

DOWNTOWN TRANSPORTATION PLAN UPDATE

Project No. ST85140052

October 2020

TECHNICAL APPENDIX

Roosevelt St

McKinley St

Fillmore St

Taylor St

Van Buren St

Monroe St

Adams St

Washington St

Jefferson St

Add signal
or hawk
→

do not connect
to downtown...

To bike in
ALL of downtown

154 Ave
Roosevelt

Eliminate
bike on
154 Ave

Continue
or here?

Improve
payment on
Adams St

= bus
ONLY?

Remove
right phase
at Adams St

Keep the bike
lane going
East of 7th Ave!



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Prepared by:

BURGESS & NIPLE
Engineers ■ Planners



Appendix A
Technical Appendix



Table of Contents

1.0	Microsimulation Model	1
1.1.	Demand Description	1
1.2.	Modeling Procedure.....	2
1.2.1.	Socioeconomic Data Development	3
1.2.2.	Perform Assignment in the Regional Model.....	3
1.2.3.	VISUM Model Development.....	4
1.2.4.	O-D Matrix Estimation	4
1.2.5.	Assignment in VISUM	4
1.2.6.	Export to VISSIM	4
2.0	Relevant Studies	11
2.1.	Downtown Phoenix Comprehensive Transportation Study (June 2014).....	11
2.2.	Comprehensive Bicycle Master Plan (November 2014)	14
2.3.	Phoenix Transportation 2050 Plan (T2050) (August 2015).....	14
2.3.1.	South Central LRT Extension.....	15
2.3.2.	Capital/I-10 West LRT Extension	15
2.4.	3 rd Avenue and 5 th Avenue Project Assessment (November 2016)	16
2.5.	City of Phoenix Complete Streets Policy (June 2017)	16
2.6.	3 rd Street Promenade: Garfield Street to Indian School Road Roadway Modernization (DRAFT April 2018) .	17
2.7.	PlanPHX (April 2018)	17
3.0	Land Use and Socioeconomic Conditions.....	18
3.1.	Existing Land Use.....	18
3.2.	Major Activity Centers	18
3.2.1.	Bio-Campus/Arizona Center	18
3.2.2.	Entertainment Area/Convention Center	19
3.2.3.	Roosevelt Arts District North.....	19
3.2.4.	Arizona State University Downtown Phoenix Campus.....	19
3.3.	Zoning.....	21
3.4.	Future Land Use	23
3.5.	Development Projects and Initiatives	23
3.6.	Socioeconomic Projections	29
4.0	Existing Transportation Network.....	32
4.1.	Access Management	36
4.2.	Parking.....	36
4.2.1.	On-Street	36
4.2.2.	Valet and Drop Off Points.....	36
4.3.	Existing Traffic Volumes	38
4.4.	Crosswalk Volumes	38
4.5.	Traffic Signal Timing Plans.....	38
5.0	Future Transportation Network	46
5.1.	MAG Model Modifications.....	46
5.2.	Programmed Improvements.....	46
5.3.	Future Turning Movement Volumes.....	47
6.0	Existing and Future Traffic Analysis	50
6.1.	Methodology.....	50
6.1.1.	MAG Travel Demand Model	50



6.1.2. Microsimulation Model	50
6.1.3. Macrosimulation Model	51
6.1.4. Synchro Model.....	52
6.2. Existing Conditions Analysis Results.....	55
6.3. Future Conditions Analysis Results	58

List of Tables

Table 1 – DPCTS Recommended Roadway Infrastructure Improvements	12
Table 2 – DPCTS Bicycle and Pedestrian Facility Recommendations.....	13
Table 3 – Existing Land Use.....	18
Table 4 – Zoning Designation and Distribution.....	21
Table 5 – Existing and Future Land Use Comparison.....	23
Table 6 – Potential Development/Redevelopment Sites (March 2020).....	25
Table 7 – Traffic Analysis Zone Projections.....	29
Table 8 – Vehicular Trip Distribution	30
Table 9 – Central Avenue Revisions to Accommodate South Central LRT Extension.....	46
Table 10 – Capacity by Functional Classification	51
Table 11 – LOS Thresholds for Signalized Intersections.....	52
Table 12 – LOS Thresholds for Unsignalized Intersections	52
Table 13 – Analysis Intersections Affected by Programmed Improvements.....	55
Table 14 – Travel Time Difference (in minutes) Between 2018 and 2025 for Select OD Pairs.....	58



List of Figures

Figure 2: Multiresolution Modeling Framework..... 2

Figure 3: Implementation of the Multiresolution Modeling Framework 3

Figure 4: Downtown Phoenix Circulation Study: Vissim Model Network (updated June 2020) 6

Figure 5: Observed versus VISSIM Simulated Counts: AM Peak Hour..... 9

Figure 6: Observed versus VISSIM Simulated Counts: PM Peak Hour 9

Figure 2.1 – South Central LRT Extension 14

Figure 2.2 – Potential Capital/I-10 West LRT Extension Route 15

Figure 2.3 – Alternate Capital/I-10 West LRT Extension Route (March 2018) 16

Figure 3.1 – Existing Land Use..... 20

Figure 3.2 – Zoning..... 22

Figure 3.3 – Potential Development/Redevelopment Sites within Study Area (updated March 2020) 24

Figure 3.4 – Traffic Analysis Zone Growth (Vehicular Trips) 31

Figure 4.1 – Existing Transportation Network 33

Figure 4.2 – Existing Number of Lanes (Modeled)..... 34

Figure 4.3 – Existing Signalized Intersections 35

Figure 4.4 – On-Street Parking 37

Figure 4.5 – Turning Movement Count Locations..... 39

Figure 4.6 – Existing Turning Movement Counts 40

Figure 4.7 – Average Daily Traffic Volumes 44

Figure 4.8 – Bicycle and Pedestrian Counts at Crosswalks 45

Figure 5.1 – Future Transportation Network..... 48

Figure 5.2 – Future Number of Lanes (Modeled*) 49

Figure 6.2 – LOS Grading Scale..... 53

Figure 6.3 – Existing a.m. Peak Hour LOS..... 56

Figure 6.4 – Existing p.m. Peak Hour LOS 57

Figure 6.5 – Future a.m. Peak Hour LOS 59

Figure 6.6 – Future p.m. Peak Hour LOS 60

Figure 6.7 – 2025 a.m. Volume to Capacity Ratios (Model Output*)..... 61

Figure 6.8 – 2025 p.m. Volume to Capacity Ratios (Model Output*)..... 62



All information provided herein was developed by December 2018, predominately sourced in the summer of 2018. Information herein is reflective of conditions at that time unless noted otherwise. A comprehensive description of the model development process follows.

1.0 Microsimulation Model

A multi-resolution modeling framework is used to perform the traffic operational analysis under a variety of network and land-use configurations within the study area. The modeling tools used to analyze the study area include:

1. **TransCAD:** TransCAD provides regional analysis and distribution of traffic associated with new developments in the study area. The models are used to identify and specify socioeconomic changes within the study area. Socioeconomic changes include adjustments to population, employment, employment categories, number of households and household sizes within the study area.
2. **VISUM:** VISUM is a macroscopic travel demand analysis tool with functionalities that are like TransCAD in many respects. VISUM is used as an intermediate software to house all the study area (sub-area) information derived from the regional travel demand model. The sub-area is an abstract representation of the study area and is extracted from the regional travel demand model. The VISUM macroscopic model includes, link information, node information, control delays derived from signal timing plans, raw segment and turning movement counts, and origin-destination matrices derived from TransCAD.
3. **VISSIM:** VISSIM is a microscopic traffic analysis software that is widely used in the industry to analyze transportation networks in a variety of travel demand and fleet mix scenarios. VISSIM is a stochastic microscopic simulation model. It uses the Wiedemann psycho-physical car following logic to model traffic on the road network. It is a time step and behavior-based simulation tool developed to model urban traffic and public transit operations. The model consists internally of two distinct components that communicate through an interface. The first one is the traffic simulator, which is a microscopic traffic flow model that simulates the movement of vehicles and generates the corresponding output. The second component, named as the signal state generator (SSG), updates the signal status for the following simulation step. It determines the signal status using the detector information from the traffic simulator on a discrete time step basis and passes the status back to the traffic simulator. VISSIM has powerful routines to analyze large-scale networks. One of these is termed as the mesoscopic Dynamic Traffic Assignment (DTA) which essentially identifies the best possible route between an origin-destination pair with internal constraints in the form of congested travel times and signal control delays. VISSIM model is an exact abstraction of lanes within a transportation network. The inputs in VISSIM include lane assignments, geometries, travel demands, distributions of vehicle speeds, acceleration, deceleration, and signal control timing plans. Signal control can be fixed, actuated or adaptive control using VAP. The model can produce measures of effectiveness commonly used in the traffic engineering profession such as total delay, stopped-time delay, stops, queue lengths, fuel emissions, and fuel consumption.
4. **Synchro:** Synchro is a signal optimization software that is widely used in the industry to optimize signals in a network. Optimized signal timing plans for known turning movement estimates from Synchro are used in VISSIM for network wide analysis.

1.1. Demand Description

Most of the commercial microscopic simulation tools permit users to specify travel demand in two different formats, either as Origin-Destination matrices (OD-matrix) or as static inbound volumes and turn proportions at decision making points. In static routing, decision-making points are pre-designated locations on a link where vehicles identify acceptable gaps and start making necessary lane changes to be on their route. When travel demand is represented in the form of OD-matrices, the study area is usually divided into several regions, known as Traffic Analysis Zones (TAZs), based on land use and socioeconomic data. Traffic leaving from each zone to every other zone and traffic arriving at a zone from every



other zone is represented in the form of a trip table or OD-matrix.

While the use of static inbound volumes and turn proportions is relatively easy to set up in small-scale networks, it is intractable, in some cases unreasonable, to implement the same in large-scale networks. For this study, travel demand was specified in the form of OD-matrices. The study area was divided into 25 TAZs. All the trips were consolidated into a single peak hour trip table. In addition to private transport, all the transit lines in the corridor were also modeled. Transit lines were modeled as static routes based on the actual arrival and departure timings listed on Valley Metro’s website.

1.2. Modeling Procedure

The modeling framework used in the study is shown in **Figure 2** and the implementation procedure is shown in **Figure 3**.

The procedure adopted has the following major steps:

1. Identify developments and associated socioeconomic changes by TAZ
2. Perform four step multi modal assignments in the regional travel demand model
3. Extract study area (sub-area) from the regional model
4. Convert the regional travel demand model for the study area into VISUM file
5. Perform OD-matrix estimation in VISUM
6. Run a traffic assignment in VISUM using estimated OD-matrix.
7. Export the VISUM network and estimated OD-matrix to VISSIM.
8. Run the VISSIM simulation with dynamic assignment and calibrate the model as needed

These steps are explained in more detail in the following sections.

Figure 1: Multiresolution Modeling Framework

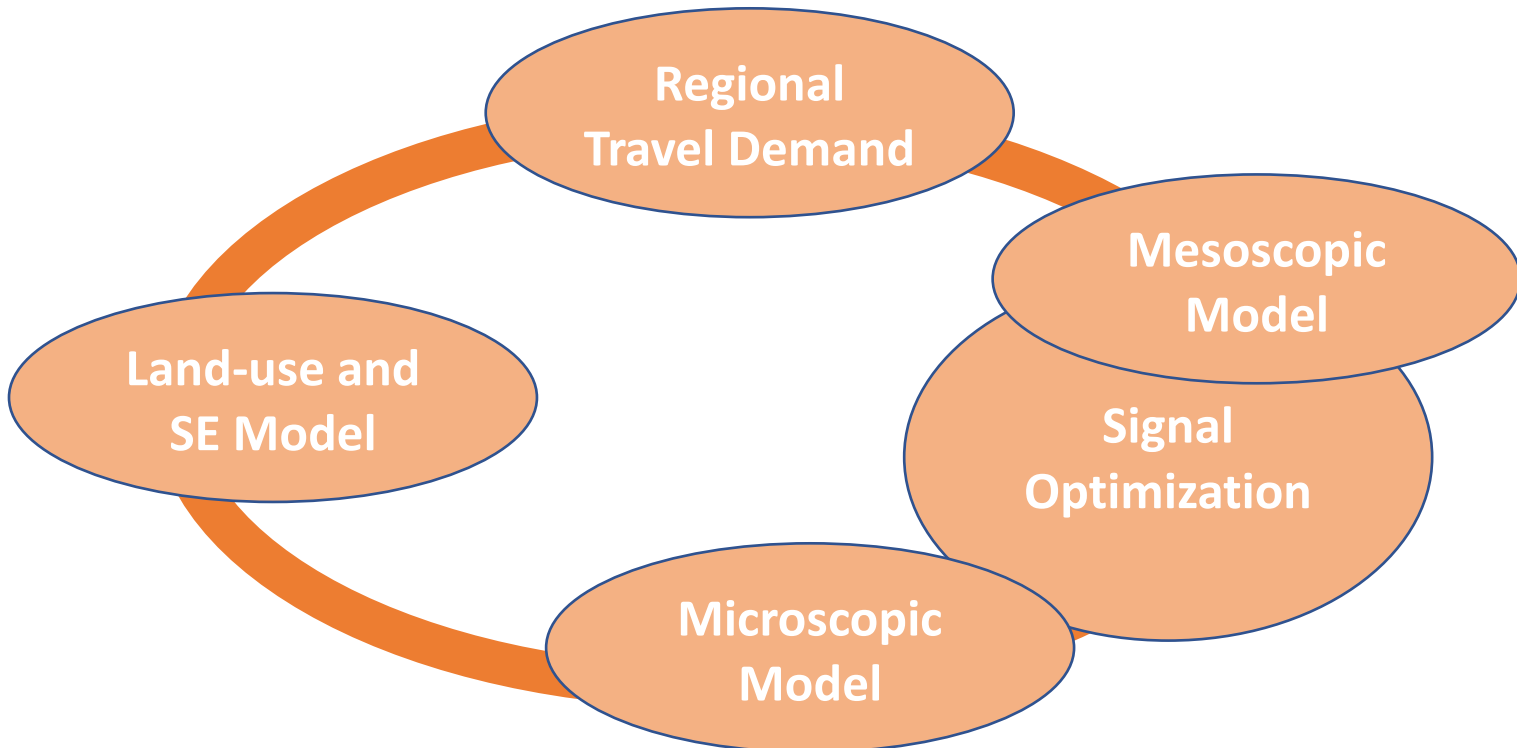
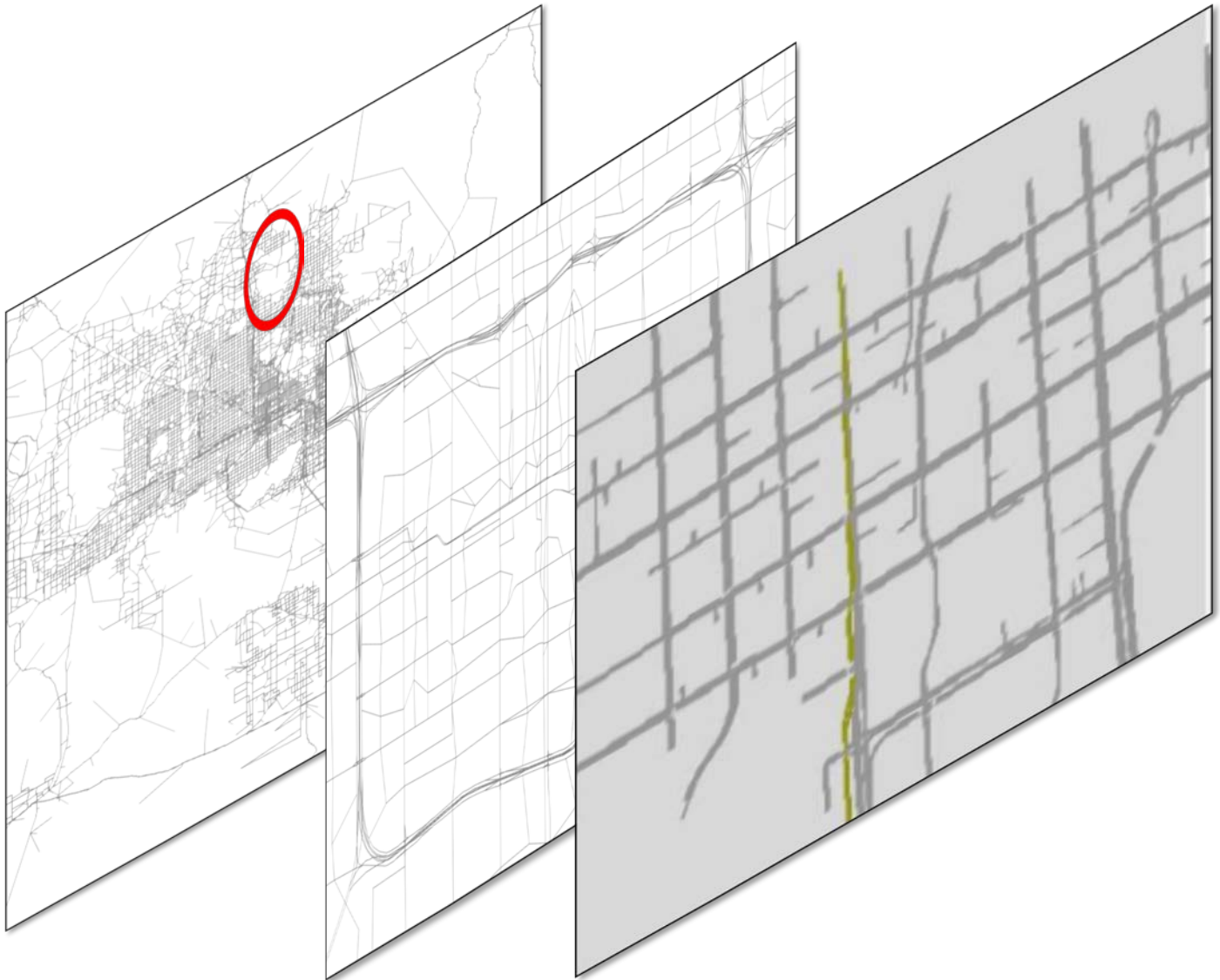




Figure 2: Implementation of the Multiresolution Modeling Framework



1.2.1. Socioeconomic Data Development

Development information obtained from the City was converted to land use based socioeconomic data sets. The socioeconomic estimates associated with each development included number of households, employment, type of employment, population and school enrollment.

1.2.2. Perform Assignment in the Regional Model

The Maricopa Association of Governments (MAG) currently uses the TransCAD software for travel demand analysis. The socioeconomic data sets used in the regional model was updated for the study area and model assignment was performed for the near-term conditions. The impact of the significant development activity within downtown and associated regional traffic attractions to the development are implemented in this step. This step also considers mode choice (auto, transit and, active transportation) for all the development within the study area.



1.2.3. VISUM Model Development

A sub-area network for the study region mentioned was extracted from this model. This process generates a skeleton network with basic information such as link-node structure and a seed matrix. Links on such a skeletal network are represented as straight lines connecting two nodes. VISUM macros can import this information to generate a VISUM base network. The skeleton network is then updated to reflect true alignment of the links using a base GIS map in VISUM. Information pertaining to links and nodes are then added to the VISUM model. Link information includes number of lanes, link capacity, and link type. Node information includes node geometry, including permitted turns, turn bay lengths and signal control parameters. The final step in the basic model building is to identify major and minor movements at every node.

1.2.4. O-D Matrix Estimation

Most of the planning models are calibrated and validated on a regional scale. Due to the macroscopic nature of the validation criteria employed in such models, a stringent set of goodness-of-fit statistics are usually not applied. Therefore, it is likely that the model performs exceptionally well for certain regions of the network and poorly at other locations. OD information of sub-areas extracted from such regional models is susceptible to some errors. Therefore, it is a common practice to adjust such OD-information to better fit up-to-date link and turn counts. This process, known as OD-matrix estimation, has been discussed extensively by the transportation modeling community and a large body of literature exists on the topic.

OD-matrix estimation in VISUM is performed using its matrix adjustment module TFlowFuzzy. This module can execute OD-matrix estimation for both private and public transport. Sampling errors associated with field counts can be inherently modeled in TFlowFuzzy as part of the estimation procedure. Field counts are therefore modeled as fuzzy sets, as opposed to precise values. Appropriate fuzzy bandwidths for field counts can be approximated based on field observations. Matrix estimation in VISUM is performed using both link and turn counts. A significant advantage of TFlowFuzzy is that it does not require counts on all links and turns in the network for convergence of the matrix estimation process.

The output of OD-matrix estimation is a new “synthetic trip table.” Traffic assignment resulting from this synthetic trip table should closely match the field counts. The constraints for TFlowFuzzy are the seed matrix, link counts, turn counts and the fuzzy error bandwidths associated with each count. Matrix estimation for the study area network was carried out using tighter constraints for high volume links (freeway/ramp segments) and principal arterials. These constraints were relaxed for minor streets and urban collectors. In the first pass matrix estimation was based on only link counts. Once a satisfactory convergence was achieved in the first pass turn counts were added as constraints to the matrix estimation process in the second pass. In all 95 percent of available link counts and 95 of available turn counts were included in matrix estimation.

1.2.5. Assignment in VISUM

VISUM has several routines to assign travel demand specified in an OD-matrix. Prior to a VISSIM export, the synthetic matrix obtained from the matrix estimation procedure was assigned using the “Multi-Equilibrium” assignment procedure. Volume-Delay functions were specified as BPR Curves. It must be noted that this assignment is just an intermediate step and that its result is not used in network analysis. Therefore, only a few checks were performed to ensure that the assignment result is not out of the ordinary.

1.2.6. Export to VISSIM

VISSIM network was generated from VISUM through an automated process. This process transforms the network from a VISUM link node structure to a VISSIM link connector structure. The shape of the connectors is determined using the angle at which the links intersect. Based on the node information entered in VISUM, the network generator automatically generates all the pocket lanes for intersections and acceleration/deceleration lanes at freeway merges and diverges. Vehicles in VISSIM are controlled using signal heads, stop signs and/or priority rules.

Priority rules are used to designate right-of-way at conflicting points in VISSIM. Priority rules are required at all the surface

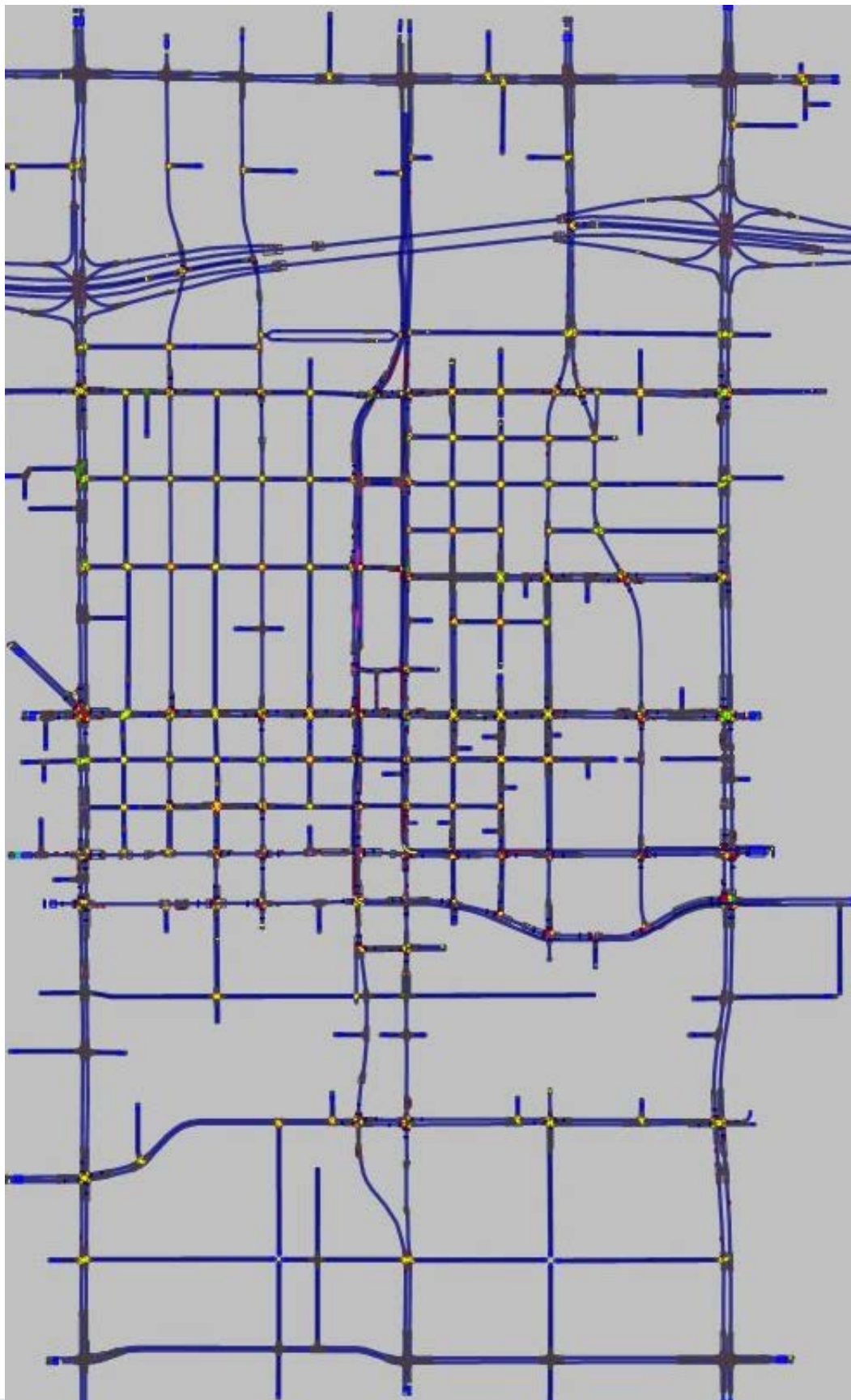


street intersections coded in VISSIM. VISUM export generates these priority rules based on the major and minor movements of an intersection and their speeds, which are defined at VISUM nodes. Moreover, entering signal control information in VISUM is relatively easy when compared to VISSIM. A VISUM export will generate all the signal control information in VISSIM, a very useful tool for large-scale networks. In addition to these network elements, VISUM export generates transit stop locations and schedules for VISSIM.

VISUM also exports traffic demand to VISSIM. This export can be either in the form of static inbound volumes and related turning proportions or as an OD-matrix. In both cases, VISUM exports the traffic assignment result based on the synthetic OD-matrix. If exported as static demands and turn proportions, the routes are fixed and will not change over the course of a simulation run. If traffic demand is exported as an OD-matrix, VISUM exports the synthetic OD-matrix in VISSIM format, routing information between OD-pairs and a cost file that contains abstract costs associated with each link and connector in the network. The model network used in the study is shown in **Figure 4**.



Figure 3: Downtown Phoenix Circulation Study: Vissim Model Network (updated June 2020)





1.2.6.1. Parameter Calibration

Model parameters in VISSIM can be classified as following:

- Car-following parameters
- Lane changing parameters
- Kinetic parameters
- Vehicle parameters

Car following and lane-change parameters directly affect the driving behavior of vehicles in the model. Kinetic parameters typically include parameters associated with desired speed, desired acceleration, maximum acceleration, maximum deceleration etc. Finally, vehicle models describe attributes associated with each vehicle type modeled. Some of the parameters affect the models' performance on a global scale while some of them have a local effect.

The first pass of calibration ensured that the lane change distance parameter associated with connectors is reasonable. The default setting for this distance in VISSIM is 656 feet. This was initially changed to the posted distances on the freeway connectors and to about 1,000 ft for arterial segments. The freeway lane change parameters did not produce a good lane changing behavior even though they were set at posted distances. As most of the commuters in peak hours are familiar with the driving conditions, they move over to their desired lane much before the posted distance. Although there is a random variation in this perceived distance to the exit, there is no data to approximately estimate an average distance. Due to this, the lane change parameters on connectors for the freeway segments were modified, with a minimum of posted distance, till a realistic animation was observed.

The next stage of parameter calibration involved adjustments to the car-following parameters in VISSIM. The arterial driver behavior was used for all the downtown travel links and the freeway driver behavior was used for the freeway segments. The car following parameters were incrementally adjusted to replicate observed segment and turning movement counts within the peak hour.

The "waiting time before diffusion" parameter of VISSIM is very effective for removing gridlocks in the model. This parameter essentially lets vehicles wait for a preset "waiting time" at a distance, known as emergency stop distance, before they can force a gap in order to stay on their route. The default value for this parameter is 60 seconds. This value was reduced to 10 seconds on freeway corridors and to 30 seconds on arterial segments.

In addition to the driving and lane change parameters, some kinetic parameters were varied as well. In VISSIM speed is defined as probability distribution functions. These functions are represented as curves for different average speeds. While some of the default curves are well suited for observed/posted speed limits, some are not. Speed limits on large-scale networks vary substantially. Due to this, attention was paid to achieve an approximate normal distribution of desired speeds, with the mean value being the posted speed limit, for all the links on the network.

1.2.6.2. Route Calibration

Large scale models often require the use of DTA methods. DTA in VISSIM is an iterative process that allocates travel demand specified in OD-matrices to different links in the network. The objective of such assignment procedures, in most of the microscopic models, is by and large minimization of travel cost between OD-pairs and appropriate route choice among possible alternative routes for all the vehicles. Travel cost could be cost in terms of travel time, trip-length, cost due to toll roads and any other general cost associated with making a trip. The proportion of the vehicles of an OD-pair selecting a particular route is determined based on the total cost associated with that route. In VISSIM, the issue of determining route choice this way is handled as a discrete choice modeling problem. It internally uses a variant of the commonly used logit model for such purposes. The iterations of simulation runs are continued until all the preset convergence criteria are satisfied. At convergence vehicle paths between OD-pairs do not vary by a significant proportion.



DTA for large-scale models is a very time-consuming process. A major advantage of using VISUM to generate the initial solution for route choice between OD-pairs is that it generates a cost file, which identifies realistic links (route choice) between any two nodes. Although such a solution is based on macroscopic assignment, it cuts down several iterations required in the VISSIM DTA process.

Route search between OD-pairs was limited to 3 choices (default is 999 choices). Such a limitation is reasonable for peak hour traffic conditions. Moreover, any path with a total cost higher by 50 percent than the total cost of the best path was rejected. VISSIM permits users to specify a percentage of travel demand that can be loaded during a simulation run. The first 19 iterations in VISSIM were based on reduced volume between OD-pairs. To begin, only 10 percent of total volume was permitted to enter the model. This value was incremented by 5 percent every subsequent iteration and by the 20th iteration all the volume was permitted into the model. Such a process enables DTA to identify bad paths between OD-pairs and in some instances between intermediate nodes. In addition to this, reduced volume enabled the modelers to visually identify bad route choices between intermediate nodes. These paths were closed permanently using the route closure option of VISSIM for all private vehicle classes. The “avoid long detours” parameter of VISSIM’s DTA procedure was left unchanged at 2.5 and “correction for overlapping paths” was always toggled on.

DTA convergence criteria were set for the volume difference criterion. After each iteration, absolute volume difference between old and new volumes between each node pair was computed. If this difference is less than or equal to 10 percent, DTA was expected to have achieved convergence. The model for the study area converged in approximately 35 iterations. One issue with the dynamic assignment process, of VISSIM, for large-scale networks is that it spends a considerable amount of time in reading all the identified paths and assigning vehicles to those paths. However, once a satisfactory convergence has been achieved the assignment result can be converted to static flows and turn proportions with a single click.

1.2.6.3. Goodness-of-Fit

Two goodness-of-fit statistics, correlation coefficient and Root Mean Squared-Error, were used to compare the model assignment to observed traffic counts.

Correlation Coefficient

Correlation coefficient (r^2) indicates how closely model predicted data matches observed data. Its value lies between 0 and 1. A correlation coefficient value closer to 1 is desirable. The formula for the term is:

$$r^2 = \left[\frac{n \sum_i (Count_i)(Volume_i) - \sum_i Count_i \sum_i Volume_i}{\sqrt{(n \sum_i Volume_i^2 - (\sum_i Volume_i)^2)(n \sum_i Count_i^2 - (\sum_i Count_i)^2)}} \right]^2$$

where n is the total number of links with a count, $Count_i$ is the observed volume (by direction) on link i, and $Volume_i$ is the estimated volume (by direction) on link i.

Figure 5 and **Figure 6** show a scatter plot between observed counts and VISSIM simulated volumes for the study network. The overall correlation value is over 0.9 for both AM and PM peak hours, which is reasonable considering the size of the model and a multi modal analysis framework.



