

Technical Memorandum

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PennDOT District 8-0 Project Manager

DATE: March 12th, 2015

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SUBJECT: Second Street Traffic Study

Michael Baker Jr., Inc. (Baker) has completed a traffic study to investigate the feasibility of converting Second Street, a City of Harrisburg owned and maintained roadway (City), between the intersection of Forster Street (SR 3016) and the intersection of Division Street (City) from one-way to two-way operation. Observations of vehicular and pedestrian movements within the study area were combined with vehicle and pedestrian counts in order to develop a thorough understanding of the needs of and demands on the local transportation system. This Technical Memorandum summarizes data collection efforts, details the methodology and analyses used to evaluate various alternatives to convert Second Street, and provides findings and considerations related to a feasible alternative. The full impacts of the proposed conversion to both the local and system roadway network will need to be evaluated further to identify appropriate mitigating improvements.

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I. INTRODUCTION

The Second Street Traffic Study was initiated as an effort to improve the livability and viability of the City of Harrisburg for its workers, residents and visitors by improving modal split, pedestrian safety, vehicular operations, mobility, and connectivity on the roadway network within the City. In this effort, PennDOT commissioned Baker to analyze three (3) future alternatives (as well as a no-build alternative) for modifications to the current one-way configuration of Second Street (City) for the Build Year of 2039. Specifically, the following four (4) alternatives were to be evaluated:

- No-Build Alternative
- Alternative 1: Second Street One-way with Bike Lane
- Alternative 2: Second Street Two-way with Bike Lane
- Alternative 3: Second Street One-way with Bike Lane and Capital Pedestrian Improvements

The intent of the evaluation of these four (4) initial alternatives was to analyze possible traffic flow and bicycle use improvements to Second Street (City) and to incorporate proposed pedestrian improvements identified in the Capital Pedestrian Improvement Plan relating to Forster Street (SR 3016). To begin the study, traffic volume, turning movement, pedestrian activity, crash data, and transit data was collected in the fall of 2014.

Upon completion of the data collection and initial alternatives analyses, Baker conducted a meeting with PennDOT to gain more insight and direction for the project. At the time of the meeting, PennDOT advised Baker to work with the Mayor of Harrisburg to refine the alternatives prior to continuing the study. As a result of further discussions and meetings on possible alterations to the Second Street corridor, both the Mayor and PennDOT executives determined that additional analyses should be conducted to further investigate the impacts of Alternative 2. Thus, the study focused primarily on the feasibility of converting Second Street (City) from one-way to two-way operations. It was also determined during these meetings that mid-day peak period analyses would not dictate any necessary mitigation, and would therefore be omitted from future analyses. Existing traffic volumes were utilized for subsequent analyses of Alternative 2 as agreed upon by the Tri-County Regional Planning Commission, PennDOT and the City.

The following alternatives were established by PennDOT and the City to further refine the initial alternatives:

- No-Build Alternative
- Alternative 2: Second Street Conversion (Two-way with Bike Lane)
- Alternative 2A: Second Street Conversion with Elimination of the Southbound Left-Turn at Forster Street and conversion of Seventh Street north of Maclay to Two-lane, One-way Northbound.
- Alternative 2B: Second Street Conversion with Elimination of the Southbound and Eastbound Left-Turns at Forster Street and Conversion of Seventh Street north of Maclay to Two-lane, One-way Northbound.

The analysis of the above alternatives' impacts to the Harrisburg roadway network indicated additional mitigation was necessary in order to produce a feasible alternative that would allow for acceptable operations throughout the City's roadway network. The following alternative was proposed by Baker:

- Alternative 2C: Feasible Alternative – Second Street Conversion with Elimination of the Eastbound Left - Turn at Forster Street and Conversion of Seventh Street north of Maclay to Two-lane, One-way Northbound.

Results of the alternatives analysis and the recommendation of Alternative 2C as the Feasible Alternative were discussed with and agreed upon by both PennDOT and the City. An official letter was then prepared by PennDOT Engineering District 8-0 and sent to the Mayor of Harrisburg outlining the goals, impacts, and recommendations of the Second Street Traffic Study.

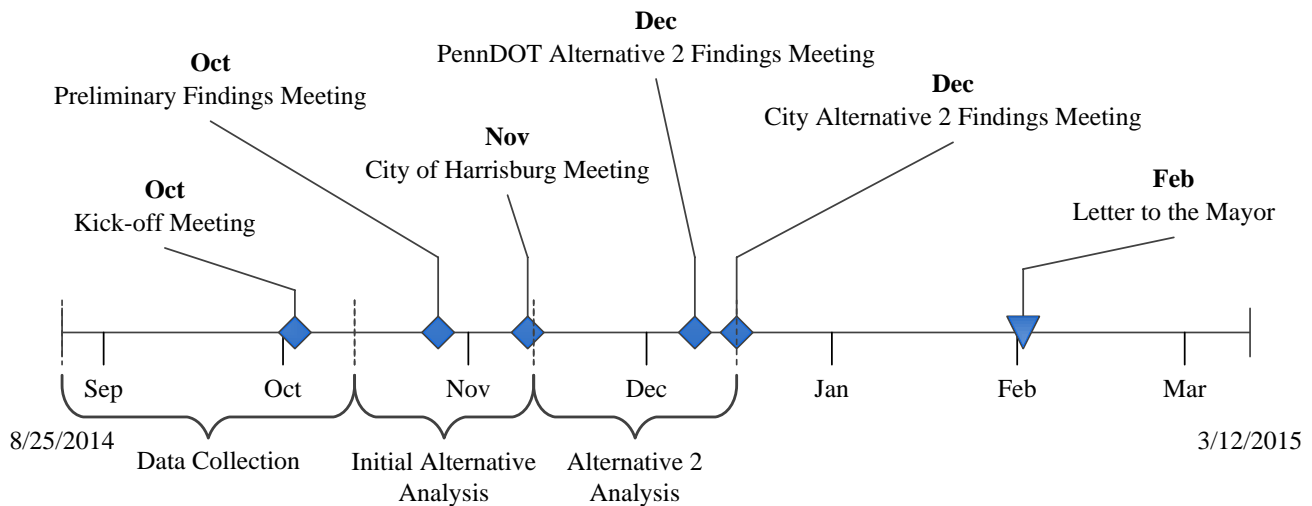
A more detailed summary of the study's timeline and related activities follows in Section II. Technical analyses and findings can be found in Section III through Section VI. Supporting figures and technical documentation is provided in the Appendix.

II. TRAFFIC STUDY TIMELINE

A. Milestones

Figure 1 depicts the timeline of the project and associated milestones, the details of which are described in the introduction.

Figure 1. Project Timeline



B. Data Collection

Intersection turning movement counts to include passenger cars, trucks, pedestrians and bicycles were conducted using video analytics during typical weekday morning (6:00 AM – 9:00 AM), mid-day (11:00 AM – 1:00 PM) and evening (3:00 PM – 6:00 PM) peak periods. **Table 1** lists the locations and dates when the turning movement counts were performed.

Table 1. Intersection Count Locations

Location	Completion Date
Front Street (SR 3009) and Forster Street (SR 3016) - Signalized	9/23/2014
2nd Street (CTY) and Division Street (CTY) - Signalized	9/23/2014
2nd Street (CTY) and Maclay Street (CTY) - Signalized	9/23/2014
2nd Street (CTY) and Forster Street (SR 3016) - Signalized	9/23/2014
7th Street (CTY) and Maclay Street (CTY) - Signalized	9/24/2014
7th Street (CTY/SR 3018) and Herr Street (SR 3018) - Signalized	9/24/2014
7th Street (SR 3018/SR 3016) and Forster Street (SR 3016) - Signalized	Capital Pedestrian Project
7th Street (SR 3016) and State Street (SR 3014) - Unsignalized	Capital Pedestrian Project

Along with the turning movement counts, Automatic Traffic Recorders (ATR) were installed throughout the study area at the locations and for the durations noted in **Table 2**. Additionally, pedestrian counts were conducted during typical weekday morning (6:00 AM – 9:00 AM), mid-day (11:00 AM – 1:00 PM) and evening (3:00 PM – 6:00 PM) peak periods coinciding with the intersection turning movement counts. Pedestrian movements were documented at midblock, uncontrolled intersection, and signalized intersection locations within the limits identified in **Table 3**.

Table 2. Automatic Traffic Recorder Locations

Location	Begin Date	End Date
Front Street (SR 3009) [North of Maclay Street]	9/23/2014	9/25/2014
Front Street (SR 3009) [South of Maclay Street]	10/7/2014	10/9/2014
2nd Street (CTY) [North of Maclay Street]	9/23/2014	9/25/2014
2nd Street (CTY) [South of Maclay Street]	10/7/2014	10/9/2014
7th Street (CTY) [North of Maclay Street]	9/23/2014	9/25/2014
7th Street (CTY) [South of Maclay Street]	9/23/2014	9/25/2014

Table 3. Midblock Pedestrian Count Locations

Location	Completion Date
2nd Street (CTY) [Between Cumberland Street (CTY) & Calder Street (CTY)]	9/23/2014
2nd Street (CTY) [Between Calder Street (CTY) & Harris Street (CTY)]	9/23/2014
2nd Street (CTY) [Between Wiconisco Street (CTY) & Division Street (CTY)]	9/23/2014

Figure 1 (Appendix 1) depicts the intersection turning movement, ATR, and midblock pedestrian count locations. Evaluation of the turning movement counts indicated the following traffic peak hours within the study area:

- Morning Peak Hour: 7:30 AM – 8:30 AM
- Mid-Day Peak Hour: 12:00 PM – 1:00 PM
- Evening Peak Hour: 4:30 PM – 5:30 PM

Raw count data of intersection, midblock pedestrian and ATR counts are provided in **Appendix 3**. A detailed data collection schedule table was provided to PennDOT; see **Attachment 1 (Appendix 6)**.

C. Crash Analysis

Five years, 2009-2013, of reportable crash data was evaluated for each study area roadway to identify and diagnose pedestrian, bicycle, and vehicular safety concerns. The evaluated data was provided by PennDOT’s Bureau of Maintenance and Operations’ (BOMO) Highway Safety and Traffic Operations Division’s (HSTOD) Crash Data Access and Retrieval Tool (CDART).

D. Alternatives Analysis

The Second Street Traffic Study adapted the focus and direction of the study throughout the course of analysis to best reflect the needs of PennDOT and the City. Initially the study was comprised of a traffic analysis for the following three (3) scenarios for the build year of 2039:

- No-Build Alternative
- Alternative 1: Second Street One-way with Bike Lane
- Alternative 2: Second Street Two-way with Bike Lane
- Alternative 3: Second Street One-way with Bike Lane and Capital Pedestrian Improvements

After some consideration by the City and PennDOT, the study was revised to address the feasibility of Alternative 2 in more detail. Existing traffic volumes were utilized for subsequent analyses of Alternative 2 as agreed upon by the Tri-County Regional Planning Commission, PennDOT and the City. The analysis of the Alternative 2 scenario was expanded to include:

Alternative 2 consists of the conversion of Second Street (City) to two-way operations and the addition of a bike lane. No restrictions for turning movements along the Second Street (City) corridor were evaluated in this scenario. This alternative provides a base comparison for the other alternatives as no mitigations were introduced in this scenario.

Alternative 2A consists of the conversion of Second Street (City) while eliminating southbound left-turns at the intersection of Forster Street (SR 3016) and Second Street (City). Seventh Street (City) north of Maclay Street (City) was converted to a two-lane one-way northbound roadway.

Alternative 2B consists of the conversion of Second Street (City) while eliminating southbound and eastbound left-turns at the intersection of Forster Street (SR 3016) and Second Street (City). Seventh Street (City) north of Maclay Street (City) was converted to a two-lane one-way northbound roadway.

Alternative 2C consists of the conversion of Second Street (City) while eliminating only eastbound left-turns at the intersection of Forster Street (SR 3016) and Second Street (City). Seventh Street (City) north of Maclay Street (City) was converted to a two-lane one-way northbound roadway. A full list of additional roadway mitigations included as part of this alternative is described in Section VI of this document. This alternative provided the City with feasible mitigations for the conversion of Second Street (City) while concurrently the City's roadways continue to operate under acceptable levels of service.

III. EXISTING CONDITIONS

A. Existing Roadway Conditions

A detailed field inventory of the City of Harrisburg's existing roadway system was conducted. The existing roadway characteristics are summarized below. According to the *Smart Transportation Guidebook (March 2008)* the study area most closely represents the "Urban Core" designation for Forster Street (SR 3016) and areas south of Forster Street (SR 3016). North of Forster Street (SR 3016), the study area most closely represents a "Town/Village Neighborhood" designation. **Figure 2 (Appendix 1)** depicts a schematic of the lane configurations and lane widths along with associated study area intersection levels of service for existing conditions.

1. Front Street (SR 3009)

Front Street (SR 3009) currently utilizes three (3) existing southbound travel lanes and is classified as an Urban Principle Arterial Highway and part of the National Highway System with an AADT of 13,580 vehicles per day in the study area according to PennDOT's Internet Traffic Monitoring System (iTMS). Front Street (SR 3009) is the primary roadway for southbound motorists entering the City from points north via SR 0322 and SR 0081. The adjacent land uses along Front Street (SR 3009) are comprised of a mix of residential, office and retail along the east side, while the Susquehanna River and the Capital Area Greenbelt, a pedestrian trail, are located along the west side. Front Street (SR 3009) construction plans detail the removal of one (1) southbound travel lane along Front Street (SR 3009) and the addition of a southbound bike lane. See **Attachment 3 (Appendix 6)** for further details on the planned construction along Front Street (SR 3009).

2. Second Street (City)

Second Street (City) currently has three (3) existing northbound travel lanes with parallel parking on both sides of the roadway. Second Street (City) is classified as an Urban Principle Arterial Highway and is part of the National Highway System. The AADT along Second Street (City) is between 7,000 and 9,000 vehicles per day according to traffic counts collected for this study. Second Street (City) serves as a major corridor out of the City of Harrisburg, especially during the evening peak hour. Commuters from both east and west of the Susquehanna River utilize Second Street (City) to access Interstate 81. Second Street (City) is bordered by a mix of residential and commercial land uses south of Maclay Street (City) and becomes primarily residential north of Maclay Street (City).

3. Third Street (City) & Commonwealth Avenue (SR 3031)

Third Street (City) and Commonwealth Ave (SR 3031) are both two-way, north-south Urban Collectors with two (2) existing travel lanes, and parallel parking intermittent along the roadway. Third Street (City) currently has an AADT of 7,298 vehicles per day, while Commonwealth Avenue (SR 3031) has an AADT of 8,468 vehicles per day within the study area according to PennDOT's iTMS. Third Street (City) and Commonwealth Avenue (SR 3031) have a mixed use of residential, retail and office land uses along both sides of each roadway. Local commuters utilize the roadways to get into and out of the city's downtown

area.

4. Seventh Street (SR 3018/SR 3016)

Seventh Street (SR 3018/SR 3016) between State Street (SR 3014) and Herr Street (SR 3018) is a north-south Urban Principle Arterial Highway and part of the National Highway System with an AADT of 5,977 southbound and 7,318 northbound vehicles per day within the study area according to PennDOT's iTMS. Seventh Street (City) north of Herr Street (SR 3018) to Maclay Street (City) is a four (4) lane north-south Urban Minor Arterial. North of Maclay Street (City), Seventh Street (City) is reduced to a two-lane two-way Urban Minor Arterial. Parking is permitted along Seventh Street (SR 3018/SR 3016) in the downtown area and parallel parking is permitted north of Maclay Street (City). Seventh Street (City) provides access into and out of the City's downtown area for commuters living to the east of the City.

5. Division Street (City)

Division Street (City) is classified as a two-lane east-west Urban Minor Arterial with approximately 5,000 to 8,000 vehicles per day within the study area according to traffic counts collected for this study. Parallel parking is permitted intermittently along both sides of the roadway. Division Street (City) primarily serves local residents and retail business within the study area.

6. Maclay Street (City), Herr Street (City) & State Street (SR 3014)

Maclay Street (City), Herr Street (City) and State Street (SR 3014) are all classified as east-west Urban Principle Arterials and part of the National Highway System with an AADT of 10,763, 12,210, and 14,556 vehicles per day respectively. All three (3) roadways serve as primary routes for traffic east of Harrisburg into and out of the city. Each roadway connects to Seventh Street (SR 3018/SR 3016, City) and has congestion issues during existing peak traffic hours due to capacity constraints.

7. Forster Street (SR 3016)

Forster Street (SR 3016) is an east-west Urban Principle Arterial with six (6) existing travel lanes, exclusive left-turn lanes and parallel parking located throughout the study area. Forster Street (SR 3016) is composed of retail and business land uses along both sides of the roadway. The Harvey Taylor Bridge is an extension of SR 3016 over the Susquehanna River located to the west of Front Street (SR 3009). SR 3016 experiences high volumes of traffic within the study area with an ADT of 13,740 and 14,427 vehicles per day in the eastbound and westbound directions respectively.

B. Existing Traffic Volumes

Figure 2 and **Figure 3** represent the existing bi-directional link volumes along study area roadways during the morning and evening peak hours respectively.

Figure 2. Existing Roadway Volumes (Morning Peak Hour)

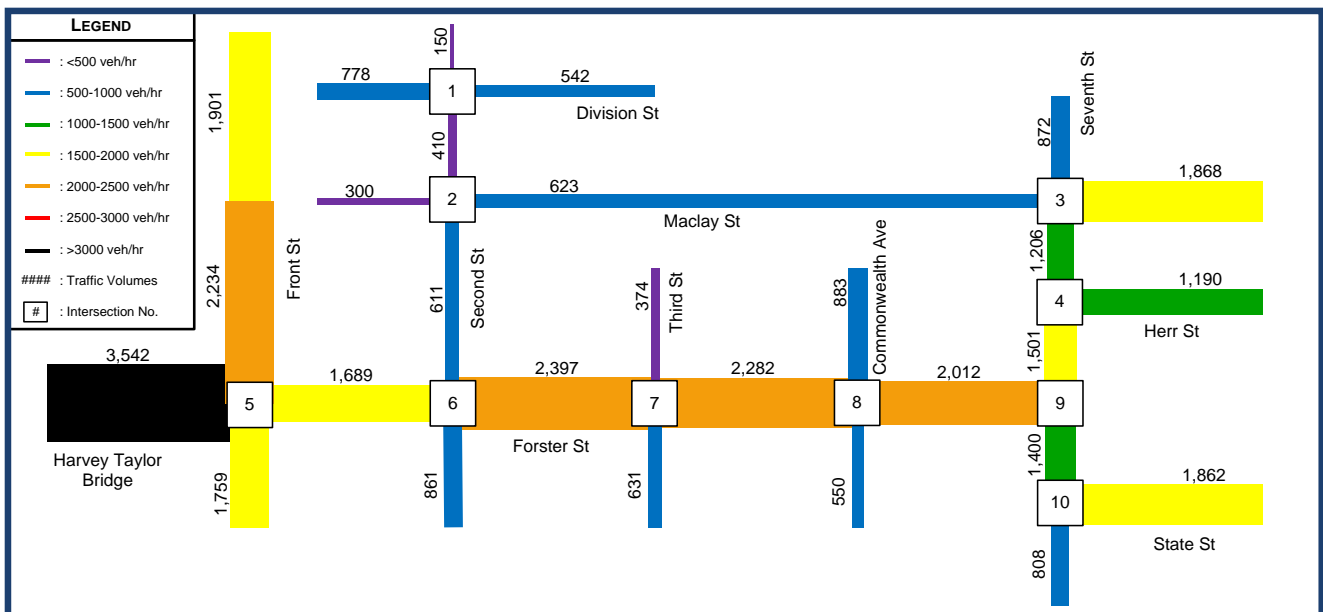


Figure 3. Existing Roadway Volumes (Evening Peak Hour)

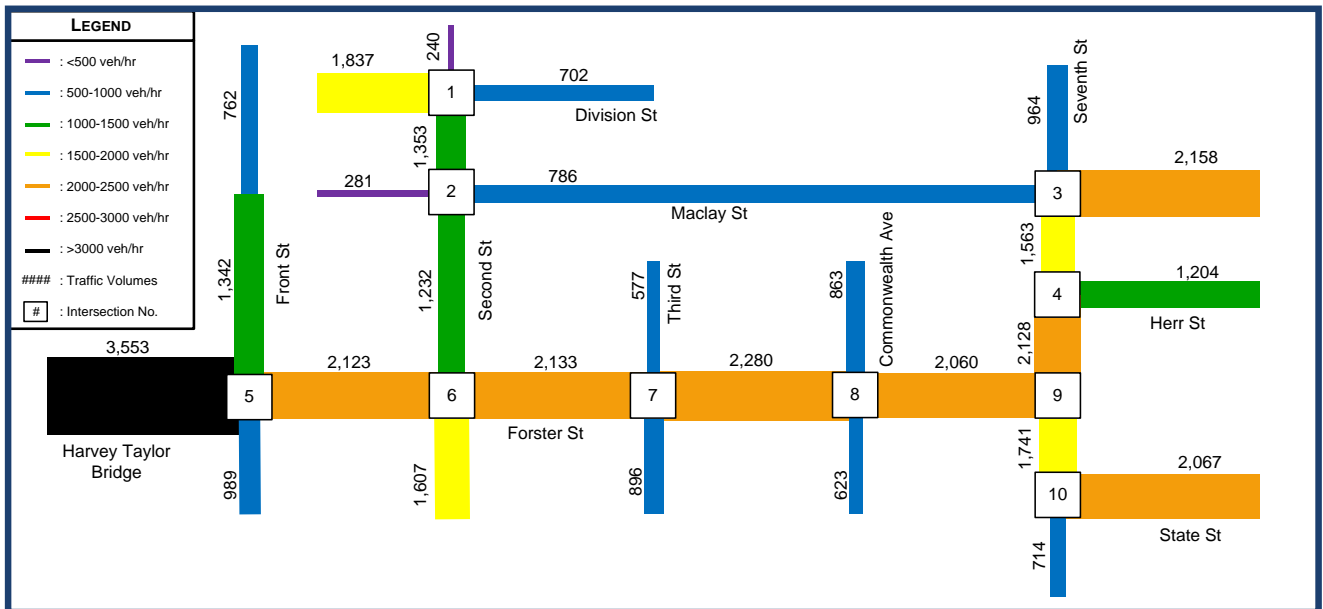


Figure 3 (Appendix 1) illustrates the existing morning and evening peak hour traffic volumes. The volumes shown in **Figure 3 (Appendix 1)** are based on the turning movement counts and have been adjusted and balanced. The raw turning movement count data is also provided (**Appendix 3**).

C. Existing Levels of Service

A capacity analysis was completed utilizing *Synchro Version 8 (Synchro8)*, *Trafficware, Ltd.* which follows the procedures outlined within the *Highway Capacity Manual (HCM 2010)* for determining levels of service. Level of Service (LOS) is a quantitative stratification of a performance metric that represents the quality of service. The HCM defines six (6) levels of service, ranging from A to F, where LOS A is the most desirable and LOS F is the least desirable. For signalized and unsignalized intersections, performance is measured by delay per vehicle and the ratio of volume to capacity (v/c ratio).

Delay quantifies the increase in travel time due to traffic control and is dependent upon a number of variables. For signalized intersections, these variables include vehicle progression, the cycle length, the green time ratio, and the v/c ratio for the lane group. For unsignalized intersections, delay is related to the availability of gaps in the major street traffic flow. Basically, it is the time a driver waits for an acceptable gap in the major street traffic flow to make a safe maneuver. **Table 4** lists the LOS thresholds as outlined the HCM 2010.

Table 4. Level of Service Criteria for Signalized and Unsignalized Intersections¹

Level of Service ²	Control Delay (second/vehicle)	
	Signalized	Unsignalized
A	≤ 10	≤ 10
B	> 10-20	> 10-15
C	> 20-35	> 15-25
D	> 35-55	> 25-35
E	> 55-80	> 35-50
F	> 80	> 50

¹ Transportation Research Board, *Highway Capacity Manual 2010*

² LOS F is assigned to any approach based or intersection based assessment when the v/c ratio is greater than 1.0.

Traffic signal timing parameters and intersection geometry/configuration for study area intersections were obtained from the traffic signal permit plans provided by PennDOT Engineering District 8-0 and were verified during the detailed field inventory.

All study intersections operate at a LOS C or better during the morning peak hour for existing conditions with the exception of the intersection of Front Street (SR 3009) and Forster Street (SR 3016), which operates at an overall intersection LOS E.

During the evening peak hour, the intersection of Front Street (SR 3009) and Forster Street (SR 3016) operates at a LOS E, and the intersection of Second Street (City) and Division Street (City) operates at a LOS F. All other study intersections operate at a LOS D or better.

Figure 4 and **Figure 5 (Appendix 1)** illustrate the morning and evening peak hour intersection LOS and control delay, respectively. A summary of the intersection LOS and control delay are also provided in **Table 1 (Appendix 2)**. Capacity analysis reports for all scenarios can be found in **Appendix 5**.

IV. TRIP RE-DISTRIBUTION

In order to accurately account for the redistribution of traffic throughout the study area as a result of the conversion of Second Street (City) to two-lane, two-way operations, several traffic distribution assumptions were made. Chiefly, existing traffic volumes were utilized for the analyses of Alternative 2 as agreed upon by the Tri-County Regional Planning Commission, PennDOT and the City. Future volumes projected previously for Dauphin County did not accurately reflect existing trends within the City of Harrisburg.

According to representatives from PennDOT, the City, and the Tri-County Regional Planning Commission, eastbound left-turn volumes at the intersection of Forster Street (SR 3016) and Second Street (City) (AM: 30%) (PM: 50%) originated from the west shore and would subsequently be eliminated from the alternatives analysis. These values were reflected in Baker's spreadsheet model based on traffic characteristics derived from existing turning movement volumes. Additionally, the Tri-County Regional Planning Commission confirmed these assumptions via the use of their traffic model.

To redistribute the volumes of Second Street (City), PennDOT, the City, and Tri-County Regional Planning Commission representatives agreed that southbound traffic along Front Street (SR 3009) would be redistributed to Second Street (City) by estimating local traffic via ATR and vehicle counts performed along Front Street (SR 3009). Since Second Street is intended to be a residential roadway, local travelers would be the primary users of the roadway; southbound commuters were assumed to remain on Front Street (SR 3009) when accessing the downtown area of the City.

In order to determine how much traffic should be redistributed from Second Street (City) due to the conversion, a capacity sensitivity analyses was conducted using the intersection of Second Street (City) and Maclay Street (City) as the governing intersection for corridor capacity. The excess northbound Second Street (City) traffic volumes were then redistributed along the Seventh Street (City) and Division Street (City) corridors east and north of the City. The decision to redistribute Second Street (City) traffic to Seventh Street (City) and Division Street (City) instead of Cameron Street (SR 0230) was due to the already existing congested conditions along Cameron Street (SR 0230). It was assumed motorists would not be inclined to access Cameron Street since Cameron Street is already at capacity, especially during the evening peak hours.

Figure 7, Figure 12, Figure 17 and Figure 22 (Appendix 1) illustrate the re-distributed traffic for Alternative 2, Alternative 2A, Alternative 2B and Alternative 2C, respectively. Detailed trip re-distribution and projected volumes for each alternative's conversion of Second Street is provided in **Appendix 4**.

V. ALTERNATIVES ANALYSIS

Evaluation of the performance of the study area intersections for projected conditions requires the comparison of available roadway and intersection capacity to projected vehicular demands. These comparisons result in projected levels of service and determine the need for improvements. Each alternative's traffic signals were optimized to reflect the best possible traffic operations of the roadway network.

A. Alternative 2

In order to establish a base comparison model to determine necessary mitigations, Alternative 2 represents the conversion of Second Street (City) from one-way to two-way operation between Forster Street (SR 3016) and Division Street (City). A southbound left-turn lane at the intersection of Forster Street (SR 3016) and Second Street (City) was included as it was determined that allowing southbound left-turns at this intersection would require a turn-lane. Additionally, an eastbound left-turn lane was eliminated as two northbound receiving lanes could not be accommodated due to the geometric restrictions of the roadway.

The capacity analysis of Alternative 2 concluded that the impacts of Alternative 2 were limited at most intersections along Forster Street (SR 3016) due to the capacity of the roadway. However, intersections such as Second Street (City) and Forster Street (SR 3016) demonstrated a decreased level of service due to the addition of a southbound approach which in-turn required an additional northbound and southbound advance left-turn signal phase. Queuing along the eastbound approach would extend farther than existing conditions due to the elimination of one existing left-turn lane, but the queuing would not exceed the existing eastbound left-turn storage length.

The intersection of Seventh Street (SR 3018/SR 3016) and Maclay Street (City) also exhibited a decrease in level of service especially during the evening peak hour. This was due to the re-distributed traffic traveling northbound through the intersection, requiring additional time for the northbound thru phase, in-turn decreasing the levels of service for the other approaches at the intersection.

Figure 6 (Appendix 1) represents a summary of the lane configurations along with associated levels of service for Alternative 2. **Figure 8 (Appendix 1)** illustrates the peak hour volumes for Alternative 2. **Figure 9 and Figure 10 (Appendix 1)** illustrate the morning and evening peak hour Level of Service and control delay, respectively for Alternative 2. The intersection LOS and control delay are provided in **Table 1 (Appendix 2)**. Capacity analysis for all scenarios can be found in **Appendix 5**.

B. Alternative 2A

Alternative 2A analyzed the impacts of restricting southbound left-turns at the intersection of Forster Street (SR 3016) and Second Street (City) and converting Seventh Street (City), north of the Maclay Street (City) intersection, from two-way to one-way northbound operations. This conversion is intended to alleviate the impacts at the intersection of Seventh Street (SR 3018/SR 3016) and Maclay Street (City) and incorporate additional roadway capacity for the re-distributed traffic traveling north along Seventh Street.

Alternative 2A demonstrated minimal improvement as compared to Alternative 2. The impacts of the eliminated

southbound left-turn from Second Street (City) to Forster Street (SR 3016) were negligible to the level of service of the intersection, especially during the evening peak hour. Eliminating southbound left-turns from Second Street (City) onto Forster Street (SR 3016), forces southbound Second Street (City) travelers to cross Harvey Taylor Bridge (SR 3016) to the west shore of the Susquehanna River. This is counterproductive; the conversion of Second Street (City) to two-way operation is intended to improve the existing roadway conditions for residents. Additionally, the effects of converting Seventh Street (City) north of Maclay Street (City) to one-way northbound operation were negligible due to the re-configuration of the northbound approach lanes at the intersection. The northbound approach levels of service were diminished due to the shared thru-right lane. Due to the volume of right-turning vehicles, queuing northbound along Seventh Street (City) would extend over twenty (20) car lengths.

Figure 11 (Appendix 1) represents a summary of the lane configurations along with associated levels of service for Alternative 2A. **Figure 13 (Appendix 1)** illustrates the peak hour volumes for Alternative 2A. **Figure 14** and **Figure 15 (Appendix 1)** illustrate the morning and evening peak hour Level of Service and control delay, respectively for Alternative 2A. The intersection LOS and control delay are provided in **Table 1 (Appendix 2)**. Capacity analysis for all scenarios can be found in **Appendix 5**.

C. Alternative 2B

Alternative 2B is the same as Alternative 2A except for Alternative 2B includes the elimination of the eastbound left-turns from Forster Street (SR 3016) to Second Street (City) and this change's resultant effect on traffic distributions. Displaced eastbound left-turn traffic volumes were re-distributed along Forster Street (SR 3016) to the intersections of Third Street (City) and Commonwealth Avenue (SR 3031).

Impacts of Alternative 2B exhibited many of the same characteristics as Alternative 2A. However, due to the eliminated eastbound left-turn movement from Forster Street (SR 3016) to Second Street (City), the Forster Street (SR 3016) corridor improved dramatically as a result of the eliminated protected-permitted eastbound left-turn signal phase at the intersection. This allowed for improved progression of traffic in both directions along the Forster Street (SR 3016) Corridor. Additionally, minimal impacts were exhibited along Forster Street (SR 3016) at the intersections of Third Street (City) and Commonwealth Avenue (SR 3031) due to the redistributed traffic.

Figure 16 (Appendix 1) represents a summary of the lane configurations along with associated levels of service for Alternative 2B. **Figure 18 (Appendix 1)** illustrates the peak hour volumes for Alternative 2B. **Figure 19** and **Figure 20 (Appendix 1)** illustrate the morning and evening peak hour Level of Service and control delay, respectively for Alternative 2B. The intersection LOS and control delay are provided in **Table 1 (Appendix 2)**. Capacity analysis for all scenarios can be found in **Appendix 5**.

VI. ALTERNATIVE 2C: FEASIBLE ALTERNATIVE

Alternative 2, Alternative 2A and Alternative 2B analysis demonstrated diminished levels of service for the City of Harrisburg's roadway network. In order to convert Second Street (City) from one-way to two-way operation while concurrently not significantly decreasing the level of service of existing roadways within the study area, the following mitigations were evaluated as Alternative 2C:

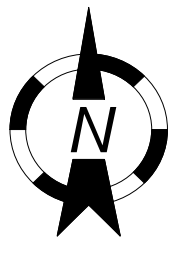
- Seventh Street (City) north of Maclay Street (City) was converted from two-way to one-way northbound in order to accommodate additional redistributed traffic volumes.
- Revised the intersection of Seventh Street (City) and Maclay Street (City) northbound approach lane assignment to include two (2) thru lanes in order to allow for a more fluid progression of northbound thru traffic.
- Division Street (City) was restriped to incorporate two (2) westbound through lanes at the intersection of Second Street (City) to accommodate increased Division Street (City) traffic volumes.
- An exclusive northbound left-turn lane in addition to the northbound left-thru-right lane at the intersection of Division Street (City) and Second Street (City) was added to accommodate the heavy northbound left-turn traffic volumes.
- A southbound left-turn lane was incorporated into the redesign of the intersection of Second Street (City) and Forster Street (SR 3016) to provide a more efficient use of the signalized intersection and provide access to the downtown Harrisburg area.
- The eastbound left-turn movement from Forster Street (SR 3016) onto Second Street (City) was eliminated, allowing traffic to flow more smoothly along the Forster Street corridor.

The traffic analysis indicated that the implementation of all the above mitigation strategies, when applied collectively, will allow the City's roadway network to accommodate the re-distributed traffic with minimal degradation. Alternative 2C was therefore suggested as the feasible alternative.

Figure 21 (Appendix 1) represents a summary of the lane configurations along with associated levels of service for Alternative 2C. **Figure 23 (Appendix 1)** illustrates the peak hour volumes for Alternative 2C. **Figure 24** and **Figure 25 (Appendix 1)** illustrate the morning and evening peak hour Level of Service and anticipated delay, respectively for Alternative 2C. The intersection LOS and anticipated delay are provided in **Table 1 (Appendix 2)**. Capacity analysis for all scenarios can be found in **Appendix 5**.

Recommendations were provided to the Mayor of Harrisburg outlining the necessary steps for the successful conversion of the Second Street (City) corridor from one-way to two-way operation; see **Table 3 (Appendix 2)**. Following the completion of all analyses, a letter was drafted for PennDOT District 8-0 addressed to the Mayor of Harrisburg. See **Attachment 2 (Appendix 6)** for the aforementioned letter to the Mayor.

APPENDIX 1
FIGURES



**7th Street (CTY) and
Maclay Street (CTY)**

**2nd Street (CTY) and
Division Street (CTY)**

**3rd Street (CTY) and
Forster Street (SR 3016)**

**Commonwealth Avenue (SR 3031)
and Forster Street (SR 3016)**

**2nd Street (CTY) and
Maclay Street (CTY)**

7th Street (CTY/SR 3018) and Herr Street (SR 3018)

**Front Street (SR 3009) and
Forster Street (SR 3016)**

7th Street (SR 3018/SR 3016) and Forster Street (SR 3016)



7th Street (SR 3016) and State Street (SR 3014)

**2nd Street (CTY) and
Forster Street (SR 3016)**

LEGEND	
	- Study Corridor Location (2 nd Street)
	- Mid-Block Pedestrian Count Locations
	- Automatic Traffic Recorder (ATR) Locations
	- Intersection Count Locations
	- Capital Pedestrian Project Count Locations
	- Signalized Intersection
	- Unsignalized Intersection

FIGURE 1

DATA COLLECTION LOCATION MAP
Work Order No. 11: 2nd Street Traffic Study



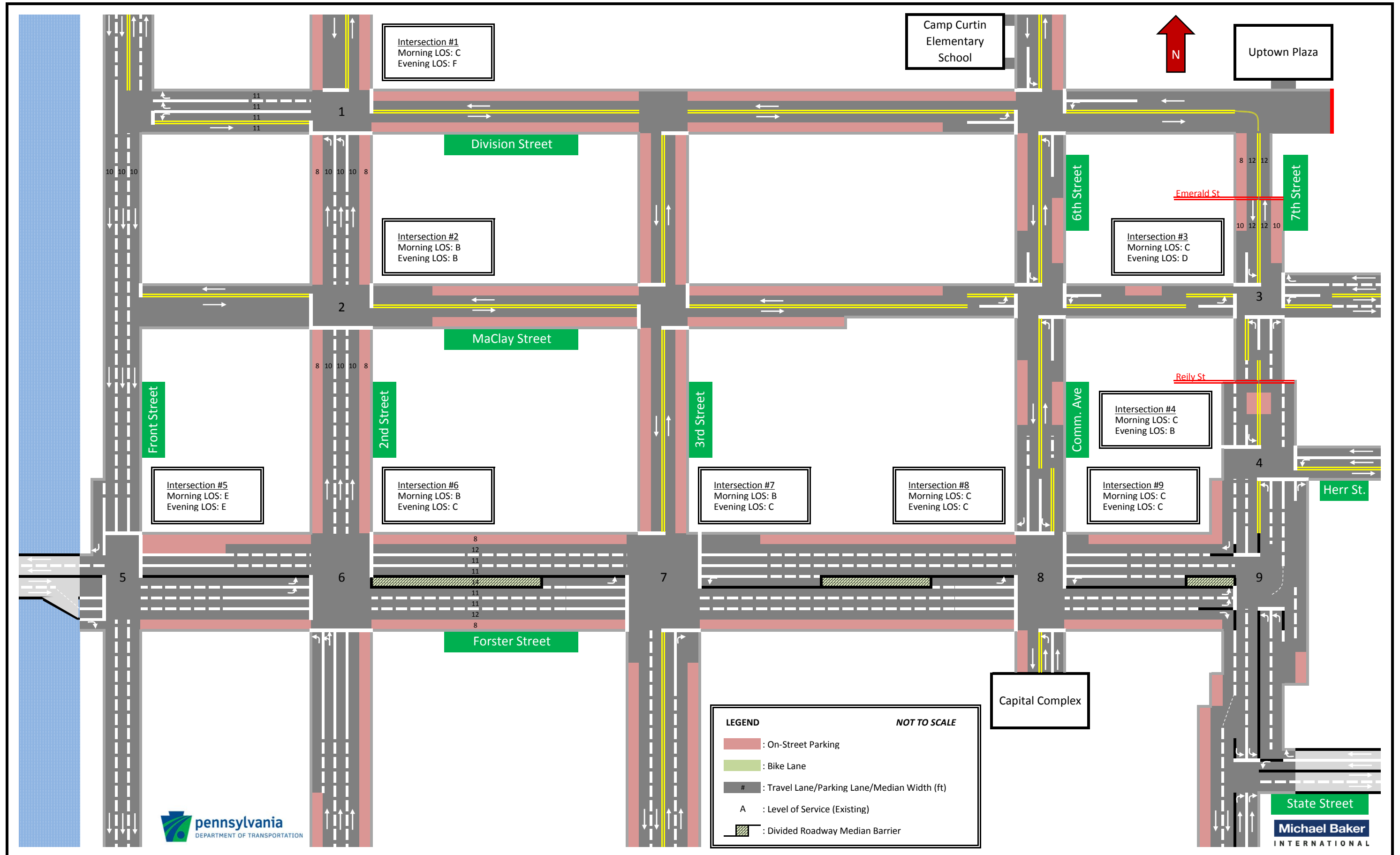


Figure 2: Existing Conditions Summary





FIGURE 3

EXISTING PEAK HOUR TRAFFIC VOLUMES

Work Order No. 11:
2nd Street Traffic Study

PennDOT Contract No.: E02871

Baker Project No.: 143249

Date: March 12, 2015

LEGEND

##[###] - AM(PM) Peak Hour Volumes (veh/hr)

- Intersection Number

STOP - Stop Sign

Yield - Yield Sign

Signal - Signalized Intersection

REGIONAL SETTING

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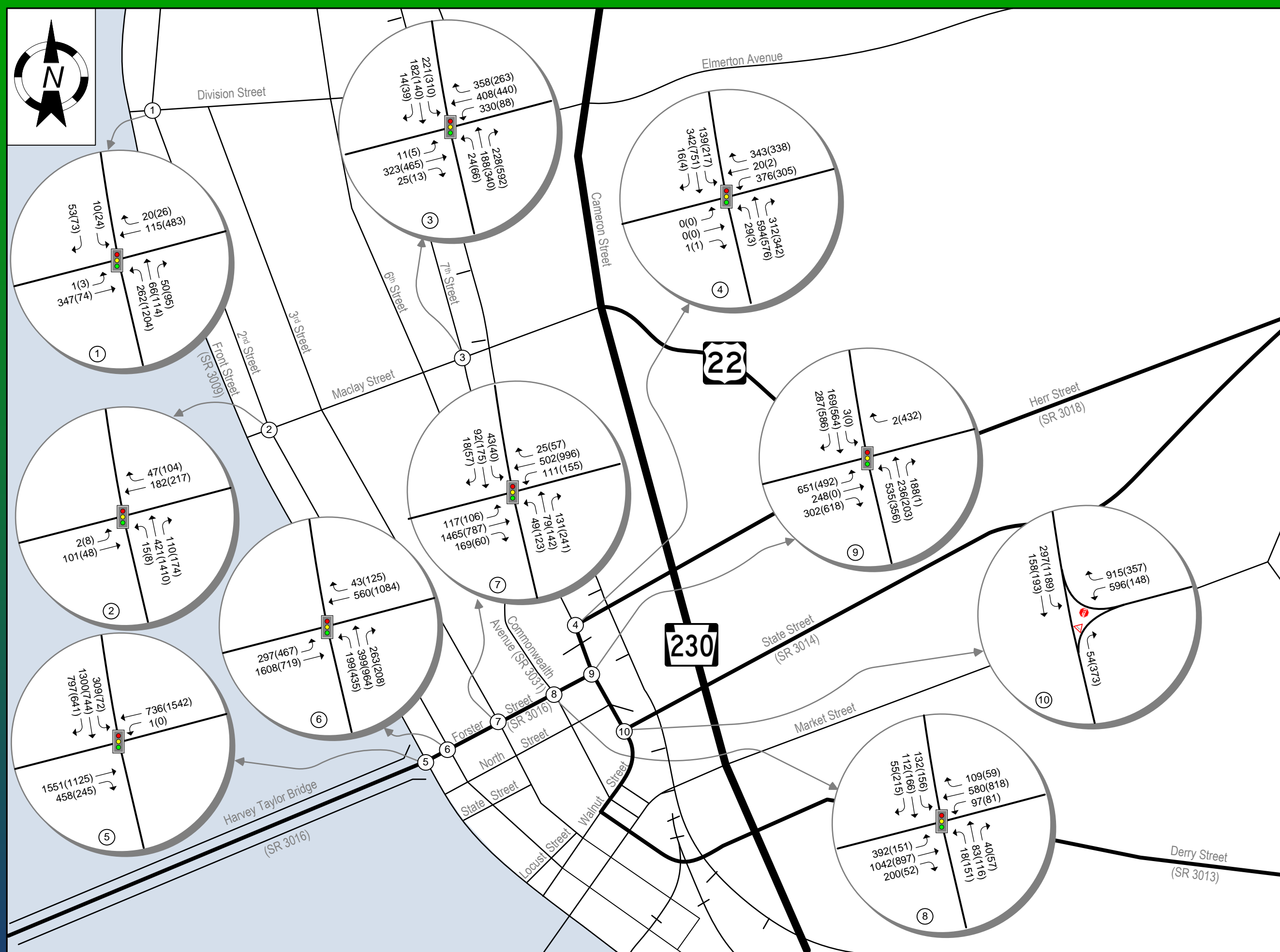




FIGURE 4

EXISTING
LEVEL OF SERVICE

Morning Peak Hour

Work Order No. 11:
2nd Street
Traffic Study

PennDOT Contract No.: E02871

Baker Project No.: 143249

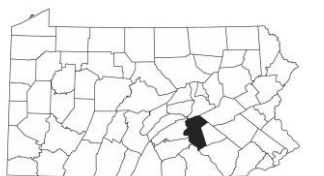
Date: March 12, 2015

LEGEND

- X(##) - Level of Service (Delay (s))
- # - Intersection Number
- STOP - Stop Sign
- Yield Sign
- Signalized Intersection

REGIONAL SETTING

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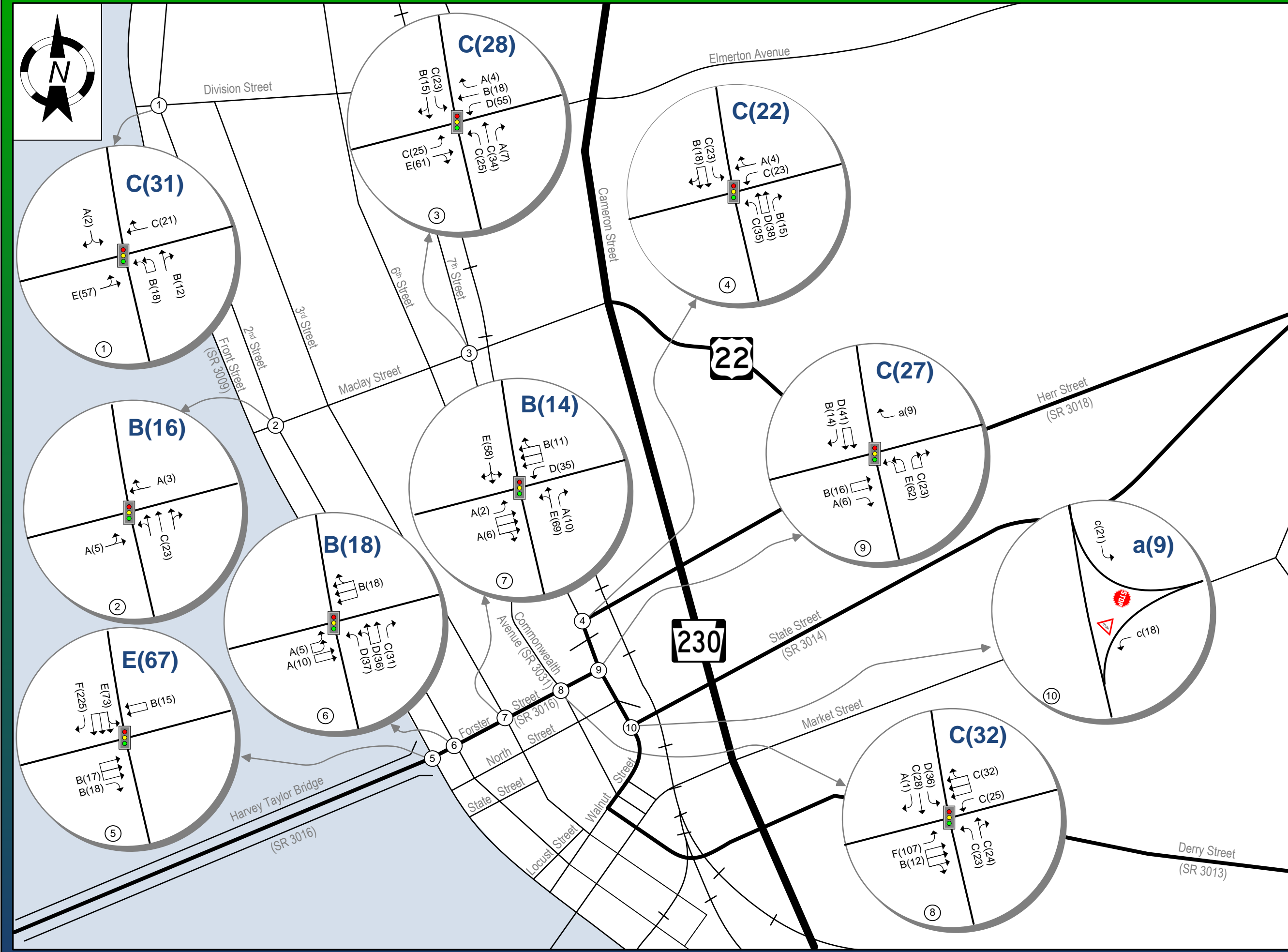




FIGURE 5

**EXISTING
LEVEL OF SERVICE**

Evening Peak Hour

**Work Order No. 11:
2nd Street
Traffic Study**

PennDOT Contract No.: E02871

Baker Project No.: 143249

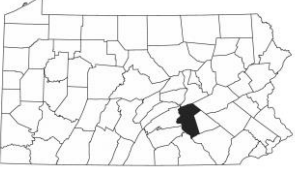
Date: March 12, 2015

LEGEND

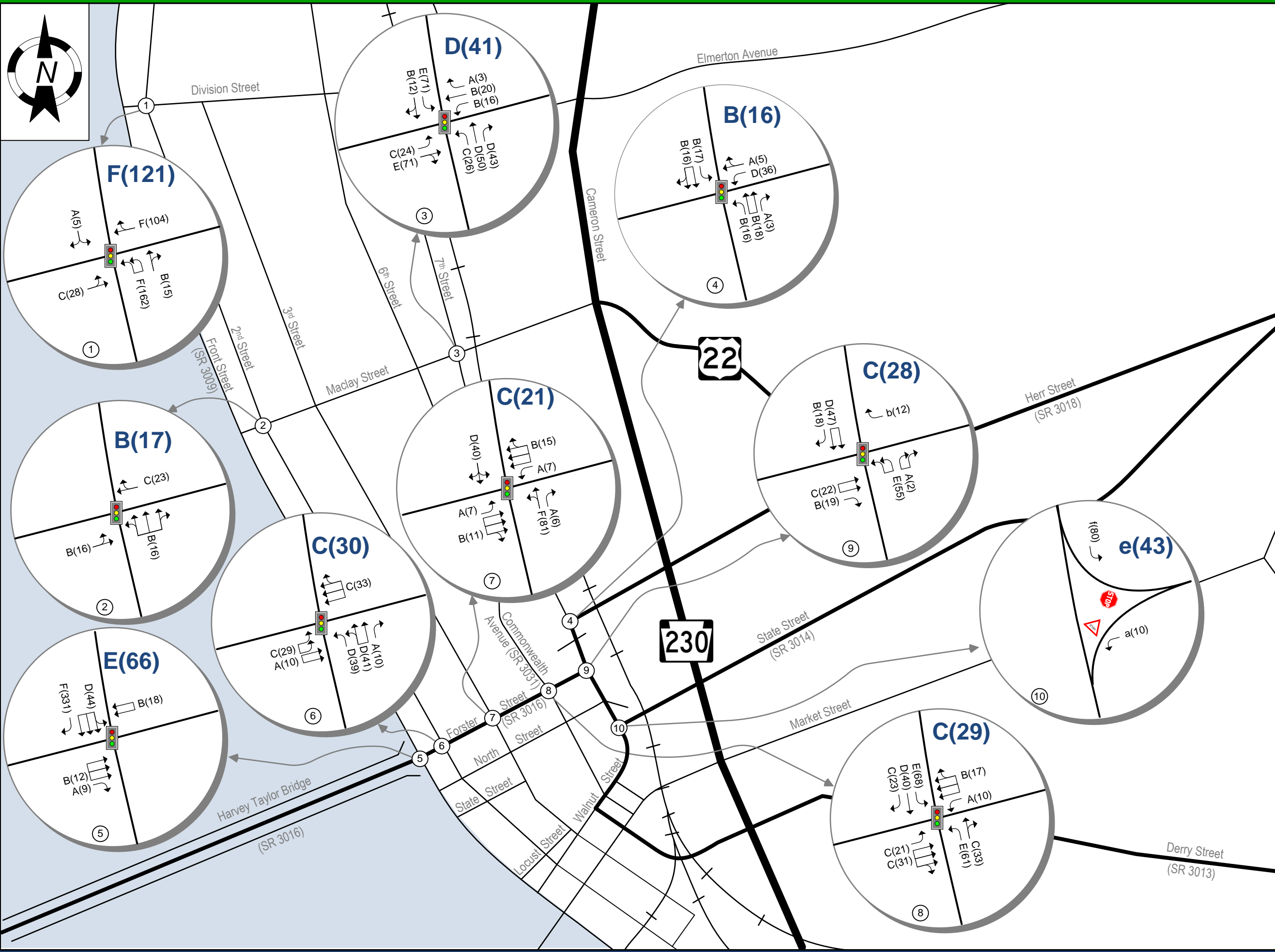
- X(##) - Level of Service (Delay (s))
- # - Intersection Number
- STOP - Stop Sign
- Yield Sign
- Signalized Intersection

REGIONAL SETTING

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Work Order No. 11: 2nd Street Traffic Study

Date: March 12, 2015

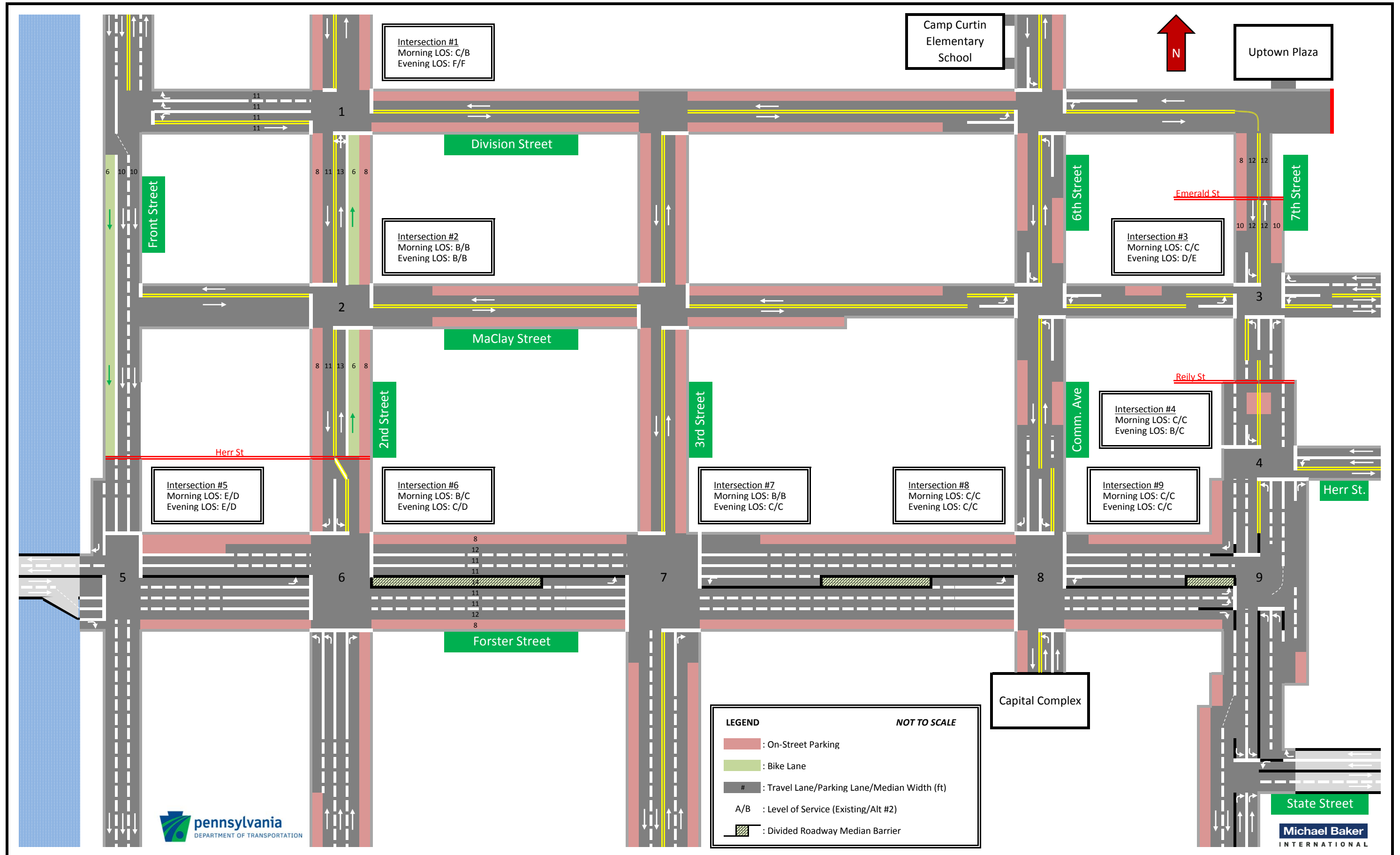


Figure 6: Alternative 2 Summary



FIGURE 7

ALTERNATIVE 2 RE-DISTRIBUTED TRAFFIC VOLUMES

Work Order No. 11: 2nd Street Traffic Study

PennDOT Contract No.: E02871

Baker Project No.: 143249

Date: March 12, 2015

LEGEND

##(##) - AM(PM) Peak Hour
Volumes (veh/hr)

- Intersection Number

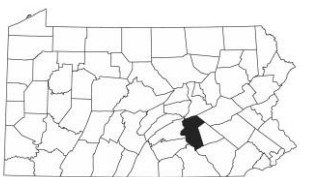
STOP - Stop Sign

Yield - Yield Sign

Signal - Signalized Intersection

REGIONAL SETTING

Harrisburg, PA



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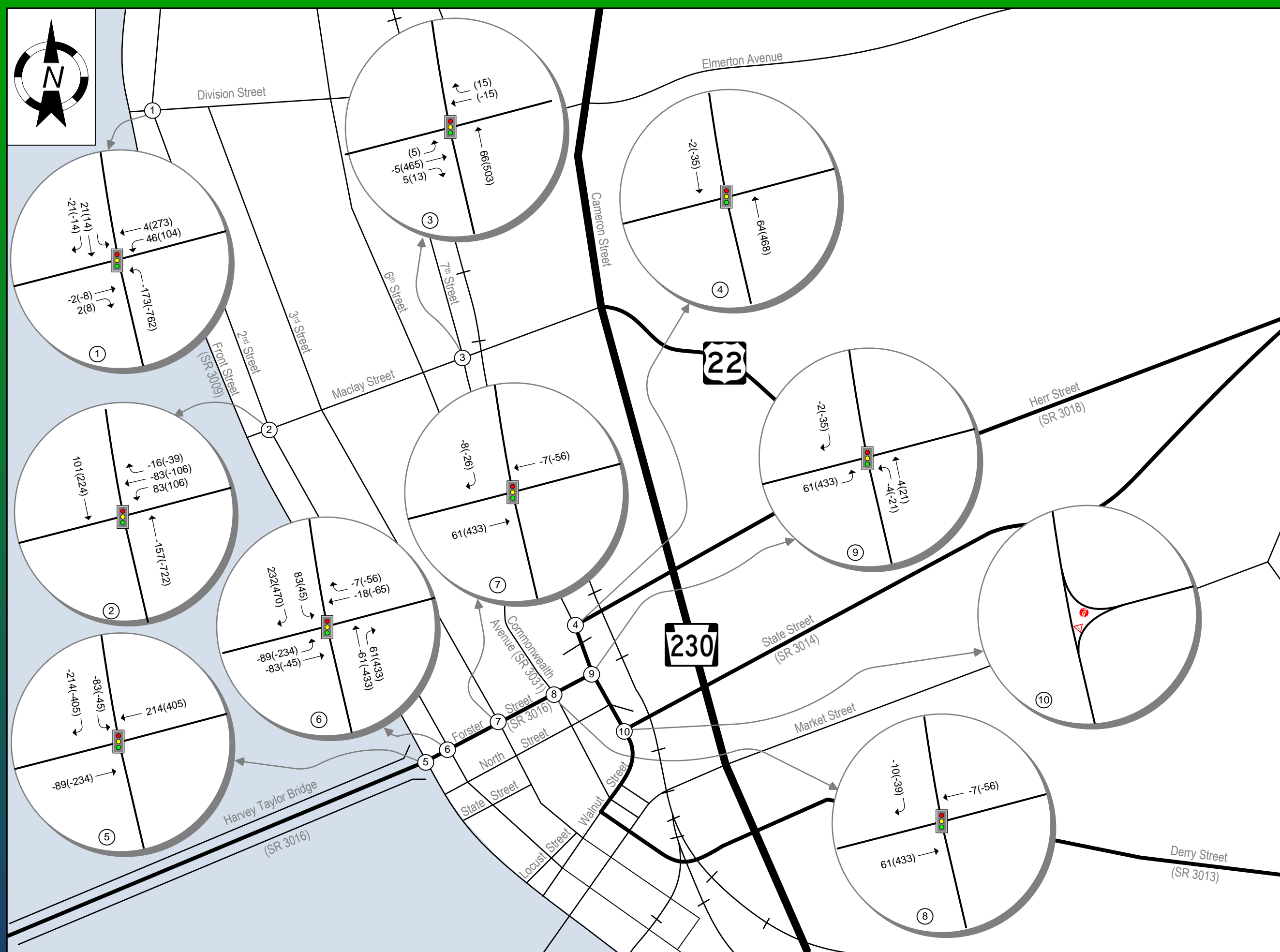




FIGURE 8

**ALTERNATIVE 2
PEAK HOUR
TRAFFIC VOLUMES**

**Work Order No. 11:
2nd Street
Traffic Study**

PennDOT Contract No.: E02871

Baker Project No.: 143249

Date: March 12, 2015

LEGEND

##(##) - AM(PM) Peak Hour Volumes (veh/hr)

- Intersection Number

STOP - Stop Sign

YIELD - Yield Sign

Signalized Intersection

REGIONAL SETTING

Harrisburg, PA



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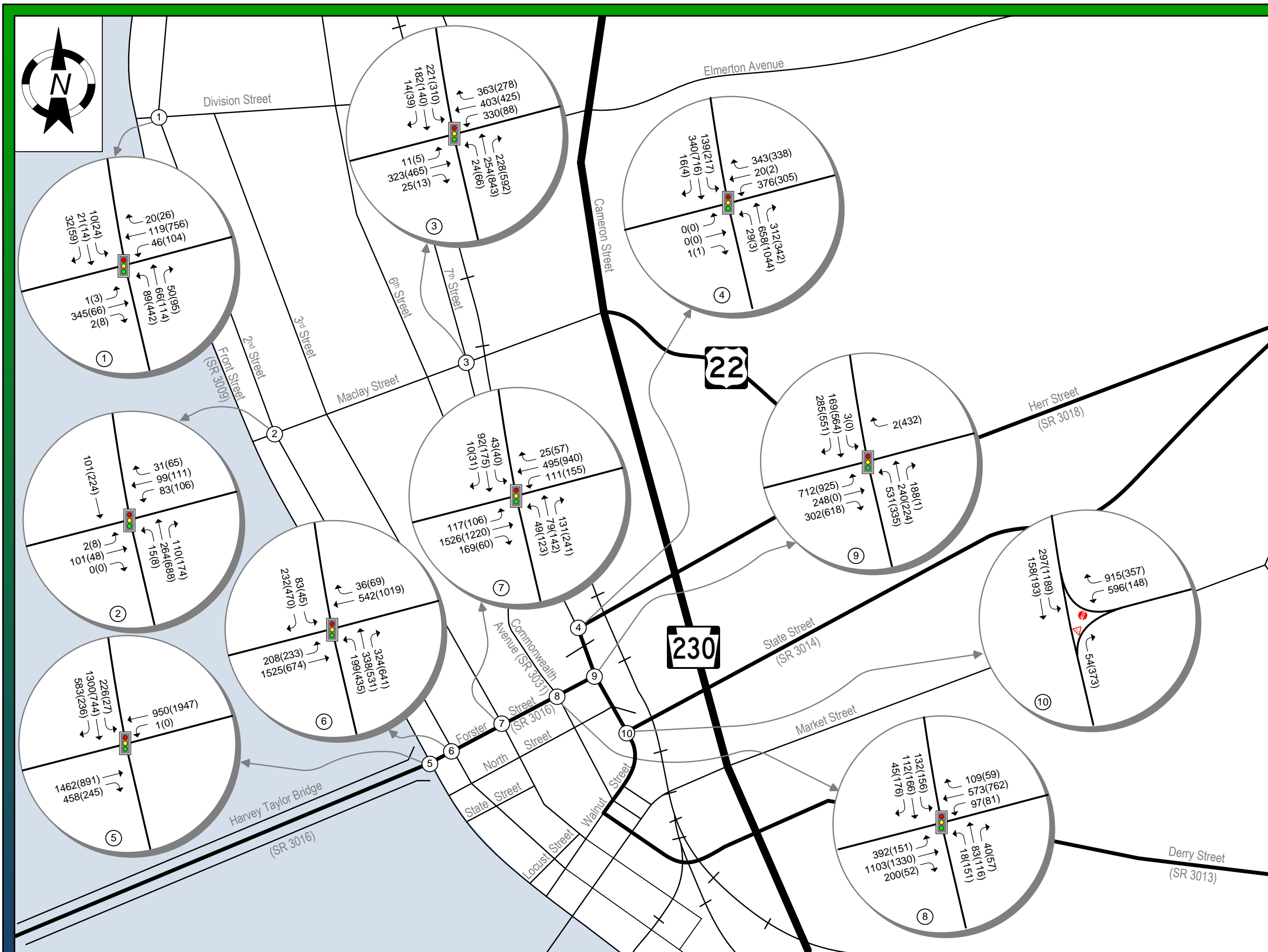




FIGURE 9

ALTERNATIVE 2
LEVEL OF SERVICE

Morning Peak Hour

Work Order No. 11:
2nd Street
Traffic Study

PennDOT Contract No.: E02871

Baker Project No.: 143249

Date: March 12, 2015

LEGEND

- X(##) - Level of Service (Delay (s))
- # - Intersection Number
- STOP - Stop Sign
- Yield Sign
- Signalized Intersection

REGIONAL SETTING

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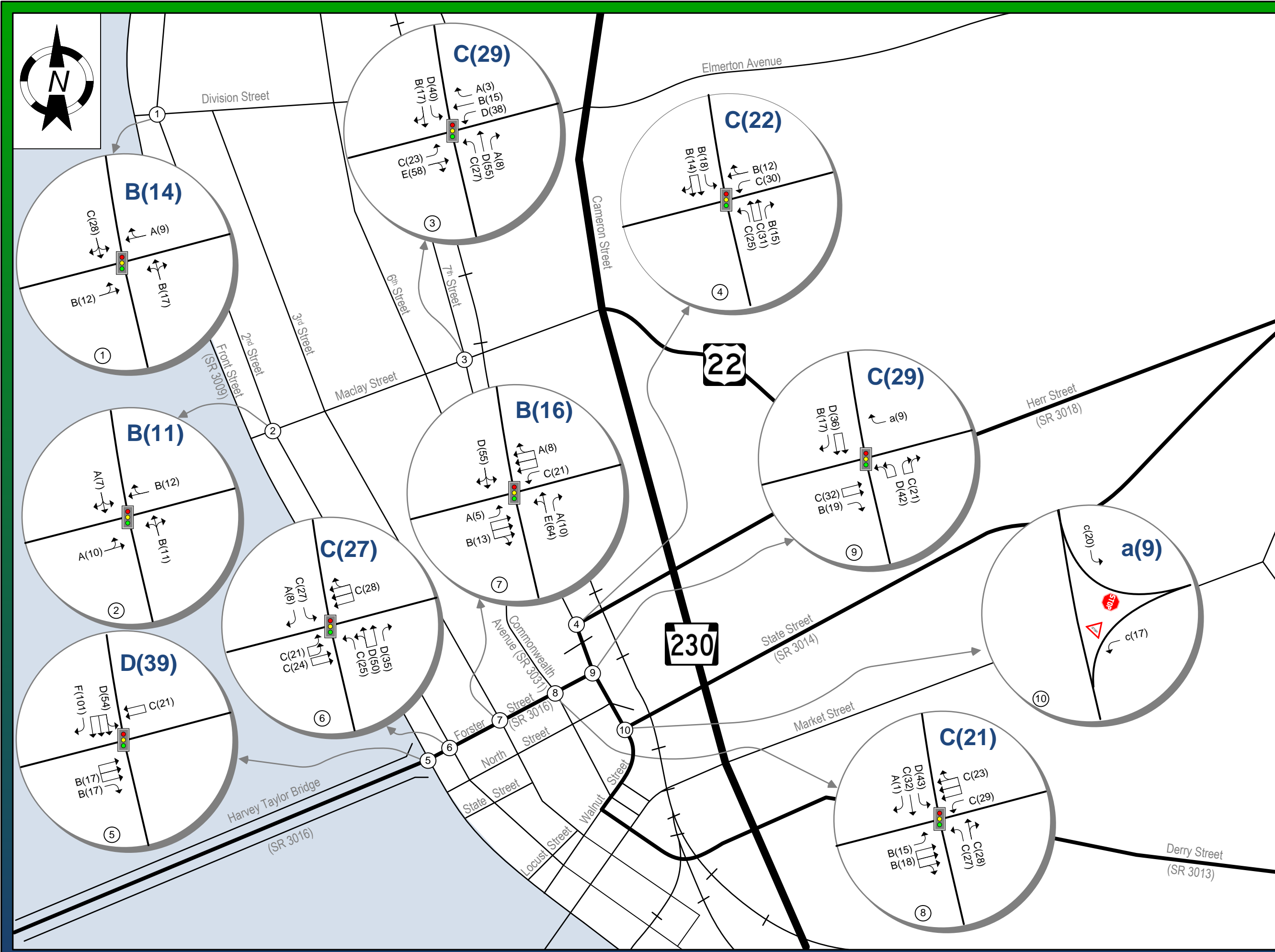




FIGURE 10

**ALTERNATIVE 2
LEVEL OF SERVICE**

Evening Peak Hour

**Work Order No. 11:
2nd Street
Traffic Study**

PennDOT Contract No.: E02871

Baker Project No.: 143249

Date: March 12, 2015

LEGEND

X(##) - Level of Service (Delay (s))

- Intersection Number

STOP - Stop Sign

Yield Sign

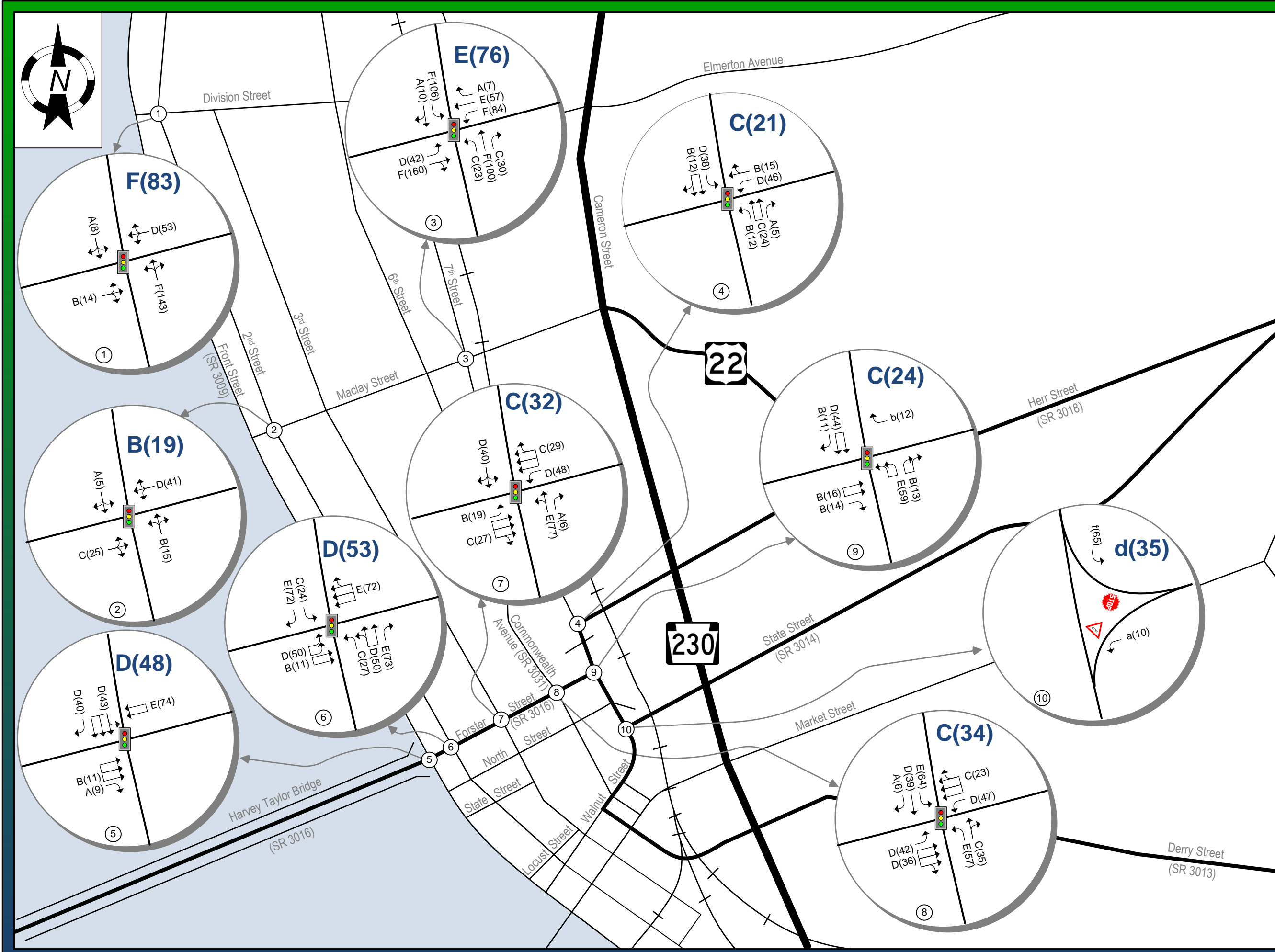
Signalized Intersection

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Work Order No. 11: 2nd Street Traffic Study

Date: March 12, 2015

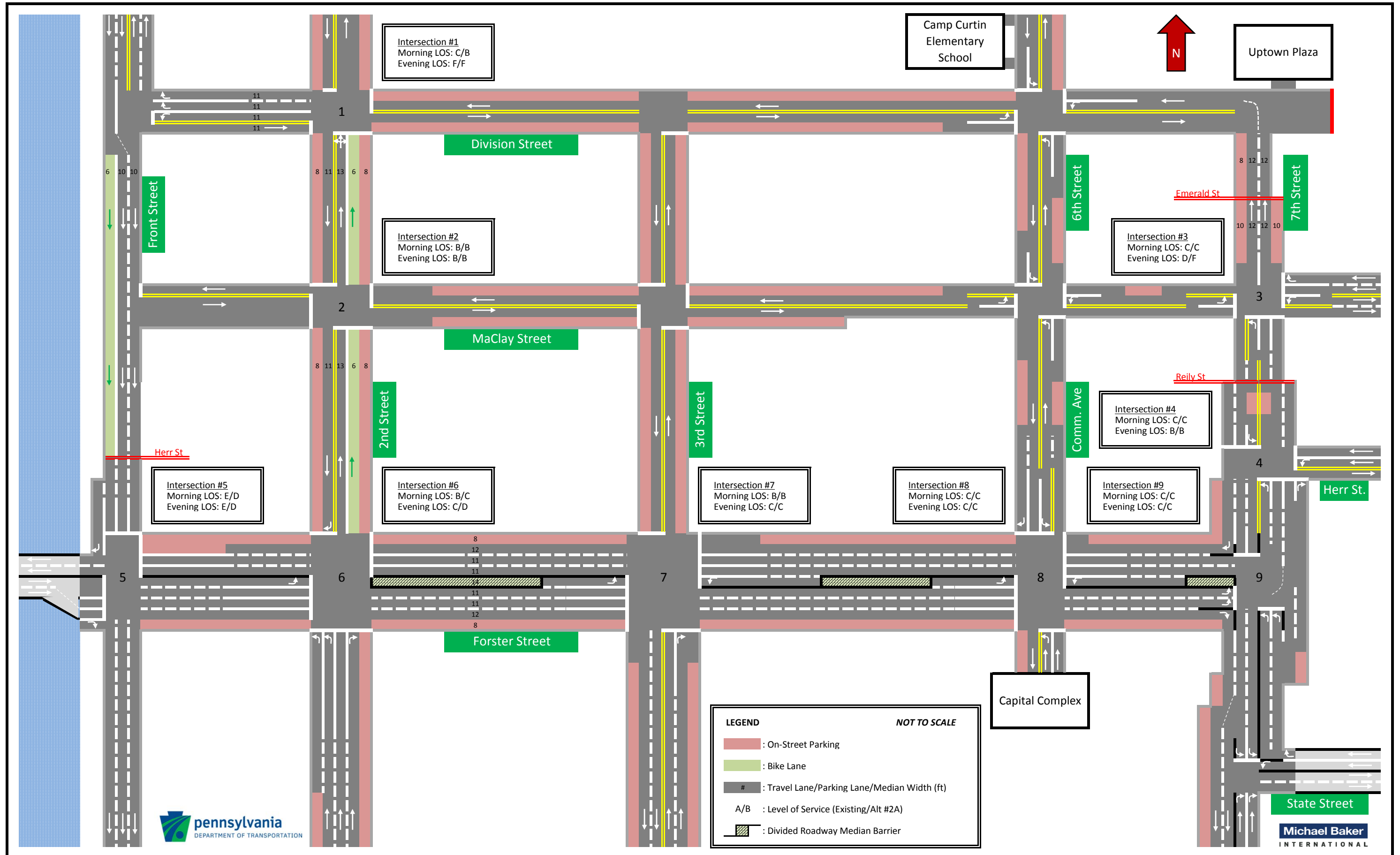


Figure 11: Alternative 2A Summary



FIGURE 12

ALTERNATIVE 2A RE-DISTRIBUTED TRAFFIC VOLUMES

Work Order No. 11: 2nd Street Traffic Study

PennDOT Contract No.: E02871

Baker Project No.: 143249

Date: March 12, 2015

LEGEND

##(##) - AM(PM) Peak Hour
Volumes (veh/hr)

- Intersection Number

STOP - Stop Sign

YIELD - Yield Sign

Signalized Intersection

REGIONAL SETTING

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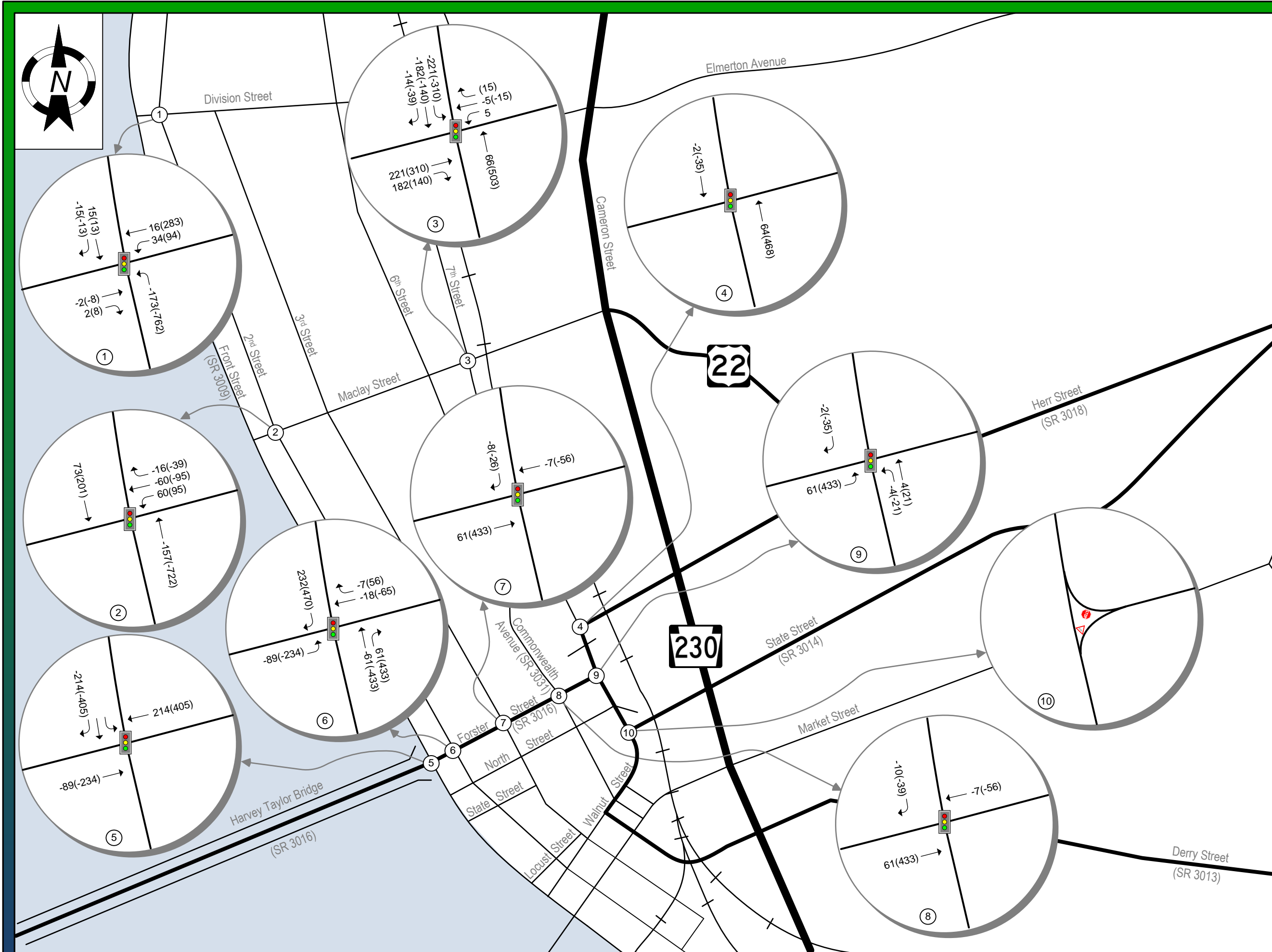




FIGURE 13

ALTERNATIVE 2A PEAK HOUR TRAFFIC VOLUMES

Work Order No. 11: 2nd Street Traffic Study

PennDOT Contract No.: E02871

Baker Project No.: 143249

Date: March 12, 2015

LEGEND

##(##) - AM(PM) Peak Hour
Volumes (veh/hr)

- Intersection Number

STOP - Stop Sign

YIELD - Yield Sign

Signalized Intersection

REGIONAL SETTING

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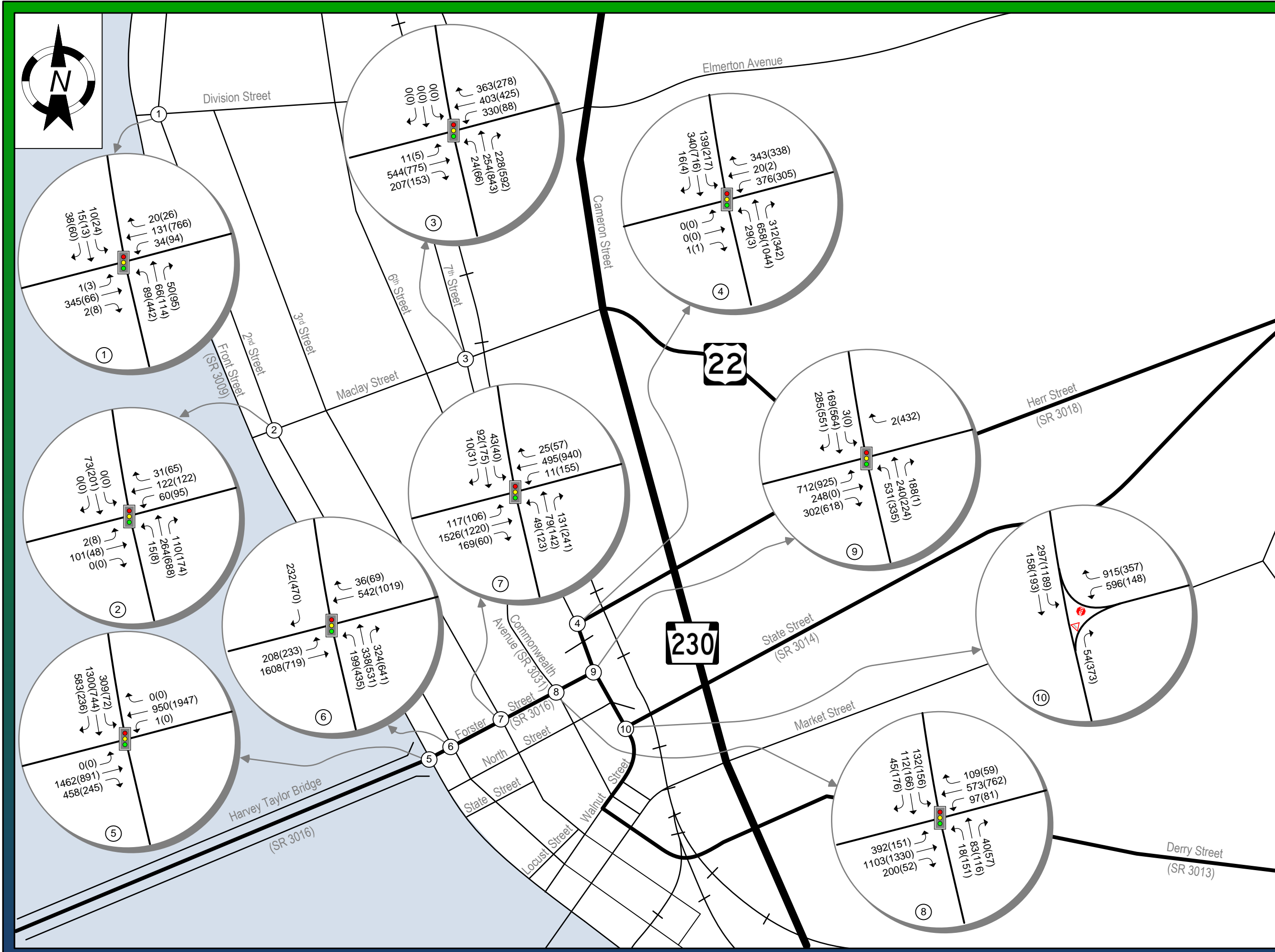




FIGURE 14

ALTERNATIVE 2A
LEVEL OF SERVICE

Morning Peak Hour

Work Order No. 11:
2nd Street
Traffic Study

PennDOT Contract No.: E02871

Baker Project No.: 143249

Date: March 12, 2015

LEGEND

- X(##) - Level of Service (Delay (s))
- # - Intersection Number
- STOP - Stop Sign
- Yield Sign
- Signalized Intersection

REGIONAL SETTING

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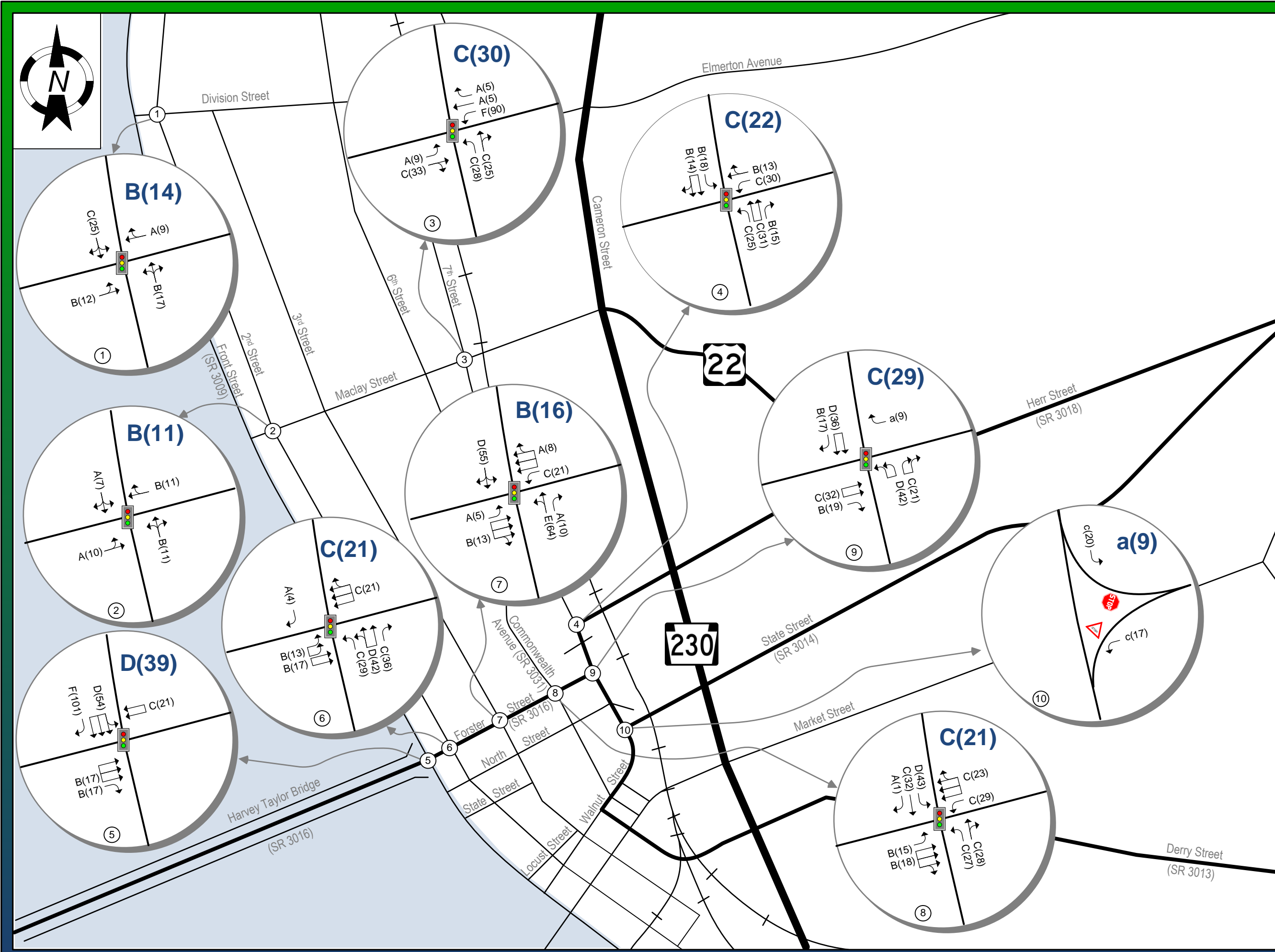




FIGURE 15

**ALTERNATIVE 2A
LEVEL OF SERVICE**

Evening Peak Hour

**Work Order No. 11:
2nd Street
Traffic Study**

PennDOT Contract No.: E02871

Baker Project No.: 143249

Date: March 12, 2015

LEGEND

X(##) - Level of Service (Delay (s))

- Intersection Number

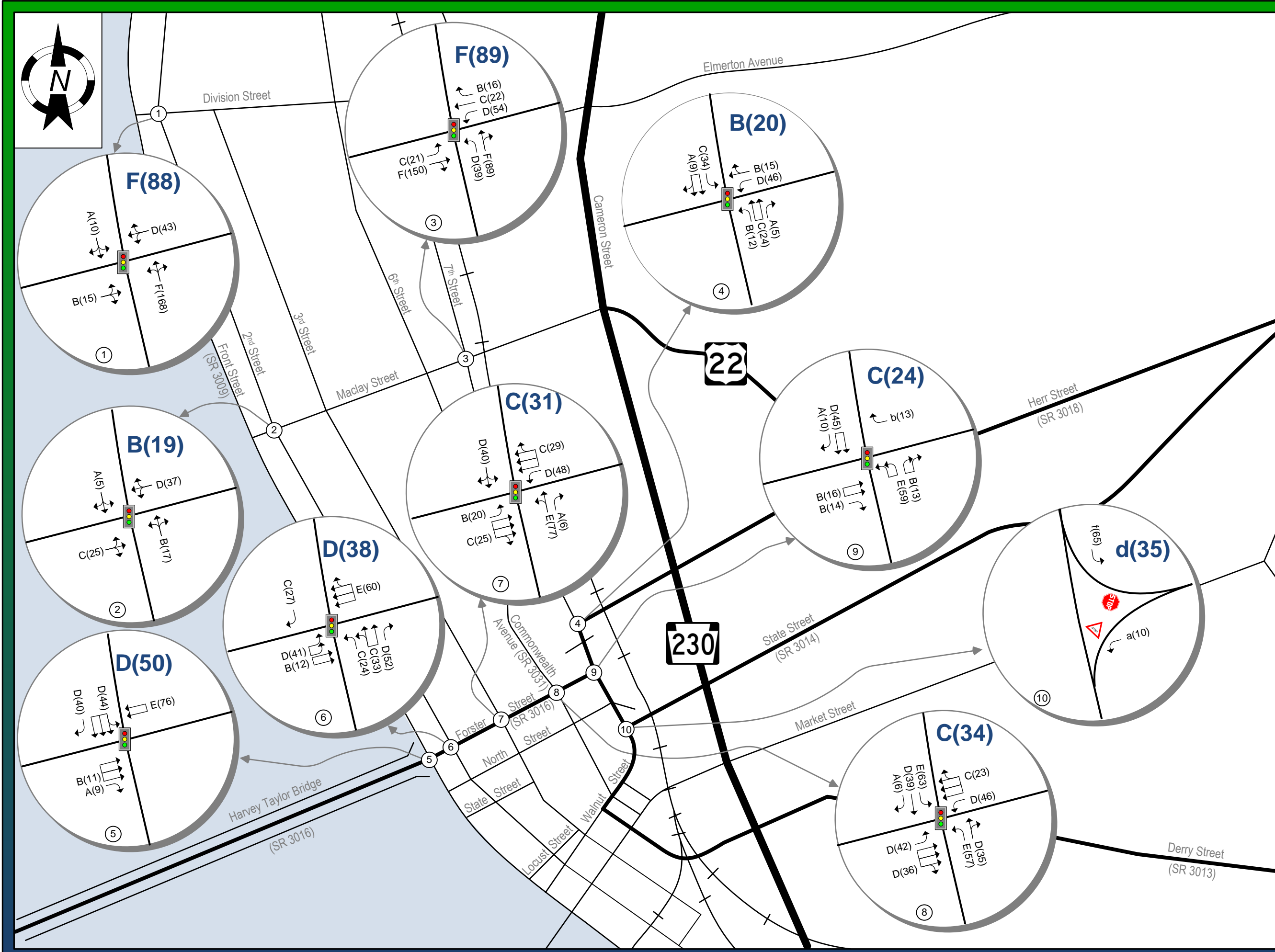
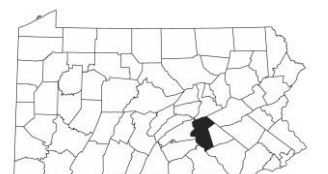
STOP - Stop Sign

Yield Sign

Signalized Intersection

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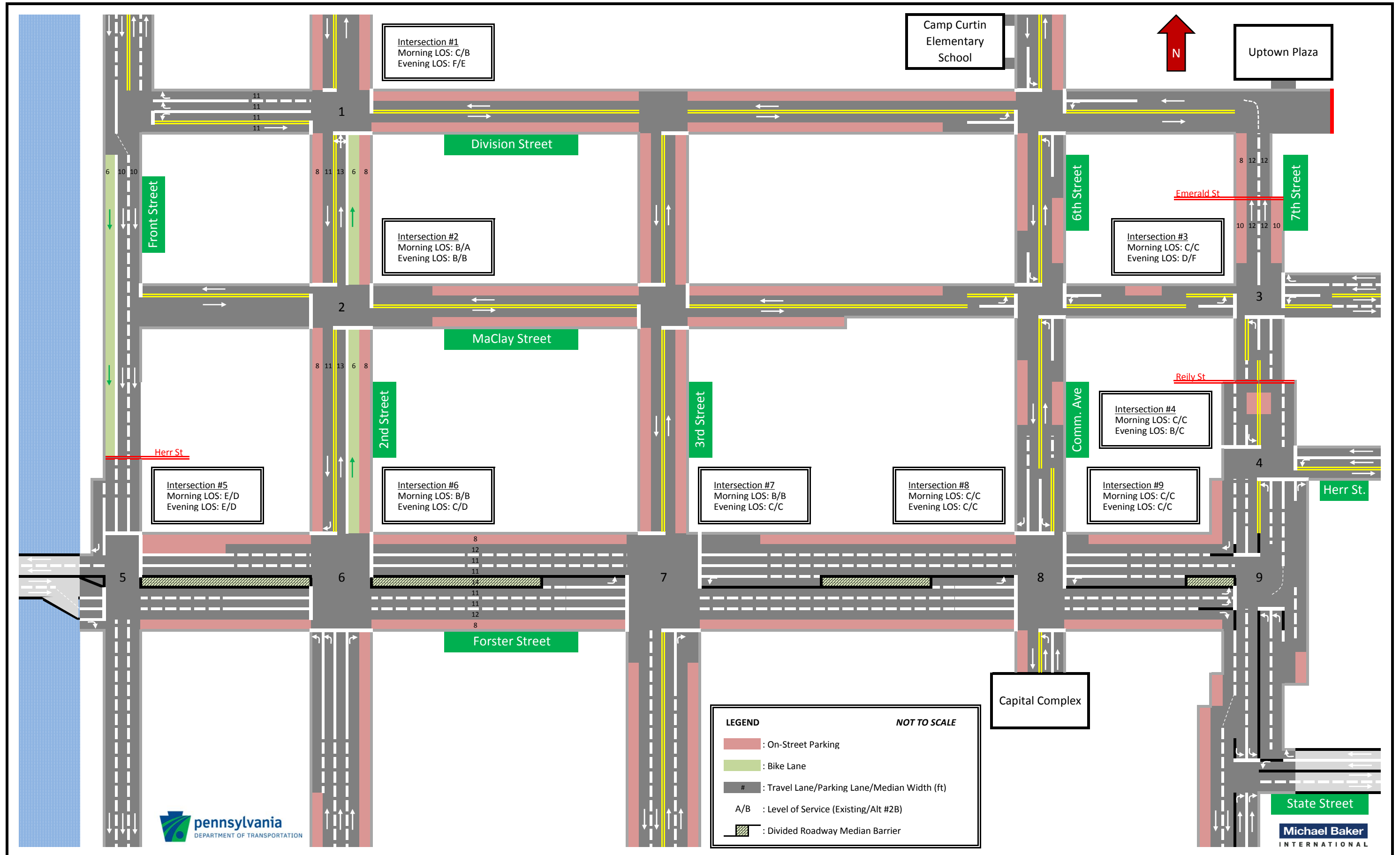


Figure 16: Alternative 2B Summary



FIGURE 17

ALTERNATIVE 2B RE-DISTRIBUTED TRAFFIC VOLUMES

Work Order No. 11: 2nd Street Traffic Study

PennDOT Contract No.: E02871

Baker Project No.: 143249

Date: March 12, 2015

LEGEND

##(##) - AM(PM) Peak Hour
Volumes (veh/hr)

- Intersection Number

STOP - Stop Sign

Yield - Yield Sign

Signal - Signalized Intersection

REGIONAL SETTING

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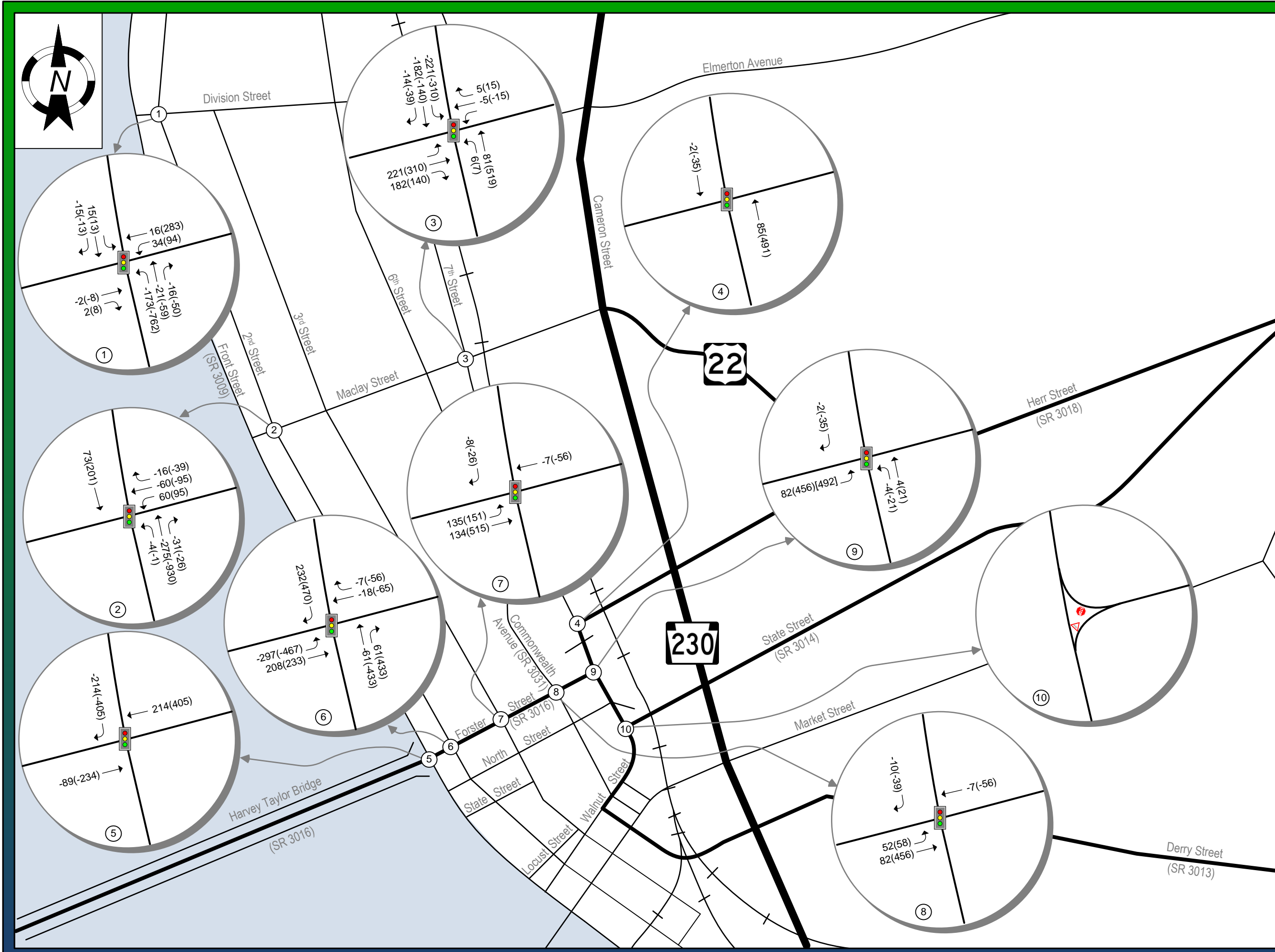




FIGURE 18

ALTERNATIVE 2B
PEAK HOUR
TRAFFIC VOLUMES

Work Order No. 11:
2nd Street
Traffic Study

PennDOT Contract No.: E02871

Baker Project No.: 143249

Date: March 12, 2015

LEGEND

##(##) - AM(PM) Peak Hour
Volumes (veh/hr)

- Intersection Number

STOP - Stop Sign

YIELD - Yield Sign

Signalized Intersection

REGIONAL SETTING

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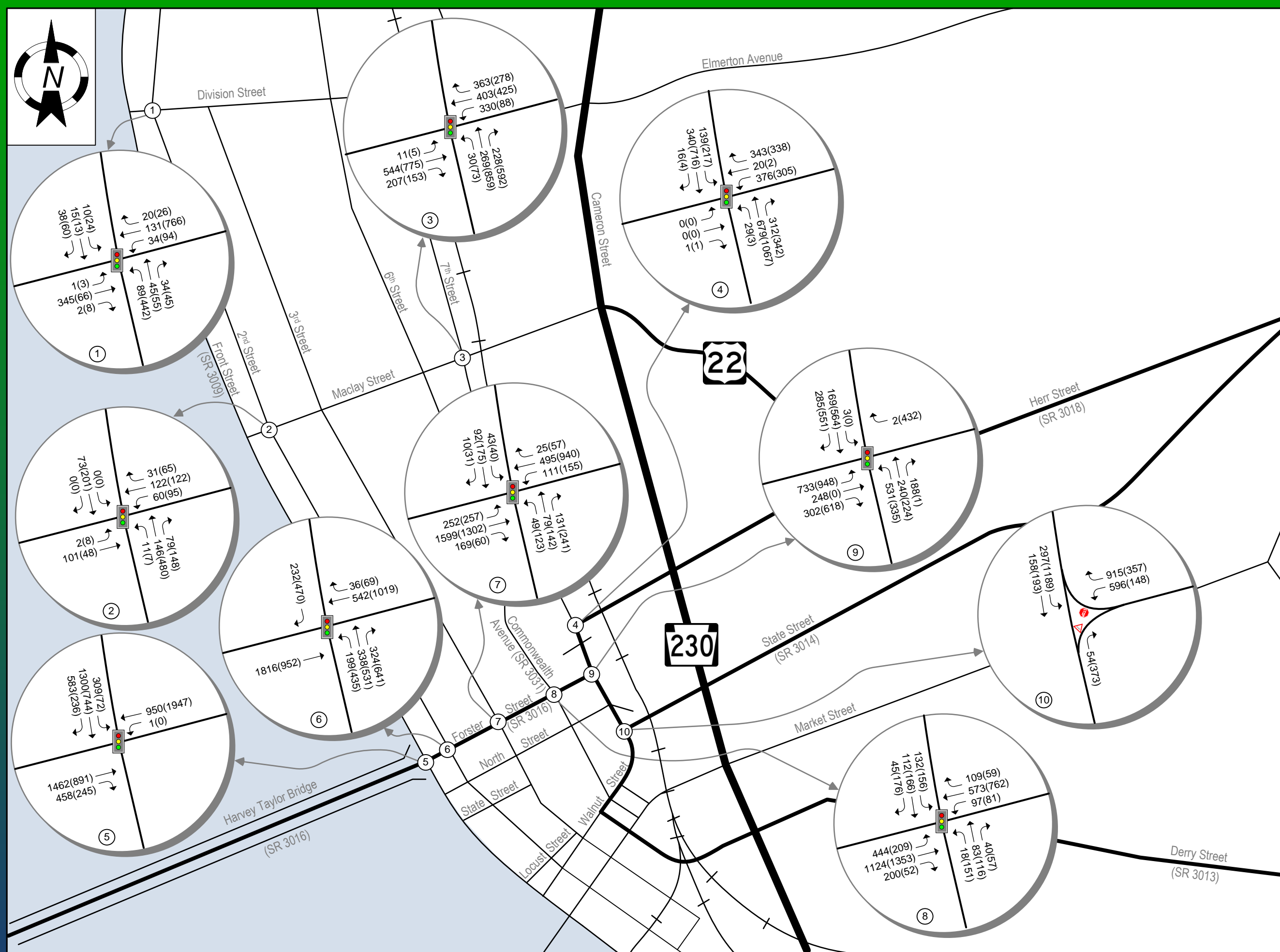
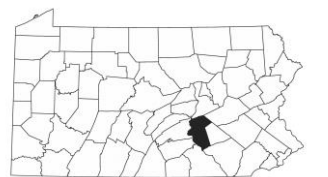




FIGURE 19

**ALTERNATIVE 2B
LEVEL OF SERVICE**

Morning Peak Hour

**Work Order No. 11:
2nd Street
Traffic Study**

PennDOT Contract No.: E02871

Baker Project No.: 143249

Date: March 12, 2015

LEGEND

- X(##) - Level of Service (Delay (s))
- # - Intersection Number
- STOP - Stop Sign
- Yield Sign
- Signalized Intersection

REGIONAL SETTING

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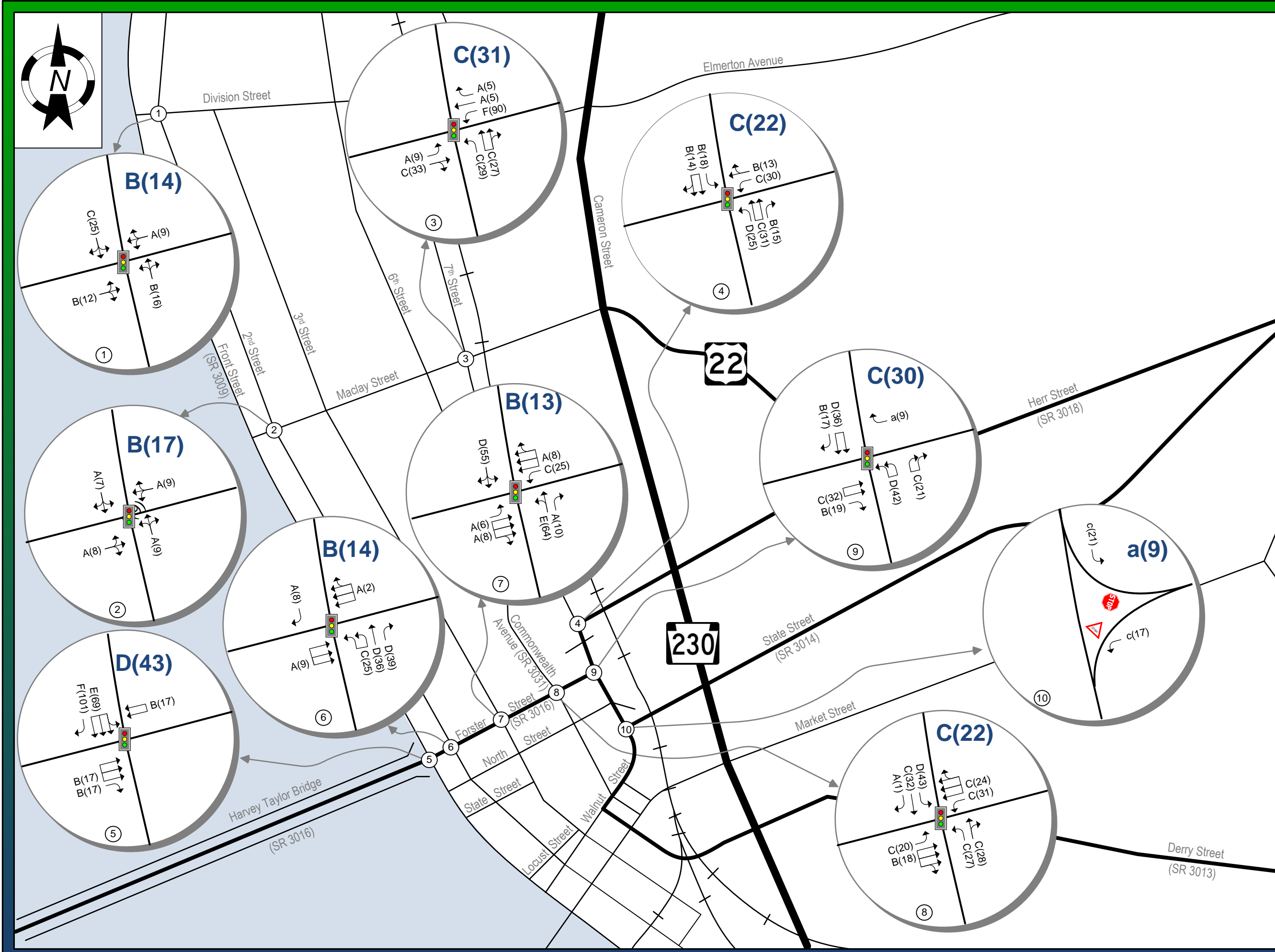




FIGURE 20

**ALTERNATIVE 2B
LEVEL OF SERVICE**

Evening Peak Hour

**Work Order No. 11:
2nd Street
Traffic Study**

PennDOT Contract No.: E02871

Baker Project No.: 143249

Date: March 12, 2015

LEGEND

X(##) - Level of Service (Delay (s))

- Intersection Number

STOP - Stop Sign

Yield Sign

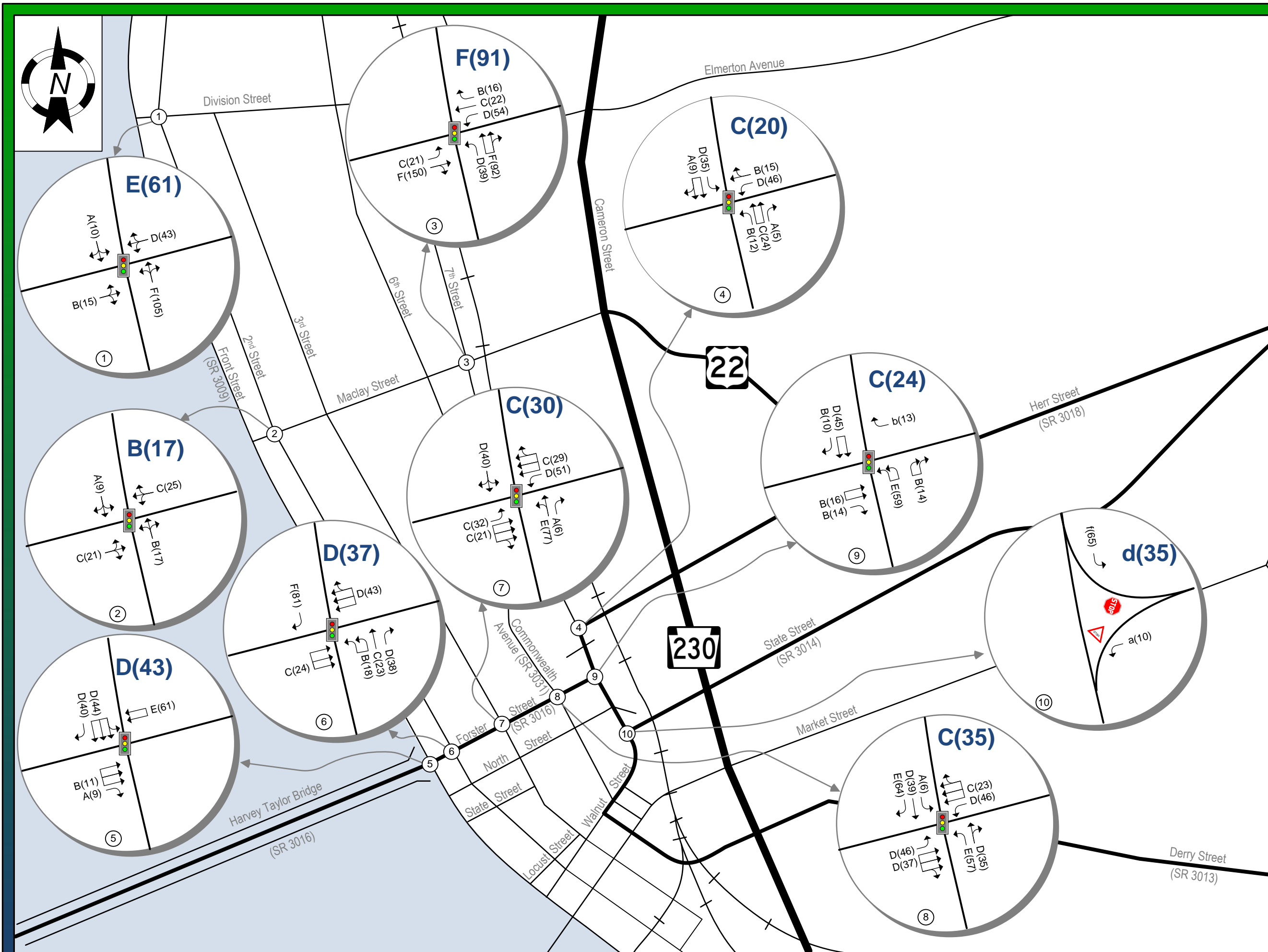
Signalized Intersection

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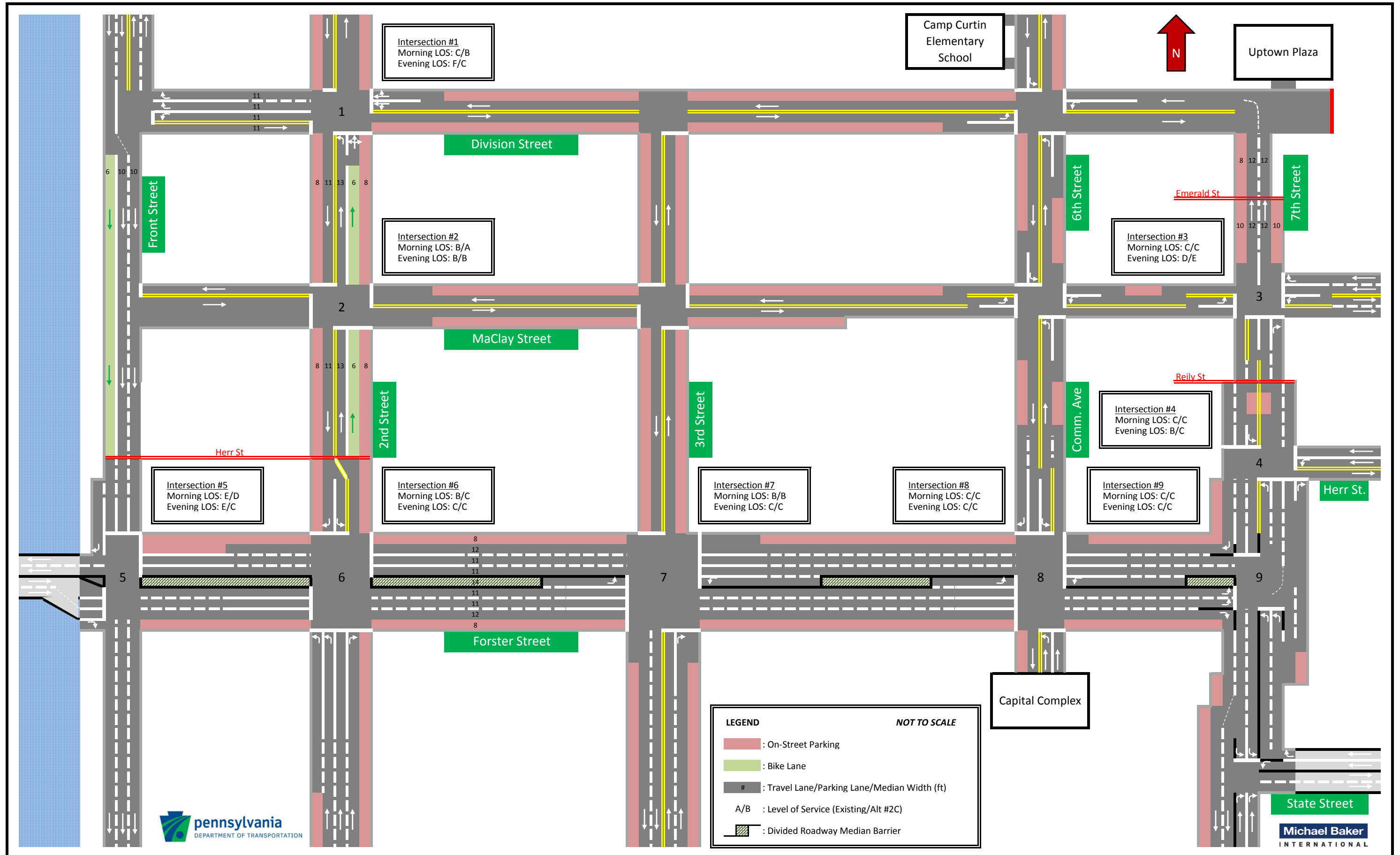


Figure 21: Alternative 2C Summary



FIGURE 22

**ALTERNATIVE 2C
RE-DISTRIBUTED
TRAFFIC VOLUMES**

**Work Order No. 11:
2nd Street
Traffic Study**

PennDOT Contract No.: E02871

Baker Project No.: 143249

Date: March 12, 2015

LEGEND

##(##) - AM(PM) Peak Hour
Volumes (veh/hr)

- Intersection Number

STOP - Stop Sign

YIELD - Yield Sign

Signalized Intersection

REGIONAL SETTING

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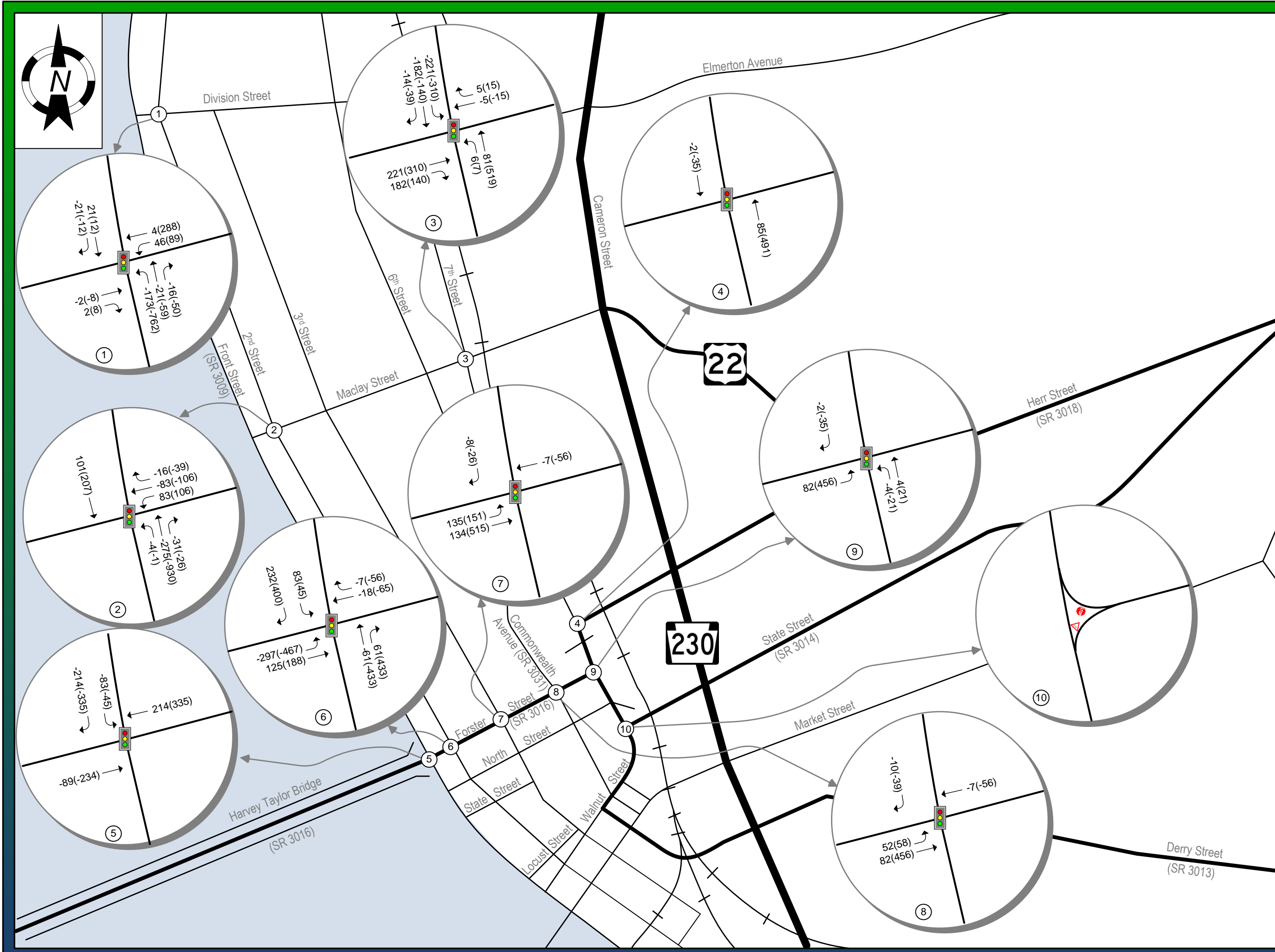




FIGURE 23

ALTERNATIVE 2C PEAK HOUR TRAFFIC VOLUMES

Work Order No. 11: 2nd Street Traffic Study

PennDOT Contract No.: E02871

Baker Project No.: 143249

Date: March 12, 2015

LEGEND

##(##) - AM(PM) Peak Hour Volumes (veh/hr)

- Intersection Number

STOP - Stop Sign

YIELD - Yield Sign

Signalized Intersection

REGIONAL SETTING

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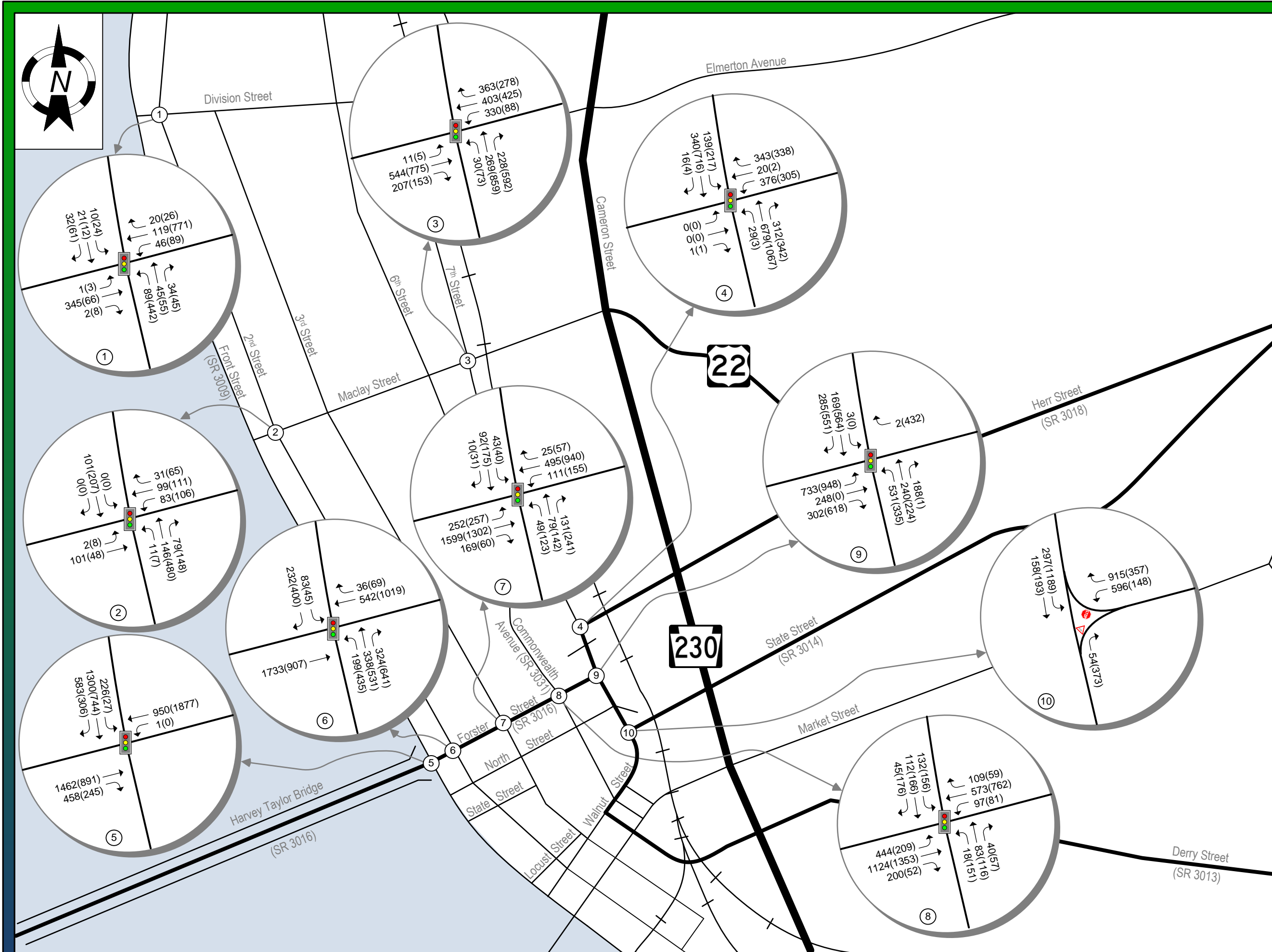




FIGURE 24

**ALTERNATIVE 2C
LEVEL OF SERVICE**

Morning Peak Hour

**Work Order No. 11:
2nd Street
Traffic Study**

PennDOT Contract No.: E02871

Baker Project No.: 143249

Date: March 12, 2015

LEGEND

- X(##) - Level of Service (Delay (s))
- # - Intersection Number
- STOP - Stop Sign
- Yield Sign
- Signalized Intersection

