	652	559	-	487	450	-	-	-	-	-	-	-
Stage 2	456	416	-	593	588	-	-	-	-	-	-	-

Approach	EB	WB	SE	NW
HCM Control Delay, s	11.7	27	0	0.3
HCM LOS	B	D		

Minor Lane/Major Mvmt	NWL	NWT	NWR	EBLn1	WBLn1	SEL	SET	SER
Capacity (veh/h)	839	-	-	587	168	717	-	-
HCM Lane V/C Ratio	0.025	-	-	0.087	0.025	-	-	-
HCM Control Delay (s)	9.4	0	-	11.7	27	0	-	-
HCM Lane LOS	A	A	-	B	D	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0.3	0.1	0	-	-



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	0	1058	613	0	0	171
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	13	13	13	13
Grade (%)		-1%	1%		-2%	
Storage Length (ft)	0			0	0	0
Storage Lanes	0			0	0	1
Taper Length (ft)	75				75	
Lane Util. Factor	1.00	0.95	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt						0.865
Flt Protected						
Satd. Flow (prot)	0	3359	1860	0	0	1665
Flt Permitted						
Satd. Flow (perm)	0	3359	1860	0	0	1665
Link Speed (mph)		35	35		25	
Link Distance (ft)		348	758		364	
Travel Time (s)		6.8	14.8		9.9	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	8%	5%	0%	0%	3%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)		0%	0%		0%	
Adj. Flow (vph)	0	1290	748	0	0	209
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	1290	748	0	0	209
Sign Control		Free	Free		Stop	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

Intersection	
Int Delay, s/veh	1.9

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Vol, veh/h	0	1058	613	0	0	171
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	Stop
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	1	-
Grade, %	-	-1	1	-	-2	-
Peak Hour Factor	82	82	82	82	82	82
Heavy Vehicles, %	0	8	5	0	0	3
Mvmt Flow	0	1290	748	0	0	209

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	748	0	-	0	1393	748
Stage 1	-	-	-	-	748	-
Stage 2	-	-	-	-	645	-
Critical Hdwy	4.3	-	-	-	7.1	6.2
Critical Hdwy Stg 1	-	-	-	-	5	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	3	-	-	-	3	3.1
Pot Cap-1 Maneuver	660	-	-	-	130	434
Stage 1	-	-	-	-	571	-
Stage 2	-	-	-	-	590	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	660	-	-	-	130	434
Mov Cap-2 Maneuver	-	-	-	-	324	-
Stage 1	-	-	-	-	571	-
Stage 2	-	-	-	-	590	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	20.7
HCM LOS			C

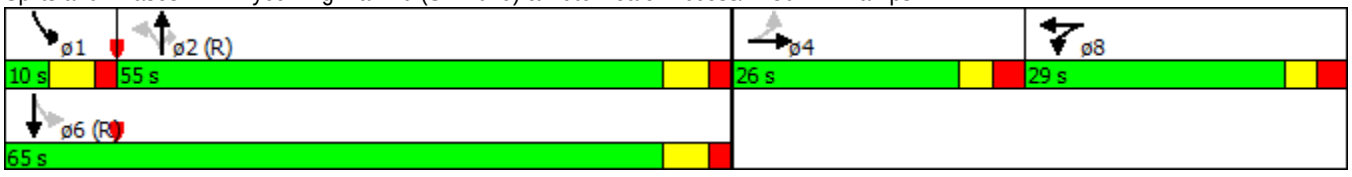
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	660	-	-	-	434
HCM Lane V/C Ratio	-	-	-	-	0.48
HCM Control Delay (s)	0	-	-	-	20.7
HCM Lane LOS	A	-	-	-	C
HCM 95th %tile Q(veh)	0	-	-	-	2.5

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	2	23	26	505	6	265	14	800	660	145	908	1
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	13	13	13	15	15	15	12	12	16	12	12	12
Grade (%)		2%			4%			1%			-1%	
Storage Length (ft)	0		100	150		0	125		0	0		375
Storage Lanes	0		0	2		0	1		1	1		1
Taper Length (ft)	75			75			75			75		
Lane Util. Factor	1.00	1.00	1.00	0.97	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95
Ped Bike Factor												
Frt		0.931			0.854				0.850			
Flt Protected		0.998		0.950			0.950			0.950		
Satd. Flow (prot)	0	1711	0	3576	1650	0	1701	1791	1725	1719	3370	0
Flt Permitted		0.301		0.950			0.290			0.071		
Satd. Flow (perm)	0	516	0	3576	1650	0	519	1791	1725	128	3370	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		28			288				465			
Link Speed (mph)		25			25			40			40	
Link Distance (ft)		187			334			1105			689	
Travel Time (s)		5.1			9.1			18.8			11.7	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
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
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	0%	0%	0%	17%	0%	0%	0%	0%	0%	2%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	2	25	28	549	7	288	15	870	717	158	987	1
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	55	0	549	295	0	15	870	717	158	988	0
Number of Detectors	1	1		1	1		1	1	0	1	1	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left		
Leading Detector (ft)	30	40		30	45		30	45	0	30	45	
Trailing Detector (ft)	-10	-10		-10	-5		-10	-5	0	-10	-5	
Turn Type	Perm	NA		Split	NA		Perm	NA	Perm	pm+pt	NA	
Protected Phases		4		8	8			2		1	6	
Permitted Phases	4						2		2	6		
Detector Phase	4	4		8	8		2	2	2	1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	3.0	5.0	
Minimum Split (s)	10.8	10.8		10.8	10.8		11.2	11.2	11.2	9.0	11.2	
Total Split (s)	26.0	26.0		29.0	29.0		55.0	55.0	55.0	10.0	65.0	
Total Split (%)	21.7%	21.7%		24.2%	24.2%		45.8%	45.8%	45.8%	8.3%	54.2%	
Maximum Green (s)	20.2	20.2		23.2	23.2		48.8	48.8	48.8	4.0	58.8	
Yellow Time (s)	3.0	3.0		3.0	3.0		4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	2.8	2.8		2.8	2.8		2.2	2.2	2.2	2.0	2.2	
Lost Time Adjust (s)		-1.0		-1.0	-1.0		-1.0	-1.0	-1.0	-1.0	-1.0	
Total Lost Time (s)		4.8		4.8	4.8		5.2	5.2	5.2	5.0	5.2	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead/Lag							Lag	Lag	Lag	Lead		
Lead-Lag Optimize?												
Vehicle Extension (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	3.0	4.0	
Minimum Gap (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Time Before Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Time To Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Recall Mode	None	None		None	None		C-Max	C-Max	C-Max	None	C-Max	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
v/c Ratio		0.74		0.69	0.50		0.07	1.12	0.71	0.66	0.51	
Control Delay		79.0		47.8	7.9		20.2	91.9	9.3	38.8	17.9	
Queue Delay		0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay		79.0		47.8	7.9		20.2	91.9	9.3	38.8	17.9	
Queue Length 50th (ft)		20		200	4		6	~819	115	70	242	
Queue Length 95th (ft)		#79		259	77		m7	m#965	m140	#243	343	
Internal Link Dist (ft)		107			254			1025			609	
Turn Bay Length (ft)				150			125					
Base Capacity (vph)		114		810	596		226	780	1013	238	1955	
Starvation Cap Reductn		0		0	0		0	0	0	0	0	
Spillback Cap Reductn		0		0	0		0	0	0	0	0	
Storage Cap Reductn		0		0	0		0	0	0	0	0	
Reduced v/c Ratio		0.48		0.68	0.49		0.07	1.12	0.71	0.66	0.51	

Intersection Summary	
Area Type:	Other
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
~ Volume exceeds capacity, queue is theoretically infinite.	
Queue shown is maximum after two cycles.	
# 95th percentile volume exceeds capacity, queue may be longer.	
Queue shown is maximum after two cycles.	
m Volume for 95th percentile queue is metered by upstream signal.	

Splits and Phases: 1: Lycoming Mall Rd (SR 2049) & Auto Dealer Access/I-180 WB Ramps



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	2	23	26	505	6	265	14	800	660	145	908	1
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	1853	1853	1853	1835	1827	1835	1791	1791	1863	1809	1774	1809
Adj Flow Rate, veh/h	2	25	15	549	7	277	15	870	425	158	987	0
Adj No. of Lanes	0	1	0	2	1	0	1	1	1	1	2	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	17	17	0	0	0	0	2	2
Cap, veh/h	3	41	25	684	8	307	339	989	874	372	2141	0
Arrive On Green	0.03	0.04	0.03	0.20	0.20	0.19	1.00	1.00	1.00	0.04	0.64	0.00
Sat Flow, veh/h	83	1035	621	3390	38	1520	576	1791	1583	1723	3458	0
Grp Volume(v), veh/h	42	0	0	549	0	284	15	870	425	158	987	0
Grp Sat Flow(s),veh/h/ln	1740	0	0	1695	0	1559	576	1791	1583	1723	1685	0
Q Serve(g_s), s	2.9	0.0	0.0	18.5	0.0	21.4	0.4	0.0	0.0	4.7	18.1	0.0
Cycle Q Clear(g_c), s	2.9	0.0	0.0	18.5	0.0	21.4	8.5	0.0	0.0	4.7	18.1	0.0
Prop In Lane	0.05		0.36	1.00		0.98	1.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	69	0	0	684	0	314	339	989	874	372	2141	0
V/C Ratio(X)	0.61	0.00	0.00	0.80	0.00	0.90	0.04	0.88	0.49	0.43	0.46	0.00
Avail Cap(c_a), veh/h	307	0	0	684	0	314	339	989	874	372	2141	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	0.33	0.33	0.33	1.00	1.00	0.00
Uniform Delay (d), s/veh	56.9	0.0	0.0	45.6	0.0	47.2	0.5	0.0	0.0	9.9	11.3	0.0
Incr Delay (d2), s/veh	11.7	0.0	0.0	7.2	0.0	28.2	0.1	4.1	0.6	0.8	0.7	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(95%),veh/ln	2.9	0.0	0.0	14.4	0.0	17.2	0.1	2.0	0.3	4.1	13.4	0.0
LnGrp Delay(d),s/veh	68.6	0.0	0.0	52.9	0.0	75.4	0.6	4.1	0.6	10.6	12.0	0.0
LnGrp LOS	E			D		E	A	A	A	B	B	
Approach Vol, veh/h		42			833			1310			1145	
Approach Delay, s/veh		68.6			60.5			3.0			11.8	
Approach LOS		E			E			A			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6		8
Phs Duration (G+Y+Rc), s	10.0	71.4		9.6		81.4		29.0
Change Period (Y+Rc), s	6.0	* 6.2		* 5.8		* 6.2		5.8
Max Green Setting (Gmax), s	4.0	* 49		* 20		* 59		23.2
Max Q Clear Time (g_c+I1), s	7.2	11.0		4.9		20.6		23.4
Green Ext Time (p_c), s	0.0	16.1		0.1		16.2		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	21.2
HCM 2010 LOS	C

Notes

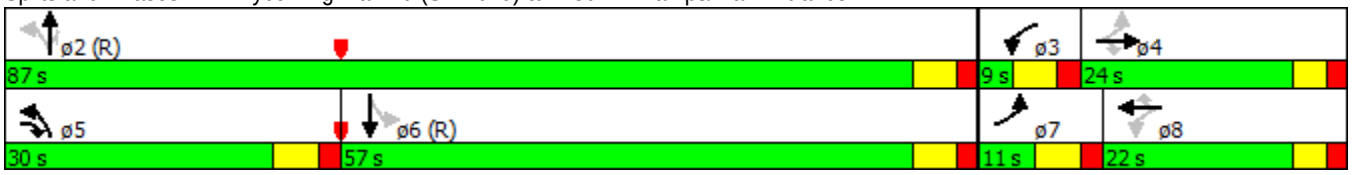
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	175	278	352	77	55	323	389	977	74	85	1080	276
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	12	11	12	12	12	12	12	12	12	12
Grade (%)		2%			2%			-2%			-3%	
Storage Length (ft)	175		0	175		225	225		225	175		0
Storage Lanes	1		1	1		1	1		0	1		0
Taper Length (ft)	75			75			75			75		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95
Ped Bike Factor												
Frt			0.850			0.850			0.850		0.969	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1644	1782	1443	1604	1713	1515	1645	1800	1515	1736	3317	0
Flt Permitted	0.646			0.222			0.070			0.166		
Satd. Flow (perm)	1118	1782	1443	375	1713	1515	121	1800	1515	303	3317	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			82			141			77		33	
Link Speed (mph)		25			25			40			40	
Link Distance (ft)		279			408			2572			1105	
Travel Time (s)		7.6			11.1			43.8			18.8	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	3%	0%	5%	2%	4%	0%	5%	1%	2%	0%	1%	3%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	192	305	387	85	60	355	427	1074	81	93	1187	303
Shared Lane Traffic (%)												
Lane Group Flow (vph)	192	305	387	85	60	355	427	1074	81	93	1490	0
Number of Detectors	1	1	1	1	1	0	1	1	1	1	1	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	
Leading Detector (ft)	30	45	30	45	45	0	45	45	30	45	45	
Trailing Detector (ft)	-10	-5	-10	-5	-5	0	-5	-5	-10	-5	-5	
Turn Type	pm+pt	NA	pm+ov	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA	
Protected Phases	7	4	5	3	8		5	2			6	
Permitted Phases	4		4	8		8	2		2	6		
Detector Phase	7	4	5	3	8	8	5	2	2	6	6	
Switch Phase												
Minimum Initial (s)	3.0	2.0	3.0	3.0	2.0	2.0	3.0	2.0	2.0	2.0	2.0	
Minimum Split (s)	9.0	7.0	9.0	9.0	7.0	7.0	9.0	8.0	8.0	8.0	8.0	
Total Split (s)	11.0	24.0	30.0	9.0	22.0	22.0	30.0	87.0	87.0	57.0	57.0	
Total Split (%)	9.2%	20.0%	25.0%	7.5%	18.3%	18.3%	25.0%	72.5%	72.5%	47.5%	47.5%	
Maximum Green (s)	5.0	19.0	24.0	3.0	17.0	17.0	24.0	81.0	81.0	51.0	51.0	
Yellow Time (s)	4.0	3.0	4.0	4.0	3.0	3.0	4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	0.0	-1.0	-1.0	
Total Lost Time (s)	5.0	4.0	5.0	5.0	4.0	4.0	5.0	5.0	6.0	5.0	5.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lag	Lead			Lag	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	4.0	3.0	3.0	4.0	4.0	3.0	4.0	4.0	4.0	4.0	
Minimum Gap (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Time Before Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Time To Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Recall Mode	None	None	None	None	None	None	None	C-Max	C-Max	C-Max	C-Max	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
v/c Ratio	0.74	1.03	0.61	0.80	0.23	1.02	1.07	0.87	0.08	0.71	1.02	
Control Delay	60.6	108.6	26.4	88.4	47.7	85.0	95.6	22.7	2.5	48.2	56.4	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	60.6	108.6	26.4	88.4	47.7	85.0	95.6	22.7	2.5	48.2	56.4	
Queue Length 50th (ft)	130	~252	184	54	42	~193	~322	455	4	66	~631	
Queue Length 95th (ft)	#230	#431	292	#114	84	#386	m#472	#965	m12	m#145	#362	
Internal Link Dist (ft)		199			328			2492			1025	
Turn Bay Length (ft)	175			175		225	225		225	175		
Base Capacity (vph)	259	297	637	106	256	347	400	1230	1047	131	1456	
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.74	1.03	0.61	0.80	0.23	1.02	1.07	0.87	0.08	0.71	1.02	

Intersection Summary	
Area Type:	Other
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	
Natural Cycle: 120	
Control Type: Actuated-Coordinated	
~ Volume exceeds capacity, queue is theoretically infinite.	
Queue shown is maximum after two cycles.	
# 95th percentile volume exceeds capacity, queue may be longer.	
Queue shown is maximum after two cycles.	
m Volume for 95th percentile queue is metered by upstream signal.	

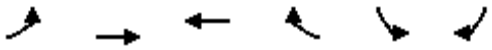
Splits and Phases: 2: Lycoming Mall Rd (SR 2049) & I-180 EB Ramps/Mall Entrance



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	175	278	352	77	55	323	389	977	74	85	1080	276
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	1730	1782	1697	1747	1713	1782	1731	1800	1782	1827	1802	1827
Adj Flow Rate, veh/h	192	305	277	85	60	0	427	1074	43	93	1187	202
Adj No. of Lanes	1	1	1	1	1	1	1	1	1	1	2	0
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	3	0	5	2	4	0	5	1	2	0	1	1
Cap, veh/h	299	297	541	115	257	227	457	1230	1023	172	1270	215
Arrive On Green	0.05	0.17	0.17	0.03	0.15	0.00	0.21	0.68	0.68	0.87	0.87	0.85
Sat Flow, veh/h	1648	1782	1443	1664	1713	1515	1649	1800	1515	520	2930	496
Grp Volume(v), veh/h	192	305	277	85	60	0	427	1074	43	93	691	698
Grp Sat Flow(s),veh/h/ln	1648	1782	1443	1664	1713	1515	1649	1800	1515	520	1712	1714
Q Serve(g_s), s	6.0	20.0	17.8	4.0	3.7	0.0	22.0	56.2	1.1	19.1	33.5	35.5
Cycle Q Clear(g_c), s	6.0	20.0	17.8	4.0	3.7	0.0	22.0	56.2	1.1	45.3	33.5	35.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.29
Lane Grp Cap(c), veh/h	299	297	541	115	257	227	457	1230	1023	172	742	743
V/C Ratio(X)	0.64	1.03	0.51	0.74	0.23	0.00	0.93	0.87	0.04	0.54	0.93	0.94
Avail Cap(c_a), veh/h	299	297	541	115	257	227	457	1230	1023	172	742	743
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	1.00	1.00	1.00	1.00	0.00	0.38	0.38	0.38	0.80	0.80	0.80
Uniform Delay (d), s/veh	45.8	50.0	29.0	47.0	44.9	0.0	31.5	14.9	6.5	19.2	6.8	7.2
Incr Delay (d2), s/veh	4.6	59.3	1.1	21.6	0.7	0.0	13.1	3.6	0.0	9.4	16.9	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(95%),veh/ln	9.6	26.5	11.7	3.0	3.2	0.0	19.4	34.1	0.9	5.6	23.8	25.3
LnGrp Delay(d),s/veh	50.4	109.3	30.1	68.5	45.6	0.0	44.6	18.5	6.6	28.6	23.7	25.2
LnGrp LOS	D	F	C	E	D		D	B	A	C	C	C
Approach Vol, veh/h		774			145			1544			1482	
Approach Delay, s/veh		66.4			59.0			25.4			24.7	
Approach LOS		E			E			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s		87.0	9.0	24.0	30.0	57.0	11.0	22.0
Change Period (Y+Rc), s		6.0	6.0	5.0	6.0	6.0	6.0	5.0
Max Green Setting (Gmax), s		81.0	3.0	19.0	24.0	51.0	5.0	17.0
Max Q Clear Time (g_c+I1), s		58.7	6.5	22.5	24.5	47.8	8.5	6.2
Green Ext Time (p_c), s		18.8	0.0	0.0	0.0	3.1	0.0	2.9

Intersection Summary	
HCM 2010 Ctrl Delay	34.4
HCM 2010 LOS	C

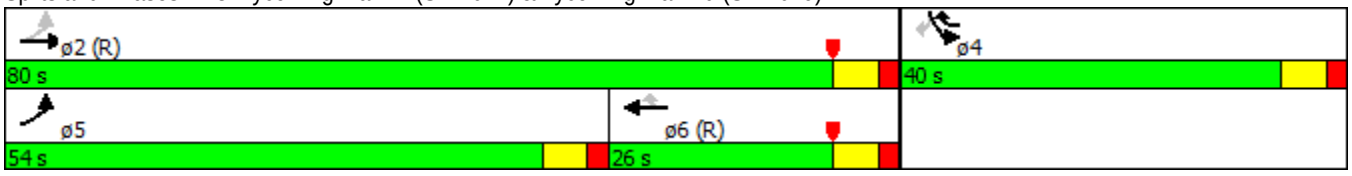


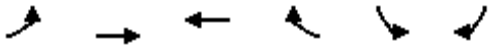
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	409	730	768	825	798	468
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	12	12	12	12
Grade (%)		-1%	1%		-2%	
Storage Length (ft)	165			215	165	0
Storage Lanes	1			1	1	1
Taper Length (ft)	125				75	
Lane Util. Factor	1.00	1.00	0.95	1.00	0.97	1.00
Ped Bike Factor						
Frt				0.850		0.850
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1719	1774	3336	1522	3191	1486
Flt Permitted	0.122				0.950	
Satd. Flow (perm)	221	1774	3336	1522	3191	1486
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)				272		530
Link Speed (mph)		45	45		40	
Link Distance (ft)		893	401		2572	
Travel Time (s)		13.5	6.1		43.8	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	2%	2%	0%	5%	4%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)		0%	0%		0%	
Adj. Flow (vph)	465	830	873	938	907	532
Shared Lane Traffic (%)						
Lane Group Flow (vph)	465	830	873	938	907	532
Number of Detectors	1	1	1	1	1	1
Detector Template	Left				Left	Right
Leading Detector (ft)	45	6	6	6	45	45
Trailing Detector (ft)	-5	0	0	0	-5	-5
Turn Type	pm+pt	NA	NA	pm+ov	Prot	Perm
Protected Phases	5	2	6	4	4	
Permitted Phases	2			6		4
Detector Phase	5				4	4
Switch Phase						
Minimum Initial (s)	3.0	15.0	15.0	5.0	5.0	5.0
Minimum Split (s)	9.0	21.0	21.0	11.0	11.0	11.0
Total Split (s)	54.0	80.0	26.0	40.0	40.0	40.0
Total Split (%)	45.0%	66.7%	21.7%	33.3%	33.3%	33.3%
Maximum Green (s)	48.0	74.0	20.0	34.0	34.0	34.0
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lead/Lag	Lead		Lag			
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	5.0	5.0	3.0	3.0	3.0
Minimum Gap (s)	3.0	2.0	2.0	3.0	3.0	3.0
Time Before Reduce (s)	0.0	42.0	42.0	0.0	0.0	0.0
Time To Reduce (s)	0.0	10.0	10.0	0.0	0.0	0.0
Recall Mode	None	C-Max	C-Max	None	None	None
Walk Time (s)		7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)		14.0	14.0	14.0	14.0	14.0
Pedestrian Calls (#/hr)		0	0	0	0	0
v/c Ratio	0.89	0.75	0.80	0.86	0.98	0.66
Control Delay	47.8	21.3	44.9	22.2	55.7	7.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	47.8	21.3	44.9	22.2	55.7	7.5
Queue Length 50th (ft)	275	423	323	391	318	63
Queue Length 95th (ft)	357	566	#534	#844	m334	m69
Internal Link Dist (ft)		813	321		2492	
Turn Bay Length (ft)	165			215	165	
Base Capacity (vph)	749	1108	1091	1097	930	808
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.62	0.75	0.80	0.86	0.98	0.66

Intersection Summary	
Area Type:	Other
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 30 (25%), Referenced to phase 2:EBTL and 6:WBT, Start of Yellow	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
# 95th percentile volume exceeds capacity, queue may be longer.	
Queue shown is maximum after two cycles.	
m Volume for 95th percentile queue is metered by upstream signal.	