Figure 4: Observed versus VISSIM Simulated Counts: AM Peak Hour

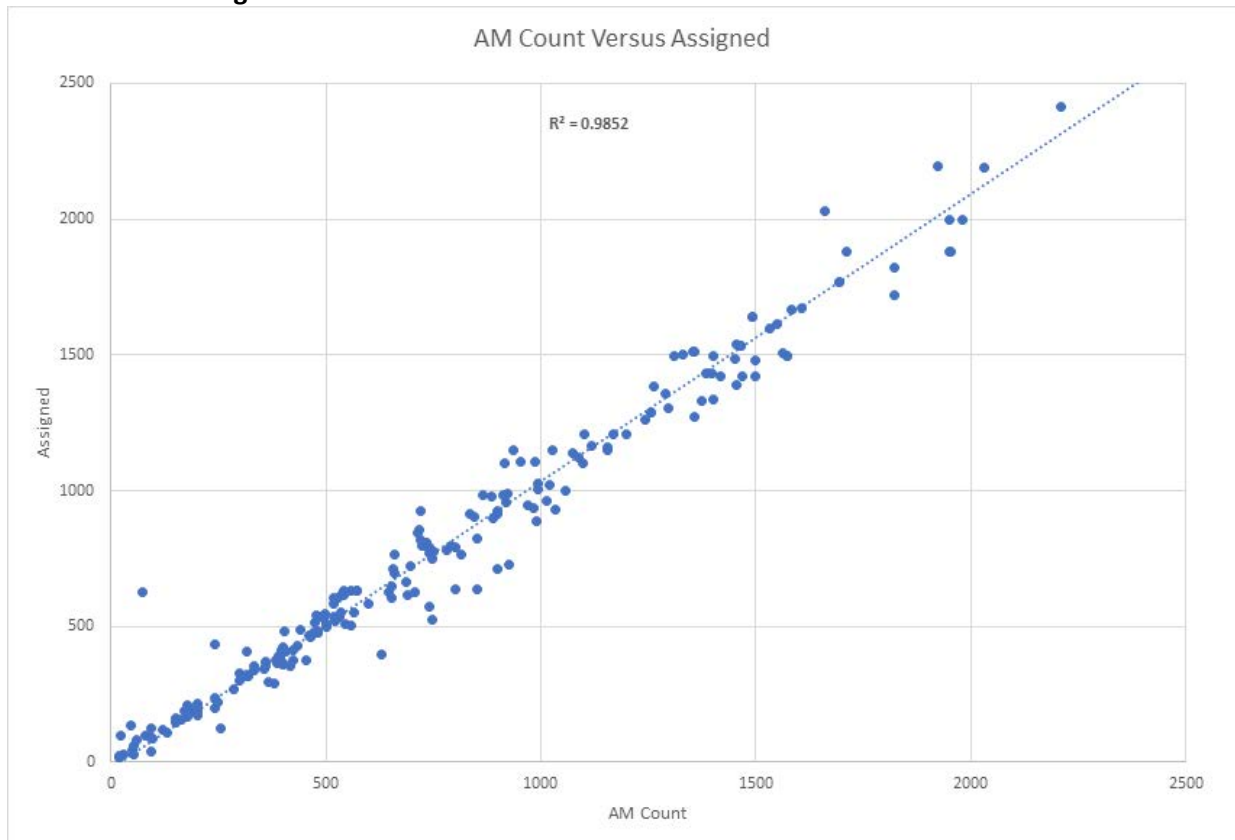
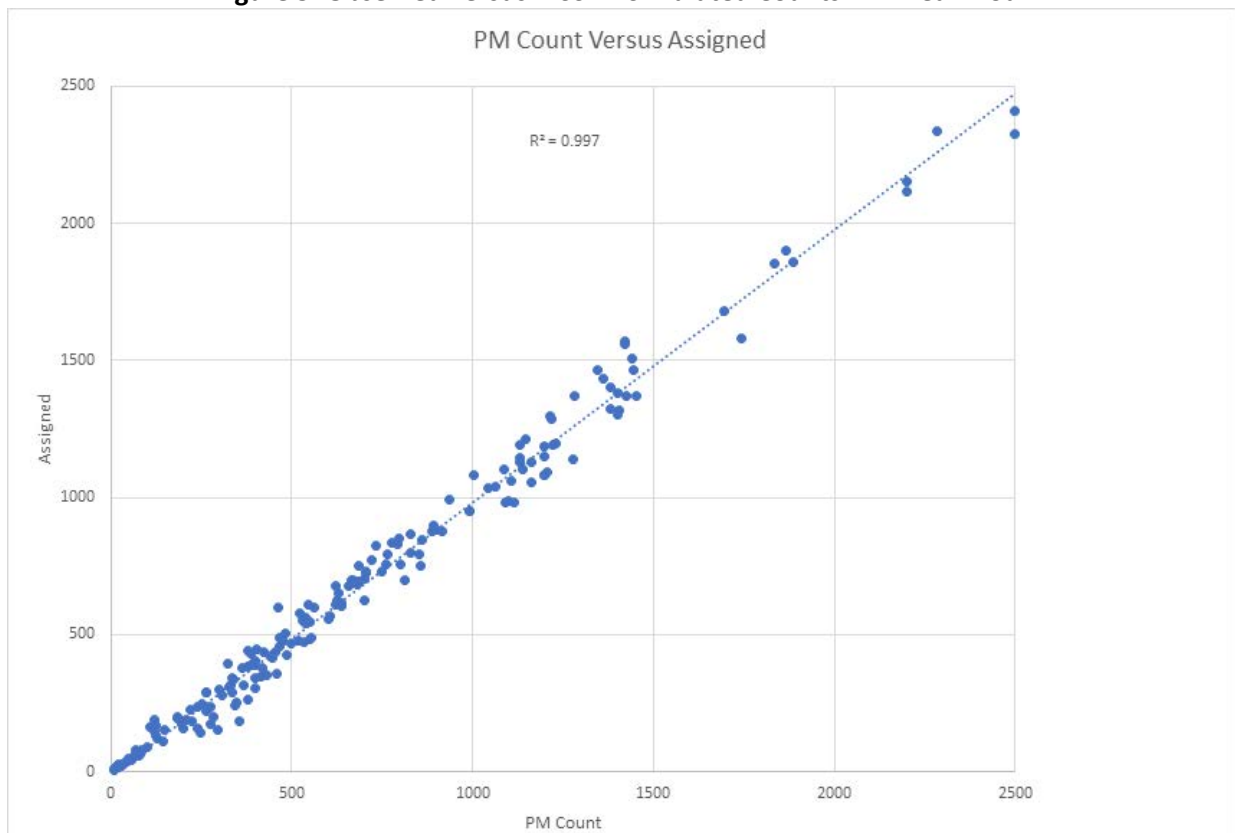


Figure 5: Observed versus VISSIM Simulated Counts: PM Peak Hour





Root Mean Squared Error

A scatter plot showing a best-fit line with no intercept can be used to identify outliers which can be due to coding errors or improper model behavior. A high value of correlation coefficient, although desirable, is not adequate to ensure that the model is accurate as it is primarily an overview statistic. Therefore, a second statistic, root mean squared error (RMSE), which shows if the model has any systematic errors and better target specific volume range was used in conjunction with the correlation-coefficient. In general, it is desirable to have a value of RMSE closer to zero. The %RMSE formula is defined as:

$$\%RMSE_i = \frac{\sqrt{\frac{\sum_j (Count_j - Volume_j)^2}{n_i - 1}}}{\bar{x}_i}$$

where $Count_j$ is the observed ground count by direction for link j , $Volume_j$ is the estimated directional volume for link j , n_i is the number of directional counts in the volume group i such that $j = 1, 2, 3, \dots, n_i$, and \bar{x}_i is the average directional count for volume group i .

The observed RMSE in the AM peak hour is 22% and in the PM peak hour is 18%. These values are exceptionally low and indicates that model can be used for alternative land use and network scenarios.



2.0 Relevant Studies

Relevant studies, plans, and other resources were collected and reviewed. These studies helped identify transportation network modifications to be expected between now and 2025. This information forms the backbone of the existing and future conditions analysis.

2.1. Downtown Phoenix Comprehensive Transportation Study (June 2014)

The DPCTS was undertaken to identify and evaluate potential roadway, transit, bicycle, pedestrian and parking improvements associated with Phoenix’s downtown transportation system. The study focus was to develop, investigate, and analyze various transportation scenarios based on strategies identified by City Street Transportation Department staff, stakeholders, and the general public, including residents, businesses, other City departments, and interested groups. The DPCTS examined potential transportation improvement strategies or system modifications that could be made to support all users of the City’s rights-of-way – motorists, transit vehicles, transit passengers, pedestrians, and bicycles – as well as the needs of commercial trucking and freight. Transportation projects and studies which informed the DPCTS included:

- Central Phoenix Transportation Framework Study
- Capital/I-10 West Light Rail Extension
- South Central Avenue Corridor Alternatives Analysis
- Downtown Event Management Plan “Sunburst”
- Greening Lower Grand Avenue
- Comprehensive Bicycle Master Plan
- Bike Share Program
- Historic Union Station
- Complete Streets Initiative
- Buckeye Road: Central to 16th Street
- Warehouse District Study

Additionally, multiple development projects and initiatives were underway during preparation of the DPCTS and informed its recommendations. These include:

- Roosevelt Row
- Central Station
- 1st Street Streetscape Study – Van Buren Street to Moreland Street
- CityScape
- Adams Street Reactivation Study
- UL2 Residences
- Phoenix Biomedical Campus
- Luhrs Marriot Courtyard/Residence Inn
- Arizona State University (ASU) Downtown Phoenix Campus
- Fillmore Post Office/ASU Student Center
- Valley National Bank Building
- City Space Park
- Roosevelt Point Student Housing
- Lofts at McKinley
- YMCA/ASU Student Rec Center
- Reinvent Phoenix project
- Hance Park Master Plan/Oasis-Plaza Project



The recommended transportation system improvement scenarios incorporated an assortment of strategies and projects phased for implementation over three timeframes: 0-5 years, 5-10 years, and long-range (beyond 10 years). The DPCTS recommendations were adopted in June 2014 by City Council. Many of the recommendations from this plan are currently being implemented; some were eliminated during the project development stage. **Table 1** summarizes the DPCTS recommendations related to roadway infrastructure and current implementation status; **Table 2** provides a summary for bicycle and pedestrian improvements.

Table 1 – DPCTS Recommended Roadway Infrastructure Improvements			
Corridor	Segment	Recommendation	Status
7th Avenue	Roosevelt Street to Van Buren Street	Potential raised median with access control	Recommendation has not advanced
5th Avenue	McDowell Road to Washington Street	One-way to two-way conversion	Programmed; see Section 2.4 for project assessment and Section 5.2 for project programming
3rd Avenue	McDowell Road to Washington Street	One-way to two-way conversion	Programmed; see Section 2.4 for project assessment and Section 5.2 for project programming
Central Avenue	Jefferson Street to Washington Street	<ul style="list-style-type: none"> • One bus-only lane • One northbound travel lane (limited to delivery vehicles and parking structure access) 	Programmed; see Section 2.3 for T2050. South Central LRT Extension project summarized in Section 5.2
Central Avenue and 1st Avenue	Jefferson Street south to study limit	Accommodations for South Central LRT Extension	Programmed; see Section 2.7 for T2050. South Central LRT Extension project summarized in Section 5.2
1st Street	Jefferson Street to Fillmore Street	<ul style="list-style-type: none"> • Change in traffic flow from two-way to two lanes northbound in conjunction with conversion of Central Avenue • Provide direct connections to/from Central Avenue south of E. Jefferson Street and north of Fillmore Street 	Phoenix is currently pursuing project funding
3rd Street	Jefferson Street to Buckeye Road	One-way to two-way conversion	Partially programmed; see Section 5.2 for project programming
N. 4th Street Connector	Roosevelt Street to E. Fillmore Street	Lane reduction from three lanes northbound to two lanes northbound	Recommendation has not advanced
5th Street	Fillmore Street to E. Jefferson Street	Convert from one-way with three lanes northbound to two lanes northbound and one lane southbound	Recommendation has not advanced
Roosevelt Street	Central Avenue to 7 th Street	Streetscape Improvements	Complete
7th Street	Roosevelt Street to Van Buren Street	Potential raised median and modifications to I-10 EB on-ramp	Recommendation has not advanced
Jefferson Street	7 th Avenue to 1 st Avenue	Potential modifications to accommodate Capital/I-10 West LRT Extension	Programmed; see Section 2.3 for T2050. South Central LRT Extension project summarized in Section 5.2



Table 1 – DPCTS Recommended Roadway Infrastructure Improvements

Corridor	Segment	Recommendation	Status
Washington Street	7 th Avenue to Central Avenue	Potential modifications to accommodate Capital/I-10 West LRT Extension	Programmed; see Section 2.3 for T2050. South Central LRT Extension project summarized in Section 5.2

Table 2 – DPCTS Bicycle and Pedestrian Facility Recommendations

Corridor	Segment	Recommendation
3rd Avenue	Van Buren Street to Jefferson Street	Northbound bicycle lane
	Grant Street to Jefferson Street	Northbound and southbound bicycle lanes
5th Avenue	Van Buren Street to Washington Street	Southbound bicycle lane
3rd Street	McDowell Road to Jefferson Street	<ul style="list-style-type: none"> • Northbound bicycle lane from Portland Street to McDowell Road • Southbound bicycle lane from McDowell Road to Jefferson Street
	Jefferson Street to Buckeye Road	Northbound and southbound bicycle lanes
4th Street Connector	Roosevelt Street to Fillmore Street	Northbound bicycle lane
5th Street	Fillmore Street to Jefferson Street	Northbound bicycle lane
Central Avenue	Union Pacific Railroad (UPRR) tracks to Jefferson Street	Northbound bicycle lane
Roosevelt Street	15 th Avenue to 10 th Street	<ul style="list-style-type: none"> • Eastbound and westbound sharrow lanes from 15th Avenue to Central Avenue • Eastbound and westbound bicycle lanes from Central Avenue to 7th Street
Washington Street	7 th Avenue to 7 th Street	Westbound sharrow lane
Jefferson Street	7 th Avenue to 7 th Street	Eastbound sharrow lane
Polk Street	7 th Avenue to Central Avenue	Enhanced pedestrian area
Adams Street	Central Avenue to 2 nd Street	Enhanced pedestrian area
Grant and Lincoln Streets	15 th Avenue to 7 th Street	Eastbound and westbound bicycle lanes
Study Area	Study Area	<ul style="list-style-type: none"> • Construct six-foot bicycle lanes • Maintain bicycle buffer through driveways • Painted bicycle lane green where buffer is narrow • Use “bicycle cross” at all signalized and unsignalized intersections • Bicycle boxes along 3rd Street at Roosevelt Street and Virginia Avenue • Enhanced pedestrian connectivity from Jefferson Street LRT station to Historic Railway Station and future commuter rail



The DPCTS considered changes to the Sunburst Plan. It assessed parking, impacts of LRT service and bus operations, and suggested additional review of the following recommendations:

- Close a portion of 3rd Street during events to help maintain pedestrian safety;
- Increase westbound access opportunities to downtown during events by keeping a through lane on Washington Street open; and
- Promote safe access for area residents at the Summit and future residential complexes near Chase Field and Talking Stick Resort Arena by modifying 3rd Street to provide one northbound lane to Jackson Street from Lincoln Street and two lanes southbound to Lincoln, south of Jackson Street.

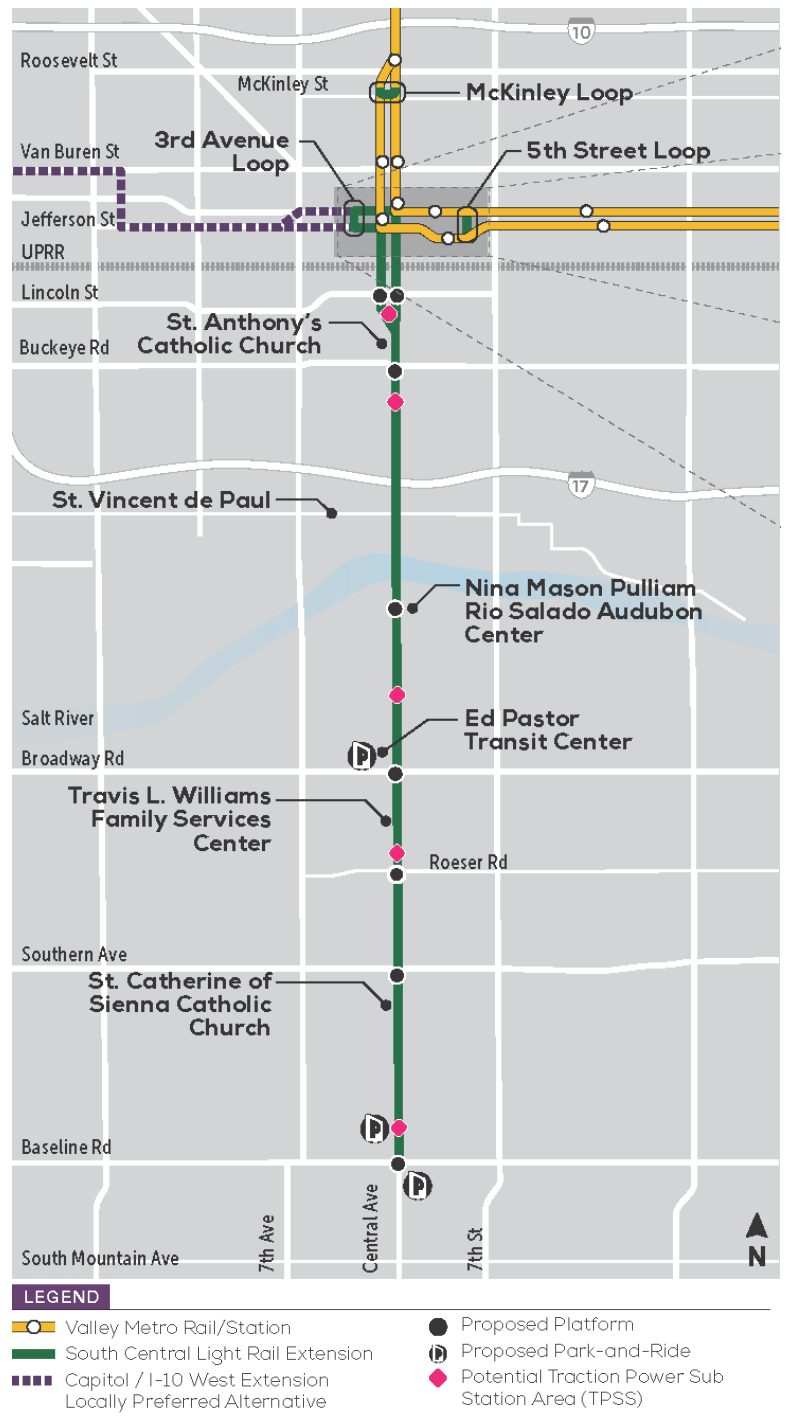
2.2. Comprehensive Bicycle Master Plan (November 2014)

The Comprehensive Bicycle Master Plan is a document intended to outline the next twenty years of development, growth and connectivity of bicycle facilities. The City hopes to be a platinum-level bicycle friendly community in the next twenty years, which involves creating a connected network that is safe and convenient for cyclists. This plan includes seven areas of excellence that the City intends to meet in order to become platinum-level, including policies and perceptions, opportunities and investments, equity and efficiency, safety, design and connectivity, connections and collaboration, and bicycles and transit. This plan identified 3rd Street as a priority corridor.

2.3. Phoenix Transportation 2050 Plan (T2050) (August 2015)

The Phoenix Transportation Plan T2050 was approved by voters August 25, 2015 and became effective January 1, 2016. It follows T2000 and provides 680 miles of new asphalt pavement on major streets, 1,080 miles of new bicycle lanes, 135 miles of new sidewalks, 2,000 new street lights, and includes \$240 million set aside for major street improvement projects. It focuses on connecting people to transit. Within the Study Area, this includes the South Central LRT Extension and the Capital/I-10 West LRT Extension. These projects are discussed in the following sections. Project programming is discussed in **Section 5.2.**

Figure 2.1 – South Central LRT Extension



Source: Valley Metro April 2018 Fact Sheet



2.3.1. South Central LRT Extension

As shown in **Figure 2.1**, the South Central LRT Extension will follow Central Avenue and generally connect the existing system south to Baseline Road. It creates three loops: the 3rd Avenue loop, the McKinley loop, and the 5th Street loop. The 5.5-mile-long extension includes 9 stations. Design is currently underway; construction is anticipated to be complete in 2023. Progress plans for the South Central Light Rail Extension were provided to this Study for incorporation into the update’s future conditions analysis.

2.3.2. Capital/I-10 West LRT Extension

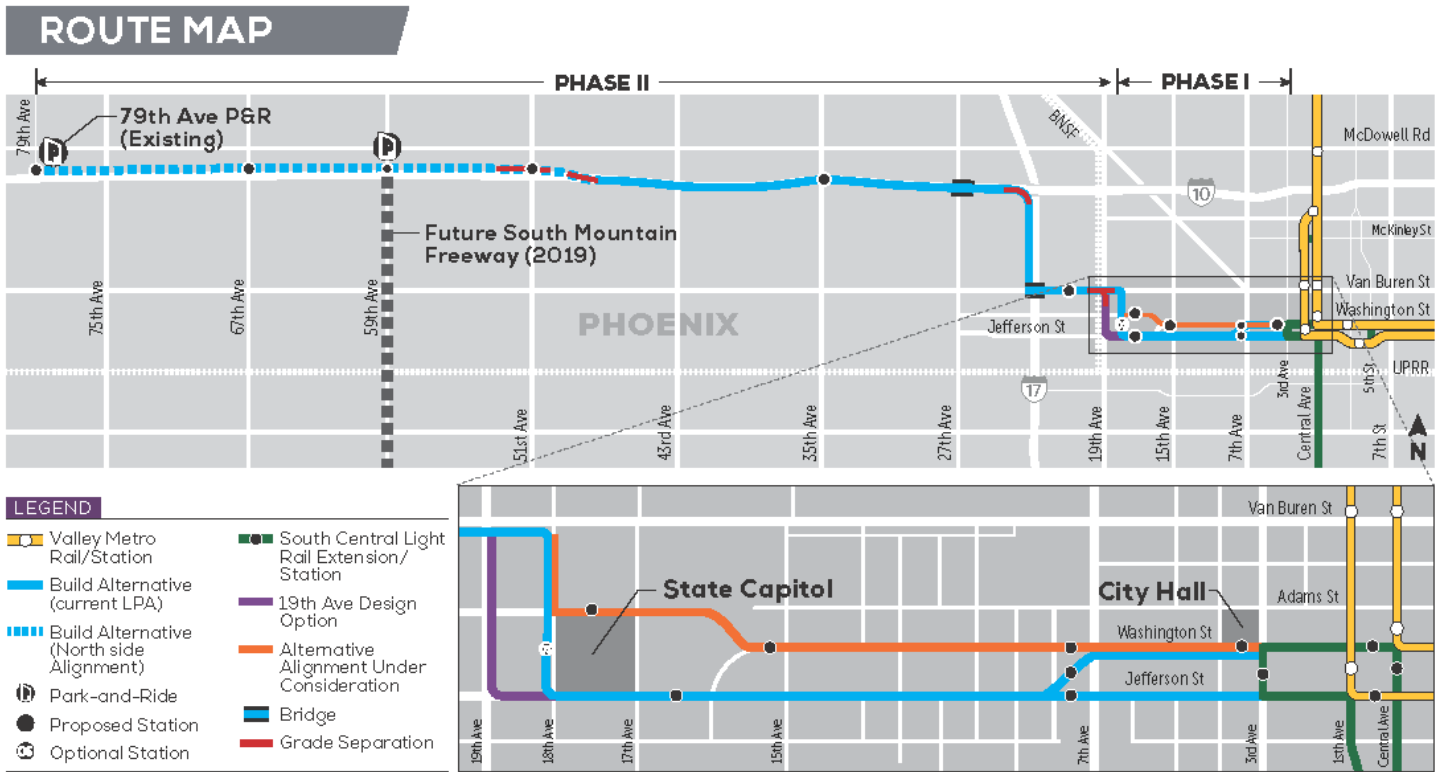
The Capital/I-10 West LRT Extension connects the existing light rail system in downtown Phoenix to the 79th Avenue park and ride. Phase 1 of the Capital/I-10 West extension, which connects the existing system to the Capital area, is 10 miles long and includes 9 stations and 2 park and rides. Phase 1 is anticipated to be complete in 2023. Currently, Washington Street and Jefferson Street are being considered for the alignment, as shown in **Figure 2.2** and **Figure 2.3**. Based on the best available information, this plan and the future year model assume it will follow Jefferson Street, as shown in **Figure 2.3**. This is discussed in more detail in **Section 5.2**.

Figure 2.2 – Potential Capital/I-10 West LRT Extension Route



Source: Valley Metro – Published Map

Figure 2.3 – Alternate Capital/I-10 West LRT Extension Route (March 2018)



Source: Valley Metro – March 2018 Fact Sheet

2.4. 3rd Avenue and 5th Avenue Project Assessment (November 2016)

The 3rd Avenue to 5th Avenue Project Assessment (PA) was developed based on the recommendations proposed in the DPCTS. The proposed modifications of 3rd Avenue and 5th Avenue from Washington Street to McDowell Road include converting one-way streets to two-way streets, while working to improve bicycling access and pedestrian safety. This Feasibility Report concluded that a Context Sensitive Split would best meet the project goals and objectives. The Context Sensitive Split recommended that 3rd Avenue be converted to one-way (one northbound lane) north of Roosevelt to McDowell Road and be a two-way roadway from Washington Street to Roosevelt Street (one lane each direction). It recommended 5th Avenue be one-way southbound north of Roosevelt Street to McDowell Road and a two-way roadway from Washington Street to Roosevelt Street (one lane each direction). This option would help improve traffic flow in the developing area south of Roosevelt Street and help preserve the traffic in the historic area north of Roosevelt Street, while improving parking and bicycle safety. It was also recommended that a two-way cycle track be implemented on 3rd Avenue from Roosevelt Street to Van Buren Street with two-way vehicle traffic as well as transitioning the southbound bicycle traffic from 5th Avenue to 3rd Avenue at Adams Street from Van Buren Street to Washington Street.

2.5. City of Phoenix Complete Streets Policy (June 2017)

The Complete Streets Policy was developed to help the City become “more walkable, foster social engagement, instill community pride, grow the local economy and property values, identify projects that will improve equitable transportation access for vulnerable and transit-dependent populations, and improve the livability and long-term sustainability of the region.” This document is intended to provide guidance for projects to be more inclusive of pedestrians, cyclists, transit-users, as well as vehicle owners. The policy outlines goals, roles and responsibilities, and expectations which align with the vision of the City’s General Plan.



2.6. 3rd Street Promenade: Garfield Street to Indian School Road Roadway Modernization (DRAFT April 2018)

The City developed the 3rd Street Promenade based on the Comprehensive Bicycle Master Plan and Reinvent PHX. These reports identified 3rd Street as a missing piece for the bicycle network as there are currently no bicycle lanes on 3rd Street in the northbound or southbound direction between Indian School Road and Roosevelt Street. This report recommended one through lane in each direction with a two-way left turn lane, as well as a buffered bicycle lane in each direction.

2.7. PlanPHX (April 2018)

The 2015 Phoenix General Plan covers four main areas including “Our Story”, “Growth, Infrastructure, & Land Use”, “Core Values”, and “Village Character Plans.” This plan addresses the growth of the City, and the direction that the City would like to go towards in the future. The vision is founded on the community benefits of prosperity, health, and the environment. This plan describes the hope for a connected oasis to include pedestrian paths, open space, and a connected network for Downtown Phoenix to accommodate the growth. This plan looks at a renewed growth strategy, which includes redevelopment and targeted growth towards existing and planned infrastructure, including transportation infrastructure.



3.0 Land Use and Socioeconomic Conditions

Existing and future land use and socioeconomic conditions in the Study Area were assessed to inform trip patterns and mode choice (transit, bicycle, pedestrian, personal vehicle) decisions expected in existing and future years. These factors directly influence the operational performance of the Study Area roadway network in existing and future years.

3.1. Existing Land Use

Existing land use within the Study Area is illustrated in **Figure 3.1**. The majority of the Study Area is composed of mixed use. Residential land is located in the northwest and southwest regions of the Study Area. There is a small area of industrial land in the southeast corner of the Study Area with parks and commercial land scattered throughout. Land use distribution is shown in **Table 3**. Existing land use information was obtained from the City.

Land Use	%
Mixed Use	58.6%
Public/Quasi-Public	22.0%
Residential	8.0%
Parks/Open Space - Public	4.0%
Industrial	2.3%
Commercial	2.2%
Transportation	2.0%
Commerce/Business Park	0.5%
Transition	0.4%

Residential land use within the Study Area is typically multi-family, including several high-rise towers. The Roosevelt Row area includes many historic single-family homes. There are varying density commercial developments, including high- and mid-rise towers and single-story businesses. Parks include the Margaret T. Hance Park, Civic Space Park, and other smaller community parks. ASU, U of A, and the Phoenix biomedical campus are all growing within the Study Area. Transition land use is designated for any area of land that is transitioning from one land use to another.

3.2. Major Activity Centers

Major activity centers include the Bio-Campus/Arizona Center, the Entertainment Area/Convention Center, and Roosevelt Arts District North. ASU has a downtown campus as well. **Figure 1.1** shows the location of these areas. Expected growth is spread throughout the Study Area, with little correlation to the activity centers.

3.2.1. Bio-Campus/Arizona Center

The Bio-Campus/Arizona Center is a 30-acre campus east of 4th Street between Garfield Street and Monroe Street. The campus is a collaborative effort between Arizona’s public universities, as well as hospitals and research institutions. The campus is primarily a bioscience and medical research, clinical, and teaching facility of more than six million square feet. This district contains the highest concentration of research scientists and professionals in the region. The Bio-Campus/Arizona Center is credited with creating more than 9,000 jobs, directly and indirectly.



3.2.2. Entertainment Area/Convention Center

The Entertainment Area/Convention Center encompasses approximately 0.18 miles of Downtown Phoenix. Chase Field, the Phoenix Convention Center, Talking Stick Resort Arena, and Stand Up Live are just a few of the major hotspots within the Entertainment Area/Convention Center. The Phoenix Convention Center Department manages other venues as well, including the Executive Conference Center, Symphony Hall, Orpheum Theatre, and five parking garages which include over 4,300 covered parking spaces. The Phoenix Convention Center hosts local, regional, and national conventions and trade shows every year, attracting thousands of people to the downtown area.

3.2.3. Roosevelt Arts District North

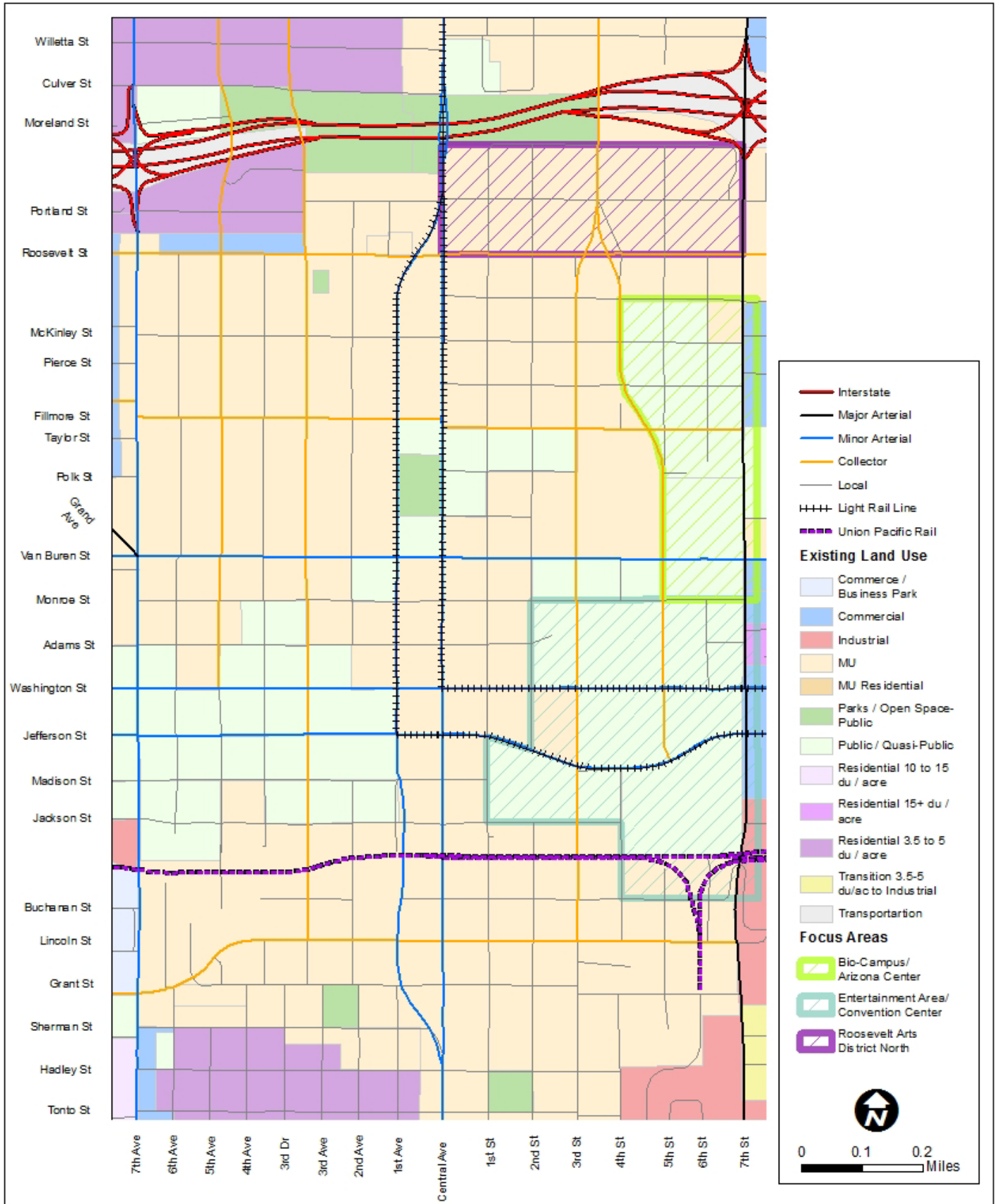
Roosevelt Row is home to downtown Phoenix's arts core, including the popular First Fridays Art Walk. The Roosevelt Arts District North promotes individual artists and many small businesses, which have contributed to the culture of the area over the past decade. There are several art galleries, murals, local boutiques, restaurants, and more within the Roosevelt Arts District North which have all helped to promote an urban renewal in the downtown area.

3.2.4. Arizona State University Downtown Phoenix Campus

The ASU downtown campus encompasses the area from Fillmore Street to Van Buren Street and from 1st Avenue to 7th Street. This area predominantly includes classrooms and research facilities, but also includes housing, a fitness center, and a park. ASU published enrollment figures from 2012-2016. During this time enrollment has generally hovered around 10,000-11,000 students.



Figure 3.1 – Existing Land Use





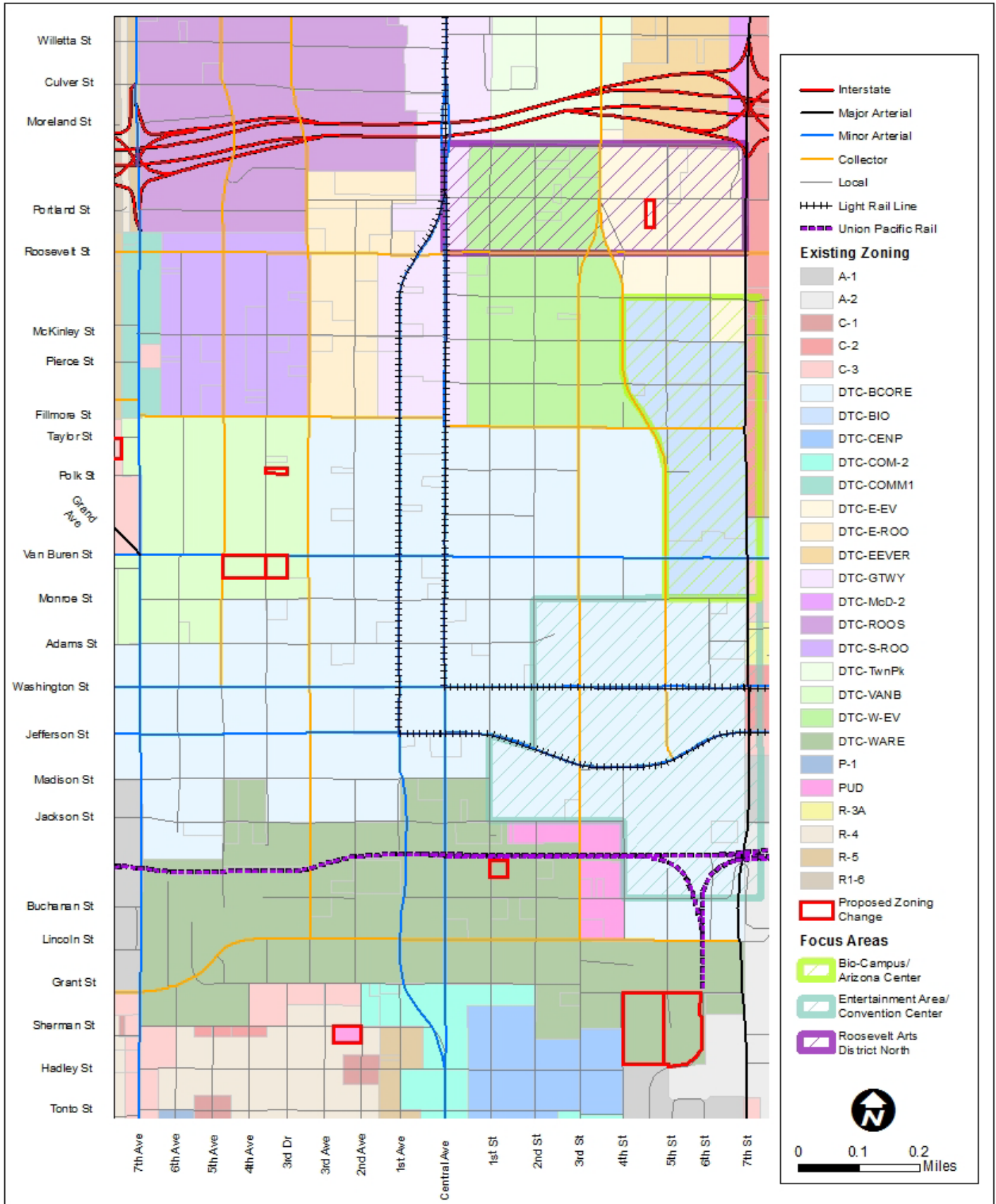
3.3. Zoning

Zoning data was obtained as GIS files through the City. The majority of the Study Area is zoned for Downtown Code (DTC), listed below. The Study Area surrounding Washington Street is zoned as the Business Core. The southwest and northwest corners of the Study Area are zoned as multi-family residential. There is a small region in the southwest and southeast corners of the Study Area zoned as industrial, with commercial zoning scattered throughout the Study Area. The DTC covers roughly two square miles from Buckeye Road to McDowell Road, from 7th Avenue to 7th Street. The DTC established set density and height for all parcels within this area, which include additional lot coverage, reduced setbacks, and altered parking requirements outside of the Business Core. The DTC also includes various streetscape criteria and design alternatives. These entitlements are intended to reduce the number of variances for these standards that may have been necessary in the past, as well as to better accommodate all modes of transportation, including cyclists and pedestrians. Zoning within the Study Area is illustrated in **Figure 3.2**; there are currently nine active zoning cases. The existing and proposed zoning is consistent with development depicted in **Figure 3.3**. Zoning designations, definitions, and distribution are shown in **Table 4**.

