Alexandria Waterfront
Traffic Impact Study

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Table of Contents

1. INTRODUCTION 1
   1.1 INTRODUCTION 1
   1.2 PURPOSE OF REPORT AND STUDY OBJECTIVES 1
   1.3 STUDY METHODOLOGY AND ASSUMPTIONS 3
   1.4 PROPOSED DEVELOPMENT 4
2. EXISTING CONDITIONS 5
   2.1 EXISTING TRAFFIC NETWORK 5
   2.2 EXISTING TRAFFIC OPERATIONS 7
   2.3 CAPACITY AND LEVEL OF SERVICE 8
   2.4 BICYCLE FACILITIES 11
   2.5 KING STREET TROLLEY 13
   2.6 MOTORCOACHES 13
   2.7 WATER ACCESS 15
   2.8 OLD TOWN ALEXANDRIA PARKING STUDY 15
   2.9 KING ST. AT WASHINGTON ST. EXCLUSIVE PEDESTRIAN PHASE 16
3. FUTURE NO-BUILD CONDITIONS (YEAR 2030) 17
   3.1 FUTURE NO-BUILD CONDITIONS (YEAR 2030) 17
4. FUTURE BUILD CONDITIONS (YEAR 2030) 20
   4.1 TRIP GENERATION AND DISTRIBUTION 20
   4.2 TRAFFIC ANALYSIS 24
5. RECOMMENDATIONS 27
   5.1 COMPARISON OF NO-BUILD ACTIONS WITH BUILD 29

LIST OF TABLES

Table 1 - Pedestrian volumes 7
Table 2 - Level of Service Criteria 8
Table 3 - Traffic Analysis Results: Existing Conditions (Year 2009) 9
Table 4 - King Street Trolley Average Daily Usage 13
Table 5 - Windows of Old Town Condominiums Trip Generation 17
Table 6 - Traffic Analysis Results: No-Build Conditions (Year 2030) 18
Table 7 - Alexandria Waterfront Trip Generation by Land Use 21
Table 8 - Alexandria Waterfront Trip Generation by Site 22
Table 9 - Traffic Analysis Results: Build Conditions (Year 2030) 25
Table 10 - Traffic Analysis Results: Comparison of No-Build Action with Build 29

Table of Contents (Continued)

LIST OF FIGURES

FIGURE 1 – STUDY AREA AND SITE LOCATION 2
FIGURE 2 – FUNCTIONAL CLASSIFICATION AND 2008 ADT 6
FIGURE 3 – EXISTING PEAK HOUR VOLUMES 10
FIGURE 4 – BICYCLE ACCESS 12
FIGURE 5 – MOTORCOACH ACCESS 14
FIGURE 6 – NO BUILD (2030) PEAK HOUR 19
FIGURE 7 – TRIP DISTRIBUTION 23
FIGURE 8 – BUILD (2030) PEAK HOUR 26

APPENDICES

Appendix A Traffic Counts
Appendix B Traffic Analysis Printouts
Appendix C Bicycle Traffic Counts
Appendix D Total Ridership Data -Trolley 2009

Acronyms and Abbreviations

ADT	Average Daily Traffic
HCM	Highway Capacity Manual
ITE	Institute of Transportation Engineers
ITS	Intelligent Transportation System
LOS	Level of Service
sec/veh	Seconds per Vehicle
SF	Square Feet
SOV	Single Occupant Vehicle
T&ES	Transportation & Environmental Services
TIP	Transportation Improvement Program
VDOT	Virginia Department of Transportation
W&OD	Washington & Old Dominion Trail

1. Introduction

1.1 Introduction

On the western shore of the Potomac River lies the waterfront district of historic Old Town Alexandria. The Alexandria waterfront is a vibrant mix of residential, retail and office space along with visitor, historic and recreational destinations. Visitors and residents alike use numerous modes of transportation, ranging from personal automobile, bicycling and walking, as well as mass transit, bus and now trolley car, to access the area's many amenities.

To ensure the future vitality of the waterfront, the City is undertaking an extensive master planning exercise. A central component of the master planning efforts is to analyze the City's transportation network to determine redevelopment impacts. By examining existing and projected traffic scenarios, the City can better serve the community by refining its waterfront framework.

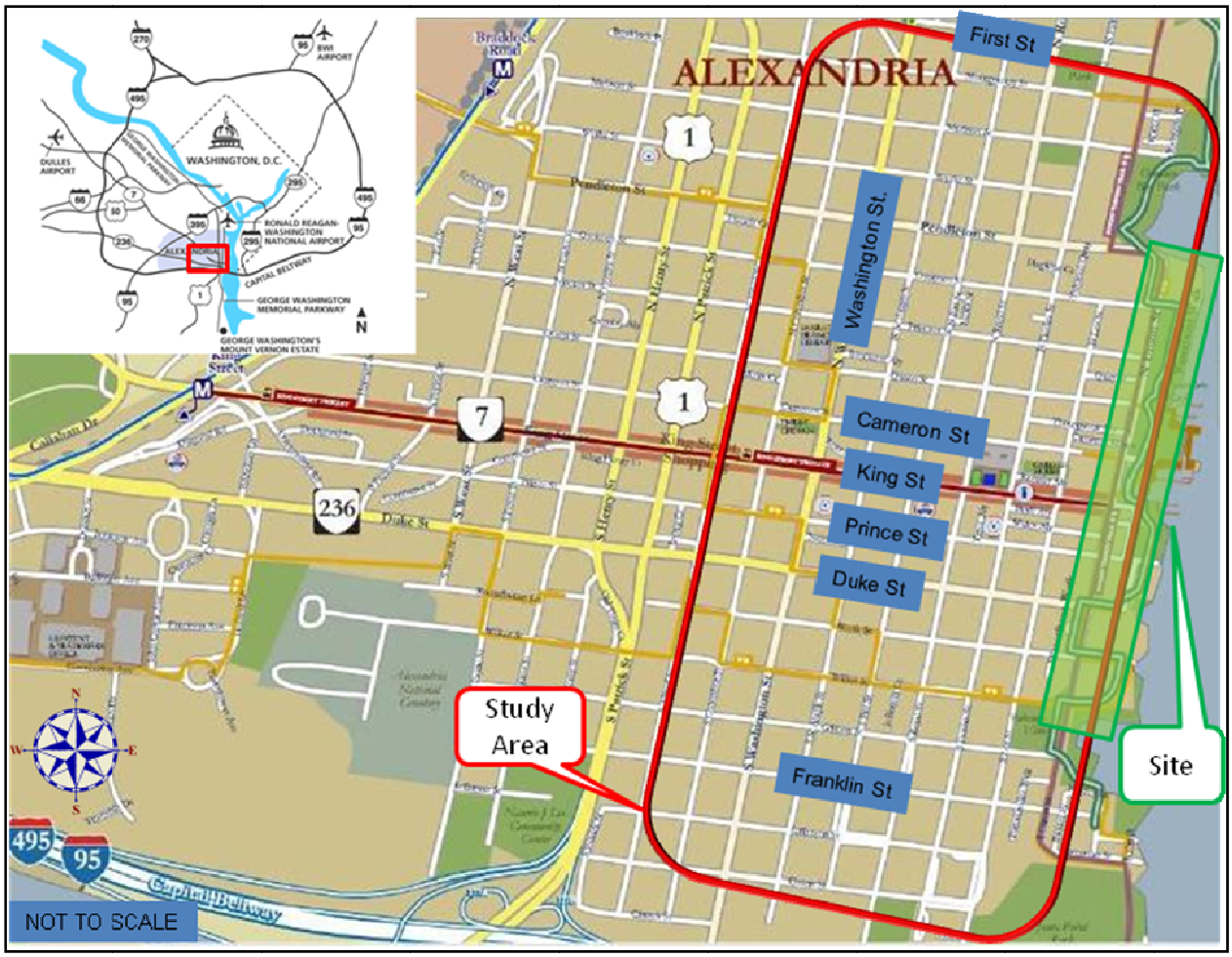
This report presents existing transportation conditions, projected future service levels with and without waterfront redevelopment, and recommendations to improve the flow of traffic within the study area.

1.2 Purpose of Report and Study Objectives

AECOM Transportation, in collaboration with AECOM Design+Planning (formerly EDAW), has prepared a traffic impact study as part of the Alexandria Waterfront Master Planning project. The primary purpose of this study is to determine the traffic impacts of the preferred waterfront development concept. To this effect, the report examines and presents existing and proposed physical conditions, as well as future build and no-build scenarios and their respective impact on local traffic. Recommendations are provided to assist the City in advancing a planning framework.

This study examines traffic impacts on key streets and intersections pertinent to accessing the Alexandria waterfront. To capture transportation movements and concerns that affect the waterfront area, the traffic impact area is a much larger study area than just the waterfront. The Traffic Impact Study Area encompasses a street grid of Old Town Alexandria extending from the Potomac River to the east, Washington Street to the west, First Street to the north and Franklin Street to the south. The Alexandria Waterfront redevelopment area is adjacent to the Potomac River, and lies within the larger traffic study area as shown in **Figure 1**.

FIGURE 1 – STUDY AREA AND SITE LOCATION



Within this larger study area, AECOM and City staff identified six key intersections (see section 1.3) for study. The following three (3) scenarios were examined at the six intersections:

1. Existing 2009 conditions
2. No-build option for year 2030
3. Waterfront development build out option for year 2030

1.3 Study Methodology and Assumptions

To maintain a focus on traffic impacts associated with the affected project area, AECOM and the City's Transportation & Environmental Services (T&ES) staff made several assumptions, as described below.

1. Traffic counts were conducted during weekday 7:00-9:00AM and 4:00-6:00PM peak periods (Thursday November 19, 2009) and weekend 12:00-2:00PM peak period (Saturday November 21, 2009) at the following six intersections along Washington Street:
    - First Street
    - Cameron Street
    - King Street
    - Prince Street
    - Duke Street
    - Franklin Street
2. Horizon year for the Alexandria waterfront development is 2030.
3. Study consists of a level of service (LOS) analysis for the six intersections. LOS was evaluated for existing conditions (2009), future (2030) no-build conditions, and future build out conditions (2030). The future no-build condition serves as a base for comparison, which assumes the traffic patterns continue as they currently exist, increased by the expected annual growth rate.
4. Synchro modeling software used to determine LOS (Synchro methodology) for AM and PM, and Saturday peak periods.
5. Proposed land uses for the waterfront development build out include office, hotel, restaurant, retail, apartments, and townhouses.
6. Annual traffic growth rate of 0.5% compounded per year with a cap of 5% to the year 2030. The 5% cap on background growth is utilized for an existing build out urban environment such as the City of Alexandria and it represents the current saturated condition. Any future development at saturated traffic condition will occur without traffic increasing significantly.
7. No allowance for internal trips.
8. Modal split is Transit 20%; Walk 9%; Bike 3%; Carpool 10%; and Single Occupancy Vehicle (SOV) 58%. Transit, Walk, and Bike were combined in the analysis to reflect alternate modes, and Carpool and SOV uses are combined to reflect automobile trips.

9. Trip assignment follows existing turning movements and ADT percentages considering factors such as logical routing, roadway classification, available capacities and projected travel times. The trip distribution used is as follows:

To/From North GW Memorial Pkwy	30%
To/From South GW Memorial Pkwy	20%
To/From West Franklin/Gibbon	12%
To/From West Duke St	5%
From West Prince St (one-way)	(6%)
To/From West King St	5%
To West Cameron St (one-way)	(6%)
To/From West Pendleton St	5%
To/From West Wythe St	5%
To/From West Madison St /Montgomery St	6%
To/From West First St	6%
Total	**100%**

Prince Street and Cameron Street are one-way in and out respectively and 6% is added only once to a total of 100%.

10. Pass-by trips for proposed restaurant and hotel development are 10% and 0% respectively.

1.4 Proposed Development

According to the City's Planning and Zoning Development Division, there is one approved un-built development project in the waterfront area at this time. This development project is:

- 1125 N. Royal Street (Windows of Old Town Condominiums) - Active/Under Construction (DSP2005-00018):
    - 30,274 SF. site on Third Street between Royal and Fairfax.
    - 21 townhomes with a reduction of 8 of the 10 required retail parking spaces
    - 18 townhouse-style condominiums
    - 3 condominiums over 1,946 SF of ground level retail
    - 47 parking spaces (one level underground parking garage)
    - 6 parking spaces in above-grade garage integrated into retail building
    - 15% visitor parking spaces provided in below grade garage
    - 36 % ground-level open space and 13% open space in decks and roof-top patios
    - Traffic/transit: DASH bus stops at 2nd and N. Fairfax and 2nd and Pitt Streets (AT2 and AT4)

2. Existing Conditions

The Alexandria Waterfront traffic study area, served by a robust transportation network, is defined by the Potomac River to the east, Washington Street to the west, First Street to the north and Franklin Street to the south. Figure 1 shows the traffic study area within a regional map as well as the proposed waterfront development area. Currently, residents, commuters, and visitors take advantage of transportation options that include mass transit (rail, subway, bus and trolley), personal vehicles, motorcoaches/tour buses, water taxi, walking and bicycling.

2.1 Existing Traffic Network

Roadways are classified according to their urban or rural setting, and the type of service they provide based on considerations such as connectivity, mobility, accessibility, vehicle miles traveled, average annual daily traffic, and abutting land use. The purpose of the roadway functional classification is to describe how traffic is channeled through the roadway network and to determine project eligibility for inclusion in the Long Range Plan and short-range Transportation Improvement Program (TIP).

Figure 2 shows the functional classification of roadways along with the Average Daily Traffic (ADT) in the study area. Roadway classification within the project is based on the VDOT/FHWA Functional Classification. The City of Alexandria has adopted a classification system that is slightly different, but its characteristics are generally the same. Roadway classification is as follows, with City classification in parenthesis:

- I-95/Capital Beltway – Urban Interstate (Expressway)
- Washington Street – Arterial
- Duke Street – Arterial
- King Street – Primary Collector
- Franklin Street – Residential Collector
- Wythe Street – Primary Collector
- Montgomery Street – Primary Collector
- Prince Street – Residential Collector
- Cameron Street – Residential Collector
- Pendleton Street – Primary Collector
- First Street – Local

The functional classification of streets and roadways not specifically mentioned is Local.

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FUNCTIONAL CLASSIFICATION AND 2008 ADT

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FIGURE 2

2.2 Existing Traffic Operations

To determine existing traffic operations in the study area, traffic turning movements and pedestrian counts were collected for weekday AM/PM and weekend peak periods. These counts occurred on Thursday November 19, 2009 and Saturday November 21, 2009. **Appendix A** contains printouts of the raw turning movement count data. Traffic turning movement volumes are shown in **Figure 3**. Weekday AM/PM and weekend peak hours were determined based on these peak-period counts. Analysis of the turning movement counts determined the four highest consecutive 15-minute volumes (the peak hour) during each peak period. The peak hours were determined to be:

- AM Peak Hour: 7:00-8:00 AM
- PM Peak Hour: 4:45-5:45 PM
- Saturday Peak Hour: 12:30-1:30 PM

Pedestrian Counts were conducted on the same dates during the AM (7:00-9:00), PM (4:00-6:00) and weekend (12:00-2:00PM) periods at the six (6) study area intersections. **Table 1** lists the total number of pedestrians at each intersection for all four crosswalks for the peak hour.

Table 1 - Pedestrian volumes

Intersection	AM Peak Hour	PM Peak Hour	SAT Peak Hour
1. First Street/ Washington Street	9	41	28
2. Cameron Street/ Washington Street	48	103	163
3. King Street/ Washington Street	203	603	1569
4. Prince Street/ Washington Street	42	96	292
5. Duke Street/ Washington Street	33	60	136
6. Franklin Street/Washington Street	42	65	124

The City supplied current signal timing and modeling files with basic timings, cycle lengths, offsets and splits for the intersections studied. Using Synchro software, a macroscopic analysis and optimization software program for modeling, analyzing and simulating traffic networks, AECOM analyzed existing traffic capacity for 2009 conditions. This analysis established a base condition to determine the existing traffic performance in the study area; **Appendix B** shows the software output.

2.3 Capacity and Level of Service

The Highway Capacity Manual (HCM), published by the Transportation Research Board, contains the standard methodology used to analyze the various elements of existing and proposed roadways. The Synchro traffic analysis software, using the Highway Capacity Software module, was used for the traffic analysis of this study.

Level of Service (LOS) is a quality measurement of traffic flow in terms of speed and travel time, freedom to maneuver, comfort and convenience. There are six LOS designations, represented by the letters A through F, with LOS A representing the best operating conditions and LOS F the worst. Signalized intersection LOS is determined by seconds delay per vehicle. A level of service D or better is considered acceptable in major urban areas such as the Metropolitan Washington Area. However, it is recognized that the Northern Virginia area typically experiences considerably lower LOS at peak periods at many intersections, and residents of the area are accustomed to a level of service below that considered acceptable by traffic engineers.

Table 2 displays the criteria used to determine LOS and the results of the capacity analysis performed for Existing Conditions are presented in **Table 3** below. The results indicate that during the 2009 year AM peak hour, two signalized intersections operate at overall LOS E. During the PM peak hour one intersection operates at LOS E and during the Saturday peak hour one intersection has LOS F.

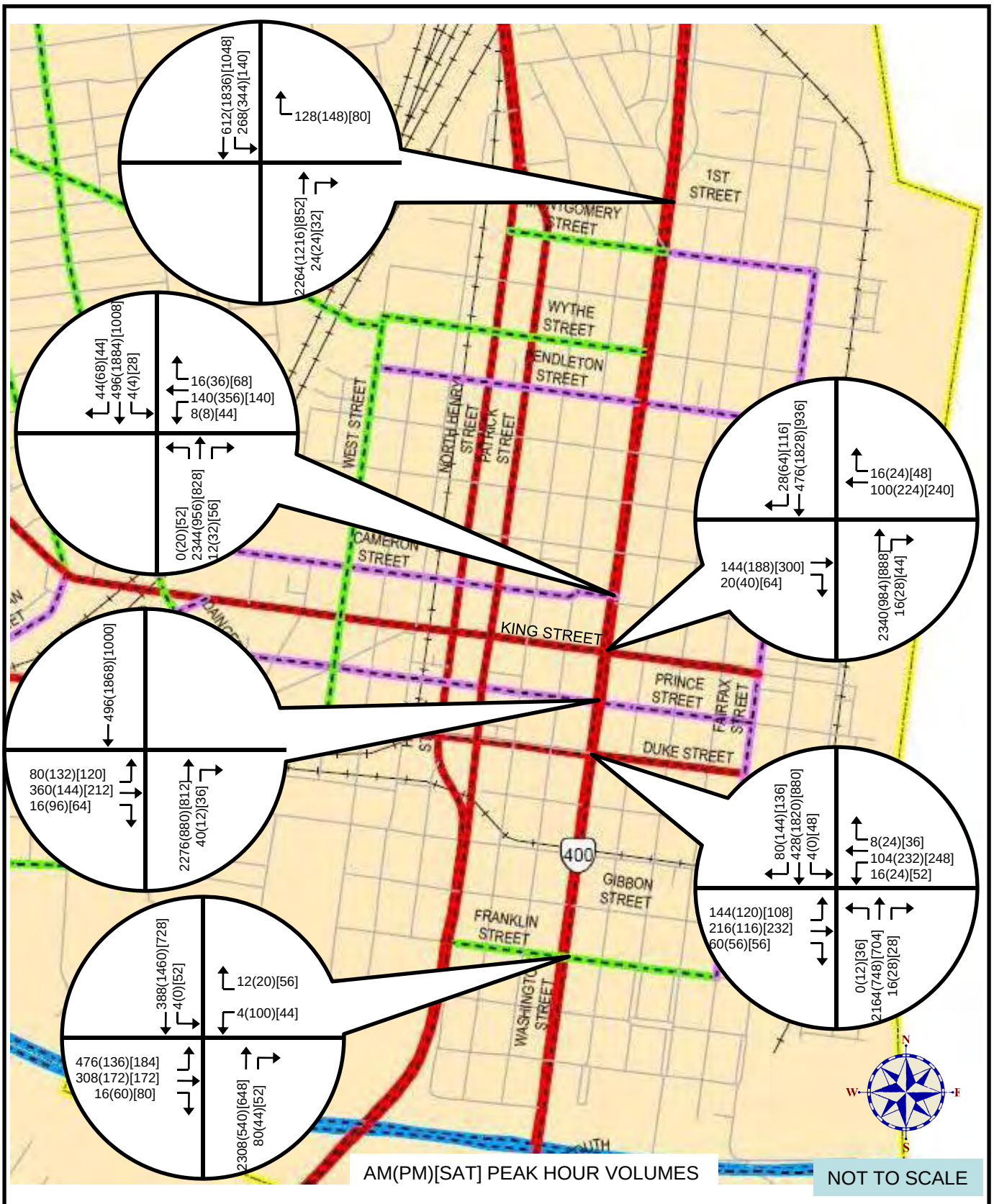
Table 2 - Level of Service Criteria

Level of Service	Signalized Intersections Average Control Delay (sec/veh)
A	Less than10
B	>10-20
C	>20-35
D	>35-55
E	>55-80
F	More than 80

sec/veh – seconds per vehicle

Table 3 - Traffic Analysis Results: Existing Conditions (Year 2009)

Intersection Number & Description	Level of Service AM	Delay (sec) AM	Level of Service PM	Delay (sec) PM	Level of Service SAT	Delay (sec) SAT	Remarks
1. First Street/ Washington Street							
WB	D	44.9	B	17.4	A	2.0	
NB	A	1.3	A	4.4	C	20.3	
SB	A	6.4	B	19.3	C	25.2	
Intersection	A	8.1	B	13.3	C	20.7	
2. Cameron Street/ Washington Street							
WB	D	38.5	D	52.9	C	30.4	
NB	B	10.9	C	21.7	B	17.0	
SB	B	17.5	F	105.3	F	151.7	
Intersection	B	13.6	E	73.9	F	82.5	
3. King Street/ Washington Street							
EB	D	39.6	D	35.2	C	30.8	
WB	D	36.7	D	37.7	C	29.1	
NB	A	6.4	A	4.3	B	13.2	
SB	B	11.6	A	2.1	A	7.8	
Intersection	A	9.8	A	7.3	B	14.6	
4. Prince Street/ Washington Street							
EB	C	31.6	C	27.6	C	27.0	
NB	E	62.3	B	11.3	B	10.4	
SB	B	13.3	A	9.8	A	8.1	
Intersection	D	50.5	B	12.3	B	12.3	
5. Duke Street/ Washington Street							
EB	F	115.8	D	44.5	C	34.8	
WB	C	32.1	C	32.0	C	27.3	
NB	E	72.3	C	32.9	D	36.4	
SB	B	11.5	A	4.9	C	22.9	
Intersection	E	66.8	B	17.1	C	29.3	
6. Franklin Street/Washington Street							
EB	E	68.4	C	27.8	B	18.9	
WB	C	24.5	C	31.0	A	9.2	
NB	E	66.6	B	15.6	B	18.5	
SB	A	5.7	A	4.0	C	23.3	
Intersection	E	58.1	B	11.4	B	19.3	



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EXISTING PEAK HOUR VOLUMES

ALEXANDRIA WATERFRONT TRAFFIC IMPACT STUDY

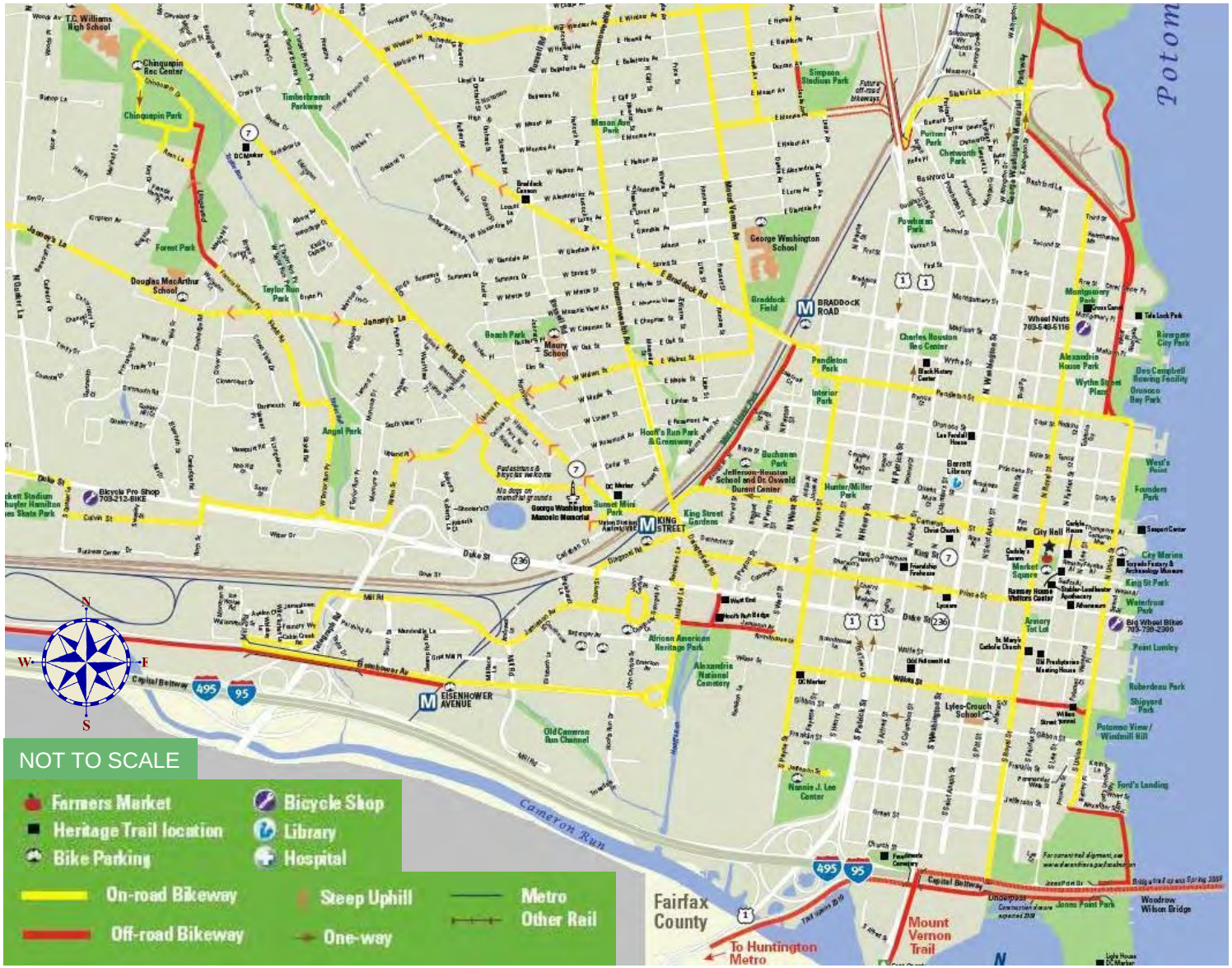
FIGURE 3

2.4 Bicycle Facilities

The Alexandria Waterfront has good bicycle access with on-road and off-road designated bikeways, bicycle parking locations, and convenient bicycle service facilities; **Figure 4** illustrates bicycle access in the area. Key among the existing access facilities is the Mt. Vernon Trail. This major regional trail provides scenic connection to the waterfront for pedestrians and bicyclists coming from the north or south along the Potomac River. This trail also links Alexandria to bicyclists using the W&OD and Custis Trail, as well as Ronald Reagan National Airport, The National Mall, and recently constructed National Harbor in Maryland. The Alexandria Waterfront Framework discussed a priority bikeway along Union Street, which currently has a on-road shared lane markings to link the north and south ends of Old Town to the Mt Vernon Trail.

The existing bicycle access network provides on-road shared-use connection to the two local Metrorail Stations; King Street and Braddock Road. Both of these stations have bicycle lockers and racks for convenient storage. In addition, Metro allows bikes on trains with some restrictions, chief among them that no bikes are allowed during weekday rush hours (7:00 – 10:00 AM and 4:00 – 7:00 PM).

A 24-hour bicycle count along the Mt Vernon Trail just, north of Pendleton Street, had a weekday average of 535 bicycles and weekend daily average of 2205 bicycles. This count occurred from Friday September 4 to Wednesday September 16, 2009 (see **Appendix C** for bicycle traffic count worksheets). From visual observation, bicycle user types range from experienced riders to those with basic operating skills including children.



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BICYCLE ACCESS

ALEXANDRIA WATERFRONT TRAFFIC IMPACT STUDY

FIGURE 4

2.5 King Street Trolley

The King Street Trolley operates between the King Street Metrorail Station and the Alexandria waterfront. This free service transports visitors and residents between the hours of 11:30 AM – 10:00 PM seven days a week. The trolley has a headway of 20 minutes.

The City of Alexandria provided Trolley Stop usage data for the ten designated stops, summarized in **Table 4** below. Total ridership for the 12 months ending October 19, 2009 was 522,420 passengers. **Appendix D** shows the Total Ridership Data -Trolley 2009.

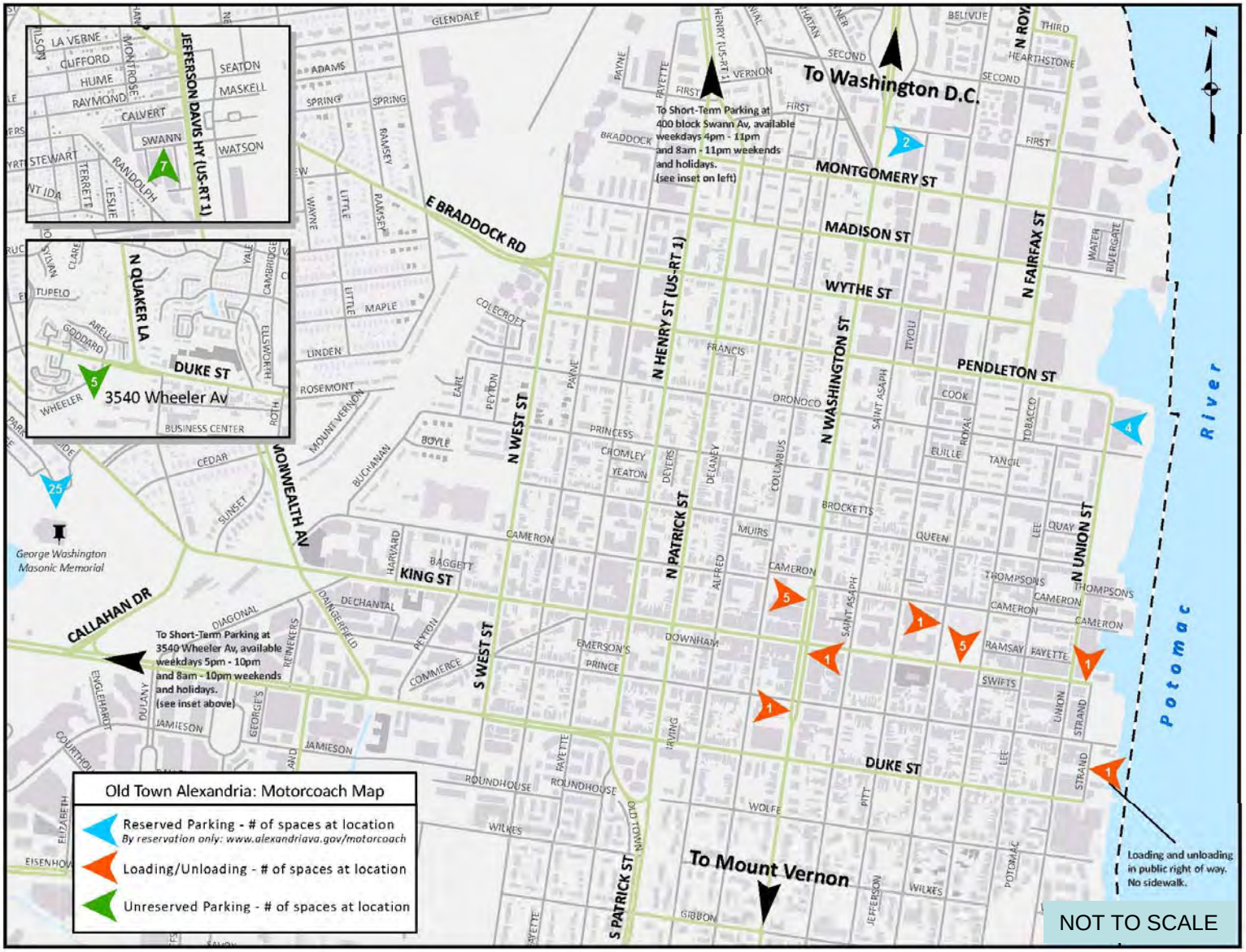
Table 4 - King Street Trolley Average Daily Usage

King Street Trolley Average Daily Usage Percentage				
	Westbound		Eastbound	
Stops	Boardings	Alightings	Boardings	Alightings
King & Union	44%	n/a	n/a	34%
King & Lee	4%	0%	0%	10%
King & Royal	14%	0%	0%	12%
King & St. Asaph	10%	1%	1%	11%
King & Columbus	15%	5%	1%	14%
King & Patrick	7%	5%	3%	10%
King & Fayette	5%	6%	6%	6%
King & Peyton	0%	7%	7%	2%
King & Diagonal	0%	9%	11%	0%
King Street Metro	n/a	66%	70%	n/a

2.6 Motorcoaches

Old Town Alexandria is a popular tourist destination, and many tourists arrive by motorcoach. **Figure 5** shows a motorcoach map for the City of Alexandria with designated loading and unloading areas, and assigned parking locations. To assist motorcoach and tour bus owners and operators, the City provides resources and maps for information on access, regulations, and activities.

To minimize adverse impacts to the environment, resident quality of life, and visitor experience, while balancing the need for this transportation modality, the City is undertaking motorcoach management actions. To enforce motorcoach management efforts, the Alexandria Police Department works to reduce engine idling, double-parking and unlawful loading/unloading practices throughout Alexandria.



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MOTORCOACH ACCESS

ALEXANDRIA WATERFRONT TRAFFIC IMPACT STUDY

FIGURE 5

2.7 Water Access

Convenient access to Alexandria's waterfront is not limited to land based transportation options; water taxi, sightseeing and marina service is available. Daily water taxi service operates between Old Town Alexandria and National Harbor, Maryland from March 1 to December 31. Hours of operation are approximately 10:45 AM until 11:15PM. Visitors and residents can traverse the Potomac River to and from the Alexandria City Marina to the National Harbor north dock and the Gaylord National south dock. This fee based service costs $8 one-way and $16 round trip for adults; fare for children (ages 2-11) is $5.00 one-way and $10.00 round trip.

Sightseeing cruises originate from the Alexandria waterfront and includes destinations such as the Washington Monuments, Georgetown, and the Mount Vernon estate. Marina services are also available for private boating at the City Marina, which is located at the base of Cameron Street. The marina has overnight boat slips plus additional short-term docking and offers docking for pleasure boats and commercial vessels; fees vary.

2.8 Old Town Alexandria Parking Study

The City hired a consultant to evaluate the current parking conditions and operations. The findings are assisting in creating management and implementation strategies to address parking in Old Town. A final report was submitted in April 2010. The Waterfront Master Plan and this traffic impact study incorporate results and recommendations from the parking study.

The parking study focuses on publicly available on- and off-street parking and does not include analysis of private parking facilities. Study considerations of public parking spaces available on-street, in surface lots, and garages within the study area include the number, occupancy, and utilization. Types of on-street parking included metered, residential permit, unrestricted, handicap, tour bus, trolley, and special parking. The parking study area is significantly larger than the traffic impact study area. The parking study area is bounded by Princess Street to the north, the King Street Metrorail station and railroad tracks to the west, Duke Street and Wolfe Street to the south, and the Potomac River waterfront to the east; an area of approximately 85 blocks.

The report revealed that parking is available during all periods studied but that parking demand increased in proximity to the river. Alfred Street appeared to be the east/west dividing line for Old Town in terms of higher parking demand. During peak periods, on-street parking and some publicly accessible off-street facilities were effectively full. In relation to the waterfront area, parking utilization along Union Street and The Strand is

typically greater than 90 percent; the lowest utilization period occurs weekday evenings; Fridays evenings record utilization rates in excess of 100 percent.

Parking counts reveal that there are 4,399 on-street and 3,933 off-street publicly accessible parking spaces in the study area. Of the 8,332 total available spaces, on-street parking accounts for the majority of available parking and comprises 60 percent of the system. Although private parking facilities were not included in this study, information provided by the City of Alexandria indicates that there are approximately 2,600 private parking spaces within the study area. The combination of publicly accessible parking and private parking totals nearly 10,000 spaces in Old Town.

As a result of utilization calculations, observed conditions and City provided information, numerous parking issues were identified. The report classified issues as Primary or Secondary, some of which follow:

- Limited on-street metered parking availability (Primary)
- Limited on-street parking availability east of Alfred Street in the neighborhood permit district (Primary)
- Garages and lots are underutilized (Primary)
- Parking supply proximity (Primary)
- Difficulty in locating off-street parking
- Fee collection method
- Insufficient tour bus parking
- High auto use

2.9 King St. at Washington St. Exclusive Pedestrian Phase

This intersection is heavily used by pedestrians at all four crosswalks especially on the weekends as shown in **Table 1**. A traffic analysis was performed for an exclusive pedestrian traffic signal phase, where all vehicular traffic stops at all four approaches and allows pedestrians to cross the King Street/Washington Street intersection in every direction, including diagonally. While an exclusive pedestrian traffic signal phase may have benefit for a pedestrian friendly appeal with weekend use it cannot be safely configured exclusively for that time because pedestrian will have expectations of using this during weekdays too. Finding of the analysis is that an exclusive pedestrian traffic signal phase would cause additional delay to all vehicles using Washington Street especially in the AM peak hour. The analysis results are: during the existing AM peak hour from LOS A and delay 9 sec to LOS F and delay 228 sec, PM peak hour from LOS A and delay 7 sec to LOS C and delay 24 sec and weekend from LOS B and delay 14 sec to LOS D and delay 51 sec.

3. Future No-Build Conditions (Year 2030)

3.1 Future No-Build Conditions (Year 2030)

To provide a Base Condition with which to compare the Alexandria Waterfront development scenario, the study developed a future No-Build Condition for Year 2030.

The components of background traffic are through traffic, consisting of all movements in the study area referred to as “background growth”, and traffic generated by developments in the area referred to as “background development”. The City of Alexandria confirmed the study assumption that appropriate traffic growth in the Old Town area is 0.5% per year. The 5% cap on background growth was set to account for an urban environment where future build out will operate at saturated traffic conditions without traffic increasing any further. Using a +0.5% annual compound growth rate with a 5% cap, existing year 2009 traffic data was projected to Year 2030 for AM, PM and weekend peak hours.

Traffic from the 1125 N. Royal Street (Windows of Old Town Condominiums as discussed in Section 2) development was then added to these volumes. Trip generation data was derived using the Trip Generation Handbook (ITE). **Table 5** summarizes the 1125 N. Royal Street (Windows of Old Town Condominiums) trip generation.

Table 5 - Windows of Old Town Condominiums Trip Generation

Trip Generation Summary

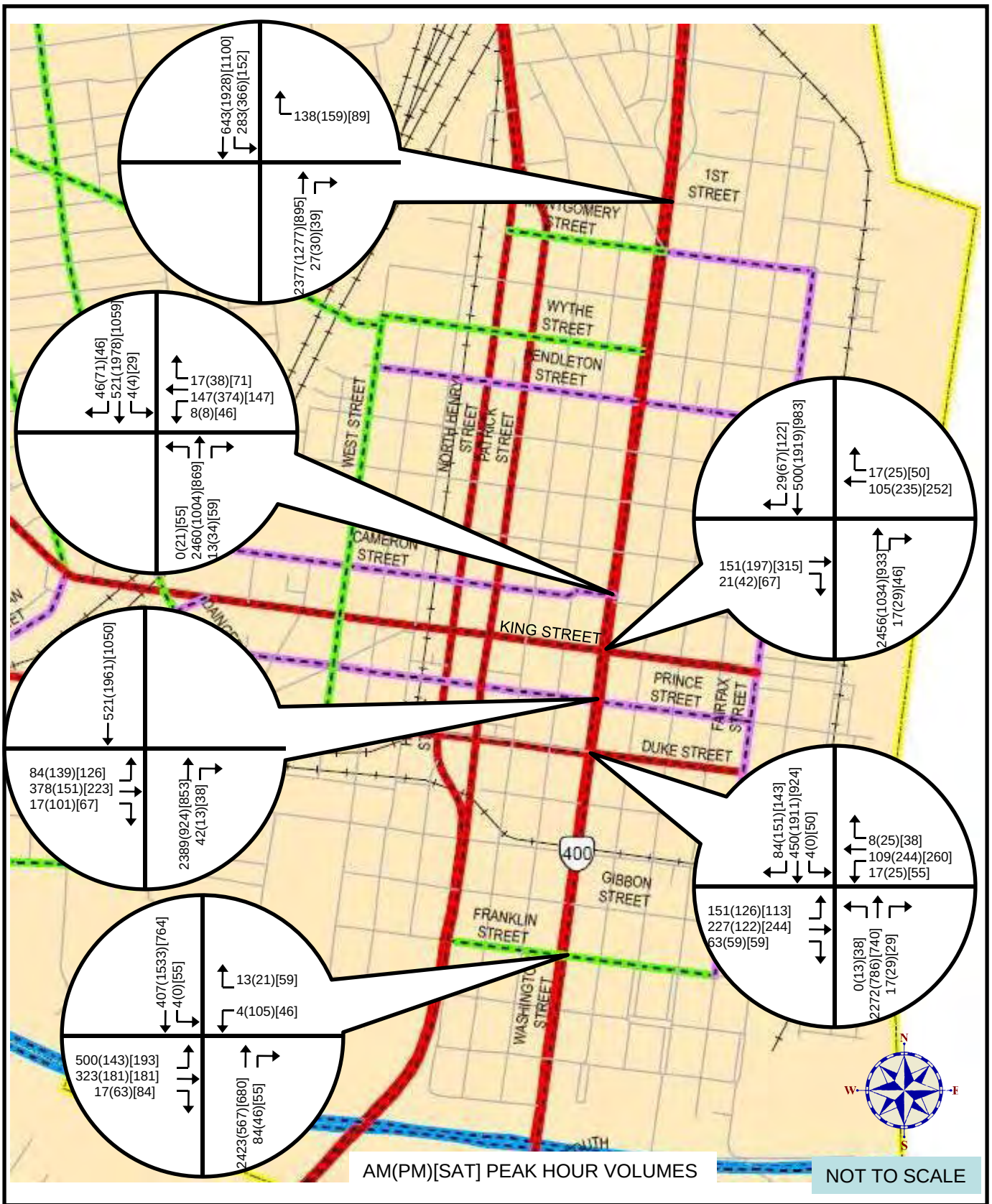
			Weekday						Saturday		
	ITE		AM Peak			PM Peak			Midday Peak		
Land Use	Code	Amount	Enter	Exit	Total	Enter	Exit	Total	Enter	Exit	Total
Residential (units)			**2**	**7**	**9**	**7**	**4**	**11**	**6**	**5**	**11**
Townhouse/Condominium	230	21	*2*	*7*	*9*	*7*	*4*	*11*	*6*	*5*	*11*
Non-residential			**1**	**1**	**2**	**4**	**4**	**8**	**5**	**5**	**10**
General Retail (ksf)	820	2	*1*	*1*	*2*	*4*	*4*	*8*	*5*	*5*	*10*
Total			**3**	**7**	**10**	**10**	**7**	**17**	**10**	**9**	**19**

The vehicular trips generated by the Windows of Old Town Condominiums development located at 1125 N. Royal Street were assigned to the study area network and added to 2030 background volumes. **Figure 6** presents the 2030 No-Build traffic volumes.

