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The mission of the Wilmington MPO is to develop and implement a comprehensive multi-modal transportation plan that supports the existing and future mobility needs and economic vitality of the Wilmington Urban Area. This shall be accomplished by protecting the environment, safe guarding the social equity, improving the quality of life for the citizens of the community, improving the local economy and providing for the safe and efficient mobility throughout the region. This is achieved through the long range transportation planning process which includes a comprehensive, continuous and cooperative approach from citizens and participating members.

Transportation Advisory Committee
Meeting Agenda

TO: Transportation Advisory Committee Members
FROM: Mike Kozlosky, Executive Director
DATE: January 21, 2016
SUBJECT: January 27th meeting

A meeting of the Wilmington Urban Area MPO Transportation Advisory Committee will be held on Wednesday, January 27th at 3 pm. The meeting will be held in the Lord Spencer Compton Conference Room in downtown Wilmington.

The following is the agenda for the meeting:

1) Call to Order
2) Introduction of New Members
3) Approval of Minutes:
   a. 11/18/15
4) Election of Officers
5) Consent Agenda
   a. Resolution accepting the Final Technical Report for US 17 Business Corridor Study (Market Street Road Diet)
   b. Resolution supporting the Wilmington MPO's submission of a NCDOT Transportation Demand Management Grant
   c. Resolution adopting STIP/MTIP Modifications (November)
   d. Opening of the 30-day Public Comment Period for STIP/MTIP Amendments (January)
   e. Opening of the 30-day Public Comment Period for the Draft FY 17 Unified Planning Work Program
6) Regular Agenda
   a. Resolution adopting the Wilmington Urban Area MPO's Comprehensive Transportation Plan
   b. Resolution approving 2016 STP-DA and TAP- DA Allocations

7) Discussion
   a. Organizational Improvements
      i. Organizational Survey
      ii. Strategic Business Plan Update
   b. 2016 Wilmington MPO Legislative Agenda
   c. Southport-Ft. Fisher Ferry Rates
   d. STIP/MTIP Project Modifications (January)
8) Updates
   a. Crossing over the Cape Fear River
   b. Wilmington MPO
   c. Cape Fear Public Transportation Authority
   d. NCDOT Division
   e. NCDOT Transportation Planning Branch
9) Announcements
   a. WMPO Bike/Ped Committee Meeting- February 18th
   b. NC Ethics Forms for Existing members- April 15th
10) Next meeting –February 24, 2016

Attachments:

- Minutes 11/18/15 meeting
- Final Technical Report for US 17 Business Corridor Study (Market Street Road Diet)
- Resolution accepting the Final Technical Report for US 17 Business Corridor Study (Market Street Road Diet)
- Resolution supporting the Wilmington MPO's submission of a NCDOT Transportation Demand Management Grant
- STIP/MTIP Modifications (November)
- Resolution adopting STIP/MTIP Modifications (November)
- STIP/MTIP Amendments (January)
- Draft FY 17 Unified Planning Work Program
- Wilmington Urban Area MPO's Comprehensive Transportation Plan
- Resolution adopting the Wilmington Urban Area MPO's Comprehensive Transportation Plan
- Resolution approving 2016 STP-DA Allocations
- Proposed Organizational Survey
- Proposed Strategic Business Plan Schedule
- Proposed 2016 Legislative Agenda
- Resolution supporting an increase in tolls for the Southport-Ft. Fisher ferry
- STIP/MTIP Modifications (January)
- Cape Fear River Crossing Update (January)
- Wilmington MPO Project Update (January)
- Cape Fear Public Transportation Authority Update (January)
- NCDOT Project Update (January)

Meeting Minutes

Wilmington Urban Area Metropolitan Planning Organization

Transportation Advisory Committee

Date: November 18, 2015

Members Present:

Laura Padgett, Chair, City of Wilmington
Pat Batleman, Town of Leland
Frank Williams, Brunswick County
Gary Doetsch, Town of Carolina Beach
Skip Watkins, New Hanover County
Hank Miller, Town of Wrightsville Beach
Earl Sheridan, City of Wilmington
Eulis Willis, Town of Navassa
David Piepmeyer, Pender County
Jonathon Barfield, Cape Fear Public Transportation Authority

Staff Present:

Mike Kozlosky, Executive Director

1. Call to Order

Ms. Padgett called the meeting to order at 3:01pm.

2. Conflict of Interest Reminder

Ms. Padgett asked if any members had a conflict of interest with any items on the meeting agenda. No members reported having a conflict of interest.

Mr. Piepmeyer made the motion to table item 7.b., Resolution encouraging the North Carolina Department of Transportation to re-designate the Hampstead Bypass and Wilmington Bypass as the Wilmington Metro Bypass. He told members that the Pender County Commissioners will need to review the item in order to determine their position on the re-designation. Mr. Williams seconded the motion and it carried unanimously.

3. Approval of Minutes

The minutes for the October 28, 2015 meeting were approved unanimously.

4. Public Comment Period

Mr. Andy Koeppel addressed members regarding item 7.b. He said the conceptual idea of having the name Wilmington Metro Bypass is excellent. It's important for a highway to have a unified name. He suggested that the designation as I-140 should also be considered as part of the name when this item comes back to the TAC for consideration.

5. Presentations

a. CFPTA Program Update – Albert Eby

Mr. Albert Eby, Executive Director of Cape Fear Public Transportation Authority gave presentation on how the transit system operates. He also explained how Surface Transportation Program funds are used for operating the transit system. Mr. Eby reviewed their organizational structure and the funding challenges they face. A brief question/answer session followed.

b. Recognition of Wilmington MPO Chair Laura Padgett

Ms. Batleman presented Ms. Padgett with flowers and a plaque in thanks for her many years of dedicated service as a member and chair of the Transportation Advisory Committee.

c. Recognition of the Citizen Advisory Committee Members

Ms. Padgett recognized the members of the Citizen Advisory Committee for their contributions in creating the Cape Fear Transportation 2040 Plan. She presented each member in attendance with a plaque and thanked them for their efforts and hard work in developing the plan.

6. Consent Agenda

a. Resolution adopting the 2016 Meeting Calendar

b. Resolution supporting the STP-DA project modification for the Town of Navassa

c. Resolution supporting the 2016 STP-DA Funding for the Cape Fear Public Transportation Authority

Mr. Doetsch made the motion to approve the items on the consent agenda. Mr. Willis seconded the motion and it carried unanimously.

7. Regular Agenda

a. Resolution adopting Cape Fear Transportation 2040

Mr. Williams made the motion to adopt the Cape Fear Transportation 2040 Plan. Mr. Barfield seconded the motion and it carried unanimously.

Ms. Padgett told members she sent a memo to the Metropolitan Mayors Coalition regarding some things coming down the road that are disturbing to her in terms of community input on transportation planning efforts. She said she hopes the memo will generate conversations and coordinated action by them to work with the Governor, the General Assembly and the NCDOT to create a transportation planning process that restores the authority and abilities of the MPOs and the communities they represent.

b. Resolution encouraging the North Carolina Department of Transportation to re-designate the Hampstead Bypass and Wilmington Bypass as the Wilmington Metro Bypass

Tabled.

c. Resolution supporting action on laws and education for mopeds, golf carts and low-speed vehicles on state and city streets with the Wilmington Planning Area

Mr. Lopez gave a presentation on the data staff compiled regarding mopeds, low-speed vehicles, and golf carts being prohibited on roadways with a speed limit of 45 mph and above. He reviewed information contained in the state's current legislation/laws and NCDOT's study entitled *Moped Crash Analysis and Enforcement Recommendations*.

Mr. Lopez told members that TCC members had concerns regarding the lack of access between jurisdictions for moped operators due to the speed limit restrictions. Members also were concerned about how bicyclists will be affected.

A brief question/answer session followed the presentation.

Mr. Willis told members he was concerned about the lack of access to roadways for mopeds and bicyclists due to the 45 mph speed limit restrictions in his jurisdictions.

Mr. Barfield told members he would like to see more efforts given to educating moped operators and bicyclists traveling on roads and highways in our state.

Mr. Barfield made the motion to support action on laws and education for mopeds, golf carts and low-speed vehicles on state and city streets with the Wilmington Planning Area. Mr. Watkins seconded the motion and it carried with 9 members voting in favor and Mr. Willis voted in opposition.

d. Resolution authorizing the MPO to enter into a Memorandum of Understanding (MOU) between the City of Wilmington, Cape Fear Public Transportation Authority, NCDOT and Wilmington Urban Area MPO for the Transit portion of the Wilmington Multi-modal Transportation Center

Ms. Padgett made the motion to support authorizing the MPO to enter into the MOU between the City of Wilmington, Cape Fear Public Transportation Authority, NCDOT and Wilmington Urban Area MPO for the transit portion of the Wilmington Multi-modal Transportation Center. Dr. Sheridan seconded the motion.

Mr. Kozlosky told members that the MPO, the City of Wilmington, NCDOT and Cape Fear Public Transportation Authority (CFPTA) passed resolutions in June indicating the desire to enter into a Memorandum of Understanding (MOU) for the transit portion of the Wilmington Multi-modal Transportation Center. The MOU outlines the responsibilities of each party associated with the development of the Multi-modal Center. He told members that the MOU will go before the CFPTA Board tomorrow and the Wilmington City Council at their January meeting and then to NCDOT for consideration.

Ms. Padgett called for a vote on the motion; and, it carried unanimously.

8. Discussion

a. DRAFT 2016-2017 Unified Planning Work Program

Mr. Kozlosky told members staff completed the draft UPWP for 2016-2017 and will bring it to the January meeting to open the 30-day public comment period. He noted that the draft UPWP includes funding for a feasibility study on the re-alignment of the rail line, a design manual for the Town of Leland, and the Northern New Hanover County Collector Street Plan. The UPWP also includes additional STP-DA funds programed for planning activities.

Mr. Kozlosky told members that during the budget process, staff received additional requests for special studies from New Hanover County, Pender County, the Town of Carolina Beach, WAVE and the Town of Leland. He said staff will work to complete several of those special studies in-house.

b. Organizational Improvements

i. Customer Survey
ii. Update Mission Statement
iii. Update Strategic Business Plan

Mr. Kozlosky told members staff will be looking at improvements to the organization over the course of the next year. He said since the Metropolitan Transportation Plan is adopted, staff will begin working on a strategic business plan for the WMPO. He said the first step in the process will be conducting a customer-survey to assist in the development of the strategic business plan. Staff will also be updating the mission statement.

A general discussion followed regarding the customer survey and identifying customers who will be polled for information. Consensus of the group was that the customers should be the TAC members and the Boards they serve. It was also suggested that staff bring a draft survey to the board for review.

c. STIP/MTIP Project Modifications (November)

Mr. Kozlosky told members the modification is for information purposes only and does not require a 30-day public comment period. Staff will bring it back to this committee for consideration at the January meeting.

9. Updates

Project updates for the Crossing over the Cape Fear River Work Group, Wilmington MPO, CFPTA and NCDOT Division are included in the agenda packet.

10. Adjournment

With no further business, the meeting was adjourned at 4:40pm

Respectfully submitted
Mike Kozlosky
Executive Director
Wilmington Urban Area Metropolitan Planning Organization

THE ABOVE MINUTES ARE NOT A VERBATIM RECORD OF THE PROCEEDINGS.
THE ENTIRE PROCEEDINGS ARE RECORDED ON A COMPACT DISC AS PART OF THIS RECORD.

2016

Final Technical Report
US 17 Corridor Study Update
(Market Street Road Diet)
Wilmington, NC

Parsons Brinckerhoff
January 2016

Contents

1 INTRODUCTION

1.1 Study Purpose

The City of Wilmington and the Wilmington Urban Area Metropolitan Planning Organization (MPO) contracted Parsons Brinckerhoff (PB) to provide an update to the *US 17 Business Corridor Study (STV/RWA, 2007)*, which recommended a Road Diet Concept be constructed in two phases along Market Street. The Road Diet would reduce the typical section from 4-lanes to 2-lanes, with a raised, landscaped median, left turn lanes where appropriate, bike lanes and some on-street parking. Phase I would implement a Road Diet from 17th Street to Covil Avenue and Phase II would continue the Road Diet from 3rd Street to 17th Street.

The purpose of this study is to evaluate, and in some cases re-evaluate, affected intersections to guide the decision-making process toward action.

1.2 What is a Road Diet?

> Road Diet Definition
> A technique in transportation planning that narrows or eliminates travel lanes and utilizes the space for other uses and travel modes.

For corridors that have excess capacity, reconfiguring the roadway with a "diet" can offer a number of benefits. The term "road diet" is a technique in transportation planning that narrows or eliminates travel lanes and utilizes the space for other uses and travel modes. A typical road diet consists of a four-lane or five-lane section converting to a two-lane section with the addition of turn lanes, medians, bike lanes, and sidewalks; creating a "Complete Street". Complete streets provide choices along the corridor to allow for all modes of transportation, including biking, walking, and driving.

Road diets and complete streets offer several benefits to all users of the roadway, including:

- An overall crash reduction, specifically to rear-end and left-turn crashes
- Fewer lanes for pedestrians to cross
- Opportunities to install pedestrian refuge islands
- Addition of dedicated bike lanes
- Traffic calming and reduced speed, which reduces number and severity of crashes
- Potential aesthetic improvements, such as street trees, landscape medians, etc.
- Potential for on-street parking

These benefits should be considered along with operational impacts when evaluating potential road diet projects. Additional considerations should be given to daily volume of the roadway, community impacts, and multi-modal and freight users. The Federal Highway Administration (FHWA) advises that roadways with ADT of 20,000 vehicles per day or less are good candidates for road diet projects.

While some agencies have found synergies between travel modes with the implementation of road diets; other agencies have observed negative impacts. It should be noted that any observed impact is dependent on the context and users of the roadway. Some of the negative impacts observed by agencies include:

- Mail trucks and transit vehicles can block traffic when stopped in a singled through lane
- In some jurisdictions, maintenance funding is tied to the number of lane-miles; reducing the number of lanes can have a negative impact on maintenance budgets
- If travel lanes are widened, increased travel speeds can be encouraged
- The introduction of a median island can make it difficult for drivers to access left turn lanes if the demand is high
- Grass and delineator buffers can necessitate ongoing maintenance

1.3 Market Street Overview

Market Street, signed as US Highway 17 Business, in Wilmington, NC provides a primary connection from downtown to destinations to the east (e.g. University of North Carolina at Wilmington, Mayfair, Ogden, and Wrightsville Beach via Eastwood Road). In 2013, Market Street had an Annual Average Daily Traffic (AADT) that ranged between roughly 12,000 to 21,345 vehicles west of 16th Street and 26,000 to 37,423 vehicles east of 16th Street, based on data collected by the North Carolina Department of Transportation (NCDOT) and Wilmington Urban Area Metropolitan Planning Organization (WMPO). Traffic volumes fluctuate based on the daily and seasonal factors.

The geometry of the corridor can currently be divided into three distinct segments. In the downtown area, between 3rd Street and 16th Street, Market Street has narrow right-of-way that includes a four-lane divided roadway, planting strips (including established tree canopy) and sidewalks. Between 17th Street and Colonial Drive the street cross section narrows to 36 feet, four 9-foot lanes with no median or turn lanes. East of Colonial Drive, the right-of-way widens to include a five-lane section (two lanes in each direction and a center two-way, left-turn lane), planting strips and sidewalks.

An analysis was performed considering the traffic impacts of a proposed road diet along Market Street between 3rd Street and Covil Avenue in a future year of 2020. Similar to the cross-section shown in **Figure 1**, the road diet considered reconfiguring the existing roadway by reducing the travel lanes to one in each direction, thus creating space to add planted median, channelized left-turn lanes and bike lanes. The potential road diet would provide "Complete Streets" accommodating multiple travel modes.

Figure 1: Road Diet Street Typical

Image Source: Plant City Times & Observer

There is another project in the study area planning to extend Independence Blvd to Martin Luther King Jr. Parkway. The new road extension will intersect Market Street at the existing Covil Avenue intersection. The project will provide additional connectivity and capacity for the region. This will likely have a great impact on trip distribution in the study area and relieve traffic from Market Street and the study intersections. Unfortunately, the project is not included in the current NCDOT Transportation Improvement Program (TIP); therefore, it is currently unfunded and has no associated timeline and it was not included as part of this study. If Independence Boulevard Extension were to be constructed, the feasibility of the road diet from 16th Street eastward on Market Street would be improved.

2 CORRIDOR TRAFFIC ANALYSIS

At the request of the City of Wilmington and the MPO, the nine study area intersections, shown in Figure 2, were analyzed.

Figure 2: Study Area Map

Existing 2015 peak traffic counts were provided by the MPO for the study intersections. The counts were taken between 7:00-9:00 AM and 4:00-6:00 PM and volumes were provided in 15 minute intervals. The total traffic intervals were evaluated to determine the AM and PM peak hour volumes for the study area intersections.

NCDOT 2011 and 2013 traffic volume maps were used to identify the ADT volumes for the study area. These counts were used to calculate the growth rate from 2011 to 2013. That average growth rate was then applied to the 2015 traffic volumes to reach 2020 traffic volumes for each area.

The 2035 Transportation Demand Model was used to forecast future traffic patterns based on the implementation of the proposed road diet. The model was used to establish the trip diversion rates based on reduction of network capacity, trip diversion, and alternative transportation modes. These diversion rates were used to adjust the 2020 traffic volumes used to analyze the operations for the study intersections.

SYNCHRO 9.0 was used to analyze the intersections in the study area for the scenarios. The Synchro results give a level of service (LOS) for the intersections. The LOS is an important measure of roadway congestion. The LOS is determined by calculating the delay for the intersection and converting it to a letter. The LOS ranges from A (insignificant congestion) to F (severe congestion). The LOS criteria for signalized intersections are shown in Table 1.

Table 1: Level of Service Criteria

Signalized Intersections	
LOS	Delay per Vehicle (seconds)
A	≤10
B	>10 and ≤20
C	>20 and ≤35
D	>35 and ≤55
E	>55 and ≤80
F	>80

2.1 Intersection Analysis Results

An analysis was performed in the 2020 horizon year under baseline conditions and road diet conditions. This provides a comparison of how the study intersections will operate in the future with existing roadway geometry in place and with the road diet reconfigurations. Signal cycle lengths remained the same between the baseline and road diet scenarios; however the phasing splits were optimized in the road diet scenario to account for the change in geometry. Table 2 summarizes the results for all of the study intersections for each scenario. The results are shown in LOS and delay, measured in seconds. The Synchro reports are included in Appendix A.

Table 2: Intersection Analysis Results

	2020 AM BASELINE LOS (delay in sec)	2020 PM BASELINE LOS (delay in sec)	2020 AM DIET LOS (delay in sec)	2020 PM DIET LOS (delay in sec)
Market Street & 3rd Street	B (12.4)	B (16.8)	B (13.6)	B (17.8)
Market Street & 5th Street	A (9.2)	B (11.5)	B (10.1)	B (13.2)
Market Street & 10th Street	A (10.0)	B (10.4)	B (10.4)	A (9.7)
Market Street & 16th Street	C (23.3)	C (33.2)	D (51.7)	C (25.7)
Market Street & 17th Street	B (17.1)	C (20.2)	D (53.8)	C (28.9)
Market Street & 23rd Street	B (10.7)	B (11.9)	D (46.2)	D (38.6)
Market Street & Forest Hills Drive	A (9.7)	A (8.2)	C (25.6)	D (40.0)
Market Street & Covil Avenue	E (62.8)	F (304.2)	F (208.2)	F (699.1)

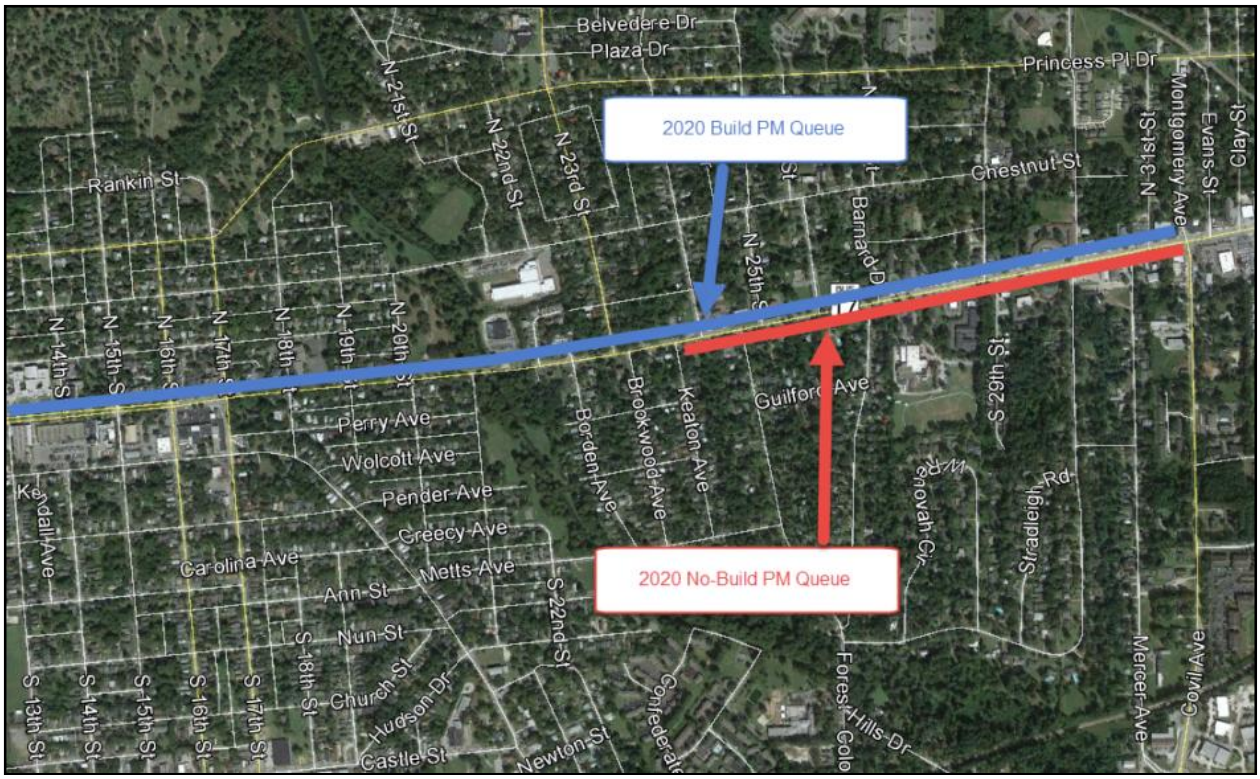
The results of the analysis show that several intersections are expected to experience a significant increase in delay under the road diet conditions. The intersections along Market Street between 16th Street and Covil Avenue all are expected to experience a decline of at least one LOS grade, except for the PM peak at 16th Street and 17th Street which remained at a LOS C. The increase of vehicle delay was more than doubled at the intersections of 23rd Street, Forest Hills Drive, and Covil Avenue for all scenarios. The intersections of 16th Street and 17th Street increased in delay by 120% and 215% for the AM peak, respectively. The intersection of 16th Street experienced a decrease in delay of approximately 20% during the PM peak, due to optimizing the phasing splits for the intersection; however 17th Street still experienced an increase in delay of approximately 40%.

The intersections along Market Street between 3rd Street to 10th Street are expected to have little to no impact under road diet conditions. Although some intersections experienced a decline in LOS, the biggest increase in delay for these intersections was less than 2 seconds. The intersection of 10th Street actually improved from LOS B to LOS A with a decrease in delay of approximately 7% in the PM peak.

2.2 Queuing Analysis Results

In addition to intersection operations, a SimTraffic analysis was performed to understand the queuing impacts along the corridor. Under road diet conditions, significant queue lengths are expected to increase from west of 16th Street to Kerr Avenue along Market Street. During the PM peak the eastbound queue from Covil Avenue along Market Street experienced the biggest impact, with the queue length expected to increase from approximately 400 feet west of Forest Hills Drive in the baseline to approximately 1,400 feet west of 16th Street with the road diet in place, an increase of approximately 5,200 feet. This impact is shown in Figure 3.

Figure 3: 2020 PM Peak Eastbound Queue on Market Street



The queue lengths along the side streets were also increased as a result of the excessive queuing along Market Street. Turning vehicles are unable to process through the intersection from these streets due to queued vehicles blocking the intersections. Excessive queues were also identified in both scenarios for 17th Street, 23rd Street, and westbound Market Street from Covil Avenue to Kerr Avenue. The SimTraffic reports are included in Appendix B.

3 TRIP DIVERSIONS

The impetus of this analysis and re-evaluation was to address the concerns of residents of neighborhoods that abut Market Street, who have expressed concerns about safety issues and vehicular crashes. Some believe that by introducing a road diet on Market Street vehicular capacity would be reduced and some of those vehicles would divert to other roadways. Research was conducted to understand the impacts to driver behavior.

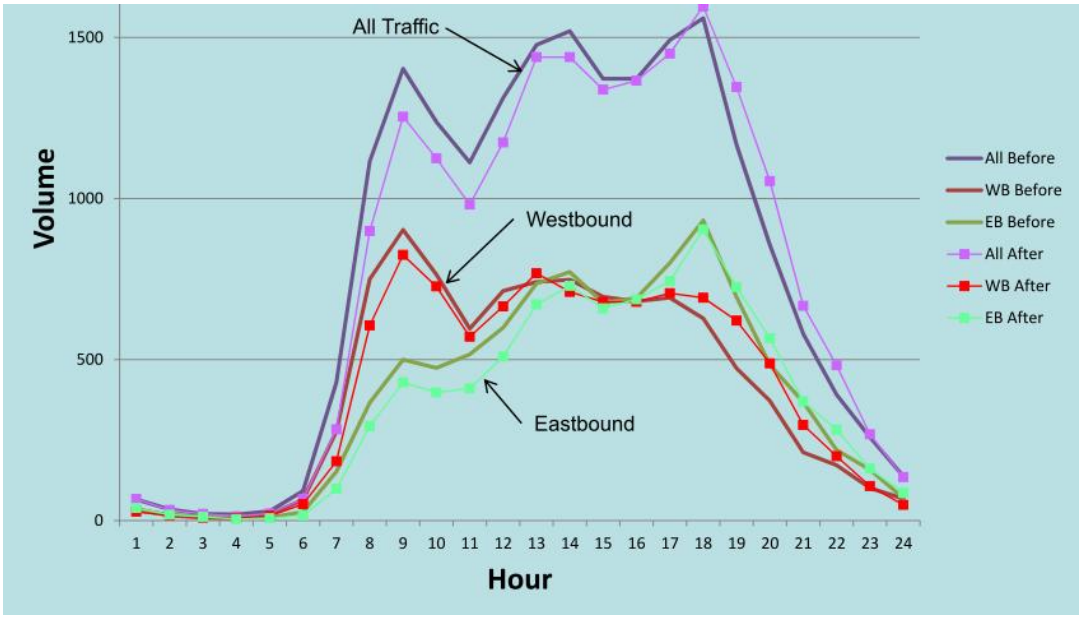
3.1 Case Studies

The FHWA published research that evaluated the before and after impacts of introducing road diets. Based on four cases studies, minimal traffic was diverted over time once a road diet was applied (*Going on a Road Diet*, FHWA-HRT-11-006, 2011).

Edgewater Drive (Orlando, FL)	Stone Way North (Seattle, WA)	Arterial Road (Athens, GA)	Arterial Road (Vancouver, WA)
•Initial Decrease from 20,500 to 18,100 then Increase to 21,000	•ADT Decrease of +/- 6% - Matched City Wide Trend	•ADT 20,000 - Decrease of +/- 4%	•ADT 17,000 – No Diversion

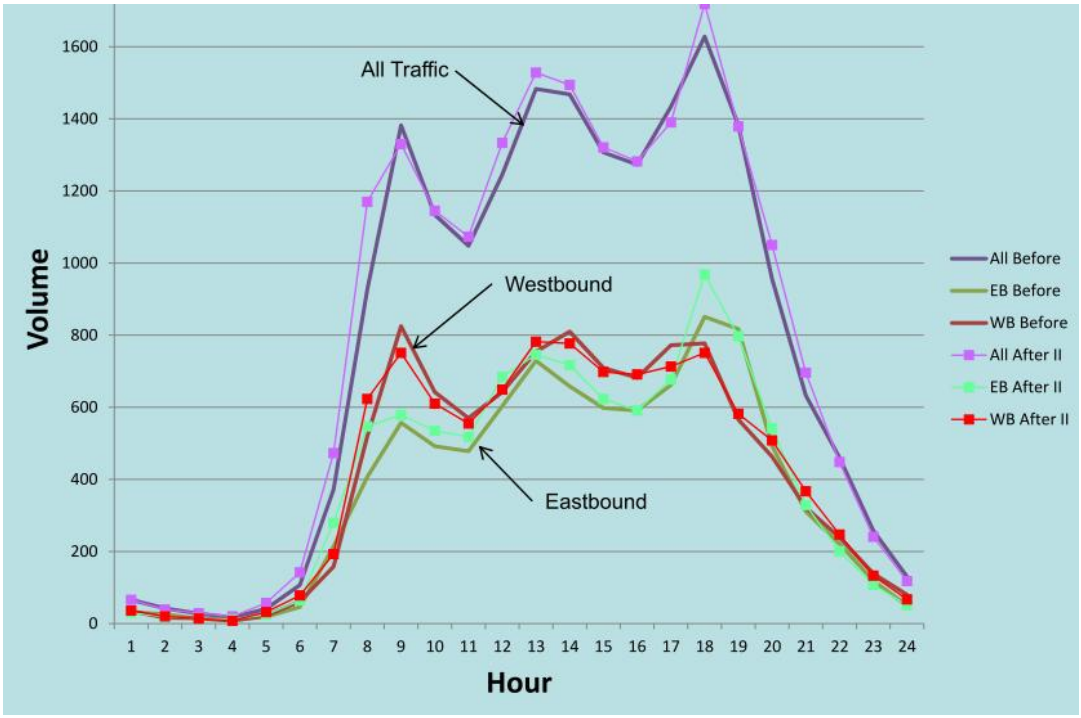
The City of Charlotte published data that was collected on East Boulevard before and after a road diet was introduced over two phases (*Before & After Studies in Charlotte, NC*, City of Charlotte, June 2012). The traffic volume fluctuated some (21,400 ADT before and 18,400 ADT after), but overall, the traffic volumes remained the same with the road diet. The evaluation showed that significant traffic did not divert to the local streets. Figure 4 and Figure 5 show the traffic changes for Phase I and II of the road diet project on East Boulevard, respectively.

Figure 4: Traffic on East Blvd Phase I – Before and After



Source: Before & After Studies in Charlotte, NC

Figure 5: Traffic on East Blvd Phase II – Before and After



Source: Before & After Studies in Charlotte, NC

3.2 Intersection Analysis of Additional Intersections

A supplemental capacity analysis was performed for five select intersections on Kerr Avenue and Princess Place. Initially, the analysis was performed under the assumption that vehicles that currently utilize Market Street would divert to these streets. After reviewing the previously mentioned case studies, it was determined that there would be little impacts to these additional intersections. Table 3 summarizes the results for the supplemental study intersections.

Table 3: Intersection Analysis Results

	2020 AM BASELINE LOS (delay in sec)	2020 PM BASELINE LOS (delay in sec)
Kerr Avenue & MLK Blvd	E (65.7)	F (106.9)
Kerr Avenue & Randall Pkwy	D (39.5)	F (112.9)
Market Street & Kerr Avenue	F (80.3)	F (110.7)
Princess Place & 16th Street	F (3059.1)	F (1391.5)
Princess Place & 17th Street	D (37.9)	D (53.2)
Princess Place & 23rd Street	F (85.0)	F (399.6)

4 CONCLUSION

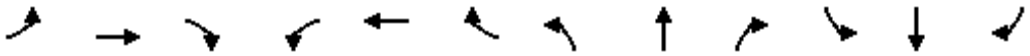
After evaluating the results, the road diet project is not recommended for the proposed limits of this study due to the negative impacts to Market Street. Additional connectivity and capacity, like what will be provided by the Independence Blvd extension, is needed in the region to redistribute trips from Market Street before the road diet will be viable for the proposed limits from 3rd Street to Covil Avenue. This is similar to the 2007 *US 17 Business Corridor Study* results that identified the completion of Independence Blvd extension as a prerequisite to the road diet implementation.

The road diet is not recommended for the proposed limits of this study due to the negative impacts to operations and increased vehicle queuing along Market Street.

The intersections of 23rd Street, Forest Hills Drive, and Covil Avenue all experienced significant impacts to delay after implementing the road diet. The intersections of 16th Street and 17th Street also experienced increases in delay; however not to the extent of the intersections further east. Similarly to delay, vehicle queuing was greatly increased along Market Street in the road diet scenario. Eastbound queuing along Market Street experienced the greatest impact with vehicle queuing increasing from west of Forest Hills Drive to west of 16th Street, an increase of approximately one mile.

However, based on the results of this study, the road diet could successfully be implemented between 3rd Street and 16th Street, with a transition to current geometry west of 16th Street. The ADT for this segment of the corridor is under the recommended 20,000 vehicle per day threshold, according to NCDOT traffic maps. The intersections in this segment operate at LOS B or better for the road diet scenarios and the impacts are within an acceptable range to achieve the additional benefits of a road diet conversion.

APPENDIX A: SYNCHRO REPORTS



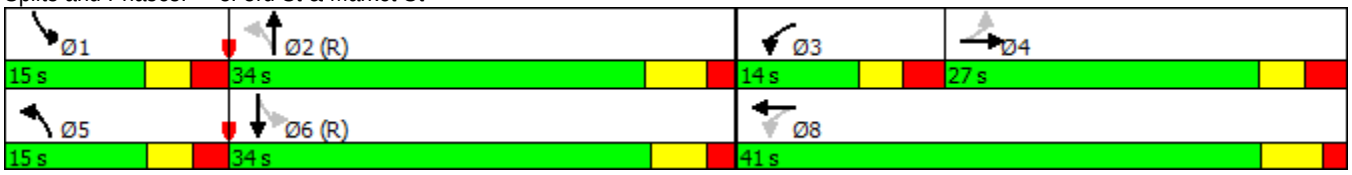
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	13	30	13	65	74	90	58	516	86	59	251	69
Future Volume (vph)	13	30	13	65	74	90	58	516	86	59	251	69
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	125		0	95		0	150		0	200		0
Storage Lanes	1		0	0		0	1		0	1		0
Taper Length (ft)	100			0			100			100		
Lane Util. Factor	1.00	0.95	0.95	0.95	0.95	0.95	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor	1.00	1.00			0.99			1.00			1.00	
Frt		0.955			0.941			0.978			0.968	
Flt Protected	0.950				0.986		0.950			0.950		
Satd. Flow (prot)	1770	3366	0	0	3266	0	1770	3455	0	1770	3416	0
Flt Permitted	0.504				0.853		0.539			0.369		
Satd. Flow (perm)	938	3366	0	0	2825	0	1004	3455	0	687	3416	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		25			35			35			35	
Link Distance (ft)		656			820			581			760	
Travel Time (s)		17.9			16.0			11.3			14.8	
Confl. Peds. (#/hr)	1		1	1		1			1			1
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	14	33	14	72	82	100	64	573	96	66	279	77
Shared Lane Traffic (%)												
Lane Group Flow (vph)	14	47	0	0	254	0	64	669	0	66	356	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)		12			12			12			12	
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	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1		1	1		1	0		1	0	
Detector Template												
Leading Detector (ft)	40	40		65	40		57	0		50	0	
Trailing Detector (ft)	0	0		50	0		-3	0		-10	0	
Detector 1 Position(ft)	0	0		50	0		-3	0		-10	0	
Detector 1 Size(ft)	40	40		15	40		60	6		60	0	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	3.0	0.0		0.0	0.0		10.0	0.0		10.0	0.0	
Turn Type	Perm	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		3	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0		7.0	10.0		7.0	10.0	

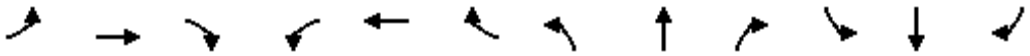
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Split (s)	24.0	24.0		12.8	21.9		12.5	24.2		12.6	25.8	
Total Split (s)	27.0	27.0		14.0	41.0		15.0	34.0		15.0	34.0	
Total Split (%)	30.0%	30.0%		15.6%	45.6%		16.7%	37.8%		16.7%	37.8%	
Maximum Green (s)	21.0	21.0		8.2	35.1		9.5	27.8		9.4	28.2	
Yellow Time (s)	3.0	3.0		3.0	4.1		3.1	4.2		3.0	3.8	
All-Red Time (s)	3.0	3.0		2.8	1.8		2.4	2.0		2.6	2.0	
Lost Time Adjust (s)	-2.0	-2.0			-2.0		-2.0	-2.0		-2.0	-2.0	
Total Lost Time (s)	4.0	4.0			3.9		3.5	4.2		3.6	3.8	
Lead/Lag	Lag	Lag		Lead			Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes			Yes	Yes		Yes	Yes	
Vehicle Extension (s)	2.0	2.0		2.0	2.0		1.0	0.2		1.0	0.2	
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	
Walk Time (s)	4.0	4.0			4.0			4.0			4.0	
Flash Dont Walk (s)	14.0	14.0			12.0			14.0			16.0	
Pedestrian Calls (#/hr)	0	0			0			0			0	
Act Effct Green (s)	14.3	14.3			14.4		65.3	57.4		65.3	57.9	
Actuated g/C Ratio	0.16	0.16			0.16		0.73	0.64		0.73	0.64	
v/c Ratio	0.09	0.09			0.56		0.08	0.30		0.11	0.16	
Control Delay	32.0	31.1			28.5		3.6	8.8		3.8	7.7	
Queue Delay	0.0	0.0			0.0		0.0	0.0		0.0	0.0	
Total Delay	32.0	31.1			28.5		3.6	8.8		3.8	7.7	
LOS	C	C			C		A	A		A	A	
Approach Delay		31.3			28.5			8.4			7.1	
Approach LOS		C			C			A			A	

Intersection Summary

Area Type: Other
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 88 (98%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 80
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.56
Intersection Signal Delay: 12.4 Intersection LOS: B
Intersection Capacity Utilization 44.0% ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 3: 3rd St & Market St





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	192	10	0	290	36	0	73	38	0	36	7
Future Volume (vph)	0	192	10	0	290	36	0	73	38	0	36	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor		1.00			1.00			1.00			1.00	
Frt		0.993			0.983			0.949			0.975	
Flt Protected												
Satd. Flow (prot)	0	3512	0	0	3474	0	0	3344	0	0	3443	0
Flt Permitted												
Satd. Flow (perm)	0	3512	0	0	3474	0	0	3344	0	0	3443	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		35			35			25			25	
Link Distance (ft)		820			2009			644			690	
Travel Time (s)		16.0			39.1			17.6			18.8	
Confl. Peds. (#/hr)	1		1	1		1	1		1	1		1
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	213	11	0	322	40	0	81	42	0	40	8
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	224	0	0	362	0	0	123	0	0	48	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)		12			12			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	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors		1			1			1			1	
Detector Template												
Leading Detector (ft)		206			206			40			40	
Trailing Detector (ft)		200			200			0			0	
Detector 1 Position(ft)		200			200			0			0	
Detector 1 Size(ft)		6			6			40			40	
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		NA			NA			NA			NA	
Protected Phases		2			6			8			4	
Permitted Phases												
Detector Phase		2			6			8			4	
Switch Phase												
Minimum Initial (s)		10.0			10.0			7.0			7.0	
Minimum Split (s)		25.5			26.6			28.7			28.7	
Total Split (s)		59.0			59.0			31.0			31.0	
Total Split (%)		65.6%			65.6%			34.4%			34.4%	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Maximum Green (s)		53.5			53.4			25.3			25.3	
Yellow Time (s)		3.8			3.9			3.2			3.1	
All-Red Time (s)		1.7			1.7			2.5			2.6	
Lost Time Adjust (s)		-2.0			-2.0			-2.0			-2.0	
Total Lost Time (s)		3.5			3.6			3.7			3.7	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)		4.5			4.5			2.0			2.0	
Minimum Gap (s)		3.0			3.0			3.0			3.0	
Time Before Reduce (s)		10.0			10.0			0.0			0.0	
Time To Reduce (s)		10.0			10.0			0.0			0.0	
Recall Mode		C-Max			C-Max			None			None	
Walk Time (s)		4.0			4.0			4.0			4.0	
Flash Dont Walk (s)		16.0			17.0			19.0			19.0	
Pedestrian Calls (#/hr)		0			0			0			0	
Act Effct Green (s)		72.7			72.6			10.1			10.1	
Actuated g/C Ratio		0.81			0.81			0.11			0.11	
v/c Ratio		0.08			0.13			0.33			0.12	
Control Delay		0.9			0.7			39.0			36.2	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		0.9			0.7			39.0			36.2	
LOS		A			A			D			D	
Approach Delay		0.9			0.7			39.0			36.2	
Approach LOS		A			A			D			D	

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 88 (98%), Referenced to phase 2:EBT and 6:WBT, Start of Green			
Natural Cycle: 60			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.33			
Intersection Signal Delay: 9.2		Intersection LOS: A	
Intersection Capacity Utilization 30.4%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 6: 5th St & Market St

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	7	182	9	38	326	15	12	67	26	18	51	4
Future Volume (vph)	7	182	9	38	326	15	12	67	26	18	51	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	0		0	100		0
Storage Lanes	0		0	0		0	0		0	1		0
Taper Length (ft)	100			100			100			100		
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.993			0.994			0.966			0.990	
Flt Protected		0.998			0.995			0.994		0.950		
Satd. Flow (prot)	0	3507	0	0	3500	0	0	1789	0	1770	1844	0
Flt Permitted		0.942			0.907			0.960		0.531		
Satd. Flow (perm)	0	3311	0	0	3191	0	0	1727	0	989	1844	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		35			35			25			25	
Link Distance (ft)		2009			900			828			513	
Travel Time (s)		39.1			17.5			22.6			14.0	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	8	202	10	42	362	17	13	74	29	20	57	4
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	220	0	0	421	0	0	116	0	20	61	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)		12			12			0			12	
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	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1		1	1		1	1		1	1	
Detector Template	Left			Left			Left					
Leading Detector (ft)	20	76		20	76		20	33		55	55	
Trailing Detector (ft)	0	70		0	70		0	-2		-5	-5	
Detector 1 Position(ft)	0	70		0	70		0	-2		-5	-5	
Detector 1 Size(ft)	20	6		20	6		20	35		60	60	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Detector Phase	2	2		6	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		7.0	7.0		7.0	7.0	
Minimum Split (s)	15.6	15.6		15.4	15.4		12.9	12.9		13.0	13.0	
Total Split (s)	60.0	60.0		60.0	60.0		30.0	30.0		30.0	30.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Split (%)	66.7%	66.7%		66.7%	66.7%		33.3%	33.3%		33.3%	33.3%	
Maximum Green (s)	54.4	54.4		54.6	54.6		24.1	24.1		24.0	24.0	
Yellow Time (s)	4.1	4.1		3.6	3.6		3.1	3.1		3.2	3.2	
All-Red Time (s)	1.5	1.5		1.8	1.8		2.8	2.8		2.8	2.8	
Lost Time Adjust (s)		-2.0			-2.0			-2.0		-2.0	-2.0	
Total Lost Time (s)		3.6			3.4			3.9		4.0	4.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		2.0	2.0		2.0	2.0	
Recall Mode	C-Max	C-Max		C-Max	C-Max		None	None		None	None	
Act Effct Green (s)		73.2			73.3			12.6		12.6	12.6	
Actuated g/C Ratio		0.81			0.81			0.14		0.14	0.14	
v/c Ratio		0.08			0.16			0.48		0.14	0.24	
Control Delay		2.2			0.4			41.7		34.8	35.5	
Queue Delay		0.0			0.0			0.0		0.0	0.0	
Total Delay		2.2			0.4			41.7		34.8	35.5	
LOS		A			A			D		C	D	
Approach Delay		2.2			0.4			41.7			35.3	
Approach LOS		A			A			D			D	

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 46 (51%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green			
Natural Cycle: 40			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.48			
Intersection Signal Delay: 10.0		Intersection LOS: A	
Intersection Capacity Utilization 41.4%		ICU Level of Service A	
Analysis Period (min) 15			

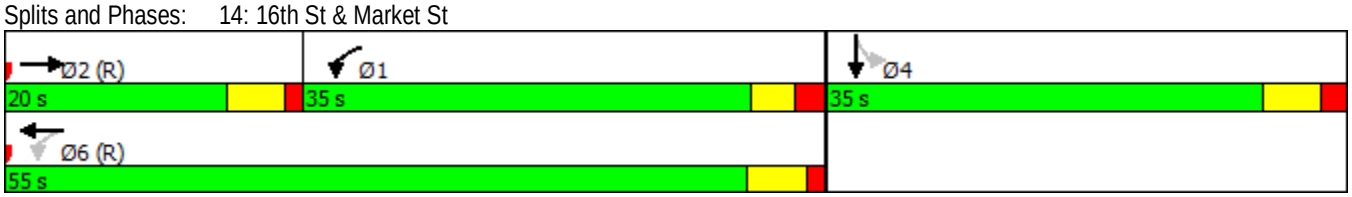
Splits and Phases: 9: 10th St & Market St