Table 4 – Zoning Designation and Distribution					
Zoning	Definition	%	Zoning	Definition	%
DTC-BCORE	Business Core	28.8	DTC-EEVER	East Evergreen	1.9
DTC-WARE	Warehouse	13.3	C-2	Intermediate Commercial	1.8
DTC-ROOS	Roosevelt North	7.2	A-2	Industrial	1.6
DTC-W-EV	Evans Churchill West	5.9	A-1	Light Industrial	1.6
DTC-VANB	Van Buren	5.2	DTC-COM-2	Commercial Corridor	1.6
DTC-GTWY	Downtown Gateway	4.4	R-5	Multiple Family Residence	1.0
DTC-BIO	Biomed	3.9	DTC-COMM1	Commercial Corridor	0.9
DTC-S-ROO	Roosevelt South	3.8	PUD	Planned Unit Development	0.9
DTC-E-EV	Evans Churchill East	3.2	DTC-McD-2	McDowell Corridor	0.4
R-4	Multiple Family Residence	2.8	C-1	Neighborhood Retail	0.3
DTC-E-ROO	Roosevelt East	2.7	R1-6	Single Family Residence	0.2
DTC-TwnpK	Townsend Park	2.3	R-3A	Multiple Family Residence	0.1
DTC-CENP	Central Park	2.0	P-1	Passenger Automobile Parking	<0.1
C-3	General Commercial	1.9			



Figure 3.2 – Zoning





3.4. Future Land Use

Future land use is based upon the MAG Land Use Explorer, which informs traffic volumes within the Traffic Analysis Zone (TAZ) structure. **Table 5** compares existing and future land use in the MAG Land Use Explorer. Notably, some land currently designated for transportation facilities and land that is currently vacant is expected to redevelop into higher traffic-generating uses. The shift from these land uses to others accounts for approximately 12.4% of the land in the Study Area. Based upon development information reviewed with the City and presented in **Section 3.5**, there is also an anticipated densification of development within the Study Area.

Table 5 – Existing and Future Land Use Comparison					
	Existing Land Use		Future Land Use		Percent Change of Total Land Use
	Square Miles	Percent	Square Miles	Percent	
Commercial	0.15	4.1%	0.17	4.7%	0.5%
Industrial	0.29	8.0%	0.40	11.0%	3.0%
Mixed Use	0.01	0.3%	0.24	6.6%	6.3%
Single Family Residential	0.55	15.1%	0.58	15.9%	0.8%
Multi-Family Residential	0.29	8.0%	0.32	8.8%	0.8%
Office	0.14	3.8%	0.18	4.9%	1.1%
Open Space	0.08	2.2%	0.08	2.2%	0.0%
Other Employment	0.88	24.2%	0.87	23.9%	-0.3%
Transportation	1.06	29.1%	0.80	22.0%	-7.1%
Vacant	0.19	5.2%	0.00	0.0%	-5.2%
Total	3.64		3.64		

3.5. Development Projects and Initiatives

The base land use for the model was coordinated with MAG to include 92 development projects proposed, in construction, or recently completed within the Study Area. After coordination, 12 additional developments were added to the model, but not at the TDM level. Projects range in size and type throughout the Study Area; typical example project types include high density residential apartment and condominiums, mixed use buildings, hotels, educational buildings and more. There are two development projects under construction or pre-development within the Roosevelt Arts District North, six presubmittal, approved, or active developments within the Bio-Campus/Arizona Center, and one development project within the Entertainment Area/Convention Center. There are more than 6.5 million square feet of anticipated development within the Study Area, including approximately 7,800 new dwelling units, and roughly 3,000 new hotel rooms. Development information was obtained from MAG, Phoenix Planning and Development, and Phoenix Economic Development to identify likely development and redevelopment in the Study Area within the next ten years. This information was used to update land use and travel demand within the MAG Travel Demand Model (TDM). Detailed information is included in **Appendix WP1-1**; project sites are shown in **Figure 3.3**.

Figure 3.3 – Potential Development/Redevelopment Sites within Study Area (updated March 2020)

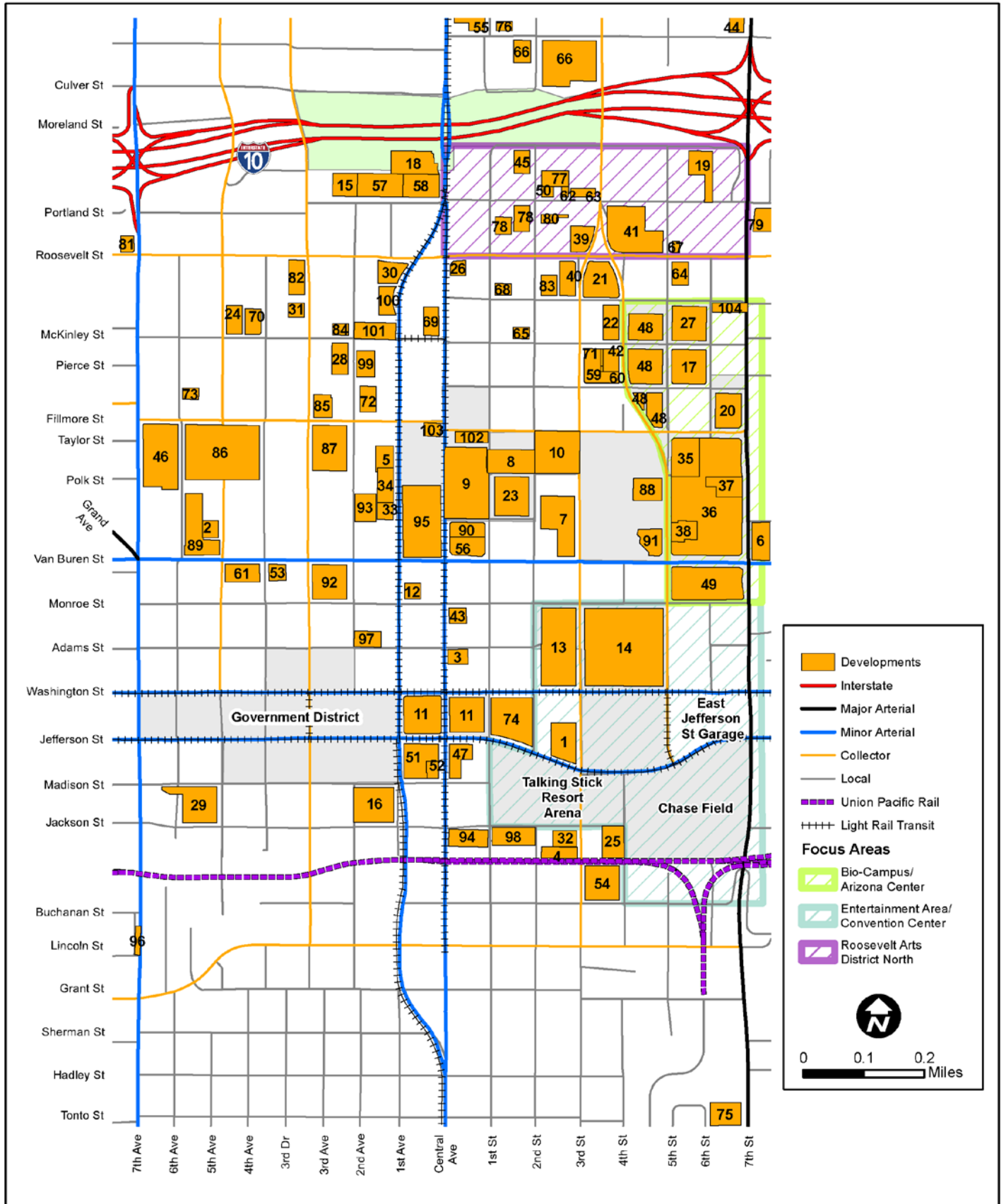




Table 6 – Potential Development/Redevelopment Sites (March 2020)

ID	Name	Status	Description	Total DU	Total SF	Hotel Keys	TAZ
1	High Rise Residential		300 Units	300			3183
2	Toll Brothers		244 Units	244			838
3	Mixed Use Hotel		Mixed Use hotel, 200 keys, and office		30000	200	847
4	Hotel at 2nd/Jackson		Midrise 150-200 keys			150-200	3183
5	Parking/Housing						841
6	U of A		200,000-300,000 SF				854
7	Sheraton Grand Phoenix	Complete	Motels/Hotels	0	856005	1000	846
8	ASU Taylor Place	Complete	Dormitories	0	0	650	846
9	ASU University Center	Complete	Arizona State University	0	533893	0	846
10	ASU Capiot Center	Complete	Arizona State University	0	161009	0	846
11	Cityscape	Complete	Mixed Use	0	866169	0	2916, 3183
12	Monroe 44	Complete	Very High Density Residential (MF)	202	0	0	842
13	Phoenix Convention Center West	Complete	Special Events	0	0	0	847
14	Phoenix Convention Center North	Complete	Special Events	0	0	0	850
15	Portland Place	Complete	Very High Density Residential (MF)	55	0	0	837
16	Maricopa County Downtown Court Tower	Complete	Public Services	0	683000	0	2916
17	BioScience High School	Complete	Schools (K-12 grade)	0	66216	0	849
18	IRISH CULTURE CENTER LIBRARY - addition	Complete	Public Services	0	20648	0	837
19	Portland 2	Active	Very High Density Residential (MF)	25	0	0	845
20	University of Arizona Cancer Center	Complete	Hospitals/Medical Centers	0	250000	0	849
21	Concorde Eastridge Downtown Housing	Complete	High Rise Residential (MF)	166	0	0	849
22	Concorde Eastridge Downtown Housing	Complete	High Rise Residential (MF)	160	0	0	849
23	ASU Arizona Center for Law & Society	Complete	Post High School Institutions	0	261077	0	846
24	The Lofts At Mckinley	Complete	Very High Density Residential	60	0	0	838
25	Summit at Copper Square	Complete	High Rise Residential	165	0	0	3183
26	C.P. Stephens DeSoto Dealership Building	Six Complete	Specialty Commercial	0	8845	0	846
27	Downtown Phoenix Biomedical Campus	Pre-Submittal/ Pre-Approval	Parking Lots	0	0	0	849
28	Urban Living on 2nd	Complete	High Rise Residential (MF)	70	0	0	841
29	Maricopa County Sherriff's Office	Active	Public Services	0	169500	0	2917
30	Union at Roosevelt	Complete	Mixed Use	80	9160	0	841
31	Townhomes @ 822 N 3rd Ave	Complete	Very High Density Residential	10	0	0	838
32	Phoenix Center for Dentistry	Pre-Submittal/Pre-Approval	Medical Offices	0	23000	0	3183
33	Lincoln Family Downtown YMCA	Complete	Institutional	0	64283	0	841
34	Lincoln Family Downtown YMCA	Complete	Institutional	0	110962	0	841
35	Downtown Phoenix Biomedical Garage	Active	Parking Structures	0	0	0	849



Table 6 – Potential Development/Redevelopment Sites (March 2020)

ID	Name	Status	Description	Total DU	Total SF	Hotel Keys	TAZ
36	Downtown Phoenix Biomedical Campus	Complete	Post High School Institutions	0	519052	0	849
37	BioScience Partnership Building	Active	Post High School Institutions	0	245000	0	849
38	Arizona Biomedical Collaboration 1	Complete	Post High School Institutions	0	89725	0	849
39	Illuminate Apartments	Complete	Mixed Use	111	4847	0	845
40	Linear Apartments	Complete	High Rise Residential (MF)	104	0	0	846
41	Roosevelt Row Apartments	Active	High Rise Residential (MF)	316	0	0	845
42	Proxy 333	Complete	High Rise Residential (MF)	118	0	0	849
43	Monroe Hilton Garden Inn	Complete	Mixed Use	0	19773	170	847
44	Starbucks	Complete	Specialty Commercial	0	2475	0	844
45	en Hance Park	Active	High Rise Residential (MF)	49	0	0	845
46	Alta Fillmore Apartment Homes	Complete	High Rise Residential (MF)	224	0	0	838
47	Barrister Place	Pre-Submittal/Pre-Approval	Mixed Use	172	28836	0	3183
48	ASU Wexford Phoenix Biomedical Campus	Approved Zoning/Plan/Design	Post High School Institutions	0	150000	0	849
49	Downtown Phoenix Biomedical Campus	Pre-Submittal/Pre-Approval	Post High School Institutions	0	200000	0	850
50	The Oscar	Approved Zoning/Plan/Design	High Density Residential (MF)	11	0	0	845
51	Luhrs City Center	Complete	Mixed Use	0	161354	0	2916
52	Marriott Hotel	Complete	Motels/Hotels	0	0	320	2916
53	Welnick Bros. Marketplace	Complete	Specialty Commercial	0	11000	0	839
54	Ballpark Apartments	Pre-Submittal/Pre-Approval	High Rise Residential (MF)	276	0	0	851
55	CIRCA	Pre-Submittal/Pre-Approval	High Rise Residential (MF)	220	0	0	844
56	Freeport McMoRan Center	Complete	Mixed Use	0	501000	242	846
57	Portland on the Park	Complete	Mixed Use	170	7200	0	837
58	Found:Re	Complete	Motels/Hotels	0	0	105	837
59	Phoenix Towers 3rd St. & Pierce	Pre-Submittal/Pre-Approval	Mixed Use	252	6000	0	849
60	Phoenix Towers 3rd St. & Pierce	Pre-Submittal/Pre-Approval	Mixed Use	360	19000	0	849
61	The Van Buren	Active	Special Events	0	20000	0	839
62	The Bungalow on Portland	Construction Plan Under Review	Vacant Residential to Adaptive Reuse as a Shell Bldg intended for Dining and Commercial Kitchen				845
63	RO2 CAM	Construction Plan Under Review	6-Story 127-Room Business Hotel w/ Amenities			127	845
64	Roosevelt Arts District	Construction Plan Under Review	Redevelop Existing Bldg & New Shell Bldg				849



Table 6 – Potential Development/Redevelopment Sites (March 2020)

ID	Name	Status	Description	Total DU	Total SF	Hotel Keys	TAZ
65	The Derby	Construction Plan Under Review	New Multi-Family Residential/Commercial Development	211			846
66	City Center on the Park	Under Construction	5-Story 325 Unit Multi-Family	325			844
67	ROOSEVELT ON 5TH	Under Construction	New 3 story mixed use building				845
68	The Churchill	Under Construction	Multi-Use Entertainment Center				846
69	Circles on Central - The Stewart	Under Construction	19 story apartment building, including adaptive reuse of existing single story building				841
70	MCKINLEY ROW	Under Construction	NEW 18 UNIT TOWNHOME PROJECT	18			838
71	3rd and Pierce	Under Construction	Mixed Use Residential Building, 278 Units	278			849
72	609 Housing	Under Construction	60 Affordable Residential Units in 4-Stories	60			841
73	6TH AVENUE COTTAGES	Under Construction	10 Single Family Attached Townhomes	304			838
74	Block 23	Under Construction	New 16-Story Mixed Use; Grocery Store, Office & 304 Unit Multi-Family				3183
75	Office Building for Road Machinery	Under Construction	New Office Bldg				907
76	Willetta Apartment Homes	Pre-Development	150 Unit 2 Bldg Mixed Use Residential/Retail	150			844
77	The Godfrey Hotel	Pre-Development	12-Story 297 Key Full Service Hotel, 163,650 SF		163560	297	845
78	RO2 Office and Garage	Pre-Development	871,300 SF 19-Story Mixed Use Bldg				845
79	SEC 7th Street and Portland	Pre-Development	New 3,500 sf Drive-Thru Restaurant Bldg w/ Perimeter Parking		3500		853
80	Knipe House Rehabilitation	Pre-Development	Rehabilitation and Adaptive Use of an Historic House as Retail and Office Space				845
81	El Norteno	Pre-Development	New Restaurant				3187
82	R3 Apartments	Pre-Development	Construction of a 5-Story - 70 Unit Apartment Complex	70			838
83	Evans Churchill West - Mixed Use Development	Pre-Development	Proposed New Mixed-Use High Rise (250') Development Including Hotel, Office and Retail Space				846
84	Residences on Second Ave	Pre-Development	New Townhouse Development, 6 Total Residences	6			841



Table 6 – Potential Development/Redevelopment Sites (March 2020)

ID	Name	Status	Description	Total DU	Total SF	Hotel Keys	TAZ
85	Aspire Fillmore Apartments	Pre-Development	Construction of a 14-Story - 198 Unit Apartment Bldg	198			841
86	The Fillmore	Pre-Development	New Multi-Family Project Located between 4th and 6th Ave South of Fillmore, total of 712 Units	712			838
87	2nd & Fillmore Multifamily	Pre-Development	Mixed Use Development w/ 333 Apt Units	333			841
88	AC Hotel at Arizona Center	Pre-Development	15-Story Hotel				849
89	5th Ave & Van Buren Apartments	Pre-Development	New 6-Story Multi-Family Residential Development, total of 230 Units	230			838
90	Kenect Phoenix	Pre-Development	High Rise Bldg consisting of Apartments, Parking and Retail		250000		846
91	Palm Tower at Arizona Center	Pre-Development	350 Unit High Rise Apartment Tower w/ Above Grade Parking, Office and Retail Space	350			849
92	200 W. Monroe	Pre-Development	2 Phase Mixed Use High Rise Project, total of 553 Units	553			842
93	Astra	Pre-Development	Mixed Use Development; Residential, Co-Living, General Office	403	3000	224	841
94	The Blue	Pre-Development	Mixed Use Development; Residential, Commercial, General Office	200	651500	200	2916
95	Central Station	Pre-Development	Mixed Use Development; Residential, Commercial, General Office	573	73880	152	841
96	Alta Warehouse	Pre-Development	Multi-Family (MF)	300			840
97	Hyatt Place Hotel	Pre-Development	Hotel	240		240	842
98	Home2Suites	Pre-Development	Hotel	148		148	3183
99	X Basecamp-Enterprise	Pre-Development	Mixed Use Development; Multi-Family Residential High-Rise, Commercial, Lounge, Coworking Space	390	245340	0	841
100	Union at Roosevelt	Pre-Development	Mixed Use Development; Multi-Family Residential Luxury High-Rise, Commercial (Retail)	105	156568	0	841



ID	Name	Status	Description	Total DU	Total SF	Hotel Keys	TAZ
101	McKinley Green	Pre-Development	Mixed Use Development; Multi-Family Residential, Commercial (Retail)	384	605483	0	841
102	ASU Student Housing	Pre-Development			283000		
103	ASU Parking Garage	Pre-Development	400 Parking Spaces				
104	Garfield House	Pre-Development	Mixed Use Development; Multi-Family Residential High-Rise, Commercial (Retail)	309	359092	0	849

3.6. Socioeconomic Projections

Socioeconomic projections were sourced from 2016 MAG Socioeconomic Projections and include each TAZ that intersects the Study Area, meaning the TAZ boundaries may extend slightly beyond the Study Area as well. **Table 6** displays population and employment information from 2015 through 2050. The table indicates a large uptick in the population (nearly 150%, or 4.3% annually). There is a sizable increase in employment, but not as dramatic (over 25%, less than 1% annually). The 2025 horizon year was linearly interpolated between the 2020 and 2030 data.

	2015	2020	2030	2040	2050	Percent Change (2015-2025)	Percent Change (2015-2050)
Total Population	31,377	43,099	61,111	69,887	75,912	68.0%	141.9%
Household Population	26,897	37,947	54,741	62,187	67,059	72.9%	149.3%
Households	12,140	16,337	22,794	25,557	27,406	64.0%	125.7%
Dwelling Units	14,713	18,196	24,159	26,513	28,120	45.1%	91.1%
Total Employment	91,406	100,499	106,477	109,971	114,824	13.8%	25.6%

Table 6 indicates a more balanced cross section in the future downtown, with increased opportunity for residents to live and work downtown. The increase in vehicular trips is shown by TAZ in **Figure 3.4**. Growth impacts the roadway network both by increasing the number of trips and by changing travel patterns, particularly whether trips originate and end inside or outside the Study Area. There are four combinations of Origin-Destination (OD) travel patterns:

- Trips that start outside the Study Area and conclude inside the Study Area (External to Internal (E-I)).
- Trips that start inside the Study Area and conclude outside the Study Area (Internal to External (I-E)).
- Trips that start inside the Study Area and conclude inside the Study Area (Internal to Internal (I-I)).
- Trips that start outside the Study Area and conclude outside the Study Area (External to External (E-E)).

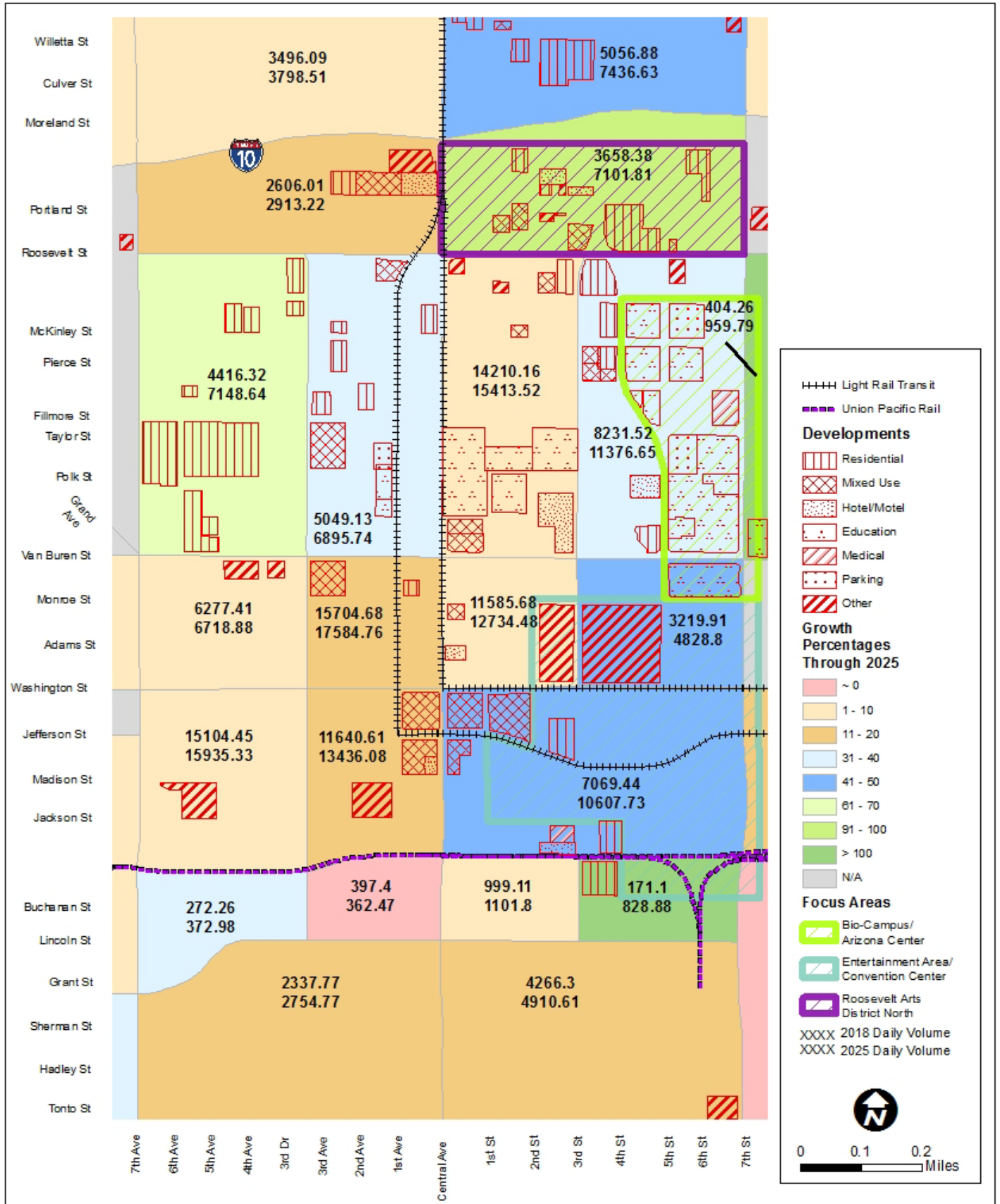
The distribution of E-I, I-E, I-I, and E-E trips impacts which roadways are utilized for most trips, as well as trip distance. For example, E-I trips may utilize I-10 or other major routes to approach the Study Area and would typically follow connecting routes, whereas I-I trips could be more evenly spread through the Study Area and not concentrated on routes that serve as linkages to the broader Valley. When more people choose to live and work downtown, the percentage of I-I trips increases. The increase in I-I trips in the study area is not significant as evident in a comparison of 2015/2025 trip types, presented in **Table 8**.



Table 8 – Vehicular Trip Distribution				
Trip Type	2015		2025	
	Number of Trips	% of Total Trips	Number of Trips	% of Total Trips
E-E	447,321	65%	457,746	61%
E-I	111,807	16%	134,439	18%
I-E	111,809	16%	134,443	18%
I-I	13,961	2%	19,819	3%

The increase in population and the expected increase in work trips for people living and working in downtown is not emerging as a trend in the trip distribution metrics shown in **Table 8**. Short work trips in downtown areas are sometimes completed using other modes of transportation, including walking, biking, and transit or rideshare services. Some of this behavior can be attributed to the costs associated with parking in downtown areas. These costs could be in the form of actual parking fees or an increase in travel time associated with searching for parking areas. Due to the anticipated “livable” aspect of downtown and general travel behavior dynamics, multimodal transportation needs should be incorporated into the planning needs of the Study Area.

Figure 3.4 – Traffic Analysis Zone Growth (Vehicular Trips)





4.0 Existing Transportation Network

The existing transportation network is shown in **Figure 4.1**. **Figure 4.2** shows the existing number of lanes within the traffic model used for this analysis. The downtown area is predominately served through a roadway grid. Existing traffic signals are shown in **Figure 4.3**. Other modes are served as follows.

Bicycle facilities: There are limited exclusive or dedicated bicycle facilities available, with very few north/south routes available between 3rd Avenue and 7th Street and few east/west routes available between Lincoln Street and Fillmore Street. This essentially creates a hole in the bicycle network in the center of downtown. However, there are bicycle facilities along portions of Fillmore Street, Roosevelt Street, Grant Street, Mooreland Street, 5th Avenue, 3rd Avenue, Central Avenue, 1st Street, and 7th Street.

Bus Transit: Valley Metro operates approximately 85 bus stops in the Study Area. There are numerous Valley Metro bus stops within the area, with north/south routes traversing the Study Area along 7th Avenue, Central/1st Avenue, and 7th Street and east/west routes along Lincoln Street, Washington/Jefferson Streets, Fillmore Street, and I-10. Routes are present along 5th Avenue, 3rd Avenue, 3rd Street, and 5th Avenue north of Van Buren Street. Roosevelt Street service is available east of 3rd Avenue.

Light Rail Transit: The Valley Metro LRT follows Washington and Jefferson Streets to Central and 1st Avenues, with stops near the Entertainment Area/Convention Center, CityScape, ASU's downtown campus, and Roosevelt Row. It runs east-south along 1st Avenue and Jefferson Street and runs west-north along Washington Street and Central Avenue. The westbound line has stops at 3rd Street/Washington Street, Washington Street/Central Avenue, Van Buren Street/Central Avenue, and Roosevelt Street/Central Avenue. The eastbound line has stops at Roosevelt Street/Central Avenue, Van Buren Street/ 1st Avenue, Jefferson Street/1st Avenue, and 3rd Street/Jefferson Street.

Freight: The UPRR crosses the Study Area from 7th Avenue to 7th Street between Jackson Street and Buchanan Street.

Figure 4.1 – Existing Transportation Network

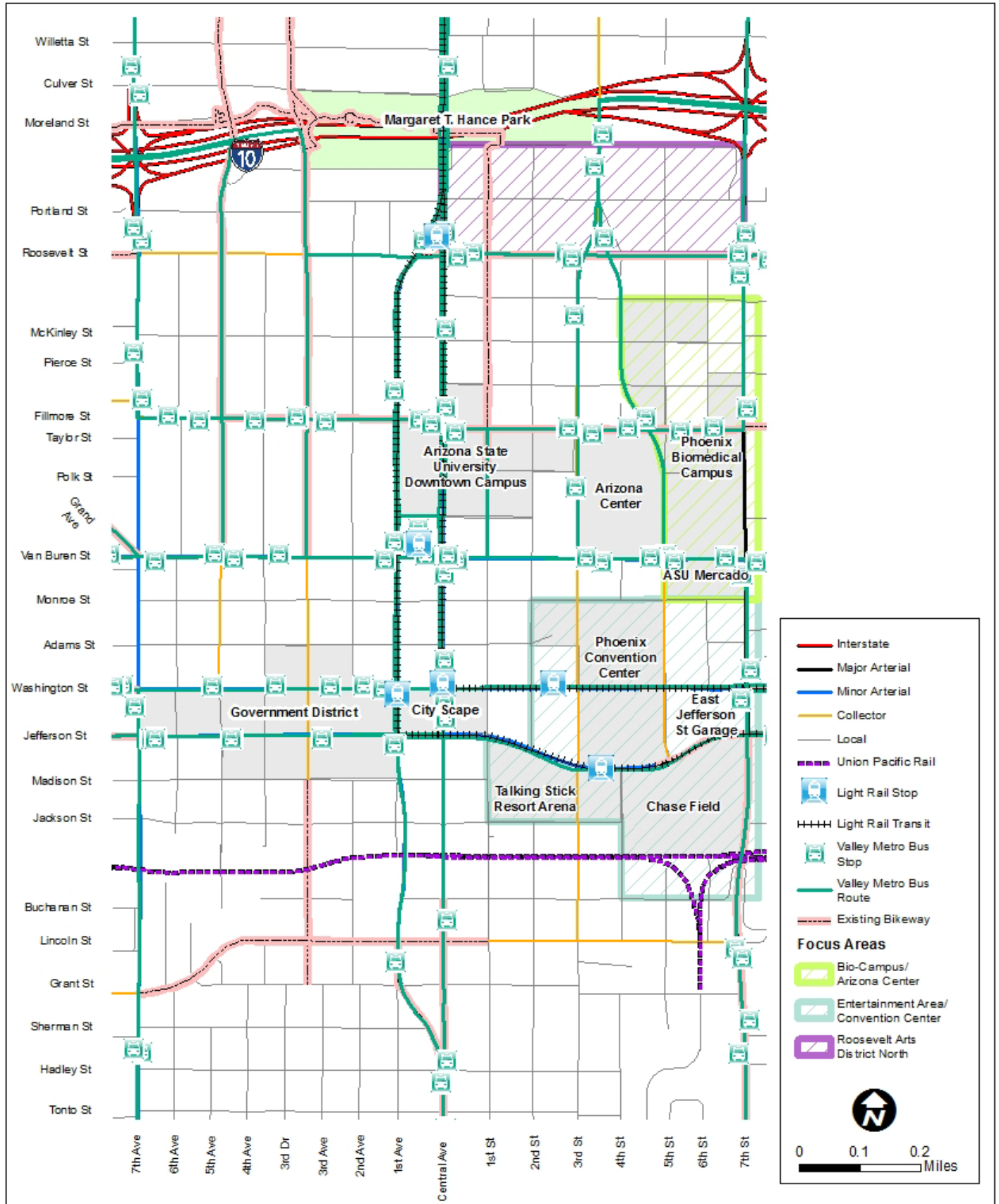




Figure 4.2 – Existing Number of Lanes (Modeled)