Traffic analysis performed using the Synchro LOS methodology for AM, PM and Saturday peak hours resulted in the LOS shown in **Table 6**. This analysis shows three (3) intersections during the AM peak hour and one intersection during the PM and the Saturday peak hour that would operate at an overall LOS F in 2030 without the Alexandria Waterfront development.

Table 6 - Traffic Analysis Results: No-Build Conditions (Year 2030)

Intersection Number & Description	Level of Service AM	Delay (sec) AM	Level of Service PM	Delay (sec) PM	Level of Service SAT	Delay (sec) SAT	Remarks
1. First Street/ Washington Street							
WB	D	45.1	C	20.2	A	3.9	
NB	A	1.8	A	4.8	C	20.6	
SB	A	6.9	C	20.3	C	26.0	
Intersection	A	8.6	B	14.4	C	21.3	
2. Cameron Street/ Washington Street							
WB	D	39.0	E	58.0	C	30.8	
NB	D	37.8	C	24.6	C	22.7	
SB	B	17.9	F	161.8	F	219.0	
Intersection	C	34.4	F	108.2	F	117.0	
3. King Street/ Washington Street							
EB	D	40.0	D	35.9	C	31.3	
WB	D	37.0	D	37.9	C	29.5	
NB	A	7.3	A	5.2	B	14.3	
SB	B	11.7	A	4.0	A	8.5	
Intersection	B	10.6	A	8.7	B	15.4	
4. Prince Street/ Washington Street							
EB	C	31.9	C	27.8	C	27.4	
NB	F	144.2	B	10.8	B	11.5	
SB	B	13.4	B	12.0	A	8.7	
Intersection	F	108.7	B	13.5	B	13.1	
5. Duke Street/ Washington Street							
EB	F	175.6	E	57.8	D	37.6	
WB	C	32.4	C	34.1	C	28.1	
NB	F	129.5	D	35.6	D	42.7	
SB	B	11.6	A	5.3	C	32.4	
Intersection	F	113.0	B	19.4	D	35.7	
6. Franklin Street/Washington Street							
EB	E	64.8	C	31.7	B	19.1	
WB	C	25.8	C	31.9	A	9.2	
NB	F	217.3	B	16.0	B	18.9	
SB	A	5.7	A	5.0	C	24.8	
Intersection	F	159.5	B	12.2	C	20.0	



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NO BUILD (2030) PEAK HOUR

ALEXANDRIA WATERFRONT TRAFFIC IMPACT STUDY

FIGURE 6

4. Future Build Conditions (Year 2030)

4.1 Trip Generation and Distribution

In order to forecast the traffic impacts of land development, proposed land uses (hotel, restaurant, etc.) are converted into vehicular trips. For a multimodal study, land uses are also translated in terms of walking, bicycle, and transit trips. The Institute of Transportation Engineers' (ITE) *Trip Generation Manual, 8th Edition* provides trip generation rates, equations, and data plots based on data collected at close to 5,000 developments across the country.

The manual categorizes land uses by type and provides a means to calculate vehicular trips entering and exiting sites, and is the industry standard for transportation professionals analyzing the site impact of proposed new development or infill projects. Study calculations were based on number of dwelling units, square footage, gross floor area, and other variables. The study estimated future vehicular trips generated by the proposed waterfront development, as well as nearby programmed projects, using the *Trip Generation Manual.*

The City of Alexandria provided projected waterfront land uses. **Tables 7 and 8** present the results of the trip generation analysis and **Figure 7** illustrates the distribution pattern of vehicular trips through the study area intersections.

Table 7 - Alexandria Waterfront Trip Generation by Land Use

Trip Generation Summary by land use

			Weekday						Saturday		
	ITE		AM Peak			PM Peak			Midday Peak		
Land Use	Code	Amount	Enter	Exit	Total	Enter	Exit	Total	Enter	Exit	Total
Residential (units)			**21**	**59**	**80**	**60**	**38**	**98**	**75**	**60**	**135**
Apartment	221	50	*7*	*25*	*32*	*24*	*13*	*37*	*20*	*17*	*37*
Mid rise Apt	223	135	*13*	*28*	*41*	*31*	*22*	*53*	*31*	*22*	*53*
Mid rise Apt	230	8	*1*	*6*	*7*	*5*	*3*	*8*	*24*	*21*	*45*
Non-residential			**755**	**220**	**975**	**727**	**959**	**1,686**	**832**	**630**	**1,462**
Hotel[1] (rooms)	310	555	*190*	*121*	*311*	*173*	*154*	*327*	*224*	*176*	*400*
General Office (ksf)	710	323	*534*	*73*	*607*	*115*	*560*	*675*	*64*	*55*	*119*
Arts and Crafts	879	10	*23*	*24*	*47*	*29*	*34*	*63*	*29*	*34*	*63*
Apparel	876	10	*8*	*2*	*10*	*19*	*19*	*38*	*19*	*19*	*38*
General Retail (ksf)	820	0	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
Restaurant[2] (ksf)	931	78	*0*	*0*	*0*	*391*	*192*	*583*	*496*	*346*	*842*
Total			**776**	**279**	**1,055**	**787**	**997**	**1,784**	**907**	**690**	**1,597**
Total alternative mode transit-walk-bike 32%			**248**	**89**	**338**	**252**	**319**	**571**	**290**	**221**	**511**
Total personal vehicle-carpool 68%			**528**	**190**	**717**	**535**	**678**	**1,213**	**617**	**469**	**1,086**

Notes:

1 - Assumed 1 room per 500 sf area

2 - High Turnover (Sit Down) Restaurant- pass by trips 10%

Table 8 - Alexandria Waterfront Trip Generation by Site

Trip Generation Summary by Site

Site	Land Use	ITE Code	Amount	Units	Weekday						Saturday		
					AM Peak			PM Peak			Midday Peak		
					Enter	Exit	Total	Enter	Exit	Total	Enter	Exit	Total
Crowne Plaza Hotel	Office	710	100,000	sf	165	23	188	32	158	190	20	17	37
(901 N. Fairfax St.)	Low-rise apartments	221	50	du	7	25	32	24	13	37	20	17	37
Plumbers & Pipefitters	Office	710	128,000	sf	201	27	228	38	184	222	24	21	45
(103 Oronoco St.)													
Robinson Terminal North	Hotel	310	385	rooms	132	84	216	120	107	227	155	122	277
(Tract 1, Parcels C & D)	Restaurant	931	7,500	sf	NA	NA	0	38	19	57	48	33	81
Waterfront Park	Restaurant	931	22,000	sf	NA	NA	0	110	54	164	140	98	238
	Restaurant	931	22,000	sf	NA	NA	0	110	54	164	140	98	238
Cummings Properties	Office	710	88,000	sf	149	20	169	30	147	177	18	15	33
(200 block of Strand St.)	Arts and Crafts[1]	879	10,000	sf	23	24	47	29	34	63	29	34	63
	Apparel[1]	876	10,000	sf	8	2	10	19	19	38	19	19	38
Robinson Terminal South	Hotel	310	170	rooms	58	37	95	53	47	100	69	54	123
(Parcel G)	Office	710	6,500	sf	19	3	22	15	71	86	2	2	4
	Restaurant	931	6,000	sf	NA	NA	0	30	15	45	38	27	65
	Mid-rise apartments[1]	223	135	du	13	28	41	31	22	53	31	22	53
	Townhouses	230	8	du	1	6	7	5	3	8	24	21	45
Beachcomber	Restaurant	931	3,630	sf	NA	NA	0	17	8	25	21	15	36
(0 Prince St.)													
Alexandria Yacht; Robinson	Restaurant	931	17,046	sf	NA	NA	0	86	42	128	109	75	184
(Parcel E)													
Subtotal					776	279	1,055	787	997	1,784	907	690	1,597
Total Alternative Mode (transit/walk/bike) -- 32%					**248**	**89**	**338**	**252**	**319**	**571**	**290**	**221**	**511**
Total Personal Vehicle/Carpool -- 68%					**528**	**190**	**717**	**535**	**678**	**1,213**	**617**	**469**	**1,086**

1 - ITE does not provide Saturday data; weekday PM peak used instead.

AECOM

TRIP DISTRIBUTION

ALEXANDRIA WATERFRONT TRAFFIC IMPACT STUDY

FIGURE 7

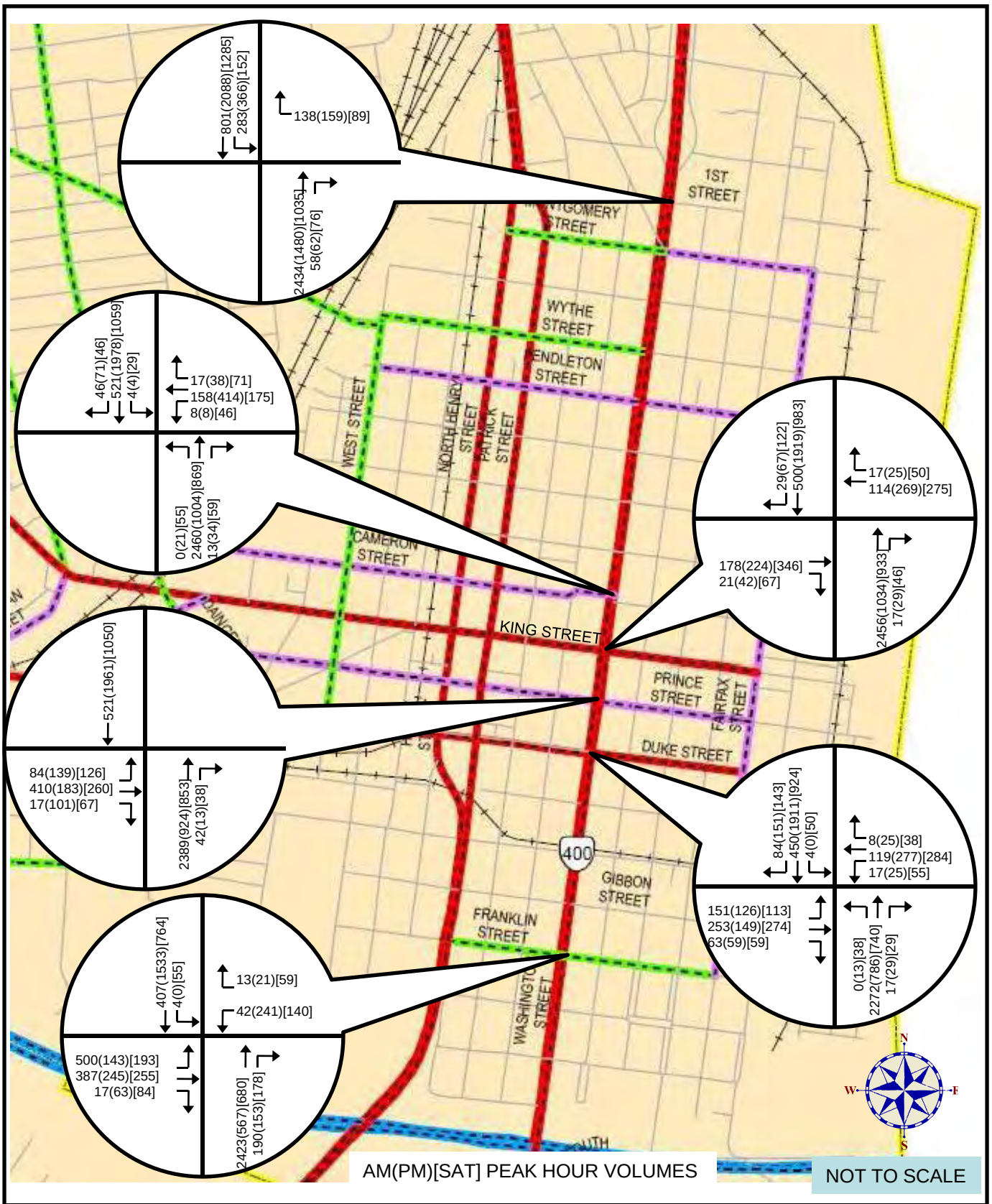
4.2 Traffic Analysis

A LOS analysis was performed with the traffic volumes shown on **Figure 8**. Cycle lengths, offsets, pedestrian crossing times, and other timing inputs were not modified from existing conditions. Under build conditions, the results show that three intersections during the AM peak hour operate at an overall LOS F in 2030. One intersection operates at an overall LOS F during the PM peak hour and Saturday peak hour. **Table 9** shows LOS results for this condition.

When a street network is laid out in a grid, such as the study area for this waterfront development project, drivers often find alternate (usually parallel) routes to travel. In other words, while overall traffic volumes increase with the introduction of new development, many of the trips would pass through less congested intersections near the Washington Street corridor. Section 6 of this report includes further discussion regarding the expected changes in traffic operations from No-Build to Build conditions.

Table 9 - Traffic Analysis Results: Build Conditions (Year 2030)

Intersection Number & Description	Level of Service AM	Delay (sec) AM	Level of Service PM	Delay (sec) PM	Level of Service SAT	Delay (sec) SAT	Remarks
1. First Street/ Washington Street							
WB	D	45.5	C	24.8	A	8.5	
NB	A	2.3	A	8.3	C	22.1	
SB	A	7.4	C	22.6	C	29.7	
Intersection	A	8.9	B	17.5	C	24.1	
2. Cameron Street/ Washington Street							
WB	D	39.6	E	77.1	C	31.8	
NB	D	37.8	C	24.6	C	22.7	
SB	B	17.9	F	161.8	F	219.0	
Intersection	C	34.4	F	110.1	F	116.1	
3. King Street/ Washington Street							
EB	D	42.0	D	37.2	C	32.6	
WB	D	37.4	D	39.9	C	30.3	
NB	A	7.3	A	5.1	B	14.2	
SB	B	11.7	A	4.0	A	8.5	
Intersection	B	11.0	A	9.4	B	15.9	
4. Prince Street/ Washington Street							
EB	C	32.4	C	28.2	C	27.7	
NB	F	144.2	B	10.6	B	11.3	
SB	B	13.4	B	12.0	A	8.7	
Intersection	F	108.0	B	13.7	B	13.3	
5. Duke Street/ Washington Street							
EB	F	263.5	F	81.1	D	41.6	
WB	C	32.8	D	35.8	C	29.2	
NB	F	129.5	D	35.7	D	42.7	
SB	B	11.6	A	5.3	C	32.4	
Intersection	F	125.2	C	22.1	D	36.5	
6. Franklin Street/Washington Street							
EB	F	121.6	C	34.2	C	21.1	
WB	D	42.7	E	76.7	C	21.3	
NB	F	316.4	B	15.9	C	20.4	
SB	A	5.8	A	5.0	C	26.3	
Intersection	F	236.4	B	17.3	C	21.8	



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BUILD (2030) PEAK HOUR

ALEXANDRIA WATERFRONT TRAFFIC IMPACT STUDY

FIGURE 8

5. Recommendations

The previous chapters examined in detail the current traffic conditions as well as the future build and no-build traffic conditions. In this chapter, recommended corrective actions are presented that would optimize traffic operations should the Waterfront Framework be implemented.

The goal of the recommendations is to promote a safe and robust multimodal transportation environment for Alexandria's waterfront and better serve the community at large. To this regard, recommendations are categorized based on modal function. The recommendations are:

Transit recommendations:

- Incorporate the waterfront terminus into the overall waterfront destination to create a multimodal hub.
- Expand King Street Trolley operating hours and decrease headway.

Pedestrian recommendations:

- Provide pedestrian safety improvements/new crosswalk at Montgomery/Washington.
- Provide Pedestrian signals at Washington Street intersections.

Bicycle recommendations:

- Improve bicycle facilities along Union Street to improve connectivity to the Mt. Vernon Trail; Consider vehicular traffic using this bicycle route as a direct route in the North-South direction.
- Improve signage and way-finding to encourage cyclists to access the waterfront and to improve safety.
- Provide safe and accessible bicycle parking facilities to encourage off-bike activities and multimodal activity.

Motorcoach recommendations:

- Allow left turns from King Street to Washington Street for motorcoaches only to remove bus traffic from adjacent residential streets.

Parking recommendations:

- Implement the recommendations of the April 2010 Old Town Alexandria Parking study.

Vehicle recommendations:

- Evaluate left-turn traffic signal phase for southbound movements at intersections of Madison St/Washington St and Wythe St/Washington St. as development increases at the Alexandria waterfront.
- Enhance current carpool and bus ridership campaign.
- Provide way-finding using Intelligent Transportation System (ITS) technology to direct traffic to existing public parking lots.

The Alexandria Waterfront Traffic Impact Study is part of a master planning process with a 20-year horizon. As proposed development projects come on line, more detailed transportation studies are recommended to assess impacts and offer mitigation strategies that are consistent with the City's vision for the waterfront area and adjacent study areas. Over time, recommendations can be implemented as development (and traffic volume) increases and/or in response to modal variations.

Institution of the proposed waterfront improvements will add traffic volume to the study area roadways. However, actions can be taken to mitigate the increases in traffic volumes and delays that are projected by future growth to promote a pedestrian friendly and multimodal downtown core. It is important to note that physical and operational improvements should not be based on special event traffic volumes because resulting requirements may be unreasonable; delays at and during special events are expected. Rather, improvements are recommended based on their benefit during daily peak periods and for safety benefits.

Alexandria has a well-connected street grid system that provides drivers with routing options, especially during congested peak hours. This spreads the traffic burden from a handful of intersections to many intersections within the system. The shared load on multiple corridors also allows the City to avoid expanding street cross-sections to the point that hinders pedestrian movement.

The findings of this traffic report will be incorporated into the master planning effort currently underway.

5.1 Comparison of No-Build Actions with Build

The Waterfront development would increase traffic volumes and increase delays at all six studied intersections in the area. However, the LOS and average delay per vehicle change from No-Build to Build is negligible in most cases.

During the 2030 Build condition, the overall average intersection delay at the Washington Street/Franklin Street intersection is projected to be almost 230 seconds per vehicle. As described in the Recommendations chapter, drivers begin to use parallel routes to a congested mainline when a grid pattern exists. This phenomenon can be routinely observed throughout the City.

Additionally, congested intersections may be improved by a Level of Service letter grade or more (i.e. LOS F to D) as multimodal transportation opportunities are increased in the region. The study has assumed the same modal split for 2030 as currently occurs in 2009. As alternative transportation means increase across the region, the move away from SOV use will result in a 'better' modal split and corresponding improvement in the LOS figures shown. **Table 10** provides a comparison of the LOS analysis results between the No-Build 2030 and Build 2030 scenarios.

Table 10 - Traffic Analysis Results: Comparison of No-Build Action with Build

Intersection Number & Description	Intersection Number & Description	Level of Service AM	Delay (sec) AM	Level of Service PM	Delay (sec) PM	Level of Service SAT	Delay (sec) SAT
1. First Street/ Washington Street	No-Build	A	8.6	B	14.4	C	21.3
	Build	A	8.9	B	17.5	C	24.1
2. Cameron Street/ Washington Street	No-Build	C	34.4	F	108.2	F	117.0
	Build	C	34.4	F	110.1	F	116.1
3. King Street/ Washington Street	No-Build	B	10.6	A	8.7	B	15.4
	Build	B	11.0	A	9.4	B	15.9
4. Prince Street/ Washington Street	No-Build	F	108.7	B	13.5	B	13.1
	Build	F	108.0	B	13.7	B	13.3
5. Duke Street/ Washington Street	No-Build	F	113.0	B	19.4	D	35.7
	Build	F	125.2	C	22.1	D	36.5
6. Franklin Street/ Washington Street	No-Build	F	159.5	B	12.2	C	20.0
	Build	F	236.4	B	17.3	C	21.8

Appendices

Appendix A
Traffic Counts

Type of peak hour being reported: Intersection Peak

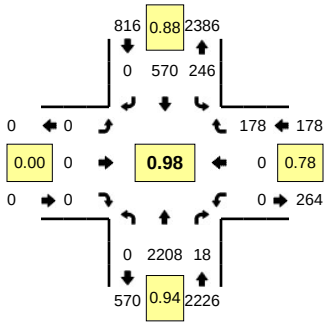
Method for determining peak hour: Total Entering Volume

LOCATION: Washington St -- 1st St

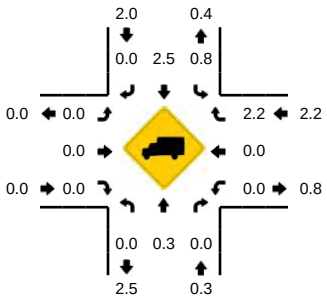
CITY/STATE: Alexancdria, VA

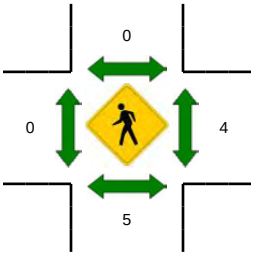
QC JOB #: 10464501

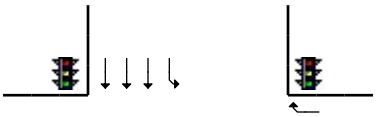
DATE: 11/19/2009

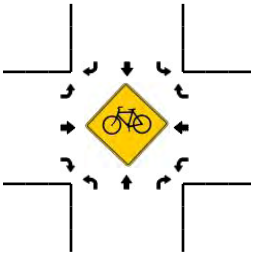


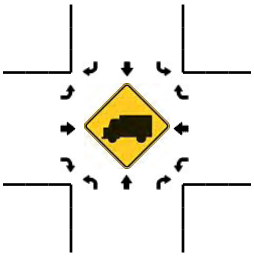
Peak-Hour: 7:15 AM -- 8:15 AM
Peak 15-Min: 7:45 AM -- 8:00 AM

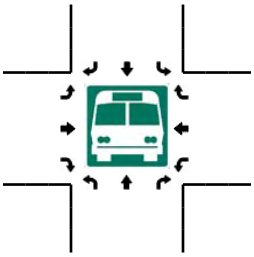












15-Min Count Period Beginning At	Washington St (Northbound)				Washington St (Southbound)				1st St (Eastbound)				1st St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	566	6	0	37	102	0	0	0	0	0	0	0	0	35	0	746	
7:15 AM	0	603	1	0	49	131	0	0	0	0	0	0	0	0	38	0	822	
7:30 AM	0	529	4	0	58	133	0	0	0	0	0	0	0	0	57	0	781	
7:45 AM	0	566	6	0	67	153	0	0	0	0	0	0	0	0	32	0	824	3173
8:00 AM	0	510	7	0	72	153	0	0	0	0	0	0	0	0	51	0	793	3220
8:15 AM	0	530	7	0	74	149	0	0	0	0	0	0	0	0	36	0	796	3194
8:30 AM	0	487	12	0	89	148	0	0	0	0	0	0	0	0	41	0	777	3190
8:45 AM	0	432	7	0	88	182	0	1	0	0	0	0	0	0	30	0	740	3106

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	2264	24	0	268	612	0	0	0	0	0	0	0	0	128	0	3296
Heavy Trucks	0	4	0		4	12	0		0	0	0		0	0	0		20
Pedestrians		0				0				0				0			0
Bicycles																	
Railroad																	
Stopped Buses																	

Comments:

Report generated on 12/1/2009 2:31 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

Type of peak hour being reported: Intersection Peak

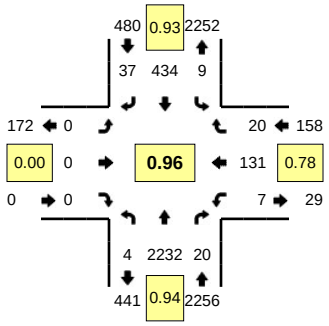
Method for determining peak hour: Total Entering Volume

LOCATION: Washington St -- Cameron St

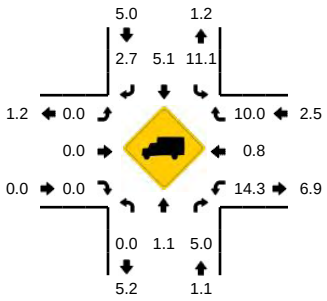
CITY/STATE: Alexandria, VA

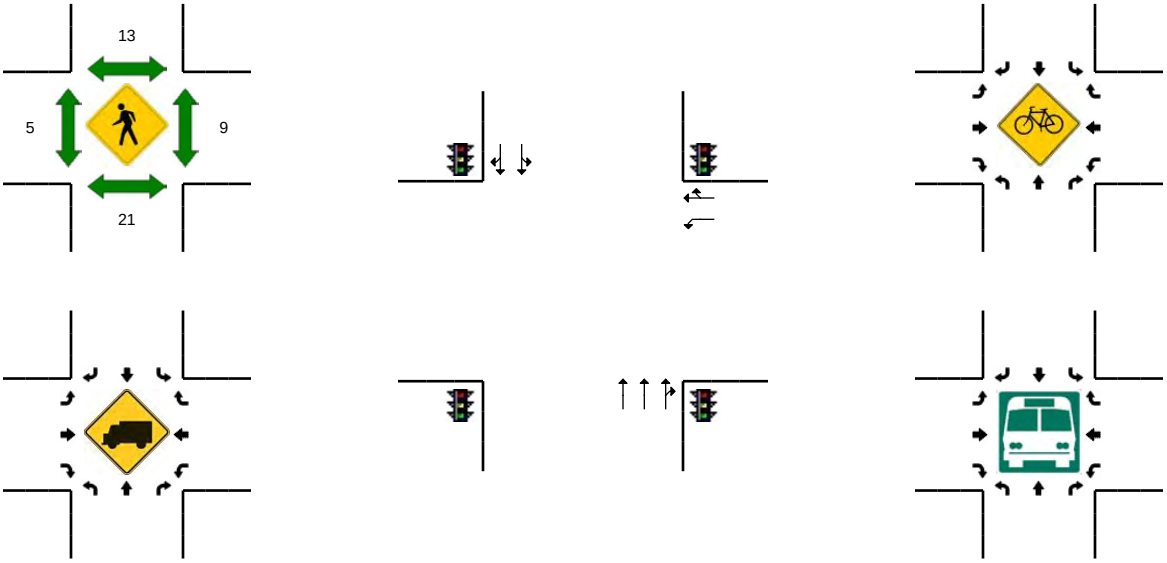
QC JOB #: 10464503

DATE: 11/19/2009



Peak-Hour: 7:00 AM -- 8:00 AM
Peak 15-Min: 7:15 AM -- 7:30 AM





15-Min Count Period Beginning At	Washington St (Northbound)				Washington St (Southbound)				Cameron St (Eastbound)				Cameron St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	1	601	1	0	1	86	3	0	0	0	0	0	1	16	3	0	713	
7:15 AM	0	580	3	0	1	120	11	0	0	0	0	0	2	35	4	0	756	
7:30 AM	3	537	6	0	3	105	10	0	0	0	0	0	3	33	5	0	705	
7:45 AM	0	514	10	0	4	123	13	0	0	0	0	0	1	47	8	0	720	2894
8:00 AM	0	516	7	0	5	107	13	0	0	0	0	0	1	29	4	0	682	2863
8:15 AM	2	470	11	0	2	121	18	0	0	0	0	0	2	36	5	0	667	2774
8:30 AM	5	461	7	0	2	94	23	1	0	0	0	0	6	15	8	0	622	2691
8:45 AM	3	433	15	0	0	109	9	0	0	0	0	0	5	49	5	0	628	2599

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	2320	12	0	4	480	44	0	0	0	0	0	8	140	16	0	3024
Heavy Trucks	0	16	0		0	32	4		0	0	0		0	0	0		52
Pedestrians		20				24				8				4			56
Bicycles																	
Railroad																	
Stopped Buses																	

Comments:

Report generated on 12/1/2009 2:31 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

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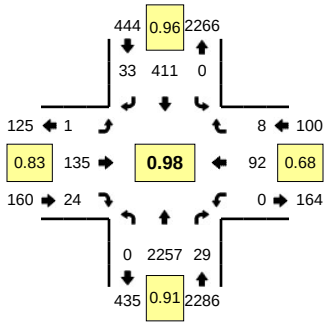
CITY/STATE: Alexandria, VA

QC JOB #: 10464505

DATE: 11/19/2009



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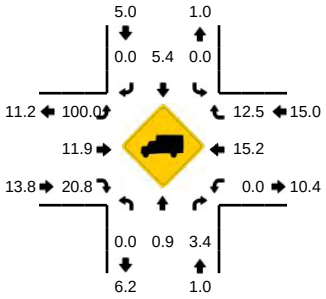
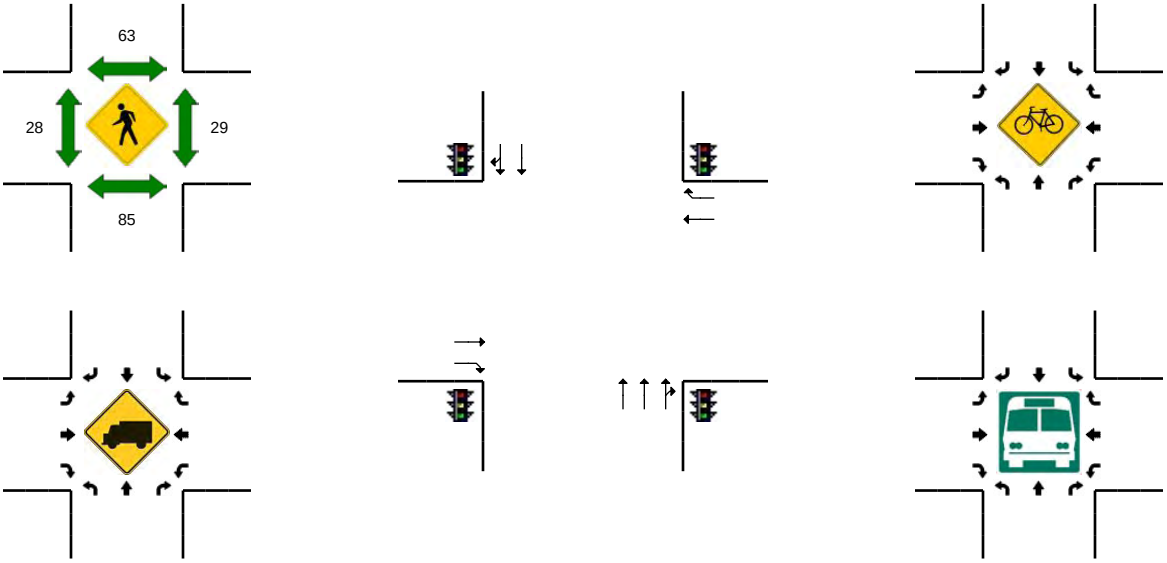
Peak 15-Min: 7:15 AM -- 7:30 AM





15-Min Count Period Beginning At	Washington St (Northbound)				Washington St (Southbound)				King St (Eastbound)				King St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	621	5	0	0	88	4	0	0	19	5	0	0	16	2	0	760	
7:15 AM	0	567	4	0	0	113	7	0	0	36	5	0	0	25	4	0	761	
7:30 AM	0	547	10	0	0	99	13	0	1	37	8	0	0	20	1	0	736	
7:45 AM	0	522	10	0	0	111	9	0	0	43	6	0	0	31	1	0	733	2990
8:00 AM	2	519	14	0	0	98	10	0	1	42	8	0	0	30	1	0	725	2955
8:15 AM	0	443	7	0	0	108	9	0	1	56	13	0	1	24	3	0	665	2859
8:30 AM	0	488	21	0	0	95	8	0	1	52	10	1	0	8	5	0	689	2812
8:45 AM	0	432	12	0	0	97	14	0	2	68	10	0	0	39	3	0	677	2756

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	2268	16	0	0	452	28	0	0	144	20	0	0	100	16	0	3044
Heavy Trucks	0	16	0		0	32	0		0	24	12		0	12	0		96
Pedestrians		108				56				48				32			244
Bicycles																	
Railroad																	
Stopped Buses																	

Comments:

Report generated on 12/1/2009 2:31 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

Type of peak hour being reported: Intersection Peak

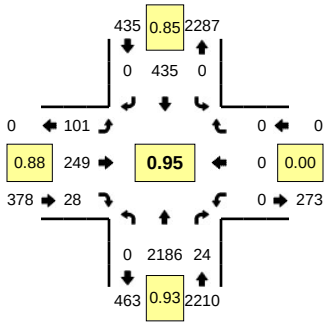
Method for determining peak hour: Total Entering Volume

LOCATION: Washington St -- Prince St

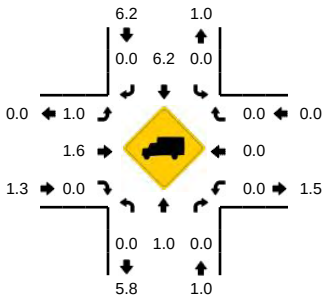
CITY/STATE: Alexandria, VA

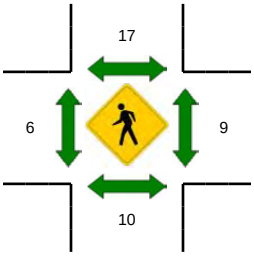
QC JOB #: 10464507

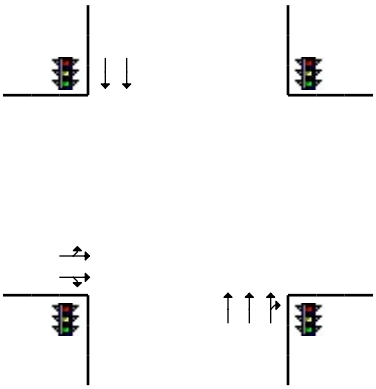
DATE: 11/19/2009

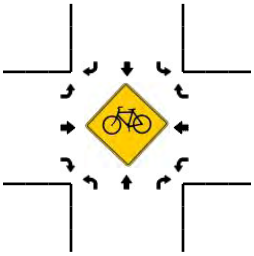


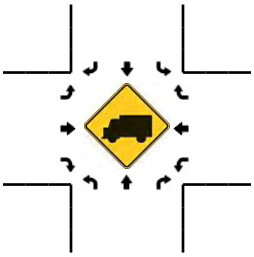
Peak-Hour: 7:00 AM -- 8:00 AM
Peak 15-Min: 7:45 AM -- 8:00 AM

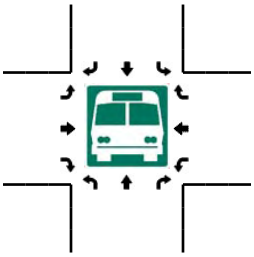












15-Min Count Period Beginning At	Washington St (Northbound)				Washington St (Southbound)				Prince St (Eastbound)				Prince St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	559	2	0	0	86	0	0	33	33	5	0	0	0	0	0	718	
7:15 AM	0	591	5	0	0	124	0	0	19	37	3	0	0	0	0	0	779	
7:30 AM	0	491	7	0	0	101	0	0	29	89	16	0	0	0	0	0	733	
7:45 AM	0	545	10	0	0	124	0	0	20	90	4	0	0	0	0	0	793	3023
8:00 AM	0	478	13	0	0	98	0	0	22	63	14	0	0	0	0	0	688	2993
8:15 AM	0	477	5	0	0	135	0	0	31	79	12	0	0	0	0	0	739	2953
8:30 AM	0	435	8	0	0	95	0	1	32	82	14	0	0	0	0	0	667	2887
8:45 AM	0	455	12	0	0	114	0	0	28	80	8	0	0	0	0	0	697	2791

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	2180	40	0	0	496	0	0	80	360	16	0	0	0	0	0	3172
Heavy Trucks	0	24	0		0	28	0		0	0	0		0	0	0		52
Pedestrians		32				20				4				16			72
Bicycles																	
Railroad																	
Stopped Buses																	

Comments:

Report generated on 12/1/2009 2:31 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

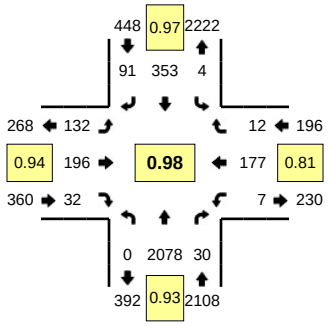
LOCATION: Washington St -- Duke St

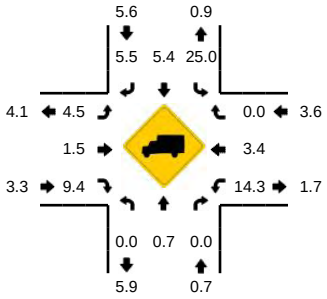
CITY/STATE: Alexandria, VA

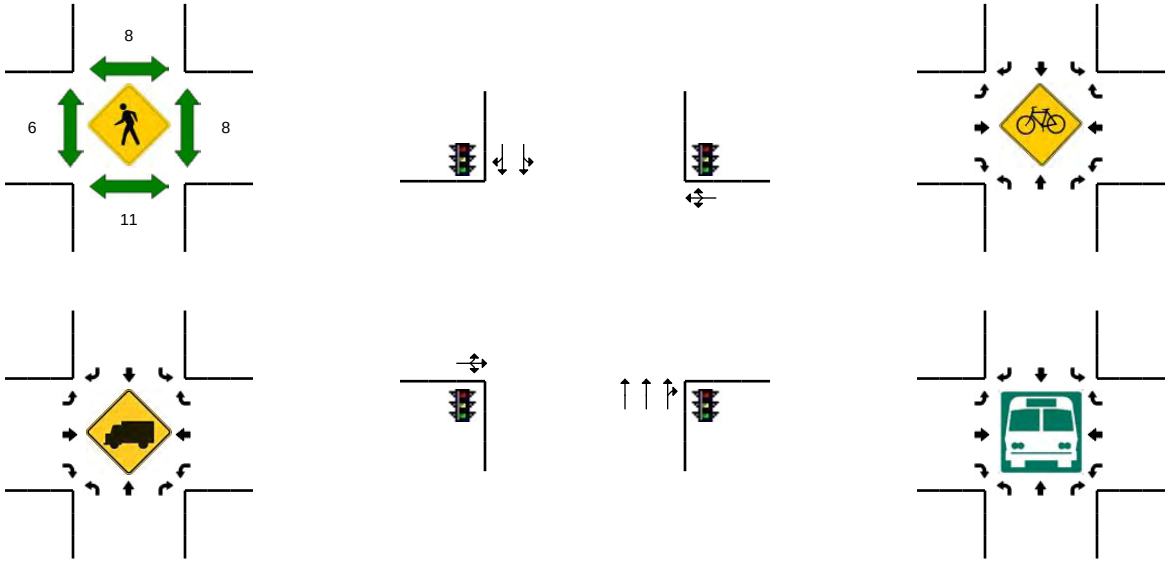
QC JOB #: 10464509

DATE: 11/19/2009

Peak-Hour: 7:00 AM -- 8:00 AM
Peak 15-Min: 7:15 AM -- 7:30 AM







15-Min Count Period Beginning At	Washington St (Northbound)				Washington St (Southbound)				Duke St (Eastbound)				Duke St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	564	4	0	1	73	25	0	38	28	4	0	0	29	3	0	769	
7:15 AM	0	541	4	0	1	91	20	0	36	54	15	0	4	26	2	0	794	
7:30 AM	0	504	12	0	0	102	19	0	28	46	10	0	0	61	3	0	785	
7:45 AM	0	469	10	0	2	87	27	0	30	68	3	0	3	61	4	0	764	3112
8:00 AM	1	478	14	0	2	93	26	0	37	43	7	0	1	32	0	0	734	3077
8:15 AM	1	400	5	0	5	89	33	0	34	59	7	0	2	47	5	0	687	2970
8:30 AM	0	446	15	0	3	89	35	0	33	49	8	0	3	35	5	0	721	2906
8:45 AM	1	390	6	0	4	69	32	0	28	62	8	0	0	51	6	0	657	2799

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	2164	16	0	4	364	80	0	144	216	60	0	16	104	8	0	3176
Heavy Trucks	0	8	0		4	24	8		8	4	0		4	0	0		60
Pedestrians		8				12				4				4			28
Bicycles																	
Railroad																	
Stopped Buses																	

Comments:

Report generated on 12/1/2009 2:31 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

Type of peak hour being reported: Intersection Peak

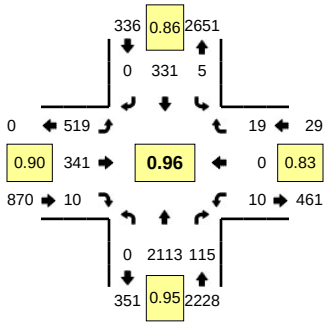
Method for determining peak hour: Total Entering Volume