Splits and Phases: 3: Lycoming Mall Dr (SR 2014) & Lycoming Mall Rd (SR 2049)





Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	409	730	768	825	798	468
Number	5	2	6	16	7	14
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	1809	1774	1756	1791	1731	1748
Adj Flow Rate, veh/h	465	830	873	736	907	387
Adj No. of Lanes	1	1	2	1	2	1
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	0	2	2	0	5	4
Cap, veh/h	520	1108	1117	954	933	433
Arrive On Green	0.25	0.63	0.33	0.33	0.29	0.29
Sat Flow, veh/h	1723	1774	3424	1522	3199	1486
Grp Volume(v), veh/h	465	830	873	736	907	387
Grp Sat Flow(s),veh/h/ln	1723	1774	1668	1522	1600	1486
Q Serve(g_s), s	24.6	39.6	28.3	40.2	33.6	29.9
Cycle Q Clear(g_c), s	24.6	39.6	28.3	40.2	33.6	29.9
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	520	1108	1117	954	933	433
V/C Ratio(X)	0.89	0.75	0.78	0.77	0.97	0.89
Avail Cap(c_a), veh/h	795	1108	1117	954	933	433
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	0.25	0.25
Uniform Delay (d), s/veh	30.9	15.9	35.9	15.9	42.0	40.7
Incr Delay (d2), s/veh	8.7	4.6	5.5	6.0	9.2	6.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	22.5	28.0	19.9	34.3	19.3	26.6
LnGrp Delay(d),s/veh	39.6	20.5	41.4	21.9	51.2	47.0
LnGrp LOS	D	C	D	C	D	D
Approach Vol, veh/h		1295	1609		1294	
Approach Delay, s/veh		27.3	32.5		49.9	
Approach LOS		C	C		D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		80.0		40.0	34.8	45.2		
Change Period (Y+Rc), s		6.0		6.0	6.0	6.0		
Max Green Setting (Gmax), s		74.0		34.0	48.0	20.0		
Max Q Clear Time (g_c+I1), s		42.1		36.1	27.1	42.7		
Green Ext Time (p_c), s		24.8		0.0	1.7	0.0		

Intersection Summary	
HCM 2010 Ctrl Delay	36.3
HCM 2010 LOS	D

Notes

User approved pedestrian interval to be less than phase max green.

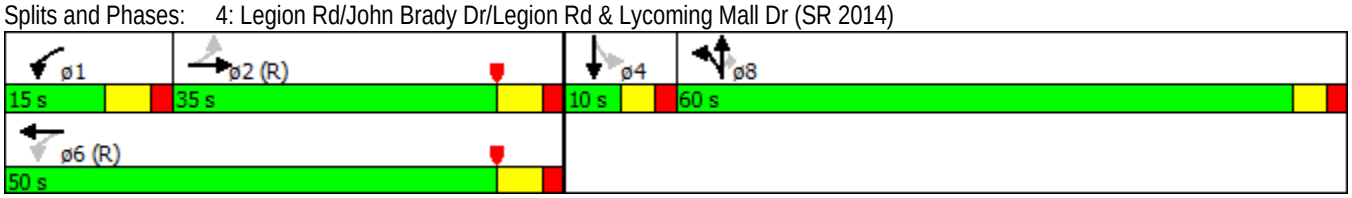
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	6	641	0	229	576	6	1419	2	437	13	8	6
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	12	13	13	13	12	12	12	14	14	14
Grade (%)		1%			-1%			-3%			0%	
Storage Length (ft)	1		0	275		0	100		150	0		0
Storage Lanes	0		0	1		0	0		1	0		0
Taper Length (ft)	75			75			75			75		
Lane Util. Factor	0.95	0.95	1.00	1.00	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt					0.998				0.850		0.968	
Flt Protected				0.950			0.950	0.952			0.977	
Satd. Flow (prot)	0	3326	0	1586	3404	0	1633	1636	1451	0	1573	0
Flt Permitted		0.947		0.118			0.950	0.952			0.587	
Satd. Flow (perm)	0	3150	0	197	3404	0	1633	1636	1451	0	945	0
Right Turn on Red			Yes			Yes			Yes			No
Satd. Flow (RTOR)					1				242			
Link Speed (mph)		45			45			45			25	
Link Distance (ft)		329			418			277			291	
Travel Time (s)		5.0			6.3			4.2			7.9	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	33%	2%	0%	12%	4%	17%	1%	0%	7%	33%	0%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)	0											
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	7	712	0	254	640	7	1577	2	486	14	9	7
Shared Lane Traffic (%)							50%					
Lane Group Flow (vph)	0	719	0	254	647	0	788	791	486	0	30	0
Number of Detectors	1	2		1	2		2	2	0	1	1	
Detector Template	Left			Left						Left	Thru	
Leading Detector (ft)	30	306		30	286		206	206	0	30	30	
Trailing Detector (ft)	-10	-5		-10	-5		-5	-5	0	-10	-10	
Turn Type	Perm	NA		pm+pt	NA		Split	NA	Perm	Perm	NA	
Protected Phases		2		1	6		8	8			4	
Permitted Phases	2			6					8	4		
Detector Phase	2	2		1	6		8	8	8	4	4	
Switch Phase												
Minimum Initial (s)	15.0	15.0		3.0	15.0		15.0	15.0	15.0	5.0	5.0	
Minimum Split (s)	21.0	21.0		13.0	21.0		20.0	20.0	20.0	10.0	10.0	
Total Split (s)	35.0	35.0		15.0	50.0		60.0	60.0	60.0	10.0	10.0	
Total Split (%)	29.2%	29.2%		12.5%	41.7%		50.0%	50.0%	50.0%	8.3%	8.3%	
Maximum Green (s)	29.0	29.0		9.0	44.0		55.0	55.0	55.0	5.0	5.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)		-1.0		-1.0	-1.0		-1.0	-1.0	-1.0		-1.0	
Total Lost Time (s)		5.0		5.0	5.0		4.0	4.0	4.0		4.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead/Lag	Lag	Lag		Lead								
Lead-Lag Optimize?												
Vehicle Extension (s)	6.0	6.0		3.0	6.0		6.0	6.0	6.0	3.0	3.0	
Minimum Gap (s)	2.0	2.0		3.0	2.0		2.0	2.0	2.0	2.0	2.0	
Time Before Reduce (s)	40.0	40.0		0.0	40.0		40.0	40.0	40.0	0.0	0.0	
Time To Reduce (s)	20.0	20.0		0.0	20.0		20.0	20.0	20.0	0.0	0.0	
Recall Mode	C-Max	C-Max		None	C-Max		None	None	None	None	None	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
v/c Ratio		0.91		1.34	0.51		1.00	1.00	0.59		0.64	
Control Delay		61.0		212.8	30.6		63.9	64.5	14.3		108.3	
Queue Delay		0.0		0.0	0.0		0.0	0.0	0.0		0.0	
Total Delay		61.0		212.8	30.6		63.9	64.5	14.3		108.3	
Queue Length 50th (ft)		286		~210	201		~690	~694	133		23	
Queue Length 95th (ft)		#400		#381	258		#943	#947	245		#76	
Internal Link Dist (ft)		249			338			197			211	
Turn Bay Length (ft)				275			100		150			
Base Capacity (vph)		787		189	1277		789	790	826		47	
Starvation Cap Reductn		0		0	0		0	0	0		0	
Spillback Cap Reductn		0		0	0		0	0	0		0	
Storage Cap Reductn		0		0	0		0	0	0		0	
Reduced v/c Ratio		0.91		1.34	0.51		1.00	1.00	0.59		0.64	

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow
Natural Cycle: 120
Control Type: Actuated-Coordinated
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 4: Legion Rd/John Brady Dr/Legion Rd & Lycoming Mall Dr (SR 2014)



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	6	641	0	229	576	6	1419	2	437	13	8	6
Number	5	2	12	1	6	16	3	8	18	7	4	14
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	1791	1751	0	1680	1807	1881	1809	1809	1707	1872	1622	1872
Adj Flow Rate, veh/h	7	712	0	254	640	5	1578	0	316	14	9	7
Adj No. of Lanes	0	2	0	1	2	0	2	0	1	0	1	0
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	0	12	4	4	1	0	7	0	0	0
Cap, veh/h	33	860	0	233	1363	11	1608	0	677	25	16	12
Arrive On Green	0.26	0.27	0.00	0.08	0.39	0.38	0.47	0.00	0.47	0.03	0.03	0.03
Sat Flow, veh/h	10	3321	0	1600	3491	27	3446	0	1451	711	457	356
Grp Volume(v), veh/h	385	334	0	254	315	330	1578	0	316	30	0	0
Grp Sat Flow(s),veh/h/ln	1738	1513	0	1600	1716	1802	1723	0	1451	1524	0	0
Q Serve(g_s), s	4.6	25.0	0.0	10.0	16.4	16.4	54.1	0.0	17.8	2.3	0.0	0.0
Cycle Q Clear(g_c), s	25.2	25.0	0.0	10.0	16.4	16.4	54.1	0.0	17.8	2.3	0.0	0.0
Prop In Lane	0.02		0.00	1.00		0.02	1.00		1.00	0.47		0.23
Lane Grp Cap(c), veh/h	477	402	0	233	670	703	1608	0	677	53	0	0
V/C Ratio(X)	0.81	0.83	0.00	1.09	0.47	0.47	0.98	0.00	0.47	0.57	0.00	0.00
Avail Cap(c_a), veh/h	477	402	0	233	670	703	1608	0	677	76	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	41.6	41.6	0.0	36.9	27.3	27.3	31.5	0.0	21.8	57.4	0.0	0.0
Incr Delay (d2), s/veh	13.6	18.0	0.0	84.8	2.4	2.2	18.4	0.0	1.8	9.2	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(95%),veh/ln	20.2	18.2	0.0	15.8	12.9	13.4	38.7	0.0	11.9	2.0	0.0	0.0
LnGrp Delay(d),s/veh	55.2	59.6	0.0	121.7	29.7	29.6	49.8	0.0	23.6	66.6	0.0	0.0
LnGrp LOS	E	E		F	C	C	D		C	E		
Approach Vol, veh/h		719			899			1894			30	
Approach Delay, s/veh		57.2			55.6			45.5			66.6	
Approach LOS		E			E			D			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6		8
Phs Duration (G+Y+Rc), s	15.0	36.8		8.2		51.8		60.0
Change Period (Y+Rc), s	6.0	6.0		5.0		6.0		5.0
Max Green Setting (Gmax), s	9.0	29.0		5.0		44.0		55.0
Max Q Clear Time (g_c+I1), s	12.5	27.5		4.3		18.9		56.6
Green Ext Time (p_c), s	0.0	1.5		0.0		22.9		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	50.6
HCM 2010 LOS	D

Notes

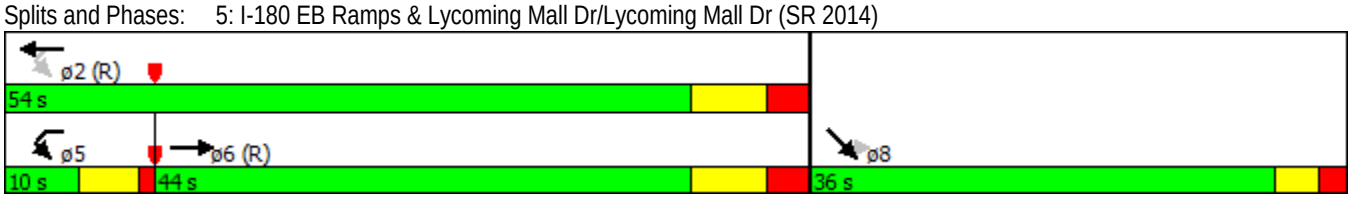
User approved volume balancing among the lanes for turning movement.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Volume (vph)	0	1098	195	87	702	0	522	0	192	0	0	0
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	14	12	12	12	12	14	14	14	12	12	12
Grade (%)		-1%			-1%			3%			-4%	
Storage Length (ft)	0		175	150		0	0		0	0		0
Storage Lanes	0		0	1		0	1		0	0		0
Taper Length (ft)	75			75			75			75		
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.977						0.850				
Flt Protected				0.950			0.950					
Satd. Flow (prot)	0	3439	0	1420	1739	0	1711	1398	0	0	0	0
Flt Permitted				0.121			0.950					
Satd. Flow (perm)	0	3439	0	181	1739	0	1711	1398	0	0	0	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		27						174				
Link Speed (mph)		45			45			25			25	
Link Distance (ft)		2369			660			376			358	
Travel Time (s)		35.9			10.0			10.3			9.8	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	4%	5%	21%	4%	0%	5%	0%	15%	0%	0%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	0	1144	203	91	731	0	544	0	200	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1347	0	91	731	0	544	200	0	0	0	0
Number of Detectors		1		1	1		1	1				
Detector Template				Left			Left	Thru				
Leading Detector (ft)		6		45	6		30	30				
Trailing Detector (ft)		0		-5	0		-10	-10				
Turn Type		NA		pm+pt	NA		Perm	NA				
Protected Phases		6		5	2			8				
Permitted Phases				2			8					
Detector Phase				5			8	8				
Switch Phase												
Minimum Initial (s)		15.0		5.0	20.0		5.0	5.0				
Minimum Split (s)		23.0		10.0	28.0		10.0	10.0				
Total Split (s)		44.0		10.0	54.0		36.0	36.0				
Total Split (%)		48.9%		11.1%	60.0%		40.0%	40.0%				
Maximum Green (s)		36.0		5.0	46.0		31.0	31.0				
Yellow Time (s)		5.0		4.0	5.0		3.0	3.0				
All-Red Time (s)		3.0		1.0	3.0		2.0	2.0				
Lost Time Adjust (s)		-1.0		-1.0	-1.0		-1.0	-1.0				
Total Lost Time (s)		7.0		4.0	7.0		4.0	4.0				

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lead/Lag		Lag		Lead								
Lead-Lag Optimize?												
Vehicle Extension (s)		3.0		4.0	3.0		4.0	4.0				
Minimum Gap (s)		3.0		3.0	3.0		3.0	3.0				
Time Before Reduce (s)		0.0		0.0	0.0		0.0	0.0				
Time To Reduce (s)		0.0		0.0	0.0		0.0	0.0				
Recall Mode		C-Min		None	C-Min		None	None				
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
v/c Ratio		1.16		0.37	0.89		0.79	0.30				
Control Delay		111.0		29.4	28.3		31.9	4.6				
Queue Delay		0.0		0.0	0.0		5.1	0.0				
Total Delay		111.0		29.4	28.3		37.1	4.6				
Queue Length 50th (ft)		~514		27	229		259	9				
Queue Length 95th (ft)		#774		m42	m302		343	43				
Internal Link Dist (ft)		2289			580			296			278	
Turn Bay Length (ft)				150								
Base Capacity (vph)		1166		243	824		705	678				
Starvation Cap Reductn		0		0	0		0	0				
Spillback Cap Reductn		2		0	0		107	0				
Storage Cap Reductn		0		0	0		0	0				
Reduced v/c Ratio		1.16		0.37	0.89		0.91	0.29				

Intersection Summary	
Area Type:	Other
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 0 (0%), Referenced to phase 2:WBTL and 6:EBT, Start of Green	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
~	Volume exceeds capacity, queue is theoretically infinite.
	Queue shown is maximum after two cycles.
#	95th percentile volume exceeds capacity, queue may be longer.
	Queue shown is maximum after two cycles.
m	Volume for 95th percentile queue is metered by upstream signal.