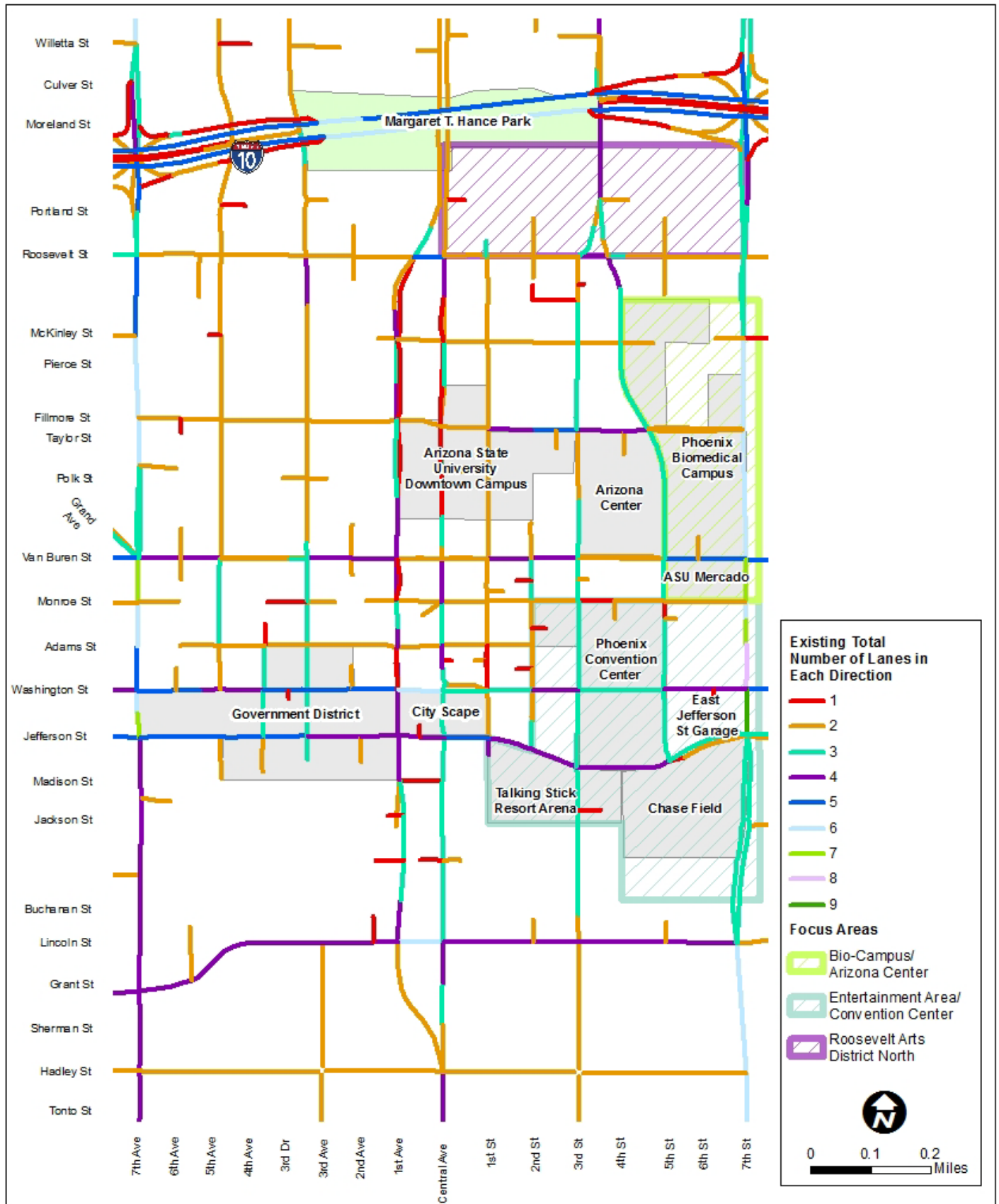
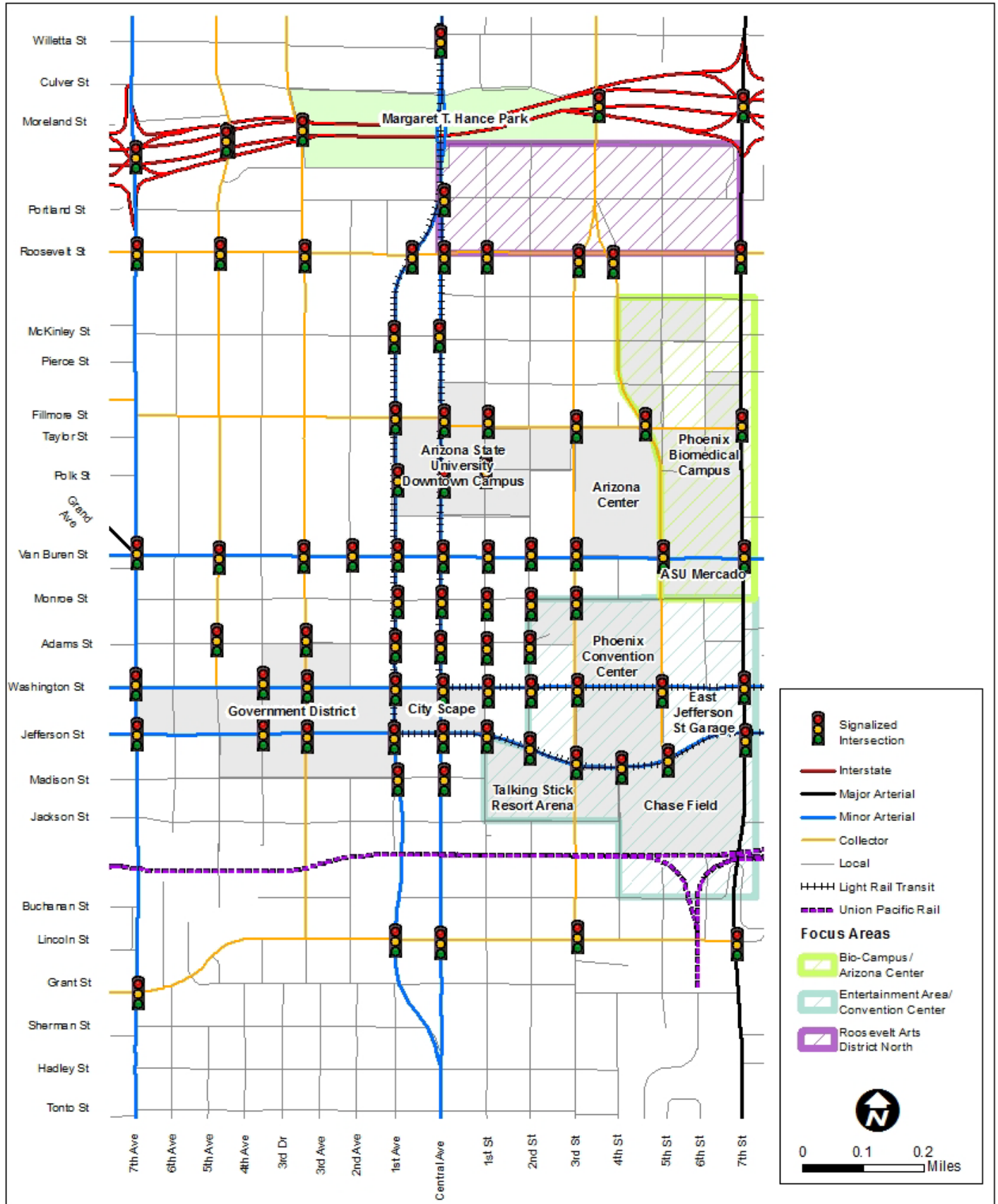


Figure 4.3 – Existing Signalized Intersections





4.1. Access Management

Access management principles generally include access spacing, driveway spacing, turning lane configurations, and median treatments. Appropriate access management provides the proper level of access and mobility for the facility. Other than medians associated with light rail lines, raised continuous medians are present along 7th Avenue and 7th Street south of Jackson Street to Lincoln Street. There is a median island on the north leg of the intersection of 7th Street and Washington Street. Raised median with breaks for access are present at the following locations:

- Van Buren Street: 2nd Street to 7th Street;
- Fillmore Street: 1st Street to 7th Street; and
- Portland Street: 3rd Avenue to 1st Avenue (large, landscaped median).

Driveway spacing within the Study Area varies. There are limited developments with shared access; there tend to be more driveways in areas with smaller developments. Most large parking facilities have multiple access points. Notable exceptions within and adjacent to the Entertainment Area/Convention Center include the Summit, a high-density residential development directly west of Chase Field (access via 4th Street), and the Renaissance Hotel (access via 1st Street north of Adams Street).

4.2. Parking

A cursory review of available parking, based on readily available information, was performed for the Study Area to the level that may inform the next phases of the Study. **Figure 4.4** shows on-street parking and parking facilities for the Study Area.

4.2.1. On-Street

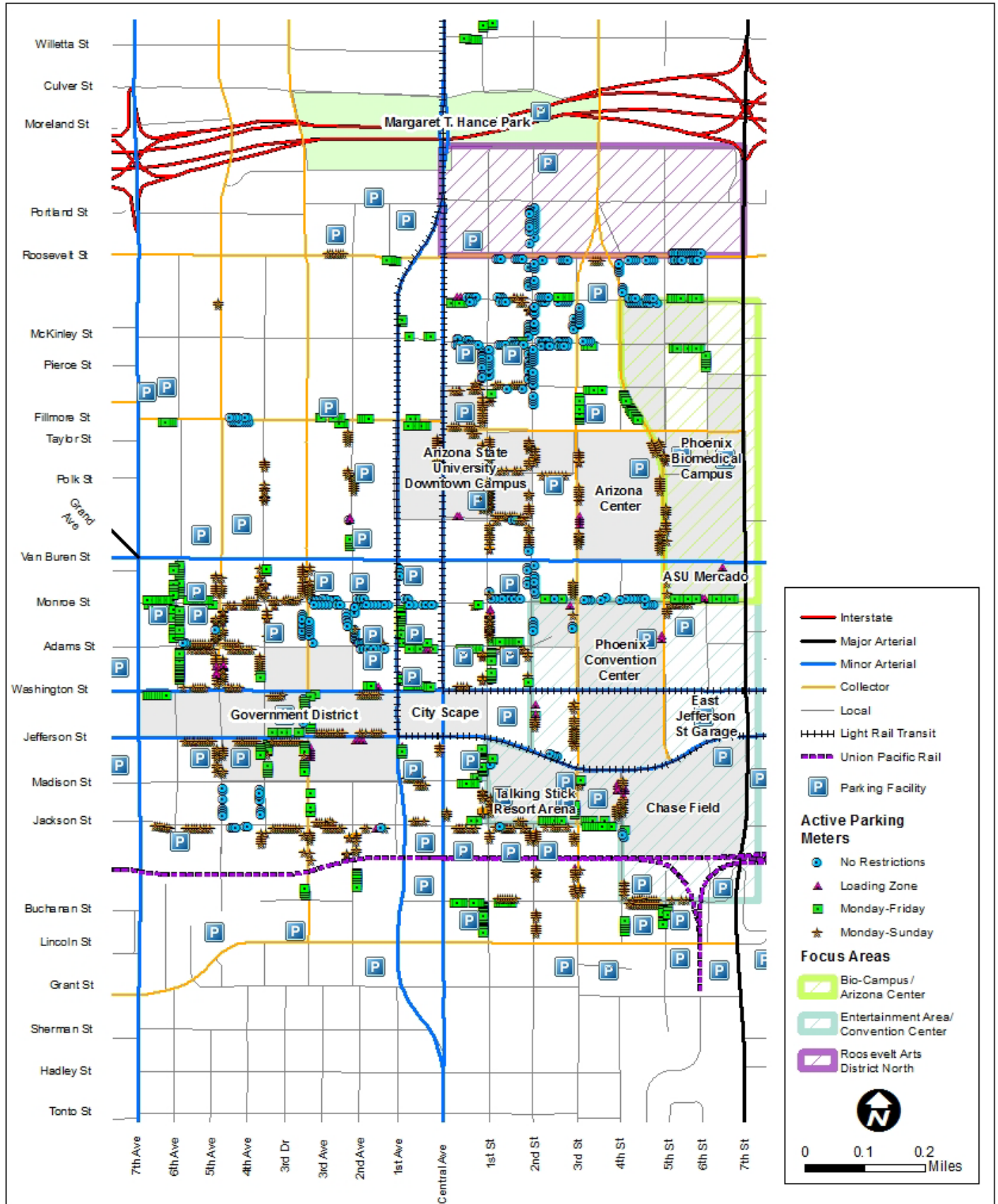
There are approximately 75 parking facilities in the Study Area, including large open lots and parking garages. Private and public parking structures total more than 25,000 parking spaces between 7th Street and 7th Avenue from Fillmore Street to Lincoln Street. Parking facilities were counted by reviewing Google aerial imagery and OpenStreet Map data. In the Study Area there are approximately 1,800 metered parking spots along the roadways, most of which are active from Monday-Sunday.

4.2.2. Valet and Drop Off Points

There is one designated valet location along Jefferson Road at Central Avenue in front of the Palomar Hotel. Currently, there are several designated green-curb areas throughout the Study Area, but no specific locations intended for ride-share. There are nine Americans with Disabilities Act (ADA) drop-off/pick-up locations within the Study Area at the following locations:

- 3rd Street and Jefferson Street (just south, west curb);
- Jackson Street, between 1st and 2nd Street (south curb);
- 5th Street between Washington Street and Monroe Street (east side);
- 1st Avenue and Adams Street (north curb, just west of 1st Avenue);
- Between 2nd and 3rd Avenue (south curb of Jefferson);
- 3rd Street and Taylor Street (east curb);
- 5th Street and Van Buren Street (just north, west curb);
- 2nd Street and Washington Street (Symphony Hall pull-in); and
- 1st Street and Adams Street (south curb).

Figure 4.4 – On-Street Parking





4.3. Existing Traffic Volumes

Traffic turning movement counts were collected for 20 signalized intersections within the Study Area on Tuesday, August 21st, 2018, and Thursday, August 23rd, 2018. Traffic count data collected in conjunction with this Study is included in **Appendix WP1-2**. Area schools and universities were in session.

Additional turning movement count information was provided by the City as available for locations with count information collected in 2015 or later. **Figure 4.5** shows select turning movement count locations used in this Study and **Figure 4.6** shows the existing turning movement counts for each location. Average Daily Traffic (ADT) volumes were provided by the City. **Figure 4.7** shows ADT volumes for roadways in the Study Area from 2015 or later. Traffic volumes are the highest on the roads connecting to I-10. The observed ADT is over 50,000 vehicles per day on 7th Avenue and 7th Street near the Traffic Interchanges (TI) with I-10.

4.4. Crosswalk Volumes

Bicycle and pedestrian movements in crosswalks were collected along with the turning movement counts for the 20 signalized intersections. Some additional crosswalk counts were provided by the City. The total number of bicyclists and pedestrians using each crosswalk at an intersection over the total period that counts were collected is shown in **Figure 4.8**. In general, the majority of crosswalk users are concentrated in the northeast quadrant of the Study Area, particularly in the section bounded by Fillmore Street to the north, 1st Avenue to the west, Jefferson Street to the south, and 7th Street to the east. This area encompasses the Bio-Campus/Arizona Center and Entertainment Area/Convention Center. The intersection of 1st Avenue and Jefferson Street, adjacent to the CityScape development, had the highest number of pedestrian crossings.

4.5. Traffic Signal Timing Plans

Traffic signal timing plans and phasing diagrams were provided by the City as available. Where timing plans were not available, optimized timing plans were developed in Synchro and used in analysis. Signal timing is discussed in more detail in **Section 6.1.4**.



Figure 4.5 – Turning Movement Count Locations

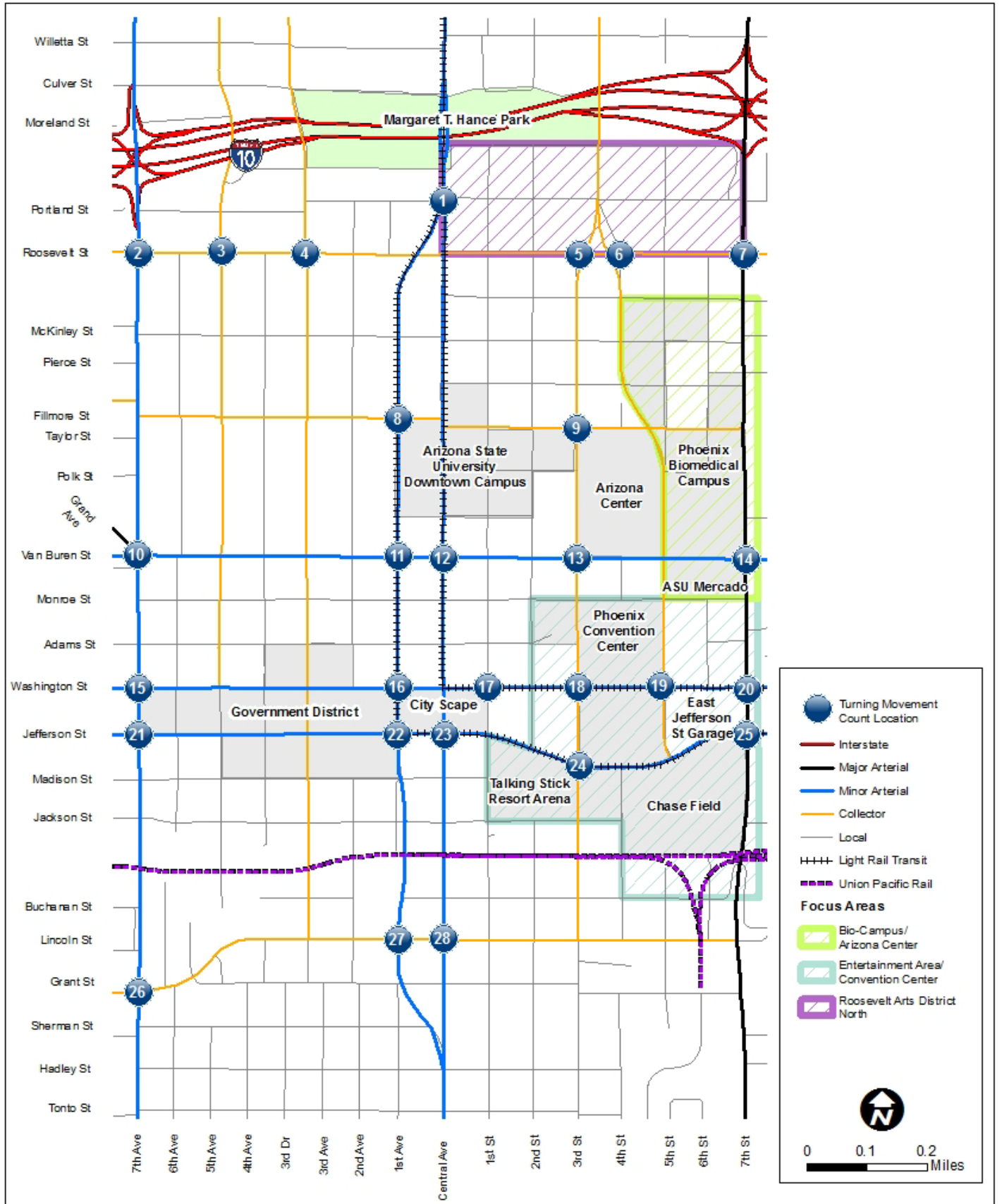


Figure 4.6 – Existing Turning Movement Counts

Existing TMC's

- X** Study Area Intersection
- XX AM Peak Hour Count
- (XX) PM Peak Hour Count

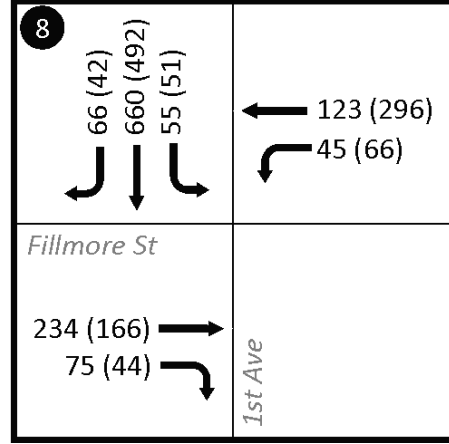
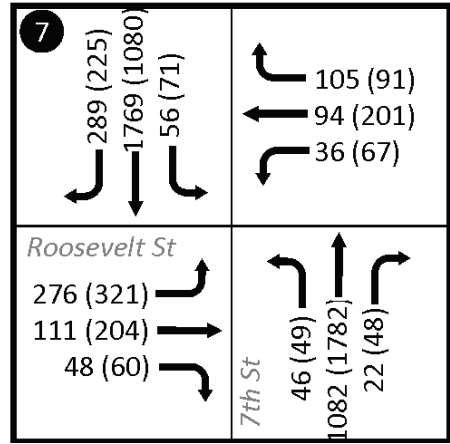
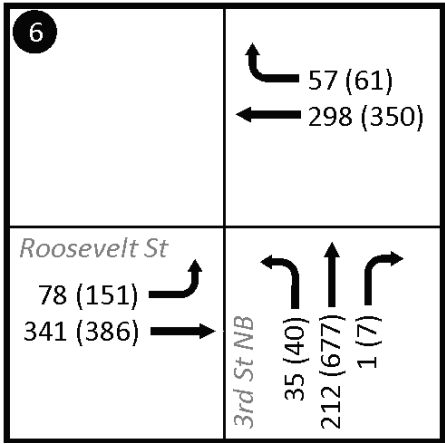
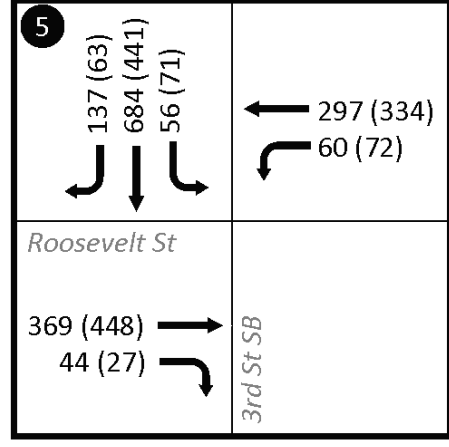
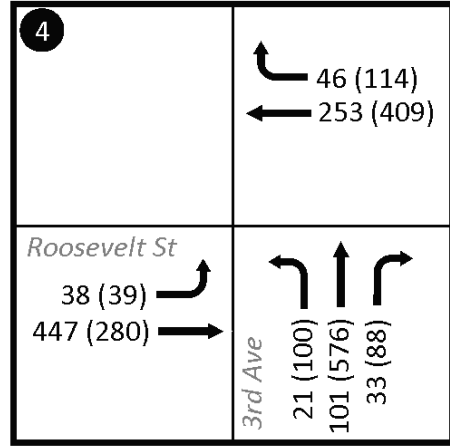
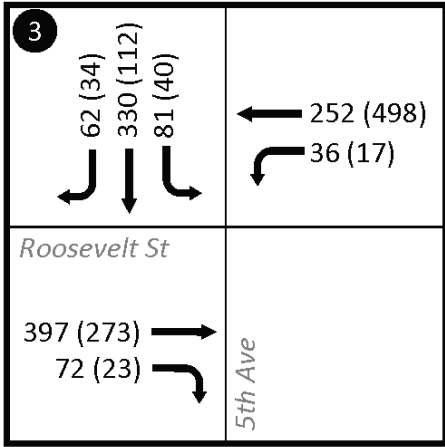
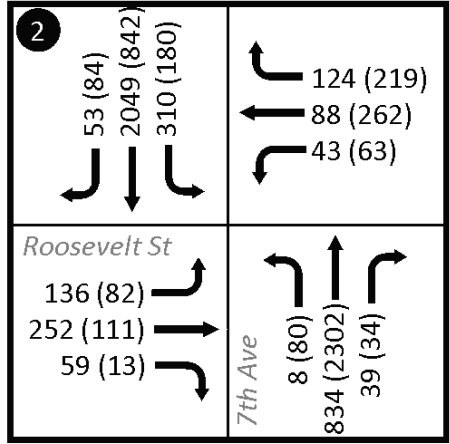
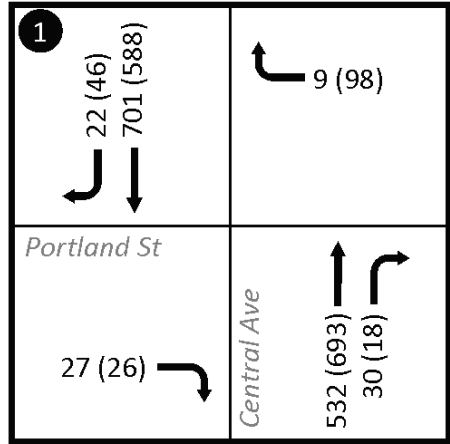


Figure 4.6 – Existing Turning Movement Counts (Continued)

Existing TMC's

- X** Study Area Intersection
- XX AM Peak Hour Count
- (XX) PM Peak Hour Count

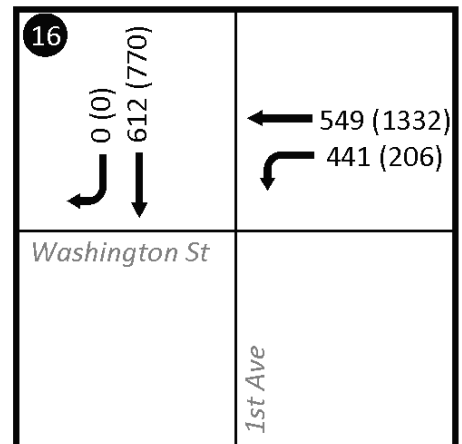
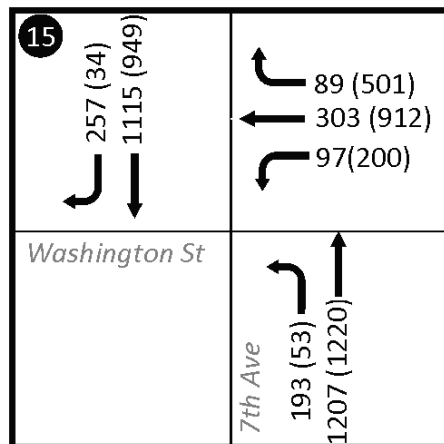
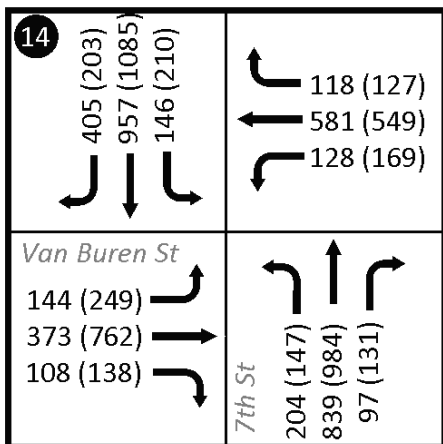
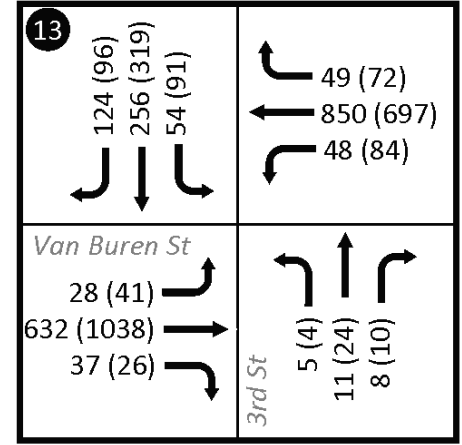
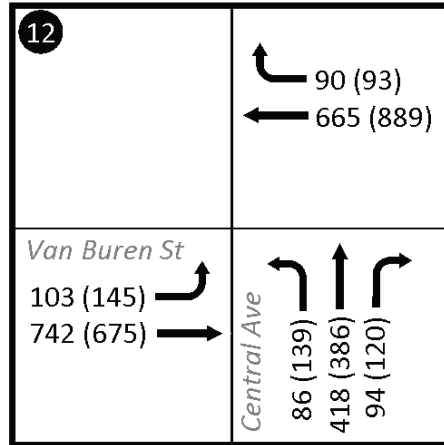
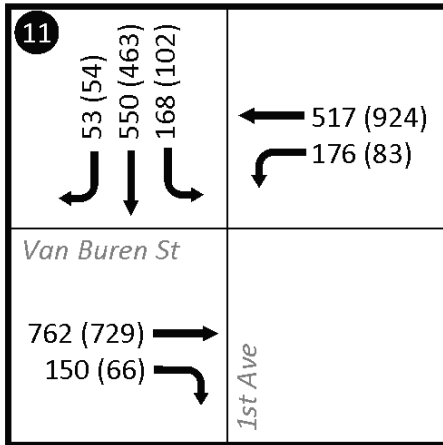
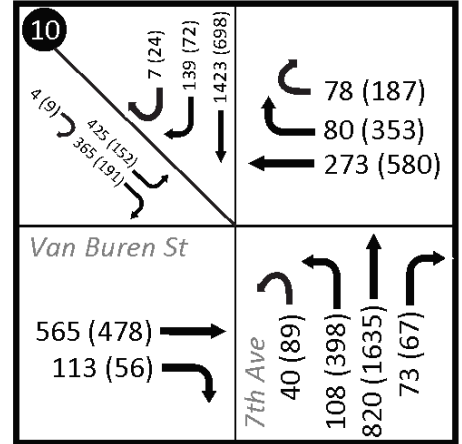
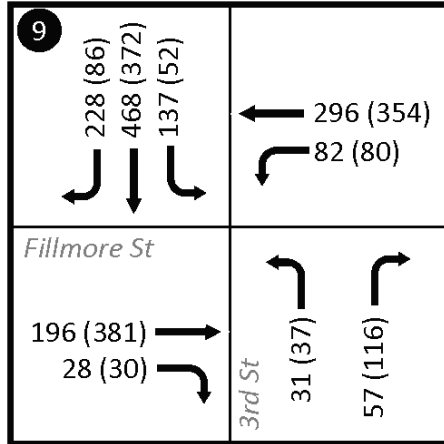


Figure 4.6 – Existing Turning Movement Counts (Continued)

Existing TMC's

- X** Study Area Intersection
- XX AM Peak Hour Count
- (XX) PM Peak Hour Count

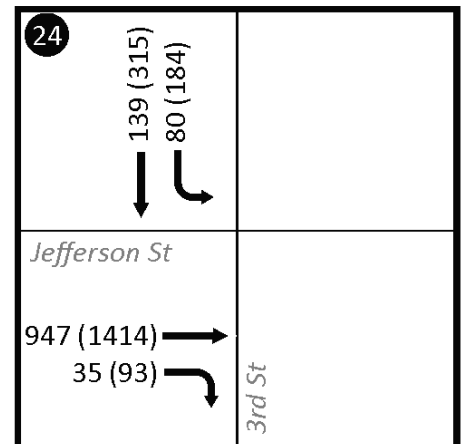
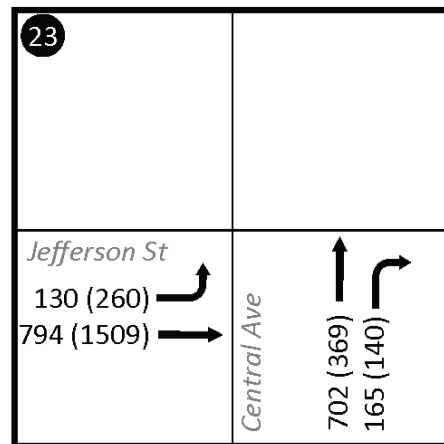
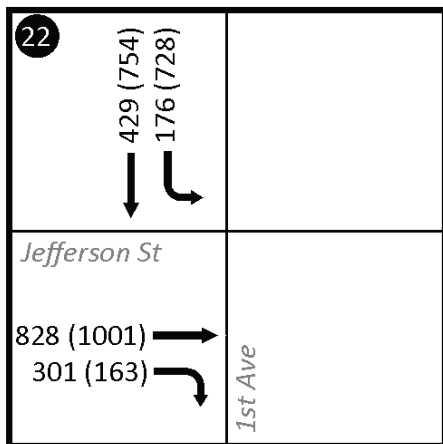
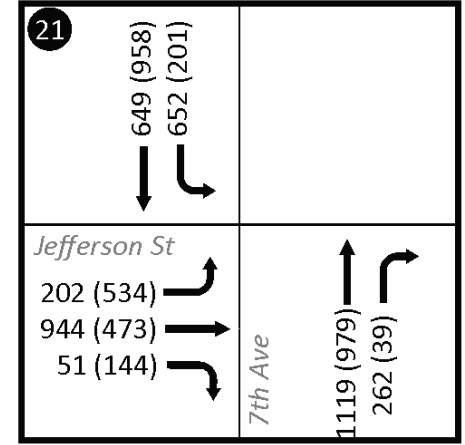
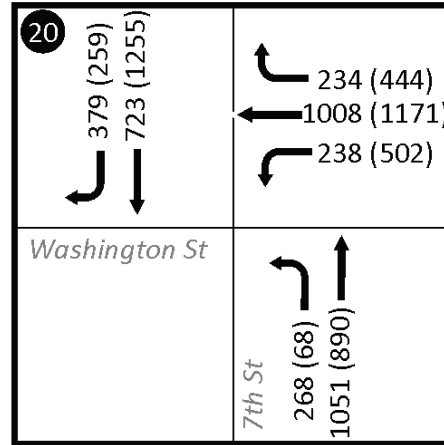
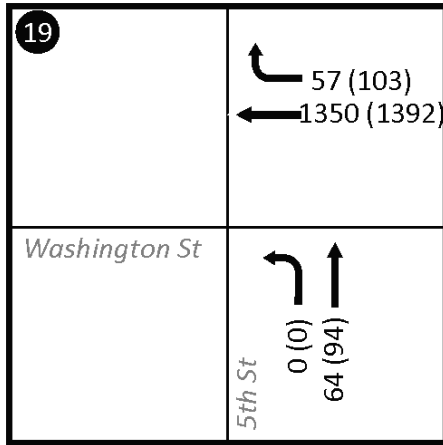
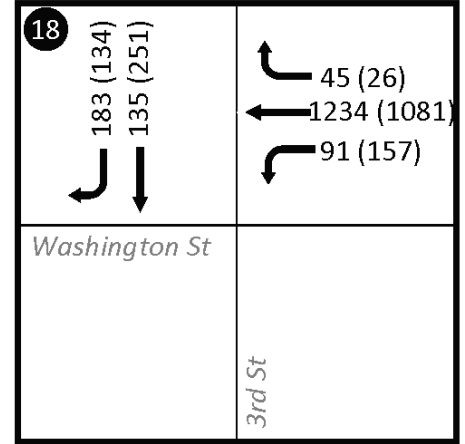
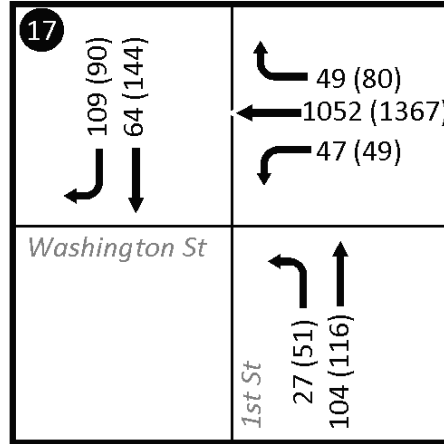


Figure 4.6 – Existing Turning Movement Counts (Continued)