LOCATION: Washington St -- Franklin St

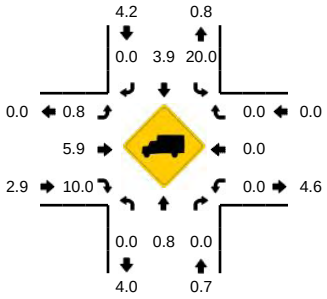
CITY/STATE: Alexandria, VA

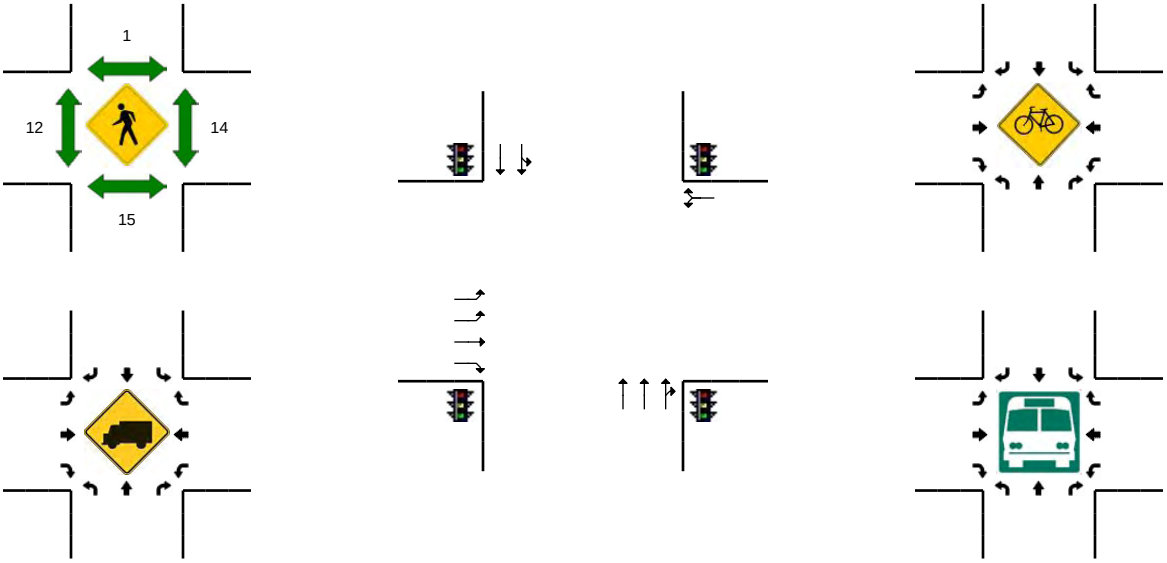
QC JOB #: 10464511

DATE: 11/19/2009



Peak-Hour: 7:15 AM -- 8:15 AM
Peak 15-Min: 7:15 AM -- 7:30 AM





15-Min Count Period Beginning At	Washington St (Northbound)				Washington St (Southbound)				Franklin St (Eastbound)				Franklin St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	499	18	0	1	52	0	0	161	65	4	0	2	0	6	0	808	
7:15 AM	0	577	20	0	1	97	0	0	119	77	4	0	1	0	3	0	899	
7:30 AM	0	508	44	0	1	85	0	0	138	88	2	0	2	0	7	0	875	
7:45 AM	0	566	27	0	1	75	0	0	112	75	4	0	2	0	7	0	869	3451
8:00 AM	0	462	24	0	2	74	0	0	150	101	0	0	5	0	2	0	820	3463
8:15 AM	0	509	17	0	2	79	0	0	96	85	7	0	1	0	4	0	800	3364
8:30 AM	0	424	16	0	2	79	0	0	157	94	4	0	0	0	5	0	781	3270
8:45 AM	0	417	15	0	4	51	0	0	124	88	9	0	1	0	4	0	713	3114

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	2308	80	0	4	388	0	0	476	308	16	0	4	0	12	0	3596
Heavy Trucks	0	16	0		4	20	0		4	8	4		0	0	0		56
Pedestrians		20				0				16				16			52
Bicycles																	
Railroad																	
Stopped Buses																	

Comments:

Report generated on 12/1/2009 2:31 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

Type of peak hour being reported: Intersection Peak

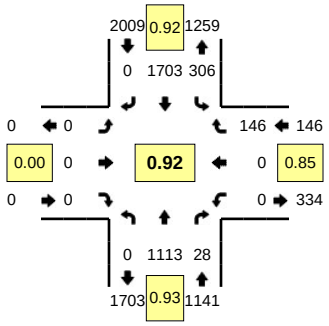
Method for determining peak hour: Total Entering Volume

LOCATION: Washington St -- 1st St

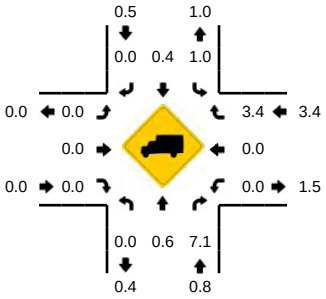
CITY/STATE: Alexancdria, VA

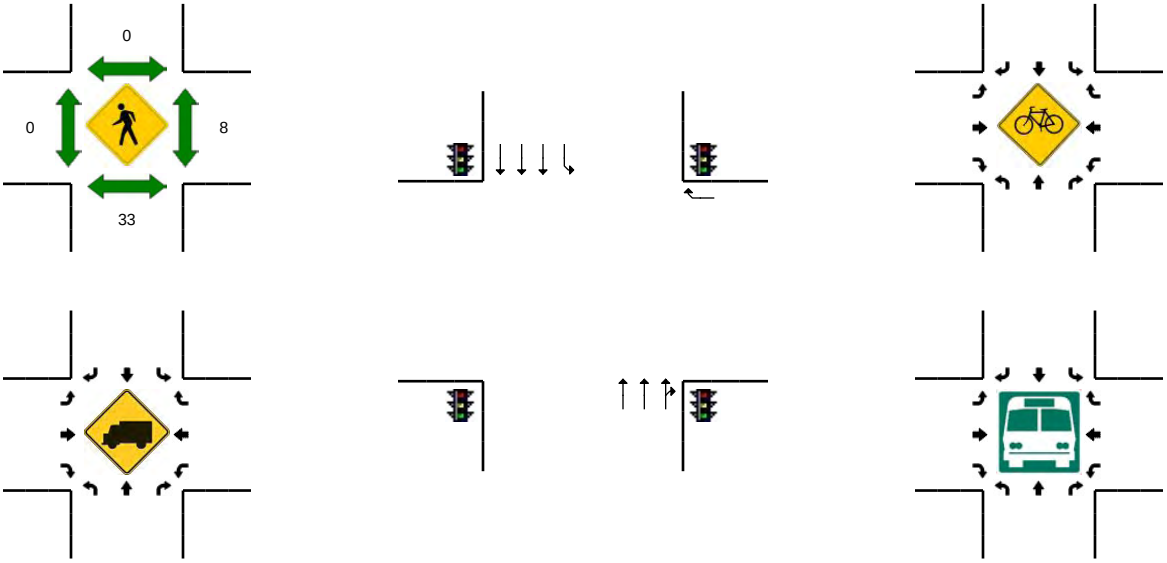
QC JOB #: 10464502

DATE: 11/19/2009



Peak-Hour: 5:00 PM -- 6:00 PM
Peak 15-Min: 5:30 PM -- 5:45 PM





15-Min Count Period Beginning At	Washington St (Northbound)				Washington St (Southbound)				1st St (Eastbound)				1st St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
4:30 PM	0	140	9	0	40	278	0	1	0	0	0	0	0	0	22	0	490	
4:45 PM	0	250	8	0	49	420	0	0	0	0	0	0	0	0	32	0	759	1249
5:00 PM	0	286	10	0	55	389	0	0	0	0	0	0	0	0	32	0	772	2021
5:15 PM	0	289	5	0	78	412	0	0	0	0	0	0	0	0	43	0	827	2848
5:30 PM	0	304	6	0	86	459	0	0	0	0	0	0	0	0	37	0	892	3250
5:45 PM	0	234	7	0	87	443	0	0	0	0	0	0	0	0	34	0	805	3296

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	1216	24	0	344	1836	0	0	0	0	0	0	0	0	148	0	3568
Heavy Trucks	0	4	0		0	8	0		0	0	0		0	0	4		16
Pedestrians		16				0				0				20			36
Bicycles																	
Railroad																	
Stopped Buses																	

Comments:

Report generated on 12/1/2009 2:31 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

Type of peak hour being reported: Intersection Peak

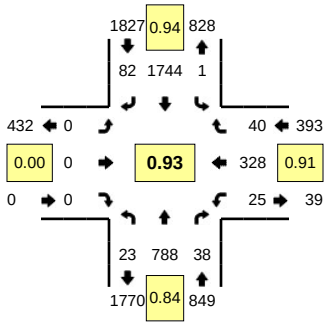
Method for determining peak hour: Total Entering Volume

LOCATION: Washington St -- Cameron St

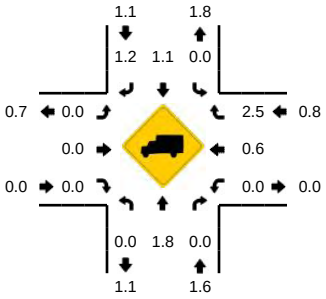
CITY/STATE: Alexandria, VA

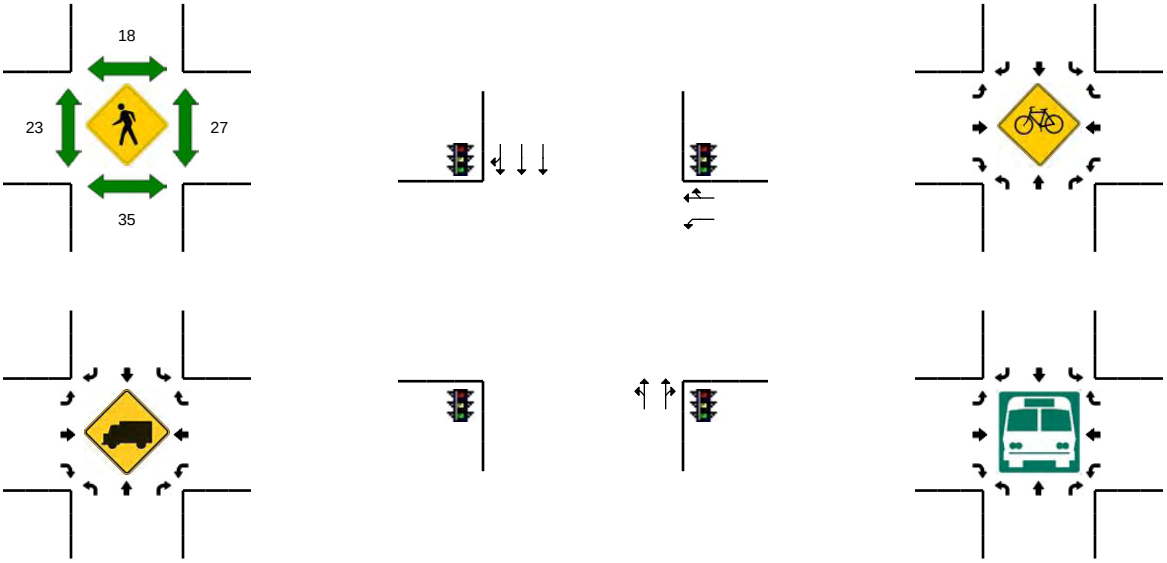
QC JOB #: 10464504

DATE: 11/19/2009



Peak-Hour: 4:45 PM -- 5:45 PM
Peak 15-Min: 5:15 PM -- 5:30 PM





15-Min Count Period Beginning At	Washington St (Northbound)				Washington St (Southbound)				Cameron St (Eastbound)				Cameron St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	6	165	10	0	0	399	17	0	0	0	0	0	8	60	9	0	674	
4:15 PM	4	179	6	1	0	469	16	1	0	0	0	0	7	53	7	0	743	
4:30 PM	5	158	10	0	0	444	15	0	0	0	0	0	13	60	9	0	714	
4:45 PM	3	189	6	0	0	470	24	0	0	0	0	0	8	61	8	0	769	2900
5:00 PM	6	174	12	1	0	405	21	0	0	0	0	0	11	80	11	0	721	2947
5:15 PM	5	239	8	0	1	453	17	0	0	0	0	0	2	89	9	0	823	3027
5:30 PM	8	186	12	0	0	416	20	0	0	0	0	0	4	98	12	0	756	3069
5:45 PM	7	176	12	0	2	434	23	0	0	0	0	0	5	84	10	0	753	3053

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	20	956	32	0	4	1812	68	0	0	0	0	0	8	356	36	0	3292
Heavy Trucks	0	4	0		0	20	0		0	0	0		0	4	4		32
Pedestrians		0				16				20				28			64
Bicycles																	
Railroad																	
Stopped Buses																	

Comments:

Report generated on 12/1/2009 2:31 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

Type of peak hour being reported: Intersection Peak

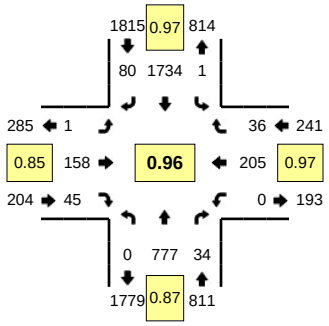
Method for determining peak hour: Total Entering Volume

LOCATION: Washington St -- King St

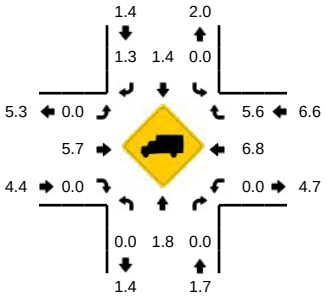
CITY/STATE: Alexandria, VA

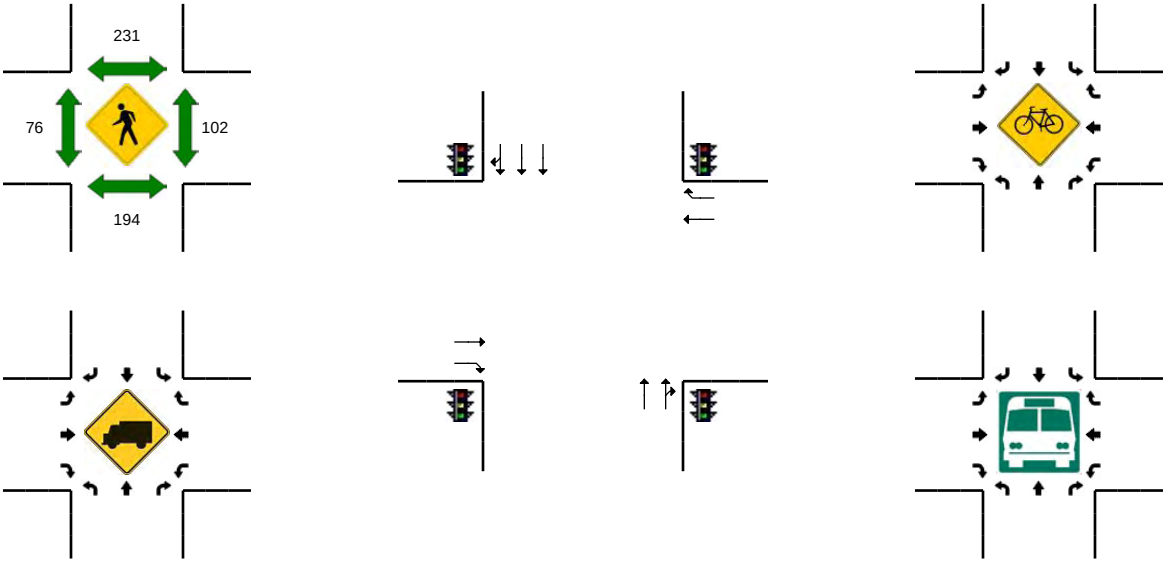
QC JOB #: 10464506

DATE: 11/19/2009



Peak-Hour: 4:30 PM -- 5:30 PM
Peak 15-Min: 5:15 PM -- 5:30 PM





15-Min Count Period Beginning At	Washington St (Northbound)				Washington St (Southbound)				King St (Eastbound)				King St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	169	8	0	1	394	21	0	0	37	16	0	0	43	11	0	700	
4:15 PM	0	177	10	0	1	434	25	0	0	40	9	0	0	48	6	0	750	
4:30 PM	0	171	10	0	1	455	20	0	0	38	14	0	0	52	10	0	771	
4:45 PM	0	179	8	0	0	453	19	0	0	38	13	0	0	48	11	0	769	2990
5:00 PM	0	190	9	0	0	407	25	0	0	35	8	0	0	49	9	0	732	3022
5:15 PM	0	237	7	0	0	419	16	0	1	47	10	0	0	56	6	0	799	3071
5:30 PM	0	201	12	0	0	410	24	0	0	52	14	0	0	47	10	0	770	3070
5:45 PM	0	177	18	0	0	399	24	0	0	46	12	0	0	42	11	0	729	3030

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	948	28	0	0	1676	64	0	4	188	40	0	0	224	24	0	3196
Heavy Trucks	0	8	0		0	16	4		0	4	0		0	16	0		48
Pedestrians		296				220				76				88			680
Bicycles																	
Railroad																	
Stopped Buses																	

Comments:

Report generated on 12/1/2009 2:31 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

Type of peak hour being reported: Intersection Peak

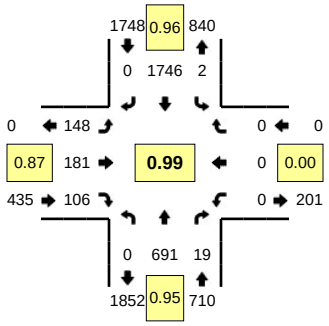
Method for determining peak hour: Total Entering Volume

LOCATION: Washington St -- Prince St

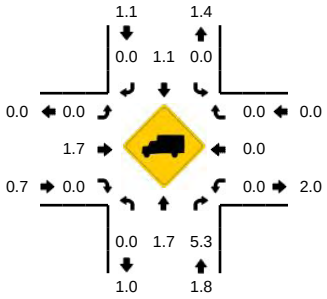
CITY/STATE: Alexandria, VA

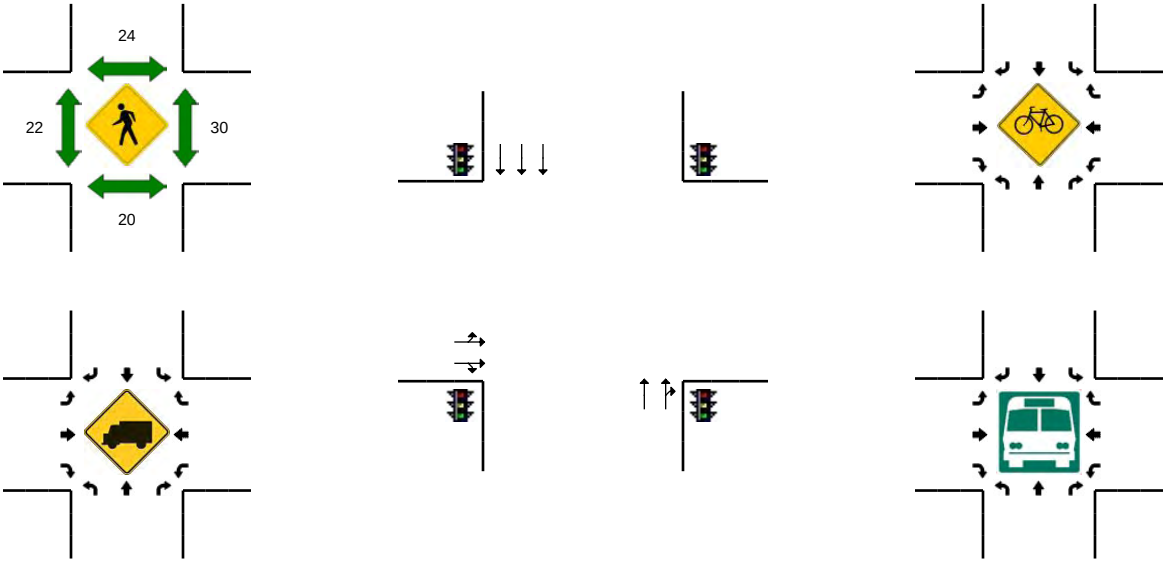
QC JOB #: 10464508

DATE: 11/19/2009



Peak-Hour: 4:45 PM -- 5:45 PM
Peak 15-Min: 5:30 PM -- 5:45 PM





15-Min Count Period Beginning At	Washington St (Northbound)				Washington St (Southbound)				Prince St (Eastbound)				Prince St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	147	3	0	0	415	0	0	33	46	23	0	0	0	0	0	667	
4:15 PM	0	158	6	0	0	441	0	0	20	33	20	0	0	0	0	0	678	
4:30 PM	0	157	5	0	0	471	0	0	29	35	26	0	0	0	0	0	723	
4:45 PM	0	151	5	0	0	463	0	0	28	50	29	0	0	0	0	0	726	2794
5:00 PM	0	177	8	0	0	437	0	0	34	50	22	0	0	0	0	0	728	2855
5:15 PM	0	179	3	0	0	394	0	1	53	45	31	0	0	0	0	0	706	2883
5:30 PM	0	184	3	0	1	452	0	0	33	36	24	0	0	0	0	0	733	2893
5:45 PM	0	144	8	0	0	397	0	0	40	66	27	0	0	0	0	0	682	2849

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	736	12	0	4	1808	0	0	132	144	96	0	0	0	0	0	2932
Heavy Trucks	0	12	4		0	16	0		0	0	0		0	0	0		32
Pedestrians		8				28				24				8			68
Bicycles																	
Railroad																	
Stopped Buses																	

Comments:

Report generated on 12/1/2009 2:31 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

Type of peak hour being reported: Intersection Peak

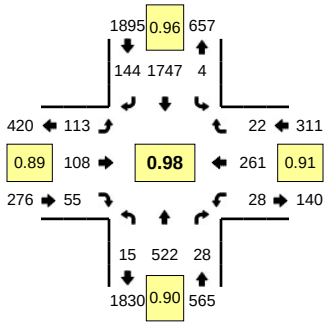
Method for determining peak hour: Total Entering Volume

LOCATION: Washington St -- Duke St

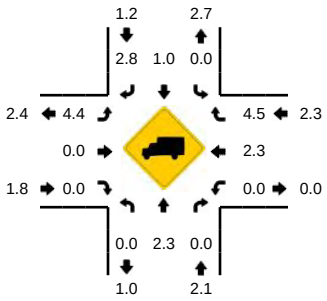
CITY/STATE: Alexandria, VA

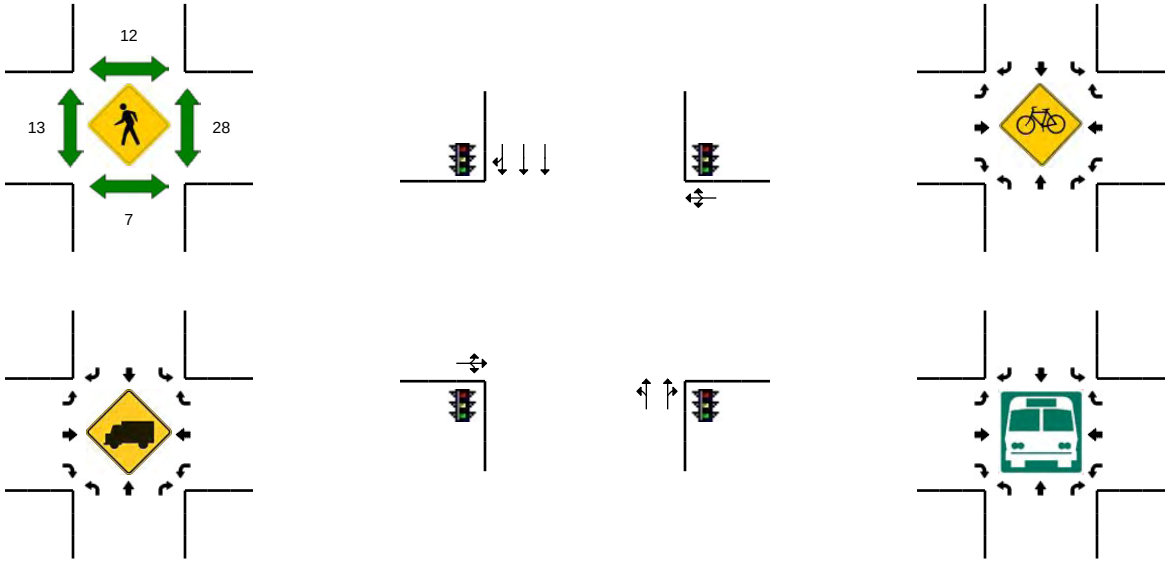
QC JOB #: 10464510

DATE: 11/19/2009



Peak-Hour: 4:15 PM -- 5:15 PM
Peak 15-Min: 4:45 PM -- 5:00 PM





15-Min Count Period Beginning At	Washington St (Northbound)				Washington St (Southbound)				Duke St (Eastbound)				Duke St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	3	109	7	0	1	402	32	0	27	37	19	0	15	63	6	0	721	
4:15 PM	2	134	7	0	1	432	32	0	30	26	17	0	6	71	5	0	763	
4:30 PM	4	121	5	0	3	442	41	0	26	25	14	0	3	64	7	0	755	
4:45 PM	3	130	7	0	0	455	36	0	30	29	14	0	6	58	6	0	774	3013
5:00 PM	6	137	9	0	0	418	35	0	27	28	10	0	13	68	4	0	755	3047
5:15 PM	7	169	4	0	1	386	41	0	24	26	20	0	5	65	6	0	754	3038
5:30 PM	8	160	3	0	3	415	37	0	19	32	7	0	8	60	8	0	760	3043
5:45 PM	3	134	7	0	3	389	42	0	28	26	9	0	5	44	2	0	692	2961

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	12	520	28	0	0	1820	144	0	120	116	56	0	24	232	24	0	3096
Heavy Trucks	0	8	0		0	20	4		8	0	0		0	4	0		44
Pedestrians		8				8				4				20			40
Bicycles																	
Railroad																	
Stopped Buses																	

Comments:

Report generated on 12/1/2009 2:31 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

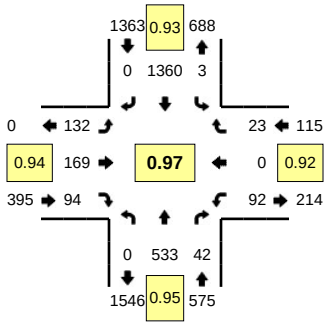
LOCATION: Washington St -- Franklin St

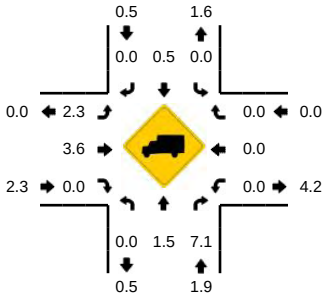
CITY/STATE: Alexandria, VA

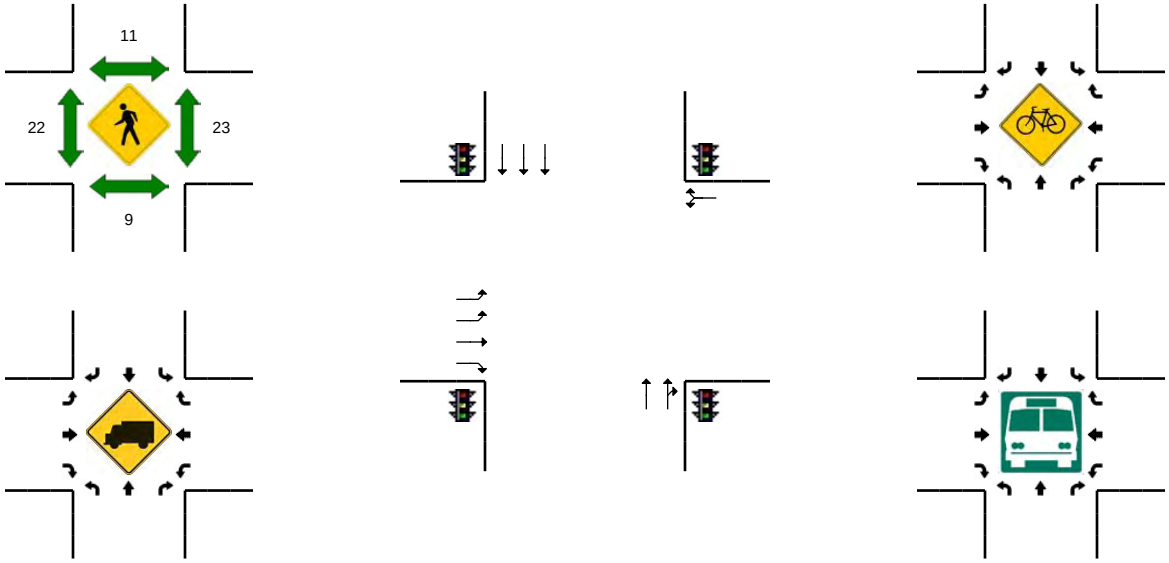
QC JOB #: 10464512

DATE: 11/19/2009

Peak-Hour: 5:00 PM -- 6:00 PM
Peak 15-Min: 5:00 PM -- 5:15 PM







15-Min Count Period Beginning At	Washington St (Northbound)				Washington St (Southbound)				Franklin St (Eastbound)				Franklin St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	111	15	0	1	329	0	0	28	34	13	0	10	0	3	0	544	
4:15 PM	0	117	11	0	2	290	0	0	28	41	15	0	8	0	3	0	515	
4:30 PM	0	131	10	0	1	314	0	0	22	33	21	0	12	0	5	0	549	
4:45 PM	0	120	9	0	0	321	0	0	32	33	18	0	28	0	6	0	567	2175
5:00 PM	0	135	11	0	0	365	0	0	34	43	15	0	25	0	5	0	633	2264
5:15 PM	0	143	9	0	1	307	0	0	37	41	21	0	25	0	9	0	593	2342
5:30 PM	0	139	8	0	1	347	0	0	28	45	26	0	20	0	7	0	621	2414
5:45 PM	0	116	14	0	1	341	0	0	33	40	32	0	22	0	2	0	601	2448

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	540	44	0	0	1460	0	0	136	172	60	0	100	0	20	0	2532
Heavy Trucks	0	8	12		0	8	0		4	8	0		0	0	0		40
Pedestrians		4				8				20				12			44
Bicycles																	
Railroad																	
Stopped Buses																	

Comments:

Report generated on 12/1/2009 2:31 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

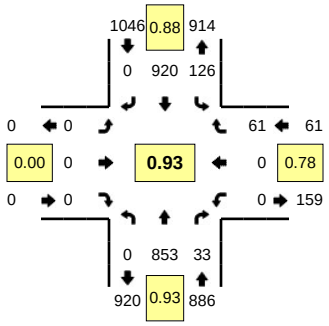
LOCATION: Washington St -- 1st St

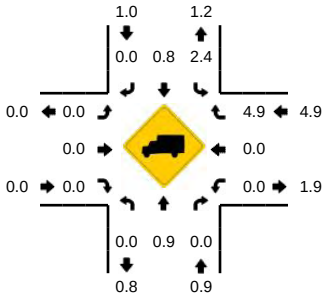
CITY/STATE: Alexancdria, VA

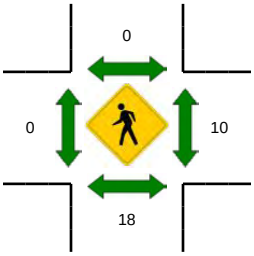
QC JOB #: 10464513

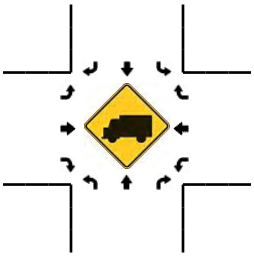
DATE: 11/21/2009

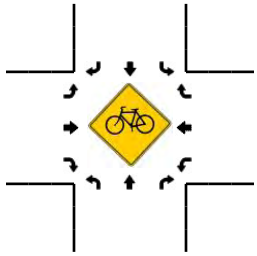
Peak-Hour: 12:15 PM -- 1:15 PM
Peak 15-Min: 12:45 PM -- 1:00 PM











15-Min Count Period Beginning At	Washington St (Northbound)				Washington St (Southbound)				1st St (Eastbound)				1st St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
12:00 PM	0	207	6	0	28	184	0	0	0	0	0	0	0	0	18	0	443	
12:15 PM	0	202	7	0	29	223	0	0	0	0	0	0	0	0	15	0	476	
12:30 PM	0	211	6	0	33	224	0	0	0	0	0	0	0	0	16	0	490	
12:45 PM	0	213	8	0	35	262	0	0	0	0	0	0	0	0	20	0	538	1947
1:00 PM	0	227	12	0	29	211	0	0	0	0	0	0	0	0	10	0	489	1993
1:15 PM	0	203	4	0	30	212	0	0	0	0	0	0	0	0	25	0	474	1991
1:30 PM	0	191	5	0	33	208	0	0	0	0	0	0	0	0	22	0	459	1960
1:45 PM	0	224	7	0	34	193	0	0	0	0	0	0	0	0	21	0	479	1901

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	852	32	0	140	1048	0	0	0	0	0	0	0	0	80	0	2152
Heavy Trucks	0	28	0		8	8	0		0	0	0		0	0	0		44
Pedestrians		20				0				0				16			36
Bicycles																	
Railroad																	
Stopped Buses																	

Comments:

Report generated on 12/1/2009 2:31 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

Type of peak hour being reported: Intersection Peak

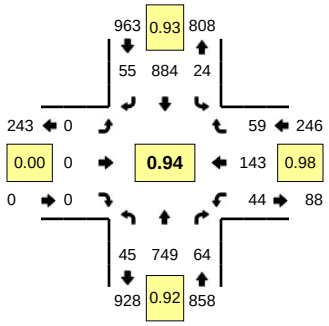
Method for determining peak hour: Total Entering Volume

LOCATION: Washington St -- Cameron St

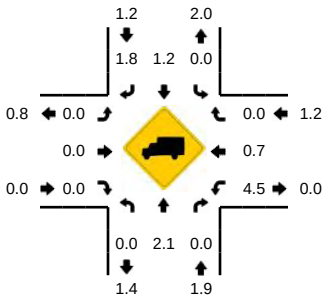
CITY/STATE: Alexandria, VA

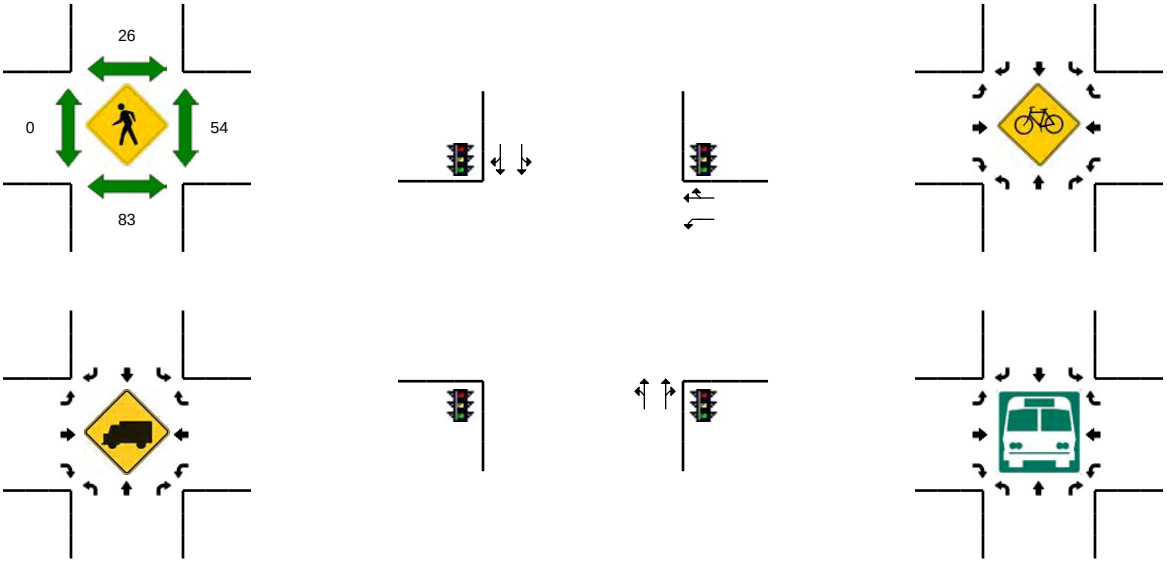
QC JOB #: 10464514

DATE: 11/21/2009



Peak-Hour: 12:15 PM -- 1:15 PM
Peak 15-Min: 1:00 PM -- 1:15 PM





15-Min Count Period Beginning At	Washington St (Northbound)				Washington St (Southbound)				Cameron St (Eastbound)				Cameron St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
12:00 PM	16	180	10	0	6	197	16	0	0	0	0	0	4	37	12	0	478	
12:15 PM	7	182	14	0	4	225	9	0	0	0	0	0	14	35	13	0	503	
12:30 PM	10	189	16	0	3	194	18	0	0	0	0	0	14	35	12	0	491	
12:45 PM	15	171	20	0	10	231	17	0	0	0	0	0	5	38	17	0	524	1996
1:00 PM	13	207	14	0	7	234	11	0	0	0	0	0	11	35	17	0	549	2067
1:15 PM	14	176	13	0	5	200	8	0	0	0	0	0	9	38	9	0	472	2036
1:30 PM	16	166	5	0	1	218	15	0	0	0	0	0	9	28	10	0	468	2013
1:45 PM	21	189	11	0	6	205	18	0	0	0	0	0	10	31	11	0	502	1991

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	52	828	56	0	28	936	44	0	0	0	0	0	44	140	68	0	2196
Heavy Trucks	0	8	0		0	4	0		0	0	0		0	0	0		12
Pedestrians		76				12				0				48			136
Bicycles																	
Railroad																	
Stopped Buses																	

Comments:

Report generated on 12/1/2009 2:31 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

Type of peak hour being reported: Intersection Peak

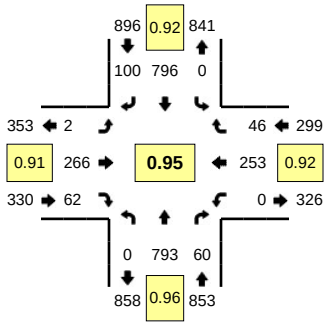
Method for determining peak hour: Total Entering Volume

LOCATION: Washington St -- King St

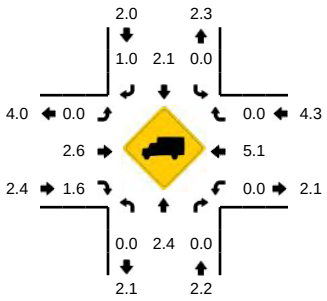
CITY/STATE: Alexandria, VA

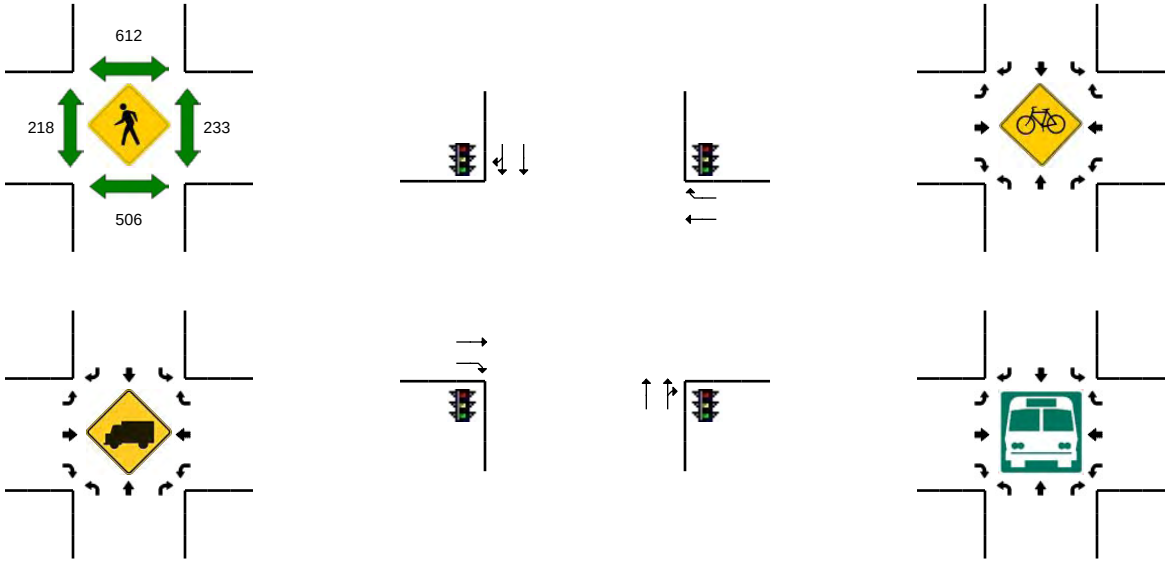
QC JOB #: 10464515

DATE: 12/21/2009



Peak-Hour: 12:30 PM -- 1:30 PM
Peak 15-Min: 1:00 PM -- 1:15 PM





15-Min Count Period Beginning At	Washington St (Northbound)				Washington St (Southbound)				King St (Eastbound)				King St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
12:00 PM	0	186	21	0	0	182	19	0	1	59	11	0	0	49	11	0	539	
12:15 PM	0	184	10	0	0	185	31	0	0	64	11	0	0	49	16	0	550	
12:30 PM	0	206	15	0	0	193	23	0	1	67	13	0	0	66	13	0	597	
12:45 PM	0	191	17	0	0	199	22	0	0	63	16	0	0	59	8	0	575	2261
1:00 PM	0	206	11	0	0	219	29	0	1	75	16	0	0	60	12	0	629	2351
1:15 PM	0	190	17	0	0	185	26	0	0	61	17	0	0	68	13	0	577	2378
1:30 PM	0	172	14	0	0	203	29	0	0	63	15	0	0	58	13	0	567	2348
1:45 PM	0	199	17	0	0	183	23	0	1	77	10	0	0	47	8	0	565	2338

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	824	44	0	0	876	116	0	4	300	64	0	0	240	48	0	2516
Heavy Trucks	0	8	0		0	12	0		0	12	0		0	16	0		48
Pedestrians		516				664				160				288			1628
Bicycles																	
Railroad																	
Stopped Buses																	

Comments:

Report generated on 12/1/2009 2:31 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

Type of peak hour being reported: Intersection Peak

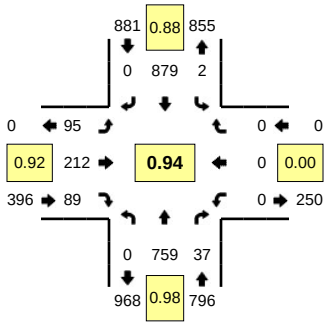
Method for determining peak hour: Total Entering Volume