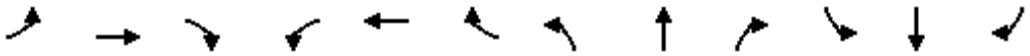
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	347	78	649	872	0	0	0	0	87	779	41
Future Volume (vph)	0	347	78	649	872	0	0	0	0	87	779	41
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	150		0	0		0	0		0
Storage Lanes	0		0	1		0	0		0	0		0
Taper Length (ft)	100			100			100			100		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	0.95	0.95	0.95
Ped Bike Factor		1.00									1.00	
Frt		0.972									0.993	
Flt Protected				0.950							0.995	
Satd. Flow (prot)	0	3431	0	1770	3539	0	0	0	0	0	3495	0
Flt Permitted				0.282							0.995	
Satd. Flow (perm)	0	3431	0	525	3539	0	0	0	0	0	3494	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		35			35			35			35	
Link Distance (ft)		1473			369			549			1165	
Travel Time (s)		28.7			7.2			10.7			22.7	
Confl. Peds. (#/hr)	1		1			1	1		1	1		1
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	386	87	721	969	0	0	0	0	97	866	46
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	473	0	721	969	0	0	0	0	0	1009	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)		12			12			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	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors		1		1	1					1	1	
Detector Template										Left		
Leading Detector (ft)		206		40	206					20	40	
Trailing Detector (ft)		200		0	200					0	0	
Detector 1 Position(ft)		200		0	200					0	0	
Detector 1 Size(ft)		6		40	6					20	40	
Detector 1 Type		Cl+Ex		Cl+Ex	Cl+Ex					Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)		0.0		0.0	0.0					0.0	0.0	
Detector 1 Queue (s)		0.0		0.0	0.0					0.0	0.0	
Detector 1 Delay (s)		0.0		15.0	0.0					0.0	5.0	
Turn Type		NA		pm+pt	NA					Perm	NA	
Protected Phases		2		1	6						4	
Permitted Phases				6						4		
Detector Phase		2		1	6					4	4	
Switch Phase												
Minimum Initial (s)		10.0		7.0	8.0					7.0	7.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Split (s)		17.1		12.1	13.3					23.7	23.7	
Total Split (s)		20.0		35.0	55.0					35.0	35.0	
Total Split (%)		22.2%		38.9%	61.1%					38.9%	38.9%	
Maximum Green (s)		14.9		29.9	49.7					29.3	29.3	
Yellow Time (s)		3.8		3.0	4.0					3.8	3.8	
All-Red Time (s)		1.3		2.1	1.3					1.9	1.9	
Lost Time Adjust (s)		-2.0		-2.0	-2.0						-2.0	
Total Lost Time (s)		3.1		3.1	3.3						3.7	
Lead/Lag		Lead		Lag								
Lead-Lag Optimize?		Yes		Yes								
Vehicle Extension (s)		6.0		2.0	6.0					5.0	5.0	
Minimum Gap (s)		2.5		3.0	2.5					2.5	2.5	
Time Before Reduce (s)		10.0		0.0	10.0					0.0	0.0	
Time To Reduce (s)		15.0		0.0	15.0					10.0	10.0	
Recall Mode		C-Max		None	C-Max					None	None	
Walk Time (s)		4.0			4.0					4.0	4.0	
Flash Dont Walk (s)		8.0			4.0					14.0	14.0	
Pedestrian Calls (#/hr)		0			0					0	0	
Act Effct Green (s)		17.5		52.5	52.3						30.7	
Actuated g/C Ratio		0.19		0.58	0.58						0.34	
v/c Ratio		0.71		0.97	0.47						0.85	
Control Delay		36.3		39.9	7.8						20.0	
Queue Delay		0.0		0.0	0.3						0.0	
Total Delay		36.3		39.9	8.1						20.0	
LOS		D		D	A						B	
Approach Delay		36.3			21.7						20.0	
Approach LOS		D			C						B	

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 80 (89%), Referenced to phase 2:EBT and 6:WBTL, Start of Green			
Natural Cycle: 65			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.97			
Intersection Signal Delay: 23.3		Intersection LOS: C	
Intersection Capacity Utilization 86.7%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 14: 16th St & Market St



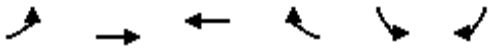


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	14	397	0	0	1267	43	252	690	357	0	0	0
Future Volume (vph)	14	397	0	0	1267	43	252	690	357	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	0.95	1.00	1.00	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00
Ped Bike Factor					1.00		1.00		0.99			
Frt					0.995				0.850			
Flt Protected		0.998					0.950					
Satd. Flow (prot)	0	3532	0	0	3520	0	1770	3539	1583	0	0	0
Flt Permitted		0.885					0.950					
Satd. Flow (perm)	0	3132	0	0	3520	0	1767	3539	1562	0	0	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		35			35			35			35	
Link Distance (ft)		369			1854			597			1164	
Travel Time (s)		7.2			36.1			11.6			22.7	
Confl. Peds. (#/hr)	1		1	1		1	1		1			
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	16	441	0	0	1408	48	280	767	397	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	457	0	0	1456	0	280	767	397	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			0			12			12	
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	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	0			0		1	1	1			
Detector Template	Left											
Leading Detector (ft)	20	0			0		40	40	40			
Trailing Detector (ft)	0	0			0		0	0	0			
Detector 1 Position(ft)	0	0			0		0	0	0			
Detector 1 Size(ft)	20	6			6		40	40	40			
Detector 1 Type	Cl+Ex	Cl+Ex			Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex			
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0			0.0		0.0	0.0	0.0			
Detector 1 Queue (s)	0.0	0.0			0.0		0.0	0.0	0.0			
Detector 1 Delay (s)	0.0	0.0			0.0		0.0	0.0	15.0			
Turn Type	Perm	NA			NA		Perm	NA	Perm			
Protected Phases		2			6			8				
Permitted Phases	2						8		8			
Detector Phase	2	2			6		8	8	8			
Switch Phase												
Minimum Initial (s)	10.0	10.0			10.0		7.0	7.0	7.0			
Minimum Split (s)	21.4	21.4			21.2		26.4	26.4	26.4			
Total Split (s)	50.0	50.0			50.0		40.0	40.0	40.0			
Total Split (%)	55.6%	55.6%			55.6%		44.4%	44.4%	44.4%			

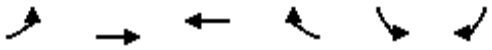
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Maximum Green (s)	44.6	44.6			44.8		34.6	34.6	34.6			
Yellow Time (s)	3.8	3.8			3.8		3.9	3.9	3.9			
All-Red Time (s)	1.6	1.6			1.4		1.5	1.5	1.5			
Lost Time Adjust (s)		-2.0			-2.0		-2.0	-2.0	-2.0			
Total Lost Time (s)		3.4			3.2		3.4	3.4	3.4			
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	0.2	0.2			0.2		2.0	2.0	2.0			
Recall Mode	C-Max	C-Max			C-Max		None	None	None			
Walk Time (s)	4.0	4.0			4.0		4.0	4.0	4.0			
Flash Dont Walk (s)	12.0	12.0			12.0		17.0	17.0	17.0			
Pedestrian Calls (#/hr)	0	0			0		0	0	0			
Act Effct Green (s)		53.1			53.3		30.1	30.1	30.1			
Actuated g/C Ratio		0.59			0.59		0.33	0.33	0.33			
v/c Ratio		0.25			0.70		0.47	0.65	0.76			
Control Delay		6.1			8.0		25.4	27.6	36.0			
Queue Delay		0.0			0.3		0.0	0.0	0.0			
Total Delay		6.1			8.3		25.4	27.6	36.0			
LOS		A			A		C	C	D			
Approach Delay		6.1			8.3			29.5				
Approach LOS		A			A			C				

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBT, Start of Green			
Natural Cycle: 60			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.76			
Intersection Signal Delay: 17.1		Intersection LOS: B	
Intersection Capacity Utilization 62.1%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 17: 17th St & Market St



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	66	724	1218	141	194	87
Future Volume (vph)	66	724	1218	141	194	87
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	0.95	0.95	0.95	1.00	1.00
Ped Bike Factor					1.00	
Frt			0.984		0.958	
Flt Protected		0.996			0.967	
Satd. Flow (prot)	0	3525	3483	0	1718	0
Flt Permitted		0.685			0.967	
Satd. Flow (perm)	0	2424	3483	0	1718	0
Right Turn on Red				No		No
Satd. Flow (RTOR)						
Link Speed (mph)		35	35		35	
Link Distance (ft)		993	944		1214	
Travel Time (s)		19.3	18.4		23.6	
Confl. Peds. (#/hr)						1
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	73	804	1353	157	216	97
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	877	1510	0	313	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		0	0		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	15	9
Number of Detectors	1	1	1		1	
Detector Template	Left					
Leading Detector (ft)	20	76	81		68	
Trailing Detector (ft)	0	70	75		-2	
Detector 1 Position(ft)	0	70	75		-2	
Detector 1 Size(ft)	20	6	6		70	
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		10.0	
Turn Type	Perm	NA	NA		Prot	
Protected Phases		2	6		4	
Permitted Phases	2					
Detector Phase	2	2	6		4	
Switch Phase						
Minimum Initial (s)	10.0	10.0	10.0		7.0	
Minimum Split (s)	14.9	14.9	15.1		15.8	
Total Split (s)	60.0	60.0	60.0		30.0	
Total Split (%)	66.7%	66.7%	66.7%		33.3%	



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Maximum Green (s)	55.1	55.1	54.9		25.2	
Yellow Time (s)	3.7	3.7	3.9		3.0	
All-Red Time (s)	1.2	1.2	1.2		1.8	
Lost Time Adjust (s)		-2.0	-2.0		-2.0	
Total Lost Time (s)		2.9	3.1		2.8	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0		2.0	
Recall Mode	C-Max	C-Max	C-Max		None	
Walk Time (s)					4.0	
Flash Dont Walk (s)					7.0	
Pedestrian Calls (#/hr)					0	
Act Effct Green (s)		62.1	61.9		22.2	
Actuated g/C Ratio		0.69	0.69		0.25	
v/c Ratio		0.52	0.63		0.74	
Control Delay		4.8	7.7		41.8	
Queue Delay		0.0	0.0		0.0	
Total Delay		4.8	7.7		41.8	
LOS		A	A		D	
Approach Delay		4.8	7.7		41.8	
Approach LOS		A	A		D	

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 36 (40%), Referenced to phase 2:EBTL and 6:WBT, Start of Green			
Natural Cycle: 50			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.74			
Intersection Signal Delay: 10.7		Intersection LOS: B	
Intersection Capacity Utilization 86.2%		ICU Level of Service E	
Analysis Period (min) 15			

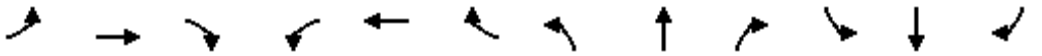
Splits and Phases: 23: Market St & 23rd St

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	806	72	48	1140	146	38
Future Volume (vph)	806	72	48	1140	146	38
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	0.95	0.95	0.95	1.00	1.00
Ped Bike Factor					1.00	
Frt	0.988				0.972	
Flt Protected				0.998	0.962	
Satd. Flow (prot)	3497	0	0	3532	1737	0
Flt Permitted				0.868	0.962	
Satd. Flow (perm)	3497	0	0	3072	1737	0
Right Turn on Red		No				No
Satd. Flow (RTOR)						
Link Speed (mph)	35			35	25	
Link Distance (ft)	944			866	959	
Travel Time (s)	18.4			16.9	26.2	
Confl. Peds. (#/hr)						1
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	896	80	53	1267	162	42
Shared Lane Traffic (%)						
Lane Group Flow (vph)	976	0	0	1320	204	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	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)		9	15		15	9
Number of Detectors	1		1	1	1	
Detector Template			Left			
Leading Detector (ft)	76		20	76	40	
Trailing Detector (ft)	70		0	70	0	
Detector 1 Position(ft)	70		0	70	0	
Detector 1 Size(ft)	6		20	6	40	
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	5.0	
Turn Type	NA		Perm	NA	Prot	
Protected Phases	2			6	8	
Permitted Phases			6			
Detector Phase	2		6	6	8	
Switch Phase						
Minimum Initial (s)	9.0		8.0	8.0	7.0	
Minimum Split (s)	14.4		12.8	12.8	20.3	
Total Split (s)	67.0		67.0	67.0	23.0	
Total Split (%)	74.4%		74.4%	74.4%	25.6%	

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Maximum Green (s)	61.6		62.2	62.2	17.7	
Yellow Time (s)	3.8		3.8	3.8	3.0	
All-Red Time (s)	1.6		1.0	1.0	2.3	
Lost Time Adjust (s)	-2.0			-2.0	-2.0	
Total Lost Time (s)	3.4			2.8	3.3	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0		3.0	3.0	2.0	
Recall Mode	C-Max		C-Max	C-Max	None	
Walk Time (s)					4.0	
Flash Dont Walk (s)					11.0	
Pedestrian Calls (#/hr)					0	
Act Effct Green (s)	67.1			67.7	16.2	
Actuated g/C Ratio	0.75			0.75	0.18	
v/c Ratio	0.37			0.57	0.65	
Control Delay	6.9			6.5	44.0	
Queue Delay	0.0			0.0	0.0	
Total Delay	6.9			6.5	44.0	
LOS	A			A	D	
Approach Delay	6.9			6.5	44.0	
Approach LOS	A			A	D	

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 16 (18%), Referenced to phase 2:EBT and 6:WBTL, Start of Green			
Natural Cycle: 55			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.65			
Intersection Signal Delay: 9.7		Intersection LOS: A	
Intersection Capacity Utilization 78.0%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 25: Forest Hills Dr & Market St

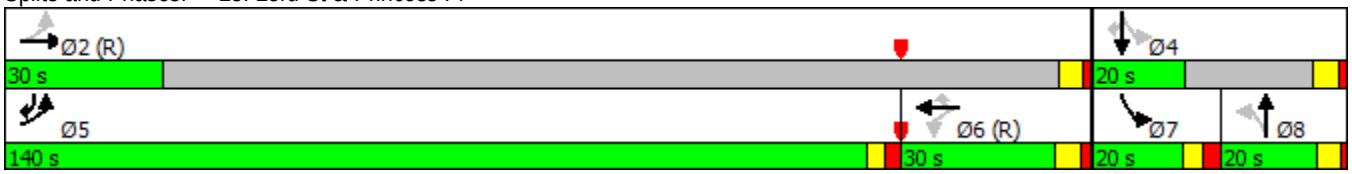


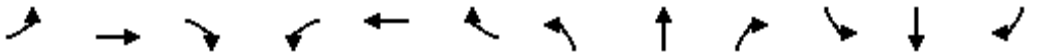
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	405	165	9	15	223	102	3	205	9	51	206	413
Future Volume (vph)	405	165	9	15	223	102	3	205	9	51	206	413
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	275		0	160		100	50		0	180		160
Storage Lanes	1		0	1		1	1		0	1		1
Taper Length (ft)	100			100			100			100		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.992				0.850		0.994				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1848	0	1770	1863	1583	1770	1852	0	1770	1863	1583
Flt Permitted	0.133			0.636			0.550			0.197		
Satd. Flow (perm)	248	1848	0	1185	1863	1583	1025	1852	0	367	1863	1583
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		35			35			35			35	
Link Distance (ft)		1312			1183			857			783	
Travel Time (s)		25.6			23.0			16.7			15.3	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	450	183	10	17	248	113	3	228	10	57	229	459
Shared Lane Traffic (%)												
Lane Group Flow (vph)	450	193	0	17	248	113	3	238	0	57	229	459
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)		12			12			12			12	
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	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	pm+pt	NA		Perm	NA	Perm	Perm	NA		pm+pt	NA	pm+ov
Protected Phases	5	2			6			8		7	4	5
Permitted Phases	2			6		6	8			4		4
Minimum Split (s)	12.4	15.4		15.8	15.8	15.8	12.1	12.1		12.8	12.5	12.4
Total Split (s)	140.0	30.0		30.0	30.0	30.0	20.0	20.0		20.0	20.0	140.0
Total Split (%)	66.7%	14.3%		14.3%	14.3%	14.3%	9.5%	9.5%		9.5%	9.5%	66.7%
Maximum Green (s)	134.6	24.6		24.2	24.2	24.2	14.9	14.9		14.2	14.5	134.6
Yellow Time (s)	3.0	3.8		4.0	4.0	4.0	3.8	3.8		3.0	4.0	3.0
All-Red Time (s)	2.4	1.6		1.8	1.8	1.8	1.3	1.3		2.8	1.5	2.4
Lost Time Adjust (s)	-2.0	-2.0		-2.0	-2.0	-2.0	-2.0	-2.0		-2.0	-2.0	-2.0
Total Lost Time (s)	3.4	3.4		3.8	3.8	3.8	3.1	3.1		3.8	3.5	3.4
Lead/Lag	Lead			Lag	Lag	Lag	Lag	Lag		Lead		Lead
Lead-Lag Optimize?	Yes			Yes	Yes	Yes	Yes	Yes		Yes		Yes
Act Effct Green (s)	166.6	166.6		26.2	26.2	26.2	16.9	16.9		36.2	36.5	176.6
Actuated g/C Ratio	0.79	0.79		0.12	0.12	0.12	0.08	0.08		0.17	0.17	0.84
v/c Ratio	0.38	0.13		0.12	1.07	0.57	0.04	1.60		0.33	0.71	0.34
Control Delay	12.0	5.2		84.0	159.9	99.0	90.3	349.8		80.0	94.8	4.5
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	12.0	5.2		84.0	159.9	99.0	90.3	349.8		80.0	94.8	4.5

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
LOS	B	A		F	F	F	F	F		F	F	A
Approach Delay		10.0			138.3			346.6			38.1	
Approach LOS		A			F			F			D	

Intersection Summary			
Area Type:	Other		
Cycle Length: 210			
Actuated Cycle Length: 210			
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green			
Natural Cycle: 60			
Control Type: Pretimed			
Maximum v/c Ratio: 1.60			
Intersection Signal Delay: 85.0		Intersection LOS: F	
Intersection Capacity Utilization 64.7%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 28: 23rd St & Princess Pl





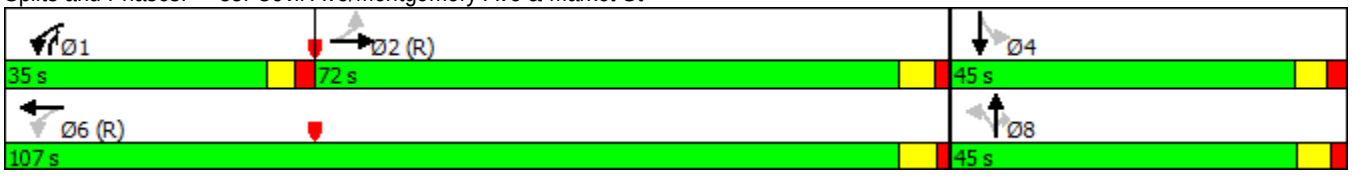
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	77	1042	266	362	1591	49	252	207	337	54	86	20
Future Volume (vph)	77	1042	266	362	1591	49	252	207	337	54	86	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	125		0	600		0	0		0	0		0
Storage Lanes	1		0	1		0	0		1	1		0
Taper Length (ft)	100			100			100			100		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.969			0.996				0.850		0.972	
Flt Protected	0.950			0.950				0.973		0.950		
Satd. Flow (prot)	1770	3429	0	1770	3525	0	0	1812	1583	1770	1811	0
Flt Permitted	0.093			0.056				0.697		0.098		
Satd. Flow (perm)	173	3429	0	104	3525	0	0	1298	1583	183	1811	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		40			40			35			25	
Link Distance (ft)		2438			3526			759			597	
Travel Time (s)		41.6			60.1			14.8			16.3	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	86	1158	296	402	1768	54	280	230	374	60	96	22
Shared Lane Traffic (%)												
Lane Group Flow (vph)	86	1454	0	402	1822	0	0	510	374	60	118	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)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane		Yes			Yes							
Headway 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
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	1	1	1	1	
Detector Template							Left					
Leading Detector (ft)	60	256		60	256		20	35	60	35	55	
Trailing Detector (ft)	0	80		0	80		0	-5	0	-5	-5	
Detector 1 Position(ft)	0	80		0	80		0	-5	0	-5	-5	
Detector 1 Size(ft)	60	6		60	6		20	40	60	40	60	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		15.0	0.0		0.0	3.0	15.0	3.0	15.0	
Detector 2 Position(ft)		250			250							
Detector 2 Size(ft)		6			6							
Detector 2 Type		Cl+Ex			Cl+Ex							
Detector 2 Channel												
Detector 2 Extend (s)		1.3			1.3							
Turn Type	Perm	NA		pm+pt	NA		Perm	NA	pm+ov	Perm	NA	
Protected Phases		2		1	6			8	1		4	
Permitted Phases	2			6			8		8	4		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	2	2		1	6		8	8	1	4	4	
Switch Phase												
Minimum Initial (s)	10.0	10.0		7.0	10.0		7.0	7.0	7.0	7.0	7.0	
Minimum Split (s)	16.0	16.0		12.3	15.8		12.8	12.8	12.3	13.1	13.1	
Total Split (s)	72.0	72.0		35.0	107.0		45.0	45.0	35.0	45.0	45.0	
Total Split (%)	47.4%	47.4%		23.0%	70.4%		29.6%	29.6%	23.0%	29.6%	29.6%	
Maximum Green (s)	66.0	66.0		29.7	101.2		39.2	39.2	29.7	38.9	38.9	
Yellow Time (s)	4.2	4.2		3.0	4.2		3.8	3.8	3.0	3.6	3.6	
All-Red Time (s)	1.8	1.8		2.3	1.6		2.0	2.0	2.3	2.5	2.5	
Lost Time Adjust (s)	-2.0	-2.0		-2.0	-2.0			-2.0	-2.0	-2.0	-2.0	
Total Lost Time (s)	4.0	4.0		3.3	3.8			3.8	3.3	4.1	4.1	
Lead/Lag	Lag	Lag		Lead					Lead			
Lead-Lag Optimize?	Yes	Yes		Yes					Yes			
Vehicle Extension (s)	3.0	3.0		1.0	3.0		1.0	1.0	1.0	1.0	1.0	
Recall Mode	C-Max	C-Max		None	C-Max		None	None	None	None	None	
Act Effct Green (s)	68.3	68.3		103.7	103.2			41.2	76.4	40.9	40.9	
Actuated g/C Ratio	0.45	0.45		0.68	0.68			0.27	0.50	0.27	0.27	
v/c Ratio	1.12	0.94		0.97	0.76			1.45	0.47	1.22	0.24	
Control Delay	175.8	53.0		81.0	9.0			258.2	27.0	247.2	45.1	
Queue Delay	0.0	0.0		0.0	0.0			0.0	0.0	0.0	0.0	
Total Delay	175.8	53.0		81.0	9.0			258.2	27.0	247.2	45.1	
LOS	F	D		F	A			F	C	F	D	
Approach Delay		59.9			22.0			160.4			113.2	
Approach LOS		E			C			F			F	

Intersection Summary

Area Type: Other
Cycle Length: 152
Actuated Cycle Length: 152
Offset: 135 (89%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 75
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.45
Intersection Signal Delay: 62.8 Intersection LOS: E
Intersection Capacity Utilization 101.4% ICU Level of Service G
Analysis Period (min) 15

Splits and Phases: 33: Covil Ave/Montgomery Ave & Market St

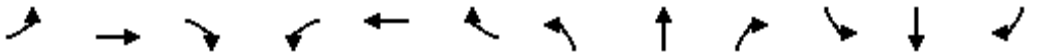


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	42	59	764	0	0	0	0	0	80	113	0
Future Volume (vph)	0	42	59	764	0	0	0	0	0	80	113	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		150	0		0	0		0	0		0
Storage Lanes	0		1	1		0	0		0	0		0
Taper Length (ft)	100			100			100			100		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00
Frt			0.850									
Flt Protected				0.950							0.980	
Satd. Flow (prot)	0	1863	1583	1770	0	0	0	0	0	0	3468	0
Flt Permitted				0.077							0.980	
Satd. Flow (perm)	0	1863	1583	143	0	0	0	0	0	0	3468	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		35			35			35			35	
Link Distance (ft)		511			350			1165			463	
Travel Time (s)		10.0			6.8			22.7			9.0	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	47	66	849	0	0	0	0	0	89	126	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	47	66	849	0	0	0	0	0	0	215	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)		12			12			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	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors		1	1	0						1	1	
Detector Template										Left		
Leading Detector (ft)		40	40	0						20	40	
Trailing Detector (ft)		0	0	0						0	0	
Detector 1 Position(ft)		0	0	0						0	0	
Detector 1 Size(ft)		40	40	20						20	40	
Detector 1 Type		Cl+Ex	Cl+Ex	Cl+Ex						Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)		0.0	0.0	0.0						0.0	0.0	
Detector 1 Queue (s)		0.0	0.0	0.0						0.0	0.0	
Detector 1 Delay (s)		0.0	15.0	0.0						0.0	0.0	
Turn Type		NA	Perm	Perm						Perm	NA	
Protected Phases		4									6	
Permitted Phases			4	3						6		
Detector Phase		4	4	3						6	6	
Switch Phase												
Minimum Initial (s)		7.0	7.0	7.0						7.0	7.0	
Minimum Split (s)		11.8	11.8	11.8						11.8	11.8	
Total Split (s)		18.0	18.0	55.0						17.0	17.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Split (%)		20.0%	20.0%	61.1%						18.9%	18.9%	
Maximum Green (s)		13.2	13.2	50.2						12.2	12.2	
Yellow Time (s)		3.8	3.8	3.0						3.8	3.8	
All-Red Time (s)		1.0	1.0	1.8						1.0	1.0	
Lost Time Adjust (s)		-2.0	-2.0	-2.0							-2.0	
Total Lost Time (s)		2.8	2.8	2.8							2.8	
Lead/Lag		Lag	Lag	Lead								
Lead-Lag Optimize?		Yes	Yes	Yes								
Vehicle Extension (s)		3.0	3.0	3.0						3.0	3.0	
Recall Mode		None	None	Max						C-Max	C-Max	
Act Effct Green (s)		11.4	11.4	52.2							20.4	
Actuated g/C Ratio		0.13	0.13	0.58							0.23	
v/c Ratio		0.20	0.33	10.35							0.27	
Control Delay		36.3	39.6	4227.8							31.8	
Queue Delay		0.0	0.0	0.0							0.0	
Total Delay		36.3	39.6	4227.8							31.8	
LOS		D	D	F							C	
Approach Delay		38.2									31.8	
Approach LOS		D									C	

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 73 (81%), Referenced to phase 6:SBTL, Start of Green			
Natural Cycle: 40			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 10.35			
Intersection Signal Delay: 3059.1		Intersection LOS: F	
Intersection Capacity Utilization 64.0%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 38: 16th St & Grace St

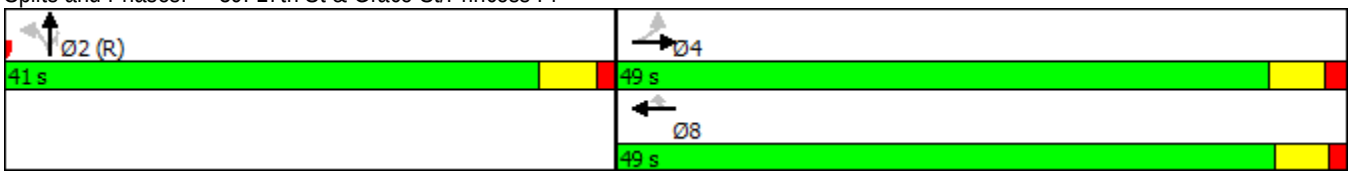


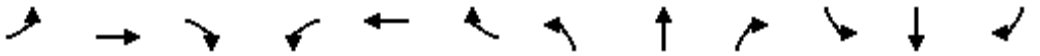
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	128	0	0	731	132	3	143	538	0	0	0
Future Volume (vph)	1	128	0	0	731	132	3	143	538	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		225	0		0	0		0
Storage Lanes	0		0	0		1	0		1	0		0
Taper Length (ft)	100			100			100			100		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt						0.850			0.850			
Flt Protected								0.999				
Satd. Flow (prot)	0	1863	0	0	1863	1583	0	1861	1583	0	0	0
Flt Permitted		0.997						0.999				
Satd. Flow (perm)	0	1857	0	0	1863	1583	0	1861	1583	0	0	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		35			35			35			35	
Link Distance (ft)		350			720			1164			324	
Travel Time (s)		6.8			14.0			22.7			6.3	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	1	142	0	0	812	147	3	159	598	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	143	0	0	812	147	0	162	598	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			-12			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway 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
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1			1	0	1	1	1			
Detector Template	Left						Left					
Leading Detector (ft)	20	40			40	0	20	40	40			
Trailing Detector (ft)	0	0			0	0	0	0	0			
Detector 1 Position(ft)	0	0			0	0	0	0	0			
Detector 1 Size(ft)	20	40			40	20	20	40	40			
Detector 1 Type	Cl+Ex	Cl+Ex			Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex			
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0			0.0	0.0	0.0	0.0	0.0			
Detector 1 Queue (s)	0.0	0.0			0.0	0.0	0.0	0.0	0.0			
Detector 1 Delay (s)	0.0	3.0			0.0	0.0	0.0	0.0	0.0			
Turn Type	Perm	NA			NA	Perm	Perm	NA	Perm			
Protected Phases		4			8			2				
Permitted Phases	4					8	2		2			
Detector Phase	4	4			8	8	2	2	2			
Switch Phase												
Minimum Initial (s)	7.0	7.0			7.0	7.0	7.0	7.0	7.0			
Minimum Split (s)	12.4	12.4			12.0	12.0	12.2	12.2	12.2			
Total Split (s)	49.0	49.0			49.0	49.0	41.0	41.0	41.0			

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Split (%)	54.4%	54.4%			54.4%	54.4%	45.6%	45.6%	45.6%			
Maximum Green (s)	43.6	43.6			44.0	44.0	35.8	35.8	35.8			
Yellow Time (s)	3.8	3.8			3.7	3.7	3.8	3.8	3.8			
All-Red Time (s)	1.6	1.6			1.3	1.3	1.4	1.4	1.4			
Lost Time Adjust (s)		-2.0			-2.0	-2.0		-2.0	-2.0			
Total Lost Time (s)		3.4			3.0	3.0		3.2	3.2			
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0			2.0	2.0	2.0	2.0	2.0			
Recall Mode	None	None			Max	Max	C-Max	C-Max	C-Max			
Act Effct Green (s)		45.6			46.0	46.0		37.8	37.8			
Actuated g/C Ratio		0.51			0.51	0.51		0.42	0.42			
v/c Ratio		0.15			0.85	0.18		0.21	0.90			
Control Delay		10.9			29.9	12.6		33.5	62.7			
Queue Delay		0.0			0.0	0.0		0.0	0.0			
Total Delay		10.9			29.9	12.6		33.5	62.7			
LOS		B			C	B		C	E			
Approach Delay		10.9			27.2			56.5				
Approach LOS		B			C			E				

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 40 (44%), Referenced to phase 2:NBTL, Start of Green			
Natural Cycle: 75			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.90			
Intersection Signal Delay: 37.9		Intersection LOS: D	
Intersection Capacity Utilization 52.8%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 39: 17th St & Grace St/Princess Pl



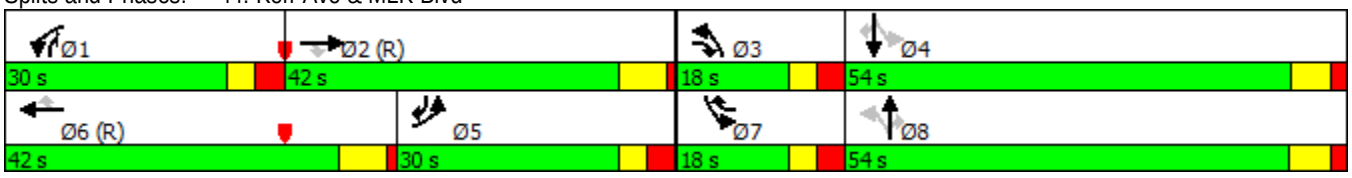


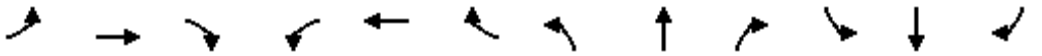
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	210	1151	363	191	1447	139	364	490	174	119	653	584
Future Volume (vph)	210	1151	363	191	1447	139	364	490	174	119	653	584
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	250		360	365		200	270		130	280		125
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (ft)	100			100			100			100		
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	5085	1583	1770	5085	1583	1770	3539	1583	1770	3539	1583
Flt Permitted	0.950			0.950			0.147			0.299		
Satd. Flow (perm)	1770	5085	1583	1770	5085	1583	274	3539	1583	557	3539	1583
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		55			55			45			45	
Link Distance (ft)		1466			1826			427			690	
Travel Time (s)		18.2			22.6			6.5			10.5	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	233	1279	403	212	1608	154	404	544	193	132	726	649
Shared Lane Traffic (%)												
Lane Group Flow (vph)	233	1279	403	212	1608	154	404	544	193	132	726	649
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)		28			28			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane								Yes				
Headway 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
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1	0	1	1	0	1	1	1	1	1	1
Detector Template												
Leading Detector (ft)	40	426	0	40	426	0	40	40	40	40	40	40
Trailing Detector (ft)	0	420	0	0	420	0	0	0	0	0	0	0
Detector 1 Position(ft)	0	420	0	0	420	0	0	0	0	0	0	0
Detector 1 Size(ft)	40	6	20	40	6	20	40	40	40	40	40	40
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	15.0	0.0	15.0	15.0	0.0	15.0
Turn Type	Prot	NA	pm+ov	Prot	NA	pm+ov	pm+pt	NA	pm+ov	pm+pt	NA	pm+ov
Protected Phases	5	2	3	1	6	7	3	8	1	7	4	5
Permitted Phases			2			6	8		8	4		4
Detector Phase	5	2	3	1	6	7	3	8	1	7	4	5
Switch Phase												
Minimum Initial (s)	7.0	14.0	7.0	7.0	14.0	7.0	7.0	12.0	7.0	7.0	12.0	7.0
Minimum Split (s)	13.3	20.3	12.9	13.3	20.3	12.9	12.9	18.5	13.3	12.9	18.3	13.3
Total Split (s)	30.0	42.0	18.0	30.0	42.0	18.0	18.0	54.0	30.0	18.0	54.0	30.0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Split (%)	20.8%	29.2%	12.5%	20.8%	29.2%	12.5%	12.5%	37.5%	20.8%	12.5%	37.5%	20.8%
Maximum Green (s)	23.7	35.7	12.1	23.7	35.7	12.1	12.1	47.5	23.7	12.1	47.7	23.7
Yellow Time (s)	3.0	5.2	3.0	3.0	5.2	3.0	3.0	4.6	3.0	3.0	4.3	3.0
All-Red Time (s)	3.3	1.1	2.9	3.3	1.1	2.9	2.9	1.9	3.3	2.9	2.0	3.3
Lost Time Adjust (s)	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	4.3	4.3	3.9	4.3	4.3	3.9	3.9	4.5	4.3	3.9	4.3	4.3
Lead/Lag	Lag	Lag	Lead	Lead	Lead	Lead	Lead	Lag	Lead	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	2.0	6.0	2.0	2.0	6.0	2.0	2.0	6.0	2.0	2.0	6.0	2.0
Minimum Gap (s)	3.0	3.5	3.0	3.0	3.5	3.0	3.0	3.5	3.0	3.0	3.5	3.0
Time Before Reduce (s)	0.0	15.0	0.0	0.0	15.0	0.0	0.0	15.0	0.0	0.0	15.0	0.0
Time To Reduce (s)	0.0	50.0	0.0	0.0	50.0	0.0	0.0	30.0	0.0	0.0	30.0	0.0
Recall Mode	None	C-Max	None	None	C-Max	None	None	None	None	None	None	None
Act Effct Green (s)	25.7	50.1	68.5	22.9	47.3	60.3	56.0	41.4	68.9	53.1	40.1	65.8
Actuated g/C Ratio	0.18	0.35	0.48	0.16	0.33	0.42	0.39	0.29	0.48	0.37	0.28	0.46
v/c Ratio	0.74	0.72	0.54	0.75	0.96	0.23	1.60	0.53	0.25	0.42	0.74	0.90
Control Delay	71.0	45.1	32.2	74.3	62.1	15.6	313.6	44.9	22.1	30.9	51.6	42.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	71.0	45.1	32.2	74.3	62.1	15.6	313.6	44.9	22.1	30.9	51.6	42.5
LOS	E	D	C	E	E	B	F	D	C	C	D	D
Approach Delay		45.5			59.8			136.2			45.9	
Approach LOS		D			E			F			D	

Intersection Summary			
Area Type:	Other		
Cycle Length: 144			
Actuated Cycle Length: 144			
Offset: 125 (87%), Referenced to phase 2:EBT and 6:WBT, Start of Green			
Natural Cycle: 90			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.60			
Intersection Signal Delay: 65.7		Intersection LOS: E	
Intersection Capacity Utilization 94.8%		ICU Level of Service F	
Analysis Period (min) 15			

Splits and Phases: 44: Kerr Ave & MLK Blvd



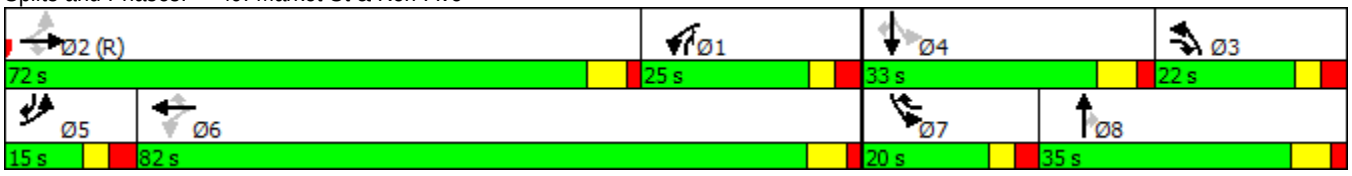


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	177	976	277	321	1519	122	278	390	124	167	454	308
Future Volume (vph)	177	976	277	321	1519	122	278	390	124	167	454	308
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	70		0	225		0	0		0	420		375
Storage Lanes	1		1	1		1	2		1	1		1
Taper Length (ft)	70			180			100			100		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	0.97	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	3433	1863	1583	1770	1863	1583
Flt Permitted	0.070			0.172			0.950			0.317		
Satd. Flow (perm)	130	3539	1583	320	3539	1583	3433	1863	1583	590	1863	1583
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		40			40			35			45	
Link Distance (ft)		905			1376			407			2922	
Travel Time (s)		15.4			23.5			7.9			44.3	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	197	1084	308	357	1688	136	309	433	138	186	504	342
Shared Lane Traffic (%)												
Lane Group Flow (vph)	197	1084	308	357	1688	136	309	433	138	186	504	342
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)		12			12			24			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane		Yes			Yes						Yes	
Headway 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
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1	0	1	1	0	1	1	1	1	1	1
Detector Template												
Leading Detector (ft)	40	306	0	40	306	0	40	40	40	35	40	40
Trailing Detector (ft)	0	300	0	0	300	0	0	0	0	-5	0	0
Detector 1 Position(ft)	0	300	0	0	300	0	0	0	0	-5	0	0
Detector 1 Size(ft)	40	6	20	40	6	20	40	40	40	40	40	40
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	10.0	0.0	0.0	10.0	0.0	0.0	3.0	0.0	15.0	10.0	0.0	15.0
Turn Type	pm+pt	NA	pm+ov	pm+pt	NA	pm+ov	Prot	NA	pm+ov	pm+pt	NA	pm+ov
Protected Phases	5	2	3	1	6	7	3	8	1	7	4	5
Permitted Phases	2		2	6		6			8	4		4
Detector Phase	5	2	3	1	6	7	3	8	1	7	4	5
Switch Phase												
Minimum Initial (s)	7.0	12.0	7.0	7.0	12.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Minimum Split (s)	13.2	18.2	13.1	13.1	18.2	12.8	13.1	13.5	13.1	12.8	13.5	13.2
Total Split (s)	15.0	72.0	22.0	25.0	82.0	20.0	22.0	35.0	25.0	20.0	33.0	15.0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Split (%)	9.9%	47.4%	14.5%	16.4%	53.9%	13.2%	14.5%	23.0%	16.4%	13.2%	21.7%	9.9%
Maximum Green (s)	8.8	65.8	15.9	18.9	75.8	14.2	15.9	28.5	18.9	14.2	26.5	8.8
Yellow Time (s)	3.0	4.5	3.0	3.0	4.5	3.0	3.0	4.5	3.0	3.0	4.5	3.0
All-Red Time (s)	3.2	1.7	3.1	3.1	1.7	2.8	3.1	2.0	3.1	2.8	2.0	3.2
Lost Time Adjust (s)	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	4.2	4.2	4.1	4.1	4.2	3.8	4.1	4.5	4.1	3.8	4.5	4.2
Lead/Lag	Lead	Lead	Lag	Lag	Lag	Lead	Lag	Lag	Lag	Lead	Lead	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	2.0	5.0	1.0	2.0	4.5	2.0	1.0	2.0	2.0	2.0	2.0	2.0
Minimum Gap (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Time Before Reduce (s)	0.0	15.0	0.0	0.0	15.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Time To Reduce (s)	0.0	30.0	0.0	0.0	30.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Recall Mode	None	C-Max	None	None	Max	None	None	None	None	None	None	None
Act Effct Green (s)	67.8	67.8	89.9	77.9	77.8	97.9	17.9	30.8	52.1	29.2	28.5	39.6
Actuated g/C Ratio	0.45	0.45	0.59	0.51	0.51	0.64	0.12	0.20	0.34	0.19	0.19	0.26
v/c Ratio	1.13	0.69	0.33	0.98	0.93	0.13	0.76	1.15	0.25	0.78	1.44	0.83
Control Delay	136.2	51.6	28.5	94.7	45.1	10.9	78.2	145.7	24.4	78.7	257.8	52.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	136.2	51.6	28.5	94.7	45.1	10.9	78.2	145.7	24.4	78.7	257.8	52.6
LOS	F	D	C	F	D	B	E	F	C	E	F	D
Approach Delay		57.6			51.1			103.0			157.5	
Approach LOS		E			D			F			F	

Intersection Summary			
Area Type:	Other		
Cycle Length: 152			
Actuated Cycle Length: 152			
Offset: 25 (16%), Referenced to phase 2:EBTL, Start of Green			
Natural Cycle: 110			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.44			
Intersection Signal Delay: 80.3		Intersection LOS: F	
Intersection Capacity Utilization 97.8%		ICU Level of Service F	
Analysis Period (min) 15			