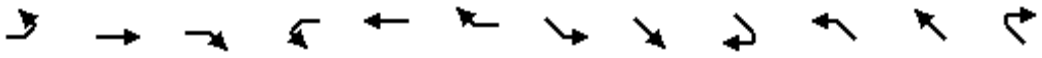
Splits and Phases: 5: I-180 EB Ramps & Lycoming Mall Dr/Lycoming Mall Dr (SR 2014)



Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Volume (veh/h)	0	1098	195	87	702	0	522	0	192	0	0	0
Number	1	6	16	5	2	12	3	8	18			
Initial Q (Qb), veh	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			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	0	1806	1809	1495	1739	0	1756	1603	1844			
Adj Flow Rate, veh/h	0	1144	73	91	731	0	544	0	149			
Adj No. of Lanes	0	2	0	1	1	0	1	1	0			
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96			
Percent Heavy Veh, %	0	4	4	21	4	0	5	0	5			
Cap, veh/h	0	1357	87	213	913	0	590	0	481			
Arrive On Green	0.00	0.41	0.41	0.13	1.00	0.00	0.35	0.00	0.34			
Sat Flow, veh/h	0	3367	209	1424	1739	0	1672	0	1363			
Grp Volume(v), veh/h	0	599	618	91	731	0	544	0	149			
Grp Sat Flow(s),veh/h/ln	0	1716	1770	1424	1739	0	1672	0	1363			
Q Serve(g_s), s	0.0	28.3	28.3	3.0	0.0	0.0	28.1	0.0	7.2			
Cycle Q Clear(g_c), s	0.0	28.3	28.3	3.0	0.0	0.0	28.1	0.0	7.2			
Prop In Lane	0.00		0.12	1.00		0.00	1.00		1.00			
Lane Grp Cap(c), veh/h	0	711	733	213	913	0	590	0	481			
V/C Ratio(X)	0.00	0.84	0.84	0.43	0.80	0.00	0.92	0.00	0.31			
Avail Cap(c_a), veh/h	0	711	733	214	913	0	595	0	485			
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.00	1.00	1.00	0.09	0.09	0.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	0.0	23.7	23.7	17.1	0.0	0.0	27.9	0.0	21.5			
Incr Delay (d2), s/veh	0.0	11.6	11.4	0.2	0.7	0.0	20.1	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			
%ile BackOfQ(95%),veh/ln	0.0	22.1	22.6	1.7	0.3	0.0	22.7	0.0	5.0			
LnGrp Delay(d),s/veh	0.0	35.3	35.1	17.3	0.7	0.0	48.0	0.0	22.1			
LnGrp LOS		D	D	B	A		D		C			
Approach Vol, veh/h		1217			822			693				
Approach Delay, s/veh		35.2			2.5			42.4				
Approach LOS		D			A			D				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2			5	6		8
Phs Duration (G+Y+Rc), s		54.2			9.9	44.3		35.8
Change Period (Y+Rc), s		8.0			5.0	8.0		5.0
Max Green Setting (Gmax), s		46.0			5.0	36.0		31.0
Max Q Clear Time (g_c+I1), s		2.5			5.5	30.8		30.6
Green Ext Time (p_c), s		6.6			0.0	2.9		0.2

Intersection Summary	
HCM 2010 Ctrl Delay	27.2
HCM 2010 LOS	C

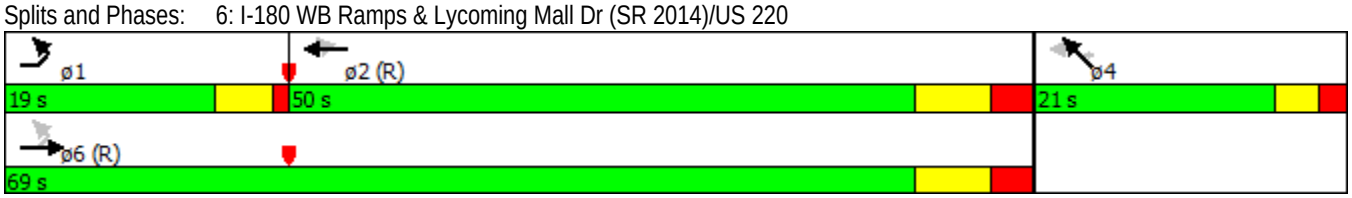


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Volume (vph)	391	1227	0	0	681	332	0	0	0	107	0	83
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	11	12	12	11	11	11	12	12	12	15	15	16
Grade (%)		1%			-1%			-3%			-3%	
Storage Length (ft)	175		0	0		260	0		0	0		445
Storage Lanes	0		0	0		1	0		0	0		1
Taper Length (ft)	75			75			75			75		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt						0.850						0.850
Flt Protected	0.950										0.950	
Satd. Flow (prot)	1566	1706	0	0	1561	1364	0	0	0	0	1801	1760
Flt Permitted	0.100										0.950	
Satd. Flow (perm)	165	1706	0	0	1561	1364	0	0	0	0	1801	1760
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						342						121
Link Speed (mph)		45			45			25			25	
Link Distance (ft)		660			1209			327			668	
Travel Time (s)		10.0			18.3			8.9			18.2	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	5%	5%	0%	0%	12%	9%	0%	0%	0%	6%	0%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	403	1265	0	0	702	342	0	0	0	110	0	86
Shared Lane Traffic (%)												
Lane Group Flow (vph)	403	1265	0	0	702	342	0	0	0	0	110	86
Number of Detectors	1	1			1	1				1	1	0
Detector Template	Left					Right				Left	Thru	
Leading Detector (ft)	45	6			6	30				30	45	0
Trailing Detector (ft)	-5	0			0	-10				-10	-5	0
Turn Type	pm+pt	NA			NA	Perm				Perm	NA	Perm
Protected Phases	1	6			2						4	
Permitted Phases	6					2				4		4
Detector Phase	1					2				4	4	4
Switch Phase												
Minimum Initial (s)	5.0	20.0			20.0	20.0				5.0	5.0	5.0
Minimum Split (s)	10.0	28.0			28.0	28.0				10.0	10.0	10.0
Total Split (s)	19.0	69.0			50.0	50.0				21.0	21.0	21.0
Total Split (%)	21.1%	76.7%			55.6%	55.6%				23.3%	23.3%	23.3%
Maximum Green (s)	14.0	61.0			42.0	42.0				16.0	16.0	16.0
Yellow Time (s)	4.0	5.0			5.0	5.0				3.0	3.0	3.0
All-Red Time (s)	1.0	3.0			3.0	3.0				2.0	2.0	2.0
Lost Time Adjust (s)	-1.0	-1.0			-1.0	-1.0					-1.0	-1.0
Total Lost Time (s)	4.0	7.0			7.0	7.0					4.0	4.0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lead/Lag	Lead				Lag	Lag						
Lead-Lag Optimize?												
Vehicle Extension (s)	4.0	3.0			3.0	3.0				4.0	4.0	4.0
Minimum Gap (s)	3.0	3.0			3.0	3.0				3.0	3.0	3.0
Time Before Reduce (s)	0.0	0.0			0.0	0.0				0.0	0.0	0.0
Time To Reduce (s)	0.0	0.0			0.0	0.0				0.0	0.0	0.0
Recall Mode	None	C-Min			C-Min	C-Min				Min	Min	Min
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
v/c Ratio	0.76	1.01			1.13	0.46					0.43	0.24
Control Delay	28.0	34.5			105.6	5.1					39.5	4.4
Queue Delay	0.0	2.4			0.2	0.0					0.0	0.0
Total Delay	28.0	36.9			105.8	5.1					39.5	4.4
Queue Length 50th (ft)	211	~538			~468	0					58	0
Queue Length 95th (ft)	m215	m#646			#786	65					103	21
Internal Link Dist (ft)		580			1129			247			588	
Turn Bay Length (ft)	175					260						445
Base Capacity (vph)	533	1252			623	837					340	430
Starvation Cap Reductn	0	10			0	0					0	0
Spillback Cap Reductn	0	0			17	0					0	0
Storage Cap Reductn	0	0			0	0					0	0
Reduced v/c Ratio	0.76	1.02			1.16	0.41					0.32	0.20

Intersection Summary	
Area Type:	Other
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 0 (0%), Referenced to phase 2:WBT and 6:EBTL, Start of Green	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
~	Volume exceeds capacity, queue is theoretically infinite.
	Queue shown is maximum after two cycles.
#	95th percentile volume exceeds capacity, queue may be longer.
	Queue shown is maximum after two cycles.
m	Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 6: I-180 WB Ramps & Lycoming Mall Dr (SR 2014)/US 220



Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Volume (veh/h)	391	1227	0	0	681	332	0	0	0	107	0	83
Number	1	6	16	5	2	12				7	4	14
Initial Q (Qb), veh	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
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1706	1706	0	0	1615	1660				1900	1793	1900
Adj Flow Rate, veh/h	403	1265	0	0	702	278				110	0	70
Adj No. of Lanes	1	1	0	0	1	1				0	1	1
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97				0.97	0.97	0.97
Percent Heavy Veh, %	5	5	0	0	12	9				0	0	0
Cap, veh/h	466	1330	0	0	956	835				167	0	158
Arrive On Green	0.29	1.00	0.00	0.00	0.59	0.59				0.09	0.00	0.10
Sat Flow, veh/h	1624	1706	0	0	1615	1411				1707	0	1615
Grp Volume(v), veh/h	403	1265	0	0	702	278				110	0	70
Grp Sat Flow(s),veh/h/ln	1624	1706	0	0	1615	1411				1707	0	1615
Q Serve(g_s), s	8.7	0.0	0.0	0.0	28.2	9.0				5.6	0.0	3.7
Cycle Q Clear(g_c), s	8.7	0.0	0.0	0.0	28.2	9.0				5.6	0.0	3.7
Prop In Lane	1.00		0.00	0.00		1.00				1.00		1.00
Lane Grp Cap(c), veh/h	466	1330	0	0	956	835				167	0	158
V/C Ratio(X)	0.86	0.95	0.00	0.00	0.73	0.33				0.66	0.00	0.44
Avail Cap(c_a), veh/h	505	1330	0	0	956	835				322	0	305
HCM Platoon Ratio	2.00	2.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.09	0.09	0.00	0.00	1.00	1.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	12.6	0.0	0.0	0.0	13.2	9.3				39.6	0.0	38.3
Incr Delay (d2), s/veh	1.6	2.2	0.0	0.0	5.0	1.1				6.1	0.0	2.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	6.5	1.2	0.0	0.0	19.9	6.7				5.3	0.0	3.2
LnGrp Delay(d),s/veh	14.1	2.2	0.0	0.0	18.2	10.4				45.7	0.0	41.0
LnGrp LOS	B	A			B	B				D		D
Approach Vol, veh/h		1668			980						180	
Approach Delay, s/veh		5.1			16.0						43.9	
Approach LOS		A			B						D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6		
Phs Duration (G+Y+Rc), s	16.9	60.3		12.8		77.2		
Change Period (Y+Rc), s	5.0	8.0		5.0		8.0		
Max Green Setting (Gmax), s	14.0	42.0		16.0		61.0		
Max Q Clear Time (g_c+I1), s	11.2	30.7		7.6		2.5		
Green Ext Time (p_c), s	0.6	6.6		0.2		11.9		

Intersection Summary	
HCM 2010 Ctrl Delay	11.3
HCM 2010 LOS	B

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	591	96	88	497	71	83
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	13	13	13	13	12	12
Grade (%)	3%			1%	5%	
Storage Length (ft)		0	75		0	0
Storage Lanes		0	1		1	0
Taper Length (ft)			75		75	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.981				0.927	
Flt Protected			0.950		0.977	
Satd. Flow (prot)	1745	0	1758	1714	1589	0
Flt Permitted			0.225		0.977	
Satd. Flow (perm)	1745	0	416	1714	1589	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	28				96	
Link Speed (mph)	55			55	35	
Link Distance (ft)	1476			1319	549	
Travel Time (s)	18.3			16.4	10.7	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	3%	3%	0%	8%	0%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	739	120	110	621	89	104
Shared Lane Traffic (%)						
Lane Group Flow (vph)	859	0	110	621	193	0
Number of Detectors	1		1	1	1	
Detector Template	Thru		Left	Thru	Left	
Leading Detector (ft)	30		30	30	30	
Trailing Detector (ft)	-10		-10	-10	-10	
Turn Type	NA		Perm	NA	Prot	
Protected Phases	4			8	2	
Permitted Phases			8			
Detector Phase	4		8	8	2	
Switch Phase						
Minimum Initial (s)	3.0		3.0	3.0	3.0	
Minimum Split (s)	15.0		15.0	15.0	15.0	
Total Split (s)	39.0		39.0	39.0	16.0	
Total Split (%)	70.9%		70.9%	70.9%	29.1%	
Maximum Green (s)	33.0		33.0	33.0	10.0	
Yellow Time (s)	4.0		4.0	4.0	4.0	
All-Red Time (s)	2.0		2.0	2.0	2.0	
Lost Time Adjust (s)	-1.0		0.0	-1.0	-1.0	
Total Lost Time (s)	5.0		6.0	5.0	5.0	

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0		3.0	3.0	3.0	
Minimum Gap (s)	3.0		3.0	3.0	3.0	
Time Before Reduce (s)	0.0		0.0	0.0	0.0	
Time To Reduce (s)	0.0		0.0	0.0	0.0	
Recall Mode	Min		Min	Min	None	
Walk Time (s)						
Flash Dont Walk (s)						
Pedestrian Calls (#/hr)						
v/c Ratio	0.70		0.39	0.52	0.51	
Control Delay	11.3		11.2	7.5	16.1	
Queue Delay	0.0		0.0	0.0	0.0	
Total Delay	11.3		11.2	7.5	16.1	
Queue Length 50th (ft)	157		16	95	27	
Queue Length 95th (ft)	235		43	143	62	
Internal Link Dist (ft)	1396			1239	469	
Turn Bay Length (ft)			75			
Base Capacity (vph)	1245		288	1215	445	
Starvation Cap Reductn	0		0	0	0	
Spillback Cap Reductn	0		0	0	0	
Storage Cap Reductn	0		0	0	0	
Reduced v/c Ratio	0.69		0.38	0.51	0.43	

Intersection Summary	
Area Type:	Other
Cycle Length: 55	
Actuated Cycle Length: 49.2	
Natural Cycle: 55	
Control Type: Actuated-Uncoordinated	

Splits and Phases: 10: Lime Bluff Road & US 220



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	591	96	88	497	71	83
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	1790	1844	1863	1725	1755	1755
Adj Flow Rate, veh/h	739	120	110	621	89	104
Adj No. of Lanes	1	0	1	1	0	0
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80
Percent Heavy Veh, %	3	3	0	8	0	0
Cap, veh/h	942	153	307	1081	127	149
Arrive On Green	0.63	0.61	0.61	0.63	0.18	0.16
Sat Flow, veh/h	1503	244	676	1725	720	842
Grp Volume(v), veh/h	0	859	110	621	194	0
Grp Sat Flow(s),veh/h/ln	0	1747	676	1725	1570	0
Q Serve(g_s), s	0.0	18.4	7.5	10.7	5.9	0.0
Cycle Q Clear(g_c), s	0.0	18.4	25.9	10.7	5.9	0.0
Prop In Lane		0.14	1.00		0.46	0.54
Lane Grp Cap(c), veh/h	0	1095	307	1081	277	0
V/C Ratio(X)	0.00	0.78	0.36	0.57	0.70	0.00
Avail Cap(c_a), veh/h	0	1169	336	1154	340	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	0.0	7.0	17.3	5.5	19.9	0.0
Incr Delay (d2), s/veh	0.0	3.4	0.7	0.6	4.8	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.0	14.7	2.6	8.9	5.2	0.0
LnGrp Delay(d),s/veh	0.0	10.4	18.0	6.2	24.7	0.0
LnGrp LOS		B	B	A	C	
Approach Vol, veh/h	859			731	194	
Approach Delay, s/veh	10.4			7.9	24.7	
Approach LOS	B			A	C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4				8
Phs Duration (G+Y+Rc), s		14.0		36.8				36.8
Change Period (Y+Rc), s		6.0		6.0				6.0
Max Green Setting (Gmax), s		10.0		33.0				33.0
Max Q Clear Time (g_c+I1), s		8.4		20.4				27.9
Green Ext Time (p_c), s		0.1		5.4				3.0

Intersection Summary	
HCM 2010 Ctrl Delay	10.9
HCM 2010 LOS	B

Notes

User approved volume balancing among the lanes for turning movement.

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	30	122	36	200	54	259	19	604	224	195	393	11
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	15	15	15	13	13	13	14	14	14	14	14	14
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	100		0	100		0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (ft)	75			75			75			75		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.974			0.932			0.959			0.996	
Flt Protected		0.992			0.981		0.950			0.950		
Satd. Flow (prot)	0	1913	0	0	1510	0	1824	1772	0	1600	1790	0
Flt Permitted		0.899			0.792		0.408			0.129		
Satd. Flow (perm)	0	1734	0	0	1219	0	783	1772	0	217	1790	0
Right Turn on Red			No			No			Yes			No
Satd. Flow (RTOR)								45				
Link Speed (mph)		25			35			25			25	
Link Distance (ft)		390			506			1477			648	
Travel Time (s)		10.6			9.9			40.3			17.7	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	0%	0%	21%	4%	8%	0%	2%	9%	14%	7%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												0
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	31	124	37	204	55	264	19	616	229	199	401	11
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	192	0	0	523	0	19	845	0	199	412	0
Number of Detectors	1	1		1	1		1	1		1	1	
Detector Template	Left			Left			Left			Left		
Leading Detector (ft)	30	45		30	45		30	45		30	45	
Trailing Detector (ft)	-10	-5		-10	-5		-10	-5		-10	-5	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	15.0	15.0		15.0	15.0		15.0	15.0		15.0	15.0	
Total Split (s)	26.0	26.0		26.0	26.0		34.0	34.0		34.0	34.0	
Total Split (%)	43.3%	43.3%		43.3%	43.3%		56.7%	56.7%		56.7%	56.7%	
Maximum Green (s)	21.0	21.0		21.0	21.0		29.0	29.0		29.0	29.0	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		-1.0			-1.0		-1.0	-1.0		-1.0	-1.0	
Total Lost Time (s)		4.0			4.0		4.0	4.0		4.0	4.0	

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Minimum Gap (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Time Before Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Time To Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Recall Mode	Max	Max		Max	Max		Max	Max		Max	Max	
Walk Time (s)	11.0	11.0		11.0	11.0		12.0	12.0		12.0	12.0	
Flash Dont Walk (s)	16.0	16.0		16.0	16.0		18.0	18.0		18.0	18.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
v/c Ratio		0.27			1.03		0.05	1.00		1.99	0.50	
Control Delay		14.0			70.5		10.5	51.3		499.3	15.2	
Queue Delay		0.0			0.0		0.0	0.0		0.0	0.0	
Total Delay		14.0			70.5		10.5	51.3		499.3	15.2	
Queue Length 50th (ft)		50			~220		4	~316		~130	111	
Queue Length 95th (ft)		91			#407		15	#568		#212	184	
Internal Link Dist (ft)		310			426			1397			568	
Turn Bay Length (ft)							100			100		
Base Capacity (vph)		724			509		362	844		100	828	
Starvation Cap Reductn		0			0		0	0		0	0	
Spillback Cap Reductn		0			0		0	0		0	0	
Storage Cap Reductn		0			0		0	0		0	0	
Reduced v/c Ratio		0.27			1.03		0.05	1.00		1.99	0.50	

Intersection Summary	
Area Type:	Other
Cycle Length: 60	
Actuated Cycle Length: 67	
Natural Cycle: 110	
Control Type: Actuated-Uncoordinated	
~ Volume exceeds capacity, queue is theoretically infinite.	
Queue shown is maximum after two cycles.	
# 95th percentile volume exceeds capacity, queue may be longer.	
Queue shown is maximum after two cycles.	

Splits and Phases: 11: Main St (SR 405) & Water St (SR 118)



Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (veh/h)	30	122	36	200	54	259	19	604	224	195	393	11
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	0.90
Adj Sat Flow, veh/h/ln	1872	1872	1872	1872	1662	1872	1872	1802	1872	1642	1753	1872
Adj Flow Rate, veh/h	31	124	37	204	55	264	19	616	209	199	401	11
Adj No. of Lanes	0	1	0	0	1	0	1	1	0	1	1	0
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	0	0	4	4	4	0	2	2	14	7	7
Cap, veh/h	125	443	119	267	66	255	460	644	218	150	764	21
Arrive On Green	0.35	0.37	0.35	0.35	0.37	0.35	0.50	0.50	0.48	0.50	0.50	0.48
Sat Flow, veh/h	150	1209	324	501	181	695	1029	1288	437	615	1528	42
Grp Volume(v), veh/h	192	0	0	523	0	0	19	0	825	199	0	412
Grp Sat Flow(s),veh/h/ln	1683	0	0	1378	0	0	1029	0	1725	615	0	1570
Q Serve(g_s), s	0.0	0.0	0.0	16.4	0.0	0.0	0.8	0.0	27.5	3.0	0.0	10.7
Cycle Q Clear(g_c), s	4.6	0.0	0.0	21.0	0.0	0.0	10.9	0.0	27.5	30.0	0.0	10.7
Prop In Lane	0.16		0.19	0.39		0.50	1.00		0.25	1.00		0.03
Lane Grp Cap(c), veh/h	659	0	0	566	0	0	460	0	862	150	0	785
V/C Ratio(X)	0.29	0.00	0.00	0.92	0.00	0.00	0.04	0.00	0.96	1.32	0.00	0.52
Avail Cap(c_a), veh/h	659	0	0	566	0	0	460	0	862	150	0	785
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	0.00	1.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	13.6	0.0	0.0	19.6	0.0	0.0	13.7	0.0	14.5	29.7	0.0	10.2
Incr Delay (d2), s/veh	1.1	0.0	0.0	23.2	0.0	0.0	0.2	0.0	21.8	183.9	0.0	2.5
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(95%),veh/ln	4.5	0.0	0.0	18.1	0.0	0.0	0.4	0.0	25.0	18.3	0.0	8.8
LnGrp Delay(d),s/veh	14.7	0.0	0.0	42.8	0.0	0.0	13.9	0.0	36.3	213.6	0.0	12.7
LnGrp LOS	B			D			B		D	F		B
Approach Vol, veh/h		192			523			844			611	
Approach Delay, s/veh		14.7			42.8			35.8			78.1	
Approach LOS		B			D			D			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		34.0		26.0		34.0		26.0
Change Period (Y+Rc), s		5.0		5.0		5.0		5.0
Max Green Setting (Gmax), s		29.0		21.0		29.0		21.0
Max Q Clear Time (g_c+I1), s		29.5		6.6		32.5		23.0
Green Ext Time (p_c), s		0.0		2.9		0.0		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	47.5
HCM 2010 LOS	D

Notes

User approved pedestrian interval to be less than phase max green.