REGIONAL SETTING

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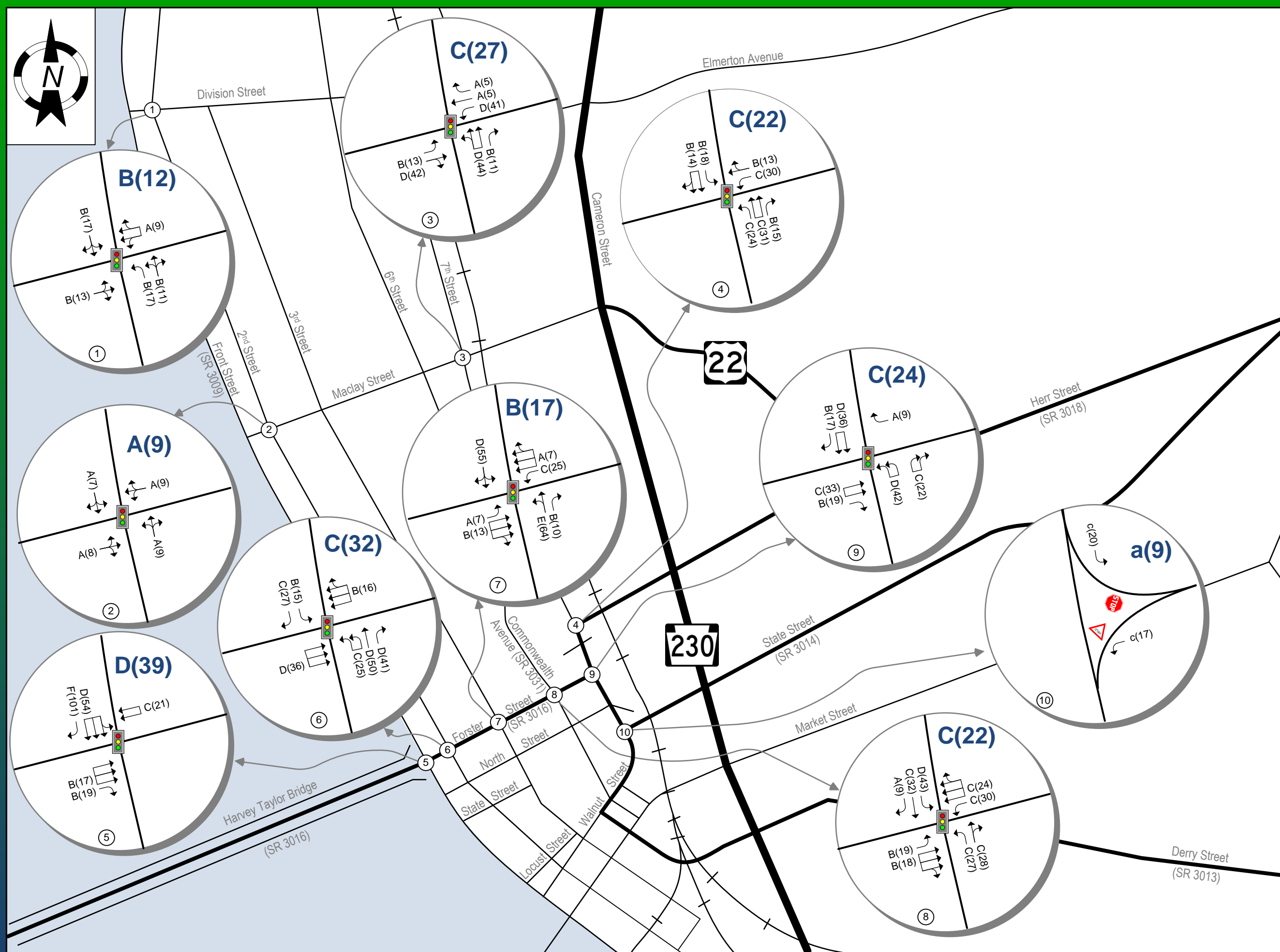




FIGURE 25

**ALTERNATIVE 2C
LEVEL OF SERVICE**

Evening Peak Hour

**Work Order No. 11:
2nd Street
Traffic Study**

PennDOT Contract No.: E02871

Baker Project No.: 143249

Date: March 12, 2015

LEGEND

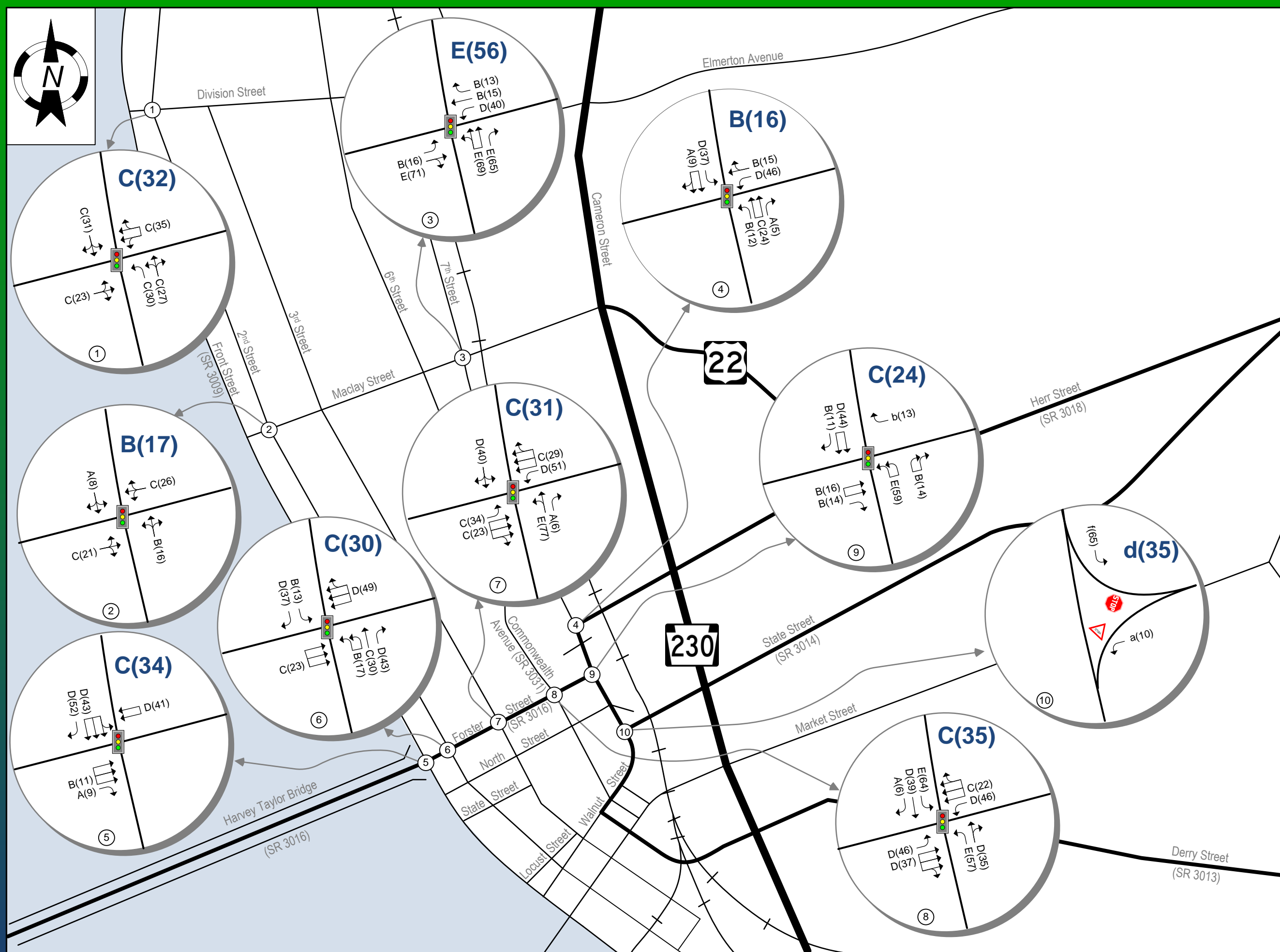
- X(##) - Level of Service (Delay (s))
- # - Intersection Number
- STOP - Stop Sign
- Yield Sign
- Signalized Intersection

REGIONAL SETTING

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APPENDIX 2
SUMMARY TABLES

SUMMARY TABLES

TABLE 1: LEVEL OF SERVICE SUMMARY TABLES

Level of Service						
AM Peak Hour						
Second Street (CTY) & Division Street (CTY)						
Direction	Approach/Movement	Existing	Alt 2	Alt 2A	Alt 2B	Alt 2C
Division Street (CTY)						
Eastbound	Left Turn	E(57)	B(12)	B(12)	B(12)	B(13)
	Through					
	Right Turn					
	Approach	E(57)	B(12)	B(12)	B(12)	B(13)
Westbound	Left Turn					A(9)
	Through	C(21)	A(9)	A(9)	A(9)	
	Right Turn					
	Approach	C(21)	A(9)	A(9)	A(9)	A(9)
Second Street (CTY)						
Northbound	Left Turn	B(18)	B(17)	B(17)	B(16)	B(17)
	Through	B(12)				B(11)
	Right Turn					
	Approach	B(16)	B(17)	B(17)	B(16)	B(14)
Southbound	Left Turn	A(2)	C(28)	C(25)	C(25)	B(17)
	Through					
	Right Turn					
	Approach	A(2)	C(28)	C(25)	C(25)	B(17)
	Overall	C(31)	B(14)	B(14)	B(14)	B(12)

Level of Service						
AM Peak Hour						
Second Street (CTY) & Maclay Street (CTY)						
Direction	Approach/Movement	Existing	Alt 2	Alt 2A	Alt 2B	Alt 2C
Maclay Street (CTY)						
Eastbound	Left Turn	A(5)	A(10)	A(10)	A(8)	A(8)
	Through					
	Right Turn					
	Approach	A(5)	A(10)	A(10)	A(8)	A(8)
Westbound	Left Turn					
	Through	A(3)	B(12)	B(11)	A(9)	A(9)
	Right Turn					
	Approach	A(3)	B(12)	B(11)	A(9)	A(9)
Second Street (CTY)						
Northbound	Left Turn	C(23)	B(11)	B(11)	A(9)	A(9)
	Through					
	Right Turn					
	Approach	C(23)	B(11)	B(11)	A(9)	A(9)
Southbound	Left Turn		A(7)	A(7)	A(7)	A(7)
	Through					
	Right Turn					
	Approach		A(7)	A(7)	A(7)	A(7)
	Overall	B(16)	B(11)	B(11)	A(9)	A(9)

Level of Service						
AM Peak Hour						
Seventh Street (CTY) & Maclay Street (CTY)						
Direction	Approach/Movement	Existing	Alt 2	Alt 2A	Alt 2B	Alt 2C
Maclay Street (CTY)						
Eastbound	Left Turn	C(25)	C(23)	A(9)	A(9)	B(13)
	Through Right Turn	E(61)	E(58)	C(33)	C(33)	D(42)
	Approach	E(59)	E(57)	C(33)	C(33)	D(42)
Westbound	Left Turn	D(55)	D(38)	F(90)	F(90)	D(41)
	Through	B(18)	B(15)	A(5)	A(5)	A(5)
	Right Turn	A(4)	A(3)	A(5)	A(5)	A(5)
	Approach	C(24)	B(18)	C(31)	C(31)	B(16)
Seventh Street (CTY)						
Northbound	Left Turn	C(25)	C(27)	C(28)	C(29)	D(44)
	Through	C(34)	D(55)	C(25)	C(27)	
	Right Turn	A(7)	A(8)			B(11)
	Approach	B(19)	C(32)	C(25)	C(27)	C(29)
Southbound	Left Turn	C(23)	D(40)			
	Through	B(15)	B(17)			
	Right Turn					
	Approach	B(19)	C(29)			
	Overall	C(28)	C(29)	C(30)	C(31)	C(27)

Level of Service						
AM Peak Hour						
Front Street (SR 3009) & Forster Street (SR 3016)						
Direction	Approach/Movement	Existing	Alt 2	Alt 2A	Alt 2B	Alt 2C
Forster Street (SR 3016)						
Eastbound	Left Turn					
	Through	B(17)	B(17)	B(17)	B(17)	B(17)
	Right Turn	B(18)	B(17)	B(17)	B(17)	B(19)
	Approach	B(17)	B(17)	B(17)	B(17)	B(17)
Westbound	Left Turn					
	Through	B(15)	C(21)	C(21)	B(17)	C(21)
	Right Turn					
	Approach	B(15)	C(21)	C(21)	B(17)	C(21)
Front Street (SR 3009)						
Northbound	Left Turn					
	Through					
	Right Turn					
	Approach					
Southbound	Left Turn	E(73)	D(54)	D(54)	E(69)	D(54)
	Through					
	Right Turn	F(225)	F(101)	F(101)	F(101)	F(101)
	Approach	F(123)	E(67)	E(67)	E(78)	E(67)
	Overall	E(67)	D(39)	D(39)	D(43)	D(39)

Level of Service						
AM Peak Hour						
Second Street (CTY) & Forster Street (SR 3016)						
Direction	Approach/Movement	Existing	Alt 2	Alt 2A	Alt 2B	Alt 2C
Forster Street (SR 3016)						
Eastbound	Left Turn	A(5)	C(21)	B(13)		D(36)
	Through	A(10)	C(24)	B(17)	A(9)	
	Right Turn					
	Approach	A(10)	C(24)	B(17)	A(9)	D(36)
Westbound	Left Turn					
	Through	B(18)	C(28)	C(21)	A(2)	B(16)
	Right Turn					
	Approach	B(18)	C(28)	C(21)	A(2)	B(16)
Second Street (CTY)						
Northbound	Left Turn	D(37)	C(25)	C(29)	C(25)	C(25)
	Through	D(36)	D(50)	D(42)	D(36)	D(50)
	Right Turn	C(31)	D(35)	D(36)	D(39)	D(41)
	Approach	C(35)	D(39)	D(36)	C(34)	D(41)
Southbound	Left Turn		C(27)			C(27)
	Through					
	Right Turn		A(8)	A(4)	A(8)	B(15)
	Approach		B(13)	A(4)	A(8)	B(20)
	Overall	B(18)	C(27)	C(21)	B(14)	C(32)

Level of Service						
AM Peak Hour						
Seventh Street (CTY/SR 3018) & Herr Street (SR 3016)						
Direction	Approach/Movement	Existing	Alt 2	Alt 2A	Alt 2B	Alt 2C
Herr Street (SR 3016)						
Eastbound	Left Turn					
	Through					
	Right Turn					
	Approach					
Westbound	Left Turn	C(23)	C(30)	C(30)	C(30)	C(30)
	Through	A(4)	B(13)	B(13)	B(13)	B(13)
	Right Turn					
	Approach	B(14)	C(22)	C(22)	C(22)	C(22)
Seventh Street (CTY/SR 3018)						
Northbound	Left Turn	C(35)	C(25)	C(25)	C(25)	C(24)
	Through	D(38)	C(31)	C(31)	C(31)	C(31)
	Right Turn	B(15)	B(15)	B(15)	B(15)	B(15)
	Approach	C(30)	C(26)	C(26)	C(26)	C(26)
Southbound	Left Turn	C(23)	B(18)	B(18)	B(18)	B(18)
	Through	B(18)	B(14)	B(14)	B(14)	B(14)
	Right Turn					
	Approach	B(19)	B(15)	B(15)	B(15)	B(15)
	Overall	C(22)	C(22)	C(23)	C(22)	C(22)

Level of Service						
AM Peak Hour						
Seventh Street (SR 3016) & State Street (SR 3014)						
Direction	Approach/Movement	Existing	Alt 2	Alt 2A	Alt 2B	Alt 2C
State Street (SR 3014)						
Eastbound	Left Turn					
	Through					
	Right Turn					
	Approach					
Westbound	Left Turn	c(18)	c(17)	c(17)	c(17)	c(17)
	Through					
	Right Turn					
	Approach	c(18)	c(17)	c(17)	c(17)	c(17)
Seventh Street (SR 3016)						
Northbound	Left Turn					
	Through					
	Right Turn					
	Approach					
Southbound	Left Turn	c(21)	c(20)	c(20)	c(20)	c(20)
	Through					
	Right Turn					
	Approach	c(21)	c(20)	c(20)	c(20)	c(20)
	Overall	a(9)	a(9)	a(9)	a(9)	a(9)

Level of Service						
PM Peak Hour						
Second Street (CTY) & Division Street (CTY)						
Direction	Approach/Movement	Existing	Alt 2	Alt 2A	Alt 2B	Alt 2C
Division Street (CTY)						
Eastbound	Left Turn	C(28)	B(14)	B(15)	B(15)	C(23)
	Through					
	Right Turn					
	Approach	C(28)	B(14)	B(15)	B(15)	C(23)
Westbound	Left Turn					C(35)
	Through	F(104)	D(53)	D(43)	D(43)	
	Right Turn					
	Approach	F(104)	D(53)	D(43)	D(43)	C(35)
Second Street (CTY)						
Northbound	Left Turn	F(162)	F(143)	F(168)	F(105)	C(30)
	Through	B(15)				C(27)
	Right Turn					
	Approach	F(140)	F(143)	F(168)	F(105)	C(28)
Southbound	Left Turn	A(5)	A(8)	A(10)	A(10)	C(31)
	Through					
	Right Turn					
	Approach	A(5)	A(8)	A(10)	A(10)	C(31)
	Overall	F(121)	F(83)	F(88)	E(61)	C(32)

Level of Service						
PM Peak Hour						
Second Street (CTY) & Maclay Street (CTY)						
Direction	Approach/Movement	Existing	Alt 2	Alt 2A	Alt 2B	Alt 2C
Maclay Street (CTY)						
Eastbound	Left Turn	B(16)	C(25)	C(25)	C(21)	C(21)
	Through					
	Right Turn					
	Approach	B(16)	C(25)	C(25)	C(21)	C(21)
Westbound	Left Turn					
	Through	C(23)	D(41)	D(37)	C(25)	C(26)
	Right Turn					
	Approach	C(23)	D(41)	D(37)	C(25)	C(26)
Second Street (CTY)						
Northbound	Left Turn	B(16)	B(15)	B(17)	B(17)	B(16)
	Through					
	Right Turn					
	Approach	B(16)	B(15)	B(17)	B(17)	B(16)
Southbound	Left Turn		A(5)	A(5)	A(9)	A(8)
	Through					
	Right Turn					
	Approach		A(5)	A(5)	A(9)	A(8)
	Overall	B(17)	B(19)	B(19)	B(17)	B(17)

Level of Service						
PM Peak Hour						
Seventh Street (CTY) & Maclay Street (CTY)						
Direction	Approach/Movement	Existing	Alt 2	Alt 2A	Alt 2B	Alt 2C
Maclay Street (CTY)						
Eastbound	Left Turn	C(24)	D(42)	C(21)	C(21)	B(16)
	Through Right Turn	E(71)	F(160)	F(150)	F(150)	E(71)
	Approach	E(71)	F(159)	F(149)	F(149)	E(71)
Westbound	Left Turn	B(16)	F(84)	D(54)	D(54)	D(40)
	Through	B(20)	E(57)	C(22)	C(22)	B(15)
	Right Turn	A(3)	A(7)	B(16)	B(16)	B(13)
	Approach	B(14)	D(42)	C(23)	C(24)	B(17)
Seventh Street (CTY)						
Northbound	Left Turn	C(26)	C(23)	D(39)	D(39)	E(69)
	Through	D(50)	F(100)	F(89)	F(92)	
	Right Turn	D(43)	C(30)			E(65)
	Approach	D(44)	E(69)	F(87)	F(90)	E(67)
Southbound	Left Turn	E(71)	F(106)			
	Through	B(12)	A(10)			
	Right Turn					
	Approach	D(49)	E(71)			
	Overall	D(41)	E(76)	F(89)	F(91)	E(56)

Level of Service						
PM Peak Hour						
Front Street (SR 3009) & Forster Street (SR 3016)						
Direction	Approach/Movement	Existing	Alt 2	Alt 2A	Alt 2B	Alt 2C
Forster Street (SR 3016)						
Eastbound	Left Turn					
	Through	B(12)	B(11)	B(11)	B(11)	B(11)
	Right Turn	A(9)	A(9)	A(9)	A(9)	A(9)
	Approach	B(11)	B(11)	A(10)	A(10)	A(10)
Westbound	Left Turn					
	Through	B(18)	E(74)	E(76)	E(61)	D(41)
	Right Turn					
	Approach	B(18)	E(74)	E(76)	E(61)	D(41)
Front Street (SR 3009)						
Northbound	Left Turn					
	Through					
	Right Turn					
	Approach					
Southbound	Left Turn	D(44)	D(43)	D(44)	D(44)	D(43)
	Through					
	Right Turn	F(331)	D(40)	D(40)	D(40)	D(52)
	Approach	F(170)	D(42)	D(43)	D(43)	D(45)
	Overall	E(66)	D(48)	D(50)	D(43)	C(34)

Level of Service						
PM Peak Hour						
Second Street (CTY) & Forster Street (SR 3016)						
Direction	Approach/Movement	Existing	Alt 2	Alt 2A	Alt 2B	Alt 2C
Forster Street (SR 3016)						
Eastbound	Left Turn	C(29)	D(50)	D(41)		C(23)
	Through	A(10)	B(11)	B(12)	C(24)	
	Right Turn					
	Approach	B(17)	C(24)	B(19)	C(24)	C(23)
Westbound	Left Turn					
	Through	C(33)	E(72)	E(60)	D(43)	D(49)
	Right Turn					
	Approach	C(33)	E(72)	E(60)	D(43)	D(49)
Second Street (CTY)						
Northbound	Left Turn	D(39)	C(27)	C(24)	B(18)	B(17)
	Through	D(41)	D(50)	C(33)	C(23)	C(30)
	Right Turn	A(10)	E(73)	D(52)	D(38)	D(43)
	Approach	D(37)	D(53)	D(38)	C(27)	C(32)
Southbound	Left Turn		C(24)			B(13)
	Through					
	Right Turn		E(72)	C(27)	F(81)	D(37)
	Approach		E(59)	C(27)	F(81)	C(30)
	Overall	C(30)	D(53)	D(38)	D(37)	C(35)

Level of Service						
PM Peak Hour						
Seventh Street (CTY/SR 3018) & Herr Street (SR 3016)						
Direction	Approach/Movement	Existing	Alt 2	Alt 2A	Alt 2B	Alt 2C
Herr Street (SR 3016)						
Eastbound	Left Turn					
	Through					
	Right Turn					
	Approach					
Westbound	Left Turn	D(36)	D(46)	D(46)	D(46)	D(46)
	Through	A(5)	B(15)	B(15)	B(15)	B(15)
	Right Turn					
	Approach	B(20)	C(29)	C(29)	C(29)	C(29)
Seventh Street (CTY/SR 3018)						
Northbound	Left Turn	B(16)	B(12)	B(12)	B(12)	B(12)
	Through	B(18)	C(24)	C(24)	C(24)	C(24)
	Right Turn	A(3)	A(5)	A(5)	A(5)	A(5)
	Approach	B(13)	B(19)	B(19)	B(19)	B(19)
Southbound	Left Turn	B(17)	D(38)	C(34)	D(35)	D(37)
	Through	B(16)	B(12)	A(9)	A(9)	A(9)
	Right Turn					
	Approach	B(16)	B(18)	B(15)	B(15)	B(16)
	Overall	B(16)	C(21)	B(20)	B(20)	C(20)

Level of Service						
PM Peak Hour						
Seventh Street (SR 3016) & State Street (SR 3014)						
Direction	Approach/Movement	Existing	Alt 2	Alt 2A	Alt 2B	Alt 2C
State Street (SR 3014)						
Eastbound	Left Turn					
	Through					
	Right Turn					
	Approach					
Westbound	Left Turn	a(10)	a(10)	a(10)	a(10)	a(10)
	Through					
	Right Turn					
	Approach	a(10)	a(10)	a(10)	a(10)	a(10)
Seventh Street (SR 3016)						
Northbound	Left Turn					
	Through					
	Right Turn					
	Approach					
Southbound	Left Turn	f(80)	f(65)	f(65)	f(65)	f(65)
	Through					
	Right Turn					
	Approach	f(80)	f(65)	f(65)	f(65)	f(65)
	Overall	e(43)	d(35)	d(35)	d(35)	d(35)

SUMMARY TABLES

TABLE 2: QUEUING SUMMARY TABLES

Queue						
AM Peak Hour						
Second Street (CTY) & Division Street (CTY)						
Direction	Approach/Movement	Existing	Alt 2	Alt 2A	Alt 2B	Alt 2C
Division Street (CTY)						
Eastbound	Left Turn	250	175	175	100	175
	Through					
	Right Turn					
	Approach					
Westbound	Left Turn					75
	Through	125	150	150	150	
	Right Turn					
	Approach					
Second Street (CTY)						
Northbound	Left Turn	100	175	175	150	75
	Through	100				125
	Right Turn					
	Approach					
Southbound	Left Turn	75	75	100	75	75
	Through					
	Right Turn					
	Approach					
	Overall					

Queue						
AM Peak Hour						
Second Street (CTY) & Maclay Street (CTY)						
Direction	Approach/Movement	Existing	Alt 2	Alt 2A	Alt 2B	Alt 2C
Maclay Street (CTY)						
Eastbound	Left Turn	75	75	75	75	75
	Through					
	Right Turn					
	Approach					
Westbound	Left Turn					
	Through	175	125	125	100	125
	Right Turn					
	Approach					
Second Street (CTY)						
Northbound	Left Turn	100	175	175	125	200
	Through	125				
	Right Turn	175				
	Approach					
Southbound	Left Turn		75	75	100	150
	Through					
	Right Turn					
	Approach					
	Overall					

Queue						
AM Peak Hour						
Seventh Street (CTY) & Maclay Street (CTY)						
Direction	Approach/Movement	Existing	Alt 2	Alt 2A	Alt 2B	Alt 2C
Maclay Street (CTY)						
Eastbound	Left Turn	100	100	100	100	75
	Through	1400	475	1375	1050	1550
	Right Turn					
	Approach					
Westbound	Left Turn	525	200	300	275	275
	Through	650	225	175	150	150
	Right Turn	475	150	125	125	125
	Approach					
Seventh Street (CTY)						
Northbound	Left Turn	75	125	75	100	175
	Through	225	300	275	300	
	Right Turn	200	150			
	Approach					
Southbound	Left Turn	175	225			
	Through	150	125			
	Right Turn					
	Approach					
	Overall					

Queue						
AM Peak Hour						
Front Street (SR 3009) & Forster Street (SR 3016)						
Direction	Approach/Movement	Existing	Alt 2	Alt 2A	Alt 2B	Alt 2C
Forster Street (SR 3016)						
Eastbound	Left Turn					
	Through	250	250	250	250	250
	Right Turn	150	150	150	150	150
	Approach					
Westbound	Left Turn					
	Through	150	225	225	200	225
	Right Turn					
	Approach					
Front Street (SR 3009)						
Northbound	Left Turn					
	Through					
	Right Turn					
	Approach					
Southbound	Left Turn					
	Through	525	350	350	425	725
	Right Turn	400	275	275	300	525
	Approach					
	Overall					

Queue						
AM Peak Hour						
Second Street (CTY) & Forster Street (SR 3016)						
Direction	Approach/Movement	Existing	Alt 2	Alt 2A	Alt 2B	Alt 2C
Forster Street (SR 3016)						
Eastbound	Left Turn	100	175	175		250
	Through	250	275	275	200	
	Right Turn					
	Approach					
Westbound	Left Turn					
	Through	50	75	50	25	750
	Right Turn					
	Approach					
Second Street (CTY)						
Northbound	Left Turn	175	125	125	100	125
	Through	225	325	325	275	350
	Right Turn	200	200	225	275	250
	Approach					
Southbound	Left Turn		125			125
	Through					
	Right Turn		125	150	150	125
	Approach					
	Overall					

Queue						
AM Peak Hour						
Seventh Street (CTY/SR 3018) & Herr Street (SR 3016)						
Direction	Approach/Movement	Existing	Alt 2	Alt 2A	Alt 2B	Alt 2C
Herr Street (SR 3016)						
Eastbound	Left Turn					
	Through					
	Right Turn					
	Approach					
Westbound	Left Turn	275	325	300	300	325
	Through	200	225	225	225	200
	Right Turn					
	Approach					
Seventh Street (CTY/SR 3018)						
Northbound	Left Turn	50	50	50	50	50
	Through	225	225	250	250	250
	Right Turn	175	200	225	225	175
	Approach					
Southbound	Left Turn	150	150	125	125	150
	Through	150	150	150	150	150
	Right Turn					
	Approach					
	Overall					

Queue						
AM Peak Hour						
Seventh Street (SR 3016) & State Street (SR 3014)						
Direction	Approach/Movement	Existing	Alt 2	Alt 2A	Alt 2B	Alt 2C
State Street (SR 3014)						
Eastbound	Left Turn					
	Through					
	Right Turn					
	Approach					
Westbound	Left Turn	75	75	75	50	50
	Through					
	Right Turn					
	Approach					
Seventh Street (SR 3016)						
Northbound	Left Turn					
	Through					
	Right Turn					
	Approach					
Southbound	Left Turn	150	150	150	150	150
	Through					
	Right Turn					
	Approach					
	Overall					

Queue						
PM Peak Hour						
Second Street (CTY) & Division Street (CTY)						
Direction	Approach/Movement	Existing	Alt 2	Alt 2A	Alt 2B	Alt 2C
Division Street (CTY)						
Eastbound	Left Turn	100	125	175	200	100
	Through					
	Right Turn					
	Approach					
Westbound	Left Turn	2025	3175	1900	2125	325
	Through					
	Right Turn					
	Approach					
Second Street (CTY)						
Northbound	Left Turn	1775	1300	1350	700	225
	Through	1475				275
	Right Turn					
	Approach					
Southbound	Left Turn	100	100	125	100	100
	Through					
	Right Turn					
	Approach					
	Overall					

Queue						
PM Peak Hour						
Second Street (CTY) & Maclay Street (CTY)						
Direction	Approach/Movement	Existing	Alt 2	Alt 2A	Alt 2B	Alt 2C
Maclay Street (CTY)						
Eastbound	Left Turn	75	75	75	75	75
	Through					
	Right Turn					
	Approach					
Westbound	Left Turn	225	275	300	275	250
	Through					
	Right Turn					
	Approach					
Second Street (CTY)						
Northbound	Left Turn	375	1075	1125	825	700
	Through					
	Right Turn					
	Approach					
Southbound	Left Turn	200	200	150	200	200
	Through					
	Right Turn					
	Approach					
	Overall					

Queue						
PM Peak Hour						
Seventh Street (CTY) & Maclay Street (CTY)						
Direction	Approach/Movement	Existing	Alt 2	Alt 2A	Alt 2B	Alt 2C
Maclay Street (CTY)						
Eastbound	Left Turn	75	50	25	50	50
	Through	1600	1950	1650	1700	1875
	Right Turn					
	Approach					
Westbound	Left Turn	150	175	125	125	125
	Through	425	450	275	300	225
	Right Turn	125	225	100	100	150
	Approach					
Seventh Street (CTY)						
Northbound	Left Turn	175	225	225	250	550
	Through	600	500	525	500	
	Right Turn	600	550			
	Approach					
Southbound	Left Turn	1200	625			
	Through	500	425			
	Right Turn					
	Approach					
	Overall					

Queue						
PM Peak Hour						
Front Street (SR 3009) & Forster Street (SR 3016)						
Direction	Approach/Movement	Existing	Alt 2	Alt 2A	Alt 2B	Alt 2C
Forster Street (SR 3016)						
Eastbound	Left Turn					
	Through	200	225	175	200	200
	Right Turn	125	125	100	125	125
	Approach					
Westbound	Left Turn					
	Through	200	200	200	200	200
	Right Turn					
	Approach					
Front Street (SR 3009)						
Northbound	Left Turn					
	Through					
	Right Turn					
	Approach					
Southbound	Left Turn					
	Through	275	225	250	250	225
	Right Turn	500	200	200	225	300
	Approach					
	Overall					

Queue						
PM Peak Hour						
Second Street (CTY) & Forster Street (SR 3016)						
Direction	Approach/Movement	Existing	Alt 2	Alt 2A	Alt 2B	Alt 2C
Forster Street (SR 3016)						
Eastbound	Left Turn	175	250	200		
	Through	125	100	100	250	225
	Right Turn					
	Approach					
Westbound	Left Turn					
	Through	700	875	1000	375	500
	Right Turn					
	Approach					
Second Street (CTY)						
Northbound	Left Turn	375	225	175	175	175
	Through	425	525	475	375	375
	Right Turn	175	500	425	425	425
	Approach					
Southbound	Left Turn		200			200
	Through					
	Right Turn		425	1175	1450	400
	Approach					
	Overall					

Queue						
PM Peak Hour						
Seventh Street (CTY/SR 3018) & Herr Street (SR 3016)						
Direction	Approach/Movement	Existing	Alt 2	Alt 2A	Alt 2B	Alt 2C
Herr Street (SR 3016)						
Eastbound	Left Turn					
	Through					
	Right Turn					
	Approach					
Westbound	Left Turn	275	350	300	300	275
	Through	175	300	225	250	250
	Right Turn					
	Approach					
Seventh Street (CTY/SR 3018)						
Northbound	Left Turn	25	25	25	25	25
	Through	225	300	300	275	300
	Right Turn	150	275	250	250	250
	Approach					
Southbound	Left Turn	175	175	175	175	175
	Through	300	375	225	275	250
	Right Turn					
	Approach					
	Overall					

Queue						
PM Peak Hour						
Seventh Street (SR 3016) & State Street (SR 3014)						
Direction	Approach/Movement	Existing	Alt 2	Alt 2A	Alt 2B	Alt 2C
State Street (SR 3014)						
Eastbound	Left Turn					
	Through					
	Right Turn					
	Approach					
Westbound	Left Turn	25	25	25	25	25
	Through					
	Right Turn					
	Approach					
Seventh Street (SR 3016)						
Northbound	Left Turn					
	Through					
	Right Turn					
	Approach					
Southbound	Left Turn	275	275	275	275	275
	Through					
	Right Turn					
	Approach					
	Overall					

SUMMARY TABLES

TABLE 3: KEY FINDINGS



Table 3: 2nd Street 2-Way Conversion Evaluation

March 12, 2015

KEY FINDINGS:			
Intersection / Corridor	Mitigation	Notes	Next Steps
2nd Street & Forster Street	Southbound left-turn lane	<ul style="list-style-type: none"> If southbound left-turns are permitted, a 150-foot left-turn storage lane will be required 	<ul style="list-style-type: none"> Determine if southbound left-turn is viable/necessary Upgrade signal technology and intersection reconfiguration accordingly
	Eliminate eastbound left-turn	<ul style="list-style-type: none"> The restricted movement allows for more fluid operations along the Forster corridor The intersections of 3rd Street and Commonwealth Avenue demonstrated acceptable operations with the redistributed traffic 	
2nd Street Corridor	Upgrade signal technology, pavement markings, and signing accordingly	<ul style="list-style-type: none"> Each intersection along 2nd Street will need to be evaluated for signalization and approach mitigations 	<ul style="list-style-type: none"> Determine which intersections will require signalization along corridor
7th Street Corridor	Convert corridor north of Maclay Street to 2 lane, one-way northbound	<ul style="list-style-type: none"> The redistributed 2nd Street traffic requires the conversion of the existing southbound lane to a northbound lane 	<ul style="list-style-type: none"> Assess local access impacts to residential and commercial land uses
7th Street & Division Street	N/A, but required	<ul style="list-style-type: none"> Intersection was not evaluated as a part of this study 	<ul style="list-style-type: none"> Evaluate impacts to intersection
7th Street & Maclay Street	Convert 7 th Street to 2 lane, one-way northbound north of the intersection	<ul style="list-style-type: none"> Additional queue and delay for eastbound approach due to redistributed traffic 	<ul style="list-style-type: none"> Study full effects of diverted traffic and conceptually design accordingly
	Modify 7 th Street northbound approach to a shared left/thru, thru, and right-turn exclusive lane	<ul style="list-style-type: none"> This configuration allows for existing intersection alignment to be utilized while providing acceptable operations 	
6th Street Corridor	N/A, but required	<ul style="list-style-type: none"> 6th Street was not evaluated as a part of this study 	<ul style="list-style-type: none"> Evaluate impacts to 6th Street
Division Street Corridor	N/A, but required	<ul style="list-style-type: none"> Division Street was not evaluated as a part of this study 	<ul style="list-style-type: none"> Evaluate impacts to Division Street
Division Street & 2nd Street	Northbound left-turn lane	<ul style="list-style-type: none"> A minimum 150-foot left-turn lane is required 	<ul style="list-style-type: none"> Upgrade signal accordingly Determine impacts to parking near intersection
	Modify westbound approach to a shared left/thru and a shared right/thru lane	<ul style="list-style-type: none"> Significantly improves capacity and operation of the intersection 	
Downtown Grid Network	Evaluate impacts to the entire network around Harrisburg	<ul style="list-style-type: none"> Unknown impacts to the full system 	<ul style="list-style-type: none"> Evaluate all major corridors

APPENDIX 3
RAW COUNT DATA



2nd Street Traffic Study
 City of Harrisburg, Dauphin County
 Baker Project #143249
 Count Summary
 KPM
 3/12/2015

System Peak Hour
 Morning Peak Hour

Time Begin	Intersection Traffic Counts						Automatic Traffic Counts						Totals		
	2nd Stret & Division Street	2nd Street & Forster Street	2nd Street & Maclay Street	7th Street & Herr Street	7th Street & Maclay Street	Front Street & Forster Street	2nd Street-North of Reily	2nd Street-North of Wisconsinco	7th Street-North of State	7th Street-South of Schuykill	Front Street-South of Division	Front Street-South of Harris Street			
6:00 AM	48	162	41	95	100	296	37	18	57	25	98	136	1,112		
6:15 AM	57	242	66	140	148	407	48	26	87	32	148	195	1,596		
6:30 AM	78	370	99	236	220	617	63	39	137	55	231	264	2,410		
6:45 AM	109	569	117	321	332	882	67	49	214	87	278	339	3,364	8,483	6:00 AM - 7:00 AM
7:00 AM	127	638	130	343	343	941	98	66	241	96	312	350	3,686	11,057	6:15 AM - 7:15 AM
7:15 AM	169	789	161	524	477	1,226	105	63	319	126	426	481	4,866	14,327	6:30 AM - 7:30 AM
7:30 AM	233	833	186	547	546	1,288	114	85	295	149	506	548	5,330	17,247	6:45 AM - 7:45 AM
7:45 AM	239	874	223	592	585	1,374	138	95	366	207	510	553	5,757	19,639	7:00 AM - 8:00 AM
8:00 AM	223	843	232	493	575	1,254	153	104	315	205	453	492	5,342	21,296	7:15 AM - 8:15 AM
8:15 AM	229	819	237	540	606	1,236	142	97	290	208	433	469	5,305	21,735	7:30 AM - 8:30 AM
8:30 AM	178	771	202	488	547	1,085	144	92	289	203	327	402	4,728	21,133	7:45 AM - 8:45 AM
8:45 AM	217	696	220	438	516	924	143	89	255	174	317	347	4,338	19,714	8:00 AM - 9:00 AM
Total	1,907	7,606	1,914	4,757	4,995	11,530	1,253	823	2,866	1,568	4,038	4,578	47,836	21,735	7:30 AM - 8:30 AM



2nd Street Traffic Study
 City of Harrisburg, Dauphin County
 Baker Project #143249
 Count Summary
 KPM
 3/12/2015

System Peak Hour
Mid Day Peak Hour

Time Begin	Intersection Traffic Counts						Automatic Traffic Counts						Totals		
	2nd Street & Division Street	2nd Street & Forster Street	2nd Street & Maclay Street	7th Street & Herr Street	7th Street & Maclay Street	Front Street & Forster Street	2nd Street-North of Reily	2nd Street-North of Wisconsin	7th Street-North of State	7th Street-South of Schuylkill	Front Street-South of Division	Front Street-South of Harris Street			
11:00 AM	125	376	159	235	368	513	115	32	169	119	137	206	2,554		
11:15 AM	143	349	154	296	358	460	114	27	197	135	128	188	2,549		
11:30 AM	150	460	176	357	395	543	122	25	204	125	137	222	2,916		
11:45 AM	176	444	198	348	382	612	130	26	207	136	165	233	3,057	11,076	11:00 AM - 12:00 PM
12:00 PM	200	480	212	391	494	613	139	21	233	190	160	219	3,352	11,874	11:15 AM - 12:15 PM
12:15 PM	180	459	214	338	453	608	128	21	214	150	145	217	3,128	12,453	11:30 AM - 12:30 PM
12:30 PM	175	471	229	372	435	545	125	21	211	171	157	232	3,144	12,681	11:45 AM - 12:45 PM
12:45 PM	200	464	203	349	444	616	136	14	226	159	168	218	3,197	12,820	12:00 PM - 1:00 PM
Total	1,349	3,503	1,545	2,686	3,329	4,510	1,009	187	1,661	1,185	1,198	1,734	23,897	12,820	12:00 PM - 1:00 PM



2nd Street Traffic Study
 City of Harrisburg, Dauphin County
 Baker Project #143249
 Count Summary
 KPM
 3/12/2015

System Peak Hour
 Evening Peak Hour

Time Begin	Intersection Traffic Counts						Automatic Traffic Counts						Totals		
	2nd Stret & Division Street	2nd Street & Forster Street	2nd Street & Maclay Street	7th Street & Herr Street	7th Street & Maclay Street	Front Street & Forster Street	2nd Street-North of Reily	2nd Street-North of Wisconsinco	7th Street-North of State	7th Street-South of Schuylkill	Front Street-South of Division	Front Street-South of Harris Street			
3:00 PM	239	565	258	395	511	703	142	129	274	156	145	244	3,761		
3:15 PM	230	625	285	394	467	668	152	140	243	145	140	239	3,729		
3:30 PM	317	795	349	557	648	894	192	183	351	191	162	256	4,894		
3:45 PM	317	674	312	477	621	804	200	164	320	175	171	249	4,484	16,868	3:00 PM - 4:00 PM
4:00 PM	423	951	441	731	704	1,039	272	234	390	198	169	283	5,835	18,942	3:15 PM - 4:15 PM
4:15 PM	456	879	438	532	690	963	255	267	380	181	171	270	5,483	20,696	3:30 PM - 4:30 PM
4:30 PM	541	984	522	690	717	1,074	274	291	370	208	176	320	6,167	21,969	3:45 PM - 4:45 PM
4:45 PM	524	1,007	485	587	680	1,083	275	272	387	203	194	296	5,992	23,477	4:00 PM - 5:00 PM
5:00 PM	561	1,028	520	708	692	1,136	286	289	419	225	200	311	6,375	24,017	4:15 PM - 5:15 PM
5:15 PM	470	983	442	554	672	1,076	260	270	373	194	193	300	5,788	24,322	4:30 PM - 5:30 PM
5:30 PM	296	769	334	424	626	871	218	173	301	209	184	252	4,658	22,813	4:45 PM - 5:45 PM
5:45 PM	284	647	302	384	510	773	178	154	236	179	172	260	4,079	20,899	5:00 PM - 6:00 PM
Total	4,658	9,907	4,688	6,433	7,538	11,084	2,704	2,567	4,044	2,265	2,076	3,281	61,245	24,322	4:30 PM - 5:30 PM

Existing System Peak Hour Distribution

Corridor	Morning Distribution						Mid Day Distribution						Evening Distribution					
	In	Out	Total	%In	%Out	%Total	In	Out	Total	%In	%Out	%Total	In	Out	Total	%In	%Out	%Total
Front St/Forster St North	2,406	0	2,406	22%	0%	11%	998	0	998	15%	0%	7%	1,457	0	1,457	13%	0%	6%
Front St/Forster St South	0	1,759	1,759	0%	17%	8%	0	747	747	0%	11%	5%	0	989	989	0%	8%	4%
Front St/Forster St West	2,009	1,533	3,542	18%	15%	17%	837	919	1,756	12%	13%	13%	1,370	2,183	3,553	13%	18%	15%
2nd St/Division St North	63	87	150	1%	1%	1%	39	61	100	1%	1%	1%	97	143	240	1%	1%	1%
2nd St/Division St East	135	407	542	1%	4%	3%	217	172	389	3%	2%	3%	509	193	702	5%	2%	3%
2nd St/Division St West	348	430	778	3%	4%	4%	85	522	607	1%	8%	4%	77	1,760	1,837	1%	14%	8%
2nd St/Maclay St West	103	197	300	1%	2%	1%	77	176	253	1%	3%	2%	56	225	281	1%	2%	1%
2nd St/Maclay St East	229	292	521	2%	3%	2%	244	285	529	4%	4%	4%	321	391	712	3%	3%	3%
2nd St/Forster St South	861	0	861	8%	0%	4%	739	0	739	11%	0%	5%	1,607	0	1,607	15%	0%	7%
3rd St/Forster St North	153	221	374	1%	2%	2%	194	248	442	3%	4%	3%	272	305	577	3%	3%	3%
3rd St/Forster St South	259	372	631	2%	4%	3%	308	292	600	5%	4%	4%	506	390	896	5%	3%	4%
Commonwealth Ave/Forster St North	299	584	883	3%	6%	4%	296	277	573	4%	4%	4%	537	326	863	5%	3%	4%
Commonwealth Ave/Forster St South	141	409	550	1%	4%	3%	120	241	361	2%	3%	3%	324	299	623	3%	2%	3%
7th St/Maclay St North	417	557	974	4%	6%	5%	396	448	844	6%	6%	6%	489	608	1,097	5%	5%	5%
7th St/Maclay St West	359	446	805	3%	4%	4%	371	418	789	5%	6%	6%	483	545	1,028	4%	4%	4%
7th St/Maclay St East	1,096	772	1,868	10%	8%	9%	705	749	1,454	10%	11%	11%	791	1,367	2,158	7%	11%	9%
7th St/Herr St East	739	451	1,190	7%	4%	6%	513	442	955	8%	6%	7%	645	559	1,204	6%	5%	5%
7th St/Forster St East	2	439	441	0%	4%	2%	73	32	105	1%	0%	1%	432	1	433	4%	0%	2%
7th St/State St South	54	754	808	0%	7%	4%	128	289	417	2%	4%	3%	373	341	714	3%	3%	3%
7th St/State St East	1,511	351	1,862	14%	3%	9%	498	576	1,074	7%	8%	8%	505	1,562	2,067	5%	13%	9%
Total	11,184	10,061	21,245	100%	100%	100%	6,838	6,894	13,732	100%	100%	100%	10,851	12,187	23,038	100%	100%	100%



2nd Street Traffic Study
 City of Harrisburg, Dauphin County
 Baker Project #143249
 Count Summary
 JPC
 3/12/2015

Other Information	
TMC Date:	9/23/2014
Projection Date	9/23/2014
N =	0.00
TPG:	3
Growth:	0.75%
Seasonal Factor:	0.873

North/Southbound Front Street
 East/Westbound Forster Street

Morning Peak Hour
Total Vehicles

Time Begin	Northbound					Southbound					Eastbound					Westbound					Int. Total
	L	T	R	RTOR	Total	L	T	R	RTOR	Total	L	T	R	RTOR	Total	L	T	R	RTOR	Total	
6:00 AM				0	0	10	91	47	0	148		65	26	0	91	0	57		0	57	296
6:15 AM				0	0	6	116	64	0	186		104	41	0	145	0	76		0	76	407
6:30 AM				0	0	19	158	113	0	290		167	59	0	226	0	101		0	101	617
6:45 AM				0	0	29	226	141	0	396		273	78	0	351	0	135		0	135	882
7:00 AM				0	0	46	209	132	0	387		336	81	0	417	0	137		0	137	941
7:15 AM				0	0	78	284	218	0	580		391	88	0	479	0	167		0	167	1,226
7:30 AM				0	0	71	321	210	0	602		395	103	0	498	0	188		0	188	1,288
7:45 AM				0	0	86	342	232	0	660		387	120	0	507	0	207		0	207	1,374
8:00 AM				0	0	71	315	179	0	565		385	118	0	503	0	186		0	186	1,254
8:15 AM				0	0	81	322	176	0	579		384	117	0	501	1	155		0	156	1,236
8:30 AM				0	0	76	236	139	0	451		393	106	0	499	0	135		0	135	1,085
8:45 AM				0	0	56	190	123	0	369		298	93	0	391	0	164		0	164	924
Total	0	0	0	0	0	629	2,810	1,774	0	5,213	0	3,578	1,030	0	4,608	1	1,708	0	0	1,709	11,530
System Peak Hour:																				5,152	7:30 AM - 8:30 AM

Peak Hour	Northbound					Southbound					Eastbound					Westbound					Int. Total
	L	T	R	RTOR	Total	L	T	R	RTOR	Total	L	T	R	RTOR	Total	L	T	R	RTOR	Total	
RAW	0	0	0	0	0	309	1,300	797	0	2,406	0	1,551	458	0	2,009	1	736	0	0	737	5,152
PHF	0.00	0.00	0.00	0.00	0.00	0.90	0.95	0.86	0.91	0.91	0.00	0.98	0.95	0.99	0.99	0.25	0.89	0.00	0.89	0.89	0.94
ADJ	0	0	0	0	0	309	1,300	797	0	2,406	0	1,551	458		2,009	1	736	0		737	5,152
HV	0	0	0	0	0	2	11	4	0	17	0	8	4	0	12	0	10	0	0	10	39
%HV%	0%	0%	0%	0%	0%	1%	1%	1%	0%	1%	0%	1%	1%	0%	1%	0%	1%	0%	0%	1%	1%



2nd Street Traffic Study
 City of Harrisburg, Dauphin County
 Baker Project #143249
 Count Summary
 JPC
 3/12/2015

Other Information	
TMC Date:	9/23/2014
Projection Date	9/23/2014
N =	0.00
TPG:	3
Growth:	0.75%
Seasonal Factor:	0.873

North/Southbound Front Street
 East/Westbound Forster Street

**Morning Peak Hour
 Heavy Vehicles**

Time Begin	Northbound					Southbound					Eastbound					Westbound					Total
	L	T	R	RTOR	Total	L	T	R	RTOR	Total	L	T	R	RTOR	Total	L	T	R	RTOR	Total	
6:00 AM				0	0	0	3	0	0	3		1	0	0	1	0	0		0	0	4
6:15 AM				0	0	0	1	0	0	1		1	0	0	1	0	2		0	2	4
6:30 AM				0	0	0	4	1	0	5		3	0	0	3	0	1		0	1	9
6:45 AM				0	0	0	4	2	0	6		4	0	0	4	0	1		0	1	11
7:00 AM				0	0	0	3	1	0	4		2	1	0	3	0	2		0	2	9
7:15 AM				0	0	0	2	1	0	3		2	1	0	3	0	4		0	4	10
7:30 AM				0	0	0	3	1	0	4		0	1	0	1	0	2		0	2	7
7:45 AM				0	0	2	4	3	0	9		2	2	0	4	0	4		0	4	17
8:00 AM				0	0	0	4	0	0	4		3	1	0	4	0	2		0	2	10
8:15 AM				0	0	0	0	0	0	0		3	0	0	3	0	2		0	2	5
8:30 AM				0	0	0	2	1	0	3		5	1	0	6	0	3		0	3	12
8:45 AM				0	0	0	3	1	0	4		3	0	0	3	0	2		0	2	9
Total	0	0	0	0	0	2	33	11	0	46	0	29	7	0	36	0	25	0	0	25	107
System Peak Hour:																				39	7:30 AM - 8:30 AM

Peak Hour	Northbound					Southbound					Eastbound					Westbound					Int. Total
	L	T	R	RTOR	Total	L	T	R	RTOR	Total	L	T	R	RTOR	Total	L	T	R	RTOR	Total	
HV	0	0	0	0	0	2	11	4	0	17	0	8	4	0	12	0	10	0	0	10	39
HV%	0%	0%	0%	0%	0%	1%	1%	1%	0%	1%	0%	1%	1%	0%	1%	0%	1%	0%	0%	1%	1%

2nd Street Traffic Study
 City of Harrisburg, Dauphin County
 Baker Project #143249
 Count Summary
 JPC
 3/12/2015

Other Information

TMC Date: 9/23/2014
 Projection Date 9/23/2014
 N = 0.00
 TPG: 3
 Growth: 0.75%
 Seasonal Factor: 0.873

North/Southbound Front Street
 East/Westbound Forster Street

Mid Day Peak Hour Total Vehicles

Time Begin	Northbound					Southbound					Eastbound					Westbound					Int. Total
	L	T	R	RTOR	Total	L	T	R	RTOR	Total	L	T	R	RTOR	Total	L	T	R	RTOR	Total	
11:00 AM				0	0	13	138	92	0	243		139	26	0	165	0	105		0	105	513
11:15 AM				0	0	14	111	86	0	211		118	32	0	150	1	98		0	99	460
11:30 AM				0	0	16	134	85	0	235		138	36	0	174	0	134		0	134	543
11:45 AM				0	0	18	175	96	0	289		150	49	0	199	1	123		0	124	612
12:00 PM				0	0	17	145	95	0	257		158	46	0	204	0	152		0	152	613
12:15 PM				0	0	20	154	95	0	269		156	49	0	205	1	133		0	134	608
12:30 PM				0	0	7	119	69	0	195		173	50	0	223	0	127		0	127	545
12:45 PM				0	0	16	147	114	0	277		169	36	0	205	0	134		0	134	616
Total	0	0	0	0	0	121	1,123	732	0	1,976	0	1,201	324	0	1,525	3	1,006	0	0	1,009	4,510
System Peak Hour:																				2,382	12:00 PM - 1:00 PM

Peak Hour	Northbound					Southbound					Eastbound					Westbound					Int. Total
	L	T	R	RTOR	Total	L	T	R	RTOR	Total	L	T	R	RTOR	Total	L	T	R	RTOR	Total	
RAW	0	0	0	0	0	60	565	373	0	998	0	656	181	0	837	1	546	0	0	547	2,382
PHF	0.00	0.00	0.00	0.00	0.00	0.75	0.92	0.82	0.00	0.90	0.00	0.95	0.91	0.00	0.94	0.25	0.90	0.00	0.00	0.90	0.97
ADJ	0	0	0	0	0	60	565	373	0	998	0	656	181		837	1	546	0		547	2,382
HV	0	0	0	0	0	0	15	5	0	20	0	7	2	0	9	0	5	0	0	5	34
%HV%	0%	0%	0%	0%	0%	0%	3%	1%	0%	2%	0%	1%	1%	0%	1%	0%	1%	0%	0%	1%	1%

2nd Street Traffic Study
 City of Harrisburg, Dauphin County
 Baker Project #143249
 Count Summary
 JPC
 3/12/2015

Other Information

TMC Date: 9/23/2014
 Projection Date 9/23/2014
 N = 0.00
 TPG: 3
 Growth: 0.75%
 Seasonal Factor: 0.873

North/Southbound Front Street
 East/Westbound Forster Street

Mid Day Peak Hour Heavy Vehicles

Time Begin	Northbound					Southbound					Eastbound					Westbound					Total
	L	T	R	RTOR	Total	L	T	R	RTOR	Total	L	T	R	RTOR	Total	L	T	R	RTOR	Total	
11:00 AM				0	0	0	2	2	0	4		3	1	0	4	0	3		0	3	11
11:15 AM				0	0	0	2	3	0	5		2	3	0	5	0	1		0	1	11
11:30 AM				0	0	0	3	2	0	5		0	1	0	1	0	1		0	1	7
11:45 AM				0	0	0	0	0	0	0		1	3	0	4	0	2		0	2	6
12:00 PM				0	0	0	5	1	0	6		1	2	0	3	0	3		0	3	12
12:15 PM				0	0	0	6	1	0	7		2	0	0	2	0	1		0	1	10
12:30 PM				0	0	0	3	1	0	4		3	0	0	3	0	1		0	1	8
12:45 PM				0	0	0	1	2	0	3		1	0	0	1	0	0		0	0	4
Total	0	0	0	0	0	0	22	12	0	34	0	13	10	0	23	0	12	0	0	12	69
System Peak Hour:																				34	12:00 PM - 1:00 PM

Peak Hour	Northbound					Southbound					Eastbound					Westbound					Int. Total
	L	T	R	RTOR	Total	L	T	R	RTOR	Total	L	T	R	RTOR	Total	L	T	R	RTOR	Total	
HV	0	0	0	0	0	0	15	5	0	20	0	7	2	0	9	0	5	0	0	5	34
HV%	0%	0%	0%	0%	0%	0%	3%	1%	0%	2%	0%	1%	1%	0%	1%	0%	1%	0%	0%	1%	1%

2nd Street Traffic Study
 City of Harrisburg, Dauphin County
 Baker Project #143249
 Count Summary
 JPC
 3/12/2015

Other Information

TMC Date: 9/23/2014
 Projection Date 9/23/2014
 N = 0.00
 TPG: 3
 Growth: 0.75%
 Seasonal Factor: 0.873

North/Southbound Front Street
 East/Westbound Forster Street

Evening Peak Hour Total Vehicles

Time Begin	Northbound					Southbound					Eastbound					Westbound					Int. Total
	L	T	R	RTOR	Total	L	T	R	RTOR	Total	L	T	R	RTOR	Total	L	T	R	RTOR	Total	
3:00 PM				0	0	9	163	114	0	286		190	67	0	257	1	159		0	160	703
3:15 PM				0	0	10	131	112	0	253		185	45	0	230	0	185		0	185	668
3:30 PM				0	0	11	177	140	0	328		224	53	0	277	0	289		0	289	894
3:45 PM				0	0	10	182	138	0	330		191	58	0	249	0	225		0	225	804
4:00 PM				0	0	17	188	130	0	335		270	65	0	335	1	368		0	369	1,039
4:15 PM				0	0	10	176	147	0	333		205	52	0	257	0	373		0	373	963
4:30 PM				0	0	11	175	159	0	345		248	65	0	313	0	416		0	416	1,074
4:45 PM				0	0	14	182	170	0	366		276	54	0	330	0	387		0	387	1,083
5:00 PM				0	0	17	213	163	0	393		299	60	0	359	0	384		0	384	1,136
5:15 PM				0	0	30	174	149	0	353		302	66	0	368	0	355		0	355	1,076
5:30 PM				0	0	20	158	114	0	292		221	65	0	286	0	293		0	293	871
5:45 PM				0	0	14	174	120	0	308		194	47	0	241	0	224		0	224	773
Total	0	0	0	0	0	173	2,093	1,656	0	3,922	0	2,805	697	0	3,502	2	3,658	0	0	3,660	11,084
System Peak Hour:																				4,369	4:30 PM - 5:30 PM

Peak Hour	Northbound					Southbound					Eastbound					Westbound					Int. Total
	L	T	R	RTOR	Total	L	T	R	RTOR	Total	L	T	R	RTOR	Total	L	T	R	RTOR	Total	
RAW	0	0	0	0	0	72	744	641	0	1,457	0	1,125	245	0	1,370	0	1,542	0	0	1,542	4,369
PHF	0.00	0.00	0.00	0.00	0.00	0.60	0.87	0.94	0.00	0.93	0.00	0.93	0.93	0.00	0.93	0.00	0.93	0.00	0.00	0.93	0.96
ADJ	0	0	0	0	0	72	744	641	0	1,457	0	1,125	245		1,370	0	1,542	0		1,542	4,369
HV	0	0	0	0	0	3	4	4	0	11	0	7	1	0	8	0	9	0	0	9	28
%HV%	0%	0%	0%	0%	0%	4%	1%	1%	0%	1%	0%	1%	0%	0%	1%	0%	1%	0%	0%	1%	1%



2nd Street Traffic Study
 City of Harrisburg, Dauphin County
 Baker Project #143249
 Count Summary
 JPC
 3/12/2015

Other Information

TMC Date: 9/23/2014
 Projection Date 9/23/2014
 N = 0.00
 TPG: 3
 Growth: 0.75%
 Seasonal Factor: 0.873

North/Southbound Front Street
 East/Westbound Forster Street

**Evening Peak Hour
 Heavy Vehicles**

Time Begin	Northbound					Southbound					Eastbound					Westbound					Total
	L	T	R	RTOR	Total	L	T	R	RTOR	Total	L	T	R	RTOR	Total	L	T	R	RTOR	Total	
3:00 PM				0	0	0	6	0	0	6		2	2	0	4	0	2		0	2	12
3:15 PM				0	0	0	1	0	0	1		11	1	0	12	0	1		0	1	14
3:30 PM				0	0	0	2	1	0	3		5	1	0	6	0	3		0	3	12
3:45 PM				0	0	0	5	1	0	6		6	0	0	6	0	2		0	2	14
4:00 PM				0	0	0	0	0	0	0		1	1	0	2	0	2		0	2	4
4:15 PM				0	0	0	1	1	0	2		3	1	0	4	0	1		0	1	7
4:30 PM				0	0	2	0	1	0	3		2	0	0	2	0	1		0	1	6
4:45 PM				0	0	0	1	3	0	4		1	0	0	1	0	5		0	5	10
5:00 PM				0	0	1	0	0	0	1		0	0	0	0	0	1		0	1	2
5:15 PM				0	0	0	3	0	0	3		4	1	0	5	0	2		0	2	10
5:30 PM				0	0	0	2	0	0	2		2	0	0	2	0	0		0	0	4
5:45 PM				0	0	2	1	0	0	3		1	1	0	2	0	0		0	0	5
Total	0	0	0	0	0	5	22	7	0	34	0	38	8	0	46	0	20	0	0	20	100
System Peak Hour:																				28	4:30 PM - 5:30 PM

Peak Hour	Northbound					Southbound					Eastbound					Westbound					Int. Total
	L	T	R	RTOR	Total	L	T	R	RTOR	Total	L	T	R	RTOR	Total	L	T	R	RTOR	Total	
HV	0	0	0	0	0	3	4	4	0	11	0	7	1	0	8	0	9	0	0	9	28
HV%	0%	0%	0%	0%	0%	4%	1%	1%	0%	1%	0%	1%	0%	0%	1%	0%	1%	0%	0%	1%	1%

North/Southbound Front Street
 East/Westbound Forster Street

Other Information	
TMC Date:	9/23/2014
Projection Date:	9/23/2014
N =	0.00
TPG:	3
Growth:	0.75%
Seasonal Factor:	0.873

**Morning Peak Hour
 Pedestrian Counts**

Time Begin	Northbound					Southbound					Eastbound					Westbound					Total
	L	T	R	RTOR	Total	L	T	R	RTOR	Total	L	T	R	RTOR	Total	L	T	R	RTOR	Total	
6:00 AM					0					0					0					1	1
6:15 AM					0					0					5					1	8
6:30 AM					2					0					0					0	1
6:45 AM					0					0					0					0	10
7:00 AM					6					0					2					1	18
7:15 AM					0					0					3					0	13
7:30 AM					2					2					2					2	20
7:45 AM					0					0					0					0	20
8:00 AM					2					1					3					1	18
8:15 AM					0					0					4					0	19
8:30 AM					0					0					3					1	15
8:45 AM					2					1					4					2	24
Total	0	0	0	0	14	0	0	0	0	4	0	0	0	0	27	0	0	0	0	9	54
System Peak Hour:																				19	

Peak Hour	Northbound					Southbound					Eastbound					Westbound					Int. Total
	L	T	R	RTOR	Total	L	T	R	RTOR	Total	L	T	R	RTOR	Total	L	T	R	RTOR	Total	
Ped	0	0	0	0	4	0	0	0	0	3	0	0	0	0	9	0	0	0	0	3	19

**Mid Day Peak Hour
 Pedestrian Counts**

Time Begin	Northbound					Southbound					Eastbound					Westbound					Total
	L	T	R	RTOR	Total	L	T	R	RTOR	Total	L	T	R	RTOR	Total	L	T	R	RTOR	Total	
11:00 AM					1					0					6					0	7
11:15 AM					1					0					6					1	8
11:30 AM					3					2					6					1	12
11:45 AM					3					1					4					0	8
12:00 PM					4					4					6					0	14
12:15 PM					4					1					14					4	57
12:30 PM					4					4					11					0	64
12:45 PM					7					5					13					2	83
Total	0	0	0	0	27	0	0	0	0	17	0	0	0	0	66	0	0	0	0	8	118
System Peak Hour:																				83	

Peak Hour	Northbound					Southbound					Eastbound					Westbound					Int. Total
	L	T	R	RTOR	Total	L	T	R	RTOR	Total	L	T	R	RTOR	Total	L	T	R	RTOR	Total	
Ped	0	0	0	0	19	0	0	0	0	14	0	0	0	0	44	0	0	0	0	6	83

**Evening Peak Hour
 Pedestrian Counts**

Time Begin	Northbound					Southbound					Eastbound					Westbound					Total
	L	T	R	RTOR	Total	L	T	R	RTOR	Total	L	T	R	RTOR	Total	L	T	R	RTOR	Total	
3:00 PM					0					0					3					0	3
3:15 PM					0					0					0					0	0
3:30 PM					0					0					0					0	1
3:45 PM					0					0					0					1	5
4:00 PM					0					4					6					3	15
4:15 PM					0					0					8					1	24
4:30 PM					0					1					9					0	33
4:45 PM					0					0					4					2	38
5:00 PM					2					0					6					2	35
5:15 PM					0					5					11					2	44
5:30 PM					2					6					17					1	60
5:45 PM					0					2					14					6	76
Total	0	0	0	0	5	0	0	0	0	18	0	0	0	0	78	0	0	0	0	18	119
System Peak Hour:																				44	

Peak Hour	Northbound					Southbound					Eastbound					Westbound					Int. Total
	L	T	R	RTOR	Total	L	T	R	RTOR	Total	L	T	R	RTOR	Total	L	T	R	RTOR	Total	
Ped	0	0	0	0	2	0	0	0	0	6	0	0	0	0	30	0	0	0	0	6	44



2nd Street Traffic Study
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Other Information

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 N = 0.00
 TPG: 3
 Growth: 0.75%
 Seasonal Factor: 0.873

North/Southbound 7th Street
 East/Westbound Maclay Street

Morning Peak Hour
Total Vehicles

Time Begin	Northbound					Southbound					Eastbound					Westbound					Int. Total	
	L	T	R	RTOR	Total	L	T	R	RTOR	Total	L	T	R	RTOR	Total	L	T	R	RTOR	Total		
6:00 AM	1	3	7	0	11	15	4	1	0	20	0	25	0	0	25	14	21	9	0	44	100	
6:15 AM	4	3	14	0	21	23	1	3	0	27	1	28	0	0	29	26	30	15	0	71	148	
6:30 AM	5	9	17	0	31	23	11	1	0	35	1	29	1	0	31	46	47	30	0	123	220	
6:45 AM	2	18	30	0	50	34	26	3	0	63	2	45	1	0	48	64	69	38	0	171	332	
7:00 AM	2	8	35	0	45	24	21	2	0	47	1	59	0	0	60	66	81	44	0	191	343	
7:15 AM	4	21	46	0	71	36	32	2	0	70	1	79	6	0	86	97	94	59	0	250	477	
7:30 AM	3	28	66	0	97	49	54	3	0	106	3	80	4	0	87	84	103	69	0	256	546	
7:45 AM	4	34	65	0	103	59	54	4	0	117	3	87	9	0	99	84	102	80	0	266	585	
8:00 AM	8	60	45	0	113	55	38	4	0	97	4	74	6	0	84	77	107	97	0	281	575	
8:15 AM	9	66	52	0	127	58	36	3	0	97	1	82	6	0	89	85	96	112	0	293	606	
8:30 AM	5	64	68	0	137	53	20	4	0	77	6	83	4	0	93	49	88	103	0	240	547	
8:45 AM	11	55	53	0	119	48	26	3	0	77	1	71	3	0	75	46	114	85	0	245	516	
Total	58	369	498	0	925	477	323	33	0	833	24	742	40	0	806	738	952	741	0	2,431	4,995	
System Peak Hour:																					2,312	7:30 AM - 8:30 AM

Peak Hour	Northbound					Southbound					Eastbound					Westbound					Int. Total
	L	T	R	RTOR	Total	L	T	R	RTOR	Total	L	T	R	RTOR	Total	L	T	R	RTOR	Total	
RAW	24	188	228	0	440	221	182	14	0	417	11	323	25	0	359	330	408	358	0	1,096	2,312
PHF	0.67	0.71	0.86	0	0.87	0.94	0.84	0.88	0	0.89	0.69	0.93	0.69	0	0.91	0.97	0.95	0.80	0	0.94	0.95
ADJ	24	188	228	0	440	221	182	14	0	417	11	323	25	0	359	330	408	358	0	1,096	2,312
HV	5	7	13	0	25	16	2	2	0	20	1	12	0	0	13	8	17	21	0	46	104
%HV%	21%	4%	6%	0%	6%	7%	1%	14%	0%	5%	9%	4%	0%	0%	4%	2%	4%	6%	0%	4%	5%



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North/Southbound 7th Street
 East/Westbound Maclay Street

**Morning Peak Hour
 Heavy Vehicles**

Time Begin	Northbound					Southbound					Eastbound					Westbound					Total	
	L	T	R	RTOR	Total	L	T	R	RTOR	Total	L	T	R	RTOR	Total	L	T	R	RTOR	Total		
6:00 AM	0	1	1	0	2	1	0	0	0	1	0	1	0	0	1	0	1	0	0	1	5	
6:15 AM	1	2	0	0	3	1	1	1	0	3	0	1	0	0	1	2	0	2	0	4	11	
6:30 AM	0	0	2	0	2	3	0	0	0	3	0	0	0	0	0	2	4	1	0	7	12	
6:45 AM	0	0	0	0	0	3	0	0	0	3	0	3	0	0	3	4	4	9	0	17	23	
7:00 AM	0	0	3	0	3	1	0	0	0	1	0	6	0	0	6	4	4	6	0	14	24	
7:15 AM	0	2	0	0	2	2	0	1	0	3	0	1	0	0	1	4	3	5	0	12	18	
7:30 AM	0	1	3	0	4	4	1	0	0	5	0	2	0	0	2	1	5	2	0	8	19	
7:45 AM	0	1	1	0	2	3	0	0	0	3	0	4	0	0	4	2	4	3	0	9	18	
8:00 AM	1	3	5	0	9	4	1	1	0	6	1	2	0	0	3	2	2	10	0	14	32	
8:15 AM	4	2	4	0	10	5	0	1	0	6	0	4	0	0	4	3	6	6	0	15	35	
8:30 AM	0	1	6	0	7	5	1	1	0	7	1	1	0	0	2	2	2	8	0	12	28	
8:45 AM	0	1	2	0	3	4	0	1	0	5	0	3	1	0	4	1	4	4	0	9	21	
Total	6	14	27	0	47	36	4	6	0	46	2	28	1	0	31	27	39	56	0	122	246	
System Peak Hour:																					104	7:30 AM - 8:30 AM

Peak Hour	Northbound					Southbound					Eastbound					Westbound					Int. Total
	L	T	R	RTOR	Total	L	T	R	RTOR	Total	L	T	R	RTOR	Total	L	T	R	RTOR	Total	
HV	5	7	13	0	25	16	2	2	0	20	1	12	0	0	13	8	17	21	0	46	104
HV%	21%	4%	6%	0%	6%	7%	1%	14%	0%	5%	9%	4%	0%	0%	4%	2%	4%	6%	0%	4%	5%

2nd Street Traffic Study
 City of Harrisburg, Dauphin County
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 JPC
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 N = 0.00
 TPG: 3
 Growth: 0.75%
 Seasonal Factor: 0.873

North/Southbound 7th Street
 East/Westbound Maclay Street

Mid Day Peak Hour Total Vehicles

Time Begin	Northbound					Southbound					Eastbound					Westbound					Int. Total	
	L	T	R	RTOR	Total	L	T	R	RTOR	Total	L	T	R	RTOR	Total	L	T	R	RTOR	Total		
11:00 AM	5	22	25	0	52	63	18	1	0	82	1	77	1	0	79	20	76	59	0	155	368	
11:15 AM	7	31	33	0	71	58	19	2	0	79	2	67	5	0	74	11	61	62	0	134	358	
11:30 AM	10	32	37	0	79	54	25	3	0	82	1	59	5	0	65	25	79	65	0	169	395	
11:45 AM	8	31	39	0	78	41	15	8	0	64	3	76	2	0	81	23	84	52	0	159	382	
12:00 PM	9	42	44	0	95	80	28	9	0	117	2	89	7	0	98	22	94	68	0	184	494	
12:15 PM	5	45	42	0	92	56	22	12	0	90	2	87	8	0	97	22	89	63	0	174	453	
12:30 PM	3	44	35	0	82	61	20	8	0	89	3	86	5	0	94	14	86	70	0	170	435	
12:45 PM	9	45	31	0	85	62	33	5	0	100	3	76	3	0	82	27	89	61	0	177	444	
Total	56	292	286	0	634	475	180	48	0	703	17	617	36	0	670	164	658	500	0	1,322	3,329	
System Peak Hour:																					1,826	12:00 PM - 1:00 PM

Peak Hour	Northbound					Southbound					Eastbound					Westbound					Int. Total
	L	T	R	RTOR	Total	L	T	R	RTOR	Total	L	T	R	RTOR	Total	L	T	R	RTOR	Total	
RAW	26	176	152	0	354	259	103	34	0	396	10	338	23	0	371	85	358	262	0	705	1,826
PHF	0.72	0.98	0.86	0	0.93	0.81	0.78	0.71	0	0.85	0.83	0.95	0.72	0	0.95	0.79	0.95	0.94	0	0.96	0.92
ADJ	26	176	152	0	354	259	103	34	0	396	10	338	23		371	85	358	262		705	1,826
HV	0	3	7	0	10	13	3	1	0	17	0	9	1	0	10	5	7	14	0	26	63
%HV%	0%	2%	5%	0%	3%	5%	3%	3%	0%	4%	0%	3%	4%	0%	3%	6%	2%	5%	0%	4%	3%

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 TPG: 3
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 Seasonal Factor: 0.873

North/Southbound 7th Street
 East/Westbound Maclay Street

Mid Day Peak Hour Heavy Vehicles

Time Begin	Northbound					Southbound					Eastbound					Westbound					Total	
	L	T	R	RTOR	Total	L	T	R	RTOR	Total	L	T	R	RTOR	Total	L	T	R	RTOR	Total		
11:00 AM	1	0	2	0	3	2	1	0	0	3	0	1	0	0	1	0	2	3	0	5	12	
11:15 AM	0	1	1	0	2	5	1	0	0	6	0	3	0	0	3	0	2	8	0	10	21	
11:30 AM	1	3	0	0	4	5	0	0	0	5	0	1	0	0	1	0	3	4	0	7	17	
11:45 AM	0	2	1	0	3	1	1	0	0	2	0	4	0	0	4	1	2	1	0	4	13	
12:00 PM	0	0	2	0	2	1	1	1	0	3	0	2	1	0	3	3	1	3	0	7	15	
12:15 PM	0	1	1	0	2	5	0	0	0	5	0	0	0	0	0	0	3	3	0	6	13	
12:30 PM	0	0	1	0	1	2	0	0	0	2	0	5	0	0	5	2	0	3	0	5	13	
12:45 PM	0	2	3	0	5	5	2	0	0	7	0	2	0	0	2	0	3	5	0	8	22	
Total	2	9	11	0	22	26	6	1	0	33	0	18	1	0	19	6	16	30	0	52	126	
System Peak Hour:																					63	12:00 PM - 1:00 PM

Peak Hour	Northbound					Southbound					Eastbound					Westbound					Int. Total
	L	T	R	RTOR	Total	L	T	R	RTOR	Total	L	T	R	RTOR	Total	L	T	R	RTOR	Total	
HV	0	3	7	0	10	13	3	1	0	17	0	9	1	0	10	5	7	14	0	26	63
HV%	0%	2%	5%	0%	3%	5%	3%	3%	0%	4%	0%	3%	4%	0%	3%	6%	2%	5%	0%	4%	3%

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North/Southbound 7th Street
 East/Westbound Maclay Street

Evening Peak Hour Total Vehicles

Time Begin	Northbound					Southbound					Eastbound					Westbound					Int. Total	
	L	T	R	RTOR	Total	L	T	R	RTOR	Total	L	T	R	RTOR	Total	L	T	R	RTOR	Total		
3:00 PM	5	53	79	0	137	51	16	6	0	73	1	102	1	0	104	14	108	75	0	197	511	
3:15 PM	11	49	44	0	104	63	19	7	0	89	2	83	3	0	88	24	92	70	0	186	467	
3:30 PM	8	56	121	0	185	81	40	11	0	132	5	110	4	0	119	19	117	76	0	212	648	
3:45 PM	11	58	124	0	193	72	33	9	0	114	5	105	5	0	115	13	108	78	0	199	621	
4:00 PM	13	82	141	0	236	88	26	9	0	123	4	107	2	0	113	30	132	70	0	232	704	
4:15 PM	13	72	148	0	233	63	25	11	0	99	4	115	4	0	123	28	118	89	0	235	690	
4:30 PM	13	92	172	0	277	73	22	12	0	107	2	111	3	0	116	32	124	61	0	217	717	
4:45 PM	13	96	155	0	264	76	31	11	0	118	1	130	2	0	133	17	86	62	0	165	680	
5:00 PM	17	84	129	0	230	83	33	10	0	126	0	122	3	0	125	21	123	67	0	211	692	
5:15 PM	23	68	136	0	227	78	54	6	0	138	2	102	5	0	109	18	107	73	0	198	672	
5:30 PM	21	45	75	0	141	103	55	9	0	167	4	112	6	0	122	15	114	67	0	196	626	
5:45 PM	20	49	73	0	142	53	23	3	0	79	3	110	2	0	115	9	86	79	0	174	510	
Total	168	804	1,397	0	2,369	884	377	104	0	1,365	33	1,309	40	0	1,382	240	1,315	867	0	2,422	7,538	
System Peak Hour:																					2,761	4:30 PM - 5:30 PM

Peak Hour	Northbound					Southbound					Eastbound					Westbound					Int. Total
	L	T	R	RTOR	Total	L	T	R	RTOR	Total	L	T	R	RTOR	Total	L	T	R	RTOR	Total	
RAW	66	340	592	0	998	310	140	39	0	489	5	465	13	0	483	88	440	263	0	791	2,761
PHF	0.72	0.89	0.86	0	0.90	0.93	0.65	0.81	0	0.89	0.63	0.89	0.65	0	0.91	0.69	0.89	0.90	0	0.91	0.96
ADJ	66	340	592	0	998	310	140	39	0	489	5	465	13	0	483	88	440	263	0	791	2,761
HV	0	4	6	0	10	2	0	0	0	2	0	4	0	0	4	3	5	4	0	12	28
%HV%	0%	1%	1%	0%	1%	1%	0%	0%	0%	0%	0%	1%	0%	0%	1%	3%	1%	2%	0%	2%	1%

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 Growth: 0.75%
 Seasonal Factor: 0.873

North/Southbound 7th Street
 East/Westbound Maclay Street

Evening Peak Hour Heavy Vehicles

Time Begin	Northbound					Southbound					Eastbound					Westbound					Total		
	L	T	R	RTOR	Total	L	T	R	RTOR	Total	L	T	R	RTOR	Total	L	T	R	RTOR	Total			
3:00 PM	0	2	2	0	4	4	1	0	0	5	0	4	0	0	4	0	4	5	0	9	22		
3:15 PM	0	2	1	0	3	1	1	0	0	2	0	4	0	0	4	1	1	2	0	4	13		
3:30 PM	0	1	1	0	2	5	5	0	0	10	0	5	0	0	5	1	2	4	0	7	24		
3:45 PM	0	2	2	0	4	3	3	0	0	6	0	4	1	0	5	1	2	3	0	6	21		
4:00 PM	0	2	2	0	4	5	0	1	0	6	0	2	0	0	2	1	2	3	0	6	18		
4:15 PM	0	4	1	0	5	1	1	0	0	2	0	0	0	0	0	1	1	1	0	3	10		
4:30 PM	0	2	2	0	4	0	0	0	0	0	0	3	0	0	3	2	1	0	0	3	10		
4:45 PM	0	1	0	0	1	2	0	0	0	2	0	1	0	0	1	1	0	2	0	3	7		
5:00 PM	0	1	3	0	4	0	0	0	0	0	0	0	0	0	0	0	3	0	0	3	7		
5:15 PM	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	1	2	0	3	4		
5:30 PM	0	0	1	0	1	0	0	0	0	0	0	1	0	0	1	1	1	2	0	4	6		
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	1	0	1	2		
Total	0	17	16	0	33	21	11	1	0	33	0	25	1	0	26	9	18	25	0	52	144		
																					System Peak Hour:	28	4:30 PM - 5:30 PM

Peak Hour	Northbound					Southbound					Eastbound					Westbound					Int. Total
	L	T	R	RTOR	Total	L	T	R	RTOR	Total	L	T	R	RTOR	Total	L	T	R	RTOR	Total	
HV	0	4	6	0	10	2	0	0	0	2	0	4	0	0	4	3	5	4	0	12	28
HV%	0%	1%	1%	0%	1%	1%	0%	0%	0%	0%	0%	1%	0%	0%	1%	3%	1%	2%	0%	2%	1%

North/Southbound 7th Street
 East/Westbound Maclay Street

Other Information	
TMC Date:	9/23/2014
Projection Date:	9/23/2014
N =	0.00
TPG:	3
Growth:	0.75%
Seasonal Factor:	0.873

**Morning Peak Hour
 Pedestrian Counts**

Time Begin	Northbound					Southbound					Eastbound					Westbound					Total
	L	T	R	RTOR	Total	L	T	R	RTOR	Total	L	T	R	RTOR	Total	L	T	R	RTOR	Total	
6:00 AM					0					0					0					0	1
6:15 AM					0					0					0					0	0
6:30 AM					0					1					0					0	1
6:45 AM					1					1					0					0	1
7:00 AM					0					1					1					0	2
7:15 AM					0					0					0					0	4
7:30 AM					0					1					0					0	4
7:45 AM					0					0					1					0	4
8:00 AM					2					1					1					2	8
8:15 AM					1					1					1					0	11
8:30 AM					0					0					1					0	11
8:45 AM					0					1					0					0	11
Total	0	0	0	0	5	0	0	0	0	6	0	0	0	0	5	0	0	0	0	2	18
System Peak Hour:																					11

Peak Hour	Northbound					Southbound					Eastbound					Westbound					Int. Total
	L	T	R	RTOR	Total	L	T	R	RTOR	Total	L	T	R	RTOR	Total	L	T	R	RTOR	Total	
Ped	0	0	0	0	3	0	0	0	0	3	0	0	0	0	3	0	0	0	0	2	11

**Mid Day Peak Hour
 Pedestrian Counts**

Time Begin	Northbound					Southbound					Eastbound					Westbound					Total
	L	T	R	RTOR	Total	L	T	R	RTOR	Total	L	T	R	RTOR	Total	L	T	R	RTOR	Total	
11:00 AM					0					1					0					1	2
11:15 AM					0					2					0					1	3
11:30 AM					1					0					1					1	3
11:45 AM					1					0					1					1	3
12:00 PM					3					0					0					0	3
12:15 PM					0					0					0					0	9
12:30 PM					2					3					0					1	6
12:45 PM					5					2					0					1	17
Total	0	0	0	0	12	0	0	0	0	8	0	0	0	0	2	0	0	0	0	6	28
System Peak Hour:																					17

Peak Hour	Northbound					Southbound					Eastbound					Westbound					Int. Total
	L	T	R	RTOR	Total	L	T	R	RTOR	Total	L	T	R	RTOR	Total	L	T	R	RTOR	Total	
Ped	0	0	0	0	10	0	0	0	0	5	0	0	0	0	0	0	0	0	0	2	17

**Evening Peak Hour
 Pedestrian Counts**

Time Begin	Northbound					Southbound					Eastbound					Westbound					Total
	L	T	R	RTOR	Total	L	T	R	RTOR	Total	L	T	R	RTOR	Total	L	T	R	RTOR	Total	
3:00 PM					0					0					0					0	0
3:15 PM					0					2					0					0	2
3:30 PM					0					1					0					1	2
3:45 PM					1					1					1					0	3
4:00 PM					0					3					1					0	4
4:15 PM					0					0					3					0	3
4:30 PM					2					2					0					0	4
4:45 PM					3					0					1					0	4
5:00 PM					0					2					0					0	2
5:15 PM					0					0					1					0	11
5:30 PM					0					0					1					0	8
5:45 PM					0					3					2					0	9
Total	0	0	0	0	6	0	0	0	0	14	0	0	0	0	10	0	0	0	0	1	31
System Peak Hour:																					11

Peak Hour	Northbound					Southbound					Eastbound					Westbound					Int. Total
	L	T	R	RTOR	Total	L	T	R	RTOR	Total	L	T	R	RTOR	Total	L	T	R	RTOR	Total	
Ped	0	0	0	0	5	0	0	0	0	4	0	0	0	0	2	0	0	0	0	0	11

2nd Street Traffic Study
 City of Harrisburg, Dauphin County
 Baker Project #143249
 Count Summary
 JPC
 3/12/2015

Other Information

TMC Date: 9/23/2014
 Projection Date 9/23/2014
 N = 0.00
 TPG: 5
 Growth: 0.75%
 Seasonal Factor: 0.95

North/Southbound 7th Street
 Westbound Herr Street

Morning Peak Hour Total Vehicles

Time Begin	Northbound					Southbound					Eastbound					Westbound					Int. Total
	L	T	R	RTOR	Total	L	T	R	RTOR	Total	L	T	R	RTOR	Total	L	T	R	RTOR	Total	
6:00 AM	0	10	27	0	37	8	6	0	0	14	0	0	0	0	0	25	3	16	0	44	95
6:15 AM	1	21	29	0	51	9	20	1	0	30	0	0	0	0	0	40	0	19	0	59	140
6:30 AM	2	39	49	0	90	14	32	0	0	46	0	0	0	0	0	68	0	32	0	100	236
6:45 AM	2	66	61	0	129	19	54	1	0	74	0	0	0	0	0	63	2	53	0	118	321
7:00 AM	2	85	65	0	152	14	46	3	0	63	0	0	0	0	0	66	2	60	0	128	343
7:15 AM	8	145	81	0	234	28	75	3	0	106	0	1	0	0	1	79	4	100	0	183	524
7:30 AM	11	136	97	0	244	35	76	3	0	114	0	0	0	0	0	93	8	88	0	189	547
7:45 AM	11	197	83	0	291	28	84	3	0	115	0	0	0	0	0	83	6	97	0	186	592
8:00 AM	2	135	64	0	201	32	78	4	0	114	0	0	1	0	1	103	2	72	0	177	493
8:15 AM	5	126	68	0	199	44	104	6	0	154	0	0	0	0	0	97	4	86	0	187	540
8:30 AM	6	102	90	0	198	42	70	6	0	118	0	0	0	0	0	90	3	79	0	172	488
8:45 AM	2	101	69	0	172	27	67	4	0	98	0	0	0	0	0	74	5	89	0	168	438
Total	52	1,163	783	0	1,998	300	712	34	0	1,046	0	1	1	0	2	881	39	791	0	1,711	4,757
System Peak Hour:																				2,172	7:30 AM - 8:30 AM

Peak Hour	Northbound					Southbound					Eastbound					Westbound					Int. Total
	L	T	R	RTOR	Total	L	T	R	RTOR	Total	L	T	R	RTOR	Total	L	T	R	RTOR	Total	
RAW	29	594	312	0	935	139	342	16	0	497	0	0	1	0	1	376	20	343	0	739	2,172
PHF	0.66	0.75	0.80	0	0.80	0.79	0.82	0.67	0	0.81	0.00	0.00	0.25	0	0.25	0.91	0.63	0.88	0	0.98	0.92
ADJ	29	594	312	0	935	139	342	16	0	497	0	0	1		1	376	20	343		739	2,172
HV	0	16	12	0	28	18	16	0	0	34	0	0	0	0	0	10	0	10	0	20	82
%HV%	0%	3%	4%	0%	3%	13%	5%	0%	0%	7%	0%	0%	0%	0%	0%	3%	0%	3%	0%	3%	4%



2nd Street Traffic Study
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 JPC
 3/12/2015

Other Information	
TMC Date:	9/23/2014
Projection Date	9/23/2014
N =	0.00
TPG:	5
Growth:	0.75%
Seasonal Factor:	0.95

North/Southbound 7th Street
 Westbound Herr Street

**Morning Peak Hour
 Heavy Vehicles**

Time Begin	Northbound					Southbound					Eastbound					Westbound					Total		
	L	T	R	RTOR	Total	L	T	R	RTOR	Total	L	T	R	RTOR	Total	L	T	R	RTOR	Total			
6:00 AM	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	2	0	3	4		
6:15 AM	0	2	0	0	2	2	2	0	0	4	0	0	0	0	0	2	0	2	0	4	10		
6:30 AM	0	1	1	0	2	0	5	0	0	5	0	0	0	0	0	2	0	2	0	4	11		
6:45 AM	0	0	2	0	2	1	3	0	0	4	0	0	0	0	0	3	0	1	0	4	10		
7:00 AM	0	3	3	0	6	3	6	0	0	9	0	0	0	0	0	2	0	1	0	3	18		
7:15 AM	0	0	0	0	0	5	7	0	0	12	0	0	0	0	0	0	0	3	0	3	15		
7:30 AM	0	2	4	0	6	4	3	0	0	7	0	0	0	0	0	2	0	4	0	6	19		
7:45 AM	0	2	2	0	4	5	6	0	0	11	0	0	0	0	0	0	0	2	0	2	17		
8:00 AM	0	6	2	0	8	3	3	0	0	6	0	0	0	0	0	2	0	1	0	3	17		
8:15 AM	0	6	4	0	10	6	4	0	0	10	0	0	0	0	0	6	0	3	0	9	29		
8:30 AM	0	1	5	0	6	3	3	0	0	6	0	0	0	0	0	2	0	2	0	4	16		
8:45 AM	0	1	1	0	2	3	2	0	0	5	0	0	0	0	0	2	0	2	0	4	11		
Total	0	25	24	0	49	35	44	0	0	79	0	0	0	0	0	24	0	25	0	49	177		
																					System Peak Hour:	82	7:30 AM - 8:30 AM

Peak Hour	Northbound					Southbound					Eastbound					Westbound					Int. Total
	L	T	R	RTOR	Total	L	T	R	RTOR	Total	L	T	R	RTOR	Total	L	T	R	RTOR	Total	
HV	0	16	12	0	28	18	16	0	0	34	0	0	0	0	0	10	0	10	0	20	82
HV%	0%	3%	4%	0%	3%	13%	5%	0%	0%	7%	0%	0%	0%	0%	0%	3%	0%	3%	0%	3%	4%

2nd Street Traffic Study
 City of Harrisburg, Dauphin County
 Baker Project #143249
 Count Summary
 JPC
 3/12/2015

Other Information

TMC Date: 9/23/2014
 Projection Date 9/23/2014
 N = 0.00
 TPG: 5
 Growth: 0.75%
 Seasonal Factor: 0.95

North/Southbound 7th Street
 Westbound Herr Street

Mid Day Peak Hour Total Vehicles

Time Begin	Northbound					Southbound					Eastbound					Westbound					Int. Total
	L	T	R	RTOR	Total	L	T	R	RTOR	Total	L	T	R	RTOR	Total	L	T	R	RTOR	Total	
11:00 AM	2	35	46	0	83	31	33	2	0	66	0	0	0	0	0	50	1	35	0	86	235
11:15 AM	1	50	68	0	119	26	40	3	0	69	0	0	0	0	0	60	0	48	0	108	296
11:30 AM	2	52	59	0	113	29	77	3	0	109	1	0	0	0	1	55	1	78	0	134	357
11:45 AM	6	56	64	0	126	48	39	2	0	89	0	0	0	0	0	48	1	84	0	133	348
12:00 PM	1	70	73	0	144	54	67	4	0	125	0	0	0	0	0	54	2	66	0	122	391
12:15 PM	1	58	63	0	122	36	52	5	0	93	0	1	1	0	2	48	2	71	0	121	338
12:30 PM	3	59	73	0	135	45	56	3	0	104	0	1	0	0	1	66	3	63	0	132	372
12:45 PM	0	58	53	0	111	43	50	7	0	100	0	0	0	0	0	76	1	61	0	138	349
Total	16	438	499	0	953	312	414	29	0	755	1	2	1	0	4	457	11	506	0	974	2,686
System Peak Hour:																				1,450	12:00 PM - 1:00 PM

Peak Hour	Northbound					Southbound					Eastbound					Westbound					Int. Total
	L	T	R	RTOR	Total	L	T	R	RTOR	Total	L	T	R	RTOR	Total	L	T	R	RTOR	Total	
RAW	5	245	262	0	512	178	225	19	0	422	0	2	1	0	3	244	8	261	0	513	1,450
PHF	0.42	0.88	0.90	X	0.89	0.82	0.84	0.68	X	0.84	0.00	0.50	0.25	X	0.38	0.80	0.67	0.92	X	0.93	0.93
ADJ	5	245	262	0	512	178	225	19	0	422	0	2	1		3	244	8	261		513	1,450
HV	0	4	7	0	11	11	7	0	0	18	0	0	0	0	0	4	0	10	0	14	43
%HV%	0%	2%	3%	0%	2%	6%	3%	0%	0%	4%	0%	0%	0%	0%	0%	2%	0%	4%	0%	3%	3%

2nd Street Traffic Study
 City of Harrisburg, Dauphin County
 Baker Project #143249
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 JPC
 3/12/2015

Other Information

TMC Date: 9/23/2014
 Projection Date 9/23/2014
 N = 0.00
 TPG: 5
 Growth: 0.75%
 Seasonal Factor: 0.95

North/Southbound 7th Street
 Westbound Herr Street

Mid Day Peak Hour Heavy Vehicles

Time Begin	Northbound					Southbound					Eastbound					Westbound					Total
	L	T	R	RTOR	Total	L	T	R	RTOR	Total	L	T	R	RTOR	Total	L	T	R	RTOR	Total	
11:00 AM	0	1	1	0	2	0	1	0	0	1	0	0	0	0	0	4	0	2	0	6	9
11:15 AM	0	1	1	0	2	0	3	0	0	3	0	0	0	0	0	1	0	1	0	2	7
11:30 AM	0	3	4	0	7	0	2	0	0	2	0	0	0	0	0	2	0	2	0	4	13
11:45 AM	0	0	1	0	1	1	0	0	0	1	0	0	0	0	0	3	0	5	0	8	10
12:00 PM	0	1	4	0	5	2	3	0	0	5	0	0	0	0	0	1	0	2	0	3	13
12:15 PM	0	0	0	0	0	2	3	0	0	5	0	0	0	0	0	0	0	2	0	2	7
12:30 PM	0	1	2	0	3	1	1	0	0	2	0	0	0	0	0	1	0	2	0	3	8
12:45 PM	0	2	1	0	3	6	0	0	0	6	0	0	0	0	0	2	0	4	0	6	15
Total	0	9	14	0	23	12	13	0	0	25	0	0	0	0	0	14	0	20	0	34	82
System Peak Hour:																				43	12:00 PM - 1:00 PM

Peak Hour	Northbound					Southbound					Eastbound					Westbound					Int. Total
	L	T	R	RTOR	Total	L	T	R	RTOR	Total	L	T	R	RTOR	Total	L	T	R	RTOR	Total	
HV	0	4	7	0	11	11	7	0	0	18	0	0	0	0	0	4	0	10	0	14	43
HV%	0%	2%	3%	0%	2%	6%	3%	0%	0%	4%	0%	0%	0%	0%	0%	2%	0%	4%	0%	3%	3%



2nd Street Traffic Study
 City of Harrisburg, Dauphin County
 Baker Project #143249
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 JPC
 3/12/2015

Other Information

TMC Date: 9/23/2014
 Projection Date 9/23/2014
 N = 0.00
 TPG: 5
 Growth: 0.75%
 Seasonal Factor: 0.95

North/Southbound 7th Street
 Westbound Herr Street

**Evening Peak Hour
 Total Vehicles**

Time Begin	Northbound					Southbound					Eastbound					Westbound					Int. Total	
	L	T	R	RTOR	Total	L	T	R	RTOR	Total	L	T	R	RTOR	Total	L	T	R	RTOR	Total		
3:00 PM	1	75	101	0	177	42	53	0	0	95	0	0	0	0	0	69	2	52	0	123	395	
3:15 PM	1	66	94	0	161	37	62	1	0	100	0	0	0	0	0	63	1	69	0	133	394	
3:30 PM	1	116	114	0	231	66	113	1	0	180	0	0	0	0	0	77	0	69	0	146	557	
3:45 PM	0	122	89	0	211	50	89	2	0	141	0	0	0	0	0	65	0	60	0	125	477	
4:00 PM	1	184	131	0	316	59	191	4	0	254	0	1	1	0	2	85	4	70	0	159	731	
4:15 PM	1	163	89	0	253	48	106	0	0	154	0	0	0	0	0	58	1	66	0	125	532	
4:30 PM	1	171	81	0	253	57	210	0	0	267	0	0	0	0	0	87	1	82	0	170	690	
4:45 PM	0	152	89	0	241	34	155	1	0	190	0	0	0	0	0	70	0	86	0	156	587	
5:00 PM	0	146	89	0	235	71	234	2	0	307	0	0	1	0	1	88	0	77	0	165	708	
5:15 PM	2	107	83	0	192	55	152	1	0	208	0	0	0	0	0	60	1	93	0	154	554	
5:30 PM	0	74	63	0	137	55	94	0	0	149	0	0	1	0	1	60	1	76	0	137	424	
5:45 PM	2	85	57	0	144	47	64	1	0	112	0	0	0	0	0	51	0	77	0	128	384	
Total	10	1,461	1,080	0	2,551	621	1,523	13	0	2,157	0	1	3	0	4	833	11	877	0	1,721	6,433	
System Peak Hour:																					2,539	4:30 PM - 5:30 PM

Peak Hour	Northbound					Southbound					Eastbound					Westbound					Int. Total
	L	T	R	RTOR	Total	L	T	R	RTOR	Total	L	T	R	RTOR	Total	L	T	R	RTOR	Total	
RAW	3	576	342	0	921	217	751	4	0	972	0	0	1	0	1	305	2	338	0	645	2,539
PHF	0.38	0.84	0.96	0	0.91	0.76	0.80	0.50	0	0.79	0.00	0.00	0.25	0	0.25	0.87	0.50	0.91	0	0.95	0.90
ADJ	3	576	342	0	921	217	751	4	0	972	0	0	1		1	305	2	338		645	2,539
HV	0	10	3	0	13	1	16	0	0	17	0	0	0	0	0	4	0	2	0	6	36
%HV%	0%	2%	1%	0%	1%	0%	2%	0%	0%	2%	0%	0%	0%	0%	0%	1%	0%	1%	0%	1%	1%

2nd Street Traffic Study
 City of Harrisburg, Dauphin County
 Baker Project #143249
 Count Summary
 JPC
 3/12/2015

Other Information

TMC Date: 9/23/2014
 Projection Date 9/23/2014
 N = 0.00
 TPG: 5
 Growth: 0.75%
 Seasonal Factor: 0.95

North/Southbound 7th Street
 Westbound Herr Street

Evening Peak Hour Heavy Vehicles

Time Begin	Northbound					Southbound					Eastbound					Westbound					Total	
	L	T	R	RTOR	Total	L	T	R	RTOR	Total	L	T	R	RTOR	Total	L	T	R	RTOR	Total		
3:00 PM	0	3	1	0	4	2	1	0	0	3	0	0	0	0	0	2	0	3	0	5	12	
3:15 PM	0	1	1	0	2	1	4	0	0	5	0	0	0	0	0	4	0	3	0	7	14	
3:30 PM	0	4	3	0	7	4	1	0	0	5	0	0	0	0	0	4	0	1	0	5	17	
3:45 PM	0	2	1	0	3	2	10	0	0	12	0	0	0	0	0	2	0	0	0	2	17	
4:00 PM	0	4	1	0	5	0	7	0	0	7	0	0	0	0	0	4	0	3	0	7	19	
4:15 PM	0	1	2	0	3	4	5	0	0	9	0	0	0	0	0	2	0	1	0	3	15	
4:30 PM	0	2	0	0	2	1	4	0	0	5	0	0	0	0	0	1	0	0	0	1	8	
4:45 PM	0	2	2	0	4	0	8	0	0	8	0	0	0	0	0	1	0	1	0	2	14	
5:00 PM	0	5	0	0	5	0	2	0	0	2	0	0	0	0	0	2	0	1	0	3	10	
5:15 PM	0	1	1	0	2	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	4	
5:30 PM	0	1	1	0	2	0	3	0	0	3	0	0	0	0	0	0	0	1	0	1	6	
5:45 PM	0	1	1	0	2	0	2	0	0	2	0	0	0	0	0	1	0	0	0	1	5	
Total	0	27	14	0	41	14	49	0	0	63	0	0	0	0	0	23	0	14	0	37	141	
System Peak Hour:																					36	4:30 PM - 5:30 PM

Peak Hour	Northbound					Southbound					Eastbound					Westbound					Int. Total
	L	T	R	RTOR	Total	L	T	R	RTOR	Total	L	T	R	RTOR	Total	L	T	R	RTOR	Total	
HV	0	10	3	0	13	1	16	0	0	17	0	0	0	0	0	4	0	2	0	6	36
HV%	0%	2%	1%	0%	1%	0%	2%	0%	0%	2%	0%	0%	0%	0%	0%	1%	0%	1%	0%	1%	1%

North/Southbound 7th Street
 Westbound Herr Street

Other Information	
TMC Date:	9/23/2014
Projection Date:	9/23/2014
N =	0.00
TPG:	5
Growth:	0.75%
Seasonal Factor:	0.95

**Morning Peak Hour
 Pedestrian Counts**

Time Begin	Northbound					Southbound					Eastbound					Westbound					Total
	L	T	R	RTOR	Total	L	T	R	RTOR	Total	L	T	R	RTOR	Total	L	T	R	RTOR	Total	
6:00 AM					0					2					0					0	2
6:15 AM					0					1					0					3	4
6:30 AM					0					7					0				1	8	
6:45 AM					0					9					0				0	9	23
7:00 AM					5					14					5				2	22	43
7:15 AM					0					48					7				1	56	95
7:30 AM					2					39					6				2	49	136
7:45 AM					0					41					1				3	45	172
8:00 AM					0					27					1				4	32	182
8:15 AM					0					20					1				5	26	152
8:30 AM					2					10					0				11	23	126
8:45 AM					1					4					0				4	9	90
Total	0	0	0	0	8	0	0	0	0	222	0	0	0	0	19	0	0	0	0	36	285
System Peak Hour:																					152

Peak Hour	Northbound					Southbound					Eastbound					Westbound					Int. Total
	L	T	R	RTOR	Total	L	T	R	RTOR	Total	L	T	R	RTOR	Total	L	T	R	RTOR	Total	
Ped	0	0	0	0	2	0	0	0	0	127	0	0	0	0	9	0	0	0	0	14	152

**Mid Day Peak Hour
 Pedestrian Counts**

Time Begin	Northbound					Southbound					Eastbound					Westbound					Total
	L	T	R	RTOR	Total	L	T	R	RTOR	Total	L	T	R	RTOR	Total	L	T	R	RTOR	Total	
11:00 AM					0					2					0				0	2	
11:15 AM					0					0					0				1	1	
11:30 AM					0					2					0				0	2	
11:45 AM					1					4					0				2	7	12
12:00 PM					1					7					0				0	8	18
12:15 PM					1					1					0				0	2	19
12:30 PM					2					0					0				0	2	19
12:45 PM					1					3					0				0	4	16
Total	0	0	0	0	6	0	0	0	0	19	0	0	0	0	0	0	0	0	3	28	
System Peak Hour:																					16

Peak Hour	Northbound					Southbound					Eastbound					Westbound					Int. Total
	L	T	R	RTOR	Total	L	T	R	RTOR	Total	L	T	R	RTOR	Total	L	T	R	RTOR	Total	
Ped	0	0	0	0	5	0	0	0	0	11	0	0	0	0	0	0	0	0	0	0	16

**Evening Peak Hour
 Pedestrian Counts**

Time Begin	Northbound					Southbound					Eastbound					Westbound					Total
	L	T	R	RTOR	Total	L	T	R	RTOR	Total	L	T	R	RTOR	Total	L	T	R	RTOR	Total	
3:00 PM					0					18					0				2	20	
3:15 PM					0					8					0				0	9	
3:30 PM					0					25					0				5	30	
3:45 PM					0					14					0				3	17	76
4:00 PM					2					54					4				11	71	127
4:15 PM					1					16					4				8	29	147
4:30 PM					0					38					11				9	58	175
4:45 PM					0					17					5				2	24	182
5:00 PM					0					29					5				4	38	149
5:15 PM					0					4					0				2	6	126
5:30 PM					1					4					0				3	8	76
5:45 PM					1					1					0				0	2	54
Total	0	0	0	0	6	0	0	0	0	228	0	0	0	0	29	0	0	0	0	49	312
System Peak Hour:																					126

Peak Hour	Northbound					Southbound					Eastbound					Westbound					Int. Total
	L	T	R	RTOR	Total	L	T	R	RTOR	Total	L	T	R	RTOR	Total	L	T	R	RTOR	Total	
Ped	0	0	0	0	0	0	0	0	0	88	0	0	0	0	21	0	0	0	0	17	126



2nd Street Traffic Study
 City of Harrisburg, Dauphin County
 Baker Project #143249
 Count Summary
 JPC
 3/12/2015

Other Information	
TMC Date:	9/23/2014
Projection Date	9/23/2014
N =	0.00
TPG:	3
Growth:	0.75%
Seasonal Factor:	0.873

Northbound 2nd Street
 East/Westbound Maclay Street

**Morning Peak Hour
 Heavy Vehicles**

Time Begin	Northbound					Southbound					Eastbound					Westbound					Total
	L	T	R	RTOR	Total	L	T	R	RTOR	Total	L	T	R	RTOR	Total	L	T	R	RTOR	Total	
6:00 AM	0	0	1	0	1				0	0	0	0		0	0		0	0	0	0	1
6:15 AM	0	0	0	0	0				0	0	0	0		0	0		0	0	0	0	0
6:30 AM	0	1	1	0	2				0	0	0	1		0	1		1	0	0	1	4
6:45 AM	0	1	1	0	2				0	0	0	0		0	0		0	0	0	0	2
7:00 AM	0	0	0	0	0				0	0	0	0		0	0		1	0	0	1	1
7:15 AM	0	0	1	0	1				0	0	0	0		0	0		1	0	0	1	2
7:30 AM	0	3	0	0	3				0	0	0	0		0	0		0	0	0	0	3
7:45 AM	0	2	1	0	3				0	0	0	0		0	0		0	0	0	0	3
8:00 AM	0	0	1	0	1				0	0	0	0		0	0		0	0	0	0	1
8:15 AM	0	0	0	0	0				0	0	0	0		0	0		0	0	0	0	0
8:30 AM	0	0	1	0	1				0	0	0	0		0	0		0	0	0	0	1
8:45 AM	0	1	1	0	2				0	0	0	1		0	1		1	0	0	1	4
Total	0	8	8	0	16	0	0	0	0	0	0	2	0	0	2	0	4	0	0	4	22
System Peak Hour:																				7	7:30 AM - 8:30 AM

Peak Hour	Northbound					Southbound					Eastbound					Westbound					Int. Total
	L	T	R	RTOR	Total	L	T	R	RTOR	Total	L	T	R	RTOR	Total	L	T	R	RTOR	Total	
HV	0	5	2	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7
HV%	0%	1%	2%	0%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	1%



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 JPC
 3/12/2015

Other Information	
TMC Date:	9/23/2014
Projection Date	9/23/2014
N =	0.00
TPG:	3
Growth:	0.75%
Seasonal Factor:	0.873

Northbound 2nd Street
 East/Westbound Maclay Street

Mid Day Peak Hour
Total Vehicles

Time Begin	Northbound					Southbound					Eastbound					Westbound					Int. Total
	L	T	R	RTOR	Total	L	T	R	RTOR	Total	L	T	R	RTOR	Total	L	T	R	RTOR	Total	
11:00 AM	6	68	23	0	97				0	0	1	10		0	11		40	11	0	51	159
11:15 AM	3	70	24	0	97				0	0	2	16		0	18		28	11	0	39	154
11:30 AM	4	70	31	0	105				0	0	2	11		0	13		40	18	0	58	176
11:45 AM	1	101	25	0	127				0	0	1	17		0	18		33	20	0	53	198
12:00 PM	5	106	24	0	135				0	0	4	20		0	24		37	16	0	53	212
12:15 PM	2	97	22	0	121				0	0	4	20		0	24		44	25	0	69	214
12:30 PM	3	103	44	0	150				0	0	3	14		0	17		38	24	0	62	229
12:45 PM	4	94	33	0	131				0	0	2	10		0	12		43	17	0	60	203
Total	28	709	226	0	963	0	0	0	0	0	19	118	0	0	137	0	303	142	0	445	1,545
System Peak Hour:																			858	12:00 PM - 1:00 PM	

Peak Hour	Northbound					Southbound					Eastbound					Westbound					Int. Total
	L	T	R	RTOR	Total	L	T	R	RTOR	Total	L	T	R	RTOR	Total	L	T	R	RTOR	Total	
RAW	14	400	123	0	537	0	0	0	0	0	13	64	0	0	77	0	162	82	0	244	858
PHF	0.70	0.94	0.70	0	0.90	0.00	0.00	0.00	0	0.00	0.81	0.80	0.00	0	0.80	0.00	0.92	0.82	0	0.88	0.94
ADJ	14	400	123	0	537	0	0	0	0	0	13	64	0		77	0	162	82		244	858
HV	0	6	6	0	12	0	0	0	0	0	1	1	0	0	2	0	2	1	0	3	17
%HV%	0%	2%	5%	0%	2%	0%	0%	0%	0%	0%	8%	2%	0%	0%	3%	0%	1%	1%	0%	1%	2%



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 Baker Project #143249
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 3/12/2015

Other Information	
TMC Date:	9/23/2014
Projection Date	9/23/2014
N =	0.00
TPG:	3
Growth:	0.75%
Seasonal Factor:	0.873

Northbound 2nd Street
 East/Westbound Maclay Street

**Mid Day Peak Hour
 Heavy Vehicles**

Time Begin	Northbound					Southbound					Eastbound					Westbound					Total
	L	T	R	RTOR	Total	L	T	R	RTOR	Total	L	T	R	RTOR	Total	L	T	R	RTOR	Total	
11:00 AM	0	0	0	0	0				0	0	0	1		0	1		0	1	0	1	2
11:15 AM	0	1	0	0	1				0	0	0	0		0	0		1	0	0	1	2
11:30 AM	0	1	0	0	1				0	0	0	2		0	2		2	0	0	2	5
11:45 AM	0	2	0	0	2				0	0	0	0		0	0		0	1	0	1	3
12:00 PM	0	1	3	0	4				0	0	0	1		0	1		0	0	0	0	5
12:15 PM	0	1	0	0	1				0	0	1	0		0	1		1	0	0	1	3
12:30 PM	0	3	0	0	3				0	0	0	0		0	0		0	1	0	1	4
12:45 PM	0	1	3	0	4				0	0	0	0		0	0		1	0	0	1	5
Total	0	10	6	0	16	0	0	0	0	0	1	4	0	0	5	0	5	3	0	8	29
System Peak Hour:																				17	12:00 PM - 1:00 PM

Peak Hour	Northbound					Southbound					Eastbound					Westbound					Int. Total
	L	T	R	RTOR	Total	L	T	R	RTOR	Total	L	T	R	RTOR	Total	L	T	R	RTOR	Total	
HV	0	6	6	0	12	0	0	0	0	0	1	1	0	0	2	0	2	1	0	3	17
HV%	0%	2%	5%	0%	2%	0%	0%	0%	0%	0%	8%	2%	0%	0%	3%	0%	1%	1%	0%	1%	2%



2nd Street Traffic Study
 City of Harrisburg, Dauphin County
 Baker Project #143249
 Count Summary
 JPC
 3/12/2015

Other Information

TMC Date: 9/23/2014
 Projection Date 9/23/2014
 N = 0.00
 TPG: 3
 Growth: 0.75%
 Seasonal Factor: 0.873

Northbound 2nd Street
 East/Westbound Maclay Street

**Evening Peak Hour
 Total Vehicles**

Time Begin	Northbound					Southbound					Eastbound					Westbound					Int. Total	
	L	T	R	RTOR	Total	L	T	R	RTOR	Total	L	T	R	RTOR	Total	L	T	R	RTOR	Total		
3:00 PM	3	138	30	0	171				0	0	4	14		0	18		49	20	0	69	258	
3:15 PM	1	171	22	0	194				0	0	0	12		0	12		59	20	0	79	285	
3:30 PM	3	214	32	0	249				0	0	0	10		0	10		70	20	0	90	349	
3:45 PM	7	200	25	0	232				0	0	2	8		0	10		46	24	0	70	312	
4:00 PM	2	302	33	0	337				0	0	1	11		0	12		71	21	0	92	441	
4:15 PM	3	308	23	0	334				0	0	0	16		0	16		61	27	0	88	438	
4:30 PM	3	361	48	0	412				0	0	3	16		0	19		65	26	0	91	522	
4:45 PM	0	348	50	0	398				0	0	1	10		0	11		51	25	0	76	485	
5:00 PM	1	384	42	0	427				0	0	1	14		0	15		56	22	0	78	520	
5:15 PM	4	317	34	0	355				0	0	3	8		0	11		45	31	0	76	442	
5:30 PM	2	220	31	0	253				0	0	4	15		0	19		44	18	0	62	334	
5:45 PM	4	204	24	0	232				0	0	1	13		0	14		37	19	0	56	302	
Total	33	3,167	394	0	3,594	0	0	0	0	0	20	147	0	0	167	0	654	273	0	927	4,688	
System Peak Hour:																					1,969	4:30 PM - 5:30 PM

Peak Hour	Northbound					Southbound					Eastbound					Westbound					Int. Total
	L	T	R	RTOR	Total	L	T	R	RTOR	Total	L	T	R	RTOR	Total	L	T	R	RTOR	Total	
RAW	8	1,410	174	0	1,592	0	0	0	0	0	8	48	0	0	56	0	217	104	0	321	1,969
PHF	0.50	0.92	0.87	0	0.93	0.00	0.00	0.00	0	0.00	0.67	0.75	0.00	0	0.74	0.00	0.83	0.84	0	0.88	0.94
ADJ	8	1,410	174	0	1,592	0	0	0	0	0	8	48	0		56	0	217	104		321	1,969
HV	1	9	0	0	10	0	0	0	0	0	0	0	0	0	0	0	4	2	0	6	16
%HV%	13%	1%	0%	0%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	2%	2%	0%	2%	1%



2nd Street Traffic Study
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Other Information	
TMC Date:	9/23/2014
Projection Date	9/23/2014
N =	0.00
TPG:	3
Growth:	0.75%
Seasonal Factor:	0.873

Northbound 2nd Street
 East/Westbound Maclay Street

**Evening Peak Hour
 Heavy Vehicles**

Time Begin	Northbound					Southbound					Eastbound					Westbound					Total	
	L	T	R	RTOR	Total	L	T	R	RTOR	Total	L	T	R	RTOR	Total	L	T	R	RTOR	Total		
3:00 PM	0	2	0	0	2				0	0	0	0		0	0		2	0	0	2	4	
3:15 PM	0	2	1	0	3				0	0	0	0		0	0		2	0	0	2	5	
3:30 PM	0	4	1	0	5				0	0	0	0		0	0		0	0	0	0	5	
3:45 PM	0	4	0	0	4				0	0	0	0		0	0		1	2	0	3	7	
4:00 PM	0	2	1	0	3				0	0	0	0		0	0		1	0	0	1	4	
4:15 PM	0	0	1	0	1				0	0	0	1		0	1		1	1	0	2	4	
4:30 PM	0	2	0	0	2				0	0	0	0		0	0		4	0	0	4	6	
4:45 PM	0	5	0	0	5				0	0	0	0		0	0		0	0	0	0	5	
5:00 PM	1	2	0	0	3				0	0	0	0		0	0		0	0	0	0	3	
5:15 PM	0	0	0	0	0				0	0	0	0		0	0		0	2	0	2	2	
5:30 PM	0	0	0	0	0				0	0	0	0		0	0		0	1	0	1	1	
5:45 PM	0	1	0	0	1				0	0	0	0		0	0		1	0	0	1	2	
Total	1	24	4	0	29	0	0	0	0	0	0	1	0	0	1	0	12	6	0	18	48	
																				System Peak Hour:	16	4:30 PM - 5:30 PM

Peak Hour	Northbound					Southbound					Eastbound					Westbound					Int. Total
	L	T	R	RTOR	Total	L	T	R	RTOR	Total	L	T	R	RTOR	Total	L	T	R	RTOR	Total	
HV	1	9	0	0	10	0	0	0	0	0	0	0	0	0	0	0	4	2	0	6	16
HV%	13%	1%	0%	0%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	2%	2%	0%	2%	1%

Northbound 2nd Street
 East/Westbound Maclay Street

Other Information	
TMC Date:	9/23/2014
Projection Date:	9/23/2014
N =	0.00
TPG:	3
Growth:	0.75%
Seasonal Factor:	0.873

**Morning Peak Hour
 Pedestrian Counts**

Time Begin	Northbound					Southbound					Eastbound					Westbound					Total
	L	T	R	RTOR	Total	L	T	R	RTOR	Total	L	T	R	RTOR	Total	L	T	R	RTOR	Total	
6:00 AM					0					1					0					0	1
6:15 AM					0					0					0					0	0
6:30 AM					0					1					0					1	2
6:45 AM					1					1					2					0	4
7:00 AM					0					1					0					0	1
7:15 AM					0					0					1					1	2
7:30 AM					0					0					0					0	0
7:45 AM					0					0					0					0	0
8:00 AM					0					0					0					1	1
8:15 AM					0					1					0					0	1
8:30 AM					0					0					1					0	1
8:45 AM					0					2					2					1	5
Total	0	0	0	0	1	0	0	0	0	7	0	0	0	0	6	0	0	0	0	4	18
																			System Peak Hour:	2	7:30 AM - 8:30 AM

Peak Hour	Northbound					Southbound					Eastbound					Westbound					Int. Total					
	L	T	R	RTOR	Total	L	T	R	RTOR	Total	L	T	R	RTOR	Total	L	T	R	RTOR	Total						
Ped	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2

**Mid Day Peak Hour
 Pedestrian Counts**

Time Begin	Northbound					Southbound					Eastbound					Westbound					Total
	L	T	R	RTOR	Total	L	T	R	RTOR	Total	L	T	R	RTOR	Total	L	T	R	RTOR	Total	
11:00 AM					0					2					0					1	3
11:15 AM					0					0					0					1	2
11:30 AM					4					0					3					4	11
11:45 AM					0					0					1					5	6
12:00 PM					0					0					2					0	2
12:15 PM					0					1					1					0	2
12:30 PM					2					2					4					3	11
12:45 PM					2					0					1					4	7
Total	0	0	0	0	8	0	0	0	0	6	0	0	0	0	12	0	0	0	0	18	44
																			System Peak Hour:	22	11:00 AM - 12:00 PM

Peak Hour	Northbound					Southbound					Eastbound					Westbound					Int. Total					
	L	T	R	RTOR	Total	L	T	R	RTOR	Total	L	T	R	RTOR	Total	L	T	R	RTOR	Total						
Ped	0	0	0	0	4	0	0	0	0	3	0	0	0	0	8	0	0	0	0	0	0	7	0	0	7	22

**Evening Peak Hour
 Pedestrian Counts**

Time Begin	Northbound					Southbound					Eastbound					Westbound					Total
	L	T	R	RTOR	Total	L	T	R	RTOR	Total	L	T	R	RTOR	Total	L	T	R	RTOR	Total	
3:00 PM					2					2					2					1	7
3:15 PM					1					1					2					2	6
3:30 PM					0					1					0					2	3
3:45 PM					0					0					0					0	2
4:00 PM					2					1					0					0	3
4:15 PM					0					0					0					2	10
4:30 PM					5					2					0					1	15
4:45 PM					8					4					0					1	26
5:00 PM					1					0					0					2	3
5:15 PM					0					0					2					1	3
5:30 PM					0					0					0					3	3
5:45 PM					0					1					0					1	2
Total	0	0	0	0	19	0	0	0	0	12	0	0	0	0	6	0	0	0	0	18	55
																			System Peak Hour:	27	4:30 PM - 5:30 PM

Peak Hour	Northbound					Southbound					Eastbound					Westbound					Int. Total					
	L	T	R	RTOR	Total	L	T	R	RTOR	Total	L	T	R	RTOR	Total	L	T	R	RTOR	Total						
Ped	0	0	0	0	14	0	0	0	0	6	0	0	0	0	2	0	0	0	0	0	0	5	0	0	5	27

2nd Street Traffic Study
 City of Harrisburg, Dauphin County
 Baker Project #143249
 Count Summary
 JPC
 3/12/2015

North/Southbound 2nd Street
 East/Westbound Forster Street

Other Information

TMC Date: 9/23/2014
 Projection Date 9/23/2014
 N = 0.00
 TPG: 3
 Growth: 0.75%
 Seasonal Factor: 0.873

Morning Peak Hour Total Vehicles

Time Begin	Northbound					Southbound					Eastbound					Westbound					Int. Total	
	L	T	R	RTOR	Total	L	T	R	RTOR	Total	L	T	R	RTOR	Total	L	T	R	RTOR	Total		
6:00 AM	10	17	13	0	40				0	0	9	62		0	71		50	1	0	51	162	
6:15 AM	30	31	21	0	82				0	0	13	96		0	109		48	3	0	51	242	
6:30 AM	22	46	34	0	102				0	0	26	155		0	181		86	1	0	87	370	
6:45 AM	33	57	50	0	140				0	0	25	289		0	314		114	1	0	115	569	
7:00 AM	46	60	65	0	171				0	0	44	324		0	368		91	8	0	99	638	
7:15 AM	39	70	75	0	184				0	0	62	409		0	471		123	11	0	134	789	
7:30 AM	39	85	73	0	197				0	0	62	409		0	471		157	8	0	165	833	
7:45 AM	51	99	73	0	223				0	0	84	395		0	479		158	14	0	172	874	
8:00 AM	56	102	68	0	226				0	0	74	404		0	478		133	6	0	139	843	
8:15 AM	53	113	49	0	215				0	0	77	400		0	477		112	15	0	127	819	
8:30 AM	36	106	34	0	176				0	0	80	402		0	482		96	17	0	113	771	
8:45 AM	49	104	51	0	204				0	0	63	295		0	358		120	14	0	134	696	
Total	464	890	606	0	1,960	0	0	0	0	0	619	3,640	0	0	4,259	0	1,288	99	0	1,387	7,606	
System Peak Hour:																					3,369	7:30 AM - 8:30 AM

Peak Hour	Northbound					Southbound					Eastbound					Westbound					Int. Total
	L	T	R	RTOR	Total	L	T	R	RTOR	Total	L	T	R	RTOR	Total	L	T	R	RTOR	Total	
RAW	199	399	263	0	861	0	0	0	0	0	297	1,608	0	0	1,905	0	560	43	0	603	3,369
PHF	0.89	0.88	0.90	0.95	0.95	0.00	0.00	0.00	0.00	0.00	0.88	0.98	0.00	0.99	0.99	0.00	0.89	0.72	0.88	0.88	0.96
ADJ	199	399	263	0	861	0	0	0	0	0	297	1,608	0	0	1,905	0	560	43	0	603	3,369
HV	4	7	7	0	18	0	0	0	0	0	4	9	0	0	13	0	5	2	0	7	38
%HV%	2%	2%	3%	0%	2%	0%	0%	0%	0%	0%	1%	1%	0%	0%	1%	0%	1%	5%	0%	1%	1%

2nd Street Traffic Study
 City of Harrisburg, Dauphin County
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 JPC
 3/12/2015

Other Information

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 Projection Date 9/23/2014
 N = 0.00
 TPG: 3
 Growth: 0.75%
 Seasonal Factor: 0.873

North/Southbound 2nd Street
 East/Westbound Forster Street

Morning Peak Hour Heavy Vehicles

Time Begin	Northbound					Southbound					Eastbound					Westbound					Total	
	L	T	R	RTOR	Total	L	T	R	RTOR	Total	L	T	R	RTOR	Total	L	T	R	RTOR	Total		
6:00 AM	0	1	2	0	3				0	0	0	1		0	1		0	0	0	0	4	
6:15 AM	0	0	1	0	1				0	0	0	1		0	1		2	0	0	2	4	
6:30 AM	0	2	1	0	3				0	0	1	0		0	1		1	0	0	1	5	
6:45 AM	0	0	0	0	0				0	0	0	4		0	4		1	1	0	2	6	
7:00 AM	0	1	1	0	2				0	0	1	2		0	3		2	1	0	3	8	
7:15 AM	1	7	1	0	9				0	0	0	2		0	2		2	1	0	3	14	
7:30 AM	0	2	1	0	3				0	0	0	0		0	0		1	1	0	2	5	
7:45 AM	4	2	4	0	10				0	0	3	4		0	7		0	1	0	1	18	
8:00 AM	0	2	2	0	4				0	0	1	2		0	3		2	0	0	2	9	
8:15 AM	0	1	0	0	1				0	0	0	3		0	3		2	0	0	2	6	
8:30 AM	1	3	1	0	5				0	0	0	4		0	4		2	1	0	3	12	
8:45 AM	0	4	2	0	6				0	0	0	4		0	4		2	2	0	4	14	
Total	6	25	16	0	47	0	0	0	0	0	6	27	0	0	33	0	17	8	0	25	105	
System Peak Hour:																					38	7:30 AM - 8:30 AM

Peak Hour	Northbound					Southbound					Eastbound					Westbound					Int. Total
	L	T	R	RTOR	Total	L	T	R	RTOR	Total	L	T	R	RTOR	Total	L	T	R	RTOR	Total	
HV	4	7	7	0	18	0	0	0	0	0	4	9	0	0	13	0	5	2	0	7	38
HV%	2%	2%	3%	0%	2%	0%	0%	0%	0%	0%	1%	1%	0%	0%	1%	0%	1%	5%	0%	1%	1%

2nd Street Traffic Study
 City of Harrisburg, Dauphin County
 Baker Project #143249
 Count Summary
 JPC
 3/12/2015

Other Information

TMC Date: 9/23/2014
 Projection Date 9/23/2014
 N = 0.00
 TPG: 3
 Growth: 0.75%
 Seasonal Factor: 0.873

North/Southbound 2nd Street
 East/Westbound Forster Street

Mid Day Peak Hour Total Vehicles

Time Begin	Northbound					Southbound					Eastbound					Westbound					Int. Total	
	L	T	R	RTOR	Total	L	T	R	RTOR	Total	L	T	R	RTOR	Total	L	T	R	RTOR	Total		
11:00 AM	31	68	35	0	134				0	0	42	106		0	148	79	15	0	0	94	376	
11:15 AM	26	72	43	0	141				0	0	33	96		0	129	69	10	0	0	79	349	
11:30 AM	41	112	45	0	198				0	0	35	120		0	155	87	20	0	0	107	460	
11:45 AM	38	91	37	0	166				0	0	48	119		0	167	93	18	0	0	111	444	
12:00 PM	40	97	52	0	189				0	0	44	124		0	168	108	15	0	0	123	480	
12:15 PM	24	89	47	0	160				0	0	48	125		0	173	112	14	0	0	126	459	
12:30 PM	40	102	45	0	187				0	0	69	121		0	190	78	16	0	0	94	471	
12:45 PM	47	110	46	0	203				0	0	55	121		0	176	73	12	0	0	85	464	
Total	287	741	350	0	1,378	0	0	0	0	0	374	932	0	0	1,306	0	699	120	0	819	3,503	
System Peak Hour:																					1,874	12:00 PM - 1:00 PM

Peak Hour	Northbound					Southbound					Eastbound					Westbound					Int. Total
	L	T	R	RTOR	Total	L	T	R	RTOR	Total	L	T	R	RTOR	Total	L	T	R	RTOR	Total	
RAW	151	398	190	0	739	0	0	0	0	0	216	491	0	0	707	0	371	57	0	428	1,874
PHF	0.80	0.90	0.91	0	0.91	0.00	0.00	0.00	0	0.00	0.78	0.98	0.00	0	0.93	0.00	0.83	0.89	0	0.85	0.98
ADJ	151	398	190	0	739	0	0	0	0	0	216	491	0		707	0	371	57		428	1,874
HV	1	9	6	0	16	0	0	0	0	0	1	6	0	0	7	0	7	4	0	11	34
%HV%	1%	2%	3%	0%	2%	0%	0%	0%	0%	0%	0%	1%	0%	0%	1%	0%	2%	7%	0%	3%	2%



2nd Street Traffic Study
 City of Harrisburg, Dauphin County
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 Count Summary
 JPC
 3/12/2015

Other Information	
TMC Date:	9/23/2014
Projection Date	9/23/2014
N =	0.00
TPG:	3
Growth:	0.75%
Seasonal Factor:	0.873