Existing TMC's

- X** Study Area Intersection
- XX AM Peak Hour Count
- (XX) PM Peak Hour Count

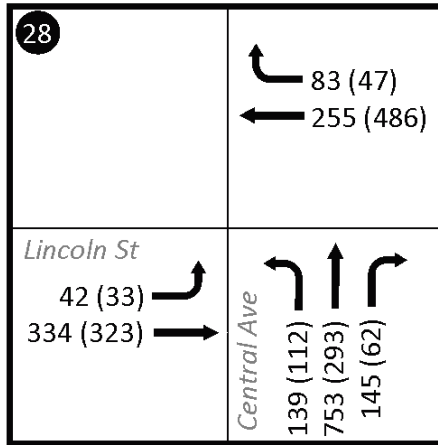
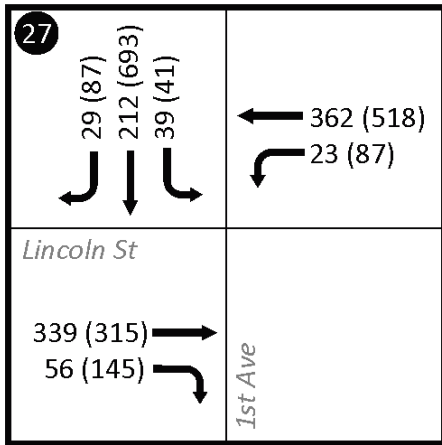
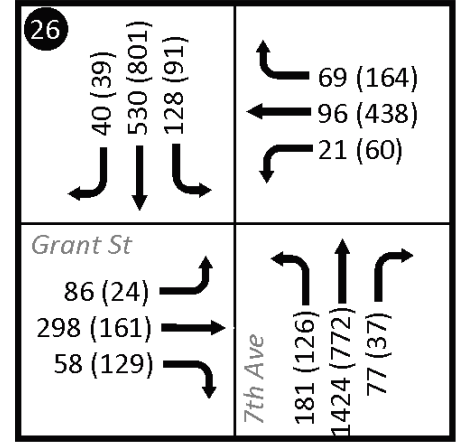
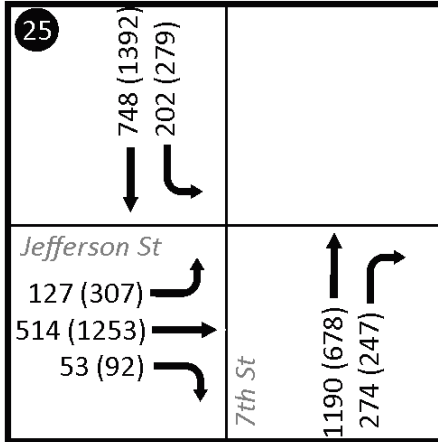


Figure 4.7 – Average Daily Traffic Volumes

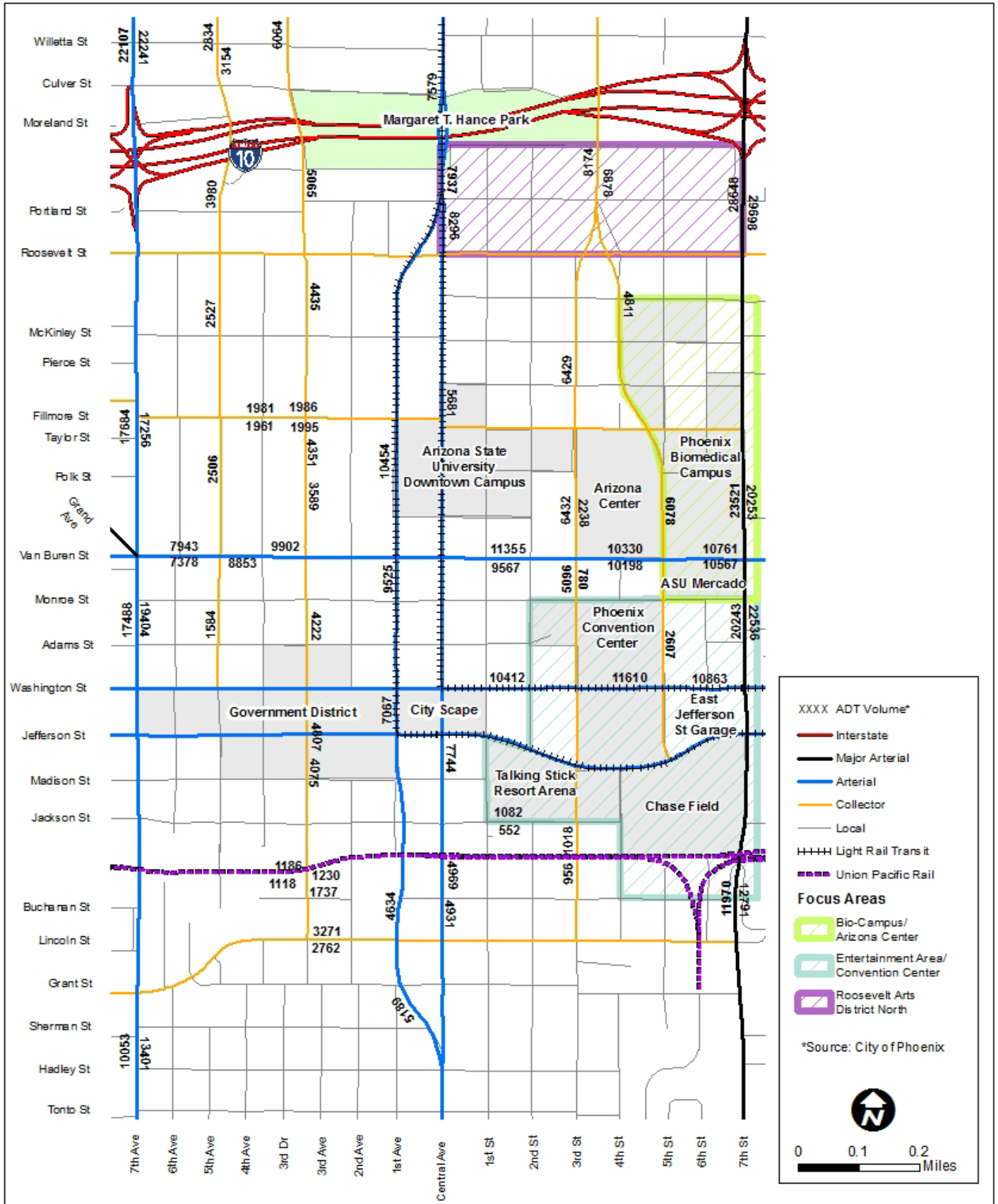
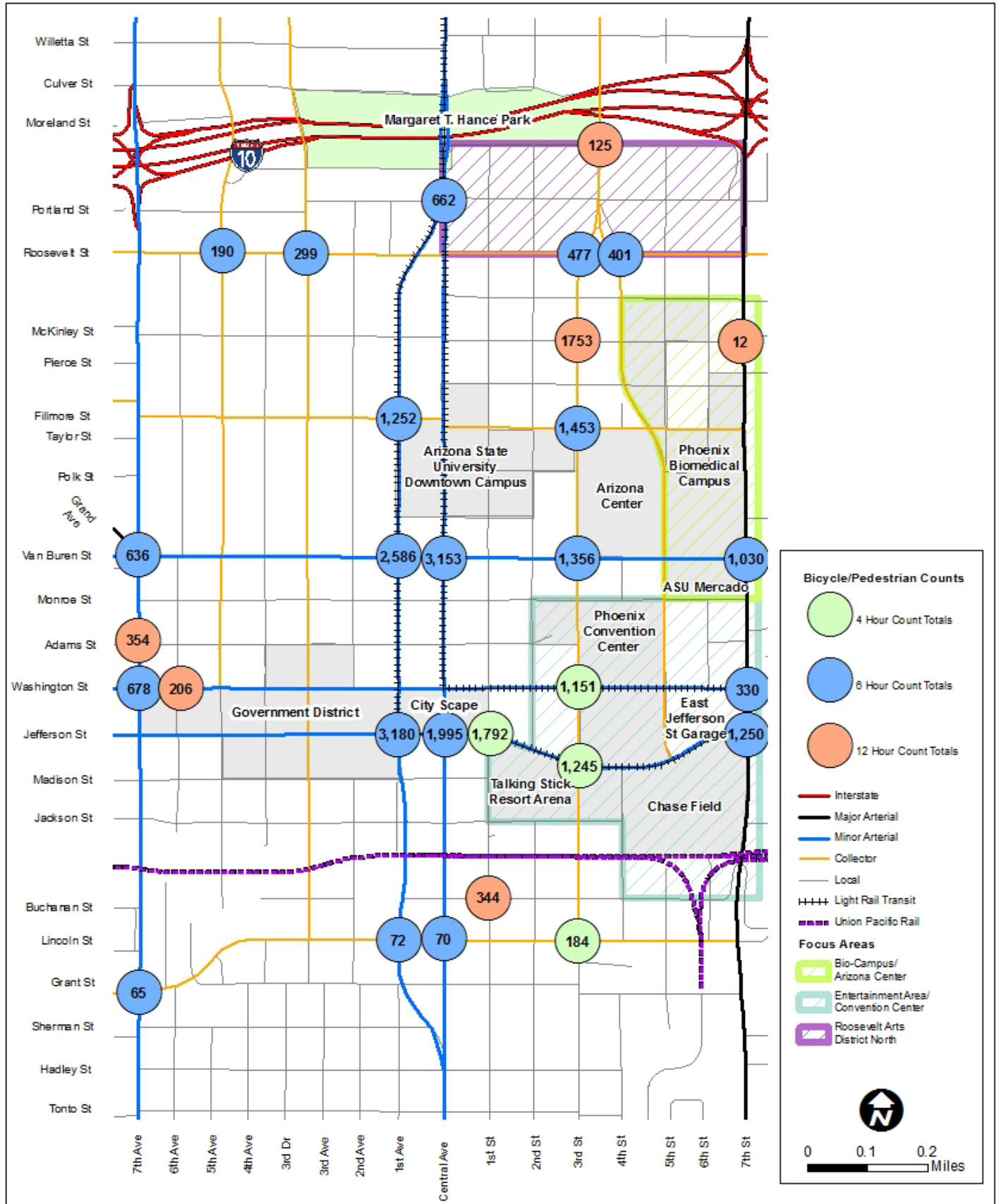


Figure 4.8 – Bicycle and Pedestrian Counts at Crosswalks





5.0 Future Transportation Network

The future transportation network was developed by supplementing the existing network with programmed improvements identified in the City’s Capital Improvement Program (CIP). Traffic volumes are based on the 2025 horizon year.

5.1. MAG Model Modifications

Development information was obtained from MAG, Phoenix Planning and Development, and Phoenix Economic Development to create a comprehensive inventory of future development expected within the Study Area over the next ten years. This information was discussed with MAG, and the regional model’s socio-economic data sets, including population, number of households, dwelling units, and employment in each TAZ within the Study Area were updated.

5.2. Programmed Improvements

There are two LRT extensions programmed through T2050 within the Study Area by 2025; the South Central LRT Extension and the Capital/I-10 West LRT Extension. Design is currently underway for the South Central LRT Extension; this Study reviewed and incorporated progress plans and coordination with the LRT design team into future model year efforts. Changes to Central Avenue within the Study Area are summarized in **Table 8**.

Table 9 – Central Avenue Revisions to Accommodate South Central LRT Extension		
Limits	Current Number of Lanes	Future Number of Lanes
Washington Street to Jefferson Street	Three lanes	Bus only, no general traffic
Jefferson Street to Madison Street	Two lanes	Two lanes; both turn right at Jefferson Street
Madison Street to Buchanan Street	Three lanes	Two lanes; one turns left at Madison Street, the other is a through/right-turn lane
Buchanan Street to Lincoln Street	Two lanes turn into three lanes	Four lanes; two through lanes, one right-turn lane and the other becomes a frontage road for property access on the east side of the light rail
Lincoln Street to Grant Street	Four lanes	Three lanes; lane east of light rail at Grant Street is left-turn/crossover
Grant Street to Hadley Street	Three lanes turn into two lanes	Two lanes
Hadley Street to Tonto Street	Two northbound lanes and two southbound lanes	1 st Avenue merges with Central Avenue at Hadley Street; south of Hadley Street, there are two lanes southbound and one lane northbound

The Capital/I-10 West LRT Extension design had not begun at the time of this writing, through as of October 2020 is in preliminary design. Based upon coordination with Valley Metro in 2018, the current preferred alignment follows both Washington Street and Jefferson Street to 7th Avenue and then transitions to Jefferson Street west of 7th Avenue. Both Washington Street and Jefferson Street are assumed to narrow to three lanes to accommodate the light rail to its connection point with the South Central LRT Extension, a reduction of one or two lanes in some locations for each street. The future model (existing plus committed) utilizes this scenario.



Other City projects currently programmed within the Study Area in the CIP include:

- Installing dynamic message signs along 7th Avenue and 7th Street (ongoing).
- Light Rail traffic modifications including Central between Washington and Jefferson.
- 3rd Street, Jefferson Street to Lincoln Street: convert from one-way to two-way (FY 2018-2020).
- 3rd Avenue & 5th Avenue: McDowell Road to Washington Street: convert from one-way to two-way streets (FY 2018-2019).

5.3. Future Turning Movement Volumes

Future turning movement volumes were developed using the modeling techniques discussed in **Section 6.1.3. Figure 5.1** shows the future transportation network. **Figure 5.2** shows the future number of lanes within the traffic model used for this analysis; it was developed by reviewing plans and other information for programmed projects within the Study Area. This information was compiled in the macrosimulation developed for this project, discussed in further detail in **Section 6.1.3. Appendix WP2-1** includes the Synchro analysis with turning movement volumes as forecasted from the existing count locations shown in **Figure 4.5**.



Figure 5.1 – Future Transportation Network

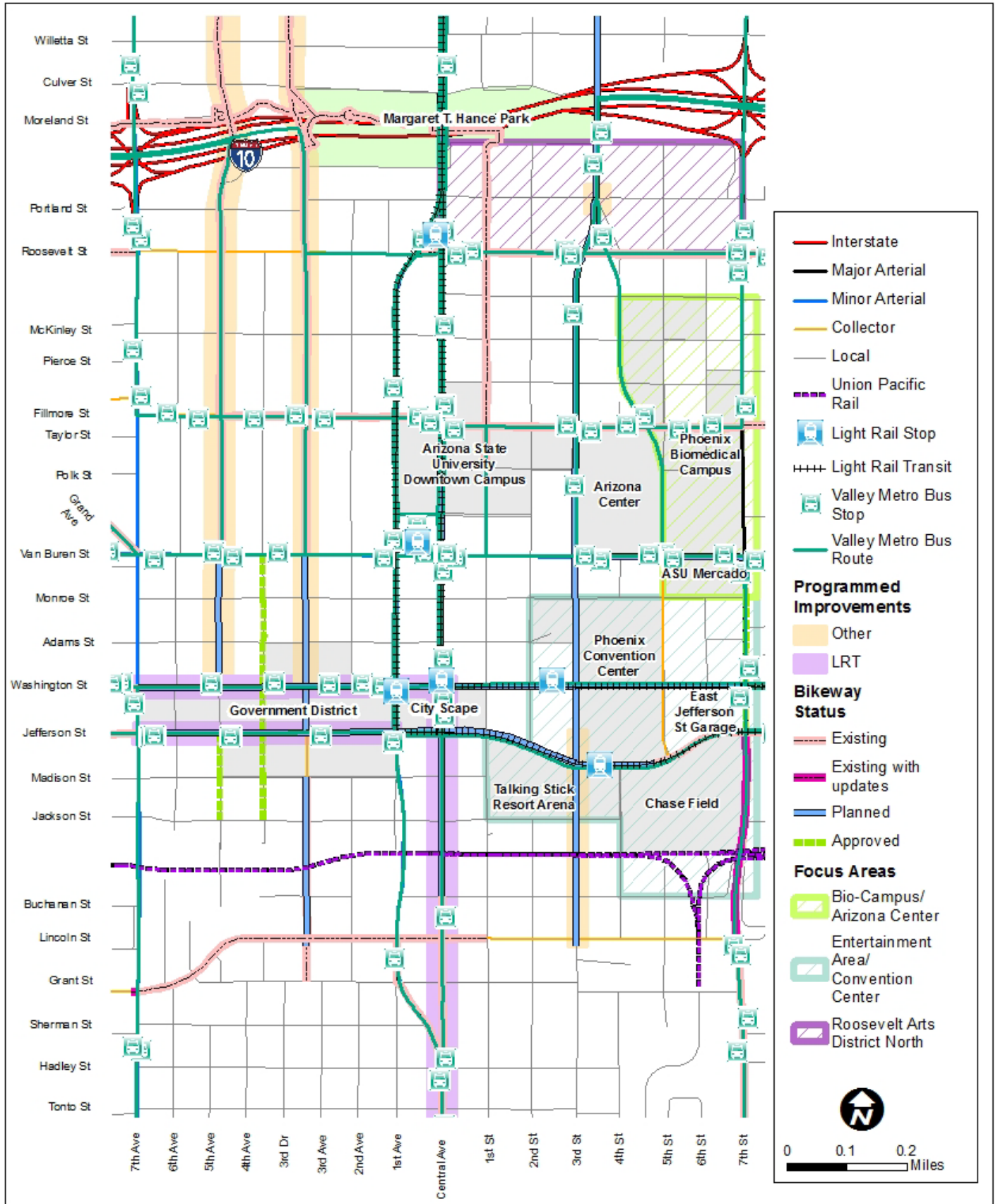
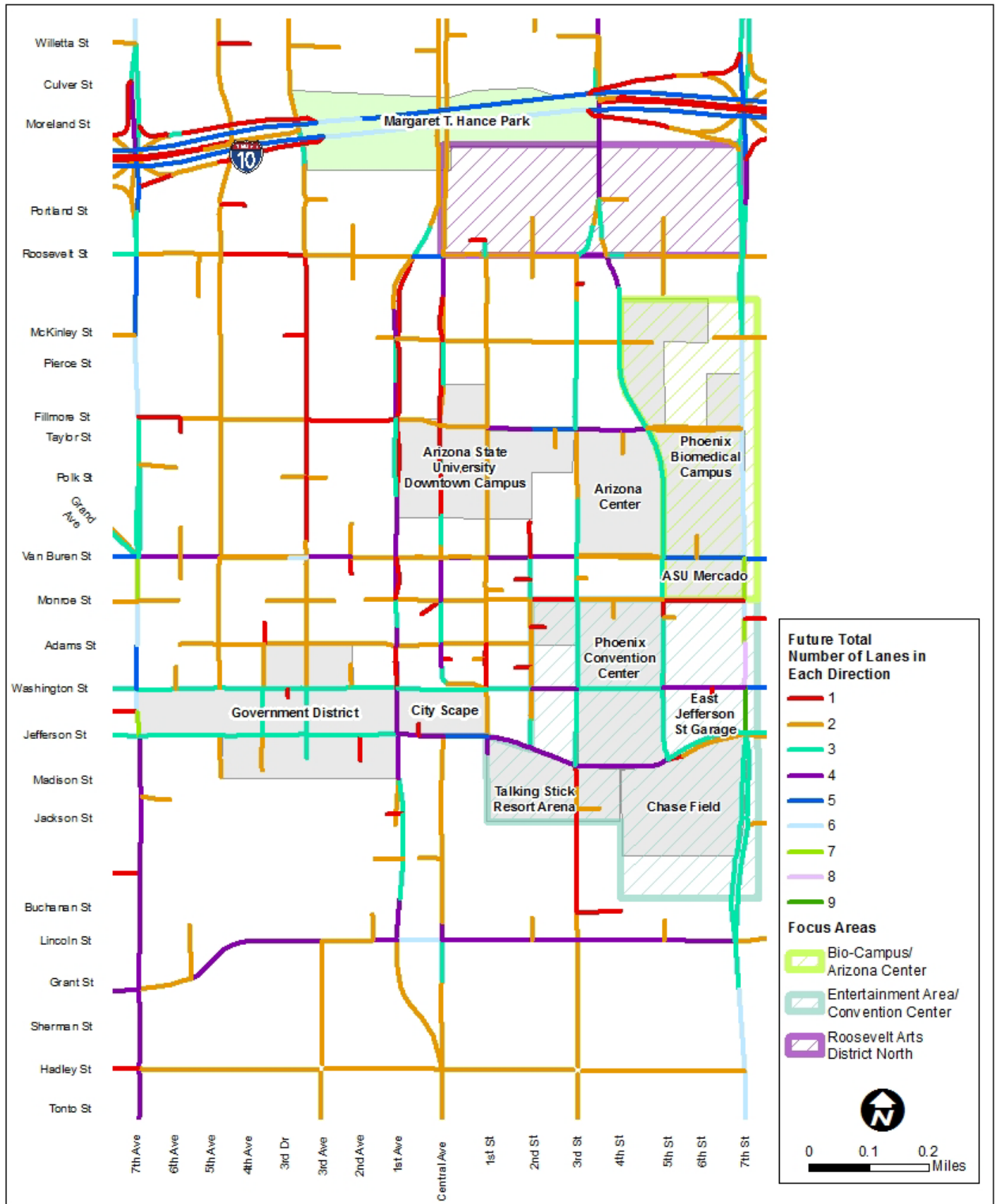




Figure 5.2 – Future Number of Lanes (Modeled*)



*Number of lanes for vehicular traffic.



6.0 Existing and Future Traffic Analysis

Existing traffic patterns for the Study Area and several subareas were assessed using a combination of methodologies and software. A Synchro (Version 10.0) model, a microsimulation model, and a macrosimulation model were developed for the Study Area to provide a complete description of traffic patterns within the Study Area for existing and future years. The analysis methodology, models, and results of the traffic analyses are described in this section.

6.1. Methodology

MAG data was obtained for the Study Area for existing and future year (2025) scenarios. The data provided the Origin-Destination (OD) data needed to model the Study Area microscopically and macroscopically. OD data, contained in a matrix format, has the number of trips for a specified time period expected between each possible origin zone and destination zone in the Study Area network. A microscopic model of the Study Area was built, then imported into the macroscopic modeling platform, Visum (Version 17). The macroscopic model was calibrated with existing traffic counts and the Study Area network was modeled for existing and future conditions to identify circulation and roadway congestion patterns. The macroscopic model also generated estimated future year turning movement volumes at intersections and provided estimated existing turning movement volumes for locations without traffic count information. These volumes were exported to Synchro for a Level of Service (LOS) analysis of Study Area intersections. Each model is discussed in more detail in the following sections and in Section 1.0.

6.1.1. MAG Travel Demand Model

A TDM is often referred to as a “regional” model because the roadway network it represents typically spans multiple jurisdictions. TDMs are extensively calibrated and rooted in survey-informed population, employment, and socioeconomic data which influence trip generation and mode choice. Calibration is the process by which the model is fine-tuned against actual count data to improve accuracy.

The Study Area lies completely within the MAG TDM. MAG TDM data representing the model network within the Study Area and OD matrices with travel data for 24-hour, a.m., p.m., and mid-day peaks for existing and future year (2025) conditions were used in this Study. Travel data in the OD matrices reflects how many vehicles are entering and exiting the network, where they are entering and exiting, and their origin or destination within the network, if applicable. Future year conditions reflect any new development, land use changes, and roadway network changes anticipated for completion by the future year.

The MAG TDM is a regional model developed using the travel demand modeling software TransCAD. The model has a land use component that includes socioeconomic information in the region disaggregated by TAZ. Each TAZ in the region generally includes information about housing, population and employment. Land use estimates for the future are generally derived from Census data and regional estimates associated with improvements. To develop the future year land use data, MAG utilizes the land use elements of adopted general/comprehensive plans for cities and towns in the region. Future year MAG models also include all the programmed and funded roadway improvements in the region.

The MAG regional model is validated to 24-hour traffic count data and is also verified for model speed estimates. The 24-hour model is comprised of four periods: a.m. peak period, mid-day period, p.m. peak period and night period. As the model is validated to 24-hour count data, the deviation in model estimates from actual counts for the four periods is typically larger than the error percentage reported for 24-hour counts.

6.1.2. Microsimulation Model

A microsimulation model was developed for the project Study Area using PTV Vissim (Vissim) software to provide a detailed assessment of traffic circulation patterns in the Study Area. The microsimulation model will be used most in the analysis conducted for the next phases of this Study, which will focus in on individual “focus areas” identified by project stakeholders. For Working Paper 1, the microsimulation model served as the template for the macrosimulation model. A



microsimulation model is the most detailed type of model that can be constructed for a Study Area. Such a model can depict lanes, turn bays, parking, crosswalks, light rail, bus stops, signals, and other physical characteristics of a network as one might see them in aerial imagery. The Vissim microscopic modeling software also allows the user to fine-tune a wide range of non-physical characteristics of the network, including signal timing, bus routing and scheduling, and speed decisions. **Figure 4** provides a snapshot of the microscopic model constructed for this analysis.

6.1.3. Macrosimulation Model

A macrosimulation model was constructed for the Study Area using PTV Visum (Visum) software to determine overall travel patterns in the Study Area, estimate 2018 segment and turning volumes and predict 2025 segment and turning volumes. Segments are the connecting roadways between intersections (nodes in the model); turning volumes are only available at nodes.

6.1.3.1. Network Characteristics

The existing Study Area microsimulation model created in Vissim, along with MAG TDM data, was imported into Visum and refined for a macrosimulation analysis. Roadway segments were identified in the model according to Federal Highway Administration (FHWA) roadway functional classification guidelines. For roadway segments with available counts, a.m. and p.m. peak hour counts were assigned as attributes to those segments. For intersections with available turning movement counts, a.m. and p.m. peak hour counts were assigned as attributes to those turning movements. Intersections were identified as either signalized or unsignalized and roadway capacity was assigned according to functional classification. **Table 9** shows the capacity allotted by classification.

Table 10 – Capacity by Functional Classification	
Functional Classification	Capacity (vehicles per hour per lane)
Interstate	2,100
Major Arterial	1,900
Minor Arterial	1,800
Collector	1,700
Local Road	1,500

For future conditions, the existing Study Area network was updated to include programmed improvements. Programmed improvements included in the model include:

- 5th Avenue: McDowell Road to Washington Street one-way to two-way conversion;
- 3rd Avenue: McDowell Road to Washington Street one-way to two-way conversion;
- 3rd Street: Jefferson Street to Lincoln Street one-way to two-way conversion;
- South Central Light Rail Extension;
- Capital/I-10 West Light Rail Extension;
- 7th Avenue and Adams Street intersection signalization; and
- 3rd Street and Portland Street intersection signalization.

To model the South Central LRT Extension, progress plans were reviewed, and the future conditions roadway network was modified accordingly. These changes are catalogued in **Section 5.2** and in **Table 8**. Within the future year model, Central Avenue between Jefferson Street and Washington Street was closed to all vehicles except buses.

To model the Capital/I-10 West LRT Extension, the future roadway network reduced Washington and Jefferson between 7th Avenue and 3rd Avenue to three through lanes. The modification was made based on coordination with Valley Metro. A final design configuration has not yet been determined for the Capital/I-10 West LRT Extension; it is possible that the final configuration will differ from model assumptions and the operational impact should ultimately be assessed according to final design plans.



6.1.3.2. Matrix Estimation

Both turning movement counts and segment counts were used to calibrate the MAG TDM data to the Study Area in a process called “matrix estimation.” The matrix estimation process used in Visum is called “TFlowFuzzy.” For this process, tolerances are assigned to segment counts and turning movement counts based on existing count values. The matrix estimation process uses a seed matrix, derived from the MAG TDM, traffic counts and tolerances to develop a calibrated OD-matrix for the Study Area. The process of OD-matrix estimation (or matrix calibration) converges when the traffic assignment using the estimated matrices results in a good correlation with observed traffic counts.

Matrix estimation is also necessary for future year analysis. To generate an estimated OD-matrix for future conditions, the difference between the estimated and original matrices for existing conditions is applied to the original future OD-matrix. The new, estimated future OD-matrix is used for all subsequent future conditions analyses.

Using the estimated matrices, Visum assigns traffic volumes and turning movement counts throughout the Study Area. For existing conditions, the process is useful for estimating counts at locations where counts were not collected. For future conditions, the process provides estimated future volumes at all locations.

6.1.4. Synchro Model

A Synchro (Version 10.0) model was developed to provide a LOS analysis of Study Area intersections. The following sections discuss the LOS analysis process and the factors that determine LOS.

6.1.4.1. Level of Service Analysis

LOS is a qualitative measure of how well an intersection or roadway segment operates on a graded scale of A (best) to F (worst). LOS takes into account a variety of factors, including stability of traffic flow, opportunity for passing, and driver comfort. Operations of LOS D and better are typically considered good and acceptable in urban settings. Operations of LOS E or F typically need attention. **Figure 6.2** provides a visual example of the LOS grading scale.

For the purpose of intersection analysis, LOS is determined using the total delay, in seconds, of vehicles which approach the intersection over the course of one traffic signal cycle. Intersections within the Study Area were analyzed using the LOS thresholds shown in and for signalized and unsignalized intersections, respectively.

Table 11 – LOS Thresholds for Signalized Intersections	
Control Delay (s)	Level of Service
<= 10 seconds	A
10-20 seconds	B
20 – 35 seconds	C
35-55 seconds	D
55- 80 seconds	E
> 80 sec seconds	F

Table 12 – LOS Thresholds for Unsignalized Intersections	
Control Delay (s)	Level of Service
<= 10 seconds	A
10-15 seconds	B
15 – 25 seconds	C
25-35 seconds	D
35- 50 seconds	E
> 50 seconds	F



Figure 6.1 – LOS Grading Scale



Level of Service A: Free-flow traffic with individual users virtually unaffected by the presence of others in the traffic stream.



Level of Service D: High-density flow in which speed and freedom to maneuver are severely restricted and comfort and convenience have declined even though flow remains stable.



Level of Service B: Stable traffic flow with a high degree of freedom to select speed and operating conditions but with some influence from other users.



Level of Service E: Unstable flow at or near capacity levels with poor levels of comfort and convenience.



Level of Service C: Restricted flow that remains stable but with significant interactions with others in the traffic stream. The general level of comfort and convenience declines noticeably at this level.



Level of Service F: Forced traffic flow in which the amount of traffic approaching a point exceeds the amount that can be served. LOS F is characterized by stop-and-go waves, poor travel times, low comfort and convenience, and increased accident exposure.

Source: <http://www.virginiadot.org/projects/resources/LOS-defined.pdf>



The LOS analysis was conducted using Synchro’s built-in methodology. While Highway Capacity Manual (HCM) 6th edition methodology is most commonly used to assess intersection LOS, it cannot assess intersections with unique signal timing and geometric configurations. To allow for similar comparison between intersections and because multiple intersections within the Study Area have unique signal timing and/or geometric configurations, the built-in Synchro methodology was used.

6.1.4.2. Intersection Geometry

Lane configuration, the number of lanes allocated to through and turning movements for each intersection approach, is one key determinant of intersection LOS. The existing conditions Synchro model of the Study Area was developed using aerial imagery. Except for some intersections bisected by the light rail, the lane configuration of each intersection in the existing conditions Synchro model matches the lane configuration of each intersection. The light rail line does not explicitly appear in the Synchro model because Synchro does not explicitly provide for modeling light rail systems.

Lane configurations for the future conditions utilized the existing conditions network, which was modified to include programmed projects. The one-way to two-way conversion projects along 5th Avenue, 3rd Avenue, and 3rd Street, for example, add approaches to intersections within the project extents. For intersections affected by the South Central LRT Extension project, intersection geometries were updated based on progress plans and other information provided by Valley Metro. The configuration of intersections which would be impacted by the Capital/I-10 West LRT Extension project are not yet finalized. However, to assess the impacts of lane/capacity reductions associated with the LRT extension, each impacted intersection along Washington Street and Jefferson Street within the extents of the light rail project were reduced by one through lane.

6.1.4.3. Traffic Volumes

Turning movement counts were collected for 20 intersections within the Study Area. Additional counts were provided by the City that were performed after 2015. The existing conditions Synchro model uses actual count volumes where available. For counts taken between 2015 and 2018, the count was grown by two percent per year to produce 2018 volumes. At locations where counts were unavailable, estimated volumes produced by the existing conditions macrosimulation model were used. Locations for which existing volumes were estimated include:

- Roosevelt Street and 1st Avenue;
- Roosevelt Street and Central Avenue;
- McKinley Street and 1st Avenue;
- McKinley Street and Central Avenue;
- Fillmore Street and 5th Avenue;
- Fillmore Street and 3rd Avenue;
- Fillmore Street and 4th Street;
- Van Buren Street and 5th Avenue;
- Washington Street and 3rd Avenue;
- Jefferson Street and 3rd Avenue;
- Washington Street and Central Avenue;
- Jefferson Street and 1st Avenue;
- Jefferson Street and 5th Street; and
- Lincoln Street and 7th Street.

All volumes used for the future conditions analysis were estimated using the future conditions macrosimulation model. In addition to vehicle turning movement counts, the Synchro model was updated with crosswalk counts during the a.m. and p.m. peak hours, if available. The crosswalk counts include any user—bicyclist or pedestrian—crossing at a crosswalk. The locations for which crosswalk counts were included in the model are shown in **Figure 4.8**. For future conditions, crosswalk volumes were grown from the 2018 counts by 16 percent for the a.m. peak hour and by 10 percent for the p.m. peak hour.



6.1.4.4. Traffic Signal Timing

All intersections within the Study Area were analyzed as actuated-coordinated intersections. For existing conditions, Study Area intersections were timed in Synchro using signal timing plans and phasing diagrams provided by the City. For intersections where timing plans were not provided, optimized timings were used. The optimized timings used cycle lengths between 90 and 120 seconds and incorporated pedestrian phasing and light rail phasing, if applicable, based on similar nearby intersections.

The future conditions analysis utilizes existing signal timing plans, unless a programmed improvement modifies an intersection. Optimized timings were used for intersections affected by programmed improvements. These intersections are listed in **Table 12**.

Table 13 – Analysis Intersections Affected by Programmed Improvements	
Programmed Improvement	Affected Intersection
5th Avenue: McDowell Road to Washington Street one-way to two-way conversion	Roosevelt Street and 5 th Avenue
3rd Avenue: McDowell Road to Washington Street one-way to two-way conversion	Roosevelt Street and 3 rd Avenue Washington Street and 3 rd Avenue
3rd Street: Jefferson Street to Lincoln Street one-way to two-way conversion	3 rd Street and Jefferson Street 3 rd Street and Lincoln Street
Capital/I-10 West LRT Extension	Intersections along Washington Street Jefferson Street between 7 th Avenue and 3 rd Avenue
South Central LRT Extension – east/west extents	Intersections along Washington Street Jefferson Street between 3 rd Avenue and Central Avenue
South Central LRT Extension – north/south extents	Intersections along 1 st Avenue Central Avenue between Jefferson Street and Lincoln Street

Because Synchro cannot directly model light rail, the phasing for intersections affected by the light rail was modified to account for the light rail. In general, the light rail phase for each impacted intersection was modeled as a pedestrian phase with four pedestrian calls per hour. Four calls per hour represents the number of times the light rail train is expected to pass through an intersection. The duration of the pedestrian phase set to match the timing of the light rail phase. Any conflicting turn movements were modeled as protected-only phases.

6.2. Existing Conditions Analysis Results

In general, the existing Study Area network performs at an acceptable LOS in both the a.m. and p.m. peak hours. An acceptable LOS is defined as LOS D or better. Roadway segments and intersections have enough capacity to serve the existing traffic demand. Intersections that do not perform at an acceptable LOS include 7th Avenue and Van Buren in the a.m. and p.m. peaks and Central Avenue and Van Buren in the p.m. peak. The 7th Avenue and Van Buren intersection is a unique 5-leg configuration which serves as a key access point to the downtown area. High traffic volumes coupled with the intersection and lane configurations at this intersection result in poor traffic operations—reflected in its LOS. Existing LOS for the a.m. and p.m. peaks is shown in **Figure 6.3** and **Figure 6.4**.

Although nearly all existing intersections analyzed in the Study Area operate at an acceptable LOS, intersections serving as access points to and from the downtown area—particularly those near freeway interchanges—have the least latent, or remaining available capacity. This is reflected in the future conditions analysis results. Note that when the freeways and access points which serve a downtown center are very congested, this can create the perception that the overall downtown roadway network is more congested than it really is.