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	1890	172	66	1478	138	54
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	11	11	11	11	10	10
Grade (%)	-1%			1%	-4%	
Storage Length (ft)		0	225		0	0
Storage Lanes		0	0		1	0
Taper Length (ft)			75		75	
Lane Util. Factor	0.95	0.95	0.95	0.95	1.00	1.00
Ped Bike Factor						
Frt	0.987				0.962	
Flt Protected				0.998	0.965	
Satd. Flow (prot)	3094	0	0	3133	1591	0
Flt Permitted				0.617	0.965	
Satd. Flow (perm)	3094	0	0	1937	1591	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	34				17	
Link Speed (mph)	50			55	35	
Link Distance (ft)	389			676	527	
Travel Time (s)	5.3			8.4	10.3	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	50%	0%	5%	0%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	2077	189	73	1624	152	59
Shared Lane Traffic (%)						
Lane Group Flow (vph)	2266	0	0	1697	211	0
Number of Detectors	1		1	1	1	
Detector Template	Thru		Left		Left	
Leading Detector (ft)	30		30	30	30	
Trailing Detector (ft)	-10		-10	-10	-10	
Turn Type	NA		Perm	NA	Prot	
Protected Phases	4			8	2	
Permitted Phases			8			
Detector Phase	4		8	8	2	
Switch Phase						
Minimum Initial (s)	3.0		3.0	3.0	3.0	
Minimum Split (s)	15.0		15.0	15.0	15.0	
Total Split (s)	75.0		75.0	75.0	15.0	
Total Split (%)	83.3%		83.3%	83.3%	16.7%	
Maximum Green (s)	69.0		69.0	69.0	9.0	
Yellow Time (s)	4.0		4.0	4.0	4.0	
All-Red Time (s)	2.0		2.0	2.0	2.0	
Lost Time Adjust (s)	-1.0			-1.0	-1.0	
Total Lost Time (s)	5.0			5.0	5.0	

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0		3.0	3.0	3.0	
Minimum Gap (s)	3.0		3.0	3.0	3.0	
Time Before Reduce (s)	0.0		0.0	0.0	0.0	
Time To Reduce (s)	0.0		0.0	0.0	0.0	
Recall Mode	Min		Min	Min	None	
Walk Time (s)						
Flash Dont Walk (s)						
Pedestrian Calls (#/hr)						
v/c Ratio	0.93			1.11	1.15	
Control Delay	16.7			74.5	149.7	
Queue Delay	0.0			0.0	0.0	
Total Delay	16.7			74.5	149.7	
Queue Length 50th (ft)	426			~604	~134	
Queue Length 95th (ft)	#802			#729	#269	
Internal Link Dist (ft)	309			596	447	
Turn Bay Length (ft)						
Base Capacity (vph)	2444			1525	183	
Starvation Cap Reductn	0			0	0	
Spillback Cap Reductn	0			0	0	
Storage Cap Reductn	0			0	0	
Reduced v/c Ratio	0.93			1.11	1.15	

Intersection Summary	
Area Type:	Other
Cycle Length: 90	
Actuated Cycle Length: 94.5	
Natural Cycle: 100	
Control Type: Actuated-Uncoordinated	
~ Volume exceeds capacity, queue is theoretically infinite.	
Queue shown is maximum after two cycles.	
# 95th percentile volume exceeds capacity, queue may be longer.	
Queue shown is maximum after two cycles.	

Splits and Phases: 12: Industrial Park Rd & John Brady Dr



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	1890	172	66	1478	138	54
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	1707	1809	1791	1709	1836	1836
Adj Flow Rate, veh/h	2077	189	73	1624	152	59
Adj No. of Lanes	2	0	0	2	0	0
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	2	2	5	5	0	0
Cap, veh/h	2341	210	68	1636	135	52
Arrive On Green	0.78	0.77	0.78	0.78	0.11	0.10
Sat Flow, veh/h	3096	270	30	2181	1213	471
Grp Volume(v), veh/h	1104	1162	687	1010	212	0
Grp Sat Flow(s),veh/h/ln	1621	1659	656	1478	1692	0
Q Serve(g_s), s	42.7	46.9	23.6	43.2	10.0	0.0
Cycle Q Clear(g_c), s	42.7	46.9	70.0	43.2	10.0	0.0
Prop In Lane		0.16	0.11		0.72	0.28
Lane Grp Cap(c), veh/h	1261	1290	555	1149	188	0
V/C Ratio(X)	0.88	0.90	1.24	0.88	1.13	0.00
Avail Cap(c_a), veh/h	1261	1290	555	1149	188	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	7.0	7.5	17.9	7.0	40.1	0.0
Incr Delay (d2), s/veh	7.2	8.9	122.4	8.0	104.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	28.4	31.9	48.6	26.9	18.2	0.0
LnGrp Delay(d),s/veh	14.1	16.4	140.3	15.0	144.2	0.0
LnGrp LOS	B	B	F	B	F	
Approach Vol, veh/h	2266			1697	212	
Approach Delay, s/veh	15.3			65.8	144.2	
Approach LOS	B			E	F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4				8
Phs Duration (G+Y+Rc), s		15.0		75.0				75.0
Change Period (Y+Rc), s		6.0		6.0				6.0
Max Green Setting (Gmax), s		9.0		69.0				69.0
Max Q Clear Time (g_c+I1), s		12.5		48.9				72.5
Green Ext Time (p_c), s		0.0		18.1				0.0

Intersection Summary	
HCM 2010 Ctrl Delay	42.4
HCM 2010 LOS	D

Notes

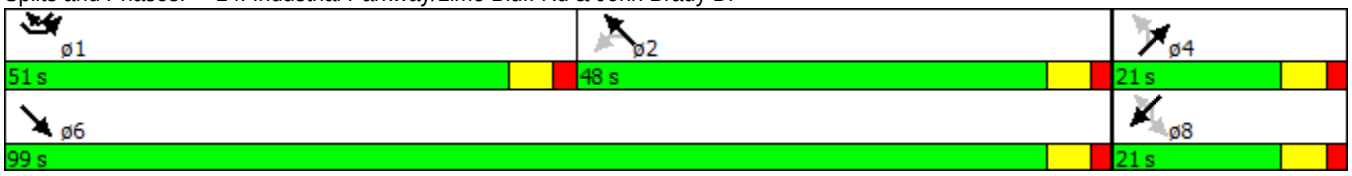
User approved volume balancing among the lanes for turning movement.

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	880	1007	4	4	746	102	22	46	5	96	22	665
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	11	11	11	11	11	11	16	16	16	11	11	11
Grade (%)		-2%			2%			2%			-1%	
Storage Length (ft)	150		0	75		0	0		0	75		150
Storage Lanes	1		0	1		0	0		0	0		1
Taper Length (ft)	75			75			75			75		
Lane Util. Factor	0.97	1.00	1.00	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.999			0.982			0.990				0.850
Flt Protected	0.950			0.950				0.985			0.961	
Satd. Flow (prot)	3145	1736	0	1091	3064	0	0	1699	0	0	1654	1486
Flt Permitted	0.950			0.258				0.812			0.693	
Satd. Flow (perm)	3145	1736	0	296	3064	0	0	1401	0	0	1192	1486
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		1			14			3				44
Link Speed (mph)		50			50			25			50	
Link Distance (ft)		832			534			184			566	
Travel Time (s)		11.3			7.3			5.0			7.7	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	3%	1%	25%	50%	5%	4%	45%	4%	0%	2%	0%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	1011	1157	5	5	857	117	25	53	6	110	25	764
Shared Lane Traffic (%)												
Lane Group Flow (vph)	1011	1162	0	5	974	0	0	84	0	0	135	764
Number of Detectors	1	1		1	1		1	1		1	1	1
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (ft)	30	30		30	30		30	30		30	30	30
Trailing Detector (ft)	-10	-10		-10	-10		-10	-10		-10	-10	-10
Turn Type	Prot	NA		Perm	NA		Perm	NA		Perm	NA	pm+ov
Protected Phases	1	6			2			4			8	1
Permitted Phases				2			4			8		8
Detector Phase	1	6		2	2		4	4		8	8	1
Switch Phase												
Minimum Initial (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Minimum Split (s)	9.0	15.0		15.0	15.0		15.0	15.0		15.0	15.0	9.0
Total Split (s)	51.0	99.0		48.0	48.0		21.0	21.0		21.0	21.0	51.0
Total Split (%)	42.5%	82.5%		40.0%	40.0%		17.5%	17.5%		17.5%	17.5%	42.5%
Maximum Green (s)	45.0	93.0		42.0	42.0		15.0	15.0		15.0	15.0	45.0
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)	-1.0	-1.0		-1.0	-1.0			-1.0			-1.0	-1.0
Total Lost Time (s)	5.0	5.0		5.0	5.0			5.0			5.0	5.0

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lead/Lag	Lead			Lag	Lag							Lead
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Minimum Gap (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Time Before Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Time To Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Recall Mode	None	Min		Min	Min		None	None		None	None	None
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
v/c Ratio	0.85	0.86		0.05	0.90			0.44			0.83	0.90
Control Delay	40.8	17.3		27.0	46.9			53.6			88.0	36.7
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0	0.0
Total Delay	40.8	17.3		27.0	46.9			53.6			88.0	36.7
Queue Length 50th (ft)	362	488		3	364			58			104	480
Queue Length 95th (ft)	428	673		12	434			108			#209	#720
Internal Link Dist (ft)		752			454			104			486	
Turn Bay Length (ft)	150			75								150
Base Capacity (vph)	1284	1440		113	1178			201			168	894
Starvation Cap Reductn	0	0		0	0			0			0	0
Spillback Cap Reductn	0	0		0	0			0			0	0
Storage Cap Reductn	0	0		0	0			0			0	0
Reduced v/c Ratio	0.79	0.81		0.04	0.83			0.42			0.80	0.85

Intersection Summary	
Area Type:	Other
Cycle Length: 120	
Actuated Cycle Length: 113.9	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
# 95th percentile volume exceeds capacity, queue may be longer.	
Queue shown is maximum after two cycles.	

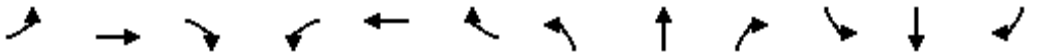
Splits and Phases: 14: Industrial Parkway/Lime Bluff Rd & John Brady Dr



Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (veh/h)	880	1007	4	4	746	102	22	46	5	96	22	665
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1765	1798	1818	1188	1699	1782	1853	1599	1853	1809	1780	1809
Adj Flow Rate, veh/h	1011	1157	5	5	857	77	25	53	4	110	25	764
Adj No. of Lanes	2	1	0	1	2	0	0	1	0	0	1	1
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %	3	1	1	50	5	5	4	4	4	0	0	0
Cap, veh/h	1156	1354	6	170	1066	96	44	64	3	165	24	775
Arrive On Green	0.35	0.76	0.75	0.36	0.36	0.35	0.14	0.15	0.14	0.15	0.15	0.15
Sat Flow, veh/h	3261	1789	8	324	2996	269	0	428	22	695	158	1538
Grp Volume(v), veh/h	1011	0	1162	5	462	472	82	0	0	135	0	764
Grp Sat Flow(s),veh/h/ln	1631	0	1797	324	1614	1652	450	0	0	853	0	1538
Q Serve(g_s), s	31.0	0.0	47.6	1.1	27.6	27.6	0.0	0.0	0.0	1.5	0.0	16.0
Cycle Q Clear(g_c), s	31.0	0.0	47.6	5.3	27.6	27.6	15.0	0.0	0.0	16.0	0.0	16.0
Prop In Lane	1.00		0.00	1.00		0.16	0.30		0.05	0.81		1.00
Lane Grp Cap(c), veh/h	1156	0	1360	170	574	587	107	0	0	189	0	775
V/C Ratio(X)	0.87	0.00	0.85	0.03	0.80	0.80	0.77	0.00	0.00	0.72	0.00	0.99
Avail Cap(c_a), veh/h	1402	0	1579	185	649	664	107	0	0	189	0	775
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	1.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	32.3	0.0	8.9	25.4	31.1	31.2	42.8	0.0	0.0	46.4	0.0	26.1
Incr Delay (d2), s/veh	5.6	0.0	4.3	0.1	6.6	6.4	27.6	0.0	0.0	12.2	0.0	28.7
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(95%),veh/ln	21.1	0.0	32.7	0.2	19.3	19.7	5.9	0.0	0.0	8.1	0.0	37.0
LnGrp Delay(d),s/veh	37.9	0.0	13.2	25.4	37.7	37.6	70.4	0.0	0.0	58.6	0.0	54.8
LnGrp LOS	D		B	C	D	D	E			E		D
Approach Vol, veh/h		2173			939			82			899	
Approach Delay, s/veh		24.7			37.6			70.4			55.4	
Approach LOS		C			D			E			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6		8
Phs Duration (G+Y+Rc), s	42.9	43.1		21.0		86.0		21.0
Change Period (Y+Rc), s	6.0	6.0		6.0		6.0		6.0
Max Green Setting (Gmax), s	45.0	42.0		15.0		93.0		15.0
Max Q Clear Time (g_c+I1), s	33.5	30.1		17.0		49.6		18.5
Green Ext Time (p_c), s	3.4	6.9		0.0		12.0		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	35.3
HCM 2010 LOS	D

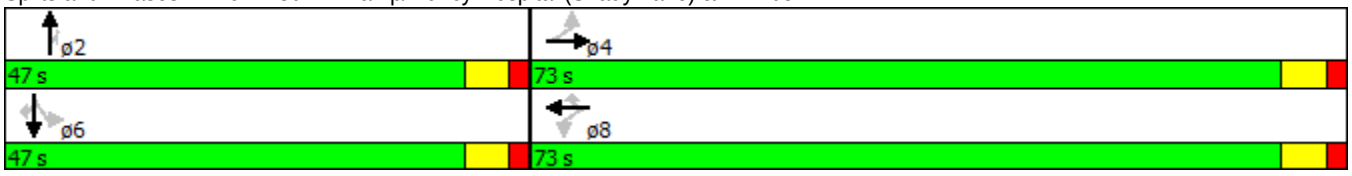


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	10	771	52	208	812	22	0	0	999	42	1	21
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1900	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	12	12	13	12	12	12	12	12	12	12
Grade (%)		-1%			1%			-3%			0%	
Storage Length (ft)	125		0	125		125	0		0	0		100
Storage Lanes	1		0	1		1	0		1	0		1
Taper Length (ft)	75			60			75			75		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.991				0.850			0.850			0.850
Flt Protected	0.950			0.950							0.953	
Satd. Flow (prot)	1685	1739	0	1506	1780	1492	0	1791	1508	0	1682	1500
Flt Permitted	0.138			0.130							0.783	
Satd. Flow (perm)	245	1739	0	206	1780	1492	0	1791	1508	0	1382	1500
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		5				27			170			27
Link Speed (mph)		35			35			25			35	
Link Distance (ft)		496			348			387			259	
Travel Time (s)		9.7			6.8			10.6			5.0	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.90	0.96	0.96	0.96	0.96	0.90	0.96	0.90	0.96	0.90	0.90	0.90
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	19%	13%	4%	2%	0%	2%	3%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	11	803	54	217	846	24	0	0	1041	47	1	23
Shared Lane Traffic (%)												
Lane Group Flow (vph)	11	857	0	217	846	24	0	0	1041	0	48	23
Number of Detectors	1	1		1	1	1		1	1	1	1	1
Detector Template	Left	Thru		Left	Thru	Right		Thru	Right	Left	Thru	Right
Leading Detector (ft)	30	30		30	30	30		30	30	30	30	30
Trailing Detector (ft)	-10	-10		-10	-10	-10		-10	-10	-10	-10	-10
Turn Type	Perm	NA		Perm	NA	Perm			Perm	Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8		8			2	6		6
Detector Phase	4	4		8	8	8		2	2	6	6	6
Switch Phase												
Minimum Initial (s)	3.0	3.0		3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0
Minimum Split (s)	15.0	15.0		15.0	15.0	15.0		15.0	15.0	15.0	15.0	15.0
Total Split (s)	73.0	73.0		73.0	73.0	73.0		47.0	47.0	47.0	47.0	47.0
Total Split (%)	60.8%	60.8%		60.8%	60.8%	60.8%		39.2%	39.2%	39.2%	39.2%	39.2%
Maximum Green (s)	67.0	67.0		67.0	67.0	67.0		41.0	41.0	41.0	41.0	41.0
Yellow Time (s)	4.0	4.0		4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0		2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-1.0	-1.0		-1.0	-1.0	-1.0		-1.0	-1.0		-1.0	-1.0
Total Lost Time (s)	5.0	5.0		5.0	5.0	5.0		5.0	5.0		5.0	5.0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0
Minimum Gap (s)	3.0	3.0		3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0
Time Before Reduce (s)	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0
Time To Reduce (s)	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0
Recall Mode	None	None		None	None	None		Min	Min	Min	Min	Min
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
v/c Ratio	0.08	0.87		1.87	0.84	0.03			1.63		0.10	0.04
Control Delay	13.7	33.3		445.0	30.8	3.8			316.3		27.1	8.3
Queue Delay	0.0	0.0		0.0	0.0	0.0			0.0		0.0	0.0
Total Delay	13.7	33.3		445.0	30.8	3.8			316.3		27.1	8.3
Queue Length 50th (ft)	4	537		~167	516	0			~1082		25	0
Queue Length 95th (ft)	14	#829		#327	725	11			#1341		53	16
Internal Link Dist (ft)		416			268			307			179	
Turn Bay Length (ft)	125			125		125						100
Base Capacity (vph)	138	987		116	1008	857			638		483	542
Starvation Cap Reductn	0	0		0	0	0			0		0	0
Spillback Cap Reductn	0	0		0	0	0			0		0	0
Storage Cap Reductn	0	0		0	0	0			0		0	0
Reduced v/c Ratio	0.08	0.87		1.87	0.84	0.03			1.63		0.10	0.04

Intersection Summary	
Area Type:	Other
Cycle Length: 120	
Actuated Cycle Length: 120	
Natural Cycle: 110	
Control Type: Actuated-Uncoordinated	
~	Volume exceeds capacity, queue is theoretically infinite.
	Queue shown is maximum after two cycles.
#	95th percentile volume exceeds capacity, queue may be longer.
	Queue shown is maximum after two cycles.

Splits and Phases: 16: I-180 EB Ramp/Muncy Hospital (Shady Lane) & PA 405



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	10	771	52	208	812	22	0	0	999	42	1	21
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	1774	1755	1809	1585	1791	1756	0	1791	1774	1800	1765	1765
Adj Flow Rate, veh/h	11	803	54	217	846	24	0	0	0	47	1	23
Adj No. of Lanes	1	1	0	1	1	1	0	1	1	0	1	1
Peak Hour Factor	0.90	0.96	0.96	0.96	0.96	0.90	0.96	0.90	0.96	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	13	4	2	0	2	3	2	2	2
Cap, veh/h	455	1233	83	415	1358	1132	0	159	133	219	4	133
Arrive On Green	0.76	0.76	0.74	0.76	0.76	0.76	0.00	0.00	0.00	0.07	0.09	0.09
Sat Flow, veh/h	637	1626	109	576	1791	1492	0	1791	1508	1243	42	1500
Grp Volume(v), veh/h	11	0	857	217	846	24	0	0	0	48	0	23
Grp Sat Flow(s),veh/h/ln	637	0	1736	576	1791	1492	0	1791	1508	1285	0	1500
Q Serve(g_s), s	0.5	0.0	15.4	18.5	14.1	0.3	0.0	0.0	0.0	2.1	0.0	0.9
Cycle Q Clear(g_c), s	14.7	0.0	15.4	33.5	14.1	0.3	0.0	0.0	0.0	2.6	0.0	0.9
Prop In Lane	1.00		0.06	1.00		1.00	0.00		1.00	0.98		1.00
Lane Grp Cap(c), veh/h	455	0	1316	415	1358	1132	0	159	133	203	0	133
V/C Ratio(X)	0.02	0.00	0.65	0.52	0.62	0.02	0.00	0.00	0.00	0.24	0.00	0.17
Avail Cap(c_a), veh/h	636	0	1809	579	1867	1556	0	1153	971	990	0	966
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	1.00	1.00	0.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	7.0	0.0	3.8	11.6	3.6	1.9	0.0	0.0	0.0	28.9	0.0	27.5
Incr Delay (d2), s/veh	0.0	0.0	0.5	1.0	0.5	0.0	0.0	0.0	0.0	0.6	0.0	0.6
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(95%),veh/ln	0.2	0.0	11.8	5.4	11.3	0.2	0.0	0.0	0.0	1.6	0.0	0.7
LnGrp Delay(d),s/veh	7.0	0.0	4.3	12.6	4.1	1.9	0.0	0.0	0.0	29.5	0.0	28.1
LnGrp LOS	A		A	B	A	A				C		C
Approach Vol, veh/h		868			1087			0			71	
Approach Delay, s/veh		4.4			5.7			0.0			29.1	
Approach LOS		A			A						C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		10.8		54.5		10.8		54.5
Change Period (Y+Rc), s		6.0		6.0		6.0		6.0
Max Green Setting (Gmax), s		41.0		67.0		41.0		67.0
Max Q Clear Time (g_c+I1), s		0.0		17.4		4.6		36.0
Green Ext Time (p_c), s		0.0		14.2		0.2		12.5