North/Southbound 2nd Street
 East/Westbound Forster Street

Mid Day Peak Hour
 Heavy Vehicles

Time Begin	Northbound					Southbound					Eastbound					Westbound					Total
	L	T	R	RTOR	Total	L	T	R	RTOR	Total	L	T	R	RTOR	Total	L	T	R	RTOR	Total	
11:00 AM	1	1	1	0	3				0	0	0	3		0	3		2	0	0	2	8
11:15 AM	0	0	1	0	1				0	0	0	1		0	1		1	3	0	4	6
11:30 AM	1	1	2	0	4				0	0	0	1		0	1		0	1	0	1	6
11:45 AM	1	1	2	0	4				0	0	0	1		0	1		2	2	0	4	9
12:00 PM	1	1	2	0	4				0	0	0	1		0	1		4	1	0	5	10
12:15 PM	0	2	1	0	3				0	0	1	2		0	3		2	0	0	2	8
12:30 PM	0	2	1	0	3				0	0	0	2		0	2		0	2	0	2	7
12:45 PM	0	4	2	0	6				0	0	0	1		0	1		1	1	0	2	9
Total	4	12	12	0	28	0	0	0	0	0	1	12	0	0	13	0	12	10	0	22	63
System Peak Hour:																				34	12:00 PM - 1:00 PM

Peak Hour	Northbound					Southbound					Eastbound					Westbound					Int. Total
	L	T	R	RTOR	Total	L	T	R	RTOR	Total	L	T	R	RTOR	Total	L	T	R	RTOR	Total	
HV	1	9	6	0	16	0	0	0	0	0	1	6	0	0	7	0	7	4	0	11	34
HV%	1%	2%	3%	0%	2%	0%	0%	0%	0%	0%	0%	1%	0%	0%	1%	0%	2%	7%	0%	3%	2%

2nd Street Traffic Study
 City of Harrisburg, Dauphin County
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 Count Summary
 JPC
 3/12/2015

Other Information

TMC Date: 9/23/2014
 Projection Date 9/23/2014
 N = 0.00
 TPG: 3
 Growth: 0.75%
 Seasonal Factor: 0.873

North/Southbound 2nd Street
 East/Westbound Forster Street

Evening Peak Hour Total Vehicles

Time Begin	Northbound					Southbound					Eastbound					Westbound					Int. Total	
	L	T	R	RTOR	Total	L	T	R	RTOR	Total	L	T	R	RTOR	Total	L	T	R	RTOR	Total		
3:00 PM	44	118	38	0	200				0	0	63	156		0	219		125	21	0	146	565	
3:15 PM	47	177	50	0	274				0	0	65	140		0	205		131	15	0	146	625	
3:30 PM	52	200	47	0	299				0	0	78	159		0	237		232	27	0	259	795	
3:45 PM	60	179	43	0	282				0	0	62	149		0	211		168	13	0	181	674	
4:00 PM	95	218	47	0	360				0	0	108	179		0	287		263	41	0	304	951	
4:15 PM	86	185	42	0	313				0	0	92	142		0	234		292	40	0	332	879	
4:30 PM	124	252	32	0	408				0	0	109	155		0	264		279	33	0	312	984	
4:45 PM	91	248	69	0	408				0	0	103	170		0	273		294	32	0	326	1,007	
5:00 PM	129	263	47	0	439				0	0	134	179		0	313		247	29	0	276	1,028	
5:15 PM	91	201	60	0	352				0	0	121	215		0	336		264	31	0	295	983	
5:30 PM	84	181	43	0	308				0	0	96	146		0	242		195	24	0	219	769	
5:45 PM	65	150	38	0	253				0	0	94	127		0	221		151	22	0	173	647	
Total	968	2,372	556	0	3,896	0	0	0	0	0	1,125	1,917	0	0	3,042	0	2,641	328	0	2,969	9,907	
System Peak Hour:																					4,002	4:30 PM - 5:30 PM

Peak Hour	Northbound					Southbound					Eastbound					Westbound					Int. Total
	L	T	R	RTOR	Total	L	T	R	RTOR	Total	L	T	R	RTOR	Total	L	T	R	RTOR	Total	
RAW	435	964	208	0	1,607	0	0	0	0	0	467	719	0	0	1,186	0	1,084	125	0	1,209	4,002
PHF	0.84	0.92	0.75	0	0.92	0.00	0.00	0.00	0	0.00	0.87	0.84	0.00	0	0.88	0.00	0.92	0.95	0	0.93	0.97
ADJ	435	964	208	0	1,607	0	0	0	0	0	467	719	0	0	1,186	0	1,084	125	0	1,209	4,002
HV	1	2	3	0	6	0	0	0	0	0	0	7	0	0	7	0	6	0	0	6	19
%HV%	0%	0%	1%	0%	0%	0%	0%	0%	0%	0%	0%	1%	0%	0%	1%	0%	1%	0%	0%	1%	0%

2nd Street Traffic Study
 City of Harrisburg, Dauphin County
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 JPC
 3/12/2015

Other Information

TMC Date: 9/23/2014
 Projection Date 9/23/2014
 N = 0.00
 TPG: 3
 Growth: 0.75%
 Seasonal Factor: 0.873

North/Southbound 2nd Street
 East/Westbound Forster Street

Evening Peak Hour Heavy Vehicles

Time Begin	Northbound					Southbound					Eastbound					Westbound					Total	
	L	T	R	RTOR	Total	L	T	R	RTOR	Total	L	T	R	RTOR	Total	L	T	R	RTOR	Total		
3:00 PM	0	3	2	0	5				0	0	2	0		0	2		3	0	0	3	10	
3:15 PM	0	1	2	0	3				0	0	0	3		0	3		1	0	0	1	7	
3:30 PM	1	4	3	0	8				0	0	0	4		0	4		2	1	0	3	15	
3:45 PM	1	0	1	0	2				0	0	0	3		0	3		1	0	0	1	6	
4:00 PM	0	2	3	0	5				0	0	0	2		0	2		1	0	0	1	8	
4:15 PM	0	1	0	0	1				0	0	0	2		0	2		1	2	0	3	6	
4:30 PM	0	0	0	0	0				0	0	0	2		0	2		1	0	0	1	3	
4:45 PM	1	0	2	0	3				0	0	0	1		0	1		3	0	0	3	7	
5:00 PM	0	1	1	0	2				0	0	0	1		0	1		1	0	0	1	4	
5:15 PM	0	1	0	0	1				0	0	0	3		0	3		1	0	0	1	5	
5:30 PM	0	0	0	0	0				0	0	0	2		0	2		0	1	0	1	3	
5:45 PM	0	1	0	0	1				0	0	0	3		0	3		1	0	0	1	5	
Total	3	14	14	0	31	0	0	0	0	0	2	26	0	0	28	0	16	4	0	20	79	
System Peak Hour:																					19	4:30 PM - 5:30 PM

Peak Hour	Northbound					Southbound					Eastbound					Westbound					Int. Total
	L	T	R	RTOR	Total	L	T	R	RTOR	Total	L	T	R	RTOR	Total	L	T	R	RTOR	Total	
HV	1	2	3	0	6	0	0	0	0	0	0	7	0	0	7	0	6	0	0	6	19
HV%	0%	0%	1%	0%	0%	0%	0%	0%	0%	0%	0%	1%	0%	0%	1%	0%	1%	0%	0%	1%	0%

North/Southbound 2nd Street
 East/Westbound Forster Street

Other Information	
TMC Date:	9/23/2014
Projection Date:	9/23/2014
N =	0.00
TPG:	3
Growth:	0.75%
Seasonal Factor:	0.873

**Morning Peak Hour
 Pedestrian Counts**

Time Begin	Northbound					Southbound					Eastbound					Westbound					Total
	L	T	R	RTOR	Total	L	T	R	RTOR	Total	L	T	R	RTOR	Total	L	T	R	RTOR	Total	
6:00 AM					0					0					0					2	2
6:15 AM					0					0					0					6	6
6:30 AM					0					1					0					2	3
6:45 AM					0					1					0					3	4
7:00 AM					0					0					0					7	7
7:15 AM					2					0					0					6	8
7:30 AM					0					2					0					6	8
7:45 AM					0					0					0					6	7
8:00 AM					4					3					2					6	15
8:15 AM					2					4					0					14	20
8:30 AM					2					6					3					2	13
8:45 AM					2					1					0					4	7
Total	0	0	0	0	12	0	0	0	0	19	0	0	0	0	5	0	0	0	0	64	100
System Peak Hour:																					50

Peak Hour	Northbound					Southbound					Eastbound					Westbound					Int. Total
	L	T	R	RTOR	Total	L	T	R	RTOR	Total	L	T	R	RTOR	Total	L	T	R	RTOR	Total	
Ped	0	0	0	0	6	0	0	0	0	10	0	0	0	0	2	0	0	0	0	32	50

**Mid Day Peak Hour
 Pedestrian Counts**

Time Begin	Northbound					Southbound					Eastbound					Westbound					Total
	L	T	R	RTOR	Total	L	T	R	RTOR	Total	L	T	R	RTOR	Total	L	T	R	RTOR	Total	
11:00 AM					1					1					1					8	11
11:15 AM					0					0					0					4	4
11:30 AM					0					2					0					6	8
11:45 AM					0					5					0					7	12
12:00 PM					1					7					0					3	11
12:15 PM					5					9					2					2	18
12:30 PM					3					3					0					6	12
12:45 PM					0					9					2					5	16
Total	0	0	0	0	10	0	0	0	0	36	0	0	0	0	5	0	0	0	0	41	92
System Peak Hour:																					57

Peak Hour	Northbound					Southbound					Eastbound					Westbound					Int. Total
	L	T	R	RTOR	Total	L	T	R	RTOR	Total	L	T	R	RTOR	Total	L	T	R	RTOR	Total	
Ped	0	0	0	0	9	0	0	0	0	28	0	0	0	0	4	0	0	0	0	16	57

**Evening Peak Hour
 Pedestrian Counts**

Time Begin	Northbound					Southbound					Eastbound					Westbound					Total
	L	T	R	RTOR	Total	L	T	R	RTOR	Total	L	T	R	RTOR	Total	L	T	R	RTOR	Total	
3:00 PM					0					0					1					3	4
3:15 PM					0					0					1					4	5
3:30 PM					0					2					0					7	9
3:45 PM					2					1					4					9	16
4:00 PM					1					1					2					7	11
4:15 PM					0					1					1					4	6
4:30 PM					0					0					3					6	9
4:45 PM					0					0					4					5	9
5:00 PM					3					1					1					4	9
5:15 PM					3					3					5					11	22
5:30 PM					1					6					2					3	12
5:45 PM					3					2					0					1	6
Total	0	0	0	0	13	0	0	0	0	17	0	0	0	0	24	0	0	0	0	64	118
System Peak Hour:																					49

Peak Hour	Northbound					Southbound					Eastbound					Westbound					Int. Total
	L	T	R	RTOR	Total	L	T	R	RTOR	Total	L	T	R	RTOR	Total	L	T	R	RTOR	Total	
Ped	0	0	0	0	6	0	0	0	0	4	0	0	0	0	13	0	0	0	0	26	49

2nd Street Traffic Study
 City of Harrisburg, Dauphin County
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 JPC
 3/12/2015

Other Information

TMC Date: 9/23/2014
 Projection Date 9/23/2014
 N = 0.00
 TPG: 3
 Growth: 0.75%
 Seasonal Factor: 0.873

North/Southbound 2nd Street
 East/Westbound Division Street

Morning Peak Hour Total Vehicles

Time Begin	Northbound					Southbound					Eastbound					Westbound					Int. Total	
	L	T	R	RTOR	Total	L	T	R	RTOR	Total	L	T	R	RTOR	Total	L	T	R	RTOR	Total		
6:00 AM	18	5	1	0	24	1		2	0	3	0	6		0	6		15	0	0	15	48	
6:15 AM	22	1	6	0	29	0		3	0	3	0	10		0	10		15	0	0	15	57	
6:30 AM	26	5	5	0	36	1		2	0	3	0	16		0	16		23	0	0	23	78	
6:45 AM	44	2	9	0	55	2		5	0	7	0	28		0	28		19	0	0	19	109	292
7:00 AM	43	14	11	0	68	3		4	0	7	0	28		0	28		24	0	0	24	127	371
7:15 AM	50	7	10	0	67	0		13	0	13	1	57		0	58		30	1	0	31	169	483
7:30 AM	65	12	10	0	87	4		11	0	15	0	94		0	94		33	4	0	37	233	638
7:45 AM	61	19	13	0	93	3		17	0	20	0	87		0	87		36	3	0	39	239	768
8:00 AM	70	19	15	0	104	1		9	0	10	0	76		0	76		25	8	0	33	223	864
8:15 AM	66	16	12	0	94	2		16	0	18	1	90		0	91		21	5	0	26	229	924
8:30 AM	62	15	15	0	92	2		11	0	13	1	44		0	45		24	4	0	28	178	869
8:45 AM	71	24	17	0	112	0		8	0	8	0	54		0	54		41	2	0	43	217	847
Total	598	139	124	0	861	19	0	101	0	120	3	590	0	0	593	0	306	27	0	333	1,907	924
System Peak Hour:																					924	7:30 AM - 8:30 AM

Peak Hour	Northbound					Southbound					Eastbound					Westbound					Int. Total
	L	T	R	RTOR	Total	L	T	R	RTOR	Total	L	T	R	RTOR	Total	L	T	R	RTOR	Total	
RAW	262	66	50	0	378	10	0	53	0	63	1	347	0	0	348	0	115	20	0	135	924
PHF	0.94	0.87	0.83	0	0.91	0.63	0.00	0.78	0	0.79	0.25	0.92	0.00	0	0.93	0.00	0.80	0.63	0	0.87	0.97
ADJ	262	66	50	0	378	10	0	53	0	63	1	347	0	0	348	0	115	20	0	135	924
HV	1	2	3	0	6	3	0	0	0	3	0	4	0	0	4	0	6	0	0	6	19
%HV%	0%	3%	6%	0%	2%	30%	0%	0%	0%	5%	0%	1%	0%	0%	1%	0%	5%	0%	0%	4%	2%

2nd Street Traffic Study
 City of Harrisburg, Dauphin County
 Baker Project #143249
 Count Summary
 JPC
 3/12/2015

Other Information

TMC Date: 9/23/2014
 Projection Date 9/23/2014
 N = 0.00
 TPG: 3
 Growth: 0.75%
 Seasonal Factor: 0.873

North/Southbound 2nd Street
 East/Westbound Division Street

Morning Peak Hour Heavy Vehicles

Time Begin	Northbound					Southbound					Eastbound					Westbound					Total
	L	T	R	RTOR	Total	L	T	R	RTOR	Total	L	T	R	RTOR	Total	L	T	R	RTOR	Total	
6:00 AM	0	1	0	0	1	1		0	0	1	0	0		0	0		4	0	0	4	6
6:15 AM	0	0	0	0	0	0		0	0	0	0	0		0	0		1	0	0	1	1
6:30 AM	0	1	0	0	1	0		0	0	0	0	0		0	0		2	0	0	2	3
6:45 AM	1	0	0	0	1	1		0	0	1	0	0		0	0		1	0	0	1	3
7:00 AM	0	1	1	0	2	1		0	0	1	0	1		0	1		1	0	0	1	5
7:15 AM	0	0	0	0	0	0		1	0	1	0	1		0	1		3	0	0	3	5
7:30 AM	0	1	1	0	2	2		0	0	2	0	1		0	1		0	0	0	0	5
7:45 AM	1	0	1	0	2	0		0	0	0	0	0		0	0		2	0	0	2	4
8:00 AM	0	1	1	0	2	1		0	0	1	0	2		0	2		1	0	0	1	6
8:15 AM	0	0	0	0	0	0		0	0	0	0	1		0	1		3	0	0	3	4
8:30 AM	0	0	0	0	0	1		0	0	1	0	1		0	1		1	0	0	1	3
8:45 AM	1	2	0	0	3	0		0	0	0	0	1		0	1		3	0	0	3	7
Total	3	7	4	0	14	7	0	1	0	8	0	8	0	8	0	22	0	0	22	52	
System Peak Hour:																				19	7:30 AM - 8:30 AM

Peak Hour	Northbound					Southbound					Eastbound					Westbound					Int. Total
	L	T	R	RTOR	Total	L	T	R	RTOR	Total	L	T	R	RTOR	Total	L	T	R	RTOR	Total	
HV	1	2	3	0	6	3	0	0	0	3	0	4	0	0	4	0	6	0	0	6	19
HV%	0%	3%	6%	0%	2%	30%	0%	0%	0%	5%	0%	1%	0%	0%	1%	0%	5%	0%	0%	4%	2%

2nd Street Traffic Study
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 JPC
 3/12/2015

Other Information

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 N = 0.00
 TPG: 3
 Growth: 0.75%
 Seasonal Factor: 0.873

North/Southbound 2nd Street
 East/Westbound Division Street

Mid Day Peak Hour Total Vehicles

Time Begin	Northbound					Southbound					Eastbound					Westbound					Int. Total
	L	T	R	RTOR	Total	L	T	R	RTOR	Total	L	T	R	RTOR	Total	L	T	R	RTOR	Total	
11:00 AM	42	12	13	0	67	3		4	0	7	0	13		0	13		33	5	0	38	125
11:15 AM	48	10	19	0	77	1		1	0	2	0	15		0	15		44	5	0	49	143
11:30 AM	54	9	15	0	78	6		8	0	14	0	15		0	15		42	1	0	43	150
11:45 AM	75	13	15	0	103	2		7	0	9	1	18		0	19		41	4	0	45	176
12:00 PM	75	18	20	0	113	5		11	0	16	2	14		0	16		53	2	0	55	200
12:15 PM	76	8	21	0	105	2		2	0	4	0	18		0	18		47	6	0	53	180
12:30 PM	67	9	17	0	93	5		3	0	8	0	24		0	24		47	3	0	50	175
12:45 PM	80	7	16	0	103	3		8	0	11	0	27		0	27		53	6	0	59	200
Total	517	86	136	0	739	27	0	44	0	71	3	144	0	0	147	0	360	32	0	392	1,349
System Peak Hour:																				755	12:00 PM - 1:00 PM

Peak Hour	Northbound					Southbound					Eastbound					Westbound					Int. Total
	L	T	R	RTOR	Total	L	T	R	RTOR	Total	L	T	R	RTOR	Total	L	T	R	RTOR	Total	
RAW	298	42	74	0	414	15	0	24	0	39	2	83	0	0	85	0	200	17	0	217	755
PHF	0.93	0.58	0.88	0	0.92	0.75	0.00	0.55	0	0.61	0.25	0.77	0.00	0	0.79	0.00	0.94	0.71	0	0.92	0.94
ADJ	298	42	74	0	414	15	0	24	0	39	2	83	0		85	0	200	17		217	755
HV	2	3	2	0	7	0	0	1	0	1	0	3	0	0	3	0	6	1	0	7	18
%HV%	1%	7%	3%	0%	2%	0%	0%	4%	0%	3%	0%	4%	0%	0%	4%	0%	3%	6%	0%	3%	2%

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 City of Harrisburg, Dauphin County
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 3/12/2015

Other Information

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 N = 0.00
 TPG: 3
 Growth: 0.75%
 Seasonal Factor: 0.873

North/Southbound 2nd Street
 East/Westbound Division Street

Mid Day Peak Hour Heavy Vehicles

Time Begin	Northbound					Southbound					Eastbound					Westbound					Total
	L	T	R	RTOR	Total	L	T	R	RTOR	Total	L	T	R	RTOR	Total	L	T	R	RTOR	Total	
11:00 AM	0	0	0	0	0	1		0	0	1	0	1		0	1		1	0	0	1	3
11:15 AM	1	0	0	0	1	0		0	0	0	0	0		0	0		1	1	0	2	3
11:30 AM	0	0	0	0	0	0		0	0	0	0	0		0	0		1	0	0	1	1
11:45 AM	1	0	1	0	2	0		0	0	0	0	1		0	1		3	1	0	4	7
12:00 PM	1	0	1	0	2	0		0	0	0	0	1		0	1		3	1	0	4	7
12:15 PM	0	1	0	0	1	0		0	0	0	0	1		0	1		1	0	0	1	3
12:30 PM	0	2	1	0	3	0		0	0	0	0	1		0	1		0	0	0	0	4
12:45 PM	1	0	0	0	1	0		1	0	1	0	0		0	0		2	0	0	2	4
Total	4	3	3	0	10	1	0	1	0	2	0	5	0	0	5	0	12	3	0	15	32
System Peak Hour:																				18	12:00 PM - 1:00 PM

Peak Hour	Northbound					Southbound					Eastbound					Westbound					Int. Total
	L	T	R	RTOR	Total	L	T	R	RTOR	Total	L	T	R	RTOR	Total	L	T	R	RTOR	Total	
HV	2	3	2	0	7	0	0	1	0	1	0	3	0	0	3	0	6	1	0	7	18
HV%	1%	7%	3%	0%	2%	0%	0%	4%	0%	3%	0%	4%	0%	0%	4%	0%	3%	6%	0%	3%	2%

2nd Street Traffic Study
 City of Harrisburg, Dauphin County
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 JPC
 3/12/2015

Other Information

TMC Date: 9/23/2013
 Projection Date 9/23/2013
 N = 0.00
 TPG: 3
 Growth: 0.75%
 Seasonal Factor: 0.873

North/Southbound 2nd Street
 East/Westbound Division Street

Evening Peak Hour Total Vehicles

Time Begin	Northbound					Southbound					Eastbound					Westbound					Int. Total	
	L	T	R	RTOR	Total	L	T	R	RTOR	Total	L	T	R	RTOR	Total	L	T	R	RTOR	Total		
3:00 PM	126	12	21	0	159	1		2	0	3	0	17		0	17	56	4	0	0	60	239	
3:15 PM	121	17	24	0	162	3		2	0	5	1	16		0	17	41	5	0	0	46	230	
3:30 PM	186	16	17	0	219	5		9	0	14	0	28		0	28	53	3	0	0	56	317	
3:45 PM	181	18	18	0	217	0		12	0	12	0	25		0	25	62	1	0	0	63	317	
4:00 PM	258	8	22	0	288	1		14	0	15	1	17		0	18	99	3	0	0	102	423	
4:15 PM	272	30	21	0	323	5		11	0	16	0	19		0	19	95	3	0	0	98	456	
4:30 PM	312	28	25	0	365	5		13	0	18	2	17		0	19	131	8	0	0	139	541	
4:45 PM	333	27	28	0	388	7		24	0	31	0	13		0	13	88	4	0	0	92	524	
5:00 PM	308	28	20	0	356	6		15	0	21	0	15		0	15	163	6	0	0	169	561	
5:15 PM	251	31	22	0	304	6		21	0	27	1	29		0	30	101	8	0	0	109	470	
5:30 PM	154	21	21	0	196	3		11	0	14	1	18		0	19	61	6	0	0	67	296	
5:45 PM	137	20	20	0	177	3		16	0	19	1	18		0	19	63	6	0	0	69	284	
Total	2,639	256	259	0	3,154	45	0	150	0	195	7	232	0	0	239	0	1,013	57	0	1,070	4,658	
System Peak Hour:																					2,096	4:30 PM - 5:30 PM

Peak Hour	Northbound					Southbound					Eastbound					Westbound					Int. Total
	L	T	R	RTOR	Total	L	T	R	RTOR	Total	L	T	R	RTOR	Total	L	T	R	RTOR	Total	
RAW	1,204	114	95	0	1,413	24	0	73	0	97	3	74	0	0	77	0	483	26	0	509	2,096
PHF	0.90	0.92	0.85	0	0.91	0.86	0.00	0.76	0	0.78	0.38	0.64	0.00	0	0.64	0.00	0.74	0.81	0	0.75	0.93
ADJ	1,204	114	95	0	1,413	24	0	73	0	97	3	74	0	0	77	0	483	26	0	509	2,096
HV	5	3	1	0	9	2	0	0	0	2	0	1	0	0	1	0	4	1	0	5	17
%HV%	0%	3%	1%	0%	1%	8%	0%	0%	0%	2%	0%	1%	0%	0%	1%	0%	1%	4%	0%	1%	1%

2nd Street Traffic Study
 City of Harrisburg, Dauphin County
 Baker Project #143249
 Count Summary
 JPC
 3/12/2015

Other Information

TMC Date: 9/23/2013
 Projection Date 9/23/2013
 N = 0.00
 TPG: 3
 Growth: 0.75%
 Seasonal Factor: 0.873

North/Southbound 2nd Street
 East/Westbound Division Street

**Evening Peak Hour
 Heavy Vehicles**

Time Begin	Northbound					Southbound					Eastbound					Westbound					Total	
	L	T	R	RTOR	Total	L	T	R	RTOR	Total	L	T	R	RTOR	Total	L	T	R	RTOR	Total		
3:00 PM	2	1	0	0	3	0	0	0	0	0	0	0	0	0	0	3	0	0	0	3	6	
3:15 PM	1	1	1	0	3	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	4	
3:30 PM	1	0	2	0	3	1	0	0	0	1	0	1	0	1	0	1	0	0	0	1	6	
3:45 PM	0	1	1	0	2	0	0	1	0	1	0	1	0	1	0	3	0	0	0	3	7	
4:00 PM	2	0	0	0	2	0	0	0	0	0	2	0	0	2	0	1	0	0	0	1	5	
4:15 PM	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	1	0	0	0	1	2	
4:30 PM	1	1	0	0	2	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	3	
4:45 PM	3	1	0	0	4	1	0	0	0	1	0	0	0	0	0	2	0	0	0	2	7	
5:00 PM	1	0	0	0	1	1	0	0	0	1	0	1	0	1	0	0	0	0	0	0	3	
5:15 PM	0	1	1	0	2	0	0	0	0	0	0	0	0	0	0	1	1	0	0	2	4	
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
5:45 PM	0	0	1	0	1	1	0	0	0	1	0	0	0	0	0	1	0	0	0	1	3	
Total	11	6	6	0	23	6	0	1	0	7	0	5	0	5	0	14	1	0	0	15	50	
System Peak Hour:																					17	4:30 PM - 5:30 PM

Peak Hour	Northbound					Southbound					Eastbound					Westbound					Int. Total
	L	T	R	RTOR	Total	L	T	R	RTOR	Total	L	T	R	RTOR	Total	L	T	R	RTOR	Total	
HV	5	3	1	0	9	2	0	0	0	2	0	1	0	0	1	0	4	1	0	5	17
HV%	0%	3%	1%	0%	1%	8%	0%	0%	0%	2%	0%	1%	0%	0%	1%	0%	1%	4%	0%	1%	1%

North/Southbound 2nd Street
 East/Westbound Division Street

Other Information	
TMC Date:	9/23/2013
Projection Date:	9/23/2013
N =	0.00
TPG:	3
Growth:	0.75%
Seasonal Factor:	0.873

**Morning Peak Hour
 Pedestrian Counts**

Time Begin	Northbound					Southbound					Eastbound					Westbound					Total
	L	T	R	RTOR	Total	L	T	R	RTOR	Total	L	T	R	RTOR	Total	L	T	R	RTOR	Total	
6:00 AM					0					0					0					0	1
6:15 AM					0					0					0					0	1
6:30 AM					0					0					0					0	0
6:45 AM					0					0					0					0	0
7:00 AM					0					0					1					1	2
7:15 AM					0					0					0					0	0
7:30 AM					1					0					0					0	1
7:45 AM					1					0					0					0	1
8:00 AM					0					0					0					0	0
8:15 AM					0					0					0					0	0
8:30 AM					0					0					1					1	2
8:45 AM					0					0					0					1	2
Total	0	0	0	0	3	0	0	0	0	0	0	0	0	0	2	0	0	0	0	3	8
System Peak Hour:																				2	

Peak Hour	Northbound					Southbound					Eastbound					Westbound					Int.				
Ped	L	T	R	RTOR	Total	L	T	R	RTOR	Total	L	T	R	RTOR	Total	L	T	R	RTOR	Total	Total				
	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2

**Mid Day Peak Hour
 Pedestrian Counts**

Time Begin	Northbound					Southbound					Eastbound					Westbound					Total
	L	T	R	RTOR	Total	L	T	R	RTOR	Total	L	T	R	RTOR	Total	L	T	R	RTOR	Total	
11:00 AM					0					0					0					0	0
11:15 AM					0					0					0					0	0
11:30 AM					0					2					1					0	3
11:45 AM					0					1					0					1	2
12:00 PM					0					0					0					0	0
12:15 PM					2					1					2					0	5
12:30 PM					1					0					0					0	1
12:45 PM					1					0					2					0	3
Total	0	0	0	0	4	0	0	0	0	4	0	0	0	0	5	0	0	0	0	1	14
System Peak Hour:																				9	

Peak Hour	Northbound					Southbound					Eastbound					Westbound					Int.				
Ped	L	T	R	RTOR	Total	L	T	R	RTOR	Total	L	T	R	RTOR	Total	L	T	R	RTOR	Total	Total				
	0	0	0	0	4	0	0	0	0	1	0	0	0	0	4	0	0	0	0	0	0	0	0	0	9

**Evening Peak Hour
 Pedestrian Counts**

Time Begin	Northbound					Southbound					Eastbound					Westbound					Total
	L	T	R	RTOR	Total	L	T	R	RTOR	Total	L	T	R	RTOR	Total	L	T	R	RTOR	Total	
3:00 PM					0					0					1					0	1
3:15 PM					0					0					0					0	0
3:30 PM					0					0					0					0	0
3:45 PM					0					0					0					1	1
4:00 PM					0					0					0					0	0
4:15 PM					0					0					0					0	0
4:30 PM					0					0					0					0	0
4:45 PM					1					0					0					0	1
5:00 PM					0					0					0					0	0
5:15 PM					0					0					0					0	0
5:30 PM					0					1					0					0	1
5:45 PM					2					1					0					3	4
Total	0	0	0	0	3	0	0	0	0	2	0	0	0	0	1	0	0	0	0	1	7
System Peak Hour:																				4	

Peak Hour	Northbound					Southbound					Eastbound					Westbound					Int.				
Ped	L	T	R	RTOR	Total	L	T	R	RTOR	Total	L	T	R	RTOR	Total	L	T	R	RTOR	Total	Total				
	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1

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Automatic Traffic Recorder 2nd Street North of Wisconisco Street Morning Peak Hour

2nd Street (Northbound)				
Time Begin	Tuesday 23-Sep-14	Wednesday 24-Sep-14	Thursday 25-Sep-14	Link Averages
	Northbound	Northbound	Northbound	Average
6:00 AM	22	16	15	18
6:15 AM	29	25	24	26
6:30 AM	36	39	42	39
6:45 AM	55	48	43	49
7:00 AM	71	69	58	66
7:15 AM	60	66	64	63
7:30 AM	80	105	70	85
7:45 AM	88	90	108	95
8:00 AM	102	98	112	104
8:15 AM	99	105	86	97
8:30 AM	88	103	86	92
8:45 AM	111	81	76	89
Total	841	845	784	823
			System Peak Hour	381
				7:30 AM - 8:30 AM

Peak Hour	Tuesday	Wednesday	Thursday	Average
RAW	369	398	376	381
PHF	0.90	0.95	0.84	0.92
ADJ	369	398	376	381
HV	18	18	14	17
%HV%	5%	5%	4%	4%

2nd Street Traffic Study
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Automatic Traffic Recorder
2nd Street North of Wisconisco Street
Evening Peak Hour

2nd Street (Northbound)				
Time Begin	Tuesday 23-Sep-14	Wednesday 24-Sep-14	Thursday 25-Sep-14	Link Averages
	Northbound	Northbound	Northbound	Average
3:00 PM	146	119	122	129
3:15 PM	153	132	135	140
3:30 PM	189	183	176	183
3:45 PM	178	168	145	164
4:00 PM	248	249	204	234
4:15 PM	271	272	259	267
4:30 PM	319	278	276	291
4:45 PM	304	254	258	272
5:00 PM	309	310	249	289
5:15 PM	288	283	240	270
5:30 PM	193	159	168	173
5:45 PM	168	149	146	154
Total	2,766	2,556	2,378	2,567
			System Peak Hour	1,123 4:30 PM - 5:30 PM

Peak Hour	Tuesday	Wednesday	Thursday	Average
RAW	1,220	1,125	1,023	1,123
PHF	0.96	0.91	0.93	0.96
ADJ	1,220	1,125	1,023	1,123
HV	43	28	47	39
%HV%	4%	2%	5%	4%

2nd Street Traffic Study
 City of Harrisburg, Dauphin County
 Baker Project #143249
 Count Summary
 JPC
 3/12/2015

Automatic Traffic Recorder
2nd Street North of Wisconisco Street
 Mid Day Peak Hour

2nd Street (Northbound)				
Time Begin	Tuesday 23-Sep-14	Wednesday 24-Sep-14	Thursday 25-Sep-14	Link Averages
	Northbound	Northbound	Northbound	Average
11:00 AM	32	19	46	32
11:15 AM	27	26	27	27
11:30 AM	30	28	18	25
11:45 AM	28	26	25	26
12:00 PM	18	19	25	21
12:15 PM	19	18	25	21
12:30 PM	19	22	22	21
12:45 PM	13	17	12	14
Total	186	175	200	187
			System Peak Hour	76 12:00 PM - 1:00 PM

Peak Hour	Tuesday	Wednesday	Thursday	Average
RAW	69	76	84	76
PHF	0.96	0.91	0.93	0.96
ADJ	1,220	1,125	1,023	1,123
HV	19	15	21	18
%HV%	2%	1%	2%	2%

2nd Street Traffic Study
 City of Harrisburg, Dauphin County
 Baker Project #143249
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 JPC
 3/12/2015

Automatic Traffic Recorder
2nd Street North of Reily Street
 Morning Peak Hour

2nd Street (Northbound)				
Time Begin	Tuesday 7-Oct-14	Wednesday 8-Oct-14	Thursday 9-Oct-14	Link Averages
	Northbound	Northbound	Northbound	Average
6:00 AM	30	49	31	37
6:15 AM	46	48	50	48
6:30 AM	69	58	63	63
6:45 AM	69	68	65	67
7:00 AM	97	102	96	98
7:15 AM	110	97	107	105
7:30 AM	106	119	117	114
7:45 AM	142	125	147	138
8:00 AM	156	150	154	153
8:15 AM	131	142	154	142
8:30 AM	141	146	146	144
8:45 AM	136	166	127	143
Total	1,233	1,270	1,257	1,253
			System Peak Hour	548 7:30 AM - 8:30 AM

215	6:00 AM - 7:00 AM
277	6:15 AM - 7:15 AM
334	6:30 AM - 7:30 AM
384	6:45 AM - 7:45 AM
455	7:00 AM - 8:00 AM
510	7:15 AM - 8:15 AM
548	7:30 AM - 8:30 AM
578	7:45 AM - 8:45 AM
583	8:00 AM - 9:00 AM

Peak Hour	Tuesday	Wednesday	Thursday	Average
RAW	535	536	572	548
PHF	0.86	0.89	0.93	0.89
ADJ	535	536	572	548
HV	96	87	114	99
%HV%	18%	16%	20%	18%

2nd Street Traffic Study
 City of Harrisburg, Dauphin County
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Automatic Traffic Recorder 2nd Street North of Reily Street Evening Peak Hour

2nd Street (Northbound)				
Time Begin	Tuesday 7-Oct-14	Wednesday 8-Oct-14	Thursday 9-Oct-14	Link Averages
	Northbound	Northbound	Northbound	Average
3:00 PM	146	135	146	142
3:15 PM	142	144	171	152
3:30 PM	206	192	177	192
3:45 PM	199	196	206	200
4:00 PM	284	272	261	272
4:15 PM	250	270	245	255
4:30 PM	267	271	284	274
4:45 PM	260	292	273	275
5:00 PM	301	294	262	286
5:15 PM	253	289	237	260
5:30 PM	220	215	219	218
5:45 PM	162	186	185	178
Total	2,690	2,756	2,666	2,704
			System Peak Hour	1,094 4:30 PM - 5:30 PM

Peak Hour	Tuesday	Wednesday	Thursday	Average
RAW	1,081	1,146	1,056	1,094
PHF	0.90	0.97	0.93	0.96
ADJ	1,081	1,146	1,056	1,094
HV	216	264	241	240
%HV%	20%	23%	23%	22%

2nd Street Traffic Study
 City of Harrisburg, Dauphin County
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Automatic Traffic Recorder
2nd Street North of Reily Street
 Mid Day Peak Hour

2nd Street (Northbound)				
Time Begin	Tuesday 7-Oct-14	Wednesday 8-Oct-14	Thursday 9-Oct-14	Link Averages
	Northbound	Northbound	Northbound	Average
11:00 AM	108	111	125	115
11:15 AM	110	110	122	114
11:30 AM	114	119	133	122
11:45 AM	126	141	124	130
12:00 PM	152	132	134	139
12:15 PM	128	131	126	128
12:30 PM	129	122	124	125
12:45 PM	142	130	135	136
Total	1,009	996	1,023	1,009
			System Peak Hour	528 12:00 PM - 1:00 PM

Peak Hour	Tuesday	Wednesday	Thursday	Average
RAW	551	515	519	528
PHF	0.90	0.97	0.93	0.96
ADJ	1,081	1,146	1,056	1,094
HV	80	97	93	90
%HV%	7%	8%	9%	8%

2nd Street Traffic Study
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 3/12/2015

Other Information
 TMC Date: 9/23/2014
 Projection Date 9/23/2014
 N = 0.00
 TPG: 3
 Growth: 0.75%
 Seasonal Factor: 0.935

Automatic Traffic Recorder
7th Street North of State Street
 Morning Peak Hour

7th Street (North/South)													
Time Begin	Tuesday 23-Sep-14			Wednesday 24-Sep-14			Thursday 25-Sep-14			Link Averages			
	Northbound	Southbound	Combined	Northbound	Southbound	Combined	Northbound	Southbound	Combined	Northbound	Southbound	Combined	
6:00 AM	31	21	52	37	22	59	40	19	59	36	21	57	
6:15 AM	56	34	90	56	28	84	54	32	86	55	31	87	
6:30 AM	108	42	150	82	57	139	82	41	123	91	47	137	
6:45 AM	118	80	198	130	101	231	124	90	214	124	90	214	495 6:00 AM - 7:00 AM
7:00 AM	147	106	253	149	91	240	139	91	230	145	96	241	679 6:15 AM - 7:15 AM
7:15 AM	200	110	310	211	123	334	195	118	313	202	117	319	912 6:30 AM - 7:30 AM
7:30 AM	213	98	311	187	95	282	200	93	293	200	95	295	1,070 6:45 AM - 7:45 AM
7:45 AM	257	108	365	261	103	364	260	109	369	259	107	366	1,221 7:00 AM - 8:00 AM
8:00 AM	215	106	321	207	102	309	212	103	315	211	104	315	1,295 7:15 AM - 8:15 AM
8:15 AM	148	122	270	163	119	282	194	123	317	168	121	290	1,266 7:30 AM - 8:30 AM
8:30 AM	164	138	302	144	131	275	162	129	291	157	133	289	1,260 7:45 AM - 8:45 AM
8:45 AM	141	114	255	137	102	239	149	123	272	142	113	255	1,149 8:00 AM - 9:00 AM
Total	1,798	1,079	2,877	1,764	1,074	2,838	1,811	1,071	2,882	1,791	1,075	2,866	1,295 7:15 AM - 8:15 AM
System Peak Hour:												1,266 7:30 AM - 8:30 AM	

Peak Hour	Tuesday			Wednesday			Thursday			Average		
	NB	SB	Combined	NB	SB	Combined	NB	SB	Combined	NB	SB	Combined
RAW	833	434	1,267	818	419	1,237	866	428	1,294	839	427	1,266
PHF	0.81	0.89	0.87	0.78	0.88	0.85	0.83	0.87	0.88	0.81	0.88	0.86
ADJ	833	434	1,267	818	419	1,237	866	428	1,294	839	427	1,266
HV	19	22	41	21	20	41	22	21	43	21	21	42
%HV%	2%	5%	3%	3%	5%	3%	3%	5%	3%	2%	5%	3%

2nd Street Traffic Study
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 JPC
 3/12/2015

Other Information
 TMC Date: 9/23/2014
 Projection Date 9/23/2014
 N = 0.00
 TPG: 3
 Growth: 0.75%
 Seasonal Factor: 0.935

Automatic Traffic Recorder
7th Street North of State Street
 Evening Peak Hour

7th Street (North/South)													
Time Begin	Tuesday 23-Sep-14			Wednesday 24-Sep-14			Thursday 25-Sep-14			Link Averages			
	Northbound	Southbound	Combined	Northbound	Southbound	Combined	Northbound	Southbound	Combined	Northbound	Southbound	Combined	
3:00 PM	118	156	274	107	154	261	130	156	286	118	155	274	
3:15 PM	102	137	239	117	125	242	108	141	249	109	134	243	
3:30 PM	140	221	361	128	196	324	166	202	368	145	206	351	
3:45 PM	129	175	304	136	183	319	160	177	337	142	178	320	
4:00 PM	162	230	392	155	258	413	146	219	365	154	236	390	
4:15 PM	145	238	383	179	208	387	146	224	370	157	223	380	
4:30 PM	157	232	389	146	209	355	125	240	365	143	227	370	
4:45 PM	161	237	398	148	259	407	113	243	356	141	246	387	
5:00 PM	138	260	398	170	275	445	141	273	414	150	269	419	
5:15 PM	92	226	318	142	296	438	134	230	364	123	251	373	
5:30 PM	129	184	313	118	202	320	112	157	269	120	181	301	
5:45 PM	98	132	230	103	140	243	96	139	235	99	137	236	
Total	1,571	2,428	3,999	1,649	2,505	4,154	1,577	2,401	3,978	1,599	2,445	4,044	
System Peak Hour:												1,556	4:15 PM - 5:15 PM
												1,549	4:30 PM - 5:30 PM

Peak Hour	Tuesday			Wednesday			Thursday			Average		
	NB	SB	Combined	NB	SB	Combined	NB	SB	Combined	NB	SB	Combined
RAW	548	955	1,503	606	1,039	1,645	513	986	1,499	556	993	1,549
PHF	0.85	0.92	0.94	0.89	0.88	0.92	0.91	0.90	0.91	0.93	0.92	0.92
ADJ	548	955	1,503	606	1,039	1,645	513	986	1,499	556	993	1,549
HV	18	34	52	13	38	51	14	31	45	15	34	49
%HV%	3%	4%	3%	2%	4%	3%	3%	3%	3%	3%	3%	3%

2nd Street Traffic Study
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 Count Summary
 JPC
 3/12/2015

Other Information
TMC Date: 9/23/2014
Projection Date 9/23/2014
N = 0.00
TPG: 3
Growth: 0.75%
Seasonal Factor: 0.935

Automatic Traffic Recorder
7th Street North of State Street
 Mid Day Peak Hour

7th Street (North/South)												
Time Begin	Tuesday 23-Sep-14			Wednesday 24-Sep-14			Thursday 25-Sep-14			Link Averages		
	Northbound	Southbound	Combined	Northbound	Southbound	Combined	Northbound	Southbound	Combined	Northbound	Southbound	Combined
11:00 AM	78	101	179	74	107	181	78	70	148	77	93	169
11:15 AM	80	107	187	83	131	214	83	107	190	82	115	197
11:30 AM	98	116	214	77	108	185	89	123	212	88	116	204
11:45 AM	102	101	203	108	98	206	88	123	211	99	107	207
12:00 PM	101	131	232	100	143	243	96	128	224	99	134	233
12:15 PM	95	118	213	96	122	218	72	140	212	88	127	214
12:30 PM	91	124	215	85	115	200	82	136	218	86	125	211
12:45 PM	103	114	217	92	126	218	116	127	243	104	122	226
Total	748	912	1,660	715	950	1,665	704	954	1,658	722	939	1,661
											System Peak Hour:	884 12:00 PM - 1:00 PM

Peak Hour	Tuesday			Wednesday			Thursday			Average		
	NB	SB	Combined	NB	SB	Combined	NB	SB	Combined	NB	SB	Combined
RAW	390	487	877	373	506	879	366	531	897	376	508	884
PHF	0.85	0.92	0.94	0.89	0.88	0.92	0.91	0.90	0.91	0.93	0.92	0.92
ADJ	548	955	1,503	606	1,039	1,645	513	986	1,499	556	993	1,549
HV	12	14	26	12	28	40	17	21	38	14	21	35
%HV%	2%	1%	2%	2%	3%	2%	3%	2%	3%	2%	2%	2%

2nd Street Traffic Study
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 JPC
 3/12/2015

Other Information
 TMC Date: 9/23/2014
 Projection Date 9/23/2014
 N = 0.00
 TPG: 5
 Growth: 0.75%
 Seasonal Factor: 0.972

Automatic Traffic Recorder
7th Street South of Schuylkill Street
 Morning Peak Hour

7th Street (North/South)													
Time Begin	Tuesday 23-Sep-14			Wednesday 24-Sep-14			Thursday 25-Sep-14			Link Averages			
	Northbound	Southbound	Combined	Northbound	Southbound	Combined	Northbound	Southbound	Combined	Northbound	Southbound	Combined	
6:00 AM	13	13	26	15	10	25	14	11	25	14	11	25	
6:15 AM	20	17	37	17	16	33	13	12	25	17	15	32	
6:30 AM	28	27	55	28	33	61	22	28	50	26	29	55	
6:45 AM	35	55	90	44	37	81	37	53	90	39	48	87	
7:00 AM	60	50	110	41	36	77	59	43	102	53	43	96	
7:15 AM	67	64	131	59	61	120	62	64	126	63	63	126	
7:30 AM	78	68	146	93	67	160	90	51	141	87	62	149	
7:45 AM	110	109	219	114	87	201	121	81	202	115	92	207	
8:00 AM	81	124	205	89	129	218	85	107	192	85	120	205	
8:15 AM	70	143	213	77	140	217	65	129	194	71	137	208	
8:30 AM	79	127	206	57	129	186	63	154	217	66	137	203	
8:45 AM	54	126	180	59	118	177	48	118	166	54	121	174	
Total	695	923	1,618	693	863	1,556	679	851	1,530	689	879	1,568	
System Peak Hour:												769	7:30 AM - 8:30 AM

Peak Hour	Tuesday			Wednesday			Thursday			Average		
	NB	SB	Combined	NB	SB	Combined	NB	SB	Combined	NB	SB	Combined
RAW	339	444	783	373	423	796	361	368	729	358	412	769
PHF	0.77	0.78	0.89	0.82	0.76	0.91	0.75	0.71	0.90	0.78	0.75	0.92
ADJ	339	444	783	373	423	796	361	368	729	358	412	769
HV	35	32	67	36	32	68	44	21	65	38	28	67
%HV%	10%	7%	9%	10%	8%	9%	12%	6%	9%	11%	7%	9%

2nd Street Traffic Study
 City of Harrisburg, Dauphin County
 Baker Project #143249
 Count Summary
 JPC
 3/12/2015

Other Information

TMC Date: 9/23/2014
 Projection Date: 9/23/2014
 N = 0.00
 TPG: 5
 Growth: 0.75%
 Seasonal Factor: 0.972

Automatic Traffic Recorder 7th Street South of Schuylkill Street Evening Peak Hour

7th Street (North/South)													
Time Begin	Tuesday 23-Sep-14			Wednesday 24-Sep-14			Thursday 25-Sep-14			Link Averages			
	Northbound	Southbound	Combined	Northbound	Southbound	Combined	Northbound	Southbound	Combined	Northbound	Southbound	Combined	
3:00 PM	70	99	169	54	102	156	62	80	142	62	94	156	
3:15 PM	63	99	162	55	101	156	42	76	118	53	92	145	
3:30 PM	84	99	183	84	122	206	80	104	184	83	108	191	
3:45 PM	60	99	159	64	119	183	55	128	183	60	115	175	
4:00 PM	84	99	183	74	128	202	76	133	209	78	120	198	
4:15 PM	55	99	154	62	140	202	52	136	188	56	125	181	
4:30 PM	72	99	171	79	152	231	77	146	223	76	132	208	
4:45 PM	52	99	151	68	161	229	74	155	229	65	138	203	
5:00 PM	91	99	190	105	153	258	93	135	228	96	129	225	
5:15 PM	74	99	173	91	129	220	76	113	189	80	114	194	
5:30 PM	112	99	211	127	95	222	114	80	194	118	91	209	
5:45 PM	76	99	175	71	115	186	61	115	176	69	110	179	
Total	893	1,188	2,081	934	1,517	2,451	862	1,401	2,263	896	1,369	2,265	
System Peak Hour:												831	4:30 PM - 5:30 PM

Peak Hour	Tuesday			Wednesday			Thursday			Average		
	NB	SB	Combined	NB	SB	Combined	NB	SB	Combined	NB	SB	Combined
RAW	289	396	685	343	595	938	320	549	869	317	513	831
PHF	0.79	1.00	0.90	0.82	0.92	0.91	0.86	0.89	0.95	0.82	0.93	0.92
ADJ	289	396	685	343	595	938	320	549	869	317	513	831
HV	43	35	78	27	27	54	25	23	48	32	28	60
%HV%	15%	9%	11%	8%	5%	6%	8%	4%	6%	10%	6%	7%

2nd Street Traffic Study
 City of Harrisburg, Dauphin County
 Baker Project #143249
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 JPC
 3/12/2015

Other Information
TMC Date: 9/23/2014
Projection Date 9/23/2014
N = 0.00
TPG: 5
Growth: 0.75%
Seasonal Factor: 0.972

Automatic Traffic Recorder
7th Street South of Schuylkill Street
 Mid Day Peak Hour

7th Street (North/South)												
Time Begin	Tuesday 23-Sep-14			Wednesday 24-Sep-14			Thursday 25-Sep-14			Link Averages		
	Northbound	Southbound	Combined	Northbound	Southbound	Combined	Northbound	Southbound	Combined	Northbound	Southbound	Combined
11:00 AM	50	76	126	49	51	100	52	79	131	50	69	119
11:15 AM	54	84	138	59	75	134	55	78	133	56	79	135
11:30 AM	62	79	141	51	75	126	45	62	107	53	72	125
11:45 AM	63	74	137	50	78	128	60	82	142	58	78	136
12:00 PM	81	131	212	90	101	191	68	100	168	80	111	190
12:15 PM	66	98	164	63	88	151	62	74	136	64	87	150
12:30 PM	82	100	182	71	106	177	59	95	154	71	100	171
12:45 PM	76	92	168	69	91	160	61	88	149	69	90	159
Total	534	734	1,268	502	665	1,167	462	658	1,120	499	686	1,185
											System Peak Hour:	671 12:00 PM - 1:00 PM

Peak Hour	Tuesday			Wednesday			Thursday			Average		
	NB	SB	Combined	NB	SB	Combined	NB	SB	Combined	NB	SB	Combined
RAW	305	421	726	293	386	679	250	357	607	283	388	671
PHF	0.79	1.00	0.90	0.82	0.92	0.91	0.86	0.89	0.95	0.82	0.93	0.92
ADJ	289	396	685	343	595	938	320	549	869	317	513	831
HV	33	27	60	35	27	62	19	11	30	29	22	51
%HV%	11%	7%	9%	10%	5%	7%	6%	2%	3%	9%	4%	6%

2nd Street Traffic Study
 City of Harrisburg, Dauphin County
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Automatic Traffic Recorder Front Street South of Harris Street Morning Peak Hour

Front Street (Southbound)				
Time Begin	Tuesday 7-Oct-14	Wednesday 8-Oct-14	Thursday 9-Oct-14	Link Averages
	Southbound	Southbound	Southbound	Average
6:00 AM	127	140	141	136
6:15 AM	200	203	183	195
6:30 AM	265	269	259	264
6:45 AM	328	358	332	339
7:00 AM	343	340	368	350
7:15 AM	509	470	465	481
7:30 AM	527	577	540	548
7:45 AM	534	551	575	553
8:00 AM	494	497	485	492
8:15 AM	463	485	459	469
8:30 AM	413	419	373	402
8:45 AM	340	358	344	347
Total	4,543	4,667	4,524	4,578
			System Peak Hour	2,075 7:15 AM - 8:15 AM
				2,062 7:30 AM - 8:30 AM

Peak Hour	Tuesday	Wednesday	Thursday	Average
RAW	2,018	2,110	2,059	2,062
PHF	0.94	0.91	0.90	0.93
ADJ	2,018	2,110	2,059	2,062
HV	106	118	95	106
%HV%	5%	6%	5%	5%

2nd Street Traffic Study
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Automatic Traffic Recorder Front Street South of Harris Street Evening Peak Hour

Front Street (Southbound)				
Time Begin	Tuesday 7-Oct-14	Wednesday 8-Oct-14	Thursday 9-Oct-14	Link Averages
	Southbound	Southbound	Southbound	Average
3:00 PM	257	241	235	244
3:15 PM	225	246	246	239
3:30 PM	239	268	260	256
3:45 PM	249	233	264	249
4:00 PM	291	269	290	283
4:15 PM	278	272	261	270
4:30 PM	308	306	347	320
4:45 PM	287	295	305	296
5:00 PM	279	326	327	311
5:15 PM	309	292	300	300
5:30 PM	243	235	279	252
5:45 PM	250	260	271	260
Total	3,215	3,243	3,385	3,281
			System Peak Hour	1,227 4:30 PM - 5:30 PM

Peak Hour	Tuesday	Wednesday	Thursday	Average
RAW	1,183	1,219	1,279	1,227
PHF	0.96	0.93	0.92	0.96
ADJ	1,183	1,219	1,279	1,227
HV	42	44	46	44
%HV%	4%	4%	4%	4%

2nd Street Traffic Study
 City of Harrisburg, Dauphin County
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Automatic Traffic Recorder
Front Street South of Harris Street
 Mid Day Peak Hour

Front Street (Southbound)					
Time Begin	Tuesday 7-Oct-14	Wednesday 8-Oct-14	Thursday 9-Oct-14	Link Averages	
	Southbound	Southbound	Southbound	Average	
11:00 AM	195	215	209	206	
11:15 AM	184	185	195	188	
11:30 AM	228	202	235	222	
11:45 AM	248	217	234	233	849 11:00 AM - 12:00 PM
12:00 PM	220	222	214	219	861 11:15 AM - 12:15 PM
12:15 PM	223	226	202	217	890 11:30 AM - 12:30 PM
12:30 PM	252	191	252	232	900 11:45 AM - 12:45 PM
12:45 PM	208	232	214	218	885 12:00 PM - 1:00 PM
Total	1,758	1,690	1,755	1,734	900 11:45 AM - 12:45 PM
			System Peak Hour		885 12:00 PM - 1:00 PM

Peak Hour	Tuesday	Wednesday	Thursday	Average
RAW	903	871	882	885
PHF	0.96	0.93	0.92	0.96
ADJ	1,183	1,219	1,279	1,227
HV	44	45	33	41
%HV%	4%	4%	3%	3%

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Automatic Traffic Recorder Front Street South of Division Street Morning Peak Hour

Front Street (Southbound)					
Time Begin	Tuesday 23-Sep-14	Wednesday 24-Sep-14	Thursday 25-Sep-14	Link Averages	
	Southbound	Southbound	Southbound	Average	
6:00 AM	102	108	83	98	
6:15 AM	144	141	160	148	
6:30 AM	243	238	212	231	
6:45 AM	288	280	265	278	755 6:00 AM - 7:00 AM
7:00 AM	340	308	288	312	969 6:15 AM - 7:15 AM
7:15 AM	458	431	390	426	1,247 6:30 AM - 7:30 AM
7:30 AM	471	536	511	506	1,522 6:45 AM - 7:45 AM
7:45 AM	534	548	447	510	1,754 7:00 AM - 8:00 AM
8:00 AM	468	467	424	453	1,895 7:15 AM - 8:15 AM
8:15 AM	472	409	417	433	1,901 7:30 AM - 8:30 AM
8:30 AM	330	336	314	327	1,722 7:45 AM - 8:45 AM
8:45 AM	318	327	307	317	1,530 8:00 AM - 9:00 AM
Total	4,168	4,129	3,818	4,038	1,901 7:30 AM - 8:30 AM
System Peak Hour					1,901 7:30 AM - 8:30 AM

Peak Hour	Tuesday	Wednesday	Thursday	Average
RAW	1,945	1,960	1,799	1,901
PHF	0.91	0.89	0.88	0.93
ADJ	1,945	1,960	1,799	1,901
HV	104	109	93	306
%HV%	5%	6%	5%	16%

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Automatic Traffic Recorder Front Street South of Division Street Evening Peak Hour

Front Street (Southbound)				
Time Begin	Tuesday 23-Sep-14	Wednesday 24-Sep-14	Thursday 25-Sep-14	Link Averages
	Southbound	Southbound	Southbound	Average
3:00 PM	140	146	149	145
3:15 PM	152	140	128	140
3:30 PM	161	167	159	162
3:45 PM	192	158	164	171
4:00 PM	177	176	153	169
4:15 PM	171	157	184	171
4:30 PM	191	172	164	176
4:45 PM	204	185	192	194
5:00 PM	191	217	192	200
5:15 PM	191	210	178	193
5:30 PM	190	200	163	184
5:45 PM	174	167	174	172
Total	2,134	2,095	2,000	2,076
System Peak Hour				
				771
				4:45 PM - 5:45 PM
				762
				4:30 PM - 5:30 PM

Peak Hour	Tuesday	Wednesday	Thursday	Average
RAW	777	784	726	762
PHF	0.95	0.90	0.95	0.95
ADJ	777	784	726	762
HV	50	46	29	125
%HV%	6%	6%	4%	16%

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Automatic Traffic Recorder Front Street South of Division Street Mid Day Peak Hour

Front Street (Southbound)				
Time Begin	Tuesday 23-Sep-14	Wednesday 24-Sep-14	Thursday 25-Sep-14	Link Averages
	Southbound	Southbound	Southbound	Average
11:00 AM	141	133	136	137
11:15 AM	131	142	112	128
11:30 AM	138	146	128	137
11:45 AM	159	178	159	165
12:00 PM	166	144	170	160
12:15 PM	148	157	130	145
12:30 PM	147	175	149	157
12:45 PM	192	150	163	168
Total	1,222	1,225	1,147	1,198
System Peak Hour				
				630 12:00 PM - 1:00 PM

Peak Hour	Tuesday	Wednesday	Thursday	Average
RAW	653	626	612	630
PHF	0.95	0.90	0.95	0.95
ADJ	777	784	726	762
HV	42	71	47	160
%HV%	5%	9%	6%	21%

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Midblock Pedestrian Crossing Morning Peak Hour

2nd Street & Reily Street				
Time Begin	Tuesday 23-Sep-14	Tuesday 23-Sep-14	Tuesday 23-Sep-14	Tuesday 23-Sep-14
	Northbound	Southbound	Eastbound	Westbound
6:15 AM	1	2	0	0
6:30 AM	0	1	0	0
6:45 AM	2	0	1	0
7:00 AM	0	1	0	0
7:15 AM	1	5	1	0
7:30 AM	1	5	0	0
7:45 AM	2	4	0	0
8:00 AM	2	4	1	0
8:15 AM	1	3	1	0
8:30 AM	4	2	0	0
8:45 AM	2	0	2	0
Total	16	27	6	0
		System Peak Hour		24
				7:30 AM - 8:30 AM
				26
				7:15 AM - 8:15 AM
				8
				6:15 AM - 7:15 AM
				12
				6:30 AM - 7:30 AM
				17
				6:45 AM - 7:45 AM
				20
				7:00 AM - 8:00 AM
				26
				7:15 AM - 8:15 AM
				24
				7:45 AM - 8:45 AM
				22
				8:00 AM - 9:00 AM

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Midblock Pedestrian Crossing

Mid Day Peak Hour

2nd Street & Reily Street							
Time Begin	Tuesday 23-Sep-14	Tuesday 23-Sep-14	Tuesday 23-Sep-14	Tuesday 23-Sep-14			
	Northbound	Southbound	Eastbound	Westbound			
11:00 AM	3	4	2	0			
11:15 AM	3	1	1	0			
11:30 AM	1	3	1	5			
11:45 AM	4	7	3	1	39	11:00 AM - 12:00 PM	
12:00 PM	4	6	5	3	48	11:15 AM - 12:15 PM	
12:15 PM	5	4	4	7	63	11:30 AM - 12:30 PM	
12:30 PM	3	9	6	0	71	11:45 AM - 12:45 PM	
12:45 PM	5	2	1	5	69	12:00 PM - 1:00 PM	
Total	28	36	23	21	71	11:45 AM - 12:45 PM	
					System Peak Hour	69	12:00 PM - 1:00 PM

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Midblock Pedestrian Crossing

Evening Peak Hour

2nd Street & Reily Street					
Time Begin	Tuesday 23-Sep-14	Tuesday 23-Sep-14	Tuesday 23-Sep-14	Tuesday 23-Sep-14	
	Northbound	Southbound	Eastbound	Westbound	
3:00 PM	3	3	2	3	
3:15 PM	2	3	2	1	
3:30 PM	6	4	4	3	
3:45 PM	3	2	1	3	45 3:00 PM - 4:00 PM
4:00 PM	1	2	4	1	42 3:15 PM - 4:15 PM
4:15 PM	3	3	2	1	43 3:30 PM - 4:30 PM
4:30 PM	5	3	3	1	38 3:45 PM - 4:45 PM
4:45 PM	1	4	1	2	37 4:00 PM - 5:00 PM
5:00 PM	5	6	5	5	50 4:15 PM - 5:15 PM
5:15 PM	5	0	0	3	49 4:30 PM - 5:30 PM
5:30 PM	0	1	3	2	43 4:45 PM - 5:45 PM
5:45 PM	1	4	5	5	50 5:00 PM - 6:00 PM
Total	35	35	32	30	50 4:15 PM - 5:15 PM
			System Peak Hour		49 4:30 PM - 5:30 PM

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Midblock Pedestrian Crossing

Morning Peak Hour

2nd Street & Verbeke Street							
Time Begin	Tuesday 23-Sep-14	Tuesday 23-Sep-14	Tuesday 23-Sep-14	Tuesday 23-Sep-14			
	Northbound	Southbound	Eastbound	Westbound			
6:15 AM	1	2	0	0			
6:30 AM	0	1	1	0			
6:45 AM	0	1	2	2			
7:00 AM	0	3	2	1	16	6:15 AM - 7:15 AM	
7:15 AM	1	6	0	0	20	6:30 AM - 7:30 AM	
7:30 AM	1	7	1	3	30	6:45 AM - 7:45 AM	
7:45 AM	5	3	2	2	37	7:00 AM - 8:00 AM	
8:00 AM	1	3	4	1	40	7:15 AM - 8:15 AM	
8:15 AM	2	7	0	2	44	7:30 AM - 8:30 AM	
8:30 AM	1	4	2	0	39	7:45 AM - 8:45 AM	
8:45 AM	3	1	1	1	33	8:00 AM - 9:00 AM	
Total	15	38	15	12	44	7:30 AM - 8:30 AM	
					System Peak Hour	44	7:30 AM - 8:30 AM

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Midblock Pedestrian Crossing

Mid Day Peak Hour

2nd Street & Verbeke Street					
Time Begin	Tuesday 23-Sep-14	Tuesday 23-Sep-14	Tuesday 23-Sep-14	Tuesday 23-Sep-14	
	Northbound	Southbound	Eastbound	Westbound	
11:00 AM	2	6	3	5	
11:15 AM	3	1	4	2	
11:30 AM	4	3	4	0	
11:45 AM	2	4	3	1	
12:00 PM	5	2	4	4	
12:15 PM	7	2	4	2	
12:30 PM	1	4	1	1	
12:45 PM	5	4	3	6	
Total	29	26	26	21	
				System Peak Hour	55
					12:00 PM - 1:00 PM

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Midblock Pedestrian Crossing

Evening Peak Hour

2nd Street & Verbeke Street					
Time Begin	Tuesday 23-Sep-14	Tuesday 23-Sep-14	Tuesday 23-Sep-14	Tuesday 23-Sep-14	
	Northbound	Southbound	Eastbound	Westbound	
3:00 PM	0	3	1	2	
3:15 PM	4	4	2	4	
3:30 PM	5	9	3	5	
3:45 PM	7	6	6	5	66 3:00 PM - 4:00 PM
4:00 PM	7	8	9	2	86 3:15 PM - 4:15 PM
4:15 PM	4	3	2	3	84 3:30 PM - 4:30 PM
4:30 PM	6	6	2	3	79 3:45 PM - 4:45 PM
4:45 PM	6	1	2	2	66 4:00 PM - 5:00 PM
5:00 PM	6	4	2	1	53 4:15 PM - 5:15 PM
5:15 PM	10	2	1	11	65 4:30 PM - 5:30 PM
5:30 PM	6	3	4	4	65 4:45 PM - 5:45 PM
5:45 PM	12	6	8	1	81 5:00 PM - 6:00 PM
Total	73	55	42	43	86 3:15 PM - 4:15 PM
			System Peak Hour		65 4:30 PM - 5:30 PM

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Midblock Pedestrian Crossing

Morning Peak Hour

2nd Street & Shamokin Street					
Time Begin	Tuesday 23-Sep-14	Tuesday 23-Sep-14	Tuesday 23-Sep-14	Tuesday 23-Sep-14	
	Northbound	Southbound	Eastbound	Westbound	
6:15 AM	0	0	0	0	
6:30 AM	1	1	0	0	
6:45 AM	0	0	0	0	
7:00 AM	0	0	0	0	
7:15 AM	1	0	0	1	
7:30 AM	1	0	0	0	
7:45 AM	1	0	0	1	
8:00 AM	0	0	0	1	
8:15 AM	0	0	1	0	
8:30 AM	0	1	3	1	
8:45 AM	0	0	0	1	
Total	4	2	4	5	
System Peak Hour				5	7:30 AM - 8:30 AM

2	6:15 AM - 7:15 AM
4	6:30 AM - 7:30 AM
3	6:45 AM - 7:45 AM
5	7:00 AM - 8:00 AM
6	7:15 AM - 8:15 AM
5	7:30 AM - 8:30 AM
9	7:45 AM - 8:45 AM
8	8:00 AM - 9:00 AM
9	7:45 AM - 8:45 AM

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Midblock Pedestrian Crossing

Mid Day Peak Hour

2nd Street & Shamokin Street					
Time Begin	Tuesday 23-Sep-14	Tuesday 23-Sep-14	Tuesday 23-Sep-14	Tuesday 23-Sep-14	
	Northbound	Southbound	Eastbound	Westbound	
11:00 AM	1	0	0	1	
11:15 AM	0	0	2	1	
11:30 AM	0	0	0	0	
11:45 AM	0	2	0	1	
12:00 PM	0	0	0	0	
12:15 PM	1	0	2	0	
12:30 PM	0	1	0	0	
12:45 PM	0	2	0	2	
Total	2	5	4	5	
System Peak Hour				8	12:00 PM - 1:00 PM

8	11:00 AM - 12:00 PM
6	11:15 AM - 12:15 PM
6	11:30 AM - 12:30 PM
7	11:45 AM - 12:45 PM
8	12:00 PM - 1:00 PM

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Midblock Pedestrian Crossing

Evening Peak Hour

2nd Street & Shamokin Street					
Time Begin	Tuesday 23-Sep-14	Tuesday 23-Sep-14	Tuesday 23-Sep-14	Tuesday 23-Sep-14	
	Northbound	Southbound	Eastbound	Westbound	
3:00 PM	1	0	0	1	
3:15 PM	0	0	0	0	
3:30 PM	0	0	0	0	
3:45 PM	0	3	0	0	5 3:00 PM - 4:00 PM
4:00 PM	0	0	0	0	3 3:15 PM - 4:15 PM
4:15 PM	0	0	1	0	4 3:30 PM - 4:30 PM
4:30 PM	0	0	0	0	4 3:45 PM - 4:45 PM
4:45 PM	0	0	0	0	1 4:00 PM - 5:00 PM
5:00 PM	0	1	0	1	3 4:15 PM - 5:15 PM
5:15 PM	1	0	0	0	3 4:30 PM - 5:30 PM
5:30 PM	0	1	0	5	9 4:45 PM - 5:45 PM
5:45 PM	0	0	0	2	11 5:00 PM - 6:00 PM
Total	2	5	1	9	11 5:00 PM - 6:00 PM
			System Peak Hour		3 4:30 PM - 5:30 PM

APPENDIX 4
TRAFFIC MODEL

Morning Peak Hour Time Period

Intersection	Dir	Mvmt	Existing Year (2014) Raw	Existing Year (2014) Balanced	Alternative #2A Re-Distribution										Total
					SB (Front St) - R		SB (3rd)		NB (2nd)		SB (7th Street)		SB (Commonwealth)		
					214	Trips	8	Trips	173	Trips	417	Trips	10	Trips	
					%	Vol	%	Vol	%	Vol	%	Vol	%	Vol	
2nd St-North of Reily St	NB	L			0	0			0	0			0	0	
		T	548	548			-91%	-157					0	-157	
		R			0	0			0	0			0	0	
	SB	L							0	0			0	0	
		T			81%	173	81%	7			0	0	81%	8	188
		R							0	0			0	0	
2nd St-North of Wisconsin St	NB	L			0	0			0	0			0	0	
		T	381	381			-100%	-173			0	0	0	-173	
		R			0	0			0	0			0	0	
	SB	L							0	0			0	0	
		T			22%	46	22%	2			0	0	22%	2	50
		R							0	0			0	0	
7th St-North of State St	NB	L			0	0			0	0			0	0	
		T	839	839					0	0			0	0	
		R			0	0			0	0			0	0	
	SB	L							0	0			0	0	
		T	427	427					0	0			0	0	
		R			0	0			0	0			0	0	
7th St-South of Schuykill St	NB	L			0	0			0	0			0	0	
		T	358	358					0	0			0	0	
		R			0	0			0	0			0	0	
	SB	L							0	0			0	0	
		T	412	412					0	0			0	0	
		R			0	0			0	0			0	0	
Front St-South of Harris St	NB	L			0	0			0	0			0	0	
		T			0	0			0	0			0	0	
		R			0	0			0	0			0	0	
	SB	L							0	0			0	0	
		T	2,062	2,062	-81%	-173			0	0			0	-173	
		R			0	0			0	0			0	0	
Front St-South of Division St	NB	L			0	0			0	0			0	0	
		T			0	0			0	0			0	0	
		R			0	0			0	0			0	0	
	SB	L							0	0			0	0	
		T	1,901	1,901	-22%	-46			0	0			0	-46	
		R			0	0			0	0			0	0	

Morning Peak Hour Time Period

Intersection	Dir	Mvmt	Existing	Existing	Existing	Existing	Existing	Existing
			Year (2014) Raw	Year (2014) Balanced	Year (2014) Volumes	Year (2014) Alt #2 Volumes	Year (2014) Alt #2A Volumes	Year (2014) Alt #2B Volumes
2nd St & Forster St	NB	L	199	199	199	199	199	199
		T	399	399	399	338	338	338
		R	263	263	263	324	324	324
	SB	L	0	0	0	83	0	0
		T	0	0	0	0	0	0
		R	0	0	0	232	232	232
	EB	L	297	297	297	208	208	0
		T	1,608	1,608	1,608	1,525	1,608	1,816
		R	0	0	0	0	0	0
	WB	L	0	0	0	0	0	0
		T	560	560	560	542	542	542
		R	43	43	43	36	36	36
2nd St & Maclay St	NB	L	15	15	15	15	15	11
		T	421	421	421	264	264	146
		R	110	110	110	110	110	79
	SB	L	0	0	0	0	0	0
		T	0	0	0	101	73	73
		R	0	0	0	0	0	0
	EB	L	2	2	2	2	2	2
		T	101	101	101	101	101	101
		R	0	0	0	0	0	0
	WB	L	0	0	0	83	60	60
		T	182	182	182	99	122	122
		R	47	47	47	31	31	31
2nd St & Division St	NB	L	262	262	262	89	89	89
		T	66	66	66	66	66	45
		R	50	50	50	50	50	34
	SB	L	10	10	10	10	10	10
		T	0	0	0	21	15	15
		R	53	53	53	32	38	38
	EB	L	1	1	1	1	1	1
		T	347	347	347	345	345	345
		R	0	0	0	2	2	2
	WB	L	0	0	0	46	34	34
		T	115	115	115	119	131	131
		R	20	20	20	20	20	20
Front St & Forster	NB	L	0	0	0	0	0	0
		T	0	0	0	0	0	0
		R	0	0	0	0	0	0
	SB	L	309	309	309	226	309	309
		T	1,300	1,300	1,300	1,300	1,300	1,300
		R	797	797	797	583	583	583
	EB	L	0	0	0	0	0	0
		T	1,551	1,551	1,551	1,462	1,462	1,462
		R	458	458	458	458	458	458
	WB	L	1	1	1	1	1	1
		T	736	736	736	950	950	950
		R	0	0	0	0	0	0

Morning Peak Hour Time Period

Intersection	Dir	Mvmt	Existing	Existing	Existing	Existing	Existing	Existing	
			Year (2014) Raw	Year (2014) Balanced	Year (2014) Volumes	Year (2014) Alt #2 Volumes	Year (2014) Alt #2A Volumes	Year (2014) Alt #2B Volumes	Year (2014) Alt #2C Volumes
7th St & Maclay St	NB	L	24	24	24	24	24	30	30
		T	188	188	188	254	254	269	269
		R	228	228	228	228	228	228	228
	SB	L	221	221	221	221	0	0	0
		T	182	182	182	182	0	0	0
		R	14	14	14	14	0	0	0
	EB	L	11	11	11	11	11	11	11
		T	323	323	323	323	544	544	544
		R	25	25	25	25	207	207	207
	WB	L	330	330	330	330	330	330	330
		T	408	408	408	403	403	403	403
		R	358	358	358	363	363	363	363
7th St & State St	NB	L	0	0	0	0	0	0	0
		T	0	0	0	0	0	0	0
		R	54	54	54	54	54	54	54
	SB	L	297	297	297	297	297	297	297
		T	158	158	158	158	158	158	158
		R	0	0	0	0	0	0	0
	EB	L	0	0	0	0	0	0	0
		T	0	0	0	0	0	0	0
		R	0	0	0	0	0	0	0
	WB	L	596	596	596	596	596	596	596
		T	0	0	0	0	0	0	0
		R	915	915	915	915	915	915	915
7th St & Forster St	NB	L	535	535	535	531	531	531	531
		T	236	236	236	240	240	240	240
		R	188	188	188	188	188	188	188
	SB	L	3	3	3	3	3	3	3
		T	169	169	169	169	169	169	169
		R	287	287	287	285	285	285	285
	EB	L	651	651	651	712	712	733	733
		T	248	248	248	248	248	248	248
		R	302	302	302	302	302	302	302
	WB	L	0	0	0	0	0	0	0
		T	0	0	0	0	0	0	0
		R	2	2	2	2	2	2	2
3rd St & Forster St	NB	L	49	49	49	49	49	49	49
		T	79	79	79	79	79	79	79
		R	131	131	131	131	131	131	131
	SB	L	43	43	43	43	43	43	43
		T	92	92	92	92	92	92	92
		R	18	18	18	10	10	10	10
	EB	L	117	117	117	117	117	252	252
		T	1,465	1,465	1,465	1,526	1,526	1,599	1,599
		R	169	169	169	169	169	169	169
	WB	L	111	111	111	111	111	111	111
		T	502	502	502	495	495	495	495
		R	25	25	25	25	25	25	25

Morning Peak Hour Time Period

Intersection	Dir	Mvmt	Existing	Existing	Existing	Existing	Existing	Existing
			Year (2014) Raw	Year (2014) Balanced	Year (2014) Volumes	Year (2014) Alt #2 Volumes	Year (2014) Alt #2A Volumes	Year (2014) Alt #2B Volumes
Commonwealth Ave & Forster St	NB	L	18	18	18	18	18	18
		T	83	83	83	83	83	83
		R	40	40	40	40	40	40
	SB	L	132	132	132	132	132	132
		T	112	112	112	112	112	112
		R	55	55	55	45	45	45
	EB	L	392	392	392	392	392	444
		T	1,042	1,042	1,042	1,103	1,103	1,124
		R	200	200	200	200	200	200
	WB	L	97	97	97	97	97	97
		T	580	580	580	573	573	573
		R	109	109	109	109	109	109
7th St & Herr St	NB	L	29	29	29	29	29	29
		T	594	594	594	658	658	679
		R	312	312	312	312	312	312
	SB	L	139	139	139	139	139	139
		T	342	342	342	340	340	340
		R	16	16	16	16	16	16
	EB	L	0	0	0	0	0	0
		T	0	0	0	0	0	0
		R	1	1	1	1	1	1
	WB	L	376	376	376	376	376	376
		T	20	20	20	20	20	20
		R	343	343	343	343	343	343

Morning Peak Hour Time Period

Intersection	Dir	Mvmt	Existing	Existing	Existing	Existing	Existing	Existing
			Year (2014) Raw	Year (2014) Balanced	Year (2014) Volumes	Year (2014) Alt #2 Volumes	Year (2014) Alt #2A Volumes	Year (2014) Alt #2B Volumes
2nd St-North of Reily St	NB	L			0	0	0	0
		T	548	548	548	391	391	237
		R			0	0	0	0
	SB	L			0	0	0	0
		T			0	255	188	188
		R			0	0	0	0
2nd St-North of Wisconsin St	NB	L			0	0	0	0
		T	381	381	381	208	208	169
		R			0	0	0	0
	SB	L			0	0	0	0
		T			0	68	50	50
		R			0	0	0	0
7th St-North of State St	NB	L			0	0	0	0
		T	839	839	839	839	839	839
		R			0	0	0	0
	SB	L			0	0	0	0
		T	427	427	427	427	427	427
		R			0	0	0	0
7th St-South of Schuykill St	NB	L			0	0	0	0
		T	358	358	358	358	358	358
		R			0	0	0	0
	SB	L			0	0	0	0
		T	412	412	412	412	412	412
		R			0	0	0	0
Front St-South of Harris St	NB	L			0	0	0	0
		T			0	0	0	0
		R			0	0	0	0
	SB	L			0	0	0	0
		T	2,062	2,062	2,062	1,822	1,889	1,889
		R			0	0	0	0
Front St-South of Division St	NB	L			0	0	0	0
		T			0	0	0	0
		R			0	0	0	0
	SB	L			0	0	0	0
		T	1,901	1,901	1,901	1,837	1,855	1,855
		R			0	0	0	0

Evening Peak Hour Time Period

Intersection	Dir	Mvmt	Existing Year (2014) Raw	Existing Year (2014) Balanced	Alternative #2A Re-Distribution										Total
					SB (Front St) - R		SB (3rd)		NB (2nd)		SB (7th Street)		SB (Commonwealth)		
					405	Trips	26	Trips	762	Trips	489	Trips	39	Trips	
					%	Vol	%	Vol	%	Vol	%	Vol	%	Vol	
2nd St-North of Reily St	NB	L			0	0	0	0	0	0	0	0	0	0	
		T	548	548			-95%	-722						-722	
		R			0	0			0	0			0	0	
	SB	L							0	0			0	0	
		T			87%	351	87%	22			0	0	87%	33	406
		R							0	0			0	0	
2nd St-North of Wisconsin St	NB	L			0	0	0	0	0	0	0	0	0	0	
		T	1,123	1,123			-100%	-762					0	-762	
		R			0	0			0	0			0	0	
	SB	L							0	0			0	0	
		T			24%	99	24%	6			0	0	24%	9	114
		R							0	0			0	0	
7th St-North of State St	NB	L			0	0	0	0	0	0	0	0	0	0	
		T	556	556					0	0			0	0	
		R			0	0			0	0			0	0	
	SB	L							0	0			0	0	
		T	993	993					0	0			0	0	
		R			0	0			0	0			0	0	
7th St-South of Schuylkill St	NB	L			0	0	0	0	0	0	0	0	0	0	
		T	317	317					0	0			0	0	
		R			0	0			0	0			0	0	
	SB	L							0	0			0	0	
		T	513	513					0	0		-513	0	-513	
		R			0	0			0	0			0	0	
Front St-South of Harris St	NB	L			0	0	0	0	0	0	0	0	0	0	
		T			0	0			0	0			0	0	
		R			0	0			0	0			0	0	
	SB	L							0	0			0	0	
		T	1,227	1,227	-87%	-351			0	0			0	-351	
		R			0	0			0	0			0	0	
Front St-South of Division St	NB	L			0	0	0	0	0	0	0	0	0	0	
		T			0	0			0	0			0	0	
		R			0	0			0	0			0	0	
	SB	L							0	0			0	0	
		T	762	762	-24%	-99			0	0			0	-99	
		R			0	0			0	0			0	0	

Evening Peak Hour Time Period

Intersection	Dir	Mvmt	Existing Year (2014) Raw	Existing Year (2014) Balanced	Alternative #2B Re-Distribution												Total
					SB (Front St) - R		SB (3rd)		NB (2nd)		NB (2nd) - No Left		SB (7th Street)		SB (Commonwealth)		
					405	Trips	26	Trips	762	Trips	233	Trips	489	Trips	39	Trips	
					%	Vol	%	Vol	%	Vol	%	Vol	%	Vol	%	Vol	
2nd St-North of Reily St	NB	L			0	0			0	0			0	0	0	0	
		T	548	548			-95%	-722	-35%	-82			0	0	0	-804	
		R			0	0			0	0			0	0	0	0	
	SB	L			0	0			0	0			0	0	0	0	
		T			87%	351	87%	22					0	87%	33	406	
		R			0	0			0	0			0	0	0	0	
2nd St-North of Wisconsin St	NB	L			0	0			0	0			0	0	0	0	
		T	1,123	1,123			-100%	-762	-26%	-61			0	0	0	-823	
		R			0	0			0	0			0	0	0	0	
	SB	L			0	0			0	0			0	0	0	0	
		T			24%	99	24%	6					0	24%	9	114	
		R			0	0			0	0			0	0	0	0	
7th St-North of State St	NB	L			0	0			0	0			0	0	0	0	
		T	556	556					0	0			0	0	0	0	
		R			0	0			0	0			0	0	0	0	
	SB	L			0	0			0	0			0	0	0	0	
		T	993	993					0	0			0	0	0	0	
		R			0	0			0	0			0	0	0	0	
7th St-South of Schuylkill St	NB	L			0	0			0	0			0	0	0	0	
		T	317	317					0	0			0	0	0	0	
		R			0	0			0	0			0	0	0	0	
	SB	L			0	0			0	0			0	0	0	0	
		T	513	513					0	0			-513	0	0	-513	
		R			0	0			0	0			0	0	0	0	
Front St-South of Harris St	NB	L			0	0			0	0			0	0	0	0	
		T			0	0			0	0			0	0	0	0	
		R			0	0			0	0			0	0	0	0	
	SB	L			0	0			0	0			0	0	0	0	
		T	1,227	1,227	-87%	-351			0	0			0	0	0	-351	
		R			0	0			0	0			0	0	0	0	
Front St-South of Division St	NB	L			0	0			0	0			0	0	0	0	
		T			0	0			0	0			0	0	0	0	
		R			0	0			0	0			0	0	0	0	
	SB	L			0	0			0	0			0	0	0	0	
		T	762	762	-24%	-99			0	0			0	0	0	-99	
		R			0	0			0	0			0	0	0	0	

Evening Peak Hour Time Period

Intersection	Dir	Mvmt	Existing Year (2014) Raw	Existing Year (2014) Balanced	Alternative #2C Re-Distribution														Total
					SB (Front St) - R		SB (Front St) - L		SB (3rd)		NB (2nd)		NB (2nd) - No Left		SB (7th Street)		SB (Commonwealth)		
					335	Trips	45	Trips	26	Trips	762	Trips	233	Trips	489	Trips	39	Trips	
					%	Vol	%	Vol	%	Vol	%	Vol	%	Vol	%	Vol	%	Vol	
2nd St-North of Reily St	NB	L			0	0	0	0	0	0	0	0	0	0	0	0	0	0	
		T	548	548	0	0	0	0	-95%	-722	-35%	-82	0	0	0	0	0	-804	
		R			0	0	0	0		0		0	0	0	0	0	0	0	
	SB	L			0	0	0	0		0		0	0	0	0	0	0	0	0
		T			92%	307	87%	39	92%	23		0		0	92%	35		404	
		R				0		0		0		0		0		0		0	
2nd St-North of Wisconsin St	NB	L			0	0	0	0	0	0	0	0	0	0	0	0	0	0	
		T	1,123	1,123	0	0	0	0	-100%	-762	-26%	-61	0	0	0	0	0	-823	
		R			0	0	0	0		0		0	0	0	0	0	0	0	
	SB	L			0	0	0	0		0		0	0	0	0	0	0	0	0
		T			24%	82	24%	11	24%	6		0		0	24%	9		108	
		R				0		0		0		0		0		0		0	
7th St-North of State St	NB	L			0	0	0	0	0	0	0	0	0	0	0	0	0	0	
		T	556	556	0	0	0	0		0		0	0	0	0	0	0	0	
		R			0	0	0	0		0		0	0	0	0	0	0	0	
	SB	L			0	0	0	0		0		0	0	0	0	0	0	0	0
		T	993	993	0	0	0	0		0		0	0	0	0	0	0	0	
		R			0	0	0	0		0		0	0	0	0	0	0	0	
7th St-South of Schuykill St	NB	L			0	0	0	0	0	0	0	0	0	0	0	0	0	0	
		T	317	317	0	0	0	0		0		0	0	0	0	0	0	0	
		R			0	0	0	0		0		0	0	0	0	0	0	0	
	SB	L			0	0	0	0		0		0	0	0	0	0	0	0	0
		T	513	513	0	0	0	0		0		0	-513	0	0	0	0	-513	
		R			0	0	0	0		0		0	0	0	0	0	0	0	
Front St-South of Harris St	NB	L			0	0	0	0	0	0	0	0	0	0	0	0	0	0	
		T			0	0	0	0		0		0	0	0	0	0	0	0	
		R			0	0	0	0		0		0	0	0	0	0	0	0	
	SB	L			0	0	0	0		0		0	0	0	0	0	0	0	0
		T	1,227	1,227	-92%	-307	-87%	-39		0		0	0	0	0	0	0	0	-346
		R				0		0		0		0	0	0	0	0	0	0	
Front St-South of Division St	NB	L			0	0	0	0	0	0	0	0	0	0	0	0	0	0	
		T			0	0	0	0		0		0	0	0	0	0	0	0	
		R			0	0	0	0		0		0	0	0	0	0	0	0	
	SB	L			0	0	0	0		0		0	0	0	0	0	0	0	0
		T	762	762	-24%	-82	-24%	-11		0		0	0	0	0	0	0	0	-93
		R				0		0		0		0	0	0	0	0	0	0	

Evening Peak Hour Time Period

Intersection	Dir	Mvmt	Existing	Existing	Existing	Existing	Existing	Existing
			Year (2014) Raw	Year (2014) Balanced	Year (2014) Volumes	Year (2014) Alt #2 Volumes	Year (2014) Alt #2A Volumes	Year (2014) Alt #2B Volumes
2nd St & Forster St	NB	L	435	435	435	435	435	435
		T	964	964	964	531	531	531
		R	208	208	208	641	641	641
	SB	L	0	0	0	45	0	0
		T	0	0	0	0	0	0
		R	0	0	0	470	470	470
	EB	L	467	467	467	233	233	0
		T	719	719	719	674	719	952
		R	0	0	0	0	0	0
	WB	L	0	0	0	0	0	0
		T	1,084	1,084	1,084	1,019	1,019	1,019
		R	125	125	125	69	69	69
2nd St & Maclay St	NB	L	8	8	8	8	8	7
		T	1,410	1,410	1,410	688	688	480
		R	174	174	174	174	174	148
	SB	L	0	0	0	0	0	0
		T	0	0	0	224	201	201
		R	0	0	0	0	0	0
	EB	L	8	8	8	8	8	8
		T	48	48	48	48	48	48
		R	0	0	0	0	0	0
	WB	L	0	0	0	106	95	95
		T	217	217	217	111	122	122
		R	104	104	104	65	65	65
2nd St & Division St	NB	L	1,204	1,204	1,204	442	442	442
		T	114	114	114	114	114	55
		R	95	95	95	95	95	45
	SB	L	24	24	24	24	24	24
		T	0	0	0	14	13	13
		R	73	73	73	59	60	61
	EB	L	3	3	3	3	3	3
		T	74	74	74	66	66	66
		R	0	0	0	8	8	8
	WB	L	0	0	0	104	94	94
		T	483	483	483	756	766	771
		R	26	26	26	26	26	26
Front St & Forster	NB	L	0	0	0	0	0	0
		T	0	0	0	0	0	0
		R	0	0	0	0	0	0
	SB	L	72	72	72	27	72	27
		T	744	744	744	744	744	744
		R	641	641	641	236	236	306
	EB	L	0	0	0	0	0	0
		T	1,125	1,125	1,125	891	891	891
		R	245	245	245	245	245	245
	WB	L	0	0	0	0	0	0
		T	1,542	1,542	1,542	1,947	1,947	1,947
		R	0	0	0	0	0	0

Evening Peak Hour Time Period

Intersection	Dir	Mvmt	Existing	Existing	Existing	Existing	Existing	Existing	
			Year (2014) Raw	Year (2014) Balanced	Year (2014) Volumes	Year (2014) Alt #2 Volumes	Year (2014) Alt #2A Volumes	Year (2014) Alt #2B Volumes	Year (2014) Alt #2C Volumes
7th St & Maclay St	NB	L	66	66	66	66	66	73	73
		T	340	340	340	843	843	859	859
		R	592	592	592	592	592	592	592
	SB	L	310	310	310	310	0	0	0
		T	140	140	140	140	0	0	0
		R	39	39	39	39	0	0	0
	EB	L	5	5	5	5	5	5	5
		T	465	465	465	465	775	775	775
		R	13	13	13	13	153	153	153
	WB	L	88	88	88	88	88	88	88
		T	440	440	440	425	425	425	425
		R	263	263	263	278	278	278	278
7th St & State St	NB	L	0	0	0	0	0	0	0
		T	0	0	0	0	0	0	0
		R	373	373	373	373	373	373	373
	SB	L	1,189	1,189	1,189	1,189	1,189	1,189	1,189
		T	193	193	193	193	193	193	193
		R	0	0	0	0	0	0	0
	EB	L	0	0	0	0	0	0	0
		T	0	0	0	0	0	0	0
		R	0	0	0	0	0	0	0
	WB	L	148	148	148	148	148	148	148
		T	0	0	0	0	0	0	0
		R	357	357	357	357	357	357	357
7th St & Forster St	NB	L	356	356	356	335	335	335	335
		T	203	203	203	224	224	224	224
		R	1	1	1	1	1	1	1
	SB	L	0	0	0	0	0	0	0
		T	564	564	564	564	564	564	564
		R	586	586	586	551	551	551	551
	EB	L	492	492	492	925	925	948	948
		T	0	0	0	0	0	0	0
		R	618	618	618	618	618	618	618
	WB	L	0	0	0	0	0	0	0
		T	0	0	0	0	0	0	0
		R	432	432	432	432	432	432	432
3rd St & Forster St	NB	L	123	123	123	123	123	123	123
		T	142	142	142	142	142	142	142
		R	241	241	241	241	241	241	241
	SB	L	40	40	40	40	40	40	40
		T	175	175	175	175	175	175	175
		R	57	57	57	31	31	31	31
	EB	L	106	106	106	106	106	257	257
		T	787	787	787	1,220	1,220	1,302	1,302
		R	60	60	60	60	60	60	60
	WB	L	155	155	155	155	155	155	155
		T	996	996	996	940	940	940	940
		R	57	57	57	57	57	57	57

Evening Peak Hour Time Period

Intersection	Dir	Mvmt	Existing	Existing	Existing	Existing	Existing	Existing
			Year (2014) Raw	Year (2014) Balanced	Year (2014) Volumes	Year (2014) Alt #2 Volumes	Year (2014) Alt #2A Volumes	Year (2014) Alt #2B Volumes
Commonwealth Ave & Forster St	NB	L	151	151	151	151	151	151
		T	116	116	116	116	116	116
		R	57	57	57	57	57	57
	SB	L	156	156	156	156	156	156
		T	166	166	166	166	166	166
		R	215	215	215	176	176	176
	EB	L	151	151	151	151	151	209
		T	897	897	897	1,330	1,330	1,353
		R	52	52	52	52	52	52
	WB	L	81	81	81	81	81	81
		T	818	818	818	762	762	762
		R	59	59	59	59	59	59
7th St & Herr St	NB	L	3	3	3	3	3	3
		T	576	576	576	1,044	1,044	1,067
		R	342	342	342	342	342	342
	SB	L	217	217	217	217	217	217
		T	751	751	751	716	716	716
		R	4	4	4	4	4	4
	EB	L	0	0	0	0	0	0
		T	0	0	0	0	0	0
		R	1	1	1	1	1	1
	WB	L	305	305	305	305	305	305
		T	2	2	2	2	2	2
		R	338	338	338	338	338	338

Evening Peak Hour Time Period

Intersection	Dir	Mvmt	Existing	Existing	Existing	Existing	Existing	Existing
			Year (2014) Raw	Year (2014) Balanced	Year (2014) Volumes	Year (2014) Alt #2 Volumes	Year (2014) Alt #2A Volumes	Year (2014) Alt #2B Volumes
2nd St-North of Reily St	NB	L			0	0	0	0
		T	548	548	548	-174	-174	-256
		R			0	0	0	0
	SB	L			0	0	0	0
		T			0	445	406	406
		R			0	0	0	0
2nd St-North of Wisconsin St	NB	L			0	0	0	0
		T	1,123	1,123	1,123	361	361	300
		R			0	0	0	0
	SB	L			0	0	0	0
		T			0	125	114	114
		R			0	0	0	0
7th St-North of State St	NB	L			0	0	0	0
		T	556	556	556	556	556	556
		R			0	0	0	0
	SB	L			0	0	0	0
		T	993	993	993	993	993	993
		R			0	0	0	0
7th St-South of Schuykill St	NB	L			0	0	0	0
		T	317	317	317	317	317	317
		R			0	0	0	0
	SB	L			0	0	0	0
		T	513	513	513	513	0	0
		R			0	0	0	0
Front St-South of Harris St	NB	L			0	0	0	0
		T			0	0	0	0
		R			0	0	0	0
	SB	L			0	0	0	0
		T	1,227	1,227	1,227	837	876	876
		R			0	0	0	0
Front St-South of Division St	NB	L			0	0	0	0
		T			0	0	0	0
		R			0	0	0	0
	SB	L			0	0	0	0
		T	762	762	762	652	663	663
		R			0	0	0	0

E02871- BPT Env Open End
 WO#11 2nd St. Traffic Study
 PN 143249
 3/12/2015

Morning Peak Hour Volume Summary

Link Volumes

Roadway	Link	Existing		
		NB/EB	SB/WB	Total
Front Street (SR 3009)	North of Maclay St	0	1,901	1,901
	Maclay St to Forster St	0	2,234	2,234
	South of Forster St	0	1,759	1,759
Division Street (CTY)	West of 2nd St	348	430	778
	East of 2nd St	407	135	542
2nd Street (CTY)	North of Division St	87	63	150
	Division St to Maclay St	410	0	410
	Maclay St to Forster St	611	0	611
	South of Forster St	861	0	861
Maclay Street (CTY)	West of 2nd St	103	197	300
	2nd St to 7th St	285	338	623
	East of 7th St	772	1,096	1,868
3rd Street (CTY)	North of Forster St	221	153	374
	South of Forster St	259	372	631
Commonwealth Avenue (SR 3031)	North of Forster St	584	299	883
	South of Forster St	141	409	550
Forster Street (SR 3016)	West of Front St	2,009	1,533	3,542
	Front St to 2nd St	941	748	1,689
	2nd St to 3rd St	1,811	586	2,397
	3rd St to Commonwealth Ave	1,637	646	2,282
	Commonwealth Ave of 7th St	1,208	804	2,012
Herr Street (SR 3018)	East of 7th St	451	739	1,190
7th Street (SR 3018/SR 3016)	North of Maclay St	458	415	872
	Maclay St to Herr St	689	517	1,206
	Herr St to Forster St	912	589	1,501
	Forster St to State St	937	463	1,400
	South of State St	54	754	808
State St (SR 3014)	East of 7th St	351	1,511	1,862

Alternative #2			Alternative #2A			Alternative #2B			Alternative #2C		
NB/EB	SB/WB	Total	NB/EB	SB/WB	Total	NB/EB	SB/WB	Total	NB/EB	SB/WB	Total
0	1,837	1,837	0	1,855	1,855	0	1,855	1,855	0	1,837	1,837
0	1,966	1,966	0	2,041	2,041	0	2,041	2,041	0	1,966	1,966
0	1,759	1,759	0	1,759	1,759	0	1,759	1,759	0	1,759	1,759
348	240	588	348	258	606	348	258	606	348	240	588
405	185	590	405	185	590	389	185	574	389	185	574
87	63	150	87	63	150	66	63	129	66	63	129
237	79	316	237	58	295	172	58	230	172	79	251
454	251	705	454	184	638	282	184	467	282	251	534
861	0	861	861	0	861	861	0	861	861	0	861
103	114	217	103	137	240	103	133	236	103	110	213
285	327	612	487	320	807	471	323	794	471	323	794
772	1,096	1,868	772	1,096	1,868	772	1,096	1,868	772	1,096	1,868
221	145	366	221	145	366	356	145	501	356	145	501
259	372	631	259	372	631	259	372	631	259	372	631
584	289	873	584	289	873	636	289	925	636	289	925
141	409	550	141	409	550	141	409	550	141	409	550
1,920	1,533	3,453	1,920	1,533	3,453	1,920	1,533	3,453	1,920	1,533	3,453
855	962	1,817	897	962	1,859	897	962	1,859	855	962	1,817
1,872	566	2,438	1,872	566	2,438	2,080	566	2,646	2,080	566	2,646
1,698	634	2,331	1,698	634	2,331	1,771	634	2,404	1,771	634	2,404
1,269	798	2,066	1,269	798	2,066	1,290	798	2,087	1,290	798	2,087
451	739	1,190	451	739	1,190	451	739	1,190	451	739	1,190
493	415	908	493	206	699	501	206	707	501	206	707
754	516	1,270	754	516	1,270	775	516	1,291	775	516	1,291
977	587	1,564	977	587	1,564	998	587	1,585	998	587	1,585
937	463	1,400	937	463	1,400	937	463	1,400	937	463	1,400
54	754	808	54	754	808	54	754	808	54	754	808
351	1,511	1,862	351	1,511	1,862	351	1,511	1,862	351	1,511	1,862

Evening Peak Hour Volume Summary

Link Volumes

Roadway	Link	Existing		
		NB/EB	SB/WB	Total
Front Street (SR 3009)	North of Maclay St	0	762	762
	Maclay St to Forster St	0	1,342	1,342
	South of Forster St	0	989	989
Division Street (CTY)	West of 2nd St	77	1,760	1,837
	East of 2nd St	193	509	702
2nd Street (CTY)	North of Division St	143	97	240
	Division St to Maclay St	1,353	0	1,353
	Maclay St to Forster St	1,232	0	1,232
	South of Forster St	1,607	0	1,607
Maclay Street (CTY)	West of 2nd St	56	225	281
	2nd St to 7th St	353	433	786
	East of 7th St	1,367	791	2,158
3rd Street (CTY)	North of Forster St	305	272	577
	South of Forster St	506	390	896
Commonwealth Avenue (SR 3031)	North of Forster St	326	537	863
	South of Forster St	324	299	623
Forster Street (SR 3016)	West of Front St	1,370	2,183	3,553
	Front St to 2nd St	596	1,531	2,126
	2nd St to 3rd St	940	1,193	2,133
	3rd St to Commonwealth Ave	1,084	1,196	2,280
	Commonwealth Ave of 7th St	1,110	950	2,060
Herr Street (SR 3018)	East of 7th St	559	645	1,204
7th Street (SR 3018/SR 3016)	North of Maclay St	463	501	964
	Maclay St to Herr St	956	607	1,563
	Herr St to Forster St	1,024	1,104	2,128
	Forster St to State St	459	1,282	1,741
	South of State St	373	341	714
State St (SR 3014)	East of 7th St	1,562	505	2,067

Alternative #2			Alternative #2A			Alternative #2B			Alternative 2C		
NB/EB	SB/WB	Total	NB/EB	SB/WB	Total	NB/EB	SB/WB	Total	NB/EB	SB/WB	Total
0	652	652	0	663	663	0	663	663	0	669	669
0	922	922	0	964	964	0	964	964	0	979	979
0	989	989	0	989	989	0	989	989	0	989	989
77	1,257	1,334	77	1,268	1,345	77	1,268	1,345	77	1,274	1,351
185	886	1,071	185	886	1,071	135	886	1,021	135	886	1,021
143	97	240	143	97	240	84	97	181	84	97	181
591	158	749	591	143	734	465	143	608	465	141	606
510	430	940	510	391	900	326	391	717	326	387	714
1,607	0	1,607	1,607	0	1,607	1,607	0	1,607	1,607	0	1,607
56	119	175	56	130	186	56	129	185	56	118	174
353	406	759	578	387	964	565	390	955	565	390	955
1,367	791	2,158	1,367	791	2,158	1,367	791	2,158	1,367	791	2,158
305	246	551	305	246	551	456	246	702	456	246	702
506	390	896	506	390	896	506	390	896	506	390	896
326	498	824	326	498	824	384	498	882	384	498	882
324	299	623	324	299	623	324	299	623	324	299	623
1,136	2,183	3,319	1,136	2,183	3,319	1,136	2,183	3,319	1,136	2,183	3,319
456	1,936	2,392	479	1,936	2,414	479	1,936	2,414	456	1,866	2,322
1,373	1,091	2,464	1,373	1,091	2,464	1,606	1,091	2,697	1,606	1,091	2,697
1,517	1,121	2,638	1,517	1,121	2,638	1,599	1,121	2,719	1,599	1,121	2,719
1,543	894	2,437	1,543	894	2,437	1,566	894	2,460	1,566	894	2,460
559	645	1,204	559	645	1,204	559	645	1,204	559	645	1,204
722	501	1,223	722	0	722	730	0	730	730	0	730
1,442	589	2,031	1,442	589	2,031	1,465	589	2,054	1,465	589	2,054
1,485	1,069	2,554	1,485	1,069	2,554	1,508	1,069	2,577	1,508	1,069	2,577
459	1,282	1,741	459	1,282	1,741	459	1,282	1,741	459	1,282	1,741
373	341	714	373	341	714	373	341	714	373	341	714
1,562	505	2,067	1,562	505	2,067	1,562	505	2,067	1,562	505	2,067

APPENDIX 5
CAPACITY ANALYSIS

Lanes, Volumes, Timings

1: 2nd Street & Division Street

10/24/2014

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↖			↖		↖	↖			↖	
Volume (vph)	1	347	0	0	115	20	262	66	50	10	0	53
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	16	12	10	10	10	10	16	10
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.97	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor							1.00	0.99				
Frt					0.980			0.935				0.886
Flt Protected							0.950				0.992	
Satd. Flow (prot)	0	1693	0	0	2024	0	3268	1574	0	0	1787	0
Flt Permitted		0.999					0.950				0.992	
Satd. Flow (perm)	0	1691	0	0	2024	0	3259	1574	0	0	1786	0
Right Turn on Red		Yes			Yes			Yes			Yes	
Satd. Flow (RTOR)					13			52			117	
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		381			3285			4939			1680	
Travel Time (s)		10.4			89.6			134.7			45.8	
Confl. Peds. (#/hr)							2		2	2		2
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
Heavy Vehicles (%)	0%	1%	0%	0%	5%	0%	0%	3%	6%	30%	0%	0%
Parking (#/hr)		0										
Adj. Flow (vph)	1	358	0	0	119	21	270	68	52	10	0	55
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	359	0	0	140	0	270	120	0	0	65	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			20			10	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.14	1.00	1.00	0.85	1.00	1.09	1.09	1.09	1.09	0.85	1.09
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm	NA			NA		Split	NA		Split	NA	
Protected Phases		4			8		6	6		2		2
Permitted Phases		4										
Minimum Split (s)	9.0	9.0			9.0		9.0	9.0		9.0		9.0
Total Split (s)	20.0	20.0			20.0		25.0	25.0		20.0		20.0
Total Split (%)	30.8%	30.8%			30.8%		38.5%	38.5%		30.8%		30.8%
Maximum Green (s)	15.0	15.0			15.0		20.0	20.0		15.0		15.0
Yellow Time (s)	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
Lost Time Adjust (s)		0.0			0.0		0.0	0.0		0.0		0.0
Total Lost Time (s)		5.0			5.0		5.0	5.0		5.0		5.0
Lead/Lag												
Lead-Lag Optimize?												
Act Effct Green (s)		15.0			15.0		20.0	20.0		15.0		15.0
Actuated g/C Ratio		0.23			0.23		0.31	0.31		0.23		0.23
v/c Ratio		0.92			0.29		0.27	0.23		0.13		0.13
Control Delay		57.3			20.7		17.9	11.7		2.0		2.0
Queue Delay		0.0			0.0		0.0	0.0		0.0		0.0

Existing Conditions 9/25/2014 Morning Peak Hour
KPM

Synchro 8 Report
Page 1

Lanes, Volumes, Timings

1: 2nd Street & Division Street

10/24/2014

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay	57.3				20.7		17.9		11.7		2.0	
LOS	E				C		B		B		A	
Approach Delay	57.3				20.7		16.0		2.0			
Approach LOS	E				C		B		A			
Queue Length 50th (ft)	139				41		41		19		0	
Queue Length 95th (ft)	#286				85		68		54		10	
Internal Link Dist (ft)	301				3205		4859		1600			
Turn Bay Length (ft)												
Base Capacity (vph)	390				477		1005		520		502	
Starvation Cap Reductn	0				0		0		0		0	
Spillover Cap Reductn	0				0		0		0		0	
Storage Cap Reductn	0				0		0		0		0	
Reduced v/c Ratio	0.92				0.29		0.27		0.23		0.13	
Intersection Summary												
Area Type:	Other											
Cycle Length:	65											
Actuated Cycle Length:	65											
Offset:	35 (54%), Referenced to phase 6:NBT, Start of Green											
Natural Cycle:	40											
Control Type:	Pretimed											
Maximum v/c Ratio:	0.92											
Intersection Signal Delay:	31.3						Intersection LOS: C					
Intersection Capacity Utilization:	41.5%						ICU Level of Service A					
Analysis Period (min):	15											
#	95th percentile volume exceeds capacity, queue may be longer.											
	Queue shown is maximum after two cycles.											
Split and Phases: 1: 2nd Street & Division Street												

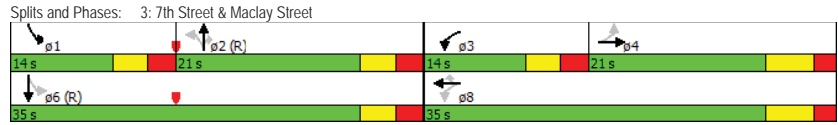
Existing Conditions 9/25/2014 Morning Peak Hour
KPM

Synchro 8 Report
Page 2

Lanes, Volumes, Timings
3: 7th Street & Maclay Street

10/24/2014

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



Lanes, Volumes, Timings
4: Front Street & Forster Street

10/24/2014

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑	↑		↑↑						↑↑↑	↑
Volume (vph)	0	1551	458	0	736	0	0	0	0	309	1300	797
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	11	11
Grade (%)		-3%			-1%			-1%			0%	
Storage Length (ft)	75		50	0		0	0		0	0		300
Storage Lanes	0		1	0		0	0		0	0		1
Taper Length (ft)	75			25			25			25		
Lane Util. Factor	1.00	0.91	1.00	1.00	0.95	1.00	1.00	1.00	1.00	0.91	0.91	1.00
Ped Bike Factor			0.97								1.00	0.98
Frt			0.850									0.850
Flt Protected											0.990	
Satd. Flow (prot)	0	5213	1623	0	3592	0	0	0	0	0	4915	1546
Flt Permitted											0.990	
Satd. Flow (perm)	0	5213	1572	0	3592	0	0	0	0	0	4904	1509
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			44									147
Link Speed (mph)		50			35			35			35	
Link Distance (ft)		192			146			595			709	
Travel Time (s)		2.6			2.8			11.6			13.8	
Confl. Peds. (#/hr)	12		12	12		12				7		7
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
Heavy Vehicles (%)	0%	1%	1%	0%	1%	0%	0%	0%	0%	1%	1%	1%
Adj. Flow (vph)	0	1650	487	0	783	0	0	0	0	329	1383	848
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1650	487	0	783	0	0	0	0	0	1712	848
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Right	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		16			5			0			0	
Link Offset(ft)		5			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	0.98	0.98	0.98	0.99	0.99	0.99	0.99	0.99	0.99	1.00	1.04	1.04
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors		1	1		1					1	1	0
Detector Template										Left		
Leading Detector (ft)		1	0		0					20	40	0
Trailing Detector (ft)		0	0		0					0	0	0
Detector 1 Position(ft)		0	0		0					0	0	0
Detector 1 Size(ft)		1	0		0					20	40	20
Detector 1 Type		Cl+Ex	Cl+Ex		Cl+Ex					Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)		0.0	0.0		0.0					0.0	0.0	0.0
Detector 1 Queue (s)		0.0	0.0		0.0					0.0	0.0	0.0
Detector 1 Delay (s)		0.0	0.0		0.0					0.0	0.0	0.0
Turn Type		NA	Perm		NA					Perm	NA	Perm
Protected Phases		2			6							4
Permitted Phases			2							4		4
Detector Phase		2	2		6					4	4	4

Lanes, Volumes, Timings
4: Front Street & Forster Street

10/24/2014

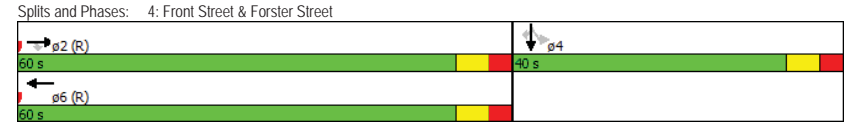
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)		10.0	10.0		10.0					10.0	10.0	10.0
Minimum Split (s)		17.0	17.0		17.0					17.0	17.0	17.0
Total Split (s)		60.0	60.0		60.0					40.0	40.0	40.0
Total Split (%)		60.0%	60.0%		60.0%					40.0%	40.0%	40.0%
Maximum Green (s)		53.0	53.0		53.0					33.0	33.0	33.0
Yellow Time (s)		4.0	4.0		4.0					4.0	4.0	4.0
All-Red Time (s)		3.0	3.0		3.0					3.0	3.0	3.0
Lost Time Adjust (s)		0.0	0.0		0.0					0.0	0.0	0.0
Total Lost Time (s)		7.0	7.0		7.0					7.0	7.0	7.0
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)		3.0	3.0		3.0					3.0	3.0	3.0
Recall Mode		C-Max	C-Max		C-Max					Max	Max	Max
Walk Time (s)		8.0	8.0		8.0					8.0	8.0	8.0
Flash Dont Walk (s)		10.0	10.0		10.0					10.0	10.0	10.0
Pedestrian Calls (#/hr)		0	0		0					0	0	0
Act Effct Green (s)		53.0	53.0		53.0					33.0	33.0	33.0
Actuated g/C Ratio		0.53	0.53		0.53					0.33	0.33	0.33
v/c Ratio		0.60	0.57		0.41					1.06	1.42	1.42
Control Delay		17.3	17.5		15.1					72.9	224.9	224.9
Queue Delay		0.0	0.0		0.2					0.0	0.0	0.0
Total Delay		17.3	17.5		15.3					72.9	224.9	224.9
LOS		B	B		B					E	F	F
Approach Delay		17.3			15.3					123.3		
Approach LOS		B			B					F		
Queue Length 50th (ft)		251	180		213					-441	-672	-672
Queue Length 95th (ft)		297	280		231					#536	#909	#909
Internal Link Dist (ft)		112			66			515		629		
Turn Bay Length (ft)			50									300
Base Capacity (vph)		2762	853		1903					1618	596	596
Starvation Cap Reductn		0	0		439					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		0.60	0.57		0.53					1.06	1.42	1.42

Intersection Summary	
Area Type:	Other
Cycle Length:	100
Actuated Cycle Length:	100
Offset:	54 (54%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle:	90
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	1.42
Intersection Signal Delay:	66.5
Intersection Capacity Utilization:	124.2%
Analysis Period (min):	15
- Volume exceeds capacity, queue is theoretically infinite. Queue shown is maximum after two cycles.	

Lanes, Volumes, Timings
4: Front Street & Forster Street

10/24/2014

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



Lanes, Volumes, Timings
5: 2nd Street & Forster Street

10/24/2014

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↕		↔	↕		↔	↕	↔			
Volume (vph)	297	1608	0	0	560	43	199	399	263	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	12	12	11	12	11	11	10	10	10	10
Grade (%)		0%			-1%			-1%			0%	
Lane Util. Factor	0.97	0.95	1.00	1.00	0.91	0.91	0.91	0.91	1.00	1.00	1.00	1.00
Ped Bike Factor	0.98				0.99		0.99	1.00	0.98			
Frt					0.989				0.850			
Flt Protected	0.950						0.950	0.998				
Satd. Flow (prot)	3351	3455	0	0	4894	0	1564	3287	1471	0	0	0
Flt Permitted	0.359						0.950	0.998				
Satd. Flow (perm)	1238	3455	0	0	4894	0	1548	3285	1438	0	0	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					17				87			
Link Speed (mph)		35			35			25		25		
Link Distance (ft)		211			828			501		5401		
Travel Time (s)		4.1			16.1			13.7		147.3		
Confl. Peds. (#/hr)	39		39			39	10		10			
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
Heavy Vehicles (%)	1%	1%	0%	0%	1%	5%	2%	2%	3%	0%	0%	0%
Adj. Flow (vph)	309	1675	0	0	583	45	207	416	274	0	0	0
Shared Lane Traffic (%)							10%					
Lane Group Flow (vph)	309	1675	0	0	628	0	186	437	274	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Right	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		29			17			11		11		
Link Offset(ft)		0			6			0		0		
Crosswalk Width(ft)		16			16			16		16		
Two way Left Turn Lane												
Headway Factor	1.04	1.04	1.00	0.99	1.04	0.99	1.04	1.09	1.09	1.09	1.09	1.09
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2			1		1	1	1			
Detector Template	Left						Left		Right			
Leading Detector (ft)	40	246			0		40	40	40			
Trailing Detector (ft)	0	0			0		0	0	0			
Detector 1 Position(ft)	0	0			0		0	0	0			
Detector 1 Size(ft)	40	0			0		40	40	40			
Detector 1 Type	CI+Ex	CI+Ex			CI+Ex		CI+Ex	CI+Ex	CI+Ex			
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0			0.0		0.0	0.0	0.0			
Detector 1 Queue (s)	0.0	0.0			0.0		0.0	0.0	0.0			
Detector 1 Delay (s)	0.0	0.0			0.0		0.0	0.0	0.0			
Detector 2 Position(ft)		240										
Detector 2 Size(ft)		6										
Detector 2 Type		CI+Ex										
Detector 2 Channel												
Detector 2 Extend (s)		0.0										
Turn Type	pm+pt	NA			NA		Perm	NA	Perm			
Protected Phases	5	2			6			4				

Existing Conditions 9/25/2014 Morning Peak Hour
KPM

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Lanes, Volumes, Timings
5: 2nd Street & Forster Street

10/24/2014

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	2											4
Detector Phase	5	2							6			4
Switch Phase												
Minimum Initial (s)	5.0	5.0			5.0		5.0	5.0	5.0	5.0		
Minimum Split (s)	11.0	34.0			35.0		34.0	34.0	34.0	34.0		
Total Split (s)	11.0	66.0			55.0		34.0	34.0	34.0	34.0		
Total Split (%)	11.0%	66.0%			55.0%		34.0%	34.0%	34.0%	34.0%		
Maximum Green (s)	6.0	60.0			49.0		28.0	28.0	28.0	28.0		
Yellow Time (s)	3.0	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		
Lost Time Adjust (s)	0.0	0.0			0.0		0.0	0.0	0.0	0.0		
Total Lost Time (s)	5.0	6.0			6.0		6.0	6.0	6.0	6.0		
Lead/Lag	Lead				Lag							
Lead-Lag Optimize?	Yes				Yes							
Vehicle Extension (s)	4.0	5.0			3.0		5.0	5.0	5.0			
Recall Mode	None	C-Max			C-Max		None	None	None			
Walk Time (s)		7.0			8.0		7.0	7.0	7.0			
Flash Dont Walk (s)		21.0			10.0		21.0	21.0	21.0			
Pedestrian Calls (#/hr)		0			0		0	0	0			
Act Effct Green (s)	65.3	64.3			51.7		23.7	23.7	23.7			
Actuated g/C Ratio	0.65	0.64			0.52		0.24	0.24	0.24			
v/c Ratio	0.32	0.75			0.25		0.51	0.56	0.67			
Control Delay	4.9	10.3			17.7		37.3	35.9	31.3			
Queue Delay	0.0	0.1			0.0		0.0	0.0	0.0			
Total Delay	4.9	10.4			17.7		37.3	35.9	31.3			
LOS	A	B			B		D	D	C			
Approach Delay		9.6			17.7			34.8				
Approach LOS		A			B			C				
Queue Length 50th (ft)	19	141			102		110	132	106			
Queue Length 95th (ft)	m28	m172			106		179	176	188			
Internal Link Dist (ft)		131			748			421				5321
Turn Bay Length (ft)												
Base Capacity (vph)	969	2222			2538		433	919	465			
Starvation Cap Reductn	0	69			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	0.32	0.78			0.25		0.43	0.48	0.59			
Intersection Summary												
Area Type:	Other											
Cycle Length:	100											
Actuated Cycle Length:	100											
Offset:	49 (49%), Referenced to phase 2:EBTL and 6:WBT, Start of Green											
Natural Cycle:	80											
Control Type:	Actuated-Coordinated											
Maximum v/c Ratio:	0.75											
Intersection Signal Delay:	17.5						Intersection LOS: B					
Intersection Capacity Utilization	124.2%						ICU Level of Service H					
Analysis Period (min)	15											

Existing Conditions 9/25/2014 Morning Peak Hour
KPM

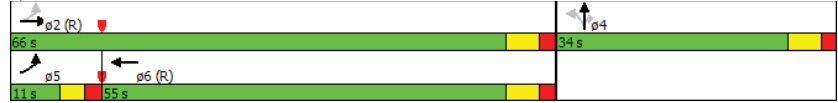
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Lanes, Volumes, Timings
5: 2nd Street & Forster Street

10/24/2014

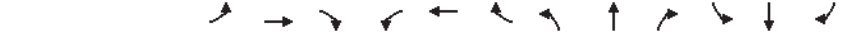
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 5: 2nd Street & Forster Street



Lanes, Volumes, Timings
6: 3rd Street & Forster Street

10/24/2014



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔↔	↔	↔	↔↔	↔	↔	↔	↔	↔	↔	↔
Volume (vph)	117	1465	169	111	502	25	49	79	131	43	92	18
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	11	12	10	11	12	12	11	10	12	16	12
Grade (%)		1%			-2%			-1%			0%	
Storage Length (ft)	225		0	225		0	0		0	0		0
Storage Lanes	1		0	1		0	0		1	0		0
Taper Length (ft)	50			50			25			25		
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	0.99	0.99			1.00			0.99	0.96		0.99	
Frt		0.984			0.993				0.850		0.984	
Flt Protected	0.950			0.950				0.981			0.986	
Satd. Flow (prot)	1676	4822	0	1533	4913	0	0	1693	1443	0	1947	0
Flt Permitted	0.415			0.079				0.689			0.748	
Satd. Flow (perm)	722	4822	0	127	4913	0	0	1180	1388	0	1468	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		26			10				149		6	
Link Speed (mph)		35			35			25			25	
Link Distance (ft)		828			923			950			1410	
Travel Time (s)		16.1			18.0			25.9			38.5	
Confl. Peds. (#/hr)	13		22	22		13	29		25	25		29
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
Heavy Vehicles (%)	0%	1%	1%	11%	2%	4%	2%	10%	5%	9%	7%	0%
Adj. Flow (vph)	133	1665	192	126	570	28	56	90	149	49	105	20
Shared Lane Traffic (%)												
Lane Group Flow (vph)	133	1857	0	126	598	0	0	146	149	0	174	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		17			10			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.10	1.05	1.01	1.08	1.03	0.99	0.99	1.04	1.09	1.00	0.85	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1		1	1		1	1	1	1	1	1
Detector Template							Left		Left			
Leading Detector (ft)	40	0		40	26		20	40	40	20	40	
Trailing Detector (ft)	0	0		0	20		0	0	0	0	0	
Detector 1 Position(ft)	0	0		0	20		0	0	0	0	0	
Detector 1 Size(ft)	40	0		40	6		20	40	40	20	40	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA	Perm	Perm	NA	
Protected Phases	1	6		5	2			4			8	
Permitted Phases	6			2			4		4	8		
Detector Phase	1	6		5	2		4	4	4	8	8	

Lanes, Volumes, Timings
6: 3rd Street & Forster Street

10/24/2014

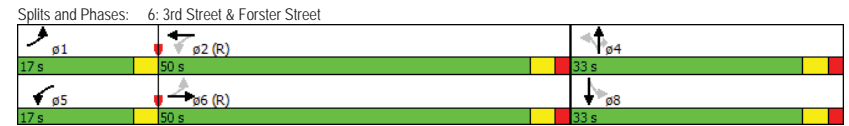
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	8.0	10.0		8.0	10.0		10.0	10.0	10.0	10.0	10.0	
Total Split (s)	17.0	50.0		17.0	50.0		33.0	33.0	33.0	33.0	33.0	
Total Split (%)	17.0%	50.0%		17.0%	50.0%		33.0%	33.0%	33.0%	33.0%	33.0%	
Maximum Green (s)	14.0	45.0		14.0	45.0		28.0	28.0	28.0	28.0	28.0	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	0.0	2.0		0.0	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)	3.0	5.0		3.0	5.0		5.0	5.0	5.0	5.0	5.0	
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	C-Max		None	C-Max		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)		12.0			12.0		21.0	21.0	21.0	21.0	21.0	
Pedestrian Calls (#/hr)		0			0		0	0	0	0	0	
Act Effct Green (s)	72.5	62.8		74.3	63.8		15.5	15.5			15.5	
Actuated g/C Ratio	0.72	0.63		0.74	0.64		0.16	0.16			0.16	
v/c Ratio	0.22	0.61		0.58	0.19		0.80	0.44			0.75	
Control Delay	2.4	5.8		35.2	11.3		69.4	10.0			57.7	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0			0.0	
Total Delay	2.4	5.8		35.2	11.3		69.4	10.0			57.7	
LOS	A	A		D	B		E	A			E	
Approach Delay		5.6			15.4		39.4				57.7	
Approach LOS		A			B		D				E	
Queue Length 50th (ft)	9	66		65	47		91	0			104	
Queue Length 95th (ft)	m16	214		121	89		145	47			160	
Internal Link Dist (ft)		748			843		870				1330	
Turn Bay Length (ft)		225			225							
Base Capacity (vph)	682	3038		293	3136		330	495			415	
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	0.20	0.61		0.43	0.19		0.44	0.30			0.42	

Intersection Summary

Area Type:	Other
Cycle Length:	100
Actuated Cycle Length:	100
Offset:	65 (65%), Referenced to phase 2:WBTL and 6:EBTL, Start of Green
Natural Cycle:	60
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.80
Intersection Signal Delay:	13.8
Intersection Capacity Utilization:	80.3%
Analysis Period (min):	15
m	Volume for 95th percentile queue is metered by upstream signal.

Lanes, Volumes, Timings
6: 3rd Street & Forster Street

10/24/2014



Lanes, Volumes, Timings

7: Commonwealth Avenue & Forster Street

10/24/2014

	↖	→	↘	↙	←	↖	↙	↘	↙	↘	↙	↘
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↖↗	↖	↖	↖↗	↖	↖	↖	↖	↖	↖	↖
Volume (vph)	392	1042	200	97	580	109	18	83	40	132	112	55
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	11	12	11	11	12	10	16	12	13	13	13
Grade (%)		-2%			-2%			-2%			-2%	
Storage Length (ft)	275		0	250		0	150		0	150		0
Storage Lanes	1		0	1		0	1		0	1		1
Taper Length (ft)	50			25			25			50		
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	1.00	0.98			0.99	0.99	0.98	0.95		0.89		0.96
Frt		0.976			0.976		0.951					0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1685	4764	0	1560	4721	0	1605	1541	0	1829	1889	1590
Flt Permitted	0.258			0.131			0.673			0.653		
Satd. Flow (perm)	456	4764	0	215	4721	0	1113	1541	0	1115	1889	1531
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		37			48			27				164
Link Speed (mph)		35			35			25				25
Link Distance (ft)		923			638			842				1379
Travel Time (s)		18.0			12.4			23.0				37.6
Confl. Peds. (#/hr)	7		66	66		7	30		161	161		30
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Heavy Vehicles (%)	1%	1%	2%	13%	4%	5%	6%	34%	15%	3%	5%	6%
Adj. Flow (vph)	461	1226	235	114	682	128	21	98	47	155	132	65
Shared Lane Traffic (%)												
Lane Group Flow (vph)	461	1461	0	114	810	0	21	145	0	155	132	65
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		11			17			13			13	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.08	1.03	0.99	1.03	1.03	0.99	1.08	0.84	0.99	0.95	0.95	0.95
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1		1	1		1	1		1	1	1
Detector Template												
Leading Detector (ft)	40	0		40	0		40	40		40	0	40
Trailing Detector (ft)	0	0		0	0		0	0		0	0	0
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	0
Detector 1 Size(ft)	40	0		40	0		40	40		40	0	40
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA	Perm
Protected Phases	1	6		5	2		4			8		8
Permitted Phases	6			2			4			8		8
Detector Phase	1	6		5	2		4	4		8	8	8

Existing Conditions 9/25/2014 Morning Peak Hour
KPM

Synchro 8 Report
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Lanes, Volumes, Timings

7: Commonwealth Avenue & Forster Street

10/24/2014

	↖	→	↘	↙	←	↖	↙	↘	↙	↘	↙	↘
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	3.0	3.0		3.0	3.0		5.0	5.0		5.0	5.0	5.0
Minimum Split (s)	9.0	9.0		9.0	9.0		11.0	11.0		11.0	11.0	11.0
Total Split (%)	10.0	30.0		29.0	49.0		41.0	41.0		41.0	41.0	41.0
Total Split (%)	10.0%	30.0%		29.0%	49.0%		41.0%	41.0%		41.0%	41.0%	41.0%
Maximum Green (s)	4.0	24.0		23.0	43.0		35.0	35.0		35.0	35.0	35.0
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)	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
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	1.0	1.0		1.0	1.0		3.0	3.0		3.0	3.0	3.0
Recall Mode	None	C-Max		None	C-Max		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)		17.0			20.0		28.0	28.0		28.0	28.0	28.0
Pedestrian Calls (#/hr)		10			10		25	25		25	25	25
Act Effct Green (s)	55.4	48.8		49.9	43.0		26.2	26.2		26.2	26.2	26.2
Actuated g/C Ratio	0.55	0.49		0.50	0.43		0.26	0.26		0.26	0.26	0.26
v/c Ratio	1.13	0.62		0.57	0.39		0.07	0.34		0.53	0.27	0.12
Control Delay	106.8	11.8		24.6	32.1		23.3	23.7		36.0	27.9	0.5
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	106.8	11.8		24.6	32.1		23.3	23.7		36.0	27.9	0.5
LOS	F	B		C	C		C	C		D	C	A
Approach Delay		34.6			31.2			23.6				26.4
Approach LOS		C			C			C				C
Queue Length 50th (ft)	-325	185		66	183		9	52		74	58	0
Queue Length 95th (ft)	#582	272		m82	m200		24	93		123	96	0
Internal Link Dist (ft)		843			558			762			1299	
Turn Bay Length (ft)		275			250			150			150	
Base Capacity (vph)	409	2345		434	2057		389	556		390	661	642
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	1.13	0.62		0.26	0.39		0.05	0.26		0.40	0.20	0.10
Intersection Summary												
Area Type:	Other											
Cycle Length:	100											
Actuated Cycle Length:	100											
Offset:	0 (0%), Referenced to phase 2:WBTL and 6:EBTL, Start of Green, Master Intersection											
Natural Cycle:	45											
Control Type:	Actuated-Coordinated											
Maximum v/c Ratio:	1.13											
Intersection Signal Delay:	32.3											
Intersection Capacity Utilization:	100.6%											
ICU Level of Service:	G											
Analysis Period (min):	15											
-	Volume exceeds capacity, queue is theoretically infinite.											
-	Queue shown is maximum after two cycles.											