Splits and Phases: 49: Market St & Kerr Ave

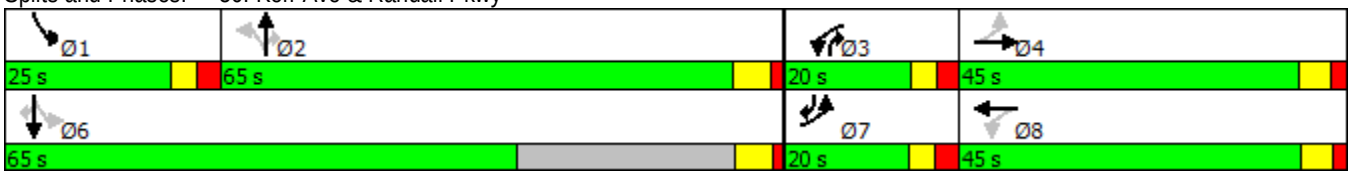


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	216	603	41	81	425	118	50	467	159	207	496	288
Future Volume (vph)	216	603	41	81	425	118	50	467	159	207	496	288
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	200		0	90		150	150		160
Storage Lanes	1		0	1		0	1		1	1		1
Taper Length (ft)	100			100			100			100		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.990			0.967				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3504	0	1770	3422	0	1770	1863	1583	1770	1863	1583
Flt Permitted	0.138			0.149			0.440			0.244		
Satd. Flow (perm)	257	3504	0	278	3422	0	820	1863	1583	455	1863	1583
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		35			35			45			45	
Link Distance (ft)		892			741			556			3064	
Travel Time (s)		17.4			14.4			8.4			46.4	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	240	670	46	90	472	131	56	519	177	230	551	320
Shared Lane Traffic (%)												
Lane Group Flow (vph)	240	716	0	90	603	0	56	519	177	230	551	320
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)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane								Yes			Yes	
Headway 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
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1		1	1		1	1	0	1	1	0
Detector Template												
Leading Detector (ft)	40	40		40	40		55	306	0	55	306	0
Trailing Detector (ft)	0	0		0	0		-5	300	0	-5	300	0
Detector 1 Position(ft)	0	0		0	0		-5	300	0	-5	300	0
Detector 1 Size(ft)	40	40		40	40		60	6	20	60	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	15.0	0.0		15.0	0.0		3.0	0.0	0.0	15.0	0.0	0.0
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA	pm+ov	pm+pt	NA	pm+ov
Protected Phases	7	4		3	8			2	3	1	6	7
Permitted Phases	4			8			2		2	6		6
Detector Phase	7	4		3	8		2	2	3	1	6	7
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0		12.0	12.0	7.0	7.0	12.0	7.0
Minimum Split (s)	12.8	12.8		12.6	12.6		18.1	18.1	12.6	12.9	17.9	12.8
Total Split (s)	20.0	45.0		20.0	45.0		65.0	65.0	20.0	25.0	65.0	20.0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Split (%)	12.9%	29.0%		12.9%	29.0%		41.9%	41.9%	12.9%	16.1%	41.9%	12.9%
Maximum Green (s)	14.2	39.2		14.4	39.4		58.9	58.9	14.4	19.1	59.1	14.2
Yellow Time (s)	3.0	3.8		3.0	3.8		4.5	4.5	3.0	3.0	4.5	3.0
All-Red Time (s)	2.8	2.0		2.6	1.8		1.6	1.6	2.6	2.9	1.4	2.8
Lost Time Adjust (s)	-2.0	-2.0		-2.0	-2.0		-2.0	-2.0	-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	3.8	3.8		3.6	3.6		4.1	4.1	3.6	3.9	3.9	3.8
Lead/Lag	Lead	Lag		Lead	Lag		Lag	Lag	Lead	Lead		Lead
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes	Yes	Yes		Yes
Vehicle Extension (s)	2.0	2.0		2.0	2.0		6.0	6.0	2.0	2.0	6.0	2.0
Minimum Gap (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Time Before Reduce (s)	0.0	0.0		0.0	0.0		10.0	10.0	0.0	0.0	10.0	0.0
Time To Reduce (s)	0.0	0.0		0.0	0.0		25.0	25.0	0.0	0.0	25.0	0.0
Recall Mode	None	None		None	None		Max	Max	None	None	Max	None
Act Effct Green (s)	50.4	35.7		42.5	31.1		61.2	61.2	76.8	80.9	80.9	101.0
Actuated g/C Ratio	0.36	0.26		0.30	0.22		0.44	0.44	0.55	0.58	0.58	0.72
v/c Ratio	0.90	0.80		0.43	0.79		0.16	0.64	0.20	0.56	0.51	0.28
Control Delay	69.2	56.5		36.8	59.6		28.1	36.5	17.8	20.5	20.3	8.0
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	69.2	56.5		36.8	59.6		28.1	36.5	17.8	20.5	20.3	8.0
LOS	E	E		D	E		C	D	B	C	C	A
Approach Delay		59.7			56.6			31.5			16.8	
Approach LOS		E			E			C			B	

Intersection Summary			
Area Type:	Other		
Cycle Length: 155			
Actuated Cycle Length: 139.5			
Natural Cycle: 80			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.90			
Intersection Signal Delay: 39.5		Intersection LOS: D	
Intersection Capacity Utilization 77.0%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 56: Kerr Ave & Randall Pkwy



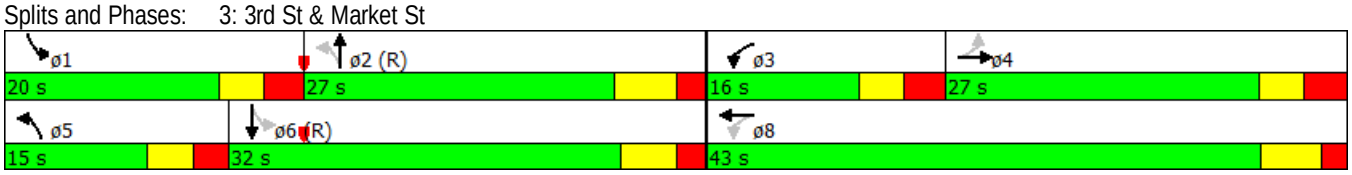
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	46	131	47	123	77	59	40	380	48	108	600	29
Future Volume (vph)	46	131	47	123	77	59	40	380	48	108	600	29
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	125		0	95		0	150		0	200		0
Storage Lanes	1		0	0		0	1		0	1		0
Taper Length (ft)	100			0			100			100		
Lane Util. Factor	1.00	0.95	0.95	0.95	0.95	0.95	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor	1.00	1.00			1.00		1.00	1.00		1.00	1.00	
Frt		0.961			0.966			0.983			0.993	
Flt Protected	0.950				0.977		0.950			0.950		
Satd. Flow (prot)	1770	3389	0	0	3330	0	1770	3474	0	1770	3512	0
Flt Permitted	0.483				0.732		0.369			0.437		
Satd. Flow (perm)	899	3389	0	0	2494	0	687	3474	0	814	3512	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		25			35			35			35	
Link Distance (ft)		656			820			581			760	
Travel Time (s)		17.9			16.0			11.3			14.8	
Confl. Peds. (#/hr)	1		1	1		1	1		1	1		1
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	51	146	52	137	86	66	44	422	53	120	667	32
Shared Lane Traffic (%)												
Lane Group Flow (vph)	51	198	0	0	289	0	44	475	0	120	699	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)		12			12			12			12	
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	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1		1	1		1	0		1	0	
Detector Template												
Leading Detector (ft)	40	40		65	40		57	0		50	0	
Trailing Detector (ft)	0	0		50	0		-3	0		-10	0	
Detector 1 Position(ft)	0	0		50	0		-3	0		-10	0	
Detector 1 Size(ft)	40	40		15	40		60	6		60	0	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	3.0	0.0		0.0	0.0		10.0	0.0		10.0	0.0	
Turn Type	Perm	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		3	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0		7.0	10.0		7.0	10.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Split (s)	24.0	24.0		12.8	21.9		12.5	24.2		12.6	25.8	
Total Split (s)	27.0	27.0		16.0	43.0		15.0	27.0		20.0	32.0	
Total Split (%)	30.0%	30.0%		17.8%	47.8%		16.7%	30.0%		22.2%	35.6%	
Maximum Green (s)	21.0	21.0		10.2	37.1		9.5	20.8		14.4	26.2	
Yellow Time (s)	3.0	3.0		3.0	4.1		3.1	4.2		3.0	3.8	
All-Red Time (s)	3.0	3.0		2.8	1.8		2.4	2.0		2.6	2.0	
Lost Time Adjust (s)	-2.0	-2.0			-2.0		-2.0	-2.0		-2.0	-2.0	
Total Lost Time (s)	4.0	4.0			3.9		3.5	4.2		3.6	3.8	
Lead/Lag	Lag	Lag		Lead			Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes			Yes	Yes		Yes	Yes	
Vehicle Extension (s)	2.0	2.0		2.0	2.0		1.0	0.2		1.0	0.2	
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	
Walk Time (s)	4.0	4.0			4.0			4.0			4.0	
Flash Dont Walk (s)	14.0	14.0			12.0			14.0			16.0	
Pedestrian Calls (#/hr)	0	0			0			0			0	
Act Effct Green (s)	17.5	17.5			17.6		61.2	51.5		62.9	57.2	
Actuated g/C Ratio	0.19	0.19			0.20		0.68	0.57		0.70	0.64	
v/c Ratio	0.29	0.30			0.59		0.08	0.24		0.18	0.31	
Control Delay	33.9	31.2			38.6		4.8	10.6		5.2	9.6	
Queue Delay	0.0	0.0			0.0		0.0	0.0		0.0	0.0	
Total Delay	33.9	31.2			38.6		4.8	10.6		5.2	9.6	
LOS	C	C			D		A	B		A	A	
Approach Delay		31.8			38.6			10.1			8.9	
Approach LOS		C			D			B			A	

Intersection Summary

Area Type: Other
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 70 (78%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 80
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.59
Intersection Signal Delay: 16.8 Intersection LOS: B
Intersection Capacity Utilization 50.6% ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 3: 3rd St & Market St



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	353	28	0	346	30	0	145	37	0	86	9
Future Volume (vph)	0	353	28	0	346	30	0	145	37	0	86	9
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor		1.00			1.00			1.00			1.00	
Frt		0.989			0.988			0.970			0.986	
Flt Protected												
Satd. Flow (prot)	0	3497	0	0	3493	0	0	3424	0	0	3485	0
Flt Permitted												
Satd. Flow (perm)	0	3497	0	0	3493	0	0	3424	0	0	3485	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		35			35			25			25	
Link Distance (ft)		820			2009			644			690	
Travel Time (s)		16.0			39.1			17.6			18.8	
Confl. Peds. (#/hr)	1		1	1		1	1		1	1		1
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	392	31	0	384	33	0	161	41	0	96	10
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	423	0	0	417	0	0	202	0	0	106	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			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	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors		1			1			1			1	
Detector Template												
Leading Detector (ft)		206			206			40			40	
Trailing Detector (ft)		200			200			0			0	
Detector 1 Position(ft)		200			200			0			0	
Detector 1 Size(ft)		6			6			40			40	
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		NA			NA			NA			NA	
Protected Phases		2			6			8			4	
Permitted Phases												
Detector Phase		2			6			8			4	
Switch Phase												
Minimum Initial (s)		10.0			10.0			7.0			7.0	
Minimum Split (s)		25.5			26.6			28.7			28.7	
Total Split (s)		59.0			59.0			31.0			31.0	
Total Split (%)		65.6%			65.6%			34.4%			34.4%	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Maximum Green (s)		53.5			53.4			25.3			25.3	
Yellow Time (s)		3.8			3.9			3.2			3.1	
All-Red Time (s)		1.7			1.7			2.5			2.6	
Lost Time Adjust (s)		-2.0			-2.0			-2.0			-2.0	
Total Lost Time (s)		3.5			3.6			3.7			3.7	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)		4.5			4.5			2.0			2.0	
Minimum Gap (s)		3.0			3.0			3.0			3.0	
Time Before Reduce (s)		10.0			10.0			0.0			0.0	
Time To Reduce (s)		10.0			10.0			0.0			0.0	
Recall Mode		C-Max			C-Max			None			None	
Walk Time (s)		4.0			4.0			4.0			4.0	
Flash Dont Walk (s)		16.0			17.0			19.0			19.0	
Pedestrian Calls (#/hr)		0			0			0			0	
Act Effct Green (s)		71.0			70.9			11.8			11.8	
Actuated g/C Ratio		0.79			0.79			0.13			0.13	
v/c Ratio		0.15			0.15			0.45			0.23	
Control Delay		1.7			2.0			39.0			35.6	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		1.7			2.0			39.0			35.6	
LOS		A			A			D			D	
Approach Delay		1.7			2.0			39.0			35.6	
Approach LOS		A			A			D			D	

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 32 (36%), Referenced to phase 2:EBT and 6:WBT, Start of Green			
Natural Cycle: 60			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.45			
Intersection Signal Delay: 11.5		Intersection LOS: B	
Intersection Capacity Utilization 30.4%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 6: 5th St & Market St

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	13	402	7	18	345	22	11	63	30	26	67	7
Future Volume (vph)	13	402	7	18	345	22	11	63	30	26	67	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	0		0	100		0
Storage Lanes	0		0	0		0	0		0	1		0
Taper Length (ft)	100			100			100			100		
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.997			0.992			0.961			0.985	
Flt Protected		0.999			0.998			0.995		0.950		
Satd. Flow (prot)	0	3525	0	0	3504	0	0	1781	0	1770	1835	0
Flt Permitted		0.940			0.926			0.960		0.533		
Satd. Flow (perm)	0	3317	0	0	3251	0	0	1718	0	993	1835	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		35			35			25			25	
Link Distance (ft)		2009			900			828			513	
Travel Time (s)		39.1			17.5			22.6			14.0	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	14	447	8	20	383	24	12	70	33	29	74	8
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	469	0	0	427	0	0	115	0	29	82	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)		12			12			0			12	
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	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1		1	1		1	1		1	1	
Detector Template	Left			Left			Left					
Leading Detector (ft)	20	76		20	76		20	33		55	55	
Trailing Detector (ft)	0	70		0	70		0	-2		-5	-5	
Detector 1 Position(ft)	0	70		0	70		0	-2		-5	-5	
Detector 1 Size(ft)	20	6		20	6		20	35		60	60	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Detector Phase	2	2		6	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		7.0	7.0		7.0	7.0	
Minimum Split (s)	15.6	15.6		15.4	15.4		12.9	12.9		13.0	13.0	
Total Split (s)	60.0	60.0		60.0	60.0		30.0	30.0		30.0	30.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Split (%)	66.7%	66.7%		66.7%	66.7%		33.3%	33.3%		33.3%	33.3%	
Maximum Green (s)	54.4	54.4		54.6	54.6		24.1	24.1		24.0	24.0	
Yellow Time (s)	4.1	4.1		3.6	3.6		3.1	3.1		3.2	3.2	
All-Red Time (s)	1.5	1.5		1.8	1.8		2.8	2.8		2.8	2.8	
Lost Time Adjust (s)		-2.0			-2.0			-2.0		-2.0	-2.0	
Total Lost Time (s)		3.6			3.4			3.9		4.0	4.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		2.0	2.0		2.0	2.0	
Recall Mode	C-Max	C-Max		C-Max	C-Max		None	None		None	None	
Act Effct Green (s)		73.2			73.3			12.6		12.6	12.6	
Actuated g/C Ratio		0.81			0.81			0.14		0.14	0.14	
v/c Ratio		0.17			0.16			0.48		0.21	0.32	
Control Delay		3.3			2.9			41.6		36.6	37.3	
Queue Delay		0.0			0.0			0.0		0.0	0.0	
Total Delay		3.3			2.9			41.6		36.6	37.3	
LOS		A			A			D		D	D	
Approach Delay		3.3			2.9			41.6			37.1	
Approach LOS		A			A			D			D	

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 78 (87%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green			
Natural Cycle: 40			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.48			
Intersection Signal Delay: 10.4		Intersection LOS: B	
Intersection Capacity Utilization 42.7%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 9: 10th St & Market St

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	577	189	426	567	0	0	0	0	97	686	18
Future Volume (vph)	0	577	189	426	567	0	0	0	0	97	686	18
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	150		0	0		0	0		0
Storage Lanes	0		0	1		0	0		0	0		0
Taper Length (ft)	100			100			100			100		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	0.95	0.95	0.95
Ped Bike Factor		1.00									1.00	
Frt		0.963									0.997	
Flt Protected				0.950							0.994	
Satd. Flow (prot)	0	3396	0	1770	3539	0	0	0	0	0	3506	0
Flt Permitted				0.155							0.994	
Satd. Flow (perm)	0	3396	0	289	3539	0	0	0	0	0	3506	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		35			35			35			35	
Link Distance (ft)		1473			369			549			1165	
Travel Time (s)		28.7			7.2			10.7			22.7	
Confl. Peds. (#/hr)			1	1						1		1
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	641	210	473	630	0	0	0	0	108	762	20
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	851	0	473	630	0	0	0	0	0	890	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)		12			12			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	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors		1		1	1					1	1	
Detector Template										Left		
Leading Detector (ft)		206		40	206					20	40	
Trailing Detector (ft)		200		0	200					0	0	
Detector 1 Position(ft)		200		0	200					0	0	
Detector 1 Size(ft)		6		40	6					20	40	
Detector 1 Type		Cl+Ex		Cl+Ex	Cl+Ex					Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)		0.0		0.0	0.0					0.0	0.0	
Detector 1 Queue (s)		0.0		0.0	0.0					0.0	0.0	
Detector 1 Delay (s)		0.0		15.0	0.0					0.0	5.0	
Turn Type		NA		pm+pt	NA					Perm	NA	
Protected Phases		2		1	6						4	
Permitted Phases				6						4		
Detector Phase		2		1	6					4	4	
Switch Phase												
Minimum Initial (s)		10.0		7.0	8.0					7.0	7.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Split (s)		17.1		12.1	13.3					23.7	23.7	
Total Split (s)		32.0		28.0	60.0					30.0	30.0	
Total Split (%)		35.6%		31.1%	66.7%					33.3%	33.3%	
Maximum Green (s)		26.9		22.9	54.7					24.3	24.3	
Yellow Time (s)		3.8		3.0	4.0					3.8	3.8	
All-Red Time (s)		1.3		2.1	1.3					1.9	1.9	
Lost Time Adjust (s)		-2.0		-2.0	-2.0						-2.0	
Total Lost Time (s)		3.1		3.1	3.3						3.7	
Lead/Lag		Lead		Lag								
Lead-Lag Optimize?		Yes		Yes								
Vehicle Extension (s)		6.0		2.0	6.0					5.0	5.0	
Minimum Gap (s)		2.5		3.0	2.5					2.5	2.5	
Time Before Reduce (s)		10.0		0.0	10.0					0.0	0.0	
Time To Reduce (s)		15.0		0.0	15.0					10.0	10.0	
Recall Mode		C-Max		None	C-Max					None	None	
Walk Time (s)		4.0			4.0					4.0	4.0	
Flash Dont Walk (s)		8.0			4.0					14.0	14.0	
Pedestrian Calls (#/hr)		0			0					0	0	
Act Effct Green (s)		29.0		57.0	56.8						26.2	
Actuated g/C Ratio		0.32		0.63	0.63						0.29	
v/c Ratio		0.78		0.80	0.28						0.87	
Control Delay		36.9		26.0	1.3						27.7	
Queue Delay		0.0		52.8	0.2						0.0	
Total Delay		36.9		78.8	1.5						27.7	
LOS		D		E	A						C	
Approach Delay		36.9			34.7						27.7	
Approach LOS		D			C						C	

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 58 (64%), Referenced to phase 2:EBT and 6:WBTL, Start of Green			
Natural Cycle: 65			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.87			
Intersection Signal Delay: 33.2		Intersection LOS: C	
Intersection Capacity Utilization 78.0%		ICU Level of Service D	
Analysis Period (min) 15			

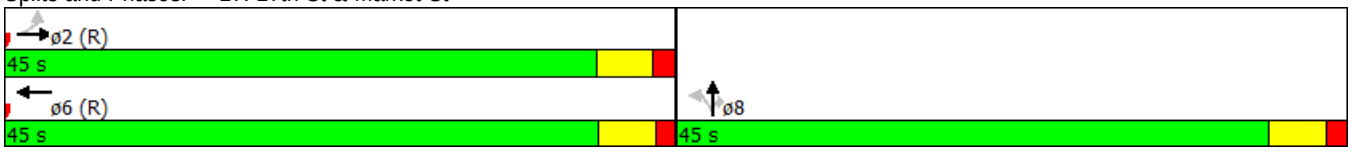
Splits and Phases: 14: 16th St & Market St

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	21	667	0	0	880	43	128	917	514	0	0	0
Future Volume (vph)	21	667	0	0	880	43	128	917	514	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	0.95	1.00	1.00	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00
Ped Bike Factor					1.00		1.00		0.99			
Frt					0.993				0.850			
Flt Protected		0.998					0.950					
Satd. Flow (prot)	0	3532	0	0	3512	0	1770	3539	1583	0	0	0
Flt Permitted		0.905					0.950					
Satd. Flow (perm)	0	3203	0	0	3512	0	1767	3539	1562	0	0	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		35			35			35			35	
Link Distance (ft)		369			1854			597			1164	
Travel Time (s)		7.2			36.1			11.6			22.7	
Confl. Peds. (#/hr)	1					1	1		1			
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	23	741	0	0	978	48	142	1019	571	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	764	0	0	1026	0	142	1019	571	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			0			12			12	
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	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	0			0		1	1	1			
Detector Template	Left											
Leading Detector (ft)	20	0			0		40	40	40			
Trailing Detector (ft)	0	0			0		0	0	0			
Detector 1 Position(ft)	0	0			0		0	0	0			
Detector 1 Size(ft)	20	6			6		40	40	40			
Detector 1 Type	Cl+Ex	Cl+Ex			Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex			
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0			0.0		0.0	0.0	0.0			
Detector 1 Queue (s)	0.0	0.0			0.0		0.0	0.0	0.0			
Detector 1 Delay (s)	0.0	0.0			0.0		0.0	0.0	15.0			
Turn Type	Perm	NA			NA		Perm	NA	Perm			
Protected Phases		2			6			8				
Permitted Phases	2						8		8			
Detector Phase	2	2			6		8	8	8			
Switch Phase												
Minimum Initial (s)	10.0	10.0			10.0		7.0	7.0	7.0			
Minimum Split (s)	21.4	21.4			21.2		26.4	26.4	26.4			
Total Split (s)	45.0	45.0			45.0		45.0	45.0	45.0			
Total Split (%)	50.0%	50.0%			50.0%		50.0%	50.0%	50.0%			

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Maximum Green (s)	39.6	39.6			39.8		39.6	39.6	39.6			
Yellow Time (s)	3.8	3.8			3.8		3.9	3.9	3.9			
All-Red Time (s)	1.6	1.6			1.4		1.5	1.5	1.5			
Lost Time Adjust (s)		-2.0			-2.0		-2.0	-2.0	-2.0			
Total Lost Time (s)		3.4			3.2		3.4	3.4	3.4			
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	0.2	0.2			0.2		2.0	2.0	2.0			
Recall Mode	C-Max	C-Max			C-Max		None	None	None			
Walk Time (s)	4.0	4.0			4.0		4.0	4.0	4.0			
Flash Dont Walk (s)	12.0	12.0			12.0		17.0	17.0	17.0			
Pedestrian Calls (#/hr)	0	0			0		0	0	0			
Act Effct Green (s)		44.8			45.0		38.4	38.4	38.4			
Actuated g/C Ratio		0.50			0.50		0.43	0.43	0.43			
v/c Ratio		0.48			0.58		0.19	0.67	0.86			
Control Delay		2.0			22.2		15.8	22.9	36.9			
Queue Delay		0.1			0.0		0.0	0.0	0.0			
Total Delay		2.1			22.2		15.8	22.9	36.9			
LOS		A			C		B	C	D			
Approach Delay		2.1			22.2			27.0				
Approach LOS		A			C			C				

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 55 (61%), Referenced to phase 2:EBTL and 6:WBT, Start of Green			
Natural Cycle: 50			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.86			
Intersection Signal Delay: 20.2		Intersection LOS: C	
Intersection Capacity Utilization 65.6%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 17: 17th St & Market St

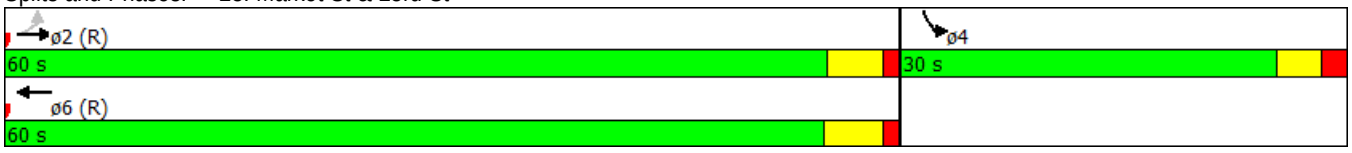


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	45	1061	918	105	231	76
Future Volume (vph)	45	1061	918	105	231	76
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	0.95	0.95	0.95	1.00	1.00
Ped Bike Factor					1.00	
Frt			0.985		0.967	
Flt Protected		0.998			0.964	
Satd. Flow (prot)	0	3532	3486	0	1730	0
Flt Permitted		0.852			0.964	
Satd. Flow (perm)	0	3015	3486	0	1730	0
Right Turn on Red				No		No
Satd. Flow (RTOR)						
Link Speed (mph)		35	35		35	
Link Distance (ft)		993	944		1214	
Travel Time (s)		19.3	18.4		23.6	
Confl. Peds. (#/hr)						1
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	50	1179	1020	117	257	84
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	1229	1137	0	341	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		0	0		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	15	9
Number of Detectors	1	1	1		1	
Detector Template	Left					
Leading Detector (ft)	20	76	81		68	
Trailing Detector (ft)	0	70	75		-2	
Detector 1 Position(ft)	0	70	75		-2	
Detector 1 Size(ft)	20	6	6		70	
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		10.0	
Turn Type	Perm	NA	NA		Prot	
Protected Phases		2	6		4	
Permitted Phases	2					
Detector Phase	2	2	6		4	
Switch Phase						
Minimum Initial (s)	10.0	10.0	10.0		7.0	
Minimum Split (s)	14.9	14.9	15.1		15.8	
Total Split (s)	60.0	60.0	60.0		30.0	
Total Split (%)	66.7%	66.7%	66.7%		33.3%	

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Maximum Green (s)	55.1	55.1	54.9		25.2	
Yellow Time (s)	3.7	3.7	3.9		3.0	
All-Red Time (s)	1.2	1.2	1.2		1.8	
Lost Time Adjust (s)		-2.0	-2.0		-2.0	
Total Lost Time (s)		2.9	3.1		2.8	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0		2.0	
Recall Mode	C-Max	C-Max	C-Max		None	
Walk Time (s)					4.0	
Flash Dont Walk (s)					7.0	
Pedestrian Calls (#/hr)					0	
Act Effct Green (s)		61.2	61.0		23.1	
Actuated g/C Ratio		0.68	0.68		0.26	
v/c Ratio		0.60	0.48		0.77	
Control Delay		8.7	6.1		42.5	
Queue Delay		0.0	0.0		0.0	
Total Delay		8.7	6.1		42.5	
LOS		A	A		D	
Approach Delay		8.7	6.1		42.5	
Approach LOS		A	A		D	

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 28 (31%), Referenced to phase 2:EBTL and 6:WBT, Start of Green			
Natural Cycle: 45			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.77			
Intersection Signal Delay: 11.9		Intersection LOS: B	
Intersection Capacity Utilization 86.5%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 23: Market St & 23rd St



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	1246	107	79	988	115	55
Future Volume (vph)	1246	107	79	988	115	55
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	0.95	0.95	0.95	1.00	1.00
Ped Bike Factor					1.00	
Frt	0.988				0.956	
Flt Protected				0.996	0.967	
Satd. Flow (prot)	3497	0	0	3525	1714	0
Flt Permitted				0.691	0.967	
Satd. Flow (perm)	3497	0	0	2446	1714	0
Right Turn on Red		No				No
Satd. Flow (RTOR)						
Link Speed (mph)	35			35	25	
Link Distance (ft)	944			866	959	
Travel Time (s)	18.4			16.9	26.2	
Confl. Peds. (#/hr)						1
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	1384	119	88	1098	128	61
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1503	0	0	1186	189	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	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)		9	15		15	9
Number of Detectors	1		1	1	1	
Detector Template			Left			
Leading Detector (ft)	76		20	76	40	
Trailing Detector (ft)	70		0	70	0	
Detector 1 Position(ft)	70		0	70	0	
Detector 1 Size(ft)	6		20	6	40	
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	5.0	
Turn Type	NA		Perm	NA	Prot	
Protected Phases	2			6	8	
Permitted Phases			6			
Detector Phase	2		6	6	8	
Switch Phase						
Minimum Initial (s)	9.0		8.0	8.0	7.0	
Minimum Split (s)	14.4		12.8	12.8	20.3	
Total Split (s)	67.0		67.0	67.0	23.0	
Total Split (%)	74.4%		74.4%	74.4%	25.6%	

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Maximum Green (s)	61.6		62.2	62.2	17.7	
Yellow Time (s)	3.8		3.8	3.8	3.0	
All-Red Time (s)	1.6		1.0	1.0	2.3	
Lost Time Adjust (s)	-2.0			-2.0	-2.0	
Total Lost Time (s)	3.4			2.8	3.3	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0		3.0	3.0	2.0	
Recall Mode	C-Max		C-Max	C-Max	None	
Walk Time (s)					4.0	
Flash Dont Walk (s)					11.0	
Pedestrian Calls (#/hr)					0	
Act Effct Green (s)	67.5			68.1	15.8	
Actuated g/C Ratio	0.75			0.76	0.18	
v/c Ratio	0.57			0.64	0.63	
Control Delay	4.1			7.7	43.6	
Queue Delay	0.0			0.0	0.0	
Total Delay	4.1			7.7	43.6	
LOS	A			A	D	
Approach Delay	4.1			7.7	43.6	
Approach LOS	A			A	D	

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 24 (27%), Referenced to phase 2:EBT and 6:WBTL, Start of Green			
Natural Cycle: 60			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.64			
Intersection Signal Delay: 8.2		Intersection LOS: A	
Intersection Capacity Utilization 87.3%		ICU Level of Service E	
Analysis Period (min) 15			

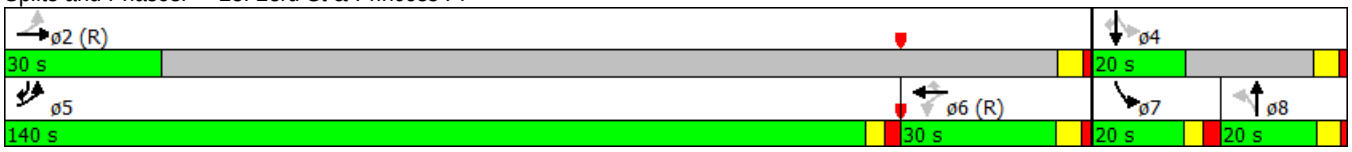
Splits and Phases: 25: Forest Hills Dr & Market St

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	321	368	105	53	374	243	178	252	72	87	654	437
Future Volume (vph)	321	368	105	53	374	243	178	252	72	87	654	437
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	275		0	160		100	50		0	180		160
Storage Lanes	1		0	1		1	1		0	1		1
Taper Length (ft)	100			100			100			100		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.967				0.850		0.967				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1801	0	1770	1863	1583	1770	1801	0	1770	1863	1583
Flt Permitted	0.133			0.469			0.237			0.197		
Satd. Flow (perm)	248	1801	0	874	1863	1583	441	1801	0	367	1863	1583
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		35			35			35			35	
Link Distance (ft)		1312			1183			857			783	
Travel Time (s)		25.6			23.0			16.7			15.3	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	357	409	117	59	416	270	198	280	80	97	727	486
Shared Lane Traffic (%)												
Lane Group Flow (vph)	357	526	0	59	416	270	198	360	0	97	727	486
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)		12			12			12			12	
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	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	pm+pt	NA		Perm	NA	Perm	Perm	NA		pm+pt	NA	pm+ov
Protected Phases	5	2			6			8		7	4	5
Permitted Phases	2			6		6	8			4		4
Minimum Split (s)	12.4	15.4		15.8	15.8	15.8	12.1	12.1		12.8	12.5	12.4
Total Split (s)	140.0	30.0		30.0	30.0	30.0	20.0	20.0		20.0	20.0	140.0
Total Split (%)	66.7%	14.3%		14.3%	14.3%	14.3%	9.5%	9.5%		9.5%	9.5%	66.7%
Maximum Green (s)	134.6	24.6		24.2	24.2	24.2	14.9	14.9		14.2	14.5	134.6
Yellow Time (s)	3.0	3.8		4.0	4.0	4.0	3.8	3.8		3.0	4.0	3.0
All-Red Time (s)	2.4	1.6		1.8	1.8	1.8	1.3	1.3		2.8	1.5	2.4
Lost Time Adjust (s)	-2.0	-2.0		-2.0	-2.0	-2.0	-2.0	-2.0		-2.0	-2.0	-2.0
Total Lost Time (s)	3.4	3.4		3.8	3.8	3.8	3.1	3.1		3.8	3.5	3.4
Lead/Lag	Lead			Lag	Lag	Lag	Lag	Lag		Lead		Lead
Lead-Lag Optimize?	Yes			Yes	Yes	Yes	Yes	Yes		Yes		Yes
Act Effct Green (s)	166.6	166.6		26.2	26.2	26.2	16.9	16.9		36.2	36.5	176.6
Actuated g/C Ratio	0.79	0.79		0.12	0.12	0.12	0.08	0.08		0.17	0.17	0.84
v/c Ratio	0.30	0.37		0.54	1.79	1.37	5.66	2.50		0.57	2.25	0.37
Control Delay	9.5	7.2		105.7	417.0	256.0	2168.2	725.1		89.6	604.6	4.7
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	9.5	7.2		105.7	417.0	256.0	2168.2	725.1		89.6	604.6	4.7

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
LOS	A	A		F	F	F	F	F		F	F	A
Approach Delay		8.1			334.0			1237.1			343.9	
Approach LOS		A			F			F			F	

Intersection Summary	
Area Type:	Other
Cycle Length: 210	
Actuated Cycle Length: 210	
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green	
Natural Cycle: 75	
Control Type: Pretimed	
Maximum v/c Ratio: 5.66	
Intersection Signal Delay: 399.6	Intersection LOS: F
Intersection Capacity Utilization 95.1%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 28: 23rd St & Princess Pl



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	115	2044	437	509	2193	80	441	94	686	127	98	98
Future Volume (vph)	115	2044	437	509	2193	80	441	94	686	127	98	98
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	125		0	600		0	0		0	0		0
Storage Lanes	1		0	1		0	0		1	1		0
Taper Length (ft)	100			100			100			100		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.974			0.995				0.850		0.925	
Flt Protected	0.950			0.950				0.960		0.950		
Satd. Flow (prot)	1770	3447	0	1770	3522	0	0	1788	1583	1770	1723	0
Flt Permitted	0.069			0.065				0.482		0.087		
Satd. Flow (perm)	129	3447	0	121	3522	0	0	898	1583	162	1723	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		40			40			35			25	
Link Distance (ft)		2438			3526			759			597	
Travel Time (s)		41.6			60.1			14.8			16.3	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	128	2271	486	566	2437	89	490	104	762	141	109	109
Shared Lane Traffic (%)												
Lane Group Flow (vph)	128	2757	0	566	2526	0	0	594	762	141	218	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane		Yes			Yes							
Headway 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
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	1	1	1	1	
Detector Template							Left					
Leading Detector (ft)	60	256		60	256		20	35	60	35	55	
Trailing Detector (ft)	0	80		0	80		0	-5	0	-5	-5	
Detector 1 Position(ft)	0	80		0	80		0	-5	0	-5	-5	
Detector 1 Size(ft)	60	6		60	6		20	40	60	40	60	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		15.0	0.0		0.0	3.0	15.0	3.0	15.0	
Detector 2 Position(ft)		250			250							
Detector 2 Size(ft)		6			6							
Detector 2 Type		Cl+Ex			Cl+Ex							
Detector 2 Channel												
Detector 2 Extend (s)		1.3			1.3							
Turn Type	Perm	NA		pm+pt	NA		Perm	NA	pm+ov	Perm	NA	
Protected Phases		2		1	6			8	1		4	
Permitted Phases	2			6			8		8	4		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	2	2		1	6		8	8	1	4	4	
Switch Phase												
Minimum Initial (s)	10.0	10.0		7.0	10.0		7.0	7.0	7.0	7.0	7.0	
Minimum Split (s)	16.0	16.0		12.3	15.8		12.8	12.8	12.3	13.1	13.1	
Total Split (s)	62.0	62.0		40.0	102.0		50.0	50.0	40.0	50.0	50.0	
Total Split (%)	40.8%	40.8%		26.3%	67.1%		32.9%	32.9%	26.3%	32.9%	32.9%	
Maximum Green (s)	56.0	56.0		34.7	96.2		44.2	44.2	34.7	43.9	43.9	
Yellow Time (s)	4.2	4.2		3.0	4.2		3.8	3.8	3.0	3.6	3.6	
All-Red Time (s)	1.8	1.8		2.3	1.6		2.0	2.0	2.3	2.5	2.5	
Lost Time Adjust (s)	-2.0	-2.0		-2.0	-2.0			-2.0	-2.0	-2.0	-2.0	
Total Lost Time (s)	4.0	4.0		3.3	3.8			3.8	3.3	4.1	4.1	
Lead/Lag	Lag	Lag		Lead					Lead			
Lead-Lag Optimize?	Yes	Yes		Yes					Yes			
Vehicle Extension (s)	3.0	3.0		1.0	3.0		1.0	1.0	1.0	1.0	1.0	
Recall Mode	C-Max	C-Max		None	C-Max		None	None	None	None	None	
Act Effct Green (s)	58.0	58.0		98.7	98.2			46.2	86.7	45.9	45.9	
Actuated g/C Ratio	0.38	0.38		0.65	0.65			0.30	0.57	0.30	0.30	
v/c Ratio	2.61	2.10		1.19	1.11			2.18	0.84	2.94	0.42	
Control Delay	801.9	521.7		140.5	82.6			570.6	37.6	945.0	45.4	
Queue Delay	0.0	0.0		0.0	0.0			0.0	0.0	0.0	0.0	
Total Delay	801.9	521.7		140.5	82.6			570.6	37.6	945.0	45.4	
LOS	F	F		F	F			F	D	F	D	
Approach Delay		534.1			93.2			271.1			398.8	
Approach LOS		F			F			F			F	

Intersection Summary

Area Type: Other
Cycle Length: 152
Actuated Cycle Length: 152
Offset: 5 (3%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 2.94
Intersection Signal Delay: 304.2 Intersection LOS: F
Intersection Capacity Utilization 152.6% ICU Level of Service H
Analysis Period (min) 15

Splits and Phases: 33: Covil Ave/Montgomery Ave & Market St

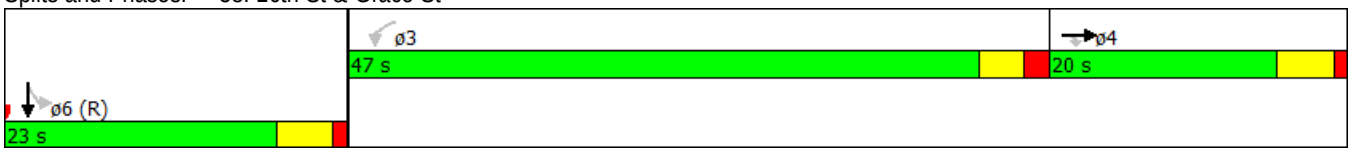
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	60	61	476	0	0	0	0	0	100	158	0
Future Volume (vph)	0	60	61	476	0	0	0	0	0	100	158	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		150	0		0	0		0	0		0
Storage Lanes	0		1	1		0	0		0	0		0
Taper Length (ft)	100			100			100			100		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00
Frt			0.850									
Flt Protected				0.950							0.981	
Satd. Flow (prot)	0	1863	1583	1770	0	0	0	0	0	0	3472	0
Flt Permitted				0.090							0.981	
Satd. Flow (perm)	0	1863	1583	168	0	0	0	0	0	0	3472	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		35			35			35			35	
Link Distance (ft)		511			350			1165			463	
Travel Time (s)		10.0			6.8			22.7			9.0	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	67	68	529	0	0	0	0	0	111	176	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	67	68	529	0	0	0	0	0	0	287	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)		12			12			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	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors		1	1	0						1	1	
Detector Template										Left		
Leading Detector (ft)		40	40	0						20	40	
Trailing Detector (ft)		0	0	0						0	0	
Detector 1 Position(ft)		0	0	0						0	0	
Detector 1 Size(ft)		40	40	20						20	40	
Detector 1 Type		Cl+Ex	Cl+Ex	Cl+Ex						Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)		0.0	0.0	0.0						0.0	0.0	
Detector 1 Queue (s)		0.0	0.0	0.0						0.0	0.0	
Detector 1 Delay (s)		0.0	15.0	0.0						0.0	0.0	
Turn Type		NA	Perm	Perm						Perm	NA	
Protected Phases		4									6	
Permitted Phases			4	3						6		
Detector Phase		4	4	3						6	6	
Switch Phase												
Minimum Initial (s)		7.0	7.0	7.0						7.0	7.0	
Minimum Split (s)		11.8	11.8	11.8						11.8	11.8	
Total Split (s)		20.0	20.0	47.0						23.0	23.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Split (%)		22.2%	22.2%	52.2%						25.6%	25.6%	
Maximum Green (s)		15.2	15.2	42.2						18.2	18.2	
Yellow Time (s)		3.8	3.8	3.0						3.8	3.8	
All-Red Time (s)		1.0	1.0	1.8						1.0	1.0	
Lost Time Adjust (s)		-2.0	-2.0	-2.0							-2.0	
Total Lost Time (s)		2.8	2.8	2.8							2.8	
Lead/Lag		Lag	Lag	Lead								
Lead-Lag Optimize?		Yes	Yes	Yes								
Vehicle Extension (s)		3.0	3.0	3.0						3.0	3.0	
Recall Mode		None	None	Max						C-Max	C-Max	
Act Effct Green (s)		11.5	11.5	44.2							28.3	
Actuated g/C Ratio		0.13	0.13	0.49							0.31	
v/c Ratio		0.28	0.34	6.45							0.26	
Control Delay		37.8	39.7	2477.8							25.5	
Queue Delay		0.0	0.0	0.0							0.0	
Total Delay		37.8	39.7	2477.8							25.5	
LOS		D	D	F							C	
Approach Delay		38.7									25.5	
Approach LOS		D									C	

Intersection Summary

Area Type: Other
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 60 (67%), Referenced to phase 6:SBTL, Start of Green
Natural Cycle: 40
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 6.45
Intersection Signal Delay: 1391.5 Intersection LOS: F
Intersection Capacity Utilization 66.0% ICU Level of Service C
Analysis Period (min) 15

Splits and Phases: 38: 16th St & Grace St

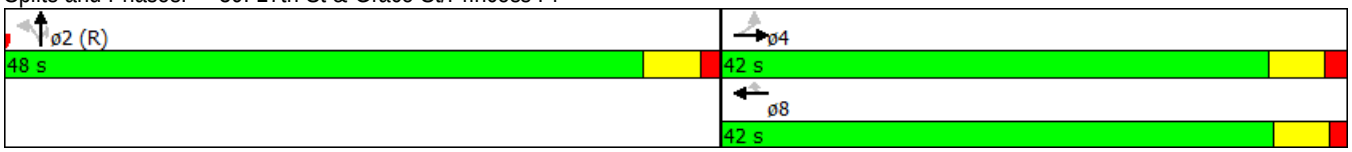


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	174	0	0	552	170	8	204	811	0	0	0
Future Volume (vph)	0	174	0	0	552	170	8	204	811	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		225	0		0	0		0
Storage Lanes	0		0	0		1	0		1	0		0
Taper Length (ft)	100			100			100			100		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt						0.850			0.850			
Flt Protected								0.998				
Satd. Flow (prot)	0	1863	0	0	1863	1583	0	1859	1583	0	0	0
Flt Permitted								0.998				
Satd. Flow (perm)	0	1863	0	0	1863	1583	0	1859	1583	0	0	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		35			35			35			35	
Link Distance (ft)		350			720			1164			324	
Travel Time (s)		6.8			14.0			22.7			6.3	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	193	0	0	613	189	9	227	901	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	193	0	0	613	189	0	236	901	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			-12			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway 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
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1			1	0	1	1	1			
Detector Template	Left						Left					
Leading Detector (ft)	20	40			40	0	20	40	40			
Trailing Detector (ft)	0	0			0	0	0	0	0			
Detector 1 Position(ft)	0	0			0	0	0	0	0			
Detector 1 Size(ft)	20	40			40	20	20	40	40			
Detector 1 Type	Cl+Ex	Cl+Ex			Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex			
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0			0.0	0.0	0.0	0.0	0.0			
Detector 1 Queue (s)	0.0	0.0			0.0	0.0	0.0	0.0	0.0			
Detector 1 Delay (s)	0.0	3.0			0.0	0.0	0.0	0.0	0.0			
Turn Type		NA			NA	Perm	Perm	NA	Perm			
Protected Phases		4			8			2				
Permitted Phases	4					8	2		2			
Detector Phase	4	4			8	8	2	2	2			
Switch Phase												
Minimum Initial (s)	7.0	7.0			7.0	7.0	7.0	7.0	7.0			
Minimum Split (s)	12.4	12.4			12.0	12.0	12.2	12.2	12.2			
Total Split (s)	42.0	42.0			42.0	42.0	48.0	48.0	48.0			

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Split (%)	46.7%	46.7%			46.7%	46.7%	53.3%	53.3%	53.3%			
Maximum Green (s)	36.6	36.6			37.0	37.0	42.8	42.8	42.8			
Yellow Time (s)	3.8	3.8			3.7	3.7	3.8	3.8	3.8			
All-Red Time (s)	1.6	1.6			1.3	1.3	1.4	1.4	1.4			
Lost Time Adjust (s)		-2.0			-2.0	-2.0		-2.0	-2.0			
Total Lost Time (s)		3.4			3.0	3.0		3.2	3.2			
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0			2.0	2.0	2.0	2.0	2.0			
Recall Mode	None	None			Max	Max	C-Max	C-Max	C-Max			
Act Effct Green (s)		38.6			39.0	39.0		44.8	44.8			
Actuated g/C Ratio		0.43			0.43	0.43		0.50	0.50			
v/c Ratio		0.24			0.76	0.28		0.26	1.14			
Control Delay		12.3			29.0	17.8		6.0	98.2			
Queue Delay		0.0			0.0	0.0		0.0	0.0			
Total Delay		12.3			29.0	17.8		6.0	98.2			
LOS		B			C	B		A	F			
Approach Delay		12.3			26.4			79.0				
Approach LOS		B			C			E				

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 18 (20%), Referenced to phase 2:NBTL, Start of Green			
Natural Cycle: 80			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.14			
Intersection Signal Delay: 53.2		Intersection LOS: D	
Intersection Capacity Utilization 66.0%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 39: 17th St & Grace St/Princess Pl