Figure 6.2 – Existing a.m. Peak Hour LOS

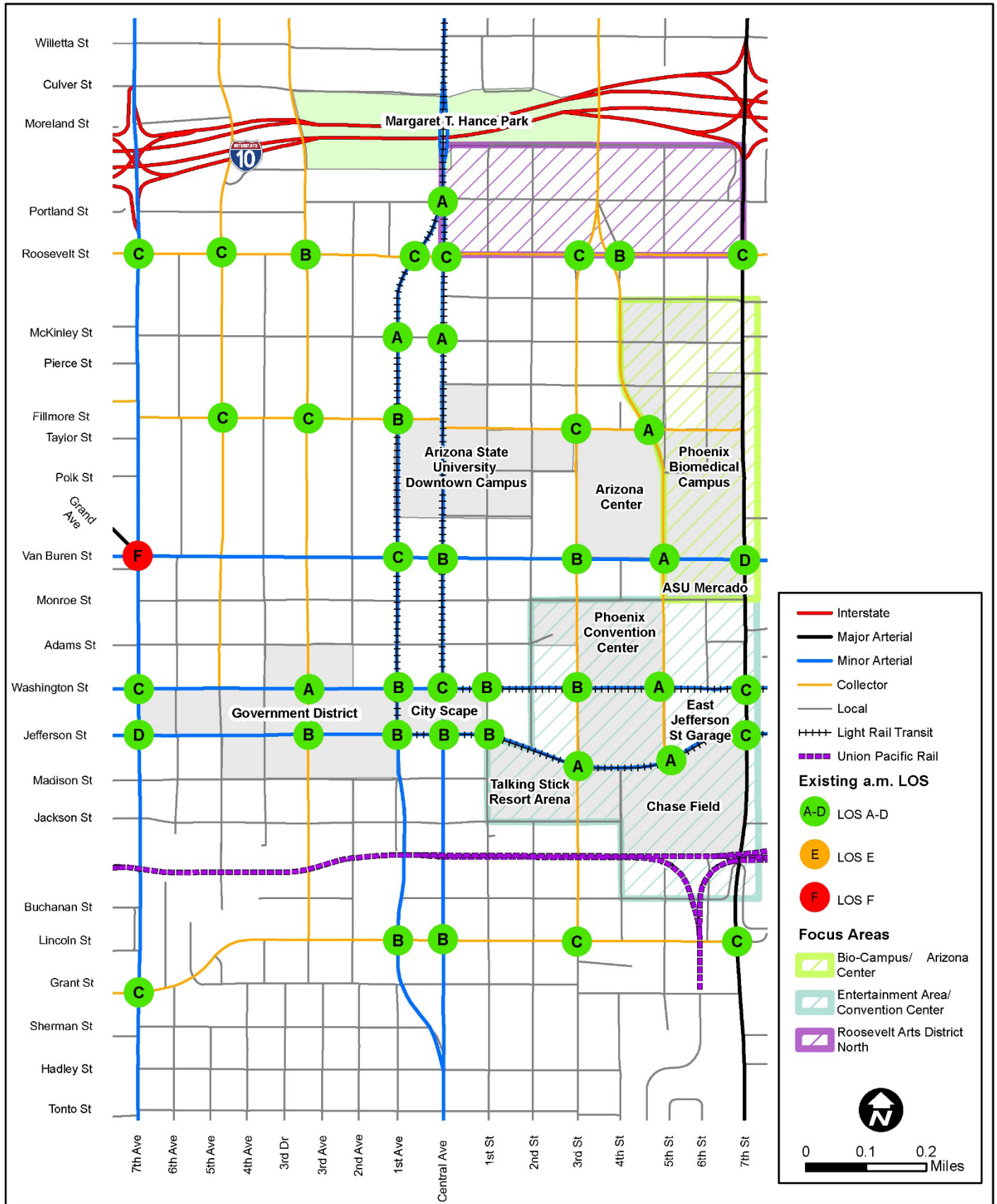
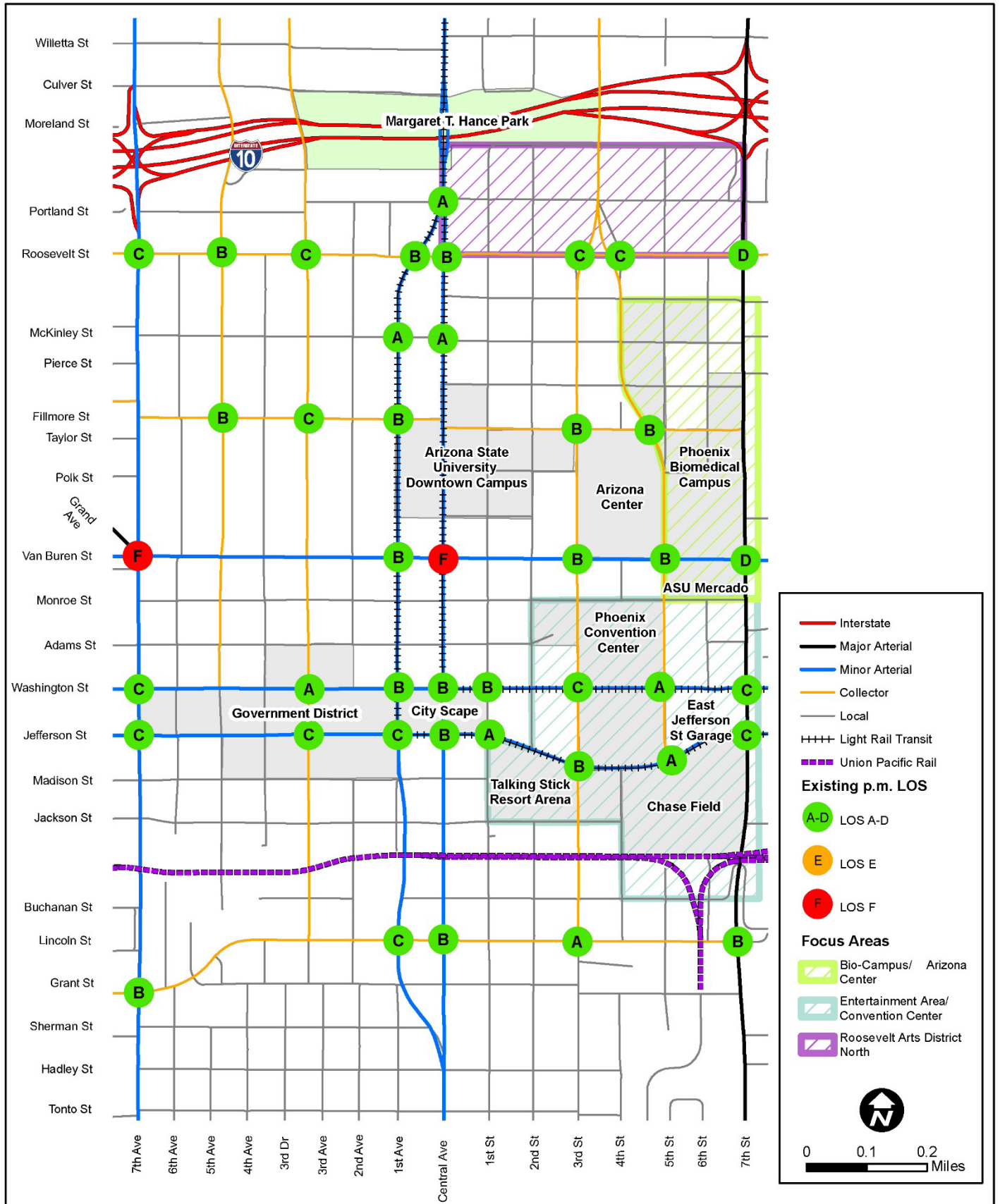


Figure 6.3 – Existing p.m. Peak Hour LOS





6.3. Future Conditions Analysis Results

The future conditions analysis incorporated programmed improvements and projected future traffic volumes into the roadway network. In general, the future roadway network operates at an acceptable LOS. However, intersections along 7th Avenue, 7th Street, and Roosevelt Street—intersections which serve as access points to downtown Phoenix—operate at or near capacity. Additionally, several intersections which do not lie on these streets operate at LOS E or F in the peak hours. This includes three intersections along 1st Avenue and Central Avenue, the 3rd Avenue and 5th Avenue unsignalized intersections along Fillmore Street, and the 1st Street and Washington Street intersection. The 1st Street and Washington Street intersection is particularly of note because it is expected to serve traffic on Central Avenue detouring around the bus-only segment of Central Avenue between Washington Street and Jefferson Street to continue on Central Avenue. Most intersections perform worse in the a.m. peak hour than in the p.m. peak hour. This pattern is typical for urban centers, where many commuters arrive for work during the anticipated a.m. peak hour and depart from work over a longer p.m. period. 2025 LOS is mapped **Figure 6.5** and **Figure 6.6**.

Figure 6.7 shows the modeled volume to capacity ratios in the 2025 a.m. peak hour and **Figure 6.8** shows the modeled volume to capacity ratios in the 2025 p.m. peak hour. The volume to capacity ratios for both the a.m. and the p.m. peak hours in the future indicate that the street network has sufficient capacity to accommodate the traffic resulting from the proposed developments. The volume to capacity ratio analysis combined with the intersection LOS analysis indicates that vehicular traffic in the Study Area will circulate with reasonable progression. However, circulation in the Study area is impacted by congested intersections, along 7th Street and 7th Avenue, that provide access to the freeway system. Congested intersection operations in the Study Area can be improved via signal operations and minor capacity improvements where possible.

Table 13 shows expected travel time difference in minutes between the existing and future year conditions for select OD pairs. In general, the travel times show a slight but acceptable increase between the key OD pairs. Traffic signal optimization and coordination may improve the travel times in the Study Area and will reduce the differences noted in **Table 13**.

Table 14 – Travel Time Difference (in minutes) Between 2018 and 2025 for Select OD Pairs						
	I-10 EB Via 7th Street	I-10 WB via 7th Avenue	7th Avenue & Tonto	7th Street & Tonto Street	Central Avenue & Tonto Street	Central Avenue & Roosevelt Street
CityScape	2.25	2.25	0.20	0.40	1.00	1.00
Government District	2.75	2.50	0.20	0.35	0.50	0.75
Bio-Campus/Arizona Center	1.75	2.50	1.75	1.25	1.00	0.75
Entertainment Area/Convention Center	2.00	2.75	1.75	1.25	1.00	1.00
Roosevelt Arts District North	0.50	1.00	2.00	1.50	1.00	N/A
Central Avenue & Tonto Street	2.50	2.75	0.25	0.25	N/A	2.25
Central Avenue & Roosevelt Street	0.50	1.00	2.00	1.50	1.00	N/A

Figure 6.4 – Future a.m. Peak Hour LOS

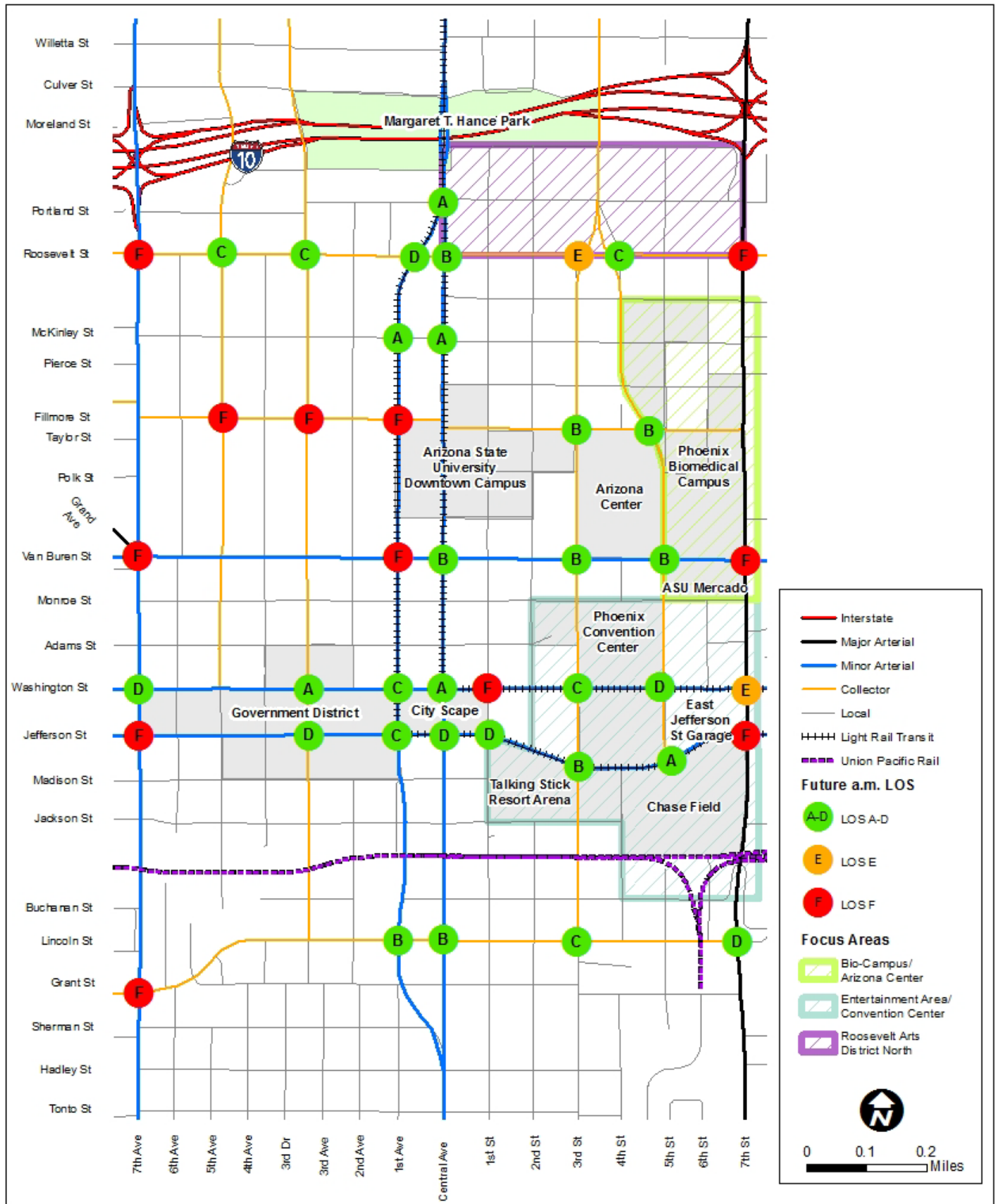




Figure 6.5 – Future p.m. Peak Hour LOS

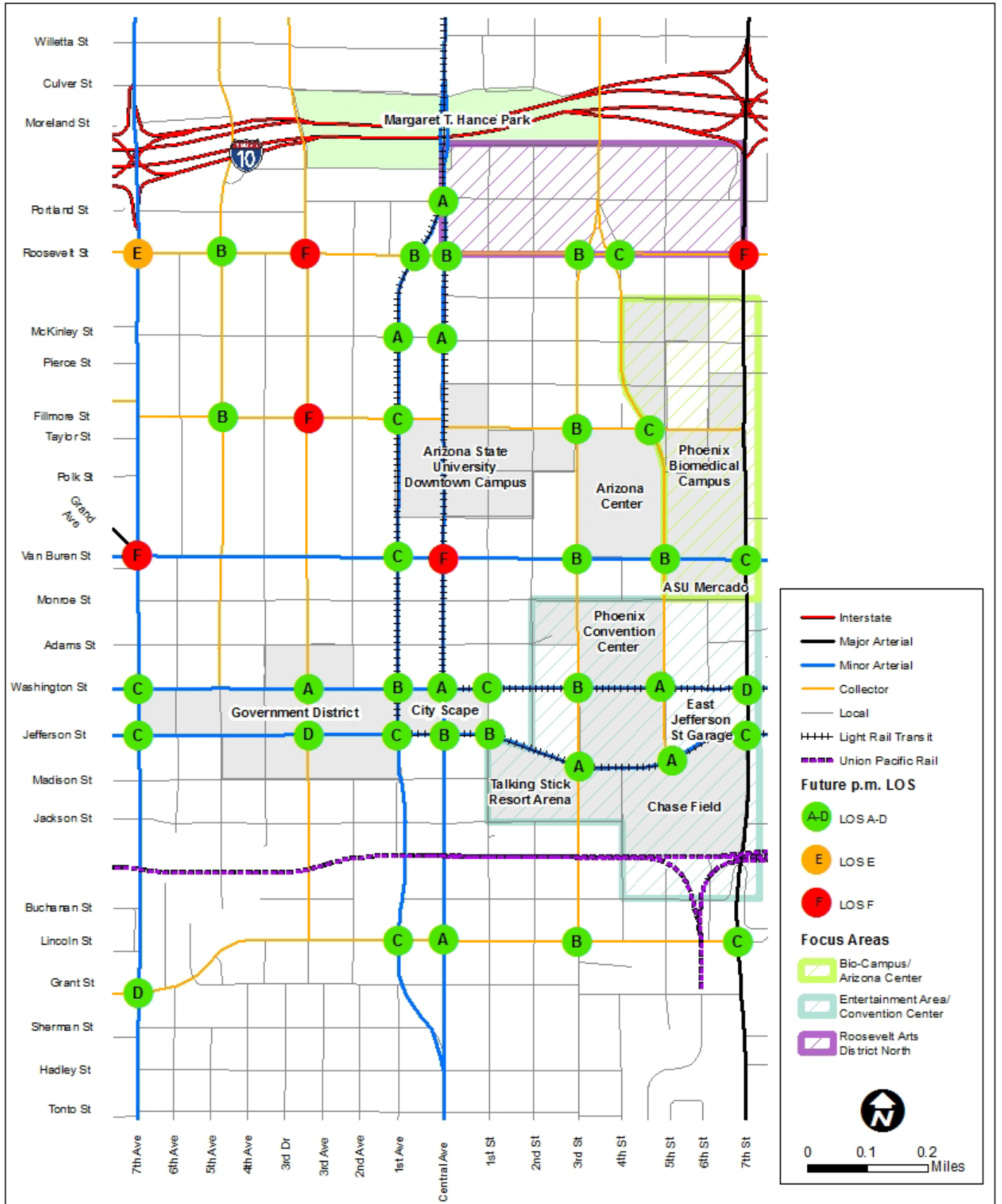
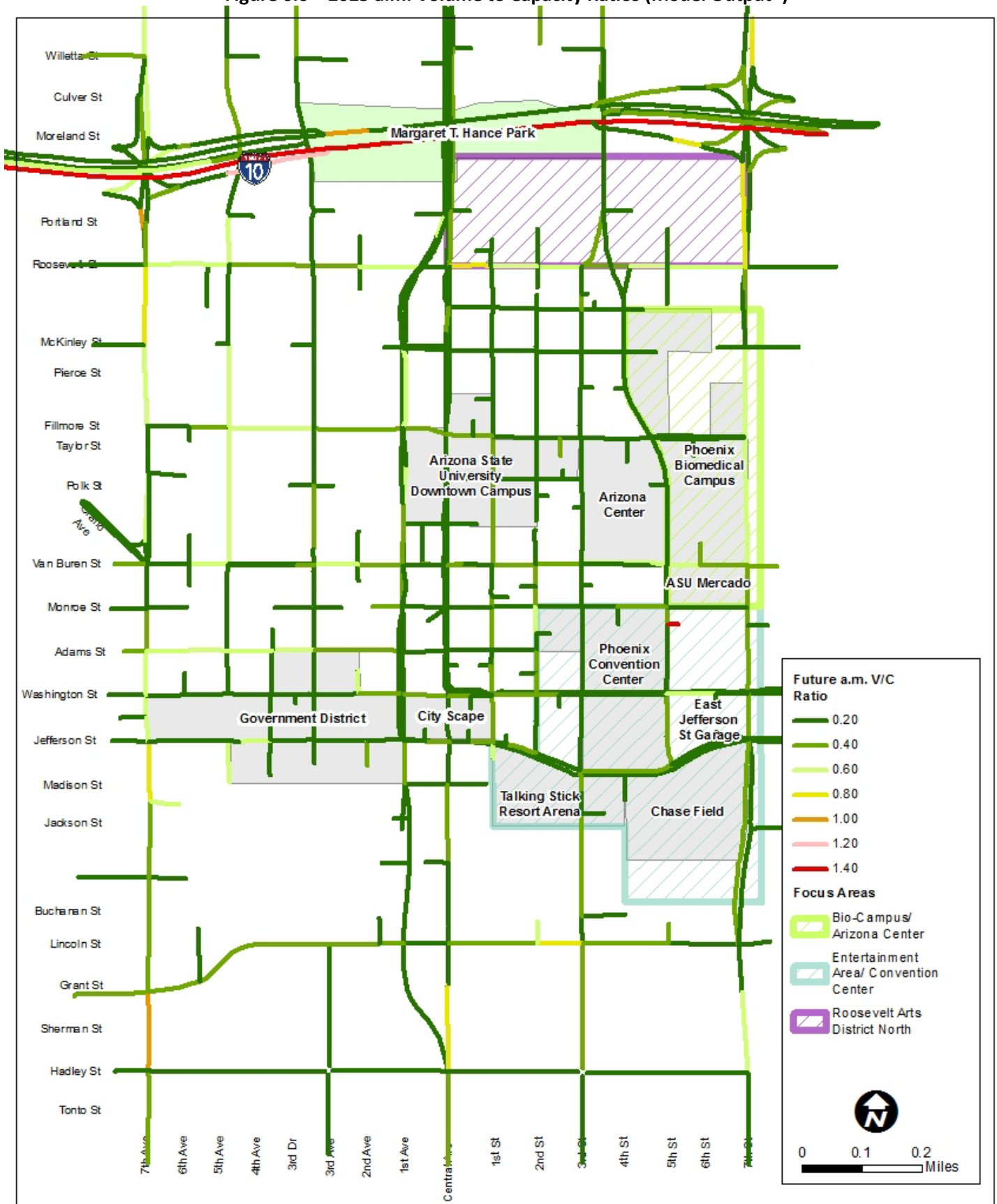




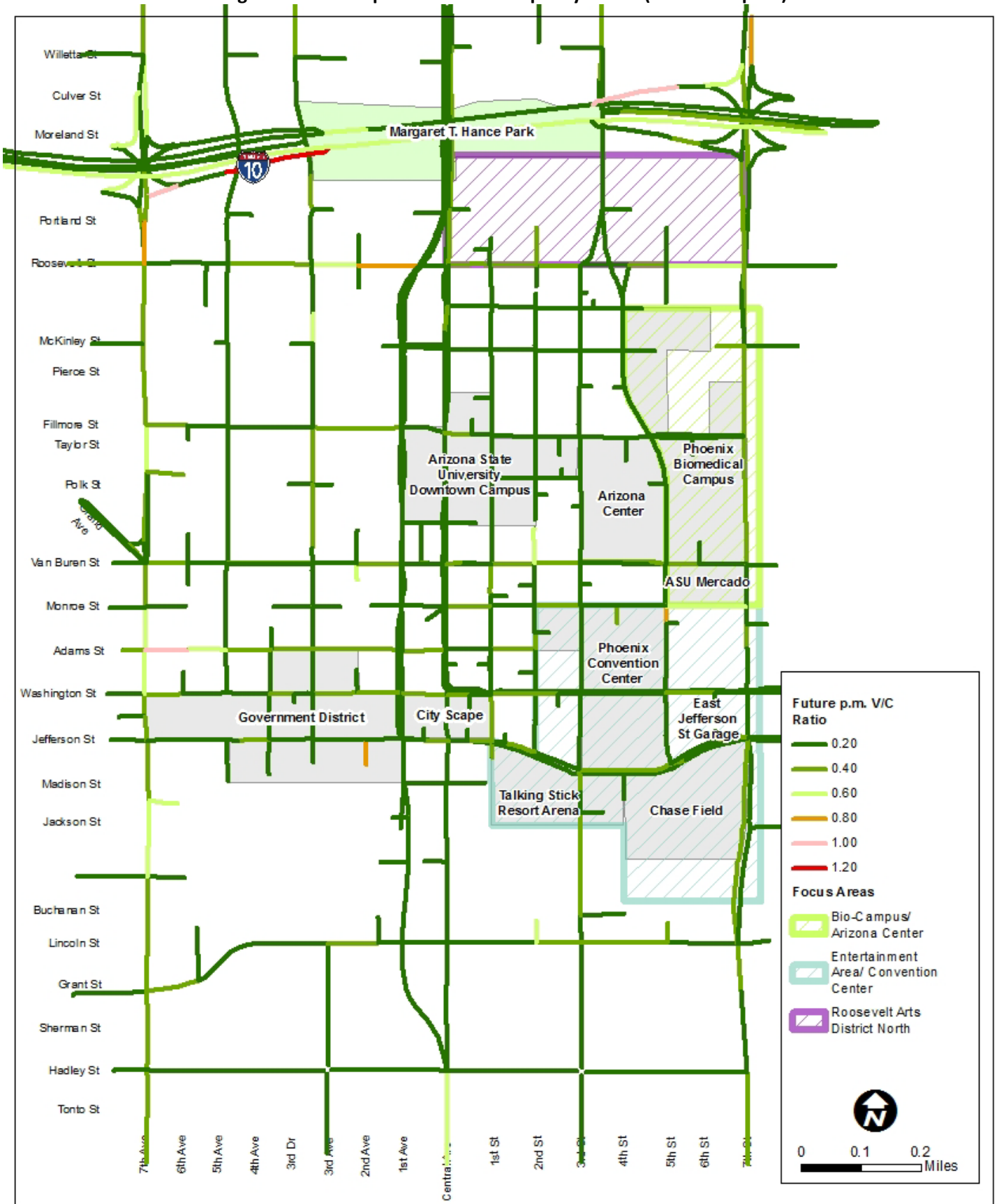
Figure 6.6 – 2025 a.m. Volume to Capacity Ratios (Model Output*)



* The volume to capacity ratio on Central Avenue between Washington and Jefferson Streets represents transit operation only.



Figure 6.7 – 2025 p.m. Volume to Capacity Ratios (Model Output*)



*The volume to capacity ratio on Central Avenue between Washington and Jefferson Streets represents transit operation only.

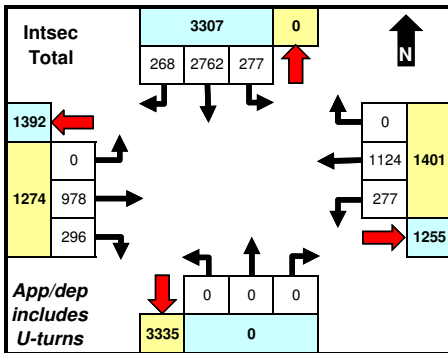
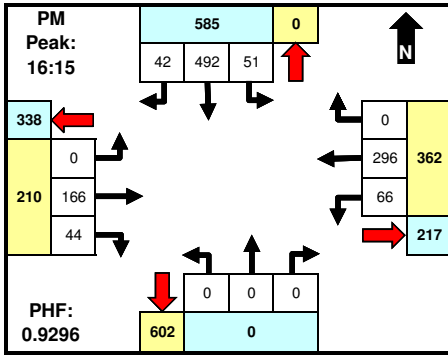
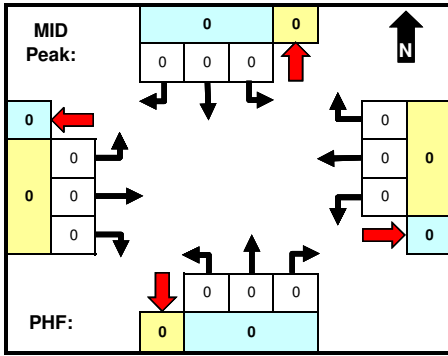
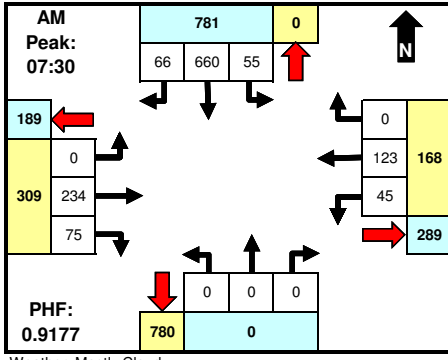


Appendix B
Traffic Turning Movement Counts



Intersection ID: 1802863
Count Date: 8/23/2018

N 1ST AVE & W FILLMORE ST



	North		East		South		West		Total
	App	Dep	App	Dep	App	Dep	App	Dep	
AM	781	0	168	289	0	780	309	189	1258
MID	0	0	0	0	0	0	0	0	0
PM	585	0	362	217	0	602	210	338	1157
Total	3307	0	1401	1255	0	3335	1274	1392	5982

Time	From North (SB)					From East (WB)					From South (NB)					From West (EB)					INTSEC	TOTAL		
	N 1ST AVE					W FILLMORE ST					N 1ST AVE					W FILLMORE ST								
	LT	Thru	RT	U	Cw/ik	LT	Thru	RT	U	Cw/ik	LT	Thru	RT	U	Cw/ik	LT	Thru	RT	U	Cw/ik				
0:00																						0	0	
0:15																							0	0
0:30																							0	0
0:45																							0	0
1:00																							0	0
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5:30																							0	0
5:45																							0	0
6:00																							0	0
6:15																							0	0
6:30	4	66	7	0	13	5	19	0	0	9	0	0	0	0	9	0	21	10	0	13	176	0	0	
6:45	3	94	12	0	9	12	13	0	0	8	0	0	0	0	10	0	33	9	0	9	212	0	0	
7:00	9	105	6	0	11	3	23	0	0	9	0	0	0	0	9	0	39	12	0	16	242	0	0	
7:15	10	124	12	0	12	5	29	0	0	12	0	0	0	0	15	0	49	12	0	23	303	0	0	
7:30	9	149	12	0	21	7	31	0	0	6	0	0	0	0	13	0	64	14	0	11	337	0	0	
7:45	11	176	17	0	12	13	27	0	0	14	0	0	0	0	12	0	64	19	0	11	376	0	0	
8:00	15	160	19	0	12	11	35	0	0	9	0	0	0	0	11	0	56	18	0	12	358	0	0	
8:15	20	175	18	0	17	14	30	0	0	21	0	0	0	0	15	0	50	24	0	17	401	0	0	
8:30	15	127	11	0	18	8	37	0	0	13	0	0	0	0	17	0	49	23	0	21	339	0	0	
8:45	19	134	12	0	12	15	35	0	0	12	0	0	0	0	17	0	53	20	0	21	350	0	0	
9:00	12	103	8	0	7	17	23	0	0	13	0	0	0	0	18	0	33	15	0	17	266	0	0	
9:15	12	100	17	0	16	13	18	0	0	16	0	0	0	0	16	0	32	8	0	13	261	0	0	
9:30																						0	0	
9:45																						0	0	
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14:30																						0	0	
14:45																						0	0	
15:00	16	67	11	0	20	10	53	0	0	12	0	0	0	0	3	0	22	7	0	16	237	0	0	
15:15	11	94	7	0	6	10	50	0	0	6	0	0	0	0	4	0	24	8	0	18	238	0	0	
15:30	3	88	9	0	10	11	62	0	0	4	0	0	0	0	6	0	25	9	0	16	243	0	0	
15:45	10	86	10	0	10	16	66	0	0	11	0	0	0	0	8	0	24	14	0	17	272	0	0	
16:00	17	108	8	0	24	10	64	0	0	14	0	0	0	0	20	0	40	9	0	35	349	0	0	
16:15	14	142	6	0	19	22	69	0	0	8	0	0	0	0	11	0	35	10	0	26	362	0	0	
16:30	18	116	10	0	11	17	80	0	0	9	0	0	0	0	9	0	45	12	0	18	345	0	0	
16:45	11	115	14	0	13	19	75	0	0	10	0	0	0	0	5	0	42	13	0	11	328	0	0	
17:00	8	119	12	0	11	8	72	0	0	8	0	0	0	0	7	0	44	9	0	13	311	0	0	
17:15	10	117	18	0	14	5	76	0	0	5	0	0	0	0	15	0	62	6	0	23	351	0	0	
17:30	14	92	5	0	12	12	76	0	0	8	0	0	0	0	5	0	41	10	0	17	292	0	0	
17:45	6	105	7	0	15	14	61	0	0	11	0	0	0	0	12	0	31	5	0	18	285	0	0	
18:00																						0	0	
18:15																						0	0	
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20:15																						0	0	
20:30																						0	0	
20:45																						0	0	
21:00																								



Intersection ID: 1802863
Count Date: 8/23/2018

N 1ST AVE & W FILLMORE ST

	From North (SB)				From East (WB)				From South (NB)				From West (EB)				INTSEC				
	N 1ST AVE				W FILLMORE ST				N 1ST AVE				W FILLMORE ST								
23:00																					
23:15																					
23:30																					
23:45																					
Total	277	2762	268	0	325	277	1124	0	0	248	0	0	0	0	267	0	978	296	0	412	7234
AM Peak Hr:																	7:30				
Pk Vol	55	660	66	0	62	45	123	0	0	50	0	0	0	51	0	234	75	0	51	1472	
PHF	0.688	0.938	0.868	n/a	0.738	0.804	0.879	n/a	n/a	0.595	n/a	n/a	n/a	0.850	n/a	0.914	0.781	n/a	0.750	0.918	
MID Peak Hr:																					
Pk Vol																					
PHF																					
PM Peak Hr:																	16:15				
Pk Vol	51	492	42	0	54	66	296	0	0	35	0	0	0	32	0	166	44	0	68	1346	
PHF	0.708	0.866	0.750	n/a	0.711	0.750	0.925	n/a	n/a	0.875	n/a	n/a	n/a	0.727	n/a	0.922	0.846	n/a	0.654	0.930	

Comments

Unless shown otherwise, MID period defined as 10:00 AM - 2:00 PM. Peaks defined based on total intersection volume for all vehicle types. Chart totals do not include crosswalk data.



Intersection ID: 1802847
Count Date: 8/21/2018

S 1ST AVE & W JEFFERSON ST

	From North (SB)				From East (WB)				From South (NB)				From West (EB)				INTSEC		
	S 1ST AVE				W JEFFERSON ST				S 1ST AVE				W JEFFERSON ST						
23:00																			
23:15																			
23:30																			
23:45																			
Total	2298	2839	0	0	500	0	0	0	0	704	0	0	0	1156	0	4473	980	820	13770
AM Peak Hr:	7:45																		
Pk Vol	176	429	0	0	82	0	0	0	186	0	0	0	308	0	828	301	0	207	2517
PHF	0.786	0.844	n/a	n/a	0.759	n/a	n/a	n/a	0.750	n/a	n/a	n/a	0.917	n/a	0.928	0.818	n/a	0.848	0.964
MID Peak Hr:																			
Pk Vol																			0
PHF																			
PM Peak Hr:	16:30																		
Pk Vol	728	754	0	0	85	0	0	0	82	0	0	0	149	0	1001	163	0	122	3084
PHF	0.915	0.865	n/a	n/a	0.817	n/a	n/a	n/a	0.820	n/a	n/a	n/a	0.730	n/a	0.872	0.849	n/a	0.693	0.932

Comments

Unless shown otherwise, MID period defined as 10:00 AM - 2:00 PM. Peaks defined based on total intersection volume for all vehicle types. Chart totals do not include crosswalk data.