Existing Conditions 9/25/2014 Morning Peak Hour
KPM

Synchro 8 Report
Page 18

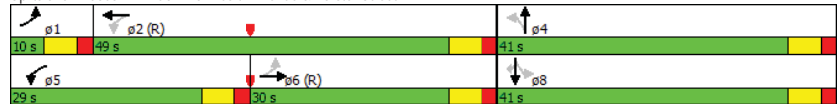
Lanes, Volumes, Timings

7: Commonwealth Avenue & Forster Street

10/24/2014

- # 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: 7: Commonwealth Avenue & Forster Street



Lanes, Volumes, Timings

9: 7th Street & Forster Street

10/24/2014

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↑				↑↑		↑↑		↑↑	↑
Volume (vph)	0	899	302	0	0	0	535	0	424	0	169	287
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	16	12	12	12	12	12	12	12	12	12	12
Grade (%)		-1%			0%			0%			-1%	
Storage Length (ft)	0		0	0		0	0		250	0		0
Storage Lanes	0		1	0		0	2		1	0		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	1.00	1.00	0.97	1.00	0.88	1.00	0.95	1.00
Ped Bike Factor			0.68				0.96		0.88			
Frt			0.850						0.850			0.850
Flt Protected							0.950					
Satd. Flow (prot)	0	4031	1576	0	0	0	3433	0	2842	0	3391	1489
Flt Permitted							0.950					
Satd. Flow (perm)	0	4031	1072	0	0	0	3299	0	2498	0	3391	1489
Right Turn on Red			Yes			Yes		Yes	Yes			Yes
Satd. Flow (RTOR)			382					22				363
Link Speed (mph)		35			25			25			25	
Link Distance (ft)		638			364			500			393	
Travel Time (s)		12.4			9.9			13.6			10.7	
Confl. Peds. (#/hr)			258				28		78			
Peak Hour Factor	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79
Heavy Vehicles (%)	0%	2%	3%	2%	2%	2%	2%	0%	2%	7%	9%	
Adj. Flow (vph)	0	1138	382	0	0	0	677	0	537	0	214	363
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1138	382	0	0	0	677	0	537	0	214	363
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		15			11			29			24	
Link Offset(ft)		-12			0			-8			12	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	0.99	0.84	0.99	1.00	1.00	1.00	1.00	1.00	1.00	0.99	0.99	0.99
Turning Speed (mph)	15		9	15		9	15		20	15		9
Number of Detectors		1	1				1		1		1	1
Detector Template			Right									Right
Leading Detector (ft)		0	20				40		44		40	20
Trailing Detector (ft)		0	0				0		4		0	0
Detector 1 Position(ft)		0	0				0		4		0	0
Detector 1 Size(ft)		0	20				40		40		40	20
Detector 1 Type		Cl+Ex	Cl+Ex				Cl+Ex		Cl+Ex		Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)		0.0	0.0				0.0		0.0		0.0	0.0
Detector 1 Queue (s)		0.0	0.0				0.0		0.0		0.0	0.0
Detector 1 Delay (s)		0.0	0.0				0.0		0.0		0.0	0.0
Turn Type		NA	Perm				Prot		custom		NA	Perm
Protected Phases		2					3		8		4	
Permitted Phases			2						4			4
Detector Phase		2	2				3		8		4	4

Lanes, Volumes, Timings
9: 7th Street & Forster Street

10/24/2014



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)		5.0	5.0				4.0		5.0		4.0	4.0
Minimum Split (s)		10.0	10.0				10.0		10.0		21.0	21.0
Total Split (s)		42.0	42.0				26.0		58.0		32.0	32.0
Total Split (%)		42.0%	42.0%				26.0%		58.0%		32.0%	32.0%
Maximum Green (s)		37.0	37.0				21.0		53.0		27.0	27.0
Yellow Time (s)		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
Lost Time Adjust (s)		0.0	0.0				0.0		0.0		0.0	0.0
Total Lost Time (s)		5.0	5.0				5.0		5.0		5.0	5.0
Lead/Lag							Lead				Lag	Lag
Lead-Lag Optimize?							Yes				Yes	Yes
Vehicle Extension (s)		3.0	3.0				3.0		3.0		3.0	3.0
Recall Mode		C-Max	C-Max				None		None		None	None
Walk Time (s)		7.0	7.0						7.0		5.0	5.0
Flash Dont Walk (s)		14.0	14.0						14.0		11.0	11.0
Pedestrian Calls (#/hr)		0	0						0		0	0
Act Effct Green (s)		51.2	51.2				21.0		38.8		12.8	12.8
Actuated g/C Ratio		0.51	0.51				0.21		0.39		0.13	0.13
v/c Ratio		0.55	0.52				0.94		0.48		0.49	0.72
Control Delay		16.0	6.1				61.5		23.1		40.7	14.3
Queue Delay		0.0	0.0				0.0		0.0		0.0	0.0
Total Delay		16.0	6.1				61.5		23.1		40.7	14.3
LOS		B	A				E		C		D	B
Approach Delay		13.5									24.1	
Approach LOS		B									C	
Queue Length 50th (ft)		143	10				220		140		58	22
Queue Length 95th (ft)		196	57				#259		139		74	56
Internal Link Dist (ft)		558			284			420			313	
Turn Bay Length (ft)								250				
Base Capacity (vph)		2062	734				720		1516		915	667
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		0.55	0.52				0.94		0.35		0.23	0.54

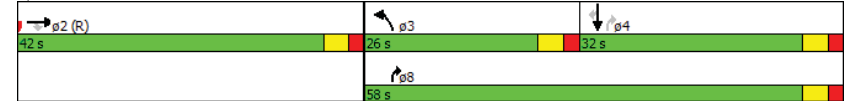
Intersection Summary

Area Type: Other
 Cycle Length: 100
 Actuated Cycle Length: 100
 Offset: 86 (86%), Referenced to phase 2:EBT, Start of Green
 Natural Cycle: 65
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.94
 Intersection Signal Delay: 26.7
 Intersection Capacity Utilization 56.5%
 Analysis Period (min) 15
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

Lanes, Volumes, Timings
9: 7th Street & Forster Street

10/24/2014

Splits and Phases: 9: 7th Street & Forster Street



Lanes, Volumes, Timings
11: 7th Street

10/24/2014



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations		↔↔			↔↔	↔↔
Volume (vph)	0	915	0	0	297	158
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	0%		0%			3%
Storage Length (ft)	100	0		0	0	
Storage Lanes	1	2		0	1	
Taper Length (ft)	75				25	
Lane Util. Factor	1.00	0.88	1.00	1.00	0.91	0.91
Frt		0.850				
Flt Protected					0.950	0.976
Satd. Flow (prot)	0	2787	0	0	1586	3259
Flt Permitted					0.950	0.976
Satd. Flow (perm)	0	2787	0	0	1586	3259
Link Speed (mph)	30		25			25
Link Distance (ft)	359		483			304
Travel Time (s)	8.2		13.2			8.3
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	995	0	0	323	172
Shared Lane Traffic (%)					50%	
Lane Group Flow (vph)	0	995	0	0	161	334
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	R NA	Left	Right	Left	Left
Median Width(ft)	5		12			17
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.02	1.02
Turning Speed (mph)	15	9		9	15	
Sign Control	Free		Free			Free

Intersection Summary	
Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	35.3%
ICU Level of Service A	
Analysis Period (min)	15

HCM Unsignalized Intersection Capacity Analysis
11: 7th Street

10/24/2014

Intersection Sign configuration not allowed in HCM analysis.

Lanes, Volumes, Timings
12: 7th Street

10/24/2014

	↑	↗	↘	↓	↙	↖
Lane Group	NBT	NBR	SBL	SBT	SWL	SWR
Lane Configurations		↗↘		↖↗	↘↙	
Volume (vph)	0	54	0	158	596	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	0%			-3%	0%	
Lane Util. Factor	1.00	0.88	1.00	0.95	1.00	1.00
Frt		0.850				
Flt Protected					0.950	
Satd. Flow (prot)	0	2787	0	3592	1770	0
Flt Permitted					0.950	
Satd. Flow (perm)	0	2787	0	3592	1770	0
Link Speed (mph)	25			25	30	
Link Distance (ft)	236			483	432	
Travel Time (s)	6.4			13.2	9.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	59	0	172	648	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	59	0	172	648	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	L NA	Right
Median Width(ft)	5			0	17	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	0.98	0.98	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Yield	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	44.1%
Analysis Period (min)	15
	ICU Level of Service A

HCM Unsignalized Intersection Capacity Analysis
12: 7th Street

10/24/2014

	↑	↗	↘	↓	↙	↖
Movement	NBT	NBR	SBL	SBT	SWL	SWR
Lane Configurations		↗↘		↖↗	↘↙	
Volume (veh/h)	0	54	0	158	596	0
Sign Control	Free			Free	Yield	
Grade	0%			-3%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	59	0	172	648	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage (veh)						
Upstream signal (ft)				1287		
pX, platoon unblocked						
vC, conflicting volume			59		86	0
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			59		86	0
IC, single (s)			4.1		6.8	6.9
IC, 2 stage (s)						
IF (s)			2.2		3.5	3.3
p0 queue free %			100		28	100
cM capacity (veh/h)			1543		906	1084

Direction, Lane #	NB 1	NB 2	SB 1	SB 2	SW 1
Volume Total	29	29	86	86	648
Volume Left	0	0	0	0	648
Volume Right	29	29	0	0	0
cSH	1700	1700	1700	1700	906
Volume to Capacity	0.02	0.02	0.05	0.05	0.72
Queue Length 95th (ft)	0	0	0	0	158
Control Delay (s)	0.0	0.0	0.0	0.0	18.3
Lane LOS					C
Approach Delay (s)	0.0		0.0		18.3
Approach LOS					C

Intersection Summary

Average Delay	13.5
Intersection Capacity Utilization	44.1%
Analysis Period (min)	15
	ICU Level of Service A

Lanes, Volumes, Timings
13: State Street

10/24/2014

	EBL	EBT	WBT	WBR	SEL	SER
Lane Configurations		↑↑	↑	↑	↑↑	↑↑
Volume (vph)	0	54	596	915	297	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	0.95	1.00	1.00	0.97	1.00
Fr				0.850		
Flt Protected					0.950	
Satd. Flow (prot)	0	3539	1863	1583	3433	0
Flt Permitted					0.950	
Satd. Flow (perm)	0	3539	1863	1583	3433	0
Link Speed (mph)		30	35		30	
Link Distance (ft)		432	1119		359	
Travel Time (s)		9.8	21.8		8.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	59	648	995	323	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	59	648	995	323	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		10	5		36	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	0		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			15	15	9
Sign Control		Free	Free		Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	60.0%
ICU Level of Service B	
Analysis Period (min)	15

HCM Unsignalized Intersection Capacity Analysis
13: State Street

10/24/2014

	EBL	EBT	WBT	WBR	SEL	SER
Lane Configurations		↑↑	↑	↑	↑↑	↑↑
Volume (veh/h)	0	54	596	915	297	0
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	59	648	995	323	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1642				677	648
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1642				677	648
IC, single (s)	4.1				6.8	6.9
IC, 2 stage (s)						
IF (s)	2.2				3.5	3.3
p0 queue free %	100				16	100
cM capacity (veh/h)	390				386	413

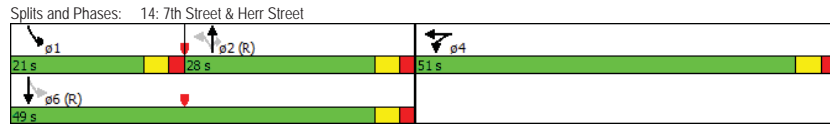
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SE 1	SE 2
Volume Total	29	29	648	995	161	161
Volume Left	0	0	0	0	161	161
Volume Right	0	0	0	995	0	0
cSH	1700	1700	1700	1700	386	386
Volume to Capacity	0.02	0.02	0.38	0.59	0.42	0.42
Queue Length 95th (ft)	0	0	0	0	50	50
Control Delay (s)	0.0	0.0	0.0	0.0	20.8	20.8
Lane LOS					C	C
Approach Delay (s)	0.0		0.0		20.8	
Approach LOS					C	

Intersection Summary

Average Delay	3.3
Intersection Capacity Utilization	60.0%
ICU Level of Service B	
Analysis Period (min)	15

Lanes, Volumes, Timings
14: 7th Street & Herr Street

10/24/2014



Lanes, Volumes, Timings
15: 7th Street

10/24/2014

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations		↔	↔↔↔	↔		
Volume (vph)	0	2	899	424	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	0.91	0.91	1.00	1.00
Frt		0.865	0.952			
Fit Protected						
Satd. Flow (prot)	0	1644	4841	0	0	0
Fit Permitted						
Satd. Flow (perm)	0	1644	4841	0	0	0
Link Speed (mph)	30		25			30
Link Distance (ft)	748		364			303
Travel Time (s)	17.0		9.9			6.9
Peak Hour Factor	0.79	0.79	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	0%	2%	2%	2%	2%
Adj. Flow (vph)	0	3	977	461	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	3	1438	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	0		0			0
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free		Free	

Intersection Summary

Area Type: Other
Control Type: Unsignalized
Intersection Capacity Utilization 36.9% ICU Level of Service A
Analysis Period (min) 15

HCM Unsignalized Intersection Capacity Analysis
15: 7th Street

10/24/2014

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations		↗ ↘	↕	↖ ↗		↕
Volume (veh/h)	0	2	899	424	0	0
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.79	0.79	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	3	977	461	0	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None		None	
Median storage (veh)						
Upstream signal (ft)			364			
pX, platoon unblocked	0.86	0.86			0.86	
vC, conflicting volume	1208	556			1438	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	686	0			953	
IC, single (s)	6.8	6.9			4.1	
IC, 2 stage (s)						
IF (s)	3.5	3.3			2.2	
p0 queue free %	100	100			100	
cM capacity (veh/h)	333	942			619	
Direction, Lane #	WB 1	NB 1	NB 2	NB 3		
Volume Total	3	391	391	656		
Volume Left	0	0	0	0		
Volume Right	3	0	0	461		
cSH	942	1700	1700	1700		
Volume to Capacity	0.00	0.23	0.23	0.39		
Queue Length 95th (ft)	0	0	0	0		
Control Delay (s)	8.8	0.0	0.0	0.0		
Lane LOS	A					
Approach Delay (s)	8.8	0.0				
Approach LOS	A					
Intersection Summary						
Average Delay			0.0			
Intersection Capacity Utilization			36.9%		ICU Level of Service	A
Analysis Period (min)			15			

Lanes, Volumes, Timings
16: 7th Street

10/24/2014

Lane Group	NBT	NBR	SBL	SBT	NWL	NWR
Lane Configurations				↕	↖ ↗	↖ ↗
Volume (vph)	0	0	0	456	0	899
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	0.91	1.00	0.76
Frt						0.850
Fit Protected						
Satd. Flow (prot)	0	0	0	5085	0	3610
Fit Permitted						
Satd. Flow (perm)	0	0	0	5085	0	3610
Link Speed (mph)	25			25	30	
Link Distance (ft)	393			305	303	
Travel Time (s)	10.7			8.3	6.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	496	0	977
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	496	0	977
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			5	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	35
Sign Control	Free			Free	Free	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	24.3%			ICU Level of Service A		
Analysis Period (min)	15					

Intersection Sign configuration not allowed in HCM analysis.

Intersection: 1: 2nd Street & Division Street

Movement	EB	WB	NB	NB	NB	SB
Directions Served	LT	TR	L	L	TR	LTR
Maximum Queue (ft)	300	141	106	110	125	70
Average Queue (ft)	146	60	36	58	49	29
95th Queue (ft)	247	113	78	99	101	57
Link Distance (ft)	347	3240	4861	4861	4861	1642
Upstream Blk Time (%)	0					
Queuing Penalty (veh)	0					
Storage Bay Dist (ft)						
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 2: 2nd Street & Maclay Street

Movement	EB	WB	NB	NB	NB
Directions Served	LT	TR	LT	T	TR
Maximum Queue (ft)	82	211	122	133	173
Average Queue (ft)	25	84	61	73	96
95th Queue (ft)	64	171	100	121	159
Link Distance (ft)	344	2937	5292	5292	5292
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)					
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 3: 7th Street & Maclay Street

Movement	EB	EB	WB	WB	WB	NB	NB	NB	B34	SB	SB
Directions Served	L	TR	L	T	R	L	T	R	T	L	TR
Maximum Queue (ft)	149	1211	506	598	319	95	276	240	23	194	159
Average Queue (ft)	21	643	253	276	130	19	95	86	1	97	64
95th Queue (ft)	96	1386	502	638	469	60	203	185	13	172	129
Link Distance (ft)		2937		832	832		414	414	3736	2540	
Upstream Blk Time (%)				5	3		0	0			
Queuing Penalty (veh)				0	0		1	1			
Storage Bay Dist (ft)	75		250			100					200
Storage Blk Time (%)	0	77	24	9			7			0	
Queuing Penalty (veh)	1	8	99	31			2			0	

Queuing and Blocking Report
Morning Peak Hour

10/24/2014

Intersection: 4: Front Street & Forster Street

Movement	EB	EB	EB	EB	B18	B18	WB	WB	B37	B37	SB	SB
Directions Served	T	T	T	R	T	T	T	T	T	T	LT	T
Maximum Queue (ft)	179	212	220	100	515	487	160	152	32	23	532	504
Average Queue (ft)	66	190	194	89	177	174	91	64	1	1	366	338
95th Queue (ft)	140	226	231	134	427	410	149	125	15	11	516	490
Link Distance (ft)	114	114	114		1509	1509	98	98	163	163	637	637
Upstream Blk Time (%)	2	30	29	2			8	3			0	
Queuing Penalty (veh)	0	0	0	0			32	11			0	
Storage Bay Dist (ft)				50								
Storage Blk Time (%)				37								
Queuing Penalty (veh)				168								

Intersection: 4: Front Street & Forster Street

Movement	SB	SB
Directions Served	T	R
Maximum Queue (ft)	464	387
Average Queue (ft)	287	209
95th Queue (ft)	448	380
Link Distance (ft)	637	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		300
Storage Blk Time (%)	6	2
Queuing Penalty (veh)	50	9

Queuing and Blocking Report
Morning Peak Hour

10/24/2014

Intersection: 5: 2nd Street & Forster Street

Movement	EB	EB	EB	EB	B37	B37	WB	WB	WB	NB	NB	NB
Directions Served	L	L	T	T	T	T	T	T	TR	L	LT	T
Maximum Queue (ft)	88	98	234	216	41	10	141	158	54	195	301	209
Average Queue (ft)	48	52	158	139	2	1	93	106	17	100	164	109
95th Queue (ft)	78	90	226	204	17	9	140	152	44	165	243	206
Link Distance (ft)	163	163	163	163	98	98	742	742	742	449	449	449
Upstream Blk Time (%)			9	4								
Queuing Penalty (veh)			40	20								
Storage Bay Dist (ft)												
Storage Blk Time (%)												
Queuing Penalty (veh)												

Intersection: 5: 2nd Street & Forster Street

Movement	NB
Directions Served	R
Maximum Queue (ft)	236
Average Queue (ft)	112
95th Queue (ft)	198
Link Distance (ft)	449
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 6: 3rd Street & Forster Street

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	SB
Directions Served	L	T	T	TR	L	T	T	TR	LT	R	LTR
Maximum Queue (ft)	104	179	189	218	180	123	148	113	184	136	224
Average Queue (ft)	36	85	101	110	76	46	75	44	84	56	100
95th Queue (ft)	79	151	165	185	148	98	126	96	149	106	183
Link Distance (ft)		742	742	742		832	832	832	891	891	1353
Upstream Blk Time (%)											
Queuing Penalty (veh)											
Storage Bay Dist (ft)	225				225						
Storage Blk Time (%)											
Queuing Penalty (veh)											

Queuing and Blocking Report
Morning Peak Hour

10/24/2014

Intersection: 7: Commonwealth Avenue & Forster Street

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	SB	SB	
Directions Served	L	T	T	TR	L	T	T	TR	L	TR	L	T	
Maximum Queue (ft)	325	563	413	302	131	211	238	197	41	196	171	170	
Average Queue (ft)	211	153	154	121	61	127	124	120	12	79	90	62	
95th Queue (ft)	372	467	354	266	113	193	188	180	36	155	148	128	
Link Distance (ft)		832	832	832		536	536	536		773		1321	
Upstream Blk Time (%)													
Queuing Penalty (veh)													
Storage Bay Dist (ft)	275							250			150		
Storage Blk Time (%)	19	1								2	1		
Queuing Penalty (veh)	66	2								0	1		

Intersection: 7: Commonwealth Avenue & Forster Street

Movement	SB
Directions Served	R
Maximum Queue (ft)	71
Average Queue (ft)	29
95th Queue (ft)	62
Link Distance (ft)	1321
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 9: 7th Street & Forster Street

Movement	EB	EB	EB	NB	NB	SB	SB	SB
Directions Served	T	T	R	L	L	T	T	R
Maximum Queue (ft)	439	487	76	251	252	100	112	41
Average Queue (ft)	155	282	3	148	160	30	52	1
95th Queue (ft)	384	481	53	225	231	76	98	29
Link Distance (ft)	536	536	536	425	425	310	310	310
Upstream Blk Time (%)	0	0						
Queuing Penalty (veh)	0	1						
Storage Bay Dist (ft)								
Storage Blk Time (%)								
Queuing Penalty (veh)								

Queuing and Blocking Report
Morning Peak Hour

10/24/2014

Intersection: 11: 7th Street

Movement	WB	WB
Directions Served	R	R
Maximum Queue (ft)	39	28
Average Queue (ft)	2	2
95th Queue (ft)	15	16
Link Distance (ft)		232
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)	100	
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 12: 7th Street

Movement	SW
Directions Served	L
Maximum Queue (ft)	79
Average Queue (ft)	14
95th Queue (ft)	54
Link Distance (ft)	329
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 13: State Street

Movement	EB	WB	WB	SE	SE
Directions Served	T	T	R	L	L
Maximum Queue (ft)	4	11	30	140	160
Average Queue (ft)	0	0	1	65	80
95th Queue (ft)	3	7	14	117	134
Link Distance (ft)	329	1104	1104	232	232
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)					
Storage Blk Time (%)					
Queuing Penalty (veh)					

Queuing and Blocking Report
Morning Peak Hour

10/24/2014

Intersection: 14: 7th Street & Herr Street

Movement	WB	WB	NB	NB	NB	NB	SB	SB	SB
Directions Served	L	TR	L	T	T	R	L	T	TR
Maximum Queue (ft)	280	230	58	239	255	223	148	188	165
Average Queue (ft)	157	106	16	141	143	81	79	63	88
95th Queue (ft)	265	193	44	204	212	161	138	135	147
Link Distance (ft)		1911	243	243	243			3736	3736
Upstream Blk Time (%)				0	0	0			
Queuing Penalty (veh)				0	1	0			
Storage Bay Dist (ft)	460					150	100		
Storage Blk Time (%)					8	0	8	0	
Queuing Penalty (veh)					24	0	13	1	

Intersection: 15: 7th Street

Movement	WB	NB	NB
Directions Served	R	T	TR
Maximum Queue (ft)	19	294	76
Average Queue (ft)	1	14	3
95th Queue (ft)	9	118	39
Link Distance (ft)	678	290	290
Upstream Blk Time (%)		0	
Queuing Penalty (veh)		1	
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 16: 7th Street

Movement	NW
Directions Served	R
Maximum Queue (ft)	21
Average Queue (ft)	1
95th Queue (ft)	10
Link Distance (ft)	254
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Queuing and Blocking Report
Morning Peak Hour

10/24/2014

Intersection: 18: Bend

Movement	WB
Directions Served	T
Maximum Queue (ft)	8
Average Queue (ft)	0
95th Queue (ft)	6
Link Distance (ft)	114
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Network Summary

Network wide Queuing Penalty: 583

Lanes, Volumes, Timings
11: 7th Street

10/24/2014



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations		↔↔			↔	↔↔
Volume (vph)	0	323	0	0	448	114
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	0%		0%			3%
Storage Length (ft)	100	0		0	0	
Storage Lanes	1	2		0	1	
Taper Length (ft)	75				25	
Lane Util. Factor	1.00	0.88	1.00	1.00	0.91	0.91
Frt		0.850				
Flt Protected					0.950	0.968
Satd. Flow (prot)	0	2787	0	0	1586	3232
Flt Permitted					0.950	0.968
Satd. Flow (perm)	0	2787	0	0	1586	3232
Link Speed (mph)	30		25			25
Link Distance (ft)	359		483			304
Travel Time (s)	8.2		13.2			8.3
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	351	0	0	487	124
Shared Lane Traffic (%)					50%	
Lane Group Flow (vph)	0	351	0	0	243	368
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	R NA	Left	Right	Left	Left
Median Width(ft)	5		12			17
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.02	1.02
Turning Speed (mph)	15	9		9	15	
Sign Control	Free		Free			Free

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	15.7%
Analysis Period (min)	15
	ICU Level of Service A

HCM Unsignalized Intersection Capacity Analysis
11: 7th Street

10/24/2014

Intersection Sign configuration not allowed in HCM analysis.

Lanes, Volumes, Timings
12: 7th Street

10/24/2014

	↑	↗	↘	↓	↙	↖
Lane Group	NBT	NBR	SBL	SBT	SWL	SWR
Lane Configurations		↗↘		↗↘	↗	
Volume (vph)	0	128	0	114	175	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	0%			-3%	0%	
Lane Util. Factor	1.00	0.88	1.00	0.95	1.00	1.00
Frt		0.850				
Flt Protected					0.950	
Satd. Flow (prot)	0	2787	0	3592	1770	0
Flt Permitted					0.950	
Satd. Flow (perm)	0	2787	0	3592	1770	0
Link Speed (mph)	25			25	30	
Link Distance (ft)	236			483	432	
Travel Time (s)	6.4			13.2	9.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	139	0	124	190	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	139	0	124	190	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	L NA	Right
Median Width(ft)	5			0	17	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	0.98	0.98	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Yield	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	19.7%
Analysis Period (min)	15
	ICU Level of Service A

HCM Unsignalized Intersection Capacity Analysis
12: 7th Street

10/24/2014

	↑	↗	↘	↓	↙	↖
Movement	NBT	NBR	SBL	SBT	SWL	SWR
Lane Configurations		↗↘		↗↘	↗	
Volume (veh/h)	0	128	0	114	175	0
Sign Control	Free			Free	Yield	
Grade	0%			-3%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	139	0	124	190	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage (veh)						
Upstream signal (ft)				1287		
pX, platoon unblocked						
vC, conflicting volume			139		62	0
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			139		62	0
IC, single (s)			4.1		6.8	6.9
IC, 2 stage (s)						
IF (s)			2.2		3.5	3.3
p0 queue free %			100		80	100
cM capacity (veh/h)			1442		937	1084

Direction, Lane #	NB 1	NB 2	SB 1	SB 2	SW 1
Volume Total	70	70	62	62	190
Volume Left	0	0	0	0	190
Volume Right	70	70	0	0	0
cSH	1700	1700	1700	1700	937
Volume to Capacity	0.04	0.04	0.04	0.04	0.20
Queue Length 95th (ft)	0	0	0	0	19
Control Delay (s)	0.0	0.0	0.0	0.0	9.8
Lane LOS					A
Approach Delay (s)	0.0		0.0		9.8
Approach LOS					A

Intersection Summary

Average Delay	4.1
Intersection Capacity Utilization	19.7%
Analysis Period (min)	15
	ICU Level of Service A

Lanes, Volumes, Timings
13: State Street

10/24/2014

	←	→	←	←	←	←
Lane Group	EBL	EBT	WBT	WBR	SEL	SER
Lane Configurations		↑↑	↑	↑	↑↑	
Volume (vph)	0	128	175	323	448	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	0.95	1.00	1.00	0.97	1.00
Frt			0.850			
Flt Protected					0.950	
Satd. Flow (prot)	0	3539	1863	1583	3433	0
Flt Permitted					0.950	
Satd. Flow (perm)	0	3539	1863	1583	3433	0
Link Speed (mph)		30	35		30	
Link Distance (ft)		432	1119		359	
Travel Time (s)		9.8	21.8		8.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	139	190	351	487	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	139	190	351	487	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		10	5		36	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	0		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			15	15	9
Sign Control		Free	Free		Stop	

Intersection Summary

Area Type: Other
 Control Type: Unsignalized
 Intersection Capacity Utilization 28.7% ICU Level of Service A
 Analysis Period (min) 15

HCM Unsignalized Intersection Capacity Analysis
13: State Street

10/24/2014

	←	→	←	←	←	←
Movement	EBL	EBT	WBT	WBR	SEL	SER
Lane Configurations		↑↑	↑	↑	↑↑	
Volume (veh/h)	0	128	175	323	448	0
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	139	190	351	487	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	541				260	190
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	541				260	190
IC, single (s)	4.1				6.8	6.9
IC, 2 stage (s)						
IF (s)	2.2				3.5	3.3
p0 queue free %	100				31	100
cM capacity (veh/h)	1023				707	819

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SE 1	SE 2
Volume Total	70	70	190	351	243	243
Volume Left	0	0	0	0	243	243
Volume Right	0	0	0	351	0	0
cSH	1700	1700	1700	1700	707	707
Volume to Capacity	0.04	0.04	0.11	0.21	0.34	0.34
Queue Length 95th (ft)	0	0	0	0	38	38
Control Delay (s)	0.0	0.0	0.0	0.0	12.7	12.7
Lane LOS					B	B
Approach Delay (s)	0.0		0.0		12.7	
Approach LOS					B	

Intersection Summary

Average Delay 5.3
 Intersection Capacity Utilization 28.7% ICU Level of Service A
 Analysis Period (min) 15

Lanes, Volumes, Timings
15: 7th Street

10/24/2014

	↙	↖	↑	↗	↘	↓
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations		↖ ↗	↖ ↗ ↘			
Volume (vph)	0	73	489	30	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	0.91	0.91	1.00	1.00
Fr		0.865	0.991			
Flt Protected						
Satd. Flow (prot)	0	1627	4991	0	0	0
Flt Permitted						
Satd. Flow (perm)	0	1627	4991	0	0	0
Link Speed (mph)	30		25			30
Link Distance (ft)	748		364			303
Travel Time (s)	17.0		9.9			6.9
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	1%	3%	3%	0%	0%
Adj. Flow (vph)	0	79	532	33	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	79	565	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	0		0			0
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	21.3%
Analysis Period (min)	15
	ICU Level of Service A

HCM Unsignalized Intersection Capacity Analysis
15: 7th Street

10/24/2014

	↙	↖	↑	↗	↘	↓
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations		↖ ↗	↖ ↗ ↘			
Volume (veh/h)	0	73	489	30	0	0
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	79	532	33	0	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage (veh)						
Upstream signal (ft)			364			
pX, platoon unblocked	0.99	0.99			0.99	
vC, conflicting volume	548	193			564	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	527	171			543	
IC, single (s)	6.8	6.9			4.1	
IC, 2 stage (s)						
IF (s)	3.5	3.3			2.2	
p0 queue free %	100	91			100	
cM capacity (veh/h)	483	842			1030	







Direction, Lane #	WB 1	NB 1	NB 2	NB 3
Volume Total	79	213	213	139
Volume Left	0	0	0	0
Volume Right	79	0	0	33
cSH	842	1700	1700	1700
Volume to Capacity	0.09	0.13	0.13	0.08
Queue Length 95th (ft)	8	0	0	0
Control Delay (s)	9.7	0.0	0.0	0.0
Lane LOS	A			
Approach Delay (s)	9.7	0.0		
Approach LOS	A			

Intersection Summary

Average Delay	1.2
Intersection Capacity Utilization	21.3%
Analysis Period (min)	15
	ICU Level of Service A

Lanes, Volumes, Timings
16: 7th Street

10/24/2014

						
Lane Group	NBT	NBR	SBL	SBT	NWL	NWR
Lane Configurations				↑↑↑		↑↑↑
Volume (vph)	0	0	0	480	0	562
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	0.91	1.00	0.76
Frt						0.850
Flt Protected						
Satd. Flow (prot)	0	0	0	5085	0	3610
Flt Permitted						
Satd. Flow (perm)	0	0	0	5085	0	3610
Link Speed (mph)	25			25	30	
Link Distance (ft)	393			305	303	
Travel Time (s)	10.7			8.3	6.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	522	0	611
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	522	0	611
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			5	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	35
Sign Control	Free			Free	Free	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	16.4%
ICU Level of Service	A
Analysis Period (min)	15

HCM Unsignalized Intersection Capacity Analysis
16: 7th Street

10/24/2014

Intersection Sign configuration not allowed in HCM analysis.

Queuing and Blocking Report
Mid Day Peak Hour

10/24/2014

Intersection: 1: 2nd Street & Division Street

Movement	EB	WB	NB	NB	NB	SB
Directions Served	LT TR	L L	TR LTR			
Maximum Queue (ft)	78	188	108	121	109	58
Average Queue (ft)	34	95	48	65	46	20
95th Queue (ft)	72	164	94	106	86	51
Link Distance (ft)	347	3240	4861	4861	4861	1642
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)						
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 2: 2nd Street & Maclay Street

Movement	EB	WB	NB	NB	NB
Directions Served	LT TR	LT T	TR		
Maximum Queue (ft)	75	180	117	153	194
Average Queue (ft)	25	67	64	74	100
95th Queue (ft)	58	149	110	130	168
Link Distance (ft)	344	2937	5292	5292	5292
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)					
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 3: 7th Street & Maclay Street

Movement	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB
Directions Served	L TR	L T	R L	T R	L T	R L	TR			
Maximum Queue (ft)	125	644	124	349	116	64	184	109	219	110
Average Queue (ft)	17	291	53	163	55	17	79	49	106	40
95th Queue (ft)	76	560	105	309	100	52	151	93	183	88
Link Distance (ft)		2937		832	832		414	414	2540	
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)	75		250			100			200	
Storage Blk Time (%)		55		4		0	5		0	
Queuing Penalty (veh)		6		3		0	1		0	

Queuing and Blocking Report
Mid Day Peak Hour

10/24/2014

Intersection: 4: Front Street & Forster Street

Movement	EB	EB	EB	EB	B18	WB	WB	B37	B37	SB	SB	SB
Directions Served	T T	T R	T T	R T	T T	T T	T T	T T	T LT	T T	T T	T
Maximum Queue (ft)	158	163	173	100	23	169	169	40	66	227	216	181
Average Queue (ft)	77	87	78	19	1	106	112	3	6	143	124	69
95th Queue (ft)	139	148	149	81	12	167	181	19	33	204	193	156
Link Distance (ft)	114	114	114		1509	98	98	163	163	637	637	637
Upstream Blk Time (%)	3	3	2	0		8	7					
Queuing Penalty (veh)	0	0	0	0		20	19					
Storage Bay Dist (ft)				50								
Storage Blk Time (%)				18								
Queuing Penalty (veh)				32								

Intersection: 4: Front Street & Forster Street

Movement	SB
Directions Served	R
Maximum Queue (ft)	167
Average Queue (ft)	37
95th Queue (ft)	114
Link Distance (ft)	
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	300
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 5: 2nd Street & Forster Street

Movement	EB	EB	EB	EB	WB	WB	WB	NB	NB	NB	NB
Directions Served	L L	T T	T T	T T	TR L	LT T	R				
Maximum Queue (ft)	118	108	178	150	76	90	58	152	228	211	118
Average Queue (ft)	56	46	93	78	28	39	11	77	159	102	53
95th Queue (ft)	99	92	154	140	63	76	38	134	219	202	89
Link Distance (ft)	163	163	163	163	742	742	742	449	449	449	449
Upstream Blk Time (%)	0	0	1	0							
Queuing Penalty (veh)	0	0	1	0							
Storage Bay Dist (ft)											
Storage Blk Time (%)											
Queuing Penalty (veh)											

Queuing and Blocking Report
Mid Day Peak Hour

10/24/2014

Intersection: 6: 3rd Street & Forster Street

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	SB	
Directions Served	L	T	T	TR	L	T	T	TR	LT	R	LTR	
Maximum Queue (ft)	109	124	129	157	156	123	157	145	200	96	215	
Average Queue (ft)	41	59	73	94	64	62	88	72	101	45	110	
95th Queue (ft)	84	106	116	139	124	106	134	129	174	84	192	
Link Distance (ft)		742	742	742		832	832	832	891	891	1353	
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	225				225							
Storage Blk Time (%)												
Queuing Penalty (veh)												

Intersection: 7: Commonwealth Avenue & Forster Street

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	SB	SB		
Directions Served	L	T	T	TR	L	T	T	TR	L	TR	L	T		
Maximum Queue (ft)	150	124	166	206	75	140	150	169	66	119	144	152		
Average Queue (ft)	53	23	73	95	29	59	66	89	21	42	75	60		
95th Queue (ft)	108	71	145	186	64	123	126	159	55	94	133	120		
Link Distance (ft)		832	832	832		536	536	536		773		1321		
Upstream Blk Time (%)														
Queuing Penalty (veh)														
Storage Bay Dist (ft)	275				250				150				150	
Storage Blk Time (%)														
Queuing Penalty (veh)														

Intersection: 7: Commonwealth Avenue & Forster Street

Movement	SB
Directions Served	R
Maximum Queue (ft)	76
Average Queue (ft)	36
95th Queue (ft)	64
Link Distance (ft)	1321
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Queuing and Blocking Report
Mid Day Peak Hour

10/24/2014

Intersection: 9: 7th Street & Forster Street

Movement	EB	EB	NB	NB	SB	SB
Directions Served	T	T	L	L	T	T
Maximum Queue (ft)	107	191	171	159	107	133
Average Queue (ft)	24	79	78	93	45	62
95th Queue (ft)	70	162	134	146	89	111
Link Distance (ft)	536	536	425	425	310	310
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)						
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 11: 7th Street

Movement	WB
Directions Served	R
Maximum Queue (ft)	5
Average Queue (ft)	0
95th Queue (ft)	4
Link Distance (ft)	232
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 12: 7th Street

Movement	SW
Directions Served	L
Maximum Queue (ft)	35
Average Queue (ft)	4
95th Queue (ft)	22
Link Distance (ft)	329
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Queuing and Blocking Report
Mid Day Peak Hour

10/24/2014

Intersection: 13: State Street

Movement	EB	WB	WB	SE	SE
Directions Served	T	T	R	L	L
Maximum Queue (ft)	33	19	13	109	132
Average Queue (ft)	1	1	0	58	71
95th Queue (ft)	12	11	9	91	110
Link Distance (ft)	329	1104	1104	232	232
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)					
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 14: 7th Street & Herr Street

Movement	WB	WB	NB	NB	NB	NB	SB	SB	SB
Directions Served	L	TR	L	T	T	R	L	T	TR
Maximum Queue (ft)	195	162	24	112	118	164	149	188	180
Average Queue (ft)	96	60	1	53	58	76	85	39	73
95th Queue (ft)	168	118	10	94	107	146	141	113	130
Link Distance (ft)		1911	243	243	243		3736	3736	
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)	460					150	100		
Storage Blk Time (%)					0	1	7	0	
Queuing Penalty (veh)					0	1	8	1	

Intersection: 15: 7th Street

Movement	WB
Directions Served	R
Maximum Queue (ft)	55
Average Queue (ft)	21
95th Queue (ft)	43
Link Distance (ft)	678
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Queuing and Blocking Report
Mid Day Peak Hour

10/24/2014

Intersection: 16: 7th Street

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Network Summary

Network wide Queuing Penalty: 93

Lanes, Volumes, Timings
4: Front Street & Forster Street

10/24/2014

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)		10.0	10.0		10.0					10.0	10.0	10.0
Minimum Split (s)		17.0	17.0		17.0					17.0	17.0	17.0
Total Split (s)		82.0	82.0		82.0					38.0	38.0	38.0
Total Split (%)		68.3%	68.3%		68.3%					31.7%	31.7%	31.7%
Maximum Green (s)		75.0	75.0		75.0					31.0	31.0	31.0
Yellow Time (s)		4.0	4.0		4.0					4.0	4.0	4.0
All-Red Time (s)		3.0	3.0		3.0					3.0	3.0	3.0
Lost Time Adjust (s)		0.0	0.0		0.0					0.0	0.0	0.0
Total Lost Time (s)		7.0	7.0		7.0					7.0	7.0	7.0
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)		3.0	3.0		3.0					3.0	3.0	3.0
Recall Mode		C-Max	C-Max		C-Max					Max	Max	Max
Walk Time (s)		8.0	8.0		8.0					8.0	8.0	8.0
Flash Dont Walk (s)		10.0	10.0		10.0					10.0	10.0	10.0
Pedestrian Calls (#/hr)		0	0		0					0	0	0
Act Effct Green (s)		75.0	75.0		75.0					31.0	31.0	31.0
Actuated g/C Ratio		0.62	0.62		0.62					0.26	0.26	0.26
v/c Ratio		0.38	0.26		0.77					0.69	1.65	1.65
Control Delay		11.5	9.3		16.0					43.5	330.6	330.6
Queue Delay		0.0	0.0		1.8					0.0	0.0	0.0
Total Delay		11.5	9.3		17.9					43.5	330.6	330.6
LOS		B	A		B					D	F	F
Approach Delay		11.1			17.9					169.8		
Approach LOS		B			B					F		
Queue Length 50th (ft)		152	69		236					217	-734	-734
Queue Length 95th (ft)		181	112		285					267	#968	#968
Internal Link Dist (ft)		112			66			515		629		
Turn Bay Length (ft)			50									300
Base Capacity (vph)		3075	979		2080					1240	406	406
Starvation Cap Reductn		0	0		304					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	0.26		0.90					0.69	1.65	1.65

Intersection Summary	
Area Type:	Other
Cycle Length:	120
Actuated Cycle Length:	120
Offset:	102 (85%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle:	120
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	1.65
Intersection Signal Delay:	66.4
Intersection Capacity Utilization:	122.1%
ICU Level of Service H	
Intersection LOS:	E
Analysis Period (min)	15
- Volume exceeds capacity, queue is theoretically infinite. Queue shown is maximum after two cycles.	

Lanes, Volumes, Timings
4: Front Street & Forster Street

10/24/2014

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

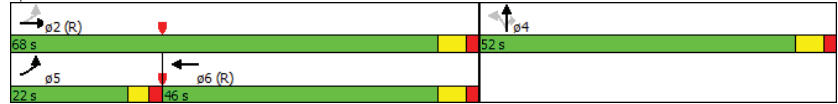


Lanes, Volumes, Timings
5: 2nd Street & Forster Street

10/24/2014

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

Splits and Phases: 5: 2nd Street & Forster Street



Lanes, Volumes, Timings
6: 3rd Street & Forster Street

10/24/2014

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↕↕	↔	↔	↕↕	↔	↔	↕	↕	↔	↔	↔
Volume (vph)	106	787	60	155	996	57	123	142	241	40	175	57
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	11	12	10	11	12	12	11	10	12	16	12
Grade (%)		1%			-2%			-1%			0%	
Storage Length (ft)	225		0	225		0	0		0	0		0
Storage Lanes	1		0	1		0	0		1	0		0
Taper Length (ft)	50			50			25		25			
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		1.00		0.99	1.00			0.99	0.95			0.99
Frt		0.989			0.992				0.850			0.972
Flt Protected	0.950			0.950				0.977				0.993
Satd. Flow (prot)	1660	4906	0	1652	4958	0	0	1784	1443	0	2029	0
Flt Permitted	0.211			0.273				0.574				0.818
Satd. Flow (perm)	369	4906	0	472	4958	0	0	1038	1375	0	1667	0
Right Turn on Red			Yes		Yes			Yes		Yes		Yes
Satd. Flow (RTOR)		10			7				248			12
Link Speed (mph)		35			35			25				25
Link Distance (ft)		828			923			950				1410
Travel Time (s)		16.1			18.0			25.9				38.5
Confl. Peds. (#/hr)	16		10	10		16	32		28	28		32
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
Heavy Vehicles (%)	1%	0%	3%	3%	1%	0%	0%	2%	5%	0%	2%	0%
Adj. Flow (vph)	109	811	62	160	1027	59	127	146	248	41	180	59
Shared Lane Traffic (%)												
Lane Group Flow (vph)	109	873	0	160	1086	0	0	273	248	0	280	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		17			10			0				0
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
Headway Factor	1.10	1.05	1.01	1.08	1.03	0.99	0.99	1.04	1.09	1.00	0.85	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1		1	1		1	1	1	1		1
Detector Template							Left			Left		
Leading Detector (ft)	40	0		40	26		20	40	40	20		40
Trailing Detector (ft)	0	0		0	20		0	0	0	0		0
Detector 1 Position(ft)	0	0		0	20		0	0	0	0		0
Detector 1 Size(ft)	40	0		40	6		20	40	40	20		40
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0		0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0		0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0		0.0
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA	Perm	Perm		NA
Protected Phases	1	6		5	2			4				8
Permitted Phases	6			2			4		4	8		
Detector Phase	1	6		5	2		4	4	4	8		8

Lanes, Volumes, Timings
6: 3rd Street & Forster Street

10/24/2014

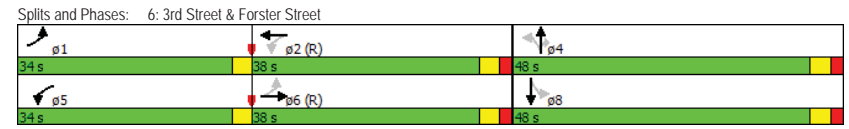
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	8.0	10.0		8.0	10.0		10.0	10.0	10.0	10.0	10.0	10.0
Total Split (s)	34.0	38.0		34.0	38.0		48.0	48.0	48.0	48.0	48.0	48.0
Total Split (%)	28.3%	31.7%		28.3%	31.7%		40.0%	40.0%	40.0%	40.0%	40.0%	40.0%
Maximum Green (s)	31.0	33.0		31.0	33.0		43.0	43.0	43.0	43.0	43.0	43.0
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	0.0	2.0		0.0	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	0.0
Total Lost Time (s)	3.0	5.0		3.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	C-Max		None	C-Max		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	7.0	7.0
Flash Dont Walk (s)	12.0	12.0		12.0	12.0		21.0	21.0	21.0	21.0	21.0	21.0
Pedestrian Calls (#/hr)	0	0		0	0		0	0	0	0	0	0
Act Effct Green (s)	74.4	63.0		76.3	63.9		33.7	33.7	33.7	33.7	33.7	33.7
Actuated g/C Ratio	0.62	0.52		0.64	0.53		0.28	0.28	0.28	0.28	0.28	0.28
v/c Ratio	0.33	0.34		0.40	0.41		0.94	0.44	0.44	0.59	0.59	0.59
Control Delay	6.5	10.8		6.9	15.3		80.6	6.0	6.0	39.5	39.5	39.5
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	6.5	10.8		6.9	15.3		80.6	6.0	6.0	39.5	39.5	39.5
LOS	A	B		A	B		F	A	A	D	D	D
Approach Delay		10.3			14.2		45.1			39.5	39.5	39.5
Approach LOS		B			B		D			D	D	D
Queue Length 50th (ft)	12	130		6	227		205	0	0	178	178	178
Queue Length 95th (ft)	21	241		80	290		#313	55	55	241	241	241
Internal Link Dist (ft)		748			843		870			1330	1330	1330
Turn Bay Length (ft)	225	225		225	225		225	225	225	225	225	225
Base Capacity (vph)	574	2580		613	2644		371	651	651	605	605	605
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	0.19	0.34		0.26	0.41		0.74	0.38	0.38	0.46	0.46	0.46

Intersection Summary

Area Type: Other
 Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 43 (36%), Referenced to phase 2:WBTL and 6:EBTL, Start of Green
 Natural Cycle: 50
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.94
 Intersection Signal Delay: 20.6
 Intersection LOS: C
 Intersection Capacity Utilization 82.7%
 ICU Level of Service E
 Analysis Period (min) 15
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

Lanes, Volumes, Timings
6: 3rd Street & Forster Street

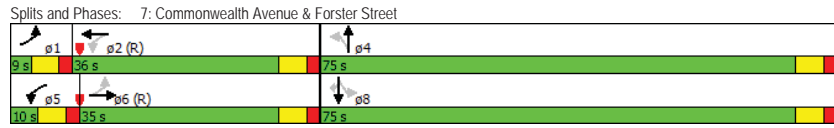
10/24/2014



Lanes, Volumes, Timings

7: Commonwealth Avenue & Forster Street

10/24/2014



Lanes, Volumes, Timings

9: 7th Street & Forster Street

10/24/2014

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↑				↑↑		↑↑			↑↑
Volume (vph)	0	492	618	0	0	0	356	0	204	0	564	586
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	16	12	12	12	12	12	12	12	12	12	12
Grade (%)		-1%			0%			0%			-1%	
Storage Length (ft)	0		0	0		0	0		250	0		0
Storage Lanes	0		1	0		0	2		1	0		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	1.00	1.00	0.97	1.00	0.88	1.00	0.95	1.00
Ped Bike Factor							0.96					
Frt			0.850						0.850			0.850
Flt Protected							0.950					
Satd. Flow (prot)	0	4071	1607	0	0	0	3467	0	2814	0	3557	1576
Flt Permitted							0.950					
Satd. Flow (perm)	0	4071	1607	0	0	0	3331	0	2814	0	3557	1576
Right Turn on Red			Yes			Yes			Yes	Yes		Yes
Satd. Flow (RTOR)			618						229			658
Link Speed (mph)		35			25			25			25	
Link Distance (ft)		638			364			500			393	
Travel Time (s)		12.4			9.9			13.6			10.7	
Confl. Peds. (#/hr)							42					
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
Heavy Vehicles (%)	0%	1%	1%	0%	0%	0%	1%	0%	1%	0%	2%	3%
Adj. Flow (vph)	0	553	694	0	0	0	400	0	229	0	634	658
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	553	694	0	0	0	400	0	229	0	634	658
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		15			11			29			24	
Link Offset(ft)		-12			0			-8			12	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	0.99	0.84	0.99	1.00	1.00	1.00	1.00	1.00	1.00	0.99	0.99	0.99
Turning Speed (mph)	15		9	15			9	15		20	15	9
Number of Detectors		1	1				1		1		1	1
Detector Template			Right									Right
Leading Detector (ft)		1	20				40		44		40	20
Trailing Detector (ft)		0	0				0		4		0	0
Detector 1 Position(ft)		0	0				0		4		0	0
Detector 1 Size(ft)		1	20				40		40		40	20
Detector 1 Type		Cl+Ex	Cl+Ex				Cl+Ex		Cl+Ex		Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)		0.0	0.0				0.0		0.0		0.0	0.0
Detector 1 Queue (s)		0.0	0.0				0.0		0.0		0.0	0.0
Detector 1 Delay (s)		0.0	0.0				0.0		0.0		0.0	0.0
Turn Type		NA	Perm				Prot		custom		NA	Perm
Protected Phases		2					3		8		4	
Permitted Phases			2						4			4
Detector Phase		2	2				3		8		4	4

Lanes, Volumes, Timings
9: 7th Street & Forster Street

10/24/2014

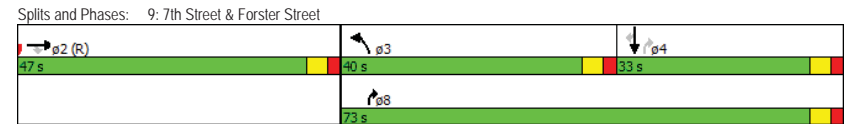
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)		5.0	5.0				4.0		5.0		4.0	4.0
Minimum Split (s)		10.0	10.0				10.0		10.0		21.0	21.0
Total Split (s)		47.0	47.0				40.0		73.0		33.0	33.0
Total Split (%)		39.2%	39.2%				33.3%		60.8%		27.5%	27.5%
Maximum Green (s)		42.0	42.0				35.0		68.0		28.0	28.0
Yellow Time (s)		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
Lost Time Adjust (s)		0.0	0.0				0.0		0.0		0.0	0.0
Total Lost Time (s)		5.0	5.0				5.0		5.0		5.0	5.0
Lead/Lag							Lead				Lag	Lag
Lead-Lag Optimize?							Yes				Yes	Yes
Vehicle Extension (s)		3.0	3.0				3.0		3.0		3.0	3.0
Recall Mode		C-Max	C-Max				None		None		None	None
Walk Time (s)		7.0	7.0						7.0		5.0	5.0
Flash Dont Walk (s)		14.0	14.0						14.0		11.0	11.0
Pedestrian Calls (#/hr)		0	0						0		0	0
Act Effct Green (s)		56.1	56.1				19.2		53.9		29.6	29.6
Actuated g/C Ratio		0.47	0.47				0.16		0.45		0.25	0.25
v/c Ratio		0.29	0.64				0.72		0.16		0.72	0.74
Control Delay		22.0	18.7				55.3		2.0		47.1	17.7
Queue Delay		0.0	0.6				0.0		0.0		0.0	0.2
Total Delay		22.0	19.4				55.3		2.0		47.1	17.9
LOS		C	B				E		A		D	B
Approach Delay		20.5									32.2	
Approach LOS		C									C	
Queue Length 50th (ft)		193	349				153		0		227	169
Queue Length 95th (ft)		261	429				195		18		272	243
Internal Link Dist (ft)		558			284			420			313	
Turn Bay Length (ft)								250				
Base Capacity (vph)		1904	1080				1011		1693		920	895
Starvation Cap Reductn		0	131				0		0		0	20
Spillback Cap Reductn		0	0				0		0		0	0
Storage Cap Reductn		0	0				0		0		0	0
Reduced v/c Ratio		0.29	0.73				0.40		0.14		0.69	0.75

Intersection Summary

Area Type:	Other
Cycle Length:	120
Actuated Cycle Length:	120
Offset:	20 (17%), Referenced to phase 2:EBT, Start of Green
Natural Cycle:	60
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.74
Intersection Signal Delay:	28.3
Intersection Capacity Utilization:	62.2%
Intersection LOS:	C
ICU Level of Service:	B
Analysis Period (min):	15

Lanes, Volumes, Timings
9: 7th Street & Forster Street

10/24/2014



Lanes, Volumes, Timings
11: 7th Street

10/24/2014



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations		↑↑			↑	↑↑
Volume (vph)	0	357	0	0	1189	193
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	0%		0%			3%
Storage Length (ft)	100	0		0	0	
Storage Lanes	1	2		0	1	
Taper Length (ft)	75				25	
Lane Util. Factor	1.00	0.88	1.00	1.00	0.91	0.91
Frt		0.850				
Flt Protected					0.950	0.964
Satd. Flow (prot)	0	2787	0	0	1586	3219
Flt Permitted					0.950	0.964
Satd. Flow (perm)	0	2787	0	0	1586	3219
Link Speed (mph)	30		25			25
Link Distance (ft)	359		483			304
Travel Time (s)	8.2		13.2			8.3
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	388	0	0	1292	210
Shared Lane Traffic (%)					50%	
Lane Group Flow (vph)	0	388	0	0	646	856
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	R NA	Left	Right	Left	Left
Median Width(ft)	5		12			17
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.02	1.02
Turning Speed (mph)	15	9		9	15	
Sign Control	Free		Free			Free

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	36.3%
ICU Level of Service	A
Analysis Period (min)	15

HCM Unsignalized Intersection Capacity Analysis
11: 7th Street

10/24/2014

Intersection Sign configuration not allowed in HCM analysis.

Lanes, Volumes, Timings
12: 7th Street

10/24/2014

	↑	↗	↘	↓	↙	↖
Lane Group	NBT	NBR	SBL	SBT	SWL	SWR
Lane Configurations		↗↘		↗↘	↗	
Volume (vph)	0	373	0	193	148	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	0%			-3%	0%	
Lane Util. Factor	1.00	0.88	1.00	0.95	1.00	1.00
Frt		0.850				
Flt Protected					0.950	
Satd. Flow (prot)	0	2787	0	3592	1770	0
Flt Permitted					0.950	
Satd. Flow (perm)	0	2787	0	3592	1770	0
Link Speed (mph)	25			25	30	
Link Distance (ft)	236			483	432	
Travel Time (s)	6.4			13.2	9.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	405	0	210	161	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	405	0	210	161	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	L NA	Right
Median Width(ft)	5			0	17	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	0.98	0.98	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Yield	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	20.2%
Analysis Period (min)	15
	ICU Level of Service A

HCM Unsignalized Intersection Capacity Analysis
12: 7th Street

10/24/2014

	↑	↗	↘	↓	↙	↖
Movement	NBT	NBR	SBL	SBT	SWL	SWR
Lane Configurations		↗↘		↗↘	↗	
Volume (veh/h)	0	373	0	193	148	0
Sign Control	Free			Free	Yield	
Grade	0%			-3%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	405	0	210	161	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage (veh)						
Upstream signal (ft)				1287		
pX, platoon unblocked						
vC, conflicting volume			405		105	0
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			405		105	0
IC, single (s)			4.1		6.8	6.9
IC, 2 stage (s)						
IF (s)			2.2		3.5	3.3
p0 queue free %			100		82	100
cM capacity (veh/h)			1150		882	1084

Direction, Lane #	NB 1	NB 2	SB 1	SB 2	SW 1
Volume Total	203	203	105	105	161
Volume Left	0	0	0	0	161
Volume Right	203	203	0	0	0
cSH	1700	1700	1700	1700	882
Volume to Capacity	0.12	0.12	0.06	0.06	0.18
Queue Length 95th (ft)	0	0	0	0	17
Control Delay (s)	0.0	0.0	0.0	0.0	10.0
Lane LOS					A
Approach Delay (s)	0.0		0.0		10.0
Approach LOS					A

Intersection Summary

Average Delay	2.1
Intersection Capacity Utilization	20.2%
Analysis Period (min)	15
	ICU Level of Service A

Lanes, Volumes, Timings
13: State Street

10/24/2014

Lane Group	EBL	EBT	WBT	WBR	SEL	SER
Lane Configurations		↑↑	↑	↑	↑↑	↑↑
Volume (vph)	0	373	148	357	1189	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	0.95	1.00	1.00	0.97	1.00
Fr			0.850			
Flt Protected					0.950	
Satd. Flow (prot)	0	3539	1863	1583	3433	0
Flt Permitted					0.950	
Satd. Flow (perm)	0	3539	1863	1583	3433	0
Link Speed (mph)		30	35		30	
Link Distance (ft)		432	1119		359	
Travel Time (s)		9.8	21.8		8.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	405	161	388	1292	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	405	161	388	1292	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		10	5		36	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	0		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			15	15	9
Sign Control		Free	Free		Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	50.9%
ICU Level of Service A	
Analysis Period (min)	15

HCM Unsignalized Intersection Capacity Analysis
13: State Street

10/24/2014

Movement	EBL	EBT	WBT	WBR	SEL	SER
Lane Configurations		↑↑	↑	↑	↑↑	↑↑
Volume (veh/h)	0	373	148	357	1189	0
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	405	161	388	1292	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	549				364	161
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	549				364	161
IC, single (s)	4.1				6.8	6.9
IC, 2 stage (s)						
IF (s)	2.2				3.5	3.3
p0 queue free %	100				0	100
cM capacity (veh/h)	1017				609	856

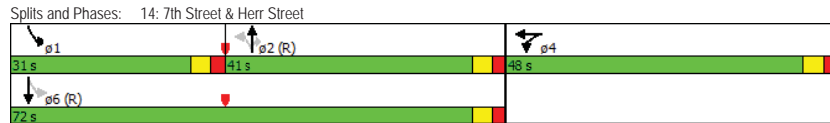
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SE 1	SE 2
Volume Total	203	203	161	388	646	646
Volume Left	0	0	0	0	646	646
Volume Right	0	0	0	388	0	0
cSH	1700	1700	1700	1700	609	609
Volume to Capacity	0.12	0.12	0.09	0.23	1.06	1.06
Queue Length 95th (ft)	0	0	0	0	452	452
Control Delay (s)	0.0	0.0	0.0	0.0	79.5	79.5
Lane LOS					F	F
Approach Delay (s)	0.0		0.0		79.5	
Approach LOS					F	

Intersection Summary

Average Delay	45.7
Intersection Capacity Utilization	50.9%
ICU Level of Service A	
Analysis Period (min)	15

Lanes, Volumes, Timings
14: 7th Street & Herr Street

10/24/2014



Lanes, Volumes, Timings
15: 7th Street

10/24/2014

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations		↑	↑↑↑			
Volume (vph)	0	432	695	1	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	0.91	0.91	1.00	1.00
Frt		0.865				
Fit Protected						
Satd. Flow (prot)	0	1627	5136	0	0	0
Fit Permitted						
Satd. Flow (perm)	0	1627	5136	0	0	0
Link Speed (mph)	30		25			30
Link Distance (ft)	748		364			303
Travel Time (s)	17.0		9.9			6.9
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89
Heavy Vehicles (%)	0%	1%	1%	0%	0%	0%
Adj. Flow (vph)	0	485	781	1	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	485	782	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	0		0			0
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free		Free	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	46.9%
ICU Level of Service	A
Analysis Period (min)	15

HCM Unsignalized Intersection Capacity Analysis
15: 7th Street

10/24/2014

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations		↗ ↘	↕	↖ ↗		
Volume (veh/h)	0	432	695	1	0	0
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89
Hourly flow rate (vph)	0	485	781	1	0	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None		None	
Median storage (veh)						
Upstream signal (ft)			364			
pX, platoon unblocked	0.94	0.94			0.94	
vC, conflicting volume	781	261			782	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	553	0			553	
IC, single (s)	6.8	6.9			4.1	
IC, 2 stage (s)						
IF (s)	3.5	3.3			2.2	
p0 queue free %	100	53			100	
cM capacity (veh/h)	441	1025			968	
Direction, Lane #	WB 1	NB 1	NB 2	NB 3		
Volume Total	485	312	312	157		
Volume Left	0	0	0	0		
Volume Right	485	0	0	1		
cSH	1025	1700	1700	1700		
Volume to Capacity	0.47	0.18	0.18	0.09		
Queue Length 95th (ft)	65	0	0	0		
Control Delay (s)	11.6	0.0	0.0	0.0		
Lane LOS	B					
Approach Delay (s)	11.6	0.0				
Approach LOS	B					
Intersection Summary						
Average Delay			4.5			
Intersection Capacity Utilization		46.9%		ICU Level of Service	A	
Analysis Period (min)		15				

Lanes, Volumes, Timings
16: 7th Street

10/24/2014

Lane Group	NBT	NBR	SBL	SBT	NWL	NWR
Lane Configurations				↕	↖ ↗	↖ ↗
Volume (vph)	0	0	0	1150	0	1127
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	0.91	1.00	0.76
Fr						0.850
Flt Protected						
Satd. Flow (prot)	0	0	0	5085	0	3610
Flt Permitted						
Satd. Flow (perm)	0	0	0	5085	0	3610
Link Speed (mph)	25			25	30	
Link Distance (ft)	393			305	303	
Travel Time (s)	10.7			8.3	6.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	1250	0	1225
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	1250	0	1225
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			5	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	35
Sign Control	Free			Free	Free	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	29.6%			ICU Level of Service A		
Analysis Period (min)	15					

Intersection Sign configuration not allowed in HCM analysis.

Intersection: 1: 2nd Street & Division Street

Movement	EB	WB	NB	NB	NB	SB
Directions Served	LT TR		L L		TR LTR	
Maximum Queue (ft)	134	1972	1756	1748	1580	101
Average Queue (ft)	41	1222	1015	1022	676	42
95th Queue (ft)	98	2024	1777	1773	1457	83
Link Distance (ft)	347	3240	4861	4861	4861	1642
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)						
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 2: 2nd Street & Maclay Street

Movement	EB	WB	NB	NB	NB
Directions Served	LT TR		LT T		TR
Maximum Queue (ft)	103	236	339	404	414
Average Queue (ft)	27	115	156	201	222
95th Queue (ft)	67	213	294	356	372
Link Distance (ft)	344	2937	5292	5292	5292
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)					
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 3: 7th Street & Maclay Street

Movement	EB	EB	WB	WB	WB	NB	NB	NB	B34	B34	SB	SB
Directions Served	L TR		L T		R	L T	R	T	T	T	L TR	
Maximum Queue (ft)	117	1547	225	492	162	200	486	504	560	607	1244	400
Average Queue (ft)	8	869	57	199	63	63	378	449	181	208	520	198
95th Queue (ft)	52	1594	145	418	119	167	598	580	511	544	1182	491
Link Distance (ft)		2937		832	832		414	414	3736	3736	2540	
Upstream Blk Time (%)							21	61				
Queuing Penalty (veh)							95	277				
Storage Bay Dist (ft)	75		250			100						200
Storage Blk Time (%)		74		11	0	37					61	
Queuing Penalty (veh)		4		10	1	25					110	

Queuing and Blocking Report
Evening Peak Hour

10/24/2014

Intersection: 4: Front Street & Forster Street

Movement	EB	EB	EB	EB	B18	B18	WB	WB	B37	B37	SB	SB
Directions Served	T	T	T	R	T	T	T	T	T	T	LT	T
Maximum Queue (ft)	194	196	209	100	97	55	182	187	211	171	305	528
Average Queue (ft)	110	95	98	34	7	3	168	162	99	67	206	224
95th Queue (ft)	179	162	180	108	45	27	181	192	188	160	272	406
Link Distance (ft)	114	114	114		1509	1509	98	98	163	163	637	637
Upstream Blk Time (%)	7	3	4	0			31	28	1	0		0
Queuing Penalty (veh)	0	0	0	0			236	215	6	1		0
Storage Bay Dist (ft)				50								
Storage Blk Time (%)				17								
Queuing Penalty (veh)				41								

Intersection: 4: Front Street & Forster Street

Movement	SB	SB	B19	B19	B19
Directions Served	T	R	T	T	T
Maximum Queue (ft)	700	400	96	370	466
Average Queue (ft)	490	365	3	79	173
95th Queue (ft)	903	478	68	387	592
Link Distance (ft)	637		1116	1116	1116
Upstream Blk Time (%)	35				
Queuing Penalty (veh)	0				
Storage Bay Dist (ft)		300			
Storage Blk Time (%)	0	53			
Queuing Penalty (veh)	0	130			

Queuing and Blocking Report
Evening Peak Hour

10/24/2014

Intersection: 5: 2nd Street & Forster Street

Movement	EB	EB	EB	EB	B37	B37	B37	WB	WB	WB	NB	NB
Directions Served	L	L	T	T	T	T	T	T	T	TR	L	LT
Maximum Queue (ft)	190	164	136	119	17	18	7	693	714	674	436	473
Average Queue (ft)	100	89	66	57	1	1	0	455	467	345	228	367
95th Queue (ft)	155	144	120	104	12	13	5	692	724	700	367	489
Link Distance (ft)	163	163	163	163	98	98	98	742	742	742	449	449
Upstream Blk Time (%)	1	1	0	0	0	0	0	0	0	0	1	5
Queuing Penalty (veh)	4	3	0	0	0	0	0	0	1	0	0	0
Storage Bay Dist (ft)												
Storage Blk Time (%)												
Queuing Penalty (veh)												

Intersection: 5: 2nd Street & Forster Street

Movement	NB	NB
Directions Served	T	R
Maximum Queue (ft)	450	218
Average Queue (ft)	298	72
95th Queue (ft)	421	173
Link Distance (ft)	449	449
Upstream Blk Time (%)	2	0
Queuing Penalty (veh)	0	0
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 6: 3rd Street & Forster Street

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	SB
Directions Served	L	T	T	TR	L	T	T	TR	LT	R	LTR
Maximum Queue (ft)	130	176	192	269	193	259	268	236	403	190	322
Average Queue (ft)	54	58	83	106	74	96	123	79	186	69	163
95th Queue (ft)	102	133	168	208	142	200	236	185	355	126	280
Link Distance (ft)		742	742	742		832	832	832	891	891	1353
Upstream Blk Time (%)											
Queuing Penalty (veh)											
Storage Bay Dist (ft)	225				225						
Storage Blk Time (%)		0				0					
Queuing Penalty (veh)		0				0					

Queuing and Blocking Report
Evening Peak Hour

10/24/2014

Intersection: 7: Commonwealth Avenue & Forster Street

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	SB	SB	
Directions Served	L	T	T	TR	L	T	T	TR	L	TR	L	T	
Maximum Queue (ft)	176	333	456	486	186	338	324	276	174	272	198	277	
Average Queue (ft)	86	121	236	303	60	157	168	163	95	103	106	107	
95th Queue (ft)	155	258	398	439	127	269	268	265	170	201	181	198	
Link Distance (ft)		832	832	832		536	536	536		773		1321	
Upstream Blk Time (%)													
Queuing Penalty (veh)													
Storage Bay Dist (ft)	275				250				150				150
Storage Blk Time (%)													
Queuing Penalty (veh)													

Intersection: 7: Commonwealth Avenue & Forster Street

Movement	SB
Directions Served	R
Maximum Queue (ft)	118
Average Queue (ft)	58
95th Queue (ft)	99
Link Distance (ft)	1321
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 9: 7th Street & Forster Street

Movement	EB	EB	EB	NB	NB	SB	SB	SB
Directions Served	T	T	R	L	L	T	T	R
Maximum Queue (ft)	246	344	428	208	197	269	286	48
Average Queue (ft)	89	176	32	119	120	155	171	2
95th Queue (ft)	186	312	214	182	180	243	258	34
Link Distance (ft)	536	536	536	425	425	310	310	310
Upstream Blk Time (%)	0			0			0	
Queuing Penalty (veh)	1			0			0	
Storage Bay Dist (ft)								
Storage Blk Time (%)								
Queuing Penalty (veh)								

Queuing and Blocking Report
Evening Peak Hour

10/24/2014

Intersection: 11: 7th Street

Movement	WB	SB	SB	SB	B10	B10	B10
Directions Served	R	L	LT	T	T	T	T
Maximum Queue (ft)	4	354	361	302	377	395	574
Average Queue (ft)	0	311	317	149	141	157	190
95th Queue (ft)	3	410	411	355	349	369	564
Link Distance (ft)		260	260	260	425	425	425
Upstream Blk Time (%)	67	71	2	0	0	10	
Queuing Penalty (veh)	264	281	9	0	2	40	
Storage Bay Dist (ft)	100						
Storage Blk Time (%)							
Queuing Penalty (veh)							

Intersection: 12: 7th Street

Movement	SW
Directions Served	L
Maximum Queue (ft)	19
Average Queue (ft)	1
95th Queue (ft)	10
Link Distance (ft)	329
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 13: State Street

Movement	EB	EB	SE	SE
Directions Served	T	T	L	L
Maximum Queue (ft)	60	31	272	277
Average Queue (ft)	27	1	249	251
95th Queue (ft)	55	14	272	275
Link Distance (ft)	329	329	232	232
Upstream Blk Time (%)			53	57
Queuing Penalty (veh)			313	340
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Queuing and Blocking Report
Evening Peak Hour

10/24/2014

Intersection: 14: 7th Street & Herr Street

Movement	WB	WB	NB	NB	NB	NB	SB	SB	SB
Directions Served	L	TR	L	T	T	R	L	T	TR
Maximum Queue (ft)	318	197	19	242	249	200	149	270	329
Average Queue (ft)	150	91	2	113	123	70	101	116	184
95th Queue (ft)	261	165	11	192	203	150	154	211	279
Link Distance (ft)		1911	243	243	243			3736	3736
Upstream Blk Time (%)				0	0	0			
Queuing Penalty (veh)				1	1	0			
Storage Bay Dist (ft)	460					150	100		
Storage Blk Time (%)					3	0	10	5	
Queuing Penalty (veh)					12	0	39	11	

Intersection: 15: 7th Street

Movement	WB
Directions Served	R
Maximum Queue (ft)	222
Average Queue (ft)	99
95th Queue (ft)	182
Link Distance (ft)	678
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 16: 7th Street

Movement	SB	NW	NW
Directions Served	T	R	R
Maximum Queue (ft)	21	38	87
Average Queue (ft)	1	1	4
95th Queue (ft)	15	24	37
Link Distance (ft)	243	254	254
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Queuing and Blocking Report
Evening Peak Hour

10/24/2014

Intersection: 18: Bend

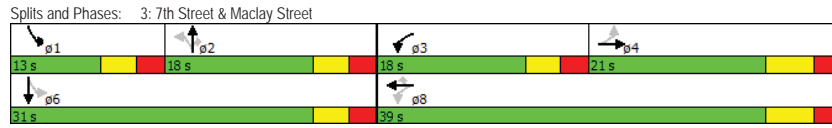
Movement	WB
Directions Served	T
Maximum Queue (ft)	32
Average Queue (ft)	1
95th Queue (ft)	12
Link Distance (ft)	114
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Network Summary

Network wide Queuing Penalty: 2494

Lanes, Volumes, Timings
3: 7th Street & Maclay Street

12/5/2014



Lanes, Volumes, Timings
4: Front Street & Forster Street

12/5/2014

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑	↑		↑↑						↑↑↑	↑
Volume (vph)	0	1462	458	1	950	0	0	0	0	226	1300	583
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	11	11
Grade (%)		-3%			-1%			-1%			0%	
Storage Length (ft)	75		50	0		0	0		0	0		300
Storage Lanes	0		1	0		0	0		0	0		1
Taper Length (ft)	75			25			25			25		
Lane Util. Factor	1.00	0.91	1.00	0.95	0.95	1.00	1.00	1.00	1.00	0.91	0.91	1.00
Ped Bike Factor			0.97		1.00						1.00	0.98
Frt			0.850									0.850
Flt Protected											0.993	
Satd. Flow (prot)	0	5213	1623	0	3592	0	0	0	0	0	4930	1546
Flt Permitted					0.954						0.993	
Satd. Flow (perm)	0	5213	1572	0	3427	0	0	0	0	0	4921	1509
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			44									83
Link Speed (mph)		50			35			35			35	
Link Distance (ft)		192			146			595			622	
Travel Time (s)		2.6			2.8			11.6			12.1	
Confl. Peds. (#/hr)	12		12	12		12				7		7
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	0%	1%	1%	0%	1%	0%	0%	0%	0%	1%	1%	1%
Adj. Flow (vph)	0	1539	482	1	1000	0	0	0	0	238	1368	614
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1539	482	0	1001	0	0	0	0	0	1606	614
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Right	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		16			5			0			0	
Link Offset(ft)		5			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	0.98	0.98	0.98	0.99	0.99	0.99	0.99	0.99	0.99	1.00	1.04	1.04
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type		NA	Perm	Perm	NA					Perm	NA	Perm
Protected Phases		2			6							4
Permitted Phases			2	6						4		4
Minimum Split (s)		17.0	17.0	17.0	17.0					17.0	17.0	17.0
Total Split (s)		60.0	60.0	60.0	60.0					40.0	40.0	40.0
Total Split (%)		60.0%	60.0%	60.0%	60.0%					40.0%	40.0%	40.0%
Maximum Green (s)		53.0	53.0	53.0	53.0					33.0	33.0	33.0
Yellow Time (s)		4.0	4.0	4.0	4.0					4.0	4.0	4.0
All-Red Time (s)		3.0	3.0	3.0	3.0					3.0	3.0	3.0
Lost Time Adjust (s)		0.0	0.0		0.0						0.0	0.0
Total Lost Time (s)		7.0	7.0		7.0						7.0	7.0
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)		8.0	8.0	8.0	8.0					8.0	8.0	8.0
Flash Dont Walk (s)		10.0	10.0	10.0	10.0					10.0	10.0	10.0

Lanes, Volumes, Timings

7: Commonwealth Avenue & Forster Street

12/5/2014

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	3.0	3.0		3.0	3.0		5.0	5.0		5.0	5.0	5.0
Minimum Split (s)	9.0	9.0		9.0	9.0		11.0	11.0		11.0	11.0	11.0
Total Split (s)	32.0	47.0		17.0	32.0		36.0	36.0		36.0	36.0	36.0
Total Split (%)	32.0%	47.0%		17.0%	32.0%		36.0%	36.0%		36.0%	36.0%	36.0%
Maximum Green (s)	26.0	41.0		11.0	26.0		30.0	30.0		30.0	30.0	30.0
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)	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
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	1.0	1.0		1.0	1.0		3.0	3.0		3.0	3.0	3.0
Recall Mode	None	C-Max		None	C-Max		None	None		None	None	None
Walk Time (s)		7.0			7.0			7.0			7.0	7.0
Flash Dont Walk (s)		17.0			14.0		22.0	22.0		22.0	22.0	22.0
Pedestrian Calls (#/hr)		10			10		25	25		25	25	25
Act Effct Green (s)	65.5	52.6		45.6	38.7		22.5	22.5		22.5	22.5	22.5
Actuated g/C Ratio	0.66	0.53		0.46	0.39		0.22	0.22		0.22	0.22	0.22
v/c Ratio	0.78	0.57		0.50	0.41		0.08	0.38		0.60	0.29	0.11
Control Delay	15.3	17.9		29.2	22.7		27.3	27.5		43.4	31.7	0.5
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	15.3	17.9		29.2	22.7		27.3	27.5		43.4	31.7	0.5
LOS	B	B		C	C		C	C		D	C	A
Approach Delay		17.3			23.5			27.5			32.2	
Approach LOS		B			C			C			C	
Queue Length 50th (ft)	196	308		43	74		9	54		77	60	0
Queue Length 95th (ft)	170	389		m90	127		28	105		139	107	0
Internal Link Dist (ft)		843			558			762			1299	
Turn Bay Length (ft)		275		250		150			150			
Base Capacity (vph)	624	2534		279	1849		334	475		328	566	571
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	0.70	0.57		0.39	0.41		0.06	0.29		0.45	0.22	0.09

Intersection Summary

Area Type:	Other
Cycle Length:	100
Actuated Cycle Length:	100
Offset:	0 (0%), Referenced to phase 2:WBTL and 6:EBTL, Start of Green, Master Intersection
Natural Cycle:	55
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.78
Intersection Signal Delay:	20.9
Intersection Capacity Utilization:	90.6%
Analysis Period (min):	15
m	Volume for 95th percentile queue is metered by upstream signal.

Lanes, Volumes, Timings

7: Commonwealth Avenue & Forster Street

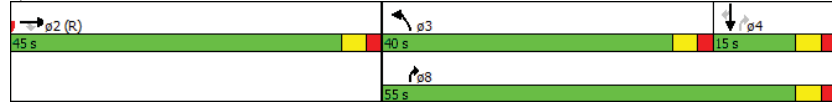
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Lanes, Volumes, Timings
9: 7th Street & Forster Street

12/5/2014

Splits and Phases: 9: 7th Street & Forster Street



Lanes, Volumes, Timings
11: 7th Street

12/5/2014

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations		↑↑			↓↓	↑↑
Volume (vph)	0	915	0	0	297	158
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	0%		0%			3%
Storage Length (ft)	100	0		0	0	
Storage Lanes	1	2		0	1	
Taper Length (ft)	75				25	
Lane Util. Factor	1.00	0.88	1.00	1.00	0.91	0.91
Frt		0.850				
Flt Protected					0.950	0.976
Satd. Flow (prot)	0	2814	0	0	1602	3291
Flt Permitted					0.950	0.976
Satd. Flow (perm)	0	2814	0	0	1602	3291
Link Speed (mph)	30		25			25
Link Distance (ft)	359		483			304
Travel Time (s)	8.2		13.2			8.3
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	0%	1%	0%	0%	1%	1%
Adj. Flow (vph)	0	963	0	0	313	166
Shared Lane Traffic (%)					50%	
Lane Group Flow (vph)	0	963	0	0	156	323
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	R NA	Left	Right	Left	Left
Median Width(ft)	5		12			17
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.02	1.02
Turning Speed (mph)	15	9		9	15	
Sign Control	Free		Free			Free

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	35.3%
ICU Level of Service A	
Analysis Period (min)	15

Lanes, Volumes, Timings
12: 7th Street

12/5/2014

Lane Group	NBT	NBR	SBL	SBT	SWL	SWR
Lane Configurations						
Volume (vph)	0	54	0	158	596	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	0%			-3%	0%	
Lane Util. Factor	1.00	0.88	1.00	0.95	1.00	1.00
Friction	0.850					
Fit Protected					0.950	
Satd. Flow (prot)	0	2814	0	3628	1787	0
Fit Permitted					0.950	
Satd. Flow (perm)	0	2814	0	3628	1787	0
Link Speed (mph)	25			25	30	
Link Distance (ft)	236			483	432	
Travel Time (s)	6.4			13.2	9.8	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	0%	1%	0%	1%	1%	0%
Adj. Flow (vph)	0	57	0	166	627	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	57	0	166	627	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	L NA	Right
Median Width(ft)	5			0	17	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	0.98	0.98	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Yield	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	44.1%			ICU Level of Service A		
Analysis Period (min)	15					

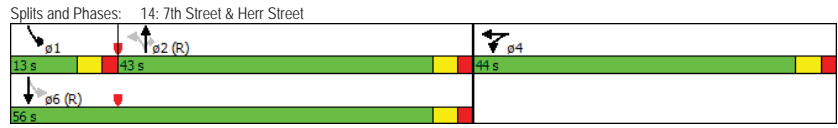
Lanes, Volumes, Timings
13: State Street

12/5/2014

Lane Group	EBL	EBT	WBT	WBR	SEL	SER
Lane Configurations						
Volume (vph)	0	54	596	915	297	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	0.95	1.00	1.00	0.97	1.00
Friction	0.850					
Fit Protected					0.950	
Satd. Flow (prot)	0	3574	1881	1599	3502	0
Fit Permitted					0.950	
Satd. Flow (perm)	0	3574	1881	1599	3502	0
Link Speed (mph)		30	35		30	
Link Distance (ft)		432	1119		359	
Travel Time (s)		9.8	21.8		8.2	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	0%	1%	1%	1%	0%	0%
Adj. Flow (vph)	0	57	627	963	313	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	57	627	963	313	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		10	5		36	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	0		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		15		15	15	9
Sign Control		Free	Free		Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	60.0%			ICU Level of Service B		
Analysis Period (min)	15					

Lanes, Volumes, Timings
14: 7th Street & Herr Street

12/5/2014



Lanes, Volumes, Timings
15: 7th Street

12/5/2014

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations		↖ ↗	↕	↖ ↗		
Volume (vph)	0	2	952	436	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	0.91	0.91	1.00	1.00
Frt		0.865	0.953			
Fit Protected						
Satd. Flow (prot)	0	1644	4846	0	0	0
Fit Permitted						
Satd. Flow (perm)	0	1644	4846	0	0	0
Link Speed (mph)	30		25			30
Link Distance (ft)	748		364			303
Travel Time (s)	17.0		9.9			6.9
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	0%	0%	2%	2%	0%	0%
Adj. Flow (vph)	0	2	1058	484	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	2	1542	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	0		0			0
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free		Free	

Intersection Summary	
Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	38.1% ICU Level of Service A
Analysis Period (min)	15

Lanes, Volumes, Timings
16: 7th Street

12/5/2014

	↑	↖	↙	↓	↘	↗
Lane Group	NBT	NBR	SBL	SBT	NWL	NWR
Lane Configurations				↑↑↑		↗↗↗
Volume (vph)	0	0	0	454	0	954
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	0.91	1.00	0.76
Frt						0.850
Flt Protected						
Satd. Flow (prot)	0	0	0	5085	0	3610
Flt Permitted						
Satd. Flow (perm)	0	0	0	5085	0	3610
Link Speed (mph)	25			25	30	
Link Distance (ft)	393			305	303	
Travel Time (s)	10.7			8.3	6.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	493	0	1037
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	493	0	1037
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			5	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	35
Sign Control	Free			Free	Free	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	25.6%
ICU Level of Service A	
Analysis Period (min)	15

Queuing and Blocking Report
Morning Peak Hour

12/5/2014

Intersection: 1: 2nd Street & Division Street

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	206	157	202	89
Average Queue (ft)	93	67	89	31
95th Queue (ft)	167	127	166	69
Link Distance (ft)	344	3247	4863	1642
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 2: 2nd Street & Maclay Street

Movement	EB	WB	NB	SB
Directions Served	LT	LTR	LTR	LTR
Maximum Queue (ft)	82	176	214	92
Average Queue (ft)	30	63	106	32
95th Queue (ft)	67	124	172	69
Link Distance (ft)	329	2952	5298	4863
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 3: 7th Street & Maclay Street

Movement	EB	EB	WB	WB	WB	NB	NB	NB	B34	SB	SB
Directions Served	L	TR	L	T	R	L	T	R	T	L	TR
Maximum Queue (ft)	135	555	240	241	174	199	340	209	8	253	130
Average Queue (ft)	22	249	120	117	75	28	160	82	0	116	66
95th Queue (ft)	93	475	198	206	131	101	279	150	4	211	119
Link Distance (ft)		2952		832	832		414	414	3736	2540	
Upstream Blk Time (%)									0		
Queuing Penalty (veh)									1		
Storage Bay Dist (ft)		75		250			100				200
Storage Blk Time (%)		0		60			0		31		2
Queuing Penalty (veh)		1		7			1		0		7

Queuing and Blocking Report
Morning Peak Hour

12/5/2014

Intersection: 4: Front Street & Forster Street

Movement	EB	EB	EB	EB	B18	B18	WB	WB	B37	B37	B37	SB
Directions Served	T	T	T	R	T	T	LT	T	T	T	T	LT
Maximum Queue (ft)	199	199	223	100	257	241	182	179	174	184	149	380
Average Queue (ft)	168	121	179	84	74	74	131	131	33	43	7	269
95th Queue (ft)	220	175	241	137	204	200	201	206	120	139	55	347
Link Distance (ft)	113	113	113		4155	4155	98	98	140	140	140	549
Upstream Blk Time (%)	20	8	19	2			17	16	1	1	0	
Queuing Penalty (veh)	0	0	0	0			82	79	2	4	1	
Storage Bay Dist (ft)				50								
Storage Blk Time (%)				31								
Queuing Penalty (veh)				144								

Intersection: 4: Front Street & Forster Street

Movement	SB	SB	SB
Directions Served	T	T	R
Maximum Queue (ft)	387	346	282
Average Queue (ft)	271	236	138
95th Queue (ft)	354	317	253
Link Distance (ft)	549	549	
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			300
Storage Blk Time (%)		1	0
Queuing Penalty (veh)		4	0

Queuing and Blocking Report
Morning Peak Hour

12/5/2014

Intersection: 5: 2nd Street & Forster Street

Movement	EB	EB	EB	EB	B37	B37	B37	WB	WB	WB	NB	NB
Directions Served	L	T	T	T	T	T	T	T	T	TR	L	L
Maximum Queue (ft)	186	216	215	222	130	122	129	243	281	95	111	128
Average Queue (ft)	92	173	169	173	36	34	37	141	155	18	55	56
95th Queue (ft)	170	259	256	254	108	106	113	239	264	60	95	104
Link Distance (ft)	140	140	140	140	98	98	98	748	748	748	2870	2870
Upstream Blk Time (%)	3	16	16	17	1	1	2					
Queuing Penalty (veh)	14	68	68	70	5	5	7					
Storage Bay Dist (ft)												
Storage Blk Time (%)												
Queuing Penalty (veh)												

Intersection: 5: 2nd Street & Forster Street

Movement	NB	NB	SB	SB
Directions Served	T	R	L	R
Maximum Queue (ft)	370	240	139	162
Average Queue (ft)	199	110	59	68
95th Queue (ft)	322	198	116	121
Link Distance (ft)	2870	2870		5298
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)			150	
Storage Blk Time (%)			0	0
Queuing Penalty (veh)			0	0

Intersection: 6: 3rd Street & Forster Street

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	SB
Directions Served	L	T	T	TR	L	T	T	TR	LT	R	LTR
Maximum Queue (ft)	162	328	418	337	176	164	210	148	173	119	239
Average Queue (ft)	43	130	151	151	61	52	80	35	85	54	102
95th Queue (ft)	116	264	305	293	133	128	169	98	150	100	190
Link Distance (ft)		748	748	748		832	832	832	891	891	1353
Upstream Blk Time (%)				0							
Queuing Penalty (veh)				0							
Storage Bay Dist (ft)		225				225					
Storage Blk Time (%)			2				0				
Queuing Penalty (veh)			3				0				

Queuing and Blocking Report
Morning Peak Hour

12/5/2014

Intersection: 7: Commonwealth Avenue & Forster Street

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	SB	SB		
Directions Served	L	T	T	TR	L	T	T	TR	L	TR	L	T		
Maximum Queue (ft)	298	396	435	410	186	311	316	302	118	218	196	483		
Average Queue (ft)	139	161	247	205	73	125	134	135	12	82	129	185		
95th Queue (ft)	256	337	405	349	151	241	244	248	56	163	220	571		
Link Distance (ft)		832	832	832		536	536	536		773		1321		
Upstream Blk Time (%)	0													
Queuing Penalty (veh)	0													
Storage Bay Dist (ft)	275							250					150	150
Storage Blk Time (%)	0	1							0	0			2	28
Queuing Penalty (veh)	1	2							0	0			0	32

Intersection: 7: Commonwealth Avenue & Forster Street

Movement	SB
Directions Served	R
Maximum Queue (ft)	66
Average Queue (ft)	25
95th Queue (ft)	58
Link Distance (ft)	1321
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 9: 7th Street & Forster Street

Movement	EB	EB	EB	NB	NB	NB	NB	SB	SB	
Directions Served	T	T	R	L	L	R	R	T	T	
Maximum Queue (ft)	539	557	330	366	381	136	51	144	162	
Average Queue (ft)	267	395	18	223	239	5	2	51	75	
95th Queue (ft)	567	622	176	375	390	71	36	112	133	
Link Distance (ft)	536	536	536	425	425	425		310	310	
Upstream Blk Time (%)	0	6	0	0	0	0				
Queuing Penalty (veh)	0	23	1	0	0	0				
Storage Bay Dist (ft)							250			
Storage Blk Time (%)							0	0		
Queuing Penalty (veh)							0	0		

Queuing and Blocking Report
Morning Peak Hour

12/5/2014

Intersection: 11: 7th Street

Movement	WB	WB	B10
Directions Served	R	R	T
Maximum Queue (ft)	27	30	4
Average Queue (ft)	2	2	0
95th Queue (ft)	13	16	3
Link Distance (ft)		232	425
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)	100		
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 12: 7th Street

Movement	SW
Directions Served	L
Maximum Queue (ft)	88
Average Queue (ft)	14
95th Queue (ft)	57
Link Distance (ft)	329
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 13: State Street

Movement	WB	WB	SE	SE
Directions Served	T	R	L	L
Maximum Queue (ft)	19	17	144	158
Average Queue (ft)	1	1	67	83
95th Queue (ft)	13	9	122	135
Link Distance (ft)	1104	1104	232	232
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Lanes, Volumes, Timings

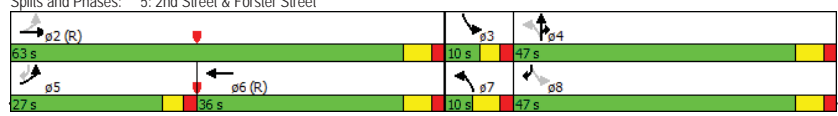
5: 2nd Street & Forster Street

12/5/2014

Table with 13 columns (EBL, EBT, EBR, WBL, WBT, WBR, NBL, NBT, NBR, SBL, SBT, SBR) and multiple rows of traffic engineering parameters such as Detector 2 Extend, Turn Type, Protected Phases, etc.

Intersection Summary
Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 10 (8%), Referenced to phase 2:EBTL and 6:WBT, Start of Green
Natural Cycle: 105
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.03
Intersection Signal Delay: 52.7
Intersection LOS: D
Intersection Capacity Utilization 88.2%
ICU Level of Service E
Analysis Period (min) 15

Splits and Phases: 5: 2nd Street & Forster Street



Lanes, Volumes, Timings

6: 3rd Street & Forster Street

12/5/2014

Table with 13 columns (EBL, EBT, EBR, WBL, WBT, WBR, NBL, NBT, NBR, SBL, SBT, SBR) and multiple rows of traffic engineering parameters such as Lane Configurations, Volume (vph), Ideal Flow (vphpl), etc.

Lanes, Volumes, Timings
9: 7th Street & Forster Street

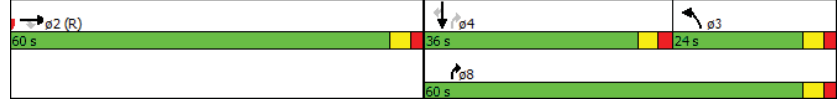
12/5/2014

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)		5.0	5.0				4.0		5.0		4.0	4.0
Minimum Split (s)		10.0	10.0				10.0		10.0		21.0	21.0
Total Split (s)		60.0	60.0				24.0		60.0		36.0	36.0
Total Split (%)		50.0%	50.0%				20.0%		50.0%		30.0%	30.0%
Maximum Green (s)		55.0	55.0				19.0		55.0		31.0	31.0
Yellow Time (s)		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
Lost Time Adjust (s)		0.0	0.0				0.0		0.0		0.0	0.0
Total Lost Time (s)		5.0	5.0				5.0		5.0		5.0	5.0
Lead/Lag							Lag				Lead	Lead
Lead-Lag Optimize?							Yes				Yes	Yes
Vehicle Extension (s)		3.0	3.0				3.0		3.0		3.0	3.0
Recall Mode		C-Max	C-Max				None		None		None	None
Walk Time (s)		7.0	7.0						7.0		5.0	5.0
Flash Dont Walk (s)		14.0	14.0						14.0		11.0	11.0
Pedestrian Calls (#/hr)		0	0						0		0	0
Act Effct Green (s)		59.8	59.8				17.1		50.2		28.0	28.0
Actuated g/C Ratio		0.50	0.50				0.14		0.42		0.23	0.23
v/c Ratio		0.51	0.67				0.75		0.20		0.76	0.72
Control Delay		15.9	12.7				59.4		13.0		44.0	10.2
Queue Delay		0.0	1.1				0.0		0.0		0.0	0.4
Total Delay		15.9	13.8				59.4		13.0		44.0	10.6
LOS		B	B				E		B		D	B
Approach Delay		15.1									27.8	
Approach LOS		B									C	

Intersection Summary

Area Type: Other
 Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 20 (17%), Referenced to phase 2:EBT, Start of Green
 Natural Cycle: 60
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.76
 Intersection Signal Delay: 23.9 Intersection LOS: C
 Intersection Capacity Utilization 62.4% ICU Level of Service B
 Analysis Period (min) 15

Splits and Phases: 9: 7th Street & Forster Street



Lanes, Volumes, Timings
11: 7th Street

12/5/2014

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	0	357	0	0	1189	193
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	0%		0%			3%
Storage Length (ft)	100	0		0	0	
Storage Lanes	1	2		0	1	
Taper Length (ft)	75				25	
Lane Util. Factor	1.00	0.88	1.00	1.00	0.91	0.91
Frt		0.850				
Fit Protected					0.950	0.964
Satd. Flow (prot)	0	2787	0	0	1586	3219
Fit Permitted					0.950	0.964
Satd. Flow (perm)	0	2787	0	0	1586	3219
Link Speed (mph)	30		25			25
Link Distance (ft)	359		483			304
Travel Time (s)	8.2		13.2			8.3
Peak Hour Factor	0.92	0.92	0.92	0.92	0.95	0.95
Adj. Flow (vph)	0	388	0	0	1252	203
Shared Lane Traffic (%)					50%	
Lane Group Flow (vph)	0	388	0	0	626	829
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	R NA	Left	Right	Left	Left
Median Width(ft)	5		12			17
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.02	1.02
Turning Speed (mph)	15	9		9	15	
Sign Control	Free		Free			Free

Intersection Summary

Area Type: Other
 Control Type: Unsignalized
 Intersection Capacity Utilization 36.3% ICU Level of Service A
 Analysis Period (min) 15

Lanes, Volumes, Timings
12: 7th Street

12/5/2014

Lane Group	NBT	NBR	SBL	SBT	SWL	SWR
Lane Configurations		↗↘		↖↗	↘	
Volume (vph)	0	373	0	193	148	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	0%			-3%	0%	
Lane Util. Factor	1.00	0.88	1.00	0.95	1.00	1.00
Frt	0.850					
Flt Protected					0.950	
Satd. Flow (prot)	0	2787	0	3592	1770	0
Flt Permitted					0.950	
Satd. Flow (perm)	0	2787	0	3592	1770	0
Link Speed (mph)	25			25	30	
Link Distance (ft)	236			483	432	
Travel Time (s)	6.4			13.2	9.8	
Peak Hour Factor	0.92	0.92	0.95	0.95	0.92	0.92
Heavy Vehicles (%)	2%	2%	0%	2%	2%	2%
Adj. Flow (vph)	0	405	0	203	161	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	405	0	203	161	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	L NA	Right
Median Width(ft)	5			0	17	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	0.98	0.98	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Yield	

Intersection Summary	
Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	20.2%
ICU Level of Service	A
Analysis Period (min)	15

Lanes, Volumes, Timings
13: State Street

12/5/2014

Lane Group	EBL	EBT	WBT	WBR	SEL	SER
Lane Configurations		↖↗	↖	↗	↖↗	
Volume (vph)	0	373	148	357	1189	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	0.95	1.00	1.00	0.97	1.00
Frt	0.850					
Flt Protected					0.950	
Satd. Flow (prot)	0	3539	1863	1583	3433	0
Flt Permitted					0.950	
Satd. Flow (perm)	0	3539	1863	1583	3433	0
Link Speed (mph)		30	35		30	
Link Distance (ft)		432	1119		359	
Travel Time (s)		9.8	21.8		8.2	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	0%	2%	2%	2%	2%	0%
Adj. Flow (vph)	0	393	156	376	1252	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	393	156	376	1252	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		10	5		36	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	0		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		15		15	15	9
Sign Control		Free	Free		Stop	

Intersection Summary	
Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	50.9%
ICU Level of Service	A
Analysis Period (min)	15

Lanes, Volumes, Timings
15: 7th Street

12/5/2014

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations		↗ ↘	↕			
Volume (vph)	0	432	1149	1	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	0.91	0.91	1.00	1.00
Frt		0.865				
Flt Protected						
Satd. Flow (prot)	0	1627	5136	0	0	0
Flt Permitted						
Satd. Flow (perm)	0	1627	5136	0	0	0
Link Speed (mph)	30		25			30
Link Distance (ft)	748		364			303
Travel Time (s)	17.0		9.9			6.9
Peak Hour Factor	0.90	0.90	0.90	0.90	0.89	0.89
Heavy Vehicles (%)	0%	1%	1%	0%	0%	0%
Adj. Flow (vph)	0	480	1277	1	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	480	1278	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	0		0			0
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	55.6%		ICU Level of Service B			
Analysis Period (min)	15					

Lanes, Volumes, Timings
16: 7th Street

12/5/2014

Lane Group	NBT	NBR	SBL	SBT	NWL	NWR
Lane Configurations				↕	↗ ↘	↗ ↘
Volume (vph)	0	0	0	1098	0	1582
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	0.91	1.00	0.76
Frt						0.850
Flt Protected						
Satd. Flow (prot)	0	0	0	5085	0	3610
Flt Permitted						
Satd. Flow (perm)	0	0	0	5085	0	3610
Link Speed (mph)	25			25		30
Link Distance (ft)	393			305		303
Travel Time (s)	10.7			8.3		6.9
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	1193	0	1720
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	1193	0	1720
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			5		0
Link Offset(ft)	0			0		0
Crosswalk Width(ft)	16			16		16
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	35
Sign Control	Free			Free		Free
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	40.2%		ICU Level of Service A			
Analysis Period (min)	15					

Queuing and Blocking Report
Evening Peak Hour

12/5/2014

Intersection: 1: 2nd Street & Division Street

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	153	2570	1148	110
Average Queue (ft)	39	1767	722	40
95th Queue (ft)	118	3171	1289	86
Link Distance (ft)	344	3246	4864	1642
Upstream Blk Time (%)	0	11		
Queueing Penalty (veh)	0	0		
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queueing Penalty (veh)				

Intersection: 2: 2nd Street & Maclay Street

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	85	303	1205	307
Average Queue (ft)	30	143	523	78
95th Queue (ft)	69	267	1062	193
Link Distance (ft)	328	2954	5294	4864
Upstream Blk Time (%)				
Queueing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queueing Penalty (veh)				

Intersection: 3: 7th Street & Maclay Street

Movement	EB	EB	WB	WB	WB	NB	NB	NB	B34	B34	SB	SB
Directions Served	L	TR	L	T	R	L	T	R	T	T	L	TR
Maximum Queue (ft)	80	1678	254	492	229	200	511	487	2567	2592	683	400
Average Queue (ft)	6	1360	75	273	123	74	486	351	1571	1558	361	148
95th Queue (ft)	38	1929	166	430	207	208	496	530	3077	3106	622	415
Link Distance (ft)		2954		832	832		414	414	3736	3736	2540	
Upstream Blk Time (%)							61	11				
Queueing Penalty (veh)							418	74				
Storage Bay Dist (ft)	75		250			100						200
Storage Blk Time (%)	1	80		16			57				55	0
Queueing Penalty (veh)	3	4		14			38				98	0

Queuing and Blocking Report
Evening Peak Hour

12/5/2014

Intersection: 4: Front Street & Forster Street

Movement	EB	EB	EB	EB	B18	B18	WB	WB	B37	B37	B37	SB
Directions Served	T	T	T	R	T	T	T	T	T	T	T	LT
Maximum Queue (ft)	200	136	208	100	86	73	184	175	181	230	191	249
Average Queue (ft)	124	66	103	34	6	4	168	169	119	145	72	161
95th Queue (ft)	196	122	197	107	36	31	182	174	185	223	208	223
Link Distance (ft)	114	114	114		4032	4032	98	98	142	142	142	637
Upstream Blk Time (%)	8	0	5	0			31	29	3	10	4	
Queueing Penalty (veh)	0	0	0	0			295	280	17	65	24	
Storage Bay Dist (ft)				50								
Storage Blk Time (%)				19								
Queueing Penalty (veh)				46								

Intersection: 4: Front Street & Forster Street

Movement	SB	SB	SB
Directions Served	T	T	R
Maximum Queue (ft)	255	245	213
Average Queue (ft)	167	135	80
95th Queue (ft)	232	212	177
Link Distance (ft)	637	637	
Upstream Blk Time (%)			
Queueing Penalty (veh)			
Storage Bay Dist (ft)		300	
Storage Blk Time (%)		0	
Queueing Penalty (veh)		0	

**Queuing and Blocking Report
Evening Peak Hour**

12/5/2014

Intersection: 5: 2nd Street & Forster Street

Movement	EB	EB	EB	EB	B37	WB	WB	WB	NB	NB	NB	NB
Directions Served	L	T	T	T	T	T	T	TR	L	L	T	R
Maximum Queue (ft)	213	99	98	121	138	795	804	805	197	287	606	565
Average Queue (ft)	141	40	44	41	23	753	759	745	109	124	326	271
95th Queue (ft)	233	82	87	91	96	849	851	874	170	220	519	490
Link Distance (ft)	142	142	142	142	98	749	749	749	2030	2030	2030	2030
Upstream Blk Time (%)	30	0		0	2	47	56	45				
Queuing Penalty (veh)	77	0		1	5	172	206	163				
Storage Bay Dist (ft)												
Storage Blk Time (%)												
Queuing Penalty (veh)												

Intersection: 5: 2nd Street & Forster Street

Movement	SB	SB
Directions Served	L	R
Maximum Queue (ft)	200	502
Average Queue (ft)	73	224
95th Queue (ft)	195	421
Link Distance (ft)	5294	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)	150	
Storage Blk Time (%)		31
Queuing Penalty (veh)		14

Intersection: 6: 3rd Street & Forster Street

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	SB	
Directions Served	L	T	T	TR	L	T	T	TR	LT	R	LTR	
Maximum Queue (ft)	198	317	343	365	275	836	846	844	926	926	744	
Average Queue (ft)	70	204	235	247	216	537	549	523	639	506	335	
95th Queue (ft)	145	286	316	338	366	973	970	973	1151	1173	785	
Link Distance (ft)	749				749	749	832		832	832	891	891
Upstream Blk Time (%)							15	15	14	48	40	
Queuing Penalty (veh)							53	55	51	0	0	
Storage Bay Dist (ft)	225				225							
Storage Blk Time (%)					4	0			64			
Queuing Penalty (veh)	4				1	100						

**Queuing and Blocking Report
Evening Peak Hour**

12/5/2014

Intersection: 7: Commonwealth Avenue & Forster Street

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	T	TR	L	T	T	TR	L	TR	L	T
Maximum Queue (ft)	290	414	475	557	198	359	376	440	174	338	190	334
Average Queue (ft)	119	264	341	373	78	140	161	193	107	125	121	128
95th Queue (ft)	212	373	443	493	189	342	361	514	184	260	196	282
Link Distance (ft)	832		832		832		536		536		536	
Upstream Blk Time (%)					0		0		9			
Queuing Penalty (veh)					0		0		25			
Storage Bay Dist (ft)	275				250						150	
Storage Blk Time (%)					2		0		11		7	
Queuing Penalty (veh)	3				0				9		12	
											10	
											20	
											6	
											4	
											20	
											6	

Intersection: 7: Commonwealth Avenue & Forster Street

Movement	SB
Directions Served	R
Maximum Queue (ft)	170
Average Queue (ft)	69
95th Queue (ft)	132
Link Distance (ft)	1321
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 9: 7th Street & Forster Street

Movement	EB	EB	EB	NB	NB	SB	SB	SB
Directions Served	T	T	R	L	L	T	T	R
Maximum Queue (ft)	384	482	424	208	211	279	308	144
Average Queue (ft)	116	206	53	122	124	162	182	32
95th Queue (ft)	296	420	282	192	192	249	267	193
Link Distance (ft)	536	536	536	425	425	310	310	310
Upstream Blk Time (%)	0			0		0		
Queuing Penalty (veh)	0		1	0			1	
Storage Bay Dist (ft)	23							
Storage Blk Time (%)								
Queuing Penalty (veh)								

Queuing and Blocking Report
Evening Peak Hour

12/5/2014

Intersection: 11: 7th Street

Movement	WB	WB	SB	SB	SB	B10	B10	B10
Directions Served	R	R	L	LT	T	T	T	T
Maximum Queue (ft)	8	10	360	362	295	380	392	576
Average Queue (ft)	0	0	320	326	161	181	193	194
95th Queue (ft)	4	5	383	378	362	400	414	554
Link Distance (ft)		232	260	260	260	425	425	425
Upstream Blk Time (%)			71	74	3	0	0	11
Queuing Penalty (veh)			280	292	13	1	1	42
Storage Bay Dist (ft)	100							
Storage Blk Time (%)								
Queuing Penalty (veh)								

Intersection: 12: 7th Street

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Intersection: 13: State Street

Movement	EB	EB	SE	SE
Directions Served	T	T	L	L
Maximum Queue (ft)	53	24	268	285
Average Queue (ft)	25	2	250	252
95th Queue (ft)	52	16	258	265
Link Distance (ft)	329	329	232	232
Upstream Blk Time (%)			55	60
Queuing Penalty (veh)			325	356
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Queuing and Blocking Report
Evening Peak Hour

12/5/2014

Intersection: 14: 7th Street & Herr Street

Movement	WB	WB	NB	NB	NB	NB	SB	SB	SB
Directions Served	L	TR	L	T	T	R	L	T	TR
Maximum Queue (ft)	368	333	20	267	263	225	149	448	449
Average Queue (ft)	203	133	1	179	184	120	120	143	176
95th Queue (ft)	328	284	9	267	277	254	171	350	364
Link Distance (ft)		1911	243	243	243			3736	3736
Upstream Blk Time (%)				1	1	0			
Queuing Penalty (veh)				6	7	0			
Storage Bay Dist (ft)	460					150	100		
Storage Blk Time (%)	1	0			12	0	29	3	
Queuing Penalty (veh)	3	1			41	1	104	7	

Intersection: 15: 7th Street

Movement	WB	NB	NB	NB
Directions Served	R	T	T	TR
Maximum Queue (ft)	421	68	128	22
Average Queue (ft)	201	2	4	1
95th Queue (ft)	385	48	65	12
Link Distance (ft)	678	290	290	290
Upstream Blk Time (%)		0	0	
Queuing Penalty (veh)		0	1	
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 16: 7th Street

Movement	SB	SB	SB	NW	NW	NW
Directions Served	T	T	T	R	R	R
Maximum Queue (ft)	65	105	110	69	145	178
Average Queue (ft)	2	11	22	2	13	22
95th Queue (ft)	38	88	141	31	67	94
Link Distance (ft)	243	243	243	254	254	254
Upstream Blk Time (%)	0	0	5			0
Queuing Penalty (veh)	0	0	17			0
Storage Bay Dist (ft)						
Storage Blk Time (%)						
Queuing Penalty (veh)						

Queuing and Blocking Report
Evening Peak Hour

12/5/2014

Intersection: 18: Bend


Movement	WB
Directions Served	T
Maximum Queue (ft)	20
Average Queue (ft)	1
95th Queue (ft)	11
Link Distance (ft)	114
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Network Summary

Network wide Queuing Penalty: 3882

Lanes, Volumes, Timings
1: 2nd Street & Division Street

12/5/2014



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↔			↔	
Volume (vph)	1	345	2	34	131	20	89	66	50	10	15	38
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	16	12	10	13	10	10	16	10
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				0.98
Frt		0.999			0.985			0.967				0.918
Flt Protected					0.991			0.979				0.992
Satd. Flow (prot)	0	1692	0	0	2030	0	0	1804	0	0	1835	0
Flt Permitted					0.903			0.848				0.899
Satd. Flow (perm)	0	1692	0	0	1850	0	0	1561	0	0	1660	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		1			13			25				39
Link Speed (mph)		25			25			25				25
Link Distance (ft)		381			3285			4939				1680
Travel Time (s)		10.4			89.6			134.7				45.8
Confl. Peds. (/hr)							2		2	2		2
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
Heavy Vehicles (%)	0%	1%	0%	0%	5%	0%	0%	3%	6%	30%	0%	0%
Parking (/hr)		0										
Adj. Flow (vph)	1	356	2	35	135	21	92	68	52	10	15	39
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	359	0	0	191	0	0	212	0	0	64	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			10	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.14	1.00	1.00	0.85	1.00	1.09	0.96	1.09	1.09	0.85	1.09
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		Perm	NA	
Protected Phases		4			8		1	6				2
Permitted Phases		4			8		6					2
Minimum Split (s)	9.0	9.0		9.0	9.0		9.0	9.0		9.0		9.0
Total Split (s)	41.0	41.0		41.0	41.0		19.0	29.0		10.0		10.0
Total Split (%)	58.6%	58.6%		58.6%	58.6%		27.1%	41.4%		14.3%		14.3%
Maximum Green (s)	36.0	36.0		36.0	36.0		14.0	24.0		5.0		5.0
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)		0.0			0.0			0.0				0.0
Total Lost Time (s)		5.0			5.0			5.0				5.0
Lead/Lag							Lead			Lag		Lag
Lead-Lag Optimize?							Yes			Yes		Yes
Act Effct Green (s)		36.0			36.0			24.0				5.0
Actuated g/C Ratio		0.51			0.51			0.34				0.07
v/c Ratio		0.41			0.20			0.35				0.42
Control Delay		12.3			9.2			17.0				25.2
Queue Delay		0.0			0.0			0.0				0.0

Lanes, Volumes, Timings
1: 2nd Street & Division Street

12/5/2014

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay		12.3			9.2			17.0				25.2
LOS		B			A			B				C
Approach Delay		12.3			9.2			17.0				25.2
Approach LOS		B			A			B				C
Queue Length 50th (ft)		88			38			58				10
Queue Length 95th (ft)		148			71			109				45
Internal Link Dist (ft)		301			3205			4859				1600
Turn Bay Length (ft)												
Base Capacity (vph)		870			957			600				154
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		0.41			0.20			0.35				0.42

Intersection Summary

Area Type: Other

Cycle Length: 70

Actuated Cycle Length: 70

Offset: 0 (0%), Referenced to phase 6:NBT, Start of Green

Natural Cycle: 40

Control Type: Pretimed

Maximum v/c Ratio: 0.42

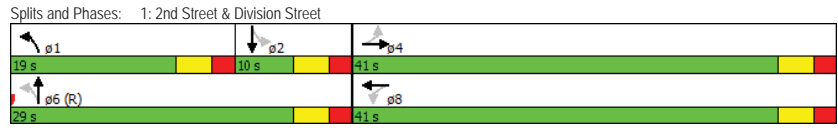
Intersection Signal Delay: 13.8

Intersection LOS: B

Intersection Capacity Utilization 59.0%

ICU Level of Service B

Analysis Period (min) 15



Lanes, Volumes, Timings
2: 2nd Street & Maclay Street

12/5/2014

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Volume (vph)	2	101	0	60	122	31	15	264	110	0	73	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	16	12	12	16	12	12	13	12	12	11	12
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			1.00			0.99				
Fr					0.980			0.962				
Fit Protected		0.999			0.986			0.998				
Satd. Flow (prot)	0	2151	0	0	2074	0	0	1850	0	0	1837	0
Fit Permitted		0.992			0.873			0.988				
Satd. Flow (perm)	0	2136	0	0	1836	0	0	1832	0	0	1837	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					16			36				
Link Speed (mph)		25			25			25				25
Link Distance (ft)		360			3029			5401				4939
Travel Time (s)		9.8			82.6			147.3				134.7
Confl. Peds. (#/hr)	1		1	1		1	1		1			
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	1%	2%	0%	0%	0%
Parking (#/hr)								0			0	
Adj. Flow (vph)	2	106	0	63	128	33	16	278	116	0	77	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	108	0	0	224	0	0	410	0	0	77	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		11			11			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.96	1.00	1.00	1.04	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1		1	1		1	1	1		1	0
Detector Template		Left		Left		Left		Left			Left	
Leading Detector (ft)	20	50		20	50		20	50		20	0	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	50		20	50		20	50		20	6	
Detector 1 Type		CI+Ex		CI+Ex		CI+Ex		CI+Ex		CI+Ex		CI+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
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		4.0	4.0	
Minimum Split (s)	35.0	35.0		35.0	35.0		35.0	35.0		20.0	20.0	

Lanes, Volumes, Timings
2: 2nd Street & Maclay Street

12/5/2014

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Split (s)	35.0	35.0		35.0	35.0		35.0	35.0		35.0	35.0	
Total Split (%)	50.0%	50.0%		50.0%	50.0%		50.0%	50.0%		50.0%	50.0%	
Maximum Green (s)	30.0	30.0		30.0	30.0		30.0	30.0		31.0	31.0	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.5	3.5	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		0.5	0.5	
Lost Time Adjust (s)												
Total Lost Time (s)		5.0			5.0			5.0			4.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	Min	Min		Min	Min		None	None		None	None	
Walk Time (s)	10.0	10.0		10.0	10.0		10.0	10.0		5.0	5.0	
Flash Dont Walk (s)	15.0	15.0		15.0	15.0		12.0	12.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)		9.8			9.8			12.1			13.2	
Actuated g/C Ratio		0.30			0.30			0.37			0.41	
v/c Ratio		0.17			0.39			0.58			0.10	
Control Delay		9.9			11.4			11.1			6.5	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		9.9			11.4			11.1			6.5	
LOS		A			B			B			A	
Approach Delay		9.9			11.4			11.1			6.5	
Approach LOS		A			B			B			A	
Queue Length 50th (ft)		12			25			43			7	
Queue Length 95th (ft)		43			78			116			25	
Internal Link Dist (ft)		280			2949			5321			4859	
Turn Bay Length (ft)												
Base Capacity (vph)		1941			1670			1668			1697	
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		0.06			0.13			0.25			0.05	
Intersection Summary												
Area Type:	Other											
Cycle Length:	70											
Actuated Cycle Length:	32.3											
Natural Cycle:	70											
Control Type:	Actuated-Uncoordinated											
Maximum v/c Ratio:	0.58											
Intersection Signal Delay:	10.6						Intersection LOS: B					
Intersection Capacity Utilization:	54.8%						ICU Level of Service A					
Analysis Period (min):	15											

Splits and Phases: 2: 2nd Street & Maclay Street

← ρ2	↓ ρ4
→ ρ6	↑ ρ8
35 s	35 s
35 s	35 s

Lanes, Volumes, Timings
3: 7th Street & Maclay Street

12/5/2014

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	11	544	207	330	403	363	24	254	228	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	12	12	10	11	11	11	14	11	13	12	
Grade (%)		-3%			-3%			-1%			-1%	
Storage Length (ft)	75		0	250		0	100		0	0		200
Storage Lanes	1		0	1		1	1		0	0		0
Taper Length (ft)	75			300			100			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	1.00	1.00
Ped Bike Factor	1.00	0.99			0.98	0.99	0.99					
Frt		0.959			0.850	0.929						
Flt Protected	0.950			0.950			0.950					
Satd. Flow (prot)	1625	1784	0	1676	1793	1495	1449	3061	0	0	0	0
Flt Permitted	0.515			0.108			0.950					
Satd. Flow (perm)	878	1784	0	191	1793	1470	1435	3061	0	0	0	0
Right Turn on Red			Yes			Yes		Yes				Yes
Satd. Flow (RTOR)		39				72		240				
Link Speed (mph)		25			35			25			25	
Link Distance (ft)		3029			877			479			2587	
Travel Time (s)		82.6			17.1			13.1			70.6	
Confl. Peds. (#/hr)	5		5	5		5	6		6	6		6
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	9%	4%	0%	2%	4%	6%	21%	4%	6%	7%	1%	14%
Adj. Flow (vph)	12	573	218	347	424	382	25	267	240	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	12	791	0	347	424	382	25	507	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		11			11			11			11	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.02	0.98	0.98	1.07	1.02	1.02	1.04	1.04	0.91	1.04	0.95	0.99
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1		1	1	1	1	1				
Detector Template				Left		Right	Left					
Leading Detector (ft)	50	50		50	50	50	50	50				
Trailing Detector (ft)	0	0		0	0	0	0	0				
Detector 1 Position(ft)	0	0		0	0	0	0	0				
Detector 1 Size(ft)	50	50		50	50	50	50	50				
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex				
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0				
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0				
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0				
Turn Type	Perm	NA		pm+pt	NA	Perm	Perm	NA				
Protected Phases		4			3		8		2			
Permitted Phases	4				8		8		2			
Detector Phase	4	4			3		8		2		2	

Lanes, Volumes, Timings
3: 7th Street & Maclay Street

12/5/2014



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	3.0	3.0		3.0	3.0	3.0	10.0	10.0				
Minimum Split (s)	9.0	9.0		8.4	9.0	9.0	15.4	15.4				
Total Split (s)	41.0	41.0		14.0	55.0	55.0	15.0	15.0				
Total Split (%)	58.6%	58.6%		20.0%	78.6%	78.6%	21.4%	21.4%				
Maximum Green (s)	35.0	35.0		8.6	49.0	49.0	9.6	9.6				
Yellow Time (s)	4.0	4.0		3.0	4.0	4.0	3.0	3.0				
All-Red Time (s)	2.0	2.0		2.4	2.0	2.0	2.4	2.4				
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0				
Total Lost Time (s)	6.0	6.0		5.4	6.0	6.0	5.4	5.4				
Lead/Lag	Lag	Lag		Lead								
Lead-Lag Optimize?	Yes	Yes		Yes								
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0				
Recall Mode	None	None		None	None	None	Min	Min				
Walk Time (s)	7.0	7.0		11.0	7.0	7.0	7.0	7.0				
Flash Dont Walk (s)	15.0	15.0		0.0	15.0	15.0	15.0	15.0				
Pedestrian Calls (#/hr)	0	0		0	0	0	0	0				
Act Effct Green (s)	31.5	31.5		46.2	45.6	45.6	9.7	9.7				
Actuated g/C Ratio	0.47	0.47		0.69	0.68	0.68	0.15	0.15				
v/c Ratio	0.03	0.92		1.07	0.35	0.37	0.12	0.78				
Control Delay	9.2	32.9		90.4	5.2	4.6	28.1	25.3				
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0				
Total Delay	9.2	32.9		90.4	5.2	4.6	28.1	25.3				
LOS	A	C		F	A	A	C	C				
Approach Delay		32.6			30.6			25.4				
Approach LOS		C			C			C				
Queue Length 50th (ft)	2	270		-119	58	41	10	58				
Queue Length 95th (ft)	10	#503		#273	94	75	30	#132				
Internal Link Dist (ft)		2949			797			399			2507	
Turn Bay Length (ft)		75		250			100					
Base Capacity (vph)	463	959		324	1324	1104	207	647				
Starvation Cap Reductn	0	0		0	0	0	0	0				
Spillback Cap Reductn	0	0		0	0	0	0	0				
Storage Cap Reductn	0	0		0	0	0	0	0				
Reduced v/c Ratio	0.03	0.82		1.07	0.32	0.35	0.12	0.78				

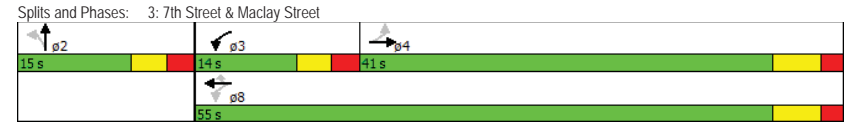
Intersection Summary

Area Type: Other
 Cycle Length: 70
 Actuated Cycle Length: 66.7
 Natural Cycle: 90
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 1.07
 Intersection Signal Delay: 30.1
 Intersection LOS: C
 Intersection Capacity Utilization 89.0%
 ICU Level of Service E
 Analysis Period (min) 15
 - Volume exceeds capacity, queue is theoretically infinite.
 - Queue shown is maximum after two cycles.
 # 95th percentile volume exceeds capacity, queue may be longer.

Lanes, Volumes, Timings
3: 7th Street & Maclay Street

12/5/2014

Queue shown is maximum after two cycles.



Lanes, Volumes, Timings
4: Front Street & Forster Street

12/5/2014

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↑↑↑	↑		↑	↑↑						↑↑↑	↑
Volume (vph)	0	1462	458	1	950	0	0	0	0	226	1300	583
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	11	11
Grade (%)		-3%			-1%			-1%			0%	
Storage Length (ft)	75		50	0		0	0		0	0		300
Storage Lanes	0		1	0		0	0		0	0		1
Taper Length (ft)	75			25				25			25	
Lane Util. Factor	1.00	0.91	1.00	0.95	0.95	1.00	1.00	1.00	1.00	0.91	0.91	1.00
Ped Bike Factor			0.97		1.00						1.00	0.98
Frt			0.850									0.850
Flt Protected											0.993	
Satd. Flow (prot)	0	5213	1623	0	3592	0	0	0	0	0	4930	1546
Flt Permitted					0.954						0.993	
Satd. Flow (perm)	0	5213	1572	0	3427	0	0	0	0	0	4921	1509
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			44									83
Link Speed (mph)		50			35			35			35	
Link Distance (ft)		192			146			595			622	
Travel Time (s)		2.6			2.8			11.6			12.1	
Confl. Peds. (#/hr)	12		12	12		12				7		7
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	0%	1%	1%	0%	1%	0%	0%	0%	0%	1%	1%	1%
Adj. Flow (vph)	0	1539	482	1	1000	0	0	0	0	238	1368	614
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1539	482	0	1001	0	0	0	0	0	1606	614
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Right	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		16			5			0			0	
Link Offset(ft)		5			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	0.98	0.98	0.98	0.99	0.99	0.99	0.99	0.99	0.99	1.00	1.04	1.04
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	NA	Perm	Perm	NA						Perm	NA	Perm
Protected Phases		2			6						4	
Permitted Phases			2		6						4	
Minimum Split (s)		17.0	17.0		17.0					17.0	17.0	17.0
Total Split (s)		60.0	60.0		60.0					40.0	40.0	40.0
Total Split (%)		60.0%	60.0%		60.0%					40.0%	40.0%	40.0%
Maximum Green (s)		53.0	53.0		53.0					33.0	33.0	33.0
Yellow Time (s)		4.0	4.0		4.0					4.0	4.0	4.0
All-Red Time (s)		3.0	3.0		3.0					3.0	3.0	3.0
Lost Time Adjust (s)		0.0	0.0		0.0					0.0	0.0	0.0
Total Lost Time (s)		7.0	7.0		7.0					7.0	7.0	7.0
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)		8.0	8.0		8.0					8.0	8.0	8.0
Flash Dont Walk (s)		10.0	10.0		10.0					10.0	10.0	10.0

Lanes, Volumes, Timings
4: Front Street & Forster Street

12/5/2014

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Pedestrian Calls (#/hr)	0	0	0	0	0						0	0
Act Effct Green (s)		53.0	53.0		53.0						33.0	33.0
Actuated g/C Ratio		0.53	0.53		0.53						0.33	0.33
v/c Ratio		0.56	0.57		0.55						0.99	1.11
Control Delay		16.6	17.3		17.0						54.0	101.3
Queue Delay		0.0	0.0		3.6						0.0	0.0
Total Delay		16.6	17.3		20.6						54.0	101.3
LOS		B	B		C						D	F
Approach Delay		16.8			20.6						67.1	
Approach LOS		B			C						E	
Queue Length 50th (ft)		227	177		212						369	-413
Queue Length 95th (ft)		271	275		270						#483	#629
Internal Link Dist (ft)		112			66			515			542	
Turn Bay Length (ft)			50									300
Base Capacity (vph)		2762	853		1816						1623	553
Starvation Cap Reductn		0	0		701						0	0
Spillback Cap Reductn		0	0		0						0	0
Storage Cap Reductn		0	0		0						0	0
Reduced v/c Ratio		0.56	0.57		0.90						0.99	1.11

Intersection Summary

Area Type: Other

Cycle Length: 100

Actuated Cycle Length: 100

Offset: 24 (24%), Referenced to phase 2:EBT and 6:WBTL, Start of Green

Natural Cycle: 60

Control Type: Pretimed

Maximum v/c Ratio: 1.11

Intersection Signal Delay: 38.8

Intersection LOS: D

Intersection Capacity Utilization 103.1%

ICU Level of Service G

Analysis Period (min) 15

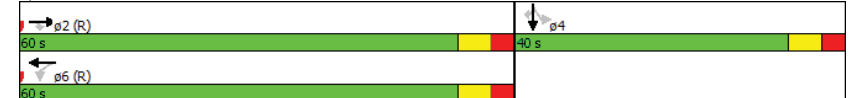
- Volume exceeds capacity, queue is theoretically infinite.