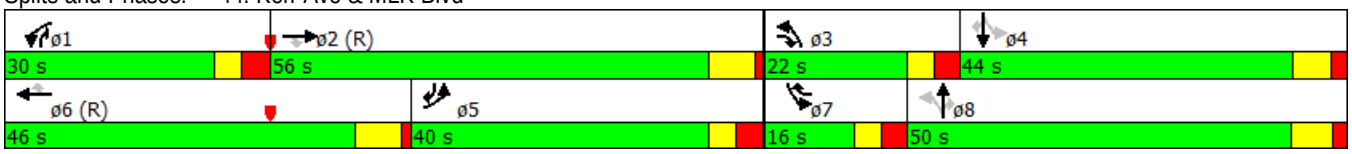


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	480	2166	444	234	1281	176	326	633	249	93	580	211
Future Volume (vph)	480	2166	444	234	1281	176	326	633	249	93	580	211
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	250		360	365		200	270		130	280		125
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (ft)	100			100			100			100		
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	5085	1583	1770	5085	1583	1770	3539	1583	1770	3539	1583
Flt Permitted	0.950			0.950			0.140			0.204		
Satd. Flow (perm)	1770	5085	1583	1770	5085	1583	261	3539	1583	380	3539	1583
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		55			55			45			45	
Link Distance (ft)		1466			1826			427			690	
Travel Time (s)		18.2			22.6			6.5			10.5	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	533	2407	493	260	1423	196	362	703	277	103	644	234
Shared Lane Traffic (%)												
Lane Group Flow (vph)	533	2407	493	260	1423	196	362	703	277	103	644	234
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)		28			28			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane								Yes				
Headway 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
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1	0	1	1	0	1	1	1	1	1	1
Detector Template												
Leading Detector (ft)	40	426	0	40	426	0	40	40	40	40	40	40
Trailing Detector (ft)	0	420	0	0	420	0	0	0	0	0	0	0
Detector 1 Position(ft)	0	420	0	0	420	0	0	0	0	0	0	0
Detector 1 Size(ft)	40	6	20	40	6	20	40	40	40	40	40	40
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	15.0	0.0	15.0	15.0	0.0	15.0
Turn Type	Prot	NA	pm+ov	Prot	NA	pm+ov	pm+pt	NA	pm+ov	pm+pt	NA	pm+ov
Protected Phases	5	2	3	1	6	7	3	8	1	7	4	5
Permitted Phases			2			6	8		8	4		4
Detector Phase	5	2	3	1	6	7	3	8	1	7	4	5
Switch Phase												
Minimum Initial (s)	7.0	14.0	7.0	7.0	14.0	7.0	7.0	12.0	7.0	7.0	12.0	7.0
Minimum Split (s)	13.3	20.3	12.9	13.3	20.3	12.9	12.9	18.5	13.3	12.9	18.3	13.3
Total Split (s)	40.0	56.0	22.0	30.0	46.0	16.0	22.0	50.0	30.0	16.0	44.0	40.0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Split (%)	26.3%	36.8%	14.5%	19.7%	30.3%	10.5%	14.5%	32.9%	19.7%	10.5%	28.9%	26.3%
Maximum Green (s)	33.7	49.7	16.1	23.7	39.7	10.1	16.1	43.5	23.7	10.1	37.7	33.7
Yellow Time (s)	3.0	5.2	3.0	3.0	5.2	3.0	3.0	4.6	3.0	3.0	4.3	3.0
All-Red Time (s)	3.3	1.1	2.9	3.3	1.1	2.9	2.9	1.9	3.3	2.9	2.0	3.3
Lost Time Adjust (s)	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	4.3	4.3	3.9	4.3	4.3	3.9	3.9	4.5	4.3	3.9	4.3	4.3
Lead/Lag	Lag	Lag	Lead	Lead	Lead	Lead	Lead	Lag	Lead	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	2.0	6.0	2.0	2.0	6.0	2.0	2.0	6.0	2.0	2.0	6.0	2.0
Minimum Gap (s)	3.0	3.5	3.0	3.0	3.5	3.0	3.0	3.5	3.0	3.0	3.5	3.0
Time Before Reduce (s)	0.0	15.0	0.0	0.0	15.0	0.0	0.0	15.0	0.0	0.0	15.0	0.0
Time To Reduce (s)	0.0	50.0	0.0	0.0	50.0	0.0	0.0	30.0	0.0	0.0	30.0	0.0
Recall Mode	None	C-Max	None	None	C-Max	None	None	None	None	None	None	None
Act Effct Green (s)	35.7	55.1	77.5	25.5	44.9	56.8	58.9	42.9	72.9	48.4	36.5	72.2
Actuated g/C Ratio	0.23	0.36	0.51	0.17	0.30	0.37	0.39	0.28	0.48	0.32	0.24	0.48
v/c Ratio	1.28	1.31	0.61	0.88	0.95	0.33	1.29	0.70	0.36	0.46	0.76	0.31
Control Delay	190.7	180.8	31.5	89.8	65.8	19.2	171.5	39.4	26.5	36.7	59.8	14.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	190.7	180.8	31.5	89.8	65.8	19.2	171.5	39.4	26.5	36.7	59.8	14.6
LOS	F	F	C	F	E	B	F	D	C	D	E	B
Approach Delay		160.9			64.3			72.4			46.6	
Approach LOS		F			E			E			D	

Intersection Summary			
Area Type:	Other		
Cycle Length: 152			
Actuated Cycle Length: 152			
Offset: 105 (69%), Referenced to phase 2:EBT and 6:WBT, Start of Green			
Natural Cycle: 130			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.31			
Intersection Signal Delay: 106.9		Intersection LOS: F	
Intersection Capacity Utilization 103.0%		ICU Level of Service G	
Analysis Period (min) 15			

Splits and Phases: 44: Kerr Ave & MLK Blvd

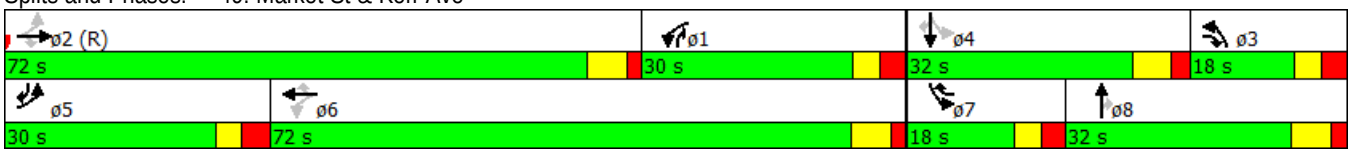


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	363	1585	431	436	1412	225	298	384	176	231	470	260
Future Volume (vph)	363	1585	431	436	1412	225	298	384	176	231	470	260
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	70		0	225		0	0		0	420		375
Storage Lanes	1		1	1		1	2		1	1		1
Taper Length (ft)	70			180			100			100		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	0.97	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	3433	1863	1583	1770	1863	1583
Flt Permitted	0.095			0.095			0.950			0.301		
Satd. Flow (perm)	177	3539	1583	177	3539	1583	3433	1863	1583	561	1863	1583
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		40			40			35			45	
Link Distance (ft)		905			1376			407			2922	
Travel Time (s)		15.4			23.5			7.9			44.3	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	403	1761	479	484	1569	250	331	427	196	257	522	289
Shared Lane Traffic (%)												
Lane Group Flow (vph)	403	1761	479	484	1569	250	331	427	196	257	522	289
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)		12			12			24			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane		Yes			Yes						Yes	
Headway 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
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1	0	1	1	0	1	1	1	1	1	1
Detector Template												
Leading Detector (ft)	40	306	0	40	306	0	40	40	40	35	40	40
Trailing Detector (ft)	0	300	0	0	300	0	0	0	0	-5	0	0
Detector 1 Position(ft)	0	300	0	0	300	0	0	0	0	-5	0	0
Detector 1 Size(ft)	40	6	20	40	6	20	40	40	40	40	40	40
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	10.0	0.0	0.0	10.0	0.0	0.0	3.0	0.0	15.0	10.0	0.0	15.0
Turn Type	pm+pt	NA	pm+ov	pm+pt	NA	pm+ov	Prot	NA	pm+ov	pm+pt	NA	pm+ov
Protected Phases	5	2	3	1	6	7	3	8	1	7	4	5
Permitted Phases	2		2	6		6			8	4		4
Detector Phase	5	2	3	1	6	7	3	8	1	7	4	5
Switch Phase												
Minimum Initial (s)	7.0	12.0	7.0	7.0	12.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Minimum Split (s)	13.2	18.2	13.1	13.1	18.2	12.8	13.1	13.5	13.1	12.8	13.5	13.2
Total Split (s)	30.0	72.0	18.0	30.0	72.0	18.0	18.0	32.0	30.0	18.0	32.0	30.0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Split (%)	19.7%	47.4%	11.8%	19.7%	47.4%	11.8%	11.8%	21.1%	19.7%	11.8%	21.1%	19.7%
Maximum Green (s)	23.8	65.8	11.9	23.9	65.8	12.2	11.9	25.5	23.9	12.2	25.5	23.8
Yellow Time (s)	3.0	4.5	3.0	3.0	4.5	3.0	3.0	4.5	3.0	3.0	4.5	3.0
All-Red Time (s)	3.2	1.7	3.1	3.1	1.7	2.8	3.1	2.0	3.1	2.8	2.0	3.2
Lost Time Adjust (s)	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	4.2	4.2	4.1	4.1	4.2	3.8	4.1	4.5	4.1	3.8	4.5	4.2
Lead/Lag	Lead	Lead	Lag	Lag	Lag	Lead	Lag	Lag	Lag	Lead	Lead	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	2.0	5.0	1.0	2.0	4.5	2.0	1.0	2.0	2.0	2.0	2.0	2.0
Minimum Gap (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Time Before Reduce (s)	0.0	15.0	0.0	0.0	15.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Time To Reduce (s)	0.0	30.0	0.0	0.0	30.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Recall Mode	None	C-Max	None	None	Max	None	None	None	None	None	None	None
Act Effct Green (s)	67.8	67.8	85.9	67.9	67.8	86.2	13.9	27.5	53.8	28.2	27.5	53.6
Actuated g/C Ratio	0.45	0.45	0.57	0.45	0.45	0.57	0.09	0.18	0.35	0.19	0.18	0.35
v/c Ratio	1.15	1.12	0.54	1.38	0.99	0.28	1.06	1.27	0.35	1.18	1.55	0.52
Control Delay	132.6	88.4	23.2	231.7	62.9	18.0	130.6	190.2	25.6	157.3	295.1	40.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	132.6	88.4	23.2	231.7	62.9	18.0	130.6	190.2	25.6	157.3	295.1	40.8
LOS	F	F	C	F	E	B	F	F	C	F	F	D
Approach Delay		83.3			93.5			135.7			193.1	
Approach LOS		F			F			F			F	

Intersection Summary			
Area Type:	Other		
Cycle Length: 152			
Actuated Cycle Length: 152			
Offset: 70 (46%), Referenced to phase 2:EBTL, Start of Green			
Natural Cycle: 150			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.55			
Intersection Signal Delay: 110.7		Intersection LOS: F	
Intersection Capacity Utilization 115.3%		ICU Level of Service H	
Analysis Period (min) 15			

Splits and Phases: 49: Market St & Kerr Ave



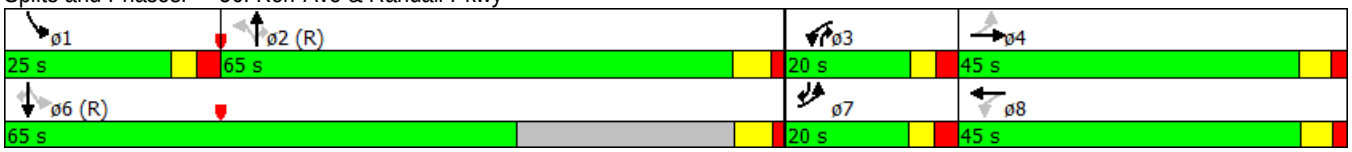
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	332	757	78	318	806	219	50	646	338	268	763	332
Future Volume (vph)	332	757	78	318	806	219	50	646	338	268	763	332
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	200		0	90		150	150		160
Storage Lanes	1		0	1		0	1		1	1		1
Taper Length (ft)	100			100			100			100		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.986			0.968				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3490	0	1770	3426	0	1770	1863	1583	1770	1863	1583
Flt Permitted	0.097			0.097			0.162			0.062		
Satd. Flow (perm)	181	3490	0	181	3426	0	302	1863	1583	115	1863	1583
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		35			35			45			45	
Link Distance (ft)		892			741			556			3064	
Travel Time (s)		17.4			14.4			8.4			46.4	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	369	841	87	353	896	243	56	718	376	298	848	369
Shared Lane Traffic (%)												
Lane Group Flow (vph)	369	928	0	353	1139	0	56	718	376	298	848	369
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)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane								Yes			Yes	
Headway 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
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA	pm+ov	pm+pt	NA	pm+ov
Protected Phases	7	4		3	8			2	3	1	6	7
Permitted Phases	4			8			2		2	6		6
Minimum Split (s)	12.8	12.8		12.6	12.6		18.1	18.1	12.6	12.9	17.9	12.8
Total Split (s)	20.0	45.0		20.0	45.0		65.0	65.0	20.0	25.0	65.0	20.0
Total Split (%)	12.9%	29.0%		12.9%	29.0%		41.9%	41.9%	12.9%	16.1%	41.9%	12.9%
Maximum Green (s)	14.2	39.2		14.4	39.4		58.9	58.9	14.4	19.1	59.1	14.2
Yellow Time (s)	3.0	3.8		3.0	3.8		4.5	4.5	3.0	3.0	4.5	3.0
All-Red Time (s)	2.8	2.0		2.6	1.8		1.6	1.6	2.6	2.9	1.4	2.8
Lost Time Adjust (s)	-2.0	-2.0		-2.0	-2.0		-2.0	-2.0	-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	3.8	3.8		3.6	3.6		4.1	4.1	3.6	3.9	3.9	3.8
Lead/Lag	Lead	Lag		Lead	Lag		Lag	Lag	Lead	Lead		Lead
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes	Yes	Yes		Yes
Minimum Gap (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Time Before Reduce (s)	0.0	0.0		0.0	0.0		10.0	10.0	0.0	0.0	10.0	0.0
Time To Reduce (s)	0.0	0.0		0.0	0.0		25.0	25.0	0.0	0.0	25.0	0.0
Act Effct Green (s)	57.4	41.2		57.8	41.4		60.9	60.9	81.4	86.1	86.1	106.2
Actuated g/C Ratio	0.37	0.27		0.37	0.27		0.39	0.39	0.53	0.56	0.56	0.69
v/c Ratio	1.58	1.00		1.50	1.24		0.47	0.98	0.45	1.03	0.82	0.34

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay	313.7	85.9		279.8	165.5		51.3	75.3	25.1	107.2	36.3	11.1
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	313.7	85.9		279.8	165.5		51.3	75.3	25.1	107.2	36.3	11.1
LOS	F	F		F	F		D	E	C	F	D	B
Approach Delay		150.7			192.5			57.7			44.1	
Approach LOS		F			F			E			D	

Intersection Summary

Area Type: Other
Cycle Length: 155
Actuated Cycle Length: 155
Offset: 25 (16%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 110
Control Type: Pretimed
Maximum v/c Ratio: 1.58
Intersection Signal Delay: 112.9 Intersection LOS: F
Intersection Capacity Utilization 111.2% ICU Level of Service H
Analysis Period (min) 15

Splits and Phases: 56: Kerr Ave & Randall Pkwy



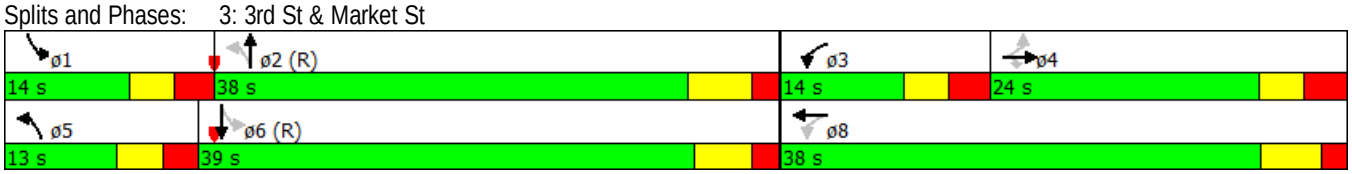
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	13	30	13	65	74	90	58	516	86	59	251	69
Future Volume (vph)	13	30	13	65	74	90	58	516	86	59	251	69
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	125		0	200		0	150		0	200		0
Storage Lanes	1		1	1		0	1		0	1		0
Taper Length (ft)	100			100			100			100		
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	0.95
Ped Bike Factor	1.00		0.99	1.00	0.99		1.00	1.00		1.00	1.00	
Frt			0.850		0.918			0.978			0.968	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1863	1583	1770	1697	0	1770	3450	0	1770	3410	0
Flt Permitted	0.643			0.503			0.531			0.353		
Satd. Flow (perm)	1196	1863	1562	936	1697	0	988	3450	0	657	3410	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		25			35			35			35	
Link Distance (ft)		656			820			581			760	
Travel Time (s)		17.9			16.0			11.3			14.8	
Confl. Peds. (#/hr)	1		1	1		1	1		1	1		1
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	14	33	14	72	82	100	64	573	96	66	279	77
Shared Lane Traffic (%)												
Lane Group Flow (vph)	14	33	14	72	182	0	64	669	0	66	356	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)		12			12			12			12	
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	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1	1	1	1		1	0		1	0	
Detector Template			Right									
Leading Detector (ft)	40	40	20	65	40		57	0		50	0	
Trailing Detector (ft)	0	0	0	50	0		-3	0		-10	0	
Detector 1 Position(ft)	0	0	0	50	0		-3	0		-10	0	
Detector 1 Size(ft)	40	40	20	15	40		60	6		60	0	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	3.0	0.0	0.0	0.0	0.0		10.0	0.0		10.0	0.0	
Turn Type	Perm	NA	Perm	pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4		3	8		5	2		1	6	
Permitted Phases	4		4	8			2			6		
Detector Phase	4	4	4	3	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	7.0	7.0	7.0	7.0	7.0		7.0	10.0		7.0	10.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Split (s)	24.0	24.0	24.0	12.8	21.9		12.5	24.2		12.6	25.8	
Total Split (s)	24.0	24.0	24.0	14.0	38.0		13.0	38.0		14.0	39.0	
Total Split (%)	26.7%	26.7%	26.7%	15.6%	42.2%		14.4%	42.2%		15.6%	43.3%	
Maximum Green (s)	18.0	18.0	18.0	8.2	32.1		7.5	31.8		8.4	33.2	
Yellow Time (s)	3.0	3.0	3.0	3.0	4.1		3.1	4.2		3.0	3.8	
All-Red Time (s)	3.0	3.0	3.0	2.8	1.8		2.4	2.0		2.6	2.0	
Lost Time Adjust (s)	-2.0	-2.0	-2.0	-2.0	-2.0		-2.0	-2.0		-2.0	-2.0	
Total Lost Time (s)	4.0	4.0	4.0	3.8	3.9		3.5	4.2		3.6	3.8	
Lead/Lag	Lag	Lag	Lag	Lead			Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes			Yes	Yes		Yes	Yes	
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0		1.0	0.2		1.0	0.2	
Recall Mode	None	None	None	None	None		None	C-Max		None	C-Max	
Walk Time (s)	4.0	4.0	4.0		4.0			4.0			4.0	
Flash Dont Walk (s)	14.0	14.0	14.0		12.0			14.0			16.0	
Pedestrian Calls (#/hr)	0	0	0		0			0			0	
Act Effct Green (s)	9.5	9.5	9.5	18.6	18.5		61.2	53.3		61.2	53.8	
Actuated g/C Ratio	0.11	0.11	0.11	0.21	0.21		0.68	0.59		0.68	0.60	
v/c Ratio	0.11	0.17	0.08	0.25	0.52		0.09	0.33		0.12	0.17	
Control Delay	38.6	38.9	37.6	17.1	23.9		5.5	11.6		5.7	10.2	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	38.6	38.9	37.6	17.1	23.9		5.5	11.6		5.7	10.2	
LOS	D	D	D	B	C		A	B		A	B	
Approach Delay		38.5			22.0			11.0			9.5	
Approach LOS		D			C			B			A	

Intersection Summary

Area Type: Other
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 18 (20%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 80
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.52
Intersection Signal Delay: 13.6 Intersection LOS: B
Intersection Capacity Utilization 44.0% ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 3: 3rd St & Market St



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	192	10	0	290	36	0	73	38	0	36	7
Future Volume (vph)	0	192	10	0	290	36	0	73	38	0	36	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
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	0.95
Ped Bike Factor		1.00			1.00			0.99			1.00	
Frt		0.993			0.985			0.949			0.975	
Flt Protected												
Satd. Flow (prot)	0	1848	0	0	1832	0	0	3334	0	0	3438	0
Flt Permitted												
Satd. Flow (perm)	0	1848	0	0	1832	0	0	3334	0	0	3438	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		35			35			25			25	
Link Distance (ft)		820			2009			644			690	
Travel Time (s)		16.0			39.1			17.6			18.8	
Confl. Peds. (#/hr)			1			1			1			1
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	213	11	0	322	40	0	81	42	0	40	8
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	224	0	0	362	0	0	123	0	0	48	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)		12			12			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	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors		1			1			1			1	
Detector Template												
Leading Detector (ft)		206			206			40			40	
Trailing Detector (ft)		200			200			0			0	
Detector 1 Position(ft)		200			200			0			0	
Detector 1 Size(ft)		6			6			40			40	
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		NA			NA			NA			NA	
Protected Phases		2			6			8			4	
Permitted Phases												
Detector Phase		2			6			8			4	
Switch Phase												
Minimum Initial (s)		10.0			10.0			7.0			7.0	
Minimum Split (s)		25.5			26.6			28.7			28.7	
Total Split (s)		58.0			58.0			32.0			32.0	
Total Split (%)		64.4%			64.4%			35.6%			35.6%	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Maximum Green (s)		52.5			52.4			26.3			26.3	
Yellow Time (s)		3.8			3.9			3.2			3.1	
All-Red Time (s)		1.7			1.7			2.5			2.6	
Lost Time Adjust (s)		-2.0			-2.0			-2.0			-2.0	
Total Lost Time (s)		3.5			3.6			3.7			3.7	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)		4.5			4.5			2.0			2.0	
Minimum Gap (s)		3.0			3.0			3.0			3.0	
Time Before Reduce (s)		10.0			10.0			0.0			0.0	
Time To Reduce (s)		10.0			10.0			0.0			0.0	
Recall Mode		C-Max			C-Max			None			None	
Walk Time (s)		4.0			4.0			4.0			4.0	
Flash Dont Walk (s)		16.0			17.0			19.0			19.0	
Pedestrian Calls (#/hr)		0			0			0			0	
Act Effct Green (s)		72.7			72.6			10.1			10.1	
Actuated g/C Ratio		0.81			0.81			0.11			0.11	
v/c Ratio		0.15			0.25			0.33			0.12	
Control Delay		1.9			2.0			39.0			36.2	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		1.9			2.0			39.0			36.2	
LOS		A			A			D			D	
Approach Delay		1.9			2.0			39.0			36.2	
Approach LOS		A			A			D			D	

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 37 (41%), Referenced to phase 2:EBT and 6:WBT, Start of Green			
Natural Cycle: 60			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.33			
Intersection Signal Delay: 10.1		Intersection LOS: B	
Intersection Capacity Utilization 30.4%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 6: 5th St & Market St

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	7	182	9	38	326	15	12	67	26	18	51	4
Future Volume (vph)	7	182	9	38	326	15	12	67	26	18	51	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	200		0	200		0	0		0	100		0
Storage Lanes	1		0	1		0	0		0	1		0
Taper Length (ft)	100			100			100			100		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.993			0.993			0.966			0.990	
Flt Protected	0.950			0.950				0.994		0.950		
Satd. Flow (prot)	1770	1850	0	1770	1850	0	0	1789	0	1770	1844	0
Flt Permitted	0.525			0.625				0.960		0.531		
Satd. Flow (perm)	978	1850	0	1164	1850	0	0	1727	0	989	1844	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		35			35			25			25	
Link Distance (ft)		2009			900			828			513	
Travel Time (s)		39.1			17.5			22.6			14.0	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	8	202	10	42	362	17	13	74	29	20	57	4
Shared Lane Traffic (%)												
Lane Group Flow (vph)	8	212	0	42	379	0	0	116	0	20	61	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)		12			12			0			12	
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	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1		1	1		1	1		1	1	
Detector Template	Left			Left			Left					
Leading Detector (ft)	20	76		20	76		20	33		55	55	
Trailing Detector (ft)	0	70		0	70		0	-2		-5	-5	
Detector 1 Position(ft)	0	70		0	70		0	-2		-5	-5	
Detector 1 Size(ft)	20	6		20	6		20	35		60	60	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Detector Phase	2	2		6	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		7.0	7.0		7.0	7.0	
Minimum Split (s)	15.6	15.6		15.4	15.4		12.9	12.9		13.0	13.0	
Total Split (s)	60.0	60.0		60.0	60.0		30.0	30.0		30.0	30.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Split (%)	66.7%	66.7%		66.7%	66.7%		33.3%	33.3%		33.3%	33.3%	
Maximum Green (s)	54.4	54.4		54.6	54.6		24.1	24.1		24.0	24.0	
Yellow Time (s)	4.1	4.1		3.6	3.6		3.1	3.1		3.2	3.2	
All-Red Time (s)	1.5	1.5		1.8	1.8		2.8	2.8		2.8	2.8	
Lost Time Adjust (s)	-2.0	-2.0		-2.0	-2.0			-2.0		-2.0	-2.0	
Total Lost Time (s)	3.6	3.6		3.4	3.4			3.9		4.0	4.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		2.0	2.0		2.0	2.0	
Recall Mode	C-Max	C-Max		C-Max	C-Max		None	None		None	None	
Act Effct Green (s)	73.2	73.2		73.3	73.3			12.6		12.6	12.6	
Actuated g/C Ratio	0.81	0.81		0.81	0.81			0.14		0.14	0.14	
v/c Ratio	0.01	0.14		0.04	0.25			0.48		0.14	0.24	
Control Delay	3.1	3.6		0.5	0.6			41.7		34.8	35.5	
Queue Delay	0.0	0.0		0.0	0.0			0.0		0.0	0.0	
Total Delay	3.1	3.6		0.5	0.6			41.7		34.8	35.5	
LOS	A	A		A	A			D		C	D	
Approach Delay		3.6			0.6			41.7			35.3	
Approach LOS		A			A			D			D	

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 73 (81%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green			
Natural Cycle: 40			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.48			
Intersection Signal Delay: 10.4		Intersection LOS: B	
Intersection Capacity Utilization 48.8%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 9: 10th St & Market St

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	347	78	649	872	0	0	0	0	87	779	41
Future Volume (vph)	0	347	78	649	872	0	0	0	0	87	779	41
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	25		0	100		0	0		0	0		0
Storage Lanes	1		1	1		0	0		0	0		0
Taper Length (ft)	200			25			100			100		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95
Ped Bike Factor			0.99								1.00	
Frt			0.850								0.993	
Flt Protected				0.950							0.995	
Satd. Flow (prot)	0	1863	1583	1770	1863	0	0	0	0	0	3493	0
Flt Permitted				0.216							0.995	
Satd. Flow (perm)	0	1863	1561	402	1863	0	0	0	0	0	3492	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		35			35			35			35	
Link Distance (ft)		1473			369			549			1165	
Travel Time (s)		28.7			7.2			10.7			22.7	
Confl. Peds. (#/hr)			1	1						1		1
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	386	87	721	969	0	0	0	0	97	866	46
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	386	87	721	969	0	0	0	0	0	1009	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)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane					Yes							
Headway 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
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors		1	1	1	1					1	1	
Detector Template			Right							Left		
Leading Detector (ft)		206	20	40	206					20	40	
Trailing Detector (ft)		200	0	0	200					0	0	
Detector 1 Position(ft)		200	0	0	200					0	0	
Detector 1 Size(ft)		6	20	40	6					20	40	
Detector 1 Type		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex					Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)		0.0	0.0	0.0	0.0					0.0	0.0	
Detector 1 Queue (s)		0.0	0.0	0.0	0.0					0.0	0.0	
Detector 1 Delay (s)		0.0	0.0	15.0	0.0					0.0	5.0	
Turn Type		NA	Perm	pm+pt	NA					Perm	NA	
Protected Phases		2		1	6						4	
Permitted Phases			2	6						4		
Detector Phase		2	2	1	6					4	4	
Switch Phase												
Minimum Initial (s)		10.0	10.0	7.0	8.0					7.0	7.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Split (s)		17.1	17.1	12.1	13.3					23.7	23.7	
Total Split (s)		25.7	25.7	33.3	59.0					31.0	31.0	
Total Split (%)		28.6%	28.6%	37.0%	65.6%					34.4%	34.4%	
Maximum Green (s)		20.6	20.6	28.2	53.7					25.3	25.3	
Yellow Time (s)		3.8	3.8	3.0	4.0					3.8	3.8	
All-Red Time (s)		1.3	1.3	2.1	1.3					1.9	1.9	
Lost Time Adjust (s)		-2.0	-2.0	-2.0	-2.0						-2.0	
Total Lost Time (s)		3.1	3.1	3.1	3.3						3.7	
Lead/Lag		Lead	Lead	Lag								
Lead-Lag Optimize?		Yes	Yes	Yes								
Vehicle Extension (s)		6.0	6.0	2.0	6.0					5.0	5.0	
Minimum Gap (s)		2.5	2.5	3.0	2.5					2.5	2.5	
Time Before Reduce (s)		10.0	10.0	0.0	10.0					0.0	0.0	
Time To Reduce (s)		15.0	15.0	0.0	15.0					10.0	10.0	
Recall Mode		C-Max	C-Max	None	C-Max					None	None	
Walk Time (s)		4.0	4.0		4.0					4.0	4.0	
Flash Dont Walk (s)		8.0	8.0		4.0					14.0	14.0	
Pedestrian Calls (#/hr)		0	0		0					0	0	
Act Effct Green (s)		22.6	22.6	55.9	55.7						27.3	
Actuated g/C Ratio		0.25	0.25	0.62	0.62						0.30	
v/c Ratio		0.83	0.22	1.02	0.84						0.95	
Control Delay		41.9	22.5	38.6	12.2						34.3	
Queue Delay		0.0	0.0	33.8	48.7						0.0	
Total Delay		41.9	22.5	72.4	60.9						34.3	
LOS		D	C	E	E						C	
Approach Delay		38.3			65.8						34.3	
Approach LOS		D			E						C	

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 10 (11%), Referenced to phase 2:EBT and 6:WBTL, Start of Green			
Natural Cycle: 80			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.02			
Intersection Signal Delay: 51.7		Intersection LOS: D	
Intersection Capacity Utilization 133.9%		ICU Level of Service H	
Analysis Period (min) 15			

Splits and Phases: 14: 16th St & Market St

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	14	397	0	0	1267	43	252	690	357	0	0	0
Future Volume (vph)	14	397	0	0	1267	43	252	690	357	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	100		0	0		200	0		0	0		0
Storage Lanes	1		0	0		1	1		1	0		0
Taper Length (ft)	25			100			100			100		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	1.00	1.00
Ped Bike Factor						0.99	1.00		0.98			
Frt						0.850			0.850			
Flt Protected	0.950						0.950					
Satd. Flow (prot)	1770	1863	0	0	1863	1583	1770	3539	1583	0	0	0
Flt Permitted	0.066						0.950					
Satd. Flow (perm)	123	1863	0	0	1863	1562	1766	3539	1548	0	0	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		35			35			35			35	
Link Distance (ft)		369			1854			597			1164	
Travel Time (s)		7.2			36.1			11.6			22.7	
Confl. Peds. (#/hr)	1					1	1		1			
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	16	441	0	0	1408	48	280	767	397	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	16	441	0	0	1408	48	280	767	397	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane		Yes										
Headway 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
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	0			0	1	1	1	1			
Detector Template	Left					Right						
Leading Detector (ft)	20	0			0	20	40	40	40			
Trailing Detector (ft)	0	0			0	0	0	0	0			
Detector 1 Position(ft)	0	0			0	0	0	0	0			
Detector 1 Size(ft)	20	6			6	20	40	40	40			
Detector 1 Type	Cl+Ex	Cl+Ex			Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex			
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0			0.0	0.0	0.0	0.0	0.0			
Detector 1 Queue (s)	0.0	0.0			0.0	0.0	0.0	0.0	0.0			
Detector 1 Delay (s)	0.0	0.0			0.0	0.0	0.0	0.0	15.0			
Turn Type	Perm	NA			NA	Perm	Perm	NA	Perm			
Protected Phases		2			6			8				
Permitted Phases	2					6	8		8			
Detector Phase	2	2			6	6	8	8	8			
Switch Phase												
Minimum Initial (s)	10.0	10.0			10.0	10.0	7.0	7.0	7.0			

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Split (s)	21.4	21.4			21.2	21.2	26.4	26.4	26.4			
Total Split (s)	63.6	63.6			63.6	63.6	26.4	26.4	26.4			
Total Split (%)	70.7%	70.7%			70.7%	70.7%	29.3%	29.3%	29.3%			
Maximum Green (s)	58.2	58.2			58.4	58.4	21.0	21.0	21.0			
Yellow Time (s)	3.8	3.8			3.8	3.8	3.9	3.9	3.9			
All-Red Time (s)	1.6	1.6			1.4	1.4	1.5	1.5	1.5			
Lost Time Adjust (s)	-2.0	-2.0			-2.0	-2.0	-2.0	-2.0	-2.0			
Total Lost Time (s)	3.4	3.4			3.2	3.2	3.4	3.4	3.4			
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	0.2	0.2			0.2	0.2	2.0	2.0	2.0			
Recall Mode	C-Max	C-Max			C-Max	C-Max	None	None	None			
Walk Time (s)	4.0	4.0			4.0	4.0	4.0	4.0	4.0			
Flash Dont Walk (s)	12.0	12.0			12.0	12.0	17.0	17.0	17.0			
Pedestrian Calls (#/hr)	0	0			0	0	0	0	0			
Act Effct Green (s)	60.2	60.2			60.4	60.4	23.0	23.0	23.0			
Actuated g/C Ratio	0.67	0.67			0.67	0.67	0.26	0.26	0.26			
v/c Ratio	0.20	0.35			1.13	0.05	0.62	0.85	1.01			
Control Delay	6.9	3.4			71.9	4.4	36.7	42.3	82.2			
Queue Delay	0.0	2.6			0.6	0.0	0.0	0.0	0.0			
Total Delay	6.9	6.0			72.5	4.4	36.7	42.3	82.2			
LOS	A	A			E	A	D	D	F			
Approach Delay		6.0			70.3			52.2				
Approach LOS		A			E			D				

Intersection Summary

Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 11 (12%), Referenced to phase 2:EBTL and 6:WBT, Start of Green			
Natural Cycle: 100			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.13			
Intersection Signal Delay: 53.8		Intersection LOS: D	
Intersection Capacity Utilization 133.9%		ICU Level of Service H	
Analysis Period (min) 15			

Splits and Phases: 17: 17th St & Market St

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	66	724	1218	141	194	87
Future Volume (vph)	66	724	1218	141	194	87
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	200			0	0	0
Storage Lanes	1			0	1	0
Taper Length (ft)	100				100	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor					0.99	
Frt			0.986		0.958	
Flt Protected	0.950				0.967	
Satd. Flow (prot)	1770	1863	1837	0	1713	0
Flt Permitted	0.058				0.967	
Satd. Flow (perm)	108	1863	1837	0	1713	0
Right Turn on Red				No		No
Satd. Flow (RTOR)						
Link Speed (mph)		35	35		35	
Link Distance (ft)		993	944		1214	
Travel Time (s)		19.3	18.4		23.6	
Confl. Peds. (#/hr)						1
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	73	804	1353	157	216	97
Shared Lane Traffic (%)						
Lane Group Flow (vph)	73	804	1510	0	313	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		12	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	15	9
Number of Detectors	1	1	1		1	
Detector Template	Left					
Leading Detector (ft)	20	76	81		68	
Trailing Detector (ft)	0	70	75		-2	
Detector 1 Position(ft)	0	70	75		-2	
Detector 1 Size(ft)	20	6	6		70	
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		10.0	
Turn Type	Perm	NA	NA		Prot	
Protected Phases		2	6		4	
Permitted Phases	2					
Detector Phase	2	2	6		4	
Switch Phase						
Minimum Initial (s)	10.0	10.0	10.0		7.0	

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Minimum Split (s)	14.9	14.9	15.1		15.8	
Total Split (s)	71.4	71.4	71.4		18.6	
Total Split (%)	79.3%	79.3%	79.3%		20.7%	
Maximum Green (s)	66.5	66.5	66.3		13.8	
Yellow Time (s)	3.7	3.7	3.9		3.0	
All-Red Time (s)	1.2	1.2	1.2		1.8	
Lost Time Adjust (s)	-2.0	-2.0	-2.0		-2.0	
Total Lost Time (s)	2.9	2.9	3.1		2.8	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0		2.0	
Recall Mode	C-Max	C-Max	C-Max		None	
Walk Time (s)					4.0	
Flash Dont Walk (s)					7.0	
Pedestrian Calls (#/hr)					0	
Act Effct Green (s)	68.5	68.5	68.3		15.8	
Actuated g/C Ratio	0.76	0.76	0.76		0.18	
v/c Ratio	0.89	0.57	1.08		1.04	
Control Delay	78.4	1.5	56.9		102.1	
Queue Delay	0.0	0.0	0.0		0.0	
Total Delay	78.4	1.5	56.9		102.1	
LOS	E	A	E		F	
Approach Delay		7.9	56.9		102.1	
Approach LOS		A	E		F	

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 46 (51%), Referenced to phase 2:EBTL and 6:WBT, Start of Green			
Natural Cycle: 120			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.08			
Intersection Signal Delay: 46.2		Intersection LOS: D	
Intersection Capacity Utilization 95.4%		ICU Level of Service F	
Analysis Period (min) 15			

Splits and Phases: 23: Market St & 23rd St

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	806	72	48	1140	146	38
Future Volume (vph)	806	72	48	1140	146	38
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		0	200		0	0
Storage Lanes		0	1		1	0
Taper Length (ft)			100		100	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor					1.00	
Frt	0.989				0.972	
Flt Protected			0.950		0.962	
Satd. Flow (prot)	1842	0	1770	1863	1734	0
Flt Permitted			0.207		0.962	
Satd. Flow (perm)	1842	0	386	1863	1734	0
Right Turn on Red		No				No
Satd. Flow (RTOR)						
Link Speed (mph)	35			35	25	
Link Distance (ft)	944			866	959	
Travel Time (s)	18.4			16.9	26.2	
Confl. Peds. (#/hr)						1
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	896	80	53	1267	162	42
Shared Lane Traffic (%)						
Lane Group Flow (vph)	976	0	53	1267	204	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			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)		9	15		15	9
Number of Detectors	1		1	1	1	
Detector Template			Left			
Leading Detector (ft)	76		20	76	40	
Trailing Detector (ft)	70		0	70	0	
Detector 1 Position(ft)	70		0	70	0	
Detector 1 Size(ft)	6		20	6	40	
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	5.0	
Turn Type	NA		Perm	NA	Prot	
Protected Phases	2			6	8	
Permitted Phases			6			
Detector Phase	2		6	6	8	
Switch Phase						
Minimum Initial (s)	9.0		8.0	8.0	7.0	

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Minimum Split (s)	14.4		12.8	12.8	20.3	
Total Split (s)	69.7		69.7	69.7	20.3	
Total Split (%)	77.4%		77.4%	77.4%	22.6%	
Maximum Green (s)	64.3		64.9	64.9	15.0	
Yellow Time (s)	3.8		3.8	3.8	3.0	
All-Red Time (s)	1.6		1.0	1.0	2.3	
Lost Time Adjust (s)	-2.0		-2.0	-2.0	-2.0	
Total Lost Time (s)	3.4		2.8	2.8	3.3	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0		3.0	3.0	2.0	
Recall Mode	C-Max		C-Max	C-Max	None	
Walk Time (s)					4.0	
Flash Dont Walk (s)					11.0	
Pedestrian Calls (#/hr)					0	
Act Effct Green (s)	68.1		68.7	68.7	15.2	
Actuated g/C Ratio	0.76		0.76	0.76	0.17	
v/c Ratio	0.70		0.18	0.89	0.70	
Control Delay	4.0		5.0	18.9	48.1	
Queue Delay	0.0		0.0	20.5	0.0	
Total Delay	4.0		5.0	39.4	48.1	
LOS	A		A	D	D	
Approach Delay	4.0			38.0	48.1	
Approach LOS	A			D	D	

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 48 (53%), Referenced to phase 2:EBT and 6:WBTL, Start of Green			
Natural Cycle: 90			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.89			
Intersection Signal Delay: 25.6		Intersection LOS: C	
Intersection Capacity Utilization 77.2%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 25: Forest Hills Dr & Market St

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	77	1042	266	362	1591	49	252	207	337	54	86	20
Future Volume (vph)	77	1042	266	362	1591	49	252	207	337	54	86	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	125		0	600		0	0		0	0		0
Storage Lanes	1		0	1		1	0		1	1		0
Taper Length (ft)	100			100			100			100		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.969				0.850			0.850		0.972	
Flt Protected	0.950			0.950				0.973		0.950		
Satd. Flow (prot)	1770	1805	0	1770	1863	1583	0	1812	1583	1770	1811	0
Flt Permitted	0.045			0.044				0.676		0.115		
Satd. Flow (perm)	84	1805	0	82	1863	1583	0	1259	1583	214	1811	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		40			40			35			25	
Link Distance (ft)		2438			3526			759			597	
Travel Time (s)		41.6			60.1			14.8			16.3	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	86	1158	296	402	1768	54	280	230	374	60	96	22
Shared Lane Traffic (%)												
Lane Group Flow (vph)	86	1454	0	402	1768	54	0	510	374	60	118	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)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane					Yes							
Headway 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
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	1	1	1	1	
Detector Template						Right	Left					
Leading Detector (ft)	60	256		60	256	20	20	35	60	35	55	
Trailing Detector (ft)	0	80		0	80	0	0	-5	0	-5	-5	
Detector 1 Position(ft)	0	80		0	80	0	0	-5	0	-5	-5	
Detector 1 Size(ft)	60	6		60	6	20	20	40	60	40	60	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		15.0	0.0	0.0	0.0	3.0	15.0	3.0	15.0	
Detector 2 Position(ft)		250			250							
Detector 2 Size(ft)		6			6							
Detector 2 Type		Cl+Ex			Cl+Ex							
Detector 2 Channel												
Detector 2 Extend (s)		1.3			1.3							
Turn Type	Perm	NA		pm+pt	NA	Perm	Perm	NA	pm+ov	Perm	NA	
Protected Phases		2		1	6			8	1		4	
Permitted Phases	2			6		6	8		8	4		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	2	2		1	6	6	8	8	1	4	4	
Switch Phase												
Minimum Initial (s)	10.0	10.0		7.0	10.0	10.0	7.0	7.0	7.0	7.0	7.0	
Minimum Split (s)	16.0	16.0		12.3	15.8	15.8	12.8	12.8	12.3	13.1	13.1	
Total Split (s)	92.0	92.0		21.0	113.0	113.0	39.0	39.0	21.0	39.0	39.0	
Total Split (%)	60.5%	60.5%		13.8%	74.3%	74.3%	25.7%	25.7%	13.8%	25.7%	25.7%	
Maximum Green (s)	86.0	86.0		15.7	107.2	107.2	33.2	33.2	15.7	32.9	32.9	
Yellow Time (s)	4.2	4.2		3.0	4.2	4.2	3.8	3.8	3.0	3.6	3.6	
All-Red Time (s)	1.8	1.8		2.3	1.6	1.6	2.0	2.0	2.3	2.5	2.5	
Lost Time Adjust (s)	-2.0	-2.0		-2.0	-2.0	-2.0		-2.0	-2.0	-2.0	-2.0	
Total Lost Time (s)	4.0	4.0		3.3	3.8	3.8		3.8	3.3	4.1	4.1	
Lead/Lag	Lag	Lag		Lead					Lead			
Lead-Lag Optimize?	Yes	Yes		Yes					Yes			
Vehicle Extension (s)	3.0	3.0		1.0	3.0	3.0	1.0	1.0	1.0	1.0	1.0	
Recall Mode	C-Max	C-Max		None	C-Max	C-Max	None	None	None	None	None	
Act Effct Green (s)	88.0	88.0		109.7	109.2	109.2		35.2	56.7	34.9	34.9	
Actuated g/C Ratio	0.58	0.58		0.72	0.72	0.72		0.23	0.37	0.23	0.23	
v/c Ratio	1.79	1.39		1.58	1.32	0.05		1.75	0.63	1.22	0.28	
Control Delay	452.0	210.7		296.1	172.9	4.3		386.2	45.0	249.0	50.5	
Queue Delay	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0	0.0	
Total Delay	452.0	210.7		296.1	172.9	4.3		386.2	45.0	249.0	50.5	
LOS	F	F		F	F	A		F	D	F	D	
Approach Delay		224.2			191.1			241.8			117.4	
Approach LOS		F			F			F			F	

Intersection Summary

Area Type: Other
Cycle Length: 152
Actuated Cycle Length: 152
Offset: 18 (12%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 150
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.79
Intersection Signal Delay: 208.2 Intersection LOS: F
Intersection Capacity Utilization 136.2% ICU Level of Service H
Analysis Period (min) 15