LOCATION: Washington St -- Prince St

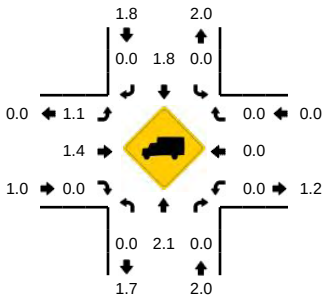
CITY/STATE: Alexandria, VA

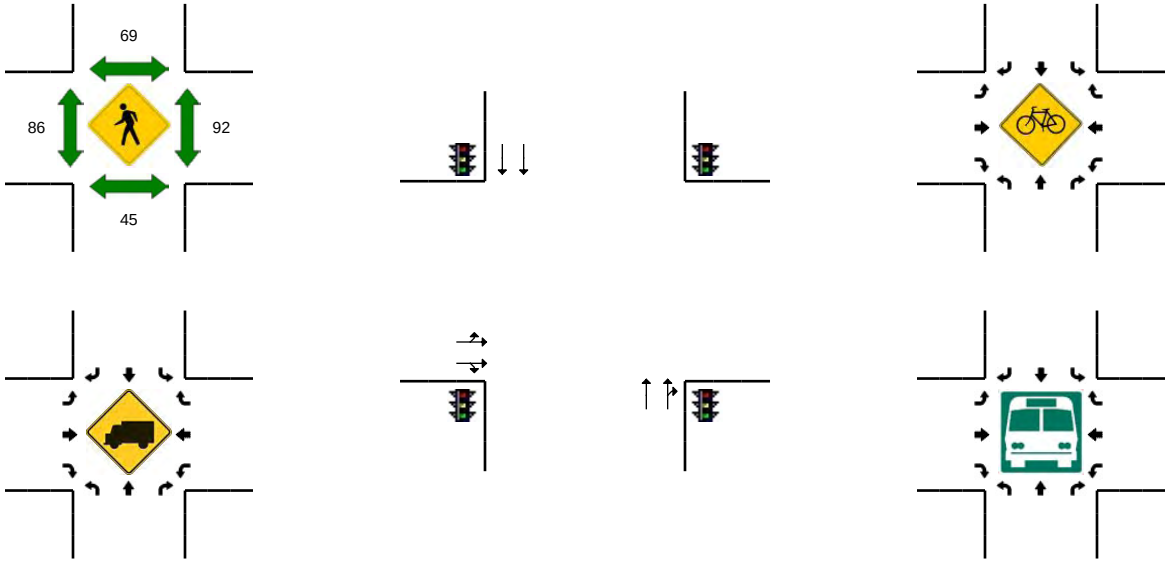
QC JOB #: 10464516

DATE: 11/21/2009



Peak-Hour: 12:15 PM -- 1:15 PM
Peak 15-Min: 1:00 PM -- 1:15 PM





15-Min Count Period Beginning At	Washington St (Northbound)				Washington St (Southbound)				Prince St (Eastbound)				Prince St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
12:00 PM	0	190	9	0	3	191	0	1	16	65	30	0	0	0	0	0	505	
12:15 PM	0	179	11	0	1	211	0	0	20	48	27	0	0	0	0	0	497	
12:30 PM	0	193	7	0	0	213	0	1	25	58	21	0	0	0	0	0	518	
12:45 PM	0	194	10	0	0	205	0	0	20	53	25	0	0	0	0	0	507	2027
1:00 PM	0	193	9	0	0	250	0	0	30	53	16	0	0	0	0	0	551	2073
1:15 PM	0	191	5	0	0	201	0	1	17	31	21	0	0	0	0	0	467	2043
1:30 PM	0	168	7	0	0	218	0	0	11	40	70	0	0	0	0	0	514	2039
1:45 PM	0	190	10	0	0	195	0	2	22	49	30	0	0	0	0	0	498	2030

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	772	36	0	0	1000	0	0	120	212	64	0	0	0	0	0	2204
Heavy Trucks	0	8	0		0	20	0		0	4	0		0	0	0		32
Pedestrians		28				48				80				60			216
Bicycles																	
Railroad																	
Stopped Buses																	

Comments:

Report generated on 12/1/2009 2:31 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

Type of peak hour being reported: Intersection Peak

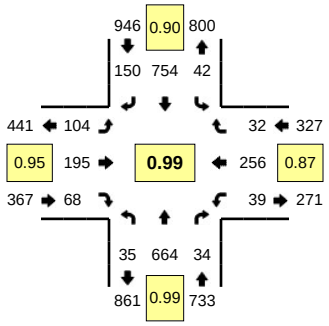
Method for determining peak hour: Total Entering Volume

LOCATION: Washington St -- Duke St

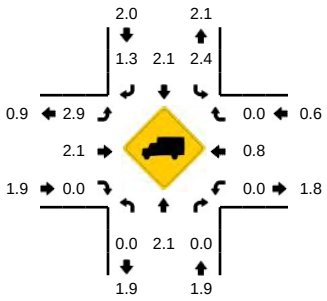
CITY/STATE: Alexandria, VA

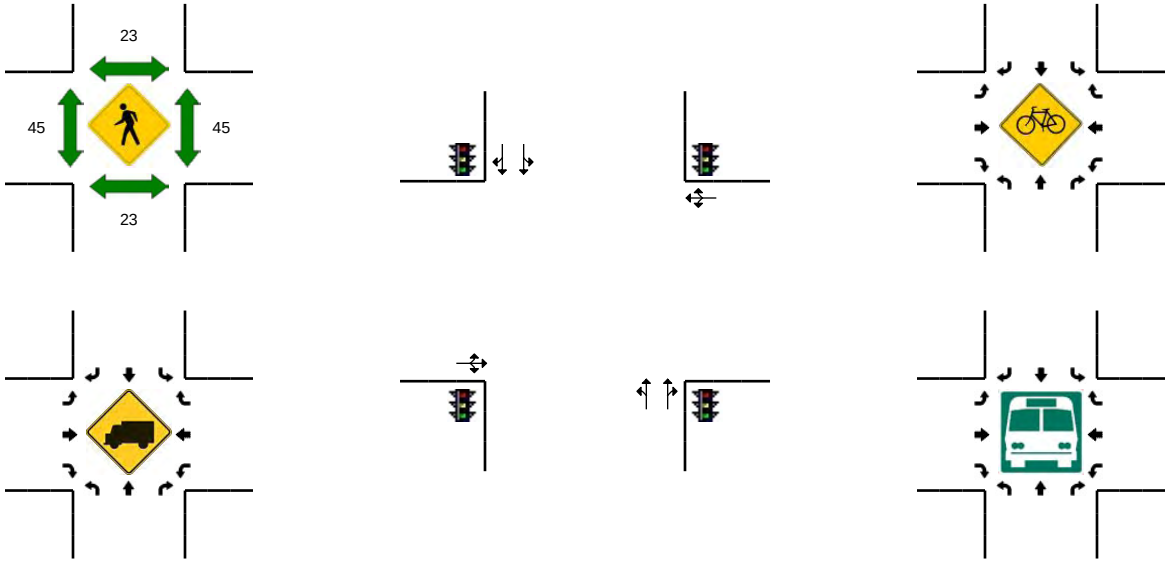
QC JOB #: 10464517

DATE: 11/21/2009



Peak-Hour: 12:30 PM -- 1:30 PM
Peak 15-Min: 12:45 PM -- 1:00 PM





15-Min Count Period Beginning At	Washington St (Northbound)				Washington St (Southbound)				Duke St (Eastbound)				Duke St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
12:00 PM	11	152	9	0	12	169	33	0	34	35	20	0	8	60	14	0	557	
12:15 PM	13	143	8	0	15	188	39	0	28	35	27	0	8	63	13	0	580	
12:30 PM	12	166	6	0	12	179	37	0	28	54	18	0	11	54	7	0	584	
12:45 PM	9	166	7	0	12	187	34	0	27	58	14	0	13	62	9	0	598	2319
1:00 PM	7	170	8	0	13	198	47	0	23	39	17	0	5	62	8	0	597	2359
1:15 PM	7	162	13	0	5	190	32	0	26	44	19	0	10	78	8	0	594	2373
1:30 PM	11	132	4	0	4	235	36	0	34	34	12	0	10	57	11	0	580	2369
1:45 PM	4	169	8	0	6	150	45	0	32	44	27	0	7	62	8	0	562	2333

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	36	664	28	0	48	748	136	0	108	232	56	0	52	248	36	0	2392
Heavy Trucks	0	28	0		0	12	0		0	12	0		0	0	0		52
Pedestrians		12				32				40				24			108
Bicycles																	
Railroad																	
Stopped Buses																	

Comments:

Report generated on 12/1/2009 2:31 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

Type of peak hour being reported: Intersection Peak

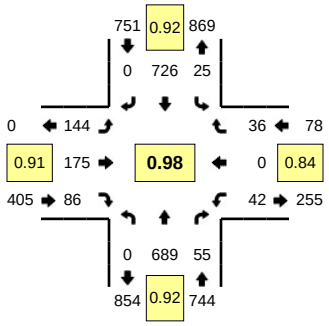
Method for determining peak hour: Total Entering Volume

LOCATION: Washington St -- Franklin St

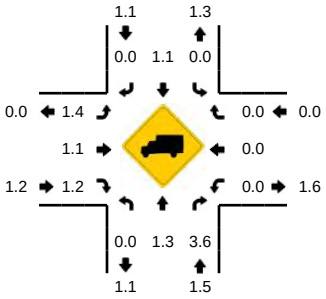
CITY/STATE: Alexandria, VA

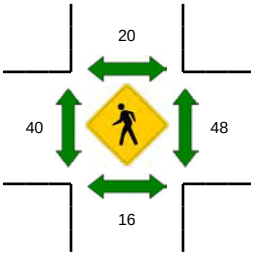
QC JOB #: 10464518

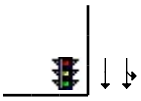
DATE: 11/21/2009

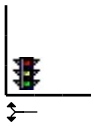


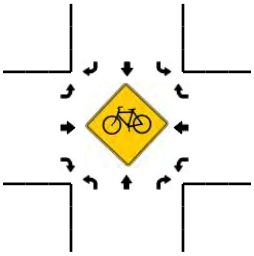
Peak-Hour: 1:00 PM -- 2:00 PM
Peak 15-Min: 1:00 PM -- 1:15 PM

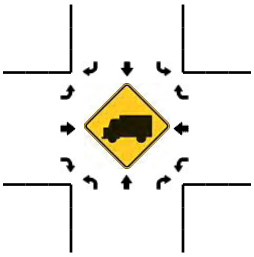


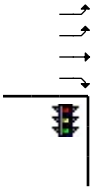


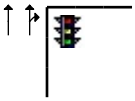


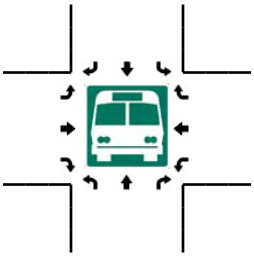












15-Min Count Period Beginning At	Washington St (Northbound)				Washington St (Southbound)				Franklin St (Eastbound)				Franklin St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
12:00 PM	0	153	11	0	8	162	0	0	37	38	18	0	15	0	6	0	448	
12:15 PM	0	170	19	0	8	168	0	0	39	33	19	0	14	0	11	0	481	
12:30 PM	0	161	7	0	7	166	0	0	46	37	18	0	6	0	13	0	461	
12:45 PM	0	161	11	0	6	156	0	0	41	46	29	0	12	0	17	0	479	1869
1:00 PM	0	162	13	0	13	182	0	0	46	43	20	0	11	0	14	0	504	1925
1:15 PM	0	188	15	0	3	174	0	0	28	44	24	0	10	0	5	0	491	1935
1:30 PM	0	148	16	0	7	198	0	0	38	46	19	0	6	0	12	0	490	1964
1:45 PM	0	191	11	0	2	172	0	0	32	42	23	0	15	0	5	0	493	1978

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	648	52	0	52	728	0	0	184	172	80	0	44	0	56	0	2016
Heavy Trucks	0	4	0		0	4	0		0	4	0		0	0	0		12
Pedestrians		24				4				20				56			104
Bicycles																	
Railroad																	
Stopped Buses																	

Comments:

Report generated on 12/1/2009 2:31 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

Appendix B
Traffic Analysis Printouts

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	0	128	2264	24	268	612
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	11	12	8	10
Storage Length (ft)	0	0		0	110	
Storage Lanes	0	0		0	1	
Taper Length (ft)	25	25		25	25	
Lane Util. Factor	1.00	1.00	*0.78	0.91	1.00	0.95
Ped Bike Factor			1.00			
Frt		0.865	0.998			
Flt Protected					0.950	
Satd. Flow (prot)	0	1442	4204	0	1534	3303
Flt Permitted					0.046	
Satd. Flow (perm)	0	1442	4204	0	74	3303
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		7	2			
Link Speed (mph)	25		25			25
Link Distance (ft)	222		429			151
Travel Time (s)	6.1		11.7			4.1
Confl. Peds. (#/hr)		4		4	4	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Parking (#/hr)		1				
Adj. Flow (vph)	0	128	2264	24	268	612
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	128	2288	0	268	612
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	0		8			8
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.00	1.15	1.04	1.00	1.20	1.09
Turning Speed (mph)	15	9		9	15	
Number of Detectors		1	1		1	1
Detector Template						
Leading Detector (ft)		5	5		35	5
Trailing Detector (ft)		0	0		-5	0
Detector 1 Position(ft)		0	0		-5	0
Detector 1 Size(ft)		5	5		40	5
Detector 1 Type		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)		0.0	0.0		0.0	0.0
Detector 1 Queue (s)		0.0	0.0		0.0	0.0
Detector 1 Delay (s)		0.0	0.0		0.0	0.0
Turn Type		Over			pm+pt	
Protected Phases		2	1		2	1
Permitted Phases					1	
Detector Phase		2	1		2	1
Switch Phase						

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Minimum Initial (s)		7.0	10.0		7.0	10.0
Minimum Split (s)		37.0	28.0		37.0	28.0
Total Split (s)	0.0	40.0	80.0	0.0	40.0	80.0
Total Split (%)	0.0%	33.3%	66.7%	0.0%	33.3%	66.7%
Maximum Green (s)		35.0	75.0		35.0	75.0
Yellow Time (s)		3.0	3.0		3.0	3.0
All-Red Time (s)		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)	4.0	5.0	5.0	4.0	5.0	5.0
Lead/Lag		Lag	Lead		Lag	Lead
Lead-Lag Optimize?						
Vehicle Extension (s)		3.0	3.0		3.0	3.0
Recall Mode		None	C-Max		None	C-Max
Walk Time (s)		7.0	7.0		7.0	7.0
Flash Dont Walk (s)		25.0	16.0		25.0	16.0
Pedestrian Calls (#/hr)		4	5		4	5
Act Effct Green (s)		22.5	87.5		110.0	87.5
Actuated g/C Ratio		0.19	0.73		0.92	0.73
v/c Ratio		0.46	0.75		0.79	0.25
Control Delay		44.9	0.9		51.9	6.4
Queue Delay		0.0	0.4		0.0	0.0
Total Delay		44.9	1.3		51.9	6.4
LOS		D	A		D	A
Approach Delay			1.3			20.3
Approach LOS			A			C

Intersection Summary	
Area Type: Other	
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 70 (58%), Referenced to phase 1:NBSB, Start of Yellow	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.79	
Intersection Signal Delay: 8.1	Intersection LOS: A
Intersection Capacity Utilization 75.4%	ICU Level of Service D
Analysis Period (min) 60	
* User Entered Value	

Splits and Phases: 108: First St & Washington St

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	8	140	16	0	2344	12	4	496	44
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	10	10	12	10	10	10	10	10	8
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.91	*0.78	0.91	0.95	0.95	0.95
Ped Bike Factor				0.98	1.00			1.00			1.00	
Frt					0.985			0.999			0.988	
Flt Protected				0.950								
Satd. Flow (prot)	0	0	0	1652	1511	0	0	3921	0	0	2921	0
Flt Permitted				0.950							0.916	
Satd. Flow (perm)	0	0	0	1613	1511	0	0	3921	0	0	2676	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		324			337			426			415	
Travel Time (s)		8.8			9.2			11.6			11.3	
Confl. Peds. (#/hr)				21		13	5		9	9		5
Peak Hour 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
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	7%	9%
Parking (#/hr)					3			1			3	
Adj. Flow (vph)	0	0	0	8	140	16	0	2344	12	4	496	44
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	8	156	0	0	2356	0	0	544	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			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	1.00	1.00	1.09	1.27	1.00	1.09	1.14	1.09	1.09	1.18	1.20
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type				Perm			Perm			Perm		
Protected Phases					2			1			1	
Permitted Phases				2			1			1		
Minimum Split (s)				38.1	38.1		29.1	29.1		29.1	29.1	
Total Split (s)	0.0	0.0	0.0	39.0	39.0	0.0	81.0	81.0	0.0	81.0	81.0	0.0
Total Split (%)	0.0%	0.0%	0.0%	32.5%	32.5%	0.0%	67.5%	67.5%	0.0%	67.5%	67.5%	0.0%
Maximum Green (s)				32.9	32.9		74.9	74.9		74.9	74.9	
Yellow Time (s)				3.0	3.0		3.0	3.0		3.0	3.0	
All-Red Time (s)				3.1	3.1		3.1	3.1		3.1	3.1	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	-2.1	0.0	0.0	-2.1	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	6.1	6.1	4.0	4.0	6.1	4.0	4.0	6.1	4.0
Lead/Lag				Lag	Lag		Lead	Lead		Lead	Lead	
Lead-Lag Optimize?												
Walk Time (s)				7.0	7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)				25.0	25.0		16.0	16.0		16.0	16.0	
Pedestrian Calls (#/hr)				0	0		0	0		0	0	
Act Effct Green (s)				32.9	32.9			74.9			74.9	
Actuated g/C Ratio				0.27	0.27			0.62			0.62	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio				0.02	0.38			0.96			0.33	
Control Delay				32.1	38.5			10.9			17.5	
Queue Delay				0.0	0.0			0.0			0.0	
Total Delay				32.1	38.5			10.9			17.5	
LOS				C	D			B			B	
Approach Delay					38.2			10.9			17.5	
Approach LOS					D			B			B	

Intersection Summary	
Area Type:	Other
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 1 (1%), Referenced to phase 1:NBSB, Start of Yellow	
Natural Cycle: 110	
Control Type: Pretimed	
Maximum v/c Ratio: 0.96	
Intersection Signal Delay: 13.6	Intersection LOS: B
Intersection Capacity Utilization 82.4%	ICU Level of Service E
Analysis Period (min) 60	
* User Entered Value	

Splits and Phases: 115: Cameron St & Washington St

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	144	20	0	100	16	0	2340	16	0	476	28
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	9	8	12	9	9	10	10	10	8	10	10
Storage Length (ft)	0		100	0		0	0		0	0		105
Storage Lanes	0		1	0		0	0		0	0		1
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	*0.78	0.91	1.00	0.95	1.00
Ped Bike Factor			0.89			0.92		1.00				0.91
Frt			0.850			0.850		0.999				0.850
Flt Protected												
Satd. Flow (prot)	0	1403	875	0	1466	1425	0	4040	0	0	2950	1478
Flt Permitted												
Satd. Flow (perm)	0	1403	782	0	1466	1309	0	4040	0	0	2950	1338
Right Turn on Red			Yes			Yes			No			No
Satd. Flow (RTOR)			20			6						
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		325			349			415			426	
Travel Time (s)		8.9			9.5			11.3			11.6	
Confl. Peds. (#/hr)			85			63			29			28
Peak Hour 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
Heavy Vehicles (%)	2%	17%	60%	2%	12%	2%	2%	2%	2%	2%	7%	2%
Bus Blockages (#/hr)	0	10	0	0	10	0	0	4	0	0	3	0
Parking (#/hr)											3	
Adj. Flow (vph)	0	144	20	0	100	16	0	2340	16	0	476	28
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	144	20	0	100	16	0	2356	0	0	476	28
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			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.20	1.20	1.00	1.20	1.14	1.09	1.10	1.09	1.20	1.19	1.09
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type			Perm			Perm						Perm
Protected Phases		2			2			1			1	
Permitted Phases			2			2						1
Minimum Split (s)		37.9	37.9		37.9	37.9		27.0			27.0	27.0
Total Split (s)	0.0	38.0	38.0	0.0	38.0	38.0	0.0	82.0	0.0	0.0	82.0	82.0
Total Split (%)	0.0%	31.7%	31.7%	0.0%	31.7%	31.7%	0.0%	68.3%	0.0%	0.0%	68.3%	68.3%
Maximum Green (s)		32.1	32.1		32.1	32.1		77.0			77.0	77.0
Yellow Time (s)		3.0	3.0		3.0	3.0		3.0			3.0	3.0
All-Red Time (s)		2.9	2.9		2.9	2.9		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	5.9	5.9	4.0	5.9	5.9	4.0	5.0	4.0	4.0	5.0	5.0
Lead/Lag		Lag	Lag		Lag	Lag		Lead			Lead	Lead
Lead-Lag Optimize?												
Walk Time (s)		7.0	7.0		7.0	7.0		7.0			7.0	7.0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Flash Dont Walk (s)		25.0	25.0		25.0	25.0		15.0			15.0	15.0
Pedestrian Calls (#/hr)		0	0		0	0		0			0	0
Act Effct Green (s)		32.1	32.1		32.1	32.1		77.0			77.0	77.0
Actuated g/C Ratio		0.27	0.27		0.27	0.27		0.64			0.64	0.64
v/c Ratio		0.38	0.09		0.26	0.05		0.91			0.25	0.03
Control Delay		39.6	14.0		36.7	25.3		6.4			11.6	9.5
Queue Delay		0.0	0.0		0.0	0.0		0.0			0.0	0.0
Total Delay		39.6	14.0		36.7	25.3		6.4			11.6	9.5
LOS		D	B		D	C		A			B	A
Approach Delay		36.5			35.2			6.4			11.5	
Approach LOS		D			D			A			B	

Intersection Summary	
Area Type: Other	
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 112 (93%), Referenced to phase 1:NBSB, Start of Yellow	
Natural Cycle: 100	
Control Type: Pretimed	
Maximum v/c Ratio: 0.91	
Intersection Signal Delay: 9.8	Intersection LOS: A
Intersection Capacity Utilization 81.3%	ICU Level of Service D
Analysis Period (min) 60	
* User Entered Value	

Splits and Phases: 116: King St & Washington St

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	80	360	16	0	0	0	0	2276	40	0	496	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	14	12	8	11	12	10	11	9
Lane Util. Factor	0.95	0.95	0.95	1.00	1.00	1.00	1.00	*0.78	0.91	1.00	0.95	1.00
Ped Bike Factor		1.00						1.00				
Frt		0.995						0.997				
Flt Protected		0.991										
Satd. Flow (prot)	0	3260	0	0	0	0	0	4199	0	0	3084	0
Flt Permitted		0.991										
Satd. Flow (perm)	0	3249	0	0	0	0	0	4199	0	0	3084	0
Right Turn on Red			No			Yes			No			Yes
Satd. Flow (RTOR)												
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		314			353			431			415	
Travel Time (s)		8.6			9.6			11.8			11.3	
Confl. Peds. (#/hr)	17		10						9			
Peak Hour 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
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	6%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	3	0
Parking (#/hr)		6			6						3	
Adj. Flow (vph)	80	360	16	0	0	0	0	2276	40	0	496	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	456	0	0	0	0	0	2316	0	0	496	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			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.09	1.00	1.00	0.92	1.00	1.20	1.04	1.00	1.09	1.14	1.14
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm											
Protected Phases		2						1			1	
Permitted Phases	2											
Minimum Split (s)	36.9	36.9						26.0			26.0	
Total Split (s)	47.0	47.0	0.0	0.0	0.0	0.0	0.0	73.0	0.0	0.0	73.0	0.0
Total Split (%)	39.2%	39.2%	0.0%	0.0%	0.0%	0.0%	0.0%	60.8%	0.0%	0.0%	60.8%	0.0%
Maximum Green (s)	41.1	41.1						68.0			68.0	
Yellow Time (s)	3.0	3.0						3.0			3.0	
All-Red Time (s)	2.9	2.9						2.0			2.0	
Lost Time Adjust (s)	-1.9	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	5.9	4.0	4.0	4.0	4.0	4.0	5.0	4.0	4.0	5.0	4.0
Lead/Lag	Lag	Lag						Lead			Lead	
Lead-Lag Optimize?												
Walk Time (s)	7.0	7.0						7.0			7.0	
Flash Dont Walk (s)	24.0	24.0						14.0			14.0	
Pedestrian Calls (#/hr)	10	10						10			10	
Act Effct Green (s)		41.1						68.0			68.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Actuated g/C Ratio		0.34						0.57			0.57	
v/c Ratio		0.41						0.97			0.28	
Control Delay		31.6						17.3			13.3	
Queue Delay		0.0						45.0			0.0	
Total Delay		31.6						62.3			13.3	
LOS		C						E			B	
Approach Delay		31.6						62.3			13.3	
Approach LOS		C						E			B	

Intersection Summary	
Area Type: Other	
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 101 (84%), Referenced to phase 1:NBSB, Start of Yellow	
Natural Cycle: 90	
Control Type: Pretimed	
Maximum v/c Ratio: 0.97	
Intersection Signal Delay: 50.5	Intersection LOS: D
Intersection Capacity Utilization 79.8%	ICU Level of Service D
Analysis Period (min) 60	

* User Entered Value

Splits and Phases: 117: Prince St & Washington St

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	144	216	60	16	104	8	0	2164	16	4	428	80
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	13	12	12	13	12	11	9	9	9	11	9
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.91	*0.78	0.91	0.95	0.95	0.95
Ped Bike Factor		0.99			1.00			1.00			1.00	
Frt		0.981			0.992			0.999			0.977	
Flt Protected		0.983			0.994							
Satd. Flow (prot)	0	1616	0	0	1632	0	0	3781	0	0	3015	0
Flt Permitted		0.822			0.933						0.922	
Satd. Flow (perm)	0	1348	0	0	1531	0	0	3781	0	0	2779	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		7			3			1			32	
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		314			356			422			431	
Travel Time (s)		8.6			9.7			11.5			11.8	
Confl. Peds. (#/hr)	8		11	11		8	6		8	8		6
Peak Hour 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
Heavy Vehicles (%)	6%	2%	2%	25%	2%	2%	2%	2%	2%	2%	7%	2%
Parking (#/hr)		3			3			1			3	
Adj. Flow (vph)	144	216	60	16	104	8	0	2164	16	4	428	80
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	420	0	0	128	0	0	2180	0	0	512	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			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.12	1.00	1.00	1.12	1.00	1.04	1.20	1.14	1.14	1.13	1.14
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		2			2			1			1	
Permitted Phases	2			2			1			1		
Minimum Split (s)	12.5	12.5		12.5	12.5		15.0	15.0		15.0	15.0	
Total Split (s)	43.0	43.0	0.0	43.0	43.0	0.0	77.0	77.0	0.0	77.0	77.0	0.0
Total Split (%)	35.8%	35.8%	0.0%	35.8%	35.8%	0.0%	64.2%	64.2%	0.0%	64.2%	64.2%	0.0%
Maximum Green (s)	37.5	37.5		37.5	37.5		72.0	72.0		72.0	72.0	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	2.5	2.5		2.5	2.5		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	-1.5	0.0	0.0	-1.5	0.0	0.0	-1.0	0.0	0.0	-1.0	0.0	0.0
Total Lost Time (s)	4.0	5.5	4.0	4.0	5.5	4.0	4.0	5.0	4.0	4.0	5.0	4.0
Lead/Lag	Lag	Lag		Lag	Lag		Lead	Lead		Lead	Lead	
Lead-Lag Optimize?												
Act Effct Green (s)		37.5			37.5			72.0			72.0	
Actuated g/C Ratio		0.31			0.31			0.60			0.60	
v/c Ratio		0.99			0.27			0.96			0.30	
Control Delay		115.8			32.1			21.9			11.5	
Queue Delay		0.0			0.0			50.5			0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay		115.8			32.1			72.3			11.5	
LOS		F			C			E			B	
Approach Delay		115.8			32.1			72.3			11.5	
Approach LOS		F			C			E			B	

Intersection Summary	
Area Type:	Other
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 96 (80%), Referenced to phase 1:NBSB, Start of Yellow	
Natural Cycle: 90	
Control Type: Pretimed	
Maximum v/c Ratio: 0.99	
Intersection Signal Delay: 66.8	Intersection LOS: E
Intersection Capacity Utilization 80.7%	ICU Level of Service D
Analysis Period (min) 60	

* User Entered Value

Splits and Phases: 118: Duke St & Washington St

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	476	308	16	4	0	12	0	2308	80	4	388	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	9	9	8	12	12	12	8	9	8	8	8	12
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	1.00	*0.78	0.91	0.95	0.95	1.00
Ped Bike Factor	1.00		0.97		0.99			1.00			1.00	
Frt			0.850		0.899			0.995				
Flt Protected	0.950				0.988						0.999	
Satd. Flow (prot)	3090	1486	1120	0	1466	0	0	3748	0	0	2795	0
Flt Permitted	0.747				0.926						0.907	
Satd. Flow (perm)	2427	1486	1086	0	1371	0	0	3748	0	0	2537	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			16		8			8				
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		273			322			442			432	
Travel Time (s)		7.4			8.8			12.1			11.8	
Confl. Peds. (#/hr)	1		15	15		1			14	14		
Peak Hour 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
Heavy Vehicles (%)	2%	3%	25%	2%	2%	2%	2%	2%	2%	100%	5%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	3	0	0	0	0
Parking (#/hr)		1			1			1			1	
Adj. Flow (vph)	476	308	16	4	0	12	0	2308	80	4	388	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	476	308	16	0	16	0	0	2388	0	0	392	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)		18			18			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.14	1.31	1.20	1.00	1.15	1.00	1.20	1.20	1.20	1.20	1.28	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm		Perm	Perm						Perm		
Protected Phases		2			2			1			1	
Permitted Phases	2		2	2						1		
Minimum Split (s)	12.5	12.5	12.5	12.5	12.5			15.5		15.5	15.5	
Total Split (s)	35.0	35.0	35.0	35.0	35.0	0.0	0.0	85.0	0.0	85.0	85.0	0.0
Total Split (%)	29.2%	29.2%	29.2%	29.2%	29.2%	0.0%	0.0%	70.8%	0.0%	70.8%	70.8%	0.0%
Maximum Green (s)	29.5	29.5	29.5	29.5	29.5			79.5		79.5	79.5	
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0			3.0		3.0	3.0	
All-Red Time (s)	2.5	2.5	2.5	2.5	2.5			2.5		2.5	2.5	
Lost Time Adjust (s)	0.0	0.0	0.0	-1.5	0.0	0.0	0.0	0.0	0.0	-1.5	0.0	0.0
Total Lost Time (s)	5.5	5.5	5.5	4.0	5.5	4.0	4.0	5.5	4.0	4.0	5.5	4.0
Lead/Lag	Lag	Lag	Lag	Lag	Lag			Lead		Lead	Lead	
Lead-Lag Optimize?												
Act Effct Green (s)	29.5	29.5	29.5		29.5			79.5			79.5	
Actuated g/C Ratio	0.25	0.25	0.25		0.25			0.66			0.66	
v/c Ratio	0.80	0.84	0.06		0.05			0.96			0.23	
Control Delay	54.5	68.4	15.6		24.5			15.1			5.7	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Delay	0.0	0.0	0.0		0.0			51.4			0.0	
Total Delay	54.5	68.4	15.6		24.5			66.6			5.7	
LOS	D	E	B		C			E			A	
Approach Delay		59.1			24.5			66.6			5.7	
Approach LOS		E			C			E			A	

Intersection Summary	
Area Type:	Other
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 51 (43%), Referenced to phase 1:NBSB, Start of Yellow	
Natural Cycle: 90	
Control Type: Pretimed	
Maximum v/c Ratio: 0.96	
Intersection Signal Delay: 58.1	Intersection LOS: E
Intersection Capacity Utilization 75.8%	ICU Level of Service D
Analysis Period (min) 60	
* User Entered Value	

Splits and Phases: 120: Franklin St & Washington St

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	0	148	1216	24	344	1836
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	*0.78
Ped Bike Factor			1.00		1.00	
Frt		0.865	0.997			
Flt Protected					0.950	
Satd. Flow (prot)	0	1596	3526	0	1770	4359
Flt Permitted					0.153	
Satd. Flow (perm)	0	1596	3526	0	284	4359
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		68	3			
Link Speed (mph)	25		25			25
Link Distance (ft)	241		430			151
Travel Time (s)	6.6		11.7			4.1
Confl. Peds. (#/hr)		8		8	8	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	2%	3%	2%	2%	2%	2%
Adj. Flow (vph)	0	148	1216	24	344	1836
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	148	1240	0	344	1836
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	0		12			12
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	
Turn Type		Over			pm+pt	
Protected Phases		2	1		2	1
Permitted Phases					1	
Minimum Split (s)		37.0	28.0		37.0	28.0
Total Split (s)	0.0	44.0	76.0	0.0	44.0	76.0
Total Split (%)	0.0%	36.7%	63.3%	0.0%	36.7%	63.3%
Maximum Green (s)		39.0	71.0		39.0	71.0
Yellow Time (s)		3.0	3.0		3.0	3.0
All-Red Time (s)		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)	4.0	5.0	5.0	4.0	5.0	5.0
Lead/Lag		Lag	Lead		Lag	Lead
Lead-Lag Optimize?						
Walk Time (s)		7.0	7.0		7.0	7.0
Flash Dont Walk (s)		25.0	16.0		25.0	16.0
Pedestrian Calls (#/hr)		5	20		5	20
Act Effct Green (s)		39.0	71.0		110.0	71.0
Actuated g/C Ratio		0.32	0.59		0.92	0.59
v/c Ratio		0.26	0.59		0.46	0.71
Control Delay		17.4	4.1		11.2	19.3

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Queue Delay		0.0	0.3		0.0	0.0
Total Delay		17.4	4.4		11.2	19.3
LOS		B	A		B	B
Approach Delay			4.4			18.0
Approach LOS			A			B

Intersection Summary	
Area Type:	Other
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 71 (59%), Referenced to phase 1:NBSB, Start of Yellow	
Natural Cycle: 75	
Control Type: Pretimed	
Maximum v/c Ratio: 0.71	
Intersection Signal Delay: 13.3	Intersection LOS: B
Intersection Capacity Utilization 78.5%	ICU Level of Service D
Analysis Period (min) 60	
* User Entered Value	

Splits and Phases: 108: First St & Washington St

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	8	356	36	20	956	32	0	1884	68
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	10	10	12	10	10	10	10	10	8
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	0.91	*0.78	0.91
Ped Bike Factor				0.96	1.00			1.00			1.00	
Frt					0.986			0.995			0.995	
Flt Protected				0.950				0.999				
Satd. Flow (prot)	0	0	0	1652	1500	0	0	3002	0	0	3925	0
Flt Permitted				0.950				0.791				
Satd. Flow (perm)	0	0	0	1587	1500	0	0	2377	0	0	3925	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		321			342			420			415	
Travel Time (s)		8.8			9.3			11.5			11.3	
Confl. Peds. (#/hr)				35		18	23		27	27		23
Peak Hour 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
Heavy Vehicles (%)	2%	2%	2%	2%	2%	11%	2%	5%	2%	2%	5%	2%
Parking (#/hr)					3			3				
Adj. Flow (vph)	0	0	0	8	356	36	20	956	32	0	1884	68
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	8	392	0	0	1008	0	0	1952	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			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	1.00	1.00	1.09	1.27	1.00	1.09	1.18	1.09	1.09	1.09	1.20
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type				Perm			Perm			Perm		
Protected Phases					2			1			1	
Permitted Phases				2			1			1		
Minimum Split (s)				38.1	38.1		29.1	29.1		29.1	29.1	
Total Split (s)	0.0	0.0	0.0	45.0	45.0	0.0	75.0	75.0	0.0	75.0	75.0	0.0
Total Split (%)	0.0%	0.0%	0.0%	37.5%	37.5%	0.0%	62.5%	62.5%	0.0%	62.5%	62.5%	0.0%
Maximum Green (s)				38.9	38.9		68.9	68.9		68.9	68.9	
Yellow Time (s)				3.0	3.0		3.0	3.0		3.0	3.0	
All-Red Time (s)				3.1	3.1		3.1	3.1		3.1	3.1	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	-2.1	0.0	0.0	-2.1	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	6.1	6.1	4.0	4.0	6.1	4.0	4.0	6.1	4.0
Lead/Lag				Lag	Lag		Lead	Lead		Lead	Lead	
Lead-Lag Optimize?												
Walk Time (s)				7.0	7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)				25.0	25.0		16.0	16.0		16.0	16.0	
Pedestrian Calls (#/hr)				0	0		0	0		0	0	
Act Effct Green (s)				38.9	38.9			68.9			68.9	
Actuated g/C Ratio				0.32	0.32			0.57			0.57	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio				0.02	0.81			0.74			0.87	
Control Delay				27.9	52.9			21.7			13.0	
Queue Delay				0.0	0.0			0.0			92.3	
Total Delay				27.9	52.9			21.7			105.3	
LOS				C	D			C			F	
Approach Delay					52.4			21.7			105.3	
Approach LOS					D			C			F	

Intersection Summary	
Area Type:	Other
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 21 (18%), Referenced to phase 1:NBSB, Start of Yellow	
Natural Cycle: 90	
Control Type: Pretimed	
Maximum v/c Ratio: 0.87	
Intersection Signal Delay: 73.9	Intersection LOS: E
Intersection Capacity Utilization 78.7%	ICU Level of Service D
Analysis Period (min) 60	
* User Entered Value	

Splits and Phases: 115: Cameron St & Washington St

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	188	40	0	224	24	0	984	28	0	1828	64
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	9	8	12	9	9	10	10	10	8	10	10
Storage Length (ft)	0		100	0		0	0		200	0		0
Storage Lanes	0		1	0		0	0		0	0		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	*0.78	0.91
Ped Bike Factor			0.77			0.73		0.99			0.99	
Frt			0.850			0.850		0.996			0.995	
Flt Protected												
Satd. Flow (prot)	0	1603	1372	0	1521	1425	0	3076	0	0	3848	0
Flt Permitted												
Satd. Flow (perm)	0	1603	1062	0	1521	1045	0	3076	0	0	3848	0
Right Turn on Red			Yes			Yes			No			No
Satd. Flow (RTOR)			12			24						
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		317			349			415			420	
Travel Time (s)		8.6			9.5			11.3			11.5	
Confl. Peds. (#/hr)			194			231			102			76
Peak Hour 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
Heavy Vehicles (%)	2%	2%	2%	2%	7%	2%	2%	2%	2%	2%	2%	6%
Bus Blockages (#/hr)	0	11	0	0	12	0	0	0	0	0	2	0
Parking (#/hr)								3			3	
Adj. Flow (vph)	0	188	40	0	224	24	0	984	28	0	1828	64
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	188	40	0	224	24	0	1012	0	0	1892	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			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.21	1.20	1.00	1.22	1.14	1.09	1.18	1.09	1.20	1.15	1.09
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type			Perm			Perm						
Protected Phases		2			2			1			1	
Permitted Phases			2			2						
Minimum Split (s)		37.9	37.9		37.9	37.9		27.0			27.0	
Total Split (s)	0.0	43.0	43.0	0.0	43.0	43.0	0.0	77.0	0.0	0.0	77.0	0.0
Total Split (%)	0.0%	35.8%	35.8%	0.0%	35.8%	35.8%	0.0%	64.2%	0.0%	0.0%	64.2%	0.0%
Maximum Green (s)		37.1	37.1		37.1	37.1		72.0			72.0	
Yellow Time (s)		3.0	3.0		3.0	3.0		3.0			3.0	
All-Red Time (s)		2.9	2.9		2.9	2.9		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	5.9	5.9	4.0	5.9	5.9	4.0	5.0	4.0	4.0	5.0	4.0
Lead/Lag		Lag	Lag		Lag	Lag		Lead			Lead	
Lead-Lag Optimize?												
Walk Time (s)		7.0	7.0		7.0	7.0		7.0			7.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Flash Dont Walk (s)		25.0	25.0		25.0	25.0		15.0			15.0	
Pedestrian Calls (#/hr)		0	0		0	0		0			0	
Act Effct Green (s)		37.1	37.1		37.1	37.1		72.0			72.0	
Actuated g/C Ratio		0.31	0.31		0.31	0.31		0.60			0.60	
v/c Ratio		0.38	0.12		0.48	0.07		0.55			0.82	
Control Delay		35.2	23.8		37.7	11.2		4.3			2.0	
Queue Delay		0.0	0.0		0.0	0.0		0.0			0.1	
Total Delay		35.2	23.8		37.7	11.2		4.3			2.1	
LOS		D	C		D	B		A			A	
Approach Delay		33.2			35.2			4.3			2.1	
Approach LOS		C			D			A			A	

Intersection Summary	
Area Type: Other	
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 32 (27%), Referenced to phase 1:NBSB, Start of Yellow	
Natural Cycle: 90	
Control Type: Pretimed	
Maximum v/c Ratio: 0.82	
Intersection Signal Delay: 7.3	Intersection LOS: A
Intersection Capacity Utilization 72.7%	ICU Level of Service C
Analysis Period (min) 60	
* User Entered Value	

Splits and Phases: 116: King St & Washington St

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	132	144	96	0	0	0	0	880	12	0	1868	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	14	12	8	11	12	10	11	9
Lane Util. Factor	0.95	0.95	0.95	1.00	1.00	1.00	1.00	0.95	0.95	1.00	*0.78	1.00
Ped Bike Factor		0.98						1.00				
Frt		0.961						0.998				
Flt Protected		0.983										
Satd. Flow (prot)	0	3098	0	0	0	0	0	3202	0	0	4202	0
Flt Permitted		0.983										
Satd. Flow (perm)	0	3067	0	0	0	0	0	3202	0	0	4202	0
Right Turn on Red			No			Yes			No			Yes
Satd. Flow (RTOR)												
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		307			348			429			415	
Travel Time (s)		8.4			9.5			11.7			11.3	
Confl. Peds. (#/hr)	24		20						30			
Peak Hour 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
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	33%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	2	0
Parking (#/hr)		6						3				
Adj. Flow (vph)	132	144	96	0	0	0	0	880	12	0	1868	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	372	0	0	0	0	0	892	0	0	1868	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			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.09	1.00	1.00	0.92	1.00	1.20	1.13	1.00	1.09	1.05	1.14
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm											
Protected Phases		2						1			1	
Permitted Phases	2											
Minimum Split (s)	36.9	36.9						26.0			26.0	
Total Split (s)	51.0	51.0	0.0	0.0	0.0	0.0	0.0	69.0	0.0	0.0	69.0	0.0
Total Split (%)	42.5%	42.5%	0.0%	0.0%	0.0%	0.0%	0.0%	57.5%	0.0%	0.0%	57.5%	0.0%
Maximum Green (s)	45.1	45.1						64.0			64.0	
Yellow Time (s)	3.0	3.0						3.0			3.0	
All-Red Time (s)	2.9	2.9						2.0			2.0	
Lost Time Adjust (s)	-1.9	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	5.9	4.0	4.0	4.0	4.0	4.0	5.0	4.0	4.0	5.0	4.0
Lead/Lag	Lag	Lag						Lead			Lead	
Lead-Lag Optimize?												
Walk Time (s)	7.0	7.0						7.0			7.0	
Flash Dont Walk (s)	24.0	24.0						14.0			14.0	
Pedestrian Calls (#/hr)	0	0						0			0	
Act Effct Green (s)		45.1						64.0			64.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Actuated g/C Ratio		0.38						0.53			0.53	
v/c Ratio		0.32						0.52			0.83	
Control Delay		27.6						11.1			9.1	
Queue Delay		0.0						0.2			0.7	
Total Delay		27.6						11.3			9.8	
LOS		C						B			A	
Approach Delay		27.6						11.3			9.8	
Approach LOS		C						B			A	