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: Front Street & Forster Street



Lanes, Volumes, Timings
5: 2nd Street & Forster Street


12/5/2014



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔↔↔	↔	↔	↔↔↔	↔	↔↔	↔	↔	↔	↔	↔
Volume (vph)	208	1608	0	0	542	36	199	338	324	0	0	232
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	12	12	11	12	11	11	10	10	11	10
Grade (%)		0%			-1%			-1%			0%	
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	0.91	0.97	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.96				0.99		0.99		0.98			0.98
Frt					0.991				0.850			0.865
Flt Protected	0.950						0.950					
Satd. Flow (prot)	1728	4964	0	0	4890	0	3335	1810	1471	0	0	1534
Flt Permitted	0.357						0.950					
Satd. Flow (perm)	624	4964	0	0	4890	0	3296	1810	1436	0	0	1498
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					10				79			388
Link Speed (mph)		35			35			25			25	
Link Distance (ft)		211			828			2926			5401	
Travel Time (s)		4.1			16.1			79.8			147.3	
Conf. Peds. (#/hr)	39		39			39	10		10	10		10
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
Heavy Vehicles (%)	1%	1%	0%	0%	1%	5%	2%	2%	3%	0%	0%	0%
Adj. Flow (vph)	217	1675	0	0	565	38	207	352	338	0	0	242
Shared Lane Traffic (%)												
Lane Group Flow (vph)	217	1675	0	0	603	0	207	352	338	0	0	242
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Right	Right	Left	Left	Right	Left	Right	Left	Left	Right	Right
Median Width(ft)		17			17			22			22	
Link Offset(ft)		0			6			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.04	1.04	1.00	0.99	1.04	0.99	1.04	1.09	1.09	1.04	1.09	1.09
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2			1		1	1	1			1
Detector Template	Left						Left		Right			Right
Leading Detector (ft)	40	246			0		40	40	40			20
Trailing Detector (ft)	0	0			0		0	0	0			0
Detector 1 Position(ft)	0	0			0		0	0	0			0
Detector 1 Size(ft)	40	0			0		40	40	40			20
Detector 1 Type	CI+Ex	CI+Ex			CI+Ex		CI+Ex	CI+Ex	CI+Ex			CI+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0			0.0		0.0	0.0	0.0			0.0
Detector 1 Queue (s)	0.0	0.0			0.0		0.0	0.0	0.0			0.0
Detector 1 Delay (s)	0.0	0.0			0.0		0.0	0.0	0.0			0.0
Detector 2 Position(ft)		240										
Detector 2 Size(ft)		6										
Detector 2 Type		CI+Ex										
Detector 2 Channel												
Detector 2 Extend (s)		0.0										
Turn Type	pm+pt	NA			NA		pm+pt	NA	Perm			Perm
Protected Phases	5	2			6		7	4				

Lanes, Volumes, Timings
5: 2nd Street & Forster Street

12/5/2014



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	2											4
Detector Phase	5	2						6			7	4
Switch Phase												4
Minimum Initial (s)	5.0	5.0			5.0		4.0	5.0	5.0			5.0
Minimum Split (s)	11.0	34.0			35.0		9.0	34.0	34.0			34.0
Total Split (s)	19.0	63.0			44.0		15.0	47.0	47.0			32.0
Total Split (%)	17.3%	57.3%			40.0%		13.6%	42.7%	42.7%			29.1%
Maximum Green (s)	14.0	57.0			38.0		10.0	41.0	41.0			27.0
Yellow Time (s)	3.0	4.0			4.0		3.0	4.0	4.0			3.0
All-Red Time (s)	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
Total Lost Time (s)	5.0	6.0			6.0		5.0	6.0	6.0			5.0
Lead/Lag	Lead				Lag		Lag					Lead
Lead-Lag Optimize?	Yes				Yes		Yes		Yes			Yes
Vehicle Extension (s)	4.0	5.0			3.0		3.0	5.0	5.0			5.0
Recall Mode	None	C-Max			C-Max		None	None	None			None
Walk Time (s)		7.0			8.0			7.0	7.0			7.0
Flash Dont Walk (s)		21.0			10.0			21.0	21.0			21.0
Pedestrian Calls (#/hr)		0			0			0	0			0
Act Effct Green (s)	67.9	66.9			49.8		32.1	31.1	31.1			7.5
Actuated g/C Ratio	0.62	0.61			0.45		0.29	0.28	0.28			0.07
v/c Ratio	0.43	0.55			0.27		0.21	0.69	0.73			0.52
Control Delay	13.4	14.7			20.5		28.5	41.6	35.8			4.2
Queue Delay	0.0	2.3			0.0		0.0	0.0	0.0			0.0
Total Delay	13.4	17.0			20.5		28.5	41.6	35.8			4.2
LOS	B	B			C		C	D	D			A
Approach Delay		16.6						36.4				
Approach LOS		B						D				
Queue Length 50th (ft)	62	237			93		56	222	168			0
Queue Length 95th (ft)	125	353			146		75	283	241			0
Internal Link Dist (ft)		131						2846				5321
Turn Bay Length (ft)												
Base Capacity (vph)	527	3020			2221		969	674	584			660
Starvation Cap Reductn	0	1161			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	0.41	0.90			0.27		0.21	0.52	0.58			0.37
Intersection Summary												
Area Type:	Other											
Cycle Length:	110											
Actuated Cycle Length:	110											
Offset:	14 (13%), Referenced to phase 2:EBTL and 6:WBT, Start of Green											
Natural Cycle:	90											
Control Type:	Actuated-Coordinated											
Maximum v/c Ratio:	0.73											
Intersection Signal Delay:	21.3						Intersection LOS: C					
Intersection Capacity Utilization:	62.8%						ICU Level of Service B					
Analysis Period (min)	15											

Lanes, Volumes, Timings
5: 2nd Street & Forster Street

12/5/2014



Lanes, Volumes, Timings
6: 3rd Street & Forster Street

12/5/2014

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SRT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Volume (vph)	117	1526	169	111	495	25	49	79	131	43	92	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	11	12	10	11	12	12	11	10	12	16	12
Grade (%)		1%			-2%			-1%			0%	
Storage Length (ft)	225		0	225		0	0		0	0		0
Storage Lanes	1		0	1		0	0		1	0		0
Taper Length (ft)	50			50			25			25		
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	0.98	0.99			1.00			0.99	0.95		0.99	
Frt		0.985			0.993				0.850		0.991	
Flt Protected	0.950			0.950				0.981			0.985	
Satd. Flow (prot)	1676	4828	0	1533	4913	0	0	1693	1443	0	1955	0
Flt Permitted	0.424			0.075				0.717			0.754	
Satd. Flow (perm)	737	4828	0	121	4913	0	0	1224	1375	0	1484	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		29			13				146			3
Link Speed (mph)		35			35			25			25	
Link Distance (ft)		828			923			950			1410	
Travel Time (s)		16.1			18.0			25.9			38.5	
Confl. Peds. (#/hr)	13		22	22		13	29		25	25		29
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
Heavy Vehicles (%)	0%	1%	1%	11%	2%	4%	2%	10%	5%	9%	7%	0%
Adj. Flow (vph)	130	1696	188	123	550	28	54	88	146	48	102	11
Shared Lane Traffic (%)												
Lane Group Flow (vph)	130	1884	0	123	578	0	0	142	146	0	161	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		17			10			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.10	1.05	1.01	1.08	1.03	0.99	0.99	1.04	1.09	1.00	0.85	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1		1	1		1	1	1	1	1	
Detector Template							Left			Left		
Leading Detector (ft)	40	0		40	26		20	40	40	20	40	
Trailing Detector (ft)	0	0		0	20		0	0	0	0	0	
Detector 1 Position(ft)	0	0		0	20		0	0	0	0	0	
Detector 1 Size(ft)	40	0		40	6		20	40	40	20	40	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA	Perm	Perm	NA	
Protected Phases	1	6		5	2			4		8		8
Permitted Phases	6			2			4		4	8		
Detector Phase	1	6		5	2		4	4	4	8		8

Lanes, Volumes, Timings
6: 3rd Street & Forster Street

12/5/2014

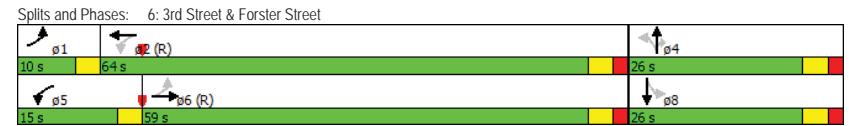
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	8.0	10.0		8.0	10.0		10.0	10.0	10.0	10.0	10.0	
Total Split (s)	10.0	59.0		15.0	64.0		26.0	26.0	26.0	26.0	26.0	
Total Split (%)	10.0%	59.0%		15.0%	64.0%		26.0%	26.0%	26.0%	26.0%	26.0%	
Maximum Green (s)	7.0	54.0		12.0	59.0		21.0	21.0	21.0	21.0	21.0	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	0.0	2.0		0.0	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)	3.0	5.0		3.0	5.0			5.0	5.0		5.0	
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	C-Max		None	C-Max		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)		12.0			12.0		14.0	14.0	14.0	14.0	14.0	
Pedestrian Calls (#/hr)		0			0		0	0	0	0	0	
Act Effct Green (s)	71.9	62.9		75.0	64.6		15.3	15.3			15.3	
Actuated g/C Ratio	0.72	0.63		0.75	0.65		0.15	0.15			0.15	
v/c Ratio	0.22	0.62		0.57	0.18		0.76	0.44			0.70	
Control Delay	4.7	13.3		21.1	7.5		64.4	10.2			54.9	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0			0.0	
Total Delay	4.7	13.3		21.1	7.5		64.4	10.2			54.9	
LOS	A	B		C	A		E	B			D	
Approach Delay		12.7			9.9			36.9			54.9	
Approach LOS		B			A			D			D	
Queue Length 50th (ft)	17	239		21	60		87	0			96	
Queue Length 95th (ft)	40	366		15	139		147	51			156	
Internal Link Dist (ft)		748			843			870			1330	
Turn Bay Length (ft)		225			225							
Base Capacity (vph)	601	3046		262	3178		257	404			314	
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	0.22	0.62		0.47	0.18		0.55	0.36			0.51	

Intersection Summary

Area Type:	Other
Cycle Length:	100
Actuated Cycle Length:	100
Offset:	38 (38%), Referenced to phase 2:WBTL and 6:EBTL, Start of Green
Natural Cycle:	60
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.76
Intersection Signal Delay:	16.4
Intersection Capacity Utilization:	74.3%
Intersection LOS:	B
ICU Level of Service:	D
Analysis Period (min):	15

Lanes, Volumes, Timings
6: 3rd Street & Forster Street

12/5/2014



Lanes, Volumes, Timings

7: Commonwealth Avenue & Forster Street

12/5/2014

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↑↑↑ ↑↑↑ ↑↑↑ ↑↑↑											
Volume (vph)	392	1103	200	97	573	109	18	83	40	132	112	45
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	11	12	11	11	12	10	16	12	13	13	13
Grade (%)		-2%			-2%			-2%			-2%	
Storage Length (ft)	275		0	250		0	150		0	150		0
Storage Lanes	1		0	1		0	1		0	1		1
Taper Length (ft)	50			25			25			50		
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	1.00	0.98		0.98	0.99		0.97	0.94		0.86		0.96
Frnt		0.977			0.976			0.951				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1685	4775	0	1560	4718	0	1605	1526	0	1829	1889	1590
Flt Permitted	0.264			0.171			0.677			0.660		
Satd. Flow (perm)	466	4775	0	276	4718	0	1114	1526	0	1095	1889	1523
Right Turn on Red			Yes		Yes			Yes				Yes
Satd. Flow (RTOR)		44			37			25				164
Link Speed (mph)		35			35			25				25
Link Distance (ft)		923			638			842				1379
Travel Time (s)		18.0			12.4			23.0				37.6
Confl. Peds. (#/hr)	7		66	66		7	30		161	161		30
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
Heavy Vehicles (%)	1%	1%	2%	13%	4%	5%	6%	34%	15%	3%	5%	6%
Adj. Flow (vph)	436	1226	222	108	637	121	20	92	44	147	124	50
Shared Lane Traffic (%)												
Lane Group Flow (vph)	436	1448	0	108	758	0	20	136	0	147	124	50
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		11			17			13			13	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.08	1.03	0.99	1.03	1.03	0.99	1.08	0.84	0.99	0.95	0.95	0.95
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1		1	1		1	1		1	1	1
Detector Template												
Leading Detector (ft)	40	0		40	0		40	40		40	0	40
Trailing Detector (ft)	0	0		0	0		0	0		0	0	0
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	0
Detector 1 Size(ft)	40	0		40	0		40	40		40	0	40
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA	Perm
Protected Phases	1	6		5	2		4	4		8		8
Permitted Phases	6			2			4			8		8
Detector Phase	1	6		5	2		4	4		8	8	8

Lanes, Volumes, Timings

7: Commonwealth Avenue & Forster Street

12/5/2014

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	3.0	3.0		3.0	3.0		5.0	5.0		5.0	5.0	5.0
Minimum Split (s)	9.0	9.0		9.0	9.0		11.0	11.0		11.0	11.0	11.0
Total Split (%)	32.0	47.0		17.0	32.0		36.0	36.0		36.0	36.0	36.0
Total Split (s)	32.0%	47.0%		17.0%	32.0%		36.0%	36.0%		36.0%	36.0%	36.0%
Maximum Green (s)	26.0	41.0		11.0	26.0		30.0	30.0		30.0	30.0	30.0
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)	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
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	1.0	1.0		1.0	1.0		3.0	3.0		3.0	3.0	3.0
Recall Mode	None	C-Max		None	C-Max		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)		17.0			14.0		22.0	22.0		22.0	22.0	22.0
Pedestrian Calls (#/hr)		10			10		25	25		25	25	25
Act Effct Green (s)	65.5	52.6		45.6	38.7		22.5	22.5		22.5	22.5	22.5
Actuated g/C Ratio	0.66	0.53		0.46	0.39		0.22	0.22		0.22	0.22	0.22
v/c Ratio	0.78	0.57		0.50	0.41		0.08	0.38		0.60	0.29	0.11
Control Delay	15.3	17.9		29.2	22.7		27.3	27.5		43.4	31.7	0.5
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	15.3	17.9		29.2	22.7		27.3	27.5		43.4	31.7	0.5
LOS	B	B		C	C		C	C		D	C	A
Approach Delay		17.3			23.5			27.5				32.2
Approach LOS		B			C			C				C
Queue Length 50th (ft)	196	308		43	74		9	54		77	60	0
Queue Length 95th (ft)	170	389		m90	127		28	105		139	107	0
Internal Link Dist (ft)		843			558			762			1299	
Turn Bay Length (ft)	275			250			150			150		
Base Capacity (vph)	624	2534		279	1849		334	475		328	566	571
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	0.70	0.57		0.39	0.41		0.06	0.29		0.45	0.22	0.09
Intersection Summary												
Area Type:	Other											
Cycle Length:	100											
Actuated Cycle Length:	100											
Offset:	0 (0%), Referenced to phase 2:WBT and 6:EBTL, Start of Green, Master Intersection											
Natural Cycle:	55											
Control Type:	Actuated-Coordinated											
Maximum v/c Ratio:	0.78											
Intersection Signal Delay:	20.9											
Intersection Capacity Utilization:	90.6%											
ICU Level of Service:	E											
Analysis Period (min)	15											
m	Volume for 95th percentile queue is metered by upstream signal.											

Lanes, Volumes, Timings

7: Commonwealth Avenue & Forster Street

12/5/2014

Splits and Phases: 7: Commonwealth Avenue & Forster Street



Lanes, Volumes, Timings

9: 7th Street & Forster Street

12/5/2014

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↑				↑↑		↑↑		↑↑	↑
Volume (vph)	0	960	302	0	0	0	531	0	428	0	169	285
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	16	12	12	12	12	12	12	12	12	12	12
Grade (%)		-1%				0%			0%			-1%
Storage Length (ft)	0		0	0		0	0		250	0		0
Storage Lanes	0		1	0		0	2		1	0		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	1.00	1.00	0.97	1.00	0.88	1.00	0.95	1.00
Ped Bike Factor			0.68				0.96		0.88			
Frt			0.850						0.850			0.850
Flt Protected							0.950					
Satd. Flow (prot)	0	4031	1576	0	0	0	3433	0	2842	0	3391	1489
Flt Permitted							0.950					
Satd. Flow (perm)	0	4031	1072	0	0	0	3294	0	2498	0	3391	1489
Right Turn on Red			Yes			Yes			Yes	Yes		Yes
Satd. Flow (RTOR)			336						22			317
Link Speed (mph)		35			25			25			25	
Link Distance (ft)		638			364			500			393	
Travel Time (s)		12.4			9.9			13.6			10.7	
Confl. Peds. (/hr)			258				28		78			
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
Heavy Vehicles (%)	0%	2%	3%	2%	2%	2%	2%	2%	0%	2%	7%	9%
Adj. Flow (vph)	0	1067	336	0	0	0	590	0	476	0	188	317
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1067	336	0	0	0	590	0	476	0	188	317
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		15			11			29			24	
Link Offset(ft)		-12			0			-8			12	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	0.99	0.84	0.99	1.00	1.00	1.00	1.00	1.00	1.00	0.99	0.99	0.99
Turning Speed (mph)		15		9	15		9	15		20	15	
Number of Detectors		1		1			1		1		1	1
Detector Template			Right									Right
Leading Detector (ft)		0	20				40		44		40	20
Trailing Detector (ft)		0	0				0		4		0	0
Detector 1 Position(ft)		0	0				0		4		0	0
Detector 1 Size(ft)		0	20				40		40		40	20
Detector 1 Type		Cl+Ex	Cl+Ex				Cl+Ex		Cl+Ex		Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)		0.0	0.0				0.0		0.0		0.0	0.0
Detector 1 Queue (s)		0.0	0.0				0.0		0.0		0.0	0.0
Detector 1 Delay (s)		0.0	0.0				0.0		0.0		0.0	0.0
Turn Type		NA	Perm				Prot		custom		NA	Perm
Protected Phases		2					3		8		4	
Permitted Phases			2						4			4
Detector Phase		2	2				3		8		4	4

Lanes, Volumes, Timings
 9: 7th Street & Forster Street

12/5/2014



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)		5.0	5.0				4.0		5.0		4.0	4.0
Minimum Split (s)		10.0	10.0				10.0		10.0		21.0	21.0
Total Split (s)		45.0	45.0				40.0		55.0		15.0	15.0
Total Split (%)		45.0%	45.0%				40.0%		55.0%		15.0%	15.0%
Maximum Green (s)		40.0	40.0				35.0		50.0		10.0	10.0
Yellow Time (s)		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
Lost Time Adjust (s)		0.0	0.0				0.0		0.0		0.0	0.0
Total Lost Time (s)		5.0	5.0				5.0		5.0		5.0	5.0
Lead/Lag							Lead				Lag	Lag
Lead-Lag Optimize?							Yes				Yes	Yes
Vehicle Extension (s)		3.0	3.0				3.0		3.0		3.0	3.0
Recall Mode		C-Max	C-Max				None		None		None	None
Walk Time (s)		7.0	7.0						7.0		5.0	5.0
Flash Dont Walk (s)		14.0	14.0						14.0		11.0	11.0
Pedestrian Calls (#/hr)		0	0						0		0	0
Act Effct Green (s)		50.7	50.7				23.0		39.3		11.3	11.3
Actuated g/C Ratio		0.51	0.51				0.23		0.39		0.11	0.11
v/c Ratio		0.52	0.47				0.75		0.42		0.49	0.71
Control Delay		32.3	18.7				41.8		21.3		36.2	16.6
Queue Delay		0.0	0.0				0.0		0.0		0.0	0.0
Total Delay		32.3	18.7				41.8		21.3		36.2	16.6
LOS		C	B				D		C		D	B
Approach Delay		29.0									23.9	
Approach LOS		C									C	
Queue Length 50th (ft)		334	110				181		118		49	45
Queue Length 95th (ft)		455	218				223		132		98	142
Internal Link Dist (ft)		558			284		420			313		
Turn Bay Length (ft)							250					
Base Capacity (vph)		2045	709				1201		1432		401	455
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		0.52	0.47				0.49		0.33		0.47	0.70

Intersection Summary

Area Type: Other

Cycle Length: 100

Actuated Cycle Length: 100

Offset: 56 (56%), Referenced to phase 2:EBT, Start of Green

Natural Cycle: 60

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.75

Intersection Signal Delay: 29.4

Intersection Capacity Utilization 58.0%

Analysis Period (min) 15

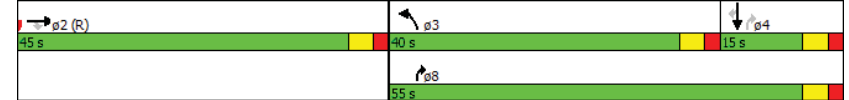
Intersection LOS: C

ICU Level of Service B

Lanes, Volumes, Timings
 9: 7th Street & Forster Street

12/5/2014

Splits and Phases: 9: 7th Street & Forster Street



Lanes, Volumes, Timings
11: 7th Street

12/5/2014

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations		↔↔			↔↔	↔↔
Volume (vph)	0	915	0	0	297	158
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	0%		0%			3%
Storage Length (ft)	100	0		0	0	
Storage Lanes	1	2		0	1	
Taper Length (ft)	75				25	
Lane Util. Factor	1.00	0.88	1.00	1.00	0.91	0.91
Fr _t		0.850				
Flt Protected					0.950	0.976
Satd. Flow (prot)	0	2814	0	0	1602	3291
Flt Permitted					0.950	0.976
Satd. Flow (perm)	0	2814	0	0	1602	3291
Link Speed (mph)	30		25		25	
Link Distance (ft)	359		483		304	
Travel Time (s)	8.2		13.2		8.3	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	0%	1%	0%	0%	1%	1%
Adj. Flow (vph)	0	963	0	0	313	166
Shared Lane Traffic (%)					50%	
Lane Group Flow (vph)	0	963	0	0	156	323
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	R NA	Left	Right	Left	Left
Median Width(ft)	5		12			17
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.02	1.02
Turning Speed (mph)	15	9		9	15	
Sign Control	Free		Free			Free

Intersection Summary
 Area Type: Other
 Control Type: Unsignalized
 Intersection Capacity Utilization 35.3%
 Analysis Period (min) 15

Lanes, Volumes, Timings
12: 7th Street

12/5/2014

Lane Group	NBT	NBR	SBL	SBT	SWL	SWR
Lane Configurations		↔↔		↔↔	↔↔	
Volume (vph)	0	54	0	158	596	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	0%			-3%	0%	
Lane Util. Factor	1.00	0.88	1.00	0.95	1.00	1.00
Fr _t		0.850				
Flt Protected					0.950	
Satd. Flow (prot)	0	2814	0	3628	1787	0
Flt Permitted					0.950	
Satd. Flow (perm)	0	2814	0	3628	1787	0
Link Speed (mph)	25			25	30	
Link Distance (ft)	236			483	432	
Travel Time (s)	6.4			13.2	9.8	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	0%	1%	0%	1%	1%	0%
Adj. Flow (vph)	0	57	0	166	627	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	57	0	166	627	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	L NA	Right
Median Width(ft)	5			0	17	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	0.98	0.98	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Yield	

Intersection Summary
 Area Type: Other
 Control Type: Unsignalized
 Intersection Capacity Utilization 44.1%
 Analysis Period (min) 15

Lanes, Volumes, Timings
13: State Street

12/5/2014

Lane Group	EBL	EBT	WBT	WBR	SEL	SER
Lane Configurations		↑↑	↑	↑	↑↑	
Volume (vph)	0	54	596	915	297	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	0.95	1.00	1.00	0.97	1.00
Frt			0.850			
Flt Protected					0.950	
Satd. Flow (prot)	0	3574	1881	1599	3502	0
Flt Permitted					0.950	
Satd. Flow (perm)	0	3574	1881	1599	3502	0
Link Speed (mph)		30	35		30	
Link Distance (ft)		432	1119		359	
Travel Time (s)		9.8	21.8		8.2	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	0%	1%	1%	1%	0%	0%
Adj. Flow (vph)	0	57	627	963	313	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	57	627	963	313	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		10	5		36	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	0		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			15	15	9
Sign Control		Free	Free		Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	60.0%		ICU Level of Service B			
Analysis Period (min)	15					

Lanes, Volumes, Timings
14: 7th Street & Herr Street

12/5/2014

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations				↑	↑			↑↑	↑	↑	↑	↑
Volume (vph)	0	0	0	376	20	343	29	658	312	139	340	16
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	10	11	12	12	11	12	16	13	16
Grade (%)		0%			4%			0%				0%
Storage Length (ft)	0		0	460		0	0		150	100		0
Storage Lanes	0		0	1		0	1		1	1		0
Taper Length (ft)	25		25			25			50			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	0.95
Ped Bike Factor				0.97	0.96		0.80		0.65	0.92		0.98
Frt					0.858				0.850			0.993
Flt Protected				0.950		0.950		0.950		0.950		
Satd. Flow (prot)	0	0	0	1603	1449	0	1805	3388	1553	1810	3479	0
Flt Permitted				0.950		0.529		0.247				
Satd. Flow (perm)	0	0	0	1562	1449	0	802	3388	1005	435	3479	0
Right Turn on Red			Yes		Yes			Yes			Yes	Yes
Satd. Flow (RTOR)				221				328			7	
Link Speed (mph)		30		25		25		25		25		25
Link Distance (ft)		299		1969		305		3799			3799	
Travel Time (s)		6.8		53.7		8.3		103.6			103.6	
Confl. Peds. (#/hr)	23		23	23		23	129		129	129		129
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	0%	0%	0%	3%	0%	3%	0%	3%	4%	13%	5%	0%
Adj. Flow (vph)	0	0	0	396	21	361	31	693	328	146	358	17
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	396	382	0	31	693	328	146	375	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		10		10		17		17		17		17
Link Offset(ft)		0		0		0		0		0		0
Crosswalk Width(ft)		16		16		16		16		16		16
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.12	1.07	1.03	1.00	1.04	1.00	0.85	0.96	0.85
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors				1	1		1	1	1	1	1	1
Detector Template							Left		Right		Left	
Leading Detector (ft)				0	0		20	0	20	20	0	0
Trailing Detector (ft)				0	0		0	0	0	0	0	0
Detector 1 Position(ft)				0	0		0	0	0	0	0	0
Detector 1 Size(ft)				0	0		20	0	20	20	0	0
Detector 1 Type				CI+Ex	CI+Ex		CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex
Detector 1 Channel												
Detector 1 Extend (s)				0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)				0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)				0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Turn Type				Split	NA		Perm	NA	Perm	pm+pt	NA	
Protected Phases				4	4		2		2	1	6	
Permitted Phases							2		2	6		
Detector Phase				4	4		2	2	2	1	6	

Lanes, Volumes, Timings
 14: 7th Street & Herr Street

12/5/2014

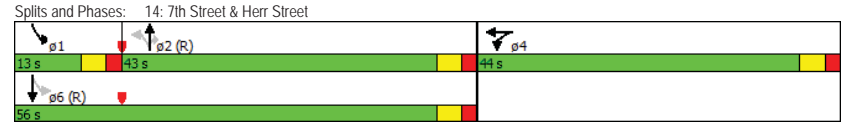
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)				10.0	10.0		10.0	10.0	10.0	3.0	10.0	
Minimum Split (s)				15.0	15.0		15.0	15.0	15.0	8.0	15.0	
Total Split (s)				44.0	44.0		43.0	43.0	43.0	13.0	56.0	
Total Split (%)				44.0%	44.0%		43.0%	43.0%	43.0%	13.0%	56.0%	
Maximum Green (s)				39.0	39.0		38.0	38.0	38.0	8.0	51.0	
Yellow Time (s)				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	
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	5.0	5.0	5.0	5.0	
Lead/Lag							Lag	Lag	Lag	Lead		
Lead-Lag Optimize?							Yes	Yes	Yes	Yes		
Vehicle Extension (s)				3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Recall Mode				Max	Max		C-Max	C-Max	C-Max	None	C-Max	
Walk Time (s)				7.0	7.0		7.0	7.0	7.0		7.0	
Flash Dont Walk (s)				20.0	20.0		12.0	12.0	12.0		12.0	
Pedestrian Calls (#/hr)				0	0		0	0	0		0	
Act Effct Green (s)				39.0	39.0		38.2	38.2	38.2	51.0	51.0	
Actuated g/C Ratio				0.39	0.39		0.38	0.38	0.38	0.51	0.51	
v/c Ratio				0.63	0.55		0.10	0.54	0.56	0.45	0.21	
Control Delay				30.3	12.7		24.9	30.8	15.2	17.6	13.6	
Queue Delay				0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay				30.3	12.7		24.9	30.8	15.2	17.6	13.6	
LOS				C	B		C	C	B	B	B	
Approach Delay					21.7			25.7			14.7	
Approach LOS					C			C			B	
Queue Length 50th (ft)				201	71		14	214	86	47	64	
Queue Length 95th (ft)				305	162		m33	291	170	82	92	
Internal Link Dist (ft)		219			1889			225			3719	
Turn Bay Length (ft)				460				150	100			
Base Capacity (vph)				625	699		306	1294	586	331	1777	
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				0.63	0.55		0.10	0.54	0.56	0.44	0.21	

Intersection Summary

Area Type: Other
 Cycle Length: 100
 Actuated Cycle Length: 100
 Offset: 22 (22%), Referenced to phase 2:NBT and 6:SBTL, Start of Green
 Natural Cycle: 55
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.63
 Intersection Signal Delay: 21.9 Intersection LOS: C
 Intersection Capacity Utilization 62.7% ICU Level of Service B
 Analysis Period (min) 15
 m Volume for 95th percentile queue is metered by upstream signal.

Lanes, Volumes, Timings
 14: 7th Street & Herr Street

12/5/2014



Lanes, Volumes, Timings
15: 7th Street

12/5/2014

	↙	↖	↑	↗	↘	↓
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations		↗ ↘ ↙ ↘	↗ ↘ ↙ ↘			
Volume (vph)	0	2	952	436	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	0.91	0.91	1.00	1.00
Frt		0.865	0.953			
Flt Protected						
Satd. Flow (prot)	0	1644	4846	0	0	0
Flt Permitted						
Satd. Flow (perm)	0	1644	4846	0	0	0
Link Speed (mph)	30		25			30
Link Distance (ft)	748		364			303
Travel Time (s)	17.0		9.9			6.9
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	0%	0%	2%	2%	0%	0%
Adj. Flow (vph)	0	2	1058	484	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	2	1542	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	0		0			0
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	38.1%		ICU Level of Service A			
Analysis Period (min)	15					

Lanes, Volumes, Timings
16: 7th Street

12/5/2014

	↑	↖	↙	↓	↗	↘
Lane Group	NBT	NBR	SBL	SBT	NWL	NWR
Lane Configurations				↗ ↘ ↙ ↘		↗ ↘ ↙ ↘
Volume (vph)	0	0	0	454	0	954
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	0.91	1.00	0.76
Frt						0.850
Flt Protected						
Satd. Flow (prot)	0	0	0	5085	0	3610
Flt Permitted						
Satd. Flow (perm)	0	0	0	5085	0	3610
Link Speed (mph)	25			25		30
Link Distance (ft)	393			305		303
Travel Time (s)	10.7			8.3		6.9
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	493	0	1037
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	493	0	1037
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			5		0
Link Offset(ft)	0			0		0
Crosswalk Width(ft)	16			16		16
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	35
Sign Control	Free			Free		Free
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	25.6%		ICU Level of Service A			
Analysis Period (min)	15					

Queuing and Blocking Report
Morning Peak Hour

12/5/2014

Intersection: 1: 2nd Street & Division Street

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	174	168	208	106
Average Queue (ft)	92	69	93	36
95th Queue (ft)	157	130	171	76
Link Distance (ft)	344	3247	4863	1642
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 2: 2nd Street & Maclay Street

Movement	EB	WB	NB	SB
Directions Served	LT	LTR	LTR	LTR
Maximum Queue (ft)	85	139	227	86
Average Queue (ft)	36	61	102	30
95th Queue (ft)	73	116	175	67
Link Distance (ft)	334	2957	5299	4863
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 3: 7th Street & Maclay Street

Movement	EB	EB	WB	WB	WB	NB	NB	NB	B34
Directions Served	L	TR	L	T	R	L	T	TR	T
Maximum Queue (ft)	149	1236	357	229	139	108	230	363	6
Average Queue (ft)	16	739	159	75	62	24	95	152	0
95th Queue (ft)	80	1353	285	173	115	71	175	259	5
Link Distance (ft)		2957		827	827		414	414	3736
Upstream Blk Time (%)							0	0	
Queuing Penalty (veh)							0	0	
Storage Bay Dist (ft)		75		250			100		
Storage Blk Time (%)		0	54	4	0		0	9	
Queuing Penalty (veh)		1	6	18	0		0	2	

Queuing and Blocking Report
Morning Peak Hour

12/5/2014

Intersection: 4: Front Street & Forster Street

Movement	EB	EB	EB	EB	B18	B18	WB	WB	B37	B37	B37	SB
Directions Served	T	T	T	R	T	T	LT	T	T	T	T	LT
Maximum Queue (ft)	199	199	221	100	198	212	175	176	142	174	90	384
Average Queue (ft)	164	124	183	86	54	56	131	136	30	38	5	258
95th Queue (ft)	218	181	237	137	157	156	202	210	104	121	49	344
Link Distance (ft)	113	113	113		4155	4155	98	98	140	140	140	549
Upstream Blk Time (%)	19	8	19	3			19	17	0	1	0	
Queuing Penalty (veh)	0	0	0	0			90	85	1	3	1	
Storage Bay Dist (ft)				50								
Storage Blk Time (%)				32								
Queuing Penalty (veh)				144								

Intersection: 4: Front Street & Forster Street

Movement	SB	SB	SB
Directions Served	T	T	R
Maximum Queue (ft)	356	314	320
Average Queue (ft)	256	222	146
95th Queue (ft)	339	298	275
Link Distance (ft)	549	549	
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			300
Storage Blk Time (%)		0	1
Queuing Penalty (veh)		1	3

Queuing and Blocking Report
Morning Peak Hour

12/5/2014

Intersection: 5: 2nd Street & Forster Street

Movement	EB	EB	EB	EB	B37	B37	B37	B37	WB	WB	WB	NB
Directions Served	L	T	T	T	T	T	T	T	T	T	TR	L
Maximum Queue (ft)	184	225	215	215	20	112	107	121	248	274	64	128
Average Queue (ft)	86	152	147	147	1	19	16	18	118	128	18	61
95th Queue (ft)	153	251	250	255	12	74	68	71	230	255	49	107
Link Distance (ft)	140	140	140	140	98	98	98	98	748	748	748	2870
Upstream Blk Time (%)	2	12	13	13		1	0	0				
Queuing Penalty (veh)	9	51	54	56		3	2	2				
Storage Bay Dist (ft)												
Storage Blk Time (%)												
Queuing Penalty (veh)												

Intersection: 5: 2nd Street & Forster Street

Movement	NB	NB	NB	SB
Directions Served	L	T	R	R
Maximum Queue (ft)	136	358	259	151
Average Queue (ft)	61	188	127	77
95th Queue (ft)	119	308	224	129
Link Distance (ft)	2870	2870	2870	5299
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 6: 3rd Street & Forster Street

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	SB	
Directions Served	L	T	T	TR	L	T	T	TR	LT	R	LTR	
Maximum Queue (ft)	129	316	336	326	159	153	181	136	188	108	201	
Average Queue (ft)	40	130	149	147	65	55	85	39	91	50	103	
95th Queue (ft)	90	262	286	290	133	128	168	101	163	87	179	
Link Distance (ft)		748	748	748		832	832	832	891	891	1353	
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	225									225		
Storage Blk Time (%)	2											
Queuing Penalty (veh)	2											

Queuing and Blocking Report
Morning Peak Hour

12/5/2014

Intersection: 7: Commonwealth Avenue & Forster Street

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	T	TR	L	T	T	TR	L	TR	L	T
Maximum Queue (ft)	264	485	533	490	182	251	262	231	105	192	195	700
Average Queue (ft)	123	192	273	222	67	128	131	128	15	82	137	349
95th Queue (ft)	237	429	493	436	143	233	232	217	61	158	232	1076
Link Distance (ft)		832	832	832		536	536	536		773		1321
Upstream Blk Time (%)	7											
Queuing Penalty (veh)	0											
Storage Bay Dist (ft)	275	250						150		150		
Storage Blk Time (%)	0	1	0						2		38	
Queuing Penalty (veh)	1	4	0						0		43	

Intersection: 7: Commonwealth Avenue & Forster Street

Movement	SB
Directions Served	R
Maximum Queue (ft)	598
Average Queue (ft)	153
95th Queue (ft)	744
Link Distance (ft)	1321
Upstream Blk Time (%)	3
Queuing Penalty (veh)	0
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 9: 7th Street & Forster Street

Movement	EB	EB	EB	NB	NB	NB	NB	SB	SB
Directions Served	T	T	R	L	L	R	R	T	T
Maximum Queue (ft)	546	565	449	385	391	131	118	179	169
Average Queue (ft)	300	417	46	213	229	4	5	61	79
95th Queue (ft)	624	640	290	348	366	68	67	141	144
Link Distance (ft)	536	536	536	425	425	425		310	310
Upstream Blk Time (%)	1	10	1	0	0				
Queuing Penalty (veh)	6	41	4	0	0				
Storage Bay Dist (ft)								250	
Storage Blk Time (%)								0 0	
Queuing Penalty (veh)								0 0	

Queuing and Blocking Report
Morning Peak Hour

12/5/2014

Intersection: 11: 7th Street

Movement	WB	WB	B10
Directions Served	R	R	T
Maximum Queue (ft)	36	25	11
Average Queue (ft)	3	1	0
95th Queue (ft)	18	11	8
Link Distance (ft)		232	425
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)	100		
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 12: 7th Street

Movement	SW
Directions Served	L
Maximum Queue (ft)	85
Average Queue (ft)	16
95th Queue (ft)	58
Link Distance (ft)	329
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 13: State Street

Movement	WB	SE	SE
Directions Served	R	L	L
Maximum Queue (ft)	8	145	178
Average Queue (ft)	0	64	82
95th Queue (ft)	5	117	140
Link Distance (ft)	1104	232	232
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Queuing and Blocking Report
Morning Peak Hour

12/5/2014

Intersection: 14: 7th Street & Herr Street

Movement	WB	WB	NB	NB	NB	NB	SB	SB	SB
Directions Served	L	TR	L	T	T	R	L	T	TR
Maximum Queue (ft)	361	256	51	245	258	223	140	153	158
Average Queue (ft)	170	111	15	154	159	104	72	50	84
95th Queue (ft)	294	203	41	230	241	206	125	115	137
Link Distance (ft)		1911	243	243	243			3736	3736
Upstream Blk Time (%)				0	1	0			
Queuing Penalty (veh)				1	2	0			
Storage Bay Dist (ft)	460					150	100		
Storage Blk Time (%)					9	1	5	0	
Queuing Penalty (veh)					29	2	8	1	

Intersection: 15: 7th Street

Movement	WB	NB	NB
Directions Served	R	T	TR
Maximum Queue (ft)	20	195	34
Average Queue (ft)	2	11	1
95th Queue (ft)	10	106	24
Link Distance (ft)	678	290	290
Upstream Blk Time (%)		1	
Queuing Penalty (veh)		5	
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 16: 7th Street

Movement	NW	NW
Directions Served	R	R
Maximum Queue (ft)	14	72
Average Queue (ft)	0	5
95th Queue (ft)	6	43
Link Distance (ft)	254	254
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Network Summary

Network wide Queuing Penalty: 686

Lanes, Volumes, Timings
1: 2nd Street & Division Street

12/4/2014

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	3	66	8	94	766	26	442	114	95	24	13	60
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	16	12	10	10	10	10	16	10
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	
Frt		0.986			0.996			0.980			0.917	
Flt Protected		0.998			0.995			0.967			0.988	
Satd. Flow (prot)	0	1668	0	0	2113	0	0	1664	0	0	1888	0
Flt Permitted		0.977			0.954			0.744			0.837	
Satd. Flow (perm)	0	1633	0	0	2026	0	0	1279	0	0	1600	0
Right Turn on Red			Yes		Yes		Yes		Yes		Yes	
Satd. Flow (RTOR)		7			2			9			63	
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		381			3285			4939			1680	
Travel Time (s)		10.4			89.6			134.7			45.8	
Confl. Peds. (#/hr)							1		1	1		1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	0%	1%	0%	0%	1%	4%	0%	3%	1%	8%	0%	0%
Parking (#/hr)		0										
Adj. Flow (vph)	3	69	8	99	806	27	465	120	100	25	14	63
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	80	0	0	932	0	0	685	0	0	102	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			10	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.14	1.00	1.00	0.85	1.00	1.09	1.09	1.09	1.09	0.85	1.09
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			6			2	
Permitted Phases	4			8			6			2		
Minimum Split (s)	9.0	9.0		9.0	9.0		9.0	9.0		9.0	9.0	
Total Split (s)	65.0	65.0		65.0	65.0		55.0	55.0		55.0	55.0	
Total Split (%)	54.2%	54.2%		54.2%	54.2%		45.8%	45.8%		45.8%	45.8%	
Maximum Green (s)	60.0	60.0		60.0	60.0		50.0	50.0		50.0	50.0	
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)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		5.0			5.0			5.0			5.0	
Lead/Lag												
Lead-Lag Optimize?												
Act Effct Green (s)		60.0			60.0			50.0			50.0	
Actuated g/C Ratio		0.50			0.50			0.42			0.42	
v/c Ratio		0.10			0.92			1.27			0.15	
Control Delay		14.8			43.0			168.3			10.0	
Queue Delay		0.0			0.0			0.0			0.0	


Lanes, Volumes, Timings
1: 2nd Street & Division Street

12/4/2014

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay		14.8			43.0			168.3			10.0	
LOS		B			D			F			B	
Approach Delay		14.8			43.0			168.3			10.0	
Approach LOS		B			D			F			B	
Intersection Summary												
Area Type: Other												
Cycle Length: 120												
Actuated Cycle Length: 120												
Offset: 0 (0%), Referenced to phase 6:NBT, Start of Green												
Natural Cycle: 120												
Control Type: Pretimed												
Maximum v/c Ratio: 1.27												
Intersection Signal Delay: 87.6												
Intersection LOS: F												
Intersection Capacity Utilization 105.0%												
ICU Level of Service G												
Analysis Period (min) 15												
Splits and Phases: 1: 2nd Street & Division Street												

Lanes, Volumes, Timings
2: 2nd Street & Maclay Street


12/4/2014



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Volume (vph)	8	48	0	95	122	65	8	688	174	0	201	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	16	12	12	16	12	12	11	12	12	12	12
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				
Frt					0.969			0.973				
Flt Protected		0.993			0.983							
Satd. Flow (prot)	0	2138	0	0	2012	0	0	1758	0	0	1900	0
Flt Permitted		0.956			0.864			0.998				
Satd. Flow (perm)	0	2058	0	0	1766	0	0	1755	0	0	1900	0
Right Turn on Red		Yes		Yes	Yes		Yes	Yes		Yes		Yes
Satd. Flow (RTOR)					19			39				
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		360			3029			5401			4939	
Travel Time (s)		9.8			82.6			147.3			134.7	
Confl. Peds. (#/hr)	4		4	4		4	10		10			
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	0%	0%	0%	0%	2%	2%	13%	1%	0%	0%	0%	0%
Parking (#/hr)							0	0				
Adj. Flow (vph)	8	51	0	100	128	68	8	724	183	0	212	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	59	0	0	296	0	0	915	0	0	212	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		11			11			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	0.85	1.00	1.00	0.85	1.00	1.00	1.04	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1		1	1		1	1		1	0	
Detector Template	Left			Left			Left			Left		
Leading Detector (ft)	20	50		20	50		20	50		20	0	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	50		20	50		20	50		20	6	
Detector 1 Type	CI+Ex	CI+Ex		CI+Ex	CI+Ex		CI+Ex	CI+Ex		CI+Ex	CI+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Turn Type	Perm	NA		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		4.0	4.0	
Minimum Split (s)	8.0	8.0		8.0	8.0		8.0	8.0		21.0	21.0	

Lanes, Volumes, Timings
2: 2nd Street & Maclay Street

12/4/2014



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Split (s)	18.0	18.0		18.0	18.0		52.0	52.0		52.0	52.0	
Total Split (%)	25.7%	25.7%		25.7%	25.7%		74.3%	74.3%		74.3%	74.3%	
Maximum Green (s)	13.0	13.0		13.0	13.0		47.0	47.0		47.0	47.0	
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)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		5.0			5.0			5.0			5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	C-Min	C-Min		C-Min	C-Min		None	None		None	None	
Walk Time (s)	10.0	10.0		10.0	10.0		10.0	10.0		10.0	10.0	
Flash Dont Walk (s)	15.0	15.0		15.0	15.0		12.0	12.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)		16.3			16.3			43.7			43.7	
Actuated g/C Ratio		0.23			0.23			0.62			0.62	
v/c Ratio		0.12			0.70			0.82			0.18	
Control Delay		24.5			36.5			16.6			5.3	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		24.5			36.5			16.6			5.3	
LOS		C			D			B			A	
Approach Delay		24.5			36.5			16.6			5.3	
Approach LOS		C			D			B			A	
Intersection Summary												
Area Type:	Other											
Cycle Length:	70											
Actuated Cycle Length:	70											
Offset:	0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green, Master Intersection											
Natural Cycle:	55											
Control Type:	Actuated-Coordinated											
Maximum v/c Ratio:	0.82											
Intersection Signal Delay:	19.3											
Intersection Capacity Utilization:	84.3%											
ICU Level of Service E												
Analysis Period (min)	15											
Splits and Phases: 2: 2nd Street & Maclay Street												
EBL	18 s	0 s	0 s	0 s	0 s	0 s	0 s	0 s	0 s	0 s	0 s	0 s
EBT		52 s										
EBR			18 s									
WBL				18 s	18 s							
WBT					52 s							
WBR						18 s						
NBL							52 s					
NBT								52 s				
NBR									52 s			
SBL										4 s	4 s	
SBT												4 s
SBR												

Lanes, Volumes, Timings
3: 7th Street & Maclay Street

12/4/2014

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Volume (vph)	5	775	153	88	425	278	66	843	592	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	12	12	10	11	11	11	11	14	11	13	12
Grade (%)		-3%			-3%			-1%			-1%	
Storage Length (ft)	75		0	250		0	100		0	0		200
Storage Lanes	1		0	1		1	1		0	0		0
Taper Length (ft)	75			300			100			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	1.00	1.00
Ped Bike Factor	1.00	1.00					0.99	0.99				
Frt		0.975				0.850		0.938				
Flt Protected	0.950			0.950			0.950					
Satd. Flow (prot)	1771	1858	0	1660	1846	1554	1754	3212	0	0	0	0
Flt Permitted	0.470			0.072			0.950					
Satd. Flow (perm)	875	1858	0	126	1846	1532	1730	3212	0	0	0	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		10				58		167				
Link Speed (mph)		25			35			25			25	
Link Distance (ft)		3029			877			479			2587	
Travel Time (s)		82.6			17.1			13.1			70.6	
Confl. Peds. (#/hr)	1		1	1		1	5		5	5		5
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
Heavy Vehicles (%)	0%	1%	0%	3%	1%	2%	0%	1%	1%	0%	0%	0%
Adj. Flow (vph)	5	807	159	92	443	290	69	878	617	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	5	966	0	92	443	290	69	1495	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		11			11			11			11	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.02	0.98	0.98	1.07	1.02	1.02	1.04	1.04	0.91	1.04	0.95	0.99
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1		1	1	1	1	1				
Detector Template				Left		Right	Left					
Leading Detector (ft)	50	50		50	50	50	50	50				
Trailing Detector (ft)	0	0		0	0	0	0	0				
Detector 1 Position(ft)	0	0		0	0	0	0	0				
Detector 1 Size(ft)	50	50		50	50	50	50	50				
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex				
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0				
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0				
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0				
Turn Type	Perm	NA		pm+pt	NA	Perm	Perm	NA				
Protected Phases		4		3	8			2				
Permitted Phases	4			8		8	2					
Detector Phase	4	4		3	8	8	2	2				

Lanes, Volumes, Timings
3: 7th Street & Maclay Street

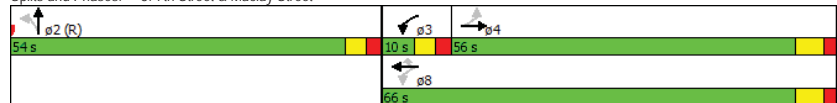
12/4/2014

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	3.0	3.0		3.0	3.0	3.0	10.0	10.0				
Minimum Split (s)	9.0	9.0		8.4	9.0	9.0	15.4	15.4				
Total Split (s)	56.0	56.0		10.0	66.0	66.0	54.0	54.0				
Total Split (%)	46.7%	46.7%		8.3%	55.0%	55.0%	45.0%	45.0%				
Maximum Green (s)	50.0	50.0		4.6	60.0	60.0	48.6	48.6				
Yellow Time (s)	4.0	4.0		3.0	4.0	4.0	3.0	3.0				
All-Red Time (s)	2.0	2.0		2.4	2.0	2.0	2.4	2.4				
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0				
Total Lost Time (s)	6.0	6.0		5.4	6.0	6.0	5.4	5.4				
Lead/Lag	Lag	Lag		Lead								
Lead-Lag Optimize?	Yes	Yes		Yes								
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0				
Recall Mode	None	None		None	None	None	C-Min	C-Min				
Walk Time (s)	7.0	7.0		11.0	7.0	7.0	7.0	7.0				
Flash Dont Walk (s)	15.0	15.0		0.0	15.0	15.0	15.0	15.0				
Pedestrian Calls (#/hr)	0	0		0	0	0	0	0				
Act Effct Green (s)	50.0	50.0		60.6	60.0	60.0	48.6	48.6				
Actuated g/C Ratio	0.42	0.42		0.50	0.50	0.50	0.40	0.40				
v/c Ratio	0.01	1.24		0.75	0.48	0.36	0.10	1.07				
Control Delay	20.8	150.1		53.8	21.9	15.9	38.9	88.7				
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0				
Total Delay	20.8	150.1		53.8	21.9	15.9	38.9	88.7				
LOS	C	F		D	C	B	D	F				
Approach Delay		149.4			23.4			86.5				
Approach LOS		F			C			F				

Intersection Summary

Area Type: Other
 Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 0 (0%), Referenced to phase 2:NBT and 6.; Start of Green
 Natural Cycle: 130
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 1.24
 Intersection Signal Delay: 89.2
 Intersection Capacity Utilization 111.5%
 Analysis Period (min) 15
 Intersection LOS: F
 ICU Level of Service H

Splits and Phases: 3: 7th Street & Maclay Street



Lanes, Volumes, Timings
 4: Front Street & Forster Street

12/4/2014

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	891	245	0	1947	0	0	0	0	72	744	236
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	11	11
Grade (%)	-3%			-1%			-1%			0%		
Storage Length (ft)	75	50		0	0	0	0	0	0	0		300
Storage Lanes	0	1	0	0	0	0	0	0	0	0		1
Taper Length (ft)	75	25		25		25		25		25		
Lane Util. Factor	1.00	0.91	1.00	1.00	0.95	1.00	1.00	1.00	1.00	0.91	0.91	1.00
Ped Bike Factor	0.95		0.95		0.95		0.95		1.00		0.98	
Frt	0.850						0.850					
Flt Protected	0.996						0.996					
Satd. Flow (prot)	0	4920	1623	0	3328	0	0	0	0	0	4806	1501
Flt Permitted	0.996											
Satd. Flow (perm)	0	4920	1546	0	3328	0	0	0	0	0	4803	1471
Right Turn on Red	Yes			Yes			Yes			Yes		
Satd. Flow (RTOR)	36			36			36			36		
Link Speed (mph)	50			35			35			35		
Link Distance (ft)	192			146			595			709		
Travel Time (s)	2.6			2.8			11.6			13.8		
Confl. Peds. (#/hr)	18	18		18	18		18		4		4	
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
Heavy Vehicles (%)	0%	7%	1%	0%	9%	0%	0%	0%	0%	3%	4%	4%
Adj. Flow (vph)	0	928	255	0	2028	0	0	0	0	75	775	246
Shared Lane Traffic (%)	0											
Lane Group Flow (vph)	0	928	255	0	2028	0	0	0	0	0	850	246
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Right	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)	16			5			0			0		
Link Offset(ft)	5			0			0			0		
Crosswalk Width(ft)	16			16			16			16		
Two way Left Turn Lane	No											
Headway Factor	0.98	0.98	0.98	0.99	0.99	0.99	0.99	0.99	0.99	1.00	1.04	1.04
Turning Speed (mph)	15	9		15	9		15		9		15	9
Turn Type	NA		Perm		NA		NA		Perm		NA	
Protected Phases	2			6			4			4		
Permitted Phases	2			4			4			4		
Minimum Split (s)	17.0		17.0		17.0		17.0		17.0		17.0	
Total Split (s)	82.0		82.0		82.0		38.0		38.0		38.0	
Total Split (%)	68.3%		68.3%		68.3%		31.7%		31.7%		31.7%	
Maximum Green (s)	75.0		75.0		75.0		31.0		31.0		31.0	
Yellow Time (s)	4.0		4.0		4.0		4.0		4.0		4.0	
All-Red Time (s)	3.0		3.0		3.0		3.0		3.0		3.0	
Lost Time Adjust (s)	0.0		0.0		0.0		0.0		0.0		0.0	
Total Lost Time (s)	7.0		7.0		7.0		7.0		7.0		7.0	
Lead/Lag	0											
Lead-Lag Optimize?	No											
Walk Time (s)	8.0			8.0			8.0			8.0		
Flash Dont Walk (s)	10.0		10.0		10.0		10.0		10.0		10.0	

Lanes, Volumes, Timings
 4: Front Street & Forster Street

12/4/2014

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Pedestrian Calls (#/hr)	0	0	0		0		0		0		0	0
Act Effct Green (s)	75.0	75.0	75.0		75.0		75.0		75.0		31.0	31.0
Actuated g/C Ratio	0.62	0.62	0.62		0.62		0.62		0.62		0.26	0.26
v/c Ratio	0.30	0.26	0.97		0.97		0.97		0.97		0.69	0.61
Control Delay	10.7	9.3	34.2		34.2		34.2		34.2		43.5	40.4
Queue Delay	0.0	0.0	41.9		41.9		41.9		41.9		0.0	0.0
Total Delay	10.7	9.3	76.1		76.1		76.1		76.1		43.5	40.4
LOS	B	A	E		E		E		E		D	D
Approach Delay	10.4		76.1		76.1		76.1		76.1		42.8	
Approach LOS	B		E		E		E		E		D	
Intersection Summary	Area Type: Other Cycle Length: 120 Actuated Cycle Length: 120 Offset: 102 (85%), Referenced to phase 2:EBT and 6:WBT, Start of Green Natural Cycle: 90 Control Type: Pretimed Maximum v/c Ratio: 0.97 Intersection Signal Delay: 49.6 Intersection Capacity Utilization: 81.3% Intersection LOS: D ICU Level of Service: D Analysis Period (min): 15											

Splits and Phases: 4: Front Street & Forster Street

Lanes, Volumes, Timings
5: 2nd Street & Forster Street

12/4/2014

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↩↩	↩↩↩	↩	↩	↩↩↩	↩	↩↩	↩	↩	↩	↩	↩↩
Volume (vph)	233	719	0	0	1019	69	435	531	641	0	0	470
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	12	12	11	12	11	11	10	10	10	10
Grade (%)		0%			-1%			-1%			0%	
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	0.91	0.97	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor					0.99	0.99	0.99	0.98				
Frt					0.991			0.850				0.865
Flt Protected	0.950						0.950					
Satd. Flow (prot)	1745	4686	0	0	4703	0	3368	1810	1471	0	0	1534
Flt Permitted	0.099						0.950					
Satd. Flow (perm)	182	4686	0	0	4703	0	3347	1810	1444	0	0	1534
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					9				119			367
Link Speed (mph)		35			35			25			25	
Link Distance (ft)		211			828			2093			5401	
Travel Time (s)		4.1			16.1			57.1			147.3	
Confl. Peds. (#/hr)	20		20	20		20	5		5			
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
Heavy Vehicles (%)	0%	7%	0%	0%	6%	0%	1%	2%	3%	0%	0%	0%
Adj. Flow (vph)	240	741	0	0	1051	71	448	547	661	0	0	485
Shared Lane Traffic (%)												
Lane Group Flow (vph)	240	741	0	0	1122	0	448	547	661	0	0	485
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Right	Right	Left	Left	Right	Left	Right	Left	Left	Left	Right
Median Width(ft)		29			17			22			22	
Link Offset(ft)		0			6			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.04	1.04	1.00	0.99	1.04	0.99	1.04	1.09	1.09	1.09	1.09	1.09
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2			1		1	1	1			1
Detector Template	Left	Left			Left		Left	Right				Right
Leading Detector (ft)	40	246			0		40	40	40			20
Trailing Detector (ft)	0	0			0		0	0	0			0
Detector 1 Position(ft)	0	0			0		0	0	0			0
Detector 1 Size(ft)	40	0			0		40	40	40			20
Detector 1 Type	CI+Ex	CI+Ex			CI+Ex		CI+Ex	CI+Ex	CI+Ex			CI+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0			0.0		0.0	0.0	0.0			0.0
Detector 1 Queue (s)	0.0	0.0			0.0		0.0	0.0	0.0			0.0
Detector 1 Delay (s)	0.0	0.0			0.0		0.0	0.0	0.0			0.0
Detector 2 Position(ft)		240										
Detector 2 Size(ft)		6										
Detector 2 Type		CI+Ex										
Detector 2 Channel												
Detector 2 Extend (s)		0.0										
Turn Type	pm+pt	NA			NA		pm+pt	NA	Perm			Perm
Protected Phases	5	2			6		7	4				

Lanes, Volumes, Timings
5: 2nd Street & Forster Street

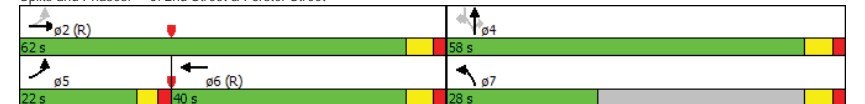
12/4/2014

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	2						4		4			4
Detector Phase	5	2				6		7	4	4		4
Switch Phase												
Minimum Initial (s)	5.0	5.0			5.0		4.0	5.0	5.0			5.0
Minimum Split (s)	11.0	34.0			35.0		11.0	34.0	34.0			34.0
Total Split (s)	22.0	62.0			40.0		28.0	58.0	58.0			58.0
Total Split (%)	18.3%	51.7%			33.3%		23.3%	48.3%	48.3%			48.3%
Maximum Green (s)	17.0	56.0			34.0		22.0	52.0	52.0			52.0
Yellow Time (s)	3.0	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
Lost Time Adjust (s)	0.0	0.0			0.0		0.0	0.0	0.0			0.0
Total Lost Time (s)	5.0	6.0			6.0		6.0	6.0	6.0			6.0
Lead/Lag	Lead				Lag							
Lead-Lag Optimize?	Yes				Yes							
Vehicle Extension (s)	4.0	5.0			3.0		3.0	5.0	5.0			5.0
Recall Mode	None	C-Max			C-Max		None	None	None			None
Walk Time (s)		7.0			8.0			7.0	7.0			7.0
Flash Dont Walk (s)		21.0			10.0			21.0	21.0			21.0
Pedestrian Calls (#/hr)		0			0			0	0			0
Act Effct Green (s)	57.0	56.0			35.3		52.0	52.0	52.0			52.0
Actuated g/C Ratio	0.48	0.47			0.29		0.43	0.43	0.43			0.43
v/c Ratio	0.83	0.34			0.81		0.31	0.70	0.95			0.56
Control Delay	40.6	12.2			59.5		23.0	33.4	52.3			8.6
Queue Delay	0.0	0.2			0.0		1.0	0.0	0.0			18.8
Total Delay	40.6	12.4			59.5		23.9	33.4	52.3			27.3
LOS	D	B			E		C	C	D			C
Approach Delay		19.3			59.5			38.4				
Approach LOS		B			E			D				

Intersection Summary

Area Type: Other
 Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 10 (8%), Referenced to phase 2:EBTL and 6:WBT, Start of Green
 Natural Cycle: 90
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.95
 Intersection Signal Delay: 38.3 Intersection LOS: D
 Intersection Capacity Utilization 77.9% ICU Level of Service D
 Analysis Period (min) 15

Splits and Phases: 5: 2nd Street & Forster Street



Lanes, Volumes, Timings
6: 3rd Street & Forster Street

12/4/2014

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗	↘	↖	↗	↘	↖	↗	↘	↖	↗	↘
Volume (vph)	106	1220	60	155	940	57	123	142	241	40	175	31
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	11	12	10	11	12	12	11	10	12	16	12
Grade (%)		1%			-2%			-1%			0%	
Storage Length (ft)	225		0	225		0	0		0	0		0
Storage Lanes	1		0	1		0	0		1	0		0
Taper Length (ft)	50			50			25		25			
Lane Util. Factor	1.00	0.91	0.91	1.00	0.91	0.91	1.00	0.99	1.00	1.00	0.99	1.00
Ped Bike Factor	0.99	1.00			1.00			0.99	0.95		0.99	
Frt	0.993				0.991				0.850		0.983	
Flt Protected	0.950			0.950				0.977			0.992	
Satd. Flow (prot)	1660	4935	0	1652	4952	0	0	1784	1443	0	2057	0
Flt Permitted	0.219			0.143				0.601			0.795	
Satd. Flow (perm)	380	4935	0	249	4952	0	0	1086	1375	0	1643	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		7			9				248			7
Link Speed (mph)		35			35			25			25	
Link Distance (ft)		828			923			950			1410	
Travel Time (s)		16.1			18.0			25.9			38.5	
Confl. Peds. (#/hr)	16		10	10		16	32		28	28		32
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
Heavy Vehicles (%)	1%	0%	3%	3%	1%	0%	2%	5%	0%	2%	0%	0%
Adj. Flow (vph)	109	1258	62	160	969	59	127	146	248	41	180	32
Shared Lane Traffic (%)												
Lane Group Flow (vph)	109	1320	0	160	1028	0	0	273	248	0	253	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		17			10			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.10	1.05	1.01	1.08	1.03	0.99	0.99	1.04	1.09	1.00	0.85	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1		1	1		1	1	1	1		1
Detector Template	Left						Left					
Leading Detector (ft)	40	0		40	26		20	40	40	20		40
Trailing Detector (ft)	0	0		0	20		0	0	0	0		0
Detector 1 Position(ft)	0	0		0	20		0	0	0	0		0
Detector 1 Size(ft)	40	0		40	6		20	40	40	20		40
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex
Detector 1 Channel	Left						Left					
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0		0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0		0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0		0.0
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA	Perm	Perm		NA
Protected Phases	1	6		5	2		4	NA	4	8		8
Permitted Phases	6			2			4		4			8
Detector Phase	1	6		5	2		4	4	4	8		8

Lanes, Volumes, Timings
6: 3rd Street & Forster Street

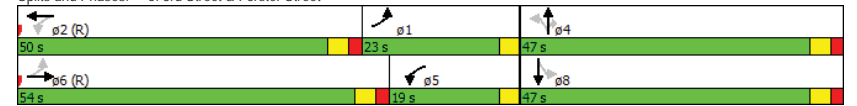
12/4/2014

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	8.0	10.0		8.0	10.0		10.0	10.0	10.0	10.0	10.0	10.0
Total Split (%)	23.0	54.0		19.0	50.0		47.0	47.0	47.0	47.0	47.0	47.0
Total Split (%)	19.2%	45.0%		15.8%	41.7%		39.2%	39.2%	39.2%	39.2%	39.2%	39.2%
Maximum Green (s)	20.0	49.0		16.0	45.0		42.0	42.0	42.0	42.0	42.0	42.0
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	0.0	2.0		0.0	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	0.0
Total Lost Time (s)	3.0	5.0		3.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lag	Lead		Lag	Lead							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	C-Max		None	C-Max		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)		12.0			12.0		21.0	21.0	21.0	21.0	21.0	21.0
Pedestrian Calls (#/hr)		0			0		0	0	0	0	0	0
Act Effct Green (s)	79.2	62.8		72.2	58.8		32.8	32.8	32.8	32.8	32.8	32.8
Actuated g/C Ratio	0.66	0.52		0.60	0.49		0.27	0.27	0.27	0.27	0.27	0.27
v/c Ratio	0.26	0.51		0.57	0.42		0.92	0.45	0.56	0.56	0.56	0.56
Control Delay	19.7	25.1		47.9	28.9		76.8	6.1	39.9	39.9	39.9	39.9
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	19.7	25.1		47.9	28.9		76.8	6.1	39.9	39.9	39.9	39.9
LOS	B	C		D	C		E	A	D	D	D	D
Approach Delay		24.7			31.5		43.2	39.9	39.9	39.9	39.9	39.9
Approach LOS		C			C		D	D	D	D	D	D

Intersection Summary

Area Type: Other
 Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 43 (36%), Referenced to phase 2:WBTL and 6:EBTL, Start of Green
 Natural Cycle: 45
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.92
 Intersection Signal Delay: 31.0 Intersection LOS: C
 Intersection Capacity Utilization 89.2% ICU Level of Service E
 Analysis Period (min) 15

Splits and Phases: 6: 3rd Street & Forster Street



Lanes, Volumes, Timings

7: Commonwealth Avenue & Forster Street

12/4/2014

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔↔↔	↔	↔↔↔	↔	↔↔↔	↔	↔	↔	↔	↔	↔
Volume (vph)	151	1330	52	81	762	59	151	116	57	156	166	176
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	11	12	11	11	12	10	16	12	13	13	13
Grade (%)		-2%			-2%			-2%			-2%	
Storage Length (ft)	275		0	250		0	150		0	150		0
Storage Lanes	1		0	1		0	1		0	1		1
Taper Length (ft)	50			25			25			50		
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	0.98	1.00		0.99	0.99		0.97	0.94		0.87		0.95
Frt		0.994			0.989			0.951				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1620	4954	0	1456	4929	0	1668	1743	0	1829	1944	1686
Flt Permitted	0.316			0.109			0.559			0.545		
Satd. Flow (perm)	530	4954	0	166	4929	0	956	1743	0	911	1944	1608
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		6			10			22				185
Link Speed (mph)		35			35			25				25
Link Distance (ft)		923			638			842				1379
Travel Time (s)		18.0			12.4			23.0				37.6
Confl. Peds. (#/hr)	25		44	44		25	34		173	173		34
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	5%	1%	4%	21%	1%	2%	2%	15%	4%	3%	2%	0%
Adj. Flow (vph)	159	1400	55	85	802	62	159	122	60	164	175	185
Shared Lane Traffic (%)												
Lane Group Flow (vph)	159	1455	0	85	864	0	159	182	0	164	175	185
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		11			17			13				13
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
Headway Factor	1.08	1.03	0.99	1.03	1.03	0.99	1.08	0.84	0.99	0.95	0.95	0.95
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1		1	1		1	1		1	1	1
Detector Template												
Leading Detector (ft)	40	0		40	0		40	40		40	0	40
Trailing Detector (ft)	0	0		0	0		0	0		0	0	0
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	0
Detector 1 Size(ft)	40	0		40	0		40	40		40	0	40
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA	Perm
Protected Phases	1	6		5	2		4			8		8
Permitted Phases	6			2			4			8		8
Detector Phase	1	6		5	2		4	4		8	8	8

Lanes, Volumes, Timings

7: Commonwealth Avenue & Forster Street

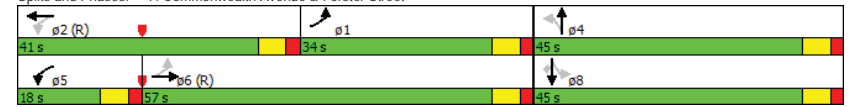
12/4/2014

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	3.0	3.0		3.0	3.0		5.0	5.0		5.0	5.0	5.0
Minimum Split (s)	9.0	9.0		9.0	9.0		11.0	11.0		11.0	11.0	11.0
Total Split (s)	34.0	57.0		18.0	41.0		45.0	45.0		45.0	45.0	45.0
Total Split (%)	28.3%	47.5%		15.0%	34.2%		37.5%	37.5%		37.5%	37.5%	37.5%
Maximum Green (s)	28.0	51.0		12.0	35.0		39.0	39.0		39.0	39.0	39.0
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)	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
Lead/Lag	Lag	Lag		Lead	Lead							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	1.0	1.0		1.0	1.0		3.0	3.0		3.0	3.0	3.0
Recall Mode	None	C-Max		None	C-Max		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)		17.0			20.0		28.0	28.0		28.0	28.0	28.0
Pedestrian Calls (#/hr)		10			10		25	25		25	25	25
Act Effct Green (s)	67.3	67.3		45.6	45.6		28.4	28.4		28.4	28.4	28.4
Actuated g/C Ratio	0.56	0.56		0.38	0.38		0.24	0.24		0.24	0.24	0.24
v/c Ratio	0.29	0.52		0.56	0.46		0.71	0.43		0.76	0.38	0.36
Control Delay	41.5	35.7		46.2	22.6		57.3	35.2		63.5	39.0	6.4
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	41.5	35.7		46.2	22.6		57.3	35.2		63.5	39.0	6.4
LOS	D	D		D	C		E	D		E	D	A
Approach Delay		36.2			24.7		45.5				35.2	
Approach LOS		D			C		D				D	

Intersection Summary

Area Type:	Other
Cycle Length:	120
Actuated Cycle Length:	120
Offset: 0 (0%), Referenced to phase 2:WBT and 6:EBTL, Start of Green, Master Intersection	
Natural Cycle:	50
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.76
Intersection Signal Delay:	33.8
Intersection LOS:	C
Intersection Capacity Utilization:	89.2%
ICU Level of Service:	E
Analysis Period (min):	15

Splits and Phases: 7: Commonwealth Avenue & Forster Street



Lanes, Volumes, Timings
9: 7th Street & Forster Street

12/4/2014

	↖	→	↗	↖	←	↖	↗	↑	↘	↙	↓	↘
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕	↕				↕	↕	↕		↕	↕
Volume (vph)	0	925	618	0	0	0	335	0	225	0	564	551
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	16	12	12	12	12	12	12	12	12	12	12
Grade (%)		-1%				0%			0%			-1%
Storage Length (ft)	0		0	0		0	0		250	0		0
Storage Lanes	0		1	0		0	2		1	0		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	1.00	1.00	0.97	1.00	0.88	1.00	0.95	1.00
Ped Bike Factor							0.96					
Frt			0.850						0.850			0.850
Flt Protected							0.950					
Satd. Flow (prot)	0	4071	1607	0	0	0	3467	0	2814	0	3557	1576
Flt Permitted							0.950					
Satd. Flow (perm)	0	4071	1607	0	0	0	3330	0	2814	0	3557	1576
Right Turn on Red			Yes			Yes			Yes	Yes		Yes
Satd. Flow (RTOR)			440						95			612
Link Speed (mph)		35			25			25			25	
Link Distance (ft)		638			364			500			393	
Travel Time (s)		12.4			9.9			13.6			10.7	
Confl. Peds. (#/hr)							42					
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
Heavy Vehicles (%)	0%	1%	1%	0%	0%	0%	1%	0%	1%	0%	2%	3%
Adj. Flow (vph)	0	1028	687	0	0	0	372	0	250	0	627	612
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1028	687	0	0	0	372	0	250	0	627	612
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		15			11			29			24	
Link Offset(ft)		-12			0			-8			12	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	0.99	0.84	0.99	1.00	1.00	1.00	1.00	1.00	1.00	0.99	0.99	0.99
Turning Speed (mph)	15		9	15		9	15		20	15		9
Number of Detectors		1	1				1		1		1	1
Detector Template			Right								Right	
Leading Detector (ft)		1	20				40		44		40	20
Trailing Detector (ft)		0	0				0		4		0	0
Detector 1 Position(ft)		0	0				0		4		0	0
Detector 1 Size(ft)		1	20				40		40		40	20
Detector 1 Type		Cl+Ex	Cl+Ex				Cl+Ex		Cl+Ex		Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)		0.0	0.0				0.0		0.0		0.0	0.0
Detector 1 Queue (s)		0.0	0.0				0.0		0.0		0.0	0.0
Detector 1 Delay (s)		0.0	0.0				0.0		0.0		0.0	0.0
Turn Type		NA	Perm				Prot		custom		NA	Perm
Protected Phases		2					3		8		4	
Permitted Phases			2						4			4
Detector Phase		2	2				3		8		4	4

Lanes, Volumes, Timings
9: 7th Street & Forster Street

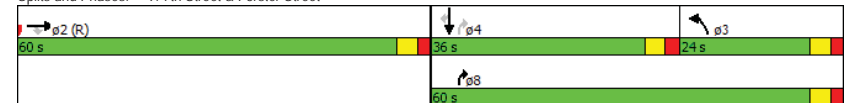
12/4/2014

	↖	→	↗	↖	←	↖	↗	↑	↘	↙	↓	↘
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)		5.0	5.0				4.0		5.0		4.0	4.0
Minimum Split (s)		10.0	10.0				10.0		10.0		21.0	21.0
Total Split (s)		60.0	60.0				24.0		60.0		36.0	36.0
Total Split (%)		50.0%	50.0%				20.0%		50.0%		30.0%	30.0%
Maximum Green (s)		55.0	55.0				19.0		55.0		31.0	31.0
Yellow Time (s)		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
Lost Time Adjust (s)		0.0	0.0				0.0		0.0		0.0	0.0
Total Lost Time (s)		5.0	5.0				5.0		5.0		5.0	5.0
Lead/Lag							Lag				Lead	Lead
Lead-Lag Optimize?							Yes				Yes	Yes
Vehicle Extension (s)		3.0	3.0				3.0		3.0		3.0	3.0
Recall Mode		C-Max	C-Max				None		None		None	None
Walk Time (s)		7.0	7.0				7.0		7.0		5.0	5.0
Flash Dont Walk (s)		14.0	14.0				14.0		14.0		11.0	11.0
Pedestrian Calls (#/hr)		0	0				0		0		0	0
Act Effct Green (s)		59.8	59.8				17.1		50.2		28.0	28.0
Actuated g/C Ratio		0.50	0.50				0.14		0.42		0.23	0.23
v/c Ratio		0.51	0.67				0.75		0.20		0.76	0.73
Control Delay		15.8	12.6				59.4		13.0		44.7	9.8
Queue Delay		0.0	1.1				0.0		0.0		0.0	0.4
Total Delay		15.8	13.7				59.4		13.0		44.7	10.2
LOS		B	B				E		B		D	B
Approach Delay		14.9									27.7	
Approach LOS		B									C	

Intersection Summary

Area Type:	Other
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 20 (17%), Referenced to phase 2:EBT, Start of Green	
Natural Cycle: 60	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.76	
Intersection Signal Delay: 23.8	Intersection LOS: C
Intersection Capacity Utilization 62.4%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 9: 7th Street & Forster Street



Lanes, Volumes, Timings
11: 7th Street

12/4/2014

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations		↔↔			↔↔	↔↔
Volume (vph)	0	357	0	0	1189	193
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	0%		0%			3%
Storage Length (ft)	100	0		0	0	
Storage Lanes	1	2		0	1	
Taper Length (ft)	75				25	
Lane Util. Factor	1.00	0.88	1.00	1.00	0.91	0.91
Frt		0.850				
Flt Protected					0.950	0.964
Satd. Flow (prot)	0	2787	0	0	1586	3219
Flt Permitted					0.950	0.964
Satd. Flow (perm)	0	2787	0	0	1586	3219
Link Speed (mph)	30		25			25
Link Distance (ft)	359		483			304
Travel Time (s)	8.2		13.2			8.3
Peak Hour Factor	0.92	0.92	0.92	0.92	0.95	0.95
Adj. Flow (vph)	0	388	0	0	1252	203
Shared Lane Traffic (%)					50%	
Lane Group Flow (vph)	0	388	0	0	626	829
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	R NA	Left	Right	Left	Left
Median Width(ft)	5		12			17
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.02	1.02
Turning Speed (mph)	15	9			9	15
Sign Control	Free		Free			Free

Intersection Summary

Area Type: Other
 Control Type: Unsignalized
 Intersection Capacity Utilization 36.3%
 Analysis Period (min) 15

Lanes, Volumes, Timings
12: 7th Street

12/4/2014

Lane Group	NBT	NBR	SBL	SBT	SWL	SWR
Lane Configurations		↔↔		↔↔	↔↔	
Volume (vph)	0	373	0	193	148	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	0%			-3%	0%	
Lane Util. Factor	1.00	0.88	1.00	0.95	1.00	1.00
Frt		0.850				
Flt Protected					0.950	
Satd. Flow (prot)	0	2787	0	3592	1770	0
Flt Permitted					0.950	
Satd. Flow (perm)	0	2787	0	3592	1770	0
Link Speed (mph)	25			25	30	
Link Distance (ft)	236			483	432	
Travel Time (s)	6.4			13.2	9.8	
Peak Hour Factor	0.92	0.92	0.95	0.95	0.92	0.92
Heavy Vehicles (%)	2%	2%	0%	2%	2%	2%
Adj. Flow (vph)	0	405	0	203	161	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	405	0	203	161	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	L NA	Right
Median Width(ft)	5			0	17	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	0.98	0.98	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Yield	

Intersection Summary

Area Type: Other
 Control Type: Unsignalized
 Intersection Capacity Utilization 20.2%
 Analysis Period (min) 15

Lanes, Volumes, Timings
13: State Street

12/4/2014

Lane Group	EBL	EBT	WBT	WBR	SEL	SER
Lane Configurations		↑↑	↑	↑	↑↑	
Volume (vph)	0	373	148	357	1189	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	0.95	1.00	1.00	0.97	1.00
Frt			0.850			
Flt Protected					0.950	
Satd. Flow (prot)	0	3539	1863	1583	3433	0
Flt Permitted					0.950	
Satd. Flow (perm)	0	3539	1863	1583	3433	0
Link Speed (mph)		30	35		30	
Link Distance (ft)		432	1119		359	
Travel Time (s)		9.8	21.8		8.2	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	0%	2%	2%	2%	2%	0%
Adj. Flow (vph)	0	393	156	376	1252	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	393	156	376	1252	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		10	5		36	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	0		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		15			15	9
Sign Control		Free	Free		Stop	

Intersection Summary	
Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	50.9%
ICU Level of Service A	
Analysis Period (min)	15

Lanes, Volumes, Timings
14: 7th Street & Herr Street

12/4/2014

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations				↑	↑		↑	↑↑	↑	↑	↑	↑↑
Volume (vph)	0	0	0	305	2	338	3	1044	342	217	716	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	10	11	12	12	11	12	16	13	16
Grade (%)		0%			4%			0%			0%	
Storage Length (ft)	0		0	460		0	0		150	100		0
Storage Lanes	0		0	1		0	1		1	1		0
Taper Length (ft)	25			25			25			50		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	0.95
Ped Bike Factor				0.97	0.96		0.97		0.84		0.84	1.00
Frt					0.851				0.850		0.850	0.999
Flt Protected				0.950			0.950			0.950		
Satd. Flow (prot)	0	0	0	1635	1461	0	1805	3421	1599	2046	3651	0
Flt Permitted				0.950			0.290			0.121		
Satd. Flow (perm)	0	0	0	1593	1461	0	532	3421	1349	261	3651	0
Right Turn on Red			Yes			Yes		Yes				Yes
Satd. Flow (RTOR)				271					234			1
Link Speed (mph)		30			25			25			25	
Link Distance (ft)		299			1969			305			3799	
Travel Time (s)		6.8			53.7			8.3			103.6	
Confl. Peds. (#/hr)				19		19	44		44	44		44
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
Heavy Vehicles (%)	0%	0%	0%	1%	0%	1%	0%	2%	1%	0%	2%	0%
Adj. Flow (vph)	0	0	0	339	2	376	3	1160	380	241	796	4
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	339	378	0	3	1160	380	241	800	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		10			10			17			17	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.12	1.07	1.03	1.00	1.04	1.00	0.85	0.96	0.85
Turning Speed (mph)		15		9	15		9	15		9	15	9
Number of Detectors				1	1		1	1	1	1	1	
Detector Template							Left		Right	Left		
Leading Detector (ft)				0	0		20	0	20	20	0	
Trailing Detector (ft)				0	0		0	0	0	0	0	
Detector 1 Position(ft)				0	0		0	0	0	0	0	
Detector 1 Size(ft)				0	0		20	0	20	20	0	
Detector 1 Type				Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)				0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)				0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)				0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Turn Type				Split	NA		Perm	NA	Perm	pm+pt	NA	
Protected Phases				4	4			2		1	6	
Permitted Phases							2		2	6		
Detector Phase				4	4		2	2	2	1	6	

Lanes, Volumes, Timings
14: 7th Street & Herr Street

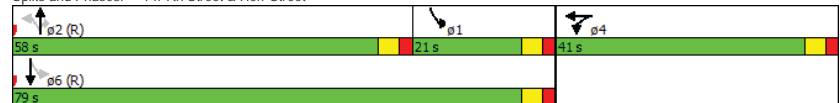
12/4/2014

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)				10.0	10.0		10.0	10.0	10.0	3.0	10.0	
Minimum Split (s)				15.0	15.0		15.0	15.0	15.0	8.0	15.0	
Total Split (s)				41.0	41.0		58.0	58.0	58.0	21.0	79.0	
Total Split (%)				34.2%	34.2%		48.3%	48.3%	48.3%	17.5%	65.8%	
Maximum Green (s)				36.0	36.0		53.0	53.0	53.0	16.0	74.0	
Yellow Time (s)				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	
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	5.0	5.0	5.0	5.0	
Lead/Lag							Lead	Lead	Lead	Lag		
Lead-Lag Optimize?							Yes	Yes	Yes	Yes		
Vehicle Extension (s)				3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Recall Mode				Max	Max		C-Max	C-Max	C-Max	None	C-Max	
Walk Time (s)				7.0	7.0		7.0	7.0	7.0		7.0	
Flash Dont Walk (s)				20.0	20.0		12.0	12.0	12.0		12.0	
Pedestrian Calls (#/hr)				0	0		0	0	0		0	
Act Effct Green (s)				36.0	36.0		53.0	53.0	53.0	74.0	74.0	
Actuated g/C Ratio				0.30	0.30		0.44	0.44	0.44	0.62	0.62	
v/c Ratio				0.69	0.60		0.01	0.77	0.52	0.61	0.36	
Control Delay				45.7	14.6		11.7	23.6	4.5	33.6	8.7	
Queue Delay				0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay				45.7	14.6		11.7	23.6	4.5	33.6	8.7	
LOS				D	B		B	C	A	C	A	
Approach Delay					29.3			18.9			14.5	
Approach LOS					C			B			B	

Intersection Summary

Area Type:	Other
Cycle Length:	120
Actuated Cycle Length:	120
Offset:	46 (38%), Referenced to phase 2:NBT and 6:SBTL, Start of Green
Natural Cycle:	60
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.77
Intersection Signal Delay:	19.8
Intersection LOS:	B
Intersection Capacity Utilization:	76.2%
ICU Level of Service:	D
Analysis Period (min):	15

Splits and Phases: 14: 7th Street & Herr Street



Lanes, Volumes, Timings
15: 7th Street

12/4/2014


Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	0	432	1150	1	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	0.91	0.91	1.00	1.00
Frt		0.865				
Flt Protected						
Satd. Flow (prot)	0	1627	5136	0	0	0
Flt Permitted						
Satd. Flow (perm)	0	1627	5136	0	0	0
Link Speed (mph)	30		25			30
Link Distance (ft)	748		364			303
Travel Time (s)	17.0		9.9			6.9
Peak Hour Factor	0.90	0.90	0.90	0.90	0.89	0.89
Heavy Vehicles (%)	0%	1%	1%	0%	0%	0%
Adj. Flow (vph)	0	480	1278	1	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	480	1279	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	0		0			0
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization:	55.7%
ICU Level of Service:	B
Analysis Period (min):	15

Lanes, Volumes, Timings
16: 7th Street

12/4/2014

						
Lane Group	NBT	NBR	SBL	SBT	NWL	NWR
Lane Configurations				↑↑↑		↑↑↑
Volume (vph)	0	0	0	1115	0	1582
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	0.91	1.00	0.76
Frt						0.850
Flt Protected						
Satd. Flow (prot)	0	0	0	5085	0	3610
Flt Permitted						
Satd. Flow (perm)	0	0	0	5085	0	3610
Link Speed (mph)	25			25	30	
Link Distance (ft)	393			305	303	
Travel Time (s)	10.7			8.3	6.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	1212	0	1720
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	1212	0	1720
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			5	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	35
Sign Control	Free			Free	Free	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	40.2%
ICU Level of Service A	
Analysis Period (min)	15

Queuing and Blocking Report
Evening Peak Hour

12/4/2014

Intersection: 1: 2nd Street & Division Street

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	217	1830	1255	130
Average Queue (ft)	50	1068	799	56
95th Queue (ft)	166	1896	1328	107
Link Distance (ft)	344	3246	4864	1642
Upstream Blk Time (%)	1			
Queuing Penalty (veh)	0			
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 2: 2nd Street & Maclay Street

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	84	353	1245	179
Average Queue (ft)	30	149	586	65
95th Queue (ft)	70	287	1119	143
Link Distance (ft)	333	2959	5294	4864
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 3: 7th Street & Maclay Street

Movement	EB	EB	WB	WB	WB	NB	NB	NB	B34	B34
Directions Served	L	TR	L	T	R	L	T	TR	T	T
Maximum Queue (ft)	47	1620	144	304	118	200	516	502	854	861
Average Queue (ft)	2	1542	63	155	55	84	483	484	390	423
95th Queue (ft)	24	1627	114	264	99	215	521	502	998	1021
Link Distance (ft)		2959		827	827		414	414	3736	3736
Upstream Blk Time (%)							45	58		
Queuing Penalty (veh)							308	400		
Storage Bay Dist (ft)	75		250			100				
Storage Blk Time (%)		59		1		0	57			
Queuing Penalty (veh)		3		1		1	37			

Queuing and Blocking Report
Evening Peak Hour

12/4/2014

Intersection: 4: Front Street & Forster Street

Movement	EB	EB	EB	EB	B18	B18	WB	WB	B37	B37	B37	SB
Directions Served	T	T	T	R	T	T	T	T	T	T	T	LT
Maximum Queue (ft)	185	133	205	100	52	48	189	177	199	254	191	252
Average Queue (ft)	100	63	84	29	2	2	169	169	141	173	100	174
95th Queue (ft)	169	123	165	93	27	22	177	174	191	232	232	235
Link Distance (ft)	114	114	114		4032	4032	98	98	142	142	142	637
Upstream Blk Time (%)	5	0	2	0			34	32	6	18	7	
Queuing Penalty (veh)	0	0	0	0			328	304	36	118	44	
Storage Bay Dist (ft)				50								
Storage Blk Time (%)				16								
Queuing Penalty (veh)				40								

Intersection: 4: Front Street & Forster Street

Movement	SB	SB	SB
Directions Served	T	T	R
Maximum Queue (ft)	259	252	231
Average Queue (ft)	181	153	97
95th Queue (ft)	249	229	197
Link Distance (ft)	637	637	
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)	300		
Storage Blk Time (%)			
Queuing Penalty (veh)			

Queuing and Blocking Report
Evening Peak Hour

12/4/2014

Intersection: 5: 2nd Street & Forster Street

Movement	EB	EB	EB	EB	B37	WB	WB	WB	NB	NB	NB	NB
Directions Served	L	T	T	T	T	T	T	TR	L	L	T	R
Maximum Queue (ft)	209	110	105	103	45	804	801	790	194	206	587	485
Average Queue (ft)	107	51	50	38	5	663	666	612	98	111	281	225
95th Queue (ft)	199	93	92	83	34	908	913	988	159	175	458	412
Link Distance (ft)	142	142	142	142	98	749	749	749	2030	2030	2030	2030
Upstream Blk Time (%)	12	0	0		0	25	31	23				
Queuing Penalty (veh)	29	0	0		0	92	114	83				
Storage Bay Dist (ft)												
Storage Blk Time (%)												
Queuing Penalty (veh)												

Intersection: 5: 2nd Street & Forster Street

Movement	SB
Directions Served	R
Maximum Queue (ft)	878
Average Queue (ft)	487
95th Queue (ft)	1151
Link Distance (ft)	5294
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 6: 3rd Street & Forster Street

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	SB	
Directions Served	L	T	T	TR	L	T	T	TR	LT	R	LTR	
Maximum Queue (ft)	177	310	326	363	275	519	529	492	908	792	552	
Average Queue (ft)	72	197	223	232	167	281	301	254	468	323	208	
95th Queue (ft)	139	283	305	326	316	503	510	473	1021	924	440	
Link Distance (ft)		749	749	749		832	832	832	891	891	1353	
Upstream Blk Time (%)										26	19	
Queuing Penalty (veh)										0	0	
Storage Bay Dist (ft)	225				225							
Storage Blk Time (%)	3				1				27			
Queuing Penalty (veh)	3				3				42			

Queuing and Blocking Report
Evening Peak Hour

12/4/2014

Intersection: 7: Commonwealth Avenue & Forster Street

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	T	TR	L	T	T	TR	L	TR	L	T
Maximum Queue (ft)	301	461	537	547	152	179	218	226	174	287	199	602
Average Queue (ft)	120	273	351	376	53	83	106	109	98	109	137	178
95th Queue (ft)	226	469	525	549	118	164	184	195	174	220	224	508
Link Distance (ft)		832	832	832		536	536	536		773		1321
Upstream Blk Time (%)		0	0	0								
Queuing Penalty (veh)		0	0	0								
Storage Bay Dist (ft)	275				250				150		150	
Storage Blk Time (%)	0	3							4	4	24	4
Queuing Penalty (veh)	0	5							6	6	39	6

Intersection: 7: Commonwealth Avenue & Forster Street

Movement	SB
Directions Served	R
Maximum Queue (ft)	118
Average Queue (ft)	57
95th Queue (ft)	100
Link Distance (ft)	1321
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 9: 7th Street & Forster Street

Movement	EB	EB	EB	NB	NB	SB	SB	SB
Directions Served	T	T	R	L	L	T	T	R
Maximum Queue (ft)	432	476	194	202	204	271	260	53
Average Queue (ft)	136	217	65	118	118	154	169	2
95th Queue (ft)	366	456	331	184	183	235	245	37
Link Distance (ft)	536	536	536	425	425	310	310	310
Upstream Blk Time (%)	1	2	2					
Queuing Penalty (veh)	5	10	9					
Storage Bay Dist (ft)								
Storage Blk Time (%)								
Queuing Penalty (veh)								

Queuing and Blocking Report
Evening Peak Hour

12/4/2014

Intersection: 11: 7th Street

Movement	WB	WB	SB	SB	SB	B10	B10	B10
Directions Served	R	R	L	LT	T	T	T	T
Maximum Queue (ft)	8	10	360	370	312	360	372	510
Average Queue (ft)	0	0	315	323	138	135	156	151
95th Queue (ft)	4	5	383	382	340	367	387	513
Link Distance (ft)		232	260	260	260	425	425	425
Upstream Blk Time (%)			57	63	2	0	0	11
Queuing Penalty (veh)			223	248	6	0	0	44
Storage Bay Dist (ft)	100							
Storage Blk Time (%)								
Queuing Penalty (veh)								

Intersection: 12: 7th Street

Movement	SW
Directions Served	L
Maximum Queue (ft)	6
Average Queue (ft)	0
95th Queue (ft)	4
Link Distance (ft)	329
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 13: State Street

Movement	EB	EB	SE	SE
Directions Served	T	T	L	L
Maximum Queue (ft)	65	18	268	275
Average Queue (ft)	27	1	250	253
95th Queue (ft)	58	8	259	264
Link Distance (ft)	329	329	232	232
Upstream Blk Time (%)			52	59
Queuing Penalty (veh)			310	349
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Queuing and Blocking Report
Evening Peak Hour

12/4/2014

Intersection: 14: 7th Street & Herr Street

Movement	WB	WB	NB	NB	NB	NB	SB	SB	SB
Directions Served	L	TR	L	T	T	R	L	T	TR
Maximum Queue (ft)	319	278	24	260	280	225	149	242	254
Average Queue (ft)	195	125	2	187	194	118	118	101	132
95th Queue (ft)	291	223	13	276	293	247	167	216	217
Link Distance (ft)		1911	243	243	243			3736	3736
Upstream Blk Time (%)				2	2	0			
Queuing Penalty (veh)			9	13	0				
Storage Bay Dist (ft)	460					150	100		
Storage Blk Time (%)					13	0	26	2	
Queuing Penalty (veh)					45	0	94	3	

Intersection: 15: 7th Street

Movement	WB	NB	NB	NB
Directions Served	R	T	T	TR
Maximum Queue (ft)	613	170	247	29
Average Queue (ft)	266	6	14	1
95th Queue (ft)	555	71	121	17
Link Distance (ft)	678	290	290	290
Upstream Blk Time (%)	2	0	0	
Queuing Penalty (veh)	0	0	1	
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 16: 7th Street

Movement	NW	NW	NW
Directions Served	R	R	R
Maximum Queue (ft)	27	125	179
Average Queue (ft)	1	19	35
95th Queue (ft)	19	84	127
Link Distance (ft)	254	254	254
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Queuing and Blocking Report
Evening Peak Hour

12/4/2014

Intersection: 18: Bend

Movement	WB
Directions Served	T
Maximum Queue (ft)	25
Average Queue (ft)	1
95th Queue (ft)	11
Link Distance (ft)	114
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Network Summary

Network wide Queuing Penalty: 3419

Lanes, Volumes, Timings
1: 2nd Street & Division Street

12/5/2014

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↖	↗	↖	↖	↖	↖	↖	↖	↖	↖	↖
Volume (vph)	1	345	2	34	131	20	89	45	34	10	15	38
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	16	12	10	13	10	10	16	10
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			0.98	
Frt		0.999			0.985			0.973			0.918	
Flt Protected					0.991			0.974			0.992	
Satd. Flow (prot)	0	1692	0	0	2030	0	0	1816	0	0	1835	0
Flt Permitted					0.903			0.821			0.908	
Satd. Flow (perm)	0	1692	0	0	1850	0	0	1528	0	0	1676	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		1			13			20			39	
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		381			3285			4939			1680	
Travel Time (s)		10.4			89.6			134.7			45.8	
Confl. Peds. (#/hr)							2		2	2		2
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
Heavy Vehicles (%)	0%	1%	0%	0%	5%	0%	0%	3%	6%	30%	0%	0%
Parking (#/hr)		0										
Adj. Flow (vph)	1	356	2	35	135	21	92	46	35	10	15	39
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	359	0	0	191	0	0	173	0	0	64	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			10	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.14	1.00	1.00	0.85	1.00	1.09	0.96	1.09	1.09	0.85	1.09
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm	NA		Perm	NA	pm+pt	NA		Perm	NA		Perm
Protected Phases		4			8		1	6			2	
Permitted Phases	4			8		6			2			
Minimum Split (s)	9.0	9.0		9.0	9.0		9.0	9.0		9.0	9.0	
Total Split (s)	41.0	41.0		41.0	41.0		19.0	29.0		10.0	10.0	
Total Split (%)	58.6%	58.6%		58.6%	58.6%		27.1%	41.4%		14.3%	14.3%	
Maximum Green (s)	36.0	36.0		36.0	36.0		14.0	24.0		5.0	5.0	
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)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		5.0			5.0			5.0			5.0	
Lead/Lag							Lead				Lag	
Lead-Lag Optimize?							Yes				Yes	Yes
Act Effct Green (s)		36.0			36.0			24.0			5.0	
Actuated g/C Ratio		0.51			0.51			0.34			0.07	
v/c Ratio		0.41			0.20			0.29			0.41	
Control Delay		12.3			9.2			16.3			25.1	
Queue Delay		0.0			0.0			0.0			0.0	

Lanes, Volumes, Timings
1: 2nd Street & Division Street

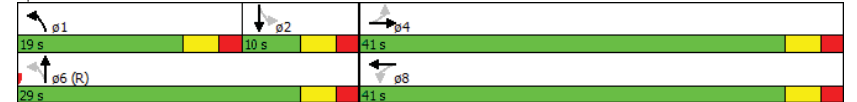
12/5/2014

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay	12.3			9.2			16.3			25.1		
LOS	B			A			B			C		
Approach Delay	12.3			9.2			16.3			25.1		
Approach LOS	B			A			B			C		
Queue Length 50th (ft)	88			38			46			10		
Queue Length 95th (ft)	148			71			90			45		
Internal Link Dist (ft)	301			3205			4859			1600		
Turn Bay Length (ft)												
Base Capacity (vph)	870			957			594			155		
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	0.41			0.20			0.29			0.41		

Intersection Summary

Area Type:	Other
Cycle Length:	70
Actuated Cycle Length:	70
Offset:	0 (0%), Referenced to phase 6:NBTL, Start of Green
Natural Cycle:	40
Control Type:	Pretimed
Maximum v/c Ratio:	0.41
Intersection Signal Delay:	13.5
Intersection LOS:	B
Intersection Capacity Utilization:	56.9%
ICU Level of Service:	B
Analysis Period (min):	15

Splits and Phases: 1: 2nd Street & Division Street



Lanes, Volumes, Timings
2: 2nd Street & Maclay Street

12/5/2014



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↖			↗			↖			↗	
Volume (vph)	2	101	0	60	122	31	11	146	79	0	73	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	16	12	12	16	12	12	13	12	12	11	12
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			1.00			0.99				
Frt					0.980			0.955				
Flt Protected		0.999			0.986			0.998				
Satd. Flow (prot)	0	2151	0	0	2074	0	0	1834	0	0	1837	0
Flt Permitted		0.993			0.884			0.983				
Satd. Flow (perm)	0	2138	0	0	1859	0	0	1806	0	0	1837	0
Right Turn on Red		Yes			Yes			Yes				Yes
Satd. Flow (RTOR)					16			45				
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		360			3029			5401			4939	
Travel Time (s)		9.8			82.6			147.3			134.7	
Confl. Peds. (#/hr)	1		1	1		1		1			1	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	1%	2%	0%	0%	0%
Parking (#/hr)							0		0			
Adj. Flow (vph)	2	106	0	63	128	33	12	154	83	0	77	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	108	0	0	224	0	0	249	0	0	77	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		11			11			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.96	1.00	1.00	1.04	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1		1	1		1	1		1		0
Detector Template	Left			Left			Left			Left		
Leading Detector (ft)	20	50		20	50		20	50		20		0
Trailing Detector (ft)	0	0		0	0		0	0		0		0
Detector 1 Position(ft)	0	0		0	0		0	0		0		0
Detector 1 Size(ft)	20	50		20	50		20	50		20		6
Detector 1 Type	CI+Ex	CI+Ex		CI+Ex	CI+Ex		CI+Ex	CI+Ex		CI+Ex		CI+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0		0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0		0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0		0.0
Turn Type	Perm	NA		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		4.0		4.0
Minimum Split (s)	35.0	35.0		35.0	35.0		35.0	35.0		20.0		20.0

Lanes, Volumes, Timings
2: 2nd Street & Maclay Street

12/5/2014



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Split (s)	35.0	35.0		35.0	35.0		35.0	35.0		35.0	35.0	
Total Split (%)	50.0%	50.0%		50.0%	50.0%		50.0%	50.0%		50.0%	50.0%	
Maximum Green (s)	30.0	30.0		30.0	30.0		30.0	30.0		31.0	31.0	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.5	3.5	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		0.5	0.5	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		5.0			5.0			5.0			4.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	Min	Min		Min	Min		None	None		None	None	
Walk Time (s)	10.0	10.0		10.0	10.0		10.0	10.0		5.0	5.0	
Flash Dont Walk (s)	15.0	15.0		15.0	15.0		12.0	12.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)		11.6			11.6			9.0			10.1	
Actuated g/C Ratio		0.38			0.38			0.29			0.33	
v/c Ratio		0.13			0.32			0.44			0.13	
Control Delay		7.7			8.5			9.2			7.0	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		7.7			8.5			9.2			7.0	
LOS	A				A			A			A	
Approach Delay		7.7			8.5			9.2			7.0	
Approach LOS		A			A			A			A	
Queue Length 50th (ft)		10			21			20			6	
Queue Length 95th (ft)		31			57			57			22	
Internal Link Dist (ft)		280			2949			5321			4859	
Turn Bay Length (ft)												
Base Capacity (vph)		2004			1743			1695			1742	
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		0.05			0.13			0.15			0.04	
Intersection Summary												
Area Type:	Other											
Cycle Length:	70											
Actuated Cycle Length:	30.8											
Natural Cycle:	70											
Control Type:	Actuated-Uncoordinated											
Maximum v/c Ratio:	0.44											
Intersection Signal Delay:	8.5						Intersection LOS: A					
Intersection Capacity Utilization:	46.5%						ICU Level of Service A					
Analysis Period (min):	15											
Splits and Phases: 2: 2nd Street & Maclay Street												

Lanes, Volumes, Timings
3: 7th Street & Maclay Street

12/5/2014

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	11	544	207	330	403	363	30	269	228	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	12	12	10	11	11	11	11	14	11	13	12
Grade (%)		-3%			-3%			-1%			-1%	
Storage Length (ft)	75		0	250		0	100		0	0		200
Storage Lanes	1		0	1		1	1		0	0		0
Taper Length (ft)	75			300			100			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	1.00	1.00
Ped Bike Factor	1.00	0.99				0.98	0.99	0.99				
Frt		0.959				0.850		0.931				
Flt Protected	0.950			0.950			0.950					
Satd. Flow (prot)	1625	1784	0	1676	1793	1495	1449	3070	0	0	0	0
Flt Permitted	0.515			0.108			0.950					
Satd. Flow (perm)	878	1784	0	191	1793	1470	1435	3070	0	0	0	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		39				61		240				
Link Speed (mph)		25			35			25			25	
Link Distance (ft)		3029			877			479			2587	
Travel Time (s)		82.6			17.1			13.1			70.6	
Confl. Peds. (#/hr)	5		5	5		5	6		6	6		6
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	9%	4%	0%	2%	4%	6%	21%	4%	6%	7%	1%	14%
Adj. Flow (vph)	12	573	218	347	424	382	32	283	240	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	12	791	0	347	424	382	32	523	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		11			11			11			11	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.02	0.98	0.98	1.07	1.02	1.02	1.04	1.04	0.91	1.04	0.95	0.99
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1		1	1	1	1	1				
Detector Template				Left		Right	Left					
Leading Detector (ft)	50	50		50	50	50	50	50				
Trailing Detector (ft)	0	0		0	0	0	0	0				
Detector 1 Position(ft)	0	0		0	0	0	0	0				
Detector 1 Size(ft)	50	50		50	50	50	50	50				
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex				
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0				
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0				
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0				
Turn Type	Perm	NA		pm+pt	NA	Perm	Perm	NA				
Protected Phases		4		3	8			2				
Permitted Phases	4			8		8	2					
Detector Phase	4	4		3	8	8	2	2				

Lanes, Volumes, Timings
3: 7th Street & Maclay Street

12/5/2014

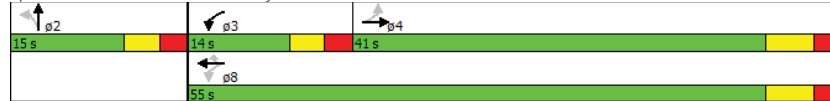
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	3.0	3.0		3.0	3.0	3.0	10.0	10.0				
Minimum Split (s)	9.0	9.0		8.4	9.0	9.0	15.4	15.4				
Total Split (%)	41.0	41.0		14.0	55.0	55.0	15.0	15.0				
Total Split (s)		58.6%		20.0%	78.6%	78.6%	21.4%	21.4%				
Maximum Green (s)	35.0	35.0		8.6	49.0	49.0	9.6	9.6				
Yellow Time (s)	4.0	4.0		3.0	4.0	4.0	3.0	3.0				
All-Red Time (s)	2.0	2.0		2.4	2.0	2.0	2.4	2.4				
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0				
Total Lost Time (s)	6.0	6.0		5.4	6.0	6.0	5.4	5.4				
Lead/Lag		Lag		Lag		Lead						
Lead-Lag Optimize?	Yes	Yes		Yes		Yes						
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0				
Recall Mode	None	None		None	None	None	Min	Min				
Walk Time (s)	7.0	7.0		11.0	7.0	7.0	7.0	7.0				
Flash Dont Walk (s)	15.0	15.0		0.0	15.0	15.0	15.0	15.0				
Pedestrian Calls (#/hr)	0	0		0	0	0	0	0				
Act Effct Green (s)	31.5	31.5		46.2	45.6	45.6	9.7	9.7				
Actuated g/C Ratio	0.47	0.47		0.69	0.68	0.68	0.15	0.15				
v/c Ratio	0.03	0.92		1.07	0.35	0.37	0.15	0.81				
Control Delay	9.2	32.9		90.4	5.2	4.7	28.7	27.0				
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0				
Total Delay	9.2	32.9		90.4	5.2	4.7	28.7	27.0				
LOS	A	C		F	A	A	C	C				
Approach Delay		32.6			30.7			27.1				
Approach LOS		C			C			C				
Queue Length 50th (ft)	2	270		-119	58	43	12	62				
Queue Length 95th (ft)	10	#503		#273	94	78	36	#141				
Internal Link Dist (ft)		2949			797			399				2507
Turn Bay Length (ft)		75			250			100				
Base Capacity (vph)	463	959		324	1324	1101	207	649				
Starvation Cap Reductn	0	0		0	0	0	0	0				
Spillback Cap Reductn	0	0		0	0	0	0	0				
Storage Cap Reductn	0	0		0	0	0	0	0				
Reduced v/c Ratio	0.03	0.82		1.07	0.32	0.35	0.15	0.81				
Intersection Summary												
Area Type:	Other											
Cycle Length:	70											
Actuated Cycle Length:	66.7											
Natural Cycle:	80											
Control Type:	Actuated-Uncoordinated											
Maximum v/c Ratio:	1.07											
Intersection Signal Delay:	30.5						Intersection LOS: C					
Intersection Capacity Utilization:	89.3%						ICU Level of Service E					
Analysis Period (min):	15											
-	Volume exceeds capacity, queue is theoretically infinite.											
	Queue shown is maximum after two cycles.											
#	95th percentile volume exceeds capacity, queue may be longer.											

Lanes, Volumes, Timings
3: 7th Street & Maclay Street

12/5/2014

Queue shown is maximum after two cycles.

Splits and Phases: 3: 7th Street & Maclay Street



Lanes, Volumes, Timings
4: Front Street & Forster Street

12/5/2014

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑	↑		↑↑						↑↑↑	↑
Volume (vph)	0	1462	458	1	950	0	0	0	0	309	1300	583
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	11	11
Grade (%)		-3%			-1%			-1%			0%	
Storage Length (ft)	75		50	0		0	0		0	0		300
Storage Lanes	0		1	0		0	0		0	0		1
Taper Length (ft)	75			25			25			25		
Lane Util. Factor	1.00	0.91	1.00	0.95	0.95	1.00	1.00	1.00	1.00	0.91	0.91	1.00
Ped Bike Factor			0.97		1.00						1.00	0.98
Frt			0.850									0.850
Flt Protected											0.990	
Satd. Flow (prot)	0	5213	1623	0	3592	0	0	0	0	0	4915	1546
Flt Permitted					0.954						0.990	
Satd. Flow (perm)	0	5213	1572	0	3427	0	0	0	0	0	4904	1509
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			44									83
Link Speed (mph)		50			35			35				35
Link Distance (ft)		192			146			595				622
Travel Time (s)		2.6			2.8			11.6				12.1
Confl. Peds. (#/hr)	12		12	12		12				7		7
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	0%	1%	1%	0%	1%	0%	0%	0%	0%	1%	1%	1%
Adj. Flow (vph)	0	1539	482	1	1000	0	0	0	0	325	1368	614
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1539	482	0	1001	0	0	0	0	0	1693	614
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Right	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		16			5			0				0
Link Offset(ft)		5			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
Headway Factor	0.98	0.98	0.98	0.99	0.99	0.99	0.99	0.99	0.99	1.00	1.04	1.04
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type		NA	Perm	Perm	NA					Perm	NA	Perm
Protected Phases		2			6							4
Permitted Phases			2	6						4		4
Minimum Split (s)		17.0	17.0	17.0	17.0					17.0	17.0	17.0
Total Split (s)		60.0	60.0	60.0	60.0					40.0	40.0	40.0
Total Split (%)		60.0%	60.0%	60.0%	60.0%					40.0%	40.0%	40.0%
Maximum Green (s)		53.0	53.0	53.0	53.0					33.0	33.0	33.0
Yellow Time (s)		4.0	4.0	4.0	4.0					4.0	4.0	4.0
All-Red Time (s)		3.0	3.0	3.0	3.0					3.0	3.0	3.0
Lost Time Adjust (s)		0.0	0.0		0.0						0.0	0.0
Total Lost Time (s)		7.0	7.0		7.0						7.0	7.0
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)		8.0	8.0	8.0	8.0					8.0	8.0	8.0
Flash Dont Walk (s)		10.0	10.0	10.0	10.0					10.0	10.0	10.0

Lanes, Volumes, Timings
4: Front Street & Forster Street

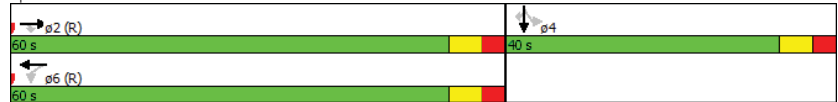
12/5/2014

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Pedestrian Calls (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Act Effct Green (s)	53.0	53.0		53.0						33.0	33.0	
Actuated g/C Ratio	0.53	0.53		0.53						0.33	0.33	
v/c Ratio	0.56	0.57		0.55						1.05	1.11	
Control Delay	16.6	17.3		16.5						69.1	101.3	
Queue Delay	0.0	0.0		0.8						0.0	0.0	
Total Delay	16.6	17.3		17.3						69.1	101.3	
LOS	B	B		B						E	F	
Approach Delay	16.8			17.3						77.7		
Approach LOS	B			B						E		
Queue Length 50th (ft)	227	177		156						-431	-413	
Queue Length 95th (ft)	271	275		197						#527	#629	
Internal Link Dist (ft)	112			66					515		542	
Turn Bay Length (ft)		50										300
Base Capacity (vph)	2762	853		1816						1618	553	
Starvation Cap Reductn	0	0		473						0	0	
Spillback Cap Reductn	0	0		0						0	0	
Storage Cap Reductn	0	0		0						0	0	
Reduced v/c Ratio	0.56	0.57		0.75						1.05	1.11	

Intersection Summary

Area Type: Other
 Cycle Length: 100
 Actuated Cycle Length: 100
 Offset: 24 (24%), Referenced to phase 2:EBT and 6:WBTL, Start of Green
 Natural Cycle: 60
 Control Type: Pretimed
 Maximum v/c Ratio: 1.11
 Intersection Signal Delay: 43.3 Intersection LOS: D
 Intersection Capacity Utilization 104.8% ICU Level of Service G
 Analysis Period (min) 15
 - 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: Front Street & Forster Street



Lanes, Volumes, Timings
5: 2nd Street & Forster Street

12/5/2014

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑			↑↑↑		↑↑	↑	↑			↑
Volume (vph)	0	1816	0	0	542	36	199	338	324	0	0	232
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	12	12	11	12	11	11	10	10	11	10
Grade (%)		0%			-1%				-1%			0%
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	0.91	0.97	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor					0.99	0.99			0.98			0.98
Frt					0.991				0.850			0.865
Flt Protected									0.950			
Satd. Flow (prot)	0	4964	0	0	4893	0	3335	1810	1471	0	0	1534
Flt Permitted									0.950			
Satd. Flow (perm)	0	4964	0	0	4893	0	3299	1810	1438	0	0	1499
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					15				33			234
Link Speed (mph)		35			35			25				25
Link Distance (ft)		211			828			2926				5401
Travel Time (s)		4.1			16.1			79.8				147.3
Confl. Peds. (#/hr)	39		39			39	10		10	10		10
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
Heavy Vehicles (%)	1%	1%	0%	0%	1%	5%	2%	2%	3%	0%	0%	0%
Adj. Flow (vph)	0	1892	0	0	565	38	207	352	338	0	0	242
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1892	0	0	603	0	207	352	338	0	0	242
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Right	Right	Left	Left	Right	Left	Right	Left	Left	Right	Right
Median Width(ft)		17			17			22				22
Link Offset(ft)		0			6			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
Headway Factor	1.04	1.04	1.00	0.99	1.04	0.99	1.04	1.09	1.09	1.04	1.09	1.09
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors		2			1		1	1	1			1
Detector Template							Left		Right			Right
Leading Detector (ft)		246			0		40	40	40			20
Trailing Detector (ft)		0			0		0	0	0			0
Detector 1 Position(ft)		0			0		0	0	0			0
Detector 1 Size(ft)		0			0		40	40	40			20
Detector 1 Type		Cl+Ex			Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex			Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)		0.0			0.0		0.0	0.0	0.0			0.0
Detector 1 Queue (s)		0.0			0.0		0.0	0.0	0.0			0.0
Detector 1 Delay (s)		0.0			0.0		0.0	0.0	0.0			0.0
Detector 2 Position(ft)					240							
Detector 2 Size(ft)					6							
Detector 2 Type					Cl+Ex							
Detector 2 Channel												
Detector 2 Extend (s)					0.0							
Turn Type		NA			NA		pm+pt	NA	Perm			Perm
Protected Phases		2			6		7	4				

Lanes, Volumes, Timings
5: 2nd Street & Forster Street

12/5/2014

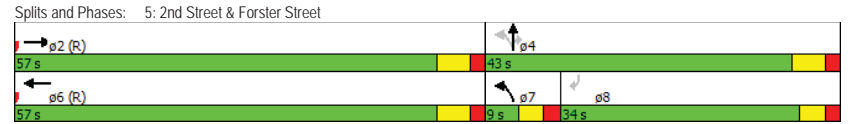
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases							4		4			8
Detector Phase		2			6		7	4	4			8
Switch Phase												
Minimum Initial (s)		5.0			5.0		4.0	5.0	5.0			5.0
Minimum Split (s)		34.0			35.0		9.0	34.0	34.0			34.0
Total Split (s)		57.0			57.0		9.0	43.0	43.0			34.0
Total Split (%)		57.0%			57.0%		9.0%	43.0%	43.0%			34.0%
Maximum Green (s)		51.0			51.0		4.0	37.0	37.0			29.0
Yellow Time (s)		4.0			4.0		3.0	4.0	4.0			3.0
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		5.0	6.0	6.0			5.0
Lead/Lag							Lead					Lag
Lead-Lag Optimize?							Yes					Yes
Vehicle Extension (s)		5.0			3.0		3.0	5.0	5.0			5.0
Recall Mode		C-Max			C-Max		None	None	None			None
Walk Time (s)		7.0			8.0		7.0	7.0	7.0			7.0
Flash Dont Walk (s)		21.0			10.0		21.0	21.0	21.0			21.0
Pedestrian Calls (#/hr)		0			0		0	0	0			0
Act Effct Green (s)		58.3			58.3		30.7	29.7	29.7			21.7
Actuated g/C Ratio		0.58			0.58		0.31	0.30	0.30			0.22
v/c Ratio		0.65			0.21		0.20	0.66	0.75			0.48
Control Delay		8.8			1.8		24.7	35.9	38.7			7.7
Queue Delay		0.0			0.0		0.0	0.0	0.0			0.0
Total Delay		8.8			1.8		24.7	35.9	38.7			7.7
LOS		A			A		C	D	D			A
Approach Delay		8.8			1.8		34.4					
Approach LOS		A			A		C					
Queue Length 50th (ft)		131			8		48	192	173			4
Queue Length 95th (ft)		m166			10		69	261	253			60
Internal Link Dist (ft)		131			748		2846				5321	
Turn Bay Length (ft)												
Base Capacity (vph)		2895			2860		1012	669	552			600
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		0.65			0.21		0.20	0.53	0.61			0.40

Intersection Summary	
Area Type:	Other
Cycle Length:	100
Actuated Cycle Length:	100
Offset:	14 (14%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle:	80
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.75
Intersection Signal Delay:	13.9
Intersection Capacity Utilization:	66.8%
ICU Level of Service:	C
Intersection LOS:	B
Analysis Period (min):	15

Lanes, Volumes, Timings
5: 2nd Street & Forster Street

12/5/2014

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



Lanes, Volumes, Timings
6: 3rd Street & Forster Street

12/5/2014

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	252	1599	169	111	495	25	49	79	131	43	92	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	11	12	10	11	12	12	11	10	12	16	12
Grade (%)		1%			-2%			-1%			0%	
Storage Length (ft)	225		0	225		0	0		0	0		0
Storage Lanes	1		0	1		0	0		1	0		0
Taper Length (ft)	50			50			25		25			
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	0.98	0.99			1.00			0.99	0.95		0.99	
Frt		0.986			0.993				0.850		0.991	
Flt Protected	0.950			0.950				0.981			0.985	
Satd. Flow (prot)	1676	4835	0	1533	4913	0	0	1693	1443	0	1955	0
Flt Permitted	0.424			0.067				0.717			0.754	
Satd. Flow (perm)	737	4835	0	108	4913	0	0	1224	1375	0	1484	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		28			13				146		3	
Link Speed (mph)		35			35			25			25	
Link Distance (ft)		828			923			950			1410	
Travel Time (s)		16.1			18.0			25.9			38.5	
Confl. Peds. (#/hr)	13		22	22		13	29		25	25		29
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
Heavy Vehicles (%)	0%	1%	1%	11%	2%	4%	2%	10%	5%	9%	7%	0%
Adj. Flow (vph)	280	1777	188	123	550	28	54	88	146	48	102	11
Shared Lane Traffic (%)												
Lane Group Flow (vph)	280	1965	0	123	578	0	0	142	146	0	161	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		17			10			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.10	1.05	1.01	1.08	1.03	0.99	0.99	1.04	1.09	1.00	0.85	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1		1	1		1	1	1	1	1	1
Detector Template							Left		Left			
Leading Detector (ft)	40	0		40	26		20	40	40	20	40	
Trailing Detector (ft)	0	0		0	20		0	0	0	0	0	
Detector 1 Position(ft)	0	0		0	20		0	0	0	0	0	
Detector 1 Size(ft)	40	0		40	6		20	40	40	20	40	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA	Perm	Perm	NA	
Protected Phases	1	6		5	2		4		4	8		8
Permitted Phases	6			2			4		4	8		8
Detector Phase	1	6		5	2		4	4	4	8		8

Lanes, Volumes, Timings
6: 3rd Street & Forster Street

12/5/2014

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	8.0	10.0		8.0	10.0		10.0	10.0	10.0	10.0	10.0	10.0
Total Split (%)	10.0	59.0		15.0	64.0		26.0	26.0	26.0	26.0	26.0	26.0
Total Split (%)	10.0%	59.0%		15.0%	64.0%		26.0%	26.0%	26.0%	26.0%	26.0%	26.0%
Maximum Green (s)	7.0	54.0		12.0	59.0		21.0	21.0	21.0	21.0	21.0	21.0
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	0.0	2.0		0.0	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	0.0
Total Lost Time (s)	3.0	5.0		3.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	C-Max		None	C-Max		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)		12.0			12.0		14.0	14.0	14.0	14.0	14.0	14.0
Pedestrian Calls (#/hr)		0			0		0	0	0	0	0	0
Act Effct Green (s)	73.4	62.8		73.5	63.1		15.3	15.3	15.3	15.3	15.3	15.3
Actuated g/C Ratio	0.73	0.63		0.74	0.63		0.15	0.15	0.15	0.15	0.15	0.15
v/c Ratio	0.45	0.64		0.60	0.19		0.76	0.44	0.70	0.70	0.70	0.70
Control Delay	5.6	8.4		24.9	7.5		64.4	10.2	54.9	54.9	54.9	54.9
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	5.6	8.4		24.9	7.5		64.4	10.2	54.9	54.9	54.9	54.9
LOS	A	A		C	A		E	B	D	D	D	D
Approach Delay		8.0			10.6		36.9		54.9		54.9	
Approach LOS		A			B		D		D		D	
Queue Length 50th (ft)	18	193		23	61		87	0	96		96	
Queue Length 95th (ft)	30	436		15	139		147	51	156		156	
Internal Link Dist (ft)		748			843		870		1330		1330	
Turn Bay Length (ft)		225			225							
Base Capacity (vph)	621	3047		253	3105		257	404	314		314	
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	0.45	0.64		0.49	0.19		0.55	0.36	0.51		0.51	
Intersection Summary												
Area Type:	Other											
Cycle Length:	100											
Actuated Cycle Length:	100											
Offset:	38 (38%), Referenced to phase 2:WBTL and 6:EBTL, Start of Green											
Natural Cycle:	55											
Control Type:	Actuated-Coordinated											
Maximum v/c Ratio:	0.76											
Intersection Signal Delay:	13.2											
Intersection Capacity Utilization:	75.7%											
ICU Level of Service:	D											
Analysis Period (min):	15											

Lanes, Volumes, Timings
6: 3rd Street & Forster Street

12/5/2014



Lanes, Volumes, Timings
7: Commonwealth Avenue & Forster Street

12/5/2014

Splits and Phases: 7: Commonwealth Avenue & Forster Street

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔↔↔		↔	↔↔↔		↔	↔		↔	↔	↔
Volume (vph)	444	1124	200	97	573	109	18	83	40	132	112	45
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	11	12	11	11	12	10	16	12	13	13	13
Grade (%)		-2%			-2%			-2%				-2%
Storage Length (ft)	275		0	250		0	150		0	150		0
Storage Lanes	1		0	1		0	1		0	1		1
Taper Length (ft)	50			25			25			50		
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	1.00	0.98		0.98	0.99		0.97	0.94		0.86		0.96
Frt		0.977			0.976			0.951				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1685	4777	0	1560	4718	0	1605	1526	0	1829	1889	1590
Flt Permitted	0.252			0.167			0.677			0.660		
Satd. Flow (perm)	445	4777	0	270	4718	0	1114	1526	0	1095	1889	1523
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		43			37			25				164
Link Speed (mph)		35			35			25				25
Link Distance (ft)		923			638			842				1379
Travel Time (s)		18.0			12.4			23.0				37.6
Confl. Peds. (#/hr)	7		66	66		7	30		161	161		30
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
Heavy Vehicles (%)	1%	1%	2%	13%	4%	5%	6%	34%	15%	3%	5%	6%
Adj. Flow (vph)	493	1249	222	108	637	121	20	92	44	147	124	50
Shared Lane Traffic (%)												
Lane Group Flow (vph)	493	1471	0	108	758	0	20	136	0	147	124	50
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		11			17			13				13
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
Headway Factor	1.08	1.03	0.99	1.03	1.03	0.99	1.08	0.84	0.99	0.95	0.95	0.95
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1		1	1		1	1		1	1	1
Detector Template												
Leading Detector (ft)	40	0		40	0		40	40		40	0	40
Trailing Detector (ft)	0	0		0	0		0	0		0	0	0
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	0
Detector 1 Size(ft)	40	0		40	0		40	40		40	0	40
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA	Perm
Protected Phases	1	6		5	2		4	4		8	8	8
Permitted Phases	6			2			4			8		8
Detector Phase	1	6		5	2		4	4		8	8	8

Lanes, Volumes, Timings

7: Commonwealth Avenue & Forster Street

12/5/2014



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	3.0	3.0		3.0	3.0		5.0	5.0		5.0	5.0	5.0
Minimum Split (s)	9.0	9.0		9.0	9.0		11.0	11.0		11.0	11.0	11.0
Total Split (s)	32.0	47.0		17.0	32.0		36.0	36.0		36.0	36.0	36.0
Total Split (%)	32.0%	47.0%		17.0%	32.0%		36.0%	36.0%		36.0%	36.0%	36.0%
Maximum Green (s)	26.0	41.0		11.0	26.0		30.0	30.0		30.0	30.0	30.0
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)	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
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	1.0	1.0		1.0	1.0		3.0	3.0		3.0	3.0	3.0
Recall Mode	None	C-Max		None	C-Max		None	None		None	None	None
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	7.0
Flash Dont Walk (s)		17.0			14.0		22.0	22.0		22.0	22.0	22.0
Pedestrian Calls (#/hr)		10			10		25	25		25	25	25
Act Effct Green (s)	65.5	52.6		42.5	35.5		22.5	22.5		22.5	22.5	22.5
Actuated g/C Ratio	0.66	0.53		0.42	0.36		0.22	0.22		0.22	0.22	0.22
v/c Ratio	0.84	0.58		0.53	0.45		0.08	0.38		0.60	0.29	0.11
Control Delay	20.3	17.9		30.6	23.8		27.3	27.5		43.4	31.7	0.5
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	20.3	17.9		30.6	23.8		27.3	27.5		43.4	31.7	0.5
LOS	C	B		C	C		C	C		D	C	A
Approach Delay		18.5			24.6			27.5			32.2	
Approach LOS		B			C			C			C	
Queue Length 50th (ft)	270	341		44	76		9	54		77	60	0
Queue Length 95th (ft)	#343	396		m90	127		28	105		139	107	0
Internal Link Dist (ft)		843			558			762			1299	
Turn Bay Length (ft)		275			250			150			150	
Base Capacity (vph)	621	2533		267	1700		334	475		328	566	571
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	0.79	0.58		0.40	0.45		0.06	0.29		0.45	0.22	0.09

Intersection Summary

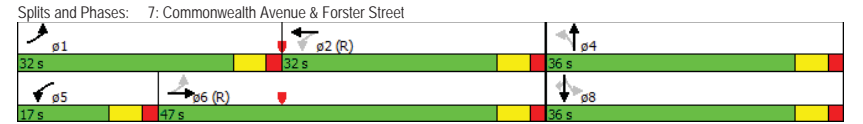
Area Type: Other
 Cycle Length: 100
 Actuated Cycle Length: 100
 Offset: 0 (0%), Referenced to phase 2:WBTL and 6:EBTL, Start of Green, Master Intersection
 Natural Cycle: 60
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.84
 Intersection Signal Delay: 21.8
 Intersection LOS: C
 Intersection Capacity Utilization 93.5%
 ICU Level of Service F
 Analysis Period (min) 15
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

Lanes, Volumes, Timings

7: Commonwealth Avenue & Forster Street

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



Lanes, Volumes, Timings
9: 7th Street & Forster Street

12/5/2014

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↑↑				↑↑	↑↑	↑↑		↑↑	↑↑
Volume (vph)	0	981	302	0	0	0	531	0	428	0	169	285
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	16	12	12	12	12	12	12	12	12	12	12
Grade (%)		-1%				0%			0%			-1%
Storage Length (ft)	0		0	0		0	0		250	0		0
Storage Lanes	0		1	0		0	2		1	0		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	1.00	1.00	0.97	1.00	0.88	1.00	0.95	1.00
Ped Bike Factor			0.68				0.96		0.88			
Frt			0.850						0.850			0.850
Flt Protected							0.950					
Satd. Flow (prot)	0	4031	1576	0	0	0	3433	0	2842	0	3391	1489
Flt Permitted							0.950					
Satd. Flow (perm)	0	4031	1072	0	0	0	3294	0	2498	0	3391	1489
Right Turn on Red			Yes			Yes			Yes	Yes		Yes
Satd. Flow (RTOR)			336						22			317
Link Speed (mph)		35			25			25			25	
Link Distance (ft)		638			364			500			393	
Travel Time (s)		12.4			9.9			13.6			10.7	
Confl. Peds. (#/hr)			258				28		78			
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
Heavy Vehicles (%)	0%	2%	3%	2%	2%	2%	2%	2%	0%	2%	7%	9%
Adj. Flow (vph)	0	1090	336	0	0	0	590	0	476	0	188	317
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1090	336	0	0	0	590	0	476	0	188	317
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		15			11			29			24	
Link Offset(ft)		-12			0			-8			12	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	0.99	0.84	0.99	1.00	1.00	1.00	1.00	1.00	1.00	0.99	0.99	0.99
Turning Speed (mph)	15		9	15		9	15		20	15		9
Number of Detectors		1	1				1		1		1	1
Detector Template			Right								Right	
Leading Detector (ft)	0	20					40		44		40	20
Trailing Detector (ft)	0	0					0		4		0	0
Detector 1 Position(ft)	0	0					0		4		0	0
Detector 1 Size(ft)	0	20					40		40		40	20
Detector 1 Type		Cl+Ex	Cl+Ex				Cl+Ex		Cl+Ex		Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0					0.0		0.0		0.0	0.0
Detector 1 Queue (s)	0.0	0.0					0.0		0.0		0.0	0.0
Detector 1 Delay (s)	0.0	0.0					0.0		0.0		0.0	0.0
Turn Type	NA	Perm					Prot		custom		NA	Perm
Protected Phases		2					3		8		4	
Permitted Phases			2						4			4
Detector Phase		2	2				3		8		4	4

Lanes, Volumes, Timings
9: 7th Street & Forster Street

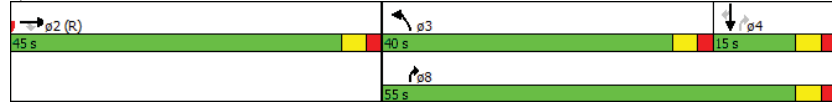
12/5/2014

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)		5.0	5.0				4.0		5.0		4.0	4.0
Minimum Split (s)		10.0	10.0				10.0		10.0		21.0	21.0
Total Split (s)		45.0	45.0				40.0		55.0		15.0	15.0
Total Split (%)		45.0%	45.0%				40.0%		55.0%		15.0%	15.0%
Maximum Green (s)		40.0	40.0				35.0		50.0		10.0	10.0
Yellow Time (s)		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
Lost Time Adjust (s)		0.0	0.0				0.0		0.0		0.0	0.0
Total Lost Time (s)		5.0	5.0				5.0		5.0		5.0	5.0
Lead/Lag							Lead				Lag	Lag
Lead-Lag Optimize?							Yes				Yes	Yes
Vehicle Extension (s)		3.0	3.0				3.0		3.0		3.0	3.0
Recall Mode		C-Max	C-Max				None		None		None	None
Walk Time (s)		7.0	7.0				7.0		7.0		5.0	5.0
Flash Dont Walk (s)		14.0	14.0				14.0		14.0		11.0	11.0
Pedestrian Calls (#/hr)		0	0				0		0		0	0
Act Effct Green (s)		50.7	50.7				23.0		39.3		11.3	11.3
Actuated g/C Ratio		0.51	0.51				0.23		0.39		0.11	0.11
v/c Ratio		0.53	0.47				0.75		0.42		0.49	0.71
Control Delay		32.3	18.8				41.8		21.3		36.2	16.6
Queue Delay		0.0	0.0				0.0		0.0		0.0	0.0
Total Delay		32.3	18.8				41.8		21.3		36.2	16.6
LOS		C	B				D		C		D	B
Approach Delay		29.1									23.9	
Approach LOS		C									C	
Queue Length 50th (ft)		343	110				181		118		49	45
Queue Length 95th (ft)		464	218				223		132		98	142
Internal Link Dist (ft)		558				284			420		313	
Turn Bay Length (ft)									250			
Base Capacity (vph)	2045	709					1201		1432		401	455
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	0.47				0.49		0.33		0.47	0.70
Intersection Summary												
Area Type:	Other											
Cycle Length:	100											
Actuated Cycle Length:	100											
Offset:	56 (56%), Referenced to phase 2:EBT, Start of Green											
Natural Cycle:	60											
Control Type:	Actuated-Coordinated											
Maximum v/c Ratio:	0.75											
Intersection Signal Delay:	29.5											
Intersection Capacity Utilization:	58.6%						ICU Level of Service B					
Analysis Period (min):	15											

Lanes, Volumes, Timings
9: 7th Street & Forster Street

12/5/2014

Splits and Phases: 9: 7th Street & Forster Street



Lanes, Volumes, Timings
11: 7th Street

12/5/2014





	←	↖	↑	↗	↓	
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations		↖↗			↖↗	↖↗
Volume (vph)	0	915	0	0	297	158
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	0%		0%			3%
Storage Length (ft)	100	0		0	0	
Storage Lanes	1	2		0	1	
Taper Length (ft)	75				25	
Lane Util. Factor	1.00	0.88	1.00	1.00	0.91	0.91
Frt		0.850				
Flt Protected					0.950	0.976
Satd. Flow (prot)	0	2814	0	0	1602	3291
Flt Permitted					0.950	0.976
Satd. Flow (perm)	0	2814	0	0	1602	3291
Link Speed (mph)	30		25			25
Link Distance (ft)	359		483			304
Travel Time (s)	8.2		13.2			8.3
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	0%	1%	0%	0%	1%	1%
Adj. Flow (vph)	0	963	0	0	313	166
Shared Lane Traffic (%)					50%	
Lane Group Flow (vph)	0	963	0	0	156	323
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	R NA	Left	Right	Left	Left
Median Width(ft)	5		12			17
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.02	1.02
Turning Speed (mph)	15	9		9	15	
Sign Control	Free		Free			Free

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	35.3%
ICU Level of Service A	
Analysis Period (min)	15






Lanes, Volumes, Timings
12: 7th Street

12/5/2014

						
Lane Group	NBT	NBR	SBL	SBT	SWL	SWR
Lane Configurations						
Volume (vph)	0	54	0	158	596	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	0%			-3%	0%	
Lane Util. Factor	1.00	0.88	1.00	0.95	1.00	1.00
Friction	0.850					
Flt Protected					0.950	
Satd. Flow (prot)	0	2814	0	3628	1787	0
Flt Permitted					0.950	
Satd. Flow (perm)	0	2814	0	3628	1787	0
Link Speed (mph)	25			25	30	
Link Distance (ft)	236			483	432	
Travel Time (s)	6.4			13.2	9.8	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	0%	1%	0%	1%	1%	0%
Adj. Flow (vph)	0	57	0	166	627	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	57	0	166	627	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	L NA	Right
Median Width(ft)	5			0	17	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	0.98	0.98	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Yield	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	44.1%			ICU Level of Service A		
Analysis Period (min)	15					

Lanes, Volumes, Timings
13: State Street

12/5/2014

						
Lane Group	EBL	EBT	WBT	WBR	SEL	SER
Lane Configurations						
Volume (vph)	0	54	596	915	297	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	0.95	1.00	1.00	0.97	1.00
Friction	0.850					
Flt Protected					0.950	
Satd. Flow (prot)	0	3574	1881	1599	3502	0
Flt Permitted					0.950	
Satd. Flow (perm)	0	3574	1881	1599	3502	0
Link Speed (mph)		30	35		30	
Link Distance (ft)		432	1119		359	
Travel Time (s)		9.8	21.8		8.2	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	0%	1%	1%	1%	0%	0%
Adj. Flow (vph)	0	57	627	963	313	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	57	627	963	313	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		10	5		36	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	0		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		15		15	15	9
Sign Control		Free	Free		Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	60.0%			ICU Level of Service B		
Analysis Period (min)	15					

Lanes, Volumes, Timings
14: 7th Street & Herr Street

12/5/2014

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations				↖	↗		↖	↗	↖	↗	↖	↗
Volume (vph)	0	0	0	376	20	343	29	679	312	139	340	16
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	10	11	12	12	11	12	16	13	16
Grade (%)		0%			4%			0%			0%	
Storage Length (ft)	0		0	460		0	0		150	100		0
Storage Lanes	0		0	1		0	1		1	1		0
Taper Length (ft)	25			25			25			50		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	0.95
Ped Bike Factor				0.97	0.96		0.80		0.65	0.93		0.98
Frt				0.858					0.850		0.993	
Flt Protected				0.950			0.950		0.950			
Satd. Flow (prot)	0	0	0	1603	1449	0	1805	3388	1553	1810	3479	0
Flt Permitted				0.950			0.529		0.236			
Satd. Flow (perm)	0	0	0	1562	1449	0	802	3388	1005	418	3479	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					218				328		7	
Link Speed (mph)		30			25			25		25		
Link Distance (ft)		299			1969			305		3799		
Travel Time (s)		6.8			53.7			8.3		103.6		
Confl. Peds. (#/hr)	23		23	23		23	129		129	129		129
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	0%	0%	0%	3%	0%	3%	0%	3%	4%	13%	5%	0%
Adj. Flow (vph)	0	0	0	396	21	361	31	715	328	146	358	17
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	396	382	0	31	715	328	146	375	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		10			10			17			17	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.12	1.07	1.03	1.00	1.04	1.00	0.85	0.96	0.85
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors				1	1		1	1	1	1	1	
Detector Template							Left		Right		Left	
Leading Detector (ft)				0	0		20	0	20	20	0	
Trailing Detector (ft)				0	0		0	0	0	0	0	
Detector 1 Position(ft)				0	0		0	0	0	0	0	
Detector 1 Size(ft)				0	0		20	0	20	20	0	
Detector 1 Type				Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)				0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)				0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)				0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Turn Type				Split	NA		Perm	NA	Perm	pm+pt	NA	
Protected Phases				4	4			2		1	6	
Permitted Phases							2		2	6		
Detector Phase				4	4		2	2	2	1	6	

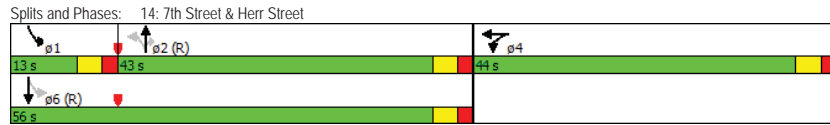
Lanes, Volumes, Timings
14: 7th Street & Herr Street

12/5/2014

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)				10.0	10.0		10.0	10.0	10.0	3.0	10.0	
Minimum Split (s)				15.0	15.0		15.0	15.0	15.0	8.0	15.0	
Total Split (%)				44.0	44.0		43.0	43.0	43.0	13.0	56.0	
Total Split (%)				44.0%	44.0%		43.0%	43.0%	43.0%	13.0%	56.0%	
Maximum Green (s)				39.0	39.0		38.0	38.0	38.0	8.0	51.0	
Yellow Time (s)				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	
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	5.0	5.0	5.0	5.0	
Lead/Lag							Lag	Lag	Lag	Lag	Lag	
Lead-Lag Optimize?							Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)				3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Recall Mode				Max	Max		C-Max	C-Max	C-Max	None	C-Max	
Walk Time (s)				7.0	7.0		7.0	7.0	7.0	7.0	7.0	
Flash Dont Walk (s)				20.0	20.0		12.0	12.0	12.0		12.0	
Pedestrian Calls (#/hr)				0	0		0	0	0	0	0	
Act Effct Green (s)				39.0	39.0		38.2	38.2	38.2	51.0	51.0	
Actuated g/C Ratio				0.39	0.39		0.38	0.38	0.38	0.51	0.51	
v/c Ratio				0.63	0.55		0.10	0.55	0.56	0.45	0.21	
Control Delay				30.3	12.9		24.9	30.9	15.2	17.9	13.6	
Queue Delay				0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay				30.3	12.9		24.9	30.9	15.2	17.9	13.6	
LOS				C	B		C	C	B	B	B	
Approach Delay					21.8			25.9			14.8	
Approach LOS					C			C			B	
Queue Length 50th (ft)				201	73		14	226	86	47	64	
Queue Length 95th (ft)				305	164		m33	302	180	82	92	
Internal Link Dist (ft)				219				1889		225		3719
Turn Bay Length (ft)					460				150	100		
Base Capacity (vph)				625	698		306	1294	586	324	1777	
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				0.63	0.55		0.10	0.55	0.56	0.45	0.21	
Intersection Summary												
Area Type: Other												
Cycle Length: 100												
Actuated Cycle Length: 100												
Offset: 22 (22%), Referenced to phase 2:NBL and 6:SBTL, Start of Green												
Natural Cycle: 55												
Control Type: Actuated-Coordinated												
Maximum v/c Ratio: 0.63												
Intersection Signal Delay: 22.1												
Intersection Capacity Utilization 63.3%												
ICU Level of Service B												
Analysis Period (min) 15												
m Volume for 95th percentile queue is metered by upstream signal.												