Splits and Phases: 33: Covil Ave/Montgomery Ave & Market St

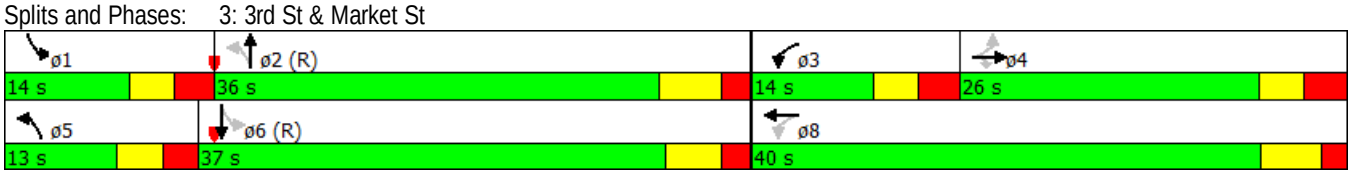
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	46	131	47	123	77	59	40	380	48	108	600	29
Future Volume (vph)	46	131	47	123	77	59	40	380	48	108	600	29
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	125		0	200		0	150		0	200		0
Storage Lanes	1		1	1		0	1		0	1		0
Taper Length (ft)	100			100			100			100		
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	0.95
Ped Bike Factor	1.00		0.99	1.00	0.99		1.00	1.00		1.00	1.00	
Frt			0.850		0.935			0.983			0.993	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1863	1583	1770	1731	0	1770	3470	0	1770	3511	0
Flt Permitted	0.660			0.414			0.346			0.407		
Satd. Flow (perm)	1228	1863	1562	770	1731	0	644	3470	0	757	3511	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		25			35			35			35	
Link Distance (ft)		656			820			581			760	
Travel Time (s)		17.9			16.0			11.3			14.8	
Confl. Peds. (#/hr)	1		1	1		1	1		1	1		1
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	51	146	52	137	86	66	44	422	53	120	667	32
Shared Lane Traffic (%)												
Lane Group Flow (vph)	51	146	52	137	152	0	44	475	0	120	699	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)		12			12			12			12	
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	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1	1	1	1		1	0		1	0	
Detector Template			Right									
Leading Detector (ft)	40	40	20	65	40		57	0		50	0	
Trailing Detector (ft)	0	0	0	50	0		-3	0		-10	0	
Detector 1 Position(ft)	0	0	0	50	0		-3	0		-10	0	
Detector 1 Size(ft)	40	40	20	15	40		60	6		60	0	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	3.0	0.0	0.0	0.0	0.0		10.0	0.0		10.0	0.0	
Turn Type	Perm	NA	Perm	pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4		3	8		5	2		1	6	
Permitted Phases	4		4	8			2			6		
Detector Phase	4	4	4	3	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	7.0	7.0	7.0	7.0	7.0		7.0	10.0		7.0	10.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Split (s)	24.0	24.0	24.0	12.8	21.9		12.5	24.2		12.6	25.8	
Total Split (s)	26.0	26.0	26.0	14.0	40.0		13.0	36.0		14.0	37.0	
Total Split (%)	28.9%	28.9%	28.9%	15.6%	44.4%		14.4%	40.0%		15.6%	41.1%	
Maximum Green (s)	20.0	20.0	20.0	8.2	34.1		7.5	29.8		8.4	31.2	
Yellow Time (s)	3.0	3.0	3.0	3.0	4.1		3.1	4.2		3.0	3.8	
All-Red Time (s)	3.0	3.0	3.0	2.8	1.8		2.4	2.0		2.6	2.0	
Lost Time Adjust (s)	-2.0	-2.0	-2.0	-2.0	-2.0		-2.0	-2.0		-2.0	-2.0	
Total Lost Time (s)	4.0	4.0	4.0	3.8	3.9		3.5	4.2		3.6	3.8	
Lead/Lag	Lag	Lag	Lag	Lead			Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes			Yes	Yes		Yes	Yes	
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0		1.0	0.2		1.0	0.2	
Recall Mode	None	None	None	None	None		None	C-Max		None	C-Max	
Walk Time (s)	4.0	4.0	4.0		4.0			4.0			4.0	
Flash Dont Walk (s)	14.0	14.0	14.0		12.0			14.0			16.0	
Pedestrian Calls (#/hr)	0	0	0		0			0			0	
Act Effct Green (s)	13.5	13.5	13.5	27.2	27.1		51.4	41.7		53.7	47.7	
Actuated g/C Ratio	0.15	0.15	0.15	0.30	0.30		0.57	0.46		0.60	0.53	
v/c Ratio	0.28	0.53	0.22	0.40	0.29		0.09	0.30		0.22	0.38	
Control Delay	36.5	41.5	34.5	13.7	12.0		8.6	16.5		9.1	15.1	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	36.5	41.5	34.5	13.7	12.0		8.6	16.5		9.1	15.1	
LOS	D	D	C	B	B		A	B		A	B	
Approach Delay		39.0			12.8			15.9			14.2	
Approach LOS		D			B			B			B	

Intersection Summary

Area Type: Other
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 74 (82%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 80
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.53
Intersection Signal Delay: 17.8 Intersection LOS: B
Intersection Capacity Utilization 50.7% ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 3: 3rd St & Market St



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	353	28	0	346	30	0	145	37	0	86	9
Future Volume (vph)	0	353	28	0	346	30	0	145	37	0	86	9
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
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	0.95
Ped Bike Factor		1.00			1.00			1.00			1.00	
Frt		0.990			0.989			0.970			0.986	
Flt Protected												
Satd. Flow (prot)	0	1842	0	0	1840	0	0	3418	0	0	3482	0
Flt Permitted												
Satd. Flow (perm)	0	1842	0	0	1840	0	0	3418	0	0	3482	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		35			35			25			25	
Link Distance (ft)		820			2009			644			690	
Travel Time (s)		16.0			39.1			17.6			18.8	
Confl. Peds. (#/hr)			1			1			1			1
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	392	31	0	384	33	0	161	41	0	96	10
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	423	0	0	417	0	0	202	0	0	106	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			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	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors		1			1			1			1	
Detector Template												
Leading Detector (ft)		206			206			40			40	
Trailing Detector (ft)		200			200			0			0	
Detector 1 Position(ft)		200			200			0			0	
Detector 1 Size(ft)		6			6			40			40	
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		NA			NA			NA			NA	
Protected Phases		2			6			8			4	
Permitted Phases												
Detector Phase		2			6			8			4	
Switch Phase												
Minimum Initial (s)		10.0			10.0			7.0			7.0	
Minimum Split (s)		25.5			26.6			28.7			28.7	
Total Split (s)		57.0			57.0			33.0			33.0	
Total Split (%)		63.3%			63.3%			36.7%			36.7%	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Maximum Green (s)		51.5			51.4			27.3			27.3	
Yellow Time (s)		3.8			3.9			3.2			3.1	
All-Red Time (s)		1.7			1.7			2.5			2.6	
Lost Time Adjust (s)		-2.0			-2.0			-2.0			-2.0	
Total Lost Time (s)		3.5			3.6			3.7			3.7	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)		4.5			4.5			2.0			2.0	
Minimum Gap (s)		3.0			3.0			3.0			3.0	
Time Before Reduce (s)		10.0			10.0			0.0			0.0	
Time To Reduce (s)		10.0			10.0			0.0			0.0	
Recall Mode		C-Max			C-Max			None			None	
Walk Time (s)		4.0			4.0			4.0			4.0	
Flash Dont Walk (s)		16.0			17.0			19.0			19.0	
Pedestrian Calls (#/hr)		0			0			0			0	
Act Effct Green (s)		71.0			70.9			11.8			11.8	
Actuated g/C Ratio		0.79			0.79			0.13			0.13	
v/c Ratio		0.29			0.29			0.45			0.23	
Control Delay		3.7			4.8			39.0			35.6	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		3.7			4.8			39.0			35.6	
LOS		A			A			D			D	
Approach Delay		3.7			4.8			39.0			35.6	
Approach LOS		A			A			D			D	

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 6 (7%), Referenced to phase 2:EBT and 6:WBT, Start of Green			
Natural Cycle: 60			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.45			
Intersection Signal Delay: 13.2		Intersection LOS: B	
Intersection Capacity Utilization 33.2%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 6: 5th St & Market St

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	13	402	7	18	345	22	11	63	30	26	67	7
Future Volume (vph)	13	402	7	18	345	22	11	63	30	26	67	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	200		0	200		0	0		0	100		0
Storage Lanes	1		0	1		0	0		0	1		0
Taper Length (ft)	100			100			100			100		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.997			0.991			0.961			0.985	
Flt Protected	0.950			0.950				0.995		0.950		
Satd. Flow (prot)	1770	1857	0	1770	1846	0	0	1781	0	1770	1835	0
Flt Permitted	0.508			0.481				0.960		0.533		
Satd. Flow (perm)	946	1857	0	896	1846	0	0	1718	0	993	1835	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		35			35			25			25	
Link Distance (ft)		2009			900			828			513	
Travel Time (s)		39.1			17.5			22.6			14.0	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	14	447	8	20	383	24	12	70	33	29	74	8
Shared Lane Traffic (%)												
Lane Group Flow (vph)	14	455	0	20	407	0	0	115	0	29	82	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)		12			12			0			12	
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	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1		1	1		1	1		1	1	
Detector Template	Left			Left			Left					
Leading Detector (ft)	20	76		20	76		20	33		55	55	
Trailing Detector (ft)	0	70		0	70		0	-2		-5	-5	
Detector 1 Position(ft)	0	70		0	70		0	-2		-5	-5	
Detector 1 Size(ft)	20	6		20	6		20	35		60	60	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Detector Phase	2	2		6	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		7.0	7.0		7.0	7.0	
Minimum Split (s)	15.6	15.6		15.4	15.4		12.9	12.9		13.0	13.0	
Total Split (s)	63.0	63.0		63.0	63.0		27.0	27.0		27.0	27.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Split (%)	70.0%	70.0%		70.0%	70.0%		30.0%	30.0%		30.0%	30.0%	
Maximum Green (s)	57.4	57.4		57.6	57.6		21.1	21.1		21.0	21.0	
Yellow Time (s)	4.1	4.1		3.6	3.6		3.1	3.1		3.2	3.2	
All-Red Time (s)	1.5	1.5		1.8	1.8		2.8	2.8		2.8	2.8	
Lost Time Adjust (s)	-2.0	-2.0		-2.0	-2.0			-2.0		-2.0	-2.0	
Total Lost Time (s)	3.6	3.6		3.4	3.4			3.9		4.0	4.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		2.0	2.0		2.0	2.0	
Recall Mode	C-Max	C-Max		C-Max	C-Max		None	None		None	None	
Act Effct Green (s)	73.2	73.2		73.3	73.3			12.6		12.6	12.6	
Actuated g/C Ratio	0.81	0.81		0.81	0.81			0.14		0.14	0.14	
v/c Ratio	0.02	0.30		0.03	0.27			0.48		0.21	0.32	
Control Delay	1.8	3.0		0.9	1.5			41.6		36.6	37.3	
Queue Delay	0.0	0.0		0.0	0.0			0.0		0.0	0.0	
Total Delay	1.8	3.0		0.9	1.5			41.6		36.6	37.3	
LOS	A	A		A	A			D		D	D	
Approach Delay		2.9			1.5			41.6			37.1	
Approach LOS		A			A			D			D	

Intersection Summary

Area Type: Other
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 39 (43%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 40
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.48
Intersection Signal Delay: 9.7 Intersection LOS: A
Intersection Capacity Utilization 40.7% ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 9: 10th St & Market St

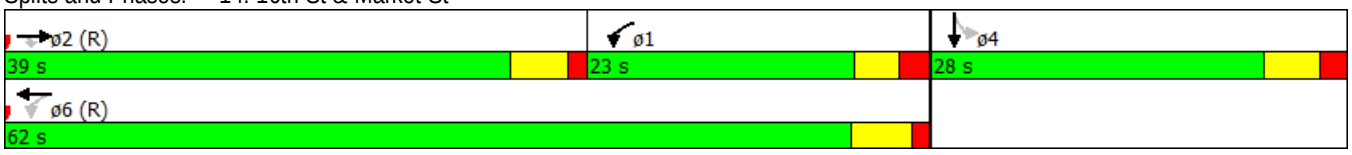
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	577	189	426	567	0	0	0	0	97	686	18
Future Volume (vph)	0	577	189	426	567	0	0	0	0	97	686	18
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	25		0	100		0	0		0	0		0
Storage Lanes	1		1	1		0	0		0	0		0
Taper Length (ft)	200			25			100			100		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95
Ped Bike Factor			0.99								1.00	
Frt			0.850								0.997	
Flt Protected				0.950							0.994	
Satd. Flow (prot)	0	1863	1583	1770	1863	0	0	0	0	0	3506	0
Flt Permitted				0.132							0.994	
Satd. Flow (perm)	0	1863	1561	246	1863	0	0	0	0	0	3505	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		35			35			35			35	
Link Distance (ft)		1473			369			549			1165	
Travel Time (s)		28.7			7.2			10.7			22.7	
Confl. Peds. (#/hr)			1	1						1		1
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	641	210	473	630	0	0	0	0	108	762	20
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	641	210	473	630	0	0	0	0	0	890	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)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane					Yes							
Headway 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
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors		1	1	1	1					1	1	
Detector Template			Right							Left		
Leading Detector (ft)		206	20	40	206					20	40	
Trailing Detector (ft)		200	0	0	200					0	0	
Detector 1 Position(ft)		200	0	0	200					0	0	
Detector 1 Size(ft)		6	20	40	6					20	40	
Detector 1 Type		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex					Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)		0.0	0.0	0.0	0.0					0.0	0.0	
Detector 1 Queue (s)		0.0	0.0	0.0	0.0					0.0	0.0	
Detector 1 Delay (s)		0.0	0.0	15.0	0.0					0.0	5.0	
Turn Type		NA	Perm	pm+pt	NA					Perm	NA	
Protected Phases		2		1	6						4	
Permitted Phases			2	6						4		
Detector Phase		2	2	1	6					4	4	
Switch Phase												
Minimum Initial (s)		10.0	10.0	7.0	8.0					7.0	7.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Split (s)		17.1	17.1	12.1	13.3					23.7	23.7	
Total Split (s)		39.0	39.0	23.0	62.0					28.0	28.0	
Total Split (%)		43.3%	43.3%	25.6%	68.9%					31.1%	31.1%	
Maximum Green (s)		33.9	33.9	17.9	56.7					22.3	22.3	
Yellow Time (s)		3.8	3.8	3.0	4.0					3.8	3.8	
All-Red Time (s)		1.3	1.3	2.1	1.3					1.9	1.9	
Lost Time Adjust (s)		-2.0	-2.0	-2.0	-2.0						-2.0	
Total Lost Time (s)		3.1	3.1	3.1	3.3						3.7	
Lead/Lag		Lead	Lead	Lag								
Lead-Lag Optimize?		Yes	Yes	Yes								
Vehicle Extension (s)		6.0	6.0	2.0	6.0					5.0	5.0	
Minimum Gap (s)		2.5	2.5	3.0	2.5					2.5	2.5	
Time Before Reduce (s)		10.0	10.0	0.0	10.0					0.0	0.0	
Time To Reduce (s)		15.0	15.0	0.0	15.0					10.0	10.0	
Recall Mode		C-Max	C-Max	None	C-Max					None	None	
Walk Time (s)		4.0	4.0		4.0					4.0	4.0	
Flash Dont Walk (s)		8.0	8.0		4.0					14.0	14.0	
Pedestrian Calls (#/hr)		0	0		0					0	0	
Act Effct Green (s)		35.9	35.9	58.9	58.7						24.3	
Actuated g/C Ratio		0.40	0.40	0.65	0.65						0.27	
v/c Ratio		0.86	0.34	0.95	0.52						0.94	
Control Delay		33.7	16.3	39.9	1.7						30.0	
Queue Delay		0.0	0.0	0.0	2.3						0.0	
Total Delay		33.7	16.3	39.9	4.0						30.0	
LOS		C	B	D	A						C	
Approach Delay		29.4			19.4						30.0	
Approach LOS		C			B						C	

Intersection Summary

Area Type: Other
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 64 (71%), Referenced to phase 2:EBT and 6:WBTL, Start of Green
Natural Cycle: 70
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.95
Intersection Signal Delay: 25.7 Intersection LOS: C
Intersection Capacity Utilization 90.0% ICU Level of Service E
Analysis Period (min) 15

Splits and Phases: 14: 16th St & Market St

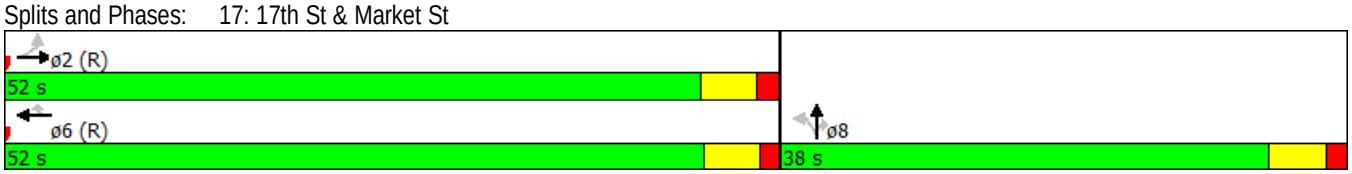


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	21	667	0	0	880	43	128	917	514	0	0	0
Future Volume (vph)	21	667	0	0	880	43	128	917	514	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	100		0	0		200	0		0	0		0
Storage Lanes	1		0	0		1	1		1	0		0
Taper Length (ft)	25			100			100			100		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	1.00	1.00
Ped Bike Factor						0.99	1.00		0.98			
Frt						0.850			0.850			
Flt Protected	0.950						0.950					
Satd. Flow (prot)	1770	1863	0	0	1863	1583	1770	3539	1583	0	0	0
Flt Permitted	0.082						0.950					
Satd. Flow (perm)	153	1863	0	0	1863	1562	1766	3539	1548	0	0	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		35			35			35			35	
Link Distance (ft)		369			1854			597			1164	
Travel Time (s)		7.2			36.1			11.6			22.7	
Confl. Peds. (#/hr)	1					1	1		1			
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	23	741	0	0	978	48	142	1019	571	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	23	741	0	0	978	48	142	1019	571	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane		Yes										
Headway 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
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	0			0	1	1	1	1			
Detector Template	Left					Right						
Leading Detector (ft)	20	0			0	20	40	40	40			
Trailing Detector (ft)	0	0			0	0	0	0	0			
Detector 1 Position(ft)	0	0			0	0	0	0	0			
Detector 1 Size(ft)	20	6			6	20	40	40	40			
Detector 1 Type	Cl+Ex	Cl+Ex			Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex			
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0			0.0	0.0	0.0	0.0	0.0			
Detector 1 Queue (s)	0.0	0.0			0.0	0.0	0.0	0.0	0.0			
Detector 1 Delay (s)	0.0	0.0			0.0	0.0	0.0	0.0	15.0			
Turn Type	Perm	NA			NA	Perm	Perm	NA	Perm			
Protected Phases		2			6			8				
Permitted Phases	2					6	8		8			
Detector Phase	2	2			6	6	8	8	8			
Switch Phase												
Minimum Initial (s)	10.0	10.0			10.0	10.0	7.0	7.0	7.0			

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Split (s)	21.4	21.4			21.2	21.2	26.4	26.4	26.4			
Total Split (s)	52.0	52.0			52.0	52.0	38.0	38.0	38.0			
Total Split (%)	57.8%	57.8%			57.8%	57.8%	42.2%	42.2%	42.2%			
Maximum Green (s)	46.6	46.6			46.8	46.8	32.6	32.6	32.6			
Yellow Time (s)	3.8	3.8			3.8	3.8	3.9	3.9	3.9			
All-Red Time (s)	1.6	1.6			1.4	1.4	1.5	1.5	1.5			
Lost Time Adjust (s)	-2.0	-2.0			-2.0	-2.0	-2.0	-2.0	-2.0			
Total Lost Time (s)	3.4	3.4			3.2	3.2	3.4	3.4	3.4			
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	0.2	0.2			0.2	0.2	2.0	2.0	2.0			
Recall Mode	C-Max	C-Max			C-Max	C-Max	None	None	None			
Walk Time (s)	4.0	4.0			4.0	4.0	4.0	4.0	4.0			
Flash Dont Walk (s)	12.0	12.0			12.0	12.0	17.0	17.0	17.0			
Pedestrian Calls (#/hr)	0	0			0	0	0	0	0			
Act Effct Green (s)	48.6	48.6			48.8	48.8	34.6	34.6	34.6			
Actuated g/C Ratio	0.54	0.54			0.54	0.54	0.38	0.38	0.38			
v/c Ratio	0.28	0.74			0.97	0.06	0.21	0.75	0.96			
Control Delay	7.6	6.6			28.0	7.7	19.6	28.2	57.3			
Queue Delay	0.0	0.1			4.6	0.0	0.1	0.0	0.0			
Total Delay	7.6	6.7			32.7	7.7	19.7	28.2	57.3			
LOS	A	A			C	A	B	C	E			
Approach Delay		6.7			31.5			37.1				
Approach LOS		A			C			D				

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 55 (61%), Referenced to phase 2:EBTL and 6:WBT, Start of Green			
Natural Cycle: 70			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.97			
Intersection Signal Delay: 28.9		Intersection LOS: C	
Intersection Capacity Utilization 90.0%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 17: 17th St & Market St



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	45	1061	918	105	231	76
Future Volume (vph)	45	1061	918	105	231	76
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	200			0	0	0
Storage Lanes	1			0	1	0
Taper Length (ft)	100				100	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor					0.99	
Frt			0.986		0.967	
Flt Protected	0.950				0.964	
Satd. Flow (prot)	1770	1863	1837	0	1726	0
Flt Permitted	0.090				0.964	
Satd. Flow (perm)	168	1863	1837	0	1726	0
Right Turn on Red				No		No
Satd. Flow (RTOR)						
Link Speed (mph)		35	35		35	
Link Distance (ft)		993	944		1214	
Travel Time (s)		19.3	18.4		23.6	
Confl. Peds. (#/hr)						1
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	50	1179	1020	117	257	84
Shared Lane Traffic (%)						
Lane Group Flow (vph)	50	1179	1137	0	341	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		12	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	15	9
Number of Detectors	1	1	1		1	
Detector Template	Left					
Leading Detector (ft)	20	76	81		68	
Trailing Detector (ft)	0	70	75		-2	
Detector 1 Position(ft)	0	70	75		-2	
Detector 1 Size(ft)	20	6	6		70	
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		10.0	
Turn Type	Perm	NA	NA		Prot	
Protected Phases		2	6		4	
Permitted Phases	2					
Detector Phase	2	2	6		4	
Switch Phase						
Minimum Initial (s)	10.0	10.0	10.0		7.0	

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Minimum Split (s)	14.9	14.9	15.1		15.8	
Total Split (s)	66.0	66.0	66.0		24.0	
Total Split (%)	73.3%	73.3%	73.3%		26.7%	
Maximum Green (s)	61.1	61.1	60.9		19.2	
Yellow Time (s)	3.7	3.7	3.9		3.0	
All-Red Time (s)	1.2	1.2	1.2		1.8	
Lost Time Adjust (s)	-2.0	-2.0	-2.0		-2.0	
Total Lost Time (s)	2.9	2.9	3.1		2.8	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0		2.0	
Recall Mode	C-Max	C-Max	C-Max		None	
Walk Time (s)					4.0	
Flash Dont Walk (s)					7.0	
Pedestrian Calls (#/hr)					0	
Act Effct Green (s)	63.8	63.8	63.6		20.5	
Actuated g/C Ratio	0.71	0.71	0.71		0.23	
v/c Ratio	0.42	0.89	0.88		0.87	
Control Delay	14.5	17.8	14.2		56.7	
Queue Delay	0.0	40.0	0.0		0.0	
Total Delay	14.5	57.8	14.2		56.7	
LOS	B	E	B		E	
Approach Delay		56.1	14.2		56.7	
Approach LOS		E	B		E	

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 87 (97%), Referenced to phase 2:EBTL and 6:WBT, Start of Green			
Natural Cycle: 65			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.89			
Intersection Signal Delay: 38.6		Intersection LOS: D	
Intersection Capacity Utilization 80.0%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 23: Market St & 23rd St

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	1246	107	79	988	115	55
Future Volume (vph)	1246	107	79	988	115	55
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		0	200		0	0
Storage Lanes		0	1		1	0
Taper Length (ft)			100		100	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor					0.99	
Frt	0.989				0.956	
Flt Protected			0.950		0.967	
Satd. Flow (prot)	1842	0	1770	1863	1709	0
Flt Permitted			0.058		0.967	
Satd. Flow (perm)	1842	0	108	1863	1709	0
Right Turn on Red		No				No
Satd. Flow (RTOR)						
Link Speed (mph)	35			35	25	
Link Distance (ft)	944			866	959	
Travel Time (s)	18.4			16.9	26.2	
Confl. Peds. (#/hr)						1
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	1384	119	88	1098	128	61
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1503	0	88	1098	189	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			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)		9	15		15	9
Number of Detectors	1		1	1	1	
Detector Template			Left			
Leading Detector (ft)	76		20	76	40	
Trailing Detector (ft)	70		0	70	0	
Detector 1 Position(ft)	70		0	70	0	
Detector 1 Size(ft)	6		20	6	40	
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	5.0	
Turn Type	NA		Perm	NA	Prot	
Protected Phases	2			6	8	
Permitted Phases			6			
Detector Phase	2		6	6	8	
Switch Phase						
Minimum Initial (s)	9.0		8.0	8.0	7.0	

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Minimum Split (s)	14.4		12.8	12.8	20.3	
Total Split (s)	69.7		69.7	69.7	20.3	
Total Split (%)	77.4%		77.4%	77.4%	22.6%	
Maximum Green (s)	64.3		64.9	64.9	15.0	
Yellow Time (s)	3.8		3.8	3.8	3.0	
All-Red Time (s)	1.6		1.0	1.0	2.3	
Lost Time Adjust (s)	-2.0		-2.0	-2.0	-2.0	
Total Lost Time (s)	3.4		2.8	2.8	3.3	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0		3.0	3.0	2.0	
Recall Mode	C-Max		C-Max	C-Max	None	
Walk Time (s)					4.0	
Flash Dont Walk (s)					11.0	
Pedestrian Calls (#/hr)					0	
Act Effct Green (s)	68.4		69.0	69.0	14.9	
Actuated g/C Ratio	0.76		0.77	0.77	0.17	
v/c Ratio	1.07		1.06	0.77	0.67	
Control Delay	54.2		141.0	11.3	47.0	
Queue Delay	0.0		0.0	0.0	0.0	
Total Delay	54.2		141.0	11.3	47.0	
LOS	D		F	B	D	
Approach Delay	54.2			20.9	47.0	
Approach LOS	D			C	D	

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 80 (89%), Referenced to phase 2:EBT and 6:WBTL, Start of Green			
Natural Cycle: 130			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.07			
Intersection Signal Delay: 40.0		Intersection LOS: D	
Intersection Capacity Utilization 88.6%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 25: Forest Hills Dr & Market St

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	115	2044	437	509	2193	80	441	94	686	127	98	98
Future Volume (vph)	115	2044	437	509	2193	80	441	94	686	127	98	98
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	125		0	600		0	0		0	0		0
Storage Lanes	1		0	1		1	0		1	1		0
Taper Length (ft)	100			100			100			100		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.974				0.850			0.850		0.925	
Flt Protected	0.950			0.950				0.960		0.950		
Satd. Flow (prot)	1770	1814	0	1770	1863	1583	0	1788	1583	1770	1723	0
Flt Permitted	0.062			0.058				0.523		0.099		
Satd. Flow (perm)	115	1814	0	108	1863	1583	0	974	1583	184	1723	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		40			40			35			25	
Link Distance (ft)		2438			3526			759			597	
Travel Time (s)		41.6			60.1			14.8			16.3	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	128	2271	486	566	2437	89	490	104	762	141	109	109
Shared Lane Traffic (%)												
Lane Group Flow (vph)	128	2757	0	566	2437	89	0	594	762	141	218	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane					Yes							
Headway 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
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	1	1	1	1	
Detector Template						Right	Left					
Leading Detector (ft)	60	256		60	256	20	20	35	60	35	55	
Trailing Detector (ft)	0	80		0	80	0	0	-5	0	-5	-5	
Detector 1 Position(ft)	0	80		0	80	0	0	-5	0	-5	-5	
Detector 1 Size(ft)	60	6		60	6	20	20	40	60	40	60	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		15.0	0.0	0.0	0.0	3.0	15.0	3.0	15.0	
Detector 2 Position(ft)		250			250							
Detector 2 Size(ft)		6			6							
Detector 2 Type		Cl+Ex			Cl+Ex							
Detector 2 Channel												
Detector 2 Extend (s)		1.3			1.3							
Turn Type	Perm	NA		pm+pt	NA	Perm	Perm	NA	pm+ov	Perm	NA	
Protected Phases		2		1	6			8	1		4	
Permitted Phases	2			6		6	8		8	4		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	2	2		1	6	6	8	8	1	4	4	
Switch Phase												
Minimum Initial (s)	10.0	10.0		7.0	10.0	10.0	7.0	7.0	7.0	7.0	7.0	
Minimum Split (s)	16.0	16.0		12.3	15.8	15.8	12.8	12.8	12.3	13.1	13.1	
Total Split (s)	69.0	69.0		23.0	92.0	92.0	60.0	60.0	23.0	60.0	60.0	
Total Split (%)	45.4%	45.4%		15.1%	60.5%	60.5%	39.5%	39.5%	15.1%	39.5%	39.5%	
Maximum Green (s)	63.0	63.0		17.7	86.2	86.2	54.2	54.2	17.7	53.9	53.9	
Yellow Time (s)	4.2	4.2		3.0	4.2	4.2	3.8	3.8	3.0	3.6	3.6	
All-Red Time (s)	1.8	1.8		2.3	1.6	1.6	2.0	2.0	2.3	2.5	2.5	
Lost Time Adjust (s)	-2.0	-2.0		-2.0	-2.0	-2.0		-2.0	-2.0	-2.0	-2.0	
Total Lost Time (s)	4.0	4.0		3.3	3.8	3.8		3.8	3.3	4.1	4.1	
Lead/Lag	Lag	Lag		Lead					Lead			
Lead-Lag Optimize?	Yes	Yes		Yes					Yes			
Vehicle Extension (s)	3.0	3.0		1.0	3.0	3.0	1.0	1.0	1.0	1.0	1.0	
Recall Mode	C-Max	C-Max		None	C-Max	C-Max	None	None	None	None	None	
Act Effct Green (s)	65.0	65.0		88.7	88.2	88.2		56.2	79.7	55.9	55.9	
Actuated g/C Ratio	0.43	0.43		0.58	0.58	0.58		0.37	0.52	0.37	0.37	
v/c Ratio	2.61	3.56		2.04	2.25	0.10		1.65	0.92	2.10	0.34	
Control Delay	801.3	1169.6		500.4	590.1	21.5		336.6	50.6	569.6	36.7	
Queue Delay	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0	0.0	
Total Delay	801.3	1169.6		500.4	590.1	21.5		336.6	50.6	569.6	36.7	
LOS	F	F		F	F	C		F	D	F	D	
Approach Delay		1153.3			557.3			175.9			246.0	
Approach LOS		F			F			F			F	

Intersection Summary

Area Type: Other
Cycle Length: 152
Actuated Cycle Length: 152
Offset: 124 (82%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 110
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 3.56
Intersection Signal Delay: 699.1 Intersection LOS: F
Intersection Capacity Utilization 216.3% ICU Level of Service H
Analysis Period (min) 15

Splits and Phases: 33: Covil Ave/Montgomery Ave & Market St

APPENDIX B: SIMTRAFFIC REPORTS

Summary of All Intervals

Run Number	1	2	3	Avg
Start Time	6:57	6:57	6:57	6:57
End Time	8:07	8:07	8:07	8:07
Total Time (min)	70	70	70	70
Time Recorded (min)	60	60	60	60
# of Intervals	2	2	2	2
# of Recorded Intervals	1	1	1	1
Vehs Entered	14444	14769	14402	14535
Vehs Exited	13967	14248	13854	14024
Starting Vehs	976	979	895	949
Ending Vehs	1453	1500	1443	1457
Travel Distance (mi)	15210	15360	14850	15140
Travel Time (hr)	1773.0	1731.1	1657.6	1720.6
Total Delay (hr)	1303.1	1257.6	1200.3	1253.7
Total Stops	28170	29534	28098	28601
Fuel Used (gal)	782.4	774.3	749.3	768.7

Interval #0 Information Seeding

Start Time	6:57
End Time	7:07
Total Time (min)	10

Volumes adjusted by Growth Factors.

No data recorded this interval.

Interval #1 Information Recording

Start Time	7:07
End Time	8:07
Total Time (min)	60

Volumes adjusted by Growth Factors.

Run Number	1	2	3	Avg
Vehs Entered	14444	14769	14402	14535
Vehs Exited	13967	14248	13854	14024
Starting Vehs	976	979	895	949
Ending Vehs	1453	1500	1443	1457
Travel Distance (mi)	15210	15360	14850	15140
Travel Time (hr)	1773.0	1731.1	1657.6	1720.6
Total Delay (hr)	1303.1	1257.6	1200.3	1253.7
Total Stops	28170	29534	28098	28601
Fuel Used (gal)	782.4	774.3	749.3	768.7

Intersection: 3: 3rd St & Market St

Movement	EB	EB	EB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	T	TR	LT	TR	L	T	TR	L	T	TR
Maximum Queue (ft)	59	70	53	110	149	59	138	124	66	88	83
Average Queue (ft)	13	24	16	58	76	22	66	46	26	37	26
95th Queue (ft)	43	59	44	103	125	54	125	104	55	77	66
Link Distance (ft)		610	610	734	734		535	535		714	714
Upstream Blk Time (%)											
Queuing Penalty (veh)											
Storage Bay Dist (ft)	125					150			200		
Storage Blk Time (%)							0				
Queuing Penalty (veh)							0				

Intersection: 6: 5th St & Market St

Movement	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	T	TR	T	TR	T	TR	T	TR
Maximum Queue (ft)	67	46	46	54	99	75	75	31
Average Queue (ft)	10	8	6	9	45	29	25	8
95th Queue (ft)	40	31	28	39	86	66	62	30
Link Distance (ft)	734	734	1935	1935	598	598	644	644
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)								
Storage Blk Time (%)								
Queuing Penalty (veh)								

Intersection: 9: 10th St & Market St

Movement	EB	EB	WB	WB	NB	SB	SB
Directions Served	LT	TR	LT	TR	LTR	L	TR
Maximum Queue (ft)	52	74	58	36	140	56	87
Average Queue (ft)	13	22	9	4	70	19	35
95th Queue (ft)	41	55	34	22	123	50	73
Link Distance (ft)	1935	1935	838	838	782		467
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)						100	
Storage Blk Time (%)							0
Queuing Penalty (veh)							0

Intersection: 14: 16th St & Market St

Movement	EB	EB	WB	WB	WB	SB	SB
Directions Served	T	TR	L	T	T	LT	TR
Maximum Queue (ft)	193	194	250	351	319	252	257
Average Queue (ft)	96	101	193	153	109	146	161
95th Queue (ft)	160	162	277	335	211	222	233
Link Distance (ft)	1394	1394		330	330	1072	1072
Upstream Blk Time (%)				2	0		
Queuing Penalty (veh)				17	0		
Storage Bay Dist (ft)			150				
Storage Blk Time (%)			27	0			
Queuing Penalty (veh)			119	2			

Intersection: 17: 17th St & Market St

Movement	EB	EB	WB	WB	NB	NB	NB	NB
Directions Served	LT	T	T	TR	L	T	T	R
Maximum Queue (ft)	120	96	313	278	214	211	264	345
Average Queue (ft)	51	37	145	114	117	116	167	177
95th Queue (ft)	97	86	270	212	188	194	245	296
Link Distance (ft)	330	330	1768	1768	551	551	551	551
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)								
Storage Blk Time (%)								
Queuing Penalty (veh)								

Intersection: 23: Market St & 23rd St

Movement	EB	EB	WB	WB	SB
Directions Served	LT	T	T	TR	LR
Maximum Queue (ft)	167	148	181	221	410
Average Queue (ft)	66	36	95	98	235
95th Queue (ft)	127	93	164	169	412
Link Distance (ft)	940	940	877	877	1144
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)					
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 25: Forest Hills Dr & Market St

Movement	EB	EB	WB	WB	NB
Directions Served	T	TR	LT	T	LR
Maximum Queue (ft)	148	174	174	181	216
Average Queue (ft)	68	86	80	81	116
95th Queue (ft)	134	148	150	162	193
Link Distance (ft)	877	877	816	816	919
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)					
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 28: 23rd St & Princess Pl

Movement	EB	EB	WB	WB	WB	NB	NB	B30	SB	SB	SB
Directions Served	L	TR	L	T	R	L	TR	T	L	T	R
Maximum Queue (ft)	324	143	193	1100	200	108	875	614	233	724	260
Average Queue (ft)	125	29	31	792	110	7	725	211	70	314	135
95th Queue (ft)	264	96	119	1310	272	45	1001	682	169	653	311
Link Distance (ft)		1239		1144			790	1144		749	
Upstream Blk Time (%)				12			46			1	
Queuing Penalty (veh)				0			95			0	
Storage Bay Dist (ft)	275		160		100	50			180		160
Storage Blk Time (%)	1			85	0	2	93			35	0
Queuing Penalty (veh)	1			99	0	4	3			164	1

Intersection: 33: Covil Ave/Montgomery Ave & Market St

Movement	EB	EB	EB	WB	WB	WB	B51	NB	NB	SB	SB
Directions Served	L	T	TR	L	T	TR	T	LT	R	L	TR
Maximum Queue (ft)	225	893	936	388	332	319	10	743	736	110	188
Average Queue (ft)	147	516	539	246	169	179	0	723	689	34	76
95th Queue (ft)	263	859	874	363	298	305	6	733	907	87	148
Link Distance (ft)		2362	2362		3457	3457	837	706	706	539	539
Upstream Blk Time (%)								84	43		
Queuing Penalty (veh)								0	0		
Storage Bay Dist (ft)	125			600							
Storage Blk Time (%)	42	43									
Queuing Penalty (veh)	216	33									

Intersection: 38: 16th St & Grace St

Movement	EB	EB	WB	SB	SB
Directions Served	T	R	L	LT	T
Maximum Queue (ft)	100	124	119	175	136
Average Queue (ft)	34	49	45	87	19
95th Queue (ft)	72	98	95	145	75
Link Distance (ft)	471		314	440	440
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)		150			
Storage Blk Time (%)	0	0			
Queuing Penalty (veh)	0	0			

Intersection: 39: 17th St & Grace St/Princess Pl

Movement	EB	WB	WB	NB	NB
Directions Served	LT	T	R	LT	R
Maximum Queue (ft)	90	523	325	257	494
Average Queue (ft)	43	297	73	84	345
95th Queue (ft)	84	464	294	166	474
Link Distance (ft)	314	646		1086	1086
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)			225		
Storage Blk Time (%)		17			
Queuing Penalty (veh)		23			

Intersection: 44: Kerr Ave & MLK Blvd

Movement	EB	EB	EB	EB	EB	WB	WB	WB	WB	WB	NB	NB
Directions Served	L	T	T	T	R	L	T	T	T	R	L	T
Maximum Queue (ft)	350	563	585	637	453	465	1815	1802	1806	300	325	392
Average Queue (ft)	209	332	313	284	245	435	1407	1375	1318	206	292	277
95th Queue (ft)	361	478	476	511	417	554	2123	2104	2056	428	344	460
Link Distance (ft)		1414	1414	1414			1772	1772	1772			325
Upstream Blk Time (%)							28	19	21		15	16
Queuing Penalty (veh)							0	0	0		0	57
Storage Bay Dist (ft)	250				360	365				200	270	
Storage Blk Time (%)	4	27		3	10	32	74		76	1	42	3
Queuing Penalty (veh)	15	56		10	39	153	141		105	4	103	13

Intersection: 44: Kerr Ave & MLK Blvd

Movement	NB	NB	B48	B46	SB	SB	SB	SB	B47
Directions Served	T	R	T	T	L	T	T	R	T
Maximum Queue (ft)	340	190	460	26	380	662	668	225	337
Average Queue (ft)	149	38	109	1	230	622	633	211	298
95th Queue (ft)	359	106	435	14	508	726	705	284	390
Link Distance (ft)	325		724	2825		590	590		294
Upstream Blk Time (%)	1		0			38	43		55
Queuing Penalty (veh)	3		2			0	0		0
Storage Bay Dist (ft)		130			280			125	
Storage Blk Time (%)	2	0				87	19	29	
Queuing Penalty (veh)	4	0				104	113	96	

Intersection: 47: Bend

Movement	NB
Directions Served	T
Maximum Queue (ft)	201
Average Queue (ft)	7
95th Queue (ft)	111
Link Distance (ft)	590
Upstream Blk Time (%)	0
Queuing Penalty (veh)	0
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 49: Market St & Kerr Ave

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB	NB
Directions Served	L	T	T	R	L	T	T	R	L	L	T	R
Maximum Queue (ft)	140	632	624	317	405	1059	1030	513	203	213	397	252
Average Queue (ft)	129	456	454	168	363	790	765	296	112	115	370	83
95th Queue (ft)	163	625	620	270	502	1361	1347	1143	197	202	432	177
Link Distance (ft)		837	837	837		1324	1324	1324	320	320	320	320
Upstream Blk Time (%)						15	14	8			55	
Queuing Penalty (veh)						0	0	0			111	
Storage Bay Dist (ft)	70				225							
Storage Blk Time (%)	79	41			45	38						
Queuing Penalty (veh)	385	72			338	123						

Intersection: 49: Market St & Kerr Ave

Movement	B12	B53	SB	SB	SB	B46	B48	B48
Directions Served	T	T	L	T	R	T	T	
Maximum Queue (ft)	532	1698	520	2937	475	836	370	397
Average Queue (ft)	392	916	350	2676	444	600	205	207
95th Queue (ft)	691	2591	694	3541	608	1149	456	512
Link Distance (ft)	430	2989		2825		724	325	325
Upstream Blk Time (%)	39	0		63		58	4	12
Queuing Penalty (veh)	310	1		755		700	23	74
Storage Bay Dist (ft)			420		375			
Storage Blk Time (%)				79				
Queuing Penalty (veh)				375				

Intersection: 56: Kerr Ave & Randall Pkwy

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	T	TR	L	T	TR	L	T	R	L	T	R
Maximum Queue (ft)	262	321	324	183	305	303	190	484	250	250	503	260
Average Queue (ft)	140	229	193	58	197	179	57	271	101	110	197	103
95th Queue (ft)	242	318	294	141	287	275	158	450	250	208	390	232
Link Distance (ft)	844	844	844		696	696		510			2989	
Upstream Blk Time (%)								1				
Queuing Penalty (veh)								0				
Storage Bay Dist (ft)				200			90		150	150		160
Storage Blk Time (%)					9		2	38	0	2	12	1
Queuing Penalty (veh)					8		10	80	2	13	59	7

Network Summary

Network wide Queuing Penalty: 5238

Summary of All Intervals

Run Number	1	2	3	Avg
Start Time	6:57	6:57	6:57	6:57
End Time	8:07	8:07	8:07	8:07
Total Time (min)	70	70	70	70
Time Recorded (min)	60	60	60	60
# of Intervals	2	2	2	2
# of Recorded Intervals	1	1	1	1
Vehs Entered	16649	16915	17153	16908
Vehs Exited	16116	16222	16508	16283
Starting Vehs	1334	1405	1312	1350
Ending Vehs	1867	2098	1957	1964
Travel Distance (mi)	16246	16245	16567	16353
Travel Time (hr)	4547.3	4542.5	4349.0	4479.6
Total Delay (hr)	4047.0	4042.1	3838.9	3976.0
Total Stops	32589	35449	36436	34822
Fuel Used (gal)	1450.9	1444.9	1410.1	1435.3

Interval #0 Information Seeding

Start Time	6:57
End Time	7:07
Total Time (min)	10

Volumes adjusted by Growth Factors.

No data recorded this interval.

Interval #1 Information Recording

Start Time	7:07
End Time	8:07
Total Time (min)	60

Volumes adjusted by Growth Factors.