Intersection ID: 1802859
Count Date: 8/21/2018

S 1ST AVE & W LINCOLN ST

	From North (SB)				From East (WB)				From South (NB)				From West (EB)				INTSEC						
	S 1ST AVE				W LINCOLN ST				S 1ST AVE				W LINCOLN ST										
23:00																							
23:15																							
23:30																							
23:45																							
Total	207	2167	286	0	12	281	2179	0	0	0	5	0	0	0	0	0	7	0	1597	415	1	48	7205
AM Peak Hr:																	7:15						
Pk Vol	39	212	29	0	5	23	362	0	0	0	0	0	0	0	0	1	0	339	56	0	5	1071	
PHF	0.750	0.914	0.659	n/a	0.625	0.639	0.923	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	0.250	n/a	0.883	0.737	n/a	0.417	0.936	
MID Peak Hr:																							
Pk Vol																							
PHF																							
PM Peak Hr:																	16:30						
Pk Vol	41	693	87	0	1	87	518	0	0	0	2	0	0	0	0	0	0	315	145	0	15	1904	
PHF	0.641	0.763	0.621	n/a	0.250	0.837	0.875	n/a	n/a	n/a	0.500	n/a	n/a	n/a	n/a	n/a	n/a	0.895	0.671	n/a	0.341	0.881	

Comments
Unless shown otherwise, MID period defined as 10:00 AM - 2:00 PM. Peaks defined based on total intersection volume for all vehicle types. Chart totals do not include crosswalk data.



Intersection ID: 1802853
Count Date: 8/21/2018

N 1ST AVE & W VAN BUREN ST

	From North (SB)				From East (WB)				From South (NB)				From West (EB)				INTSEC				
	N 1ST AVE				W VAN BUREN ST				N 1ST AVE				W VAN BUREN ST								
23:00																					
23:15																					
23:30																					
23:45																					
Total	716	2480	333	0	936	671	3922	0	1	508	0	0	1	0	448	0	4050	423	0	694	15183
AM Peak Hr:																	7:45				
Pk Vol	168	550	53	0	171	176	517	0	0	73	0	0	0	0	78	0	762	87	0	131	2766
PHF	0.857	0.870	0.828	n/a	0.792	0.863	0.904	n/a	n/a	0.793	n/a	n/a	n/a	n/a	0.886	n/a	0.920	0.906	n/a	0.819	0.955
MID Peak Hr:																					
Pk Vol																					0
PHF																					
PM Peak Hr:																	16:45				
Pk Vol	102	463	54	0	153	83	924	0	0	99	0	0	1	0	71	0	729	66	0	73	2818
PHF	0.850	0.870	0.794	n/a	0.683	0.943	0.971	n/a	n/a	0.750	n/a	n/a	0.250	n/a	0.807	n/a	0.911	0.786	n/a	0.629	0.901

Comments

Unless shown otherwise, MID period defined as 10:00 AM - 2:00 PM. Peaks defined based on total intersection volume for all vehicle types. Chart totals do not include crosswalk data.



Intersection ID: 1802862
Count Date: 8/23/2018

N 3RD AVE & W ROOSEVELT ST

Comments

Unless shown otherwise, MID period defined as 10:00 AM - 2:00 PM. Peaks defined based on total intersection volume for all vehicle types. Chart totals do not include crosswalk data.

	From North (SB)				From East (WB)				From South (NB)				From West (EB)				INTSEC				
	N 3RD AVE				W ROOSEVELT ST				N 3RD AVE				W ROOSEVELT ST								
23:00																					
23:15																					
23:30																					
23:45																					
Total	0	0	0	0	104	0	1820	402	0	78	285	1475	289	0	86	198	1907	0	0	31	6675
AM Peak Hr:																	7:45				
Pk Vol	0	0	0	0	27	0	253	46	0	16	21	101	33	0	13	38	447	0	0	7	1002
PHF	n/a	n/a	n/a	n/a	0.614	n/a	0.904	0.821	n/a	0.800	0.750	0.682	0.750	n/a	0.542	0.792	0.916	n/a	n/a	0.583	0.942
MID Peak Hr:																					
Pk Vol																					0
PHF																					
PM Peak Hr:																	16:30				
Pk Vol	0	0	0	0	13	0	409	114	0	7	100	576	88	0	14	39	280	0	0	2	1642
PHF	n/a	n/a	n/a	n/a	0.813	n/a	0.845	0.891	n/a	0.875	0.806	0.791	0.846	n/a	0.583	0.750	0.886	n/a	n/a	0.250	0.948



Intersection ID: 1802864
Count Date: 8/21/2018

N 3RD ST & E FILLMORE ST

Comments

Unless shown otherwise, MID period defined as 10:00 AM - 2:00 PM. Peaks defined based on total intersection volume for all vehicle types. Chart totals do not include crosswalk data.

	From North (SB)				From East (WB)				From South (NB)				From West (EB)				INTSEC				
	N 3RD ST				E FILLMORE ST				N 3RD ST				E FILLMORE ST								
23:00																					0
23:15																					0
23:30																					0
23:45																					0
Total	467	2092	738	0	261	416	1564	2	8	350	161	1	440	1	310	0	1474	141	0	532	8958
AM Peak Hr:																			8:00		
Pk Vol	137	468	228	0	50	82	296	0	1	76	31	0	57	0	84	0	196	28	0	118	1852
PHF	0.699	0.929	0.731	n/a	0.694	0.641	0.914	n/a	0.250	0.514	0.705	n/a	0.891	n/a	0.724	n/a	0.925	0.700	n/a	0.720	0.892
MID Peak Hr:																					
Pk Vol																					0
PHF																					
PM Peak Hr:																			16:30		
Pk Vol	52	372	86	0	34	80	354	0	0	33	37	1	116	0	34	0	381	30	0	85	1695
PHF	0.619	0.903	0.860	n/a	0.773	0.909	0.885	n/a	n/a	0.688	0.712	0.250	0.744	n/a	0.773	n/a	0.882	0.682	n/a	0.850	0.957



Intersection ID: 1802865
Count Date: 8/21/2018

N 3RD ST & E VAN BUREN ST

	From North (SB)				From East (WB)				From South (NB)				From West (EB)				INTSEC				
	N 3RD ST				E VAN BUREN ST				N 3RD ST				E VAN BUREN ST								
23:00																					0
23:15																					0
23:30																					0
23:45																					0
Total	335	1425	584	1	605	367	4219	284	12	265	33	98	46	1	199	186	4446	223	2	287	13618
AM Peak Hr:																				7:45	
Pk Vol	54	256	124	1	115	48	850	49	2	34	5	11	8	0	48	28	632	37	1	42	2345
PHF	0.844	0.901	0.816	0.250	0.799	0.800	0.940	0.721	0.250	0.773	0.625	0.550	0.667	n/a	0.800	0.538	0.952	0.771	0.250	0.618	0.950
MID Peak Hr:																					
Pk Vol																					0
PHF																					
PM Peak Hr:																				16:30	
Pk Vol	91	319	96	0	102	84	697	72	2	43	4	24	10	0	29	41	1038	26	0	64	2742
PHF	0.758	0.949	0.800	n/a	0.879	0.875	0.947	0.621	0.250	0.768	0.500	0.750	0.625	n/a	0.806	0.854	0.914	0.722	n/a	0.667	0.913

Comments

Unless shown otherwise, MID period defined as 10:00 AM - 2:00 PM. Peaks defined based on total intersection volume for all vehicle types. Chart totals do not include crosswalk data.



Intersection ID: 1802850
Count Date: 8/21/2018

N 3RD ST (NB) & E ROOSEVELT ST

	From North (SB)				From East (WB)				From South (NB)				From West (EB)				INTSEC				
	N 3RD ST (NB)				E ROOSEVELT ST				N 3RD ST (NB)				E ROOSEVELT ST								
23:00																					
23:15																					
23:30																					
23:45																					
Total	0	0	0	0	142	0	1845	260	0	101	206	2065	24	0	155	592	1837	0	0	3	7230
AM Peak Hr:																	7:15				
Pk Vol	0	0	0	0	32	0	298	57	0	10	35	212	1	0	11	78	341	0	0	0	1075
PHF	n/a	n/a	n/a	n/a	0.800	n/a	0.887	0.792	n/a	0.625	0.795	0.726	0.250	n/a	0.688	0.848	0.879	n/a	n/a	n/a	0.853
MID Peak Hr:																					
Pk Vol																					0
PHF																					
PM Peak Hr:																	16:30				
Pk Vol	0	0	0	0	33	0	350	61	0	21	40	677	7	0	39	151	386	0	0	1	1766
PHF	n/a	n/a	n/a	n/a	0.750	n/a	0.893	0.803	n/a	0.750	0.909	0.886	0.438	n/a	0.650	0.899	0.869	n/a	n/a	0.250	0.958

Comments

Unless shown otherwise, MID period defined as 10:00 AM - 2:00 PM. Peaks defined based on total intersection volume for all vehicle types. Chart totals do not include crosswalk data.



Intersection ID: 1802849
Count Date: 8/23/2018

N 3RD ST (SB) & E ROOSEVELT ST

	From North (SB)				From East (WB)				From South (NB)				From West (EB)				INTSEC				
	N 3RD ST (SB)				E ROOSEVELT ST				N 3RD ST (SB)				E ROOSEVELT ST								
23:00																					
23:15																					
23:30																					
23:45																					
Total	320	2727	553	0	170	317	1793	0	0	62	0	0	0	0	143	1	2198	204	0	102	8590
AM Peak Hr:																		7:45			
Pk Vol	56	684	137	0	26	60	297	0	0	13	0	0	0	23	0	369	44	0	14	1723	
PHF	0.700	0.977	0.835	n/a	0.650	0.833	0.940	n/a	n/a	0.542	n/a	n/a	n/a	0.639	n/a	0.809	0.786	n/a	0.700	0.953	
MID Peak Hr:																					
Pk Vol																					0
PHF																					
PM Peak Hr:																		17:00			
Pk Vol	71	441	63	0	56	72	334	0	0	16	0	0	0	29	1	448	27	0	27	1585	
PHF	0.683	0.835	0.630	n/a	0.737	0.720	0.835	n/a	n/a	0.571	n/a	n/a	n/a	0.518	0.250	0.918	0.844	n/a	0.750	0.930	

Comments

Unless shown otherwise, MID period defined as 10:00 AM - 2:00 PM. Peaks defined based on total intersection volume for all vehicle types. Chart totals do not include crosswalk data.



Intersection ID: 1802861
Count Date: 8/23/2018

N 5TH AVE & W ROOSEVELT ST

	From North (SB)				From East (WB)				From South (NB)				From West (EB)				INTSEC				
	N 5TH AVE				W ROOSEVELT ST				N 5TH AVE				W ROOSEVELT ST								
23:00																					
23:15																					
23:30																					
23:45																					
Total	267	992	236	0	81	140	1985	0	0	19	0	0	0	0	60	0	1833	241	0	30	5884
AM Peak Hr:																	7:30				
Pk Vol	81	330	62	0	17	36	252	0	0	3	0	0	0	15	0	397	72	0	8	1273	
PHF	0.810	0.907	0.705	n/a	0.386	0.818	0.851	n/a	n/a	0.375	n/a	n/a	n/a	0.750	n/a	0.886	0.857	n/a	0.500	0.917	
MID Peak Hr:																					
Pk Vol																					
PHF																					
PM Peak Hr:																	16:30				
Pk Vol	40	112	34	0	13	17	498	0	0	5	0	0	0	15	0	273	23	0	3	1033	
PHF	0.909	0.737	0.773	n/a	0.542	0.850	0.865	n/a	n/a	0.625	n/a	n/a	n/a	0.625	n/a	0.886	0.719	n/a	0.375	0.956	

Comments

Unless shown otherwise, MID period defined as 10:00 AM - 2:00 PM. Peaks defined based on total intersection volume for all vehicle types. Chart totals do not include crosswalk data.



Intersection ID: 1802858
Count Date: 8/21/2018

S 7TH AVE & W GRANT ST

	From North (SB)				From East (WB)				From South (NB)				From West (EB)				INTSEC				
	S 7TH AVE				W GRANT ST				S 7TH AVE				W GRANT ST								
23:00																					0
23:15																					0
23:30																					0
23:45																					0
Total	630	3873	217	18	17	250	1330	608	0	20	825	5609	316	0	11	268	1049	456	0	17	15514
AM Peak Hr:																				7:15	
Pk Vol	128	530	40	3	6	21	96	69	0	2	181	1424	77	0	6	86	298	58	0	6	3031
PHF	0.744	0.901	0.667	0.750	0.500	0.656	0.686	0.821	n/a	0.500	0.854	0.952	0.875	n/a	0.300	0.597	0.810	0.806	n/a	0.500	0.960
MID Peak Hr:																					
Pk Vol																					0
PHF																					
PM Peak Hr:																				16:15	
Pk Vol	91	801	39	1	1	60	438	164	0	3	126	772	37	0	1	24	161	129	0	1	2849
PHF	0.813	0.914	0.886	0.250	0.250	0.789	0.876	0.891	n/a	0.750	0.808	0.881	0.712	n/a	0.250	0.750	0.759	0.806	n/a	0.250	0.915

Comments

Unless shown otherwise, MID period defined as 10:00 AM - 2:00 PM. Peaks defined based on total intersection volume for all vehicle types. Chart totals do not include crosswalk data.



Intersection ID: 1802857
Count Date: 8/21/2018

N 7TH AVE & WASHINGTON ST

	From North (SB)				From East (WB)				From South (NB)				From West (EB)				INTSEC					
	N 7TH AVE				WASHINGTON ST				N 7TH AVE				WASHINGTON ST									
23:00																					0	
23:15																					0	
23:30																					0	
23:45																					0	
Total	0	5735	707	1	355	704	3024	1510	0	121	638	6424	0	2	102	0	0	0	1	0	100	19424
AM Peak Hr:																			7:30			
Pk Vol	0	1115	257	1	47	97	303	89	0	15	193	1207	0	0	20	0	0	0	1	0	20	3365
PHF	n/a	0.971	0.824	0.250	0.734	0.713	0.823	0.767	n/a	0.536	0.846	0.937	n/a	n/a	0.714	n/a	n/a	n/a	0.250	n/a	0.833	0.944
MID Peak Hr:																						
Pk Vol																						0
PHF																						
PM Peak Hr:																			16:30			
Pk Vol	0	949	34	0	66	200	912	501	0	24	53	1220	0	0	29	0	0	0	0	0	18	4006
PHF	n/a	0.964	0.500	n/a	0.660	0.794	0.927	0.908	n/a	0.667	0.883	0.827	n/a	n/a	0.659	n/a	n/a	n/a	n/a	n/a	0.643	0.894

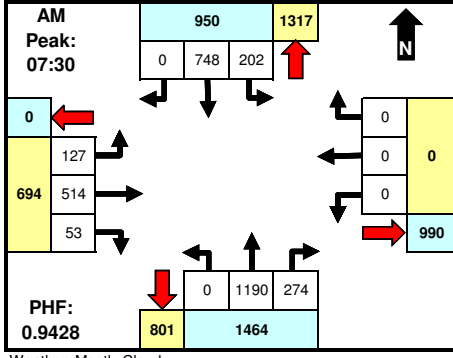
Comments

Unless shown otherwise, MID period defined as 10:00 AM - 2:00 PM. Peaks defined based on total intersection volume for all vehicle types. Chart totals do not include crosswalk data.

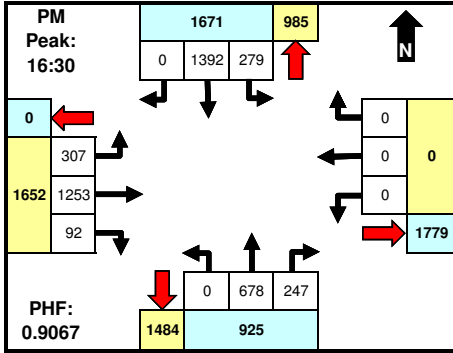
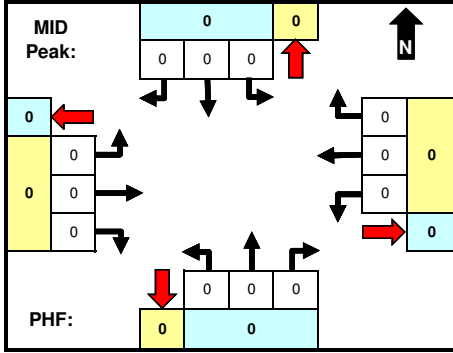


Intersection ID: 1802856
Count Date: 8/21/2018

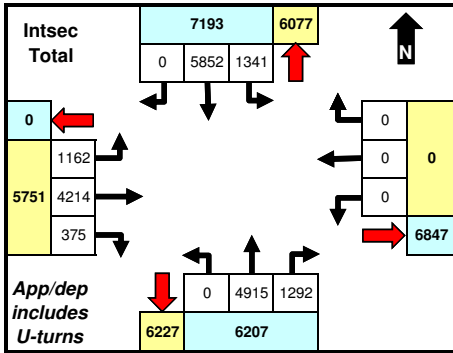
S 7TH ST & E JEFFERSON ST



Weather: Mostly Cloudy



Weather: Mostly Cloudy



	North		East		South		West		Total
	App	Dep	App	Dep	App	Dep	App	Dep	
AM	950	1317	0	990	1464	801	694	0	3108
MID	0	0	0	0	0	0	0	0	0
PM	1671	985	0	1779	925	1484	1652	0	4248
Total	7193	6077	0	6847	6207	6227	5751	0	19151

Time	From North (SB) S 7TH ST					From East (WB) E JEFFERSON ST					From South (NB) S 7TH ST					From West (EB) E JEFFERSON ST					INTSEC		
	LT	Thru	RT	U	Cw/ik	LT	Thru	RT	U	Cw/ik	LT	Thru	RT	U	Cw/ik	LT	Thru	RT	U	Cw/ik			
	0:00																						
0:15																							0
0:30																							0
0:45																							0
1:00																							0
1:15																							0
1:30																							0
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5:15																							0
5:30																							0
5:45																							0
6:00																							0
6:15																							0
6:30	31	127	0	0	0	0	0	0	0	0	2	0	132	29	0	1	19	103	6	0	0	450	
6:45	33	140	0	0	0	0	0	0	0	1	0	234	39	0	0	20	88	6	0	0	1	562	
7:00	31	140	0	0	1	0	0	0	0	0	0	229	43	0	3	23	101	13	0	1	585		
7:15	34	168	0	0	0	0	0	0	0	2	0	274	42	0	3	29	114	12	0	3	681		
7:30	55	177	0	0	0	0	0	0	0	3	0	298	74	0	4	25	130	23	0	1	790		
7:45	56	164	0	0	3	0	0	0	0	7	0	260	71	0	0	28	137	8	0	1	735		
8:00	43	204	0	0	0	0	0	0	0	1	0	338	73	0	2	36	124	10	0	0	831		
8:15	48	203	0	0	0	0	0	0	0	1	0	294	56	0	3	38	123	12	0	0	778		
8:30	41	193	0	0	2	0	0	0	0	0	0	270	53	0	2	29	88	15	0	3	696		
8:45	45	139	0	0	2	0	0	0	0	0	0	240	52	0	2	25	105	5	0	2	617		
9:00	41	165	0	0	1	0	0	0	0	0	0	197	37	0	1	28	64	11	0	2	547		
9:15	42	177	0	0	2	0	0	0	0	1	0	230	32	0	2	37	68	14	0	2	607		
9:30																						0	
9:45																						0	
10:00																						0	
10:15																						0	
10:30																						0	
10:45																						0	
11:00																						0	
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13:30																						0	
13:45																						0	
14:00																						0	
14:15																						0	
14:30																						0	
14:45																						0	
15:00	65	273	0	0	0	0	0	0	0	0	0	161	31	0	2	76	180	21	0	7	816		
15:15	57	237	0	0	0	0	0	0	0	1	0	184	46	0	4	71	197	17	0	31	845		
15:30	66	326	0	0	4	0	0	0	0	0	0	149	41	0	1	63	189	15	0	29	883		
15:45	67	332	0	0	6	0	0	0	0	2	0	154	38	0	7	51	181	13	0	37	888		
16:00	53	252	0	0	3	0	0	0	0	1	0	193	73	0	11	69	279	23	0	62	1019		
16:15	81	370	0	0	6	0	0	0	0	8	0	152	48	0	19	83	275	34	0	73	1149		
16:30	66	312	0	0	7	0	0	0	0	1	0	169	50	0	10	71	307	22	0	47	1062		
16:45	71	337	0	0	18	0	0	0	0	2	0	182	67	0	24	68	295	26	0	53	1143		
17:00	68	396	0	0	26	0	0	0	0	6	0	152	56	0	19	75	282	20	0	60	1160		
17:15	74	347	0	0	15	0	0	0	0	30	0	175	74	0	41	93	369	24	0	39	1281		
17:30	70	287	0	0	28	0	0	0	0	38	0	132	70	0	42	57	232	12	0	66	1034		
17:45	103	386	0	0	64	0	0	0	0	34	0	116	97	0	55	48	183	13	0	143	1242		
18:00																						0	
18:15																						0	
18:30																						0	
18:45																						0	
19:00																						0	
19:15																						0	
19:30																						0	
19:45																						0	
20:00																						0	
20:15																						0	
20:30																						0	
20:45																						0	
21:00																						0	
21:15																						0	
21:30																						0	
21:45																							



Intersection ID: 1802856
Count Date: 8/21/2018

S 7TH ST & E JEFFERSON ST

Comments

Unless shown otherwise, MID period defined as 10:00 AM - 2:00 PM. Peaks defined based on total intersection volume for all vehicle types. Chart totals do not include crosswalk data.

	From North (SB) S 7TH ST				From East (WB) E JEFFERSON ST				From South (NB) S 7TH ST				From West (EB) E JEFFERSON ST				INTSEC				
23:00																					
23:15																	0				
23:30																	0				
23:45																	0				
Total	1341	5852	0	0	188	0	0	0	0	141	0	4915	1292	0	258	1162	4214	375	0	663	20401
AM Peak Hr:																	7:30				
Pk Vol	202	748	0	0	3	0	0	0	0	12	0	1190	274	0	9	127	514	53	0	2	3134
PHF	0.902	0.917	n/a	n/a	0.250	n/a	n/a	n/a	n/a	0.429	n/a	0.880	0.926	n/a	0.563	0.836	0.938	0.576	n/a	0.500	0.943
MID Peak Hr:																					
Pk Vol																					0
PHF																					
PM Peak Hr:																	16:30				
Pk Vol	279	1392	0	0	66	0	0	0	0	39	0	678	247	0	94	307	1253	92	0	199	4646
PHF	0.943	0.879	n/a	n/a	0.635	n/a	n/a	n/a	n/a	0.325	n/a	0.931	0.834	n/a	0.573	0.825	0.849	0.885	n/a	0.829	0.907



Intersection ID: 1802845
Count Date: 8/21/2018

N 7TH ST & E VAN BUREN ST

Comments

Unless shown otherwise, MID period defined as 10:00 AM - 2:00 PM. Peaks defined based on total intersection volume for all vehicle types. Chart totals do not include crosswalk data.

	From North (SB)				From East (WB)				From South (NB)				From West (EB)				INTSEC				
	N 7TH ST				E VAN BUREN ST				N 7TH ST				E VAN BUREN ST								
23:00																					
23:15																					
23:30																					
23:45																					
Total	899	5646	1575	1	450	796	2952	703	0	178	911	4995	620	5	207	1125	2842	696	0	195	24796
AM Peak Hr:	7:45																				
Pk Vol	146	957	405	0	89	128	581	118	0	44	204	839	97	0	52	144	373	108	0	28	4313
PHF	0.793	0.927	0.920	n/a	0.767	0.941	0.914	0.819	n/a	0.611	0.699	0.932	0.836	n/a	0.520	0.900	0.914	0.931	n/a	0.700	0.988
MID Peak Hr:	16:30																				
Pk Vol																					
PHF																					
PM Peak Hr:	16:30																				
Pk Vol	210	1085	203	0	111	169	549	127	0	39	147	984	131	0	58	249	762	138	0	51	5013
PHF	0.875	0.942	0.906	n/a	0.771	0.899	0.921	0.756	n/a	0.886	0.896	0.925	0.910	n/a	0.630	0.841	0.890	0.802	n/a	0.750	0.958



Intersection ID: 1802855
Count Date: 8/21/2018

N 7TH ST & E WASHINGTON ST

Comments

Unless shown otherwise, MID period defined as 10:00 AM - 2:00 PM. Peaks defined based on total intersection volume for all vehicle types. Chart totals do not include crosswalk data.

	From North (SB)				From East (WB)				From South (NB)				From West (EB)				INTSEC			
	N 7TH ST				E WASHINGTON ST				N 7TH ST				E WASHINGTON ST							
23:00																				
23:15																				
23:30																				
23:45																				
Total	0	5656	1701	0	91	1807	5506	1749	0	57	884	5336	0	3	57	0	0	0	125	22972
AM Peak Hr:																	7:45			
Pk Vol	0	723	379	0	12	238	1008	234	0	12	268	1051	0	0	9	0	0	0	17	3951
PHF	n/a	0.908	0.877	n/a	0.750	0.975	0.910	0.696	n/a	0.333	0.882	0.916	n/a	n/a	0.563	n/a	n/a	n/a	0.472	0.971
MID Peak Hr:																				
Pk Vol																				0
PHF																				
PM Peak Hr:																	16:30			
Pk Vol	0	1255	259	0	25	502	1171	444	0	10	68	890	0	0	16	0	0	0	29	4669
PHF	n/a	0.934	0.875	n/a	0.625	0.826	0.932	0.949	n/a	0.500	0.680	0.923	n/a	n/a	0.571	n/a	n/a	n/a	0.806	0.957



Intersection ID: 1802854
Count Date: 8/21/2018

N CENTRAL AVE & E VAN BUREN ST

Comments

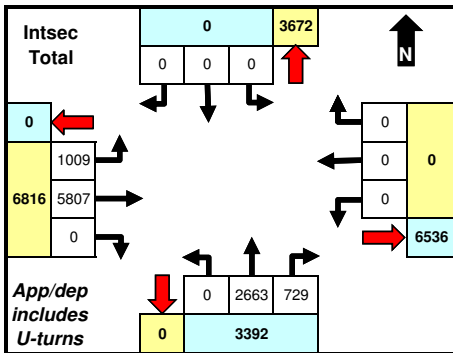
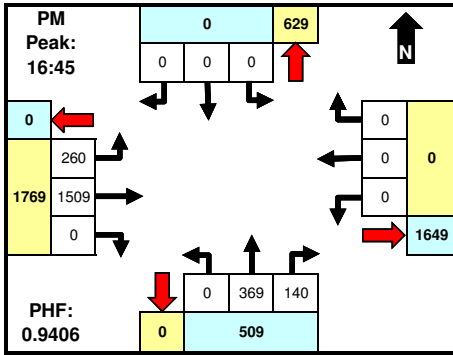
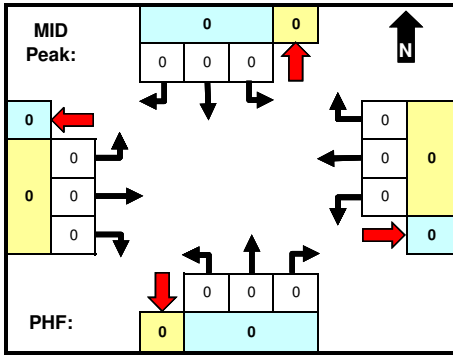
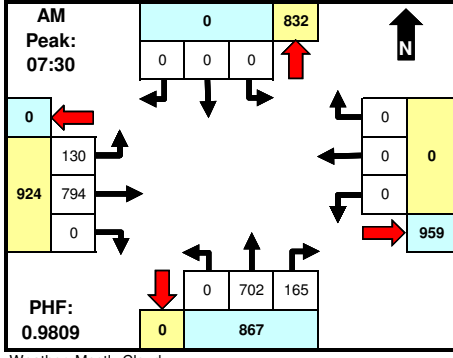
Unless shown otherwise, MID period defined as 10:00 AM - 2:00 PM. Peaks defined based on total intersection volume for all vehicle types. Chart totals do not include crosswalk data.

	From North (SB)				From East (WB)				From South (NB)				From West (EB)				INTSEC				
	N CENTRAL AVE				E VAN BUREN ST				N CENTRAL AVE				E VAN BUREN ST								
23:00																					
23:15																					
23:30																					
23:45																					
Total	0	0	0	0	853	0	4185	488	0	1017	639	2213	643	0	670	613	3897	0	0	613	15831
AM Peak Hr:																	7:45				
Pk Vol	0	0	0	0	150	0	665	90	0	163	86	418	94	0	94	103	742	0	0	84	2689
PHF	n/a	n/a	n/a	n/a	0.915	n/a	0.913	0.776	n/a	0.832	0.768	0.768	0.870	n/a	0.734	0.757	0.961	n/a	n/a	0.840	0.918
MID Peak Hr:																					
Pk Vol																					0
PHF																					
PM Peak Hr:																	16:45				
Pk Vol	0	0	0	0	157	0	889	93	0	175	139	386	120	0	118	145	675	0	0	127	3024
PHF	n/a	n/a	n/a	n/a	0.623	n/a	0.992	0.802	n/a	0.768	0.965	0.894	0.882	n/a	0.776	0.906	0.870	n/a	n/a	0.836	0.946



Intersection ID: 1802846
Count Date: 8/21/2018

S CENTRAL AVE & W JEFFERSON ST



	North		East		South		West		Total
	App	Dep	App	Dep	App	Dep	App	Dep	
AM	0	832	0	959	867	0	924	0	1791
MID	0	0	0	0	0	0	0	0	0
PM	0	629	0	1649	509	0	1769	0	2278
Total	0	3672	0	6536	3392	0	6816	0	10208

Time	From North (SB)					From East (WB)					From South (NB)					From West (EB)					INTSEC	
	S CENTRAL AVE					W JEFFERSON ST					S CENTRAL AVE					W JEFFERSON ST						
	LT	Thru	RT	U	Cw/ik	LT	Thru	RT	U	Cw/ik	LT	Thru	RT	U	Cw/ik	LT	Thru	RT	U	Cw/ik		
0:00																						0
0:15																						0
0:30																						0
0:45																						0
1:00																						0
1:15																						0
1:30																						0
1:45																						0
2:00																						0
2:15																						0
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4:45																						0
5:00																						0
5:15																						0
5:30																						0
5:45																						0
6:00																						0
6:15																						0
6:30	0	0	0	0	12	0	0	0	0	4	0	75	19	0	3	13	139	0	0	6	271	
6:45	0	0	0	0	16	0	0	0	0	6	0	115	22	0	7	21	167	0	0	10	364	
7:00	0	0	0	0	31	0	0	0	0	12	0	103	25	0	2	25	165	0	0	16	379	
7:15	0	0	0	0	25	0	0	0	0	10	0	159	28	0	10	25	151	0	0	18	426	
7:30	0	0	0	0	27	0	0	0	0	13	0	197	40	0	11	32	181	0	0	22	523	
7:45	0	0	0	0	34	0	0	0	0	5	0	202	44	0	9	27	178	0	0	18	517	
8:00	0	0	0	0	30	0	0	0	0	6	0	153	37	0	7	32	226	0	0	22	513	
8:15	0	0	0	0	19	0	0	0	0	7	0	150	44	0	11	39	209	0	0	20	499	
8:30	0	0	0	0	43	0	0	0	0	4	0	140	35	0	13	33	208	0	0	27	503	
8:45	0	0	0	0	35	0	0	0	0	8	0	139	29	0	11	34	164	0	0	12	432	
9:00	0	0	0	0	27	0	0	0	0	3	0	107	24	0	11	22	173	0	0	28	395	
9:15	0	0	0	0	26	0	0	0	0	10	0	97	25	0	20	36	169	0	0	18	401	
9:30																						0
9:45																						0
10:00																						0
10:15																						0
10:30																						0
10:45																						0
11:00																						0
11:15																						0
11:30																						0
11:45																						0
12:00																						0
12:15																						0
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13:00																						0
13:15																						0
13:30																						0
13:45																						0
14:00																						0
14:15																						0
14:30																						0
14:45																						0
15:00	0	0	0	0	35	0	0	0	0	6	0	65	20	0	9	44	203	0	0	14	396	
15:15	0	0	0	0	14	0	0	0	0	6	0	101	19	0	12	35	190	0	0	34	411	
15:30	0	0	0	0	28	0	0	0	0	11	0	86	23	0	9	48	249	0	0	20	474	
15:45	0	0	0	0	26	0	0	0	0	14	0	68	29	0	16	50	229	0	0	20	452	
16:00	0	0	0	0	24	0	0	0	0	13	0	91	30	0	23	64	316	0	0	18	579	
16:15	0	0	0	0	31	0	0	0	0	9	0	86	27	0	23	60	303	0	0	27	566	
16:30	0	0	0	0	26	0	0	0	0	20	0	78	27	0	21	62	349	0	0	33	616	
16:45	0	0	0	0	47	0	0	0	0	15	0	95	29	0	18	61	333	0	0	32	630	
17:00	0	0	0	0	49	0	0	0	0	17	0	84	34	0	37	68	421	0	0	43	753	
17:15	0	0	0	0	42	0	0	0	0	22	0	87	40	0	39	75	418	0	0	30	753	
17:30	0	0	0	0	48	0	0	0	0	24	0	103	37	0	41	56	337	0	0	51	697	
17:45	0	0	0	0	51	0	0	0	0	24	0	82	42	0	39	47	329	0	0	39	653	
18:00																						0
18:15																						0
18:30																						0
18:45																						0
19:00																						0
19:15																						0
19:30																						0
19:45																						0
20:00																						0
20:15																						0
20:30																						0
20:45																						0
21:00																						0
21:15																						0
21:30																						0
21:45																						0
22:00																						0
22:15																						0
22:30																						0
22:45																						0



Intersection ID: 1802846
Count Date: 8/21/2018

S CENTRAL AVE & W JEFFERSON ST

	From North (SB)				From East (WB)				From South (NB)				From West (EB)				INTSEC				
	S CENTRAL AVE				W JEFFERSON ST				S CENTRAL AVE				W JEFFERSON ST								
23:00																					0
23:15																					0
23:30																					0
23:45																					0
Total	0	0	0	0	746	0	0	0	0	269	0	2663	729	0	402	1009	5807	0	0	578	12203
AM Peak Hr:																				7:30	
Pk Vol	0	0	0	0	110	0	0	0	31	0	702	165	0	38	130	794	0	0	82	2052	
PHF	n/a	n/a	n/a	n/a	0.809	n/a	n/a	n/a	0.596	n/a	0.869	0.938	n/a	0.864	0.833	0.878	n/a	n/a	0.932	0.981	
MID Peak Hr:																					
Pk Vol																					0
PHF																					
PM Peak Hr:																				16:45	
Pk Vol	0	0	0	0	186	0	0	0	78	0	369	140	0	135	260	1509	0	0	156	2833	
PHF	n/a	n/a	n/a	n/a	0.949	n/a	n/a	n/a	0.813	n/a	0.896	0.875	n/a	0.823	0.867	0.896	n/a	n/a	0.765	0.941	

Comments

Unless shown otherwise, MID period defined as 10:00 AM - 2:00 PM. Peaks defined based on total intersection volume for all vehicle types. Chart totals do not include crosswalk data.