Lanes, Volumes, Timings
14: 7th Street & Herr Street

12/5/2014



Lanes, Volumes, Timings
15: 7th Street

12/5/2014

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations		↑	↑↑↑			
Volume (vph)	0	2	973	436	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	0.91	0.91	1.00	1.00
Frt		0.865	0.954			
Fit Protected						
Satd. Flow (prot)	0	1644	4851	0	0	0
Fit Permitted						
Satd. Flow (perm)	0	1644	4851	0	0	0
Link Speed (mph)	30		25			30
Link Distance (ft)	748		364			303
Travel Time (s)	17.0		9.9			6.9
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	0%	0%	2%	2%	0%	0%
Adj. Flow (vph)	0	2	1081	484	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	2	1565	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	0		0			0
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free		Free	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	38.5%
ICU Level of Service	A
Analysis Period (min)	15

Lanes, Volumes, Timings
16: 7th Street

12/5/2014

	↑	↖	↙	↓	↘	↗
Lane Group	NBT	NBR	SBL	SBT	NWL	NWR
Lane Configurations				↑↑↑		↗↗↗
Volume (vph)	0	0	0	454	0	975
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	0.91	1.00	0.76
Frt						0.850
Flt Protected						
Satd. Flow (prot)	0	0	0	5085	0	3610
Flt Permitted						
Satd. Flow (perm)	0	0	0	5085	0	3610
Link Speed (mph)	25			25	30	
Link Distance (ft)	393			305	303	
Travel Time (s)	10.7			8.3	6.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	493	0	1060
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	493	0	1060
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			5	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	35
Sign Control	Free			Free	Free	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	26.1%
ICU Level of Service A	
Analysis Period (min)	15

Queuing and Blocking Report
Morning Peak Hour

12/5/2014

Intersection: 1: 2nd Street & Division Street

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	226	170	159	85
Average Queue (ft)	91	68	71	34
95th Queue (ft)	167	129	137	75
Link Distance (ft)	344	3247	4863	1642
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 2: 2nd Street & Maclay Street

Movement	EB	WB	NB	SB
Directions Served	LT	LTR	LTR	LTR
Maximum Queue (ft)	71	124	149	110
Average Queue (ft)	24	47	74	41
95th Queue (ft)	56	97	118	90
Link Distance (ft)	334	2957	5299	4863
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 3: 7th Street & Maclay Street

Movement	EB	EB	WB	WB	WB	NB	NB	NB	B34
Directions Served	L	TR	L	T	R	L	T	TR	T
Maximum Queue (ft)	149	1004	290	189	128	118	244	358	8
Average Queue (ft)	17	554	160	72	62	28	106	169	0
95th Queue (ft)	83	1043	265	139	109	77	182	279	5
Link Distance (ft)		2957		827	827		414	414	3736
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)	75		250			100			
Storage Blk Time (%)		52	3			0	11		
Queuing Penalty (veh)		6	11			0	3		

Queuing and Blocking Report
Morning Peak Hour

12/5/2014

Intersection: 4: Front Street & Forster Street

Movement	EB	EB	EB	EB	B18	B18	WB	WB	B37	B37	SB	SB
Directions Served	T	T	T	R	T	T	LT	T	T	T	LT	T
Maximum Queue (ft)	199	199	214	100	275	244	170	170	91	98	450	420
Average Queue (ft)	165	125	185	91	56	72	124	127	8	13	302	291
95th Queue (ft)	218	178	235	129	177	189	178	188	45	56	406	392
Link Distance (ft)	113	113	113		4155	4155	98	98	141	141	549	549
Upstream Blk Time (%)	18	8	21	3			17	16			0	0
Queuing Penalty (veh)	0	0	0	0			84	80			0	0
Storage Bay Dist (ft)				50								
Storage Blk Time (%)				32								
Queuing Penalty (veh)				149								

Intersection: 4: Front Street & Forster Street

Movement	SB	SB	B19
Directions Served	T	R	T
Maximum Queue (ft)	428	336	25
Average Queue (ft)	261	148	1
95th Queue (ft)	373	299	18
Link Distance (ft)	549		2651
Upstream Blk Time (%)	0		
Queuing Penalty (veh)	0		
Storage Bay Dist (ft)		300	
Storage Blk Time (%)	3	1	
Queuing Penalty (veh)	16	2	

Queuing and Blocking Report
Morning Peak Hour

12/5/2014

Intersection: 5: 2nd Street & Forster Street

Movement	EB	EB	EB	B37	B37	B37	WB	WB	WB	NB	NB	NB
Directions Served	T	T	T	T	T	T	T	T	TR	L	L	T
Maximum Queue (ft)	198	175	171	10	11	6	123	142	39	93	130	298
Average Queue (ft)	130	110	98	1	0	0	28	31	4	53	55	164
95th Queue (ft)	193	165	158	10	8	4	78	86	20	84	97	261
Link Distance (ft)	141	141	141	98	98	98	748	748	748	2870	2870	2870
Upstream Blk Time (%)	6	2	2									
Queuing Penalty (veh)	34	11	10									
Storage Bay Dist (ft)												
Storage Blk Time (%)												
Queuing Penalty (veh)												

Intersection: 5: 2nd Street & Forster Street

Movement	NB	SB
Directions Served	R	R
Maximum Queue (ft)	321	173
Average Queue (ft)	148	78
95th Queue (ft)	259	140
Link Distance (ft)	2870	5299
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 6: 3rd Street & Forster Street

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	SB
Directions Served	L	T	T	TR	L	T	T	TR	LT	R	LTR
Maximum Queue (ft)	100	155	168	202	157	147	185	135	182	128	208
Average Queue (ft)	51	59	70	73	68	42	72	36	92	57	105
95th Queue (ft)	91	128	141	159	127	112	149	99	157	105	180
Link Distance (ft)		748	748	748			832	832	832	891	891
Upstream Blk Time (%)											
Queuing Penalty (veh)											
Storage Bay Dist (ft)		225				225					
Storage Blk Time (%)											
Queuing Penalty (veh)											

Queuing and Blocking Report
Morning Peak Hour

12/5/2014

Intersection: 7: Commonwealth Avenue & Forster Street

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	T	TR	L	T	T	TR	L	TR	L	T
Maximum Queue (ft)	296	532	519	499	185	321	275	238	101	218	199	676
Average Queue (ft)	146	179	262	197	74	125	129	134	12	92	126	266
95th Queue (ft)	260	403	448	406	148	235	225	228	51	185	216	911
Link Distance (ft)		832	832	832		536	536	536		773		1321
Upstream Blk Time (%)		0	0	0								4
Queuing Penalty (veh)		0	0	0								0
Storage Bay Dist (ft)	275				250				150		150	
Storage Blk Time (%)	1	1				0				3	27	1
Queuing Penalty (veh)	3	4				0				1	30	1

Intersection: 7: Commonwealth Avenue & Forster Street

Movement	SB
Directions Served	R
Maximum Queue (ft)	577
Average Queue (ft)	85
95th Queue (ft)	488
Link Distance (ft)	1321
Upstream Blk Time (%)	1
Queuing Penalty (veh)	0
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 9: 7th Street & Forster Street

Movement	EB	EB	EB	NB	NB	NB	NB	B10	B10	SB	SB
Directions Served	T	T	R	L	L	R	R	T	T	T	T
Maximum Queue (ft)	548	577	436	409	419	246	140	4	5	148	156
Average Queue (ft)	326	435	53	209	225	11	5	0	0	48	67
95th Queue (ft)	616	636	311	378	395	117	71	3	3	114	126
Link Distance (ft)	536	536	536	425	425	425		260	260	310	310
Upstream Blk Time (%)	1	11	1	1	1	0					
Queuing Penalty (veh)	4	47	4	2	3	0					
Storage Bay Dist (ft)							250				
Storage Blk Time (%)											
Queuing Penalty (veh)											

Queuing and Blocking Report
Morning Peak Hour

12/5/2014

Intersection: 11: 7th Street

Movement	WB	WB	SB
Directions Served	R	R	T
Maximum Queue (ft)	28	24	11
Average Queue (ft)	1	2	0
95th Queue (ft)	12	13	8
Link Distance (ft)		232	260
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)	100		
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 12: 7th Street

Movement	SW
Directions Served	L
Maximum Queue (ft)	75
Average Queue (ft)	11
95th Queue (ft)	45
Link Distance (ft)	329
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 13: State Street

Movement	EB	WB	WB	SE	SE
Directions Served	T	T	R	L	L
Maximum Queue (ft)	4	23	32	167	196
Average Queue (ft)	0	1	1	63	83
95th Queue (ft)	3	12	14	119	141
Link Distance (ft)	329	1104	1104	232	232
Upstream Blk Time (%)				0	0
Queuing Penalty (veh)				0	0
Storage Bay Dist (ft)					
Storage Blk Time (%)					
Queuing Penalty (veh)					

Queuing and Blocking Report
Morning Peak Hour

12/5/2014

Intersection: 14: 7th Street & Herr Street

Movement	WB	WB	NB	NB	NB	NB	SB	SB	SB
Directions Served	L	TR	L	T	T	R	L	T	TR
Maximum Queue (ft)	336	292	63	254	263	225	140	164	158
Average Queue (ft)	177	109	16	152	159	100	72	48	82
95th Queue (ft)	299	208	45	236	244	203	125	107	141
Link Distance (ft)		1911	243	243	243			3736	3736
Upstream Blk Time (%)				1	1	0			
Queuing Penalty (veh)				2	2	0			
Storage Bay Dist (ft)	460					150	100		
Storage Blk Time (%)				10	1	4	0		
Queuing Penalty (veh)				30	2	6	0		

Intersection: 15: 7th Street

Movement	WB	NB	NB
Directions Served	R	T	TR
Maximum Queue (ft)	19	318	104
Average Queue (ft)	1	26	3
95th Queue (ft)	9	165	48
Link Distance (ft)	678	290	290
Upstream Blk Time (%)		1	
Queuing Penalty (veh)		6	
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 16: 7th Street

Movement	NW	NW
Directions Served	R	R
Maximum Queue (ft)	59	46
Average Queue (ft)	2	3
95th Queue (ft)	23	29
Link Distance (ft)	254	254
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Network Summary

Network wide Queuing Penalty: 557

Lanes, Volumes, Timings
1: 2nd Street & Division Street

12/5/2014



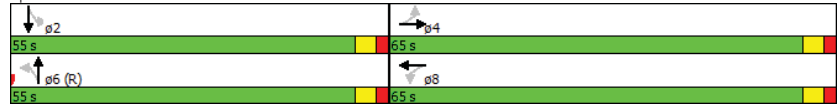
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Volume (vph)	3	66	8	94	766	26	442	55	45	24	13	60
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	16	12	10	10	10	10	16	10
Lane Util. Factor	1.00	1.00	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
Frt		0.986			0.996			0.989				0.917
Flt Protected		0.998			0.995			0.961				0.988
Satd. Flow (prot)	0	1668	0	0	2113	0	0	1676	0	0	1888	0
Flt Permitted		0.977			0.954			0.708				0.847
Satd. Flow (perm)	0	1633	0	0	2026	0	0	1234	0	0	1619	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		7			2			5				63
Link Speed (mph)		25			25			25				25
Link Distance (ft)		381			3285			4939				1680
Travel Time (s)		10.4			89.6			134.7				45.8
Confl. Peds. (#/hr)							1		1	1		1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	0%	1%	0%	0%	1%	4%	0%	3%	1%	8%	0%	0%
Parking (#/hr)		0										
Adj. Flow (vph)	3	69	8	99	806	27	465	58	47	25	14	63
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	80	0	0	932	0	0	570	0	0	102	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			10	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.14	1.00	1.00	0.85	1.00	1.09	1.09	1.09	1.09	0.85	1.09
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			6				2
Permitted Phases	4			8			6			2		
Minimum Split (s)	9.0	9.0		9.0	9.0		9.0	9.0		9.0	9.0	
Total Split (s)	65.0	65.0		65.0	65.0		65.0	65.0		65.0	65.0	
Total Split (%)	54.2%	54.2%		54.2%	54.2%		45.8%	45.8%		45.8%	45.8%	
Maximum Green (s)	60.0	60.0		60.0	60.0		50.0	50.0		50.0	50.0	
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)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		5.0			5.0			5.0			5.0	
Lead/Lag												
Lead-Lag Optimize?												
Act Effct Green (s)		60.0			60.0			50.0			50.0	
Actuated g/C Ratio		0.50			0.50			0.42			0.42	
v/c Ratio		0.10			0.92			1.10			0.14	
Control Delay		14.8			43.0			104.5			10.0	
Queue Delay		0.0			0.0			0.0			0.0	

Lanes, Volumes, Timings
1: 2nd Street & Division Street

12/5/2014

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay		14.8			43.0			104.5			10.0	
LOS		B			D			F			B	
Approach Delay		14.8			43.0			104.5			10.0	
Approach LOS		B			D			F			B	
Intersection Summary												
Area Type:	Other											
Cycle Length:	120											
Actuated Cycle Length:	120											
Offset:	0 (0%), Referenced to phase 6:NBT, Start of Green											
Natural Cycle:	100											
Control Type:	Pretimed											
Maximum v/c Ratio:	1.10											
Intersection Signal Delay:	60.5					Intersection LOS: E						
Intersection Capacity Utilization:	98.9%					ICU Level of Service F						
Analysis Period (min):	15											

Splits and Phases: 1: 2nd Street & Division Street



Lanes, Volumes, Timings
2: 2nd Street & Maclay Street

12/5/2014

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↔			↔	
Volume (vph)	8	48	0	95	122	65	7	480	148	0	201	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	16	12	12	16	12	12	11	12	12	12	12
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			0.968	
Frt					0.969			0.968				
Fit Protected		0.993			0.983			0.999				
Satd. Flow (prot)	0	2138	0	0	2012	0	0	1746	0	0	1900	0
Fit Permitted		0.953			0.873			0.997				
Satd. Flow (perm)	0	2051	0	0	1784	0	0	1742	0	0	1900	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					19			48				
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		360			3029			5401			4939	
Travel Time (s)		9.8			82.6			147.3			134.7	
Confl. Peds. (#/hr)	4		4	4		4	10		10			
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	0%	0%	0%	0%	2%	2%	13%	1%	0%	0%	0%	0%
Parking (#/hr)							0		0			
Adj. Flow (vph)	8	51	0	100	128	68	7	505	156	0	212	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	59	0	0	296	0	0	668	0	0	212	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		11			11			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	0.85	1.00	1.00	0.85	1.00	1.00	1.04	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1		1	1		1	1		1	0	
Detector Template	Left			Left			Left			Left		
Leading Detector (ft)	20	50		20	50		20	50		20	0	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	50		20	50		20	50		20	6	
Detector 1 Type	CI+Ex	CI+Ex		CI+Ex	CI+Ex		CI+Ex	CI+Ex		CI+Ex	CI+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		NA	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		4.0	4.0	
Minimum Split (s)	8.0	8.0		8.0	8.0		8.0	8.0		21.0	21.0	

Lanes, Volumes, Timings
2: 2nd Street & Maclay Street

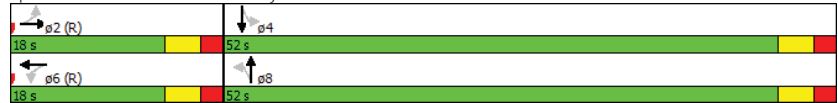
12/5/2014

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Split (s)	18.0	18.0	18.0	18.0	18.0	52.0	52.0	52.0	52.0	52.0	52.0	52.0
Total Split (%)	25.7%	25.7%	25.7%	25.7%	25.7%	74.3%	74.3%	74.3%	74.3%	74.3%	74.3%	74.3%
Maximum Green (s)	13.0	13.0	13.0	13.0	13.0	47.0	47.0	47.0	47.0	47.0	47.0	47.0
Yellow Time (s)	3.0	3.0	3.0	3.0	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	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	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
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	3.0	3.0
Recall Mode	C-Min	C-Min	C-Min	C-Min	C-Min	None	None	None	None	None	None	None
Walk Time (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	5.0	5.0	5.0
Flash Dont Walk (s)	15.0	15.0	15.0	15.0	15.0	12.0	12.0	11.0	11.0	11.0	11.0	11.0
Pedestrian Calls (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Act Effct Green (s)	24.4	24.4	24.4	24.4	24.4	35.6	35.6	35.6	35.6	35.6	35.6	35.6
Actuated g/C Ratio	0.35	0.35	0.35	0.35	0.35	0.51	0.51	0.51	0.51	0.51	0.51	0.51
v/c Ratio	0.08	0.08	0.08	0.08	0.08	0.73	0.73	0.73	0.73	0.73	0.73	0.73
Control Delay	20.5	20.5	20.5	20.5	20.5	16.7	16.7	16.7	16.7	16.7	16.7	16.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	20.5	20.5	20.5	20.5	20.5	16.7	16.7	16.7	16.7	16.7	16.7	16.7
LOS	C	C	C	C	C	B	B	B	B	B	B	B
Approach Delay	20.5	20.5	20.5	20.5	20.5	16.7	16.7	16.7	16.7	16.7	16.7	16.7
Approach LOS	C	C	C	C	C	B	B	B	B	B	B	B

Intersection Summary

Area Type:	Other
Cycle Length:	70
Actuated Cycle Length:	70
Offset:	0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green, Master Intersection
Natural Cycle:	45
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.73
Intersection Signal Delay:	17.3
Intersection LOS:	B
Intersection Capacity Utilization:	71.0%
ICU Level of Service:	C
Analysis Period (min):	15

Splits and Phases: 2: 2nd Street & Maclay Street




Lanes, Volumes, Timings
3: 7th Street & Maclay Street

12/5/2014

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Volume (vph)	5	775	153	88	425	278	73	859	592	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	12	12	10	11	11	11	14	11	13	13	12
Grade (%)		-3%			-3%			-1%				-1%
Storage Length (ft)	75	0	250	0	100	0	0	0	0	0	0	200
Storage Lanes	1	0	1	0	1	0	0	0	0	0	0	0
Taper Length (ft)	75	0	300	0	100	0	0	0	0	0	0	25
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00	1.00	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Frt	0.975	0.975	0.850	0.850	0.939	0.939	0.939	0.939	0.939	0.939	0.939	0.939
Flt Protected	0.950	0.950	0.950	0.950	0.950	0.950	0.950	0.950	0.950	0.950	0.950	0.950
Satd. Flow (prot)	1771	1858	0	1660	1846	1554	1754	3216	0	0	0	0
Flt Permitted	0.470	0.470	0.072	0.072	0.950	0.950	0.950	0.950	0.950	0.950	0.950	0.950
Satd. Flow (perm)	875	1858	0	126	1846	1532	1730	3216	0	0	0	0
Right Turn on Red		Yes		Yes		Yes		Yes		Yes		Yes
Satd. Flow (RTOR)	10	10	55	167	167	167	167	167	167	167	167	167
Link Speed (mph)	25	25	25	25	25	25	25	25	25	25	25	25
Link Distance (ft)	3029	3029	877	479	2587	2587	2587	2587	2587	2587	2587	2587
Travel Time (s)	82.6	82.6	17.1	13.1	70.6	70.6	70.6	70.6	70.6	70.6	70.6	70.6
Confl. Peds. (#/hr)	1	1	1	1	5	5	5	5	5	5	5	5
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
Heavy Vehicles (%)	0%	1%	0%	3%	1%	2%	0%	1%	1%	1%	0%	0%
Adj. Flow (vph)	5	807	159	92	443	290	76	895	617	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	5	966	0	92	443	290	76	1512	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)	11	11	11	11	11	11	11	11	11	11	11	11
Link Offset(ft)	0	0	0	0	0	0	0	0	0	0	0	0
Crosswalk Width(ft)	16	16	16	16	16	16	16	16	16	16	16	16
Two way Left Turn Lane												
Headway Factor	1.02	0.98	0.98	1.07	1.02	1.02	1.04	1.04	0.91	1.04	0.95	0.99
Turning Speed (mph)	15	15	9	15	15	9	15	15	9	15	15	9
Number of Detectors	1	1	1	1	1	1	1	1	1	1	1	1
Detector Template			Left	Right	Left	Left	Left	Left	Left	Left	Left	Left
Leading Detector (ft)	50	50	50	50	50	50	50	50	50	50	50	50
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Size(ft)	50	50	50	50	50	50	50	50	50	50	50	50
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Turn Type	Perm	NA	pm+pt	NA	Perm	Perm	Perm	NA	NA	NA	NA	NA
Protected Phases	4	4	3	8	8	2	2	2	2	2	2	2
Permitted Phases	4	4	3	8	8	2	2	2	2	2	2	2
Detector Phase	4	4	3	8	8	2	2	2	2	2	2	2

Lanes, Volumes, Timings
3: 7th Street & Maclay Street

12/5/2014

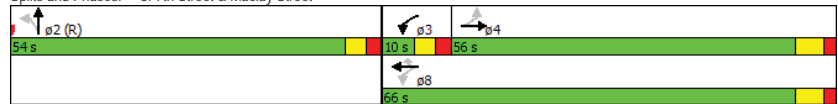


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	3.0	3.0		3.0	3.0	3.0	10.0	10.0				
Minimum Split (s)	9.0	9.0		8.4	9.0	9.0	15.4	15.4				
Total Split (s)	56.0	56.0		10.0	66.0	66.0	54.0	54.0				
Total Split (%)	46.7%	46.7%		8.3%	55.0%	55.0%	45.0%	45.0%				
Maximum Green (s)	50.0	50.0		4.6	60.0	60.0	48.6	48.6				
Yellow Time (s)	4.0	4.0		3.0	4.0	4.0	3.0	3.0				
All-Red Time (s)	2.0	2.0		2.4	2.0	2.0	2.4	2.4				
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0				
Total Lost Time (s)	6.0	6.0		5.4	6.0	6.0	5.4	5.4				
Lead/Lag	Lag	Lag		Lead								
Lead-Lag Optimize?	Yes	Yes		Yes								
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0				
Recall Mode	None	None		None	None	None	C-Min	C-Min				
Walk Time (s)	7.0	7.0		11.0	7.0	7.0	7.0	7.0				
Flash Dont Walk (s)	15.0	15.0		0.0	15.0	15.0	15.0	15.0				
Pedestrian Calls (#/hr)	0	0		0	0	0	0	0				
Act Effct Green (s)	50.0	50.0		60.6	60.0	60.0	48.6	48.6				
Actuated g/C Ratio	0.42	0.42		0.50	0.50	0.50	0.40	0.40				
v/c Ratio	0.01	1.24		0.75	0.48	0.37	0.11	1.08				
Control Delay	20.8	150.1		53.8	21.9	16.1	39.3	92.4				
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0				
Total Delay	20.8	150.1		53.8	21.9	16.1	39.3	92.4				
LOS	C	F		D	C	B	D	F				
Approach Delay	149.4			23.5		89.9						
Approach LOS	F			C		F						

Intersection Summary


Area Type:	Other
Cycle Length:	120
Actuated Cycle Length:	120
Offset:	0 (0%), Referenced to phase 2:NBTL and 6.; Start of Green
Natural Cycle:	130
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	1.24
Intersection Signal Delay:	90.8
Intersection Capacity Utilization:	111.9%
Analysis Period (min):	15
Intersection LOS:	F
ICU Level of Service:	H

Splits and Phases: 3: 7th Street & Maclay Street



Lanes, Volumes, Timings
4: Front Street & Forster Street

12/5/2014



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑	↑		↑↑						↑↑↑	↑
Volume (vph)	0	891	245	0	1947	0	0	0	0	72	744	236
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	11	11
Grade (%)		-3%			-1%			-1%			0%	
Storage Length (ft)	75		50	0		0	0		0	0		300
Storage Lanes	0		1	0		0	0		0	0		1
Taper Length (ft)	75			25			25			25		
Lane Util. Factor	1.00	0.91	1.00	1.00	0.95	1.00	1.00	1.00	1.00	0.91	0.91	1.00
Ped Bike Factor			0.95								1.00	0.98
Frt			0.850									0.850
Flt Protected												0.996
Satd. Flow (prot)	0	4920	1623	0	3328	0	0	0	0	0	4806	1501
Flt Permitted												0.996
Satd. Flow (perm)	0	4920	1546	0	3328	0	0	0	0	0	4803	1471
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			36									36
Link Speed (mph)		50			35			35			35	
Link Distance (ft)		192			146			595			709	
Travel Time (s)		2.6			2.8			11.6			13.8	
Confl. Peds. (#/hr)	18		18	18		18				4		4
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
Heavy Vehicles (%)	0%	7%	1%	0%	9%	0%	0%	0%	0%	3%	4%	4%
Adj. Flow (vph)	0	928	255	0	2028	0	0	0	0	75	775	246
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	928	255	0	2028	0	0	0	0	0	850	246
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Right	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		16			5			0			0	
Link Offset(ft)		5			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	0.98	0.98	0.98	0.99	0.99	0.99	0.99	0.99	0.99	1.00	1.04	1.04
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type		NA	Perm		NA					Perm	NA	Perm
Protected Phases		2			6						4	
Permitted Phases			2								4	
Minimum Split (s)		17.0	17.0		17.0					17.0	17.0	17.0
Total Split (s)		82.0	82.0		82.0					38.0	38.0	38.0
Total Split (%)		68.3%	68.3%		68.3%					31.7%	31.7%	31.7%
Maximum Green (s)		75.0	75.0		75.0					31.0	31.0	31.0
Yellow Time (s)		4.0	4.0		4.0					4.0	4.0	4.0
All-Red Time (s)		3.0	3.0		3.0					3.0	3.0	3.0
Lost Time Adjust (s)		0.0	0.0		0.0					0.0	0.0	0.0
Total Lost Time (s)		7.0	7.0		7.0					7.0	7.0	7.0
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)		8.0	8.0		8.0					8.0	8.0	8.0
Flash Dont Walk (s)		10.0	10.0		10.0					10.0	10.0	10.0

Lanes, Volumes, Timings
4: Front Street & Forster Street

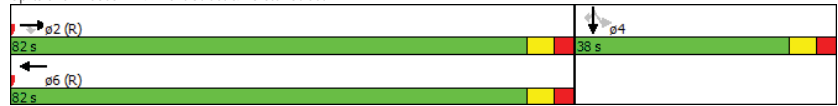
12/5/2014

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Pedestrian Calls (#/hr)		0	0		0					0	0	0
Act Effct Green (s)		75.0	75.0		75.0					31.0	31.0	
Actuated g/C Ratio		0.62	0.62		0.62					0.26	0.26	
v/c Ratio		0.30	0.26		0.97					0.69	0.61	
Control Delay		10.7	9.3		35.4					43.5	40.4	
Queue Delay		0.0	0.0		25.6					0.0	0.0	
Total Delay		10.7	9.3		61.0					43.5	40.4	
LOS		B	A		E					D	D	
Approach Delay		10.4			61.0					42.8		
Approach LOS		B			E					D		

Intersection Summary

Area Type:	Other
Cycle Length:	120
Actuated Cycle Length:	120
Offset:	102 (85%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle:	90
Control Type:	Pretimed
Maximum v/c Ratio:	0.97
Intersection Signal Delay:	42.5
Intersection Capacity Utilization:	81.3%
Analysis Period (min):	15
ICU Level of Service D	

Splits and Phases: 4: Front Street & Forster Street



Lanes, Volumes, Timings
5: 2nd Street & Forster Street

12/5/2014

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑			↑↑↑		↑↑	↑	↑			↑
Volume (vph)	0	952	0	0	1019	69	435	531	641	0	0	470
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	12	12	11	12	11	11	10	10	10	10
Grade (%)		0%			-1%			-1%				0%
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	0.91	0.97	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor					0.99		0.99		0.98			
Frt					0.991				0.850			0.865
Flt Protected							0.950					
Satd. Flow (prot)	0	4686	0	0	4703	0	3368	1810	1471	0	0	1534
Flt Permitted							0.950					
Satd. Flow (perm)	0	4686	0	0	4703	0	3347	1810	1444	0	0	1534
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					10				27			27
Link Speed (mph)		35			35			25				25
Link Distance (ft)		211			828			2093				5401
Travel Time (s)		4.1			16.1			57.1				147.3
Confl. Peds. (#/hr)	20		20	20		20	5		5			
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
Heavy Vehicles (%)	0%	7%	0%	0%	6%	0%	1%	2%	3%	0%	0%	0%
Adj. Flow (vph)	0	981	0	0	1051	71	448	547	661	0	0	485
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	981	0	0	1122	0	448	547	661	0	0	485
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Right	Right	Left	Left	Right	Left	Right	Left	Left	Right	Right
Median Width(ft)		29			17			22				22
Link Offset(ft)		0			6			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
Headway Factor	1.04	1.04	1.00	0.99	1.04	0.99	1.04	1.09	1.09	1.09	1.09	1.09
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors		2			1		1	1	1			1
Detector Template							Left		Right			Right
Leading Detector (ft)		246			0		40	40	40			20
Trailing Detector (ft)		0			0		0	0	0			0
Detector 1 Position(ft)		0			0		0	0	0			0
Detector 1 Size(ft)		0			0		40	40	40			20
Detector 1 Type		Cl+Ex			Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex			Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)		0.0			0.0		0.0	0.0	0.0			0.0
Detector 1 Queue (s)		0.0			0.0		0.0	0.0	0.0			0.0
Detector 1 Delay (s)		0.0			0.0		0.0	0.0	0.0			0.0
Detector 2 Position(ft)					240							
Detector 2 Size(ft)					6							
Detector 2 Type					Cl+Ex							
Detector 2 Channel												
Detector 2 Extend (s)		0.0										
Turn Type		NA			NA		pm+pt	NA	Perm			Perm
Protected Phases		2			6		7	4				

Lanes, Volumes, Timings
5: 2nd Street & Forster Street

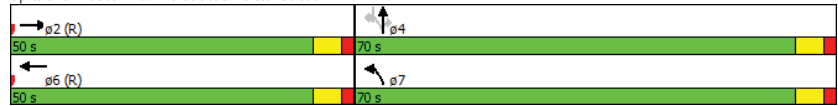
12/5/2014

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases							4	4	4			4
Detector Phase		2			6		7	4	4			4
Switch Phase												
Minimum Initial (s)		5.0			5.0		4.0	5.0	5.0			5.0
Minimum Split (s)		34.0			35.0		11.0	34.0	34.0			34.0
Total Split (s)		50.0			50.0		70.0	70.0	70.0			70.0
Total Split (%)		41.7%			41.7%		58.3%	58.3%	58.3%			58.3%
Maximum Green (s)		44.0			44.0		64.0	64.0	64.0			64.0
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
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)		5.0			3.0		3.0	5.0	5.0			5.0
Recall Mode		C-Max			C-Max		None	None	None			None
Walk Time (s)		7.0			8.0		7.0	7.0	7.0			7.0
Flash Dont Walk (s)		21.0			10.0		21.0	21.0	21.0			21.0
Pedestrian Calls (#/hr)		0			0		0	0	0			0
Act Effct Green (s)		45.8			45.8		62.2	62.2	62.2			62.2
Actuated g/C Ratio		0.38			0.38		0.52	0.52	0.52			0.52
v/c Ratio		0.55			0.62		0.26	0.58	0.87			0.60
Control Delay		23.3			43.3		16.2	22.7	37.7			22.3
Queue Delay		0.3			0.0		1.4	0.0	0.0			58.2
Total Delay		23.6			43.3		17.7	22.7	37.7			80.5
LOS		C			D		B	C	D			F
Approach Delay		23.6			43.3		27.3					
Approach LOS		C			D		C					

Intersection Summary

Area Type:	Other
Cycle Length:	120
Actuated Cycle Length:	120
Offset:	10 (8%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle:	80
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.87
Intersection Signal Delay:	36.8
Intersection Capacity Utilization:	77.9%
ICU Level of Service D	
Analysis Period (min):	15

Spplits and Phases: 5: 2nd Street & Forster Street



Lanes, Volumes, Timings
6: 3rd Street & Forster Street

12/5/2014

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔↔↔	↔	↔	↔↔↔	↔	↔	↔	↔	↔	↔	↔
Volume (vph)	257	1302	60	155	940	57	123	142	241	40	175	31
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	11	12	10	11	12	12	11	10	12	16	12
Grade (%)		1%			-2%			-1%			0%	
Storage Length (ft)	225		0	225		0	0		0	0		0
Storage Lanes	1		0	1		0	0		1	0		0
Taper Length (ft)	50			50			25			25		
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	0.99	1.00			1.00		0.99	0.95	0.99			0.99
Frt		0.993			0.991			0.850	0.983			
Flt Protected	0.950			0.950				0.977	0.992			
Satd. Flow (prot)	1660	4936	0	1652	4952	0	0	1784	1443	0	2057	0
Flt Permitted	0.218			0.124				0.601	0.795			
Satd. Flow (perm)	378	4936	0	216	4952	0	0	1086	1375	0	1643	0
Right Turn on Red			Yes		Yes			Yes	Yes		Yes	Yes
Satd. Flow (RTOR)		7			9				248		7	
Link Speed (mph)		35			35			25	25		25	
Link Distance (ft)		828			923			950	1410		1410	
Travel Time (s)		16.1			18.0			25.9	38.5		38.5	
Confl. Peds. (#/hr)	16		10	10		16	32		28	28		32
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
Heavy Vehicles (%)	1%	0%	3%	3%	1%	0%	0%	2%	5%	0%	2%	0%
Adj. Flow (vph)	265	1342	62	160	969	59	127	146	248	41	180	32
Shared Lane Traffic (%)												
Lane Group Flow (vph)	265	1404	0	160	1028	0	0	273	248	0	253	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		17			10			0	0		0	
Link Offset(ft)		0			0			0	0		0	
Crosswalk Width(ft)		16			16			16	16		16	
Two way Left Turn Lane												
Headway Factor	1.10	1.05	1.01	1.08	1.03	0.99	0.99	1.04	1.09	1.00	0.85	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1		1	1		1	1	1	1	1	1
Detector Template							Left		Left			
Leading Detector (ft)	40	0		40	26		20	40	40	20	40	
Trailing Detector (ft)	0	0		0	20		0	0	0	0	0	
Detector 1 Position(ft)	0	0		0	20		0	0	0	0	0	
Detector 1 Size(ft)	40	0		40	6		20	40	40	20	40	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA	Perm	Perm	NA	NA
Protected Phases	1	6		5	2		4	4	4	8		8
Permitted Phases	6			2			4		4	8		8
Detector Phase	1	6		5	2		4	4	4	8		8

Lanes, Volumes, Timings
6: 3rd Street & Forster Street

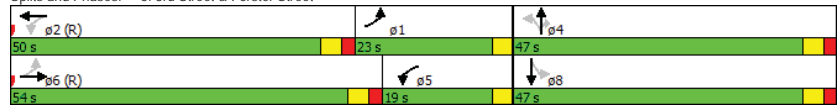
12/5/2014

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
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)	8.0	10.0		8.0	10.0		10.0	10.0	10.0	10.0	10.0	
Total Split (s)	23.0	54.0		19.0	50.0		47.0	47.0	47.0	47.0	47.0	
Total Split (%)	19.2%	45.0%		15.8%	41.7%		39.2%	39.2%	39.2%	39.2%	39.2%	
Maximum Green (s)	20.0	49.0		16.0	45.0		42.0	42.0	42.0	42.0	42.0	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	0.0	2.0		0.0	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)	3.0	5.0		3.0	5.0		5.0	5.0	5.0	5.0	5.0	
Lead/Lag	Lag	Lead		Lag	Lead							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	C-Max		None	C-Max		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)		12.0			12.0		21.0	21.0	21.0	21.0	21.0	
Pedestrian Calls (#/hr)		0			0		0	0	0	0	0	
Act Effct Green (s)	79.2	62.3		72.2	58.3		32.8	32.8	32.8	32.8	32.8	
Actuated g/C Ratio	0.66	0.52		0.60	0.49		0.27	0.27	0.27	0.27	0.27	
v/c Ratio	0.63	0.55		0.59	0.43		0.92	0.45	0.56	0.56	0.56	
Control Delay	31.6	20.5		51.3	29.3		76.8	6.1	39.9	39.9	39.9	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay	31.6	20.5		51.3	29.3		76.8	6.1	39.9	39.9	39.9	
LOS	C	C		D	C		E	A	D	D	D	
Approach Delay		22.2			32.3			43.2			39.9	
Approach LOS		C			C			D			D	

Intersection Summary

Area Type:	Other
Cycle Length:	120
Actuated Cycle Length:	120
Offset:	43 (36%), Referenced to phase 2:WBTL and 6:EBTL, Start of Green
Natural Cycle:	50
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.92
Intersection Signal Delay:	29.8
Intersection LOS:	C
Intersection Capacity Utilization:	90.7%
ICU Level of Service:	E
Analysis Period (min):	15

Splits and Phases: 6: 3rd Street & Forster Street



Lanes, Volumes, Timings
7: Commonwealth Avenue & Forster Street

12/5/2014

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔↔↔	↔	↔	↔↔↔	↔	↔	↔	↔	↔	↔	↔
Volume (vph)	209	1353	52	81	762	59	151	116	57	156	166	176
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	11	12	11	11	12	10	16	12	13	13	13
Grade (%)		-2%			-2%			-2%			-2%	
Storage Length (ft)	275		0	250		0	150		0	150		0
Storage Lanes	1		0	1		0	1		0	1		1
Taper Length (ft)	50			25			25			50		
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	0.98	1.00		0.99	0.99		0.97	0.94		0.87		0.95
Frt		0.994			0.989			0.951				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1620	4955	0	1456	4929	0	1668	1743	0	1829	1944	1686
Flt Permitted	0.316			0.109			0.559			0.545		
Satd. Flow (perm)	530	4955	0	166	4929	0	956	1743	0	911	1944	1608
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		6			10			22				185
Link Speed (mph)		35			35			25				25
Link Distance (ft)		923			638			842				1379
Travel Time (s)		18.0			12.4			23.0				37.6
Confl. Peds. (#/hr)	25		44	44		25	34		173	173		34
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	5%	1%	4%	21%	1%	2%	2%	15%	4%	3%	2%	0%
Adj. Flow (vph)	220	1424	55	85	802	62	159	122	60	164	175	185
Shared Lane Traffic (%)												
Lane Group Flow (vph)	220	1479	0	85	864	0	159	182	0	164	175	185
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		11			17			13			13	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.08	1.03	0.99	1.03	1.03	0.99	1.08	0.84	0.99	0.95	0.95	0.95
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1		1	1		1	1		1	1	1
Detector Template												
Leading Detector (ft)	40	0		40	0		40	40		40	0	40
Trailing Detector (ft)	0	0		0	0		0	0		0	0	0
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	0
Detector 1 Size(ft)	40	0		40	0		40	40		40	0	40
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA	Perm
Protected Phases	1	6		5	2		4			8		8
Permitted Phases	6			2			4			8		8
Detector Phase	1	6		5	2		4	4		8	8	8

Lanes, Volumes, Timings

7: Commonwealth Avenue & Forster Street

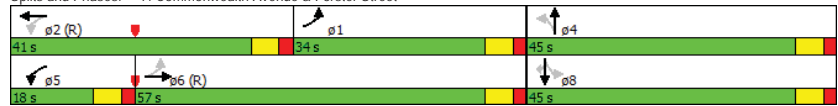
12/5/2014

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	3.0	3.0		3.0	3.0		5.0	5.0		5.0	5.0	5.0
Minimum Split (s)	9.0	9.0		9.0	9.0		11.0	11.0		11.0	11.0	11.0
Total Split (s)	34.0	57.0		18.0	41.0		45.0	45.0		45.0	45.0	45.0
Total Split (%)	28.3%	47.5%		15.0%	34.2%		37.5%	37.5%		37.5%	37.5%	37.5%
Maximum Green (s)	28.0	51.0		12.0	35.0		39.0	39.0		39.0	39.0	39.0
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)	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
Lead/Lag	Lag	Lag		Lead	Lead							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	1.0	1.0		1.0	1.0		3.0	3.0		3.0	3.0	3.0
Recall Mode	None	C-Max		None	C-Max		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)		17.0			20.0		28.0	28.0		28.0	28.0	28.0
Pedestrian Calls (#/hr)		10			10		25	25		25	25	25
Act Effct Green (s)	67.3	67.3		45.6	45.6		28.4	28.4		28.4	28.4	28.4
Actuated g/C Ratio	0.56	0.56		0.38	0.38		0.24	0.24		0.24	0.24	0.24
v/c Ratio	0.40	0.53		0.56	0.46		0.71	0.43		0.76	0.38	0.36
Control Delay	45.5	37.0		46.2	22.6		57.3	35.2		63.5	39.0	6.4
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	45.5	37.0		46.2	22.6		57.3	35.2		63.5	39.0	6.4
LOS	D	D		D	C		E	D		E	D	A
Approach Delay		38.1			24.7			45.5			35.2	
Approach LOS		D			C			D			D	

Intersection Summary

Area Type:	Other
Cycle Length:	120
Actuated Cycle Length:	120
Offset: 0 (0%), Referenced to phase 2:WBT and 6:EBTL, Start of Green, Master Intersection	
Natural Cycle:	50
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.76
Intersection Signal Delay:	34.8
Intersection LOS:	C
Intersection Capacity Utilization:	91.8%
ICU Level of Service:	F
Analysis Period (min):	15

Splits and Phases: 7: Commonwealth Avenue & Forster Street



Lanes, Volumes, Timings

9: 7th Street & Forster Street

12/5/2014

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↑				↑↑	↑	↑↑		↑↑	↑
Volume (vph)	0	948	618	0	0	0	335	0	225	0	564	551
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	16	12	12	12	12	12	12	12	12	12	12
Grade (%)		-1%			0%			0%			-1%	
Storage Length (ft)	0		0	0		0	0		250	0		0
Storage Lanes	0		1	0		0	2		1	0		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	1.00	1.00	0.97	1.00	0.88	1.00	0.95	1.00
Ped Bike Factor							0.96					
Frt			0.850						0.850			0.850
Flt Protected							0.950					
Satd. Flow (prot)	0	4071	1607	0	0	0	3467	0	2814	0	3557	1576
Flt Permitted							0.950					
Satd. Flow (perm)	0	4071	1607	0	0	0	3330	0	2814	0	3557	1576
Right Turn on Red			Yes			Yes			Yes	Yes		Yes
Satd. Flow (RTOR)			440						88			612
Link Speed (mph)		35			25			25			25	
Link Distance (ft)		638			364			500			393	
Travel Time (s)		12.4			9.9			13.6			10.7	
Confl. Peds. (#/hr)							42					
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
Heavy Vehicles (%)	0%	1%	1%	0%	0%	0%	1%	0%	1%	0%	2%	3%
Adj. Flow (vph)	0	1053	687	0	0	0	372	0	250	0	627	612
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1053	687	0	0	0	372	0	250	0	627	612
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		15			11			29			24	
Link Offset(ft)		-12			0			-8			12	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	0.99	0.84	0.99	1.00	1.00	1.00	1.00	1.00	1.00	0.99	0.99	0.99
Turning Speed (mph)	15		9	15		9	15		20	15		9
Number of Detectors		1	1				1		1		1	1
Detector Template			Right								Right	
Leading Detector (ft)		1	20				40		44		40	20
Trailing Detector (ft)		0	0				0		4		0	0
Detector 1 Position(ft)		0	0				0		4		0	0
Detector 1 Size(ft)		1	20				40		40		40	20
Detector 1 Type		Cl+Ex	Cl+Ex				Cl+Ex		Cl+Ex		Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)		0.0	0.0				0.0		0.0		0.0	0.0
Detector 1 Queue (s)		0.0	0.0				0.0		0.0		0.0	0.0
Detector 1 Delay (s)		0.0	0.0				0.0		0.0		0.0	0.0
Turn Type	NA	Perm					Prot		custom		NA	Perm
Protected Phases		2					3		8		4	
Permitted Phases			2						4			4
Detector Phase		2	2				3		8		4	4

Lanes, Volumes, Timings
9: 7th Street & Forster Street

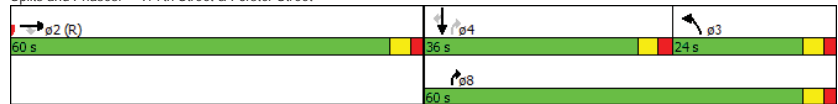
12/5/2014

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)		5.0	5.0				4.0		5.0		4.0	4.0
Minimum Split (s)		10.0	10.0				10.0		10.0		21.0	21.0
Total Split (s)		60.0	60.0				24.0		60.0		36.0	36.0
Total Split (%)		50.0%	50.0%				20.0%		50.0%		30.0%	30.0%
Maximum Green (s)		55.0	55.0				19.0		55.0		31.0	31.0
Yellow Time (s)		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
Lost Time Adjust (s)		0.0	0.0				0.0		0.0		0.0	0.0
Total Lost Time (s)		5.0	5.0				5.0		5.0		5.0	5.0
Lead/Lag							Lag		Lead		Lead	
Lead-Lag Optimize?							Yes		Yes		Yes	Yes
Vehicle Extension (s)		3.0	3.0				3.0		3.0		3.0	3.0
Recall Mode		C-Max	C-Max				None		None		None	None
Walk Time (s)		7.0	7.0						7.0		5.0	5.0
Flash Dont Walk (s)		14.0	14.0						14.0		11.0	11.0
Pedestrian Calls (#/hr)		0	0						0		0	0
Act Effct Green (s)		59.8	59.8				17.1		50.2		28.0	28.0
Actuated g/C Ratio		0.50	0.50				0.14		0.42		0.23	0.23
v/c Ratio		0.52	0.67				0.75		0.20		0.76	0.73
Control Delay		15.7	12.4				59.4		13.6		44.7	9.8
Queue Delay		0.3	1.1				0.0		0.0		0.0	0.4
Total Delay		16.0	13.5				59.4		13.6		44.7	10.2
LOS		B	B				E		B		D	B
Approach Delay		15.0									27.7	
Approach LOS		B									C	

Intersection Summary

Area Type:	Other
Cycle Length:	120
Actuated Cycle Length:	120
Offset:	20 (17%), Referenced to phase 2:EBT, Start of Green
Natural Cycle:	60
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.76
Intersection Signal Delay:	23.9
Intersection LOS:	C
Intersection Capacity Utilization:	63.0%
ICU Level of Service:	B
Analysis Period (min):	15

Splits and Phases: 9: 7th Street & Forster Street



Lanes, Volumes, Timings
11: 7th Street

12/5/2014

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	0	357	0	0	1189	193
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	0%		0%			3%
Storage Length (ft)	100	0		0	0	
Storage Lanes	1	2		0	1	
Taper Length (ft)	75				25	
Lane Util. Factor	1.00	0.88	1.00	1.00	0.91	0.91
Frt		0.850				
Flt Protected					0.950	0.964
Satd. Flow (prot)	0	2787	0	0	1586	3219
Flt Permitted					0.950	0.964
Satd. Flow (perm)	0	2787	0	0	1586	3219
Link Speed (mph)	30		25			25
Link Distance (ft)	359		483			304
Travel Time (s)	8.2		13.2			8.3
Peak Hour Factor	0.92	0.92	0.92	0.92	0.95	0.95
Adj. Flow (vph)	0	388	0	0	1252	203
Shared Lane Traffic (%)					50%	
Lane Group Flow (vph)	0	388	0	0	626	829
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	R NA	Left	Right	Left	Left
Median Width(ft)	5		12			17
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.02	1.02
Turning Speed (mph)	15	9		9	15	
Sign Control	Free		Free			Free

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization:	36.3%
ICU Level of Service:	A
Analysis Period (min):	15

Lanes, Volumes, Timings
12: 7th Street

12/5/2014

	↑	↗	↘	↓	↙	↖
Lane Group	NBT	NBR	SBL	SBT	SWL	SWR
Lane Configurations		↗↘		↗↘	↙	
Volume (vph)	0	373	0	193	148	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	0%			-3%	0%	
Lane Util. Factor	1.00	0.88	1.00	0.95	1.00	1.00
Frt		0.850				
Flt Protected					0.950	
Satd. Flow (prot)	0	2787	0	3592	1770	0
Flt Permitted					0.950	
Satd. Flow (perm)	0	2787	0	3592	1770	0
Link Speed (mph)	25			25	30	
Link Distance (ft)	236			483	432	
Travel Time (s)	6.4			13.2	9.8	
Peak Hour Factor	0.92	0.92	0.95	0.95	0.92	0.92
Heavy Vehicles (%)	2%	2%	0%	2%	2%	2%
Adj. Flow (vph)	0	405	0	203	161	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	405	0	203	161	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	L NA	Right
Median Width(ft)	5			0	17	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	0.98	0.98	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Yield	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	20.2%		ICU Level of Service A			
Analysis Period (min)	15					

Lanes, Volumes, Timings
13: State Street

12/5/2014

	↗	→	←	↖	↘	↙
Lane Group	EBL	EBT	WBT	WBR	SEL	SER
Lane Configurations		↗↘	↗	↘	↗↘	
Volume (vph)	0	373	148	357	1189	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	0.95	1.00	1.00	0.97	1.00
Frt				0.850		
Flt Protected					0.950	
Satd. Flow (prot)	0	3539	1863	1583	3433	0
Flt Permitted					0.950	
Satd. Flow (perm)	0	3539	1863	1583	3433	0
Link Speed (mph)		30	35		30	
Link Distance (ft)		432	1119		359	
Travel Time (s)		9.8	21.8		8.2	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	0%	2%	2%	2%	2%	0%
Adj. Flow (vph)	0	393	156	376	1252	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	393	156	376	1252	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		10	5		36	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	0		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		15		15	15	9
Sign Control		Free	Free		Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	50.9%		ICU Level of Service A			
Analysis Period (min)	15					

Lanes, Volumes, Timings
14: 7th Street & Herr Street

12/5/2014

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations				↖	↖		↖	↖	↖	↖	↖	↖
Volume (vph)	0	0	0	305	2	338	3	1067	342	217	716	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	10	11	12	12	11	12	16	13	16
Grade (%)		0%			4%			0%			0%	
Storage Length (ft)	0		0	460		0	0		150	100		0
Storage Lanes	0		0	1		0	1		1	1		0
Taper Length (ft)	25			25			25			50		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	0.95
Ped Bike Factor				0.97	0.96		0.97		0.84		1.00	
Frt					0.851				0.850		0.999	
Flt Protected				0.950			0.950			0.950		
Satd. Flow (prot)	0	0	0	1635	1461	0	1805	3421	1599	2046	3651	0
Flt Permitted				0.950			0.290			0.113		
Satd. Flow (perm)	0	0	0	1593	1461	0	532	3421	1349	243	3651	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					270				229		1	
Link Speed (mph)		30			25			25			25	
Link Distance (ft)		299			1969			305			3799	
Travel Time (s)		6.8			53.7			8.3			103.6	
Confl. Peds. (#/hr)				19		19	44		44	44		44
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
Heavy Vehicles (%)	0%	0%	0%	1%	0%	1%	0%	2%	1%	0%	2%	0%
Adj. Flow (vph)	0	0	0	339	2	376	3	1186	380	241	796	4
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	339	378	0	3	1186	380	241	800	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		10			10			17			17	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.12	1.07	1.03	1.00	1.04	1.00	0.85	0.96	0.85
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors				1	1		1	1	1	1	1	
Detector Template							Left		Right		Left	
Leading Detector (ft)				0	0		20	0	20	20	0	
Trailing Detector (ft)				0	0		0	0	0	0	0	
Detector 1 Position(ft)				0	0		0	0	0	0	0	
Detector 1 Size(ft)				0	0		20	0	20	20	0	
Detector 1 Type				CI+Ex	CI+Ex		CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	
Detector 1 Channel												
Detector 1 Extend (s)				0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)				0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)				0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Turn Type				Split	NA		Perm	NA	Perm	pm+pt	NA	
Protected Phases				4	4			2		1	6	
Permitted Phases							2		2	6		
Detector Phase				4	4		2	2	2	1	6	

Lanes, Volumes, Timings
14: 7th Street & Herr Street

12/5/2014

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)				10.0	10.0		10.0	10.0	10.0	3.0	10.0	
Minimum Split (s)				15.0	15.0		15.0	15.0	15.0	8.0	15.0	
Total Split (%)				41.0	41.0		58.0	58.0	58.0	21.0	79.0	
Total Split (%)				34.2%	34.2%		48.3%	48.3%	48.3%	17.5%	65.8%	
Maximum Green (s)				36.0	36.0		53.0	53.0	53.0	16.0	74.0	
Yellow Time (s)				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	
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	5.0	5.0	5.0	5.0	
Lead/Lag							Lead	Lead	Lead	Lag		
Lead-Lag Optimize?							Yes	Yes	Yes	Yes		
Vehicle Extension (s)				3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Recall Mode				Max	Max		C-Max	C-Max	C-Max	None	C-Max	
Walk Time (s)				7.0	7.0		7.0	7.0	7.0	7.0	7.0	
Flash Dont Walk (s)				20.0	20.0		12.0	12.0	12.0		12.0	
Pedestrian Calls (#/hr)				0	0		0	0	0	0	0	
Act Effct Green (s)				36.0	36.0		53.0	53.0	53.0	74.0	74.0	
Actuated g/C Ratio				0.30	0.30		0.44	0.44	0.44	0.62	0.62	
v/c Ratio				0.69	0.60		0.01	0.79	0.53	0.62	0.36	
Control Delay				45.7	14.7		11.7	24.0	4.6	35.3	8.7	
Queue Delay				0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay				45.7	14.7		11.7	24.1	4.6	35.3	8.7	
LOS				D	B		B	C	A	D	A	
Approach Delay					29.4			19.3			14.9	
Approach LOS					C			B			B	
Intersection Summary												
Area Type:	Other											
Cycle Length:	120											
Actuated Cycle Length:	120											
Offset:	46 (38%), Referenced to phase 2:NBT and 6:SBTL, Start of Green											
Natural Cycle:	60											
Control Type:	Actuated-Coordinated											
Maximum v/c Ratio:	0.79											
Intersection Signal Delay:	20.1						Intersection LOS: C					
Intersection Capacity Utilization:	76.9%						ICU Level of Service D					
Analysis Period (min):	15											
Splits and Phases: 14: 7th Street & Herr Street												

Lanes, Volumes, Timings
15: 7th Street

12/5/2014

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations		↗ ↘	↕	↖ ↗		↕
Volume (vph)	0	432	1172	1	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	0.91	0.91	1.00	1.00
Frt		0.865				
Flt Protected						
Satd. Flow (prot)	0	1627	5136	0	0	0
Flt Permitted						
Satd. Flow (perm)	0	1627	5136	0	0	0
Link Speed (mph)	30		25			30
Link Distance (ft)	748		364			303
Travel Time (s)	17.0		9.9			6.9
Peak Hour Factor	0.90	0.90	0.90	0.90	0.89	0.89
Heavy Vehicles (%)	0%	1%	1%	0%	0%	0%
Adj. Flow (vph)	0	480	1302	1	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	480	1303	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	0		0			0
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	56.1%		ICU Level of Service B			
Analysis Period (min)	15					

Lanes, Volumes, Timings
16: 7th Street

12/5/2014

Lane Group	NBT	NBR	SBL	SBT	NWL	NWR
Lane Configurations				↕	↖ ↗	↖ ↗
Volume (vph)	0	0	0	1115	0	1604
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	0.91	1.00	0.76
Frt						0.850
Flt Protected						
Satd. Flow (prot)	0	0	0	5085	0	3610
Flt Permitted						
Satd. Flow (perm)	0	0	0	5085	0	3610
Link Speed (mph)	25			25		30
Link Distance (ft)	393			305		303
Travel Time (s)	10.7			8.3		6.9
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	1212	0	1743
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	1212	0	1743
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			5		0
Link Offset(ft)	0			0		0
Crosswalk Width(ft)	16			16		16
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	35
Sign Control	Free			Free		Free
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	40.7%		ICU Level of Service A			
Analysis Period (min)	15					

Queuing and Blocking Report
Evening Peak Hour

12/5/2014

Intersection: 1: 2nd Street & Division Street

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	219	1694	758	111
Average Queue (ft)	61	1079	452	51
95th Queue (ft)	194	2115	687	96
Link Distance (ft)	344	3246	4864	1642
Upstream Blk Time (%)	2			
Queuing Penalty (veh)	0			
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 2: 2nd Street & Maclay Street

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	85	290	986	232
Average Queue (ft)	28	134	405	94
95th Queue (ft)	68	266	821	188
Link Distance (ft)	333	2959	5294	4864
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 3: 7th Street & Maclay Street

Movement	EB	EB	WB	WB	WB	NB	NB	NB	B34	B34
Directions Served	L	TR	L	T	R	L	T	TR	T	T
Maximum Queue (ft)	76	1615	124	348	101	200	506	511	850	869
Average Queue (ft)	3	1530	57	167	50	90	481	485	452	489
95th Queue (ft)	33	1692	102	286	82	227	510	495	1011	1041
Link Distance (ft)		2959		827	827		414	414	3736	3736
Upstream Blk Time (%)							49	61		
Queuing Penalty (veh)							344	431		
Storage Bay Dist (ft)	75		250			100				
Storage Blk Time (%)		59		2	0	58				
Queuing Penalty (veh)		3		2	1	42				

Queuing and Blocking Report
Evening Peak Hour

12/5/2014

Intersection: 4: Front Street & Forster Street

Movement	EB	EB	EB	EB	B18	B18	WB	WB	B37	B37	B37	SB
Directions Served	T	T	T	R	T	T	T	T	T	T	T	LT
Maximum Queue (ft)	174	138	204	100	37	89	194	175	216	248	191	235
Average Queue (ft)	91	73	99	34	1	5	169	169	147	179	103	171
95th Queue (ft)	151	126	187	106	17	42	180	175	200	240	239	227
Link Distance (ft)	114	114	114		4032	4032	98	98	142	142	142	637
Upstream Blk Time (%)	3	1	5	0			34	32	9	21	8	
Queuing Penalty (veh)	0	0	0	0			324	303	55	133	49	
Storage Bay Dist (ft)				50								
Storage Blk Time (%)				19	0							
Queuing Penalty (veh)				46	0							

Intersection: 4: Front Street & Forster Street

Movement	SB	SB	SB
Directions Served	T	T	R
Maximum Queue (ft)	239	229	250
Average Queue (ft)	174	148	103
95th Queue (ft)	230	216	208
Link Distance (ft)	637	637	
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			300
Storage Blk Time (%)			0
Queuing Penalty (veh)			0

Queuing and Blocking Report
Evening Peak Hour

12/5/2014

Intersection: 5: 2nd Street & Forster Street

Movement	EB	EB	EB	B37	B37	B37	WB	WB	WB	NB	NB	NB
Directions Served	T	T	T	T	T	T	T	T	TR	L	L	T
Maximum Queue (ft)	213	215	228	78	50	70	485	592	475	178	198	470
Average Queue (ft)	166	154	152	7	3	5	341	343	124	87	96	214
95th Queue (ft)	228	210	219	40	24	35	466	496	364	147	160	370
Link Distance (ft)	142	142	142	98	98	98	749	749	749	2030	2030	2030
Upstream Blk Time (%)	10	7	7	0	0	0	0	0	0			
Queuing Penalty (veh)	31	23	21	0	0	0	0	0	0			
Storage Bay Dist (ft)												
Storage Blk Time (%)												
Queuing Penalty (veh)												

Intersection: 5: 2nd Street & Forster Street

Movement	NB	SB
Directions Served	R	R
Maximum Queue (ft)	511	1214
Average Queue (ft)	231	705
95th Queue (ft)	419	1427
Link Distance (ft)	2030	5294
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 6: 3rd Street & Forster Street

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	SB
Directions Served	L	T	T	TR	L	T	T	TR	LT	R	LTR
Maximum Queue (ft)	266	334	357	354	250	330	343	293	332	196	282
Average Queue (ft)	148	141	176	174	107	188	215	162	185	84	154
95th Queue (ft)	253	272	309	307	202	292	319	269	302	155	274
Link Distance (ft)		749	749	749		832	832	832	891	891	1353
Upstream Blk Time (%)											
Queuing Penalty (veh)											
Storage Bay Dist (ft)	225				225						
Storage Blk Time (%)	2	1			0	3					
Queuing Penalty (veh)	8	2			1	5					

Queuing and Blocking Report
Evening Peak Hour

12/5/2014

Intersection: 7: Commonwealth Avenue & Forster Street

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	T	TR	L	T	T	TR	L	TR	L	T
Maximum Queue (ft)	308	512	681	550	175	191	200	210	174	289	199	342
Average Queue (ft)	159	297	375	391	64	88	110	110	92	109	121	129
95th Queue (ft)	270	478	555	568	136	162	178	182	167	209	204	255
Link Distance (ft)		832	832	832		536	536	536		773		1321
Upstream Blk Time (%)		0	0	0								
Queuing Penalty (veh)		1	1	2								
Storage Bay Dist (ft)	275				250				150		150	
Storage Blk Time (%)	0	4							4	3	12	3
Queuing Penalty (veh)	2	8							6	5	21	5

Intersection: 7: Commonwealth Avenue & Forster Street

Movement	SB
Directions Served	R
Maximum Queue (ft)	106
Average Queue (ft)	54
95th Queue (ft)	88
Link Distance (ft)	1321
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 9: 7th Street & Forster Street

Movement	EB	EB	EB	NB	NB	SB	SB
Directions Served	T	T	R	L	L	T	T
Maximum Queue (ft)	430	518	392	220	216	280	296
Average Queue (ft)	106	213	143	127	122	156	177
95th Queue (ft)	278	451	511	199	186	242	260
Link Distance (ft)	536	536	536	425	425	310	310
Upstream Blk Time (%)	0	0	3			0	0
Queuing Penalty (veh)	0	2	17			0	0
Storage Bay Dist (ft)							
Storage Blk Time (%)							
Queuing Penalty (veh)							

Queuing and Blocking Report
Evening Peak Hour

12/5/2014

Intersection: 11: 7th Street

Movement	SB	SB	SB	B10	B10	B10
Directions Served	L	LT	T	T	T	T
Maximum Queue (ft)	358	366	318	393	410	590
Average Queue (ft)	329	333	145	221	231	268
95th Queue (ft)	364	360	350	465	470	682
Link Distance (ft)	260	260	260	425	425	425
Upstream Blk Time (%)	75	80	3	0	0	24
Queuing Penalty (veh)	297	314	11	0	1	96
Storage Bay Dist (ft)						
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 12: 7th Street

Movement	SW
Directions Served	L
Maximum Queue (ft)	6
Average Queue (ft)	0
95th Queue (ft)	4
Link Distance (ft)	329
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 13: State Street

Movement	EB	EB	SE	SE
Directions Served	T	T	L	L
Maximum Queue (ft)	60	6	265	275
Average Queue (ft)	24	0	250	253
95th Queue (ft)	55	4	258	265
Link Distance (ft)	329	329	232	232
Upstream Blk Time (%)			54	60
Queuing Penalty (veh)			321	358
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Queuing and Blocking Report
Evening Peak Hour

12/5/2014

Intersection: 14: 7th Street & Herr Street

Movement	WB	WB	NB	NB	NB	NB	SB	SB	SB
Directions Served	L	TR	L	T	T	R	L	T	TR
Maximum Queue (ft)	318	268	24	260	271	225	149	303	307
Average Queue (ft)	200	143	2	182	186	109	120	121	142
95th Queue (ft)	294	236	13	270	275	234	173	278	264
Link Distance (ft)		1911	243	243	243			3736	3736
Upstream Blk Time (%)				1	1	0			
Queuing Penalty (veh)				7	8	0			
Storage Bay Dist (ft)	460					150	100		
Storage Blk Time (%)					11	0	33	2	
Queuing Penalty (veh)					37	1	118	3	

Intersection: 15: 7th Street

Movement	WB	NB	NB	NB
Directions Served	R	T	T	TR
Maximum Queue (ft)	456	68	197	12
Average Queue (ft)	194	4	11	0
95th Queue (ft)	371	62	105	6
Link Distance (ft)	678	290	290	290
Upstream Blk Time (%)		0	1	
Queuing Penalty (veh)		0	2	
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 16: 7th Street

Movement	SB	NW	NW
Directions Served	T	R	R
Maximum Queue (ft)	10	106	174
Average Queue (ft)	0	13	22
95th Queue (ft)	7	62	95
Link Distance (ft)	243	254	254
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Lanes, Volumes, Timings
1: Division Street & 2nd Street

3/10/2015

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔		↔	↔		↔	↔		↔	↔	
Volume (vph)	1	345	2	46	119	20	89	45	34	10	21	32
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	16	12	10	13	10	10	16	10
Storage Length (ft)	0	0	0	0	0	0	150	0	0	0	0	0
Storage Lanes	0	0	0	0	0	0	1	0	0	0	0	0
Taper Length (ft)	25	25	25	25	25	25	50	25	25	25	25	25
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00
Ped Bike Factor							1.00	0.99			0.99	
Frt		0.999			0.984			0.942			0.931	
Flt Protected					0.988		0.950	0.995			0.992	
Satd. Flow (prot)	0	1692	0	0	3853	0	1600	1668	0	0	1886	0
Flt Permitted					0.828		0.632	0.994			0.947	
Satd. Flow (perm)	0	1692	0	0	3229	0	1063	1666	0	0	1799	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		1			21			35			33	
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		381			3285			4939			1680	
Travel Time (s)		10.4			89.6			134.7			45.8	
Confl. Peds. (#/hr)							2		2	2		2
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
Heavy Vehicles (%)	0%	1%	0%	0%	5%	0%	0%	3%	6%	30%	0%	0%
Parking (#/hr)		0										
Adj. Flow (vph)	1	356	2	47	123	21	92	46	35	10	22	33
Shared Lane Traffic (%)							10%					
Lane Group Flow (vph)	0	359	0	0	191	0	83	90	0	0	65	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			10			10	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.14	1.00	1.00	0.85	1.00	1.09	0.96	1.09	1.09	0.85	1.09
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm		Perm			pm+pt			Perm			
Protected Phases		4			8		1	6			2	
Permitted Phases	4			8			6			2		
Minimum Split (s)	9.0	9.0		9.0	9.0		9.0	9.0		9.0	9.0	
Total Split (s)	40.0	40.0	0.0	40.0	40.0	0.0	14.0	30.0	0.0	16.0	16.0	0.0
Total Split (%)	57.1%	57.1%	0.0%	57.1%	57.1%	0.0%	20.0%	42.9%	0.0%	22.9%	22.9%	0.0%
Maximum Green (s)	35.0	35.0		35.0	35.0		9.0	25.0		11.0	11.0	
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)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0	4.0
Lead/Lag							Lead			Lag	Lag	
Lead-Lag Optimize?							Yes		Yes		Yes	
Act Effct Green (s)		35.0			35.0		25.0	25.0			11.0	
Actuated g/C Ratio		0.50			0.50		0.36	0.36			0.16	

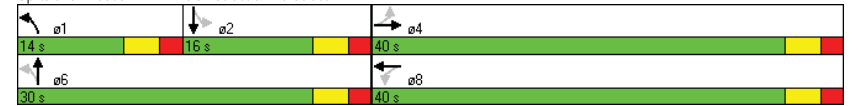
Lanes, Volumes, Timings
1: Division Street & 2nd Street

3/10/2015

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio		0.42			0.12		0.18	0.15			0.21	
Control Delay		13.0			8.5		16.6	11.0			17.3	
Queue Delay		0.0			0.0		0.0	0.0			0.0	
Total Delay		13.0			8.5		16.6	11.0			17.3	
LOS		B			A		B	B			B	
Approach Delay		13.0			8.5		13.7				17.3	
Approach LOS		B			A		B	B			B	
Queue Length 50th (ft)		91			18		25	15			12	
Queue Length 95th (ft)		153			34		54	46			44	
Internal Link Dist (ft)		301			3205		4859				1600	
Turn Bay Length (ft)							150					
Base Capacity (vph)		847			1625		449	618			311	
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		0.42			0.12		0.18	0.15			0.21	

Intersection Summary	
Area Type:	Other
Cycle Length:	70
Actuated Cycle Length:	70
Offset:	0 (0%), Referenced to phase 6:NBTL, Start of Green
Natural Cycle:	40
Control Type:	Pretimed
Maximum v/c Ratio:	0.42
Intersection Signal Delay:	12.4
Intersection Capacity Utilization:	49.4%
ICU Level of Service A	
Analysis Period (min)	15

Splits and Phases: 1: Division Street & 2nd Street



Lanes, Volumes, Timings
2: Maclay Street & 2nd Street

3/10/2015

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↖		↖	↖			↖			↖	
Volume (vph)	2	101	0	83	99	31	11	146	79	0	101	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	16	12	12	16	12	12	13	12	12	11	12
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			1.00			0.99				
Frt					0.980			0.955				
Flt Protected		0.999			0.981			0.998				
Satd. Flow (prot)	0	2151	0	0	2064	0	0	1834	0	0	1837	0
Flt Permitted		0.993			0.835			0.981				
Satd. Flow (perm)	0	2138	0	0	1756	0	0	1803	0	0	1837	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					16			45				
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		360			3029			5401			4939	
Travel Time (s)		9.8			82.6			147.3			134.7	
Confl. Peds. (#/hr)	1		1	1		1	1		1			
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	1%	2%	0%	0%	0%
Parking (#/hr)							0		0			
Adj. Flow (vph)	2	106	0	87	104	33	12	154	83	0	106	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	108	0	0	224	0	0	249	0	0	106	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Right	Left	Left	Right	Right
Median Width(ft)		11			11			10			10	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.96	1.00	1.00	1.04	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm			Perm			Perm			Perm		
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		4.0	4.0	
Minimum Split (s)	35.0	35.0		35.0	35.0		35.0	35.0		20.0	20.0	
Total Split (s)	35.0	35.0	0.0	35.0	35.0	0.0	35.0	35.0	0.0	35.0	35.0	0.0
Total Split (%)	50.0%	50.0%	0.0%	50.0%	50.0%	0.0%	50.0%	50.0%	0.0%	50.0%	50.0%	0.0%
Maximum Green (s)	30.0	30.0		30.0	30.0		30.0	30.0		31.0	31.0	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.5	3.5	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		0.5	0.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0	4.0	4.0	4.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	Min	Min		Min	Min		None	None		None	None	

Lanes, Volumes, Timings
2: Maclay Street & 2nd Street

3/10/2015

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Walk Time (s)	10.0	10.0		10.0	10.0		10.0	10.0		5.0	5.0	
Flash Dont Walk (s)	15.0	15.0		15.0	15.0		12.0	12.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)		11.3			11.3			9.0			10.0	
Actuated g/C Ratio		0.37			0.37			0.30			0.33	
v/c Ratio		0.14			0.34			0.44			0.18	
Control Delay		7.7			8.8			9.2			7.4	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		7.7			8.8			9.2			7.4	
LOS		A			A			A			A	
Approach Delay		7.7			8.8			9.2			7.4	
Approach LOS		A			A			A			A	
Queue Length 50th (ft)		10			21			20			9	
Queue Length 95th (ft)		31			58			59			30	
Internal Link Dist (ft)		280			2949			5321			4859	
Turn Bay Length (ft)												
Base Capacity (vph)		2016			1657			1703			1753	
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		0.05			0.14			0.15			0.06	
Intersection Summary												
Area Type:	Other											
Cycle Length:	70											
Actuated Cycle Length:	30.5											
Natural Cycle:	70											
Control Type:	Actuated-Uncoordinated											
Maximum v/c Ratio:	0.44											
Intersection Signal Delay:	8.6											
Intersection LOS:	A											
Intersection Capacity Utilization:	46.6%											
ICU Level of Service:	A											
Analysis Period (min):	15											
Splits and Phases: 2: Maclay Street & 2nd Street												

Lanes, Volumes, Timings
3: Maclay Street & 7th Street

3/10/2015

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Volume (vph)	11	544	207	330	403	363	30	269	228	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	12	12	10	11	11	11	11	14	11	13	12
Grade (%)		-3%			-3%			-1%			-1%	
Storage Length (ft)	75		0	250		0	100		0	0		200
Storage Lanes	1		0	1		1	0		1	0		0
Taper Length (ft)	75		25	300		25	100		25	25		200
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00	0.99				0.98		1.00	0.97			
Frt		0.959				0.850		0.850				
Flt Protected	0.950			0.950				0.995				
Satd. Flow (prot)	1625	1782	0	1676	1793	1495	0	3301	1633	0	0	0
Flt Permitted	0.515			0.089				0.995				
Satd. Flow (perm)	878	1782	0	157	1793	1468	0	3296	1581	0	0	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		29				65			240			
Link Speed (mph)		25			35			25			25	
Link Distance (ft)		3029			877			479			2587	
Travel Time (s)		82.6			17.1			13.1			70.6	
Confl. Peds. (#/hr)	5		5	5		5	6		6	6		6
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	9%	4%	0%	2%	4%	6%	21%	4%	6%	7%	1%	14%
Adj. Flow (vph)	12	573	218	347	424	382	32	283	240	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	12	791	0	347	424	382	0	315	240	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		11			11			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.02	0.98	0.98	1.07	1.02	1.02	1.04	1.04	0.91	1.04	0.95	0.99
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm			pm+pt		Perm	Perm		Perm			
Protected Phases		4			3	8			2			
Permitted Phases	4				8		8	2		2		
Detector Phase	4	4			3	8	8	2	2	2		
Switch Phase												
Minimum Initial (s)	3.0	3.0		3.0	3.0	3.0	10.0	10.0	10.0			
Minimum Split (s)	9.0	9.0		8.4	9.0	9.0	15.4	15.4	15.4			
Total Split (s)	48.0	48.0	0.0	24.0	72.0	72.0	18.0	18.0	18.0	0.0	0.0	0.0
Total Split (%)	53.3%	53.3%	0.0%	26.7%	80.0%	80.0%	20.0%	20.0%	20.0%	0.0%	0.0%	0.0%
Maximum Green (s)	42.0	42.0		18.6	66.0	66.0	12.6	12.6	12.6			
Yellow Time (s)	4.0	4.0		3.0	4.0	4.0	3.0	3.0	3.0			
All-Red Time (s)	2.0	2.0		2.4	2.0	2.0	2.4	2.4	2.4			
Lost Time Adjust (s)	0.0	0.0	0.0	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	4.0	5.4	6.0	6.0	5.4	5.4	5.4	4.0	4.0	4.0
Lead/Lag	Lag	Lag		Lead								

Lanes, Volumes, Timings
3: Maclay Street & 7th Street

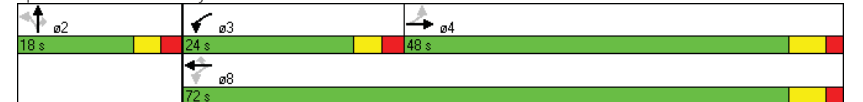
3/10/2015

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead-Lag Optimize?	Yes	Yes		Yes								
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0			
Recall Mode	None	None		None	None	None	Min	Min	Min			
Walk Time (s)	7.0	7.0		11.0	7.0	7.0	7.0	7.0	7.0			
Flash Dont Walk (s)	15.0	15.0		0.0	15.0	15.0	15.0	15.0	15.0			
Pedestrian Calls (#/hr)	0	0		0	0	0	0	0	0			
Act Effct Green (s)	39.2	39.2		61.7	61.1	61.1		12.0	12.0			
Actuated g/C Ratio	0.46	0.46		0.73	0.72	0.72		0.14	0.14			
v/c Ratio	0.03	0.94		0.85	0.33	0.35		0.67	0.56			
Control Delay	13.4	42.3		41.0	5.0	4.5		43.7	10.6			
Queue Delay	0.0	0.0		0.0	0.0	0.0		0.0	0.0			
Total Delay	13.4	42.3		41.0	5.0	4.5		43.7	10.6			
LOS	B	D		D	A	A		D	B			
Approach Delay		41.8			15.7			29.4				
Approach LOS		D			B			C				
Queue Length 50th (ft)	4	398		133	70	51		91	0			
Queue Length 95th (ft)	13	#654		#274	106	86		136	65			
Internal Link Dist (ft)		2949			797			399			2507	
Turn Bay Length (ft)	75			250								
Base Capacity (vph)	442	911		453	1418	1174		497	443			
Starvation Cap Reductn	0	0		0	0	0		0	0			
Spillback Cap Reductn	0	0		0	0	0		0	0			
Storage Cap Reductn	0	0		0	0	0		0	0			
Reduced v/c Ratio	0.03	0.87		0.77	0.30	0.33		0.63	0.54			

Intersection Summary

Area Type:	Other
Cycle Length:	90
Actuated Cycle Length:	84.7
Natural Cycle:	90
Control Type:	Actuated-Uncoordinated
Maximum v/c Ratio:	0.94
Intersection Signal Delay:	27.1
Intersection LOS:	C
Intersection Capacity Utilization:	86.5%
ICU Level of Service:	E
Analysis Period (min):	15
# 95th percentile volume exceeds capacity, queue may be longer.	
Queue shown is maximum after two cycles.	

Splits and Phases: 3: Maclay Street & 7th Street



Lanes, Volumes, Timings
4: Forster Street & Front Street

3/10/2015

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑	↑		↑↑						↑↑↑	↑
Volume (vph)	0	1462	458	1	950	0	0	0	0	226	1300	583
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	11	11
Grade (%)		-3%			-1%			-1%			0%	
Storage Length (ft)	75		50	0		0	0		0	0		300
Storage Lanes	0		1	0		0	0		0	0		1
Taper Length (ft)	75		50	25		25	25		25	25		100
Lane Util. Factor	1.00	0.91	1.00	0.95	0.95	1.00	1.00	1.00	1.00	0.91	0.91	1.00
Ped Bike Factor			0.97		1.00						1.00	0.98
Frt			0.850									0.850
Flt Protected											0.993	
Satd. Flow (prot)	0	5213	1623	0	3592	0	0	0	0	0	4930	1546
Flt Permitted					0.954						0.993	
Satd. Flow (perm)	0	5213	1572	0	3427	0	0	0	0	0	4921	1509
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			3									83
Link Speed (mph)		50			35			35			35	
Link Distance (ft)		192			146			595			622	
Travel Time (s)		2.6			2.8			11.6			12.1	
Confl. Peds. (#/hr)	12		12	12		12				7		7
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	0%	1%	1%	0%	1%	0%	0%	0%	0%	1%	1%	1%
Adj. Flow (vph)	0	1539	482	1	1000	0	0	0	0	238	1368	614
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1539	482	0	1001	0	0	0	0	0	1606	614
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Right	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		16			5			0			0	
Link Offset(ft)		5			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	0.98	0.98	0.98	0.99	0.99	0.99	0.99	0.99	0.99	1.00	1.04	1.04
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type			Perm	Perm						Perm		Perm
Protected Phases		2			6							4
Permitted Phases			2	6						4		4
Minimum Split (s)		17.0	17.0	17.0	17.0					17.0	17.0	17.0
Total Split (s)	0.0	60.0	60.0	60.0	60.0	0.0	0.0	0.0	0.0	40.0	40.0	40.0
Total Split (%)	0.0%	60.0%	60.0%	60.0%	60.0%	0.0%	0.0%	0.0%	0.0%	40.0%	40.0%	40.0%
Maximum Green (s)		53.0	53.0	53.0	53.0					33.0	33.0	33.0
Yellow Time (s)		4.0	4.0	4.0	4.0					4.0	4.0	4.0
All-Red Time (s)		3.0	3.0	3.0	3.0					3.0	3.0	3.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	7.0	7.0	7.0	7.0	4.0	4.0	4.0	4.0	7.0	7.0	7.0
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)		8.0	8.0	8.0	8.0					8.0	8.0	8.0
Flash Dont Walk (s)		10.0	10.0	10.0	10.0					10.0	10.0	10.0

Lanes, Volumes, Timings
4: Forster Street & Front Street

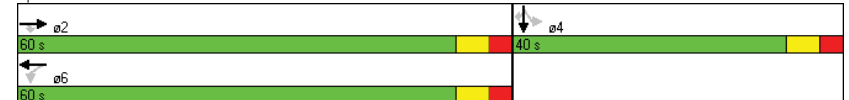
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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Pedestrian Calls (#/hr)		0	0	0	0						0	0
Act Effct Green (s)		53.0	53.0		53.0						33.0	33.0
Actuated g/C Ratio		0.53	0.53		0.53						0.33	0.33
v/c Ratio		0.56	0.58		0.55						0.99	1.11
Control Delay		16.6	19.3		17.0						53.9	100.6
Queue Delay		0.0	0.0		3.6						0.0	0.0
Total Delay		16.6	19.3		20.6						53.9	100.6
LOS		B	B		C						D	F
Approach Delay		17.3			20.6						66.8	
Approach LOS		B			C						E	
Queue Length 50th (ft)		227	197		212						369	-413
Queue Length 95th (ft)		271	298		270						#483	#629
Internal Link Dist (ft)		112			66			515			542	
Turn Bay Length (ft)			50									300
Base Capacity (vph)		2763	835		1816						1624	554
Starvation Cap Reductn		0	0		701						0	0
Spillback Cap Reductn		0	0		0						0	0
Storage Cap Reductn		0	0		0						0	0
Reduced v/c Ratio		0.56	0.58		0.90						0.99	1.11

Intersection Summary

Area Type:	Other
Cycle Length:	100
Actuated Cycle Length:	100
Offset:	24 (24%), Referenced to phase 2:EBT and 6:WBTL, Start of Green
Natural Cycle:	70
Control Type:	Pretimed
Maximum v/c Ratio:	1.11
Intersection Signal Delay:	38.9
Intersection Capacity Utilization:	103.1%
ICU Level of Service:	G
Analysis Period (min):	15
- 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: Forster Street & Front Street



Lanes, Volumes, Timings
5: Forster Street & 2nd Street

3/10/2015

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔↔↔		↔	↔↔↔		↔↔	↔	↔	↔		↔
Volume (vph)	0	1733	0	0	542	36	199	338	324	83	0	232
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	12	12	11	12	11	11	10	10	11	10
Grade (%)		0%			-1%			-1%			0%	
Storage Length (ft)	0		0	0		0	0		0	150		0
Storage Lanes	1		0	0		0	2		1	1		1
Taper Length (ft)	25		25	25		25	25		25	50		25
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	0.91	0.97	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor					0.99	0.99	0.99	0.98	0.98	0.99		0.98
Frt					0.991			0.850				0.850
Flt Protected							0.950			0.950		
Satd. Flow (prot)	1818	4964	0	0	4886	0	3335	1810	1471	1685	0	1507
Flt Permitted							0.950			0.303		
Satd. Flow (perm)	1818	4964	0	0	4886	0	3292	1810	1435	534	0	1470
Right Turn on Red			Yes		Yes				Yes		Yes	
Satd. Flow (RTOR)				9					90			160
Link Speed (mph)		35			35			25			25	
Link Distance (ft)		211			828			2926			5401	
Travel Time (s)		4.1			16.1			79.8			147.3	
Confl. Peds. (#/hr)	39		39			39	10		10	10		10
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
Heavy Vehicles (%)	1%	1%	0%	0%	1%	5%	2%	2%	3%	0%	0%	0%
Adj. Flow (vph)	0	1805	0	0	565	38	207	352	338	86	0	242
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1805	0	0	603	0	207	352	338	86	0	242
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Right	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		17			17			22			22	
Link Offset(ft)		0			6			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.04	1.04	1.00	0.99	1.04	0.99	1.04	1.04	1.09	1.09	1.04	1.09
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	pm+pt					pm+pt		Perm	custom		custom	
Protected Phases	5	2			6		7	4		3		8
Permitted Phases	2						4		4	8		5
Detector Phase	5	2			6		7	4	4	3		8
Switch Phase												
Minimum Initial (s)	5.0	5.0			5.0		4.0	5.0	5.0	4.0		5.0
Minimum Split (s)	11.0	34.0			35.0		9.0	34.0	34.0	9.0		34.0
Total Split (s)	21.0	63.0	0.0	0.0	42.0	0.0	14.0	43.0	43.0	14.0	0.0	43.0
Total Split (%)	17.5%	52.5%	0.0%	0.0%	35.0%	0.0%	11.7%	35.8%	35.8%	11.7%	0.0%	35.8%
Maximum Green (s)	16.0	57.0			36.0		9.0	37.0	37.0	9.0		38.0
Yellow Time (s)	3.0	4.0			4.0		3.0	4.0	4.0	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)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	6.0	4.0	4.0	6.0	4.0	5.0	6.0	6.0	5.0	4.0	5.0
Lead/Lag	Lead				Lag		Lead	Lag	Lag	Lead		Lag

Lanes, Volumes, Timings
5: Forster Street & 2nd Street

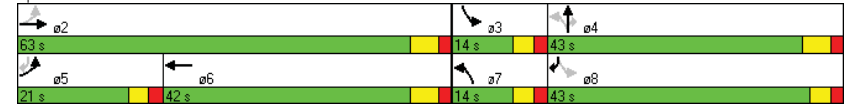
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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead-Lag Optimize?	Yes				Yes		Yes	Yes	Yes	Yes		Yes
Vehicle Extension (s)	4.0	5.0			3.0		3.0	5.0	5.0	3.0		5.0
Recall Mode	None	C-Max			C-Max		None	None	None	None		None
Walk Time (s)	7.0				8.0		7.0	7.0		7.0		7.0
Flash Dont Walk (s)		21.0			10.0		21.0	21.0		21.0		21.0
Pedestrian Calls (#/hr)		0			0		0	0		0		0
Act Effct Green (s)	65.6				65.6		39.6	31.4	31.4	37.9		29.5
Actuated g/C Ratio	0.55				0.55		0.33	0.26	0.26	0.32		0.25
v/c Ratio	0.67				0.23		0.19	0.74	0.76	0.35		0.49
Control Delay	22.7				15.6		24.8	50.2	41.0	26.9		15.3
Queue Delay	13.3				0.0		0.0	0.0	0.0	0.0		0.0
Total Delay	36.1				15.6		24.8	50.2	41.0	26.9		15.3
LOS	D				B		C	D	D	C		B
Approach Delay	36.1				15.6		40.9					
Approach LOS	D				B		D					
Queue Length 50th (ft)	379				90		52	248	179	42		49
Queue Length 95th (ft)	473				125		73	339	279	72		117
Internal Link Dist (ft)	131				748		2846				5321	
Turn Bay Length (ft)										150		
Base Capacity (vph)		2712			2674		1089	558	505	258		587
Starvation Cap Reductn	922				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	1.01				0.23		0.19	0.63	0.67	0.33		0.41

Intersection Summary

Area Type:	Other
Cycle Length:	120
Actuated Cycle Length:	120
Offset:	14 (12%), Referenced to phase 2:EBTL and 6:WBT, Start of Green
Natural Cycle:	90
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.76
Intersection Signal Delay:	32.3
Intersection Capacity Utilization:	74.0%
ICU Level of Service:	D
Analysis Period (min):	15

Splits and Phases: 5: Forster Street & 2nd Street



Lanes, Volumes, Timings

7: Forster Street & Commonwealth Avenue

3/10/2015

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔↔	↔	↔	↔↔	↔	↔	↔	↔	↔	↔	↔
Volume (vph)	444	1124	200	97	573	109	18	83	40	132	112	45
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	11	12	11	11	12	10	16	12	13	13	13
Grade (%)		-2%			-2%			-2%			-2%	
Storage Length (ft)	275		0	250		0	150		0	150		0
Storage Lanes	1		0	1		0	1		0	1		1
Taper Length (ft)	50		25	25		25	25		25	50		25
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	1.00	0.98		0.98	0.99		0.97	0.94		0.86		0.96
Frt		0.977			0.976			0.951				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1685	4777	0	1560	4718	0	1605	1526	0	1829	1889	1590
Flt Permitted	0.252			0.167			0.677			0.660		
Satd. Flow (perm)	445	4777	0	270	4718	0	1114	1526	0	1095	1889	1523
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		43			37			25				50
Link Speed (mph)		35			35			25				25
Link Distance (ft)		923			638			842				1379
Travel Time (s)		18.0			12.4			23.0				37.6
Confl. Peds. (#/hr)	7		66	66		7	30		161	161		30
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
Heavy Vehicles (%)	1%	1%	2%	13%	4%	5%	6%	34%	15%	3%	5%	6%
Adj. Flow (vph)	493	1249	222	108	637	121	20	92	44	147	124	50
Shared Lane Traffic (%)												
Lane Group Flow (vph)	493	1471	0	108	758	0	20	136	0	147	124	50
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		11			17			13				13
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
Headway Factor	1.08	1.03	0.99	1.03	1.03	0.99	1.08	0.84	0.99	0.95	0.95	0.95
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	pm+pt			pm+pt		Perm			Perm			Perm
Protected Phases	1	6		5	2			4				8
Permitted Phases	6			2			4			8		8
Detector Phase	1	6		5	2		4	4		8		8
Switch Phase												
Minimum Initial (s)	3.0	3.0		3.0	3.0		5.0	5.0		5.0	5.0	5.0
Minimum Split (s)	9.0	9.0		9.0	9.0		11.0	11.0		11.0	11.0	11.0
Total Split (s)	32.0	47.0	0.0	17.0	32.0	0.0	36.0	36.0	0.0	36.0	36.0	36.0
Total Split (%)	32.0%	47.0%	0.0%	17.0%	32.0%	0.0%	36.0%	36.0%	0.0%	36.0%	36.0%	36.0%
Maximum Green (s)	26.0	41.0		11.0	26.0		30.0	30.0		30.0	30.0	30.0
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)	0.0	0.0	0.0	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	4.0	6.0	6.0	4.0	6.0	6.0	4.0	6.0	6.0	6.0
Lead/Lag	Lead	Lag		Lead	Lag							

Lanes, Volumes, Timings

7: Forster Street & Commonwealth Avenue

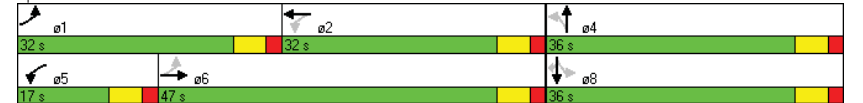
3/10/2015

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	1.0	1.0		1.0	1.0		3.0	3.0		3.0	3.0	3.0
Recall Mode	None	C-Max		None	C-Max		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)		17.0			14.0		22.0	22.0		22.0	22.0	22.0
Pedestrian Calls (#/hr)		10			10		25	25		25	25	25
Act Effct Green (s)	65.5	52.6		42.5	35.5		22.5	22.5		22.5	22.5	22.5
Actuated g/C Ratio	0.66	0.53		0.42	0.36		0.22	0.22		0.22	0.22	0.22
v/c Ratio	0.84	0.58		0.53	0.45		0.08	0.38		0.60	0.29	0.13
Control Delay	19.2	17.8		30.4	23.8		27.3	27.5		43.3	31.7	8.5
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	19.2	17.8		30.4	23.8		27.3	27.5		43.3	31.7	8.5
LOS	B	B		C	C		C	C		D	C	A
Approach Delay		18.1			24.6			27.4				33.4
Approach LOS		B			C			C				C
Queue Length 50th (ft)	232	316		44	76		9	54		77	60	0
Queue Length 95th (ft)	#342	396		m90	127		28	105		139	107	27
Internal Link Dist (ft)		843			558			762				1299
Turn Bay Length (ft)	275			250			150			150		
Base Capacity (vph)	621	2533		268	1701		334	475		329	567	492
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	0.79	0.58		0.40	0.45		0.06	0.29		0.45	0.22	0.10

Intersection Summary

Area Type:	Other
Cycle Length:	100
Actuated Cycle Length:	100
Offset:	0 (0%), Referenced to phase 2:WBT and 6:EBTL, Start of Green, Master Intersection
Natural Cycle:	60
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.84
Intersection Signal Delay:	21.8
Intersection Capacity Utilization:	93.5%
ICU Level of Service F	
Analysis Period (min):	15
#	95th percentile volume exceeds capacity, queue may be longer.
m	Queue shown is maximum after two cycles.
m	Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 7: Forster Street & Commonwealth Avenue



Lanes, Volumes, Timings
9: Forster Street &

3/10/2015

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↑				↑↑		↑↑		↑↑	↑
Volume (vph)	0	981	302	0	0	0	531	0	428	0	169	285
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	16	12	12	12	12	12	12	12	12	12	12
Grade (%)		-1%			0%			0%			-1%	
Storage Length (ft)	0		0	0		0	0		250	0		0
Storage Lanes	0		1	0		0	2		1	0		1
Taper Length (ft)	25		25	25		25	25		100	25		25
Lane Util. Factor	1.00	0.95	1.00	1.00	1.00	1.00	0.97	1.00	0.88	1.00	0.95	1.00
Ped Bike Factor			0.68				0.96		0.88			
Frt			0.850						0.850			0.850
Flt Protected							0.950					
Satd. Flow (prot)	0	4031	1576	0	0	0	3433	0	2842	0	3391	1489
Flt Permitted							0.950					
Satd. Flow (perm)	0	4031	1072	0	0	0	3294	0	2498	0	3391	1489
Right Turn on Red			Yes			Yes			Yes	Yes		Yes
Satd. Flow (RTOR)			336						7			317
Link Speed (mph)		35			25			25			25	
Link Distance (ft)		638			364			500			393	
Travel Time (s)		12.4			9.9			13.6			10.7	
Confl. Peds. (#/hr)			258				28		78			
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
Heavy Vehicles (%)	0%	2%	3%	2%	2%	2%	2%	2%	0%	2%	7%	9%
Adj. Flow (vph)	0	1090	336	0	0	0	590	0	476	0	188	317
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1090	336	0	0	0	590	0	476	0	188	317
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		15			11			29			24	
Link Offset(ft)		-12			0			-8			12	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	0.99	0.84	0.99	1.00	1.00	1.00	1.00	1.00	1.00	0.99	0.99	0.99
Turning Speed (mph)	15		9	15		9	15		20	15		9
Turn Type			Perm			Prot		custom				Perm
Protected Phases		2					3		8			4
Permitted Phases			2						4			4
Detector Phase		2	2				3		8			4
Switch Phase												
Minimum Initial (s)		5.0	5.0				4.0		5.0		4.0	4.0
Minimum Split (s)		10.0	10.0				10.0		10.0		21.0	21.0
Total Split (s)	0.0	45.0	45.0	0.0	0.0	0.0	40.0	0.0	55.0	0.0	15.0	15.0
Total Split (%)	0.0%	45.0%	45.0%	0.0%	0.0%	0.0%	40.0%	0.0%	55.0%	0.0%	15.0%	15.0%
Maximum Green (s)		40.0	40.0				35.0		50.0		10.0	10.0
Yellow Time (s)		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
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	5.0	5.0	4.0	4.0	4.0	5.0	4.0	5.0	4.0	5.0	5.0
Lead/Lag							Lead				Lag	Lag

Lanes, Volumes, Timings
9: Forster Street &

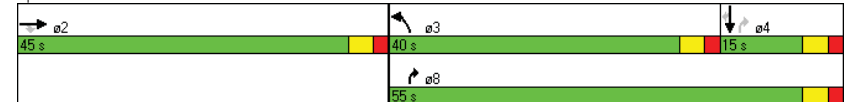
3/10/2015

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead-Lag Optimize?							Yes				Yes	Yes
Vehicle Extension (s)		3.0	3.0				3.0		3.0		3.0	3.0
Recall Mode		C-Max	C-Max				None		None		None	None
Walk Time (s)		7.0	7.0				7.0		7.0		5.0	5.0
Flash Dont Walk (s)		14.0	14.0				14.0		14.0		11.0	11.0
Pedestrian Calls (#/hr)		0	0				0		0		0	0
Act Effct Green (s)		50.7	50.7				23.0		39.3		11.3	11.3
Actuated g/C Ratio		0.51	0.51				0.23		0.39		0.11	0.11
v/c Ratio		0.53	0.47				0.75		0.42		0.49	0.70
Control Delay		32.5	18.7				41.8		22.1		36.1	16.5
Queue Delay		0.0	0.0				0.0		0.0		0.0	0.0
Total Delay		32.5	18.7				41.8		22.1		36.1	16.5
LOS		C	B				D		C		D	B
Approach Delay		29.2									23.8	
Approach LOS		C									C	
Queue Length 50th (ft)		342	110				181		123		49	45
Queue Length 95th (ft)		463	218				223		136		98	142
Internal Link Dist (ft)		558			284			420			313	
Turn Bay Length (ft)									250			
Base Capacity (vph)		2045	709				1202		1425		401	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		0.53	0.47				0.49		0.33		0.47	0.70

Intersection Summary

Area Type:	Other
Cycle Length:	100
Actuated Cycle Length:	100
Offset:	56 (56%), Referenced to phase 2:EBT, Start of Green
Natural Cycle:	60
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.75
Intersection Signal Delay:	29.7
Intersection Capacity Utilization:	58.6%
ICU Level of Service:	B
Analysis Period (min):	15

Split and Phases: 9: Forster Street &



Lanes, Volumes, Timings
11: 7th Street &

3/10/2015

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	0	915	0	0	297	158
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	0%		0%			3%
Storage Length (ft)	100	0		0	0	
Storage Lanes	1	2		0	1	
Taper Length (ft)	75	25		25	25	
Lane Util. Factor	1.00	0.88	1.00	1.00	0.91	0.91
Frt		0.850				
Flt Protected					0.950	0.976
Satd. Flow (prot)	0	2814	0	0	1602	3291
Flt Permitted					0.950	0.976
Satd. Flow (perm)	0	2814	0	0	1602	3291
Link Speed (mph)	30		25		25	
Link Distance (ft)	359		483		304	
Travel Time (s)	8.2		13.2		8.3	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	0%	1%	0%	0%	1%	1%
Adj. Flow (vph)	0	963	0	0	313	166
Shared Lane Traffic (%)					50%	
Lane Group Flow (vph)	0	963	0	0	156	323
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	R NA	Left	Right	Left	Left
Median Width(ft)	5		12			17
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.02	1.02
Turning Speed (mph)	15	9		9	15	
Sign Control	Free		Free			Free

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	35.3%
ICU Level of Service A	
Analysis Period (min)	15

Lanes, Volumes, Timings
12: 7th Street &

3/10/2015


Lane Group	NBT	NBR	SBL	SBT	SWL	SWR
Lane Configurations						
Volume (vph)	0	54	0	158	596	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	0%			-3%	0%	
Lane Util. Factor	1.00	0.88	1.00	0.95	1.00	1.00
Frt		0.850				
Flt Protected					0.950	
Satd. Flow (prot)	0	2814	0	3628	1787	0
Flt Permitted					0.950	
Satd. Flow (perm)	0	2814	0	3628	1787	0
Link Speed (mph)	25			25	30	
Link Distance (ft)	236			483	432	
Travel Time (s)	6.4			13.2	9.8	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	0%	1%	0%	1%	1%	0%
Adj. Flow (vph)	0	57	0	166	627	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	57	0	166	627	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	L NA	Right
Median Width(ft)	5			0	17	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	0.98	0.98	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Yield	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	44.1%
ICU Level of Service A	
Analysis Period (min)	15

Lanes, Volumes, Timings
13: State Street &

3/10/2015




Lane Group	EBL	EBT	WBT	WBR	SEL	SER
Lane Configurations		↑↑	↑	↑	↑↑	
Volume (vph)	0	54	596	915	297	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	0.95	1.00	1.00	0.97	1.00
Frt			0.850			
Flt Protected					0.950	
Satd. Flow (prot)	0	3574	1881	1599	3502	0
Flt Permitted					0.950	
Satd. Flow (perm)	0	3574	1881	1599	3502	0
Link Speed (mph)		30	35		30	
Link Distance (ft)		432	1119		359	
Travel Time (s)		9.8	21.8		8.2	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	0%	1%	1%	1%	0%	0%
Adj. Flow (vph)	0	57	627	963	313	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	57	627	963	313	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		10	5		36	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	0		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			15		9
Sign Control		Free	Free		Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	60.0%
ICU Level of Service	B
Analysis Period (min)	15

Lanes, Volumes, Timings
14: Herr Street & 7th Street

3/10/2015



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations				↑	↑		↑	↑↑	↑	↑	↑	↑
Volume (vph)	0	0	0	376	20	343	29	679	312	139	340	16
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	10	11	12	12	11	12	16	13	16
Grade (%)		0%			4%			0%				0%
Storage Length (ft)	0		0	460		0	0		150	100		0
Storage Lanes	0		0	1		0	1		1	1		0
Taper Length (ft)	25		25	25		25	25		75	50		25
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	0.95
Ped Bike Factor				0.97	0.96		0.80		0.65	0.93	0.98	
Frt					0.858				0.850		0.993	
Flt Protected				0.950		0.950			0.950		0.950	
Satd. Flow (prot)	0	0	0	1603	1449	0	1805	3388	1553	1810	3479	0
Flt Permitted				0.950		0.529			0.236			
Satd. Flow (perm)	0	0	0	1562	1449	0	802	3388	1005	418	3479	0
Right Turn on Red			Yes		Yes		Yes		Yes		Yes	Yes
Satd. Flow (RTOR)				218					328		7	
Link Speed (mph)		30			25			25			25	
Link Distance (ft)		299			1969			305			3799	
Travel Time (s)		6.8			53.7			8.3			103.6	
Confl. Peds. (#/hr)	23		23	23		23	129		129	129		129
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	0%	0%	0%	3%	0%	3%	0%	3%	4%	13%	5%	0%
Adj. Flow (vph)	0	0	0	396	21	361	31	715	328	146	358	17
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	396	382	0	31	715	328	146	375	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		10			10			17			17	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.12	1.07	1.03	1.00	1.04	1.00	0.85	0.96	0.85
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type				Split			Perm		Perm	pm+pt		
Protected Phases				4	4				2		1	6
Permitted Phases							2		2	6		
Detector Phase				4	4		2	2	2	1	6	
Switch Phase												
Minimum Initial (s)				10.0	10.0		10.0	10.0	10.0	3.0	10.0	
Minimum Split (s)				15.0	15.0		15.0	15.0	15.0	8.0	15.0	
Total Split (s)	0.0	0.0	0.0	44.0	44.0	0.0	43.0	43.0	43.0	13.0	56.0	0.0
Total Split (%)	0.0%	0.0%	0.0%	44.0%	44.0%	0.0%	43.0%	43.0%	43.0%	13.0%	56.0%	0.0%
Maximum Green (s)				39.0	39.0		38.0	38.0	38.0	8.0	51.0	
Yellow Time (s)				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	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	5.0	5.0	4.0	5.0	5.0	5.0	5.0	5.0	4.0
Lead/Lag							Lag	Lag	Lag	Lag		

Lanes, Volumes, Timings
14: Herr Street & 7th Street

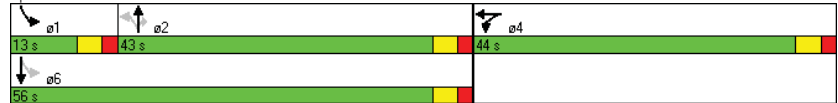
3/10/2015

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead-Lag Optimize?							Yes	Yes	Yes	Yes		
Vehicle Extension (s)				3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode				Max	Max		C-Max	C-Max	C-Max	None	C-Max	
Walk Time (s)				7.0	7.0		7.0	7.0	7.0		7.0	
Flash Dont Walk (s)				20.0	20.0		12.0	12.0	12.0		12.0	
Pedestrian Calls (#/hr)				0	0		0	0	0		0	
Act Effct Green (s)				39.0	39.0		38.2	38.2	38.2	51.0	51.0	
Actuated g/C Ratio				0.39	0.39		0.38	0.38	0.38	0.51	0.51	
v/c Ratio				0.63	0.55		0.10	0.55	0.56	0.45	0.21	
Control Delay				30.3	12.9		24.3	30.9	15.1	17.8	13.6	
Queue Delay				0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay				30.3	12.9		24.3	30.9	15.1	17.8	13.6	
LOS				C	B		C	C	B	B	B	
Approach Delay					21.8			25.9			14.8	
Approach LOS					C			C			B	
Queue Length 50th (ft)				201	73		14	224	85	47	64	
Queue Length 95th (ft)				305	164		m33	302	176	82	92	
Internal Link Dist (ft)		219			1889			225			3719	
Turn Bay Length (ft)				460				150	100			
Base Capacity (vph)				625	698		307	1295	587	325	1778	
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				0.63	0.55		0.10	0.55	0.56	0.45	0.21	

Intersection Summary

Area Type: Other
 Cycle Length: 100
 Actuated Cycle Length: 100
 Offset: 22 (22%), Referenced to phase 2:NBT and 6:SBTL, Start of Green
 Natural Cycle: 55
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.63
 Intersection Signal Delay: 22.1 Intersection LOS: C
 Intersection Capacity Utilization 63.3% ICU Level of Service B
 Analysis Period (min) 15
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 14: Herr Street & 7th Street



Lanes, Volumes, Timings
15: 7th Street &

3/10/2015

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	0	2	973	436	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	0.91	0.91	1.00	1.00
Frt		0.865	0.954			
Fit Protected						
Satd. Flow (prot)	0	1644	4851	0	0	0
Fit Permitted						
Satd. Flow (perm)	0	1644	4851	0	0	0
Link Speed (mph)	30		25			30
Link Distance (ft)	748		364			303
Travel Time (s)	17.0		9.9			6.9
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	0%	0%	2%	2%	0%	0%
Adj. Flow (vph)	0	2	1081	484	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	2	1565	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	0		0			0
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free

Intersection Summary

Area Type: Other
 Control Type: Unsignalized
 Intersection Capacity Utilization 38.5% ICU Level of Service A
 Analysis Period (min) 15

Lanes, Volumes, Timings
16: 7th Street &

3/10/2015

Lane Group	NBT	NBR	SBL	SBT	NWL	NWR
Lane Configurations				↑↑↑		↑↑↑
Volume (vph)	0	0	0	454	0	975
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	0.91	1.00	0.76
Frt						0.850
Flt Protected						
Satd. Flow (prot)	0	0	0	5085	0	3610
Flt Permitted						
Satd. Flow (perm)	0	0	0	5085	0	3610
Link Speed (mph)	25			25	30	
Link Distance (ft)	393			305	303	
Travel Time (s)	10.7			8.3	6.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	493	0	1060
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	493	0	1060
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			5	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	35
Sign Control	Free			Free	Free	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	26.1%			ICU Level of Service A		
Analysis Period (min)	15					

Queuing and Blocking Report
Morning Peak Hour

3/10/2015

Intersection: 1: Division Street & 2nd Street

Movement	EB	WB	WB	NB	NB	SB
Directions Served	LTR	LT	TR	L	LTR	LTR
Maximum Queue (ft)	206	79	86	71	138	93
Average Queue (ft)	104	40	37	18	56	32
95th Queue (ft)	175	76	72	51	111	68
Link Distance (ft)	348	3242	3242		4862	1626
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)				150		
Storage Blk Time (%)					0	
Queuing Penalty (veh)					0	

Intersection: 2: Maclay Street & 2nd Street

Movement	EB	WB	NB	SB
Directions Served	LT	LTR	LTR	LTR
Maximum Queue (ft)	77	143	219	158
Average Queue (ft)	24	51	98	60
95th Queue (ft)	60	111	177	127
Link Distance (ft)	329	2957	5298	4862
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 3: Maclay Street & 7th Street

Movement	EB	EB	WB	WB	WB	NB	NB	NB
Directions Served	L	TR	L	T	R	LT	T	R
Maximum Queue (ft)	127	1313	325	177	158	180	194	216
Average Queue (ft)	14	785	165	62	60	93	99	93
95th Queue (ft)	75	1526	274	135	119	152	164	176
Link Distance (ft)		2957		826	826	414	414	414
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)	75		250					
Storage Blk Time (%)		50	3					
Queuing Penalty (veh)		5	11					

Queuing and Blocking Report
Morning Peak Hour

3/10/2015

Intersection: 4: Forster Street & Front Street

Movement	EB	EB	EB	EB	B18	B18	WB	WB	B37	B37	B37	SB
Directions Served	T	T	T	R	T	T	LT	T	T	T	T	LT
Maximum Queue (ft)	199	200	211	100	487	565	180	182	135	208	88	628
Average Queue (ft)	161	144	192	76	174	195	119	126	27	39	3	510
95th Queue (ft)	216	205	231	142	426	463	201	211	99	137	37	723
Link Distance (ft)	113	113	113		4155	4155	98	98	140	140	140	549
Upstream Blk Time (%)	21	15	23	5			15	16	0	1	0	17
Queuing Penalty (veh)	0	0	0	0			74	78	1	4	0	0
Storage Bay Dist (ft)				50								
Storage Blk Time (%)				35								
Queuing Penalty (veh)				159								

Intersection: 4: Forster Street & Front Street

Movement	SB	SB	SB	B19	B19
Directions Served	T	T	R	T	T
Maximum Queue (ft)	620	627	400	918	1271
Average Queue (ft)	475	499	298	241	302
95th Queue (ft)	660	715	523	765	962
Link Distance (ft)	549	549		2651	2651
Upstream Blk Time (%)	7	16			0
Queuing Penalty (veh)	0	0			0
Storage Bay Dist (ft)			300		
Storage Blk Time (%)		37	3		
Queuing Penalty (veh)		213	11		

Queuing and Blocking Report
Morning Peak Hour

3/10/2015

Intersection: 5: Forster Street & 2nd Street

Movement	EB	EB	EB	B37	B37	B37	WB	WB	WB	NB	NB	NB
Directions Served	T	T	T	T	T	T	T	T	TR	L	L	T
Maximum Queue (ft)	211	212	211	183	170	167	235	253	84	109	118	402
Average Queue (ft)	198	194	188	92	64	58	96	106	13	46	60	210
95th Queue (ft)	243	249	250	195	152	146	219	233	58	88	102	339
Link Distance (ft)	140	140	140	98	98	98	748	748	748	2870	2870	2870
Upstream Blk Time (%)	22	19	18	8	4	4						
Queuing Penalty (veh)	92	82	76	33	18	15						
Storage Bay Dist (ft)												
Storage Blk Time (%)												
Queuing Penalty (veh)												

Intersection: 5: Forster Street & 2nd Street

Movement	NB	SB	SB
Directions Served	R	L	R
Maximum Queue (ft)	291	121	168
Average Queue (ft)	134	61	70
95th Queue (ft)	236	108	124
Link Distance (ft)	2870		5298
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)		150	
Storage Blk Time (%)		0	0
Queuing Penalty (veh)		0	0

Intersection: 6: Forster Street & 3rd Street

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	SB
Directions Served	L	T	T	TR	L	T	T	TR	LT	R	LTR
Maximum Queue (ft)	255	342	358	359	144	158	178	149	194	153	323
Average Queue (ft)	89	153	178	165	62	57	86	38	92	55	135
95th Queue (ft)	182	293	323	310	122	132	161	100	169	110	269
Link Distance (ft)		748	748	748		832	832	832	891	891	1353
Upstream Blk Time (%)											
Queuing Penalty (veh)											
Storage Bay Dist (ft)	225				225						
Storage Blk Time (%)	0	2									
Queuing Penalty (veh)	0	5									

Queuing and Blocking Report
Morning Peak Hour

3/10/2015

Intersection: 7: Forster Street & Commonwealth Avenue

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	T	TR	L	T	T	TR	L	TR	L	T
Maximum Queue (ft)	310	436	450	438	192	222	459	265	100	216	199	487
Average Queue (ft)	177	179	237	193	71	134	154	144	14	87	128	137
95th Queue (ft)	302	364	404	374	144	212	313	236	54	168	216	458
Link Distance (ft)		832	832	832		536	536	536		773		1321
Upstream Blk Time (%)							0					
Queuing Penalty (veh)							0					
Storage Bay Dist (ft)	275				250				150		150	
Storage Blk Time (%)	1	0			0				2	20	1	
Queuing Penalty (veh)	4	2			0				0	22	2	

Intersection: 7: Forster Street & Commonwealth Avenue

Movement	SB
Directions Served	R
Maximum Queue (ft)	229
Average Queue (ft)	32
95th Queue (ft)	164
Link Distance (ft)	1321
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 9: Forster Street &

Movement	EB	EB	EB	NB	NB	NB	NB	B10	B10	B10	SB	SB
Directions Served	T	T	R	L	L	R	R	T	T	T	T	T
Maximum Queue (ft)	510	567	512	437	428	411	297	49	50	64	145	165
Average Queue (ft)	228	372	46	250	261	70	98	6	8	8	56	81
95th Queue (ft)	463	583	293	445	448	286	273	51	59	73	124	146
Link Distance (ft)	536	536	536	425	425	425		260	260	260	310	310
Upstream Blk Time (%)	1	6	0	4	5	0					0	
Queuing Penalty (veh)	3	25	1	12	16	0					0	
Storage Bay Dist (ft)							250					
Storage Blk Time (%)							2	2				
Queuing Penalty (veh)							5	4				

Queuing and Blocking Report
Morning Peak Hour

3/10/2015

Intersection: 11: 7th Street &

Movement	WB	WB	B10
Directions Served	R	R	T
Maximum Queue (ft)	38	38	98
Average Queue (ft)	4	2	3
95th Queue (ft)	21	15	69
Link Distance (ft)		232	425
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)	100		
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 12: 7th Street &

Movement	SW
Directions Served	L
Maximum Queue (ft)	84
Average Queue (ft)	11
95th Queue (ft)	48
Link Distance (ft)	329
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 13: State Street &

Movement	SE	SE
Directions Served	L	L
Maximum Queue (ft)	140	146
Average Queue (ft)	59	76
95th Queue (ft)	111	127
Link Distance (ft)	232	232
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Queuing and Blocking Report
Morning Peak Hour

3/10/2015

Intersection: 14: Herr Street & 7th Street

Movement	WB	WB	NB	NB	NB	NB	SB	SB	SB
Directions Served	L	TR	L	T	T	R	L	T	TR
Maximum Queue (ft)	370	312	76	241	253	223	149	174	162
Average Queue (ft)	184	99	16	138	151	76	78	53	84
95th Queue (ft)	307	196	46	224	227	168	135	124	144
Link Distance (ft)		1906	243	243	243			3736	3736
Upstream Blk Time (%)				0	0	0			
Queuing Penalty (veh)				1	1	0			
Storage Bay Dist (ft)	460					150	100		
Storage Blk Time (%)				7	0	6	1		
Queuing Penalty (veh)				20	0	10	1		

Intersection: 15: 7th Street &

Movement	WB	NB	NB	NB
Directions Served	R	T	T	TR
Maximum Queue (ft)	21	57	237	11
Average Queue (ft)	2	2	25	0
95th Queue (ft)	11	40	160	6
Link Distance (ft)	678	290	290	290
Upstream Blk Time (%)		0	0	
Queuing Penalty (veh)		0	1	
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 16: 7th Street &

Movement	NW	NW
Directions Served	R	R
Maximum Queue (ft)	14	35
Average Queue (ft)	1	2
95th Queue (ft)	8	20
Link Distance (ft)	254	254
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Network Summary

Network wide Queuing Penalty: 1012

Lanes, Volumes, Timings
1: 2nd Street & Division Street

12/9/2014

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔		↔	↔		↔	↔		↔	↔	
Volume (vph)	3	66	8	89	771	26	442	55	45	24	12	61
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	16	12	10	10	10	10	16	10
Storage Length (ft)	0	0	0	0	0	800	150	0	0	0	0	0
Storage Lanes	0	0	0	0	0	0	1	0	0	0	0	0
Taper Length (ft)	25	25	25	25	50	50	25	25	25	25	25	25
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00
Ped Bike Factor							1.00	1.00				0.99
Frt		0.986			0.996			0.975				0.915
Flt Protected		0.998			0.995		0.950	0.969				0.988
Satd. Flow (prot)	0	1668	0	0	4015	0	1600	1574	0	0	1891	0
Flt Permitted		0.972			0.906		0.691	0.748				0.988
Satd. Flow (perm)	0	1625	0	0	3656	0	1163	1215	0	0	1889	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		6			3			11				60
Link Speed (mph)		25			25			25				25
Link Distance (ft)		381			3285			4939				1680
Travel Time (s)		10.4			89.6			134.7				45.8
Confl. Peds. (#/hr)							1		1	1		1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	0%	1%	0%	0%	1%	4%	0%	3%	1%	8%	0%	0%
Parking (#/hr)		0										
Adj. Flow (vph)	3	69	8	94	812	27	465	58	47	25	13	64
Shared Lane Traffic (%)							39%					
Lane Group Flow (vph)	0	80	0	0	933	0	284	286	0	0	102	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Right	Left	Left	Right	Right
Median Width(ft)		0			0			10			10	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.14	1.00	1.00	0.85	1.00	1.09	1.09	1.09	1.09	0.85	1.09
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm	NA		Perm	NA		Perm	NA		Split	NA	
Protected Phases		4			8			6		2		2
Permitted Phases	4			8			6			9.0		9.0
Minimum Split (s)	9.0	9.0		9.0	9.0		9.0	9.0		9.0		9.0
Total Split (s)	44.0	44.0		44.0	44.0		52.0	52.0		14.0		14.0
Total Split (%)	40.0%	40.0%		40.0%	40.0%		47.3%	47.3%		12.7%		12.7%
Maximum Green (s)	39.0	39.0		39.0	39.0		47.0	47.0		9.0		9.0
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)		0.0			0.0		0.0	0.0		0.0		0.0
Total Lost Time (s)		5.0			5.0		5.0	5.0		5.0		5.0
Lead/Lag												
Lead-Lag Optimize?												
Act Effct Green (s)		39.0			39.0		47.0	47.0		9.0		9.0
Actuated g/C Ratio		0.35			0.35		0.43	0.43		0.08		0.08

Lanes, Volumes, Timings
1: 2nd Street & Division Street

12/9/2014

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio		0.14			0.72		0.57	0.54				0.49
Control Delay		23.1			34.5		29.5	27.3				31.0
Queue Delay		0.0			0.0		0.0	0.0				0.0
Total Delay		23.1			34.5		29.5	27.3				31.0
LOS		C			C		C	C				C
Approach Delay		23.1			34.5			28.4				31.0
Approach LOS		C			C			C				C
Intersection Summary												
Area Type:	Other											
Cycle Length:	110											
Actuated Cycle Length:	110											
Offset:	0 (0%), Referenced to phase 6:NBL, Start of Green											
Natural Cycle:	55											
Control Type:	Pretimed											
Maximum v/c Ratio:	0.72											
Intersection Signal Delay:	31.7											
Intersection Capacity Utilization:	58.1%											
ICU Level of Service:	B											
Analysis Period (min):	15											
Splits and Phases: 1: 2nd Street & Division Street												

Lanes, Volumes, Timings
2: 2nd Street & Maclay Street

12/9/2014

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔		↔				↔			↔	
Volume (vph)	8	48	0	106	111	65	8	480	148	0	207	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	16	12	12	16	12	12	11	12	12	12	12
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				
Frt					0.969			0.969				
Flt Protected		0.993			0.981			0.999				
Satd. Flow (prot)	0	2138	0	0	2010	0	0	1747	0	0	1900	0
Flt Permitted		0.953			0.856			0.997				
Satd. Flow (perm)	0	2051	0	0	1750	0	0	1743	0	0	1900	0
Right Turn on Red		Yes		Yes		Yes		Yes		Yes		Yes
Satd. Flow (RTOR)					18			50				
Link Speed (mph)		25			25			25				25
Link Distance (ft)		360			3029			5401				4939
Travel Time (s)		9.8			82.6			147.3				134.7
Confl. Peds. (#/hr)	4		4	4		4	10		10			
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	0%	0%	0%	0%	2%	2%	13%	1%	0%	0%	0%	0%
Parking (#/hr)							0		0			
Adj. Flow (vph)	8	51	0	112	117	68	8	505	156	0	218	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	59	0	0	297	0	0	669	0	0	218	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		11			11			10			10	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	0.85	1.00	1.00	0.85	1.00	1.00	1.04	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1		1	1		1	1		1		0
Detector Template	Left			Left			Left			Left		
Leading Detector (ft)	20	50		20	50		20	50		20		0
Trailing Detector (ft)	0	0		0	0		0	0		0		0
Detector 1 Position(ft)	0	0		0	0		0	0		0		0
Detector 1 Size(ft)	20	50		20	50		20	50		20		6
Detector 1 Type	CI+Ex	CI+Ex		CI+Ex	CI+Ex		CI+Ex	CI+Ex		CI+Ex		CI+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0		0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0		0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0		0.0
Turn Type	Perm	NA		Perm	NA		Perm	NA		NA		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		4.0		4.0
Minimum Split (s)	8.0	8.0		8.0	8.0		8.0	8.0		20.0		20.0