Run Number	1	2	3	Avg
Vehs Entered	16649	16915	17153	16908
Vehs Exited	16116	16222	16508	16283
Starting Vehs	1334	1405	1312	1350
Ending Vehs	1867	2098	1957	1964
Travel Distance (mi)	16246	16245	16567	16353
Travel Time (hr)	4547.3	4542.5	4349.0	4479.6
Total Delay (hr)	4047.0	4042.1	3838.9	3976.0
Total Stops	32589	35449	36436	34822
Fuel Used (gal)	1450.9	1444.9	1410.1	1435.3

Intersection: 3: 3rd St & Market St

Movement	EB	EB	EB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	T	TR	LT	TR	L	T	TR	L	T	TR
Maximum Queue (ft)	87	148	147	172	103	53	144	124	80	162	152
Average Queue (ft)	31	67	52	84	59	23	68	40	38	82	58
95th Queue (ft)	71	112	106	141	100	51	123	95	69	148	123
Link Distance (ft)		610	610	734	734		535	535		714	714
Upstream Blk Time (%)											
Queuing Penalty (veh)											
Storage Bay Dist (ft)	125					150			200		
Storage Blk Time (%)		0					0				
Queuing Penalty (veh)		0					0				

Intersection: 6: 5th St & Market St

Movement	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	T	TR	T	TR	T	TR	T	TR
Maximum Queue (ft)	60	72	57	66	134	101	114	52
Average Queue (ft)	23	18	14	13	75	44	52	16
95th Queue (ft)	55	51	44	43	118	83	92	44
Link Distance (ft)	734	734	1935	1935	598	598	644	644
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)								
Storage Blk Time (%)								
Queuing Penalty (veh)								

Intersection: 9: 10th St & Market St

Movement	EB	EB	WB	WB	NB	SB	SB
Directions Served	LT	TR	LT	TR	LTR	L	TR
Maximum Queue (ft)	85	94	93	102	154	83	123
Average Queue (ft)	29	33	33	42	68	27	49
95th Queue (ft)	70	81	76	86	122	64	94
Link Distance (ft)	1935	1935	838	838	782		467
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)						100	
Storage Blk Time (%)						0	0
Queuing Penalty (veh)						0	0

Intersection: 14: 16th St & Market St

Movement	EB	EB	WB	WB	WB	SB	SB
Directions Served	T	TR	L	T	T	LT	TR
Maximum Queue (ft)	242	268	248	294	51	228	232
Average Queue (ft)	142	163	134	25	14	141	143
95th Queue (ft)	233	253	230	126	40	204	216
Link Distance (ft)	1394	1394		330	330	1072	1072
Upstream Blk Time (%)				0			
Queuing Penalty (veh)				0			
Storage Bay Dist (ft)			150				
Storage Blk Time (%)			4	0			
Queuing Penalty (veh)			13	0			

Intersection: 17: 17th St & Market St

Movement	EB	EB	WB	WB	NB	NB	NB	NB
Directions Served	LT	T	T	TR	L	T	T	R
Maximum Queue (ft)	157	151	341	258	415	566	574	578
Average Queue (ft)	61	44	173	155	157	307	356	284
95th Queue (ft)	121	109	273	232	487	583	605	542
Link Distance (ft)	330	330	1768	1768	551	551	551	551
Upstream Blk Time (%)					8	13	17	12
Queuing Penalty (veh)					0	0	0	0
Storage Bay Dist (ft)								
Storage Blk Time (%)								
Queuing Penalty (veh)								

Intersection: 23: Market St & 23rd St

Movement	EB	EB	WB	WB	SB
Directions Served	LT	T	T	TR	LR
Maximum Queue (ft)	253	257	301	315	289
Average Queue (ft)	93	92	76	87	124
95th Queue (ft)	214	210	277	297	236
Link Distance (ft)	940	940	877	877	1144
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)					
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 25: Forest Hills Dr & Market St

Movement	EB	EB	WB	WB	NB
Directions Served	T	TR	LT	T	LR
Maximum Queue (ft)	502	491	189	194	226
Average Queue (ft)	116	119	84	83	112
95th Queue (ft)	412	417	153	157	184
Link Distance (ft)	877	877	816	816	919
Upstream Blk Time (%)	0	0			
Queuing Penalty (veh)	0	3			
Storage Bay Dist (ft)					
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 28: 23rd St & Princess Pl

Movement	EB	EB	WB	WB	WB	NB	NB	B30	SB	SB	SB
Directions Served	L	TR	L	T	R	L	TR	T	L	T	R
Maximum Queue (ft)	208	224	259	1190	200	150	880	797	279	801	260
Average Queue (ft)	81	70	68	1161	119	144	813	361	83	767	156
95th Queue (ft)	172	183	198	1177	276	155	965	952	221	782	357
Link Distance (ft)		1239		1144			790	1144		749	
Upstream Blk Time (%)				91			76	6		77	
Queuing Penalty (veh)				0			114	10		0	
Storage Bay Dist (ft)	275		160		100	50			180		160
Storage Blk Time (%)				85	1	100	54			78	
Queuing Penalty (veh)				251	3	323	96			410	

Intersection: 33: Covil Ave/Montgomery Ave & Market St

Movement	EB	EB	EB	B21	B21	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	TR	T	T	L	T	TR	LT	R	L	TR
Maximum Queue (ft)	225	2444	2453	554	560	700	1382	1391	740	749	220	284
Average Queue (ft)	183	1960	1971	153	156	599	896	881	722	722	98	146
95th Queue (ft)	285	2581	2584	630	635	844	1582	1595	733	735	178	261
Link Distance (ft)		2362	2362	816	816		3457	3457	706	706	539	539
Upstream Blk Time (%)		27	28	4	5				78	53		
Queuing Penalty (veh)		177	185	26	31				0	0		
Storage Bay Dist (ft)	125					600						
Storage Blk Time (%)	75	56				18	13					
Queuing Penalty (veh)	765	64				195	65					

Intersection: 38: 16th St & Grace St

Movement	EB	EB	WB	SB	SB
Directions Served	T	R	L	LT	T
Maximum Queue (ft)	104	111	75	200	147
Average Queue (ft)	46	43	35	110	27
95th Queue (ft)	84	85	72	181	95
Link Distance (ft)	471		314	440	440
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)		150			
Storage Blk Time (%)		0			
Queuing Penalty (veh)		0			

Intersection: 39: 17th St & Grace St/Princess Pl

Movement	EB	WB	NB	NB
Directions Served	LT	T	LT	R
Maximum Queue (ft)	123	236	1131	1113
Average Queue (ft)	56	105	816	1000
95th Queue (ft)	104	199	1432	1340
Link Distance (ft)	314	646	1086	1086
Upstream Blk Time (%)			6	20
Queuing Penalty (veh)			30	96
Storage Bay Dist (ft)				
Storage Blk Time (%)		0		
Queuing Penalty (veh)		1		

Intersection: 44: Kerr Ave & MLK Blvd

Movement	EB	EB	EB	EB	EB	WB	WB	WB	WB	WB	NB	NB
Directions Served	L	T	T	T	R	L	T	T	T	R	L	T
Maximum Queue (ft)	350	1469	1454	1461	460	465	1351	1300	1050	300	295	346
Average Queue (ft)	345	1434	1425	1263	380	437	760	717	549	190	178	186
95th Queue (ft)	386	1452	1450	1826	610	521	1282	1222	1001	413	285	284
Link Distance (ft)		1414	1414	1414			1772	1772	1772			325
Upstream Blk Time (%)		78	25	30							0	0
Queuing Penalty (veh)		0	0	0							0	1
Storage Bay Dist (ft)	250				360	365				200	270	
Storage Blk Time (%)	71	46		49	1	66	26		52	0	1	1
Queuing Penalty (veh)	513	220		217	5	280	62		91	1	3	2

Intersection: 44: Kerr Ave & MLK Blvd

Movement	NB	NB	SB	SB	SB	SB	B47
Directions Served	T	R	L	T	T	R	T
Maximum Queue (ft)	284	210	380	692	662	225	334
Average Queue (ft)	120	81	304	659	612	166	309
95th Queue (ft)	238	169	538	686	657	295	343
Link Distance (ft)	325			590	590		294
Upstream Blk Time (%)	0			67	26		71
Queuing Penalty (veh)	0			0	0		0
Storage Bay Dist (ft)		130	280			125	
Storage Blk Time (%)	4	1		93	24	10	
Queuing Penalty (veh)	10	4		86	51	30	

Intersection: 49: Market St & Kerr Ave

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB	NB
Directions Served	L	T	T	R	L	T	T	R	L	L	T	R
Maximum Queue (ft)	140	550	551	298	405	1372	1364	1370	322	200	396	225
Average Queue (ft)	121	273	265	130	398	1273	1249	977	112	108	350	94
95th Queue (ft)	165	460	453	234	458	1554	1570	1885	220	172	444	191
Link Distance (ft)		837	837	837		1324	1324	1324	320	320	320	320
Upstream Blk Time (%)						55	34	16			47	
Queuing Penalty (veh)						0	0	0			141	
Storage Bay Dist (ft)	70				225							
Storage Blk Time (%)	54	44			78	37						
Queuing Penalty (veh)	425	159			554	162						

Intersection: 49: Market St & Kerr Ave

Movement	B12	B53	SB	SB	SB	B46	B48	B48
Directions Served	T	T	L	T	R	T	T	
Maximum Queue (ft)	526	969	520	2933	475	830	346	373
Average Queue (ft)	325	223	390	2040	365	333	81	45
95th Queue (ft)	675	717	668	3631	675	960	289	247
Link Distance (ft)	430	2989		2825		724	325	325
Upstream Blk Time (%)	23			36		24	1	3
Queuing Penalty (veh)	280			455		308	4	21
Storage Bay Dist (ft)			420		375			
Storage Blk Time (%)				74				
Queuing Penalty (veh)				365				

Intersection: 56: Kerr Ave & Randall Pkwy

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	T	TR	L	T	TR	L	T	R	L	T	R
Maximum Queue (ft)	896	888	860	300	749	735	190	548	250	250	680	260
Average Queue (ft)	854	802	515	292	714	705	55	528	192	128	231	77
95th Queue (ft)	905	1039	1041	344	730	737	157	539	349	233	506	200
Link Distance (ft)	844	844	844		696	696		510			2989	
Upstream Blk Time (%)	86	54	5		83	39		52				
Queuing Penalty (veh)	0	0	0		0	0		0				
Storage Bay Dist (ft)				200			90		150	150		160
Storage Blk Time (%)				78	55		2	57	4	5	11	0
Queuing Penalty (veh)				316	176		21	221	25	54	67	4

Network Summary

Network wide Queuing Penalty: 8193

Summary of All Intervals

Run Number	1	2	3	Avg
Start Time	6:57	6:57	6:57	6:57
End Time	8:07	8:07	8:07	8:07
Total Time (min)	70	70	70	70
Time Recorded (min)	60	60	60	60
# of Intervals	2	2	2	2
# of Recorded Intervals	1	1	1	1
Vehs Entered	13841	13859	13904	13864
Vehs Exited	13315	13198	13212	13241
Starting Vehs	948	930	915	929
Ending Vehs	1474	1591	1607	1554
Travel Distance (mi)	13760	13728	13585	13691
Travel Time (hr)	2026.1	2164.9	2190.9	2127.3
Total Delay (hr)	1601.6	1742.2	1773.1	1705.6
Total Stops	28654	28780	30534	29319
Fuel Used (gal)	801.5	829.5	827.5	819.5

Interval #0 Information Seeding

Start Time	6:57
End Time	7:07
Total Time (min)	10

Volumes adjusted by Growth Factors.

No data recorded this interval.

Interval #1 Information Recording

Start Time	7:07
End Time	8:07
Total Time (min)	60

Volumes adjusted by Growth Factors.

Run Number	1	2	3	Avg
Vehs Entered	13841	13859	13904	13864
Vehs Exited	13315	13198	13212	13241
Starting Vehs	948	930	915	929
Ending Vehs	1474	1591	1607	1554
Travel Distance (mi)	13760	13728	13585	13691
Travel Time (hr)	2026.1	2164.9	2190.9	2127.3
Total Delay (hr)	1601.6	1742.2	1773.1	1705.6
Total Stops	28654	28780	30534	29319
Fuel Used (gal)	801.5	829.5	827.5	819.5

Intersection: 6: 5th St & Market St

Movement	EB	WB	NB	NB	SB	SB
Directions Served	TR	TR	T	TR	T	TR
Maximum Queue (ft)	96	83	118	81	82	54
Average Queue (ft)	32	24	52	36	27	10
95th Queue (ft)	78	66	92	74	64	37
Link Distance (ft)	734	1935	610	610	656	656
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)						
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 9: 10th St & Market St

Movement	EB	EB	WB	WB	NB	SB	SB
Directions Served	L	TR	L	TR	LTR	L	TR
Maximum Queue (ft)	28	70	43	64	129	53	100
Average Queue (ft)	2	23	4	9	64	16	38
95th Queue (ft)	14	56	23	38	112	44	82
Link Distance (ft)		1935		838	794		479
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)	200		200			100	
Storage Blk Time (%)							1
Queuing Penalty (veh)							0

Intersection: 14: 16th St & Market St

Movement	EB	EB	WB	WB	SB	SB
Directions Served	T	R	L	T	LT	TR
Maximum Queue (ft)	224	509	125	352	370	381
Average Queue (ft)	160	99	124	330	242	262
95th Queue (ft)	241	312	126	363	339	356
Link Distance (ft)		1394		330	1084	1084
Upstream Blk Time (%)				13		
Queuing Penalty (veh)				200		
Storage Bay Dist (ft)	25		100			
Storage Blk Time (%)	65	31	35	26		
Queuing Penalty (veh)	51	107	301	169		

Intersection: 17: 17th St & Market St

Movement	EB	EB	WB	WB	B20	NB	NB	NB	NB
Directions Served	L	T	T	R	T	L	T	T	R
Maximum Queue (ft)	42	108	1876	300	948	366	507	572	557
Average Queue (ft)	8	45	1661	88	583	171	262	405	410
95th Queue (ft)	31	93	2242	304	1289	327	481	661	684
Link Distance (ft)		330	1768		941	563	563	563	563
Upstream Blk Time (%)			65		3	0	0	25	35
Queuing Penalty (veh)			844		41	0	0	0	0
Storage Bay Dist (ft)	100			200					
Storage Blk Time (%)		0	63						
Queuing Penalty (veh)		0	27						

Intersection: 23: Market St & 23rd St

Movement	EB	EB	B20	WB	SB
Directions Served	L	T	T	TR	LR
Maximum Queue (ft)	168	379	106	893	783
Average Queue (ft)	79	194	8	525	485
95th Queue (ft)	234	763	83	1064	873
Link Distance (ft)		941	1768	877	1150
Upstream Blk Time (%)		3		6	
Queuing Penalty (veh)		23		81	
Storage Bay Dist (ft)	200				
Storage Blk Time (%)		17			
Queuing Penalty (veh)		11			

Intersection: 25: Forest Hills Dr & Market St

Movement	EB	WB	WB	B21	NB
Directions Served	TR	L	T	T	LR
Maximum Queue (ft)	443	300	932	2352	296
Average Queue (ft)	318	74	390	459	133
95th Queue (ft)	863	262	966	1811	264
Link Distance (ft)	877		816	2366	925
Upstream Blk Time (%)	4		17	0	
Queuing Penalty (veh)	33		312	1	
Storage Bay Dist (ft)		200			
Storage Blk Time (%)			33		
Queuing Penalty (veh)			16		

Intersection: 33: Covil Ave/Montgomery Ave & Market St

Movement	EB	EB	B21	WB	WB	WB	B51	B51	NB	NB	SB	SB
Directions Served	L	TR	T	L	T	R	T	T	LT	R	L	TR
Maximum Queue (ft)	225	2224	276	700	3568	3572	852	855	740	767	109	198
Average Queue (ft)	180	1849	240	547	3118	2901	473	472	733	731	47	88
95th Queue (ft)	279	2565	848	936	4391	4443	1088	1091	739	751	95	162
Link Distance (ft)		2366	816		3457	3457	837	837	718	718	552	552
Upstream Blk Time (%)		25	3		65	46	1	2	89	60		
Queuing Penalty (veh)		210	29		682	481	14	22	0	0		
Storage Bay Dist (ft)	125			600								
Storage Blk Time (%)	73	42			31							
Queuing Penalty (veh)	951	32			112							

Intersection: 3: 3rd St & Market St

Movement	EB	EB	EB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	T	R	L	TR	L	T	TR	L	T	TR
Maximum Queue (ft)	45	80	52	103	166	54	155	143	73	88	74
Average Queue (ft)	10	23	12	37	81	19	55	35	28	30	22
95th Queue (ft)	36	58	42	78	139	44	124	92	59	72	58
Link Distance (ft)		610	610		734		535	535		726	726
Upstream Blk Time (%)											
Queuing Penalty (veh)											
Storage Bay Dist (ft)	125			200		150			200		
Storage Blk Time (%)		0			0		0				
Queuing Penalty (veh)		0			0		0				

Summary of All Intervals

Run Number	1	2	3	Avg
Start Time	6:57	6:57	6:57	6:57
End Time	8:07	8:07	8:07	8:07
Total Time (min)	70	70	70	70
Time Recorded (min)	60	60	60	60
# of Intervals	2	2	2	2
# of Recorded Intervals	1	1	1	1
Vehs Entered	15212	15435	15224	15286
Vehs Exited	14584	14865	14762	14735
Starting Vehs	1220	1272	1322	1264
Ending Vehs	1848	1842	1784	1822
Travel Distance (mi)	13471	13729	13603	13601
Travel Time (hr)	5240.9	5090.0	5066.7	5132.5
Total Delay (hr)	4827.4	4669.1	4648.9	4715.1
Total Stops	30256	29595	30757	30206
Fuel Used (gal)	1528.0	1494.5	1491.3	1504.6

Interval #0 Information Seeding

Start Time	6:57
End Time	7:07
Total Time (min)	10

Volumes adjusted by Growth Factors.

No data recorded this interval.

Interval #1 Information Recording

Start Time	7:07
End Time	8:07
Total Time (min)	60

Volumes adjusted by Growth Factors.

Run Number	1	2	3	Avg
Vehs Entered	15212	15435	15224	15286
Vehs Exited	14584	14865	14762	14735
Starting Vehs	1220	1272	1322	1264
Ending Vehs	1848	1842	1784	1822
Travel Distance (mi)	13471	13729	13603	13601
Travel Time (hr)	5240.9	5090.0	5066.7	5132.5
Total Delay (hr)	4827.4	4669.1	4648.9	4715.1
Total Stops	30256	29595	30757	30206
Fuel Used (gal)	1528.0	1494.5	1491.3	1504.6

Intersection: 6: 5th St & Market St

Movement	EB	WB	NB	NB	SB	SB
Directions Served	TR	TR	T	TR	T	TR
Maximum Queue (ft)	139	130	146	120	102	65
Average Queue (ft)	58	38	79	47	51	11
95th Queue (ft)	120	93	129	95	94	40
Link Distance (ft)	734	1935	610	610	656	656
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)						
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 9: 10th St & Market St

Movement	EB	EB	WB	WB	NB	SB	SB
Directions Served	L	TR	L	TR	LTR	L	TR
Maximum Queue (ft)	29	129	35	59	130	59	123
Average Queue (ft)	4	49	3	11	66	17	48
95th Queue (ft)	21	111	17	39	117	46	95
Link Distance (ft)		1935		838	794		479
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)	200		200			100	
Storage Blk Time (%)							2
Queuing Penalty (veh)							1

Intersection: 14: 16th St & Market St

Movement	EB	EB	B2	WB	WB	SB	SB
Directions Served	T	R	T	L	T	LT	TR
Maximum Queue (ft)	225	1371	127	125	237	528	516
Average Queue (ft)	201	783	34	76	45	290	289
95th Queue (ft)	283	1633	185	131	159	544	542
Link Distance (ft)		1394	838		330	1084	1084
Upstream Blk Time (%)		14					
Queuing Penalty (veh)		65					
Storage Bay Dist (ft)	25			100			
Storage Blk Time (%)	75	21		6	0		
Queuing Penalty (veh)	141	123		36	0		

Intersection: 17: 17th St & Market St

Movement	EB	EB	WB	WB	NB	NB	NB	NB
Directions Served	L	T	T	R	L	T	T	R
Maximum Queue (ft)	125	341	213	43	433	568	597	611
Average Queue (ft)	34	270	99	7	65	226	535	554
95th Queue (ft)	118	443	183	25	208	511	713	694
Link Distance (ft)		330	1768		563	563	563	563
Upstream Blk Time (%)		27			0	0	62	78
Queuing Penalty (veh)		183			0	0	0	0
Storage Bay Dist (ft)	100			200				
Storage Blk Time (%)		72	0					
Queuing Penalty (veh)		15	0					

Intersection: 23: Market St & 23rd St

Movement	EB	EB	B20	WB	SB
Directions Served	L	T	T	TR	LR
Maximum Queue (ft)	300	1044	1783	138	245
Average Queue (ft)	125	921	1404	58	142
95th Queue (ft)	365	1353	2514	126	236
Link Distance (ft)		941	1768	877	1150
Upstream Blk Time (%)		82	16		
Queuing Penalty (veh)		971	187		
Storage Bay Dist (ft)	200				
Storage Blk Time (%)		83			
Queuing Penalty (veh)		37			

Intersection: 25: Forest Hills Dr & Market St

Movement	EB	WB	WB	NB
Directions Served	TR	L	T	LR
Maximum Queue (ft)	894	59	140	212
Average Queue (ft)	845	22	67	119
95th Queue (ft)	1075	51	129	192
Link Distance (ft)	877		816	925
Upstream Blk Time (%)	19			
Queuing Penalty (veh)	250			
Storage Bay Dist (ft)		200		
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 33: Covil Ave/Montgomery Ave & Market St

Movement	EB	EB	B21	WB	WB	WB	B51	B51	NB	NB	SB	SB
Directions Served	L	TR	T	L	T	R	T	T	LT	R	L	TR
Maximum Queue (ft)	225	2477	832	700	3569	3569	853	866	754	762	240	250
Average Queue (ft)	155	2445	804	586	3522	3447	728	730	735	731	99	129
95th Queue (ft)	258	2466	951	952	3623	4012	1131	1145	745	776	194	220
Link Distance (ft)		2366	816		3457	3457	837	837	718	718	552	552
Upstream Blk Time (%)		92	14		94	78	4	6	78	59		
Queuing Penalty (veh)		1195	178		925	765	43	63	0	0		
Storage Bay Dist (ft)	125			600								
Storage Blk Time (%)	51	58			43							
Queuing Penalty (veh)	1265	67			221							

Intersection: 3: 3rd St & Market St

Movement	EB	EB	EB	WB	WB	NB	NB	NB	SB	SB	SB	
Directions Served	L	T	R	L	TR	L	T	TR	L	T	TR	
Maximum Queue (ft)	73	179	88	129	118	47	138	124	82	163	138	
Average Queue (ft)	27	83	34	54	48	16	57	28	39	70	42	
95th Queue (ft)	61	146	72	106	93	40	109	77	72	139	105	
Link Distance (ft)		610	610		734		535	535		726	726	
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	125			200		150			200			
Storage Blk Time (%)		3					0					
Queuing Penalty (veh)		1					0					

WILMINGTON URBAN AREA METROPOLITAN PLANNING ORGANIZATION
TRANSPORTATION ADVISORY COMMITTEE

RESOLUTION ACCEPTING THE FINAL TECHNICAL REPORT FOR THE US 17 BUSINESS CORRIDOR STUDY UPDATE (MARKET STREET ROAD DIET)

WHEREAS, the Wilmington Urban Area Metropolitan Planning Organization provides transportation planning services for the City of Wilmington, Town of Carolina Beach, Town of Kure Beach, Town of Wrightsville Beach, Town of Belville, Town of Leland, Town of Navassa, New Hanover County, Brunswick County, Pender County, Cape Fear Public Transportation Authority and the North Carolina Board of Transportation; and

WHEREAS, the US 17 Business Corridor Study, undertaken by STV/Ralph Whitehead Associates, Inc. was adopted by the Wilmington Urban Area MPO's Transportation Advisory Committee on May 30, 2007 and by the Wilmington City Council on July 10, 2007; and

WHEREAS, the study recommended that following the construction of Independence Boulevard extension, the conversion of Market Street to a median-divided facility with one vehicle lane in each direction, bicycle lanes and limited parking at designated locations along the corridor is viable; and

WHEREAS, a key requirement of the recommendation was that any conversion was to be contingent upon first completing Independence Boulevard extension from Randall Parkway to the Martin Luther King Jr. Parkway; and

WHEREAS, despite this recommended requirement, many citizens have continued to request the implementation of the "road diet" on Market Street; and

WHEREAS, the City of Wilmington and the Wilmington Urban Area MPO contracted with Parsons Brinckerhoff (PB) to provide an update to the US 17 Business Corridor Study; and

WHEREAS, the purpose of this study is to evaluate, and in some cases re-evaluate, affected intersections to guide the decision-making process toward action; and

WHEREAS, after evaluating the results, the study concluded that the road diet project is not recommended for the section between 16th Street and Covil Avenue due to the negative impacts to Market Street; and

WHEREAS, based on the results of this study, the road diet could successfully be implemented between 3rd Street and 16th Street, with a transition to current geometry west of 16th Street.

NOW THEREFORE, be it resolved by the Wilmington Urban Area Metropolitan Planning Organization's Transportation Advisory Committee hereby accepts the Final Technical Report for the US 17 Business Corridor Study Update (Market Street Road Diet).

ADOPTED at a regular meeting of the Wilmington Urban Area Metropolitan Planning Organization Transportation Advisory Committee on January 27, 2016.

_____
Chair
Transportation Advisory Committee

_____
Mike Kozlosky, Secretary

WILMINGTON URBAN AREA METROPOLITAN PLANNING ORGANIZATION
TRANSPORTATION ADVISORY COMMITTEE

RESOLUTION SEEKING PERMISSION TO APPLY FOR FY2017 TRANSPORTATION DEMAND MANAGEMENT PROGRAM (TDM) FUNDING, ENTER INTO AGREEMENT WITH NCDOT, PROVIDE THE NECESSARY ASSURANCES, AND THE REQUIRED LOCAL MATCH

WHEREAS, the Wilmington Urban Area Metropolitan Planning Organization provides transportation planning services for the City of Wilmington, Town of Carolina Beach, Town of Kure Beach, Town of Wrightsville Beach, Town of Belville, Town of Leland, Town of Navassa, New Hanover County, Brunswick County, Pender County, Cape Fear Public Transportation Authority and the North Carolina Board of Transportation; and

WHEREAS, Article 2B of Chapter 136 of the North Carolina General Statutes and the Governor of North Carolina have designated the North Carolina Department of Transportation (NCDOT) as the agency responsible for administering federal and state public transportation funds; and

WHEREAS, the North Carolina Department of Transportation receives funds from the North Carolina General Assembly to provide assistance for Transportation Demand Management (TDM) programs; and

WHEREAS, the purpose of these transportation funds is to provide grant monies to local agencies for the provision of TDM program services and activities; and

WHEREAS, the Wilmington Urban Area MPO was awarded a FY 16 Transportation Demand Management grant; and

WHEREAS, in an effort to continue the program, the Wilmington Urban Area MPO must apply annually for these grant funds; and

WHEREAS, the WMPO hereby assures and certifies that it will comply with the state Statutes, regulations, executive orders, and all administrative requirements related to the applications made to and grants received from the North Carolina Department of Transportation.

NOW THEREFORE, be it resolved that the Executive Director of the Wilmington Metropolitan Planning Organization is hereby authorized to submit a grant application for state funding, provide the required local match, make the necessary assurances and certifications and be empowered to enter into an agreement with the NCDOT to provide TDM management services and activities.

ADOPTED at a regular meeting of the Wilmington Urban Area Metropolitan Planning Organization Transportation Advisory Committee on January 27, 2016.

_____
Chair
Transportation Advisory Committee

_____
Mike Kozlosky, Secretary

A motion was made by (*Board Member's Name*) _____ and seconded by (*Board Member's Name or N/A, if not required*) _____for the adoption of the following resolution, and upon being put to a vote was duly adopted.

Seal Subscribed and sworn to me (*date*) _____

_____

*Notary Public **

_____

Seal

_____

Printed name and address

My commission expires (*date*) _____

Proposed Revisions to 2016-2025 STIP/MTIP Program

STIP/MTIP Modifications
(November)

AV-5702	WILMINGTON INTERNATIONAL (ILM),	CONSTRUCTION	FY 2016 - $500,000 (T)
NEW HANOVER	REHABILITATE GA APRON NORTH.		FY 2016 - $3,000,000 (O)
PROJ.CATEGORY	DELAY CONSTRUCTION FROM FY 15 TO FY 16 TO		$3,500,000
STATEWIDE	COINCIDE WITH LOCAL FEDERAL AVIATION GRANT.		

WILMINGTON URBAN AREA METROPOLITAN PLANNING ORGANIZATION
TRANSPORTATION ADVISORY COMMITTEE

RESOLUTION APPROVING MODIFICATIONS TO THE 2016-2025 STATE /METROPOLITAN TRANSPORTATION IMPROVEMENT PROGRAMS

WHEREAS, the Wilmington Urban Area Metropolitan Planning Organization provides transportation planning services for the City of Wilmington, Town of Carolina Beach, Town of Kure Beach, Town of Wrightsville Beach, Town of Belville, Town of Leland, Town of Navassa, New Hanover County, Brunswick County, Pender County, Cape Fear Public Transportation Authority and the North Carolina Board of Transportation; and

WHEREAS, the Transportation Advisory Committee has found that the Wilmington Urban Area Metropolitan Planning Organization is conducting transportation planning in a continuous, cooperative, and comprehensive manner; and

WHEREAS, the North Carolina Board of Transportation adopted the 2016-2025 State Transportation Improvement Program on June 4, 2015 and the Wilmington Urban Area Metropolitan Planning Organization adopted the Statewide/Metropolitan Transportation Improvement Program on June 24, 2015; and

WHEREAS, the Wilmington Urban Area MPO desires to modify the State/Metropolitan Transportation Improvement Programs for the Wilmington International Airport (ILM) rehabilitation of the GA apron north to delay construction from FY 15 to FY 16 to coincide with the Local Federal Aviation grant.

NOW THEREFORE, be it resolved by the Wilmington Urban Area Metropolitan Planning Organization's Transportation Advisory Committee approves modifying the 2016-2025 State/Metropolitan Transportation Improvement Programs for the Wilmington International Airport (ILM) rehabilitation of the GA apron north to delay construction from FY 15 to FY 16 to coincide with the Local Federal Aviation grant.

ADOPTED at a regular meeting of the Wilmington Urban Area Metropolitan Planning Organization Transportation Advisory Committee on January 27, 2016.

_____
Chair
Transportation Advisory Committee

_____
Mike Kozlosky, Secretary

Proposed Revisions to 2016-2025 STIP/MTIP Program

STIP/MTIP Additions
(January)

U-4751A NEW HANOVER PROJ.CATEGORY STATEW IDE	LENDIRE ROAD, W EST OF US 17 BUSINESS (MARKET STREET) TO US 17 BUSINESS (MARKET STREET)/SR 1403 (MIDDLE SOUND LOOP ROAD). REALIGN ROADW AY. ADD CONSTRUCTION IN FY 16 NOT PREVIOUSLY PROGRAMMED.	CONSTRUCTION	FY 2016 - $1,000,000 (T) $1,000,000
U-5880 NEW HANOVER PROJ.CATEGORY REGIONAL	US 74 (MARTIN LUTHER KING, JR. BOULEVARD), US 17 BUSINESS (MARKET STREET). UPGRADE INTERCHANGE. NEW PROJECT PROGRAMMED DUE TO ADDITIONAL REVENUE (HB 97).	RIGHT-OF-W AY CONSTRUCTION	FY 2022 - $3,000,000 (T) FY 2024 - $6,250,000 (T) FY 2025 - $6,250,000 (T) $15,500,000
U-5881 NEW HANOVER PROJ.CATEGORY STATEW IDE	NC 132 (COLLEGE ROAD), SR 2048 (GORDON ROAD) TO SR 1272 (NEW CENTRE DRIVE). UPGRADE NEW PROJECT PROGRAMMED DUE TO ADDITIONAL REVENUE (HB 97).	RIGHT-OF-W AY UTILITIES CONSTRUCTION	FY 2023 - $19,208,000 (T) FY 2023 - $2,305,000 (T) FY 2025 - $31,350,000 (T) POST YR- $31,350,000 (T) $84,213,000
U-5914 BRUNSW ICK PROJ.CATEGORY DIVISION	NC 133, US 17/74/76 TO SR 1554 (OLD RIVER ROAD). MODERNIZE ROADW AY. NEW PROJECT PROGRAMMED DUE TO ADDITIONAL REVENUE (HB 97).	CONSTRUCTION	FY 2020 - $5,130,000 (T) $5,130,000

* W -5203DIV BRUNSW ICK ONSLOW NEW HANOVER PROJ.CATEGORY DIVISION	VARIOUS, DIVISION 3 RUMBLE STRIPS, GUARDRAIL, SAFETY AND LIGHTING IMPROVEMENTS AT SELECTED LOCATIONS. ADD RIGHT-OF-W AY IN FY 16 AND CONSTRUCTION IN FY 16 NOT PREVIOUSLY PROGRAMMED.	RIGHT-OF-W AY CONSTRUCTION	FY 2016 - $36,000 (HSIP) FY 2016 - $3,575,000 (HSIP) $3,611,000
* W -5203REG ONSLOW PROJ.CATEGORY REGIONAL	VARIOUS, DIVISION 3 RUMBLE STRIPS, GUARDRAIL,SAFETY AND LIGHTING IMPROVEMENTS AT SELECTED LOCATIONS. ADD RIGHT-OF-W AY IN FY 16 AND CONSTRUCTION IN FY 16 NOT PREVIOUSLY PROGRAMMED.	RIGHT-OF-W AY CONSTRUCTION	FY 2016 - $25,000 (HSIP) FY 2016 - $1,255,000 (HSIP) $1,280,000
* W -5203SW BRUNSW ICK ONSLOW NEW HANOVER PROJ.CATEGORY STATEW IDE	VARIOUS, DIVISION 3 RUMBLE STRIPS, GUARDRAIL, SAFETY AND LIGHTING IMPROVEMENTS AT SELECTED LOCATIONS. ADD RIGHT-OF-W AY IN FY 16 AND CONSTRUCTION IN FY 16 AND FY 17 NOT PREVIOUSLY PROGRAMMED.	RIGHT-OF-W AY CONSTRUCTION	FY 2016 - $51,000 (HSIP) FY 2016 - $5,725,000 (HSIP) FY 2017 - $725,000 (HSIP) $6,501,000
U-5926 NEW HANOVER DIVISION PROJ.CATEGORY	NEW ROUTE. SR 1302 (23RD STREET) TO 26TH STREET. CONSTRUCT ROUTE ON NEW LOCATION. ECONOMIC DEVELOPMENT PROJECT. ADD RIGHT-OF-WAY IN FY 17 AND CONSTRUCTION IN FY 18 NOT PREVIOUSLY PROGRAMMED. THIS IS AN ECONOMIC DEVELOPMENT PROJECT.	RIGHT-OF-WAY CONSTRUCTION	FY 2017 - $225,000 (T) FY 2017 - $225,000 (L) FY 2018 - $2,436,000 (T) FY 2018 - $2,436,000 (L) $5,322,000

Unified Planning Work Program

Fiscal Year 2017

DRAFT

FY 2016-2017 UNIFIED PLANNING WORK PROGRAM
for the
WILMINGTON, NORTH CAROLINA URBAN AREA

TABLE OF CONTENTS

Introduction

In compliance with Federal law and in the spirit of cooperation, the Wilmington Urban Area conducts a "cooperative, comprehensive, and continuing…." transportation planning process. This Planning Work Program (PWP) outlines the tasks and associated funding sources dedicated to the Wilmington Urban Area MPO transportation planning process during fiscal year 2016-2017. Depending on the specific funding source, tasks funded through the PWP are eligible for reimbursement of 80-90% of their cost from the Federal Highway Administration and Federal Transit Administration through the North Carolina Department of Transportation.

The PWP for the Wilmington Urban Area identifies four separate funding sources for Urban Area transportation planning. A brief description of these funding sources follows:

-Statewide Planning and Research Programs (SPR)-These funds are used by NCDOT to conduct work for the Wilmington Urban Area MPO.

-Federal Highway Administration Section 104(f) Funds-These funds are dedicated to the urban area to perform transportation planning. They require a 20% local match.

-Federal Transit Administration Section 5303 Funds-These funds are used for transit planning in the urban area. The Federal Transit Administration provides 80% of these funds, NCDOT 10%, and there is a required 10% local match.

-Surface Transportation Program-Direct Attributable Funds- These funds are dedicated to Transportation Management Areas and these funds can be used to perform transportation planning. They require a 20% local match.

The local match requirements will be shared by all members of the Wilmington Urban Area MPO in direct proportion to population as defined in the Wilmington Urban Area MPO Memorandum of Understanding.

Narrative of PWP Section 104(f) Work Tasks to be Performed in FY 2016-2017
(Primary work to be performed by lead planning agency staff except where noted.)

Line Item Code

II-A1 Traffic Volume Counts- Wilmington MPO staff maintains an ongoing traffic counting program. An annual summary of the urban area traffic counts and accident data will be prepared and uploaded to the WMPO website.

II-A2 Vehicle Miles of Travel- Establish VMT as measure of effectiveness of transportation system. Measure the VMT with the new travel demand model.

II-A3 Street System Changes- No tasks foreseen.

II-A4 Traffic Accidents-Currently MPO staff conducts an ongoing effort to summarize traffic accident data for specific projects. MPO staff also utilizes accident data for specific inquiries.

II-A5 Transit System Data- Update of transit system database as needed.

II-A6 Dwelling Unit, Population, Employment Changes- Will measure land use changes by Transportation Analysis Zone between 2010 Census and travel demand model base year. Staff will provide capacity analysis for proposed developments within the Wilmington planning area boundary.

II-A7 Air Travel- Assistance to Wilmington International Airport as needed.

II-A8 Vehicle Occupancy Rate Counts- Monitor VOC as needed.

II-A9 Travel Time Studies- No tasks foreseen.

II-A10 Mapping- Keep Geographic Information System files current and produce maps to support the TCC and TAC, transportation plans, programs, and projects.

II-A11 Central Area Parking Inventory- No tasks foreseen.

II-A12 Bicycle and Pedestrian Facilities Inventory- Update bicycle suitability assessment of federal-aid functionally classed roadways.

II-B1 Collection of Base Year Data- No tasks foreseen.

II-B2 Collection of Network Data- No tasks foreseen.

II-B3 Travel Model Updates- No tasks foreseen.

II-B4 Travel Surveys- No tasks foreseen.

II-B5 Forecast of Data to Horizon Year-No tasks foreseen.

II-B6 Community Goals and Objectives- Monitor public input as it pertains to goals and objectives set forth in the adopted Metropolitan Transportation Plan. Implementation of the Performance Measures from MAP-21.

II-B7 Forecast of Future Year Travel Patterns- No tasks foreseen.

II-B-8 Capacity Deficiency Analysis- Identify areas of deficient capacity through use of travel demand model for further analysis as potential long range transportation improvement projects.

II-B9 Highway Element of Metropolitan Transportation Plan (MTP)- Identification of highway deficiencies, priorities, and proposed highway improvement solutions and strategies. Provide documentation of process and recommendations in the MTP. Implementation of the Performance Measures from MAP-21.

II-B10 Transit Element of Metropolitan Transportation Plan- Identify public transportation deficiencies, priorities, and proposed transit improvement solutions for inclusion in the update of the MTP. Provide documentation of process and recommendations in the update of the MTP. Implementation of the Performance Measures from MAP-21.

II-B11 Bicycle and Pedestrian Element of the Metropolitan Transportation Plan- Identify bicycle deficiencies, priorities, and proposed bicycle and pedestrian improvement solutions and strategies. Provide documentation of the process and recommendations in the update of the MTP. Implementation of the Performance Measures from MAP-21.

II-B12 Airport/Air Travel Element of the Metropolitan Transportation Plan - Identify airport and air service deficiencies, priorities, and proposed airport and air service improvement solutions and strategies. Provide documentation of process and recommendations in the update of the MTP. Implementation of the Performance Measures from MAP-21.

II-B13 Collector Street Element of Metropolitan Transportation Plan- Develop regionally acceptable collector street policies and program recommendations for inclusion in the update of the MTP. Implementation of the Performance Measures from MAP-21.

II-B14 Rail, Waterway and Other Elements of Metropolitan Transportation Plan - Identify rail and waterway deficiencies, priorities, and proposed rail and waterway improvement solutions and strategies. Provide documentation of process and recommendations in the update of the MTP. Implementation of the Performance Measures from MAP-21.

II-B15 Freight Movement/Mobility Planning- Identification of freight movement deficiencies, priorities, and proposed improvement solutions and strategies. Provide documentation of process and recommendations in the update of the MTP. Implementation of the Performance Measures from MAP-21.

II-B16 Financial Planning- Develop realistic, best estimates of funding sources available and project cost estimates throughout the forecast years for the MTP. Ensure fiscal constraint in the update of the MTP. Implementation of the Performance Measures from MAP-21.

II-B17 Congestion Management Strategies- Develop strategies to address and manage congestion by increasing transportation system supply, reducing demand by application of alternative mode solutions, and transportation system management strategies. Evaluate strategies developed for the Congestion Management Process. Document process and solutions in the update of the MTP and CMP report. Implementation of the Performance Measures from MAP-21.

II-B-18 Air Quality Planning/ Conformity Analysis- No tasks foreseen.

III-A Planning Work Program- Evaluation of FY 2015 PWP and development of FY 2016 PWP.

III-B Transportation Improvement Program-Review and amend the 2016-2025 Transportation Improvement Program on an as needed basis.

III-C1 Title VI Compliance-Work to insure compliance with the requirements of Title VI in urban area policies and practices.

III-C2 Environmental Justice- Analysis and outreach to insure that transportation plans and projects comply with Environmental Justice policies.

III-C3 MBE Planning- Activities to encourage participation of minority-owned business enterprises in contractual and supply opportunities.

III-C4 Planning for the Elderly and Disabled- Ensure the special needs of the elderly and disabled are addressed in all transportation planning projects.

II-C5 Safety/Drug Control Planning- No tasks foreseen by the MPO.

III-C6 Public Involvement- Extensive Public Participation effort will be carried out to solicit input and reaction to the completion of planning studies within the Wilmington MPO's planning area boundary.

III-C7 Private Sector Participation- Activities to encourage private sector participation in planning and project activities.

III-D1 Transportation Enhancement Planning- Prepare and submit applications for potential transportation enhancement funding in the Wilmington Urban Area.

II-D2 Environmental and Pre-TIP Planning- Conduct environmental analysis and planning for the development of transportation projects in the Wilmington Urban Area.

III-D3 Special Studies- Consultant will be contracted to assist in the completion of the Metropolitan Transportation Plan and other studies completed by the MPO. These special studies include a feasibly study for the relocation of the rail line, a street design manual for the Town of Leland and a future transportation network for northeastern New Hanover County.

III-D4 Statewide and Regional Planning- Coordination of urban area activities with statewide and regional initiatives.

III-E Management and Operations- Required ongoing administrative and operational tasks to support MPO committees and reporting requirements.