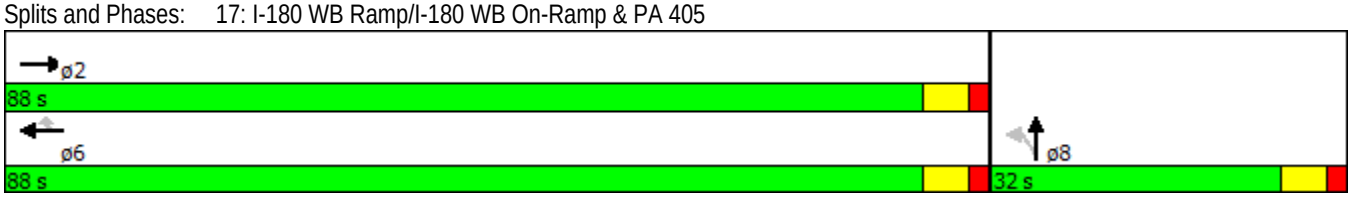
Intersection Summary	
HCM 2010 Ctrl Delay	6.0
HCM 2010 LOS	A

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	1490	280	0	619	965	23	0	216	0	0	0
Ideal Flow (vphpl)	1900	1800	1800	1900	1800	1800	1800	1800	1800	1900	1900	1900
Lane Width (ft)	12	12	11	12	12	12	12	12	12	12	12	12
Grade (%)		-1%			-1%			-4%			-2%	
Storage Length (ft)	0		250	0		115	0		0	0		0
Storage Lanes	0		0	0		1	0		0	0		0
Taper Length (ft)	75			75			75			75		
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.976				0.850		0.878				
Flt Protected								0.995				
Satd. Flow (prot)	0	3294	0	0	1691	1507	0	1410	0	0	0	0
Flt Permitted								0.995				
Satd. Flow (perm)	0	3294	0	0	1691	1507	0	1410	0	0	0	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		42				850		40				
Link Speed (mph)		45			45			25			25	
Link Distance (ft)		758			636			290			200	
Travel Time (s)		11.5			9.6			7.9			5.5	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	100%	2%	1%	0%	7%	2%	40%	0%	11%	0%	0%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	0	1693	318	0	703	1097	26	0	245	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	2011	0	0	703	1097	0	271	0	0	0	0
Number of Detectors		1			1	1	1	1				
Detector Template		Thru			Thru	Right	Left	Thru				
Leading Detector (ft)		30			30	30	30	30				
Trailing Detector (ft)		-10			-10	-10	-10	-10				
Turn Type		NA			NA	Perm	Perm	NA				
Protected Phases		2			6			8				
Permitted Phases						6	8					
Detector Phase		2			6	6	8	8				
Switch Phase												
Minimum Initial (s)		3.0			3.0	3.0	3.0	3.0				
Minimum Split (s)		15.0			15.0	15.0	15.0	15.0				
Total Split (s)		88.0			88.0	88.0	32.0	32.0				
Total Split (%)		73.3%			73.3%	73.3%	26.7%	26.7%				
Maximum Green (s)		82.0			82.0	82.0	26.0	26.0				
Yellow Time (s)		4.0			4.0	4.0	4.0	4.0				
All-Red Time (s)		2.0			2.0	2.0	2.0	2.0				
Lost Time Adjust (s)		-1.0			-1.0	-1.0		-1.0				
Total Lost Time (s)		5.0			5.0	5.0		5.0				

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)		3.0			3.0	3.0	3.0	3.0				
Minimum Gap (s)		3.0			3.0	3.0	3.0	3.0				
Time Before Reduce (s)		0.0			0.0	0.0	0.0	0.0				
Time To Reduce (s)		0.0			0.0	0.0	0.0	0.0				
Recall Mode		Min			Min	Min	None	None				
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
v/c Ratio		0.89			0.61	0.85		0.80				
Control Delay		19.7			12.0	10.1		53.1				
Queue Delay		0.0			0.0	0.0		0.0				
Total Delay		19.7			12.0	10.1		53.1				
Queue Length 50th (ft)		560			254	63		162				
Queue Length 95th (ft)		664			350	252		#289				
Internal Link Dist (ft)		678			556			210			120	
Turn Bay Length (ft)						115						
Base Capacity (vph)		2642			1351	1375		405				
Starvation Cap Reductn		0			0	0		0				
Spillback Cap Reductn		0			0	0		0				
Storage Cap Reductn		0			0	0		0				
Reduced v/c Ratio		0.76			0.52	0.80		0.67				

Intersection Summary	
Area Type:	Other
Cycle Length: 120	
Actuated Cycle Length: 104.6	
Natural Cycle: 65	
Control Type: Actuated-Uncoordinated	
# 95th percentile volume exceeds capacity, queue may be longer.	
Queue shown is maximum after two cycles.	

Splits and Phases: 17: I-180 WB Ramp/I-180 WB On-Ramp & PA 405



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	1490	280	0	619	965	23	0	216	0	0	0
Number	5	2	12	1	6	16	3	8	18			
Initial Q (Qb), veh	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			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	0	1776	1809	0	1691	1774	1836	1614	1836			
Adj Flow Rate, veh/h	0	1693	0	0	703	1097	26	0	188			
Adj No. of Lanes	0	2	0	0	1	1	0	1	0			
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88			
Percent Heavy Veh, %	0	2	2	0	7	2	0	0	0			
Cap, veh/h	0	2471	0	0	1238	1104	30	0	219			
Arrive On Green	0.00	0.73	0.00	0.00	0.73	0.73	0.17	0.00	0.17			
Sat Flow, veh/h	0	3553	0	0	1691	1508	169	0	1221			
Grp Volume(v), veh/h	0	1693	0	0	703	1097	214	0	0			
Grp Sat Flow(s),veh/h/ln	0	1687	0	0	1691	1508	1390	0	0			
Q Serve(g_s), s	0.0	30.6	0.0	0.0	21.6	81.1	17.0	0.0	0.0			
Cycle Q Clear(g_c), s	0.0	30.6	0.0	0.0	21.6	81.1	17.0	0.0	0.0			
Prop In Lane	0.00		0.00	0.00		1.00	0.12		0.88			
Lane Grp Cap(c), veh/h	0	2471	0	0	1238	1104	250	0	0			
V/C Ratio(X)	0.00	0.69	0.00	0.00	0.57	0.99	0.86	0.00	0.00			
Avail Cap(c_a), veh/h	0	2471	0	0	1238	1104	331	0	0			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.00	1.00	0.00	0.00	1.00	1.00	1.00	0.00	0.00			
Uniform Delay (d), s/veh	0.0	8.2	0.0	0.0	7.0	14.9	45.6	0.0	0.0			
Incr Delay (d2), s/veh	0.0	0.8	0.0	0.0	0.6	25.5	15.6	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			
%ile BackOfQ(95%),veh/ln	0.0	20.3	0.0	0.0	15.4	51.2	12.1	0.0	0.0			
LnGrp Delay(d),s/veh	0.0	9.0	0.0	0.0	7.6	40.4	61.2	0.0	0.0			
LnGrp LOS		A			A	D	E					
Approach Vol, veh/h		1693			1800			214				
Approach Delay, s/veh		9.0			27.6			61.2				
Approach LOS		A			C			E				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2				6		8
Phs Duration (G+Y+Rc), s		88.0				88.0		25.4
Change Period (Y+Rc), s		6.0				6.0		6.0
Max Green Setting (Gmax), s		82.0				82.0		26.0
Max Q Clear Time (g_c+I1), s		33.1				83.6		19.0
Green Ext Time (p_c), s		31.7				0.0		0.4

Intersection Summary	
HCM 2010 Ctrl Delay	21.0
HCM 2010 LOS	C

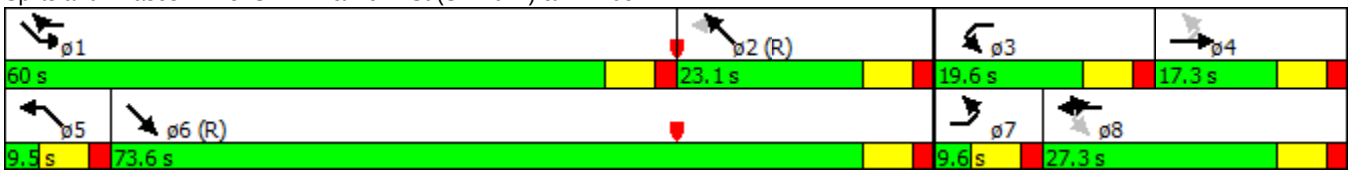
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Volume (vph)	36	236	32	227	194	1328	1378	357	74	24	233	208
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	11	11	11	11	11	11	11	11	11	11	11	11
Grade (%)		-2%			-1%			1%			-2%	
Storage Length (ft)	195		0	155		225	225		0	125		0
Storage Lanes	1		0	1		2	2		0	1		0
Taper Length (ft)	75			75			75			75		
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	0.88	0.97	1.00	1.00	1.00	0.95	0.95
Ped Bike Factor												
Frt		0.982				0.850		0.974			0.929	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1575	3211	0	1629	1714	2295	3010	1637	0	1590	2981	0
Flt Permitted	0.626			0.289			0.950			0.495		
Satd. Flow (perm)	1038	3211	0	495	1714	2295	3010	1637	0	828	2981	0
Right Turn on Red			No			Yes			Yes			Yes
Satd. Flow (RTOR)						347		14			126	
Link Speed (mph)		45			45			40			45	
Link Distance (ft)		670			586			596			570	
Travel Time (s)		10.2			8.9			10.2			8.6	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
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
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	6%	2%	3%	2%	2%	14%	6%	3%	3%	5%	5%	3%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	39	257	35	247	211	1443	1498	388	80	26	253	226
Shared Lane Traffic (%)												
Lane Group Flow (vph)	39	292	0	247	211	1443	1498	468	0	26	479	0
Number of Detectors	1	1		1	1	1	2	2		1	2	
Detector Template	Left	Thru		Left	Thru	Right				Left		
Leading Detector (ft)	40	30		40	30	30	160	160		30	310	
Trailing Detector (ft)	-10	-5		-10	-5	-5	-10	-10		-10	-10	
Turn Type	pm+pt	NA		pm+pt	NA	pt+ov	Prot	NA		pm+pt	NA	
Protected Phases	7	4		3	8	8 1	1	6		5	2	
Permitted Phases	4			8						2		
Detector Phase	7	4		3	8	8 1	1	6		5	2	
Switch Phase												
Minimum Initial (s)	3.0	5.0		3.0	5.0		3.0	5.0		3.0	5.0	
Minimum Split (s)	9.5	11.5		9.5	11.5		9.5	11.5		9.5	11.5	
Total Split (s)	9.6	17.3		19.6	27.3		60.0	73.6		9.5	23.1	
Total Split (%)	8.0%	14.4%		16.3%	22.8%		50.0%	61.3%		7.9%	19.3%	
Maximum Green (s)	3.1	10.8		13.1	20.8		53.5	67.1		3.0	16.6	
Yellow Time (s)	4.5	4.5		4.5	4.5		4.5	4.5		4.5	4.5	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	-1.0	-1.0		-1.0	-1.0		-1.0	-1.0		-1.0	-1.0	
Total Lost Time (s)	5.5	5.5		5.5	5.5		5.5	5.5		5.5	5.5	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	5.0		3.0	5.0		3.0	4.0		3.0	4.0	
Minimum Gap (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Time Before Reduce (s)	0.0	0.0		0.0	0.0		0.0	9.0		0.0	9.0	
Time To Reduce (s)	0.0	0.0		0.0	0.0		0.0	18.0		0.0	18.0	
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	
Walk Time (s)		12.0			12.0			14.0			14.0	
Flash Dont Walk (s)		18.0			18.0			21.0			21.0	
Pedestrian Calls (#/hr)		0			0			0			0	
v/c Ratio	0.25	0.93		0.94	0.58	0.83	1.10	0.47		0.15	0.88	
Control Delay	39.8	89.0		83.4	50.9	15.0	87.1	15.8		23.3	55.4	
Queue Delay	0.0	0.0		0.0	0.0	1.2	0.0	0.0		0.0	0.0	
Total Delay	39.8	89.0		83.4	50.9	16.2	87.1	15.8		23.3	55.4	
Queue Length 50th (ft)	23	120		167	154	353	~676	202		9	145	
Queue Length 95th (ft)	52	#206		#293	241	507	#812	292		24	#238	
Internal Link Dist (ft)		590			506			516			490	
Turn Bay Length (ft)	195			155		225	225			125		
Base Capacity (vph)	155	315		262	366	1736	1367	986		174	544	
Starvation Cap Reductn	0	0		0	0	121	0	0		0	0	
Spillback Cap Reductn	0	0		0	0	0	0	0		0	0	
Storage Cap Reductn	0	0		0	0	0	0	0		0	0	
Reduced v/c Ratio	0.25	0.93		0.94	0.58	0.89	1.10	0.47		0.15	0.88	

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:NWTL and 6:SET, Start of Green, Master Intersection
Natural Cycle: 120
Control Type: Actuated-Coordinated
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 18: SR 442 & Penn St (SR 2044) & PA 405



Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Volume (veh/h)	36	236	32	227	194	1328	1378	357	74	24	233	208
Number	7	4	14	3	8	18	1	6	16	5	2	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
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	1715	1780	1818	1774	1774	1587	1690	1739	1791	1731	1747	1818
Adj Flow Rate, veh/h	39	257	19	247	211	1008	1498	388	70	26	253	126
Adj No. of Lanes	1	2	0	1	1	2	2	1	0	1	2	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, %	6	2	2	2	2	14	6	3	3	5	5	5
Cap, veh/h	147	314	23	281	322	1509	1418	822	148	240	319	154
Arrive On Green	0.03	0.10	0.09	0.12	0.18	0.18	0.45	0.57	0.56	0.03	0.15	0.15
Sat Flow, veh/h	1633	3195	235	1689	1774	2374	3122	1434	259	1649	2172	1049
Grp Volume(v), veh/h	39	135	141	247	211	1008	1498	0	458	26	191	188
Grp Sat Flow(s),veh/h/ln	1633	1691	1739	1689	1774	1187	1561	0	1693	1649	1660	1562
Q Serve(g_s), s	2.5	9.4	9.5	14.1	13.3	21.8	54.5	0.0	19.1	1.6	13.4	14.0
Cycle Q Clear(g_c), s	2.5	9.4	9.5	14.1	13.3	21.8	54.5	0.0	19.1	1.6	13.4	14.0
Prop In Lane	1.00		0.13	1.00		1.00	1.00		0.15	1.00		0.67
Lane Grp Cap(c), veh/h	147	166	171	281	322	1509	1418	0	970	240	243	229
V/C Ratio(X)	0.26	0.81	0.82	0.88	0.65	0.67	1.06	0.00	0.47	0.11	0.79	0.82
Avail Cap(c_a), veh/h	147	166	171	281	322	1509	1418	0	970	249	243	229
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.09	0.09	0.09	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	46.3	53.0	53.1	42.7	45.6	13.8	32.8	0.0	15.1	41.5	49.4	49.7
Incr Delay (d2), s/veh	0.9	28.2	29.1	3.3	0.6	0.1	40.4	0.0	1.6	0.2	22.1	26.7
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(95%),veh/ln	2.1	9.6	10.0	2.5	7.8	12.1	56.5	0.0	14.2	1.3	12.1	12.3
LnGrp Delay(d),s/veh	47.3	81.2	82.2	46.0	46.2	14.0	73.1	0.0	16.7	41.7	71.5	76.4
LnGrp LOS	D	F	F	D	D	B	F		B	D	E	E
Approach Vol, veh/h		315			1466			1956			405	
Approach Delay, s/veh		77.5			24.0			59.9			71.9	
Approach LOS		E			C			E			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	60.0	23.1	19.6	17.3	8.9	74.2	9.6	27.3
Change Period (Y+Rc), s	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5
Max Green Setting (Gmax), s	53.5	16.6	13.1	10.8	3.0	67.1	3.1	20.8
Max Q Clear Time (g_c+I1), s	57.0	16.5	16.6	11.9	4.1	21.1	5.0	24.3
Green Ext Time (p_c), s	0.0	0.1	0.0	0.0	0.0	16.4	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	49.7
HCM 2010 LOS	D

Notes

User approved pedestrian interval to be less than phase max green.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	814	1	109	0	0	0	63	2029	8	6	1961	704
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	11	12	12	12	12	12	12	12	11	11	11	11
Grade (%)		3%			2%			0%			1%	
Storage Length (ft)	200		0	0		0	175		0	75		225
Storage Lanes	2		0	0		0	1		0	1		1
Taper Length (ft)	75			75			75			75		
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	1.00
Ped Bike Factor												
Frt		0.851						0.999				0.850
Flt Protected	0.950						0.950			0.950		
Satd. Flow (prot)	3159	1509	0	0	1782	0	1676	3317	0	1645	3133	1472
Flt Permitted	0.950						0.059			0.059		
Satd. Flow (perm)	3159	1509	0	0	1782	0	104	3317	0	102	3133	1472
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		7						1				749
Link Speed (mph)		40			35			45			45	
Link Distance (ft)		499			348			586			796	
Travel Time (s)		8.5			6.8			8.9			12.1	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	2%	3%	0%	0%	5%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	866	1	116	0	0	0	67	2159	9	6	2086	749
Shared Lane Traffic (%)												
Lane Group Flow (vph)	866	117	0	0	0	0	67	2168	0	6	2086	749
Number of Detectors	1	1		1	1		1	1		1	1	1
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (ft)	30	30		30	30		30	30		30	30	30
Trailing Detector (ft)	-10	-10		-10	-10		-10	-10		-10	-10	-10
Turn Type	Prot	NA					Perm	NA		Perm	NA	pm+ov
Protected Phases	7	4			8			2			6	7
Permitted Phases				8			2			6		6
Detector Phase	7	4		8	8		2	2		6	6	7
Switch Phase												
Minimum Initial (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Minimum Split (s)	9.0	15.0		15.0	15.0		15.0	15.0		15.0	15.0	9.0
Total Split (s)	32.0	47.0		15.0	15.0		73.0	73.0		73.0	73.0	32.0
Total Split (%)	26.7%	39.2%		12.5%	12.5%		60.8%	60.8%		60.8%	60.8%	26.7%
Maximum Green (s)	26.0	41.0		9.0	9.0		67.0	67.0		67.0	67.0	26.0
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)	-1.0	-1.0			-1.0		-1.0	-1.0		-1.0	-1.0	-1.0
Total Lost Time (s)	5.0	5.0			5.0		5.0	5.0		5.0	5.0	5.0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Lead/Lag	Lead			Lag	Lag							Lead
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Minimum Gap (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Time Before Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Time To Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Recall Mode	None	None		None	None		Min	Min		Min	Min	None
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
v/c Ratio	1.07	0.30					1.00	1.01		0.09	1.03	0.51
Control Delay	89.1	31.9					137.8	41.1		10.7	47.4	1.3
Queue Delay	0.0	0.0					0.0	34.9		0.0	6.3	0.0
Total Delay	89.1	31.9					137.8	76.1		10.7	53.6	1.3
Queue Length 50th (ft)	~332	59					41	~732		1	~791	0
Queue Length 95th (ft)	#454	110					#92	#948		8	#929	0
Internal Link Dist (ft)		419			268			506			716	
Turn Bay Length (ft)	200						175			75		225
Base Capacity (vph)	812	607					67	2148		66	2028	1472
Starvation Cap Reductn	0	0					0	241		0	33	0
Spillback Cap Reductn	0	0					0	0		0	0	0
Storage Cap Reductn	0	0					0	0		0	0	0
Reduced v/c Ratio	1.07	0.19					1.00	1.14		0.09	1.05	0.51

Intersection Summary	
Area Type:	Other
Cycle Length: 120	
Actuated Cycle Length: 105	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
~ Volume exceeds capacity, queue is theoretically infinite.	
Queue shown is maximum after two cycles.	
# 95th percentile volume exceeds capacity, queue may be longer.	
Queue shown is maximum after two cycles.	