Intersection Summary	
Area Type:	Other
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 35 (29%), Referenced to phase 1:NBSB, Start of Yellow	
Natural Cycle: 80	
Control Type: Pretimed	
Maximum v/c Ratio: 0.83	
Intersection Signal Delay: 12.3	Intersection LOS: B
Intersection Capacity Utilization 71.0%	ICU Level of Service C
Analysis Period (min) 60	

* User Entered Value

Splits and Phases: 117: Prince St & Washington St

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	120	116	56	24	232	24	12	748	28	0	1820	144
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	13	12	12	13	12	11	9	9	9	11	9
Storage Length (ft)	0		0	0		0	0		115	0		0
Storage Lanes	0		0	0		0	0		1	0		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.91	*0.78	0.91
Ped Bike Factor		0.99			1.00			1.00	0.96		1.00	
Frt		0.974			0.988				0.850		0.989	
Flt Protected		0.980			0.996			0.999				
Satd. Flow (prot)	0	1589	0	0	1673	0	0	2999	1425	0	4155	0
Flt Permitted		0.664			0.956			0.860				
Satd. Flow (perm)	0	1074	0	0	1606	0	0	2582	1362	0	4155	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		11			4				27		14	
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		311			349			430			429	
Travel Time (s)		8.5			9.5			11.7			11.7	
Confl. Peds. (#/hr)	12		7	7		12	13		28	28		13
Peak Hour 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
Heavy Vehicles (%)	7%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	3%
Parking (#/hr)		3			3			3				
Adj. Flow (vph)	120	116	56	24	232	24	12	748	28	0	1820	144
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	292	0	0	280	0	0	760	28	0	1964	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			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.12	1.00	1.00	1.12	1.00	1.04	1.23	1.14	1.14	1.04	1.14
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm			Perm			Perm		Perm	Perm		
Protected Phases		2			2			1			1	
Permitted Phases	2			2			1		1	1		
Minimum Split (s)	12.5	12.5		12.5	12.5		15.0	15.0	15.0	15.0	15.0	
Total Split (s)	48.0	48.0	0.0	48.0	48.0	0.0	72.0	72.0	72.0	72.0	72.0	0.0
Total Split (%)	40.0%	40.0%	0.0%	40.0%	40.0%	0.0%	60.0%	60.0%	60.0%	60.0%	60.0%	0.0%
Maximum Green (s)	42.5	42.5		42.5	42.5		67.0	67.0	67.0	67.0	67.0	
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)	2.5	2.5		2.5	2.5		2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	-1.5	-1.5	0.0	-1.5	-1.5	0.0	-1.0	-1.0	-1.0	-1.0	-1.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lag	Lag		Lag	Lag		Lead	Lead	Lead	Lead	Lead	
Lead-Lag Optimize?												
Act Effct Green (s)		44.0			44.0			68.0	68.0		68.0	
Actuated g/C Ratio		0.37			0.37			0.57	0.57		0.57	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio		0.73			0.47			0.52	0.04		0.83	
Control Delay		44.5			32.0			32.6	12.6		4.0	
Queue Delay		0.0			0.0			0.2	0.0		0.8	
Total Delay		44.5			32.0			32.9	12.6		4.9	
LOS		D			C			C	B		A	
Approach Delay		44.5			32.0			32.1			4.9	
Approach LOS		D			C			C			A	

Intersection Summary	
Area Type:	Other
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 47 (39%), Referenced to phase 1:NBSB, Start of Yellow	
Natural Cycle: 50	
Control Type: Pretimed	
Maximum v/c Ratio: 0.83	
Intersection Signal Delay: 17.1	Intersection LOS: B
Intersection Capacity Utilization 79.9%	ICU Level of Service D
Analysis Period (min) 60	
* User Entered Value	

Splits and Phases: 118: Duke St & Washington St

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	136	172	60	100	0	20	0	540	44	0	1460	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	9	9	8	12	12	12	8	9	8	8	8	12
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.91	*0.78	1.00
Ped Bike Factor	0.99		0.98		0.99			1.00				
Frt			0.850		0.978			0.989				
Flt Protected	0.950				0.960							
Satd. Flow (prot)	3060	1629	1228	0	1560	0	0	2904	0	0	3645	0
Flt Permitted	0.697				0.626							
Satd. Flow (perm)	2215	1629	1204	0	1012	0	0	2904	0	0	3645	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			35		9			12				
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		273			322			443			426	
Travel Time (s)		7.4			8.8			12.1			11.6	
Confl. Peds. (#/hr)	11		9	9		11			23	23		
Peak Hour 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
Heavy Vehicles (%)	3%	5%	2%	2%	2%	2%	2%	2%	27%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	3	0	0	0	0
Parking (#/hr)			1		1			1			1	
Adj. Flow (vph)	136	172	60	100	0	20	0	540	44	0	1460	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	136	172	60	0	120	0	0	584	0	0	1460	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)		18			18			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.14	1.14	1.38	1.00	1.15	1.00	1.20	1.23	1.20	1.20	1.25	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm		Perm	Perm						Perm		
Protected Phases		2			2			1			1	
Permitted Phases	2		2	2						1		
Minimum Split (s)	12.5	12.5	12.5	12.5	12.5			15.5		15.5	15.5	
Total Split (s)	46.0	46.0	46.0	46.0	46.0	0.0	0.0	74.0	0.0	74.0	74.0	0.0
Total Split (%)	38.3%	38.3%	38.3%	38.3%	38.3%	0.0%	0.0%	61.7%	0.0%	61.7%	61.7%	0.0%
Maximum Green (s)	40.5	40.5	40.5	40.5	40.5			68.5		68.5	68.5	
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0			3.0		3.0	3.0	
All-Red Time (s)	2.5	2.5	2.5	2.5	2.5			2.5		2.5	2.5	
Lost Time Adjust (s)	0.0	0.0	0.0	-1.5	0.0	0.0	0.0	0.0	0.0	-1.5	0.0	0.0
Total Lost Time (s)	5.5	5.5	5.5	4.0	5.5	4.0	4.0	5.5	4.0	4.0	5.5	4.0
Lead/Lag	Lag	Lag	Lag	Lag	Lag			Lead		Lead	Lead	
Lead-Lag Optimize?												
Act Effct Green (s)	40.5	40.5	40.5		40.5			68.5			68.5	
Actuated g/C Ratio	0.34	0.34	0.34		0.34			0.57			0.57	
v/c Ratio	0.18	0.31	0.14		0.34			0.35			0.70	
Control Delay	28.9	31.4	14.9		31.0			15.6			2.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Delay	0.0	0.0	0.0		0.0			0.0			1.9	
Total Delay	28.9	31.4	14.9		31.0			15.6			4.0	
LOS	C	C	B		C			B			A	
Approach Delay		27.8			31.0			15.6			4.0	
Approach LOS		C			C			B			A	

Intersection Summary	
Area Type:	Other
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 87 (73%), Referenced to phase 1:NBSB, Start of Yellow	
Natural Cycle: 50	
Control Type: Pretimed	
Maximum v/c Ratio: 0.70	
Intersection Signal Delay: 11.4	Intersection LOS: B
Intersection Capacity Utilization 68.6%	ICU Level of Service C
Analysis Period (min) 60	
* User Entered Value	

Splits and Phases: 120: Franklin St & Washington St

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	0	80	852	32	140	1048
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	11	12	8	10
Lane Util. Factor	1.00	1.00	0.91	0.91	1.00	0.95
Ped Bike Factor			1.00		0.99	
Frt		0.865	0.995			
Flt Protected					0.950	
Satd. Flow (prot)	0	1442	4837	0	1476	3303
Flt Permitted					0.267	
Satd. Flow (perm)	0	1442	4837	0	412	3303
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		112	6			
Link Speed (mph)	25		25			25
Link Distance (ft)	222		422			180
Travel Time (s)	6.1		11.5			4.9
Confl. Peds. (#/hr)		10		10	10	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	2%	2%	3%	2%	6%	2%
Parking (#/hr)		1				
Adj. Flow (vph)	0	80	852	32	140	1048
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	80	884	0	140	1048
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	0		8			8
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.00	1.15	1.04	1.00	1.20	1.09
Turning Speed (mph)	15	9		9	15	
Turn Type		Over			pm+pt	
Protected Phases		2	1		2	1
Permitted Phases					1	
Minimum Split (s)		37.0	28.0		37.0	28.0
Total Split (s)	0.0	59.0	71.0	0.0	59.0	71.0
Total Split (%)	0.0%	45.4%	54.6%	0.0%	45.4%	54.6%
Maximum Green (s)		54.0	66.0		54.0	66.0
Yellow Time (s)		3.0	3.0		3.0	3.0
All-Red Time (s)		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)	4.0	5.0	5.0	4.0	5.0	5.0
Lead/Lag		Lag	Lead		Lag	Lead
Lead-Lag Optimize?						
Walk Time (s)		7.0	7.0		7.0	7.0
Flash Dont Walk (s)		25.0	16.0		25.0	16.0
Pedestrian Calls (#/hr)		10	15		10	15
Act Effct Green (s)		54.0	66.0		120.0	66.0
Actuated g/C Ratio		0.42	0.51		0.92	0.51

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
v/c Ratio		0.12	0.36		0.17	0.62
Control Delay		2.0	19.7		0.7	25.2
Queue Delay		0.0	0.6		0.0	0.0
Total Delay		2.0	20.3		0.7	25.2
LOS		A	C		A	C
Approach Delay			20.3			22.3
Approach LOS			C			C

Intersection Summary	
Area Type: Other	
Cycle Length: 130	
Actuated Cycle Length: 130	
Offset: 120 (92%), Referenced to phase 1:NBSB, Start of Yellow	
Natural Cycle: 65	
Control Type: Pretimed	
Maximum v/c Ratio: 0.62	
Intersection Signal Delay: 20.7	Intersection LOS: C
Intersection Capacity Utilization 54.2%	ICU Level of Service A
Analysis Period (min) 60	

Splits and Phases: 108: First St & Washington St

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	44	140	68	52	828	56	28	1008	44
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	10	10	12	10	10	10	10	10	8
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	0.95	0.95	0.95
Ped Bike Factor				0.90	0.99			0.99			1.00	
Frt					0.951			0.991			0.994	
Flt Protected				0.950				0.997			0.999	
Satd. Flow (prot)	0	0	0	1652	1459	0	0	3061	0	0	3092	0
Flt Permitted				0.950				0.732			0.900	
Satd. Flow (perm)	0	0	0	1485	1459	0	0	2247	0	0	2783	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		163			339			429			411	
Travel Time (s)		4.4			9.2			11.7			11.2	
Confl. Peds. (#/hr)				83		26			54	54		
Peak Hour 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
Parking (#/hr)					1			1			3	
Adj. Flow (vph)	0	0	0	44	140	68	52	828	56	28	1008	44
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	44	208	0	0	936	0	0	1080	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			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	1.00	1.00	1.09	1.26	1.00	1.09	1.17	1.09	1.09	1.18	1.20
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type				Perm			Perm			Perm		
Protected Phases					2			1			1	
Permitted Phases				2			1			1		
Minimum Split (s)				38.1	38.1		29.1	29.1		29.1	29.1	
Total Split (s)	0.0	0.0	0.0	57.0	57.0	0.0	73.0	73.0	0.0	73.0	73.0	0.0
Total Split (%)	0.0%	0.0%	0.0%	43.8%	43.8%	0.0%	56.2%	56.2%	0.0%	56.2%	56.2%	0.0%
Maximum Green (s)				50.9	50.9		66.9	66.9		66.9	66.9	
Yellow Time (s)				3.0	3.0		3.0	3.0		3.0	3.0	
All-Red Time (s)				3.1	3.1		3.1	3.1		3.1	3.1	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	-2.1	0.0	0.0	-2.1	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	6.1	6.1	4.0	4.0	6.1	4.0	4.0	6.1	4.0
Lead/Lag				Lag	Lag		Lead	Lead		Lead	Lead	
Lead-Lag Optimize?												
Walk Time (s)				7.0	7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)				25.0	25.0		16.0	16.0		16.0	16.0	
Pedestrian Calls (#/hr)				0	0		0	0		0	0	
Act Effct Green (s)				50.9	50.9			66.9			66.9	
Actuated g/C Ratio				0.39	0.39			0.51			0.51	
v/c Ratio				0.08	0.36			0.81			0.75	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay				25.4	30.4			17.0			29.4	
Queue Delay				0.0	0.0			0.0			122.4	
Total Delay				25.4	30.4			17.0			151.7	
LOS				C	C			B			F	
Approach Delay					29.5			17.0			151.7	
Approach LOS					C			B			F	

Intersection Summary	
Area Type:	Other
Cycle Length: 130	
Actuated Cycle Length: 130	
Offset: 127 (98%), Referenced to phase 1:NBSB, Start of Yellow	
Natural Cycle: 80	
Control Type: Pretimed	
Maximum v/c Ratio: 0.81	
Intersection Signal Delay: 82.5	Intersection LOS: F
Intersection Capacity Utilization 98.4%	ICU Level of Service F
Analysis Period (min) 60	

Splits and Phases: 115: Cameron St & Washington St

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	300	64	0	240	48	0	888	44	0	936	116
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	9	8	12	9	9	10	10	10	8	10	10
Storage Length (ft)	0		100	0		0	0		0	0		105
Storage Lanes	0		1	0		0	0		0	0		1
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	1.00
Ped Bike Factor			0.63			0.61		0.97				0.46
Frt			0.850			0.850		0.993				0.850
Flt Protected												
Satd. Flow (prot)	0	1611	1372	0	1560	1425	0	3006	0	0	3107	1478
Flt Permitted												
Satd. Flow (perm)	0	1611	867	0	1560	864	0	3006	0	0	3107	682
Right Turn on Red			Yes			Yes			No			No
Satd. Flow (RTOR)			28			30						
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		165			345			416			429	
Travel Time (s)		4.5			9.4			11.3			11.7	
Confl. Peds. (#/hr)			506			612			233			218
Peak Hour 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
Heavy Vehicles (%)	2%	4%	2%	2%	7%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	5	0	0	6	0	0	1	0	0	1	0
Parking (#/hr)								3			3	
Adj. Flow (vph)	0	300	64	0	240	48	0	888	44	0	936	116
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	300	64	0	240	48	0	932	0	0	936	116
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			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.17	1.20	1.00	1.18	1.14	1.09	1.18	1.09	1.20	1.18	1.09
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type			Perm			Perm						Perm
Protected Phases		2			2			1			1	
Permitted Phases			2			2						1
Minimum Split (s)		37.9	37.9		37.9	37.9		27.0			27.0	27.0
Total Split (s)	0.0	59.0	59.0	0.0	59.0	59.0	0.0	71.0	0.0	0.0	71.0	71.0
Total Split (%)	0.0%	45.4%	45.4%	0.0%	45.4%	45.4%	0.0%	54.6%	0.0%	0.0%	54.6%	54.6%
Maximum Green (s)		53.1	53.1		53.1	53.1		66.0			66.0	66.0
Yellow Time (s)		3.0	3.0		3.0	3.0		3.0			3.0	3.0
All-Red Time (s)		2.9	2.9		2.9	2.9		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	5.9	5.9	4.0	5.9	5.9	4.0	5.0	4.0	4.0	5.0	5.0
Lead/Lag		Lag	Lag		Lag	Lag		Lead			Lead	Lead
Lead-Lag Optimize?												
Walk Time (s)		7.0	7.0		7.0	7.0		7.0			7.0	7.0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Flash Dont Walk (s)		25.0	25.0		25.0	25.0		15.0			15.0	15.0
Pedestrian Calls (#/hr)		0	0		0	0		0			0	0
Act Effct Green (s)		53.1	53.1		53.1	53.1		66.0			66.0	66.0
Actuated g/C Ratio		0.41	0.41		0.41	0.41		0.51			0.51	0.51
v/c Ratio		0.46	0.17		0.38	0.13		0.61			0.59	0.34
Control Delay		30.8	16.3		29.1	12.8		13.2			7.4	8.0
Queue Delay		0.0	0.0		0.0	0.0		0.0			0.4	0.0
Total Delay		30.8	16.3		29.1	12.8		13.2			7.8	8.0
LOS		C	B		C	B		B			A	A
Approach Delay		28.2			26.4			13.2			7.8	
Approach LOS		C			C			B			A	

Intersection Summary	
Area Type: Other	
Cycle Length: 130	
Actuated Cycle Length: 130	
Offset: 128 (98%), Referenced to phase 1:NBSB, Start of Yellow	
Natural Cycle: 65	
Control Type: Pretimed	
Maximum v/c Ratio: 0.61	
Intersection Signal Delay: 14.6	Intersection LOS: B
Intersection Capacity Utilization 62.1%	ICU Level of Service B
Analysis Period (min) 60	

Splits and Phases: 116: King St & Washington St

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	120	212	64	0	0	0	0	812	36	0	1000	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	14	12	8	11	12	10	11	9
Lane Util. Factor	0.95	0.95	0.95	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	1.00
Ped Bike Factor		0.96						0.99				
Frt		0.976						0.994				
Flt Protected		0.985										
Satd. Flow (prot)	0	3147	0	0	0	0	0	3181	0	0	3414	0
Flt Permitted		0.985										
Satd. Flow (perm)	0	3064	0	0	0	0	0	3181	0	0	3414	0
Right Turn on Red			No			Yes			No			Yes
Satd. Flow (RTOR)												
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		155			356			419			416	
Travel Time (s)		4.2			9.7			11.4			11.3	
Confl. Peds. (#/hr)	69		45						92			
Peak Hour 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
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	1	0
Parking (#/hr)		6						3				
Adj. Flow (vph)	120	212	64	0	0	0	0	812	36	0	1000	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	396	0	0	0	0	0	848	0	0	1000	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			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.09	1.00	1.00	0.92	1.00	1.20	1.13	1.00	1.09	1.05	1.14
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm											
Protected Phases		2						1			1	
Permitted Phases	2											
Minimum Split (s)	36.9	36.9						26.0			26.0	
Total Split (s)	59.0	59.0	0.0	0.0	0.0	0.0	0.0	71.0	0.0	0.0	71.0	0.0
Total Split (%)	45.4%	45.4%	0.0%	0.0%	0.0%	0.0%	0.0%	54.6%	0.0%	0.0%	54.6%	0.0%
Maximum Green (s)	53.1	53.1						66.0			66.0	
Yellow Time (s)	3.0	3.0						3.0			3.0	
All-Red Time (s)	2.9	2.9						2.0			2.0	
Lost Time Adjust (s)	-1.9	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	5.9	4.0	4.0	4.0	4.0	4.0	5.0	4.0	4.0	5.0	4.0
Lead/Lag	Lag	Lag						Lead			Lead	
Lead-Lag Optimize?												
Walk Time (s)	7.0	7.0						7.0			7.0	
Flash Dont Walk (s)	24.0	24.0						14.0			14.0	
Pedestrian Calls (#/hr)	10	10						10			10	
Act Effct Green (s)		53.1						66.0			66.0	
Actuated g/C Ratio		0.41						0.51			0.51	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio		0.32						0.53			0.58	
Control Delay		27.0						10.0			8.0	
Queue Delay		0.0						0.4			0.1	
Total Delay		27.0						10.4			8.1	
LOS		C						B			A	
Approach Delay		27.0						10.4			8.1	
Approach LOS		C						B			A	

Intersection Summary	
Area Type: Other	
Cycle Length: 130	
Actuated Cycle Length: 130	
Offset: 0 (0%), Referenced to phase 1:NBSB, Start of Yellow	
Natural Cycle: 65	
Control Type: Pretimed	
Maximum v/c Ratio: 0.58	
Intersection Signal Delay: 12.3	Intersection LOS: B
Intersection Capacity Utilization 62.6%	ICU Level of Service B
Analysis Period (min) 60	

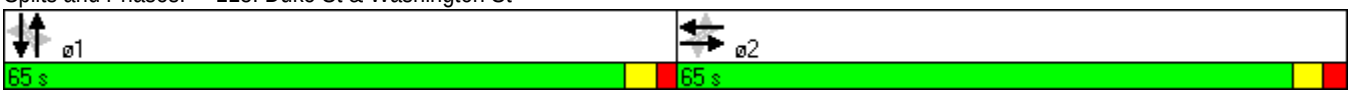
Splits and Phases: 117: Prince St & Washington St

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	108	232	56	52	248	36	36	704	28	48	880	136
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	13	12	12	13	12	11	9	9	9	11	9
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	0.95	0.95	0.95
Ped Bike Factor		0.99			1.00			1.00			0.99	
Frt		0.981			0.986			0.995			0.981	
Flt Protected		0.987			0.992			0.998			0.998	
Satd. Flow (prot)	0	1615	0	0	1661	0	0	2921	0	0	3130	0
Flt Permitted		0.770			0.888			0.775			0.838	
Satd. Flow (perm)	0	1257	0	0	1485	0	0	2268	0	0	2626	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		8			6			4			16	
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		310			357			434			419	
Travel Time (s)		8.5			9.7			11.8			11.4	
Confl. Peds. (#/hr)	23		23	23		23	45		45	45		45
Peak Hour 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
Heavy Vehicles (%)	2%	5%	2%	2%	2%	2%	2%	4%	2%	2%	2%	2%
Parking (#/hr)		3			3			3			3	
Adj. Flow (vph)	108	232	56	52	248	36	36	704	28	48	880	136
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	396	0	0	336	0	0	768	0	0	1064	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			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.12	1.00	1.00	1.12	1.00	1.04	1.23	1.14	1.14	1.13	1.14
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		2			2			1			1	
Permitted Phases	2			2			1			1		
Minimum Split (s)	12.5	12.5		12.5	12.5		15.0	15.0		15.0	15.0	
Total Split (s)	65.0	65.0	0.0	65.0	65.0	0.0	65.0	65.0	0.0	65.0	65.0	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)	59.5	59.5		59.5	59.5		60.0	60.0		60.0	60.0	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	2.5	2.5		2.5	2.5		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	-1.5	0.0	0.0	-1.5	0.0	0.0	-1.0	0.0	0.0	-1.0	0.0	0.0
Total Lost Time (s)	4.0	5.5	4.0	4.0	5.5	4.0	4.0	5.0	4.0	4.0	5.0	4.0
Lead/Lag	Lag	Lag		Lag	Lag		Lead	Lead		Lead	Lead	
Lead-Lag Optimize?												
Act Effct Green (s)		59.5			59.5			60.0			60.0	
Actuated g/C Ratio		0.46			0.46			0.46			0.46	
v/c Ratio		0.68			0.49			0.73			0.87	
Control Delay		34.8			27.3			33.5			22.9	
Queue Delay		0.0			0.0			2.9			0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay		34.8			27.3			36.4			22.9	
LOS		C			C			D			C	
Approach Delay		34.8			27.3			36.4			22.9	
Approach LOS		C			C			D			C	

Intersection Summary	
Area Type:	Other
Cycle Length: 130	
Actuated Cycle Length: 130	
Offset: 128 (98%), Referenced to phase 1:NBSB, Start of Yellow	
Natural Cycle: 60	
Control Type: Pretimed	
Maximum v/c Ratio: 0.87	
Intersection Signal Delay: 29.3	Intersection LOS: C
Intersection Capacity Utilization 101.8%	ICU Level of Service G
Analysis Period (min) 60	

Splits and Phases: 118: Duke St & Washington St

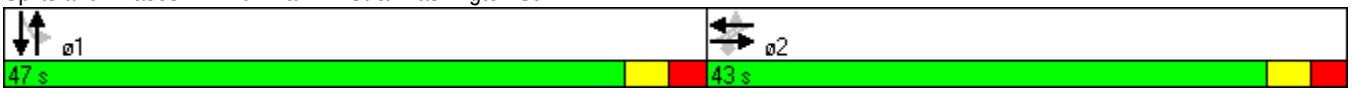


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	184	172	80	44	0	56	0	648	52	52	728	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	9	9	8	12	12	12	8	9	8	8	8	12
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	0.95	1.00
Ped Bike Factor	0.98		0.98		0.98			0.99			1.00	
Frt			0.850		0.924			0.989				
Flt Protected	0.950				0.978						0.997	
Satd. Flow (prot)	3060	1484	1372	0	1485	0	0	2948	0	0	2882	0
Flt Permitted	0.731				0.834						0.855	
Satd. Flow (perm)	2305	1484	1340	0	1261	0	0	2948	0	0	2469	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			80		56			12				
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		296			322			447			423	
Travel Time (s)		8.1			8.8			12.2			11.5	
Confl. Peds. (#/hr)	20		16	16		20			48	48		
Peak Hour 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
Heavy Vehicles (%)	3%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	1	0	0	0	0
Parking (#/hr)		3			1			3			3	
Adj. Flow (vph)	184	172	80	44	0	56	0	648	52	52	728	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	184	172	80	0	100	0	0	700	0	0	780	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)		18			18			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.14	1.33	1.20	1.00	1.15	1.00	1.20	1.24	1.20	1.20	1.29	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm		Perm	Perm						Perm		
Protected Phases		2			2			1			1	
Permitted Phases	2		2	2						1		
Minimum Split (s)	12.5	12.5	12.5	12.5	12.5			15.5		15.5	15.5	
Total Split (s)	43.0	43.0	43.0	43.0	43.0	0.0	0.0	47.0	0.0	47.0	47.0	0.0
Total Split (%)	47.8%	47.8%	47.8%	47.8%	47.8%	0.0%	0.0%	52.2%	0.0%	52.2%	52.2%	0.0%
Maximum Green (s)	37.5	37.5	37.5	37.5	37.5			41.5		41.5	41.5	
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0			3.0		3.0	3.0	
All-Red Time (s)	2.5	2.5	2.5	2.5	2.5			2.5		2.5	2.5	
Lost Time Adjust (s)	0.0	0.0	0.0	-1.5	0.0	0.0	0.0	0.0	0.0	-1.5	0.0	0.0
Total Lost Time (s)	5.5	5.5	5.5	4.0	5.5	4.0	4.0	5.5	4.0	4.0	5.5	4.0
Lead/Lag	Lag	Lag	Lag	Lag	Lag			Lead		Lead	Lead	
Lead-Lag Optimize?												
Act Effct Green (s)	37.5	37.5	37.5		37.5			41.5			41.5	
Actuated g/C Ratio	0.42	0.42	0.42		0.42			0.46			0.46	
v/c Ratio	0.19	0.28	0.13		0.18			0.51			0.69	
Control Delay	17.3	18.9	4.6		9.2			18.5			23.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Delay	0.0	0.0	0.0		0.0			0.0			0.3	
Total Delay	17.3	18.9	4.6		9.2			18.5			23.3	
LOS	B	B	A		A			B			C	
Approach Delay		15.6			9.2			18.5			23.3	
Approach LOS		B			A			B			C	

Intersection Summary	
Area Type:	Other
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 35 (39%), Referenced to phase 1:NBSB, Start of Yellow	
Natural Cycle: 40	
Control Type: Pretimed	
Maximum v/c Ratio: 0.69	
Intersection Signal Delay: 19.3	Intersection LOS: B
Intersection Capacity Utilization 86.5%	ICU Level of Service E
Analysis Period (min) 60	

Splits and Phases: 120: Franklin St & Washington St



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	0	138	2377	27	283	643
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	11	12	8	10
Storage Length (ft)	0	0		0	110	
Storage Lanes	0	0		0	1	
Taper Length (ft)	25	25		25	25	
Lane Util. Factor	1.00	1.00	*0.78	0.91	1.00	0.95
Ped Bike Factor			1.00			
Frt		0.865	0.998			
Flt Protected					0.950	
Satd. Flow (prot)	0	1442	4204	0	1534	3303
Flt Permitted					0.046	
Satd. Flow (perm)	0	1442	4204	0	74	3303
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		6	2			
Link Speed (mph)	25		25			25
Link Distance (ft)	222		429			151
Travel Time (s)	6.1		11.7			4.1
Confl. Peds. (#/hr)		4		4	4	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Parking (#/hr)		1				
Adj. Flow (vph)	0	138	2377	27	283	643
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	138	2404	0	283	643
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	0		8			8
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.00	1.15	1.04	1.00	1.20	1.09
Turning Speed (mph)	15	9		9	15	
Number of Detectors		1	1		1	1
Detector Template						
Leading Detector (ft)		5	5		35	5
Trailing Detector (ft)		0	0		-5	0
Detector 1 Position(ft)		0	0		-5	0
Detector 1 Size(ft)		5	5		40	5
Detector 1 Type		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)		0.0	0.0		0.0	0.0
Detector 1 Queue (s)		0.0	0.0		0.0	0.0
Detector 1 Delay (s)		0.0	0.0		0.0	0.0
Turn Type		Over			pm+pt	
Protected Phases		2	1		2	1
Permitted Phases					1	
Detector Phase		2	1		2	1
Switch Phase						

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Minimum Initial (s)		7.0	10.0		7.0	10.0
Minimum Split (s)		37.0	28.0		37.0	28.0
Total Split (s)	0.0	40.0	80.0	0.0	40.0	80.0
Total Split (%)	0.0%	33.3%	66.7%	0.0%	33.3%	66.7%
Maximum Green (s)		35.0	75.0		35.0	75.0
Yellow Time (s)		3.0	3.0		3.0	3.0
All-Red Time (s)		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)	4.0	5.0	5.0	4.0	5.0	5.0
Lead/Lag		Lag	Lead		Lag	Lead
Lead-Lag Optimize?						
Vehicle Extension (s)		3.0	3.0		3.0	3.0
Recall Mode		None	C-Max		None	C-Max
Walk Time (s)		7.0	7.0		7.0	7.0
Flash Dont Walk (s)		25.0	16.0		25.0	16.0
Pedestrian Calls (#/hr)		4	5		4	5
Act Effct Green (s)		23.5	86.5		110.0	86.5
Actuated g/C Ratio		0.20	0.72		0.92	0.72
v/c Ratio		0.48	0.79		0.80	0.27
Control Delay		45.1	1.4		53.0	6.9
Queue Delay		0.0	0.4		0.0	0.0
Total Delay		45.1	1.8		53.0	6.9
LOS		D	A		D	A
Approach Delay			1.8			21.0
Approach LOS			A			C

Intersection Summary	
Area Type: Other	
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 70 (58%), Referenced to phase 1:NBSB, Start of Yellow	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.80	
Intersection Signal Delay: 8.6	Intersection LOS: A
Intersection Capacity Utilization 78.5%	ICU Level of Service D
Analysis Period (min) 60	
* User Entered Value	

Splits and Phases: 108: First St & Washington St

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	8	147	17	0	2460	13	4	521	46
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	10	10	12	10	10	10	10	10	8
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.91	*0.78	0.91	0.95	0.95	0.95
Ped Bike Factor				0.98	1.00			1.00			1.00	
Frt					0.984			0.999			0.988	
Flt Protected				0.950								
Satd. Flow (prot)	0	0	0	1652	1510	0	0	3921	0	0	2921	0
Flt Permitted				0.950							0.898	
Satd. Flow (perm)	0	0	0	1613	1510	0	0	3921	0	0	2623	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		324			337			426			415	
Travel Time (s)		8.8			9.2			11.6			11.3	
Confl. Peds. (#/hr)				21		13	5		9	9		5
Peak Hour 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
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	7%	9%
Parking (#/hr)					3			1			3	
Adj. Flow (vph)	0	0	0	8	147	17	0	2460	13	4	521	46
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	8	164	0	0	2473	0	0	571	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			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	1.00	1.00	1.09	1.27	1.00	1.09	1.14	1.09	1.09	1.18	1.20
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type				Perm			Perm			Perm		
Protected Phases					2			1			1	
Permitted Phases				2			1			1		
Minimum Split (s)				38.1	38.1		29.1	29.1		29.1	29.1	
Total Split (s)	0.0	0.0	0.0	39.0	39.0	0.0	81.0	81.0	0.0	81.0	81.0	0.0
Total Split (%)	0.0%	0.0%	0.0%	32.5%	32.5%	0.0%	67.5%	67.5%	0.0%	67.5%	67.5%	0.0%
Maximum Green (s)				32.9	32.9		74.9	74.9		74.9	74.9	
Yellow Time (s)				3.0	3.0		3.0	3.0		3.0	3.0	
All-Red Time (s)				3.1	3.1		3.1	3.1		3.1	3.1	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	-2.1	0.0	0.0	-2.1	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	6.1	6.1	4.0	4.0	6.1	4.0	4.0	6.1	4.0
Lead/Lag				Lag	Lag		Lead	Lead		Lead	Lead	
Lead-Lag Optimize?												
Walk Time (s)				7.0	7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)				25.0	25.0		16.0	16.0		16.0	16.0	
Pedestrian Calls (#/hr)				0	0		0	0		0	0	
Act Effct Green (s)				32.9	32.9			74.9			74.9	
Actuated g/C Ratio				0.27	0.27			0.62			0.62	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio				0.02	0.40			1.01			0.35	
Control Delay				32.1	39.0			37.8			17.8	
Queue Delay				0.0	0.0			0.0			0.2	
Total Delay				32.1	39.0			37.8			17.9	
LOS				C	D			D			B	
Approach Delay					38.7			37.8			17.9	
Approach LOS					D			D			B	

Intersection Summary	
Area Type:	Other
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 1 (1%), Referenced to phase 1:NBSB, Start of Yellow	
Natural Cycle: 120	
Control Type: Pretimed	
Maximum v/c Ratio: 1.01	
Intersection Signal Delay: 34.4	Intersection LOS: C
Intersection Capacity Utilization 84.7%	ICU Level of Service E
Analysis Period (min) 60	
* User Entered Value	

Splits and Phases: 115: Cameron St & Washington St

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	151	21	0	105	17	0	2456	17	0	500	29
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	9	8	12	9	9	10	10	10	8	10	10
Storage Length (ft)	0		100	0		0	0		0	0		105
Storage Lanes	0		1	0		0	0		0	0		1
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	*0.78	0.91	1.00	0.95	1.00
Ped Bike Factor			0.89			0.92		1.00				0.91
Frt			0.850			0.850		0.999				0.850
Flt Protected												
Satd. Flow (prot)	0	1403	875	0	1466	1425	0	4040	0	0	2950	1478
Flt Permitted												
Satd. Flow (perm)	0	1403	782	0	1466	1309	0	4040	0	0	2950	1338
Right Turn on Red			Yes			Yes			No			No
Satd. Flow (RTOR)			21			5						
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		325			349			415			426	
Travel Time (s)		8.9			9.5			11.3			11.6	
Confl. Peds. (#/hr)			85			63			29			28
Peak Hour 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
Heavy Vehicles (%)	2%	17%	60%	2%	12%	2%	2%	2%	2%	2%	7%	2%
Bus Blockages (#/hr)	0	10	0	0	10	0	0	4	0	0	3	0
Parking (#/hr)											3	
Adj. Flow (vph)	0	151	21	0	105	17	0	2456	17	0	500	29
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	151	21	0	105	17	0	2473	0	0	500	29
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			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.20	1.20	1.00	1.20	1.14	1.09	1.10	1.09	1.20	1.19	1.09
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type			Perm			Perm						Perm
Protected Phases		2			2			1			1	
Permitted Phases			2			2						1
Minimum Split (s)		37.9	37.9		37.9	37.9		27.0			27.0	27.0
Total Split (s)	0.0	38.0	38.0	0.0	38.0	38.0	0.0	82.0	0.0	0.0	82.0	82.0
Total Split (%)	0.0%	31.7%	31.7%	0.0%	31.7%	31.7%	0.0%	68.3%	0.0%	0.0%	68.3%	68.3%
Maximum Green (s)		32.1	32.1		32.1	32.1		77.0			77.0	77.0
Yellow Time (s)		3.0	3.0		3.0	3.0		3.0			3.0	3.0
All-Red Time (s)		2.9	2.9		2.9	2.9		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	5.9	5.9	4.0	5.9	5.9	4.0	5.0	4.0	4.0	5.0	5.0
Lead/Lag		Lag	Lag		Lag	Lag		Lead			Lead	Lead
Lead-Lag Optimize?												
Walk Time (s)		7.0	7.0		7.0	7.0		7.0			7.0	7.0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Flash Dont Walk (s)		25.0	25.0		25.0	25.0		15.0			15.0	15.0
Pedestrian Calls (#/hr)		0	0		0	0		0			0	0
Act Effct Green (s)		32.1	32.1		32.1	32.1		77.0			77.0	77.0
Actuated g/C Ratio		0.27	0.27		0.27	0.27		0.64			0.64	0.64
v/c Ratio		0.40	0.09		0.27	0.05		0.95			0.26	0.03
Control Delay		40.0	13.8		37.0	26.4		7.3			11.7	9.5
Queue Delay		0.0	0.0		0.0	0.0		0.0			0.0	0.0
Total Delay		40.0	13.8		37.0	26.4		7.3			11.7	9.5
LOS		D	B		D	C		A			B	A
Approach Delay		36.8			35.5			7.3			11.5	
Approach LOS		D			D			A			B	

Intersection Summary	
Area Type: Other	
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 112 (93%), Referenced to phase 1:NBSB, Start of Yellow	
Natural Cycle: 100	
Control Type: Pretimed	
Maximum v/c Ratio: 0.95	
Intersection Signal Delay: 10.6	Intersection LOS: B
Intersection Capacity Utilization 83.6%	ICU Level of Service E
Analysis Period (min) 60	
* User Entered Value	

Splits and Phases: 116: King St & Washington St

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	84	378	17	0	0	0	0	2389	42	0	521	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	14	12	8	11	12	10	11	9
Lane Util. Factor	0.95	0.95	0.95	1.00	1.00	1.00	1.00	*0.78	0.91	1.00	0.95	1.00
Ped Bike Factor		1.00						1.00				
Frt		0.995						0.997				
Flt Protected		0.991										
Satd. Flow (prot)	0	3260	0	0	0	0	0	4199	0	0	3084	0
Flt Permitted		0.991										
Satd. Flow (perm)	0	3249	0	0	0	0	0	4199	0	0	3084	0
Right Turn on Red			No			Yes			No			Yes
Satd. Flow (RTOR)												
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		314			353			431			415	
Travel Time (s)		8.6			9.6			11.8			11.3	
Confl. Peds. (#/hr)	17		10						9			
Peak Hour 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
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	6%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	3	0
Parking (#/hr)		6			6						3	
Adj. Flow (vph)	84	378	17	0	0	0	0	2389	42	0	521	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	479	0	0	0	0	0	2431	0	0	521	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			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.09	1.00	1.00	0.92	1.00	1.20	1.04	1.00	1.09	1.14	1.14
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm											
Protected Phases		2						1			1	
Permitted Phases	2											
Minimum Split (s)	36.9	36.9						26.0			26.0	
Total Split (s)	47.0	47.0	0.0	0.0	0.0	0.0	0.0	73.0	0.0	0.0	73.0	0.0
Total Split (%)	39.2%	39.2%	0.0%	0.0%	0.0%	0.0%	0.0%	60.8%	0.0%	0.0%	60.8%	0.0%
Maximum Green (s)	41.1	41.1						68.0			68.0	
Yellow Time (s)	3.0	3.0						3.0			3.0	
All-Red Time (s)	2.9	2.9						2.0			2.0	
Lost Time Adjust (s)	-1.9	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	5.9	4.0	4.0	4.0	4.0	4.0	5.0	4.0	4.0	5.0	4.0
Lead/Lag	Lag	Lag						Lead			Lead	
Lead-Lag Optimize?												
Walk Time (s)	7.0	7.0						7.0			7.0	
Flash Dont Walk (s)	24.0	24.0						14.0			14.0	
Pedestrian Calls (#/hr)	10	10						10			10	
Act Effct Green (s)		41.1						68.0			68.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Actuated g/C Ratio		0.34						0.57			0.57	
v/c Ratio		0.43						1.02			0.30	
Control Delay		31.9						53.6			13.4	
Queue Delay		0.0						90.6			0.0	
Total Delay		31.9						144.2			13.4	
LOS		C						F			B	
Approach Delay		31.9						144.2			13.4	
Approach LOS		C						F			B	

Intersection Summary	
Area Type: Other	
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 101 (84%), Referenced to phase 1:NBSB, Start of Yellow	
Natural Cycle: 90	
Control Type: Pretimed	
Maximum v/c Ratio: 1.02	
Intersection Signal Delay: 108.7	Intersection LOS: F
Intersection Capacity Utilization 82.0%	ICU Level of Service E
Analysis Period (min) 60	