MPO	Wilmington
FTA Code	442100-
Task Code	II-A-5
Title	Transit System Data
Task Objective	Collect and analyze data for route planning and submission to NTD
Tangible Product Expected	Accurate data from multiple data collection devices onboard Wave Transit vehicles and other sources to ensure compliance with National Transit Database requirements
Expected Completion Date of Products	June 2016
Previous Work	Collection of data and submission to NTD
Relationship	This is a collaborative effort of the Wilmington MPO and the Cape Fear Public Transportation Authority (Wave Transit)
Responsible Agency	CFPTA
SPR - Highway - NCDOT 20%	
SPR - Highway - F11WA 80%	
Section 104 (f) PL, Local 20%	
Section 104 (f) PL, FHWA 80%	
Section 5303 Local 10%	1,200
Section 5303 NCDOT 10%	1,200
Section 5303 FTA 80%	9,600
Section 5307 Transit - Local 10%	
Section 5307 Transit - NCDOT 10%	
Section 5307 Transit - FTA 80%	
Additional Funds - Local 100%	

MPO	Wilmington
FTA Code	442100-
Task Code	II-B-6
Title	Community Goals & Objectives
Task Objective	Interpret and communicate with members of the Authority and WMPO TCC and TAC adopted planning documents defining community goals and objectives
Tangible Product Expected	Service offerings that are compliant with adopted plans that outlined the goals of the community for public transportation in the region
Expected Completion Date of Products	June 2016
Previous Work	Communication of goals and objectives to decision makers and the public
Relationship	This is a collaborative effort of the Wilmington MPO and the Cape Fear Public Transportation Authority (Wave Transit)
Responsible Agency	CFPTA
SPR - Highway - NCDOT 20%	
SPR - Highway - F11WA 80%	
Section 104 (f) PL, Local 20%	
Section 104 (f) PL, FHWA 80%	
Section 5303 Local 10%	400
Section 5303 NCDOT 10%	400
Section 5303 FTA 80%	3,200
Section 5307 Transit - Local 10%	
Section 5307 Transit - NCDOT 10%	
Section 5307 Transit - FTA 80%	
Additional Funds - Local 100%	

MPO	Wilmington
FTA Code	442100-
Task Code	II-B-10
Title	Transit Element of the LRTP
Task Objective	Provide input to CAC, TCC and TAC regarding long range transit plans for the region
Tangible Product Expected	Informed decisions regarding long range public transportation plans leading to a realistic planning document for the region
Expected Completion Date of Products	June 2016
Previous Work	Provided input and educated decision makers regarding the federal and state public transportation program
Relationship	This is a collaborative effort of the Wilmington MPO and the Cape Fear Public Transportation Authority (Wave Transit)
Responsible Agency	CFPTA
SPR - Highway - NCDOT 20%	
SPR - Highway - F11WA 80%	
Section 104 (f) PL, Local 20%	
Section 104 (f) PL, FHWA 80%	
Section 5303 Local 10%	400
Section 5303 NCDOT 10%	400
Section 5303 FTA 80%	3,200
Section 5307 Transit - Local 10%	
Section 5307 Transit - NCDOT 10%	
Section 5307 Transit - FTA 80%	
Additional Funds - Local 100%	

MPO	Wilmington
FTA Code	442100-
Task Code	II-B-16
Title	Financial Planning
Task Objective	Plan capital and operating cost estimates to ensure fiscal compliance and maintain the adopted level of transit service
Tangible Product Expected	Short range financial plans based on current federal and state legislation to ensure that transit services are provided in a consistent manner utilizing the most economical and efficient methods
Expected Completion Date of Products	June 2016
Previous Work	Financial planning of the public transportation program
Relationship	This is a collaborative effort of the Wilmington MPO and the Cape Fear Public Transportation Authority (Wave Transit)
Responsible Agency	CFPTA
SPR - Highway - NCDOT 20%	
SPR - Highway - F11WA 80%	
Section 104 (f) PL, Local 20%	
Section 104 (f) PL, FHWA 80%	
Section 5303 Local 10%	800
Section 5303 NCDOT 10%	800
Section 5303 FTA 80%	6,400
Section 5307 Transit - Local 10%	
Section 5307 Transit - NCDOT 10%	
Section 5307 Transit - FTA 80%	
Additional Funds - Local 100%	

MPO	Wilmington
FTA Code	442100-
Task Code	II-C-1
Title	Title VI
Task Objective	Interpret and prepare Title VI documents and monitor Title VI efforts to ensure compliance with FTA approved Title VI program
Tangible Product Expected	Compliance with the Title VI circular and adopted Title VI program
Expected Completion Date of Products	June 2016
Previous Work	Title VI program development and compliance efforts
Relationship	This is a collaborative effort of the Wilmington MPO and the Cape Fear Public Transportation Authority (Wave Transit)
Responsible Agency	CFPTA
SPR - Highway - NCDOT 20%	
SPR - Highway - F11WA 80%	
Section 104 (f) PL, Local 20%	
Section 104 (f) PL, FHWA 80%	
Section 5303 Local 10%	800
Section 5303 NCDOT 10%	800
Section 5303 FTA 80%	6,400
Section 5307 Transit - Local 10%	
Section 5307 Transit - NCDOT 10%	
Section 5307 Transit - FTA 80%	
Additional Funds - Local 100%	

MPO	Wilmington
FTA Code	442100-
Task Code	II-C-3
Title	Minority Business Enterprise
Task Objective	Implement and monitor the MBE program to be compliant with adopted MBE program, update MBE goals as required, and undertake MBE outreach
Tangible Product Expected	MBE participation that is equal to or greater than the adopted and approved MBE goal
Expected Completion Date of Products	June 2016
Previous Work	MBE program oversight
Relationship	This is a collaborative effort of the Wilmington MPO and the Cape Fear Public Transportation Authority (Wave Transit)
Responsible Agency	CFPTA
SPR - Highway - NCDOT 20%	
SPR - Highway - F11WA 80%	
Section 104 (f) PL, Local 20%	
Section 104 (f) PL, FHWA 80%	
Section 5303 Local 10%	800
Section 5303 NCDOT 10%	800
Section 5303 FTA 80%	6,400
Section 5307 Transit - Local 10%	
Section 5307 Transit - NCDOT 10%	
Section 5307 Transit - FTA 80%	
Additional Funds - Local 100%	

MPO	Wilmington
FTA Code	442100-
Task Code	II-C-6
Title	Public Involvement
Task Objective	Hear and analyze public comment from monthly meetings of the Authority, email comments, written comments and other comments outlined in the Authority Public Involvement Program. Work with public to update LCP, LRTP, SRTP and other planning documents.
Tangible Product Expected	Make recommendations to appropriate parties from comments made to the Authority by members of the community
Expected Completion Date of Products	June 2016
Previous Work	Public comment
Relationship	This is a collaborative effort of the Wilmington MPO and the Cape Fear Public Transportation Authority (Wave Transit)
Responsible Agency	CFPTA
SPR - Highway - NCDOT 20%	
SPR - Highway - F11WA 80%	
Section 104 (f) PL, Local 20%	
Section 104 (f) PL, FHWA 80%	
Section 5303 Local 10%	800
Section 5303 NCDOT 10%	800
Section 5303 FTA 80%	6,400
Section 5307 Transit - Local 10%	
Section 5307 Transit - NCDOT 10%	
Section 5307 Transit - FTA 80%	
Additional Funds - Local 100%	

MPO	Wilmington
FTA Code	442100-
Task Code	III-E
Title	Management & Operations
Task Objective	MPO and CFPTA staff will conduct required administrative and operational tasks to support Wave Transit. Periodical reviews of administrative agreements and procedures. Staff will perform daily operations to disseminate planning information to the TAC/TCC committee members, the public and/or other agencies.
Tangible Product Expected	Compliance with FTA and NCDOT requirements, well informed community and elected officials about the public transit program, and functional system that meets the needs of the community
Expected Completion Date of Products	June 2016
Previous Work	Collection of data and submission to NTD
Relationship	This is a collaborative effort of the Wilmington MPO and the Cape Fear Public Transportation Authority (Wave Transit)
Responsible Agency	CFPTA
SPR - Highway - NCDOT 20%	
SPR - Highway - F11WA 80%	
Section 104 (f) PL, Local 20%	
Section 104 (f) PL, FHWA 80%	
Section 5303 Local 10%	2,800
Section 5303 NCDOT 10%	2,800
Section 5303 FTA 80%	22,400
Section 5307 Transit - Local 10%	
Section 5307 Transit - NCDOT 10%	
Section 5307 Transit - FTA 80%	
Additional Funds - Local 100%	

Wilmington Urban Area Metropolitan Planning Organization

FY2017 Unified Planning Work Program

Approved:

TASK CODE	TASK DESCRIPTION	SEC. 104 (f) PL		SECTION 5303			STP-DA		TDM		TASK FUNDING SUMMARY			
		Highway / Transit		Transit / Highway			Highway / Transit		Transit					
		Local 20%	FHWA 80%	Local 10%	State 10%	FTA 80%	Local 20%	FHWA 80%	Local 50%	State 50%	LOCAL	STATE	FEDERAL	TOTAL
II-A	**Surveillance of Change**													
II-A-1	Traffic Volume Counts	8,800	35,200								8,800		35,200	44,000
II-A-2	Vehicle Miles of Travel	50	200								50		200	250
II-A-3	Street System Changes												-	-
II-A-4	Traffic Accidents	600	2,400								600		2,400	3,000
II-A-5	Transit System Data	100	400	1,200	1,200	9,600					1,300	1,200	10,000	12,500
II-A-6	Dwelling Unit, Pop. & Emp. Change	400	1,600								400		1,600	2,000
II-A-7	Air Travel	50	200								50		200	250
II-A-8	Vehicle Occupancy Rates	50	200								50		200	250
II-A-9	Travel Time Studies												-	-
II-A-10	Mapping	600	2,400								600		2,400	3,000
II-A-11	Central Area Parking Inventory													
II-A-12	Bike & Ped. Facilities Inventory	50	200								50		200	250
II-B	**Long Range Transp. Plan**													
II-B-1	Collection of Base Year Data													
II-B-2	Collection of Network Data													
II-B-3	Travel Model Updates													
II-B-4	Travel Surveys													
II-B-5	Forecast of Data to Horizon year													
II-B-6	Community Goals & Objectives	4,000	16,000	400	400	3,200					4,400	400	19,200	24,000
II-B-7	Forecast of Futurel Travel Patterns													
II-B-8	Capacity Deficiency Analysis	400	1,600								400		1,600	2,000
II-B-9	Highway Element of th LRTP	2,000	8,000								2,000		8,000	10,000
II-B-10	Transit Element of the LRTP	400	1,600	400	400	3,200					800	400	4,800	6,000
II-B-11	Bicycle & Ped. Element of the LRTP	2,000	8,000								2,000		8,000	10,000
II-B-12	Airport/Air Travel Element of LRTP	450	1,800								450		1,800	2,250
II-B-13	Collector Street Element of LRTP	600	2,400								600		2,400	3,000
II-B-14	Rail, Water or other mode of LRTP	800	3,200								800		3,200	4,000
II-B-15	Freight Movement/Mobility Planning	200	800								200		800	1,000
II-B-16	Financial Planning	200	800	800	800	6,400					1,000	800	7,200	9,000
II-B-17	Congestion Management Strategies	500	2,000								500		2,000	2,500
II-B-18	Air Qual. Planning/Conformity Anal.													
III-A	**Planning Work Program**	200	800								200		800	1,000
III-B	**Transp. Improvement Plan**	200	800								200		800	1,000
III-C	**Cvl Rgts. Cmp./Otr .Reg. Reqs.**													
III-C-1	Title VI	200	800	800	800	6,400					1,000	800	7,200	9,000
III-C-2	Environmental Justice	200	800								200		800	1,000
III-C-3	Minority Business Enterprise	100	400	800	800	6,400					900	800	6,800	8,500
III-C-4	Planning for the Elderly & Disabled	50	200								50		200	250
III-C-5	Safety/Drug Control Planning													
III-C-6	Public Involvement	600	2,400	800	800	6,400					1,400	800	8,800	11,000
III-C-7	Private Sector Participation	50	200								50		200	250
III-D	**Incidental Plng./Project Dev.**													
III-D-1	Transportation Enhancement Plng.	50	200								50		200	250
III-D-2	Enviro. Analysis & Pre-TIP Plng.	50	200								50		200	250
III-D-3	Special Studies	28,000	112,000								28,000		112,000	140,000
III-D-4	Regional or Statewide Planning	100	400								100		400	500
III-E	**Management & Operations**	22,000	88,000	2,800	2,800	22,400	60,000	240,000	60,000	60,000	144,800	62,800	350,400	438,000
TOTALS		**74,050**	**296,200**	**8,000**	**8,000**	**64,000**	**60,000**	**240,000**	**60,000**	**60,000**	**202,050**	**68,000**	**600,200**	**870,250**

Anticipated DBE Contracting Opportunities for FY 2016-2017

Name of MPO: Wilmington Urban Area MPO

Person Completing Form: Mike Kozlosky Telephone Number: 910-342-2781

Prospectus Task Code	Prospectus Description	Name of Agency Contracting Out	Type of Contracting Opportunity (Consultant, etc.)	Federal Funds to be Contracted Out	Total Funds to be Contracted Out
III-D-3	Special Studies	City of Wilmington	Consultant	$100,000	$125,000

RESOLUTION

APPROVING THE FY 2016-2017 PLANNING WORK PROGRAM
OF THE WILMINGTON URBAN AREA

WHEREAS, a comprehensive and continuing transportation planning program must be carried out cooperatively in order to ensure that funds for transportation projects are effectively allocated to the Wilmington Urban Area;

WHEREAS, the City of Wilmington has been designated as the recipient of Federal Transit Administration Metropolitan Planning Program (Section 5303) funds and Federal Highway Administration Metropolitan Planning (Section 104(f)) funds;

WHEREAS, members of the Wilmington Urban Area Transportation Advisory Committee agree that the Planning Work Program will effectively advance transportation planning for State Fiscal Year 2016-2017;

NOW THEREFORE, be it resolved that the Transportation Advisory Committee hereby endorses the FY 2016-2017 Planning Work Program for the Wilmington Urban Area.

****

I, _____ , Chair of the Wilmington Urban Area Transportation Advisory Committee do hereby certify that the above is a true and correct copy of an excerpt from the minutes of a meeting of the Wilmington Urban Area Transportation Advisory Committee, duly held on this the ___ day of _____ 2016.

_____

_____ Chair
Wilmington Urban Area TAC

****

Subscribed and sworn to me this the _____ day of_____, 2016.

_____

Notary Public

My commission expires_____.

RESOLUTION CONFIRMING TRANSPORTATION PLANNING PROCESS

RESOLUTION CERTIFYING THE WILMINGTON METROPOLITAN PLANNING ORGANIZATION'S TRANSPORTATION PLANNING PROCESS FOR FY 2016

WHEREAS, the Transportation Advisory Committee has found that the Metropolitan Planning Organization is conducting transportation planning in a continuous, cooperative, and comprehensive manner in accordance with 23 U.S.C. 134 and 49 U.S.C. 1607;

WHEREAS, the Transportation Advisory Committee has found the Transportation Planning Process to be in full compliance with Title VI of the Civil Rights Act of 1964 and the Title VI Assurance executed by each State under 23 U.S.C. 324 and 29 U.S.C. 794;

WHEREAS, the Transportation Advisory Committee has considered how the Transportation Planning Process will affect the involvement of Disadvantaged Business Enterprises in the FHWA and the FTA funded planning projects (Section 1003(b) of ISTEA of 1991 (Pub. L. 102-240), Sec. 105(f), Pub. L. 97-424, 96 Stat. 2100, 49 CFR part 23);

WHEREAS, the Transportation Advisory Committee has considered how the Transportation Planning Process will affect the elderly and the disabled per the provision of the Americans With Disabilities Act of 1990 (Pub. L. 101-336, 104 Stat. 327, as amended) and the U.S. DOT implementing regulations (49 CFR parts 27, 37, and 38);

WHEREAS, the Transportation Plan has a planning horizon year of 2040, and meets all the requirements for an adequate Transportation Plan,

NOW THEREFORE, be it resolved that the Wilmington Urban Area Transportation Advisory Committee certifies the transportation planning process for the Wilmington Metropolitan Planning Organization on this the ___th day of _____, 2016.

_____

_____
Chair, Transportation Advisory Committee

_____

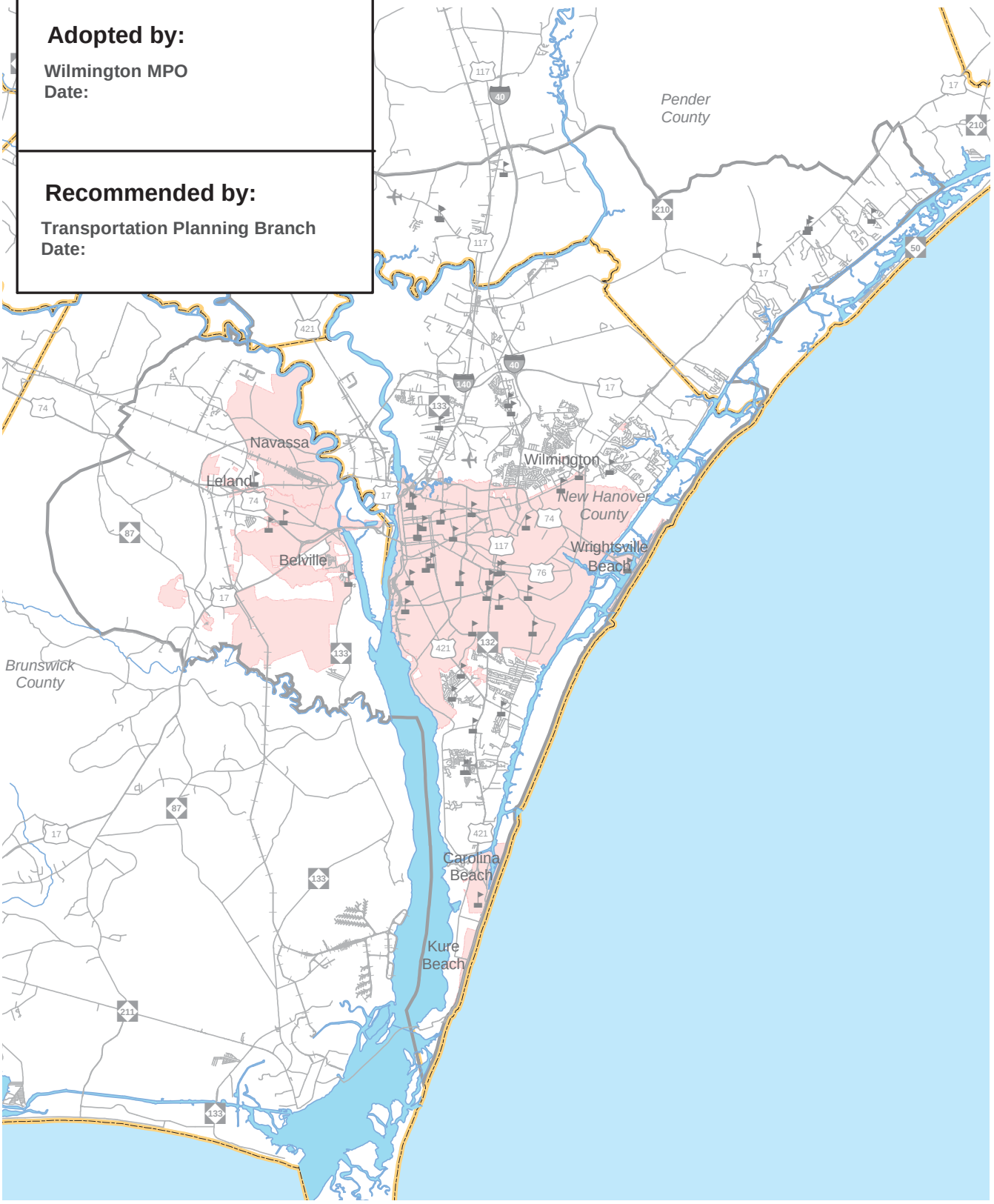
Mike Kozlosky
Secretary, Wilmington Metropolitan Planning Organization

Adopted by:

Wilmington MPO
Date:

Recommended by:

Transportation Planning Branch
Date:



Sheet 1	Adoption Sheet
Sheet 2	Highway Map
Sheet 3	Public Transportation and Rail Map
Sheet 4	Bicycle Map
Sheet 5	Pedestrian Map

Legend

- Airports
- Schools
- Roads
- Rail Roads
- MPO Boundary
- Water
- Municipal Boundary
- CountyBoundary

0 1 2 4 6
Miles

N
W E
S

Sheet 1 of 5

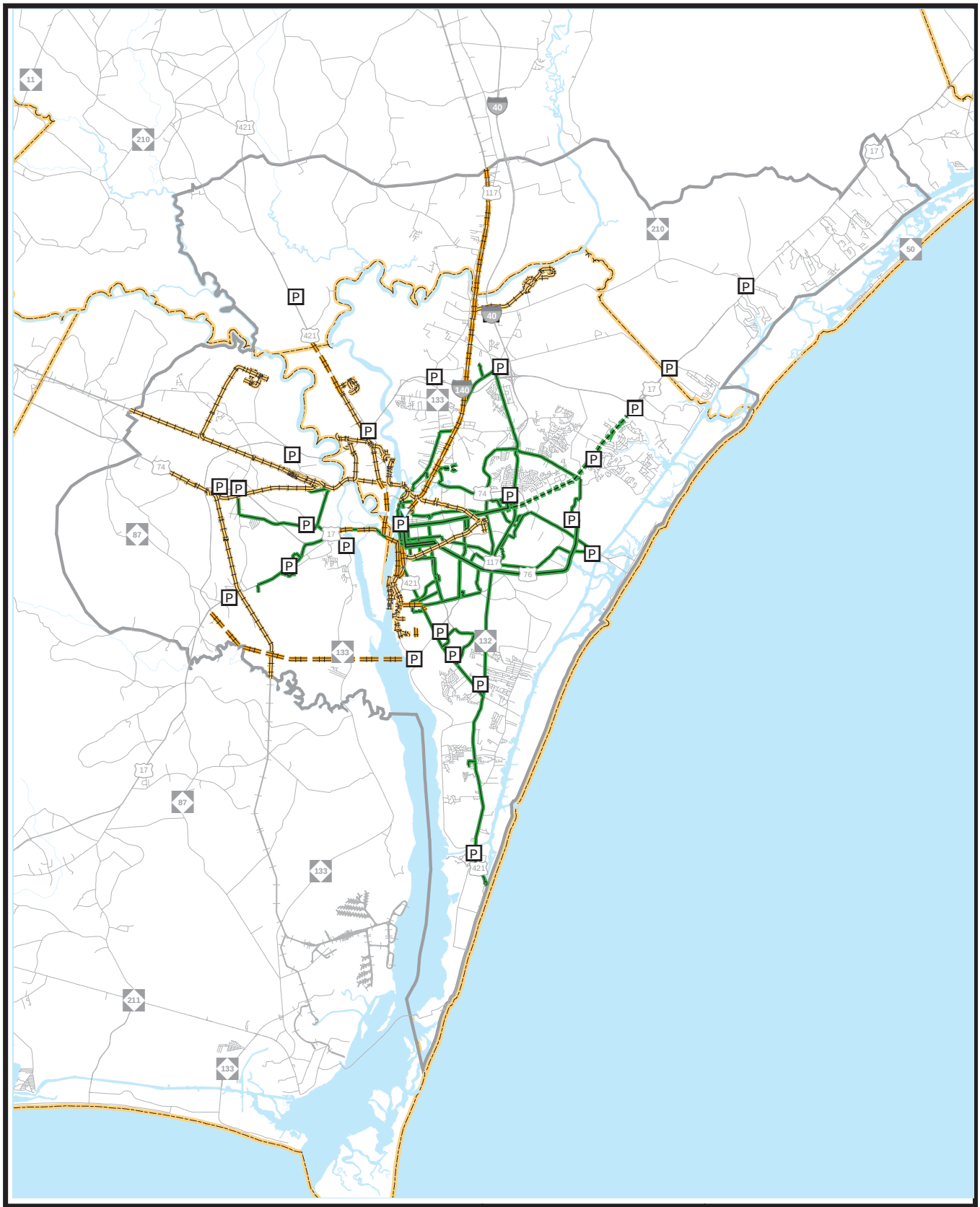
Base map date: 6/1/2015

Adoption Sheet

Wilmington MPO

Comprehensive Transportation Plan

Plan date: December 9, 2015



Bus Routes
- Existing
- Needs Improvement
- Recommended

Fixed Guideway
- Existing
- Needs Improvement
- Recommended

Operational Strategies
- Existing
- Needs Improvement
- Recommended

Rail Corridor
- Active
- Inactive
- Recommended

High Speed Rail Corridor
- Existing
- Recommended

- Existing Grade Separation
- Proposed Grade Separation

Multimodal Connector
- Existing
- Recommended

Park and Ride Lot
- Existing
- Recommended

0 0.75 1.5 3 4.5
Miles

N
W E
S

Sheet 3 of 5

Base map date: June 1, 2015

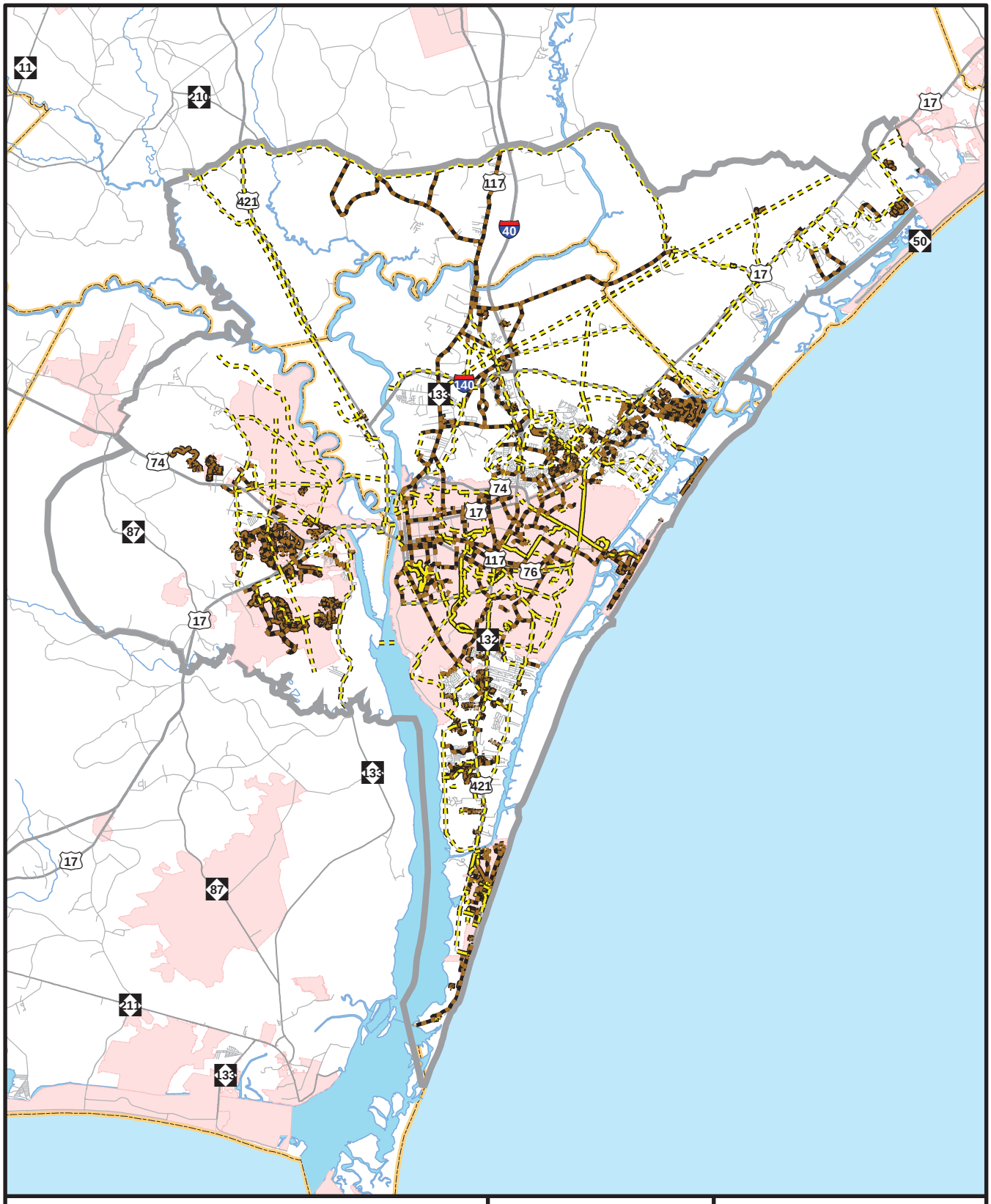
Refer to CTP document for more details

Public Transportation and Rail Map

Wilmington MPO

Comprehensive Transportation Plan

Plan date: December 9, 2015



On-road
- Existing
- Needs Improvement
- Recommended

Multi-Use Paths
- Existing
- Needs Improvement
- Recommended

Off-road
- Existing
- Needs Improvement
- Recommended

- Existing Grade Separation
- Proposed Grade Separation

0 0.75 1.5 3 4.5
Miles

N
W E
S

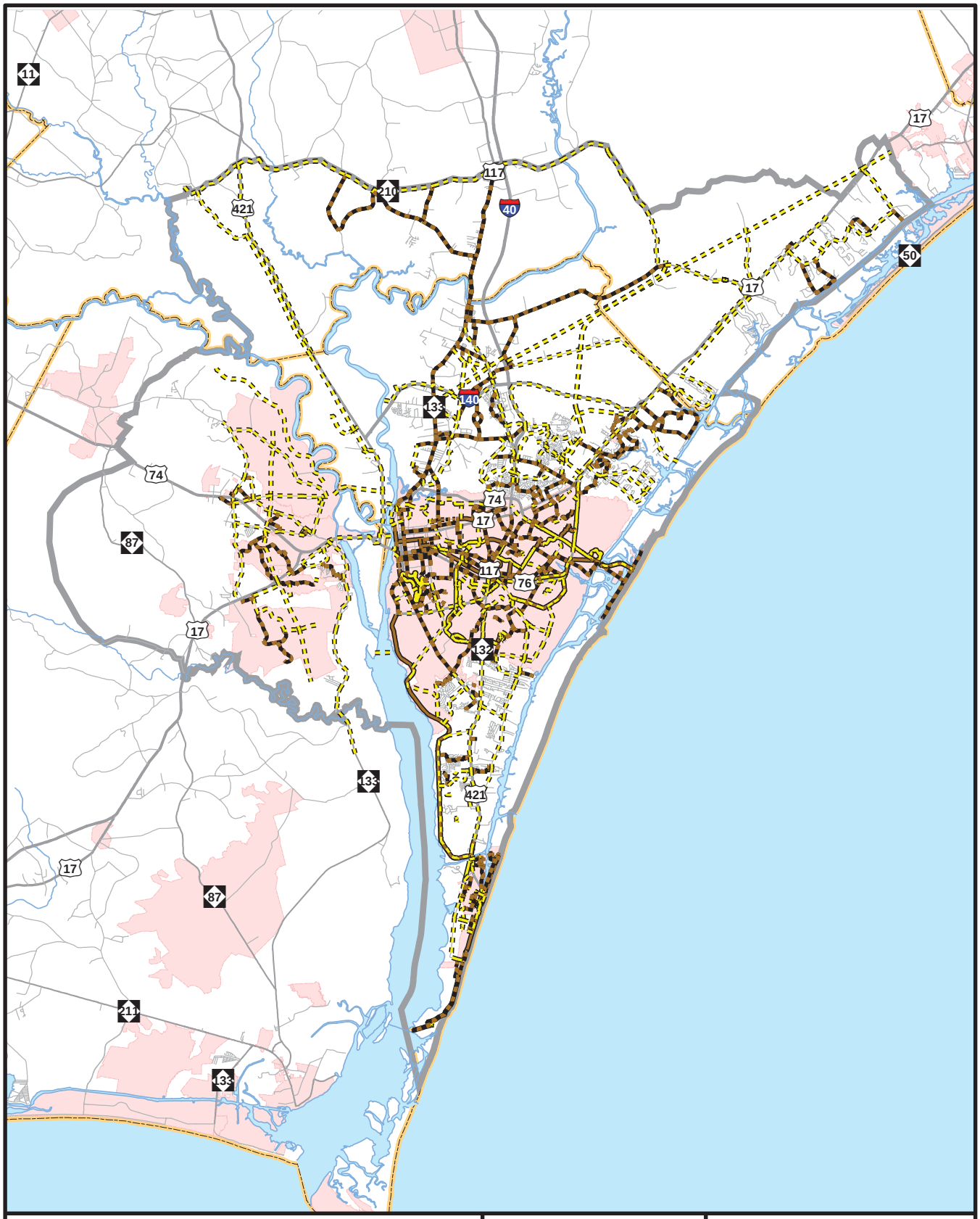
Sheet 4 of 5

Base map date: JUNE 1, 2015

Pedestrian Map

Wilmington MPO
Comprehensive Transportation Plan

Plan date: December 9, 2015


On-road
Existing
Needs Improvement
Recommended
Multi-Use Paths
Existing
Needs Improvement
Recommended
Off-road
Existing
Needs Improvement
Recommended
Existing Grade Separation
Proposed Grade Separation
0 0.75 1.5 3 4.5
Miles
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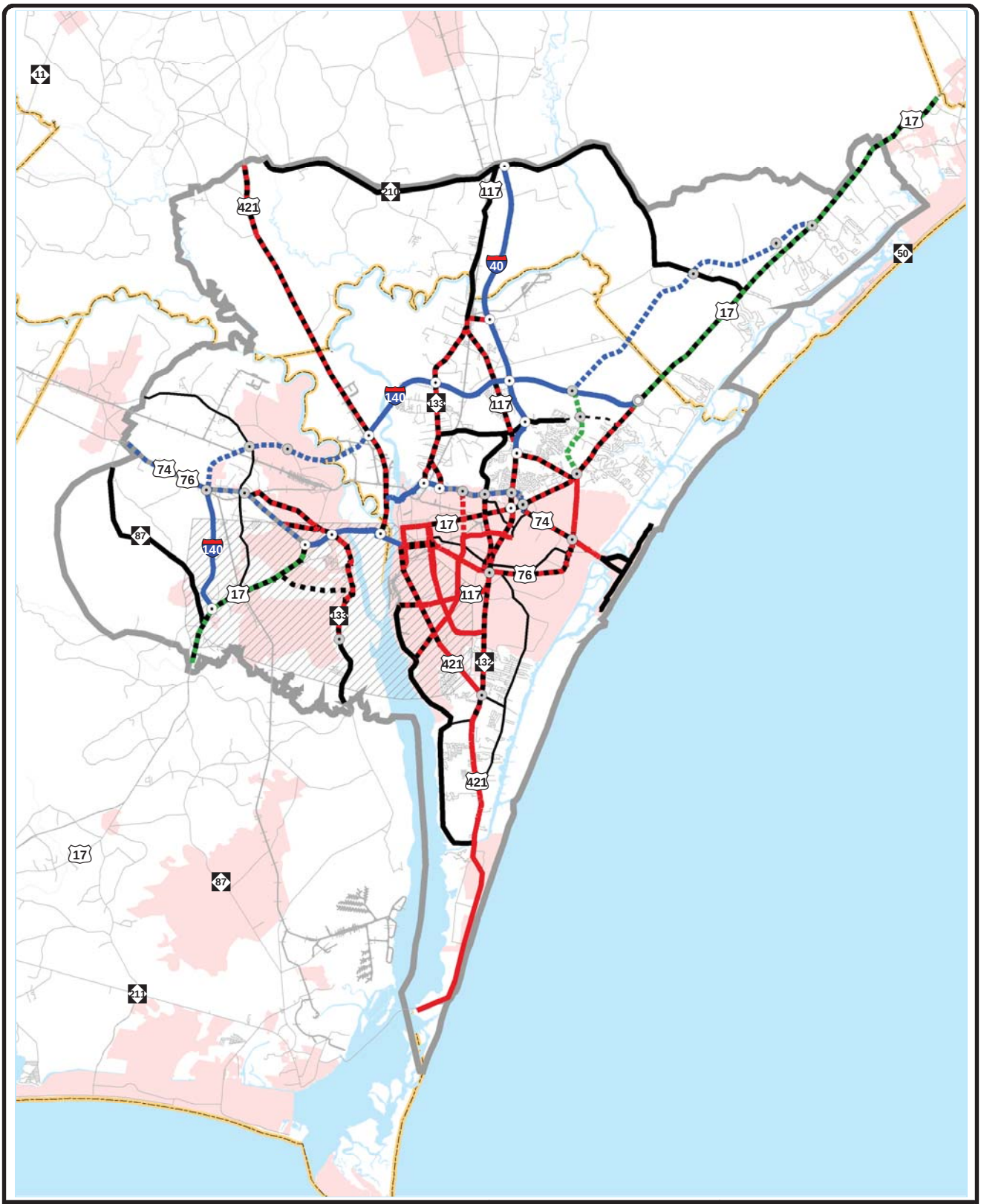
Sheet 4 of 5
Base map date: June 1, 2015
Bicycle Map
Wilmington MPO
Comprehensive
Transportation Plan
Plan date: December 9, 2015



Freeways
- Existing
- Needs Improvement
- Recommended

Expressways
- Existing
- Needs Improvement
- Recommended

Boulevards
- Existing
- Needs Improvement
- Recommended

Other Major Thoroughfares
- Existing
- Needs Improvement
- Recommended

Minor Thoroughfares
- Existing
- Needs Improvement
- Recommended

- Existing Interchange
- Proposed Interchange
- Interchange Needs Improvement
- Existing Grade Separation
- Proposed Grade Separation

*Cape Fear Crossing is shown as the Study Area (Cross Hatched area) for this project, no final alternative alignment has been chosen at the time of adoption of the CTP

0 0.75 1.5 3 4.5
Miles

N W E S

Sheet 2 of 5

Base map date: JUNE 1, 2015

Refer to CTP document for more details

Highway Map

Wilmington MPO
Comprehensive Transportation Plan

Plan date: DECEMBER 9, 2015

NCDOT Facility Types Comparison Chart

	Freeways	Expressways	Boulevards	Thoroughfares
Functional Purpose	High Mobility, Low Access	High Mobility, Low to Moderate Access	Moderate Mobility, Low to Moderate Access	Moderate to Low Mobility, High Access
AASHTO Design Classification	Interstate or Freeway	Arterial	Arterial or Collector	Collector or Local
Posted Speed Limit	55 mph or greater	45 mph to 60 mph	30 mph to 55 mph	25mph to 55 mph
Control of Access	Full	Limited or Partial	Limited or Partial	None
Traffic Signals	Not Allowed	Not Allowed	Allowed	Allowed
Driveways	Not Allowed	Limited Control of Access - Not Allowed Partial Control of Access - One Driveway Connection per Parcel; Consolidate and/or Share Driveways and Limit Access to Connecting Streets or Service Roads; Restrict to Right-in/Right-out	Limited Control of Access - Not Allowed Partial Control of Access - One Driveway Connection per Parcel; Consolidate and/or Share Driveways and Limit Access to Connecting Streets or Service Roads; Restrict to Right-in/Right-out	Allowed with Full Movements; Consolidate or Share Connections, if possible
Cross-Section	Minimum 4 Lanes with a Median	Minimum 4 Lanes with a Median	Minimum 2 Lanes with a Median	Minimum 2 Lanes; No Median; Includes Facilities with Two Way Left Turn Lane
Connections	Provided only at Interchanges; All Cross Streets are Grade-Separated	Provided only at Interchanges for Major Cross Streets and At-Grade Intersections for Minor Cross Streets; Use of Acceleration and Deceleration Lanes for At-Grade Intersections	At-Grade Intersections for most Major and Minor Cross Streets (Occasional Interchange at Major Crossing); Use of Acceleration and Deceleration Lanes	Primarily At-Grade Intersections
Median Crossovers	Public-use Crossovers Not Allowed; U-turn Median Openings for Use by Authorized Vehicles Only when Need is Justified	Allowed; Alternatives to All-Movement Crossovers Encouraged; Minimum Spacing between All-Movement Crossovers is 2000 feet (posted speed limit of greater than 45 mph) or 1200 feet (posted speed limit of 45 mph or less)	Allowed; Minimum Spacing between All-Movement Crossovers is 2000 feet (posted speed limit of greater than 45 mph) or 1200 feet (posted speed limit of 45 mph or less)	Not Applicable

WILMINGTON URBAN AREA METROPOLITAN PLANNING ORGANIZATION
TRANSPORTATION ADVISORY COMMITTEE

RESOLUTION ADOPTING *THE WILMINGTON URBAN AREA COMPREHENSIVE TRANSPORTATION PLAN*

WHEREAS, the Wilmington Urban Area Metropolitan Planning Organization provides transportation planning services for the City of Wilmington, Town of Carolina Beach, Town of Kure Beach, Town of Wrightsville Beach, Town of Belville, Town of Leland, Town of Navassa, New Hanover County, Brunswick County, Pender County, Cape Fear Public Transportation Authority and the N.C. Board of Transportation; and

WHEREAS. the Wilmington Urban Area Metropolitan Planning Organization (Wilmington MPO) has established a comprehensive, cooperative and continuing (3-C) transportation planning process to develop an annual unified planning work program, 25-year metropolitan transportation plan, and a metropolitan transportation improvement program (MTIP) to facilitate the expenditure of federal funds; and

WHEREAS, the Wilmington MPO and the Transportation Planning Branch, North Carolina Department of Transportation plan for the Wilmington Urban Area; and

WHEREAS, it is recognized that the proper movement of traffic within and through, for all modes of transportation, the Wilmington Urban Area is a highly desirable element of the comprehensive plan for the orderly growth and development of the Wilmington Urban Area.

NOW THEREFORE, BE IT RESOLVED by the Wilmington Urban Area Metropolitan Planning Organization's Transportation Advisory Committee hereby adopts the Wilmington Urban Area Comprehensive Transportation Plan as a guide in the development of the transportation system for the Wilmington Urban Area and the same is hereby recommended to the North Carolina Department of Transportation for its subsequent adoption.

ADOPTED at a regular meeting of the Wilmington Urban Area Metropolitan Planning Organization Transportation Advisory Committee on January 27, 2016.

_____

Chair

Transportation Advisory Committee

_____

Mike Kozlosky, Secretary

WILMINGTON URBAN AREA METROPOLITAN PLANNING ORGANIZATION
TRANSPORTATION ADVISORY COMMITTEE

RESOLUTION SUPPORTING THE ALLOCATION OF SURFACE TRANSPORTATION PROGRAM- DIRECT ATTRIBUTABLE (STP-DA) FUNDS TO THE SELECTED FY 2016 PROJECTS

WHEREAS, the Wilmington Urban Area Metropolitan Planning Organization provides transportation planning services for the City of Wilmington, Town of Carolina Beach, Town of Kure Beach, Town of Wrightsville Beach, Town of Belville, Town of Leland, Town of Navassa, New Hanover County, Brunswick County, Pender County, Cape Fear Public Transportation Authority and the North Carolina Board of Transportation; and

WHEREAS, on July 18, 2012 the Federal Transit Administration (FTA) and the Federal Highways Administration (FHWA) designated the Wilmington Urban Area Metropolitan Planning Organization as a Transportation Management Area (TMA); and

WHEREAS, Surface Transportation Direct Attributable (STP-DA) funds are available for all designated TMAs; and

WHEREAS, the Wilmington Urban Area Metropolitan Planning Organization Transportation Advisory Committee adopted the prioritization process and 2015 modal target investment strategies on June 24, 2015; and

WHEREAS, the Wilmington Urban Area Metropolitan Planning Organization developed a call for projects and received 4 submittals from MPO member agencies; and

WHEREAS, the Wilmington MPO has reviewed the project submittals based on the modal target investment strategies and prioritization process.

NOW, THEREFORE, be it resolved that the Wilmington Metropolitan Planning Organization's Transportation Advisory Committee hereby supports the allocation of STP-DA funds to the Wilmington Multi-modal Transportation Center.

ADOPTED at a regular meeting of the Wilmington Urban Area Metropolitan Planning Organization Transportation Advisory Committee on January 27, 2016.

_____
Chair
Transportation Advisory Committee

_____
Mike Kozlosky, Secretary

2016 WMPO Organizational Survey

Welcome to the WMPO Organizational Survey

Thank you for participating in this important survey measuring how the Wilmington Urban Area Metropolitan Planning Organization (WMPO) conducts transportation planning for the Wilmington region. Your thoughts and opinions will provide valuable information to better serve the WMPO board and your community in the future. The survey seeks feedback regarding the organization, management and staff, website, and committees. This survey is anonymous.

This survey has a total of 26 questions and should only take XX minutes to complete. Be assured that all answers you provide will be kept in the strictest confidentiality. Please click 'Next' to begin.

Wilmington Urban Area Metropolitan Planning Organization
www.wmpo.org

2016 WMPO Organizational Survey

WMPO SWOT Questions

The following questions (1-4) request information regarding your overall perception of the WMPO. Your answers will be used for a SWOT analysis.

Please provide your comments on the following questions:

1. What practices are really working well, organizational competencies and effective processes?

2. Knowledge gaps, inefficient procedures, lack of value, synergy?

3. Untapped resources, positive changes in external environment?

4. Potential changes, threatened resources, unwise practices?

WMPO Wilmington Urban Area Metropolitan Planning Organization www.wmpo.org

2016 WMPO Organizational Survey

Organization as a System

Questions 5-14 seek your feedback pertaining to the organization, management, and staff. Please chose your answers by selecting one of the options for each row and providing your comments in the boxes below.

5. How would you grade the WMPO's *management* on:

	Has **exceeded** my expectations (outstanding)	**Has consistent** performance and is **above** my minimum expectations/standards	… **met** my minimum expectations	**Is doing some, but did not meet** my minimum expectations/standards	**Is doing little to nothing** in this category	N/A
Leadership abilities	◯	◯	◯	◯	◯	◯
Asking for input when making impacting decisions	◯	◯	◯	◯	◯	◯
Informing program/project changes	◯	◯	◯	◯	◯	◯
Communicating information	◯	◯	◯	◯	◯	◯

6. How would you grade WMPO's *communication* efforts related to:

	Has **exceeded** my expectations (outstanding)	**Has consistent** performance and is **above** my minimum expectations/standards	… **met** my minimum expectations	**Is doing some, but did not meet** my minimum expectations/standards	**Is doing little to nothing** in this category	N/A
Current, planning regional-wide issues	◯	◯	◯	◯	◯	◯
Current, specific jurisdiction issues	◯	◯	◯	◯	◯	◯
Providing a consistent message	◯	◯	◯	◯	◯	◯

7. How would you grade the your perception of the WMPO:

	Has **exceeded** my expectations (outstanding)	**Has consistent** performance and is **above** my minimum expectations/standards	… **met** my minimum expectations	**Is doing some, but did not meet** my minimum expectations/standards	**Is doing little to nothing** in this category	N/A
Employee's work efforts	◯	◯	◯	◯	◯	◯
Customer service	◯	◯	◯	◯	◯	◯
Response time to your concerns	◯	◯	◯	◯	◯	◯
Reasons for existing	◯	◯	◯	◯	◯	◯

8. How would you grade the *publics'* perception of the WMPO:

	Has **exceeded** my expectations (outstanding)	**Has consistent** performance and is **above** my minimum expectations/standards	… **met** my minimum expectations	**Is doing some, but did not meet** my minimum expectations/standards	**Is doing little to nothing** in this category	N/A
Employee's work efforts	◯	◯	◯	◯	◯	◯
Customer service	◯	◯	◯	◯	◯	◯
Response time to their concerns	◯	◯	◯	◯	◯	◯
Providing a consistent message	◯	◯	◯	◯	◯	◯

Please provide your comments on the following questions:

9. How would you rate the level of "*on-the-job*" knowledge from WMPO staff?

10. Are WMPO staff members working well with the jurisdictions we serve?

11. Do WMPO staff members understand the community's values?

WMPO Wilmington Urban Area Metropolitan Planning Organization www.wmpo.org

2016 WMPO Organizational Survey

Organizational Effectiveness

This sections seeks feedback regarding the effectiveness of the<u>entire</u> organization.