Splits and Phases: 19: PA 405 & Chippewa Rd/Driveway



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (veh/h)	814	1	109	0	0	0	63	2029	8	6	1961	704
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	1773	1773	1773	1782	1782	1782	1765	1748	1800	1791	1706	1791
Adj Flow Rate, veh/h	866	1	84	0	0	0	67	2159	7	6	2086	749
Adj No. of Lanes	2	1	0	0	1	0	1	2	0	1	2	1
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0	0	0	0	2	3	3	0	5	0
Cap, veh/h	842	5	384	0	2	0	70	2199	7	75	2099	1377
Arrive On Green	0.26	0.26	0.25	0.00	0.00	0.00	0.65	0.65	0.64	0.65	0.65	0.65
Sat Flow, veh/h	3276	18	1492	0	-89100	0	93	3395	11	185	3241	1522
Grp Volume(v), veh/h	866	0	85	0	0	0	67	1055	1111	6	2086	749
Grp Sat Flow(s),veh/h/ln	1638	0	1510	0	1782	0	93	1660	1746	185	1620	1522
Q Serve(g_s), s	27.0	0.0	4.7	0.0	0.0	0.0	1.2	64.5	64.7	3.4	66.8	9.7
Cycle Q Clear(g_c), s	27.0	0.0	4.7	0.0	0.0	0.0	68.0	64.5	64.7	67.9	66.8	9.7
Prop In Lane	1.00		0.99	0.00		0.00	1.00		0.01	1.00		1.00
Lane Grp Cap(c), veh/h	842	0	388	0	2	0	70	1075	1131	75	2099	1377
V/C Ratio(X)	1.03	0.00	0.22	0.00	0.00	0.00	0.96	0.98	0.98	0.08	0.99	0.54
Avail Cap(c_a), veh/h	842	0	604	0	170	0	70	1075	1131	75	2099	1377
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	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	39.0	0.0	31.1	0.0	0.0	0.0	52.5	17.9	17.9	50.7	18.3	0.9
Incr Delay (d2), s/veh	38.4	0.0	0.3	0.0	0.0	0.0	94.6	22.9	22.5	0.5	18.2	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(95%),veh/ln	30.0	0.0	3.6	0.0	0.0	0.0	6.8	45.7	47.7	0.3	44.5	7.0
LnGrp Delay(d),s/veh	77.4	0.0	31.4	0.0	0.0	0.0	147.1	40.8	40.4	51.2	36.5	1.4
LnGrp LOS	F		C				F	D	D	D	D	A
Approach Vol, veh/h		951			0			2233			2841	
Approach Delay, s/veh		73.3			0.0			43.8			27.2	
Approach LOS		E						D			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6	7	8
Phs Duration (G+Y+Rc), s		73.0		32.0		73.0	32.0	0.0
Change Period (Y+Rc), s		6.0		6.0		6.0	6.0	6.0
Max Green Setting (Gmax), s		67.0		41.0		67.0	26.0	9.0
Max Q Clear Time (g_c+I1), s		70.5		6.7		70.4	29.5	0.0
Green Ext Time (p_c), s		0.0		0.3		0.0	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	40.6
HCM 2010 LOS	D

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	82	2846	0	2	2673	18	0	0	0	28	0	46
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	10	11	12	12	11	11	12	12	12	12	12	12
Grade (%)		1%			0%			0%			1%	
Storage Length (ft)	60		0	175		0	0		0	75		0
Storage Lanes	1		0	1		0	0		0	1		0
Taper Length (ft)	140			75			75			75		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt					0.999						0.850	
Flt Protected	0.950			0.950						0.950		
Satd. Flow (prot)	1527	3163	0	1710	3173	0	0	1800	0	1519	1522	0
Flt Permitted	0.950			0.051						0.656		
Satd. Flow (perm)	1527	3163	0	92	3173	0	0	1800	0	1049	1522	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					1						64	
Link Speed (mph)		45			45			35			45	
Link Distance (ft)		796			771			91			413	
Travel Time (s)		12.1			11.7			1.8			6.3	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	4%	4%	0%	0%	4%	18%	0%	0%	0%	12%	0%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	91	3162	0	2	2970	20	0	0	0	31	0	51
Shared Lane Traffic (%)												
Lane Group Flow (vph)	91	3162	0	2	2990	0	0	0	0	31	51	0
Number of Detectors	1	1		1	1		1	1		1	1	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	30	30		30	30		30	30		30	30	
Trailing Detector (ft)	-10	-10		-10	-10		-10	-10		-10	-10	
Turn Type	Prot	NA		Perm	NA					pm+pt	NA	
Protected Phases	5	2			6			8		7	4	
Permitted Phases				6			8			4		
Detector Phase	5	2		6	6		8	8		7	4	
Switch Phase												
Minimum Initial (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Minimum Split (s)	9.0	15.0		15.0	15.0		15.0	15.0		9.0	15.0	
Total Split (s)	9.0	96.0		87.0	87.0		15.0	15.0		9.0	24.0	
Total Split (%)	7.5%	80.0%		72.5%	72.5%		12.5%	12.5%		7.5%	20.0%	
Maximum Green (s)	4.0	91.0		82.0	82.0		10.0	10.0		4.0	19.0	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	-1.0	-1.0		-1.0	-1.0			-1.0		-1.0	-1.0	
Total Lost Time (s)	4.0	4.0		4.0	4.0			4.0		4.0	4.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead/Lag	Lead			Lag	Lag		Lag	Lag		Lead		
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Minimum Gap (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Time Before Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Time To Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Recall Mode	None	C-Max		C-Max	C-Max		None	None		None	None	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
v/c Ratio	0.39	1.11		0.03	1.34					0.36	0.34	
Control Delay	52.6	68.9		7.0	176.1					65.1	15.1	
Queue Delay	0.0	0.0		0.0	0.0					0.0	0.0	
Total Delay	52.6	68.9		7.0	176.1					65.1	15.1	
Queue Length 50th (ft)	65	~1504		0	~1605					24	0	
Queue Length 95th (ft)	121	#1655		4	#1742					56	30	
Internal Link Dist (ft)		716			691			11			333	
Turn Bay Length (ft)	60			175						75		
Base Capacity (vph)	232	2836		64	2236					87	307	
Starvation Cap Reductn	0	0		0	0					0	0	
Spillback Cap Reductn	0	0		0	0					0	0	
Storage Cap Reductn	0	0		0	0					0	0	
Reduced v/c Ratio	0.39	1.11		0.03	1.34					0.36	0.17	

Intersection Summary	
Area Type:	Other
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 91 (76%), Referenced to phase 2:EBT and 6:WBTL, Start of Yellow	
Natural Cycle: 120	
Control Type: Actuated-Coordinated	
~ Volume exceeds capacity, queue is theoretically infinite.	
Queue shown is maximum after two cycles.	
# 95th percentile volume exceeds capacity, queue may be longer.	
Queue shown is maximum after two cycles.	

Splits and Phases: 20: Driveway/Lime Bluff Rd & PA 405



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	82	2846	0	2	2673	18	0	0	0	28	0	46
Number	5	2	12	1	6	16	3	8	18	7	4	14
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	1722	1722	1791	1800	1729	1800	1800	1800	1800	1599	1791	1791
Adj Flow Rate, veh/h	91	3162	0	2	2970	13	0	0	0	31	0	30
Adj No. of Lanes	1	2	0	1	2	0	0	1	0	1	1	0
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	4	4	4	0	4	4	0	0	0	12	0	0
Cap, veh/h	68	2923	0	60	2745	12	0	2	0	113	0	61
Arrive On Green	0.04	0.89	0.00	0.82	0.82	0.82	0.00	0.00	0.00	0.03	0.00	0.03
Sat Flow, veh/h	1640	3358	0	68	3355	15	0	-60623	0	1523	0	1522
Grp Volume(v), veh/h	91	3162	0	2	1453	1530	0	0	0	31	0	30
Grp Sat Flow(s),veh/h/ln	1640	1636	0	68	1643	1727	0	1800	0	1523	0	1522
Q Serve(g_s), s	5.0	107.2	0.0	0.0	98.2	98.2	0.0	0.0	0.0	2.4	0.0	2.3
Cycle Q Clear(g_c), s	5.0	107.2	0.0	98.2	98.2	98.2	0.0	0.0	0.0	2.4	0.0	2.3
Prop In Lane	1.00		0.00	1.00		0.01	0.00		0.00	1.00		1.00
Lane Grp Cap(c), veh/h	68	2923	0	60	1344	1413	0	2	0	113	0	61
V/C Ratio(X)	1.33	1.08	0.00	0.03	1.08	1.08	0.00	0.00	0.00	0.27	0.00	0.49
Avail Cap(c_a), veh/h	68	2923	0	60	1344	1413	0	165	0	123	0	254
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	1.00	1.00	1.00	0.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	57.5	6.4	0.0	60.0	10.9	10.9	0.0	0.0	0.0	57.0	0.0	56.9
Incr Delay (d2), s/veh	158.2	37.5	0.0	1.0	49.6	49.7	0.0	0.0	0.0	1.3	0.0	6.1
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(95%),veh/ln	9.5	104.8	0.0	0.1	110.6	116.3	0.0	0.0	0.0	1.9	0.0	1.9
LnGrp Delay(d),s/veh	215.7	43.9	0.0	61.0	60.5	60.5	0.0	0.0	0.0	58.3	0.0	63.0
LnGrp LOS	F	F		E	F	F				E		E
Approach Vol, veh/h		3253			2985			0			61	
Approach Delay, s/veh		48.7			60.5			0.0			60.6	
Approach LOS		D			E						E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6	7	8
Phs Duration (G+Y+Rc), s		111.2		8.8	9.0	102.2	8.2	0.6
Change Period (Y+Rc), s		5.0		5.0	5.0	5.0	5.0	5.0
Max Green Setting (Gmax), s		91.0		19.0	4.0	82.0	4.0	10.0
Max Q Clear Time (g_c+I1), s		109.7		4.3	7.5	100.7	4.9	0.0
Green Ext Time (p_c), s		0.0		0.0	0.0	0.0	0.0	0.0

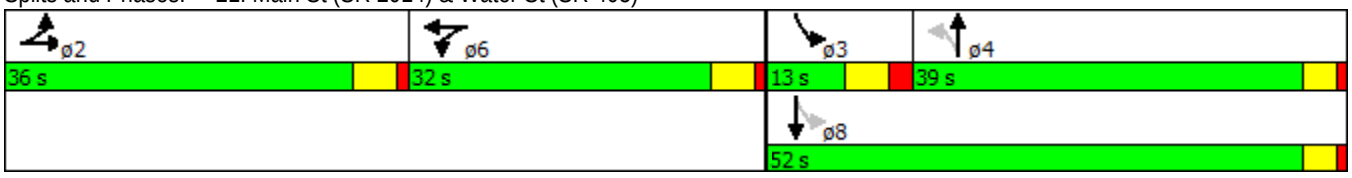
Intersection Summary	
HCM 2010 Ctrl Delay	54.4
HCM 2010 LOS	D

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	346	343	38	194	387	90	45	518	176	98	385	445
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	16	16	16	12	12	12	10	10	10	10	10	10
Grade (%)		-2%			1%			2%			-1%	
Storage Length (ft)	200		0	0		75	75		0	75		0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (ft)	75			75			75			75		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.99			0.99		1.00	0.99		1.00	0.98	
Frt		0.993			0.982			0.962			0.920	
Flt Protected		0.977			0.986		0.950			0.950		
Satd. Flow (prot)	0	1814	0	0	1642	0	1309	1313	0	1316	1253	0
Flt Permitted		0.977			0.986		0.111			0.098		
Satd. Flow (perm)	0	1808	0	0	1639	0	153	1313	0	135	1253	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		463			494			1137			622	
Travel Time (s)		12.6			13.5			31.0			17.0	
Confl. Peds. (#/hr)	10		10	10		10	10		10	10		10
Confl. Bikes (#/hr)												
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	10%	10%	10%	5%	5%	5%	5%	5%	5%	6%	6%	6%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)							6	6	6	6	6	6
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	384	381	42	216	430	100	50	576	196	109	428	494
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	807	0	0	746	0	50	772	0	109	922	0
Number of Detectors	1	1		1	1		1	1		1	1	
Detector Template	Left			Left			Left			Left		
Leading Detector (ft)	30	40		30	40		30	40		30	40	
Trailing Detector (ft)	-10	-10		-10	-10		-10	-10		-10	-10	
Turn Type	Split	NA		Split	NA		Perm	NA		pm+pt	NA	
Protected Phases	2	2		6	6			4		3	8	
Permitted Phases							4			8		
Detector Phase	2	2		6	6		4	4		3	8	
Switch Phase												
Minimum Initial (s)	8.0	8.0		8.0	8.0		7.1	7.1		3.0	7.1	
Minimum Split (s)	13.0	13.0		13.0	13.0		12.1	12.1		13.0	12.1	
Total Split (s)	36.0	36.0		32.0	32.0		39.0	39.0		13.0	52.0	
Total Split (%)	30.0%	30.0%		26.7%	26.7%		32.5%	32.5%		10.8%	43.3%	
Maximum Green (s)	31.0	31.0		27.0	27.0		34.9	34.9		7.0	47.9	
Yellow Time (s)	4.0	4.0		4.0	4.0		3.1	3.1		4.0	3.1	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		2.0	1.0	
Lost Time Adjust (s)		-0.5			-0.5		-1.0	-1.0		-1.0	-1.0	
Total Lost Time (s)		4.5			4.5		3.1	3.1		5.0	3.1	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead/Lag							Lag	Lag		Lead		
Lead-Lag Optimize?												
Vehicle Extension (s)	3.5	3.5		3.5	3.5		2.0	2.0		3.0	2.0	
Minimum Gap (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Time Before Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Time To Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Recall Mode	None	None		None	None		None	None		None	None	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
v/c Ratio		1.70			1.98		1.11	1.97		0.83	1.81	
Control Delay		351.8			479.0		211.2	471.2		71.4	397.0	
Queue Delay		0.0			0.0		0.0	0.0		0.0	0.0	
Total Delay		351.8			479.0		211.2	471.2		71.4	397.0	
Queue Length 50th (ft)		~917			~899		~44	~928		55	~1075	
Queue Length 95th (ft)		#1159			#1136		#129	#1166		#154	#1323	
Internal Link Dist (ft)		383			414			1057			542	
Turn Bay Length (ft)							75			75		
Base Capacity (vph)		476			376		45	392		131	510	
Starvation Cap Reductn		0			0		0	0		0	0	
Spillback Cap Reductn		0			0		0	0		0	0	
Storage Cap Reductn		0			0		0	0		0	0	
Reduced v/c Ratio		1.70			1.98		1.11	1.97		0.83	1.81	

Intersection Summary	
Area Type:	Other
Cycle Length: 120	
Actuated Cycle Length: 120	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
~ Volume exceeds capacity, queue is theoretically infinite.	
Queue shown is maximum after two cycles.	
# 95th percentile volume exceeds capacity, queue may be longer.	
Queue shown is maximum after two cycles.	

Splits and Phases: 21: Main St (SR 2014) & Water St (SR 405)



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	346	343	38	194	387	90	45	518	176	98	385	445
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	1.00		0.98	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.87	1.00	1.00	0.87
Adj Sat Flow, veh/h/ln	1891	1719	1891	1791	1706	1791	1697	1697	1782	1707	1707	1809
Adj Flow Rate, veh/h	384	381	42	216	430	67	50	576	196	109	428	494
Adj No. of Lanes	0	1	0	0	1	0	1	1	0	1	1	0
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	10	10	10	5	5	5	5	5	5	6	6	6
Cap, veh/h	208	206	23	114	228	36	62	314	107	171	255	294
Arrive On Green	0.27	0.26	0.26	0.23	0.23	0.22	0.30	0.30	0.29	0.07	0.41	0.40
Sat Flow, veh/h	791	785	86	500	995	155	579	1049	357	1625	625	722
Grp Volume(v), veh/h	807	0	0	713	0	0	50	0	772	109	0	922
Grp Sat Flow(s),veh/h/ln	1662	0	0	1649	0	0	579	0	1406	1625	0	1347
Q Serve(g_s), s	31.5	0.0	0.0	27.5	0.0	0.0	0.5	0.0	35.9	5.3	0.0	48.9
Cycle Q Clear(g_c), s	31.5	0.0	0.0	27.5	0.0	0.0	35.9	0.0	35.9	5.3	0.0	48.9
Prop In Lane	0.48		0.05	0.30		0.09	1.00		0.25	1.00		0.54
Lane Grp Cap(c), veh/h	436	0	0	378	0	0	62	0	421	171	0	549
V/C Ratio(X)	1.85	0.00	0.00	1.89	0.00	0.00	0.80	0.00	1.84	0.64	0.00	1.68
Avail Cap(c_a), veh/h	436	0	0	378	0	0	62	0	421	171	0	549
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	0.00	1.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	44.1	0.0	0.0	46.2	0.0	0.0	60.0	0.0	42.2	30.3	0.0	35.8
Incr Delay (d2), s/veh	391.2	0.0	0.0	408.8	0.0	0.0	48.0	0.0	385.0	7.6	0.0	314.0
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(95%),veh/ln	111.3	0.0	0.0	99.7	0.0	0.0	4.5	0.0	106.0	4.9	0.0	118.8
LnGrp Delay(d),s/veh	435.3	0.0	0.0	455.0	0.0	0.0	107.9	0.0	427.2	37.9	0.0	349.8
LnGrp LOS	F			F			F		F	D		F
Approach Vol, veh/h		807			713			822			1031	
Approach Delay, s/veh		435.3			455.0			407.7			316.8	
Approach LOS		F			F			F			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4		6		8
Phs Duration (G+Y+Rc), s		36.0	13.0	39.0		32.0		52.0
Change Period (Y+Rc), s		5.0	6.0	4.1		5.0		4.1
Max Green Setting (Gmax), s		31.0	7.0	34.9		27.0		47.9
Max Q Clear Time (g_c+I1), s		34.0	7.8	38.4		30.0		50.9
Green Ext Time (p_c), s		0.0	0.0	0.0		0.0		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	396.5
HCM 2010 LOS	F

Lane Group	EBL	EBT	WBT	WBR	SWL	SWR
Lane Configurations						
Volume (vph)	118	800	647	0	0	79
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	10	10
Grade (%)		2%	-3%		-1%	
Storage Length (ft)	0			0	0	0
Storage Lanes	0			0	1	0
Taper Length (ft)	75				75	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt					0.865	
Flt Protected		0.994				
Satd. Flow (prot)	0	1831	1837	0	1511	0
Flt Permitted		0.994				
Satd. Flow (perm)	0	1831	1837	0	1511	0
Link Speed (mph)		55	45		25	
Link Distance (ft)		1209	517		640	
Travel Time (s)		15.0	7.8		17.5	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	3%	2%	5%	0%	0%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)		0%	0%		0%	
Adj. Flow (vph)	122	825	667	0	0	81
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	947	667	0	81	0
Sign Control		Free	Free		Stop	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

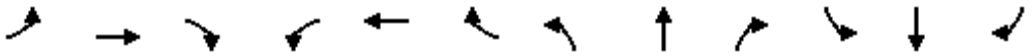
Intersection	
Int Delay, s/veh	1.4

Movement	EBL	EBT	WBT	WBR	SWL	SWR
Vol, veh/h	118	800	647	0	0	79
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, %	-	2	-3	-	-1	-
Peak Hour Factor	97	97	97	97	97	97
Heavy Vehicles, %	3	2	5	0	0	2
Mvmt Flow	122	825	667	0	0	81

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	667	0	-	0	1735	667
Stage 1	-	-	-	-	667	-
Stage 2	-	-	-	-	1068	-
Critical Hdwy	4.13	-	-	-	7.1	6.2
Critical Hdwy Stg 1	-	-	-	-	5.2	-
Critical Hdwy Stg 2	-	-	-	-	5.2	-
Follow-up Hdwy	3	-	-	-	3	3.1
Pot Cap-1 Maneuver	728	-	-	-	17	484
Stage 1	-	-	-	-	597	-
Stage 2	-	-	-	-	310	-
Platoon blocked, %		-	-	-	1	
Mov Cap-1 Maneuver	728	-	-	-	12	484
Mov Cap-2 Maneuver	-	-	-	-	12	-
Stage 1	-	-	-	-	597	-
Stage 2	-	-	-	-	214	-

Approach	EB	WB	SW
HCM Control Delay, s	1.4	0	13.9
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SWLn1
Capacity (veh/h)	728	-	-	-	484
HCM Lane V/C Ratio	0.167	-	-	-	0.168
HCM Control Delay (s)	10.9	0	-	-	13.9
HCM Lane LOS	B	A	-	-	B
HCM 95th %tile Q(veh)	0.6	-	-	-	0.6



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	2	781	44	3	624	19	23	36	2	17	29	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	11	11	11	10	10	10
Grade (%)		-2%			1%			0%			-3%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (ft)	75			75			75			75		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.993			0.996			0.996			0.997	
Flt Protected								0.981			0.983	
Satd. Flow (prot)	0	1787	0	0	1780	0	0	1763	0	0	1690	0
Flt Permitted								0.981			0.983	
Satd. Flow (perm)	0	1787	0	0	1780	0	0	1763	0	0	1690	0
Link Speed (mph)		55			55			35			50	
Link Distance (ft)		1494			4148			578			618	
Travel Time (s)		18.5			51.4			11.3			8.4	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
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
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	7%	0%	0%	6%	0%	0%	3%	0%	0%	7%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	2	849	48	3	678	21	25	39	2	18	32	1
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	899	0	0	702	0	0	66	0	0	51	0
Sign Control		Free			Free			Stop			Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	11.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	2	781	44	3	624	19	23	36	2	17	29	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	-2	-	-	1	-	-	0	-	-	-3	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	0	7	0	0	6	0	0	3	0	0	7	0
Mvmt Flow	2	849	48	3	678	21	25	39	2	18	32	1