* User Entered Value

Splits and Phases: 117: Prince St & Washington St

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	151	227	63	17	109	8	0	2272	17	4	450	84
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	13	12	12	13	12	11	9	9	9	11	9
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.91	*0.78	0.91	0.95	0.95	0.95
Ped Bike Factor		0.99			1.00			1.00			1.00	
Frt		0.981			0.992			0.999			0.977	
Flt Protected		0.983			0.994							
Satd. Flow (prot)	0	1616	0	0	1631	0	0	3781	0	0	3015	0
Flt Permitted		0.816			0.926						0.920	
Satd. Flow (perm)	0	1339	0	0	1519	0	0	3781	0	0	2773	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		7			3			1			32	
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		314			356			422			431	
Travel Time (s)		8.6			9.7			11.5			11.8	
Confl. Peds. (#/hr)	8		11	11		8	6		8	8		6
Peak Hour 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
Heavy Vehicles (%)	6%	2%	2%	25%	2%	2%	2%	2%	2%	2%	7%	2%
Parking (#/hr)		3			3			1			3	
Adj. Flow (vph)	151	227	63	17	109	8	0	2272	17	4	450	84
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	441	0	0	134	0	0	2289	0	0	538	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			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.12	1.00	1.00	1.12	1.00	1.04	1.20	1.14	1.14	1.13	1.14
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		2			2			1			1	
Permitted Phases	2			2			1			1		
Minimum Split (s)	12.5	12.5		12.5	12.5		15.0	15.0		15.0	15.0	
Total Split (s)	43.0	43.0	0.0	43.0	43.0	0.0	77.0	77.0	0.0	77.0	77.0	0.0
Total Split (%)	35.8%	35.8%	0.0%	35.8%	35.8%	0.0%	64.2%	64.2%	0.0%	64.2%	64.2%	0.0%
Maximum Green (s)	37.5	37.5		37.5	37.5		72.0	72.0		72.0	72.0	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	2.5	2.5		2.5	2.5		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	-1.5	0.0	0.0	-1.5	0.0	0.0	-1.0	0.0	0.0	-1.0	0.0	0.0
Total Lost Time (s)	4.0	5.5	4.0	4.0	5.5	4.0	4.0	5.0	4.0	4.0	5.0	4.0
Lead/Lag	Lag	Lag		Lag	Lag		Lead	Lead		Lead	Lead	
Lead-Lag Optimize?												
Act Effct Green (s)		37.5			37.5			72.0			72.0	
Actuated g/C Ratio		0.31			0.31			0.60			0.60	
v/c Ratio		1.04			0.28			1.01			0.32	
Control Delay		175.6			32.4			51.3			11.6	
Queue Delay		0.0			0.0			78.2			0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay		175.6			32.4			129.5			11.6	
LOS		F			C			F			B	
Approach Delay		175.6			32.4			129.5			11.6	
Approach LOS		F			C			F			B	

Intersection Summary	
Area Type:	Other
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 96 (80%), Referenced to phase 1:NBSB, Start of Yellow	
Natural Cycle: 140	
Control Type: Pretimed	
Maximum v/c Ratio: 1.04	
Intersection Signal Delay: 113.0	Intersection LOS: F
Intersection Capacity Utilization 84.0%	ICU Level of Service E
Analysis Period (min) 60	

* User Entered Value

Splits and Phases: 118: Duke St & Washington St

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	500	323	17	4	0	13	0	2423	84	4	407	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	9	9	8	12	12	12	8	9	8	8	8	12
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	1.00	*0.78	0.91	0.95	0.95	1.00
Ped Bike Factor	1.00		0.97		0.99			1.00			1.00	
Frt			0.850		0.897			0.995				
Flt Protected	0.950				0.988							
Satd. Flow (prot)	3090	1486	1120	0	1463	0	0	3748	0	0	2799	0
Flt Permitted	0.746				0.928						0.904	
Satd. Flow (perm)	2423	1486	1086	0	1371	0	0	3748	0	0	2530	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			17		7			8				
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		273			322			442			432	
Travel Time (s)		7.4			8.8			12.1			11.8	
Confl. Peds. (#/hr)	1		15	15		1			14	14		
Peak Hour 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
Heavy Vehicles (%)	2%	3%	25%	2%	2%	2%	2%	2%	2%	100%	5%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	3	0	0	0	0
Parking (#/hr)		1			1			1			1	
Adj. Flow (vph)	500	323	17	4	0	13	0	2423	84	4	407	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	500	323	17	0	17	0	0	2507	0	0	411	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)		18			18			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.14	1.31	1.20	1.00	1.15	1.00	1.20	1.20	1.20	1.20	1.28	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm		Perm	Perm						Perm		
Protected Phases		2			2			1			1	
Permitted Phases	2		2	2						1		
Minimum Split (s)	12.5	12.5	12.5	12.5	12.5			15.5		15.5	15.5	
Total Split (s)	35.0	35.0	35.0	35.0	35.0	0.0	0.0	85.0	0.0	85.0	85.0	0.0
Total Split (%)	29.2%	29.2%	29.2%	29.2%	29.2%	0.0%	0.0%	70.8%	0.0%	70.8%	70.8%	0.0%
Maximum Green (s)	29.5	29.5	29.5	29.5	29.5			79.5		79.5	79.5	
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0			3.0		3.0	3.0	
All-Red Time (s)	2.5	2.5	2.5	2.5	2.5			2.5		2.5	2.5	
Lost Time Adjust (s)	0.0	0.0	0.0	-1.5	0.0	0.0	0.0	0.0	0.0	-1.5	0.0	0.0
Total Lost Time (s)	5.5	5.5	5.5	4.0	5.5	4.0	4.0	5.5	4.0	4.0	5.5	4.0
Lead/Lag	Lag	Lag	Lag	Lag	Lag			Lead		Lead	Lead	
Lead-Lag Optimize?												
Act Effct Green (s)	29.5	29.5	29.5		29.5			79.5			79.5	
Actuated g/C Ratio	0.25	0.25	0.25		0.25			0.66			0.66	
v/c Ratio	0.84	0.88	0.06		0.05			1.01			0.25	
Control Delay	58.5	77.2	15.2		25.8			40.9			5.7	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Delay	0.0	0.0	0.0		0.0			176.4			0.0	
Total Delay	58.5	77.2	15.2		25.8			217.3			5.7	
LOS	E	E	B		C			F			A	
Approach Delay		64.8			25.8			217.3			5.7	
Approach LOS		E			C			F			A	

Intersection Summary	
Area Type:	Other
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 51 (43%), Referenced to phase 1:NBSB, Start of Yellow	
Natural Cycle: 110	
Control Type: Pretimed	
Maximum v/c Ratio: 1.01	
Intersection Signal Delay: 159.5	Intersection LOS: F
Intersection Capacity Utilization 78.8%	ICU Level of Service D
Analysis Period (min) 60	
* User Entered Value	

Splits and Phases: 120: Franklin St & Washington St

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	0	159	1277	30	366	1928
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	*0.78
Ped Bike Factor			1.00			
Frt		0.865	0.997			
Flt Protected					0.950	
Satd. Flow (prot)	0	1596	3525	0	1770	4359
Flt Permitted					0.136	
Satd. Flow (perm)	0	1596	3525	0	253	4359
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		59	3			
Link Speed (mph)	25		25			25
Link Distance (ft)	241		430			151
Travel Time (s)	6.6		11.7			4.1
Confl. Peds. (#/hr)		8		8	8	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	2%	3%	2%	2%	2%	2%
Adj. Flow (vph)	0	159	1277	30	366	1928
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	159	1307	0	366	1928
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	0		12			12
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	
Turn Type		Over			pm+pt	
Protected Phases		2	1		2	1
Permitted Phases					1	
Minimum Split (s)		37.0	28.0		37.0	28.0
Total Split (s)	0.0	44.0	76.0	0.0	44.0	76.0
Total Split (%)	0.0%	36.7%	63.3%	0.0%	36.7%	63.3%
Maximum Green (s)		39.0	71.0		39.0	71.0
Yellow Time (s)		3.0	3.0		3.0	3.0
All-Red Time (s)		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)	4.0	5.0	5.0	4.0	5.0	5.0
Lead/Lag		Lag	Lead		Lag	Lead
Lead-Lag Optimize?						
Walk Time (s)		7.0	7.0		7.0	7.0
Flash Dont Walk (s)		25.0	16.0		25.0	16.0
Pedestrian Calls (#/hr)		5	20		5	20
Act Effct Green (s)		39.0	71.0		110.0	71.0
Actuated g/C Ratio		0.32	0.59		0.92	0.59
v/c Ratio		0.28	0.63		0.50	0.75
Control Delay		20.2	4.6		15.0	20.3

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Queue Delay		0.0	0.3		0.0	0.0
Total Delay		20.2	4.8		15.0	20.3
LOS		C	A		B	C
Approach Delay			4.8			19.5
Approach LOS			A			B

Intersection Summary	
Area Type: Other	
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 71 (59%), Referenced to phase 1:NBSB, Start of Yellow	
Natural Cycle: 75	
Control Type: Pretimed	
Maximum v/c Ratio: 0.75	
Intersection Signal Delay: 14.4	Intersection LOS: B
Intersection Capacity Utilization 81.6%	ICU Level of Service D
Analysis Period (min) 60	
* User Entered Value	

Splits and Phases: 108: First St & Washington St

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	8	374	38	21	1004	34	0	1978	71
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	10	10	12	10	10	10	10	10	8
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	0.91	*0.78	0.91
Ped Bike Factor				0.96	1.00			1.00			1.00	
Frt					0.986			0.995			0.995	
Flt Protected				0.950				0.999				
Satd. Flow (prot)	0	0	0	1652	1500	0	0	3002	0	0	3925	0
Flt Permitted				0.950				0.760				
Satd. Flow (perm)	0	0	0	1587	1500	0	0	2284	0	0	3925	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		321			342			420			415	
Travel Time (s)		8.8			9.3			11.5			11.3	
Confl. Peds. (#/hr)				35		18	23		27	27		23
Peak Hour 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
Heavy Vehicles (%)	2%	2%	2%	2%	2%	11%	2%	5%	2%	2%	5%	2%
Parking (#/hr)					3			3				
Adj. Flow (vph)	0	0	0	8	374	38	21	1004	34	0	1978	71
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	8	412	0	0	1059	0	0	2049	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			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	1.00	1.00	1.09	1.27	1.00	1.09	1.18	1.09	1.09	1.09	1.20
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type				Perm			Perm			Perm		
Protected Phases					2			1			1	
Permitted Phases				2			1			1		
Minimum Split (s)				38.1	38.1		29.1	29.1		29.1	29.1	
Total Split (s)	0.0	0.0	0.0	45.0	45.0	0.0	75.0	75.0	0.0	75.0	75.0	0.0
Total Split (%)	0.0%	0.0%	0.0%	37.5%	37.5%	0.0%	62.5%	62.5%	0.0%	62.5%	62.5%	0.0%
Maximum Green (s)				38.9	38.9		68.9	68.9		68.9	68.9	
Yellow Time (s)				3.0	3.0		3.0	3.0		3.0	3.0	
All-Red Time (s)				3.1	3.1		3.1	3.1		3.1	3.1	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	-2.1	0.0	0.0	-2.1	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	6.1	6.1	4.0	4.0	6.1	4.0	4.0	6.1	4.0
Lead/Lag				Lag	Lag		Lead	Lead		Lead	Lead	
Lead-Lag Optimize?												
Walk Time (s)				7.0	7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)				25.0	25.0		16.0	16.0		16.0	16.0	
Pedestrian Calls (#/hr)				0	0		0	0		0	0	
Act Effct Green (s)				38.9	38.9			68.9			68.9	
Actuated g/C Ratio				0.32	0.32			0.57			0.57	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio				0.02	0.85			0.81			0.91	
Control Delay				27.9	58.0			24.6			14.2	
Queue Delay				0.0	0.0			0.0			147.6	
Total Delay				27.9	58.0			24.6			161.8	
LOS				C	E			C			F	
Approach Delay					57.4			24.6			161.8	
Approach LOS					E			C			F	

Intersection Summary	
Area Type:	Other
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 21 (18%), Referenced to phase 1:NBSB, Start of Yellow	
Natural Cycle: 90	
Control Type: Pretimed	
Maximum v/c Ratio: 0.91	
Intersection Signal Delay: 108.2	Intersection LOS: F
Intersection Capacity Utilization 80.8%	ICU Level of Service D
Analysis Period (min) 60	
* User Entered Value	

Splits and Phases: 115: Cameron St & Washington St

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	197	42	0	235	25	0	1034	29	0	1919	67
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	9	8	12	9	9	10	10	10	8	10	10
Storage Length (ft)	0		100	0		0	0		200	0		0
Storage Lanes	0		1	0		0	0		0	0		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	*0.78	0.91
Ped Bike Factor			0.77			0.73		0.99			0.99	
Frt			0.850			0.850		0.996			0.995	
Flt Protected												
Satd. Flow (prot)	0	1572	1372	0	1565	1425	0	3019	0	0	3781	0
Flt Permitted												
Satd. Flow (perm)	0	1572	1062	0	1565	1045	0	3019	0	0	3781	0
Right Turn on Red			Yes			Yes			No			No
Satd. Flow (RTOR)			9			25						
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		317			349			415			420	
Travel Time (s)		8.6			9.5			11.3			11.5	
Confl. Peds. (#/hr)			194			231			102			76
Peak Hour 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
Heavy Vehicles (%)	2%	4%	2%	2%	4%	2%	2%	4%	2%	2%	4%	2%
Bus Blockages (#/hr)	0	11	0	0	12	0	0	0	0	0	2	0
Parking (#/hr)								3			3	
Adj. Flow (vph)	0	197	42	0	235	25	0	1034	29	0	1919	67
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	197	42	0	235	25	0	1063	0	0	1986	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			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.21	1.20	1.00	1.22	1.14	1.09	1.18	1.09	1.20	1.15	1.09
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type			Perm			Perm						
Protected Phases		2			2			1			1	
Permitted Phases			2			2						
Minimum Split (s)		37.9	37.9		37.9	37.9		27.0			27.0	
Total Split (s)	0.0	43.0	43.0	0.0	43.0	43.0	0.0	77.0	0.0	0.0	77.0	0.0
Total Split (%)	0.0%	35.8%	35.8%	0.0%	35.8%	35.8%	0.0%	64.2%	0.0%	0.0%	64.2%	0.0%
Maximum Green (s)		37.1	37.1		37.1	37.1		72.0			72.0	
Yellow Time (s)		3.0	3.0		3.0	3.0		3.0			3.0	
All-Red Time (s)		2.9	2.9		2.9	2.9		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	5.9	5.9	4.0	5.9	5.9	4.0	5.0	4.0	4.0	5.0	4.0
Lead/Lag		Lag	Lag		Lag	Lag		Lead			Lead	
Lead-Lag Optimize?												
Walk Time (s)		7.0	7.0		7.0	7.0		7.0			7.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Flash Dont Walk (s)		25.0	25.0		25.0	25.0		15.0			15.0	
Pedestrian Calls (#/hr)		0	0		0	0		0			0	
Act Effct Green (s)		37.1	37.1		37.1	37.1		72.0			72.0	
Actuated g/C Ratio		0.31	0.31		0.31	0.31		0.60			0.60	
v/c Ratio		0.41	0.13		0.49	0.07		0.59			0.88	
Control Delay		35.9	26.0		37.9	11.1		5.1			3.6	
Queue Delay		0.0	0.0		0.0	0.0		0.1			0.4	
Total Delay		35.9	26.0		37.9	11.1		5.2			4.0	
LOS		D	C		D	B		A			A	
Approach Delay		34.1			35.3			5.2			4.0	
Approach LOS		C			D			A			A	

Intersection Summary	
Area Type: Other	
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 32 (27%), Referenced to phase 1:NBSB, Start of Yellow	
Natural Cycle: 90	
Control Type: Pretimed	
Maximum v/c Ratio: 0.88	
Intersection Signal Delay: 8.7	Intersection LOS: A
Intersection Capacity Utilization 74.5%	ICU Level of Service D
Analysis Period (min) 60	
* User Entered Value	

Splits and Phases: 116: King St & Washington St

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	139	151	101	0	0	0	0	924	13	0	1961	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	14	12	8	11	12	10	11	9
Lane Util. Factor	0.95	0.95	0.95	1.00	1.00	1.00	1.00	0.95	0.95	1.00	*0.78	1.00
Ped Bike Factor		0.98						1.00				
Frt		0.961						0.998				
Flt Protected		0.983										
Satd. Flow (prot)	0	3098	0	0	0	0	0	3202	0	0	4202	0
Flt Permitted		0.983										
Satd. Flow (perm)	0	3067	0	0	0	0	0	3202	0	0	4202	0
Right Turn on Red			No			Yes			No			Yes
Satd. Flow (RTOR)												
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		307			348			429			415	
Travel Time (s)		8.4			9.5			11.7			11.3	
Confl. Peds. (#/hr)	24		20						30			
Peak Hour 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
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	33%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	2	0
Parking (#/hr)		6						3				
Adj. Flow (vph)	139	151	101	0	0	0	0	924	13	0	1961	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	391	0	0	0	0	0	937	0	0	1961	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			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.09	1.00	1.00	0.92	1.00	1.20	1.13	1.00	1.09	1.05	1.14
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm											
Protected Phases		2						1			1	
Permitted Phases	2											
Minimum Split (s)	36.9	36.9						26.0			26.0	
Total Split (s)	51.0	51.0	0.0	0.0	0.0	0.0	0.0	69.0	0.0	0.0	69.0	0.0
Total Split (%)	42.5%	42.5%	0.0%	0.0%	0.0%	0.0%	0.0%	57.5%	0.0%	0.0%	57.5%	0.0%
Maximum Green (s)	45.1	45.1						64.0			64.0	
Yellow Time (s)	3.0	3.0						3.0			3.0	
All-Red Time (s)	2.9	2.9						2.0			2.0	
Lost Time Adjust (s)	-1.9	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	5.9	4.0	4.0	4.0	4.0	4.0	5.0	4.0	4.0	5.0	4.0
Lead/Lag	Lag	Lag						Lead			Lead	
Lead-Lag Optimize?												
Walk Time (s)	7.0	7.0						7.0			7.0	
Flash Dont Walk (s)	24.0	24.0						14.0			14.0	
Pedestrian Calls (#/hr)	0	0						0			0	
Act Effct Green (s)		45.1						64.0			64.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Actuated g/C Ratio		0.38						0.53			0.53	
v/c Ratio		0.34						0.55			0.88	
Control Delay		27.8						10.5			10.2	
Queue Delay		0.0						0.2			1.8	
Total Delay		27.8						10.8			12.0	
LOS		C						B			B	
Approach Delay		27.8						10.8			12.0	
Approach LOS		C						B			B	

Intersection Summary	
Area Type: Other	
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 35 (29%), Referenced to phase 1:NBSB, Start of Yellow	
Natural Cycle: 80	
Control Type: Pretimed	
Maximum v/c Ratio: 0.88	
Intersection Signal Delay: 13.5	Intersection LOS: B
Intersection Capacity Utilization 72.8%	ICU Level of Service C
Analysis Period (min) 60	

* User Entered Value

Splits and Phases: 117: Prince St & Washington St

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	126	122	59	25	244	25	13	786	29	0	1911	151
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	13	12	12	13	12	11	9	9	9	11	9
Storage Length (ft)	0		0	0		0	0		115	0		0
Storage Lanes	0		0	0		0	0		1	0		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.91	*0.78	0.91
Ped Bike Factor		0.99			1.00			1.00	0.96		1.00	
Frt		0.974			0.989				0.850		0.989	
Flt Protected		0.980			0.996			0.999				
Satd. Flow (prot)	0	1588	0	0	1675	0	0	2999	1425	0	4155	0
Flt Permitted		0.635			0.953			0.818				
Satd. Flow (perm)	0	1027	0	0	1602	0	0	2456	1361	0	4155	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		9			4				26		14	
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		311			349			430			429	
Travel Time (s)		8.5			9.5			11.7			11.7	
Confl. Peds. (#/hr)	12		7	7		12	13		28	28		13
Peak Hour 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
Heavy Vehicles (%)	7%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	3%
Parking (#/hr)		3			3			3				
Adj. Flow (vph)	126	122	59	25	244	25	13	786	29	0	1911	151
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	307	0	0	294	0	0	799	29	0	2062	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			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.12	1.00	1.00	1.12	1.00	1.04	1.23	1.14	1.14	1.04	1.14
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm			Perm			Perm		Perm	Perm		
Protected Phases		2			2			1			1	
Permitted Phases	2			2			1		1	1		
Minimum Split (s)	12.5	12.5		12.5	12.5		15.0	15.0	15.0	15.0	15.0	
Total Split (s)	48.0	48.0	0.0	48.0	48.0	0.0	72.0	72.0	72.0	72.0	72.0	0.0
Total Split (%)	40.0%	40.0%	0.0%	40.0%	40.0%	0.0%	60.0%	60.0%	60.0%	60.0%	60.0%	0.0%
Maximum Green (s)	42.5	42.5		42.5	42.5		67.0	67.0	67.0	67.0	67.0	
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)	2.5	2.5		2.5	2.5		2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	-1.5	0.0	0.0	-1.5	0.0	0.0	-1.0	0.0	0.0	-1.0	0.0	0.0
Total Lost Time (s)	4.0	5.5	4.0	4.0	5.5	4.0	4.0	5.0	5.0	4.0	5.0	4.0
Lead/Lag	Lag	Lag		Lag	Lag		Lead	Lead	Lead	Lead	Lead	
Lead-Lag Optimize?												
Act Effct Green (s)		42.5			42.5			67.0	67.0		67.0	
Actuated g/C Ratio		0.35			0.35			0.56	0.56		0.56	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio		0.83			0.52			0.58	0.04		0.89	
Control Delay		57.8			34.1			35.3	13.5		5.2	
Queue Delay		0.0			0.0			0.2	0.0		0.1	
Total Delay		57.8			34.1			35.6	13.5		5.3	
LOS		E			C			D	B		A	
Approach Delay		57.8			34.1			34.8			5.3	
Approach LOS		E			C			C			A	

Intersection Summary	
Area Type:	Other
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 47 (39%), Referenced to phase 1:NBSB, Start of Yellow	
Natural Cycle: 70	
Control Type: Pretimed	
Maximum v/c Ratio: 0.89	
Intersection Signal Delay: 19.4	Intersection LOS: B
Intersection Capacity Utilization 86.7%	ICU Level of Service E
Analysis Period (min) 60	
* User Entered Value	

Splits and Phases: 118: Duke St & Washington St

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	143	181	63	105	0	21	0	567	46	0	1533	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	9	9	8	12	12	12	8	9	8	8	8	12
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.91	*0.78	1.00
Ped Bike Factor	0.99		0.98		0.99			1.00				
Frt			0.850		0.978			0.989				
Flt Protected	0.950				0.960							
Satd. Flow (prot)	3060	1629	1228	0	1560	0	0	2905	0	0	3645	0
Flt Permitted	0.694				0.605							
Satd. Flow (perm)	2206	1629	1204	0	978	0	0	2905	0	0	3645	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			29		9			12				
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		273			322			443			426	
Travel Time (s)		7.4			8.8			12.1			11.6	
Confl. Peds. (#/hr)	11		9	9		11			23	23		
Peak Hour 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
Heavy Vehicles (%)	3%	5%	2%	2%	2%	2%	2%	2%	27%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	3	0	0	0	0
Parking (#/hr)			1		1			1			1	
Adj. Flow (vph)	143	181	63	105	0	21	0	567	46	0	1533	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	143	181	63	0	126	0	0	613	0	0	1533	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)		18			18			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.14	1.14	1.38	1.00	1.15	1.00	1.20	1.23	1.20	1.20	1.25	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm		Perm	Perm						Perm		
Protected Phases		2			2			1			1	
Permitted Phases	2		2	2						1		
Minimum Split (s)	12.5	12.5	12.5	12.5	12.5			15.5		15.5	15.5	
Total Split (s)	46.0	46.0	46.0	46.0	46.0	0.0	0.0	74.0	0.0	74.0	74.0	0.0
Total Split (%)	38.3%	38.3%	38.3%	38.3%	38.3%	0.0%	0.0%	61.7%	0.0%	61.7%	61.7%	0.0%
Maximum Green (s)	40.5	40.5	40.5	40.5	40.5			68.5		68.5	68.5	
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0			3.0		3.0	3.0	
All-Red Time (s)	2.5	2.5	2.5	2.5	2.5			2.5		2.5	2.5	
Lost Time Adjust (s)	0.0	0.0	0.0	-1.5	0.0	0.0	0.0	0.0	0.0	-1.5	0.0	0.0
Total Lost Time (s)	5.5	5.5	5.5	4.0	5.5	4.0	4.0	5.5	4.0	4.0	5.5	4.0
Lead/Lag	Lag	Lag	Lag	Lag	Lag			Lead		Lead	Lead	
Lead-Lag Optimize?												
Act Effct Green (s)	40.5	40.5	40.5		40.5			68.5			68.5	
Actuated g/C Ratio	0.34	0.34	0.34		0.34			0.57			0.57	
v/c Ratio	0.19	0.33	0.15		0.38			0.37			0.74	
Control Delay	29.1	31.7	17.7		31.9			15.7			2.1	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Delay	0.0	0.0	0.0		0.0			0.2			2.9	
Total Delay	29.1	31.7	17.7		31.9			16.0			5.0	
LOS	C	C	B		C			B			A	
Approach Delay		28.5			31.9			16.0			5.0	
Approach LOS		C			C			B			A	

Intersection Summary	
Area Type:	Other
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 87 (73%), Referenced to phase 1:NBSB, Start of Yellow	
Natural Cycle: 45	
Control Type: Pretimed	
Maximum v/c Ratio: 0.74	
Intersection Signal Delay: 12.2	Intersection LOS: B
Intersection Capacity Utilization 70.0%	ICU Level of Service C
Analysis Period (min) 60	
* User Entered Value	

Splits and Phases: 120: Franklin St & Washington St

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	0	89	895	39	152	1100
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	11	12	8	10
Lane Util. Factor	1.00	1.00	0.91	0.91	1.00	0.95
Ped Bike Factor			1.00		0.99	
Frt		0.865	0.994			
Flt Protected					0.950	
Satd. Flow (prot)	0	1442	4831	0	1476	3303
Flt Permitted					0.249	
Satd. Flow (perm)	0	1442	4831	0	384	3303
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		100	7			
Link Speed (mph)	25		25			25
Link Distance (ft)	222		422			180
Travel Time (s)	6.1		11.5			4.9
Confl. Peds. (#/hr)		10		10	10	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	2%	2%	3%	2%	6%	2%
Parking (#/hr)		1				
Adj. Flow (vph)	0	89	895	39	152	1100
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	89	934	0	152	1100
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	0		8			8
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.00	1.15	1.04	1.00	1.20	1.09
Turning Speed (mph)	15	9		9	15	
Turn Type		Over			pm+pt	
Protected Phases		2	1		2	1
Permitted Phases					1	
Minimum Split (s)		37.0	28.0		37.0	28.0
Total Split (s)	0.0	59.0	71.0	0.0	59.0	71.0
Total Split (%)	0.0%	45.4%	54.6%	0.0%	45.4%	54.6%
Maximum Green (s)		54.0	66.0		54.0	66.0
Yellow Time (s)		3.0	3.0		3.0	3.0
All-Red Time (s)		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)	4.0	5.0	5.0	4.0	5.0	5.0
Lead/Lag		Lag	Lead		Lag	Lead
Lead-Lag Optimize?						
Walk Time (s)		7.0	7.0		7.0	7.0
Flash Dont Walk (s)		25.0	16.0		25.0	16.0
Pedestrian Calls (#/hr)		10	15		10	15
Act Effct Green (s)		54.0	66.0		120.0	66.0
Actuated g/C Ratio		0.42	0.51		0.92	0.51

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
v/c Ratio		0.14	0.38		0.19	0.66
Control Delay		3.9	19.9		0.8	26.0
Queue Delay		0.0	0.7		0.0	0.0
Total Delay		3.9	20.6		0.8	26.0
LOS		A	C		A	C
Approach Delay			20.6			22.9
Approach LOS			C			C

Intersection Summary	
Area Type: Other	
Cycle Length: 130	
Actuated Cycle Length: 130	
Offset: 120 (92%), Referenced to phase 1:NBSB, Start of Yellow	
Natural Cycle: 65	
Control Type: Pretimed	
Maximum v/c Ratio: 0.66	
Intersection Signal Delay: 21.3	Intersection LOS: C
Intersection Capacity Utilization 54.2%	ICU Level of Service A
Analysis Period (min) 60	

Splits and Phases: 108: First St & Washington St

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	46	147	71	55	869	59	29	1059	46
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	10	10	12	10	10	10	10	10	8
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	0.95	0.95	0.95
Ped Bike Factor				0.90	0.99			0.99			1.00	
Frt					0.951			0.991			0.994	
Flt Protected				0.950				0.997			0.999	
Satd. Flow (prot)	0	0	0	1652	1459	0	0	3061	0	0	3092	0
Flt Permitted				0.950				0.705			0.896	
Satd. Flow (perm)	0	0	0	1485	1459	0	0	2164	0	0	2771	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		163			339			429			411	
Travel Time (s)		4.4			9.2			11.7			11.2	
Confl. Peds. (#/hr)				83		26			54	54		
Peak Hour 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
Parking (#/hr)					1			1			3	
Adj. Flow (vph)	0	0	0	46	147	71	55	869	59	29	1059	46
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	46	218	0	0	983	0	0	1134	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			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	1.00	1.00	1.09	1.26	1.00	1.09	1.17	1.09	1.09	1.18	1.20
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type				Perm			Perm			Perm		
Protected Phases					2			1			1	
Permitted Phases				2			1			1		
Minimum Split (s)				38.1	38.1		29.1	29.1		29.1	29.1	
Total Split (s)	0.0	0.0	0.0	57.0	57.0	0.0	73.0	73.0	0.0	73.0	73.0	0.0
Total Split (%)	0.0%	0.0%	0.0%	43.8%	43.8%	0.0%	56.2%	56.2%	0.0%	56.2%	56.2%	0.0%
Maximum Green (s)				50.9	50.9		66.9	66.9		66.9	66.9	
Yellow Time (s)				3.0	3.0		3.0	3.0		3.0	3.0	
All-Red Time (s)				3.1	3.1		3.1	3.1		3.1	3.1	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	-2.1	0.0	0.0	-2.1	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	6.1	6.1	4.0	4.0	6.1	4.0	4.0	6.1	4.0
Lead/Lag				Lag	Lag		Lead	Lead		Lead	Lead	
Lead-Lag Optimize?												
Walk Time (s)				7.0	7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)				25.0	25.0		16.0	16.0		16.0	16.0	
Pedestrian Calls (#/hr)				0	0		0	0		0	0	
Act Effct Green (s)				50.9	50.9			66.9			66.9	
Actuated g/C Ratio				0.39	0.39			0.51			0.51	
v/c Ratio				0.08	0.38			0.88			0.80	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay				25.5	30.8			22.7			31.3	
Queue Delay				0.0	0.0			0.0			187.7	
Total Delay				25.5	30.8			22.7			219.0	
LOS				C	C			C			F	
Approach Delay					29.9			22.7			219.0	
Approach LOS					C			C			F	

Intersection Summary	
Area Type:	Other
Cycle Length: 130	
Actuated Cycle Length: 130	
Offset: 127 (98%), Referenced to phase 1:NBSB, Start of Yellow	
Natural Cycle: 80	
Control Type: Pretimed	
Maximum v/c Ratio: 0.88	
Intersection Signal Delay: 117.0	Intersection LOS: F
Intersection Capacity Utilization 101.2%	ICU Level of Service G
Analysis Period (min) 60	

Splits and Phases: 115: Cameron St & Washington St

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	315	67	0	252	50	0	933	46	0	983	122
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	9	8	12	9	9	10	10	10	8	10	10
Storage Length (ft)	0		100	0		0	0		0	0		105
Storage Lanes	0		1	0		0	0		0	0		1
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	1.00
Ped Bike Factor			0.63			0.61		0.97				0.46
Frt			0.850			0.850		0.993				0.850
Flt Protected												
Satd. Flow (prot)	0	1611	1372	0	1560	1425	0	3006	0	0	3107	1478
Flt Permitted												
Satd. Flow (perm)	0	1611	867	0	1560	864	0	3006	0	0	3107	682
Right Turn on Red			Yes			Yes			No			No
Satd. Flow (RTOR)			25			26						
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		165			345			416			429	
Travel Time (s)		4.5			9.4			11.3			11.7	
Confl. Peds. (#/hr)			506			612			233			218
Peak Hour 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
Heavy Vehicles (%)	2%	4%	2%	2%	7%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	5	0	0	6	0	0	1	0	0	1	0
Parking (#/hr)								3			3	
Adj. Flow (vph)	0	315	67	0	252	50	0	933	46	0	983	122
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	315	67	0	252	50	0	979	0	0	983	122
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			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.17	1.20	1.00	1.18	1.14	1.09	1.18	1.09	1.20	1.18	1.09
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type			Perm			Perm						Perm
Protected Phases		2			2			1			1	
Permitted Phases			2			2						1
Minimum Split (s)		37.9	37.9		37.9	37.9		27.0			27.0	27.0
Total Split (s)	0.0	59.0	59.0	0.0	59.0	59.0	0.0	71.0	0.0	0.0	71.0	71.0
Total Split (%)	0.0%	45.4%	45.4%	0.0%	45.4%	45.4%	0.0%	54.6%	0.0%	0.0%	54.6%	54.6%
Maximum Green (s)		53.1	53.1		53.1	53.1		66.0			66.0	66.0
Yellow Time (s)		3.0	3.0		3.0	3.0		3.0			3.0	3.0
All-Red Time (s)		2.9	2.9		2.9	2.9		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	5.9	5.9	4.0	5.9	5.9	4.0	5.0	4.0	4.0	5.0	5.0
Lead/Lag		Lag	Lag		Lag	Lag		Lead			Lead	Lead
Lead-Lag Optimize?												
Walk Time (s)		7.0	7.0		7.0	7.0		7.0			7.0	7.0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Flash Dont Walk (s)		25.0	25.0		25.0	25.0		15.0			15.0	15.0
Pedestrian Calls (#/hr)		0	0		0	0		0			0	0
Act Effct Green (s)		53.1	53.1		53.1	53.1		66.0			66.0	66.0
Actuated g/C Ratio		0.41	0.41		0.41	0.41		0.51			0.51	0.51
v/c Ratio		0.48	0.18		0.40	0.14		0.64			0.62	0.35
Control Delay		31.3	17.6		29.5	14.8		14.3			8.1	8.8
Queue Delay		0.0	0.0		0.0	0.0		0.0			0.5	0.0
Total Delay		31.3	17.6		29.5	14.8		14.3			8.5	8.8
LOS		C	B		C	B		B			A	A
Approach Delay		28.9			27.0			14.3			8.6	
Approach LOS		C			C			B			A	

Intersection Summary	
Area Type: Other	
Cycle Length: 130	
Actuated Cycle Length: 130	
Offset: 128 (98%), Referenced to phase 1:NBSB, Start of Yellow	
Natural Cycle: 65	
Control Type: Pretimed	
Maximum v/c Ratio: 0.64	
Intersection Signal Delay: 15.4	Intersection LOS: B
Intersection Capacity Utilization 63.4%	ICU Level of Service B
Analysis Period (min) 60	

Splits and Phases: 116: King St & Washington St

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	126	233	67	0	0	0	0	853	38	0	1050	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	14	12	8	11	12	10	11	9
Lane Util. Factor	0.95	0.95	0.95	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	1.00
Ped Bike Factor		0.96						0.99				
Frt		0.976						0.994				
Flt Protected		0.985										
Satd. Flow (prot)	0	3148	0	0	0	0	0	3181	0	0	3414	0
Flt Permitted		0.985										
Satd. Flow (perm)	0	3067	0	0	0	0	0	3181	0	0	3414	0
Right Turn on Red			No			Yes			No			Yes
Satd. Flow (RTOR)												
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		155			356			419			416	
Travel Time (s)		4.2			9.7			11.4			11.3	
Confl. Peds. (#/hr)	69		45						92			
Peak Hour 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
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	1	0
Parking (#/hr)		6						3				
Adj. Flow (vph)	126	233	67	0	0	0	0	853	38	0	1050	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	426	0	0	0	0	0	891	0	0	1050	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			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.09	1.00	1.00	0.92	1.00	1.20	1.13	1.00	1.09	1.05	1.14
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm											
Protected Phases		2						1			1	
Permitted Phases	2											
Minimum Split (s)	36.9	36.9						26.0			26.0	
Total Split (s)	59.0	59.0	0.0	0.0	0.0	0.0	0.0	71.0	0.0	0.0	71.0	0.0
Total Split (%)	45.4%	45.4%	0.0%	0.0%	0.0%	0.0%	0.0%	54.6%	0.0%	0.0%	54.6%	0.0%
Maximum Green (s)	53.1	53.1						66.0			66.0	
Yellow Time (s)	3.0	3.0						3.0			3.0	
All-Red Time (s)	2.9	2.9						2.0			2.0	
Lost Time Adjust (s)	-1.9	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	5.9	4.0	4.0	4.0	4.0	4.0	5.0	4.0	4.0	5.0	4.0
Lead/Lag	Lag	Lag						Lead			Lead	
Lead-Lag Optimize?												
Walk Time (s)	7.0	7.0						7.0			7.0	
Flash Dont Walk (s)	24.0	24.0						14.0			14.0	
Pedestrian Calls (#/hr)	10	10						10			10	
Act Effct Green (s)		53.1						66.0			66.0	
Actuated g/C Ratio		0.41						0.51			0.51	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio		0.34						0.55			0.61	
Control Delay		27.4						11.0			8.6	
Queue Delay		0.0						0.5			0.1	
Total Delay		27.4						11.5			8.7	
LOS		C						B			A	
Approach Delay		27.4						11.5			8.7	
Approach LOS		C						B			A	

Intersection Summary	
Area Type: Other	
Cycle Length: 130	
Actuated Cycle Length: 130	
Offset: 0 (0%), Referenced to phase 1:NBSB, Start of Yellow	
Natural Cycle: 65	
Control Type: Pretimed	
Maximum v/c Ratio: 0.61	
Intersection Signal Delay: 13.1	Intersection LOS: B
Intersection Capacity Utilization 63.9%	ICU Level of Service B
Analysis Period (min) 60	

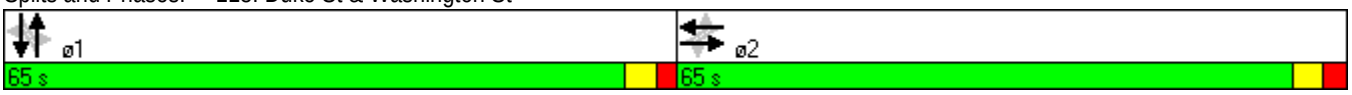
Splits and Phases: 117: Prince St & Washington St

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	113	244	59	55	260	38	38	740	29	50	924	143
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	13	12	12	13	12	11	9	9	9	11	9
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	0.95	0.95	0.95
Ped Bike Factor		0.99			1.00			1.00			0.99	
Frt		0.981			0.985			0.995			0.981	
Flt Protected		0.987			0.992			0.998			0.998	
Satd. Flow (prot)	0	1615	0	0	1660	0	0	2921	0	0	3130	0
Flt Permitted		0.757			0.880			0.748			0.819	
Satd. Flow (perm)	0	1236	0	0	1471	0	0	2189	0	0	2567	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		8			6			4			17	
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		310			357			434			419	
Travel Time (s)		8.5			9.7			11.8			11.4	
Confl. Peds. (#/hr)	23		23	23		23	45		45	45		45
Peak Hour 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
Heavy Vehicles (%)	2%	5%	2%	2%	2%	2%	2%	4%	2%	2%	2%	2%
Parking (#/hr)		3			3			3			3	
Adj. Flow (vph)	113	244	59	55	260	38	38	740	29	50	924	143
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	416	0	0	353	0	0	807	0	0	1117	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			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.12	1.00	1.00	1.12	1.00	1.04	1.23	1.14	1.14	1.13	1.14
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		2			2			1			1	
Permitted Phases	2			2			1			1		
Minimum Split (s)	12.5	12.5		12.5	12.5		15.0	15.0		15.0	15.0	
Total Split (s)	65.0	65.0	0.0	65.0	65.0	0.0	65.0	65.0	0.0	65.0	65.0	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)	59.5	59.5		59.5	59.5		60.0	60.0		60.0	60.0	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	2.5	2.5		2.5	2.5		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	-1.5	0.0	0.0	-1.5	0.0	0.0	-1.0	0.0	0.0	-1.0	0.0	0.0
Total Lost Time (s)	4.0	5.5	4.0	4.0	5.5	4.0	4.0	5.0	4.0	4.0	5.0	4.0
Lead/Lag	Lag	Lag		Lag	Lag		Lead	Lead		Lead	Lead	
Lead-Lag Optimize?												
Act Effct Green (s)		59.5			59.5			60.0			60.0	
Actuated g/C Ratio		0.46			0.46			0.46			0.46	
v/c Ratio		0.73			0.52			0.80			0.94	
Control Delay		37.6			28.1			37.2			32.4	
Queue Delay		0.0			0.0			5.4			0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay		37.6			28.1			42.7			32.4	
LOS		D			C			D			C	
Approach Delay		37.6			28.1			42.7			32.4	
Approach LOS		D			C			D			C	

Intersection Summary	
Area Type:	Other
Cycle Length: 130	
Actuated Cycle Length: 130	
Offset: 128 (98%), Referenced to phase 1:NBSB, Start of Yellow	
Natural Cycle: 65	
Control Type: Pretimed	
Maximum v/c Ratio: 0.94	
Intersection Signal Delay: 35.7	Intersection LOS: D
Intersection Capacity Utilization 106.0%	ICU Level of Service G
Analysis Period (min) 60	

Splits and Phases: 118: Duke St & Washington St

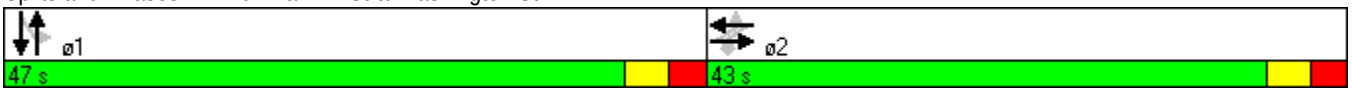


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	193	181	84	46	0	59	0	680	55	55	764	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	9	9	8	12	12	12	8	9	8	8	8	12
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	0.95	1.00
Ped Bike Factor	0.98		0.98		0.98			0.99			1.00	
Frt			0.850		0.924			0.989				
Flt Protected	0.950				0.979						0.997	
Satd. Flow (prot)	3060	1484	1372	0	1486	0	0	2947	0	0	2882	0
Flt Permitted	0.726				0.829						0.846	
Satd. Flow (perm)	2290	1484	1340	0	1253	0	0	2947	0	0	2443	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			84		59			12				
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		296			322			447			423	
Travel Time (s)		8.1			8.8			12.2			11.5	
Confl. Peds. (#/hr)	20		16	16		20			48	48		
Peak Hour 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
Heavy Vehicles (%)	3%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	1	0	0	0	0
Parking (#/hr)		3			1			3			3	
Adj. Flow (vph)	193	181	84	46	0	59	0	680	55	55	764	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	193	181	84	0	105	0	0	735	0	0	819	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)		18			18			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.14	1.33	1.20	1.00	1.15	1.00	1.20	1.24	1.20	1.20	1.29	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm		Perm	Perm						Perm		
Protected Phases		2			2			1			1	
Permitted Phases	2		2	2						1		
Minimum Split (s)	12.5	12.5	12.5	12.5	12.5			15.5		15.5	15.5	
Total Split (s)	43.0	43.0	43.0	43.0	43.0	0.0	0.0	47.0	0.0	47.0	47.0	0.0
Total Split (%)	47.8%	47.8%	47.8%	47.8%	47.8%	0.0%	0.0%	52.2%	0.0%	52.2%	52.2%	0.0%
Maximum Green (s)	37.5	37.5	37.5	37.5	37.5			41.5		41.5	41.5	
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0			3.0		3.0	3.0	
All-Red Time (s)	2.5	2.5	2.5	2.5	2.5			2.5		2.5	2.5	
Lost Time Adjust (s)	0.0	0.0	0.0	-1.5	0.0	0.0	0.0	0.0	0.0	-1.5	0.0	0.0
Total Lost Time (s)	5.5	5.5	5.5	4.0	5.5	4.0	4.0	5.5	4.0	4.0	5.5	4.0
Lead/Lag	Lag	Lag	Lag	Lag	Lag			Lead		Lead	Lead	
Lead-Lag Optimize?												
Act Effct Green (s)	37.5	37.5	37.5		37.5			41.5			41.5	
Actuated g/C Ratio	0.42	0.42	0.42		0.42			0.46			0.46	
v/c Ratio	0.20	0.29	0.14		0.19			0.54			0.73	
Control Delay	17.5	19.1	4.5		9.2			18.9			24.4	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Delay	0.0	0.0	0.0		0.0			0.0			0.4	
Total Delay	17.5	19.1	4.5		9.2			18.9			24.8	
LOS	B	B	A		A			B			C	
Approach Delay		15.7			9.2			18.9			24.8	
Approach LOS		B			A			B			C	