Lanes, Volumes, Timings
2: 2nd Street & Maclay Street

12/9/2014

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Split (s)	17.0	17.0		17.0	17.0		53.0	53.0		53.0	53.0	
Total Split (%)	24.3%	24.3%		24.3%	24.3%		75.7%	75.7%		75.7%	75.7%	
Maximum Green (s)	12.0	12.0		12.0	12.0		48.0	48.0		49.0	49.0	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.5	3.5	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		0.5	0.5	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		5.0			5.0			5.0			4.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	C-Min	C-Min		C-Min	C-Min		None	None		None	None	
Walk Time (s)	10.0	10.0		10.0	10.0		10.0	10.0		5.0	5.0	
Flash Dont Walk (s)	15.0	15.0		15.0	15.0		12.0	12.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)		24.0			24.0			36.0			37.0	
Actuated g/C Ratio		0.34			0.34			0.51			0.53	
v/c Ratio		0.08			0.49			0.73			0.22	
Control Delay		21.0			25.8			16.1			7.9	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		21.0			25.8			16.1			7.9	
LOS		C			C			B			A	
Approach Delay		21.0			25.8			16.1			7.9	
Approach LOS		C			C			B			A	
Intersection Summary												
Area Type:	Other											
Cycle Length:	70											
Actuated Cycle Length:	70											
Offset:	0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green, Master Intersection											
Natural Cycle:	55											
Control Type:	Actuated-Coordinated											
Maximum v/c Ratio:	0.73											
Intersection Signal Delay:	17.2											
Intersection Capacity Utilization:	71.9%											
ICU Level of Service:	C											
Analysis Period (min):	15											
Splits and Phases: 2: 2nd Street & Maclay Street												

Lanes, Volumes, Timings
3: 7th Street & Maclay Street

12/9/2014

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Volume (vph)	5	775	153	88	425	278	73	859	592	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	12	12	10	11	11	11	11	14	11	13	12
Grade (%)		-3%			-3%			-1%			-1%	
Storage Length (ft)	75		0	250		0	100		100	0		200
Storage Lanes	1		0	1		1	0		1	0		0
Taper Length (ft)	75			300			100			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00	1.00				0.99		1.00	0.97			
Frt		0.975				0.850		0.850				
Flt Protected	0.950			0.950				0.996				
Satd. Flow (prot)	1771	1858	0	1660	1846	1554	0	3461	1714	0	0	0
Flt Permitted	0.506			0.062				0.996				
Satd. Flow (perm)	942	1858	0	108	1846	1532	0	3457	1657	0	0	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		12				24			208			
Link Speed (mph)		25			35			25			25	
Link Distance (ft)		3029			877			479			2587	
Travel Time (s)		82.6			17.1			13.1			70.6	
Confl. Peds. (#/hr)	1		1	1		1	5		5	5		5
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
Heavy Vehicles (%)	0%	1%	0%	3%	1%	2%	0%	1%	1%	1%	0%	0%
Adj. Flow (vph)	5	807	159	92	443	290	76	895	617	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	5	966	0	92	443	290	0	971	617	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		11			11			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.02	0.98	0.98	1.07	1.02	1.02	1.04	1.04	0.91	1.04	0.95	0.99
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1		1	1	1	1	1	1			1
Detector Template				Left		Right	Left		Right			
Leading Detector (ft)	50	50		50	50	50	50	50	50			50
Trailing Detector (ft)	0	0		0	0	0	0	0	0			0
Detector 1 Position(ft)	0	0		0	0	0	0	0	0			0
Detector 1 Size(ft)	50	50		50	50	50	50	50	50			50
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex			Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0			0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0			0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0			0.0
Turn Type	Perm	NA		pm+pt	NA	Perm	Perm	NA	Perm			Perm
Protected Phases		4		3		8			2			
Permitted Phases	4			8		8	2		2			
Detector Phase	4	4		3	8	8	2	2	2			2

Lanes, Volumes, Timings
3: 7th Street & Maclay Street

12/9/2014

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	3.0	3.0		3.0	3.0	3.0	10.0	10.0	10.0			
Minimum Split (s)	9.0	9.0		8.4	9.0	9.0	15.4	15.4	15.4			
Total Split (s)	65.0	65.0		11.0	76.0	76.0	44.0	44.0	44.0			
Total Split (%)	54.2%	54.2%		9.2%	63.3%	63.3%	36.7%	36.7%	36.7%			
Maximum Green (s)	59.0	59.0		5.6	70.0	70.0	38.6	38.6	38.6			
Yellow Time (s)	4.0	4.0		3.0	4.0	4.0	3.0	3.0	3.0			
All-Red Time (s)	2.0	2.0		2.4	2.0	2.0	2.4	2.4	2.4			
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0			
Total Lost Time (s)	6.0	6.0		5.4	6.0	6.0	5.4	5.4	5.4			
Lead/Lag	Lag	Lag		Lead								
Lead-Lag Optimize?	Yes	Yes		Yes								
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0			
Recall Mode	None	None		None	None	None	C-Min	C-Min	C-Min			
Walk Time (s)	7.0	7.0		11.0	7.0	7.0	7.0	7.0	7.0			
Flash Dont Walk (s)	15.0	15.0		0.0	15.0	15.0	15.0	15.0	15.0			
Pedestrian Calls (#/hr)	0	0		0	0	0	0	0	0			
Act Effct Green (s)	59.5	59.5		71.3	70.7	70.7		37.9	37.9			
Actuated g/C Ratio	0.50	0.50		0.59	0.59	0.59		0.32	0.32			
v/c Ratio	0.01	1.04		0.67	0.41	0.32		0.89	0.93			
Control Delay	15.8	71.2		40.0	14.9	12.6		69.2	64.5			
Queue Delay	0.0	0.0		0.0	0.0	0.0		0.0	0.0			
Total Delay	15.8	71.2		40.0	14.9	12.6		69.2	64.5			
LOS	B	E		D	B	B		E	E			
Approach Delay		70.9			16.9			67.4				
Approach LOS		E			B			E				
Intersection Summary												
Area Type:	Other											
Cycle Length:	120											
Actuated Cycle Length:	120											
Offset:	0 (0%), Referenced to phase 2:NBT and 6.; Start of Green											
Natural Cycle:	120											
Control Type:	Actuated-Coordinated											
Maximum v/c Ratio:	1.04											
Intersection Signal Delay:	56.1						Intersection LOS: E					
Intersection Capacity Utilization:	98.2%						ICU Level of Service F					
Analysis Period (min):	15											
Splits and Phases:	3: 7th Street & Maclay Street											

Lanes, Volumes, Timings
4: Front Street & Forster Street

12/9/2014

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑	↑		↑↑						↑↑↑	↑
Volume (vph)	0	891	245	0	1877	0	0	0	0	27	744	306
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	11	11
Grade (%)		-3%			-1%			-1%			0%	
Storage Length (ft)	75		50	0		0	0		0	0		300
Storage Lanes	0		1	0		0	0		0	0		1
Taper Length (ft)	75			25			25			25		
Lane Util. Factor	1.00	0.91	1.00	1.00	0.95	1.00	1.00	1.00	1.00	0.91	0.91	1.00
Ped Bike Factor			0.95								1.00	0.98
Frt			0.850									0.850
Flt Protected											0.998	
Satd. Flow (prot)	0	4920	1623	0	3328	0	0	0	0	0	4813	1501
Flt Permitted											0.998	
Satd. Flow (perm)	0	4920	1546	0	3328	0	0	0	0	0	4812	1471
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			36									36
Link Speed (mph)		50			35			35			35	
Link Distance (ft)		192			146			595			709	
Travel Time (s)		2.6			2.8			11.6			13.8	
Confl. Peds. (#/hr)	18		18	18		18				4		4
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
Heavy Vehicles (%)	0%	7%	1%	0%	9%	0%	0%	0%	0%	3%	4%	4%
Adj. Flow (vph)	0	928	255	0	1955	0	0	0	0	28	775	319
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	928	255	0	1955	0	0	0	0	0	803	319
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Right	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		16			5			0			0	
Link Offset(ft)		5			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	0.98	0.98	0.98	0.99	0.99	0.99	0.99	0.99	0.99	1.00	1.04	1.04
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type		NA	Perm		NA					Perm	NA	Perm
Protected Phases		2			6						4	
Permitted Phases			2							4		4
Minimum Split (s)		17.0	17.0		17.0					17.0	17.0	17.0
Total Split (s)		82.0	82.0		82.0					38.0	38.0	38.0
Total Split (%)		68.3%	68.3%		68.3%					31.7%	31.7%	31.7%
Maximum Green (s)		75.0	75.0		75.0					31.0	31.0	31.0
Yellow Time (s)		4.0	4.0		4.0					4.0	4.0	4.0
All-Red Time (s)		3.0	3.0		3.0					3.0	3.0	3.0
Lost Time Adjust (s)		0.0	0.0		0.0					0.0	0.0	0.0
Total Lost Time (s)		7.0	7.0		7.0					7.0	7.0	7.0
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)		8.0	8.0		8.0					8.0	8.0	8.0
Flash Dont Walk (s)		10.0	10.0		10.0					10.0	10.0	10.0

Lanes, Volumes, Timings
4: Front Street & Forster Street

12/9/2014

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Pedestrian Calls (#/hr)		0	0		0						0	0
Act Effct Green (s)		75.0	75.0		75.0						31.0	31.0
Actuated g/C Ratio		0.62	0.62		0.62						0.26	0.26
v/c Ratio		0.30	0.26		0.94						0.65	0.79
Control Delay		10.7	9.3		26.8						42.5	51.6
Queue Delay		0.0	0.0		14.1						0.0	0.0
Total Delay		10.7	9.3		40.9						42.5	51.6
LOS		B	A		D						D	D
Approach Delay		10.4			40.9						45.1	
Approach LOS		B			D						D	

Intersection Summary	
Area Type:	Other
Cycle Length:	120
Actuated Cycle Length:	120
Offset:	102 (85%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle:	90
Control Type:	Pretimed
Maximum v/c Ratio:	0.94
Intersection Signal Delay:	33.5
Intersection Capacity Utilization:	82.9%
ICU Level of Service:	E
Analysis Period (min):	15

Splits and Phases: 4: Front Street & Forster Street



Lanes, Volumes, Timings
5: 2nd Street & Forster Street

12/9/2014

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑			↑↑↑		↑↑	↑	↑	↑		↑
Volume (vph)	0	907	0	0	1019	69	435	531	641	45	0	400
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	12	12	11	12	11	11	10	10	10	10
Grade (%)		0%			-1%			-1%			0%	
Storage Length (ft)	0		0	0		0	0		0	150		0
Storage Lanes	0		0	0		0	2		1	1		1
Taper Length (ft)	25			25			25			50		
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	0.91	0.97	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor					0.99	0.99	0.99		0.98			
Frt					0.991				0.850			0.850
Flt Protected							0.950			0.950		
Satd. Flow (prot)	0	4686	0	0	4703	0	3368	1810	1471	1685	0	1507
Flt Permitted							0.950			0.275		
Satd. Flow (perm)	0	4686	0	0	4703	0	3347	1810	1444	488	0	1507
Right Turn on Red			Yes		Yes				Yes		Yes	
Satd. Flow (RTOR)				9					107			82
Link Speed (mph)		35			35			25			25	
Link Distance (ft)		211			828			2093			5401	
Travel Time (s)		4.1			16.1			57.1			147.3	
Confl. Peds. (#/hr)	20		20	20		20	5		5			
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
Heavy Vehicles (%)	0%	7%	0%	0%	6%	0%	1%	2%	3%	0%	0%	0%
Adj. Flow (vph)	0	935	0	0	1051	71	448	547	661	46	0	412
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	935	0	0	1122	0	448	547	661	46	0	412
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Right	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		29			17			22			22	
Link Offset(ft)		0			6			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.04	1.04	1.00	0.99	1.04	0.99	1.04	1.04	1.09	1.09	1.09	1.09
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors		2			1		1	1	1	1		1
Detector Template					Left		Left		Right	Left		Right
Leading Detector (ft)		246			0		40	40	40	20		20
Trailing Detector (ft)		0			0		0	0	0	0		0
Detector 1 Position(ft)		0			0		0	0	0	0		0
Detector 1 Size(ft)		0			0		40	40	40	20		20
Detector 1 Type		Cl+Ex			Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)		0.0			0.0		0.0	0.0	0.0	0.0		0.0
Detector 1 Queue (s)		0.0			0.0		0.0	0.0	0.0	0.0		0.0
Detector 1 Delay (s)		0.0			0.0		0.0	0.0	0.0	0.0		0.0
Detector 2 Position(ft)		240										
Detector 2 Size(ft)		6										
Detector 2 Type		Cl+Ex										
Detector 2 Channel												

Lanes, Volumes, Timings
5: 2nd Street & Forster Street

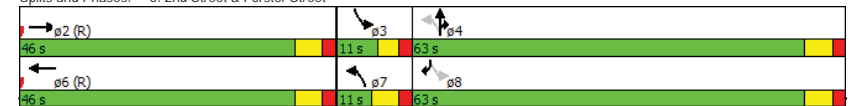
12/9/2014

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0										
Turn Type		NA				NA	pm+pt	NA	custom	pm+pt		Prot
Protected Phases		2			6		7	4	4	3		8
Permitted Phases							4	4	4	8		8
Detector Phase		2			6		7	4	4	3		8
Switch Phase												
Minimum Initial (s)		5.0			5.0		4.0	5.0	5.0	4.0		5.0
Minimum Split (s)		34.0			35.0		11.0	34.0	34.0	9.0		34.0
Total Split (s)		46.0			46.0		11.0	63.0	63.0	11.0		63.0
Total Split (%)		38.3%			38.3%		9.2%	52.5%	52.5%	9.2%		52.5%
Maximum Green (s)		40.0			40.0		5.0	57.0	57.0	6.0		57.0
Yellow Time (s)		4.0			4.0		4.0	4.0	4.0	3.0		4.0
All-Red Time (s)		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
Total Lost Time (s)		6.0			6.0		6.0	6.0	6.0	5.0		6.0
Lead/Lag							Lead	Lag	Lag	Lead		Lag
Lead-Lag Optimize?							Yes	Yes	Yes	Yes		Yes
Vehicle Extension (s)		5.0				3.0	3.0	5.0	5.0	3.0		5.0
Recall Mode		C-Max				C-Max	None	None	None	None		None
Walk Time (s)		7.0			8.0		7.0	7.0	7.0	7.0		7.0
Flash Dont Walk (s)		21.0			10.0		21.0	21.0				21.0
Pedestrian Calls (#/hr)		0			0		0	0	0	0		0
Act Effct Green (s)		44.7			44.7		58.5	54.5	54.5	59.2		52.3
Actuated g/C Ratio		0.37			0.37		0.49	0.45	0.45	0.49		0.44
v/c Ratio		0.54			0.64		0.27	0.67	0.91	0.15		0.59
Control Delay		22.7			48.6		16.7	29.9	43.4	12.6		23.0
Queue Delay		0.2			0.0		0.5	0.0	0.0	0.0		14.1
Total Delay		22.9			48.6		17.1	29.9	43.4	12.6		37.1
LOS		C			D		B	C	D	B		D
Approach Delay		22.9			48.6			31.8				
Approach LOS		C			D			C				

Intersection Summary

Area Type:	Other
Cycle Length:	120
Actuated Cycle Length:	120
Offset:	10 (8%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle:	90
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.91
Intersection Signal Delay:	34.7
Intersection LOS:	C
Intersection Capacity Utilization:	80.2%
ICU Level of Service:	D
Analysis Period (min):	15

Splits and Phases: 5: 2nd Street & Forster Street



Lanes, Volumes, Timings
6: 3rd Street & Forster Street

12/9/2014

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	257	1302	60	155	940	57	123	142	241	40	175	31
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	11	12	10	11	12	12	11	10	12	16	12
Grade (%)	EBL: 1%, EBT: 1%, EBR: 1%, WBL: -2%, WBT: -2%, WBR: -2%, NBL: -1%, NBT: -1%, NBR: -1%, SBL: 0%, SBT: 0%, SBR: 0%											
Storage Length (ft)	225		0	225		0	0		0	0		0
Storage Lanes	1		0	1		0	0		1	0		0
Taper Length (ft)	50			50			25		25			
Lane Util. Factor	1.00	0.91	0.91	1.00	0.91	0.91	1.00	0.99	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99	1.00			1.00			0.99	0.95		0.99	
Frt	0.993				0.991				0.850		0.983	
Flt Protected	0.950			0.950				0.977			0.992	
Satd. Flow (prot)	1660	4936	0	1652	4952	0	0	1784	1443	0	2057	0
Flt Permitted	0.218			0.124				0.601			0.795	
Satd. Flow (perm)	378	4936	0	216	4952	0	0	1086	1375	0	1643	0
Right Turn on Red			Yes		Yes			Yes		Yes		Yes
Satd. Flow (RTOR)		7			9				248		7	
Link Speed (mph)		35			35			25			25	
Link Distance (ft)		828			923			950			1410	
Travel Time (s)		16.1			18.0			25.9			38.5	
Confl. Peds. (#/hr)	16		10	10		16	32		28	28		32
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
Heavy Vehicles (%)	1%	0%	3%	3%	1%	0%	2%	5%	0%	2%	0%	0%
Adj. Flow (vph)	265	1342	62	160	969	59	127	146	248	41	180	32
Shared Lane Traffic (%)												
Lane Group Flow (vph)	265	1404	0	160	1028	0	0	273	248	0	253	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		17			10			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.10	1.05	1.01	1.08	1.03	0.99	0.99	1.04	1.09	1.00	0.85	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1		1	1		1	1	1	1	1	1
Detector Template	Left Left											
Leading Detector (ft)	40	0		40	26		20	40	40	20	40	
Trailing Detector (ft)	0	0		0	20		0	0	0	0	0	
Detector 1 Position(ft)	0	0		0	20		0	0	0	0	0	
Detector 1 Size(ft)	40	0		40	6		20	40	40	20	40	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA	Perm	Perm	NA	
Protected Phases	1	6		5	2		4	4	4	8	8	
Permitted Phases	6			2			4	4	4	8	8	
Detector Phase	1	6		5	2		4	4	4	8	8	

Lanes, Volumes, Timings
6: 3rd Street & Forster Street

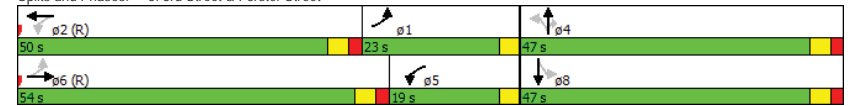
12/9/2014

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	8.0	10.0		8.0	10.0		10.0	10.0	10.0	10.0	10.0	10.0
Total Split (%)	23.0	54.0		19.0	50.0		47.0	47.0	47.0	47.0	47.0	47.0
Total Split (%)	19.2%	45.0%		15.8%	41.7%		39.2%	39.2%	39.2%	39.2%	39.2%	39.2%
Maximum Green (s)	20.0	49.0		16.0	45.0		42.0	42.0	42.0	42.0	42.0	42.0
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	0.0	2.0		0.0	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	0.0
Total Lost Time (s)	3.0	5.0		3.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lag	Lead		Lag	Lead		Lag	Lead	Lag	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	C-Max		None	C-Max		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)		12.0			12.0		21.0	21.0	21.0	21.0	21.0	21.0
Pedestrian Calls (#/hr)		0			0		0	0	0	0	0	0
Act Effct Green (s)	79.2	62.3		72.2	58.3		32.8	32.8	32.8	32.8	32.8	32.8
Actuated g/C Ratio	0.66	0.52		0.60	0.49		0.27	0.27	0.27	0.27	0.27	0.27
v/c Ratio	0.63	0.55		0.59	0.43		0.92	0.45	0.56	0.56	0.56	0.56
Control Delay	33.8	23.0		51.4	29.4		76.8	6.1	39.9	39.9	39.9	39.9
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	33.8	23.0		51.4	29.4		76.8	6.1	39.9	39.9	39.9	39.9
LOS	C	C		D	C		E	A	D	D	D	D
Approach Delay		24.7			32.3			43.2			39.9	
Approach LOS		C			C			D			D	

Intersection Summary

Area Type:	Other
Cycle Length:	120
Actuated Cycle Length:	120
Offset:	43 (36%), Referenced to phase 2:WBTL and 6:EBTL, Start of Green
Natural Cycle:	50
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.92
Intersection Signal Delay:	30.9
Intersection Capacity Utilization:	90.7%
Analysis Period (min):	15
Intersection LOS:	C
ICU Level of Service:	E

Splits and Phases: 6: 3rd Street & Forster Street



Lanes, Volumes, Timings

7: Commonwealth Avenue & Forster Street

12/9/2014

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔↔↔	↔	↔	↔↔↔	↔	↔	↔	↔	↔	↔	↔
Volume (vph)	209	1353	52	81	762	59	151	116	57	156	166	176
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	11	12	11	11	12	10	16	12	13	13	13
Grade (%)		-2%			-2%			-2%			-2%	
Storage Length (ft)	275		0	250		0	150		0	150		0
Storage Lanes	1		0	1		0	1		0	1		1
Taper Length (ft)	50			25			25			50		
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	0.98	1.00		0.99	0.99		0.97	0.94		0.87		0.95
Frt		0.994			0.989			0.951				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1620	4955	0	1456	4929	0	1668	1743	0	1829	1944	1686
Flt Permitted	0.316			0.109			0.559			0.545		
Satd. Flow (perm)	530	4955	0	166	4929	0	956	1743	0	911	1944	1608
Right Turn on Red			Yes		Yes			Yes			Yes	
Satd. Flow (RTOR)		6			10			22				185
Link Speed (mph)		35			35			25			25	
Link Distance (ft)		923			638			842			1379	
Travel Time (s)		18.0			12.4			23.0			37.6	
Confl. Peds. (#/hr)	25		44	44		25	34		173	173		34
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	5%	1%	4%	21%	1%	2%	2%	15%	4%	3%	2%	0%
Adj. Flow (vph)	220	1424	55	85	802	62	159	122	60	164	175	185
Shared Lane Traffic (%)												
Lane Group Flow (vph)	220	1479	0	85	864	0	159	182	0	164	175	185
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		11			17			13			13	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.08	1.03	0.99	1.03	1.03	0.99	1.08	0.84	0.99	0.95	0.95	0.95
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1		1	1		1	1		1	1	1
Detector Template												
Leading Detector (ft)	40	0		40	0		40	40		40	0	40
Trailing Detector (ft)	0	0		0	0		0	0		0	0	0
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	0
Detector 1 Size(ft)	40	0		40	0		40	40		40	0	40
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA	Perm
Protected Phases	1	6		5	2		4	4		8	8	8
Permitted Phases	6			2			4			8		8
Detector Phase	1	6		5	2		4	4		8	8	8

Lanes, Volumes, Timings

7: Commonwealth Avenue & Forster Street

12/9/2014

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	3.0	3.0		3.0	3.0		5.0	5.0		5.0	5.0	5.0
Minimum Split (s)	9.0	9.0		9.0	9.0		11.0	11.0		11.0	11.0	11.0
Total Split (s)	34.0	57.0		18.0	41.0		45.0	45.0		45.0	45.0	45.0
Total Split (%)	28.3%	47.5%		15.0%	34.2%		37.5%	37.5%		37.5%	37.5%	37.5%
Maximum Green (s)	28.0	51.0		12.0	35.0		39.0	39.0		39.0	39.0	39.0
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)	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
Lead/Lag	Lag	Lag		Lead	Lead							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	1.0	1.0		1.0	1.0		3.0	3.0		3.0	3.0	3.0
Recall Mode	None	C-Max		None	C-Max		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)		17.0			20.0		28.0	28.0		28.0	28.0	28.0
Pedestrian Calls (#/hr)		10			10		25	25		25	25	25
Act Effct Green (s)	67.3	67.3		45.6	45.6		28.4	28.4		28.4	28.4	28.4
Actuated g/C Ratio	0.56	0.56		0.38	0.38		0.24	0.24		0.24	0.24	0.24
v/c Ratio	0.40	0.53		0.56	0.46		0.71	0.43		0.76	0.38	0.36
Control Delay	45.9	37.4		46.0	22.4		57.3	35.2		63.5	39.0	6.4
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	45.9	37.4		46.0	22.4		57.3	35.2		63.5	39.0	6.4
LOS	D	D		D	C		E	D		E	D	A
Approach Delay		38.5			24.5			45.5			35.2	
Approach LOS		D			C			D			D	
Intersection Summary												
Area Type:	Other											
Cycle Length:	120											
Actuated Cycle Length:	120											
Offset:	0 (0%), Referenced to phase 2:WBTl and 6:EBTL, Start of Green, Master Intersection											
Natural Cycle:	50											
Control Type:	Actuated-Coordinated											
Maximum v/c Ratio:	0.76											
Intersection Signal Delay:	34.9						Intersection LOS: C					
Intersection Capacity Utilization:	91.8%						ICU Level of Service F					
Analysis Period (min):	15											
Splits and Phases:	7: Commonwealth Avenue & Forster Street											

Lanes, Volumes, Timings
9: 7th Street & Forster Street

12/9/2014

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↑				↑↑	↑	↑↑		↑↑	↑
Volume (vph)	0	948	618	0	0	0	335	0	225	0	564	551
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	16	12	12	12	12	12	12	12	12	12	12
Grade (%)		-1%				0%			0%			-1%
Storage Length (ft)	0		0	0		0	0		250	0		0
Storage Lanes	0		1	0		0	2		1	0		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	1.00	1.00	0.97	1.00	0.88	1.00	0.95	1.00
Ped Bike Factor							0.96					
Frt			0.850						0.850			0.850
Flt Protected							0.950					
Satd. Flow (prot)	0	4071	1607	0	0	0	3467	0	2814	0	3557	1576
Flt Permitted							0.950					
Satd. Flow (perm)	0	4071	1607	0	0	0	3330	0	2814	0	3557	1576
Right Turn on Red			Yes			Yes			Yes	Yes		Yes
Satd. Flow (RTOR)			440						88			612
Link Speed (mph)		35			25			25			25	
Link Distance (ft)		638			364			500			393	
Travel Time (s)		12.4			9.9			13.6			10.7	
Confl. Peds. (#/hr)							42					
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
Heavy Vehicles (%)	0%	1%	1%	0%	0%	0%	1%	0%	1%	0%	2%	3%
Adj. Flow (vph)	0	1053	687	0	0	0	372	0	250	0	627	612
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1053	687	0	0	0	372	0	250	0	627	612
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		15			11			29			24	
Link Offset(ft)		-12			0			-8			12	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	0.99	0.84	0.99	1.00	1.00	1.00	1.00	1.00	1.00	0.99	0.99	0.99
Turning Speed (mph)	15		9	15		9	15		20	15		9
Number of Detectors		1	1				1		1		1	1
Detector Template			Right								Right	
Leading Detector (ft)		1	20				40		44		40	20
Trailing Detector (ft)		0	0				0		4		0	0
Detector 1 Position(ft)		0	0				0		4		0	0
Detector 1 Size(ft)		1	20				40		40		40	20
Detector 1 Type		Cl+Ex	Cl+Ex				Cl+Ex		Cl+Ex		Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)		0.0	0.0				0.0		0.0		0.0	0.0
Detector 1 Queue (s)		0.0	0.0				0.0		0.0		0.0	0.0
Detector 1 Delay (s)		0.0	0.0				0.0		0.0		0.0	0.0
Turn Type		NA	Perm				Prot		custom		NA	Perm
Protected Phases		2					3		8		4	
Permitted Phases			2						4			4
Detector Phase		2	2				3		8		4	4

Lanes, Volumes, Timings
9: 7th Street & Forster Street

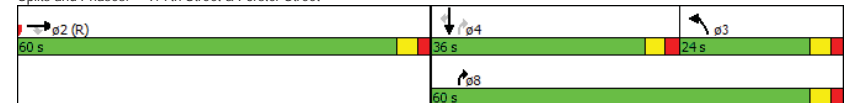
12/9/2014

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)		5.0	5.0				4.0		5.0		4.0	4.0
Minimum Split (s)		10.0	10.0				10.0		10.0		21.0	21.0
Total Split (s)		60.0	60.0				24.0		60.0		36.0	36.0
Total Split (%)		50.0%	50.0%				20.0%		50.0%		30.0%	30.0%
Maximum Green (s)		55.0	55.0				19.0		55.0		31.0	31.0
Yellow Time (s)		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
Lost Time Adjust (s)		0.0	0.0				0.0		0.0		0.0	0.0
Total Lost Time (s)		5.0	5.0				5.0		5.0		5.0	5.0
Lead/Lag							Lag				Lead	Lead
Lead-Lag Optimize?							Yes				Yes	Yes
Vehicle Extension (s)		3.0	3.0				3.0		3.0		3.0	3.0
Recall Mode		C-Max	C-Max				None		None		None	None
Walk Time (s)		7.0	7.0				7.0		7.0		5.0	5.0
Flash Dont Walk (s)		14.0	14.0				14.0		14.0		11.0	11.0
Pedestrian Calls (#/hr)		0	0				0		0		0	0
Act Effct Green (s)		59.8	59.8				17.1		50.2		28.0	28.0
Actuated g/C Ratio		0.50	0.50				0.14		0.42		0.23	0.23
v/c Ratio		0.52	0.67				0.75		0.20		0.76	0.73
Control Delay		15.9	12.5				59.4		13.6		44.1	10.0
Queue Delay		0.3	1.1				0.0		0.0		0.0	0.4
Total Delay		16.2	13.6				59.4		13.6		44.1	10.5
LOS		B	B				E		B		D	B
Approach Delay		15.2									27.5	
Approach LOS		B									C	

Intersection Summary

Area Type:	Other
Cycle Length:	120
Actuated Cycle Length:	120
Offset:	20 (17%), Referenced to phase 2:EBT, Start of Green
Natural Cycle:	60
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.76
Intersection Signal Delay:	23.9
Intersection LOS:	C
Intersection Capacity Utilization:	63.0%
ICU Level of Service:	B
Analysis Period (min):	15

Splits and Phases: 9: 7th Street & Forster Street



Lanes, Volumes, Timings
11: 7th Street

12/9/2014

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations		↔↔			↔↔	↔↔
Volume (vph)	0	357	0	0	1189	193
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	0%		0%			3%
Storage Length (ft)	100	0		0	0	
Storage Lanes	1	2		0	1	
Taper Length (ft)	75				25	
Lane Util. Factor	1.00	0.88	1.00	1.00	0.91	0.91
Frt		0.850				
Flt Protected					0.950	0.964
Satd. Flow (prot)	0	2787	0	0	1586	3219
Flt Permitted					0.950	0.964
Satd. Flow (perm)	0	2787	0	0	1586	3219
Link Speed (mph)	30		25		25	
Link Distance (ft)	359		483		304	
Travel Time (s)	8.2		13.2		8.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.95	0.95
Adj. Flow (vph)	0	388	0	0	1252	203
Shared Lane Traffic (%)					50%	
Lane Group Flow (vph)	0	388	0	0	626	829
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	R NA	Left	Right	Left	Left
Median Width(ft)	5		12		17	
Link Offset(ft)	0		0		0	
Crosswalk Width(ft)	16		16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.02	1.02
Turning Speed (mph)	15	9			9	15
Sign Control	Free		Free			Free
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	36.3%		ICU Level of Service A			
Analysis Period (min)	15					

Lanes, Volumes, Timings
12: 7th Street

12/9/2014

Lane Group	NBT	NBR	SBL	SBT	SWL	SWR
Lane Configurations		↔↔		↔↔	↔↔	
Volume (vph)	0	373	0	193	148	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	0%			-3%	0%	
Lane Util. Factor	1.00	0.88	1.00	0.95	1.00	1.00
Frt		0.850				
Flt Protected					0.950	
Satd. Flow (prot)	0	2787	0	3592	1770	0
Flt Permitted					0.950	
Satd. Flow (perm)	0	2787	0	3592	1770	0
Link Speed (mph)	25			25	30	
Link Distance (ft)	236			483	432	
Travel Time (s)	6.4			13.2	9.8	
Peak Hour Factor	0.92	0.92	0.95	0.95	0.92	0.92
Heavy Vehicles (%)	2%	2%	0%	2%	2%	2%
Adj. Flow (vph)	0	405	0	203	161	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	405	0	203	161	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	L NA	Right
Median Width(ft)	5			0	17	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	0.98	0.98	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Yield	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	20.2%		ICU Level of Service A			
Analysis Period (min)	15					

Lanes, Volumes, Timings
13: State Street

12/9/2014

Lane Group	EBL	EBT	WBT	WBR	SEL	SER
Lane Configurations		↑↑	↑	↑	↑↑	
Volume (vph)	0	373	148	357	1189	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	0.95	1.00	1.00	0.97	1.00
Frt			0.850			
Flt Protected					0.950	
Satd. Flow (prot)	0	3539	1863	1583	3433	0
Flt Permitted					0.950	
Satd. Flow (perm)	0	3539	1863	1583	3433	0
Link Speed (mph)		30	35		30	
Link Distance (ft)		432	1119		359	
Travel Time (s)		9.8	21.8		8.2	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	0%	2%	2%	2%	2%	0%
Adj. Flow (vph)	0	393	156	376	1252	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	393	156	376	1252	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		10	5		36	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	0		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		15		15	15	9
Sign Control		Free	Free		Stop	

Intersection Summary	
Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	50.9%
ICU Level of Service A	
Analysis Period (min)	15

Lanes, Volumes, Timings
14: 7th Street & Herr Street

12/9/2014

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations				↑	↑		↑	↑↑	↑	↑	↑	↑
Volume (vph)	0	0	0	305	2	338	3	1067	342	217	716	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	10	11	12	12	11	12	16	13	16
Grade (%)		0%			4%			0%				0%
Storage Length (ft)	0		0	460		0	0		150	100		0
Storage Lanes	0		0	1		0	1		1	1		0
Taper Length (ft)	25			25			25			50		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	0.95
Ped Bike Factor				0.97	0.96		0.97		0.84		1.00	
Frt					0.851				0.850		0.999	
Flt Protected				0.950			0.950			0.950		
Satd. Flow (prot)	0	0	0	1635	1461	0	1805	3421	1599	2046	3651	0
Flt Permitted				0.950			0.290			0.113		
Satd. Flow (perm)	0	0	0	1593	1461	0	532	3421	1349	243	3651	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)				270					229			1
Link Speed (mph)		30			25			25			25	
Link Distance (ft)		299			1969			305			3799	
Travel Time (s)		6.8			53.7			8.3			103.6	
Confl. Peds. (#/hr)				19		19	44		44	44		44
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
Heavy Vehicles (%)	0%	0%	0%	1%	0%	1%	0%	2%	1%	0%	2%	0%
Adj. Flow (vph)	0	0	0	339	2	376	3	1186	380	241	796	4
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	339	378	0	3	1186	380	241	800	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		10			10			17			17	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.12	1.07	1.03	1.00	1.04	1.00	0.85	0.96	0.85
Turning Speed (mph)		15		9	15		9	15		9	15	9
Number of Detectors				1	1		1	1	1	1	1	
Detector Template							Left		Right		Left	
Leading Detector (ft)				0	0		20	0	20	20	0	
Trailing Detector (ft)				0	0		0	0	0	0	0	
Detector 1 Position(ft)				0	0		0	0	0	0	0	
Detector 1 Size(ft)				0	0		20	0	20	20	0	
Detector 1 Type				Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)				0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)				0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)				0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Turn Type				Split	NA		Perm	NA	Perm	pm+pt	NA	
Protected Phases				4	4			2		1	6	
Permitted Phases							2		2	6		
Detector Phase				4	4		2	2	2	1	6	

Lanes, Volumes, Timings
14: 7th Street & Herr Street

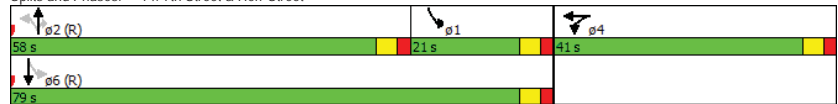
12/9/2014

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)				10.0	10.0		10.0	10.0	10.0	3.0	10.0	
Minimum Split (s)				15.0	15.0		15.0	15.0	15.0	8.0	15.0	
Total Split (s)				41.0	41.0		58.0	58.0	58.0	21.0	79.0	
Total Split (%)				34.2%	34.2%		48.3%	48.3%	48.3%	17.5%	65.8%	
Maximum Green (s)				36.0	36.0		53.0	53.0	53.0	16.0	74.0	
Yellow Time (s)				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	
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	5.0	5.0	5.0	5.0	
Lead/Lag							Lead	Lead	Lead	Lag		
Lead-Lag Optimize?							Yes	Yes	Yes	Yes		
Vehicle Extension (s)				3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Recall Mode				Max	Max		C-Max	C-Max	C-Max	None	C-Max	
Walk Time (s)				7.0	7.0		7.0	7.0	7.0		7.0	
Flash Dont Walk (s)				20.0	20.0		12.0	12.0	12.0		12.0	
Pedestrian Calls (#/hr)				0	0		0	0	0		0	
Act Effct Green (s)				36.0	36.0		53.0	53.0	53.0	74.0	74.0	
Actuated g/C Ratio				0.30	0.30		0.44	0.44	0.44	0.62	0.62	
v/c Ratio				0.69	0.60		0.01	0.79	0.53	0.62	0.36	
Control Delay				45.7	14.7		11.7	24.1	4.6	36.7	9.3	
Queue Delay				0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay				45.7	14.7		11.7	24.1	4.6	36.7	9.3	
LOS				D	B		B	C	A	D	A	
Approach Delay					29.4			19.4			15.6	
Approach LOS					C			B			B	

Intersection Summary

Area Type:	Other
Cycle Length:	120
Actuated Cycle Length:	120
Offset:	46 (38%), Referenced to phase 2:NBT and 6:SBTL, Start of Green
Natural Cycle:	60
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.79
Intersection Signal Delay:	20.4
Intersection LOS:	C
Intersection Capacity Utilization:	76.9%
ICU Level of Service:	D
Analysis Period (min):	15

Splits and Phases: 14: 7th Street & Herr Street



Lanes, Volumes, Timings
15: 7th Street

12/9/2014

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	0	432	1172	1	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	0.91	0.91	1.00	1.00
Fr _t		0.865				
Flt Protected						
Satd. Flow (prot)	0	1627	5136	0	0	0
Flt Permitted						
Satd. Flow (perm)	0	1627	5136	0	0	0
Link Speed (mph)	30		25			30
Link Distance (ft)	748		364			303
Travel Time (s)	17.0		9.9			6.9
Peak Hour Factor	0.90	0.90	0.90	0.90	0.89	0.89
Heavy Vehicles (%)	0%	1%	1%	0%	0%	0%
Adj. Flow (vph)	0	480	1302	1	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	480	1303	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	0		0			0
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization:	56.1%
ICU Level of Service:	B
Analysis Period (min):	15

Lanes, Volumes, Timings
16: 7th Street

12/9/2014

Lane Group	NBT	NBR	SBL	SBT	NWL	NWR
Lane Configurations				↑↑↑		↑↑↑
Volume (vph)	0	0	0	1115	0	1604
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	0.91	1.00	0.76
Frt						0.850
Flt Protected						
Satd. Flow (prot)	0	0	0	5085	0	3610
Flt Permitted						
Satd. Flow (perm)	0	0	0	5085	0	3610
Link Speed (mph)	25			25	30	
Link Distance (ft)	393			305	303	
Travel Time (s)	10.7			8.3	6.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	1212	0	1743
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	1212	0	1743
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			5	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	35
Sign Control	Free			Free	Free	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	40.7%
ICU Level of Service A	
Analysis Period (min)	15

Queuing and Blocking Report
Evening Peak Hour

12/9/2014

Intersection: 1: 2nd Street & Division Street

Movement	EB	WB	WB	NB	NB	SB
Directions Served	LTR	LT	TR	L	LTR	LTR
Maximum Queue (ft)	92	337	338	200	337	133
Average Queue (ft)	40	224	233	115	149	48
95th Queue (ft)	81	316	323	217	275	97
Link Distance (ft)	348	3244	3244		4863	1626
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)				150		
Storage Blk Time (%)				3	8	
Queuing Penalty (veh)				10	19	

Intersection: 2: 2nd Street & Maclay Street

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	80	276	816	213
Average Queue (ft)	27	126	370	91
95th Queue (ft)	67	236	681	185
Link Distance (ft)	328	2959	5294	4863
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 3: 7th Street & Maclay Street

Movement	EB	EB	WB	WB	WB	NB	NB	NB	B34	B34
Directions Served	L	TR	L	T	R	LT	T	R	T	T
Maximum Queue (ft)	101	1600	149	254	182	510	510	200	1124	1127
Average Queue (ft)	5	1398	64	122	70	472	486	200	442	519
95th Queue (ft)	41	1861	120	219	140	534	501	200	1150	1179
Link Distance (ft)		2959		826	826	414	414		3736	3736
Upstream Blk Time (%)						34	67			
Queuing Penalty (veh)						242	470			
Storage Bay Dist (ft)	75		250					100		
Storage Blk Time (%)		50		0			50	69		
Queuing Penalty (veh)		2		0			295	296		

Queuing and Blocking Report
Evening Peak Hour

12/9/2014

Intersection: 4: Front Street & Forster Street

Movement	EB	EB	EB	EB	B18	B18	WB	WB	B37	B37	B37	SB
Directions Served	T	T	T	R	T	T	T	T	T	T	T	LT
Maximum Queue (ft)	177	133	205	100	19	49	186	174	190	242	188	237
Average Queue (ft)	86	73	103	37	1	3	168	169	124	150	84	158
95th Queue (ft)	150	123	188	111	10	22	181	174	197	233	223	215
Link Distance (ft)	114	114	114		4032	4032	98	98	142	142	142	637
Upstream Blk Time (%)	3	1	5	0			33	31	4	13	5	
Queuing Penalty (veh)	0	0	0	0			308	291	25	81	32	
Storage Bay Dist (ft)				50								
Storage Blk Time (%)				19								
Queuing Penalty (veh)				47								

Intersection: 4: Front Street & Forster Street

Movement	SB	SB	SB
Directions Served	T	T	R
Maximum Queue (ft)	251	235	328
Average Queue (ft)	164	141	155
95th Queue (ft)	223	208	286
Link Distance (ft)	637	637	
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			300
Storage Blk Time (%)		0	1
Queuing Penalty (veh)		0	1

Queuing and Blocking Report
Evening Peak Hour

12/9/2014

Intersection: 5: 2nd Street & Forster Street

Movement	EB	EB	EB	B37	B37	B37	WB	WB	WB	NB	NB	NB
Directions Served	T	T	T	T	T	T	T	T	TR	L	L	T
Maximum Queue (ft)	226	212	216	76	23	41	642	716	523	160	202	421
Average Queue (ft)	160	148	148	6	2	3	385	398	185	82	92	211
95th Queue (ft)	225	208	218	41	14	19	544	572	481	138	159	363
Link Distance (ft)	142	142	142	98	98	98	749	749	749	2030	2030	2030
Upstream Blk Time (%)	8	7	7	0			0	0				
Queuing Penalty (veh)	25	20	20	0			0	0				
Storage Bay Dist (ft)												
Storage Blk Time (%)												
Queuing Penalty (veh)												

Intersection: 5: 2nd Street & Forster Street

Movement	NB	SB	SB
Directions Served	R	L	R
Maximum Queue (ft)	514	199	455
Average Queue (ft)	224	67	207
95th Queue (ft)	424	189	393
Link Distance (ft)	2030		5294
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)		150	
Storage Blk Time (%)			30
Queuing Penalty (veh)			13

Intersection: 6: 3rd Street & Forster Street

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	SB
Directions Served	L	T	T	TR	L	T	T	TR	LT	R	LTR
Maximum Queue (ft)	273	354	351	358	274	328	372	322	347	249	298
Average Queue (ft)	155	161	196	197	119	197	227	179	203	91	160
95th Queue (ft)	257	294	320	331	233	306	337	286	327	178	272
Link Distance (ft)		749	749	749		832	832	832	891	891	1353
Upstream Blk Time (%)											
Queuing Penalty (veh)											
Storage Bay Dist (ft)		225				225					
Storage Blk Time (%)		3	1			1	5				
Queuing Penalty (veh)		13	3			2	8				

Queuing and Blocking Report
Evening Peak Hour

12/9/2014

Intersection: 7: Commonwealth Avenue & Forster Street

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	T	TR	L	T	T	TR	L	TR	L	T
Maximum Queue (ft)	302	497	597	587	162	224	235	227	174	291	199	316
Average Queue (ft)	153	283	368	387	69	89	106	107	98	108	115	116
95th Queue (ft)	269	420	500	522	138	178	186	185	171	214	194	236
Link Distance (ft)		832	832	832		536	536	536		773		1321
Upstream Blk Time (%)				0								
Queuing Penalty (veh)				0								
Storage Bay Dist (ft)	275				250				150		150	
Storage Blk Time (%)	1	4			0				3	4	11	4
Queuing Penalty (veh)	2	7			0				6	5	18	6

Intersection: 7: Commonwealth Avenue & Forster Street

Movement	SB
Directions Served	R
Maximum Queue (ft)	122
Average Queue (ft)	59
95th Queue (ft)	99
Link Distance (ft)	1321
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 9: 7th Street & Forster Street

Movement	EB	EB	EB	NB	NB	SB	SB
Directions Served	T	T	R	L	L	T	T
Maximum Queue (ft)	388	485	403	222	211	256	269
Average Queue (ft)	112	191	61	125	123	162	180
95th Queue (ft)	289	399	319	202	189	243	253
Link Distance (ft)	536	536	536	425	425	310	310
Upstream Blk Time (%)		0	0			0	
Queuing Penalty (veh)		1	2			0	
Storage Bay Dist (ft)							
Storage Blk Time (%)							
Queuing Penalty (veh)							

Queuing and Blocking Report
Evening Peak Hour

12/9/2014

Intersection: 11: 7th Street

Movement	WB	SB	SB	SB	B10	B10	B10
Directions Served	R	L	LT	T	T	T	T
Maximum Queue (ft)	11	368	364	295	358	368	498
Average Queue (ft)	0	319	324	121	163	176	176
95th Queue (ft)	8	408	405	328	393	398	547
Link Distance (ft)		260	260	260	425	425	425
Upstream Blk Time (%)		64	70	2	0	0	10
Queuing Penalty (veh)		253	276	6	0	0	40
Storage Bay Dist (ft)	100						
Storage Blk Time (%)							
Queuing Penalty (veh)							

Intersection: 12: 7th Street

Movement	SW
Directions Served	L
Maximum Queue (ft)	6
Average Queue (ft)	0
95th Queue (ft)	4
Link Distance (ft)	329
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 13: State Street

Movement	EB	EB	SE	SE
Directions Served	T	T	L	L
Maximum Queue (ft)	57	31	277	276
Average Queue (ft)	26	1	250	252
95th Queue (ft)	55	15	274	275
Link Distance (ft)	329	329	232	232
Upstream Blk Time (%)			52	58
Queuing Penalty (veh)			308	343
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Queuing and Blocking Report
Evening Peak Hour

12/9/2014

Intersection: 14: 7th Street & Herr Street

Movement	WB	WB	NB	NB	NB	NB	SB	SB	SB
Directions Served	L	TR	L	T	T	R	L	T	TR
Maximum Queue (ft)	293	280	24	260	279	225	149	292	289
Average Queue (ft)	183	138	2	188	197	112	125	123	137
95th Queue (ft)	268	245	13	271	284	237	169	263	244
Link Distance (ft)		1911	243	243	243			3736	3736
Upstream Blk Time (%)				1	2	0			
Queuing Penalty (veh)				6	12	0			
Storage Bay Dist (ft)	460					150	100		
Storage Blk Time (%)					14	0	37	1	
Queuing Penalty (veh)					48	0	134	3	

Intersection: 15: 7th Street

Movement	WB	NB	NB	NB
Directions Served	R	T	T	TR
Maximum Queue (ft)	388	181	255	15
Average Queue (ft)	191	6	13	0
95th Queue (ft)	348	76	115	8
Link Distance (ft)	678	290	290	290
Upstream Blk Time (%)		0	1	
Queuing Penalty (veh)		0	3	
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 16: 7th Street

Movement	NW	NW	NW
Directions Served	R	R	R
Maximum Queue (ft)	11	98	159
Average Queue (ft)	0	15	31
95th Queue (ft)	8	65	113
Link Distance (ft)	254	254	254
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Queuing and Blocking Report
Evening Peak Hour

12/9/2014

Intersection: 18: Bend

Movement	WB
Directions Served	T
Maximum Queue (ft)	21
Average Queue (ft)	1
95th Queue (ft)	10
Link Distance (ft)	114
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Network Summary

Network wide Queuing Penalty: 3704

APPENDIX 6

OTHER ATTACHMENTS

OTHER ATTACHMENTS

ATTACHMENT 1: DELIVERABLE 1.1 – DATA COLLECTION SCHEDULE TABLE

Data Collection Schedule Table

INTERSECTION COUNTS

Notes

Morning (6:00-9:00AM), Midday (11:00AM-1:00PM), Evening (3:00-6:00PM) Peak Periods; Data Collection Technique: Video Recording Equipment; Data Collected: Passenger and Truck Turning Movements, Bicycle and Pedestrian Movements

Location	Completion Date
Front Street (SR 3009) and Forster Street (SR 3016) - Signalized	9/23/2014
2nd Street (CTY) and Division Street (CTY) - Signalized	9/23/2014
2nd Street (CTY) and Maclay Street (CTY) - Signalized	9/23/2014
2nd Street (CTY) and Forster Street (SR 3016) - Signalized	9/23/2014
7th Street (CTY) and Maclay Street (CTY) - Signalized	9/24/2014
7th Street (CTY/SR 3018) and Herr Street (SR 3018) - Signalized	9/24/2014
7th Street (SR 3018/SR 3016) and Forster Street (SR 3016) - Signalized	Cap Ped Project
7th Street (SR 3016) and State Street (SR 3014) - Unsignalized	Cap Ped Project

MIDBLOCK PEDESTRIAN COUNTS

Notes

Morning (6:00-9:00AM), Midday (11:00AM-1:00PM), Evening (3:00-6:00PM) Peak Periods; Data Collection Technique: Manual; Data Collected: Pedestrian Movements at Midblock, Uncontrolled Intersection, and Signalized Intersection Locations within Count Location Limits

Location	Completion Date
2nd Street (CTY) [Between Cumberland Street (CTY) & Calder Street (CTY)]	9/23/2014
2nd Street (CTY) [Between Calder Street (CTY) & Harris Street (CTY)]	9/23/2014
2nd Street (CTY) [Between Wiconisco Street (CTY) & Division Street (CTY)]	9/23/2014

AUTOMATIC TRAFFIC RECORDER (ATR) COUNTS

Notes

72-Hour Count Period; Data Collected: Number of Vehicles, Classification, Speed, and Available Gaps

Location	Completion Date
Front Street (SR 3009) [North of Maclay Street]	9/23/2014 - 9/25/2014
Front Street (SR 3009) [South of Maclay Street]	10/7/2014 - 10/9/2014
2nd Street (CTY) [North of Maclay Street]	9/23/2014 - 9/25/2014
2nd Street (CTY) [South of Maclay Street]	10/7/2014 - 10/9/2014
7th Street (CTY) [North of Maclay Street]	9/23/2014 - 9/25/2014
7th Street (CTY) [South of Maclay Street]	9/23/2014 - 9/25/2014

CRASH DATA

Notes

Data Collected: 5 Years (2009-2013) of Reportable Crash Data from PennDOT BOMO HSTOD (CDART)

Location	Completion Date
2nd Street (CTY)	9/24/2014
7th Street (CTY)	9/24/2014
7th Street (SR 3018) [Segments 10 and 11]	9/24/2014
Front Street (SR 3009) [Segment 41 thru 130/131]	9/24/2014
Forster Street (SR 3016) [Segment 10/11 thru 30/31]	9/24/2014
Walnut Street (SR 3014) [Segment 15 thru 20/21]	9/24/2014
Maclay Street (CTY)	9/24/2014
Division Street (CTY)	9/24/2014

PennDOT E02871 WO#11: 2nd Street Traffic Study

Task 1.1 - Data Collection, Deliverable

Job # 143249

Last Updated: 10/9/2014



FIELD INVENTORY AND MISCELLANEOUS DATA COLLECTION

Notes

Field inventoried roadway widths, approximate approach grades, posted speed limits, traffic control, lane widths, lane assignments, regulatory signage, etc.

Location	Completion Date
Front Street (SR 3009) and Forster Street (SR 3016) - Signalized	9/18/2014
2nd Street (CTY) and Division Street (CTY) - Signalized	9/18/2014
2nd Street (CTY) and Maclay Street (CTY) - Signalized	9/18/2014
2nd Street (CTY) and Forster Street (SR 3016) - Signalized	9/18/2014
7th Street (CTY) and Maclay Street (CTY) - Signalized	9/18/2014
7th Street (CTY/SR 3018) and Herr Street (SR 3018) - Signalized	9/18/2014
7th Street (SR 3018/SR 3016) and Forster Street (SR 3016) - Signalized	9/18/2014
7th Street (SR 3016) and State Street (SR 3014) - Unsignalized	9/18/2014
2nd Street Corridor (CTY)	9/18/2014
Front Street Corridor (SR 3009)	9/18/2014

TRAFFIC SIGNAL PERMIT PLANS

Notes

Provided by Matt Clouser (PennDOT District 8-0)

Location	Completion Date
Front Street (SR 3009) and Forster Street (SR 3016) - Signalized	9/17/2014
2nd Street (CTY) and Division Street (CTY) - Signalized	9/17/2014
2nd Street (CTY) and Maclay Street (CTY) - Signalized	9/17/2014
2nd Street (CTY) and Forster Street (SR 3016) - Signalized	9/17/2014
7th Street (CTY) and Maclay Street (CTY) - Signalized	9/17/2014
7th Street (CTY/SR 3018) and Herr Street (SR 3018) - Signalized	9/17/2014
7th Street (SR 3018/SR 3016) and Forster Street (SR 3016) - Signalized	9/17/2014

AS-BUILT INTERSECTION PLANS

Notes

Request made to Wayne Martin, City Engineer for the City of Harrisburg. Per a phone call with Wayne on 10/3/2014, as-builts are not readily available

Location	Completion Date
Front Street (SR 3009) and Forster Street (SR 3016) - Signalized	Not Obtainable, 10/3/2014
2nd Street (CTY) and Division Street (CTY) - Signalized	Not Obtainable, 10/3/2014
2nd Street (CTY) and Maclay Street (CTY) - Signalized	Not Obtainable, 10/3/2014
2nd Street (CTY) and Forster Street (SR 3016) - Signalized	Not Obtainable, 10/3/2014
7th Street (CTY) and Maclay Street (CTY) - Signalized	Not Obtainable, 10/3/2014
7th Street (CTY/SR 3018) and Herr Street (SR 3018) - Signalized	Not Obtainable, 10/3/2014
7th Street (SR 3018/SR 3016) and Forster Street (SR 3016) - Signalized	Not Obtainable, 10/3/2014
7th Street (SR 3016) and State Street (SR 3014) - Unsignalized	Not Obtainable, 10/3/2014

INVENTORY OF MASS TRANSIT SERVICES

Notes

Obtained from Capital Area Transit (CAT) website

Location

Completion Date

Route-81-Ship-Newville-Hbg	9/18/2014
Pedestrian and Bike Trails	9/18/2014

INVENTORY OF PLANNED ROADWAY PROJECTS WITHIN THE CITY OF HARRISBURG

Notes

Obtained from MPMS IQ and TIP websites

Location

Completion Date

69061 - Mulberry St Bridge Rehab	9/29/2014
74517 - Paxton Creek Bridge	9/29/2014
74521 - Maclay Street Bridge	9/29/2014
77326 - Mulberry St Brdg Lt Rstr	9/29/2014
89102 - Carlisle Pk/US 22 Signals	9/29/2014
90892 - Cameron Street	9/29/2014
96285 - S 19th Street Resurface	9/29/2014
96287 - Front Street Resurface	9/29/2014
97030 - HATS Low Cost Safety	9/29/2014
97392 - Greenbelt Safety Imprvmts	9/29/2014
97407 - Cameron St Low Cost Safe	9/29/2014

OTHER ATTACHMENTS

ATTACHMENT 2: DELIVERABLE 1.2 – LETTER TO THE MAYOR



February 2, 2015

The Honorable Mayor Eric Papenfuse
City of Harrisburg
10 North Second Street
Harrisburg, PA 17101-1678

Dear Mayor Papenfuse,

The Pennsylvania Department of Transportation (Department) has completed a preliminary study to investigate the feasibility of converting Second Street between Forster Street and Division Street from one-way to two-way traffic flow. The Department set out to complete this study with the City of Harrisburg's intentions of enhancing the City by promoting multi-modal choices, improving safety, increasing sustainability, encouraging redevelopment opportunities and calming traffic along the Second Street corridor. We have included Tri-County Planning Commission in the process.

This preliminary study was conducted as a high-level planning effort that focused on the potential traffic impacts associated with the proposal by conducting data collection, analyzing existing operations and identifying mitigation alternatives for the feasible conversion of Second Street. The Department has deemed that the conversion of Second Street, which is a principal arterial highway through the City of Harrisburg, is feasible but must be supported by a number of improvements on Second Street as well as other area roadways in order to safely accommodate redistributed traffic. It is also important to note that motorists, especially outbound peak

afternoon commuters will experience additional travel time delay. The extent of this delay will ultimately be determined by the improvements made along the alternative routes.

Second Street currently maintains three lanes of travel in the northbound direction, serving as a main corridor out of the City. Once Second Street has been converted to a two-lane, two direction roadway; commuters currently traveling out of the City via Second Street will need alternative routes to reach their destinations. Seventh Street provides the most appealing alternative route. Currently underutilized, Seventh Street north of Maclay Street will need to be converted from two-way to one-way northbound traffic flow with an additional northbound lane to help accommodate increased traffic volumes. The two northbound lanes need to be extended to and carried along Division Street to the intersection at Second Street. It is particularly noteworthy that the intersection of Division Street and Seventh Street will need redesigned for access to the Uptown Plaza.

By converting Second Street to two-way, southbound traffic will have additional access to Forster Street allowing local travelers a more convenient route to the central business district and Capitol Complex. This conversion alters the entire corridor and consequently each and every intersection along the corridor. Each intersection along Second Street will need to be analyzed individually to determine the necessity of turn lanes, revisions to intersection traffic control, and impacts to on-street parking. Preliminarily, it is recommended that a southbound left-turn lane be incorporated into the redesign of the intersection of Second Street and Forster Street to provide a more efficient use of the signalized intersection. Additionally, the eastbound left-turn from

Forster Street on to Second Street must be eliminated. The Department can assist by adjusting the median islands on the state highway. This change will provide improved traffic flow along the Forster Street corridor to Third, Sixth and Seventh Streets.

The conversion of Second Street represents a major transportation change for the City of Harrisburg. In addition to the improvements noted, the conversion of Second Street will require additional engineering to analyze the full effects of the conversion and traffic redistribution to ensure residents and commuters can move throughout the City in a safe and efficient manner. Moving forward we encourage the City to fully engage all local and regional stakeholders, including Tri-County Planning Commission.

Our staff at District 8 is available should you have any further questions regarding the results of the study or the information provided in this letter. Thank you for your willingness to reach out and coordinate with the Department.

Sincerely,

Michael C. Keiser, P.E.

OTHER ATTACHMENTS

ATTACHMENT 3: FRONT STREET (SR 3009) CONSTRUCTION PLANS

D-9012 CADD (02-90) REVISION (10-04) PLOTTED: 27-AUG-2014 07:43

PLAN PREPARATION
PROJECT MANAGER: DOUG MURPHY

DISTRICT	COUNTY	TOWNSHIP	BOROUGH	CITY	ROUTE	SECTION	TOTAL SHEETS
8-0	DAUPHIN			HARRISBURG	3009	014	27

ECMS NO. 96287

ALSO INCLUDED:

SIGNING AND PAVEMENT MARKING PLAN	6 SHEETS
EROSION AND SEDIMENT POLLUTION CONTROL PLAN	1 SHEET
TRAFFIC SIGNAL PLAN	1 SHEET

COMMONWEALTH OF PENNSYLVANIA



DEPARTMENT OF TRANSPORTATION

DRAWINGS FOR CONSTRUCTION OF

STATE ROUTE 3009 SECTION 014

IN DAUPHIN COUNTY

FROM STA. 14+90 TO STA. 189+00 LENGTH 17,300 FT. 3.28 MI.

FROM SEG. 0010 OFFSET 0490 TO SEG. 0110 OFFSET 0140

FROM SEG. 0011 OFFSET 0490 TO SEG. 0111 OFFSET 0140

SCALE

HORIZONTAL 0 50 100 FEET

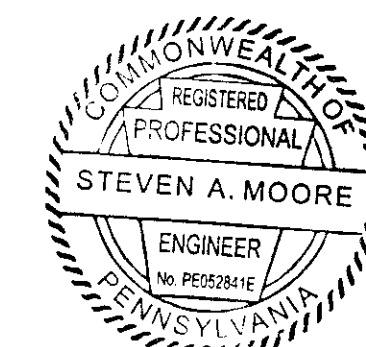
DESIGN DESIGNATION

HIGHWAY CLASSIFICATION - URBAN PRINCIPAL ARTERIAL
 DESIGN SPEED - 35 MPH (POSTED)
 PAVEMENT WIDTH - 30 TO 53 FT
 SHOULDER WIDTH - N/A

TRAFFIC DATA

CURRENT A. D. T. - 17,197 (2014)
 DESIGN YEAR A. D. T. - 19,969 (2034)
 D. H. V. - 1,892
 D - 100%
 T - 2%

PLANS PREPARED BY:
DISTRICT 8-0
HIGHWAY DESIGN UNIT



S.A.M.
 STEVEN A. MOORE, P. E.
 DISTRICT HIGHWAY
 DESIGN ENGINEER
 DATE: 27 August 2014

RECOMMENDED DATE: August 27, 2014

Douglas P. Murphy
DISTRICT PROJECT MANAGER

RECOMMENDED DATE: August 27, 2014

Michael A. Gillespie, P.E.
DISTRICT EXECUTIVE

RECOMMENDED DATE: 8/27/14

Scott Christa
DEPUTY SECRETARY

APPROVED DATE: 8/27/14

Danny J. Schulz
SECRETARY OF TRANSPORTATION
(ON BEHALF OF THE GOVERNOR
AS WELL AS HIMSELF)

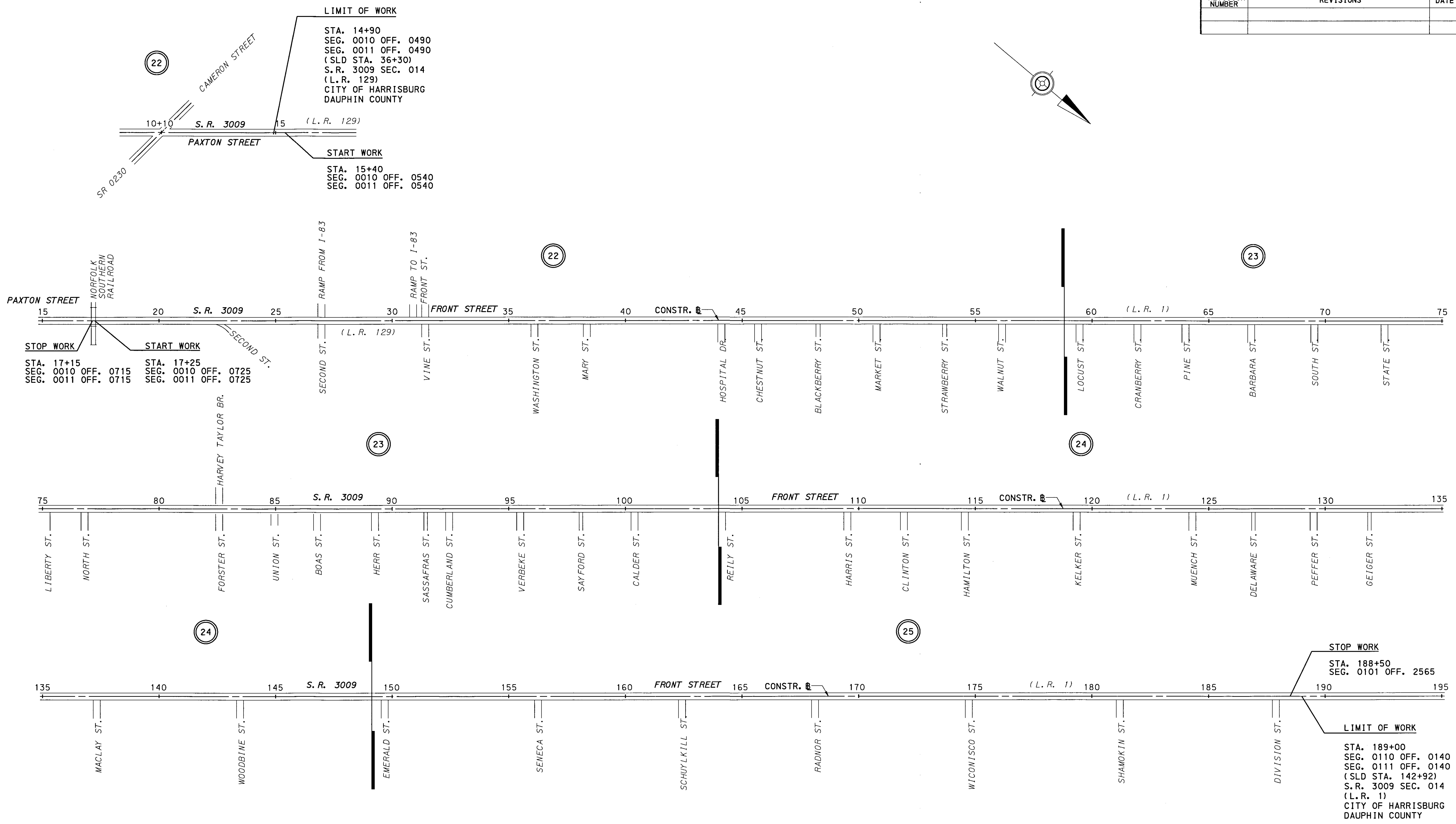
FILE NAME G:\nds4\223009014A\22-3009-014\SR 3009 Sec 014.dgn

DISTRICT	COUNTY	ROUTE	SECTION	SHEET
8-0	DAUPHIN	3009	014	2 OF 27
CITY OF HARRISBURG				
REVISION NUMBER	REVISIONS	DATE	BY	

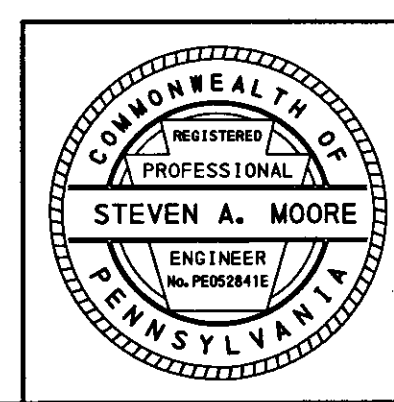
PLOTTED: 26-AUG-2014 11:02

D-9012 CADD (02-90) REVISED (10-04)

FILE NAME: G:\ds4\223009014\22-3009-014\SR 3009 Sec 014.dgn



INDEX MAP



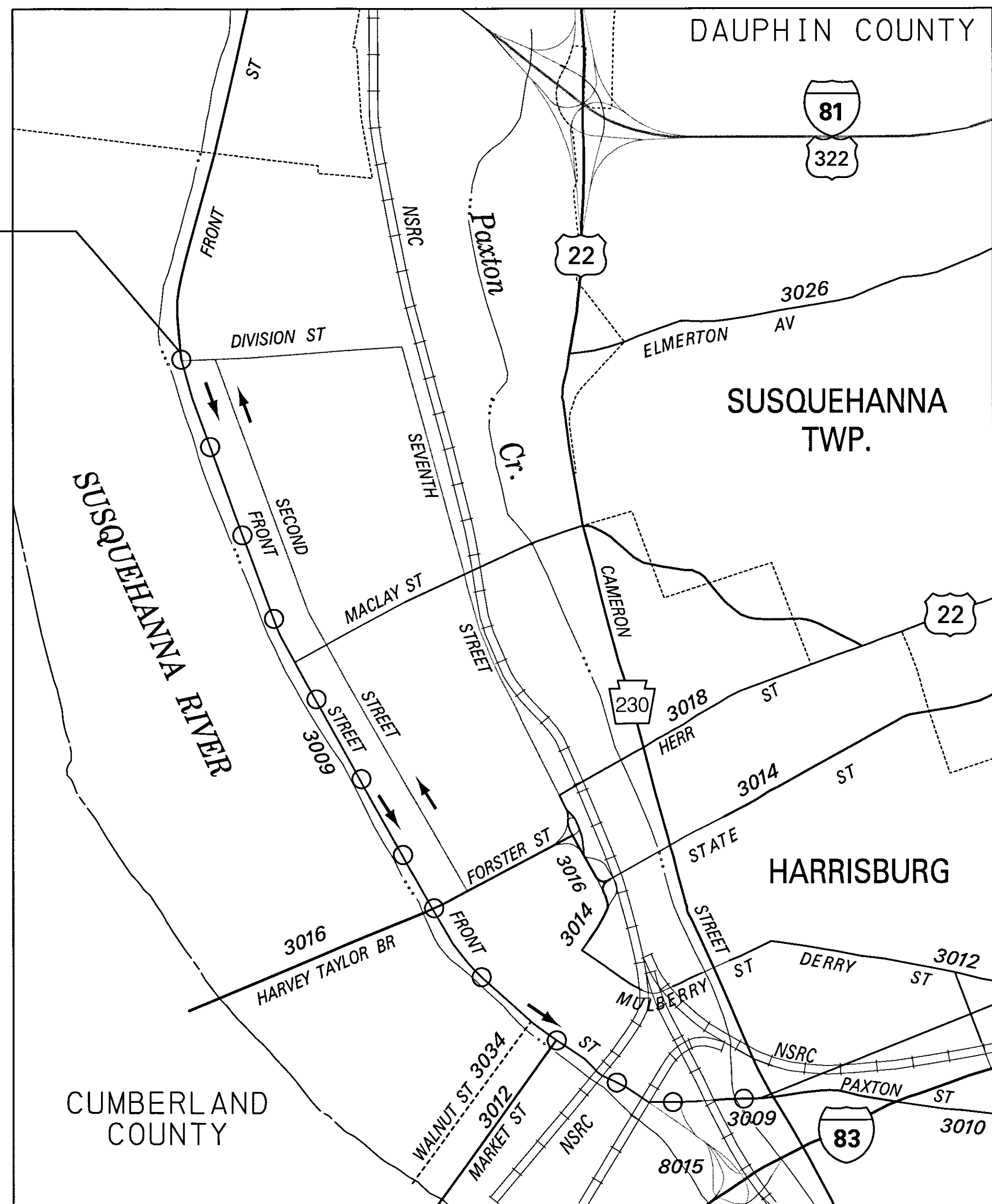
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D-9012 CADD (02-90) REVISED (10-04)

FILE NAME: G:\vds4\223009014\22-3009-014\SR 3009 Sec 014.dgn

DISTRICT	COUNTY	ROUTE	SECTION	SHEET
8-0	DAUPHIN	3009	014	3 OF 27
CITY OF HARRISBURG				
REVISION NUMBER	REVISIONS	DATE	BY	

LOCATION MAP

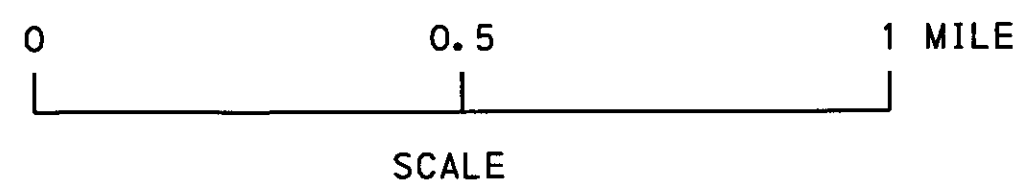


LIMIT OF WORK

STA. 189+00
 SEG. 0110 OFF. 0140
 SEG. 0111 OFF. 0140
 (SLD STA. 142+92)
 S.R. 3009 SEC. 014
 (L.R. 1)
 CITY OF HARRISBURG
 DAUPHIN COUNTY

LIMIT OF WORK

STA. 14+90
 SEG. 0010 OFF. 0490
 SEG. 0011 OFF. 0490
 (SLD STA. 36+30)
 S.R. 3009 SEC. 014
 (L.R. 129)
 CITY OF HARRISBURG
 DAUPHIN COUNTY

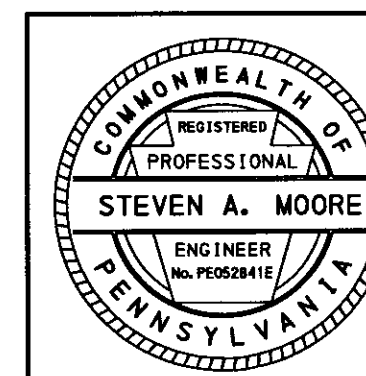


LEGEND

- INTERSTATE 83
- U. S. TRAFFIC ROUTE 22
- PA TRAFFIC ROUTE 230
- STATE ROAD 3009
- MUNICIPAL BOUNDARY
- PROJECT

SHEET INDEX

DESCRIPTION	SHEET
TITLE SHEET	1
INDEX MAP	2
LOCATION MAP	3
GENERAL NOTES	4
PAVEMENT HISTORY	5
TYPICAL SECTIONS	6
DETAILS	7
DRIVE AND CURB RAMP IDENTIFICATION CHART	8-9
LINE PAINTING DETAILS - NEW TWO-LANE	10-12
TRAFFIC CONTROL - TYPICAL SECTIONS	13
SUMMARY SHEET	14-15
TABULATION SHEETS	16 - 22
PLAN SHEETS	23 - 27
SUPPLEMENTAL PLANS	
SIGNING AND PAVEMENT MARKING PLAN	1 - 6
EROSION AND SEDIMENT POLLUTION CONTROL PLAN	1
TRAFFIC SIGNAL PLAN	1



PLOTTED: 26-AUG-2014 17:39

D-9012 CADD (02-90) REVISED (10-04)

FILE NAME: G:\ds4\223009014\22-3009-014\SR 3009 Sec 014.dgn

DISTRICT	COUNTY	ROUTE	SECTION	SHEET
8-0	DAUPHIN	3009	014	4 OF 27
CITY OF HARRISBURG				
REVISION NUMBER	REVISIONS	DATE	BY	

LIST OF PUBLIC UTILITIES

THE HARRISBURG AUTHORITY
SHANNON G. WILLIAMS, P.E.
212 LOCUST STREET
SUITE 202
HARRISBURG, PA 17102
(717) 525-7677

PPL ELECTRIC UTILITIES CORPORATION
CHARLOTTE KRUPA
TWO NORTH NINTH STREET
GENN3
ALLENTOWN, PA 18101-1179
(610) 774-6287

UGI UTILITIES INCORPORATED
DAVID J. DEAN
1301 AIP DRIVE
MIDDLETOWN, PA 17057
(717) 255-4346

VERIZON NORTH LLC
DEB DELIA
15 EAST MONTGOMERY AVENUE
PITTSBURGH, PA 15212

FRONTIER COMMUNICATIONS
MELISSA SORBER
100 CTE DRIVE
DALLAS, PA 18612-9774
(570) 631-6409

UNITED TELEPHONE CO OF PA LLC DBA
CENTURY LINK
SHERRY MOWERY, NETWORK ENGINEER
P.O. BOX 1416
CARLISLE, PA 17013
(717) 245-6441

UNITED WATER PENNSYLVANIA, INC.
DENNIS PLANK
P.O. BOX 4151
HARRISBURG, PA 17111-0151
(717) 561-1103 EX 1617

GENERAL NOTES

THE LEGAL RIGHT-OF-WAY ON S.R. 3009, FORMERLY KNOWN AS L.R. 129, FROM STA. 14+90 (SLD STA. 36+30) TO STA. 31+25 (SLD STA. 19+37) IS EIGHTY (80) FEET IN WIDTH, BASED ON A CITY OF HARRISBURG ORDINANCE FOR PAXTON STREET.

WIDTHS ON S.R. 3009, FORMERLY KNOWN AS L.R. 129 AND L.R. 1, FROM STA. 31+25 (SLD STA. 19+37) TO STA. 188+50 (SLD STA. 188+50) ARE AS FOLLOWS:
ORDAINED ROADWAY WIDTH VARIES CURB-TO-CURB FROM THIRTY TO FORTY-TWO FEET, PUBLIC PARK ON WEST SIDE, PUBLIC RIGHT-OF-WAY TO BUILDING SET-BACK LINE FROM EAST CURB LINE. BASED ON HARRISBURG WARD MAPS AND ORDINANCE.

S.R. 3009 PREVIOUSLY KNOWN AS L.R. 1 & L.R. 129
CONSTRUCT PROJECT IN ACCORDANCE WITH SPECIFICATION 408, DATED 2011.
CUT PAVING NOTCHES FOR BITUMINOUS DRIVES AND SIDE ROADS.
HORIZONTAL CONTROL IS BASED ON AS BUILT'S, STRAIGHT LINE DIAGRAM, LINENS, RMS, SATELLITE IMAGERY, AND VIDEO LOG.
CONTRACTOR IS TO VERIFY ALL DRAINAGE FACILITIES FOR TYPE, SIZE AND LOCATION.
DO NOT INTERFERE WITH THE OPERATION OF ANY FIRE HYDRANT, FIRE CALL BOX OR POLICE BOX.
THIS IS A FEDERAL-AID PROJECT AND AS SUCH IS SUBJECT TO INSPECTION BY REPRESENTATIVES OF THE FEDERAL HIGHWAY ADMINISTRATION AND THE PENNSYLVANIA DEPARTMENT OF TRANSPORTATION.

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

SERIAL NO. _____ CITY OF HARRISBURG

DETAILS, OTHER THAN THOSE INDICATED ARE ON THE FOLLOWING STANDARD DRAWINGS:

RC-10M	JUN. 1, 2010	TC-8600	JUN. 13, 2013
RC-20M	JUN. 1, 2010	TC-8700C	JUN. 13, 2013
RC-22M	JUN. 1, 2010	TC-8701D	JUN. 13, 2013
RC-25M	JUN. 1, 2010	TC-8701E	JUN. 13, 2013
RC-26M	JUN. 1, 2010	TC-8701S	JUN. 13, 2013
RC-28M	JUN. 10, 2013	TC-8702B	JUN. 13, 2013
RC-30M	JUN. 1, 2010	TC-8702C	JUN. 13, 2013
RC-32M	JUN. 1, 2010	TC-8806	DEC. 12, 2011
RC-45M	JUN. 1, 2010		
RC-46M	JUN. 1, 2010		
RC-52M	JUN. 1, 2010		
RC-54M	JUN. 1, 2010		
RC-64M	JUN. 1, 2010		
RC-67M	JUN. 10, 2013		
RC-73M	JUN. 1, 2010		
RC-92M	JUN. 1, 2010		

DESIGN PA ONE CALL SERIAL NUMBERS

SERIAL NO. 20131370778 CITY OF HARRISBURG
SERIAL NO. 20131370798 CITY OF HARRISBURG

TABULATION OF SEGMENT EQUALITIES

S.R. 3009

SEGMENT EQUALITY LIST			
SEGMENT	SEGMENT LENGTH	START STATION	END STATION
0010	1321	10+10	23+31
0011	1641	10+10	26+95
0021	546	26+95	31+50
0031	1944	31+50	50+80
0041	829	50+80	59+47
0051	1310	59+47	72+50
0061	1670	72+50	89+25
0071	3533	89+25	124+45
0081	1280	124+45	137+30
0091	2510	137+30	162+30
0101	2601	162+30	188+86
0110	3584	188+86	224+70

TABULATION OF OVERALL LENGTH

STA. 14+90 TO STA. 189+40 = 17,410 FT. OR 3.30 MILES

TABULATION OF CONSTRUCTION LENGTH

STA. 15+40 TO STA. 17+15 = 175 FT. OR 0.03 MILES
STA. 17+25 TO STA. 188+50 = 17,125 FT. OR 3.24 MILES
TOTALS = 17,300 FT. OR 3.28 MILES

EARTHWORK SUMMARY ENTIRE PROJECT

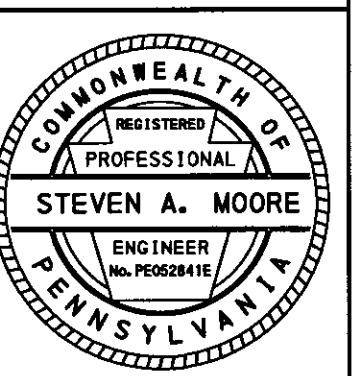
THE INFORMATION ON ESTIMATED AMOUNTS OF EARTHWORK HAS BEEN USED IN THE PRELIMINARY ESTIMATE. DO NOT USE AS A WAIVER OF ANY PROVISIONS OF THE SPECIFICATIONS AND CONTRACTS.

CU. YDS. OF EXCAVATION						CUBIC YDS. OF COMPLETED EMBANKMENT *	TONS OF SEL. BORROW EXCAV. (R-5)	TONS OF SEL. BORROW EXCAV. (R-7)
CLASS 1	CLASS 1A	CLASS 1B	CLASS 2	CLASS 3	CLASS 4			
					61			

* INCLUDE ALL BORROW ITEMS.

LIST OF EQUALITIES

NONE



PLOTTED:26-AUG-2014 11:04

0-9012 CADD (02-90) REVISED (10-04)

FILE NAME: G:\vds4\223009014A\22-3009-014\SR 3009 Sec 014.dgn

DISTRICT	COUNTY	ROUTE	SECTION	SHEET
8-0	DAUPHIN	3009	014	5 OF 27
CITY OF HARRISBURG				
REVISION NUMBER	REVISIONS	DATE	BY	

RECORD OF EXISTING ROAD TYPES

NOTE: THE DEPTHS OF MATERIALS SHOWN ARE FOR DESIGN PURPOSES ONLY, ANY RISK OF UNANTICIPATED COSTS ASSOCIATED WITH DIFFERENCES BETWEEN THE LISTED DEPTHS AND THE ACTUAL DEPTHS SHALL BE ACCEPTED BY THE CONTRACTOR.

S.R. 3009-014

LIMIT OF WORK

ADJACENT TO

SEG. 0010 OFF. 0490 TO

SEG. 0010 OFF. 0544

27' OF 2" SUPERPAVE HMA WRG. CRSE. ON
 27' OF 2 1/2" SUPERPAVE HMA BINDER LVL. ON
 5' OF 2" SUPERPAVE HMA WRG. CRSE. ON
 5' OF 2 1/2" SUPERPAVE HMA BINDER LVL. ON
 5' OF 12" SUPERPAVE HMA BASE ON
 5' OF 8" 2A SUBBASE ON
 26' OF 1 1/2" SUPERPAVE HMA WRG. ON
 26' OF 1 1/2" SUPERPAVE HMA WRG. SCRATCH ON
 26' OF 1 1/2" BIT. WRG. CRSE. ID-2 ON
 17' OF 9" PCC. BASE CRSE. ON
 18' OF 6" UNKNOWN SUBBASE

SEG. 0011 OFF. 0490 TO
 SEG. 0011 OFF. 0664

SEG. 0011 OFF. 0664 TO
 SEG. 0011 OFF. 0705

SEG. 0011 OFF. 0705 TO
 SEG. 0011 OFF. 1027

26' OF 1 1/2" SUPERPAVE HMA WRG. CRSE. ON
 26' OF 1 1/2" SUPERPAVE HMA WRG. SCRATCH ON
 26' OF 1" BIT. WRG. CRSE. ID-2 ON
 26' OF 1" BIT. WRG. CRSE. FJ-1 ON
 17' OF 9" PCC. BASE CRSE. ON
 18' OF 6" UNKNOWN SUBBASE

BRIDGE:
 BMS I.D.: 22 7301 4000 3060

26' OF 1 1/2" SUPERPAVE HMA WRG. CRSE. ON
 26' OF 1 1/2" SUPERPAVE HMA WRG. SCRATCH ON
 26' OF 1" BIT. WRG. CRSE. ID-2 ON
 26' OF 1" BIT. WRG. CRSE. FJ-1 ON
 17' OF 9" PCC. BASE CRSE. ON
 18' OF 6" UNKNOWN SUBBASE

SEG. 0031 OFF. 1309 TO
 SEG. 0031 OFF. 1944

SEG. 0041 OFF. 0000 TO
 SEG. 0041 OFF. 0829

40' OF 1 1/2" SUPERPAVE HMA WRG. CRSE. ON
 40' OF 1 1/2" SUPERPAVE HMA WRG. SCRATCH ON
 3' OF 1 1/2" BIT. WRG. CRSE. ID-2 ON
 3' OF 8" PCC. BASE CRSE. ON
 3' OF 6" UNKNOWN SUBBASE ON
 40' OF 1" BIT. WRG. CRSE. ID-2 ON
 40' OF 1" BIT. WRG. CRSE. FJ-1 ON
 40' OF 9" PCC. BASE CRSE. ON
 40' OF 4" UNKNOWN SUBBASE

SEG. 0010 OFF. 0544 TO

SEG. 0010 OFF. 0556

27' OF 2" SUPERPAVE HMA WRG. CRSE. ON
 27' OF 2 1/2" SUPERPAVE HMA BINDER LVL. ON
 5' OF 2" SUPERPAVE HMA WRG. CRSE. ON
 5' OF 2 1/2" SUPERPAVE HMA BINDER LVL. ON
 5' OF 12" SUPERPAVE HMA BASE ON
 5' OF 8" 2A SUBBASE ON
 26' OF 1 1/2" SUPERPAVE HMA WRG. ON
 26' OF 1 1/2" SUPERPAVE HMA WRG. SCRATCH ON
 26' OF 1" BIT. WRG. CRSE. ID-2 ON
 26' OF 1" BIT. WRG. CRSE. FJ-2 ON
 17' OF 9" PCC. BASE CRSE. ON
 18' OF 6" UNKNOWN SUBBASE

SEG. 0011 OFF. 1027 TO
 SEG. 0011 OFF. 1204

SEG. 0011 OFF. 1204 TO
 SEG. 0011 OFF. 1641

BRIDGE:
 BMS I.D.: 22 3009 0010 1034

49' OF 1 1/2" SUPERPAVE HMA WRG. CRSE. ON
 49' OF 1 1/2" SUPERPAVE HMA WRG. SCRATCH ON
 49' OF 1" BIT. WRG. CRSE. ID-2 ON
 49' OF 1" BIT. WRG. CRSE. FJ-1 ON
 49' OF 9" PCC. BASE CRSE. ON
 49' OF 6" UNKNOWN SUBBASE

SEG. 0051 OFF. 0000 TO
 SEG. 0051 OFF. 1310

38' OF 1 1/2" SUPERPAVE HMA WRG. CRSE. ON
 38' OF 1 1/2" SUPERPAVE HMA WRG. SCRATCH ON
 38' OF 1 1/2" BIT. WRG. CRSE. ID-2 ON
 38' OF 1 1/2" BIT. WRG. CRSE. FJ-1 ON
 38' OF 2 1/4" BIT. WRG. CRSE. JA-1 ON
 38' OF 9" PCC. BASE CRSE.

30' OF 1 1/2" SUPERPAVE HMA WRG. CRSE. ON
 30' OF 1 1/2" SUPERPAVE HMA WRG. SCRATCH ON
 30' OF 1 1/2" BIT. WRG. CRSE. ID-2 ON
 30' OF 1 1/2" BIT. WRG. CRSE. FJ-1 ON
 30' OF 2 1/4" BIT. WRG. CRSE. JA-1 ON
 30' OF 9" PCC. BASE CRSE.

SEG. 0010 OFF. 0556 TO

SEG. 0010 OFF. 0633

26' OF 1 1/2" SUPERPAVE HMA WRG. CRSE. ON
 26' OF 1 1/2" SUPERPAVE HMA WRG. SCRATCH ON
 26' OF 1" BIT. WRG. CRSE. ID-2 ON
 26' OF 1" BIT. WRG. CRSE. FJ-2 ON
 17' OF 9" PCC. BASE CRSE. ON
 18' OF 6" UNKNOWN SUBBASE

SEG. 0021 OFF. 0000 TO
 SEG. 0021 OFF. 0434

49' OF 1 1/2" SUPERPAVE HMA WRG. CRSE. ON
 49' OF 1 1/2" SUPERPAVE HMA WRG. SCRATCH ON
 49' OF 1" BIT. WRG. CRSE. ID-2 ON
 49' OF 1" BIT. WRG. CRSE. FJ-1 ON
 49' OF 9" PCC. BASE CRSE. ON
 49' OF 6" UNKNOWN SUBBASE

SEG. 0061 OFF. 0000 TO
 SEG. 0061 OFF. 0588

SEG. 0061 OFF. 0588 TO
 SEG. 0061 OFF. 1670

30' OF 1 1/2" SUPERPAVE HMA WRG. CRSE. ON
 30' OF 1 1/2" SUPERPAVE HMA WRG. SCRATCH ON
 30' OF 1 1/2" BIT. WRG. CRSE. ID-2 ON
 30' OF 1 1/2" BIT. WRG. CRSE. FJ-1 ON
 30' OF 2 1/4" BIT. WRG. CRSE. JA-1 ON
 30' OF 9" PCC. BASE CRSE.

30' OF 1 1/2" SUPERPAVE HMA WRG. CRSE. ON
 30' OF 1 1/2" SUPERPAVE HMA WRG. SCRATCH ON
 30' OF 1" BIT. WRG. CRSE. FJ-1 ON
 6' OF 2 1/2" BIT. WRG. CRSE. JA-1 ON
 6' OF 9" PCC. BASE CRSE.

SEG. 0010 OFF. 0633 TO

SEG. 0010 OFF. 0674

BRIDGE:
 BMS I.D.: 22 7301 4000 3060

26' OF 1 1/2" SUPERPAVE HMA WRG. CRSE. ON
 26' OF 1 1/2" SUPERPAVE HMA WRG. SCRATCH ON
 26' OF 1" BIT. WRG. CRSE. ID-2 ON
 26' OF 1" BIT. WRG. CRSE. FJ-1 ON
 17' OF 9" PCC. BASE CRSE. ON
 18' OF 6" UNKNOWN SUBBASE

SEG. 0021 OFF. 0434 TO
 SEG. 0021 OFF. 0546

30' OF 1 1/2" SUPERPAVE HMA WRG. CRSE. ON
 30' OF 1 1/2" SUPERPAVE HMA WRG. SCRATCH ON
 30' OF 1 1/2" BIT. WRG. CRSE. ID-2 ON
 3' OF 1 1/2" BIT. WRG. CRSE. ID-2 ON
 3' OF 8" PCC. BASE CRSE. ON
 3' OF 6" UNKNOWN SUBBASE ON
 30' OF 1 1/2" BIT. WRG. CRSE. ID-2 ON
 30' OF 1" BIT. WRG. CRSE. FJ-1 ON
 30' OF 9" PCC. BASE CRSE. ON
 30' OF 6" UNKNOWN SUBBASE

SEG. 0071 OFF. 0000 TO
 SEG. 0071 OFF. 3533

30' OF 1 1/2" SUPERPAVE HMA WRG. CRSE. ON
 30' OF 1 1/2" SUPERPAVE HMA WRG. SCRATCH ON
 30' OF 1" BIT. WRG. CRSE. FJ-1 ON
 30' OF 1" BIT. WRG. CRSE. FJ-1 ON
 30' OF 1 1/2" BIT. BINDER ID-2 ON
 30' OF 1 1/2" BIT. WRG. HE-1 ON
 30' OF 8" PCC. BASE CRSE.

SEG. 0010 OFF. 1034 TO

SEG. 0010 OFF. 1211

BRIDGE:
 BMS I.D.: 22 3009 0010 1034

26' OF 1 1/2" SUPERPAVE HMA WRG. CRSE. ON
 26' OF 1 1/2" SUPERPAVE HMA WRG. SCRATCH ON
 26' OF 1" BIT. WRG. CRSE. ID-2 ON
 26' OF 1" BIT. WRG. CRSE. FJ-1 ON
 17' OF 9" PCC. BASE CRSE. ON
 18' OF 6" UNKNOWN SUBBASE

SEG. 0031 OFF. 0000 TO
 SEG. 0031 OFF. 0178

30' OF 1 1/2" SUPERPAVE HMA WRG. CRSE. ON
 30' OF 1 1/2" SUPERPAVE HMA WRG. SCRATCH ON
 30' OF 1 1/2" BIT. WRG. CRSE. ID-2 ON
 3' OF 1 1/2" BIT. WRG. CRSE. ON
 3' OF 8" PCC. BASE CRSE. ON
 3' OF 6" UNKNOWN SUBBASE ON
 30' OF 1 1/2" BIT. WRG. CRSE. ID-2 ON
 30' OF 1" BIT. WRG. CRSE. FJ-1 ON
 30' OF 9" PCC. BASE CRSE. ON
 30' OF 4" UNKNOWN SUBBASE

SEG. 0081 OFF. 0000 TO
 SEG. 0081 OFF. 1280

30' OF 1 1/2" SUPERPAVE HMA WRG. CRSE. ON
 30' OF 1 1/2" SUPERPAVE HMA WRG. SCRATCH ON
 30' OF 1" BIT. WRG. CRSE. FJ-1 ON
 30' OF 1" BIT. WRG. CRSE. FJ-1 ON
 30' OF 1 1/2" BIT. BINDER ID-2 ON
 30' OF 1 1/2" BIT. WRG. CRSE. HE-1 ON
 30' OF 8" PCC. BASE CRSE.

SEG. 0011 OFF. 0000 TO

SEG. 0011 OFF. 0556

26' OF 2" SUPERPAVE HMA WRG. CRSE. ON
 26' OF 2 1/2" SUPERPAVE HMA BINDER CRSE. ON
 5' OF 2" SUPERPAVE HMA WRG. CRSE. ON
 5' OF 2 1/2" SUPERPAVE HMA BINDER CRSE. ON
 5' OF 12" SUPERPAVE HMA BASE CRSE. ON
 5' OF 8" 2A SUBBASE ON
 26' OF 1 1/2" SUPERPAVE HMA WRG. CRSE. ON
 26' OF 1 1/2" SUPERPAVE HMA WRG. SCRATCH ON
 26' OF 1" BIT. WRG. CRSE. ID-2 ON
 26' OF 1" BIT. WRG. CRSE. FJ-1 ON
 17' OF 9" PCC. BASE CRSE. ON
 18' OF 6" UNKNOWN SUBBASE

SEG. 0031 OFF. 0178 TO
 SEG. 0031 OFF. 0815

30' OF 1 1/2" SUPERPAVE HMA WRG. CRSE. ON
 30' OF 1 1/2" SUPERPAVE HMA WRG. SCRATCH ON
 30' OF 1 1/2" BIT. WRG. CRSE. ID-2 ON
 30' OF 3" BIT. WRG. CRSE. ID-2 ON
 30' OF 1" BIT. WRG. CRSE. FJ-1 ON
 30' OF 9" PCC. BASE CRSE. ON
 30' OF 4" UNKNOWN SUBBASE

SEG. 0091 OFF. 0000 TO
 SEG. 0091 OFF. 0982

SEG. 0091 OFF. 0982 TO
 SEG. 0091 OFF. 2510

30' OF 1 1/2" SUPERPAVE HMA WRG. CRSE. ON
 30' OF 1 1/2" SUPERPAVE HMA WRG. SCRATCH ON
 30' OF 1" BIT. WRG. CRSE. FJ-1 ON
 30' OF 1 1/2" BIT. BINDER ID-2 ON
 30' OF 1 1/2" BIT. WRG. CRSE. HE-1 ON
 30' OF 8" PCC. BASE CRSE.

30' OF 1 1/2" SUPERPAVE HMA WRG. CRSE. ON
 30' OF 1 1/2" SUPERPAVE HMA WRG. SCRATCH ON
 30' OF 1" BIT. WRG. CRSE. FJ-1 ON
 30' OF 1 1/2" BIT. BINDER ID-2 ON
 30' OF 2 1/2" BIT. WRG. CRSE. JA-1 ON
 30' OF 8" PCC. BASE CRSE.

SEG. 0011 OFF. 0556 TO

SEG. 0011 OFF. 0556

26' OF 2" SUPERPAVE HMA WRG. CRSE. ON
 26' OF 2 1/2" SUPERPAVE HMA BINDER CRSE. ON
 5' OF 2" SUPERPAVE HMA WRG. CRSE. ON
 5' OF 2 1/2" SUPERPAVE HMA BINDER CRSE. ON
 5' OF 12" SUPERPAVE HMA BASE CRSE. ON
 5' OF 8" 2A SUBBASE ON
 26' OF 1 1/2" SUPERPAVE HMA WRG. CRSE. ON
 26' OF 1 1/2" SUPERPAVE HMA WRG. SCRATCH ON
 26' OF 1" BIT. WRG. CRSE. ID-2 ON
 26' OF 1" BIT. WRG. CRSE. FJ-1 ON
 17' OF 9" PCC. BASE CRSE. ON
 18' OF 6" UNKNOWN SUBBASE

SEG. 0031 OFF. 0815 TO
 SEG. 0031 OFF. 1309

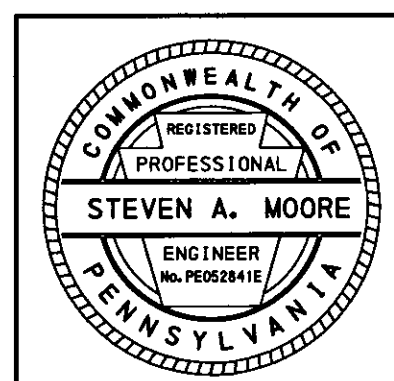
30' OF 1 1/2" SUPERPAVE HMA WRG. CRSE. ON
 30' OF 1 1/2" SUPERPAVE HMA WRG. SCRATCH ON
 30' OF 1 1/2" BIT. WRG. CRSE. ID-2 ON
 3' OF 1 1/2" BIT. WRG. CRSE. ID-2 ON
 3' OF 8" PCC. BASE CRSE. ON
 3' OF 6" UNKNOWN SUBBASE ON
 30' OF 3" BIT. WRG. CRSE. ID-2 ON
 30' OF 1" BIT. WRG. CRSE. FJ-1 ON
 30' OF 9" PCC. BASE CRSE. ON
 30' OF 4" UNKNOWN SUBBASE

SEG. 0101 OFF. 0000 TO
 SEG. 0110 OFF. 0140

LIMIT OF WORK

30' OF 1 1/2" SUPERPAVE HMA WRG. CRSE. ON
 30' OF 1 1/2" SUPERPAVE HMA WRG. SCRATCH ON
 30' OF 1" BIT. WRG. CRSE. FJ-1 ON
 30' OF 1" BIT. WRG. CRSE. FJ-1 ON
 30' OF 1 1/2" BIT. BINDER ID-2 ON
 30' OF 2 1/2" BIT. WRG. CRSE. JA-1 ON
 30' OF 8" PCC. BASE CRSE.

30' OF 1 1/2" SUPERPAVE HMA WRG. CRSE. ON
 30' OF 1 1/2" SUPERPAVE HMA WRG. SCRATCH ON
 30' OF 1" BIT. WRG. CRSE. FJ-1 ON
 30' OF 1" BIT. WRG. CRSE. FJ-1 ON
 30' OF 1 1/2" BIT. BINDER ID-2 ON
 30' OF 2 1/2" BIT. WRG. CRSE. JA-1 ON
 30' OF 8" PCC. BASE CRSE.



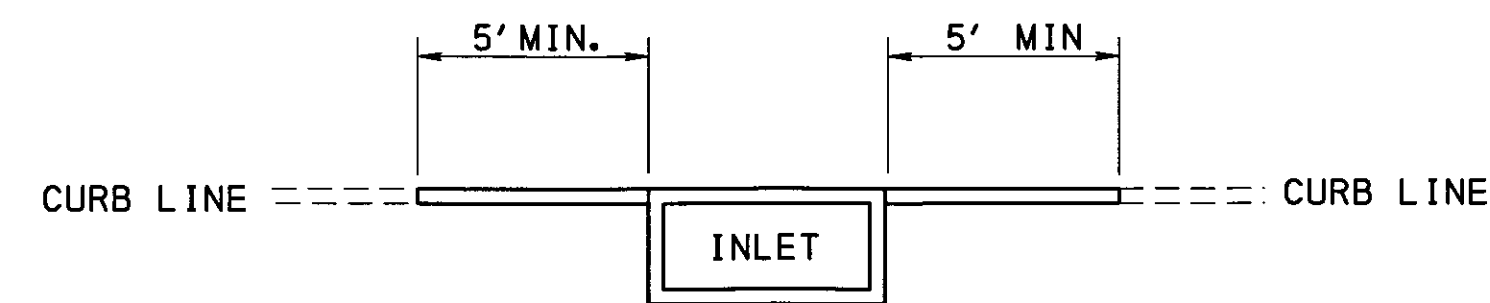
PLOTTED:26-AUG-2014 17:31

D-9012 CADD (02-90) REVISED (10-04)

FILE NAME: G:\vds4\223009014\22-3009-014\SR 3009 Sec 014.dgn

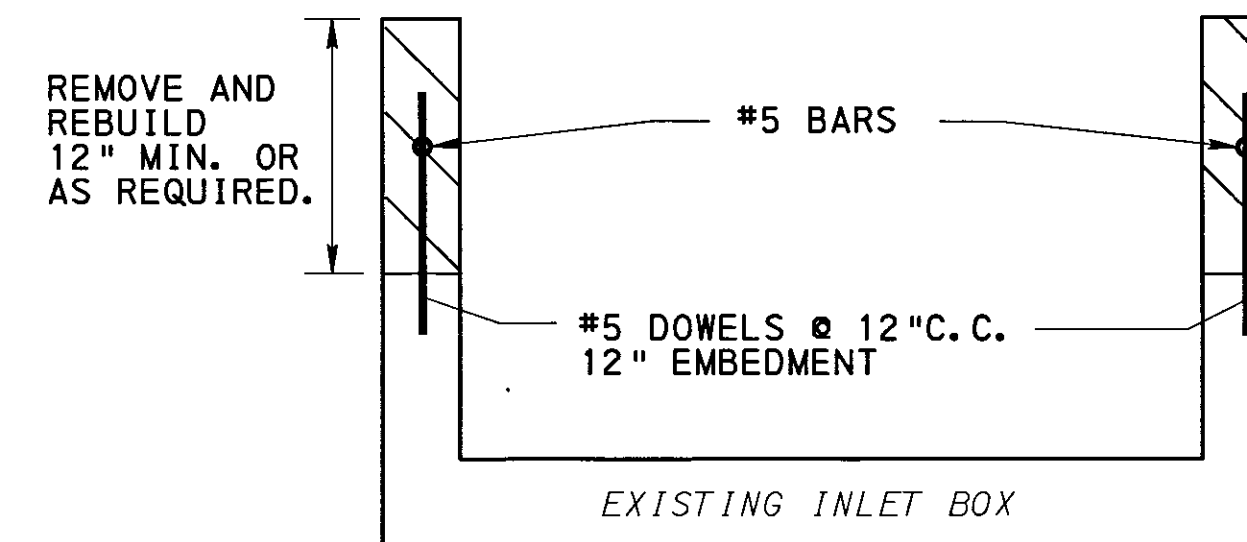
DETAILS

DISTRICT	COUNTY	ROUTE	SECTION	SHEET
8-0	DAUPHIN	3009	014	7 OF 27
CITY OF HARRISBURG				
REVISION NUMBER	REVISIONS	DATE	BY	



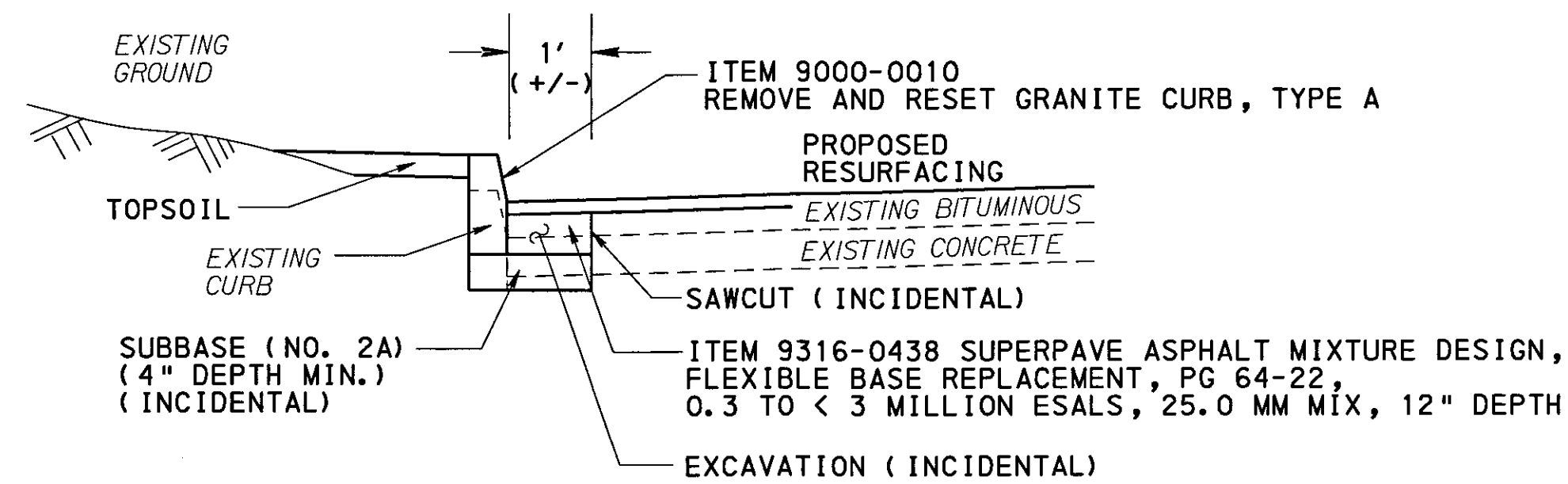
REPLACE 5' MIN. (OR TO JOINT) EACH SIDE OF INLET BOX WHERE CONCRETE CURB EXISTS.
 RESET GRANITE CURB TO 8" REVEAL OR AS DIRECTED ON EACH SIDE OF INLET.

TYPICAL CURB REPLACEMENT AT INLET



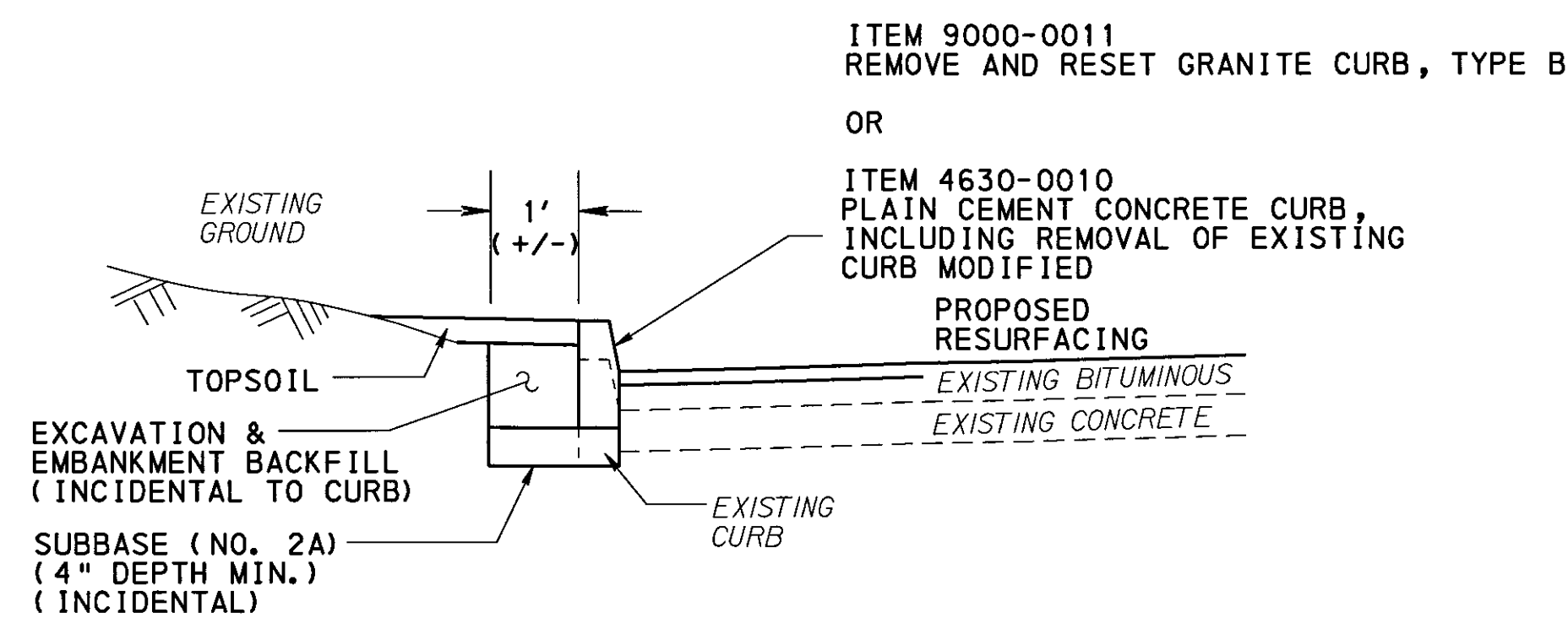
REBUILT INLET BOX

ITEM NO. 9607-0001



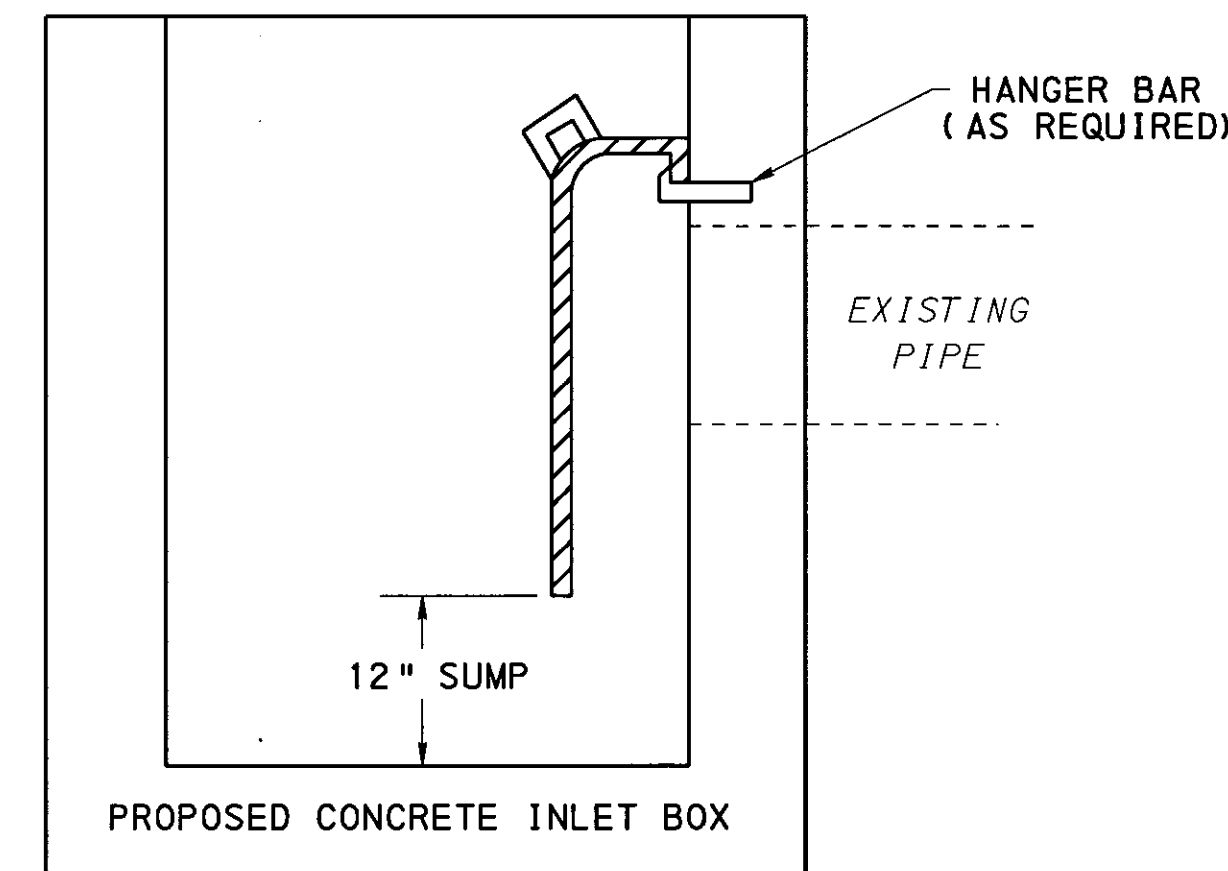
DETAIL FOR CURB RESET
(EXCAVATION IN-FRONT OF CURB)

- NOTES:
1. THIS DETAIL IS FOR AREAS WHERE THERE IS AN OBSTRUCTION BEHIND THE CURB.
 2. RESET CURB TO HAVE 8" STANDARD REVEAL.
 3. CONSTRUCTION TOLERANCE FOR RESET CURB REVEAL IS (+/- 0.5").
 4. SUBBASE MATERIAL (NO. 2A) IS INCIDENTAL TO CURB PLACEMENT.



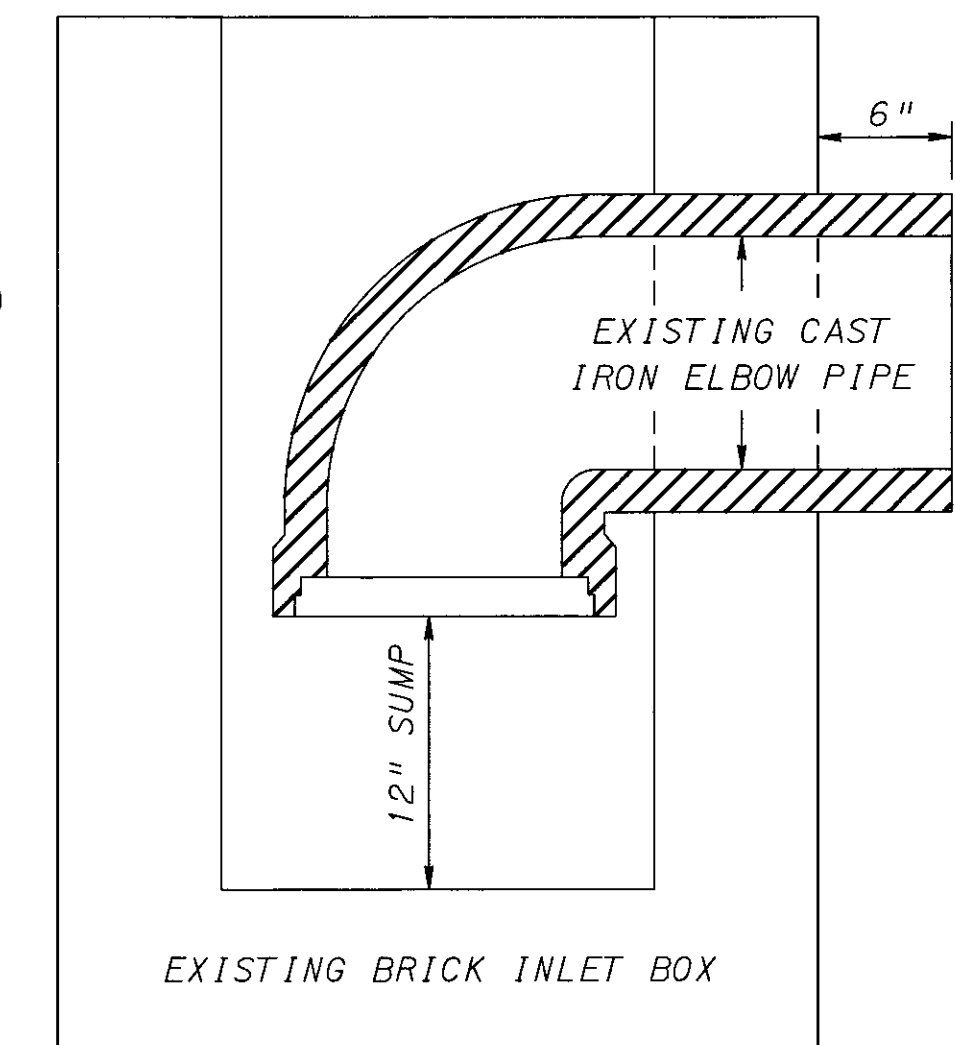
DETAIL FOR CURB RESET OR REPLACEMENT
(EXCAVATION BEHIND CURB)

- NOTE:
1. NEW OR RESET CURB TO HAVE 8" STANDARD REVEAL.
 2. CONSTRUCTION TOLERANCE FOR RESET CURB REVEAL IS (+/- 0.5").
 3. SUBBASE MATERIAL (NO. 2A) IS INCIDENTAL TO CURB PLACEMENT.

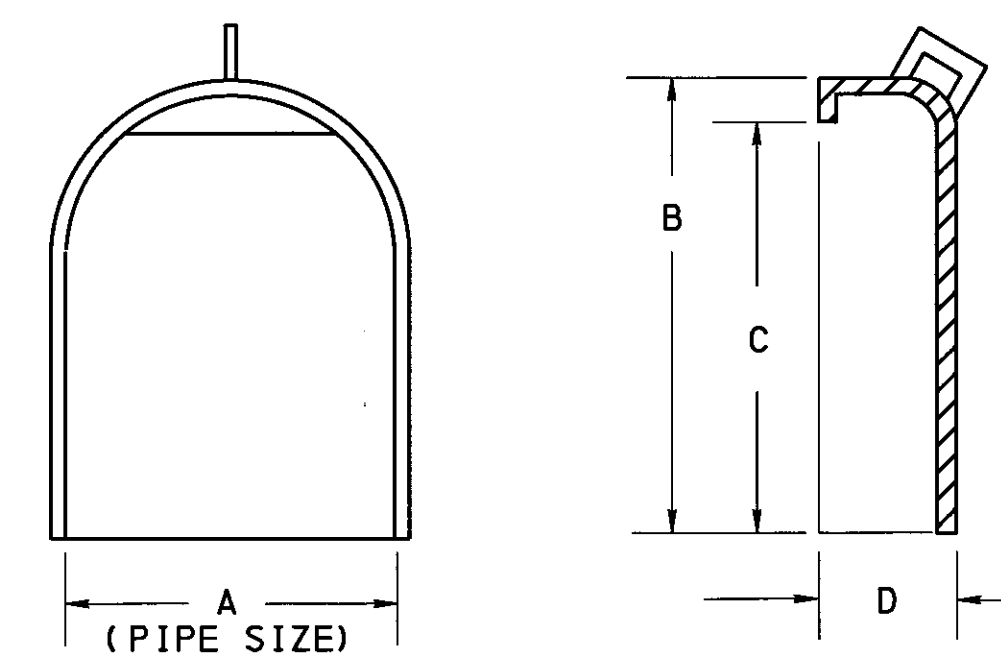


SUMP INLET BOX WITH GAS TRAP

ITEM NO. 9605-0001



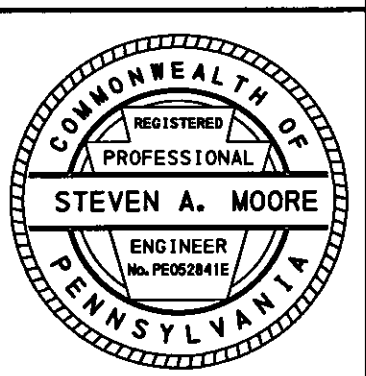
- NOTE:
1. REMOVE EXISTING CAST IRON ELBOW PIPE AND RECONNECT EXISTING PIPE TO INLET.



GAS TRAP DETAIL

A	B	C	D
15.25"	26"	23"	8"
18.25"	31"	28"	10"

STA.	C. I. PIPE SIZE	STREET
51+00 RT	15"	MARKET
51+10 LT	15"	MARKET
55+90 RT	18"	WALNUT
59+55 LT	15"	LOCUST
63+80 RT	18"	PINE
69+55 LT	18"	SOUTH
72+35 LT	18"	STATE
74+85 RT	15"	LIBERTY
74+85 LT	15"	LIBERTY
75+45 RT	15"	LIBERTY
83+80 LT	15"	MID-BLOCK
86+65 LT	15"	BOAS



PLOTTED: 26-AUG-2014 11:05

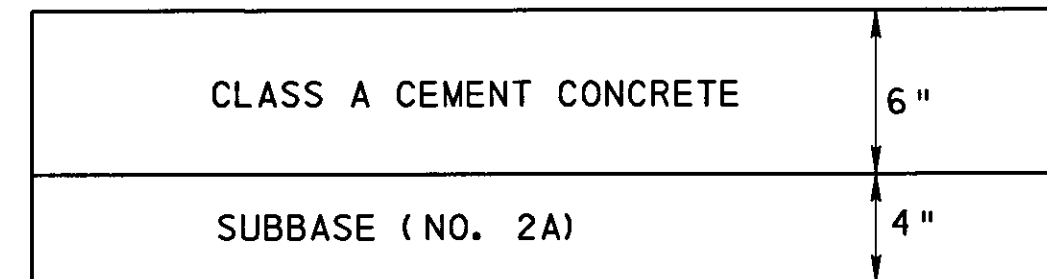
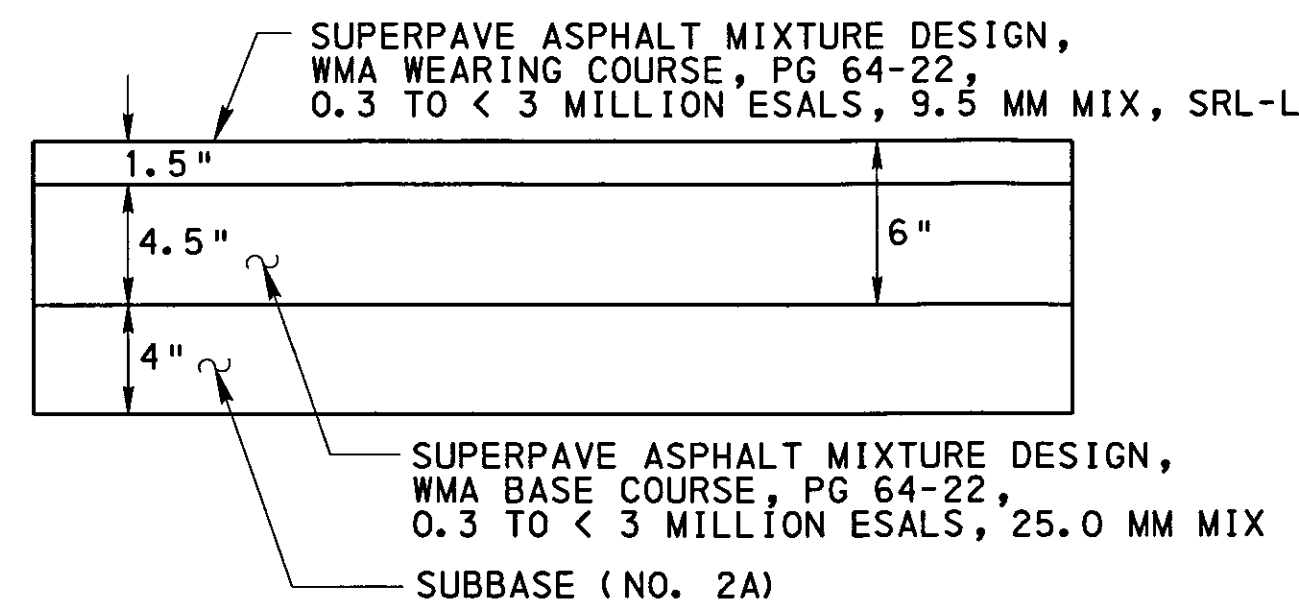
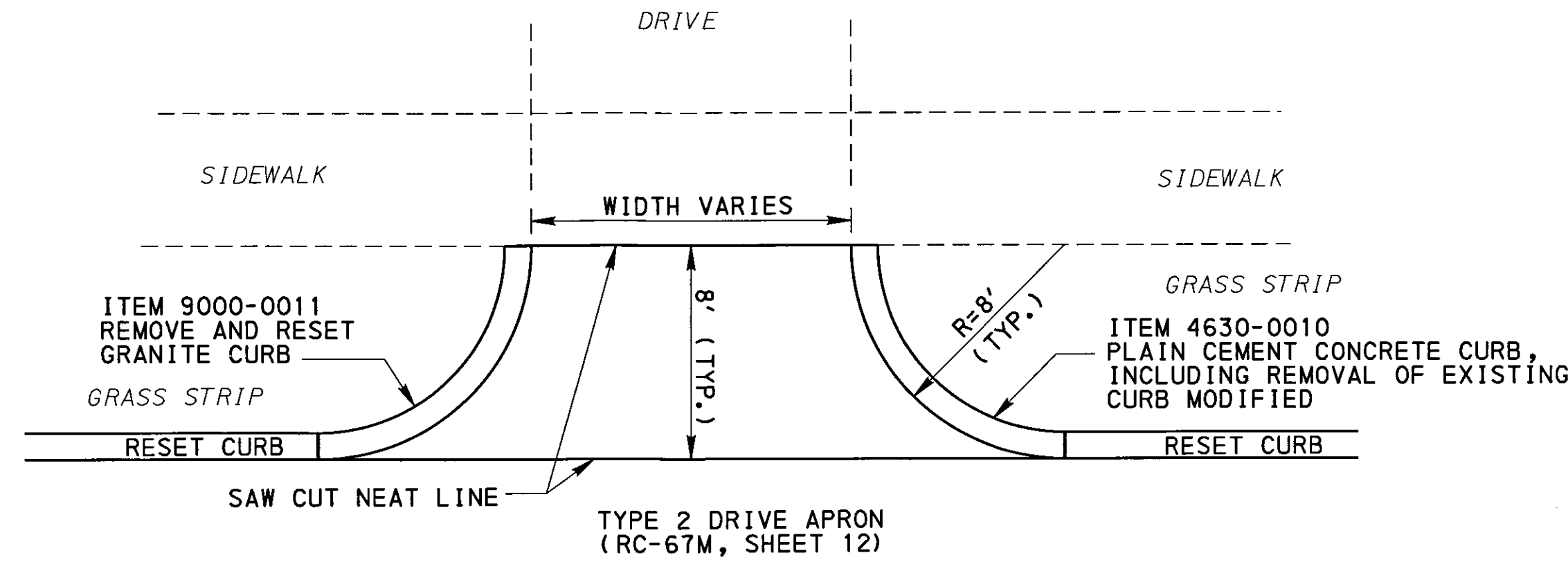
D-9012 CADD (02-90) REVISED (10-04)

FILE NAME: G:\d64\223009014A\22-3009-014\SR 3009 Sec 014.dgn

DRIVE IDENTIFICATION CHART N. FRONT STREET (FOR INFORMATION ONLY)

NOTE: ALL QUANTITIES ARE TABULATED "AS DIRECTED".
CHART IS FOR LOCATIONS AND ESTIMATED
QUANTITIES ONLY. QUANTITIES, MAY CHANGE DUE
TO FIELD CONDITIONS.

DISTRICT	COUNTY	ROUTE	SECTION	SHEET
8-0	DAUPHIN	3009	014	8 OF 27
CITY OF HARRISBURG				
REVISION NUMBER	REVISIONS	DATE	BY	



ITEM 9000-0001 - BITUMINOUS DRIVE REPLACEMENT

ITEM 9000-0002 - CONCRETE DRIVE REPLACEMENT

TYPICAL DRIVE REPLACEMENT

NOTE: EITHER RESET EXISTING GRANITE CURB OR PLACE NEW CONCRETE CURB.
MAKE INDIVIDUAL DRIVES THE SAME ON BOTH SIDES OF THE DRIVE.