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	699	0	0	897	0	0	1588	1582	873	1593	1596	689
Stage 1	-	-	-	-	-	-	877	877	-	695	695	-
Stage 2	-	-	-	-	-	-	711	705	-	898	901	-
Critical Hdwy	4.9	-	-	4.9	-	-	8.1	6.53	6.4	8.1	6.5	6.4
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.53	-	5.5	4.97	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.53	-	5.5	4.97	-
Follow-up Hdwy	3.5	-	-	3.5	-	-	3	4.027	3.4	3	4.063	3.4
Pot Cap-1 Maneuver	547	-	-	455	-	-	61	108	329	60	107	423
Stage 1	-	-	-	-	-	-	383	365	-	547	490	-
Stage 2	-	-	-	-	-	-	477	438	-	432	407	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	547	-	-	455	-	-	46	106	329	42	105	423
Mov Cap-2 Maneuver	-	-	-	-	-	-	46	106	-	42	105	-
Stage 1	-	-	-	-	-	-	380	362	-	543	485	-
Stage 2	-	-	-	-	-	-	440	433	-	380	404	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0.1	182.2	143
HCM LOS			F	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	72	547	-	-	455	-	-	69
HCM Lane V/C Ratio	0.921	0.004	-	-	0.007	-	-	0.74
HCM Control Delay (s)	182.2	11.6	0	-	13	0	-	143
HCM Lane LOS	F	B	A	-	B	A	-	F
HCM 95th %tile Q(veh)	4.6	0	-	-	0	-	-	3.4

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	54	622	96	8	516	3	89	34	6	5	37	47
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	12	12	12	12	11	11	11	14	14	14
Grade (%)		0%			-1%			7%			-1%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (ft)	75			75			75			75		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.983			0.999			0.993			0.928	
Flt Protected		0.997			0.999			0.967			0.997	
Satd. Flow (prot)	0	1702	0	0	1674	0	0	1580	0	0	1785	0
Flt Permitted		0.997			0.999			0.967			0.997	
Satd. Flow (perm)	0	1702	0	0	1674	0	0	1580	0	0	1785	0
Link Speed (mph)		55			55			40			40	
Link Distance (ft)		1228			918			354			317	
Travel Time (s)		15.2			11.4			6.0			5.4	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	6%	4%	0%	0%	8%	0%	3%	0%	0%	0%	0%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	59	684	105	9	567	3	98	37	7	5	41	52
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	848	0	0	579	0	0	142	0	0	98	0
Sign Control		Free			Free			Stop			Stop	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

Intersection	
Int Delay, s/veh	91.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	54	622	96	8	516	3	89	34	6	5	37	47
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	-1	-	-	7	-	-	-1	-
Peak Hour Factor	91	91	91	91	91	91	91	91	91	91	91	91
Heavy Vehicles, %	6	4	0	0	8	0	3	0	0	0	0	0
Mvmt Flow	59	684	105	9	567	3	98	37	7	5	41	52

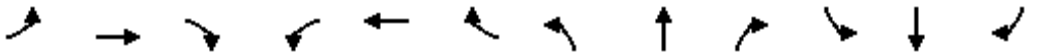
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	570	0	0	789	0	0	1487	1443	736	1463	1494	569
Stage 1	-	-	-	-	-	-	855	855	-	586	586	-
Stage 2	-	-	-	-	-	-	632	588	-	877	908	-
Critical Hdwy	4.9	-	-	4.9	-	-	8.1	6.5	6.4	8.1	6.5	6.4
Critical Hdwy Stg 1	-	-	-	-	-	-	7.53	6.9	-	5.9	5.3	-
Critical Hdwy Stg 2	-	-	-	-	-	-	7.53	6.9	-	5.9	5.3	-
Follow-up Hdwy	3.5	-	-	3.5	-	-	3	4	3.4	3	4	3.4
Pot Cap-1 Maneuver	617	-	-	503	-	-	~ 74	133	397	77	124	498
Stage 1	-	-	-	-	-	-	281	271	-	581	517	-
Stage 2	-	-	-	-	-	-	412	397	-	402	375	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	617	-	-	503	-	-	~ 39	107	397	47	100	498
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ 39	107	-	47	100	-
Stage 1	-	-	-	-	-	-	232	224	-	480	504	-
Stage 2	-	-	-	-	-	-	331	387	-	272	310	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.8	0.2	$ 1030.8	60.6
HCM LOS			F	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	49	617	-	-	503	-	-	156
HCM Lane V/C Ratio	2.893	0.096	-	-	0.017	-	-	0.627
HCM Control Delay (s)	$ 1030.8	11.5	0	-	12.3	0	-	60.6
HCM Lane LOS	F	B	A	-	B	A	-	F
HCM 95th %tile Q(veh)	15.1	0.3	-	-	0.1	-	-	3.4

Notes

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



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	48	23	8	0	10	1	6	32	6	0	11	31
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	10	10	10	10	10	13	13	13	16	16	16
Grade (%)		-3%			2%			1%			-2%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (ft)	75			75			75			75		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.986			0.991			0.982			0.901	
Flt Protected		0.971						0.993				
Satd. Flow (prot)	0	1324	0	0	1578	0	0	1599	0	0	1334	0
Flt Permitted		0.971						0.993				
Satd. Flow (perm)	0	1324	0	0	1578	0	0	1599	0	0	1334	0
Link Speed (mph)		35			25			25			25	
Link Distance (ft)		1453			774			205			154	
Travel Time (s)		28.3			21.1			5.6			4.2	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	38%	0%	71%	0%	11%	0%	0%	23%	17%	0%	38%	50%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	66	32	11	0	14	1	8	44	8	0	15	42
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	109	0	0	15	0	0	60	0	0	57	0
Sign Control		Stop			Stop			Free			Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	5.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	48	23	8	0	10	1	6	32	6	0	11	31
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, %	-	-3	-	-	2	-	-	1	-	-	-2	-
Peak Hour Factor	73	73	73	73	73	73	73	73	73	73	73	73
Heavy Vehicles, %	38	0	71	0	11	0	0	23	17	0	38	50
Mvmt Flow	66	32	11	0	14	1	8	44	8	0	15	42

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	108	104	36	122	122	48	58	0	0	52	0	0
Stage 1	36	36	-	64	64	-	-	-	-	-	-	-
Stage 2	72	68	-	58	58	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.3	-	-	4.3	-	-
Critical Hdwy Stg 1	5.88	4.9	-	6.5	6.01	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.88	4.9	-	6.5	6.01	-	-	-	-	-	-	-
Follow-up Hdwy	3	4	3.1	3	4.099	3.1	3	-	-	3	-	-
Pot Cap-1 Maneuver	1014	790	1108	992	755	1091	1147	-	-	1152	-	-
Stage 1	1149	874	-	1098	818	-	-	-	-	-	-	-
Stage 2	1099	852	-	1107	824	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	993	784	1108	947	750	1091	1147	-	-	1152	-	-
Mov Cap-2 Maneuver	993	784	-	947	750	-	-	-	-	-	-	-
Stage 1	1141	874	-	1090	812	-	-	-	-	-	-	-
Stage 2	1072	846	-	1057	824	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	9.4	9.8	1.1	0
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1147	-	-	931	772	1152	-	-
HCM Lane V/C Ratio	0.007	-	-	0.116	0.02	-	-	-
HCM Control Delay (s)	8.2	0	-	9.4	9.8	0	-	-
HCM Lane LOS	A	A	-	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.4	0.1	0	-	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Volume (vph)	1	0	37	3	0	0	1	1064	0	16	859	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	10	10	9	9	9	11	11	11	11	11	11
Grade (%)		1%			-1%			-3%			0%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (ft)	75			75			75			75		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.868										
Flt Protected		0.999			0.950						0.999	
Satd. Flow (prot)	0	1438	0	0	1633	0	0	1828	0	0	1753	0
Flt Permitted		0.999			0.950						0.999	
Satd. Flow (perm)	0	1438	0	0	1633	0	0	1828	0	0	1753	0
Link Speed (mph)		25			25			50			50	
Link Distance (ft)		172			263			318			367	
Travel Time (s)		4.7			7.2			4.3			5.0	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	100%	0%	4%	0%	0%	0%	0%	2%	0%	40%	4%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	1	0	39	3	0	0	1	1132	0	17	914	1
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	40	0	0	3	0	0	1133	0	0	932	0
Sign Control		Stop			Stop			Free			Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

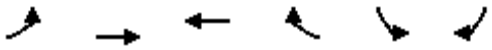
Intersection	
Int Delay, s/veh	0.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Vol, veh/h	1	0	37	3	0	0	1	1064	0	16	859	1
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, %	-	1	-	-	-1	-	-	-3	-	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	100	0	4	0	0	0	0	2	0	40	4	0
Mvmt Flow	1	0	39	3	0	0	1	1132	0	17	914	1

Major/Minor	Minor1			Minor2			Major1			Major2		
Conflicting Flow All	2082	2083	1132	2102	2082	914	915	0	0	1132	0	0
Stage 1	1134	1134	-	948	948	-	-	-	-	-	-	-
Stage 2	948	949	-	1154	1134	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.3	-	-	4.3	-	-
Critical Hdwy Stg 1	7.3	5.7	-	5.9	5.3	-	-	-	-	-	-	-
Critical Hdwy Stg 2	7.3	5.7	-	5.9	5.3	-	-	-	-	-	-	-
Follow-up Hdwy	3	4	3.1	3	4	3.1	3	-	-	3	-	-
Pot Cap-1 Maneuver	42	54	259	40	54	348	575	-	-	480	-	-
Stage 1	186	263	-	367	361	-	-	-	-	-	-	-
Stage 2	254	324	-	282	298	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	40	50	259	32	50	348	575	-	-	480	-	-
Mov Cap-2 Maneuver	40	50	-	32	50	-	-	-	-	-	-	-
Stage 1	185	262	-	365	335	-	-	-	-	-	-	-
Stage 2	236	301	-	238	297	-	-	-	-	-	-	-

Approach	EB	WB	SE	NW
HCM Control Delay, s	24.4	129.6	0	0.2
HCM LOS	C	F		

Minor Lane/Major Mvmt	NWL	NWT	NWR	EBLn1	WBLn1	SEL	SET	SER
Capacity (veh/h)	480	-	-	226	32	575	-	-
HCM Lane V/C Ratio	0.035	-	-	0.179	0.1	0.002	-	-
HCM Control Delay (s)	12.8	0	-	24.4	129.6	11.3	0	-
HCM Lane LOS	B	A	-	C	F	B	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0.6	0.3	0	-	-



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	0	1812	766	0	0	276
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	13	13	13	13
Grade (%)		-1%	1%		-2%	
Storage Length (ft)	0			0	0	0
Storage Lanes	0			0	0	1
Taper Length (ft)	75				75	
Lane Util. Factor	1.00	0.95	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt						0.865
Flt Protected						
Satd. Flow (prot)	0	3522	1826	0	0	1634
Flt Permitted						
Satd. Flow (perm)	0	3522	1826	0	0	1634
Link Speed (mph)		35	35		25	
Link Distance (ft)		348	758		364	
Travel Time (s)		6.8	14.8		9.9	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	3%	7%	0%	0%	5%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)		0%	0%		0%	
Adj. Flow (vph)	0	1888	798	0	0	288
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	1888	798	0	0	288
Sign Control		Free	Free		Stop	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

Intersection	
Int Delay, s/veh	3.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Vol, veh/h	0	1812	766	0	0	276
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	Stop
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	1	-
Grade, %	-	-1	1	-	-2	-
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	0	3	7	0	0	5
Mvmt Flow	0	1888	798	0	0	288

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	798	0	-	0	1742	798
Stage 1	-	-	-	-	798	-
Stage 2	-	-	-	-	944	-
Critical Hdwy	4.3	-	-	-	7.1	6.2
Critical Hdwy Stg 1	-	-	-	-	5	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	3	-	-	-	3	3.1
Pot Cap-1 Maneuver	633	-	-	-	73	406
Stage 1	-	-	-	-	542	-
Stage 2	-	-	-	-	421	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	633	-	-	-	73	406
Mov Cap-2 Maneuver	-	-	-	-	249	-
Stage 1	-	-	-	-	542	-
Stage 2	-	-	-	-	421	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	32.7
HCM LOS			D

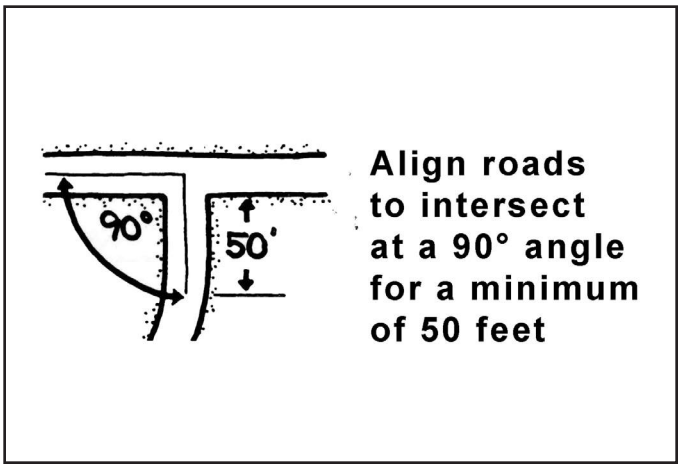
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	633	-	-	-	406
HCM Lane V/C Ratio	-	-	-	-	0.708
HCM Control Delay (s)	0	-	-	-	32.7
HCM Lane LOS	A	-	-	-	D
HCM 95th %tile Q(veh)	0	-	-	-	5.3

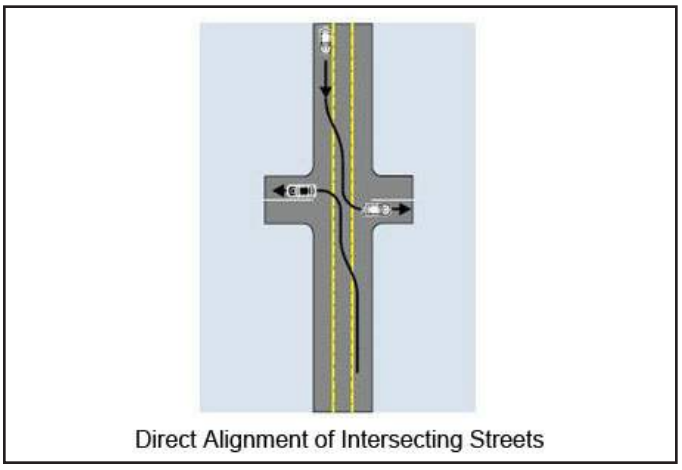
APPENDIX I

Access Management Concepts

Access Management Concepts: Road/Street Design & Redesign Guidelines

Muncy Area Corridor Access Management Plan
Transportation Improvement Strategies









This set of Guidelines pertains to:

1. Road & Driveway Alignments
2. Nearby Access Roads & Lanes
3. Spacing of Street & Driveway Intersections
4. Curb Cuts: Spacing & Width
5. Sidewalks
6. Crosswalks
7. Street Trees
8. Bicycle Lanes

TCA Thomas Comitta Associates, Inc. Town Planners & Landscape Architects

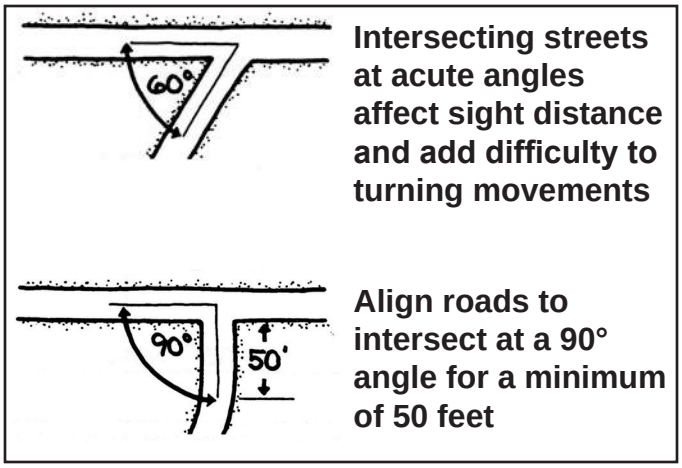
McMAHON TRANSPORTATION ENGINEERS & PLANNERS

Draft: August 25, 2014

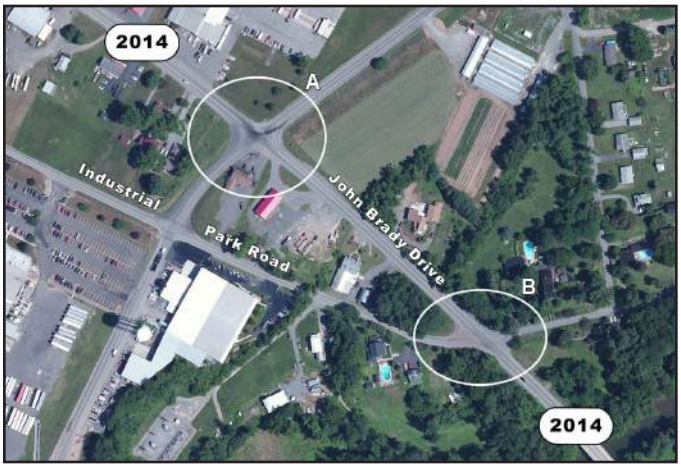
Road & Driveway Alignments

Access Management Concepts:
Road/Street Design & Redesign Guidelines

Muncy Area Corridor Access Management Plan - Transportation Improvement Strategies



Intersecting Streets at Right Angles Allows for Improved Sight Distance and a Safer Turning Radius



John Brady Drive & Industrial Park Road, Muncy CreekTownship, PA
A: Preferred; B: Not Preferred

Intent:

1.1. Alignments for roads and driveways are intended to intersect at safe angles, preferably at a perpendicular angle.

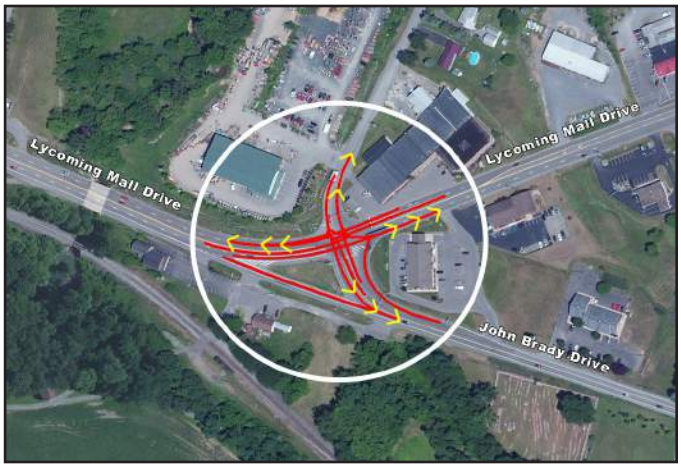
1.2. Alignments for roads and driveways are intended to promote safe visibility and sight distance.

Design & Redesign Guidelines:

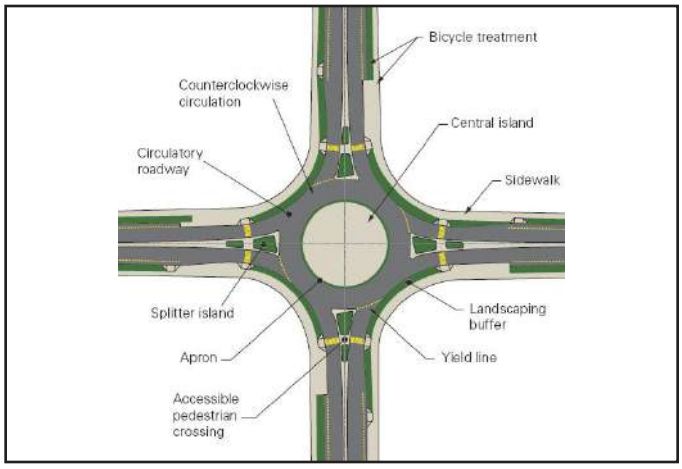
1.3. Alignments for roads and driveways shall be perpendicular to the primary road or street, and **not** at acute angles.

1.4. New roads shall "line up" with existing roads, so that the intersections are in direct alignment and **not** offset.