Intersection Summary	
Area Type:	Other
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 35 (39%), Referenced to phase 1:NBSB, Start of Yellow	
Natural Cycle: 45	
Control Type: Pretimed	
Maximum v/c Ratio: 0.73	
Intersection Signal Delay: 20.0	Intersection LOS: C
Intersection Capacity Utilization 88.6%	ICU Level of Service E
Analysis Period (min) 60	

Splits and Phases: 120: Franklin St & Washington St



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	0	138	2434	58	283	801
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	11	12	8	10
Storage Length (ft)	0	0		0	110	
Storage Lanes	0	0		0	1	
Taper Length (ft)	25	25		25	25	
Lane Util. Factor	1.00	1.00	*0.78	0.91	1.00	0.95
Ped Bike Factor			1.00			
Frt		0.865	0.997			
Flt Protected					0.950	
Satd. Flow (prot)	0	1442	4198	0	1534	3303
Flt Permitted					0.046	
Satd. Flow (perm)	0	1442	4198	0	74	3303
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		5	5			
Link Speed (mph)	25		25			25
Link Distance (ft)	222		429			151
Travel Time (s)	6.1		11.7			4.1
Confl. Peds. (#/hr)		4		4	4	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Parking (#/hr)		1				
Adj. Flow (vph)	0	138	2434	58	283	801
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	138	2492	0	283	801
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	0		8			8
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.00	1.15	1.04	1.00	1.20	1.09
Turning Speed (mph)	15	9		9	15	
Number of Detectors		1	1		1	1
Detector Template						
Leading Detector (ft)		5	5		35	5
Trailing Detector (ft)		0	0		-5	0
Detector 1 Position(ft)		0	0		-5	0
Detector 1 Size(ft)		5	5		40	5
Detector 1 Type		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)		0.0	0.0		0.0	0.0
Detector 1 Queue (s)		0.0	0.0		0.0	0.0
Detector 1 Delay (s)		0.0	0.0		0.0	0.0
Turn Type		Over			pm+pt	
Protected Phases		2	1		2	1
Permitted Phases					1	
Detector Phase		2	1		2	1
Switch Phase						

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Minimum Initial (s)		7.0	10.0		7.0	10.0
Minimum Split (s)		37.0	28.0		37.0	28.0
Total Split (s)	0.0	40.0	80.0	0.0	40.0	80.0
Total Split (%)	0.0%	33.3%	66.7%	0.0%	33.3%	66.7%
Maximum Green (s)		35.0	75.0		35.0	75.0
Yellow Time (s)		3.0	3.0		3.0	3.0
All-Red Time (s)		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)	4.0	5.0	5.0	4.0	5.0	5.0
Lead/Lag		Lag	Lead		Lag	Lead
Lead-Lag Optimize?						
Vehicle Extension (s)		3.0	3.0		3.0	3.0
Recall Mode		None	C-Max		None	C-Max
Walk Time (s)		7.0	7.0		7.0	7.0
Flash Dont Walk (s)		25.0	16.0		25.0	16.0
Pedestrian Calls (#/hr)		4	5		4	5
Act Effct Green (s)		23.5	86.5		110.0	86.5
Actuated g/C Ratio		0.20	0.72		0.92	0.72
v/c Ratio		0.48	0.82		0.80	0.34
Control Delay		45.5	2.0		53.0	7.4
Queue Delay		0.0	0.3		0.0	0.0
Total Delay		45.5	2.3		53.0	7.4
LOS		D	A		D	A
Approach Delay			2.3			19.3
Approach LOS			A			B

Intersection Summary	
Area Type: Other	
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 70 (58%), Referenced to phase 1:NBSB, Start of Yellow	
Natural Cycle: 100	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.82	
Intersection Signal Delay: 8.9	Intersection LOS: A
Intersection Capacity Utilization 80.3%	ICU Level of Service D
Analysis Period (min) 60	
* User Entered Value	

Splits and Phases: 108: First St & Washington St

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	8	158	17	0	2460	13	4	521	46
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	10	10	12	10	10	10	10	10	8
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.91	*0.78	0.91	0.95	0.95	0.95
Ped Bike Factor				0.98	1.00			1.00			1.00	
Frt					0.985			0.999			0.988	
Flt Protected				0.950								
Satd. Flow (prot)	0	0	0	1652	1512	0	0	3921	0	0	2921	0
Flt Permitted				0.950							0.898	
Satd. Flow (perm)	0	0	0	1613	1512	0	0	3921	0	0	2623	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		324			337			426			415	
Travel Time (s)		8.8			9.2			11.6			11.3	
Confl. Peds. (#/hr)				21		13	5		9	9		5
Peak Hour 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
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	7%	9%
Parking (#/hr)					3			1			3	
Adj. Flow (vph)	0	0	0	8	158	17	0	2460	13	4	521	46
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	8	175	0	0	2473	0	0	571	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			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	1.00	1.00	1.09	1.27	1.00	1.09	1.14	1.09	1.09	1.18	1.20
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type				Perm			Perm			Perm		
Protected Phases					2			1			1	
Permitted Phases				2			1			1		
Minimum Split (s)				38.1	38.1		29.1	29.1		29.1	29.1	
Total Split (s)	0.0	0.0	0.0	39.0	39.0	0.0	81.0	81.0	0.0	81.0	81.0	0.0
Total Split (%)	0.0%	0.0%	0.0%	32.5%	32.5%	0.0%	67.5%	67.5%	0.0%	67.5%	67.5%	0.0%
Maximum Green (s)				32.9	32.9		74.9	74.9		74.9	74.9	
Yellow Time (s)				3.0	3.0		3.0	3.0		3.0	3.0	
All-Red Time (s)				3.1	3.1		3.1	3.1		3.1	3.1	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	-2.1	0.0	0.0	-2.1	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	6.1	6.1	4.0	4.0	6.1	4.0	4.0	6.1	4.0
Lead/Lag				Lag	Lag		Lead	Lead		Lead	Lead	
Lead-Lag Optimize?												
Walk Time (s)				7.0	7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)				25.0	25.0		16.0	16.0		16.0	16.0	
Pedestrian Calls (#/hr)				0	0		0	0		0	0	
Act Effct Green (s)				32.9	32.9			74.9			74.9	
Actuated g/C Ratio				0.27	0.27			0.62			0.62	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio				0.02	0.42			1.01			0.35	
Control Delay				32.1	39.6			37.8			17.8	
Queue Delay				0.0	0.0			0.0			0.2	
Total Delay				32.1	39.6			37.8			17.9	
LOS				C	D			D			B	
Approach Delay					39.3			37.8			17.9	
Approach LOS					D			D			B	

Intersection Summary	
Area Type:	Other
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 1 (1%), Referenced to phase 1:NBSB, Start of Yellow	
Natural Cycle: 120	
Control Type: Pretimed	
Maximum v/c Ratio: 1.01	
Intersection Signal Delay: 34.4	Intersection LOS: C
Intersection Capacity Utilization 84.7%	ICU Level of Service E
Analysis Period (min) 60	
* User Entered Value	

Splits and Phases: 115: Cameron St & Washington St

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	178	21	0	114	17	0	2456	17	0	500	29
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	9	8	12	9	9	10	10	10	8	10	10
Storage Length (ft)	0		100	0		0	0		0	0		105
Storage Lanes	0		1	0		0	0		0	0		1
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	*0.78	0.91	1.00	0.95	1.00
Ped Bike Factor			0.89			0.92		1.00				0.91
Frt			0.850			0.850		0.999				0.850
Flt Protected												
Satd. Flow (prot)	0	1403	875	0	1466	1425	0	4040	0	0	2950	1478
Flt Permitted												
Satd. Flow (perm)	0	1403	782	0	1466	1309	0	4040	0	0	2950	1338
Right Turn on Red			Yes			Yes			No			No
Satd. Flow (RTOR)			21			5						
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		325			349			415			426	
Travel Time (s)		8.9			9.5			11.3			11.6	
Confl. Peds. (#/hr)			85			63			29			28
Peak Hour 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
Heavy Vehicles (%)	2%	17%	60%	2%	12%	2%	2%	2%	2%	2%	7%	2%
Bus Blockages (#/hr)	0	10	0	0	10	0	0	4	0	0	3	0
Parking (#/hr)											3	
Adj. Flow (vph)	0	178	21	0	114	17	0	2456	17	0	500	29
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	178	21	0	114	17	0	2473	0	0	500	29
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			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.20	1.20	1.00	1.20	1.14	1.09	1.10	1.09	1.20	1.19	1.09
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type			Perm			Perm						Perm
Protected Phases		2			2			1			1	
Permitted Phases			2			2						1
Minimum Split (s)		37.9	37.9		37.9	37.9		27.0			27.0	27.0
Total Split (s)	0.0	38.0	38.0	0.0	38.0	38.0	0.0	82.0	0.0	0.0	82.0	82.0
Total Split (%)	0.0%	31.7%	31.7%	0.0%	31.7%	31.7%	0.0%	68.3%	0.0%	0.0%	68.3%	68.3%
Maximum Green (s)		32.1	32.1		32.1	32.1		77.0			77.0	77.0
Yellow Time (s)		3.0	3.0		3.0	3.0		3.0			3.0	3.0
All-Red Time (s)		2.9	2.9		2.9	2.9		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	5.9	5.9	4.0	5.9	5.9	4.0	5.0	4.0	4.0	5.0	5.0
Lead/Lag		Lag	Lag		Lag	Lag		Lead			Lead	Lead
Lead-Lag Optimize?												
Walk Time (s)		7.0	7.0		7.0	7.0		7.0			7.0	7.0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Flash Dont Walk (s)		25.0	25.0		25.0	25.0		15.0			15.0	15.0
Pedestrian Calls (#/hr)		0	0		0	0		0			0	0
Act Effct Green (s)		32.1	32.1		32.1	32.1		77.0			77.0	77.0
Actuated g/C Ratio		0.27	0.27		0.27	0.27		0.64			0.64	0.64
v/c Ratio		0.47	0.09		0.29	0.05		0.95			0.26	0.03
Control Delay		42.0	13.8		37.4	26.4		7.3			11.7	9.5
Queue Delay		0.0	0.0		0.0	0.0		0.0			0.0	0.0
Total Delay		42.0	13.8		37.4	26.4		7.3			11.7	9.5
LOS		D	B		D	C		A			B	A
Approach Delay		39.0			36.0			7.3			11.5	
Approach LOS		D			D			A			B	

Intersection Summary	
Area Type: Other	
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 112 (93%), Referenced to phase 1:NBSB, Start of Yellow	
Natural Cycle: 100	
Control Type: Pretimed	
Maximum v/c Ratio: 0.95	
Intersection Signal Delay: 11.0	Intersection LOS: B
Intersection Capacity Utilization 83.6%	ICU Level of Service E
Analysis Period (min) 60	
* User Entered Value	

Splits and Phases: 116: King St & Washington St

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	84	410	17	0	0	0	0	2389	42	0	521	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	14	12	8	11	12	10	11	9
Lane Util. Factor	0.95	0.95	0.95	1.00	1.00	1.00	1.00	*0.78	0.91	1.00	0.95	1.00
Ped Bike Factor		1.00						1.00				
Frt		0.995						0.997				
Flt Protected		0.992										
Satd. Flow (prot)	0	3264	0	0	0	0	0	4199	0	0	3084	0
Flt Permitted		0.992										
Satd. Flow (perm)	0	3253	0	0	0	0	0	4199	0	0	3084	0
Right Turn on Red			No			Yes			No			Yes
Satd. Flow (RTOR)												
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		314			353			431			415	
Travel Time (s)		8.6			9.6			11.8			11.3	
Confl. Peds. (#/hr)	17		10						9			
Peak Hour 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
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	6%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	3	0
Parking (#/hr)		6			6						3	
Adj. Flow (vph)	84	410	17	0	0	0	0	2389	42	0	521	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	511	0	0	0	0	0	2431	0	0	521	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			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.09	1.00	1.00	0.92	1.00	1.20	1.04	1.00	1.09	1.14	1.14
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm											
Protected Phases		2						1			1	
Permitted Phases	2											
Minimum Split (s)	36.9	36.9						26.0			26.0	
Total Split (s)	47.0	47.0	0.0	0.0	0.0	0.0	0.0	73.0	0.0	0.0	73.0	0.0
Total Split (%)	39.2%	39.2%	0.0%	0.0%	0.0%	0.0%	0.0%	60.8%	0.0%	0.0%	60.8%	0.0%
Maximum Green (s)	41.1	41.1						68.0			68.0	
Yellow Time (s)	3.0	3.0						3.0			3.0	
All-Red Time (s)	2.9	2.9						2.0			2.0	
Lost Time Adjust (s)	-1.9	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	5.9	4.0	4.0	4.0	4.0	4.0	5.0	4.0	4.0	5.0	4.0
Lead/Lag	Lag	Lag						Lead			Lead	
Lead-Lag Optimize?												
Walk Time (s)	7.0	7.0						7.0			7.0	
Flash Dont Walk (s)	24.0	24.0						14.0			14.0	
Pedestrian Calls (#/hr)	10	10						10			10	
Act Effct Green (s)		41.1						68.0			68.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Actuated g/C Ratio		0.34						0.57			0.57	
v/c Ratio		0.46						1.02			0.30	
Control Delay		32.4						53.6			13.4	
Queue Delay		0.0						90.6			0.0	
Total Delay		32.4						144.2			13.4	
LOS		C						F			B	
Approach Delay		32.4						144.2			13.4	
Approach LOS		C						F			B	

Intersection Summary	
Area Type: Other	
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 101 (84%), Referenced to phase 1:NBSB, Start of Yellow	
Natural Cycle: 90	
Control Type: Pretimed	
Maximum v/c Ratio: 1.02	
Intersection Signal Delay: 108.0	Intersection LOS: F
Intersection Capacity Utilization 82.0%	ICU Level of Service E
Analysis Period (min) 60	

* User Entered Value

Splits and Phases: 117: Prince St & Washington St

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	151	253	63	17	119	8	0	2272	17	4	450	84
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	13	12	12	13	12	11	9	9	9	11	9
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.91	*0.78	0.91	0.95	0.95	0.95
Ped Bike Factor		1.00			1.00			1.00			1.00	
Frt		0.982			0.993			0.999			0.977	
Flt Protected		0.984			0.994							
Satd. Flow (prot)	0	1621	0	0	1636	0	0	3781	0	0	3015	0
Flt Permitted		0.814			0.925						0.920	
Satd. Flow (perm)	0	1338	0	0	1522	0	0	3781	0	0	2773	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		7			3			1			32	
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		314			356			422			431	
Travel Time (s)		8.6			9.7			11.5			11.8	
Confl. Peds. (#/hr)	8		11	11		8	6		8	8		6
Peak Hour 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
Heavy Vehicles (%)	6%	2%	2%	25%	2%	2%	2%	2%	2%	2%	7%	2%
Parking (#/hr)		3			3			1			3	
Adj. Flow (vph)	151	253	63	17	119	8	0	2272	17	4	450	84
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	467	0	0	144	0	0	2289	0	0	538	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			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.12	1.00	1.00	1.12	1.00	1.04	1.20	1.14	1.14	1.13	1.14
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		2			2			1			1	
Permitted Phases	2			2			1			1		
Minimum Split (s)	12.5	12.5		12.5	12.5		15.0	15.0		15.0	15.0	
Total Split (s)	43.0	43.0	0.0	43.0	43.0	0.0	77.0	77.0	0.0	77.0	77.0	0.0
Total Split (%)	35.8%	35.8%	0.0%	35.8%	35.8%	0.0%	64.2%	64.2%	0.0%	64.2%	64.2%	0.0%
Maximum Green (s)	37.5	37.5		37.5	37.5		72.0	72.0		72.0	72.0	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	2.5	2.5		2.5	2.5		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	-1.5	0.0	0.0	-1.5	0.0	0.0	-1.0	0.0	0.0	-1.0	0.0	0.0
Total Lost Time (s)	4.0	5.5	4.0	4.0	5.5	4.0	4.0	5.0	4.0	4.0	5.0	4.0
Lead/Lag	Lag	Lag		Lag	Lag		Lead	Lead		Lead	Lead	
Lead-Lag Optimize?												
Act Effct Green (s)		37.5			37.5			72.0			72.0	
Actuated g/C Ratio		0.31			0.31			0.60			0.60	
v/c Ratio		1.10			0.30			1.01			0.32	
Control Delay		263.5			32.8			51.3			11.6	
Queue Delay		0.0			0.0			78.2			0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay		263.5			32.8			129.5			11.6	
LOS		F			C			F			B	
Approach Delay		263.5			32.8			129.5			11.6	
Approach LOS		F			C			F			B	

Intersection Summary	
Area Type:	Other
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 96 (80%), Referenced to phase 1:NBSB, Start of Yellow	
Natural Cycle: 150	
Control Type: Pretimed	
Maximum v/c Ratio: 1.10	
Intersection Signal Delay: 125.2	Intersection LOS: F
Intersection Capacity Utilization 96.6%	ICU Level of Service F
Analysis Period (min) 60	

* User Entered Value

Splits and Phases: 118: Duke St & Washington St

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	500	387	17	42	0	13	0	2423	190	4	407	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	9	9	8	12	12	12	8	9	8	8	8	12
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	1.00	*0.78	0.91	0.95	0.95	1.00
Ped Bike Factor	1.00		0.97		0.99			1.00			1.00	
Frt			0.850		0.968			0.989				
Flt Protected	0.950				0.963							
Satd. Flow (prot)	3090	1486	1120	0	1549	0	0	3721	0	0	2799	0
Flt Permitted	0.754				0.351						0.894	
Satd. Flow (perm)	2450	1486	1086	0	562	0	0	3721	0	0	2502	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			17		7			18				
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		273			322			442			432	
Travel Time (s)		7.4			8.8			12.1			11.8	
Confl. Peds. (#/hr)	1		15	15		1			14	14		
Peak Hour 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
Heavy Vehicles (%)	2%	3%	25%	2%	2%	2%	2%	2%	2%	100%	5%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	3	0	0	0	0
Parking (#/hr)		1			1			1			1	
Adj. Flow (vph)	500	387	17	42	0	13	0	2423	190	4	407	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	500	387	17	0	55	0	0	2613	0	0	411	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)		18			18			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.14	1.31	1.20	1.00	1.15	1.00	1.20	1.20	1.20	1.20	1.28	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm		Perm	Perm						Perm		
Protected Phases		2			2			1			1	
Permitted Phases	2		2	2						1		
Minimum Split (s)	12.5	12.5	12.5	12.5	12.5			15.5		15.5	15.5	
Total Split (s)	35.0	35.0	35.0	35.0	35.0	0.0	0.0	85.0	0.0	85.0	85.0	0.0
Total Split (%)	29.2%	29.2%	29.2%	29.2%	29.2%	0.0%	0.0%	70.8%	0.0%	70.8%	70.8%	0.0%
Maximum Green (s)	29.5	29.5	29.5	29.5	29.5			79.5		79.5	79.5	
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0			3.0		3.0	3.0	
All-Red Time (s)	2.5	2.5	2.5	2.5	2.5			2.5		2.5	2.5	
Lost Time Adjust (s)	0.0	0.0	0.0	-1.5	0.0	0.0	0.0	0.0	0.0	-1.5	0.0	0.0
Total Lost Time (s)	5.5	5.5	5.5	4.0	5.5	4.0	4.0	5.5	4.0	4.0	5.5	4.0
Lead/Lag	Lag	Lag	Lag	Lag	Lag			Lead		Lead	Lead	
Lead-Lag Optimize?												
Act Effct Green (s)	29.5	29.5	29.5		29.5			79.5			79.5	
Actuated g/C Ratio	0.25	0.25	0.25		0.25			0.66			0.66	
v/c Ratio	0.83	1.06	0.06		0.38			1.06			0.25	
Control Delay	57.5	209.2	15.2		42.7			120.5			5.8	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Delay	0.0	0.0	0.0		0.0			196.0			0.0	
Total Delay	57.5	209.2	15.2		42.7			316.4			5.8	
LOS	E	F	B		D			F			A	
Approach Delay		121.6			42.7			316.4			5.8	
Approach LOS		F			D			F			A	

Intersection Summary	
Area Type:	Other
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 51 (43%), Referenced to phase 1:NBSB, Start of Yellow	
Natural Cycle: 140	
Control Type: Pretimed	
Maximum v/c Ratio: 1.06	
Intersection Signal Delay: 236.4	Intersection LOS: F
Intersection Capacity Utilization 98.6%	ICU Level of Service F
Analysis Period (min) 60	
* User Entered Value	

Splits and Phases: 120: Franklin St & Washington St

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	0	159	1480	62	366	2088
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	*0.78
Ped Bike Factor			1.00			
Frt		0.865	0.994			
Flt Protected					0.950	
Satd. Flow (prot)	0	1596	3512	0	1770	4359
Flt Permitted					0.084	
Satd. Flow (perm)	0	1596	3512	0	156	4359
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		36	6			
Link Speed (mph)	25		25			25
Link Distance (ft)	241		430			151
Travel Time (s)	6.6		11.7			4.1
Confl. Peds. (#/hr)		8		8	8	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	2%	3%	2%	2%	2%	2%
Adj. Flow (vph)	0	159	1480	62	366	2088
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	159	1542	0	366	2088
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	0		12			12
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	
Turn Type		Over			pm+pt	
Protected Phases		2	1		2	1
Permitted Phases					1	
Minimum Split (s)		37.0	28.0		37.0	28.0
Total Split (s)	0.0	44.0	76.0	0.0	44.0	76.0
Total Split (%)	0.0%	36.7%	63.3%	0.0%	36.7%	63.3%
Maximum Green (s)		39.0	71.0		39.0	71.0
Yellow Time (s)		3.0	3.0		3.0	3.0
All-Red Time (s)		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)	4.0	5.0	5.0	4.0	5.0	5.0
Lead/Lag		Lag	Lead		Lag	Lead
Lead-Lag Optimize?						
Walk Time (s)		7.0	7.0		7.0	7.0
Flash Dont Walk (s)		25.0	16.0		25.0	16.0
Pedestrian Calls (#/hr)		5	20		5	20
Act Effct Green (s)		39.0	71.0		110.0	71.0
Actuated g/C Ratio		0.32	0.59		0.92	0.59
v/c Ratio		0.29	0.74		0.55	0.81
Control Delay		24.8	7.9		23.8	22.5

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Queue Delay		0.0	0.4		0.0	0.1
Total Delay		24.8	8.3		23.8	22.6
LOS		C	A		C	C
Approach Delay			8.3			22.8
Approach LOS			A			C

Intersection Summary	
Area Type:	Other
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 71 (59%), Referenced to phase 1:NBSB, Start of Yellow	
Natural Cycle: 80	
Control Type: Pretimed	
Maximum v/c Ratio: 0.81	
Intersection Signal Delay: 17.5	Intersection LOS: B
Intersection Capacity Utilization 88.2%	ICU Level of Service E
Analysis Period (min) 60	
* User Entered Value	

Splits and Phases: 108: First St & Washington St

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	8	414	38	21	1004	34	0	1978	71
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	10	10	12	10	10	10	10	10	8
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	0.91	*0.78	0.91
Ped Bike Factor				0.96	1.00			1.00			1.00	
Frt					0.987			0.995			0.995	
Flt Protected				0.950				0.999				
Satd. Flow (prot)	0	0	0	1652	1503	0	0	3002	0	0	3925	0
Flt Permitted				0.950				0.760				
Satd. Flow (perm)	0	0	0	1587	1503	0	0	2284	0	0	3925	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		321			342			420			415	
Travel Time (s)		8.8			9.3			11.5			11.3	
Confl. Peds. (#/hr)				35		18	23		27	27		23
Peak Hour 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
Heavy Vehicles (%)	2%	2%	2%	2%	2%	11%	2%	5%	2%	2%	5%	2%
Parking (#/hr)					3			3				
Adj. Flow (vph)	0	0	0	8	414	38	21	1004	34	0	1978	71
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	8	452	0	0	1059	0	0	2049	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			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	1.00	1.00	1.09	1.27	1.00	1.09	1.18	1.09	1.09	1.09	1.20
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type				Perm			Perm			Perm		
Protected Phases					2			1			1	
Permitted Phases				2			1			1		
Minimum Split (s)				38.1	38.1		29.1	29.1		29.1	29.1	
Total Split (s)	0.0	0.0	0.0	45.0	45.0	0.0	75.0	75.0	0.0	75.0	75.0	0.0
Total Split (%)	0.0%	0.0%	0.0%	37.5%	37.5%	0.0%	62.5%	62.5%	0.0%	62.5%	62.5%	0.0%
Maximum Green (s)				38.9	38.9		68.9	68.9		68.9	68.9	
Yellow Time (s)				3.0	3.0		3.0	3.0		3.0	3.0	
All-Red Time (s)				3.1	3.1		3.1	3.1		3.1	3.1	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	-2.1	0.0	0.0	-2.1	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	6.1	6.1	4.0	4.0	6.1	4.0	4.0	6.1	4.0
Lead/Lag				Lag	Lag		Lead	Lead		Lead	Lead	
Lead-Lag Optimize?												
Walk Time (s)				7.0	7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)				25.0	25.0		16.0	16.0		16.0	16.0	
Pedestrian Calls (#/hr)				0	0		0	0		0	0	
Act Effct Green (s)				38.9	38.9			68.9			68.9	
Actuated g/C Ratio				0.32	0.32			0.57			0.57	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio				0.02	0.93			0.81			0.91	
Control Delay				27.9	77.1			24.6			14.2	
Queue Delay				0.0	0.0			0.0			147.6	
Total Delay				27.9	77.1			24.6			161.8	
LOS				C	E			C			F	
Approach Delay					76.3			24.6			161.8	
Approach LOS					E			C			F	

Intersection Summary	
Area Type:	Other
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 21 (18%), Referenced to phase 1:NBSB, Start of Yellow	
Natural Cycle: 90	
Control Type: Pretimed	
Maximum v/c Ratio: 0.93	
Intersection Signal Delay: 110.1	Intersection LOS: F
Intersection Capacity Utilization 80.8%	ICU Level of Service D
Analysis Period (min) 60	
* User Entered Value	

Splits and Phases: 115: Cameron St & Washington St

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	224	42	0	269	25	0	1034	29	0	1919	67
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	9	8	12	9	9	10	10	10	8	10	10
Storage Length (ft)	0		100	0		0	0		200	0		0
Storage Lanes	0		1	0		0	0		0	0		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	*0.78	0.91
Ped Bike Factor			0.77			0.73		0.99			0.99	
Frt			0.850			0.850		0.996			0.995	
Flt Protected												
Satd. Flow (prot)	0	1572	1372	0	1565	1425	0	3019	0	0	3781	0
Flt Permitted												
Satd. Flow (perm)	0	1572	1062	0	1565	1045	0	3019	0	0	3781	0
Right Turn on Red			Yes			Yes			No			No
Satd. Flow (RTOR)			9			25						
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		317			349			415			420	
Travel Time (s)		8.6			9.5			11.3			11.5	
Confl. Peds. (#/hr)			194			231			102			76
Peak Hour 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
Heavy Vehicles (%)	2%	4%	2%	2%	4%	2%	2%	4%	2%	2%	4%	2%
Bus Blockages (#/hr)	0	11	0	0	12	0	0	0	0	0	2	0
Parking (#/hr)								3			3	
Adj. Flow (vph)	0	224	42	0	269	25	0	1034	29	0	1919	67
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	224	42	0	269	25	0	1063	0	0	1986	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			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.21	1.20	1.00	1.22	1.14	1.09	1.18	1.09	1.20	1.15	1.09
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type			Perm			Perm						
Protected Phases		2			2			1			1	
Permitted Phases			2			2						
Minimum Split (s)		37.9	37.9		37.9	37.9		27.0			27.0	
Total Split (s)	0.0	43.0	43.0	0.0	43.0	43.0	0.0	77.0	0.0	0.0	77.0	0.0
Total Split (%)	0.0%	35.8%	35.8%	0.0%	35.8%	35.8%	0.0%	64.2%	0.0%	0.0%	64.2%	0.0%
Maximum Green (s)		37.1	37.1		37.1	37.1		72.0			72.0	
Yellow Time (s)		3.0	3.0		3.0	3.0		3.0			3.0	
All-Red Time (s)		2.9	2.9		2.9	2.9		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	5.9	5.9	4.0	5.9	5.9	4.0	5.0	4.0	4.0	5.0	4.0
Lead/Lag		Lag	Lag		Lag	Lag		Lead			Lead	
Lead-Lag Optimize?												
Walk Time (s)		7.0	7.0		7.0	7.0		7.0			7.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Flash Dont Walk (s)		25.0	25.0		25.0	25.0		15.0			15.0	
Pedestrian Calls (#/hr)		0	0		0	0		0			0	
Act Effct Green (s)		37.1	37.1		37.1	37.1		72.0			72.0	
Actuated g/C Ratio		0.31	0.31		0.31	0.31		0.60			0.60	
v/c Ratio		0.46	0.13		0.56	0.07		0.59			0.88	
Control Delay		37.2	26.0		39.9	11.1		5.1			3.6	
Queue Delay		0.0	0.0		0.0	0.0		0.1			0.4	
Total Delay		37.2	26.0		39.9	11.1		5.1			4.0	
LOS		D	C		D	B		A			A	
Approach Delay		35.4			37.5			5.1			4.0	
Approach LOS		D			D			A			A	

Intersection Summary	
Area Type: Other	
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 32 (27%), Referenced to phase 1:NBSB, Start of Yellow	
Natural Cycle: 90	
Control Type: Pretimed	
Maximum v/c Ratio: 0.88	
Intersection Signal Delay: 9.4	Intersection LOS: A
Intersection Capacity Utilization 74.5%	ICU Level of Service D
Analysis Period (min) 60	
* User Entered Value	

Splits and Phases: 116: King St & Washington St

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	139	183	101	0	0	0	0	924	13	0	1961	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	14	12	8	11	12	10	11	9
Lane Util. Factor	0.95	0.95	0.95	1.00	1.00	1.00	1.00	0.95	0.95	1.00	*0.78	1.00
Ped Bike Factor		0.98						1.00				
Frt		0.964						0.998				
Flt Protected		0.984										
Satd. Flow (prot)	0	3113	0	0	0	0	0	3202	0	0	4202	0
Flt Permitted		0.984										
Satd. Flow (perm)	0	3084	0	0	0	0	0	3202	0	0	4202	0
Right Turn on Red			No			Yes			No			Yes
Satd. Flow (RTOR)												
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		307			348			429			415	
Travel Time (s)		8.4			9.5			11.7			11.3	
Confl. Peds. (#/hr)	24		20						30			
Peak Hour 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
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	33%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	2	0
Parking (#/hr)		6						3				
Adj. Flow (vph)	139	183	101	0	0	0	0	924	13	0	1961	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	423	0	0	0	0	0	937	0	0	1961	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			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.09	1.00	1.00	0.92	1.00	1.20	1.13	1.00	1.09	1.05	1.14
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm											
Protected Phases		2						1			1	
Permitted Phases	2											
Minimum Split (s)	36.9	36.9						26.0			26.0	
Total Split (s)	51.0	51.0	0.0	0.0	0.0	0.0	0.0	69.0	0.0	0.0	69.0	0.0
Total Split (%)	42.5%	42.5%	0.0%	0.0%	0.0%	0.0%	0.0%	57.5%	0.0%	0.0%	57.5%	0.0%
Maximum Green (s)	45.1	45.1						64.0			64.0	
Yellow Time (s)	3.0	3.0						3.0			3.0	
All-Red Time (s)	2.9	2.9						2.0			2.0	
Lost Time Adjust (s)	-1.9	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	5.9	4.0	4.0	4.0	4.0	4.0	5.0	4.0	4.0	5.0	4.0
Lead/Lag	Lag	Lag						Lead			Lead	
Lead-Lag Optimize?												
Walk Time (s)	7.0	7.0						7.0			7.0	
Flash Dont Walk (s)	24.0	24.0						14.0			14.0	
Pedestrian Calls (#/hr)	0	0						0			0	
Act Effct Green (s)		45.1						64.0			64.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Actuated g/C Ratio		0.38						0.53			0.53	
v/c Ratio		0.36						0.55			0.88	
Control Delay		28.2						10.4			10.2	
Queue Delay		0.0						0.2			1.8	
Total Delay		28.2						10.6			12.0	
LOS		C						B			B	
Approach Delay		28.2						10.6			12.0	
Approach LOS		C						B			B	

Intersection Summary	
Area Type: Other	
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 35 (29%), Referenced to phase 1:NBSB, Start of Yellow	
Natural Cycle: 80	
Control Type: Pretimed	
Maximum v/c Ratio: 0.88	
Intersection Signal Delay: 13.7	Intersection LOS: B
Intersection Capacity Utilization 72.8%	ICU Level of Service C
Analysis Period (min) 60	

* User Entered Value

Splits and Phases: 117: Prince St & Washington St

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	126	149	59	25	277	25	13	786	29	0	1911	151
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	13	12	12	13	12	11	9	9	9	11	9
Storage Length (ft)	0		0	0		0	0		115	0		0
Storage Lanes	0		0	0		0	0		1	0		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.91	*0.78	0.91
Ped Bike Factor		0.99			1.00			1.00	0.96		1.00	
Frt		0.976			0.990				0.850		0.989	
Flt Protected		0.981			0.996			0.999				
Satd. Flow (prot)	0	1596	0	0	1677	0	0	2999	1425	0	4155	0
Flt Permitted		0.621			0.955			0.818				
Satd. Flow (perm)	0	1008	0	0	1607	0	0	2456	1361	0	4155	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		9			4				26		14	
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		311			349			430			429	
Travel Time (s)		8.5			9.5			11.7			11.7	
Confl. Peds. (#/hr)	12		7	7		12	13		28	28		13
Peak Hour 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
Heavy Vehicles (%)	7%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	3%
Parking (#/hr)		3			3			3				
Adj. Flow (vph)	126	149	59	25	277	25	13	786	29	0	1911	151
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	334	0	0	327	0	0	799	29	0	2062	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			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.12	1.00	1.00	1.12	1.00	1.04	1.23	1.14	1.14	1.04	1.14
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm			Perm			Perm		Perm	Perm		
Protected Phases		2			2			1			1	
Permitted Phases	2			2			1		1	1		
Minimum Split (s)	12.5	12.5		12.5	12.5		15.0	15.0	15.0	15.0	15.0	
Total Split (s)	48.0	48.0	0.0	48.0	48.0	0.0	72.0	72.0	72.0	72.0	72.0	0.0
Total Split (%)	40.0%	40.0%	0.0%	40.0%	40.0%	0.0%	60.0%	60.0%	60.0%	60.0%	60.0%	0.0%
Maximum Green (s)	42.5	42.5		42.5	42.5		67.0	67.0	67.0	67.0	67.0	
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)	2.5	2.5		2.5	2.5		2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	-1.5	0.0	0.0	-1.5	0.0	0.0	-1.0	0.0	0.0	-1.0	0.0	0.0
Total Lost Time (s)	4.0	5.5	4.0	4.0	5.5	4.0	4.0	5.0	5.0	4.0	5.0	4.0
Lead/Lag	Lag	Lag		Lag	Lag		Lead	Lead	Lead	Lead	Lead	
Lead-Lag Optimize?												
Act Effct Green (s)		42.5			42.5			67.0	67.0		67.0	
Actuated g/C Ratio		0.35			0.35			0.56	0.56		0.56	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio		0.92			0.57			0.58	0.04		0.89	
Control Delay		81.1			35.8			35.5	13.6		5.2	
Queue Delay		0.0			0.0			0.2	0.0		0.1	
Total Delay		81.1			35.8			35.7	13.6		5.3	
LOS		F			D			D	B		A	
Approach Delay		81.1			35.8			34.9			5.3	
Approach LOS		F			D			C			A	

Intersection Summary	
Area Type:	Other
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 47 (39%), Referenced to phase 1:NBSB, Start of Yellow	
Natural Cycle: 75	
Control Type: Pretimed	
Maximum v/c Ratio: 0.92	
Intersection Signal Delay: 22.1	Intersection LOS: C
Intersection Capacity Utilization 89.8%	ICU Level of Service E
Analysis Period (min) 60	
* User Entered Value	

Splits and Phases: 118: Duke St & Washington St

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	143	245	63	214	0	21	0	567	153	0	1533	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	9	9	8	12	12	12	8	9	8	8	8	12
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.91	*0.78	1.00
Ped Bike Factor	0.99		0.98		0.99			0.99				
Frt			0.850		0.988			0.968				
Flt Protected	0.950				0.956							
Satd. Flow (prot)	3060	1629	1228	0	1572	0	0	2737	0	0	3645	0
Flt Permitted	0.685				0.484							
Satd. Flow (perm)	2183	1629	1204	0	792	0	0	2737	0	0	3645	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			29		4			47				
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		273			322			443			426	
Travel Time (s)		7.4			8.8			12.1			11.6	
Confl. Peds. (#/hr)	11		9	9		11			23	23		
Peak Hour 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
Heavy Vehicles (%)	3%	5%	2%	2%	2%	2%	2%	2%	27%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	3	0	0	0	0
Parking (#/hr)			1		1			1			1	
Adj. Flow (vph)	143	245	63	214	0	21	0	567	153	0	1533	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	143	245	63	0	235	0	0	720	0	0	1533	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)		18			18			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.14	1.14	1.38	1.00	1.15	1.00	1.20	1.23	1.20	1.20	1.25	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm		Perm	Perm						Perm		
Protected Phases		2			2			1			1	
Permitted Phases	2		2	2						1		
Minimum Split (s)	12.5	12.5	12.5	12.5	12.5			15.5		15.5	15.5	
Total Split (s)	46.0	46.0	46.0	46.0	46.0	0.0	0.0	74.0	0.0	74.0	74.0	0.0
Total Split (%)	38.3%	38.3%	38.3%	38.3%	38.3%	0.0%	0.0%	61.7%	0.0%	61.7%	61.7%	0.0%
Maximum Green (s)	40.5	40.5	40.5	40.5	40.5			68.5		68.5	68.5	
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0			3.0		3.0	3.0	
All-Red Time (s)	2.5	2.5	2.5	2.5	2.5			2.5		2.5	2.5	
Lost Time Adjust (s)	0.0	0.0	0.0	-1.5	0.0	0.0	0.0	0.0	0.0	-1.5	0.0	0.0
Total Lost Time (s)	5.5	5.5	5.5	4.0	5.5	4.0	4.0	5.5	4.0	4.0	5.5	4.0
Lead/Lag	Lag	Lag	Lag	Lag	Lag			Lead		Lead	Lead	
Lead-Lag Optimize?												
Act Effct Green (s)	40.5	40.5	40.5		40.5			68.5			68.5	
Actuated g/C Ratio	0.34	0.34	0.34		0.34			0.57			0.57	
v/c Ratio	0.19	0.45	0.15		0.87			0.45			0.74	
Control Delay	29.1	34.2	17.7		76.7			15.7			2.1	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Delay	0.0	0.0	0.0		0.0			0.2			2.9	
Total Delay	29.1	34.2	17.7		76.7			15.9			5.0	
LOS	C	C	B		E			B			A	
Approach Delay		30.3			76.7			15.9			5.0	
Approach LOS		C			E			B			A	

Intersection Summary	
Area Type:	Other
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 87 (73%), Referenced to phase 1:NBSB, Start of Yellow	
Natural Cycle: 55	
Control Type: Pretimed	
Maximum v/c Ratio: 0.87	
Intersection Signal Delay: 17.3	Intersection LOS: B
Intersection Capacity Utilization 70.0%	ICU Level of Service C
Analysis Period (min) 60	
* User Entered Value	

Splits and Phases: 120: Franklin St & Washington St

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	0	89	1035	76	152	1285
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	11	12	8	10
Lane Util. Factor	1.00	1.00	0.91	0.91	1.00	0.95
Ped Bike Factor			1.00		1.00	
Frt		0.865	0.990			
Flt Protected					0.950	
Satd. Flow (prot)	0	1442	4807	0	1476	3303
Flt Permitted					0.194	
Satd. Flow (perm)	0	1442	4807	0	300	3303
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		68	13			
Link Speed (mph)	25		25			25
Link Distance (ft)	222		422			180
Travel Time (s)	6.1		11.5			4.9
Confl. Peds. (#/hr)		10		10	10	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	2%	2%	3%	2%	6%	2%
Parking (#/hr)		1				
Adj. Flow (vph)	0	89	1035	76	152	1285
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	89	1111	0	152	1285
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	0		8			8
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.00	1.15	1.04	1.00	1.20	1.09
Turning Speed (mph)	15	9		9	15	
Turn Type		Over			pm+pt	
Protected Phases		2	1		2	1
Permitted Phases					1	
Minimum Split (s)		37.0	28.0		37.0	28.0
Total Split (s)	0.0	59.0	71.0	0.0	59.0	71.0
Total Split (%)	0.0%	45.4%	54.6%	0.0%	45.4%	54.6%
Maximum Green (s)		54.0	66.0		54.0	66.0
Yellow Time (s)		3.0	3.0		3.0	3.0
All-Red Time (s)		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)	4.0	5.0	5.0	4.0	5.0	5.0
Lead/Lag		Lag	Lead		Lag	Lead
Lead-Lag Optimize?						
Walk Time (s)		7.0	7.0		7.0	7.0
Flash Dont Walk (s)		25.0	16.0		25.0	16.0
Pedestrian Calls (#/hr)		10	15		10	15
Act Effct Green (s)		54.0	66.0		120.0	66.0
Actuated g/C Ratio		0.42	0.51		0.92	0.51