SIDE STREET	DRIVE ADDRESS NUMBER	NAME	BITUMINOUS DRIVE (WIDTH)	AREA (SY)	CONCRETE DRIVE (WIDTH)	AREA (SY)	ISSUE
DIVISION	2841	PRIVATE	14	12.4			
	2837	NORTH TOWER			22	19.6	
	2835	GAUDENZIA	14	12.4			
	2833	PRIVATE			16	14.2	
	2807	LEBER			15	13.3	
SHAMOKIN	2721	MATHAIS	15	13.3			
	2717	FOR SALE			17	15.1	
	2709	HILLCREST			15	13.3	
	2701	MILESTONE			24	21.3	
WICONISCO	2637	BETH EL	15	13.3			
	2637	BETH EL	15	13.3			
	2615	MID PENN BANK			16	14.2	
	2615	MID PENN BANK			25	22.2	
RADNOR	2601	PRIVATE			16	14.2	
	2515	REBECCA'S PLACE			18	16.0	
	2509	PA BUILDER'S			15	13.3	
	2505	VITETTA			16	14.2	
	2501	MABX			16	14.2	
SCHUYLKILL	2417	PRIVATE	12	10.7			
	2415	RAYMOND JAMES			16	14.2	
	2411	PRIVATE			15	13.3	
	2405	COMMUNITY BANKER			15	13.3	
SENECA	2403	ED BLACK	14	12.4			
	2345	OHEV SHOLOM			24	21.3	
	2311	RIVER PLAZA	20	17.8			
	2311	RIVER PLAZA	20	17.8			
EMERALD	2311	RIVER PLAZA	20	17.8			
	2233	WAGNER			14	12.4	
	2201	PARTNERS, LP			15	13.3	
WOODBINE	2201	PARTNERS, LP	20	17.8			
	2101	GOV. PLAZA NORTH			20	17.8	
	2101	GOV. PLAZA NORTH			20	17.8	
	2101	GOV. PLAZA NORTH			20	17.8	
MACLAY							
GEIGER	2001	GOV. PLAZA SOUTH			20	17.8	
PEFFER	1925	PA AUTOMOTIVE	22	19.6			
DELAWARE							
MUENCH	1829	CHAR'S					REMOVE
	1829	CHAR'S			20	17.8	
KELKER	1719	PURCELL			17	15.1	
	1711	PSU HERSHEY	22	19.6			
	1705	WEBPAGE FX	25	22.2			
	1701	REILLY	18	16.0			
HAMILTON	1631	FMA ADVISORY	16	14.2			
	1625	PATHSTONE			15	13.3	
	1617	CUMMINGS			16	14.2	
CLINTON	1613	JOSEPH HAIR	15	13.3			
	1609	DILKS			20	17.8	
	1607	PRIVATE			15	13.3	
	1601	PRIVATE			15	13.3	
HARRIS	1519	RIVERVIEW MANOR			20	17.8	
	1515	YOUTH ADVOCATE			15	13.3	
	1511	YOUTH ADVOCATE			15	13.3	
	1501	PA. I. A. D. A.			18	16.0	CENTER ON AISLE
REILY							
BOAS	1007	PA BLIND ASSN.			16	14.2	
SUB-TOTAL	16 DRIVES - BITUMINOUS			246.1			
SUB-TOTAL	36 DRIVES - CONCRETE				561.3		
AS DIRECTED				28.9		38.7	
TOTAL				275.0		600.0	

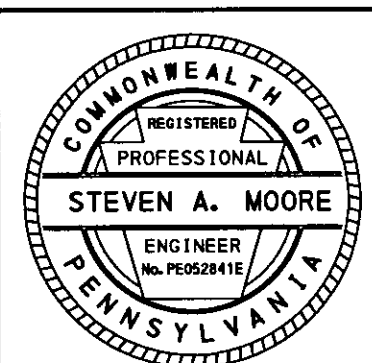
REMOVE EXISTING SIDEWALK

ITEM NO. 9203-0001

NOTE: ALL QUANTITIES ARE TABULATED "AS DIRECTED".
CHART IS FOR LOCATIONS AND ESTIMATED
QUANTITIES ONLY. QUANTITIES, MAY CHANGE DUE
TO FIELD CONDITIONS.

NOT FOR CURB RAMP PLACEMENT.

STA.	SY
73+50 RT	4.5
74+10 RT	4.5
74+50 RT	4.5
78+40 RT	9
81+20 RT	4.5
81+50 RT	4.5
83+15 - 84+00 RT	36.7
84+40 RT	4.5
87+40 RT	4.5
90+10 RT	4.5
90+90 RT	4.5
95+70 - 96+70 RT	33.3
99+50 RT	4.5
101+60 LT	10.0
104+35 LT	6.7
109+75 LT	13.3
110+35 RT	4.5
114+75 LT	6.7
115+75 RT	4.5
117+40 RT	4.5
119+20 LT	3.3
119+50 LT	3.3
123+00 RT	22.2
124+30 LT	3.3
127+65 RT	4.5
151+30 LT	13.3
155+30 RT	6.2
157+25 RT	5.3
158+00 RT	4.5
160+40 RT	4.5
162+30 LT	13.3
172+20 LT	6.7
175+85 LT	6.7
179+90 RT	4.5
181+10 LT	5.6
186+10 RT	4.5
SUB-TOTAL	285.9
AS DIRECTED	50.1
TOTAL	336



RAMP WIDTH: TO BE 6' MINIMUM.

NOTE: FROM STA 82+75 TO 188+50. FORSTER ST. TO DIVISION ST. CURB WAS TABBED UNDER THOSE STATIONS.

**CURB RAMP IDENTIFICATION CHART
(FOR INFORMATION ONLY)**

NOTE: CURB RAMP CHART IS FOR INFORMATION ONLY. ALL QUANTITIES ARE TABULATED "AS DIRECTED". CHART IS FOR RAMP LOCATIONS AND ESTIMATED QUANTITIES ONLY. CURB RAMP STYLES, AND THEREFORE QUANTITIES, MAY CHANGE DUE TO FIELD CONDITIONS.

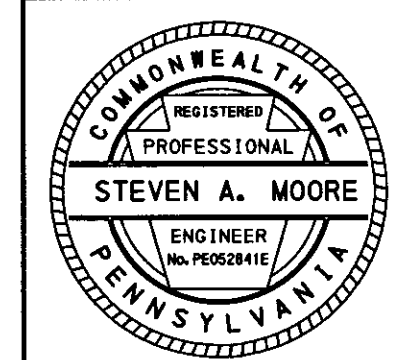
DISTRICT	COUNTY	ROUTE	SECTION	SHEET
8-0	DAUPHIN	3009	014	9 OF 27
CITY OF HARRISBURG				
REVISION NUMBER	REVISIONS	DATE	BY	

CURB RAMP NUMBER	STATION INTERSECTING STREET	CURB RAMP TYPE (SUGGESTED ONLY)	QUANTITIES		
			CURB (LF)	SIDEWALK (SY)	DWS (SF)
1	187+82 LT DIVISION ST.	4		15	12
2	181+40 LT SHAMOKIN ST.	4		15	12
3	181+40 RT SHAMOKIN ST.	4		15	12
4	174+49 RT WICONISCO ST.	4		15	12
5	174+49 LT WICONISCO ST.	4		20	12
6	168+00 LT RADNOR ST.	4		20	12
7	168+00 RT RADNOR ST.	4		25	12
8	162+28 RT SCHUYLKILL ST.	4 SHARED		25	24
9	162+28 LT SCHUYLKILL ST.	4		20	12
10	156+05 LT SENECA ST.	4		20	12
11	156+05 RT SENECA ST.	6 SHARED		25	24
12	150+00 LT EMERALD ST.	4		20	12
13	150+00 RT EMERALD ST.	4		20	12
14	143+15 LT WOODBINE ST.	4		20	12
15	143+15 RT WOODBINE ST.	4		15	12
16	137+58 LT MACLAY ST.	4		15	12
17	137+58 RT MACLAY ST.	6 SHARED		25	24
18	137+10 RT MACLAY ST.	4		15	12
19	129+25 RT PEPPER ST.	4		15	12
20	129+25 LT PEPPER ST.	4		15	12
21	124+00 LT MUENCH ST.	1		20	12
22	124+00 RT MUENCH ST.	4		15	12
23	119+08 RT KELKER ST.	4 SHARED		25	24
24	119+08 LT KELKER ST.	4		15	12

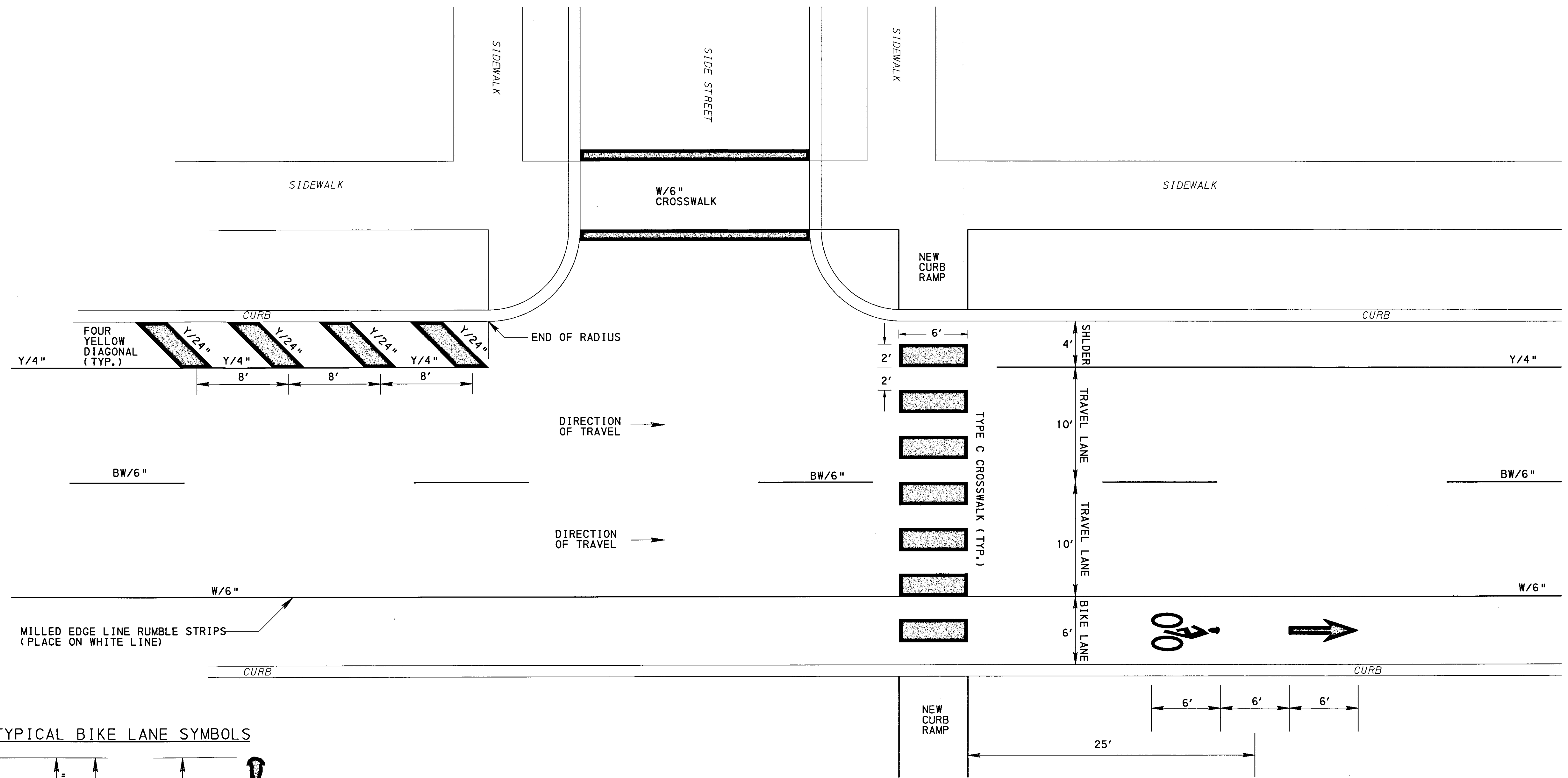
CURB RAMP NUMBER	STATION INTERSECTING STREET	CURB RAMP TYPE (SUGGESTED ONLY)	QUANTITIES			
			CURB (LF)	SIDEWALK (SY)	DWS (SF)	BRICK (SY)
25	114+28 LT HAMILTON ST.	4 SHARED		25	24	
26	114+28 RT HAMILTON ST.	4 SHARED		25	24	
27	109+25 LT HARRIS ST.	4		15	12	
28	109+25 RT HARRIS ST.	4		15	12	
29	103+95 LT REILY ST.	4		15	12	
30	103+95 RT REILY ST.	4 SHARED		25	12	
31	100+10 LT CALDER ST.	4		15	12	
32	100+10 RT CALDER ST.	1		20	12	
33	95+25 RT VERBEKE ST.	1		20	12	
34	95+25 LT VERBEKE ST.	4		15	12	
35	92+20 RT CUMBERLAND ST.	4		15	12	
36	92+20 LT CUMBERLAND ST.	4		15	12	3
37	89+50 RT HERR ST.	4		15	12	3
38	89+50 LT HERR ST.	4		15	12	
39	86+55 RT BOAS ST.	4		15	12	
40	86+55 LT BOAS ST.	4		15	12	
41	77+00 LT NORTH ST.	4	12	15	12	
42	77+00 RT NORTH ST.	4	12	15	12	
43	75+50 LT LIBERTY ST.	1	18	20	12	
44	75+50 RT LIBERTY ST.	4	12	15	12	3
45	72+75 LT STATE ST.	DWS ONLY			12	3
46	72+25 LT STATE ST.	4	12	15	12	
47	69+35 LT SOUTH ST.	4	12	15	12	
48	64+22 RT PINE ST.	1	18	20	12	
49	64+22 LT PINE ST.	4	12	15	12	

CURB RAMP NUMBER	STATION INTERSECTING STREET	CURB RAMP TYPE (SUGGESTED ONLY)	QUANTITIES			
			CURB (LF)	SIDEWALK (SY)	DWS (SF)	BRICK (SY)
50	59+25 LT LOCUST ST.	4	12	15	12	
51	59+25 RT LOCUST ST.	1	18	20	12	
52	56+35 RT WALNUT ST.	DWS ONLY			12	3
53	50+95 RT MARKET ST.	1 DOUBLE SHARED	24	25	24	
54	50+95 LT MARKET ST.	1 DOUBLE SHARED	24	25	24	
55	46+00 RT CHESTNUT ST.	1	18	20	12	
56	46+00 LT CHESTNUT ST.	4	12	15	12	
57	35+85 RT WASHINGTON ST.	1	18	20	12	
58	35+85 LT WASHINGTON ST.	4	12	15	12	
59	31+85 LT FRONT ST.	1	18	20	12	
60	31+55 RT VINE ST.	DWS ONLY			12	
61	27+25 RT PAXTON/SECOND ST.	1	18	20	12	
62	27+25 LT PAXTON/SECOND ST.	1	18	20	12	
63	26+75 RT PAXTON/SECOND ST.	4	12	15	12	
64	26+00 LT PAXTON/SECOND ST.	1	18	20	12	
	SUB-TOTAL (STATE)		330	1110	864	15
65	0+15 LT SECOND ST.	4	16	13	12	
66	0+05 RT SECOND ST.	4	10	7	12	
67	10+25 LT SECOND/WASH. ST.	1 DOUBLE SHARED	24	25	24	3
68	10+25 RT SECOND/WASH. ST.	1 DOUBLE SHARED	20	10	24	
69	10+65 LT SECOND/WASH. ST.	1 DOUBLE SHARED	24	25	24	
70	10+65 RT SECOND/WASH. ST.	1 DOUBLE SHARED	20	10	24	
	SUB-TOTAL (CITY)		114	90	120	3
	SUB-TOTAL (ALL)		444	1200	984	18
	AS DIRECTED		70	90	36	5
	TOTAL		514	1290	1020	23

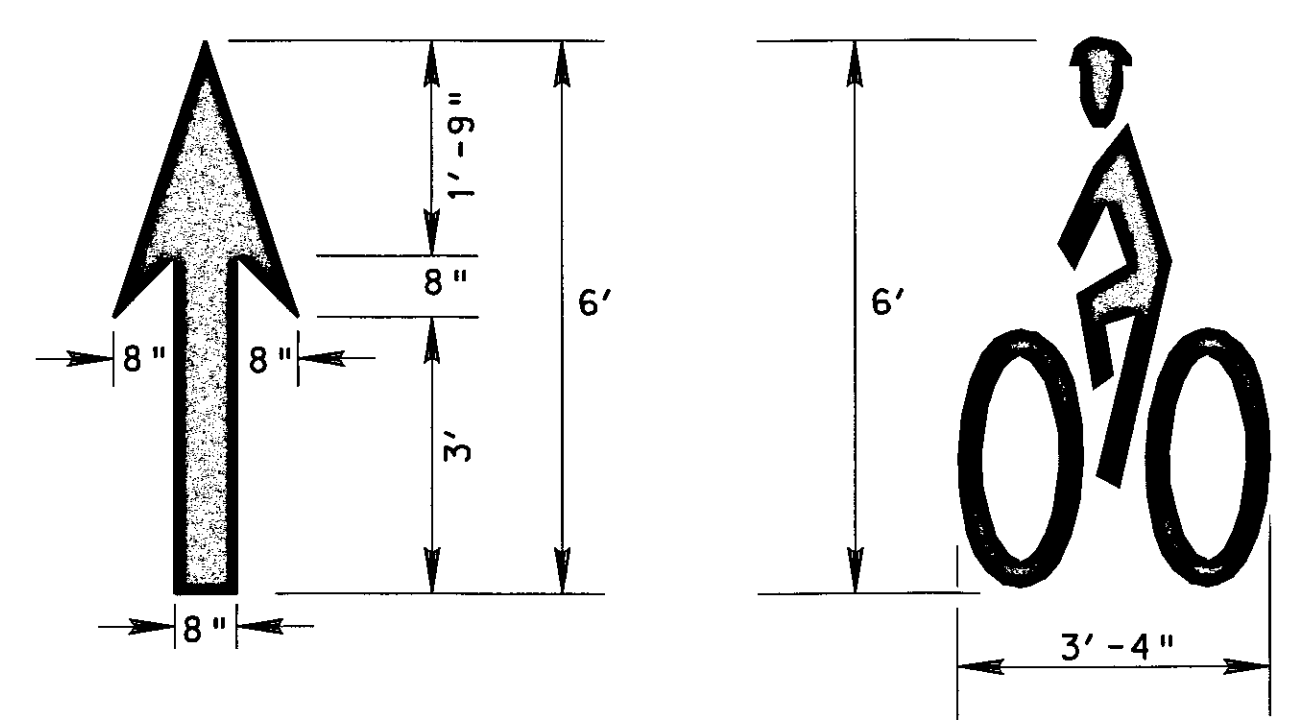
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DISTRICT	COUNTY	ROUTE	SECTION	SHEET
8-0	DAUPHIN	3009	014	10 OF 27
CITY OF HARRISBURG				
REVISION NUMBER	REVISIONS			DATE BY



TYPICAL BIKE LANE SYMBOLS

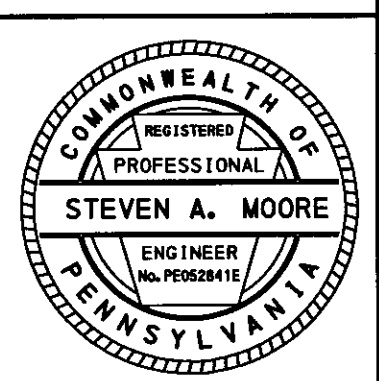


ITEM 9965-0001
WHITE PERFORMED THERMOPLASTIC LEGEND,
"BIKE LANE ARROW", 6'-0"

ITEM 9965-0002
WHITE PERFORMED THERMOPLASTIC LEGEND,
"BICYCLE WITH HELMETED RIDER",
6'-0" X 3'-4"

PLAN VIEW - RESTRIPIING

STA. 88+50 TO 183+60
TWO-LANE TYPICAL LINE PAINTING
HERR STREET TO DIVISION STREET
STA. 89+35 TO STA. 86+25, TRANSITION FROM 2-LANES TO 4-LANES
STA. 187+20 TO STA. 183+60, TWO-LANE SHIFT



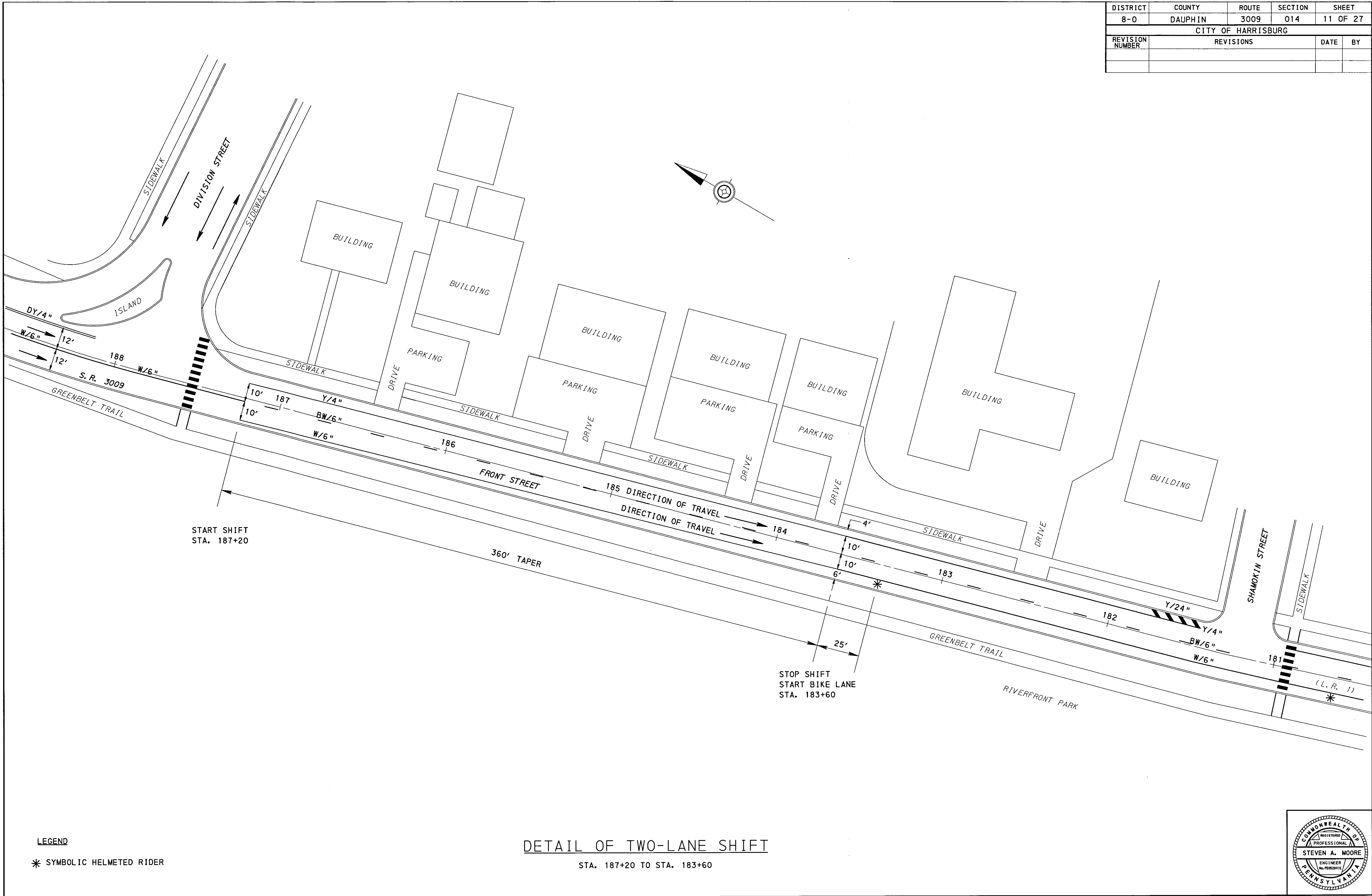
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DISTRICT	COUNTY	ROUTE	SECTION	SHEET
8-0	DAUPHIN	3009	014	11 OF 27
CITY OF HARRISBURG				
REVISION NUMBER	REVISIONS	DATE	BY	

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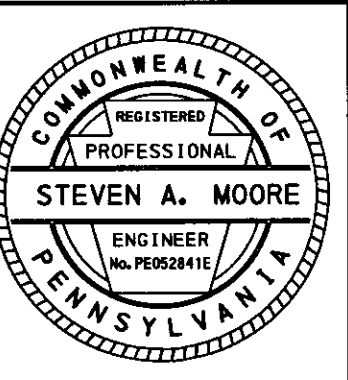
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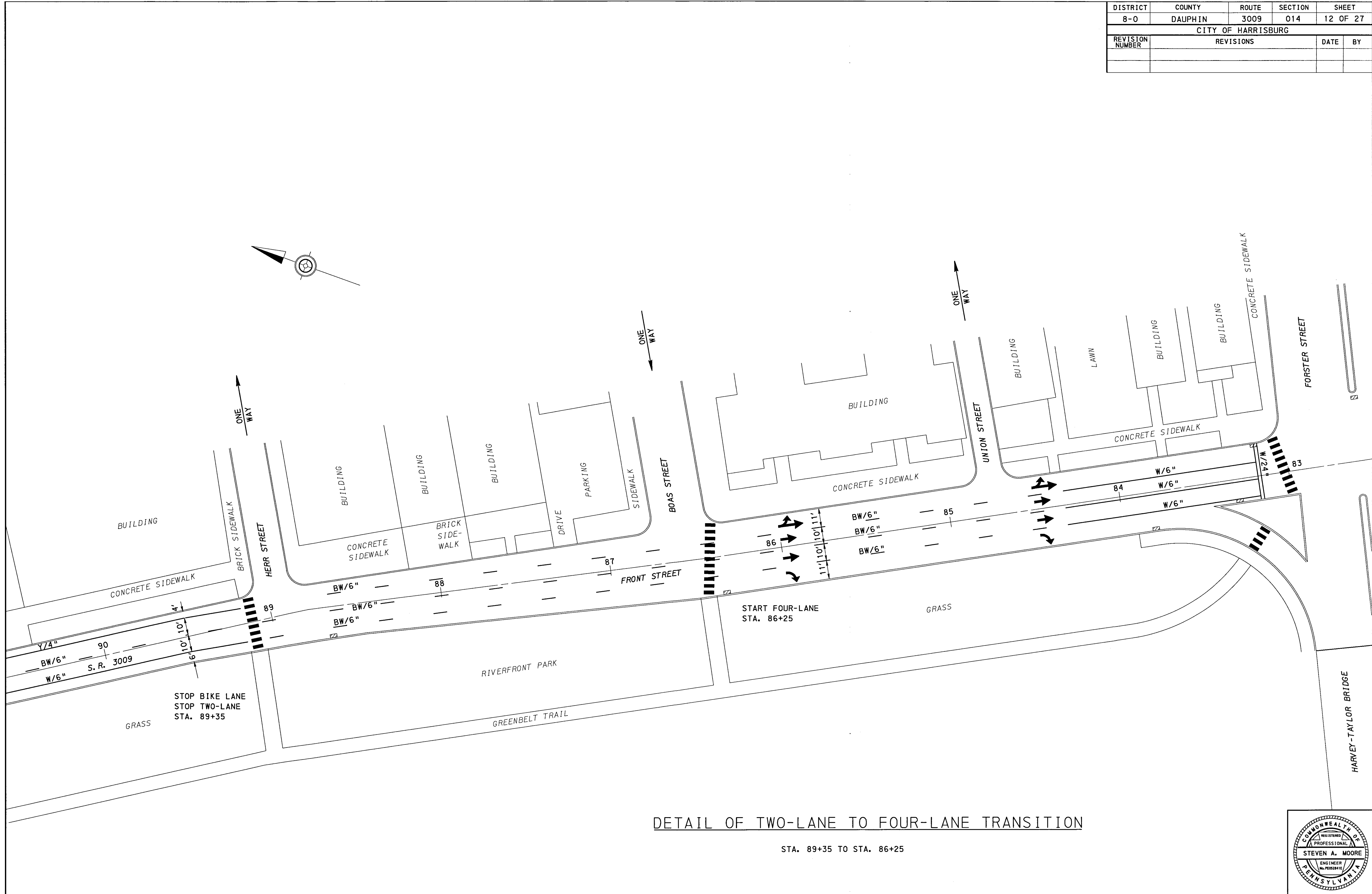
LEGEND
 * SYMBOLIC HELMETED RIDER

DETAIL OF TWO-LANE SHIFT
 STA. 187+20 TO STA. 183+60



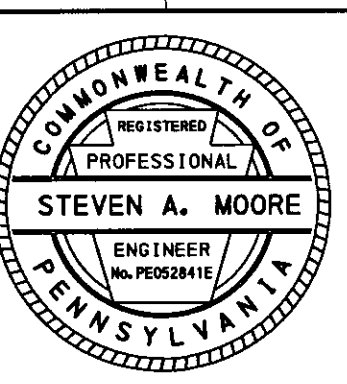
DISTRICT	COUNTY	ROUTE	SECTION	SHEET
8-0	DAUPHIN	3009	014	12 OF 27
CITY OF HARRISBURG				
REVISION NUMBER	REVISIONS	DATE	BY	

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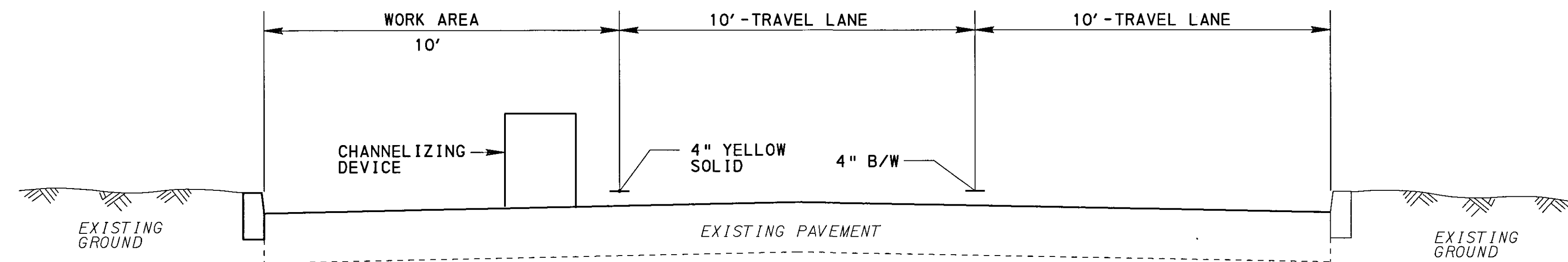
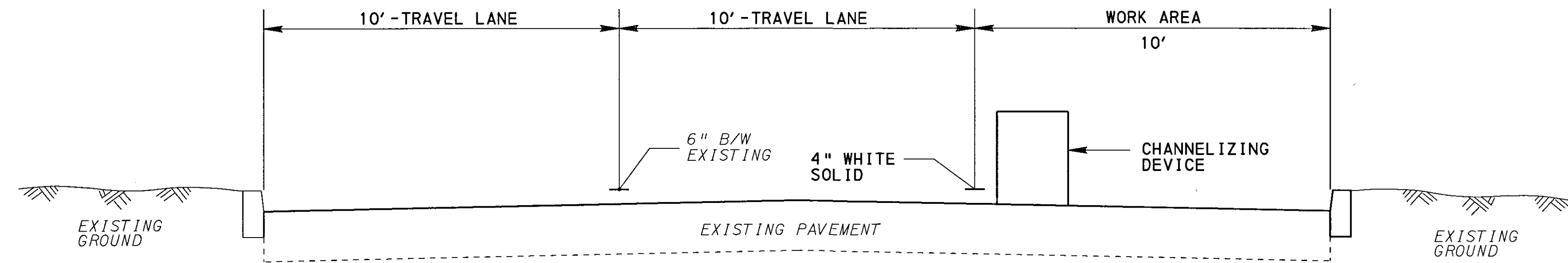
DETAIL OF TWO-LANE TO FOUR-LANE TRANSITION

STA. 89+35 TO STA. 86+25



DISTRICT	COUNTY	ROUTE	SECTION	SHEET
8-0	DAUPHIN	3009	014	13 OF 27
CITY OF HARRISBURG				
REVISION NUMBER	REVISIONS	DATE	BY	

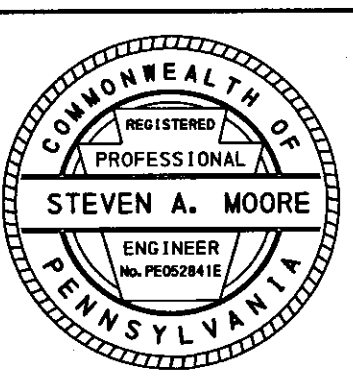
TRAFFIC CONTROL - TYPICAL SECTIONS



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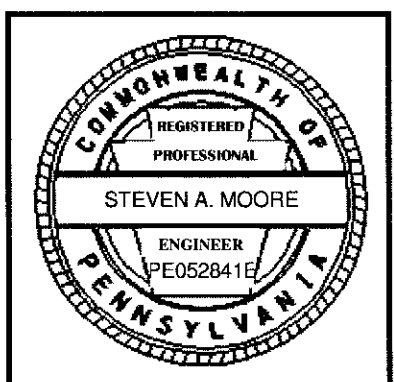
REVISION NO	REVISIONS	DATE	BY	DISTRICT	COUNTY	ROUTE	SECTION	SHEET
				8-0	DAUPHIN	3009	014	14 OF 27
CITY OF HARRISBURG								

SUMMARY

◆ - SEE SPECIAL PROVISIONS

HARRISBURG CITY

QUANTITY	ITEM NO	DESCRIPTION	DESIGN NO	FOR TAB SEE SHEET	QUANTITY	ITEM NO	DESCRIPTION	DESIGN NO	FOR TAB SEE SHEET	QUANTITY	ITEM NO	DESCRIPTION	DESIGN NO	FOR TAB SEE SHEET	QUANTITY	ITEM NO	DESCRIPTION	DESIGN NO	FOR TAB SEE SHEET	
	UNIT					UNIT					UNIT					UNIT				
	4201 0001	CLEARING AND GRUBBING MODIFIED		NO TAB		0608 0001	MOBILIZATION		NO TAB	1	0901 0203	ARROW PANEL		SPMP	6600	0963 0001	PAVEMENT MARKING REMOVAL		SPMP	
	LS					LS					EACH					SF				
61	0204 0150	CLASS 4 EXCAVATION		18-21		0609 0007	INSPECTOR'S FIELD OFFICE AND INSPECTION FACILITIES, TYPE B		NO TAB	55077	0901 0320	4" STANDARD PAVEMENT MARKINGS, PAINT & BEADS, YELLOW		SPMP	8	0965 0152	WHITE PREFORMED THERMOPLASTIC LEGEND, "RR CROSSING", 6' - 6", 12' LANE WIDTH (INCLUDES "X", "RR", AND 2 TRANSVERSE BANDS)		SPMP	
	CY					LS					LF				EACH					
						0609 0009	EQUIPMENT PACKAGE		NO TAB	51593	0901 0330	4" STANDARD PAVEMENT MARKINGS, PAINT & BEADS, WHITE		SPMP	38	0965 0220	WHITE PREFORMED THERMOPLASTIC LEGEND, "STRAIGHT ARROW", 12' - 0" X 1' - 8"		SPMP	
						LS					LF				EACH					
1000	0316 0426	SUPERPAVE ASPHALT MIXTURE DESIGN, FLEXIBLE BASE REPLACEMENT, PG 64-22, 0.3 TO < 3 MILLION ESALS, 25.0 MM MIX, 6" DEPTH		16-17						100000	0901 0331	6" STANDARD PAVEMENT MARKINGS, PAINT & BEADS, WHITE		SPMP	4	0965 0222	WHITE PREFORMED THERMOPLASTIC LEGEND, "RIGHT ARROW", 12' - 0" X 3' - 0"		SPMP	
	SY										LF				EACH					
15000	0405 0001	BITUMINOUS PAVEMENT LONGITUDINAL JOINT DENSITY INCENTIVE/DISINCENTIVE		NO TAB	1	0619 0460	PERMANENT IMPACT ATTENUATING DEVICE, TYPE II, TEST LEVEL 3 (ENERGY ABSORBING TERMINALS FLARED)		22	4273	0901 0334	24" STANDARD PAVEMENT MARKINGS, PAINT & BEADS, WHITE		SPMP	4	0965 0226	WHITE PREFORMED THERMOPLASTIC LEGEND, "THRU AND RIGHT ARROW", 20' - 0" X 3' - 7"		SPMP	
	DOLLA					EACH					LF				EACH					
202	0411 0495	SUPERPAVE ASPHALT MIXTURE DESIGN, WMA WEARING COURSE, PG 64-22, 0.3 TO < 3 MILLION ESALS, 9.5 MM MIX, SRL-L		16-17	2	4619 0610	PERMANENT IMPACT ATTENUATING DEVICE, TYPE V (STANDARD), TEST LEVEL 3 MODIFIED		22						18	0965 0228	WHITE PREFORMED THERMOPLASTIC LEGEND, "THRU AND LEFT ARROW", 20' - 0" X 3' - 7"		SPMP	
	TON					EACH									EACH					
2722	0411 2495	SUPERPAVE ASPHALT MIXTURE DESIGN, WMA WEARING COURSE (SCRATCH), PG 64-22, 0.3 TO < 3 MILLION ESALS, 9.5 MM MIX, SRL-L		16-17	1	0620 0400	TERMINAL SECTION, SINGLE		22	1	0901 0460	FULL-MATRIX CHANGEABLE MESSAGE SIGN WITH TELECOMMUNICATIONS		SPMP						
	TON					EACH					EACH									
15891	0460 0002	BITUMINOUS TACK COAT		16-17	13	0620 1125	TYPE 2-SCC GUIDE RAIL		22	10385	0910 4115	AWG 6 UNDERGROUND CABLE, COPPER, 1 CONDUCTOR		22	23	0971 0001	REMOVE POST MOUNTED SIGNS, TYPE B		SPMP	
	GAL					LF					LF				EACH					
										10385	0910 5057	2-1/2" DIRECT BURIAL CONDUIT		22						
											LF									
4022	0491 0013	MILLING OF BITUMINOUS PAVEMENT SURFACE, 2" DEPTH, MILLED MATERIAL RETAINED BY CONTRACTOR		16-17	6134	4630 0010	PLAIN CEMENT CONCRETE CURB, INCLUDING REMOVAL OF EXISTING CURB MODIFIED		16-17	10385	0910 6000	TRENCH		22	1000	1999 0000	TRAINEES FOR PROJECTS 100% STATE FUNDED		NO TAB	
	SY					LF					LF				hour					
71696	0491 0033	MILLING OF BITUMINOUS PAVEMENT SURFACE, 2" DEPTH, MILLED MATERIAL RETAINED BY DEPARTMENT (DELIVERED TO STOCKPILE)		16-17	9725	4660 0002	MILLED EDGELINE RUMBLE STRIPS		22											
	SY					LF														
70	0516 2007	PATCHING JOINT		16-17	220	4676 0001	CEMENT CONCRETE SIDEWALK MODIFIED		16-17	529	0931 0001	POST MOUNTED SIGNS, TYPE B		SPMP	10	4605 4000	CLEAN EXISTING INLETS		18-21	
	LF					SY					SF				EACH					
15	0516 2008	NEW PAVEMENT JOINT		16-17						346	0932 0001	POST MOUNTED SIGNS, TYPE C		SPMP						
	LF										SF									
10	0516 2021	SUBBASE MATERIAL FOR CONCRETE PAVEMENT PATCHING		16-17		0686 0010	CONSTRUCTION SURVEYING, TYPE A		NO TAB	588	0936 0001	STRUCTURE MOUNTED EXTRUDED ALUMINUM CHANNEL SIGNS		SPMP						
	CY					LS					SF									
185	0516 3043	ACCELERATED CONCRETE PAVEMENT PATCHING, TYPE B, 9" DEPTH		16-17		0689 0003	CPM SCHEDULE		NO TAB	120	0936 0200	STRUCTURE MOUNTED FLAT SHEET ALUMINUM SIGNS		SPMP	275	9000 0001	BITUMINOUS DRIVE REPLACEMENT		16-17	
	SY					LS					SF				SY					
										5	0941 0001	RESET POST MOUNTED SIGNS, TYPE B		SPMP	600	9000 0002	CONCRETE DRIVE REPLACEMENT		16-17	
											EACH				SY					
50	0601 0400	18" THERMOPLASTIC PIPE, GROUP VI, 15'-2" FILL		18-21	EITHER 1020	0695 0002	DETECTABLE WARNING SURFACE, CAST IRON		16-17	1950	0956 0101	LOOP SENSOR		SPMP						
	LF					SF					LF									
500	0601 5901	CLEANING EXISTING PIPE CULVERTS, DIAMETERS UP TO AND INCLUDING 36"		18-21	OR 1020	0695 0003	DETECTABLE WARNING SURFACE, POLYMER CONCRETE		16-17											
	LF					SF														
20	0601 8011	15" REINFORCED CONCRETE PIPE, TYPE A, < 1.5' FILL, 100 YEAR DESIGN LIFE		18-21	OR 1020	0695 0004	DETECTABLE WARNING SURFACE, POLYMER COMPOSITE		16-17	150	0960 0001	4" WHITE HOT THERMOPLASTIC PAVEMENT MARKINGS		SPMP	3	9000 0004	REBUILT WATER BOX		22	
	LF					SF					LF				EACH					
87	0605 2711	TYPE C CONCRETE TOP UNIT AND BICYCLE SAFE GRATE		18-21	575	0802 0001	TOPSOIL FURNISHED AND PLACED		22	14525	0960 0002	4" YELLOW HOT THERMOPLASTIC PAVEMENT MARKINGS		SPMP						
	SET					CY					LF									
6	0605 2731	TYPE M CONCRETE TOP UNIT AND BICYCLE SAFE GRATE		18-21	154	4804 0011	SEEDING AND SOIL SUPPLEMENTS - FORMULA B MODIFIED		22	40333	0960 0005	6" WHITE HOT THERMOPLASTIC PAVEMENT MARKINGS		SPMP						
	SET					LB					LF									
20	0605 2850	STANDARD INLET BOX, HEIGHT $\leq 10'$		18-21	1000	0845 0001	UNFORESEEN WATER POLLUTION CONTROL		NO TAB	3930	0960 0008	8" WHITE HOT THERMOPLASTIC PAVEMENT MARKINGS		SPMP						
	EACH					DOLLA					LF									
57	4605 2850	STANDARD INLET BOX, HEIGHT $\leq 10'$ MODIFIED		18-21						3092	0960 0021	24" WHITE HOT THERMOPLASTIC PAVEMENT MARKINGS		SPMP						
	EACH										LF									
1	0606 0050	GRADE ADJUSTMENT OF EXISTING INLETS		18-21		0901 0001	MAINTENANCE AND PROTECTION OF TRAFFIC DURING CONSTRUCTION		NO TAB	418	0960 0022	24" YELLOW HOT THERMOPLASTIC PAVEMENT MARKINGS		SPMP						
	SET					LS					LF									



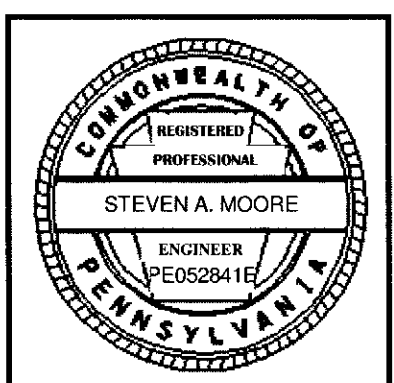
SUMMARY

REVISION NO	REVISIONS	DATE	BY	DISTRICT	COUNTY	ROUTE	SECTION	SHEET
				8-0	DAUPHIN	3009	014	15 OF 27
CITY OF HARRISBURG								

◆ - SEE SPECIAL PROVISIONS

HARRISBURG CITY

QUANTITY	ITEM NO	DESCRIPTION	DESIGN NO	FOR TAB SEE SHEET	QUANTITY	ITEM NO	DESCRIPTION	DESIGN NO	FOR TAB SEE SHEET	QUANTITY	ITEM NO	DESCRIPTION	DESIGN NO	FOR TAB SEE SHEET	QUANTITY	ITEM NO	DESCRIPTION	DESIGN NO	FOR TAB SEE SHEET
	UNIT					UNIT					UNIT					UNIT			
1000	9000 0010	REMOVE AND RESET GRANITE CURB, TYPE A		16-17															
	LF																		
15915	9000 0011	REMOVE AND RESET GRANITE CURB, TYPE B		16-17	2	9810 0052	SELECTIVE TREE REMOVAL (2601 N. FRONT ST)		22										
	LF					EACH													
200	9000 0012	GRANITE CURB DELIVERED TO CITY		16-17	1	9810 0053	SELECTIVE TREE REMOVAL (1201 N. FRONT ST)		22										
	LF					EACH													
					1	9810 0054	SELECTIVE TREE REMOVAL (1101 N. FRONT ST)		22										
						EACH													
					1	9810 0055	SELECTIVE TREE REMOVAL (2509 N. FRONT ST)		22										
						EACH													
336	9203 0001	REMOVE EXISTING SIDEWALK		16-17	4	9810 0056	SELECTIVE TREE REMOVAL (2101 N. FRONT ST)		22										
	SY					EACH													
					2	9810 0057	SELECTIVE TREE REMOVAL (2505 N. FRONT ST)		22										
						EACH													
					1	9810 0058	SELECTIVE TREE REMOVAL (2247 N. FRONT ST)		22										
						EACH													
200	9316 0437	SUPERPAVE ASPHALT MIXTURE DESIGN, FLEXIBLE BASE REPLACEMENT, PG 64-22, 0.3 TO < 3 MILLION ESALS, 25.0 MM MIX, 15" DEPTH		16-17	2	9810 0059	SELECTIVE TREE REMOVAL (PARK AT EMERALD)		22										
	SY					EACH													
650	9316 0438	SUPERPAVE ASPHALT MIXTURE DESIGN, FLEXIBLE BASE REPLACEMENT, PG 64-22, 0.3 TO < 3 MILLION ESALS, 25.0 MM MIX, 12" DEPTH		18-21	2	9810 0060	SELECTIVE TREE REMOVAL (PARK AT RADNOR)		22										
	SY					EACH													
65	9411 0991	SUPERPAVE ASPHALT MIXTURE DESIGN, WMA WEARING COURSE, PG 76-22, 0.3 TO < 3 MILLION ESALS, 9.5 MM MIX, SRL-E		16-17															
	TON																		
73746	9411 4981	SUPERPAVE ASPHALT MIXTURE DESIGN, WMA WEARING COURSE, RPS, PG 76-22, 0.3 TO < 3 MILLION ESALS, 9.5 MM MIX, 1 1/2" DEPTH, SRL-E		16-17	5000	9901 0350	RAILROAD PROTECTIVE SERVICES		NO TAB										
	SY					DOLLAR													
					3	9963 0001	RESET STRUCTURE MOUNTED SIGNS		SPMP										
						EACH													
12	9605 0001	SUMP INLET BOX WITH GAS TRAP		18-21															
	EACH																		
5	9607 0001	REBUILT INLET BOX		18-21	19	9965 0001	WHITE PREFORMED THERMOPLASTIC LEGEND, "BIKE LANE ARROW", 6'-0"		SPMP										
	EACH					EACH													
2	9618 0001	CONCRETE COLLAR FOR PIPE EXTENSION (LESS THAN 24" DIAMETER PIPE)		18-21	19	9965 0002	WHITE PREFORMED THERMOPLASTIC LEGEND, "BICYCLE WITH HELMETED RIDER", 6'-0" X 3'-4"		SPMP										
	EACH					EACH													
1290	9676 0001	CEMENT CONCRETE SIDEWALK MODIFIED		16-17															
	SY																		
58	9676 0002	REBUILD EXISTING BRICK SIDEWALK		16-17															
	SY																		
10	9808 0002	REMOVE AND RESET PLANTER		22															
	EACH																		



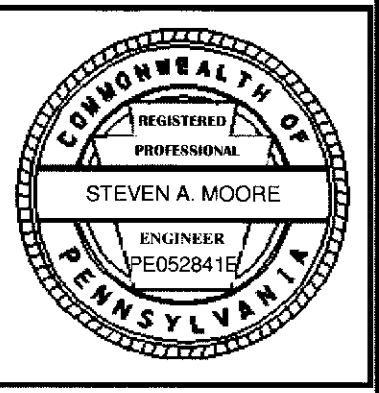
TABULATION OF QUANTITIES

REVISION NO	REVISIONS	DATE	BY	DISTRICT	COUNTY	ROUTE	SECTION	SHEET
				8-0	DAUPHIN	3009	014	16 OF 27
CITY OF HARRISBURG								

(+) SEE SUMMARY SHEET FOR COMPLETE ITEM NUMBERS.

ROADWAY

0316 0426 SY	0411 0495 TON	0411 2495 TON	0460 0002 GAL	0491 0013 SY	0491 0033 SY	0516 2007 LF	0516 2008 LF	0516 2021 CY	0516 3043 SY	4630 0010 LF	4676 0001 SY	0695 (+) SF	9000 0001 SY	9000 0002 SY	9000 0010 LF	9000 0011 LF	9000 0012 LF	9203 0001 SY	9316 0437 SY	9411 0991 TON	9411 4981 SY	9676 0001 SY	9676 0002 SY							ITEM NUM UNIT	REMARKS	SIDE	STATIONS				
S.R. 3009-014 (FORSTER TO DIVISION)																																					
																1600															RESET GRANITE TO CALDER ST.	RT	83+15.00 TO 100+25.00				
											200																				SIDEWALK REPLACEMENT NECESSARY DUE TO CURB REPLACEMENT.		83+15.00 TO 188+50.00				
															1000																FOR RESET OF GRANITE CURB IN AREAS OF OBSTRUCTIONS BEHIND CURB.	LT	83+15.00 TO 188+50.00				
										1000			275	600		300															DRIVE REPLACEMENT. SEE DRIVE IDENTIFICATION CHART.	RT	83+15.00 TO 188+50.00				
										525																					NEW CURB	LT	83+35.00 TO 89+10.00				
																1015															RESET GRANITE TO CALDER ST.	LT	89+10.00 TO 100+25.00				
										1800																					NEW CURB TO KELKER ST.	RT	100+25.00 TO 119+25.00				
										1925																					NEW CURB TO KELKER ST.	LT	100+25.00 TO 119+50.00				
																6700	100														RESET GRANITE	RT	119+50.00 TO 187+50.00				
																6000	100														RESET GRANITE	LT	119+50.00 TO 188+50.00				
S.R. 3009-014 (FRONT & PAXTON STREETS)																																					
										300																					AS DIRECTED. AT INLET REPLACEMENTS.		15+40.00 TO 188+50.00				
1000																			100												AS DIRECTED. BASE REPLACEMENT		15+40.00 TO 188+50.00				
										400		900											1200	20							AS DIRECTED. SEE CURB RAMP IDENTIFICATION CHART.		15+40.00 TO 188+50.00				
		2378	13314		63400																										RESURFACING		15+40.00 TO 188+50.00				
						30			25																						15' X 15' PATCH	RT	17+30.00				
							15	5	70																						REMOVE AND REPLACE ISLAND AT RAMP. RAKE TINE FINISH.	LT	26+70.00				
						40		5	90																						PATCH CONCRETE AT RAMP.	LT	31+00.00				
S.R. 3009-014 (RR BRIDGE TO WASHINGTON ST)																																					
																300																	LT	33+00.00 TO 36+00.00			
S.R. 3009-014 SIDEWALK REMOVAL																																					
																			336												REMOVE EXISTING SIDEWALKS OR WALKWAYS (CONCRETE OR BITUMINOUS) NOT BEING REPLACED. SEE IDENTIFICATION CHART.		73+50.00 TO 188+50.00				
SECOND STREET																																					
												120																						0+00.00 TO 15+35.00			
										114													90	3											0+00.00 TO 15+35.00		
		241	1532		7296															100		7296													0+00.00 TO 15+35.00		
										70	20																								INCLUDES SECOND STREET-RAMP. FOR REPAIR AT INLETS.		0+00.00 TO 15+35.00



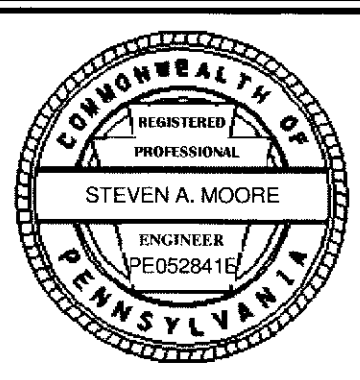
NOTE: INVERT DEPTH (FOR INFORMATION ONLY)

TABULATION OF QUANTITIES

DRAINAGE

REVISION NO	REVISIONS	DATE	BY	DISTRICT	COUNTY	ROUTE	SECTION	SHEET
				8-0	DAUPHIN	3009	014	18 OF 27
CITY OF HARRISBURG								

CLASS 4 EXCAVATION	REMARKS		SIDE	STATIONS
	ITEM NUM	UNIT		
	S.R. 3009-014 (FORSTER TO DIVISION)			
		FOR REPAIR IN AREAS OF CURB EXCAVATION IN FRONT OF CURB	LT	83+15.00 TO 188+50.00
		S.R. 3009-014 (FRONT & PAXTON STREETS, DRAINAGE)		
		AS DIRECTED. BASE REPLACEMENT AT INLETS		15+40.00 TO 188+50.00
	500	AS DIRECTED. INLET CLEANING FOR INLETS NOT BEING REPLACED.		15+40.00 TO 188+50.00
		PAXTON ST. INVERT 6'.	RT	17+55.00
		PAXTON ST. INVERT 3'	LT	17+65.00
		MID-BLOCK. INVERT 4'	RT	33+65.00
		MID-BLOCK. INVERT 5'	LT	33+70.00
		WASHINGTON ST. INVERT 3'	RT	35+90.00
		WASHINGTON ST. INVERT 5'	LT	36+00.00
		WASHINGTON ST. INVERT 3'	RT	36+23.00
		MARY ST. INVERT 5'	LT	38+25.00
		OVERHEAD RR. INVERT 3'	LT	40+45.00
		OVERHEAD RR. INVERT 3'	RT	40+45.00
		CHESTNUT ST. M INVERT 3'	RT	45+85.00
		CHESTNUT ST. M INVERT 4'	LT	45+90.00
		MARKET ST. INVERT 3' - SUMP	RT	51+00.00
		MARKET ST. INVERT 6' - SUMP	LT	51+10.00
		WALNUT ST. INVERT 8' - SUMP	RT	55+90.00
		LOCUST ST. INVERT 6' - SUMP	LT	59+55.00
		PINE ST. INVERT 6'. REBUILT C.	LT	63+65.00
		PINE ST. INVERT 8' - SUMP	RT	63+80.00
		BARBARA ST. INVERT 5'	RT	66+65.00
		BARBARA ST. INVERT 6'	RT	66+95.00
		BARBARA ST. INVERT 7'	LT	67+00.00
20		SOUTH ST. INVERT 6'. REMOVE INLET IN STREET. PLACE C INLET ON CURB LINE.	RT	69+45.00
		SOUTH ST. INVERT 7' - SUMP	LT	69+55.00



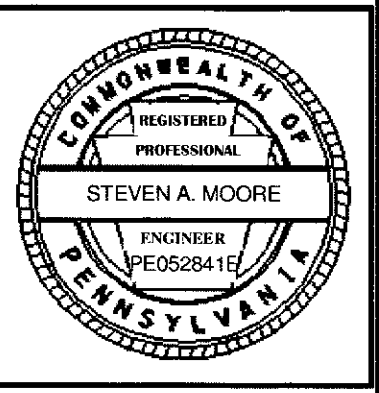
NOTE: INVERT DEPTH (FOR INFORMATION ONLY)

TABULATION OF QUANTITIES

REVISION NO	REVISIONS	DATE	BY	DISTRICT	COUNTY	ROUTE	SECTION	SHEET
				8-0	DAUPHIN	3009	014	19 OF 27
CITY OF HARRISBURG								

DRAINAGE

CLASS 4 EXCAVATION	REMARKS		SIDE	STATIONS
	ITEM NUM	UNIT		
0204	STATE ST. INVERT 6'	RT	72+18.00	
0150	STATE ST. INVERT 8' - SUMP	LT	72+35.00	
CY	LIBERTY ST. INVERT 6' - SUMP	LT	74+85.00	
0601	LIBERTY ST. INVERT 5' - SUMP	RT	74+85.00	
0400	LIBERTY ST. INVERT 6'	LT	75+45.00	
LF	LIBERTY ST. INVERT - 4' - SUMP	RT	75+45.00	
0601	NORTH ST. INVERT 3'	RT	77+10.00	
0400	MID-BLOCK. INVERT 5'	RT	80+75.00	
LF	FORSTER ST.	RT	83+10.00	
0601	FORSTER ST.	LT	83+15.00	
0400	MID-BLOCK. SUMP	LT	83+80.00	
LF	BOAS ST. SUMP.	LT	86+65.00	
0601	BOAS ST. INVERT 3'	RT	86+65.00	
0400	HERR ST. INVERT 3'	LT	89+10.00	
LF	HERR ST. INVERT 3'	RT	89+10.00	
0601	CUMBERLAND ST. INVERT 3'	RT	92+30.00	
0400	CUMBERLAND ST. INVERT 3'	LT	92+40.00	
LF	CUMBERLAND ST. INVERT 3'	RT	92+60.00	
0601	MID-BLOCK. INVERT 3'	RT	94+00.00	
0400	VERBEKE ST. INVERT 3'	RT	95+60.00	
LF	VERBEKE ST. INVERT 4'	LT	95+65.00	
0601	CALDER ST. INVERT 4'	LT	100+40.00	
0400	CALDER ST. INVERT 3'	RT	100+50.00	
LF	HARRIS ST. INVERT 4'	LT	109+00.00	
0601	HARRIS ST. 3.5' INVERT RT.	RT	109+50.00	
0400	CLINTON ST. INVERT 3'	RT	111+80.00	
LF	CLINTON ST. INVERT 4'	LT	111+90.00	
0601	CLINTON ST. INVERT 3'	RT	112+10.00	



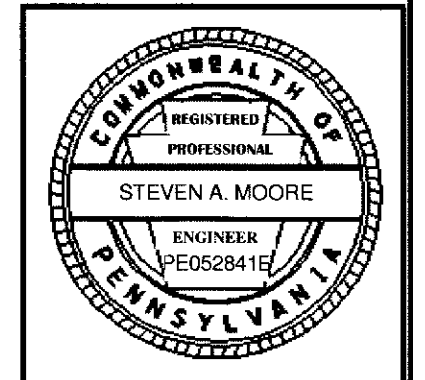
NOTE: INVERT DEPTH (FOR INFORMATION ONLY)

TABULATION OF QUANTITIES

REVISION NO	REVISIONS	DATE	BY	DISTRICT	COUNTY	ROUTE	SECTION	SHEET
				8-0	DAUPHIN	3009	014	21 OF 27
CITY OF HARRISBURG								

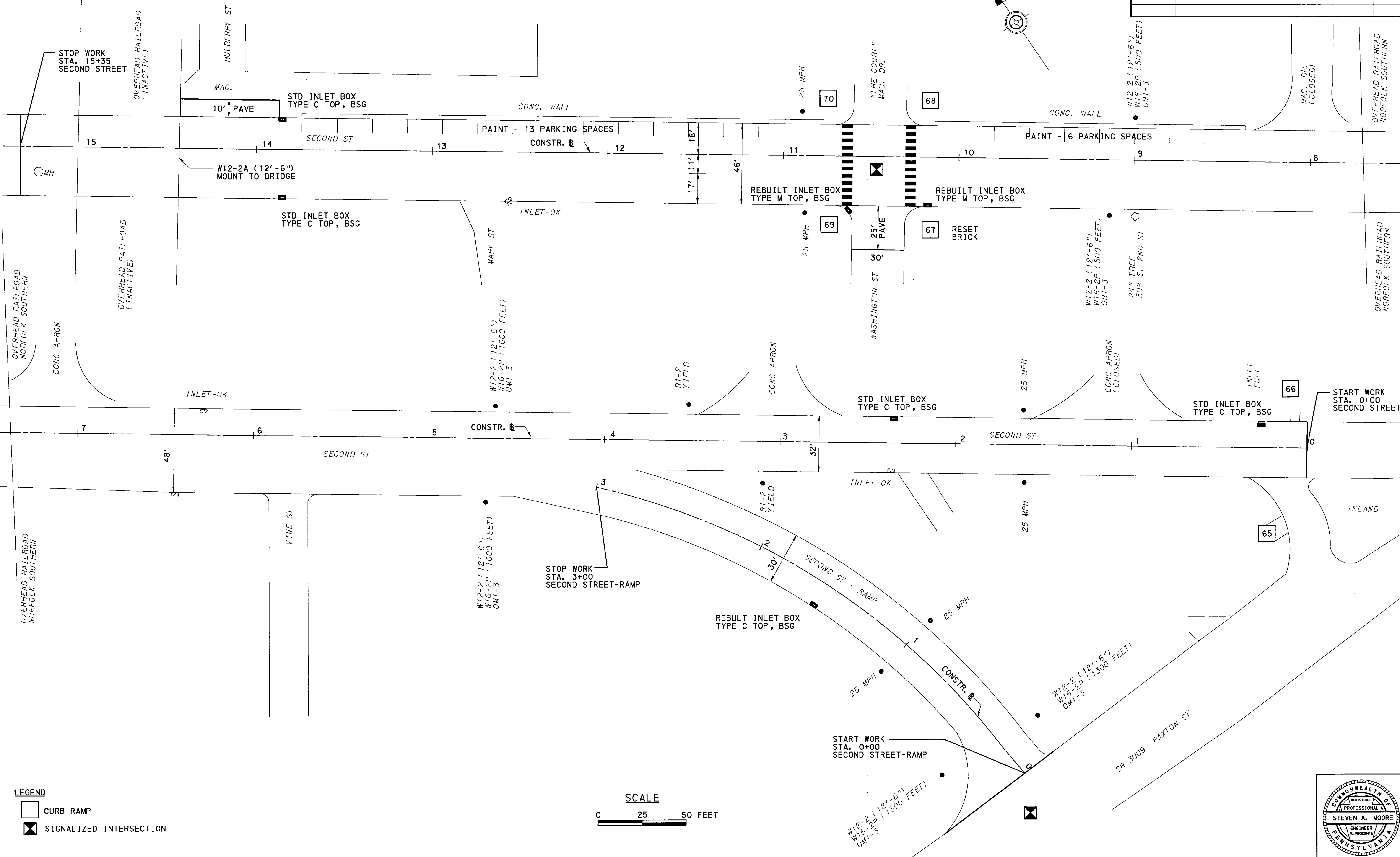
DRAINAGE

CLASS 4 EXCAVATION												REMARKS	SIDE	STATIONS						
0204 0150 CY	0601 0400	0601 5901 LF	0601 8011	0605 2711 SET	0605 2731 SET	0605 2850 EACH	4605 2850 EACH	0606 0050 SET	4605 4000 EACH	9316 0438 SY	9605 0001 EACH				9607 0001 EACH	9618 0001 EACH	ITEM NUM UNIT			
				1			1										RADNOR ST. INVERT 3'	RT	168+30.00	
				1			1										WICONISCO ST. INVERT 3'	RT	174+55.00	
				1			1										WICONISCO ST. INVERT 3'	RT	174+85.00	
				1			1										SHAMOKIN ST. INVERT 4.5'	LT	181+20.00	
				1			1										SHAMOKIN ST. INVERT 3.5'	RT	181+35.00	
				1			1										DIVISION ST. INVERT 6'. PAVE TAPER TO INLET.	LT	187+90.00	
SECOND STREET																				
										25							INCLUDES SECOND STREET-RAMP. FOR REPAIR AT INLETS.		0+00.00 TO 15+35.00	
				1			1											RT	0+25.00	
				1			1										INVERT 4.5'	RT	2+35.00	
							1											LT	6+45.00	
					1							1						LT	10+25.00	
					1							1						LT	11+65.00	
				1			1										INVERT 4'	LT	14+85.00	
				1			1										INVERT 3'	RT	14+85.00	
SECOND STREET-RAMP																				
				1								1						LT	1+55.00	
61	50	500	20	87	6	20	57	1	10	650	12	5	2				TOTALS			



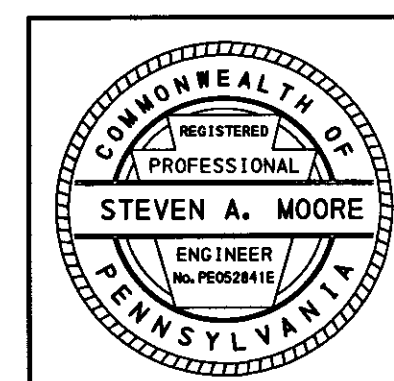
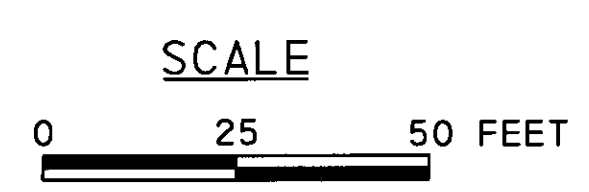
SECOND STREET PLAN

DISTRICT	COUNTY	ROUTE	SHEET
8-0	DAUPHIN	SECOND STREET	23 OF 27
CITY OF HARRISBURG			
REVISION NUMBER	REVISIONS	DATE	BY



LEGEND

- CURB RAMP
- SIGNALIZED INTERSECTION



DISTRICT	COUNTY	ROUTE	SECTION	SHEET
8-0	DAUPHIN	3009	014	24 OF 27
CITY OF HARRISBURG				
REVISION NUMBER	REVISIONS	DATE	BY	

LIMIT OF WORK
 STA. 14+90
 SEG. 0010 OFF. 0490
 SEG. 0011 OFF. 0490
 (SLD STA. 36+30)
 S.R. 3009 SEC. 014
 (L.R. 129)
 CITY OF HARRISBURG
 DAUPHIN COUNTY

EXISTING STRUCTURE DATA
 STA. 16+50 (1930)
 TYPE: CONC. T-BEAM
 ROADWAY WIDTH: 54'
 LENGTH = 34'
 BMS NO.: 22 7301 4000 3060

EXISTING STRUCTURE DATA
 STA. 21+00 (1929)
 TYPE: STEEL I-BEAM
 ROADWAY WIDTH: 52'
 LENGTH = 172'
 BMS NO.: 22 3009 0010 1034

REMOVE ALL TREES AND SHRUBS ALONG SPUR RAMP FROM I-83 (EAST SIDE) FROM INTERSECTION TO LIGHTPOLE (CURB TO ROW FENCE) (LENGTH APPROXIMATELY 200').

START WORK
 STA. 15+40
 SEG. 0010 OFF. 0540
 SEG. 0011 OFF. 0540

STOP WORK
 STA. 17+15
 SEG. 0010 OFF. 0715
 SEG. 0011 OFF. 0715

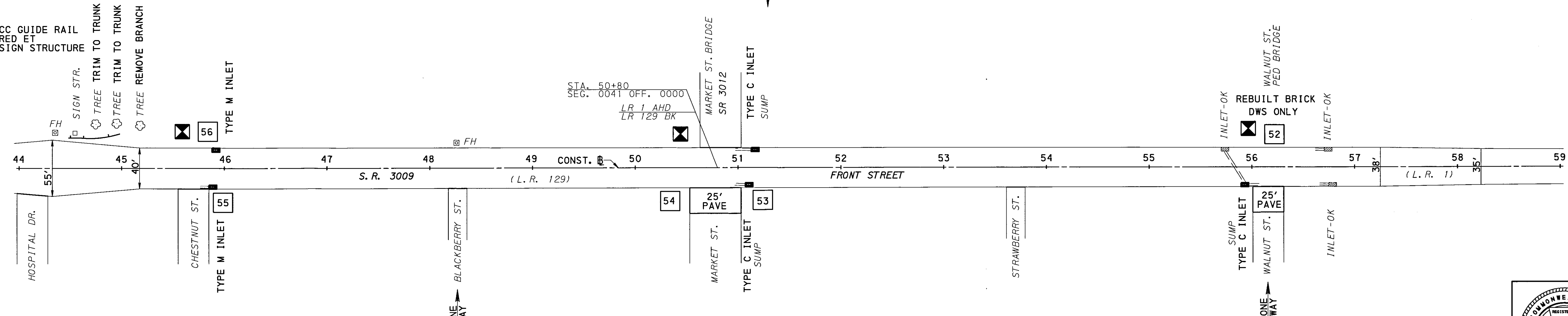
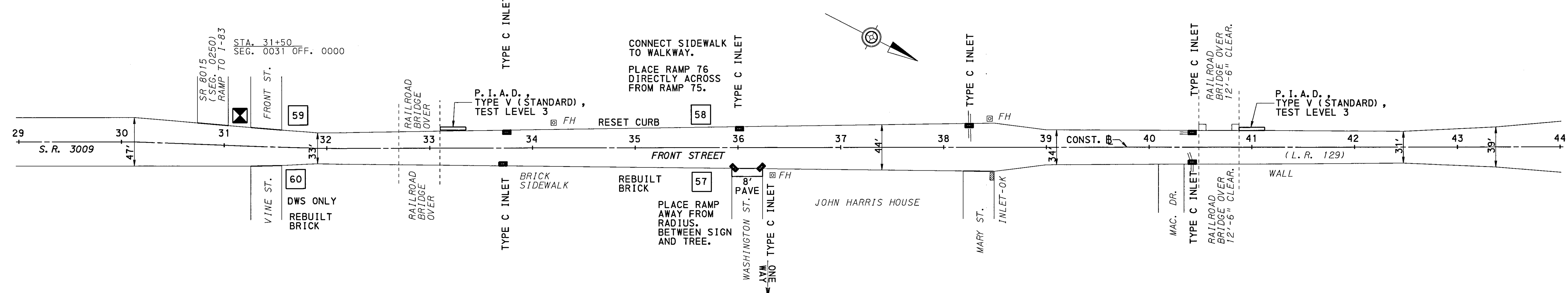
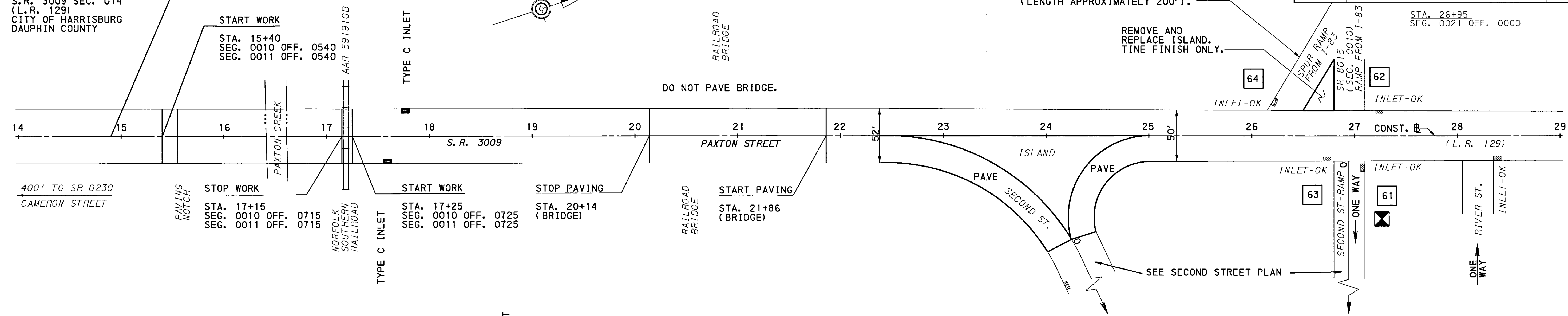
START WORK
 STA. 17+25
 SEG. 0010 OFF. 0725
 SEG. 0011 OFF. 0725

STOP PAVING
 STA. 20+14
 (BRIDGE)

START PAVING
 STA. 21+86
 (BRIDGE)

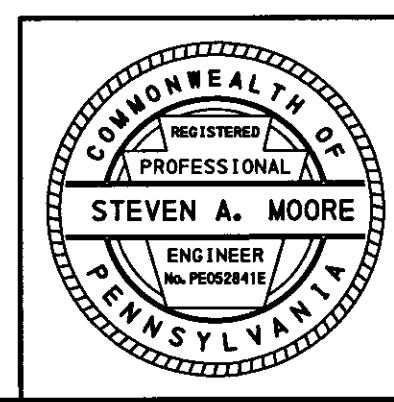
REMOVE AND REPLACE ISLAND. TIME FINISH ONLY.

STA. 26+95
 SEG. 0021 OFF. 0000



LEGEND
 □ CURB RAMP
 ⊠ SIGNALIZED INTERSECTION

SCALE
 HORIZONTAL 0 50 100 FEET



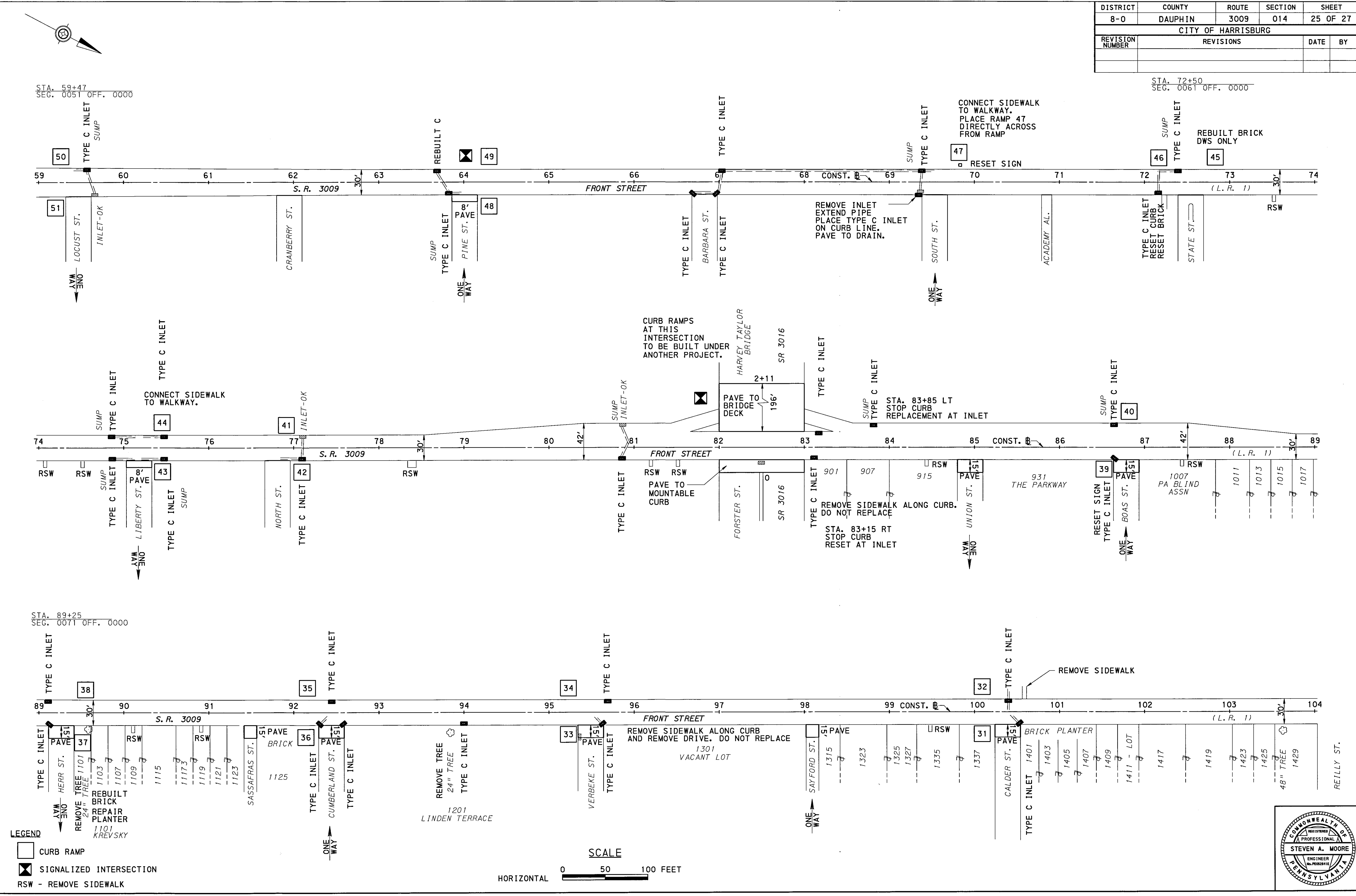
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DISTRICT	COUNTY	ROUTE	SECTION	SHEET
8-0	DAUPHIN	3009	014	25 OF 27
CITY OF HARRISBURG				
REVISION NUMBER	REVISIONS	DATE	BY	

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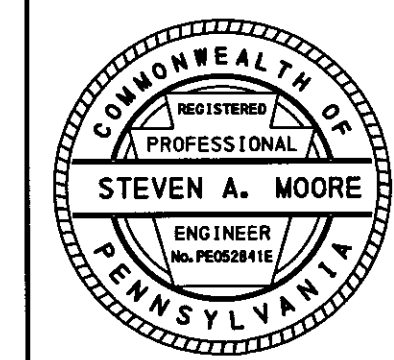
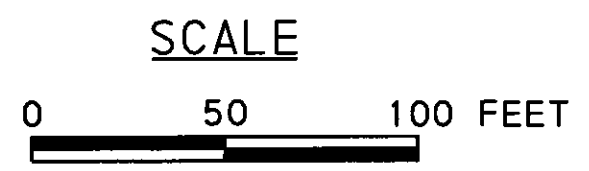
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LEGEND

- CURB RAMP
- SIGNALIZED INTERSECTION
- RSW - REMOVE SIDEWALK

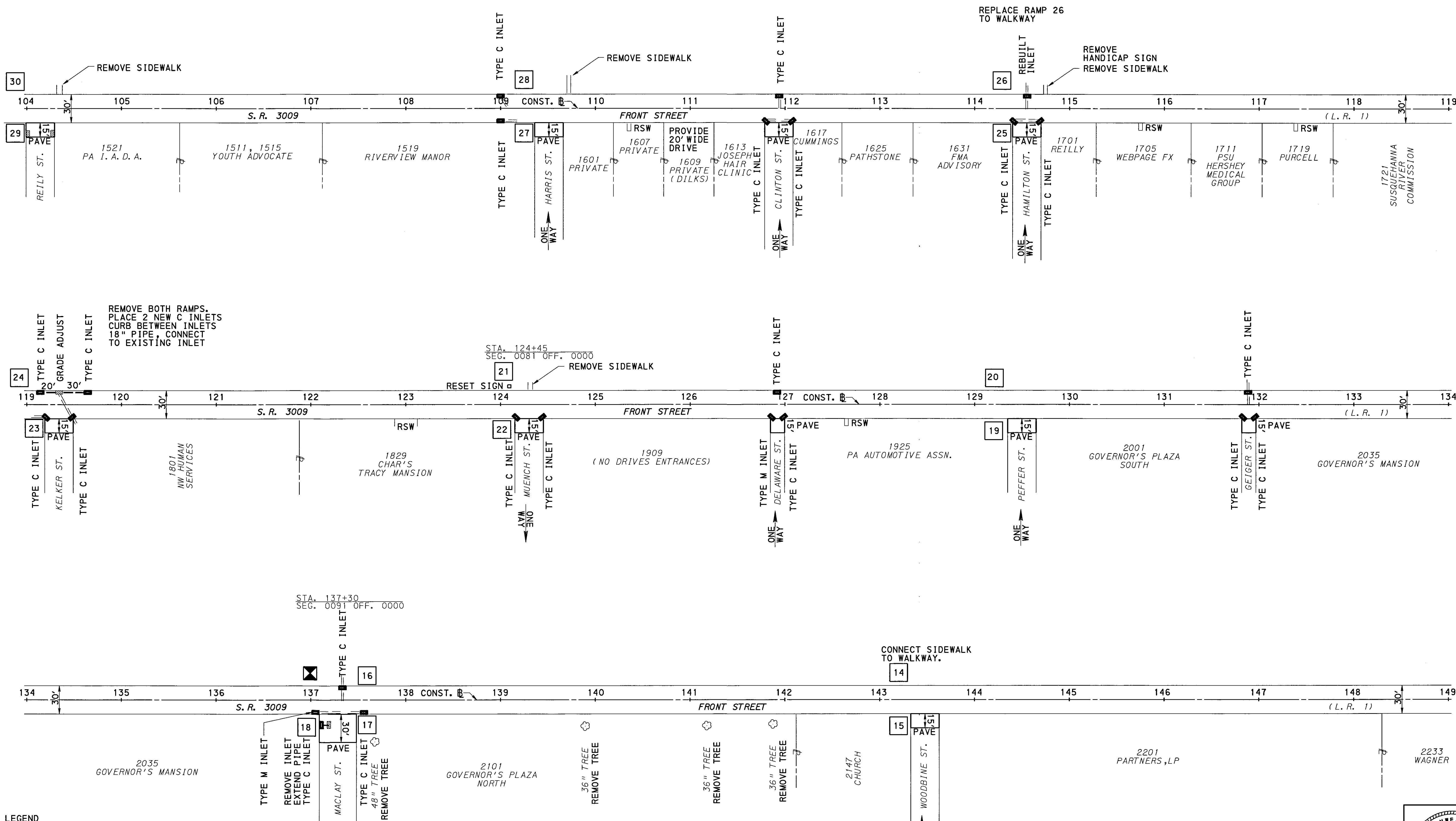


DISTRICT	COUNTY	ROUTE	SECTION	SHEET
8-0	DAUPHIN	3009	014	26 OF 27
CITY OF HARRISBURG				
REVISION NUMBER	REVISIONS	DATE	BY	

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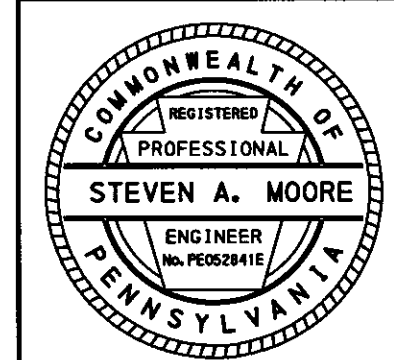
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LEGEND
 CURB RAMP
 SIGNALIZED INTERSECTION
 RSW - REMOVE SIDEWALK

SCALE
 HORIZONTAL 0 50 100 FEET

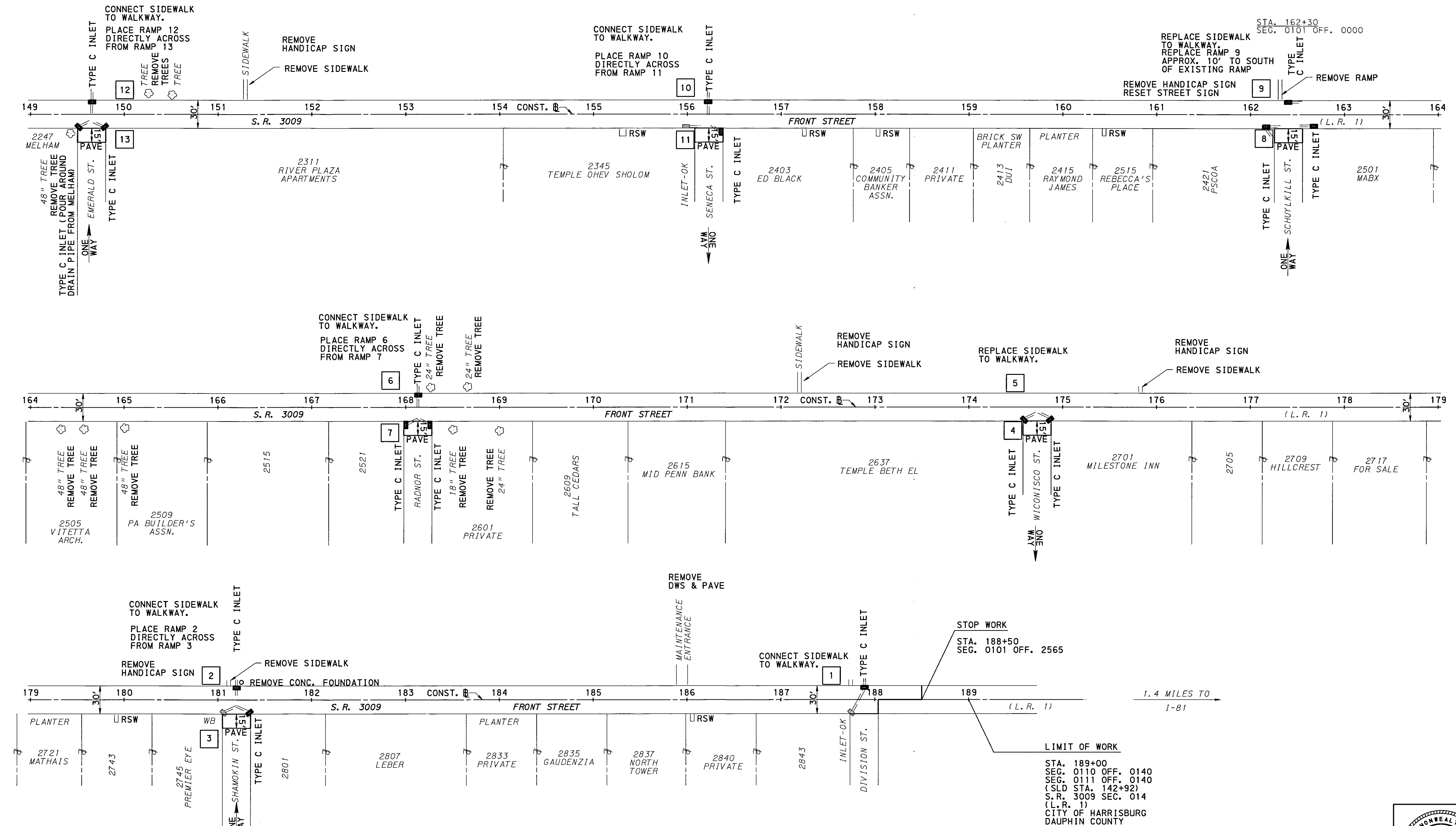


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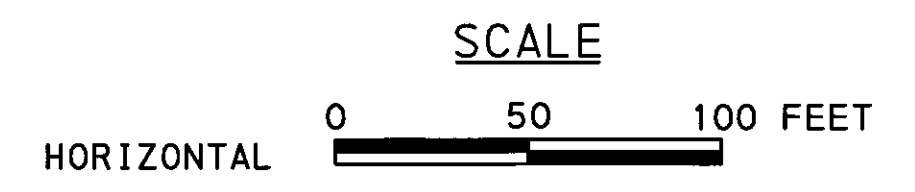
DISTRICT	COUNTY	ROUTE	SECTION	SHEET
8-0	DAUPHIN	3009	014	27 OF 27
CITY OF HARRISBURG				
REVISION NUMBER	REVISIONS	DATE	BY	



LEGEND

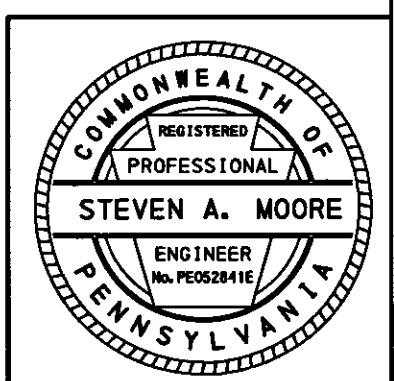
□ CURB RAMP

RSW - REMOVE SIDEWALK



LIMIT OF WORK

STA. 189+00
 SEC. 0110 OFF. 0140
 SEC. 0111 OFF. 0140
 (SLD STA. 142+92)
 S.R. 3009 SEC. 014
 (L.R. 1)
 CITY OF HARRISBURG
 DAUPHIN COUNTY



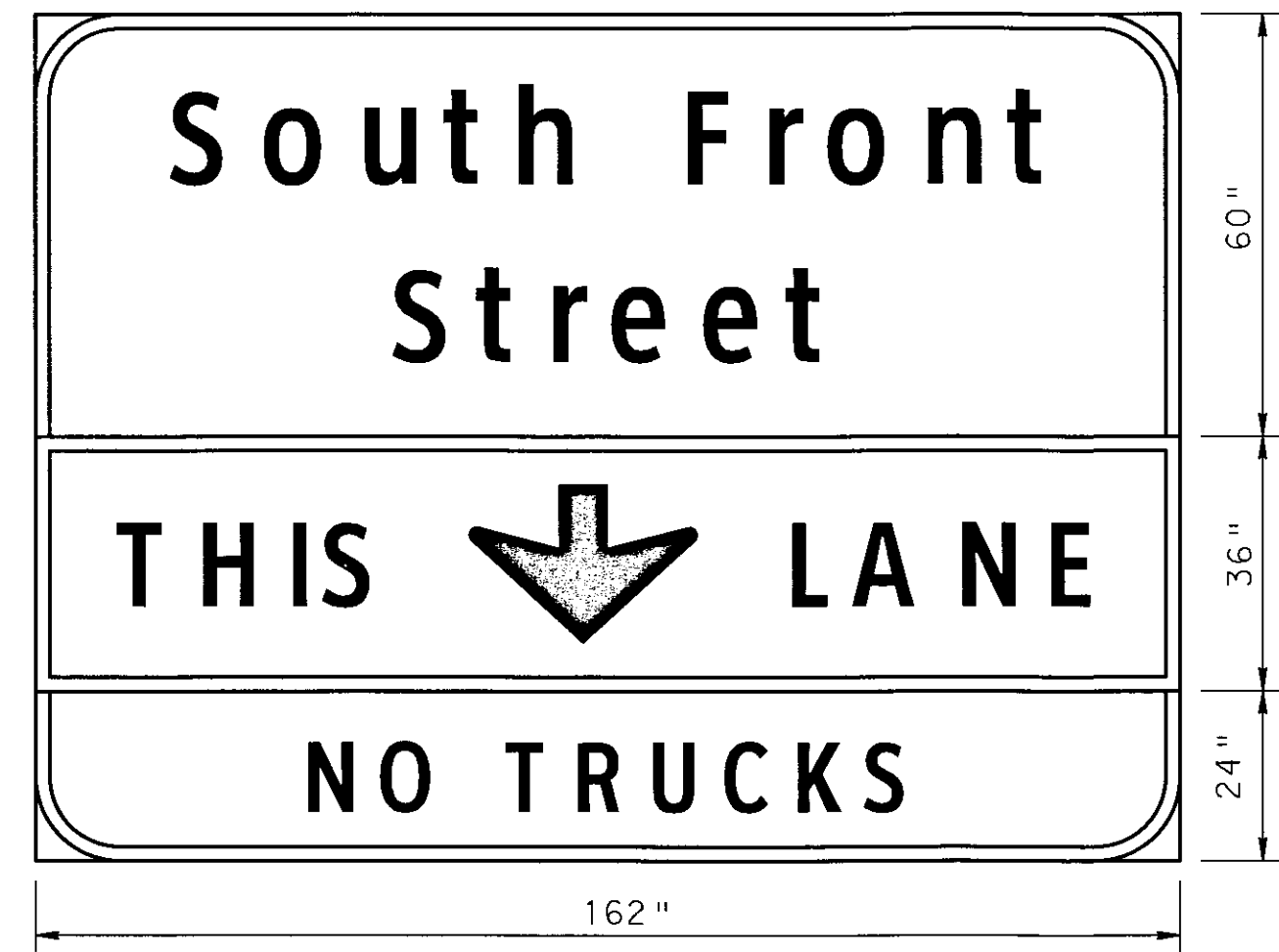
DISTRICT	COUNTY	ROUTE	SECTION	SHEET
8 -0	DAUPHIN	3009	014	1 OF 6
CITY OF HARRISBURG				
REVISION NUMBER	REVISIONS	DATE	BY	

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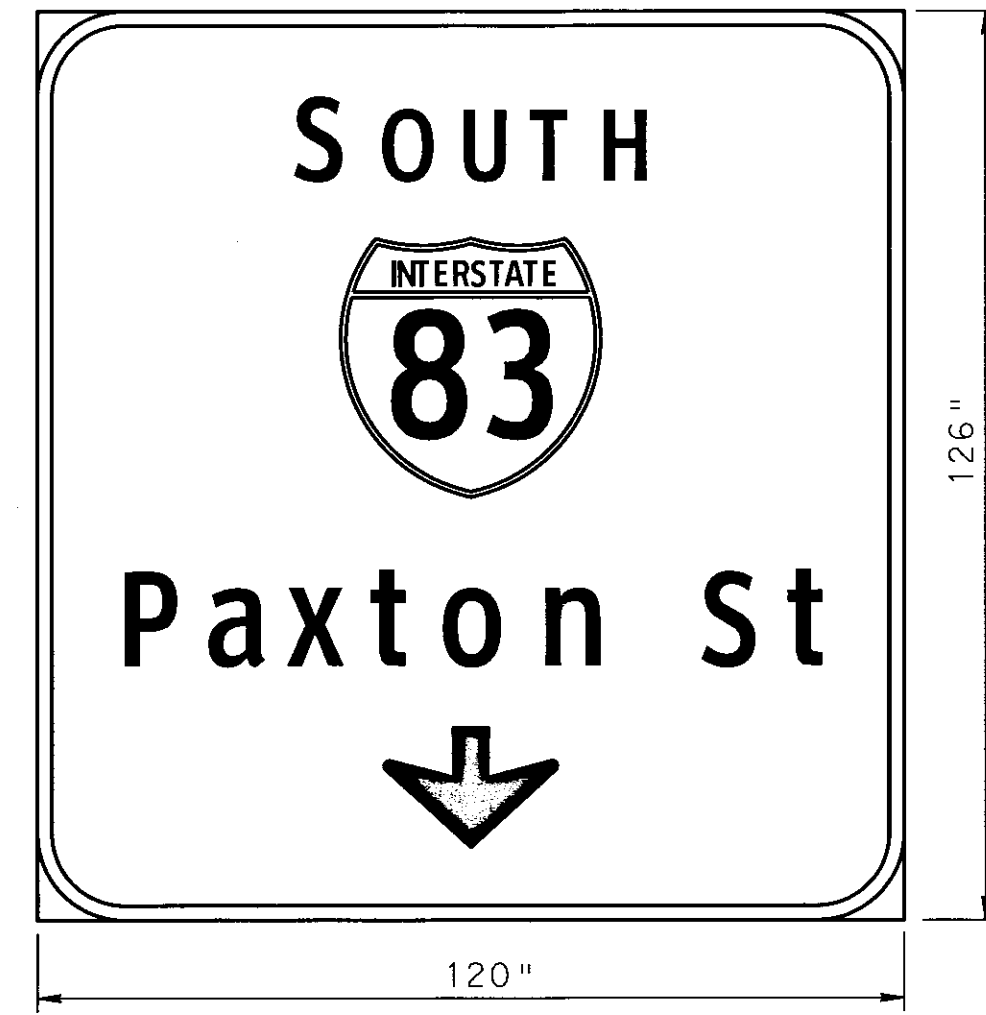
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DETAIL (1)



ITEM NO. 0936-0001 STA. 44+75 LT.
 [South Front] [STREET], WHITE ON GREEN
 [THIS] [LANE], BLACK AND YELLOW
 [NO TRUCKS], BLACK ON WHITE

DETAIL (2)



ITEM NO. 0936-0001 STA. 44+75 RT.
 WHITE ON GREEN

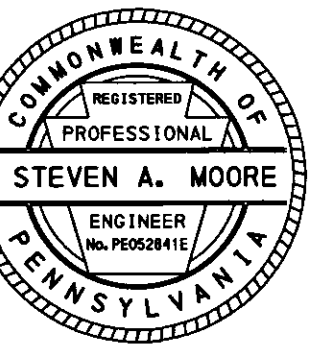
DETAIL (3)



ITEM NO. 0936-0001 STA. 44+75 CL.
 WHITE ON GREEN

- GENERAL NOTES:
1. PLACEMENT OF TEMPORARY MARKINGS AND/OR REMOVAL OF TEMPORARY MARKINGS PRIOR TO THE APPLICATION OF FINAL EPOXY (OR THERMOPLASTIC) MARKINGS IS INCIDENTAL TO THE EPOXY (OR THERMOPLASTIC) MARKINGS. EPOXY (OR THERMOPLASTIC) MARKINGS MAY ONLY BE PLACED OVER TEMPORARY MARKINGS THAT ARE 8 MILS OR LESS IN THICKNESS. WEEKLY RETROREFLECTOMETER READINGS OF THE TEMPORARY MARKINGS MUST BE TAKEN BY THE CONTRACTOR IF TEMPORARY MARKINGS THAT ARE 8 MILS OR LESS ARE INSTALLED. MAINTAIN A MINIMUM RETROREFLECTOMETER READING OF 125 MCD/M2^LUX FOR THE DURATION THAT THE TEMPORARY MARKINGS ARE IN PLACE. ANY REAPPLICATION OF TEMPORARY MARKINGS REQUIRED FOR FAILURE TO MAINTAIN THE MINIMUM RETROREFLECTOMETER READING WILL BE INCIDENTAL TO THE EPOXY (OR THERMOPLASTIC) PAVEMENT MARKINGS. IF TEMPORARY MARKINGS GREATER THAN 8 MILS ARE APPLIED, ALL TEMPORARY MARKINGS MUST BE REMOVED AS PER PDT PUB. 408 SECTION 963 PRIOR TO THE INSTALLATION OF THE EPOXY (OR THERMOPLASTIC) MARKINGS.

PREPARED BY:
 DISTRICT 8-0
 HIGHWAY
 DESIGN UNIT



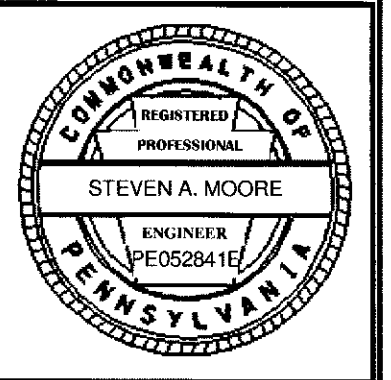
SIGNING AND PAVEMENT MARKING PLAN

TABULATION OF QUANTITIES

SIGNING AND PAVEMENT MARKING PLAN

REVISION NO	REVISIONS	DATE	BY	DISTRICT	COUNTY	ROUTE	SECTION	SHEET
				8-0	DAUPHIN	3009	014	5 OF 6
CITY OF HARRISBURG								

ARROW PANEL	REMARKS	SIDE	STATIONS
0901 0203 EACH	MACLAY STREET SIGNAL		
0901 0320 LF			137+30.00
0901 0330 LF	10' CROSSWALKS AND STOPS BARS		137+30.00
0901 0334 LF	CENTER 2 SIGNS ON NEW LANES (CANTILEVER STRUCTURE, STA. 139+05). REMOVE ONE SIGN.		137+30.00
0901 0480 EACH	R3-8A (LS-S), 30"X30"		137+30.00
0931 0001 SF	TEMPORARY STOPS BARS (3-TIMES)		137+30.00
0836 0200 SF			
0941 0001 EACH			
0936 0101 LF	S.R. 3009-014 (BOAS TO DIVISION)		
0960 0002 LF	SOUTH AND FRONT STREET SIGN	LT	69+75.00
0980 0005 LF	CROSSWALKS FOR SIDE STREETS. INCLUDES UNION STREET	RT	86+25.00 TO 188+50.00
0960 0021 LF	MILLED SURFACE. PLACE NEW 2-LANE PATTERN.		86+25.00 TO 188+50.10
0980 0022 LF	SCRATCH. PLACE NEW 2-LANE PATTERN.		86+25.00 TO 188+50.20
0963 0001 SF	WEARING. PLACE NEW 2-LANE PATTERN.		86+25.00 TO 188+50.30
0985 0220 EACH	FINAL WEARING. PLACE NEW 2-LANE PATTERN.		86+25.00 TO 188+50.40
0965 0228 EACH	BOAS AND FRONT STREET SIGN	RT	86+55.00
0971 0001 EACH	REMOVE HANDICAP SIGNS. 114+30, 151+30, 162+20, 172+20, 175+80, 181+10	LT	114+30.00 TO 181+10.00
0963 0001 EACH	MOVE SEGMENT MARKER 80 PADDLE TO STREET SIGN	LT	124+00.00
0965 0001 EACH	MUENCH AND FRONT STREET SIGN	LT	124+00.00
0965 0002 EACH	SCHUYLKILL AND FRONT STREET SIGN	LT	162+10.00
	S.R. 3009-014 (FORSTER TO DIVISION)		
1 10000 10000	TRAFFIC CONTROL		89+50.00 TO 188+50.00
	SECOND STREET		
	FINAL WEARING.		0+00.00 TO 15+35.00
3000	TEMPORARY PAINT FOR MILLED SURFACE & SCRATCH. BW/4"		0+00.00 TO 15+35.00
5	R2-1, 24"X30", (25)	LT	1+60.00
5	R2-1, 24"X30", (25)	RT	1+60.00
3.9	R1-2, 36"X36"	LT	3+10.00
3.9	R1-2, 36"X36"	RT	4+50.00
21.25	W12-2, 48"X48", (12'-6"). W16-2P, 24"X18", (1000 FEET). OM1-3, 18"X18"	LT	4+60.00



EROSION AND SEDIMENT POLLUTION CONTROL PLAN

DISTRICT	COUNTY	ROUTE	SECTION	SHEET
8-0	DAUPHIN	3009	014	1 OF 1
CITY OF HARRISBURG				
REVISION NUMBER	REVISIONS		DATE	BY

A. GENERAL CONTROLS

1. DURING THE PRECONSTRUCTION CONFERENCE OR PRIOR TO THE START OF THE APPLICABLE CONSTRUCTION, THE CONTRACTOR SHALL SUBMIT, FOR ACCEPTANCE, AN EROSION CONTROL PLAN OUTLINING THE SCHEDULE FOR ACCOMPLISHMENT OF TEMPORARY AND PERMANENT EROSION AND WATER POLLUTION ABATEMENT. NO WORK SHALL BE STARTED UNTIL THE EROSION CONTROL PLAN SCHEDULES AND METHOD OF OPERATIONS HAVE BEEN APPROVED BY THE ENGINEER.
2. UNDER NO CONDITION SHALL THE SURFACE OF ERODIBLE EARTH MATERIAL EXPOSED AT ONE TIME BY CLEARING AND GRUBBING, EXCAVATION, BORROW OR EMBANKMENT WITHIN THE RIGHT-OF-WAY EXCEED 43,560 SQUARE FEET WITHOUT PRIOR APPROVAL BY THE ENGINEER. A SECTION IS NOT CONSIDERED AS PART OF THIS SURFACE AREA ONCE STABILIZATION MEASURES (EITHER TEMPORARY OR PERMANENT) ARE ESTABLISHED.
3. IF THERE ARE OMISSIONS IN THE DESIGN OR IF POOR PERFORMANCE OF EROSION CONTROL MEASURES ARE DISCOVERED DURING CONSTRUCTION, THE ENGINEER WILL TAKE IMMEDIATE STEPS FOR CORRECTION INCLUDING NOTIFICATION OF THE APPROPRIATE AGENCY TO AVOID A RECURRENCE OF THE PROBLEM. WHEN THE ENGINEER DETERMINES ANY EROSION CONTROL MEASURES ARE NECESSARY THAT WERE NOT FORESEEN IN THE DESIGN STAGE, HE SHOULD ESTIMATE THE EROSION POTENTIAL AND SELECT MEASURES ON THE BASIS OF BOTH THE EFFECTIVENESS OF THE CONTROL MEASURES AND CONSEQUENCES OF THE EROSION. WEATHER CONDITIONS AT THE TIME OF CONSTRUCTION AND TYPE OF SOILS MUST BE CONSIDERED IN SELECTING THE MEANS OF CONTROL.

B. TEMPORARY CONTROLS

1. DURING CONSTRUCTION, THE ROADWAY WILL BE MAINTAINED IN SUCH CONDITION THAT IT WILL BE WELL DRAINED AT ALL TIMES AND WITHOUT EROSION.
2. PRIOR TO SUSPENSION OF CONSTRUCTION OPERATIONS FOR ANY APPRECIABLE LENGTH OF TIME, THE CONTRACTOR WILL BE REQUIRED TO SHAPE THE TOP OF EARTHWORK IN SUCH A MANNER AS TO ALLOW RUNOFF OF RAINWATER WITHOUT EROSION. EARTH DIKES MAY BE REQUIRED ALONG THE TOP EDGE OF EMBANKMENTS TO INTERCEPT RUNOFF WATER FROM CUTS AND FROM EMBANKMENTS WHICH ARE LOCATED IN THE IMMEDIATE VICINITY OF ANY STREAM, CHANNEL, POND, DITCH OR OTHER DRAINAGE FACILITY.
3. SEEDING WITH TEMPORARY COVER WILL BE USED ON EXPOSED SLOPES THAT CANNOT BE PERMANENTLY SEEDED BECAUSE OF UNFAVORABLE SEEDING TIME OR TO ELIMINATE EXPOSED SURFACE AREA. RAPIDLY GROWING PLANTS, SUCH AS ANNUAL RYE GRASS, SMALL GRAIN, SUDAN GRASS, AND FIELD BROME GRASS CAN BE USED AS TEMPORARY COVER.
4. ANY DISTURBED ARE ON WHICH ACTIVITY HAS CEASED AND WHICH WILL REMAIN EXPOSED FOR MORE THAN 20 DAYS MUST BE SEEDED AND MULCHED IMMEDIATELY. DISTURBED AREAS WHICH ARE NOT AT FINISHED GRADE AND WHICH WILL BE REDISTURBED WITHIN 1 YEAR MAY BE SEEDED AND MULCHED WITH A QUICK GROWING TEMPORARY SEEDING MIXTURE AND MULCH. DISTURBED AREAS WHICH ARE EITHER AT FINISHED GRADE OR WILL NOT BE REDISTURBED WITHIN 1 YEAR MUST BE SEEDED AND MULCHED WITH A PERMANENT SEED MIXTURE AND MULCH
5. BALES OF HAY, STRAW, OR SILT BARRIER FENCE WILL BE PLACED AS SHOWN AND, OF APPLICABLE, IN AREAS INDICATED BY THE ENGINEER.
6. TEMPORARY EROSION CONTROL MEASURES SHALL BE CONTINUED UNTIL THE PERMANENT DRAINAGE FACILITIES HAVE BEEN CONSTRUCTED AND THE VEGETATIVE COVER ON SLOPE IS SUFFICIENTLY ESTABLISHED.
7. ALL EROSION AND SEDIMENTATION CONTROLS MUST BE PROPERLY MAINTAINED UNTIL THE SITE IS STABILIZED. MAINTENANCE MUST INCLUDE INSPECTIONS OF ALL EROSION AND SEDIMENTATION CONTROLS AFTER EACH STORM EVENT AND ON A WEEKLY BASIS. ALL PREVENTATIVE AND REMEDIAL MAINTENANCE WORK, INCLUDING CLEAN OUT, REPAIR, REPLACEMENT, REGRADING, RESEEDING REMULCHING AND RENETTING, MUST BE PERFORMED IMMEDIATELY.

C. PERMANENT CONTROLS

1. PERMANENT SEEDING, MULCHING, AND SODDING WILL BE INCORPORATED INTO THE CONSTRUCTION PHASE DURING THE APPROVED PLANTING SEASONS AND IN COMPLIANCE WITH PENNDOT SPECIFICATIONS.
2. PERMANENT SOIL PROTECTION AND DRAINAGE FACILITIES WILL BE COMPLETED AS EARLY AS PRACTICAL, PARTICULARLY INTERCEPTING CHANNELS AND SIMILAR CONTROLS THAT WILL DIVERT RUNOFF FROM WORK AREAS AND UNPROTECTED SOIL.
3. AREAS USED TO OBTAIN BORROW EXCAVATION OR TO DISPOSE OF ANY UNSUITABLE MATERIAL WILL BE SELECTED WITH CONSIDERATION OF EROSION CONTROL. BEFORE ANY EXCAVATION OR DISPOSAL OPERATIONS COMMENCE, PLANS FOR THE CONTROL OF DRAINAGE WATER SHOULD INCLUDE MEASURES TO KEEP SEDIMENT FROM ENTERING DEFINED DRAINAGE AREAS. FINAL RESTORATION OF THE DISTURBED AREA WILL INCLUDE GRADING, ESTABLISHMENT OF VEGETATIVE COVER, OR OTHER NECESSARY TREATMENT THAT WILL BLEND THE AREA INTO THE SURROUNDING LANDSCAPE.
4. TEMPORARY EROSION AND SEDIMENTATION CONTROLS MUST BE REMOVED AFTER FINAL SITE STABILIZATION HAS BEEN ACHIEVED. AREAS DISTURBED DURING REMOVAL OF THE CONTROLS MUST BE STABILIZED.

D. EROSION AND SEDIMENTATION CONTROL MATERIALS

1. ALL MATERIALS AND PROCEDURES FOR ACCOMPLISHING THE REQUIRED SOIL EROSION AND SEDIMENTATION CONTROL WILL CONFORM TO PENNSYLVANIA DEPARTMENT OF TRANSPORTATION SPECIFICATIONS, PUBLICATION 408, SECTION 212, SECTION 735, AND SECTION 800, AND PUBLICATION 72, ROADWAY CONSTRUCTION STANDARD DRAWINGS.
2. ADHERE TO MANUFACTURE'S RECOMMENDATIONS FOR REPLACING FILTER FABRIC DUE TO WEATHERING.

E. EROSION CONTROL DESIGN

COMPLIES WITH THE REQUIREMENTS OF THE DEPARTMENT OF ENVIRONMENTAL PROTECTION TITLE 25- RULES AND REGULATIONS, PART 1, SUBPART C, ARTICLE 11 AND CHAPTER 102. IN THE EVENT OF CONFLICT BETWEEN THESE REQUIREMENTS AND POLLUTION CONTROL LAWS, RULES, OR REGULATIONS OF OTHER FEDERAL, STATE, OR LOCAL AGENCIES, THE MORE RESTRICTIVE LAWS, RULES, OR REGULATIONS APPLY.

F. EROSION CONTROL ITEMS REQUIRED WITH THIS PLAN ARE AS FOLLOWS:

UNFORESEEN WATER POLLUTION CONTROL
TOPSOIL FURNISHED AND PLACED
SEEDING AND SOIL SUPPLEMENTS - FORMULA B MODIFIED

G. GENERAL COMMENTS

1. THE CONTRACTOR SHALL NOTIFY THE CONSERVATION DISTRICT AT LEAST 2 WEEKS BEFORE THE DATE THAT ON SITE EARTHWORK OPERATIONS INCLUDING CLEARING AND GRUBBING WILL BEGIN.
2. A COPY OF THE EROSION AND SEDIMENT POLLUTION CONTROL PLAN MUST BE AVAILABLE AT THE SITE OF THE EARTH MOVING ACTIVITY DURING CONSTRUCTION AND UNTIL THE SITE IS STABILIZED.
3. THE CONTRACTOR IS RESPONSIBLE FOR THE PROPER CONSTRUCTION, STABILIZATION, AND MAINTENANCE OF ALL EROSION AND SEDIMENTATION CONTROLS AND RELATED ITEM INCLUDED WITHIN THE PERMITS.
4. EROSION AND SEDIMENTATION CONTROLS MUST BE CONSTRUCTED, STABILIZED AND FUNCTIONAL BEFORE GENERAL SITE DISTURBANCE WITHIN THE TRIBUTARY AREAS OF THOSE CONTROLS.

H. SITE SPECIFIC COMMENTS

1. THE CONTRACTOR SHALL SUBMIT, FOR REVIEW AND APPROVAL BY THE DEPARTMENT AND THE CONSERVATION DISTRICT, A COMPLETE SCHEDULE OF INSTALLATION OF THE EROSION CONTROL MEASURES AND FACILITIES AS THEY RELATE TO THE VARIOUS PHASES OF EARTHMOVING ACTIVITIES. ALL OF THE STEPS TO BE TAKEN FROM INITIAL SITE CLEARING THROUGH FINAL STABILIZATION MUST BE INCLUDED.
2. ROCK DAM FILTERS WILL BE REMOVED WHEN CLOGGED WITH SEDIMENTS. MATERIALS MUST BE WASHED COMPLETELY FREE OF ALL FOREIGN MATERIALS OR NEW ROCK USED TO REBUILD THE FILTER.
3. ALL PERMANENT OUTLETS WILL BE INSPECTED, CLEARED AND REPAIRED TO FINAL ELEVATIONS AFTER ALL STORM EVENTS DURING CONSTRUCTION AND AFTER STABILIZATION IS COMPLETED.
4. STORMWATER INLETS MUST BE PROTECTED UNTIL THE TRIBUTARY AREAS ARE STABILIZED.

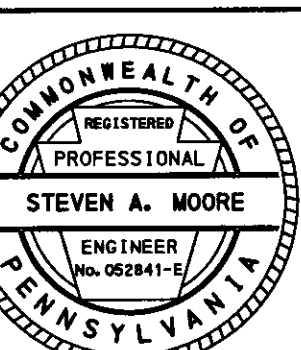
I. REVISIONS

PERMIT REVISIONS ARE REQUIRED WHEN THE CONTRACTOR PROPOSED TO CHANGE CONTROL MEASURES AND/OR FACILITIES FROM THOSE ORIGINALLY APPROVED IN THE PERMITTED EROSION AND SEDIMENT POLLUTION CONTROL PLAN. THE REVISIONS MUST BE SUBMITTED BY THE CONTRACTOR, WITH A COPY TO THE DISTRICT 8 DESIGN UNIT AND TO THE COUNTY CONSERVATION DISTRICT FOR REVIEW AND APPROVAL PRIOR TO IMPLEMENTING THE CHANGE.

DAUPHIN COUNTY CONSERVATION DISTRICT
1451 PETERS MOUNTAIN ROAD
DAUPHIN, PA. 17081
TELEPHONE: 717-921-8100

PENNSYLVANIA DEPARTMENT OF TRANSPORTATION
DISTRICT 8 DESIGN UNIT
2140 HERR STREET
HARRISBURG, PA. 17103-1699
TELEPHONE: 717-783-3773
ATTENTION: DOUG MURPHY

PREPARED BY:
DISTRICT 8-0
HIGHWAY
DESIGN UNIT



FILE NAME: G:\s4\22300901\4\22-3009-014\MaClay Street Files\SIGNAL PLAN.dgn

PLOTTED: 26-AUG-2014 11:17

D-9012 CADD (02-90) REVISED (10-04)

MOVEMENT, SEQUENCE AND TIMING									EMERGENCY FLASHING	
PHASE	INTERVAL	1	2	3	4	5	6	7		8
1,2	G	G	Y	R	R	R	R	R	R	Y
3,4	R	R	R	R	G	G	Y	R	R	R
5,6	H	H	H	H	M	FH	H	H	H	OFF
7,8	M	FH	H	H	H	H	H	H	H	OFF
FIXED			4	1.5			3	2		
MINIMUM SEC/ACT		3				3				
MAX INIT		-				-				
PASSAGE		3				3				
TTR		-				-				
TBR		-				-				
MIN GAP		-				-				
MAX 1		40				40				
PEDESTRIAN *		10	11			9	9			
MEMORY		NON-LOCKING			MIN. RECALL					

* UPON PEDESTRIAN ACTUATION ONLY, OTHERWISE "H" AT ALL OTHER TIMES.

SIGNAL IS INTERCONNECTED WITH ADJACENT SIGNAL AT MACLAY STREET AND N. SECOND STREET

DETECTOR NOTES

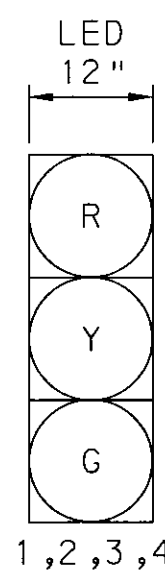
DETECTORS 4a, 4b CALLS & EXTENDS PHASE 4, PRESENCE DETECTOR 6 EXTENDS PHASE 6, PRESENCE DETECTORS 7 & 8 PLACE A CALL ON PHASE 6 DETECTORS 9 & 10 PLACE A CALL ON PHASE 6

CONSTRUCTION NOTES

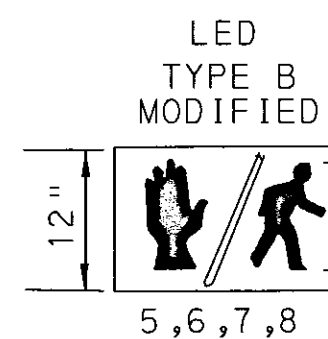
- REPLACE LOOPS 4a AND 4b. NEW SIGN **G** AND CENTER SIGNS **E** AND **F** ON NEW LANES.

SIGNS

PLAN SYMBOL	DESCRIPTION	SIZE W X H	SERIES DESIGNATION
A	MaClay St	72"x16"	D3-4
B	N Front St	84"x16"	D3-4
C	EDUCATIONAL PUSH BUTTON →	9"x12"	R10-3B(R)
D	EDUCATIONAL PUSH BUTTON ←	9"x12"	R10-3B(L)
E	LANE USE CONTROL SIGN (LS)	30"x36"	R3-6LS
F	STRAIGHT-THROUGH SIGN	30"x36"	R3-5S
G	LANE USE CONTROL SIGN (LS-S)	30"x30"	R3-8A(LS-S)
H	NO PEDESTRIAN CROSSING	24"x24"	R9-3A
I	← ONE WAY	30"x36"	R6-2L



SIGNAL INDICATIONS



BACKPLATES ON ALL OVERHEAD SIGNALS SIGNALS 1,2,3,4 TO BE EQUIPPED WITH TUNNEL VISORS.

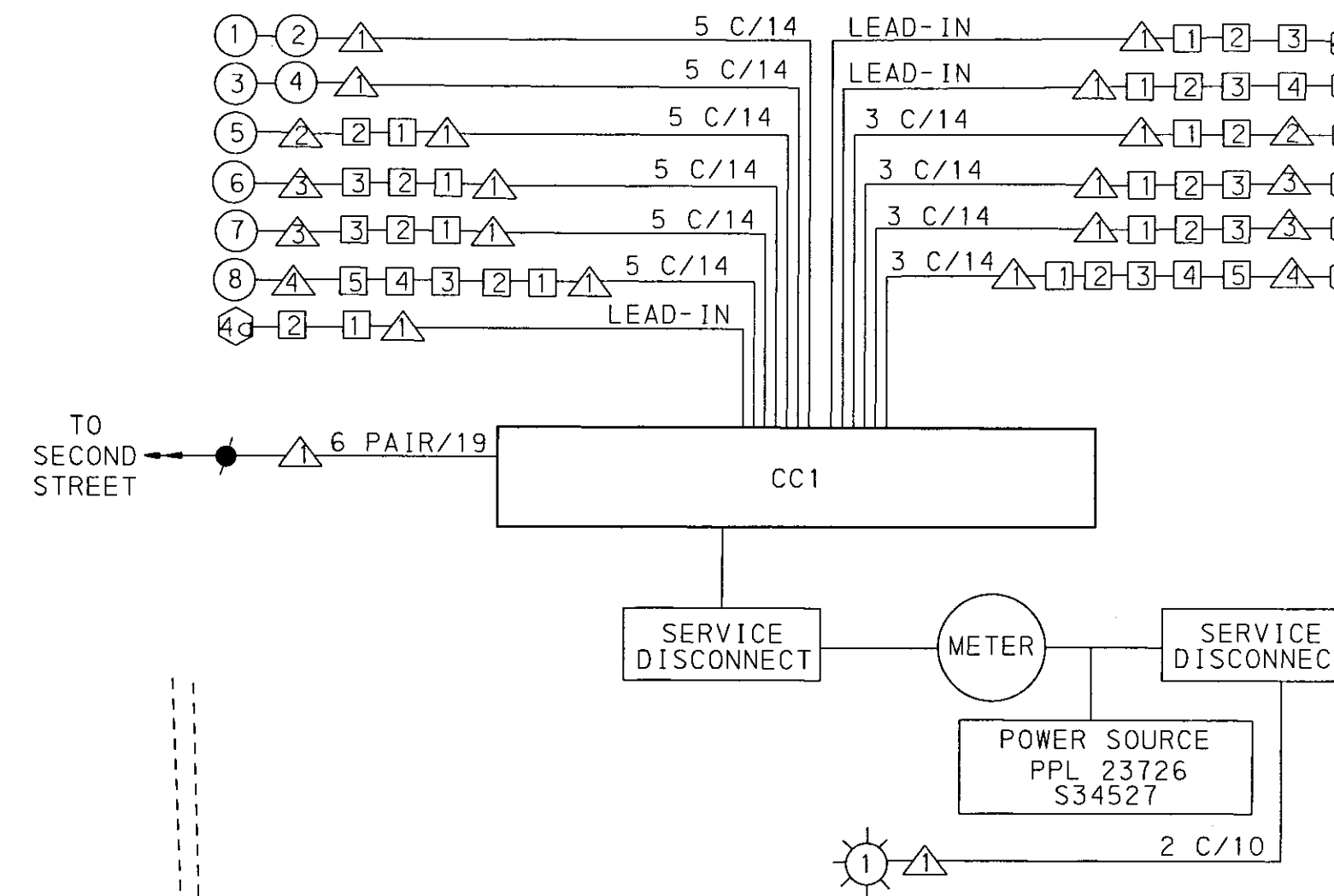
WIRING DIAGRAM LEGEND

- (A) SIGNAL HEAD
- (J) JUNCTION BOX
- (T) TRAFFIC SIGNAL SUPPORT
- (D) DETECTOR
- CC1 - CONTROLLER
- (U) UTILITY POLE
- 3 C/14 - CABLE (NO. OF CONDUCTORS/SIZE AWG)

N. SECOND STREET. SEE INTERCONNECT PLAN FOR FURTHER INFO.

DISTRICT	COUNTY	ROUTE	SECTION	SHEET
8-0	DAUPHIN	3009	014	1 OF 1
CITY OF HARRISBURG				
REVISION NUMBER	REVISIONS		DATE	BY

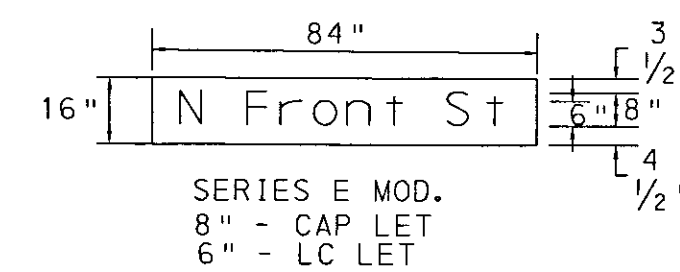
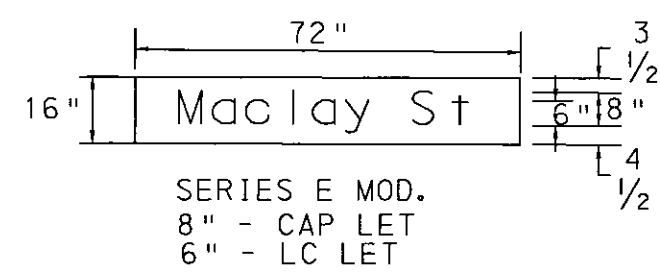
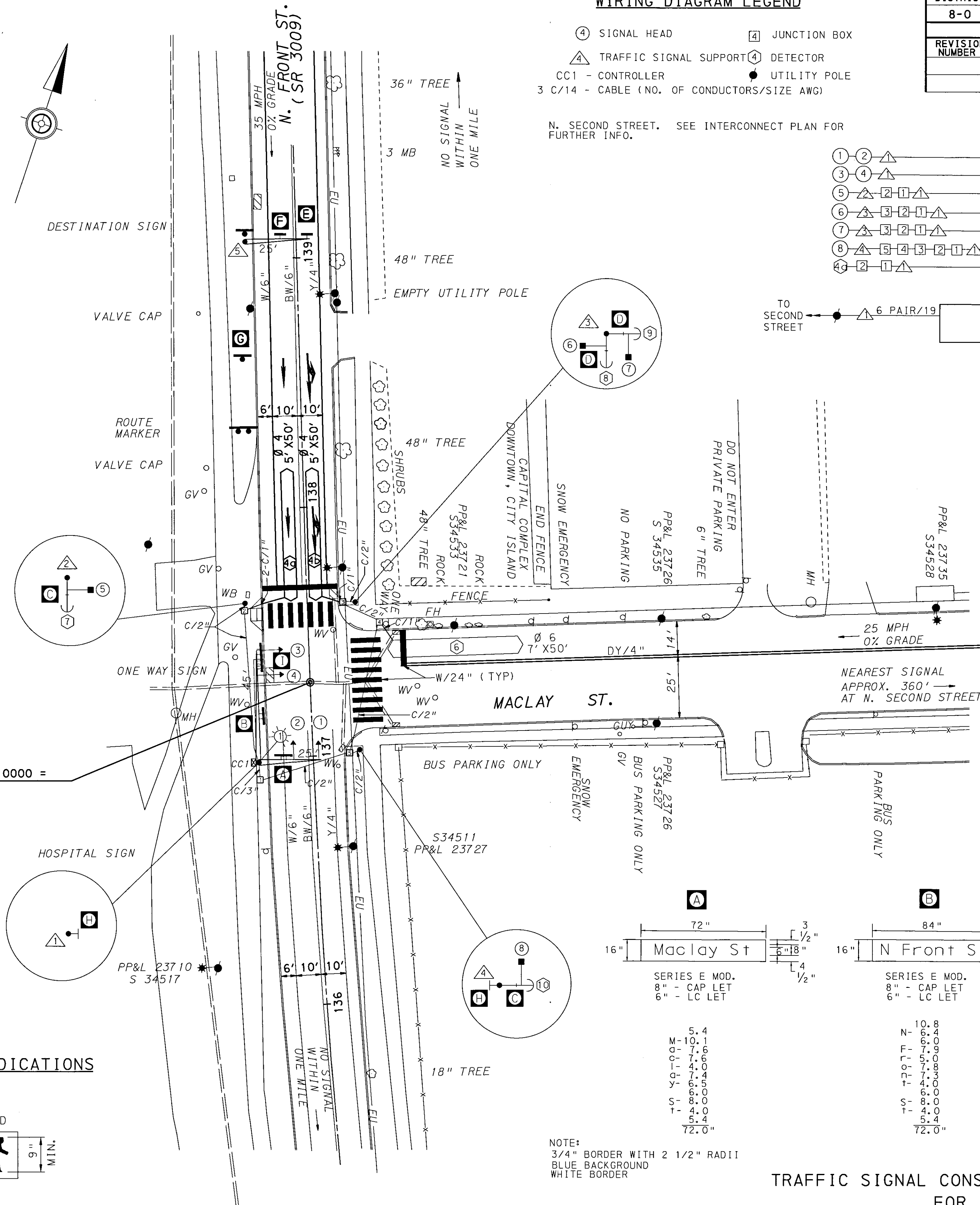
WIRING DIAGRAM



LEGEND

- (A) MAST ARM
- (B) PEDESTAL
- (C) VEHICULAR SIGNAL HEAD
- (D) PEDESTRIAN SIGNAL HEAD
- (E) GROUND MOUNTED SIGN
- (F) VEHICLE DETECTOR
- (G) PEDESTRIAN PUSH BUTTON/SIGN
- (H) JUNCTION BOX
- (I) CC1 CONTROLLER ASSEMBLY
- C/2" CONDUIT SIZE
- W/4" SOLID WHITE LINE/WIDTH
- BW/4" BROKEN WHITE LINE/WIDTH
- DW/4" DOTTED WHITE LINE/WIDTH
- Y/4" SOLID YELLOW LINE/WIDTH
- BY/4" BROKEN YELLOW LINE/WIDTH
- DY/4" DOUBLE SOLID YELLOW LINE/WIDTH
- (L) LUMINAIRE
- (P) PAINTED PAVEMENT ARROW
- (M) MAST ARM MOUNTED SIGN PANEL

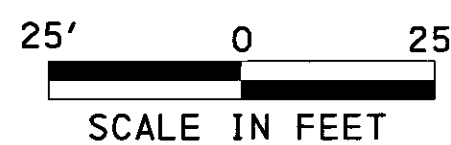
SEG. 0091 OFF. 0000 = STA. 137+30



- N- 5.4
- D- 10.1
- O- 7.6
- I- 4.0
- P- 7.4
- T- 6.0
- S- 8.0
- L- 4.0
- 5.4
- 72.0"

- N- 10.8
- D- 6.2
- O- 7.6
- I- 5.0
- P- 7.8
- T- 4.0
- S- 6.0
- L- 4.0
- 5.4
- 72.0"

NOTE: 3/4" BORDER WITH 2 1/2" RADII! BLUE BACKGROUND WHITE BORDER



TRAFFIC SIGNAL CONSTRUCTION PLAN FOR MACLAY STREET AND FRONT STREET (SR 3009) (REVISED FROM 3-LANES TO 2-LANES)

PREPARED BY:
DISTRICT 8-0
HIGHWAY DESIGN UNIT

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