1.5. Roundabouts should be considered, if feasible, to allow for improved traffic flow.



Cumulative Acute Angle Intersections Create Turning Movement Complexity, Hall Station Intersection, Muncy Township, PA

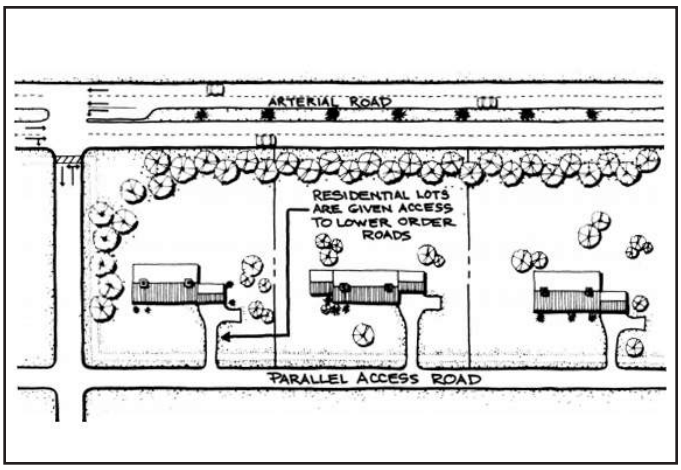


Roundabout as an Optional Design Technique for Road Intersections

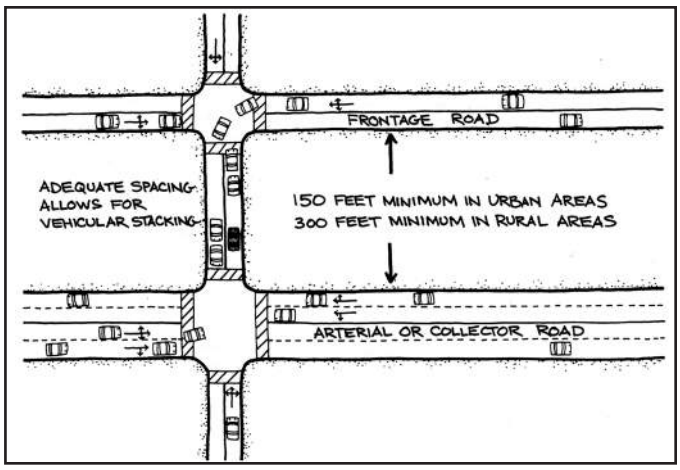
Nearby Access Roads & Lanes

Access Management Concepts:
Road/Street Design & Redesign Guidelines

Muncy Area Corridor Access Management Plan - Transportation Improvement Strategies



Nearby Access Roads & Lanes Provide Access to Lots Located Near Arterial or Collector Roads



Sufficient Spacing Necessary for Vehicular Stacking

Intent:

2.1. Parallel access lanes and roads are intended to relieve congestion along principal thoroughfares.

Design & Redesign Guidelines:

2.2. Parallel access lanes and roads should be considered to enable vehicular traffic to access properties away from congested roadway segments and intersections.



Village Road and U.S. Route 220, Muncy Township, PA
= Nearby Access Road

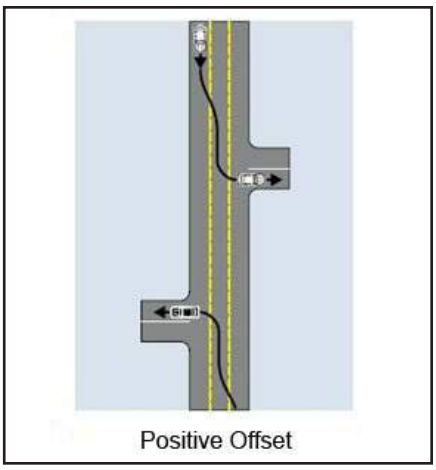


Industrial Park Road and John Brady Drive, Muncy Creek Township, PA
= Nearby Access Road

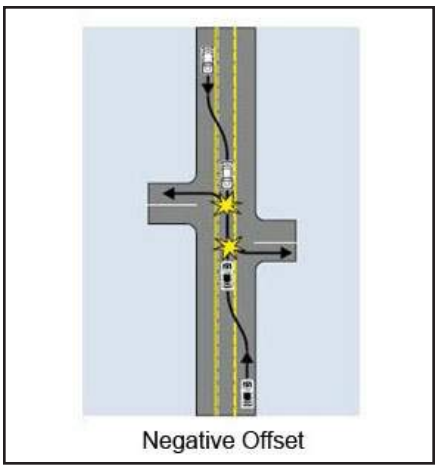
Spacing of Street & Driveway Intersections

Access Management Concepts:
Road/Street Design & Redesign Guidelines

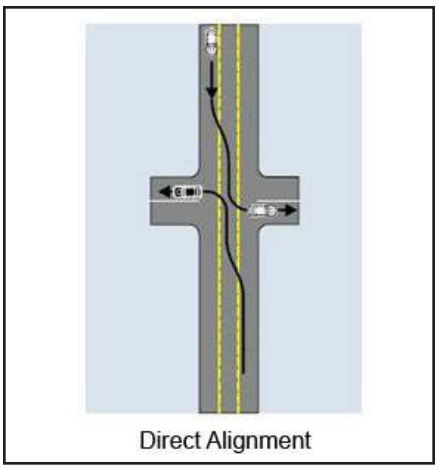
Muncy Area Corridor Access Management Plan - Transportation Improvement Strategies



Positive Offset "Preferred"



Negative Offset Creates an Overlap for Left Turns Exiting the Major Roadway



Direct Alignment Provides Drivers Access Without Using the Same Median Area Prior to Turning

Intent:

3.1. The spacing of intersecting streets and driveways is intended to provide ample distances between vehicular turns onto a principal thoroughfare.

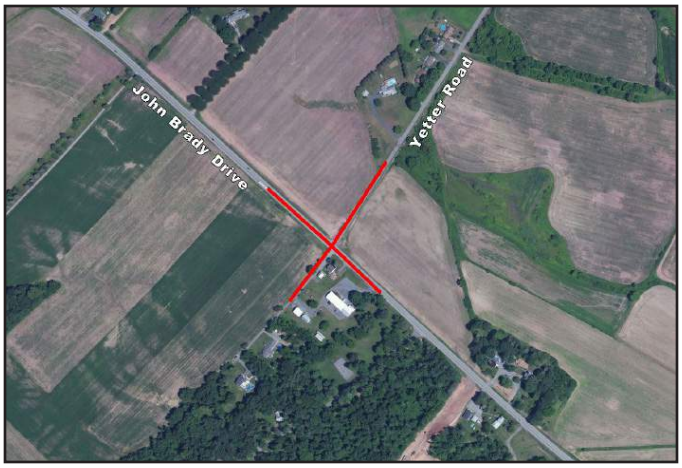
Design & Redesign Guidelines:

3.2. Street intersections shall be offset by at least 300 feet wherever possible.

3.3. Driveway intersections shall be offset by at least 60 feet wherever possible.



Negative Offset of Pepper and New Streets, Muncy Borough, PA



Direct Alignment of Yetter Road and Local Residential Road Across John Brady Drive, Muncy Township, PA

= Preferred Intersection

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Town Planners & Landscape Architects

Curb Cuts: Spacing & Width

Access Management Concepts:
Road/Street Design & Redesign Guidelines

Muncy Area Corridor Access Management Plan - Transportation Improvement Strategies



Clear Entry & Exit Points with Roadway Markings,
W. Water Street, Muncy Borough, PA



Clear Entry & Exit Points, Lycoming Mall Drive, Muncy, PA

Intent:

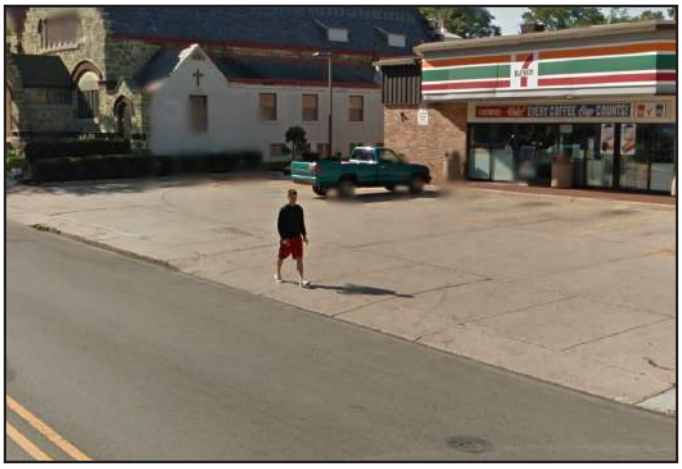
4.1. Curb cut spacing is intended to minimize conflicting turning movements along a thoroughfare.

4.2. Curb cut widths are intended to minimize unchannelized vehicular turns along thoroughfares.

Design & Redesign Guidelines:

4.3. Curb cut spacing shall be at least 50 feet apart, and preferably 100 feet apart where driveways intersect a roadway.

4.4. Curb cut widths shall be minimized and shall be no more than 36 feet in width at the curb radius along the right-of-way line.



No Clear Entry & Exit Points, 7-Eleven, West Chester, PA



No Clear Entry & Exit Points, N. Washington Sreet, Muncy Borough, PA

Sidewalks

Access Management Concepts:
Road/Street Design & Redesign Guidelines

Muncy Area Corridor Access Management Plan - Transportation Improvement Strategies



Proposed Sidewalk Along Four-Lane Roadway, Sandy Springs, GA



Sidewalk in Concord Township, PA

Intent:

5.1. Sidewalks are intended to enhance pedestrian availability.

5.2. Sidewalks are intended to be an important element of a complete street.

Design & Redesign Guidelines:

5.3. Sidewalks shall be provided on both sides of all streets, whenever possible.

5.4. Sidewalks shall be a minimum of 4’ 6” in width.



Opportunity for Sidewalk in Residential Area Along Route 405, Wolf Township, PA



Continuous Sidewalk, East Pikeland Township, PA

Crosswalks

Access Management Concepts:
Road/Street Design & Redesign Guidelines

Muncy Area Corridor Access Management Plan - Transportation Improvement Strategies



Continental Style Crosswalk with Pedestrian Signage



Continental Style Crosswalk with Pedestrian Signage and Warning Lights, St. Petersburg, FL

Intent:

6.1. Crosswalks are intended to provide a safe means of pedestrian access.

6.2. Crosswalks are intended to provide linkage to a sidewalk network.

Design & Redesign Guidelines:

6.3. Crosswalks shall be provided at all signalized intersections.

6.4. Crosswalks shall be a minimum of six (6) feet in width.



Standard Style Crosswalk with Signage and Warning Lights Linking Muncy Valley Hospital to Parking Lot, Muncy Borough, PA



Standard Style Crosswalk Markings at Intersection of Cemetery and S. Main Streets, Hughesville Borough, PA

Street Trees

Access Management Concepts:
Road/Street Design & Redesign Guidelines

Muncy Area Corridor Access Management Plan - Transportation Improvement Strategies



Street Trees Integrated into Median



Street Trees Along Route 1, Concord Township, PA

Intent:

7.1. Street trees are intended to provide shade for the streetscape.

7.2. Street trees may be utilized as a “green” traffic calming technique.

Design & Redesign Guidelines:

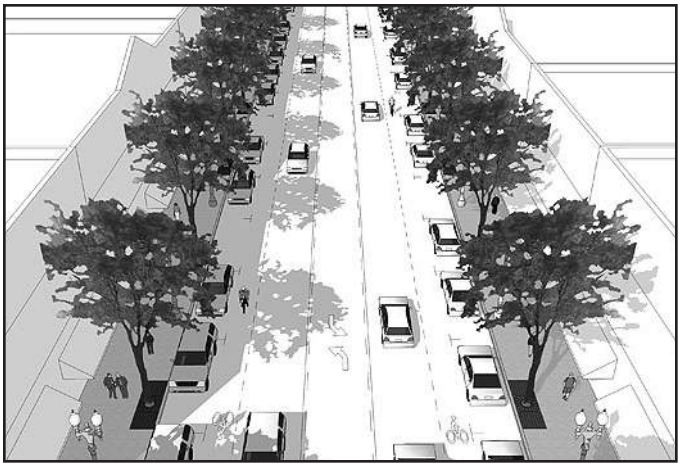
7.3. Street trees shall be installed and maintained at regular intervals along streets, especially in Muncy and Hughesville Boroughs.

7.4. Street tree species shall be selected in accordance with varying streetscape conditions.

7.5. Street trees should be utilized as a “green” form of traffic calming.



Street Trees Integrated into Bike Lane Buffer Area, Lower Macungie Township, PA

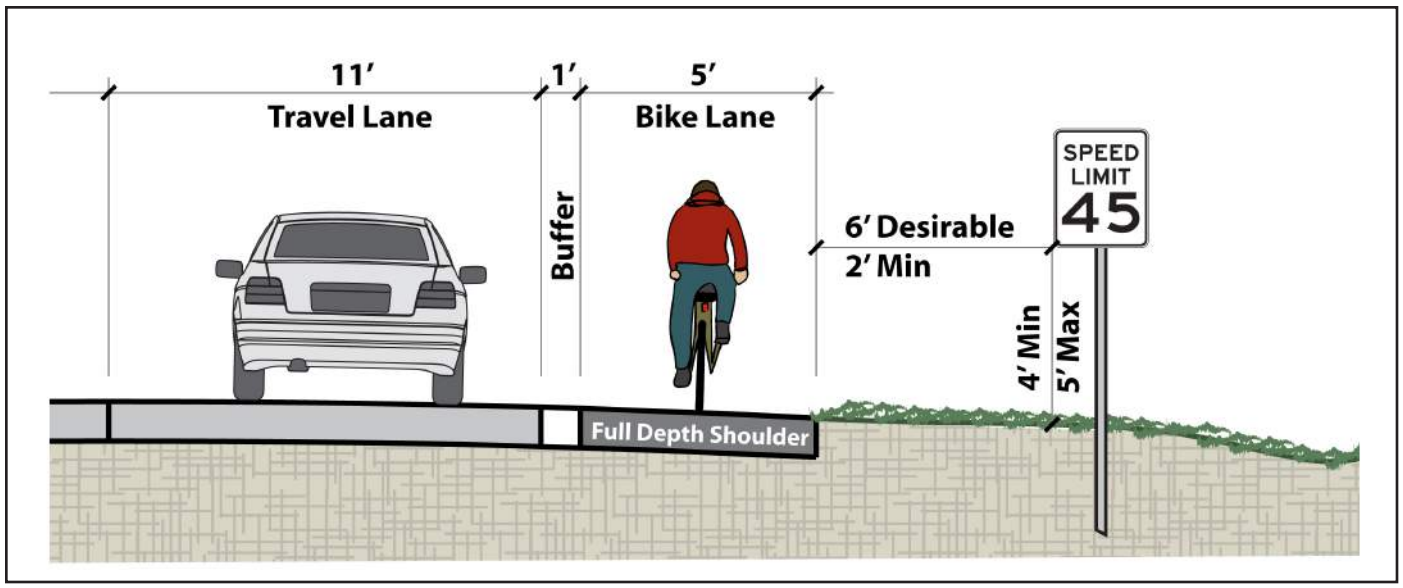


Street Trees at Regular Intervals Provide Shade, and Serve as a “Green” Form of Traffic Calming

Bicycle Lanes

Access Management Concepts:
Road/Street Design & Redesign Guidelines

Muncy Area Corridor Access Management Plan - Transportation Improvement Strategies



Example of Bike Lane with Integrated Buffer Area, Route 52 - Kennett Pike, Kennett Township, Chester County, PA

Intent:

8.1. Bicycle lanes are intended to provide multi-modal opportunities for transportation.

8.2. Road and street design & redesign are intended to be respectful of bicycling opportunities.

Design & Redesign Guidelines:

8.3. Bicycle lanes shall be designed and/or designated to promote safety for bicyclists and motorists.

8.4. Bicycle lanes should be designated along shoulders that are of sufficient width.



Bike Path Separated from Roadway by Buffer Area, Hilton Head, SC

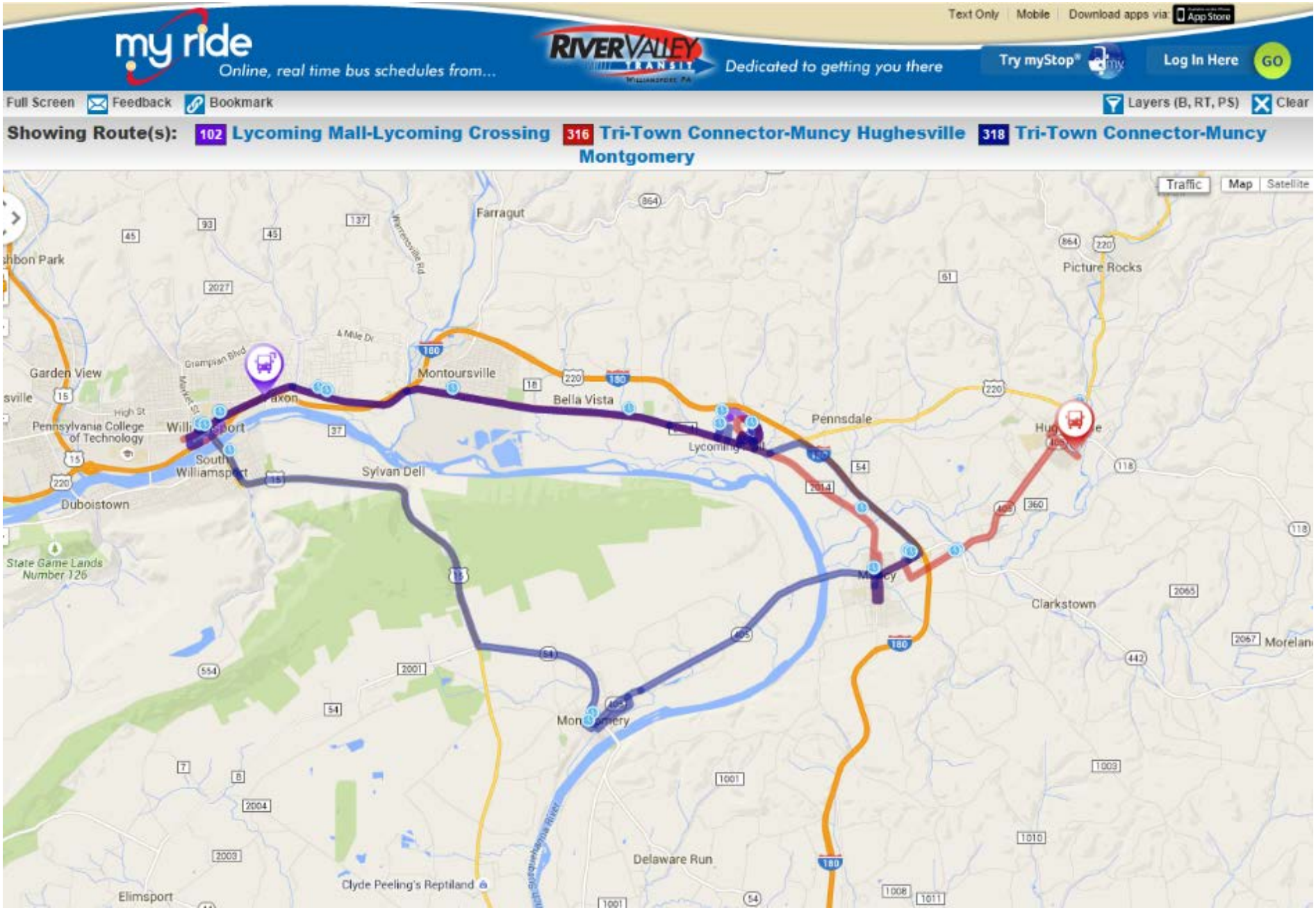


On-Street Parking and Bicycle Lane Along Route 52, Centreville, DE

APPENDIX J

Multi-Modal Considerations

Bicycle and Pedestrian Facilities Toolbox	Users	Description	Design Guidelines (width)
Sidewalk 	Pedestrians	A concrete pathway parallel to the road that is intended for use by pedestrians with numerous access points to adjacent land uses.	5’ to 6’ 4’ permissible if passing areas are provided
Sidepath 	Pedestrians	An asphalt paved pathway parallel to the road that is intended for use by pedestrians to connect various destinations.	6’ to 8’
Multi-Use Trail 	Bicycles & Pedestrians	An off-road pathway at least 8’ wide that is used by both bicyclists and pedestrians.	10’ to 12’ 8’ permissible in certain situations
On-Road Bicycle Lane 	Bicycles	A portion of the roadway at least 5’ wide and designated for exclusive use by bicyclists with pavement markings and/or signage.	5’ to 6’
Shared Lane - *Sharrow* 	Bicycles & Motorized Vehicles	A roadway with travel lanes that are shared by both vehicles and bicycles. The roadway can include striping or signage to indicate increased bicycle traffic, such as a sharrows or “Share the Road” signs.	14’ curb lane
Paved Shoulder 	Bicycles & Pedestrians	A paved shoulder can improve bicycle accommodations when other facilities are not possible or not provided.	Varies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Online, real time bus schedules from...
RIVER VALLEY TRANSIT
Dedicated to getting you there
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GO
Full Screen
Feedback
Bookmark
Layers (B, RT, PS)
Clear
Showing Route(s): 102 Lycoming Mall-Lycoming Crossing 316 Tri-Town Connector-Muncy Hughesville 318 Tri-Town Connector-Muncy Montgomery
Traffic
Map
Satellite
Farragut
Picture Rocks
Garden View
Montoursville
Bella Vista
Pennsylvania College of Technology
Williamsport
South Williamsport
Sylvan Dell
Pennsdale
Duboistown
State Game Lands Number 126
Clarkstown
Delaware Run
Clyde Peeling's Reptiland
Elimsport