12. Organizational Effectiveness (Please select one of the following)

	Extremely Effective	Somewhat Effective	Somewhat Ineffective	Extremely Ineffective	N/A
Overall, how effective is the WMPO as an organization?	○	○	○	○	○
Selecting projects and studies?	○	○	○	○	○
Seeking input from member organizations and TAC, TCC, CAC, Bike/Ped members?	○	○	○	○	○
Prioritizing effectively?	○	○	○	○	○
Developing a Unified Planning Work Program (UPWP)?	○	○	○	○	○
Developing the Metropolitan Transportation Plan?	○	○	○	○	○
Managing STIP (State Transportation Improvement Program)?	○	○	○	○	○

13. Overall, does the WMPO use resources efficiently? If not, what suggestions do you have for the WMPO to operate more efficiently?

WMPO Wilmington Urban Area Metropolitan Planning Organization www.wmpo.org

2016 WMPO Organizational Survey

Changes in the WMPO

Please suggest any changes you think should occur within the WMPO. If you desire to explain the changes you would like to see, please use the 'Recommendations/Comments' box a the bottom of the page.

14. Changes in the WMPO (Please select one of the following)

	No Changes	Some Changes
WMPO's Vision and Purpose	○	○
TAC Policies/Processes	○	○
TCC Policies/Processes	○	○
CAC Policies/Processes	○	○
CAC Policies/Processes	○	○
Organizational structure and hosting of the WMPO	○	○

Recommendations/Comments

2016 WMPO Organizational Survey

WMPO's Staff Effectiveness

This section seeks information regarding the effectiveness of WMPO staff while fulfilling their duties.

15. WMPO's Staff Effectiveness (Please select one of the following)

	Extremely Effective	Somewhat Effective	Somewhat Ineffective	Extremely Ineffective	N/A
Responding to request for information from the public	○	○	○	○	○
Responding to requests for information from member jurisdiction staff members	○	○	○	○	○
Responding to requests for information from elected officials and TAC	○	○	○	○	○
Advocating for funding for WMPO priorities	○	○	○	○	○
Providing staff support to TCC meetings	○	○	○	○	○
Providing staff support to TAC meetings	○	○	○	○	○
Providing support to CAC meetings	○	○	○	○	○
Providing support to Bike Ped meetings	○	○	○	○	○
Remaining neutral amongst member jurisdictions	○	○	○	○	○
Providing expert analysis in a way that is meaningful and understandable	○	○	○	○	○
WMPO staff is available for assistance	○	○	○	○	○
WMPO staff effectively communicates each of their roles	○	○	○	○	○

16. Please provide ways to improve staff effectiveness:

WMPO Wilmington Urban Area Metropolitan Planning Organization www.wmpo.org

2016 WMPO Organizational Survey

WMPO's Website

This section seeks information pertaining to the WMPO website (www.wmpo.org). As we are currently updating the website, the information you provide will provide us guidance on how to develop the website to better serve your needs.

17. WMPO's Website (Please select one of the following)

	Extremely Effective	Somewhat Effective	Somewhat Ineffective	Extremely Ineffective	N/A
Ease of finding information on website	○	○	○	○	○

18. How Frequently do you visit our website?

- ○ daily
- ○ few times per week, once per week
- ○ few times per month
- ○ once per month
- ○ less frequently than once per month

19. How can we better design the website? Tell us your ideas and suggestions

20. What information do you search for and would like to see on the WMPO website?

WMPO Wilmington Urban Area Metropolitan Planning Organization www.wmpo.org

2016 WMPO Organizational Survey

Committee Procedures and Operations

The following questions seek information regarding the committee you may serve or work closely with.

21. Committee Procedures and Operations (Please select one of the following)

	Extremely Effective	Somewhat Effective	Somewhat Ineffective	Extremely Ineffective	N/A
Overall structure of meetings	○	○	○	○	○
Allocating/prioritizing time for discussion based on importance	○	○	○	○	○
Meeting space/location	○	○	○	○	○
Meeting dates and time	○	○	○	○	○
WMPO staff communicates/channels relevant information/concerns among committees	○	○	○	○	○
WMPO staff providing orientation and on-boarding process for new committee members	○	○	○	○	○
WMPO staff providing committee members agenda materials in a timely manner	○	○	○	○	○
Meetings allow members to be engaged/represented equally	○	○	○	○	○
Use of meeting time for civic organizations, e.g. presentations	○	○	○	○	○
Use of meeting time for consultants, e.g. presentations, reports	○	○	○	○	○

WMPO Wilmington Urban Area Metropolitan Planning Organization www.wmpo.org

2016 WMPO Organizational Survey

Committee Procedures and Operations cont.

22. How can committee procedures and operations be improved?

23. How can information best be communicated/exchanged among TCC, TAC and WMPO staff?

24. How difficult was it to become oriented to your role as a committee member?

25. How can we improve the orientation/on-boarding process for new TAC/TCC committee member?

26. How do your fellow alderman/commission/council members view the WMPO?

Proposed Wilmington MPO FY 2017-2021 Strategic Business Plan Schedule

January 27, 2016- Review and approval of Customer Survey with Transportation Advisory Committee

January 28, 2016- Send out survey to Customers

February 28, 2016- Survey Closes

Mid- March- Host TAC retreat to review survey results and to facilitate discussions on Strategic Business Plan-The recommendations will be broken down into Short-Term (1-2 years), Mid-Term (3-5 years) and Long Term (beyond 5 years)

April 27, 2016- Review Draft 2017-2021 Strategic Business Plan

May 25, 2016- Adopt 2017-2021 Strategic Business Plan

Wilmington MPO
Legislative Agenda 2016

Transportation Financing

The Wilmington MPO supports prioritization and funding for local transportation and infrastructure projects and to explore new transportation and infrastructure revenue sources to address the growing needs of the state and the nation. Including, but not limited to road and highway projects, public transportation, bicycle and pedestrian infrastructure, beach nourishment, waterway maintenance, port infrastructure, airports, etc.

Moped Legislation

The Wilmington MPO supports the North Carolina Department of Transportation's policy recommendation of restricting mopeds on public roadways with posted speed limits of 45 mph or greater. The MPO also encourages the North Carolina General Assembly to implement laws that regulate the use of mopeds in a manner that promotes the safety and welfare of the citizens and visitors of North Carolina and pursue education and clarity on existing regulations for mopeds, golf carts, and low-speed vehicles.

Corridor Preservation

The Wilmington MPO requests the General Assembly continue to support NCGS 136-44.50 to protect vital Transportation Corridors in the state of North Carolina.

Opposition to Transfer of State Road Maintenance

The Wilmington MPO respectfully and urgently requests the North Carolina General Assembly reject proposals which would transfer responsibility for large portions of the state's road system to local governments, and weaken or dismantle municipal Powell Bill Street maintenance funding.

WILMINGTON URBAN AREA METROPOLITAN PLANNING ORGANIZATION
TRANSPORTATION ADVISORY COMMITTEE

RESOLUTION SUPPORTING AN INCREASE IN THE FERRY TOLLS FOR THE FORT FISHER/SOUTHPORT FERRY

WHEREAS, the Wilmington Urban Area Metropolitan Planning Organization provides transportation planning services for the City of Wilmington, Town of Carolina Beach, Town of Kure Beach, Town of Wrightsville Beach, Town of Belville, Town of Leland, Town of Navassa, New Hanover County, Brunswick County, Pender County, Cape Fear Public Transportation Authority and the North Carolina Board of Transportation; and

WHEREAS, in 2013, the North Carolina General Assembly mandated that new ferry acquisitions be funded through Strategic Transportation Initiative funding or by revenue-raising initiatives such as tolling, advertising, and concessions; and

WHEREAS, the North Carolina Board of Transportation has approved a tolling methodology which tolls routes by distance travelled and raises approximately five million dollars a year for ferry replacement; and

WHEREAS, all money collected will go only toward new ferry vessels and ferry improvements; and

WHEREAS, the Fort Fisher/Southport ferry is currently a tolled ferry; and

WHERESAS, the NCDOT is proposing to retain the same ferry tolls for pedestrians, bicycles and motorcycles but increase the ferry tolls for < 20 feet from $5 to $7, 20 feet – 40 feet from $10 to $14 and > 40 from $15 to $28.

NOW THEREFORE, be it resolved that the Wilmington Metropolitan Planning Organization's Transportation Advisory Committee hereby supports an increase in the ferry tolls for the Fort Fisher/Southport Ferry.

ADOPTED at a regular meeting of the Wilmington Urban Area Metropolitan Planning Organization Transportation Advisory Committee on March 26, 2014.

Laura Padgett, Chair
Transportation Advisory Committee

Mike Kozlosky, Secretary

Proposed Revisions to 2016-2025 STIP/MTIP Program

STIP/MTIP Modifications
(January)

U-3831 NEW HANOVER PROJ.CATEGORY DIVISION	SR 2048 (GORDON ROAD), NC 132 INTERCHANGE RAMP TO W EST OF US 17 BUSINESS (MARKET STREET) IN W ILMINGTON. W IDEN TO MULTI-LANES. RIGHT-OF-W AY ACCELERATED FROM FY 22 TO FY 21 AND CONSTRUCTION FROM FY 24 TO FY 23. PROJECTACCELERATED IN THE PROGRAM DUE TO ADDITIONAL REVENUE (HB 97).	RIGHT-OF-WAY CONSTRUCTION	FY 2021 - $4,200,000 (T) FY 2023 - $13,100,000 (T) $17,300,000
U-4902C NEW HANOVER PROJ.CATEGORY STATEWIDE	US 17 BUSINESS (MARKET STREET), MARTIN LUTHER KING, JR. BOULEVARD TO STATION ROAD. ACCESS MANAGEMENT IMPROVEMENTS. RIGHT-OF-W AY ACCELERATED FROM FY 18 TO FY 16 AND CONSTRUCTION FROM FY 20 TO FY 18. PROJECT ACCELERATED IN THE PROGRAM DUE TO ADDITIONAL REVENUE (HB 97).	RIGHT-OF-W AY CONSTRUCTION	FY 2016 - $125,000 (T) FY 2018 - $1,700,000 (T) FY 2019 - $1,700,000 (T) $3,525,000
U-4902D NEW HANOVER PROJ.CATEGORY STATEWIDE	US 17 BUSINESS (MARKET STREET), LENDIRE ROAD TO SR 2734 (MARSH OAKS DRIVE). ACCESS MANAGEMENT IMPROVEMENTS. RIGHT-OF-W AY ACCELERATED FROM FY 18 TO FY 16 AND CONSTRUCTION FROM FY 20 TO FY 18. PROJECT ACCELERATED IN THE PROGRAM DUE TO ADDITIONAL REVENUE (HB 97).	RIGHT-OF-W AY CONSTRUCTION	FY 2016 - $250,000 (T) FY 2018 - $3,150,000 (T) FY 2019 - $3,150,000 (T) $6,550,000

U-5710 NEW HANOVER PROJ.CATEGORY STATEW IDE	US 74 (EASTW OOD ROAD), SR 1409 (MILITARY CUTOFF ROAD) INTERSECTION IN W ILMINGTON. CONVERT ATGRADE INTERSECTION TO AN INTERCHANGE. RIGHT-OF-W AY ACCELERATED FROM FY 20 TO FY 19 AND CONSTRUCTION FROM FY 22 TO FY 21. PROJECT ACCELERATED IN THE PROGRAM DUE TO ADDITIONAL REVENUE (HB 97).	RIGHT-OF-WAY CONSTRUCTION	FY 2019 - $2,430,000 (NHP) FY 2020 - $2,430,000 (NHP) FY 2021 - $6,750,000 (NHP) FY 2022 - $6,750,000 (NHP) FY 2023 - $6,750,000 (NHP) $25,110,000
U-5729 NEW HANOVER PROJ.CATEGORY REGIONAL	US 421 (CAROLINA BEACH ROAD), US 421 (BURNETT AVENUE) TO US 117 (SHIPYARD BOULEVARD) IN W ILMINGTON. UPGRADE ROADW AY. RIGHT-OF-W AY ACCELERATED FROM FY 19 TO FY 18 AND CONSTRUCTION DELAYED FROM FY 20 TO FY 21 TO ALLOW ADDITIONAL TIME FOR RIGHT-OF-W AY. PROJECT ACCELERATED IN THE PROGRAM DUE TO ADDITIONAL REVENUE (HB 97).	RIGHT-OF-W AY UTILITIES CONSTRUCTION	FY 2018 - $3,000,000 (T) FY 2018 - $275,000 (T) FY 2021 - $10,000,000 (T) $13,275,000
U-5731 NEW HANOVER PROJ.CATEGORY REGIONAL	US 74, US 17/US 421 IN W ILMINGTON. CONSTRUCT A FLY-OVER AND FREE FLOW RAMP AT INTERCHANGE. RIGHT-OF-W AY ACCELERATED FROM FY 22 TO FY 21 AND CONSTRUCTION FROM FY 24 TO FY 22. PROJECT ACCELERATED IN THE PROGRAM DUE TO ADDITIONAL REVENUE (HB 97).	RIGHT-OF-W AY CONSTRUCTION	FY 2021 - $3,000,000 (T) FY 2022 - $12,500,000 (T) $15,500,000

U-5863 NEW HANOVER PROJ.CATEGORY REGIONAL	NC 133 (CASTLE HAYNE ROAD), I-140/US 17 (WILMINGTON BYPASS) TO SR 1310 (DIVISION DRIVE) IN WILMINGTON. WIDEN TO MULTI-LANES. RIGHT-OF-W AY ACCELERATED FROM FY 22 TO FY 21 AND CONSTRUCTION FROM FY 24 TO FY 23. PROJECT ACCELERATED IN THE PROGRAM DUE TO ADDITIONAL REVENUE (HB 97).	RIGHT-OF-W AY UTILITIES CONSTRUCTION	FY 2021 - $965,000 (T) FY 2021 - $116,000 (T) FY 2023 - $9,272,000 (T) FY 2024 - $9,272,000 (T) FY 2025 - $9,272,000 (T) $28,897,000
U-5732 PENDER PROJ.CATEGORY REGIONAL	US 17, SR 1582 (W ASHINGTON ACRES ROAD) TO SR 1563 (SLOOP POINT LOOP ROAD). CONVERT TO SUPERSTREET. RIGHT-OF-W AY ACCELERATED FROM FY 19 TO FY 18 AND CONSTRUCTION FROM FY 21 TO FY 20. PROJECT ACCELERATED IN THE PROGRAM DUE TO ADDITIONAL REVENUE (HB 97).	RIGHT-OF-W AY UTILITIES CONSTRUCTION	FY 2018 - $4,724,000 (T) FY 2018 - $567,000 (T) FY 2020 - $4,706,000 (T) FY 2021 - $4,706,000 (T) FY 2022 - $4,707,000 (T) $19,410,000

Cape Fear Crossing

STIP U-4738

Brunswick and New Hanover Counties

PROJECT STATUS REPORT

January 4, 2016

Project Description

Roadway extending from the vicinity of US 17 Bypass and I-140 in Brunswick County to US 421 in New Hanover County, including a crossing of the Cape Fear River.

Current Status

The following list includes completed and ongoing tasks during the month of December:

- The project team continues to coordinate and correspond with project stakeholders.
- Functional Design Plans for the 12 detailed study alternatives (DSAs) have been reviewed by NCDOT; the project team is currently working on revising the designs.
- Hydraulic analysis of the DSAs is ongoing.
- Hurricane evacuation modeling of the DSAs is ongoing.
- The Historic Architecture Eligibility Report has been accepted by NCDOT and reviewed by the North Carolina State Historic Preservation Office (SHPO). NCDOT is currently working with SHPO to determine what resources within the project study area are eligible for listing on the National Register of Historic Places.
- Studies for the Traffic Noise Analysis and Air Quality Analysis are ongoing.
- An update to the Draft Natural Resources Technical Report is ongoing.
- NCDOT is currently evaluating an additional alternative proposed by the WMPO near the Port of Wilmington. There are currently 12 alternatives being designed and evaluated for inclusion in the draft environmental document. NCDOT is coordinating with the NCSPA regarding this alternative; if it is determined this alternative is reasonable, studies may need to be redone to include this alternative.
- The Cape Fear Crossing project is programmed in the 2016-2025 STIP for planning and environmental studies only using STPDA funding from the Wilmington MPO.
- The project team will plan to present the status of the project to the WMPO TAC before the next NEPA/Section 404 Merger Team Meeting.

Contact Information

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WILMINGTON MPO
TRANSPORTATION PLANNING
JANUARY 2016

CONGESTION MANAGEMENT PROCESS

Project Description/Scope: Comply with a Federal mandate to create and adopt a process to evaluate the region's most congested corridors through locally-defined multi-modal performance measures in an effort to suggest improvements that would alleviate traffic congestion in the region. The CMP was adopted by the TAC on December 11, 2013. Data collection procedures have been developed. A schedule for collection logistics has been drafted and data collection will continuously be monitored and updated as needed.

Next Steps:

- Continue data collection and monitoring of congestion
- Document data collection in a Biennial Report

COLLEGE ROAD UPGRADES (U-5702), (U-5704) and (U-5792)

Project Description/Scope: The Strategic Transportation Investments is a new formula to determine how the North Carolina Department of Transportation (NCDOT), in partnership with local governments, will fund and prioritize transportation projects in the state of North Carolina. The Strategic Transportation Investment Formula allocates funding at the statewide, regional and division tiers. Prioritization 3.0 was the process used to determine the projects that are to be funded in the State's Transportation Improvement Program (STIP). The adopted 2016-2025 State Transportation Improvement Program includes several projects on College Road.

U-5704: Construction of an interchange at College Road and Oleander Drive

U-5702: Construction of Access Management Improvements on College Road between Gordon Road and Carolina Beach Road. The Department has several spot safety and intersection improvements that are anticipated would be completed under this project. This project may also include median modifications, access management strategies, etc. to improve traffic flow and safety on College Road. Another project that may be funded in the Statewide Mobility Category is an Upgrade of College Road between New Centre Drive and Gordon Road to include an additional through lane and an interchange at College Road and the Martin Luther King Jr. Parkway.

U-5792: Convert at-grade intersection to interchange

Next Steps:

- Complete Planning, Environmental Review and Design for the projects

METROPOLITAN TRANSPORTATION PLAN

Project Description/Scope: Update the Federally-mandated Metropolitan Transportation Plan/Long-Range Transportation Plan for the Wilmington Urban Area Metropolitan Planning Organization. The draft plan was finalized by the Transportation Advisory Committee on July 22, 2015. . The plan has now been adopted by all Wilmington Urban Area Metropolitan Planning Organization member jurisdictions. The TAC adopted the plan on November 18, 2015.

Next Steps:

- Implementation of the plan

MILITARY CUTOFF ROAD/EASTWOOD ROAD (U-5710)

Project Descriptions/Scope: The adopted 2016-2025 State Transportation Improvement Program identified funding to upgrade the intersection of Military Cutoff Road/Eastwood Road to an interchange. HDR has been selected by NCDOT to complete this work. The Department hosted a small group meeting with adjacent property owners and held a public workshop on September 29th. There were over 140 people that attended this meeting.

Next Steps:

- Complete Planning, Environmental Review and Design for the project

17TH STREET STREETSCAPE

Project Descriptions/Scope: The 17th Street streetscape project will include upgrades to 17th Street between Wrightsville Avenue and Princess Place Drive. The project will provide for a more efficient transportation system by reduced travel speeds, removal of the lateral shift, improved pedestrian crossings, improved safety and enhance the aesthetics of the area. The project may also include aesthetic improvements that will enhance the entryway into Carolina Heights and provide a pocket park. The project had a bid opening planned on September 24th. The bid exceeded the budget.

Next Steps:

- Rebid the project in January
- Award and Construct the streetscape enhancements

Pender County Collector Street Plan

The Wilmington MPO and Pender County have partnered to update the Coastal Pender County Collector Street Plan and to create a collector street plan for the area that was not previously part of the MPO. The project team held the 3rd Steering Committee meetings on December 3rd, where members provided feedback on draft collector street networks and proposed cross-sections. Draft network scenarios can be viewed on the project website (www.pendercollector.com).

Next Steps:

- Review finalized collector street networks
- Hold public informational meeting on January 21, 2016

SITE DEVELOPMENT REVIEW

Project Descriptions/Scope: The Wilmington MPO assists with site development and transportation impact analysis review for the MPO's member jurisdictions. During the last month, staff has reviewed the following development proposals:

- New Hanover County Development Plan Reviews: 4 reviews
- New Hanover County Informal Plan Reviews: 1 reviews
- New Hanover Concept Reviews: 0 reviews
- Town of Leland Formal Reviews: 3 reviews
- Town of Leland Informal Reviews: 0 reviews
- Town of Carolina Beach Formal Reviews: 0 reviews
- Town of Carolina Beach Informal Reviews: 0 reviews

- Brunswick County Formal Plan Reviews: 0 reviews
- Brunswick County Informal Plan Reviews: 0 reviews
- TIA Reviews: 14 total (New Hanover County 5, City of Wilmington 4, Carolina Beach 1, Brunswick County 1, Belville 0, and Pender County 3) new 2 and ongoing 12
- Pender County Development Plan Reviews: 8 reviews
- Pender County Informal Plan Reviews: 3 reviews
- Pender County Concept Reviews: 1 reviews
- City of Wilmington Formal Reviews: 26 (10 new, 16 on-going)
- City of Wilmington Informal Reviews: 14 (7 new, 7 on-going)
- City of Wilmington Concept Reviews: 4 (1 new concept reviews-3 on-going concept)
- COW Project Releases: 2 Full releases

STP-DA/TAP-DA FY 2013 and 2014 Project Status
STP-DA

U-5534A - TOWN OF NAVASSA – MAIN STREET BICYCLE LANES
Project Descriptions/Scope: This project will include planning, design, and construction of an additional 4 feet on either side of Main Street for bike lanes starting at the existing Navassa bike path east of Brooklyn Street to Old Mill Road. The Letter of Interest (LOI) has been advertised.

Next Steps:
- NCDOT meeting to discuss the project on January 13, 2016

U-5534B - CITY OF WILMINGTON- HEIDI TRASK DRAWBRIDGE
Project Descriptions/Scope: This project consists of construction of a public walkway/pier underneath the Heidi Trask Drawbridge to provide for a safe crossing for cyclists and pedestrians across US 74 (Wrightsville Avenue) on the mainland side of the drawbridge in Wilmington.

Next Steps:
- Bid award February 2016
- Construction anticipated February 2016

U-5534C - WRIGHTSVILLE AVENUE/GREENVILLE AVENUE TO HINTON AVENUE
Project Descriptions/Scope: The project is for construction of intersection re-alignment improvements at the intersection of Wrightsville Avenue/Greenville Avenue and bike lanes and sidewalks along Greenville Avenue from Wrightsville Avenue to Hinton Avenue.

Next Steps:
- Right of Way underway
- Letting anticipated May 2016

U-5534D - TOWN OF LELAND - OLD FAYETTEVILLE ROAD MUP
Project Descriptions/Scope: This project is for design and construction of a ten foot (10') wide multi use path, separate but adjacent to Old Fayetteville Road, beginning at or around the corner of the Leland Town Hall Campus and ending at the driveway of the North Brunswick High School.

Next Steps:

- ROW documents submitted October 2, 2015
- Awaiting NCDOT Encroachment Agreement

U-5534E - TOWN OF CAROLINA BEACH - ISLAND GREENWAY AND HARPER AVENUE

Project Descriptions/Scope: This project is for the design and construction of an off-road multi-use path that begins at Mike Chappell Park and winds along the existing cleared fire path and terminates at Greenville Avenue and the Harper Avenue bike lanes will consist of a bicycle boulevard on existing pavement on each side of Harper Avenue from Dow Road to Lake Park Boulevard. The Town desires to combine the project with the awarded 2014 STP-DA project.

Next Steps:

- PCE Submitted August 2015- Awaiting NCDOT Approval

U-5534S (Formerly U-5534M)– Coral Drive Sidewalks

Project Descriptions/Scope: The construction of sidewalks along coral drive will install approximately 954 feet of 5 foot wide sidewalk on Coral Drive adjacent to Wrightsville Beach Elementary.

Next Steps:

- Awaiting NCDOT agreement
- R/W Plans complete: February 2017
- Let Date: April 2017

U-5534H – HINTON AVE MULTI-USE PATH

Project Descriptions/Scope: This project consists of the construction of a 10' wide multi-use path along Hinton Avenue from Park Avenue to Greenville Avenue.

Next Steps:

- PCE anticipated approval date January 31, 2016
- Anticipated Let Date of March 26, 2016

U-5534G –HOOKER ROAD MULTI-USE PATH

Project Descriptions/Scope: The project consist of the construction of a 10' wide multi-use path along Hooker Road from Wrightsville Avenue to Mallard Drive/Rose Ave intersection

Next Steps:

- PCE anticipated approval date January 31, 2016
- Anticipated Let Date of March 26, 2016

U-5534K –LELAND MIDDLE SCHOOL SIDEWALK

Project Descriptions/Scope: The construction of 5 foot wide concrete sidewalk adjacent to Old Fayetteville Road from Ricefield Branch Rd to the Hwy 74/76 overpass after Glendale Drive with connections to Leland Middle School and the surrounding neighborhoods.

Next Steps:

- Right of Way Plans anticipated to be complete: January 15, 2016
- Anticipated Let Date: March 26, 2016

U-5534J –OLD FAYETTEVILLE LOOP ROAD PEDESTRIAN LOOP

Project Descriptions/Scope: The construction of 5 foot wide sidewalks in three locations: along Village Road from Town Hall Drive going southeast to the existing sidewalk in front of the apartment complex, along Town Hall Drive from Village Road NE to the sidewalk currently under construction by the new Town Hall, and along Old Fayetteville Road from the existing sidewalk in front of the apartment complex to Village Road NE

Next Steps:

- Right of Way Plans anticipated to be complete: January 15, 2016
- Let Date: March 26, 2016

U-5534I –VILLAGE ROAD MULTI-USE PATH EXTENSION

Project Descriptions/Scope: The construction of a 10 foot wide asphalt multi-use path routed across Perry Ave, behind the library, out to Village Road, down Village Road ending on the western edge of the First Baptist Church property before the Sturgeon Creek Bridge

Next Steps:

- Right of Way Plans complete: September 25, 2016
- Anticipated Let Date: December 26, 2016

SHIPYARD BOULEVARD SIDEWALK-

Project Description/Scope: The construction of a sidewalk and bus pull-out along Shipyard Boulevard between Vance Street and Rutledge Drive. This will be a partnership between the City of Wilmington, Cape Fear Public Transportation Authority and Wilmington MPO.

Next Steps:

- McKim and Creed is providing Surveying
- R/W plans anticipated June 2016

TAP-DA

CITY OF WILMINGTON – MILITARY CUTOFF ROAD MULTI-USE PATH

Project Descriptions/Scope: This project is for the design and construction of a10-foot wide, asphalt multi-use path on Military Cutoff Road from Gordon Road to Eastwood Road.

Next Steps:

- McKim & Creed providing surveying and design'
- R/W plans anticipated May 2016

U-5527B CITY OF WILMINGTON – 5th AVE INTERSECTION UPGRADES

Project Descriptions/Scope: This project is for the construction of high visibility crosswalks, curb ramps, and pedestrian activated signals on 5th Ave at the Dawson Street and Wooster Street intersections.

Next Steps:

- City of Wilmington is preparing plans for the project
- Anticipated Let Date: September 26, 2016

U-5527C NEW HANOVER COUNTY – MIDDLE SOUND GREENWAY – EXTENSION TO MIDDLE SOUND VILLAGE

Project Descriptions/Scope: This project is for the construction of a multi-use path along Middle Sound Loop Road from Oyster Lane to the Middle Sound Village driveway

Next Steps:

- Right of Way Acquisition underway
- Anticipated Let Date: April 26, 2016

TRANSPORTATION DEMAND MANAGEMENT PROGRAM

Project Description/Scope: UNCW is taking the role as lead employer for the Cape Fear region. The WMPO will coordinate with UNCW to work with other major employers in the region to identify opportunities for public outreach, marketing, carpooling, vanpooling, alternative/compressed work schedules, Emergency Guaranteed Ride Home, park and ride lots, etc. The MPO established 2 park and ride lots in Brunswick County and a ridesharing program that began on January 5th. The MPO adopted "Work Cape Fear: Expanding Commuter Options in the Cape Fear Region" TDM Short Range Plan on January 28th and also authorized staff to apply for a TDM grant through NCDOT that if approved would fund a full-time TDM Coordinator position. The Agreement with NCDOT for the full-time TDM Coordinator position was approved on November 4, 2015. The Wilmington MPO has hired a full-time TDM Coordinator.

Next Steps:

- Promote 2 Park & Ride Lots in Brunswick County
- Develop a marketing plan

US 17 BUSINESS CORRIDOR STUDY

Project Description/Scope: In 2007 the Wilmington MPO, in cooperation with NCDOT and the City of Wilmington completed the US 17 Business Corridor Study. The Corridor Study recommended the implementation of a "road diet." This recommendation included a requirement to construct Independence Boulevard Extension prior to implementation. Citizens have continued to request the implementation of the "road diet," however the construction of Independence Boulevard extension is now many years off. The City of Wilmington and Wilmington MPO requested an update of this study to re-examine the feasibility of implementing the road diet without first constructing Independence Boulevard extension. PB presented the preliminary findings to the Wilmington City Council on July 21st and TAC on July 22nd. PB has provided the final documentation.

Next Steps:

- Present to the TCC/TAC for acceptance of the final report in January

Cape Fear Public Transportation Authority

Project Update

January 2016

1. **Bus fleet replacement & conversion to CNG** - (no significant change) identifying state and federal funding opportunities to replace 19 thirty-five foot buses. Bid awarded to Gillig, LLC on June 26, 2014. Four buses scheduled for delivery in February 2016. One CNG shuttle delivered in August 2015.
2. **Shuttle fleet replacement -** two shuttles delivered in summer of 2015. Three additional shuttles on order and funding for two more has been identified. Two used shuttles purchased from the City of Durham in December 2015.
3. **Wilmington Multimodal Transportation Center** - Interlocal Agreement between Authority, City of Wilmington, WMPO and NCDOT finalized. Upon relocation of all U-Haul tenants, stabilization of Neuwirth and Thomas grocery to begin. Demolition of U-Haul building to commence simultaneously. Final design of downtown transit hub to begin when funding identified.

Transportation

PAT McCRORY
Governor

NICHOLAS J. TENNYSON
Secretary

January 20, 2016

TIP Projects:

R-3601 (US 17/74/76): Widening across the "CAUSEWAY", between Leland/Belville and the Cape Fear River. Replacing the bridges over the Brunswick River and one of the bridges over Alligator Creek.
Estimated Contract Completion Date November 2016

R-2633 BA – (Wilmington Bypass) construct a 4-lane divided highway from US 74/76 (near Malmo) to SR 1430 (Cedar Hill Road).
Estimated Contract Completion Date April 30, 2018
Open to traffic on November 2017

R-2633 BB – (Wilmington Bypass: Bridge over Cape Fear River) construct a 4-land divided highway from SR 1430 (Cedar Hill Road) to US 421 (where I-140 currently ends in New Hanover County…this includes the large bridge over the Cape Fear River).
Estimated Contract Completion Date April 30, 2018
Open to traffic on November 2017

R-3324 – Long Beach Road Extension construct a 2-lane, 2-way roadway from NC 133 (near Jump & Run Creek) to NC 87. Most of this roadway will be on new location.
Estimated Contract Completion Date Summer 2016

R-3432 – SR 1163 (Georgetown Road) extend from SR 1184 (Ocean Isle Beach Road) to NC 179.
Open to traffic
Estimated Contract Completion Date May 13, 2016

B-5103: replace bridge #35 over the abandoned railroad on SR 1627 (3rd Street), in Wilmington.
Open to traffic April 1, 2016
Estimated Contract Completion Date September 28, 2016

U-3338 B: Widening of Kerr Ave. from Randall Parkway to Martin Luther King, Jr. Parkway.
Availability Date January 2016…Sealand Contractors

B-5236: replace bridge #19 over Lords Creek on SR 1100 (River Road)
Let Date September 20, 2017

B-4929: Bridge @ Surf City NC 50/210 - replace bridge #16 over the inter-coastal waterway with a fixed span high rise structure.
Let Date August 2016

U-4751: Military Cutoff Road Extension: extending Military Cutoff Road from Market Street to the Wilmington Bypass, with an interchange at the Bypass.
Let Date October 2017

B-4590: replace bridge #29 over Smith Creek on NC 133 (Old Castle Hayne Road)
Let Date December 2018

R-5701: construct a roundabout at the intersection of US 117 Business, Walker Street & Wilmington Street
Let Date January 2020

U-5729: US 421 (Carolina Beach Road) from Burnett Avenue to US 117 (Shipyard Blvd) upgrade the roadway
Let Date January 2020

U-5790: US 421 (Carolina Beach Road) widen existing US 421 from Sanders Road to NC 132 (College Road) and construct fly-overs at Monkey Junction intersection
Construction 2020

U-5732: US 17 (Ocean Highway in Hampstead)
Convert to superstreet from SR 1582 (Washington Acres Road) to SR 1563 (Sloop Point Loop Road).
Construction 2021

U-4902 C&D: US 17 Business (Market Street) construct a "super-street" (median) from SR 2734 (Marsh Oaks Drive) to Lendire Drive & from Station Road to US 74 (MLK Parkway/Eastwood Road).
Construction 2020

Greenfield Lake Culvert: replace the large culvert under 3rd Street and US 421 Truck/Front Street...Utility relocation work will begin late 2013 and finish prior to let date
November 2015

Wrightsville Avenue (EB-4411C_WBS#36333.3.FS3_2016CPT.03.02.20651):
widen for bike lanes on SR 1411 (Wrightsville Ave.) from Huntington Ave. to US 76 (Oleander Drive)
Availability Date October 5, 2015
Estimated Contract Completion Date May 6, 2016

Resurfacing Contracts:

Resurfacing Contract: C-203480 3CR.10101.150, 3CR.20101.150, 3CR.10651.150, 3CR.20651.150 & 3CR.10711.150 Barnhill Contracting
Brunswick County primary routes:

US 17 Business – mill & resurface from US 17 (south end of US 17 Bus.) to US 17 (@ nose of concrete island)…Bolivia area
US 17 Bypass (Southbound lanes) – patch, mill & resurface from 0.17 miles north of SR 1401 (Galloway Road) to 0.09 miles south of SR 1401

Brunswick County secondary routes:

SR 1104 (Beach Drive) – patching, milling, resurface & leveling from beginning of curb & gutter section to end of SR 1104
SR 1828 (Kings Lynn Drive) – patching, mill & resurface from SR 1104 (West Beach Drive) to SR 1828
SR 1401 (Galloway Road) – resurface from US 17 to SR 1402 (Randolphville Road)
SR 1435 (North Navassa Road) – patching, mill & resurface from SR 1472 (Village Road Northeast) to SR 1432 (Old Mill Road Northeast)
SR 1430 (Cedar Hill Road) – patching, mill & resurface from SR 1435 (North Navassa Road) to 0.58 miles south of SR 1431 (Royster Road Northeast)
SR 1430 (Cedar Hill Road) – patching, mill & resurface from 0.54 miles north of SR 1431 (Royster Road Northeast) to SR 1426 (Mount Misery Road)

Mill & resurface the following primary routes in New Hanover County:

US 421 (Carolina Beach Road) – from 0.26 miles south of Independence Blvd. (non-system portion) to west of Lake Shore Drive (non-system)

US 117 Northbound Lanes (Shipyard Blvd) – from US 421 to 0.05 miles east of US 421 (Carolina Beach Road)

US 117 Southbound Lanes (Shipyard Blvd) – from 0.20 miles east of US 421 to US 421 (Carolina Beach Road)

US 421 Southbound Lanes (South 3rd Street) – from US 76 (Dawson Street) to Greenfield Street (non-system)

US 421 Northbound Lanes (South 3rd Street) – from Greenfield Street (non-system) to US 76 (Dawson Street

US 17 Business (South 3rd Street) – from US 76 eastbound lanes to US 76 westbound lanes

Mill & resurface the following secondary routes in New Hanover County:

SR 1218 (16th Street) – from US 76 westbound lanes (Wooster Street) to US 76 eastbound lanes (Dawson Street)

SR 1371 (16th St.) - from Grace Street (non-system) to US 17 Business (Market Street)

SR 2816 (16th St.) - from US 17 Business (Market Street) to US 76 westbound lanes (Wooster Street)

SR 1301 (17th Street) - from US 17 Business (Market Street) to Grace Street (non-system)

SR 2817 (17th Street) - from US 76 eastbound lanes (Dawson Street) to US 17 Business (Market Street)

SR 1411 (Wrightsville Avenue) - from Dawson Street Extension (non-system) to SR 1209 (Independence Blvd.)

Resurface the following secondary routes in New Hanover County:

SR 2699 (Amsterdam Way) - from SR 2700 (Old Dairy Rd.) to SR 2048 (Gordon Rd.)

SR 2701 (Antilles Ct.) - from SR 2698 (Netherlands Dr.) to end maintenance

SR 2698 (Netherlands Dr.) - from SR 2048 (Gordon Rd.) to SR 2700 (Old Dairy Rd.)

SR 2700 (Old Dairy Rd.) - from US 17 Bus. (Market St.) to SR 2699 (Amsterdam Way)

SR 2220 (Windmill Way) - from SR 2219 (N. Green Meadows Dr.) to SR 2700 (Old Dairy Rd)

SR 2183 (Spring Rd) - from NC 133 (Castle Hayne Rd.) to SR 2184 (Fairfield Rd.)

SR 2184 (Fairfield Rd.) - from SR 2183 (Spring Rd) to SR 1318 (Blue Clay Rd)

Widen & resurface following routes in New Hanover County:

SR 1940 (Covil Farm Rd) - from SR 1409 (Military Cut-Off Rd) to SR 1916 (Red Cedar Rd)
SR 2717 (Torchwood Blvd.) - from US 17 Bus. (Market St.) to SR 2718 (Beacon Dr.)

Mill & resurface a section & just resurface another section of SR 1363 (Bayshore Dr.) from US 17 Bus. (Market St.) to SR 1393 (Biscayne Dr.)

Pender County primary routes:

US 117 - mill & resurface from 0.30 miles north of NC 210 to 0.026 miles north of US 117 Business
NC 11/53 - mill & resurface from begin curb & gutter @ western city limits of Town of Atkinson to end curb & gutter @ the eastern city limits.
NC 53 - Patch ONLY from I-40 to US 117 (Town of Burgaw).

Estimated Contract Completion Date Spring 2016

Resurfacing Contract: DC-00090 3CR.10101.165
Brunswick County:

NC 211 – mill & resurface from NC 87 to end of system at Fort Fisher Ferry Terminal.

Estimated Contract Completion Date Spring 2016

Resurfacing Contract: C203630 WBS #46176.3.FS1
New Hanover & Pender Counties:

I-40 – milling & resurfacing from Gordon Road interchange to NC 210 interchange
I-40 – milling & resurfacing from US 117 interchange to mile post 393 (approximately 3.5 miles east of US 117 interchange)

Estimated Contract Completion Date December 2016

Resurfacing Contract: 3CR.10651.174 & 3CR.20651.174 & 3SP.20655.003
New Hanover County:

US 421 (Fort Fisher Blvd) milling & resurfacing from "E" Ave to end of system
SR 1402 (Porter's Neck Road) milling & resurfacing from back of shopping center to SR 1401 (Bald Eagle Lane)
SR 1565 (Jasmine Cove Way) resurfacing from NC 132 (South College Road) to snd of system
SR 2578 (Wood Ridge Road) resurfacing from SR 1704 (Hidden Valley Road) to SR 2573 (Woods Edge Road)

SR 2589 (Turtle Dove Court) resurfacing from SR 1565 (Jasmine Cove Way) to end of system

SR 2590 (Song Sparrow Court) resurfacing from SR 1565 (Jasmine Cove Way) to end of system

SR 2591 (White Ibis Court) resurfacing from SR 1565 (Jasmine Cove Way) to end of system

Work Complete

Resurfacing Contract: 2016CPT.03.04.10711 & 2016CPT.03.04.20711

Pender County:

US 117 Bypass milling & resurfacing from southern city limits of Burgaw to SR 1504 (Murphy Road).

NC 53 milling & resurfacing from US 117 Bypass to US 117 Business

SR 1104 (Canetuck Road) resurfacing from bridge #20 over Lyon Creek to Bladen County line

SR 1301 (Bay Road) resurfacing from SR 1300 (Englishtown Road) to SR 1001 (Willard Road)

SR 1411 (Old River Road) resurfacing from US 117 to SR 1412 (New Road)

Estimated Contract Completion Date June 2016

Resurfacing Contract: 2016CPT.03.07.20651

New Hanover County:

SR 1335 (Parmele Road) resurfacing from NC 133 (Castle Hayne Road) to US 117/NC 132 (North College Road)

SR 1276 (Cathay Road) resurfacing from US 421 (Carolina Beach Road) to SR 1281 (Ventura Drive)

SR 1524 (Golden Road) resurfacing from US 421 (Carolina Beach Road) to SR 1492 (Myrtle Grove Road)

SR 1544 (Friendly Lane) resurfacing from SR 1492 (Masonboro Loop Road) to end of system

SR 1616 (Pelican Point) resurfacing from SR 1492 (Masonboro Loop Road) to end of system

SR 1386 (Hall Drive) resurfacing from SR 1318 (Blue Clay Road) to SR 1312 (Trask Drive)

SR 1311 (Gardner Drive) resurfacing from SR 1312 (Trask Drive) to SR 1312 (Trask Drive)

SR 1312 (Trask Drive) resurfacing from SR 1311 (Gardner Drive) to SR 1311 (Gardner Drive)

State Port Roadway resurfacing

Estimated Contract Completion Date June 2016

Resurfacing Contract: 2016CPT.03.08.10101 & 2016CPT.03.08.20101

Brunswick County:

NC 87/NC 133 (River Road) resurfacing from project limits of R-3324 (Long Beach Road Extension) to SR 1526 (Jabbertown Road)

SR 1100 (Caswell Beach Road) milling & resurfacing from SR 1190 (Oak Island Drive) to end of system

SR 1101 (Fish Factory Road) resurfacing from NC 133 (Long Beach Road) to end of system

SR 1194 (West Street) resurfacing from NC 211 to end of system, in Southport

SR 1209 (9th Street) resurfacing from NC 211 to end of system, in Southport

SR 1210 (Old Bridge Road) resurfacing from NC 133 (Long Beach Road) to end of system

SR 1526 (Jabbertown Road) resurfacing from NC 87 to SR 1527 (Leonard Street), in Southport

SR 1528 (Moore Street) resurfacing from NC 211 to end of system, in Southport

Estimated Contract Completion Date May 2016

Resurfacing Contract: 2016 CPT.03.09.10101 & 2013CPT.03.09.20101

Brunswick County:

US 17 NBL & SBL resurfacing from NC 904 to South Carolina line

SR 1139 (Seashore Road) resurfacing from NC 130 (Holden Beach Road) to SR 1137 (Boones Neck Road)

SR 1184 (Ocean Isle Beach Road) resurfacing from US 17 to NC 904/179

SR 1241 (Milliken Avenue) resurfacing from

SR 1242 (Beach Drive) resurfacing from NC 179 Bus. to end of the system

SR 1940 (Claremont Drive) resurfacing from SR 1941 (Stratford Place) to end of the system

SR 1941 (Stratford Place) resurfacing from SR 1943 (Country Club Drive) to SR 1940 (Claremont Drive)

SR 1942 (Bruce Lane) resurfacing from SR 1941 (Stratford Place) to SR 1944 (Deep Branch Road)

SR 1944 (Deep Branch Road) resurfacing from SR 1942 (Bruce Lane) to SR 1940 (Claremont Drive)

SR 1813 (Pinewood Drive) resurfacing from SR 1950 (Camelia Drive) to end of system

SR 1943 (Country Club Drive) resurfacing from SR 1949 (Brierwood Road) to SR 1941 (Stratford Place)

SR 1949 (Brierwood Road) resurfacing from SR 1943 (Country Club Drive) to Shallotte City Limits

SR 1950 (Camelia Drive) resurfacing from SR 1141 (Kirby Road) to SR 1813 (Pinewood Drive)

SR 1951 (Driftwood Acres Drive) resurfacing from SR 1950 (Camelia Drive) to end of the system

SR 1952 (Myrtlewood Drive) resurfacing from SR 1950 (Camelia Drive) to end of the system

Availability Date February 2016

Estimated Contract Completion Date November 2016

If you have any questions, please contact Patrick Riddle at the Division 3 Office: priddle@ncdot.gov