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
v/c Ratio		0.14	0.45		0.20	0.77
Control Delay		8.5	20.9		1.0	29.7
Queue Delay		0.0	1.2		0.0	0.0
Total Delay		8.5	22.1		1.0	29.7
LOS		A	C		A	C
Approach Delay			22.1			26.7
Approach LOS			C			C

Intersection Summary	
Area Type: Other	
Cycle Length: 130	
Actuated Cycle Length: 130	
Offset: 120 (92%), Referenced to phase 1:NBSB, Start of Yellow	
Natural Cycle: 70	
Control Type: Pretimed	
Maximum v/c Ratio: 0.77	
Intersection Signal Delay: 24.1	Intersection LOS: C
Intersection Capacity Utilization 56.8%	ICU Level of Service B
Analysis Period (min) 60	

Splits and Phases: 108: First St & Washington St

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	46	175	71	55	869	59	29	1059	46
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	10	10	12	10	10	10	10	10	8
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	0.95	0.95	0.95
Ped Bike Factor				0.90	0.99			0.99			1.00	
Frt					0.957			0.991			0.994	
Flt Protected				0.950				0.997			0.999	
Satd. Flow (prot)	0	0	0	1652	1471	0	0	3061	0	0	3092	0
Flt Permitted				0.950				0.705			0.896	
Satd. Flow (perm)	0	0	0	1485	1471	0	0	2164	0	0	2771	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		163			339			429			411	
Travel Time (s)		4.4			9.2			11.7			11.2	
Confl. Peds. (#/hr)				83		26			54	54		
Peak Hour 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
Parking (#/hr)					1			1			3	
Adj. Flow (vph)	0	0	0	46	175	71	55	869	59	29	1059	46
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	46	246	0	0	983	0	0	1134	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			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	1.00	1.00	1.09	1.26	1.00	1.09	1.17	1.09	1.09	1.18	1.20
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type				Perm			Perm			Perm		
Protected Phases					2			1			1	
Permitted Phases				2			1			1		
Minimum Split (s)				38.1	38.1		29.1	29.1		29.1	29.1	
Total Split (s)	0.0	0.0	0.0	57.0	57.0	0.0	73.0	73.0	0.0	73.0	73.0	0.0
Total Split (%)	0.0%	0.0%	0.0%	43.8%	43.8%	0.0%	56.2%	56.2%	0.0%	56.2%	56.2%	0.0%
Maximum Green (s)				50.9	50.9		66.9	66.9		66.9	66.9	
Yellow Time (s)				3.0	3.0		3.0	3.0		3.0	3.0	
All-Red Time (s)				3.1	3.1		3.1	3.1		3.1	3.1	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	-2.1	0.0	0.0	-2.1	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	6.1	6.1	4.0	4.0	6.1	4.0	4.0	6.1	4.0
Lead/Lag				Lag	Lag		Lead	Lead		Lead	Lead	
Lead-Lag Optimize?												
Walk Time (s)				7.0	7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)				25.0	25.0		16.0	16.0		16.0	16.0	
Pedestrian Calls (#/hr)				0	0		0	0		0	0	
Act Effct Green (s)				50.9	50.9			66.9			66.9	
Actuated g/C Ratio				0.39	0.39			0.51			0.51	
v/c Ratio				0.08	0.43			0.88			0.80	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay				25.5	31.8			22.7			31.3	
Queue Delay				0.0	0.0			0.0			187.7	
Total Delay				25.5	31.8			22.7			219.0	
LOS				C	C			C			F	
Approach Delay					30.8			22.7			219.0	
Approach LOS					C			C			F	

Intersection Summary	
Area Type:	Other
Cycle Length: 130	
Actuated Cycle Length: 130	
Offset: 127 (98%), Referenced to phase 1:NBSB, Start of Yellow	
Natural Cycle: 80	
Control Type: Pretimed	
Maximum v/c Ratio: 0.88	
Intersection Signal Delay: 116.1	Intersection LOS: F
Intersection Capacity Utilization 101.2%	ICU Level of Service G
Analysis Period (min) 60	

Splits and Phases: 115: Cameron St & Washington St

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	346	67	0	275	50	0	933	46	0	983	122
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	9	8	12	9	9	10	10	10	8	10	10
Storage Length (ft)	0		100	0		0	0		0	0		105
Storage Lanes	0		1	0		0	0		0	0		1
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	1.00
Ped Bike Factor			0.63			0.61		0.97				0.46
Frt			0.850			0.850		0.993				0.850
Flt Protected												
Satd. Flow (prot)	0	1611	1372	0	1560	1425	0	3006	0	0	3107	1478
Flt Permitted												
Satd. Flow (perm)	0	1611	867	0	1560	864	0	3006	0	0	3107	682
Right Turn on Red			Yes			Yes			No			No
Satd. Flow (RTOR)			25			26						
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		165			345			416			429	
Travel Time (s)		4.5			9.4			11.3			11.7	
Confl. Peds. (#/hr)			506			612			233			218
Peak Hour 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
Heavy Vehicles (%)	2%	4%	2%	2%	7%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	5	0	0	6	0	0	1	0	0	1	0
Parking (#/hr)								3			3	
Adj. Flow (vph)	0	346	67	0	275	50	0	933	46	0	983	122
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	346	67	0	275	50	0	979	0	0	983	122
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			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.17	1.20	1.00	1.18	1.14	1.09	1.18	1.09	1.20	1.18	1.09
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type			Perm			Perm						Perm
Protected Phases		2			2			1			1	
Permitted Phases			2			2						1
Minimum Split (s)		37.9	37.9		37.9	37.9		27.0			27.0	27.0
Total Split (s)	0.0	59.0	59.0	0.0	59.0	59.0	0.0	71.0	0.0	0.0	71.0	71.0
Total Split (%)	0.0%	45.4%	45.4%	0.0%	45.4%	45.4%	0.0%	54.6%	0.0%	0.0%	54.6%	54.6%
Maximum Green (s)		53.1	53.1		53.1	53.1		66.0			66.0	66.0
Yellow Time (s)		3.0	3.0		3.0	3.0		3.0			3.0	3.0
All-Red Time (s)		2.9	2.9		2.9	2.9		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	5.9	5.9	4.0	5.9	5.9	4.0	5.0	4.0	4.0	5.0	5.0
Lead/Lag		Lag	Lag		Lag	Lag		Lead			Lead	Lead
Lead-Lag Optimize?												
Walk Time (s)		7.0	7.0		7.0	7.0		7.0			7.0	7.0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Flash Dont Walk (s)		25.0	25.0		25.0	25.0		15.0			15.0	15.0
Pedestrian Calls (#/hr)		0	0		0	0		0			0	0
Act Effct Green (s)		53.1	53.1		53.1	53.1		66.0			66.0	66.0
Actuated g/C Ratio		0.41	0.41		0.41	0.41		0.51			0.51	0.51
v/c Ratio		0.53	0.18		0.43	0.14		0.64			0.62	0.35
Control Delay		32.6	17.6		30.3	14.8		14.2			8.1	8.8
Queue Delay		0.0	0.0		0.0	0.0		0.0			0.5	0.0
Total Delay		32.6	17.6		30.3	14.8		14.2			8.5	8.8
LOS		C	B		C	B		B			A	A
Approach Delay		30.2			27.9			14.2			8.6	
Approach LOS		C			C			B			A	

Intersection Summary	
Area Type: Other	
Cycle Length: 130	
Actuated Cycle Length: 130	
Offset: 128 (98%), Referenced to phase 1:NBSB, Start of Yellow	
Natural Cycle: 65	
Control Type: Pretimed	
Maximum v/c Ratio: 0.64	
Intersection Signal Delay: 15.9	Intersection LOS: B
Intersection Capacity Utilization 63.4%	ICU Level of Service B
Analysis Period (min) 60	

Splits and Phases: 116: King St & Washington St

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	126	260	67	0	0	0	0	853	38	0	1050	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	14	12	8	11	12	10	11	9
Lane Util. Factor	0.95	0.95	0.95	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	1.00
Ped Bike Factor		0.97						0.99				
Frt		0.978						0.994				
Flt Protected		0.986										
Satd. Flow (prot)	0	3159	0	0	0	0	0	3181	0	0	3414	0
Flt Permitted		0.986										
Satd. Flow (perm)	0	3083	0	0	0	0	0	3181	0	0	3414	0
Right Turn on Red			No			Yes			No			Yes
Satd. Flow (RTOR)												
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		155			356			419			416	
Travel Time (s)		4.2			9.7			11.4			11.3	
Confl. Peds. (#/hr)	69		45						92			
Peak Hour 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
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	1	0
Parking (#/hr)		6						3				
Adj. Flow (vph)	126	260	67	0	0	0	0	853	38	0	1050	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	453	0	0	0	0	0	891	0	0	1050	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			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.09	1.00	1.00	0.92	1.00	1.20	1.13	1.00	1.09	1.05	1.14
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm											
Protected Phases		2						1			1	
Permitted Phases	2											
Minimum Split (s)	36.9	36.9						26.0			26.0	
Total Split (s)	59.0	59.0	0.0	0.0	0.0	0.0	0.0	71.0	0.0	0.0	71.0	0.0
Total Split (%)	45.4%	45.4%	0.0%	0.0%	0.0%	0.0%	0.0%	54.6%	0.0%	0.0%	54.6%	0.0%
Maximum Green (s)	53.1	53.1						66.0			66.0	
Yellow Time (s)	3.0	3.0						3.0			3.0	
All-Red Time (s)	2.9	2.9						2.0			2.0	
Lost Time Adjust (s)	-1.9	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	5.9	4.0	4.0	4.0	4.0	4.0	5.0	4.0	4.0	5.0	4.0
Lead/Lag	Lag	Lag						Lead			Lead	
Lead-Lag Optimize?												
Walk Time (s)	7.0	7.0						7.0			7.0	
Flash Dont Walk (s)	24.0	24.0						14.0			14.0	
Pedestrian Calls (#/hr)	10	10						10			10	
Act Effct Green (s)		53.1						66.0			66.0	
Actuated g/C Ratio		0.41						0.51			0.51	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio		0.36						0.55			0.61	
Control Delay		27.7						10.8			8.6	
Queue Delay		0.0						0.5			0.1	
Total Delay		27.7						11.3			8.7	
LOS		C						B			A	
Approach Delay		27.7						11.3			8.7	
Approach LOS		C						B			A	

Intersection Summary	
Area Type: Other	
Cycle Length: 130	
Actuated Cycle Length: 130	
Offset: 0 (0%), Referenced to phase 1:NBSB, Start of Yellow	
Natural Cycle: 65	
Control Type: Pretimed	
Maximum v/c Ratio: 0.61	
Intersection Signal Delay: 13.3	Intersection LOS: B
Intersection Capacity Utilization 63.9%	ICU Level of Service B
Analysis Period (min) 60	

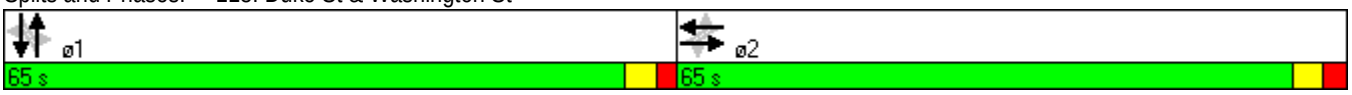
Splits and Phases: 117: Prince St & Washington St

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	113	274	59	55	284	38	38	740	29	50	924	143
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	13	12	12	13	12	11	9	9	9	11	9
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	0.95	0.95	0.95
Ped Bike Factor		0.99			1.00			1.00			0.99	
Frt		0.982			0.986			0.995			0.981	
Flt Protected		0.987			0.993			0.998			0.998	
Satd. Flow (prot)	0	1616	0	0	1663	0	0	2921	0	0	3130	0
Flt Permitted		0.755			0.878			0.748			0.819	
Satd. Flow (perm)	0	1234	0	0	1469	0	0	2189	0	0	2567	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		8			6			4			17	
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		310			357			434			419	
Travel Time (s)		8.5			9.7			11.8			11.4	
Confl. Peds. (#/hr)	23		23	23		23	45		45	45		45
Peak Hour 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
Heavy Vehicles (%)	2%	5%	2%	2%	2%	2%	2%	4%	2%	2%	2%	2%
Parking (#/hr)		3			3			3			3	
Adj. Flow (vph)	113	274	59	55	284	38	38	740	29	50	924	143
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	446	0	0	377	0	0	807	0	0	1117	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			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.12	1.00	1.00	1.12	1.00	1.04	1.23	1.14	1.14	1.13	1.14
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		2			2			1			1	
Permitted Phases	2			2			1			1		
Minimum Split (s)	12.5	12.5		12.5	12.5		15.0	15.0		15.0	15.0	
Total Split (s)	65.0	65.0	0.0	65.0	65.0	0.0	65.0	65.0	0.0	65.0	65.0	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)	59.5	59.5		59.5	59.5		60.0	60.0		60.0	60.0	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	2.5	2.5		2.5	2.5		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	-1.5	0.0	0.0	-1.5	0.0	0.0	-1.0	0.0	0.0	-1.0	0.0	0.0
Total Lost Time (s)	4.0	5.5	4.0	4.0	5.5	4.0	4.0	5.0	4.0	4.0	5.0	4.0
Lead/Lag	Lag	Lag		Lag	Lag		Lead	Lead		Lead	Lead	
Lead-Lag Optimize?												
Act Effct Green (s)		59.5			59.5			60.0			60.0	
Actuated g/C Ratio		0.46			0.46			0.46			0.46	
v/c Ratio		0.78			0.56			0.80			0.94	
Control Delay		41.6			29.2			37.2			32.4	
Queue Delay		0.0			0.0			5.4			0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay		41.6			29.2			42.7			32.4	
LOS		D			C			D			C	
Approach Delay		41.6			29.2			42.7			32.4	
Approach LOS		D			C			D			C	

Intersection Summary	
Area Type:	Other
Cycle Length: 130	
Actuated Cycle Length: 130	
Offset: 128 (98%), Referenced to phase 1:NBSB, Start of Yellow	
Natural Cycle: 70	
Control Type: Pretimed	
Maximum v/c Ratio: 0.94	
Intersection Signal Delay: 36.5	Intersection LOS: D
Intersection Capacity Utilization 108.3%	ICU Level of Service G
Analysis Period (min) 60	

Splits and Phases: 118: Duke St & Washington St

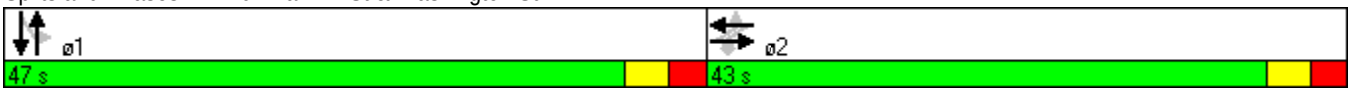


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	193	255	84	140	0	59	0	680	178	55	764	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	9	9	8	12	12	12	8	9	8	8	8	12
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	0.95	1.00
Ped Bike Factor	0.98		0.98		0.99			0.99			1.00	
Frt			0.850		0.960			0.969				
Flt Protected	0.950				0.966						0.997	
Satd. Flow (prot)	3060	1484	1372	0	1534	0	0	2860	0	0	2882	0
Flt Permitted	0.648				0.591						0.805	
Satd. Flow (perm)	2051	1484	1340	0	933	0	0	2860	0	0	2325	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			84		29			48				
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		296			322			447			423	
Travel Time (s)		8.1			8.8			12.2			11.5	
Confl. Peds. (#/hr)	20		16	16		20			48	48		
Peak Hour 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
Heavy Vehicles (%)	3%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	1	0	0	0	0
Parking (#/hr)		3			1			3			3	
Adj. Flow (vph)	193	255	84	140	0	59	0	680	178	55	764	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	193	255	84	0	199	0	0	858	0	0	819	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)		18			18			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.14	1.33	1.20	1.00	1.15	1.00	1.20	1.24	1.20	1.20	1.29	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm		Perm	Perm						Perm		
Protected Phases		2			2			1			1	
Permitted Phases	2		2	2						1		
Minimum Split (s)	12.5	12.5	12.5	12.5	12.5			15.5		15.5	15.5	
Total Split (s)	43.0	43.0	43.0	43.0	43.0	0.0	0.0	47.0	0.0	47.0	47.0	0.0
Total Split (%)	47.8%	47.8%	47.8%	47.8%	47.8%	0.0%	0.0%	52.2%	0.0%	52.2%	52.2%	0.0%
Maximum Green (s)	37.5	37.5	37.5	37.5	37.5			41.5		41.5	41.5	
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0			3.0		3.0	3.0	
All-Red Time (s)	2.5	2.5	2.5	2.5	2.5			2.5		2.5	2.5	
Lost Time Adjust (s)	0.0	0.0	0.0	-1.5	0.0	0.0	0.0	0.0	0.0	-1.5	0.0	0.0
Total Lost Time (s)	5.5	5.5	5.5	4.0	5.5	4.0	4.0	5.5	4.0	4.0	5.5	4.0
Lead/Lag	Lag	Lag	Lag	Lag	Lag			Lead		Lead	Lead	
Lead-Lag Optimize?												
Act Effct Green (s)	37.5	37.5	37.5		37.5			41.5			41.5	
Actuated g/C Ratio	0.42	0.42	0.42		0.42			0.46			0.46	
v/c Ratio	0.23	0.41	0.14		0.49			0.64			0.76	
Control Delay	17.8	21.1	4.5		21.3			20.1			26.2	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Delay	0.0	0.0	0.0		0.0			0.4			0.2	
Total Delay	17.8	21.1	4.5		21.3			20.4			26.3	
LOS	B	C	A		C			C			C	
Approach Delay		17.3			21.3			20.4			26.3	
Approach LOS		B			C			C			C	

Intersection Summary	
Area Type:	Other
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 35 (39%), Referenced to phase 1:NBSB, Start of Yellow	
Natural Cycle: 45	
Control Type: Pretimed	
Maximum v/c Ratio: 0.76	
Intersection Signal Delay: 21.8	Intersection LOS: C
Intersection Capacity Utilization 93.1%	ICU Level of Service F
Analysis Period (min) 60	

Splits and Phases: 120: Franklin St & Washington St



Lanes, Volumes, Timings
116: King St & Washington St

5/5/2010

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	144	20	0	100	16	0	2340	16	0	476	28
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	9	8	12	9	9	10	10	10	8	10	10
Storage Length (ft)	0		100	0		0	0		0	0		105
Storage Lanes	0		1	0		0	0		0	0		1
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	*0.78	0.91	1.00	0.95	1.00
Ped Bike Factor			0.78			0.83		1.00				0.96
Frt			0.850			0.850		0.999				0.850
Flt Protected												
Satd. Flow (prot)	0	1403	875	0	1466	1425	0	4041	0	0	2950	1478
Flt Permitted												
Satd. Flow (perm)	0	1403	678	0	1466	1183	0	4041	0	0	2950	1412
Right Turn on Red			Yes			Yes			No			No
Satd. Flow (RTOR)			20			16						
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		325			349			415			426	
Travel Time (s)		8.9			9.5			11.3			11.6	
Confl. Peds. (#/hr)			85			63			29			28
Peak Hour 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
Heavy Vehicles (%)	2%	17%	60%	2%	12%	2%	2%	2%	2%	2%	7%	2%
Bus Blockages (#/hr)	0	10	0	0	10	0	0	4	0	0	3	0
Parking (#/hr)											3	
Adj. Flow (vph)	0	144	20	0	100	16	0	2340	16	0	476	28
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	144	20	0	100	16	0	2356	0	0	476	28
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			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.20	1.20	1.00	1.20	1.14	1.09	1.10	1.09	1.20	1.19	1.09
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type			Perm			Perm						Perm
Protected Phases		2			2			1			1	
Permitted Phases			2			2						1
Minimum Split (s)		18.0	18.0		18.0	18.0		35.0			35.0	35.0
Total Split (s)	0.0	20.0	20.0	0.0	20.0	20.0	0.0	73.0	0.0	0.0	73.0	73.0
Total Split (%)	0.0%	16.7%	16.7%	0.0%	16.7%	16.7%	0.0%	60.8%	0.0%	0.0%	60.8%	60.8%
Maximum Green (s)		14.1	14.1		14.1	14.1		68.0			68.0	68.0
Yellow Time (s)		3.0	3.0		3.0	3.0		3.0			3.0	3.0
All-Red Time (s)		2.9	2.9		2.9	2.9		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	5.9	5.9	4.0	5.9	5.9	4.0	5.0	4.0	4.0	5.0	5.0
Lead/Lag		Lag	Lag		Lag	Lag		Lead			Lead	Lead
Lead-Lag Optimize?												
Walk Time (s)												

Lane Group	ø4
Lane Configurations	
Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Bus Blockages (#/hr)	
Parking (#/hr)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Turn Type	
Protected Phases	4
Permitted Phases	
Minimum Split (s)	27.0
Total Split (s)	27.0
Total Split (%)	23%
Maximum Green (s)	23.0
Yellow Time (s)	3.0
All-Red Time (s)	1.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Walk Time (s)	4.0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)		14.1	14.1		14.1	14.1		68.0			68.0	68.0
Actuated g/C Ratio		0.12	0.12		0.12	0.12		0.57			0.57	0.57
v/c Ratio		0.87	0.21		0.58	0.10		1.03			0.28	0.04
Control Delay		112.2	24.1		65.3	22.1		71.9			12.8	11.0
Queue Delay		0.0	0.0		0.0	0.0		219.5			0.0	0.0
Total Delay		112.2	24.1		65.3	22.1		291.4			12.8	11.0
LOS		F	C		E	C		F			B	B
Approach Delay		101.5			59.3			291.4			12.7	
Approach LOS		F			E			F			B	

Intersection Summary	
Area Type:	Other
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 0 (0%), Referenced to phase 1:NBSB, Start of Yellow	
Natural Cycle: 110	
Control Type: Pretimed	
Maximum v/c Ratio: 1.03	
Intersection Signal Delay: 228.2	Intersection LOS: F
Intersection Capacity Utilization 68.0%	ICU Level of Service C
Analysis Period (min) 60	
* User Entered Value	

Splits and Phases: 116: King St & Washington St

Lanes, Volumes, Timings
116: King St & Washington St

5/5/2010

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	188	40	0	224	24	0	984	28	0	1828	64
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	9	8	12	9	9	10	10	10	8	10	10
Storage Length (ft)	0		100	0		0	0		200	0		0
Storage Lanes	0		1	0		0	0		0	0		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	*0.78	0.91
Ped Bike Factor			0.69			0.68		1.00			1.00	
Frt			0.850			0.850		0.996			0.995	
Flt Protected												
Satd. Flow (prot)	0	1603	1372	0	1521	1425	0	3091	0	0	3865	0
Flt Permitted												
Satd. Flow (perm)	0	1603	948	0	1521	968	0	3091	0	0	3865	0
Right Turn on Red			Yes			Yes			No			No
Satd. Flow (RTOR)			39			24						
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		317			349			415			420	
Travel Time (s)		8.6			9.5			11.3			11.5	
Confl. Peds. (#/hr)			194			231			102			76
Peak Hour 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
Heavy Vehicles (%)	2%	2%	2%	2%	7%	2%	2%	2%	2%	2%	2%	6%
Bus Blockages (#/hr)	0	11	0	0	12	0	0	0	0	0	2	0
Parking (#/hr)								3			3	
Adj. Flow (vph)	0	188	40	0	224	24	0	984	28	0	1828	64
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	188	40	0	224	24	0	1012	0	0	1892	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			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.21	1.20	1.00	1.22	1.14	1.09	1.18	1.09	1.20	1.15	1.09
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type			Perm			Perm						
Protected Phases		2			2			1			1	
Permitted Phases			2			2						
Minimum Split (s)		18.0	18.0		18.0	18.0		35.0			35.0	
Total Split (s)	0.0	28.0	28.0	0.0	28.0	28.0	0.0	65.0	0.0	0.0	65.0	0.0
Total Split (%)	0.0%	23.3%	23.3%	0.0%	23.3%	23.3%	0.0%	54.2%	0.0%	0.0%	54.2%	0.0%
Maximum Green (s)		22.1	22.1		22.1	22.1		60.0			60.0	
Yellow Time (s)		3.0	3.0		3.0	3.0		3.0			3.0	
All-Red Time (s)		2.9	2.9		2.9	2.9		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	5.9	5.9	4.0	5.9	5.9	4.0	5.0	4.0	4.0	5.0	4.0
Lead/Lag		Lag	Lag		Lag	Lag		Lead			Lead	
Lead-Lag Optimize?												
Walk Time (s)												

Lane Group	ø4
Lane Configurations	
Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Bus Blockages (#/hr)	
Parking (#/hr)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Turn Type	
Protected Phases	4
Permitted Phases	
Minimum Split (s)	27.0
Total Split (s)	27.0
Total Split (%)	23%
Maximum Green (s)	23.0
Yellow Time (s)	3.0
All-Red Time (s)	1.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Walk Time (s)	4.0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)		22.1	22.1		22.1	22.1		60.0			60.0	
Actuated g/C Ratio		0.18	0.18		0.18	0.18		0.50			0.50	
v/c Ratio		0.64	0.19		0.80	0.12		0.65			0.98	
Control Delay		56.6	15.4		71.8	16.5		6.9			22.9	
Queue Delay		0.0	0.0		0.0	0.0		0.0			2.4	
Total Delay		56.6	15.4		71.8	16.5		6.9			25.2	
LOS		E	B		E	B		A			C	
Approach Delay		49.4			66.4			6.9			25.2	
Approach LOS		D			E			A			C	

Intersection Summary	
Area Type:	Other
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 32 (27%), Referenced to phase 1:NBSB, Start of Yellow	
Natural Cycle: 100	
Control Type: Pretimed	
Maximum v/c Ratio: 0.98	
Intersection Signal Delay: 24.4	Intersection LOS: C
Intersection Capacity Utilization 59.3%	ICU Level of Service B
Analysis Period (min) 60	
* User Entered Value	

Splits and Phases: 116: King St & Washington St

Lanes, Volumes, Timings
116: King St & Washington St

5/5/2010

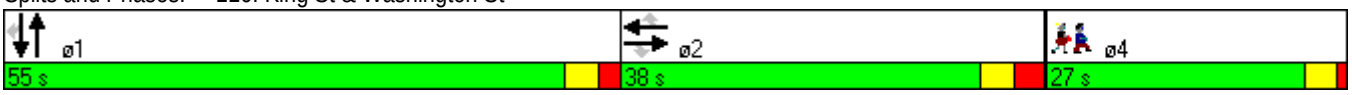
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	300	64	0	240	48	0	888	44	0	936	116
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	9	8	12	9	9	10	10	10	8	10	10
Storage Length (ft)	0		100	0		0	0		0	0		105
Storage Lanes	0		1	0		0	0		0	0		1
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	1.00
Ped Bike Factor			0.64			0.62		0.99				0.72
Frt			0.850			0.850		0.993				0.850
Flt Protected												
Satd. Flow (prot)	0	1611	1372	0	1560	1425	0	3043	0	0	3107	1478
Flt Permitted												
Satd. Flow (perm)	0	1611	880	0	1560	881	0	3043	0	0	3107	1069
Right Turn on Red			Yes			Yes			No			No
Satd. Flow (RTOR)			44			48						
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		165			345			416			429	
Travel Time (s)		4.5			9.4			11.3			11.7	
Confl. Peds. (#/hr)			506			612			233			218
Peak Hour 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
Heavy Vehicles (%)	2%	4%	2%	2%	7%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	5	0	0	6	0	0	1	0	0	1	0
Parking (#/hr)								3			3	
Adj. Flow (vph)	0	300	64	0	240	48	0	888	44	0	936	116
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	300	64	0	240	48	0	932	0	0	936	116
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			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.17	1.20	1.00	1.18	1.14	1.09	1.18	1.09	1.20	1.18	1.09
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type			Perm			Perm						Perm
Protected Phases		2			2			1			1	
Permitted Phases			2			2						1
Minimum Split (s)		18.0	18.0		18.0	18.0		35.0			35.0	35.0
Total Split (s)	0.0	38.0	38.0	0.0	38.0	38.0	0.0	55.0	0.0	0.0	55.0	55.0
Total Split (%)	0.0%	31.7%	31.7%	0.0%	31.7%	31.7%	0.0%	45.8%	0.0%	0.0%	45.8%	45.8%
Maximum Green (s)		32.1	32.1		32.1	32.1		50.0			50.0	50.0
Yellow Time (s)		3.0	3.0		3.0	3.0		3.0			3.0	3.0
All-Red Time (s)		2.9	2.9		2.9	2.9		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	5.9	5.9	4.0	5.9	5.9	4.0	5.0	4.0	4.0	5.0	5.0
Lead/Lag		Lag	Lag		Lag	Lag		Lead			Lead	Lead
Lead-Lag Optimize?												
Walk Time (s)												

Lane Group	ø4
Lane Configurations	
Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Bus Blockages (#/hr)	
Parking (#/hr)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Turn Type	
Protected Phases	4
Permitted Phases	
Minimum Split (s)	27.0
Total Split (s)	27.0
Total Split (%)	23%
Maximum Green (s)	23.0
Yellow Time (s)	3.0
All-Red Time (s)	1.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Walk Time (s)	4.0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)		32.1	32.1		32.1	32.1		50.0			50.0	50.0
Actuated g/C Ratio		0.27	0.27		0.27	0.27		0.42			0.42	0.42
v/c Ratio		0.70	0.24		0.58	0.18		0.74			0.72	0.26
Control Delay		49.8	17.1		44.6	11.1		33.8			33.2	24.9
Queue Delay		0.0	0.0		0.0	0.0		22.6			22.0	0.0
Total Delay		49.8	17.1		44.6	11.1		56.4			55.2	24.9
LOS		D	B		D	B		E			E	C
Approach Delay		44.1			39.0			56.4			51.9	
Approach LOS		D			D			E			D	

Intersection Summary	
Area Type:	Other
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 8 (7%), Referenced to phase 1:NBSB, Start of Yellow	
Natural Cycle: 80	
Control Type: Pretimed	
Maximum v/c Ratio: 0.74	
Intersection Signal Delay: 51.0	Intersection LOS: D
Intersection Capacity Utilization 51.2%	ICU Level of Service A
Analysis Period (min) 60	

Splits and Phases: 116: King St & Washington St



Appendix C
Bicycle Traffic Counts

City of Alexandria, VA

Bicycle Count : Mt Vernon Trail just North of Pendleton
Lane Direction : Northbound and Southbound Combined Count
:

Site: Mt Vern Bike

Volume (1 Ch/pg., 60 Min., 7 Days)
Channel: NB & SB

Interval Begin	Mon 8/31/2009	Tue 9/1/2009	Wed 9/2/2009	Thu 9/3/2009	Fri 9/4/2009	Sat 9/5/2009	Sun 9/6/2009	Weekday Avg	Week Avg
12:00 AM	*	*	*	*	*	0	2	*	1
1:00 AM	*	*	*	*	*	1	0	*	0
2:00 AM	*	*	*	*	*	0	0	*	0
3:00 AM	*	*	*	*	*	0	0	*	0
4:00 AM	*	*	*	*	*	0	0	*	0
5:00 AM	*	*	*	*	*	4	0	*	2
6:00 AM	*	*	*	*	*	13	2	*	7
7:00 AM	*	*	*	*	*	41	34	*	37
8:00 AM	*	*	*	*	*	94	67	*	80
9:00 AM	*	*	*	*	*	138	177	*	157
10:00 AM	*	*	*	*	*	229	234	*	231
11:00 AM	*	*	*	*	*	275	316	*	295
12:00 PM	*	*	*	*	*	184	316	*	250
1:00 PM	*	*	*	*	*	213	310	*	261
2:00 PM	*	*	*	*	*	191	266	*	228
3:00 PM	*	*	*	*	*	196	274	*	235
4:00 PM	*	*	*	*	91	187	237	91	171
5:00 PM	*	*	*	*	109	152	154	109	138
6:00 PM	*	*	*	*	113	103	102	113	106
7:00 PM	*	*	*	*	48	57	48	48	51
8:00 PM	*	*	*	*	6	7	6	6	6
9:00 PM	*	*	*	*	3	0	0	3	1
10:00 PM	*	*	*	*	4	2	2	4	2
11:00 PM	*	*	*	*	1	6	1	1	2
Totals	*	*	*	*	375	2093	2548	375	2261
AM Peak	*	*	*	*	*	11:00 AM	11:00 AM	*	11:00 AM
Volume	*	*	*	*	*	275	316	*	295
PM Peak	*	*	*	*	6:00 PM	1:00 PM	12:00 PM	6:00 PM	1:00 PM
Volume	*	*	*	*	113	213	316	113	261

City of Alexandria, VA

Bicycle Count : Mt Vernon Trail just North of Pendleton
Lane Direction : Northbound and Southbound Combined Count
:

Site: Mt Vern Bike

Volume (1 Ch/pg., 60 Min., 7 Days)
Channel: NB & SB

Interval Begin	Mon 9/7/2009	Tue 9/8/2009	Wed 9/9/2009	Thu 9/10/2009	Fri 9/11/2009	Sat 9/12/2009	Sun 9/13/2009	Weekday Avg	Week Avg
12:00 AM	1	1	0	0	1	0	0	0	0
1:00 AM	0	1	0	0	0	1	0	0	0
2:00 AM	1	0	0	0	0	0	0	0	0
3:00 AM	0	0	0	0	0	0	0	0	0
4:00 AM	0	0	2	2	0	0	2	0	0
5:00 AM	0	2	7	5	4	0	0	3	2
6:00 AM	3	13	26	20	4	5	2	13	10
7:00 AM	34	20	34	29	4	28	29	24	25
8:00 AM	87	24	33	38	6	60	78	37	46
9:00 AM	137	9	11	37	2	110	156	39	66
10:00 AM	196	7	21	41	1	128	221	53	87
11:00 AM	215	7	10	31	2	168	279	53	101
12:00 PM	208	12	14	41	4	180	322	55	111
1:00 PM	221	12	20	24	8	182	320	57	112
2:00 PM	187	18	25	34	8	157	324	54	107
3:00 PM	105	17	43	22	15	144	284	40	90
4:00 PM	62	19	60	35	18	173	276	38	91
5:00 PM	41	51	83	49	30	83	201	50	76
6:00 PM	20	54	75	52	28	63	125	45	59
7:00 PM	22	31	30	16	13	21	42	22	25
8:00 PM	4	7	5	3	6	5	3	5	4
9:00 PM	0	2	0	0	4	2	1	1	1
10:00 PM	1	1	3	0	0	2	2	1	1
11:00 PM	1	0	0	0	0	0	0	0	0
Totals	1546	308	502	479	158	1512	2667	590	1014
AM Peak	11:00 AM	8:00 AM	7:00 AM	10:00 AM	8:00 AM	11:00 AM	11:00 AM	10:00 AM	11:00 AM
Volume	215	24	34	41	6	168	279	53	101
PM Peak	1:00 PM	6:00 PM	5:00 PM	6:00 PM	5:00 PM	1:00 PM	2:00 PM	1:00 PM	1:00 PM
Volume	221	54	83	52	30	182	324	57	112

City of Alexandria, VA

Bicycle Count : Mt Vernon Trail just North of Pendleton
Lane Direction : Northbound and Southbound Combined Count
:

Site: Mt Vern Bike

Volume (1 Ch/pg., 60 Min., 7 Days)
Channel: NB & SB

Interval Begin	Mon 9/14/2009	Tue 9/15/2009	Wed 9/16/2009	Thu 9/17/2009	Fri 9/18/2009	Sat 9/19/2009	Sun 9/20/2009	Weekday Avg	Week Avg
12:00 AM	0	0	1	*	*	*	*	0	0
1:00 AM	1	1	0	*	*	*	*	0	0
2:00 AM	0	0	0	*	*	*	*	0	0
3:00 AM	0	0	0	*	*	*	*	0	0
4:00 AM	0	3	1	*	*	*	*	1	1
5:00 AM	11	10	8	*	*	*	*	9	9
6:00 AM	27	33	25	*	*	*	*	28	28
7:00 AM	49	54	35	*	*	*	*	46	46
8:00 AM	44	50	44	*	*	*	*	46	46
9:00 AM	47	50	30	*	*	*	*	42	42
10:00 AM	43	58	29	*	*	*	*	43	43
11:00 AM	73	56	37	*	*	*	*	55	55
12:00 PM	55	56	16	*	*	*	*	42	42
1:00 PM	55	54	*	*	*	*	*	54	54
2:00 PM	41	49	*	*	*	*	*	45	45
3:00 PM	59	57	*	*	*	*	*	58	58
4:00 PM	82	73	*	*	*	*	*	77	77
5:00 PM	118	98	*	*	*	*	*	108	108
6:00 PM	125	117	*	*	*	*	*	121	121
7:00 PM	64	32	*	*	*	*	*	48	48
8:00 PM	12	6	*	*	*	*	*	9	9
9:00 PM	1	7	*	*	*	*	*	4	4
10:00 PM	1	3	*	*	*	*	*	2	2
11:00 PM	1	2	*	*	*	*	*	1	1
Totals	909	869	226	*	*	*	*	839	839
AM Peak	11:00 AM	10:00 AM	8:00 AM	*	*	*	*	11:00 AM	11:00 AM
Volume	73	58	44	*	*	*	*	55	55
PM Peak	6:00 PM	6:00 PM	12:00 PM	*	*	*	*	6:00 PM	6:00 PM
Volume	125	117	16	*	*	*	*	121	121

Appendix D
Total Ridership Data -Trolley 2009

King Street Trolley Stats & Graph

	Weekday	Weekend	Total
Week of 3-31-08	783	644	1,427
Week of 4-7-08	6,333	2,536	8,869
Week of 4-14-08	6,616	2,732	9,348
Week of 4-21-08	6,749	2,762	9,511
Week of 4-28-08	6,855	3,852	10,707
Week of 5-5-08	9,343	3,780	13,123
Week of 5-12-08	9,969	3,926	13,895
Week of 5-19-08	9,102	3,791	12,893
Week of 5-26-08	9,532	3,854	13,386
Week of 6-2-08	10,557	4,304	14,861
Week of 6-9-08	9,774	4,991	14,765
Week of 6-16-08	11,052	5,416	16,468
Week of 6-23-08	11,375	5,498	16,873
Week of 6-30-08	11,789	5,536	17,325
Week of 7-7-08	12,821	6,288	19,109
Week of 7-14-08	11,757	4,936	16,693
Week of 7-21-08	10,785	4,465	15,250
Week of 7-28-08	9,736	4,978	14,714
Week of 8-4-08	10,044	5,283	15,327
Week of 8-11-08	9,467	5,010	14,477
Week of 8-18-08	11,624	5,571	17,195
Week of 8-25-08	11,731	4,892	16,623
Week of 9-1-08	11,750	4,920	16,670
Week of 9-8-08	7,315	3,218	10,533
Week of 9-15-08	9,543	3,910	13,453
Week of 9-22-08	11,702	4,922	16,624
Week of 9-29-08	11,359	5,439	16,798
Week of 10-6-08	11,610	4,875	16,485
Week of 10-13-08	11,634	4,821	16,455
Week of 10-20-08	11,676	4,854	16,530
Week of 10-27-08	12,061	5,131	17,192
Week of 11-3-08	9,670	3,922	13,592
Week of 11-10-08	11,786	4,862	16,648
Week of 11-17-08	11,569	4,866	16,435
Week of 11-24-08	9,523	3,854	13,377
Week of 12-1-08	9,826	4,951	14,777
Week of 12-8-08	11,459	4,824	16,283
Week of 12-15-08	4,555	4,513	9,068
Week of 12-22-08	4,310	2,801	7,111
Week of 12-29-08	8,310	2,145	10,455
Week of 1-5-09	3,381	1,183	4,564
Week of 1-12-09	2,889	1,574	4,463
Week of 1-19-09	4,334	1,297	5,631
Week of 1-26-09	2,632	1,347	3,979
Week of 2-2-09	2,883	1,992	4,875
Week of 2-9-09	3,343	1,590	4,933
Week of 2-16-09	3,228	1,355	4,583
Week of 2-23-09	3,496	1,218	4,714
Week of 3-2-09	3,342	2,583	5,925

Week of 3-9-09	4,354	2,031	6,385
Week of 3-16-09	5,946	3,117	9,063
Week of 3-23-09	5,752	3,673	9,425
Week of 3-30-09	6,149	4,092	10,241
Week of 4-6-09	7,947	3,465	11,412
Week of 4-13-09	6,957	3,164	10,121
Week of 4-20-09	6,421	3,431	9,852
Week of 4-27-09	5,486	1,753	7,239
Week of 5-4-09	5,011	3,118	8,129
Week of 5-11-09	6,260	2,535	8,795
Week of 5-18-09	6,822	4,032	10,854
Week of 5-25-09	5,469	3,127	8,596
Week of 6-1-09	5,733	4,065	9,798
Week of 6-8-09	8,041	4,034	12,075
Week of 6-15-09	7,806	4,694	12,500
Week of 6-22-09	9,353	3,963	13,316
Week of 6-29-09	9,346	4,524	13,870
Week of 7-6-09	8,728	4,492	13,220
Week of 7-13-09	8,855	3,969	12,824
Week of 7-20-09	8,557	4,279	12,836
Week of 7-27-09	8,781	3,473	12,254
Week of 8-3-09	9,290	4,449	13,739
Week of 8-10-09	7,678	3,999	11,677
Week of 8-17-09	7,730	3,305	11,035
Week of 8-24-09	6,332	3,406	9,738
Week of 8-31-09	5,996	3,614	9,610
Week of 9-7-09	5,460	3,523	8,983
Week of 9-14-09	6,463	3,624	10,087
Week of 9-21-09	6,427	3,161	9,588
Week of 9-28-09	5,699	3,230	8,929
Week of 10-5-09	6,935	3,810	10,745
Week of 10-12-09	5,239	2,292	7,531
Week of 10-19-09	6,277	3,071	9,348
Total			948,807