Intersection ID: 1802860
Count Date: 8/21/2018

S CENTRAL AVE & E LINCOLN ST

Comments

Unless shown otherwise, MID period defined as 10:00 AM - 2:00 PM. Peaks defined based on total intersection volume for all vehicle types. Chart totals do not include crosswalk data.

	From North (SB)		From East (WB)				From South (NB)				From West (EB)				INTSEC							
	S CENTRAL AVE		E LINCOLN ST				S CENTRAL AVE				E LINCOLN ST											
23:00																	0					
23:15																	0					
23:30																	0					
23:45																	0					
Total	0	0	0	0	18	0	1868	363	1	29	600	2473	450	0	8	192	1620	2	2	15	7641	
AM Peak Hr:																	7:15					
Pk Vol	0	0	0	0	5	0	255	83	0	4	139	753	145	0	1	42	334	0	1	1	1763	
PHF	n/a	n/a	n/a	n/a	0.625	n/a	0.924	0.830	n/a	0.333	0.869	0.914	0.684	n/a	0.250	0.656	0.861	n/a	0.250	0.250	0.932	
MID Peak Hr:																						
Pk Vol																						0
PHF																						
PM Peak Hr:																	16:30					
Pk Vol	0	0	0	0	2	0	486	47	0	6	112	293	62	0	4	33	323	0	0	7	1375	
PHF	n/a	n/a	n/a	n/a	0.500	n/a	0.907	0.588	n/a	0.375	0.737	0.893	0.705	n/a	0.500	0.917	0.841	n/a	n/a	0.583	0.968	



Intersection ID: 1803864
Count Date: 9/12/2018

N CENTRAL AVE/N 1ST AVE & W PORTLAND ST

	From North (SB)				From East (WB)				From South (NB)				From West (EB)				INTSEC					
	N CENTRAL AVE/N 1ST AVE		W PORTLAND ST		N CENTRAL AVE/N 1ST AVE		W PORTLAND ST		N CENTRAL AVE/N 1ST AVE		W PORTLAND ST		N CENTRAL AVE/N 1ST AVE		W PORTLAND ST							
23:00																		0				
23:15																		0				
23:30																		0				
23:45																		0				
Total	0	3217	155	0	3	0	0	250	0	213	0	3083	104	0	304	0	0	140	0	142	7611	
AM Peak Hr:																	7:30					
Pk Vol	0	701	22	0	0	0	0	9	0	21	0	532	30	0	38	0	0	27	0	12	1392	
PHF	n/a	0.952	0.786	n/a	n/a	n/a	n/a	0.450	n/a	0.875	n/a	0.792	0.577	n/a	0.528	n/a	n/a	0.563	n/a	0.500	0.911	
MID Peak Hr:																						
Pk Vol																						0
PHF																						
PM Peak Hr:																	16:30					
Pk Vol	0	588	46	0	0	0	0	98	0	50	0	693	18	0	61	0	0	26	0	33	1613	
PHF	n/a	0.948	0.676	n/a	n/a	n/a	n/a	0.845	n/a	0.893	n/a	0.833	0.750	n/a	0.763	n/a	n/a	0.591	n/a	0.825	0.912	

Comments




















Unless shown otherwise, MID period defined as 10:00 AM - 2:00 PM. Peaks defined based on total intersection volume for all vehicle types. Chart totals do not include crosswalk data.



Appendix C
AM Syncho Analysis

Lanes, Volumes, Timings
30: Madison St & Central Ave

09/10/2020

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	300	0	0	0	3	0	50	797	150	0	0	0
Future Volume (vph)	300	0	0	0	3	0	50	797	150	0	0	0
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	100		0	0		0	0		0	0		0
Storage Lanes	1		0	0		1	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.91	0.91	0.91	1.00	1.00	1.00
Frt								0.977				
Flt Protected	0.950							0.998				
Satd. Flow (prot)	1770	1863	0	0	1863	1863	0	4958	0	0	0	0
Flt Permitted	0.756							0.998				
Satd. Flow (perm)	1408	1863	0	0	1863	1863	0	4958	0	0	0	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)								64				
Link Speed (mph)		30			30			30				30
Link Distance (ft)		394			255			257				421
Travel Time (s)		9.0			5.8			5.8				9.6
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	326	0	0	0	3	0	54	866	163	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	326	0	0	0	3	0	0	1083	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		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	2			2	1	1	2				
Detector Template	Left	Thru			Thru	Right	Left	Thru				
Leading Detector (ft)	20	100			100	20	20	100				
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	20	20	6				
Detector 1 Type	Cl+Ex	Cl+Ex			Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex				
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0			0.0	0.0	0.0	0.0				
Detector 1 Queue (s)	0.0	0.0			0.0	0.0	0.0	0.0				
Detector 1 Delay (s)	0.0	0.0			0.0	0.0	0.0	0.0				
Detector 2 Position(ft)		94			94			94				
Detector 2 Size(ft)		6			6			6				
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				
Turn Type	Perm				NA	Perm	Perm	NA				
Protected Phases		2			6			4				
Permitted Phases	2					6	4					

Lanes, Volumes, Timings
 30: Madison St & Central Ave

09/10/2020

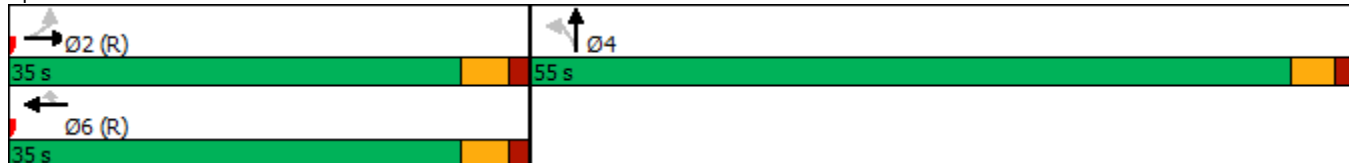


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	2	2			6	6	4	4				
Switch Phase												
Minimum Initial (s)	15.0	15.0			15.0	15.0	15.0	15.0				
Minimum Split (s)	23.7	23.7			23.7	23.7	23.2	23.2				
Total Split (s)	35.0	35.0			35.0	35.0	55.0	55.0				
Total Split (%)	38.9%	38.9%			38.9%	38.9%	61.1%	61.1%				
Maximum Green (s)	30.3	30.3			30.3	30.3	50.8	50.8				
Yellow Time (s)	3.2	3.2			3.2	3.2	3.0	3.0				
All-Red Time (s)	1.5	1.5			1.5	1.5	1.2	1.2				
Lost Time Adjust (s)	0.0	0.0			0.0	0.0		0.0				
Total Lost Time (s)	4.7	4.7			4.7	4.7		4.2				
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	1.0	1.0			1.0	1.0	1.0	1.0				
Recall Mode	C-Max	C-Max			C-Max	C-Max	None	None				
Walk Time (s)	8.0	8.0			8.0	8.0	8.0	8.0				
Flash Dont Walk (s)	9.0	9.0			9.0	9.0	9.0	9.0				
Pedestrian Calls (#/hr)	0	0			0	0	0	0				
Act Effct Green (s)	55.9				55.9			25.2				
Actuated g/C Ratio	0.62				0.62			0.28				
v/c Ratio	0.37				0.00			0.76				
Control Delay	11.0				8.3			31.1				
Queue Delay	0.6				0.0			0.0				
Total Delay	11.6				8.3			31.1				
LOS	B				A			C				
Approach Delay		11.6			8.3			31.1				
Approach LOS		B			A			C				

Intersection Summary



















Area Type: Other
 Cycle Length: 90
 Actuated Cycle Length: 90
 Offset: 50 (56%), Referenced to phase 2:EBTL and 6:WBT, Start of Green
 Natural Cycle: 50
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.76
 Intersection Signal Delay: 26.5
 Intersection LOS: C
 Intersection Capacity Utilization 40.8%
 ICU Level of Service A
 Analysis Period (min) 15

Splits and Phases: 30: Madison St & Central Ave



Lanes, Volumes, Timings
37: Lincoln/Lincoln St & 1st Ave

09/10/2020

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	339	56	23	362	0	0	0	0	39	212	29
Future Volume (vph)	0	339	56	23	362	0	0	0	0	39	212	29
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	0		0	0		250
Storage Lanes	0		0	1		0	0		0	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	1.00	0.95	1.00
Ped Bike Factor		1.00		1.00								0.98
Frt		0.975										0.850
Flt Protected				0.950						0.950		
Satd. Flow (prot)	0	3443	0	1770	3539	0	0	0	0	1770	3539	1583
Flt Permitted				0.487						0.950		
Satd. Flow (perm)	0	3443	0	907	3539	0	0	0	0	1770	3539	1553
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		37										44
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		708			369			199			327	
Travel Time (s)		16.1			8.4			4.5			7.4	
Confl. Peds. (#/hr)	5		1	1		5	5					5
Peak Hour Factor	0.92	0.88	0.74	0.64	0.92	0.92	0.92	0.92	0.92	0.75	0.91	0.66
Adj. Flow (vph)	0	385	76	36	393	0	0	0	0	52	233	44
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	461	0	36	393	0	0	0	0	52	233	44
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		2		1	2					1	2	1
Detector Template		Thru		Left	Thru					Left	Thru	Right
Leading Detector (ft)		100		20	100					20	100	20
Trailing Detector (ft)		0		0	0					0	0	0
Detector 1 Position(ft)		0		0	0					0	0	0
Detector 1 Size(ft)		6		20	6					20	6	20
Detector 1 Type		Cl+Ex		Cl+Ex	Cl+Ex					Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)		0.0		0.0	0.0					0.0	0.0	0.0
Detector 1 Queue (s)		0.0		0.0	0.0					0.0	0.0	0.0
Detector 1 Delay (s)		0.0		0.0	0.0					0.0	0.0	0.0
Detector 2 Position(ft)		94			94							94
Detector 2 Size(ft)		6			6							6
Detector 2 Type		Cl+Ex			Cl+Ex							Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0							0.0
Turn Type		NA		Perm	NA					Perm	NA	Perm

Lanes, Volumes, Timings
 37: Lincoln/Lincoln St & 1st Ave

09/10/2020



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Protected Phases		1			1						2	
Permitted Phases				1						2		2
Detector Phase		1		1	1					2	2	2
Switch Phase												
Minimum Initial (s)		15.0		15.0	15.0					15.0	15.0	15.0
Minimum Split (s)		24.9		24.9	24.9					24.1	24.1	24.1
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%
Maximum Green (s)		45.2		45.2	45.2					34.9	34.9	34.9
Yellow Time (s)		3.6		3.6	3.6					3.6	3.6	3.6
All-Red Time (s)		1.2		1.2	1.2					1.5	1.5	1.5
Lost Time Adjust (s)		0.0		0.0	0.0					0.0	0.0	0.0
Total Lost Time (s)		4.8		4.8	4.8					5.1	5.1	5.1
Lead/Lag		Lead		Lead	Lead					Lag	Lag	Lag
Lead-Lag Optimize?		Yes		Yes	Yes					Yes	Yes	Yes
Vehicle Extension (s)		3.0		3.0	3.0					3.0	3.0	3.0
Recall Mode		C-Max		C-Max	C-Max					None	None	None
Walk Time (s)		8.0		8.0	8.0					8.0	8.0	8.0
Flash Dont Walk (s)		11.0		11.0	11.0					11.0	11.0	11.0
Pedestrian Calls (#/hr)		0		0	0					0	0	0
Act Effect Green (s)		65.1		65.1	65.1					15.0	15.0	15.0
Actuated g/C Ratio		0.72		0.72	0.72					0.17	0.17	0.17
v/c Ratio		0.18		0.05	0.15					0.18	0.39	0.15
Control Delay		3.8		2.5	2.5					34.0	35.7	11.7
Queue Delay		0.0		0.0	0.0					0.0	0.0	0.0
Total Delay		3.8		2.5	2.5					34.0	35.7	11.7
LOS		A		A	A					C	D	B
Approach Delay		3.8			2.5						32.2	
Approach LOS		A			A						C	

Intersection Summary























Area Type:	Other
Cycle Length:	90
Actuated Cycle Length:	90
Offset:	86 (96%), Referenced to phase 1:EBWB, Start of Green
Natural Cycle:	50
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.39
Intersection Signal Delay:	11.0
Intersection LOS:	B
Intersection Capacity Utilization:	59.0%
ICU Level of Service:	B
Analysis Period (min):	15

Splits and Phases: 37: Lincoln/Lincoln St & 1st Ave



Lanes, Volumes, Timings
39: 7th Ave & Grant St

09/10/2020

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	86	298	58	21	96	69	181	1424	77	128	530	40
Future Volume (vph)	86	298	58	21	96	69	181	1424	77	128	530	40
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	165		0	150		0	115		175	160		0
Storage Lanes	1		0	1		0	1		1	1		0
Taper Length (ft)	25			25			25		25			
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	0.95	1.00	1.00	0.95	0.95
Ped Bike Factor	0.99	1.00		1.00	0.99		1.00		0.99		1.00	
Frt		0.975			0.943				0.850		0.986	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3439	0	1770	3312	0	1770	3539	1583	1770	3483	0
Flt Permitted	0.597			0.328			0.393			0.128		
Satd. Flow (perm)	1105	3439	0	609	3312	0	730	3539	1560	238	3483	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		21			51				88			22
Link Speed (mph)		30			30			30				30
Link Distance (ft)		432			474			1028				2278
Travel Time (s)		9.8			10.8			23.4				51.8
Confl. Peds. (#/hr)	6		6	6		6	6		2	2		6
Peak Hour Factor	0.60	0.81	0.81	0.66	0.69	0.82	0.85	0.95	0.88	0.74	0.90	0.67
Adj. Flow (vph)	143	368	72	32	139	84	213	1499	88	173	589	60
Shared Lane Traffic (%)												
Lane Group Flow (vph)	143	440	0	32	223	0	213	1499	88	173	649	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	2		1	2		1	2	1	1		2
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left		Thru
Leading Detector (ft)	20	100		20	100		20	100	20	20		100
Trailing Detector (ft)	0	0		0	0		0	0	0	0		0
Detector 1 Position(ft)	0	0		0	0		0	0	0	0		0
Detector 1 Size(ft)	20	6		20	6		20	6	20	20		6
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0		0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0		0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0		0.0
Detector 2 Position(ft)		94			94			94				94
Detector 2 Size(ft)		6			6			6				6
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				0.0
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	Perm		NA

Lanes, Volumes, Timings
39: 7th Ave & Grant St

09/10/2020



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Protected Phases		2			2			1			1	
Permitted Phases	2			2			1		1	1		
Detector Phase	2	2		2	2		1	1	1	1	1	
Switch Phase												
Minimum Initial (s)	2.0	2.0		2.0	2.0		15.0	15.0	15.0	15.0	15.0	
Minimum Split (s)	27.2	27.2		27.2	27.2		25.0	25.0	25.0	25.0	25.0	
Total Split (s)	30.0	30.0		30.0	30.0		72.0	72.0	72.0	72.0	72.0	
Total Split (%)	29.4%	29.4%		29.4%	29.4%		70.6%	70.6%	70.6%	70.6%	70.6%	
Maximum Green (s)	24.8	24.8		24.8	24.8		67.0	67.0	67.0	67.0	67.0	
Yellow Time (s)	3.6	3.6		3.6	3.6		3.6	3.6	3.6	3.6	3.6	
All-Red Time (s)	1.6	1.6		1.6	1.6		1.4	1.4	1.4	1.4	1.4	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.2	5.2		5.2	5.2		5.0	5.0	5.0	5.0	5.0	
Lead/Lag	Lag	Lag		Lag	Lag		Lead	Lead	Lead	Lead	Lead	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None		None	None		C-Max	C-Max	C-Max	C-Max	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0		8.0	8.0	8.0	8.0	8.0	
Flash Dont Walk (s)	15.0	15.0		15.0	15.0		12.0	12.0	12.0	12.0	12.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0	0	0	0	
Act Effect Green (s)	20.2	20.2		20.2	20.2		71.6	71.6	71.6	71.6	71.6	
Actuated g/C Ratio	0.20	0.20		0.20	0.20		0.70	0.70	0.70	0.70	0.70	
v/c Ratio	0.66	0.63		0.27	0.32		0.42	0.60	0.08	1.04	0.26	
Control Delay	51.4	39.3		38.6	27.0		10.4	9.8	1.6	102.9	6.2	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay	51.4	39.3		38.6	27.0		10.4	9.8	1.6	102.9	6.2	
LOS	D	D		D	C		B	A	A	F	A	
Approach Delay		42.3			28.4			9.5			26.5	
Approach LOS		D			C			A			C	

Intersection Summary

Area Type: Other
 Cycle Length: 102
 Actuated Cycle Length: 102
 Offset: 13 (13%), Referenced to phase 1:NBSB, Start of Green
 Natural Cycle: 110
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 1.04
 Intersection Signal Delay: 20.4
 Intersection LOS: C
 Intersection Capacity Utilization 83.9%
 ICU Level of Service E
 Analysis Period (min) 15

Splits and Phases: 39: 7th Ave & Grant St



Lanes, Volumes, Timings
47: 5th Ave & Fillmore St

09/10/2020



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕						↕↕	
Traffic Volume (vph)	0	452	0	0	144	0	0	0	0	80	434	0
Future Volume (vph)	0	452	0	0	144	0	0	0	0	80	434	0
Ideal Flow (vphp)	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	1.00	1.00	0.95	0.95	0.95
Frt												
Flt Protected											0.992	
Satd. Flow (prot)	0	1863	0	0	1863	0	0	0	0	0	3511	0
Flt Permitted											0.992	
Satd. Flow (perm)	0	1863	0	0	1863	0	0	0	0	0	3511	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		485			736			292			454	
Travel Time (s)		11.0			16.7			6.6			10.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	491	0	0	157	0	0	0	0	87	472	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	491	0	0	157	0	0	0	0	0	559	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	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
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	44.8%
Analysis Period (min)	15
	ICU Level of Service A

Lanes, Volumes, Timings
50: 3rd Ave /3rd Ave & Jefferson St

09/10/2020



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↙	↖						↑↑↑				
Traffic Volume (vph)	104	1380	0	0	0	0	0	65	2	0	0	0
Future Volume (vph)	104	1380	0	0	0	0	0	65	2	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.81	0.81	1.00	1.00	1.00	1.00	1.00	0.91	0.91	1.00	1.00	1.00
Frts								0.996				
Flt Protected	0.950											
Satd. Flow (prot)	1433	6035	0	0	0	0	0	5065	0	0	0	0
Flt Permitted	0.950											
Satd. Flow (perm)	1433	6035	0	0	0	0	0	5065	0	0	0	0
Right Turn on Red	Yes		Yes			Yes			Yes			Yes
Satd. Flow (RTOR)	102	18						2				
Link Speed (mph)		30			30			30				30
Link Distance (ft)		390			802			180				190
Travel Time (s)		8.9			18.2			4.1				4.3
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	113	1500	0	0	0	0	0	71	2	0	0	0
Shared Lane Traffic (%)	10%											
Lane Group Flow (vph)	102	1511	0	0	0	0	0	73	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		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	2						2				
Detector Template	Left	Thru						Thru				
Leading Detector (ft)	20	100						100				
Trailing Detector (ft)	0	0						0				
Detector 1 Position(ft)	0	0						0				
Detector 1 Size(ft)	20	6						6				
Detector 1 Type	Cl+Ex	Cl+Ex						Cl+Ex				
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0						0.0				
Detector 1 Queue (s)	0.0	0.0						0.0				
Detector 1 Delay (s)	0.0	0.0						0.0				
Detector 2 Position(ft)		94						94				
Detector 2 Size(ft)		6						6				
Detector 2 Type		Cl+Ex						Cl+Ex				
Detector 2 Channel												
Detector 2 Extend (s)		0.0						0.0				
Turn Type	Perm	NA						NA				
Protected Phases		4						2				
Permitted Phases	4											
Detector Phase	4	4						2				
Switch Phase												
Minimum Initial (s)	5.0	5.0						5.0				

Lanes, Volumes, Timings
 50: 3rd Ave /3rd Ave & Jefferson St

09/10/2020



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Split (s)	22.5	22.5						22.5				
Total Split (s)	63.0	63.0						27.0				
Total Split (%)	70.0%	70.0%						30.0%				
Maximum Green (s)	58.5	58.5						22.5				
Yellow Time (s)	3.5	3.5						3.5				
All-Red Time (s)	1.0	1.0						1.0				
Lost Time Adjust (s)	0.0	0.0						0.0				
Total Lost Time (s)	4.5	4.5						4.5				
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0						3.0				
Recall Mode	None	None						C-Max				
Walk Time (s)	7.0	7.0						7.0				
Flash Dont Walk (s)	11.0	11.0						11.0				
Pedestrian Calls (#/hr)	0	0						0				
Act Effct Green (s)	40.7	40.7						40.3				
Actuated g/C Ratio	0.45	0.45						0.45				
v/c Ratio	0.14	0.55						0.03				
Control Delay	2.5	18.1						16.8				
Queue Delay	0.0	0.1						0.0				
Total Delay	2.5	18.1						16.8				
LOS	A	B						B				
Approach Delay		17.2						16.8				
Approach LOS		B						B				

Intersection Summary

Area Type: Other
 Cycle Length: 90
 Actuated Cycle Length: 90
 Offset: 8 (9%), Referenced to phase 2:NBT and 6:, Start of Green
 Natural Cycle: 45
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.55
 Intersection Signal Delay: 17.1
 Intersection Capacity Utilization 30.8%
 Analysis Period (min) 15
 Intersection LOS: B
 ICU Level of Service A

Splits and Phases: 50: 3rd Ave /3rd Ave & Jefferson St



Lanes, Volumes, Timings
51: 7th Ave & Washington St

09/10/2020



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations				↙	↑↑↑	↗	↙	↑↑↑			↑↔	
Traffic Volume (vph)	0	0	0	97	303	89	193	1207	0	0	1115	257
Future Volume (vph)	0	0	0	97	303	89	193	1207	0	0	1115	257
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	60		0	0		0
Storage Lanes	0		0	1		2	1		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	0.91	0.88	1.00	0.91	1.00	1.00	0.95	0.95
Ped Bike Factor				0.97		0.91					0.99	
Frt						0.850					0.968	
Flt Protected				0.950			0.950					
Satd. Flow (prot)	0	0	0	1770	5085	2787	1770	5085	0	0	3391	0
Flt Permitted				0.950			0.110					
Satd. Flow (perm)	0	0	0	1712	5085	2543	205	5085	0	0	3391	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						116						38
Link Speed (mph)		30			30			30				30
Link Distance (ft)		631			745			382				400
Travel Time (s)		14.3			16.9			8.7				9.1
Confl. Peds. (#/hr)				20		47	20		15	15		20
Peak Hour Factor	0.92	0.92	0.92	0.71	0.82	0.77	0.85	0.94	0.92	0.92	0.97	0.82
Adj. Flow (vph)	0	0	0	137	370	116	227	1284	0	0	1149	313
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	137	370	116	227	1284	0	0	1462	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			24				24
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	2	1	1	2				2
Detector Template				Left	Thru	Right	Left	Thru				Thru
Leading Detector (ft)				20	100	20	20	100				100
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	20	20	6				6
Detector 1 Type				Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex				Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)				0.0	0.0	0.0	0.0	0.0				0.0
Detector 1 Queue (s)				0.0	0.0	0.0	0.0	0.0				0.0
Detector 1 Delay (s)				0.0	0.0	0.0	0.0	0.0				0.0
Detector 2 Position(ft)					94			94				94
Detector 2 Size(ft)					6			6				6
Detector 2 Type					Cl+Ex			Cl+Ex				Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)					0.0			0.0				0.0
Turn Type				Perm	NA	Perm	pm+pt	NA				NA

Lanes, Volumes, Timings

51: 7th Ave & Washington St

09/10/2020

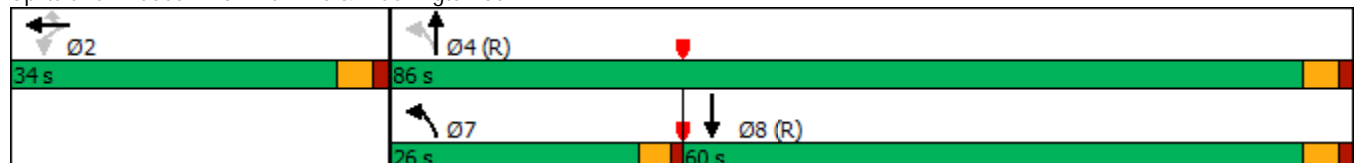


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Protected Phases					2		7	4			8	
Permitted Phases				2		2	4					
Detector Phase				2	2	2	7	4			8	
Switch Phase												
Minimum Initial (s)				15.0	15.0	15.0	2.0	15.0			15.0	
Minimum Split (s)				26.9	26.9	26.9	9.5	24.6			24.6	
Total Split (s)				34.0	34.0	34.0	26.0	86.0			60.0	
Total Split (%)				28.3%	28.3%	28.3%	21.7%	71.7%			50.0%	
Maximum Green (s)				29.1	29.1	29.1	22.0	81.4			55.4	
Yellow Time (s)				3.2	3.2	3.2	3.0	3.2			3.2	
All-Red Time (s)				1.7	1.7	1.7	1.0	1.4			1.4	
Lost Time Adjust (s)				0.0	0.0	0.0	0.0	0.0			0.0	
Total Lost Time (s)				4.9	4.9	4.9	4.0	4.6			4.6	
Lead/Lag							Lead				Lag	
Lead-Lag Optimize?							Yes				Yes	
Vehicle Extension (s)				1.0	1.0	1.0	2.0	1.0			1.0	
Recall Mode				None	None	None	None	C-Max			C-Max	
Walk Time (s)				8.0	8.0	8.0		8.0			8.0	
Flash Dont Walk (s)				14.0	14.0	14.0		12.0			12.0	
Pedestrian Calls (#/hr)				0	0	0		0			0	
Act Effect Green (s)				16.0	16.0	16.0	95.1	94.5			76.7	
Actuated g/C Ratio				0.13	0.13	0.13	0.79	0.79			0.64	
v/c Ratio				0.60	0.55	0.26	0.67	0.32			0.67	
Control Delay				60.3	51.6	9.6	24.3	14.4			16.4	
Queue Delay				0.0	0.0	0.0	0.8	1.5			0.1	
Total Delay				60.3	51.6	9.6	25.1	16.0			16.5	
LOS				E	D	A	C	B			B	
Approach Delay					45.7			17.3			16.5	
Approach LOS					D			B			B	

Intersection Summary

Area Type:	Other
Cycle Length:	120
Actuated Cycle Length:	120
Offset:	100 (83%), Referenced to phase 4:NBTL and 8:SBT, Start of Green
Natural Cycle:	90
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.67
Intersection Signal Delay:	21.9
Intersection LOS:	C
Intersection Capacity Utilization	78.4%
ICU Level of Service	D
Analysis Period (min)	15

Splits and Phases: 51: 7th Ave & Washington St



Lanes, Volumes, Timings

53: 3rd Ave

09/10/2020



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations								↑↑↑				
Traffic Volume (vph)	0	0	0	0	591	106	0	169	0	0	0	0
Future Volume (vph)	0	0	0	0	591	106	0	169	0	0	0	0
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	0.81	0.81	0.91	0.91	1.00	1.00	1.00	1.00
Fr t					0.977							
Flt Protected												
Satd. Flow (prot)	0	0	0	0	7371	0	0	5085	0	0	0	0
Flt Permitted												
Satd. Flow (perm)	0	0	0	0	7371	0	0	5085	0	0	0	0
Right Turn on Red			Yes			Yes	Yes		Yes			Yes
Satd. Flow (RTOR)					78							
Link Speed (mph)		30			30			30				30
Link Distance (ft)		183			450			187				405
Travel Time (s)		4.2			10.2			4.3				9.2
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	0	642	115	0	184	0	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	757	0	0	184	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0				0
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
Headway Factor	1.00	1.00	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					2		1	2				
Detector Template					Thru		Left	Thru				
Leading Detector (ft)					100		20	100				
Trailing Detector (ft)					0		0	0				
Detector 1 Position(ft)					0		0	0				
Detector 1 Size(ft)					6		20	6				
Detector 1 Type					Cl+Ex		Cl+Ex	Cl+Ex				
Detector 1 Channel												
Detector 1 Extend (s)					0.0		0.0	0.0				
Detector 1 Queue (s)					0.0		0.0	0.0				
Detector 1 Delay (s)					0.0		0.0	0.0				
Detector 2 Position(ft)					94			94				
Detector 2 Size(ft)					6			6				
Detector 2 Type					Cl+Ex			Cl+Ex				
Detector 2 Channel												
Detector 2 Extend (s)					0.0			0.0				
Turn Type					NA			NA				
Protected Phases					2			4				
Permitted Phases							4					
Detector Phase					2		4	4				
Switch Phase												
Minimum Initial (s)					15.0		15.0	15.0				

Lanes, Volumes, Timings

53: 3rd Ave

09/10/2020



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Split (s)					23.5		30.7	30.7				
Total Split (s)					53.0		37.0	37.0				
Total Split (%)					58.9%		41.1%	41.1%				
Maximum Green (s)					48.5		32.3	32.3				
Yellow Time (s)					3.0		3.0	3.0				
All-Red Time (s)					1.5		1.7	1.7				
Lost Time Adjust (s)					0.0			0.0				
Total Lost Time (s)					4.5			4.7				
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)					1.0		1.0	1.0				
Recall Mode					C-Max		None	None				
Walk Time (s)					8.0		13.0	13.0				
Flash Dont Walk (s)					11.0		13.0	13.0				
Pedestrian Calls (#/hr)					0		0	0				
Act Effect Green (s)					65.8			15.0				
Actuated g/C Ratio					0.73			0.17				
v/c Ratio					0.14			0.22				
Control Delay					3.3			31.4				
Queue Delay					0.0			0.0				
Total Delay					3.3			31.4				
LOS					A			C				
Approach Delay					3.3			31.4				
Approach LOS					A			C				

Intersection Summary

Area Type:	Other
Cycle Length:	90
Actuated Cycle Length:	90
Offset:	61 (68%), Referenced to phase 2:WBT, Start of Green
Natural Cycle:	55
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.22
Intersection Signal Delay:	8.8
Intersection LOS:	A
Intersection Capacity Utilization:	32.8%
ICU Level of Service:	A
Analysis Period (min):	15

Splits and Phases: 53: 3rd Ave



Lanes, Volumes, Timings
78: 3rd St & Van Buren St

09/10/2020



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	28	632	37	48	850	49	5	11	8	54	256	124
Future Volume (vph)	28	632	37	48	850	49	5	11	8	54	256	124
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	81		0	152		0	95		0	144		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	0.95	0.95
Ped Bike Factor	0.96	1.00		0.98	0.98		0.98	0.98		0.96	0.98	
Frt		0.990			0.990			0.944				0.948
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3486	0	1770	3438	0	1770	1726	0	1770	3287	0
Flt Permitted	0.238			0.345			0.376			0.736		
Satd. Flow (perm)	425	3486	0	631	3438	0	683	1726	0	1321	3287	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		12			12			12			137	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		400			750			390			272	
Travel Time (s)		9.1			17.0			8.9			6.2	
Confl. Peds. (#/hr)	115		48	48		115	42		34	34		42
Peak Hour Factor	0.54	0.95	0.77	0.80	0.94	0.72	0.62	0.55	0.67	0.84	0.90	0.82
Adj. Flow (vph)	52	665	48	60	904	68	8	20	12	64	284	151
Shared Lane Traffic (%)												
Lane Group Flow (vph)	52	713	0	60	972	0	8	32	0	64	435	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	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
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	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA	

Lanes, Volumes, Timings
78: 3rd St & Van Buren St

09/10/2020



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Protected Phases	5	6		5	6			4				8
Permitted Phases	6			6			4			8		
Detector Phase	5	6		5	6		4	4		8		8
Switch Phase												
Minimum Initial (s)	2.0	15.0		2.0	15.0		15.0	15.0		15.0		15.0
Minimum Split (s)	9.5	23.5		9.5	23.5		24.9	24.9		24.9		24.9
Total Split (s)	11.0	35.0		11.0	35.0		29.0	29.0		29.0		29.0
Total Split (%)	14.7%	46.7%		14.7%	46.7%		38.7%	38.7%		38.7%		38.7%
Maximum Green (s)	8.0	30.5		8.0	30.5		24.1	24.1		24.1		24.1
Yellow Time (s)	3.0	3.0		3.0	3.0		3.2	3.2		3.2		3.2
All-Red Time (s)	0.0	1.5		0.0	1.5		1.7	1.7		1.7		1.7
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0		0.0
Total Lost Time (s)	3.0	4.5		3.0	4.5		4.9	4.9		4.9		4.9
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	2.0	1.0		2.0	1.0		2.0	2.0		2.0		2.0
Recall Mode	None	C-Max		None	C-Max		None	None		None		None
Walk Time (s)		8.0			8.0		8.0	8.0		8.0		8.0
Flash Dont Walk (s)		9.0			9.0		12.0	12.0		12.0		12.0
Pedestrian Calls (#/hr)		0			0		0	0		0		0
Act Effect Green (s)	49.3	43.4		49.3	43.4		15.4	15.4		15.4		15.4
Actuated g/C Ratio	0.66	0.58		0.66	0.58		0.21	0.21		0.21		0.21
v/c Ratio	0.14	0.35		0.12	0.49		0.06	0.09		0.24		0.56
Control Delay	4.8	9.4		4.5	10.8		24.8	18.1		27.3		21.0
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0		0.0
Total Delay	4.8	9.4		4.5	10.8		24.8	18.1		27.3		21.0
LOS	A	A		A	B		C	B		C		C
Approach Delay		9.1			10.4			19.4				21.8
Approach LOS		A			B			B				C

Intersection Summary




















Area Type: Other
 Cycle Length: 75
 Actuated Cycle Length: 75
 Offset: 4 (5%), Referenced to phase 2: and 6:EBWB, Start of Green
 Natural Cycle: 60
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.56
 Intersection Signal Delay: 12.6
 Intersection LOS: B
 Intersection Capacity Utilization 55.5%
 ICU Level of Service B
 Analysis Period (min) 15

Splits and Phases: 78: 3rd St & Van Buren St



Lanes, Volumes, Timings
86: 3rd St & Fillmore St

09/10/2020

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	196	28	82	296	0	31	0	57	137	468	228
Future Volume (vph)	0	196	28	82	296	0	31	0	57	137	468	228
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	128		0	0		138	0		0
Storage Lanes	0		0	1		0	1		1	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	1.00	0.95	0.95
Ped Bike Factor		0.98		0.91			0.96		0.89	0.90	0.94	
Fr t		0.976							0.850		0.943	
Flt Protected				0.950			0.950			0.950		
Satd. Flow (prot)	0	3376	0	1770	3539	0	1770	0	1583	1770	3123	0
Flt Permitted				0.596			0.161			0.950		
Satd. Flow (perm)	0	3376	0	1006	3539	0	289	0	1405	1588	3123	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		32							64			192
Link Speed (mph)		30			30			30				30
Link Distance (ft)		767			619			367				320
Travel Time (s)		17.4			14.1			8.3				7.3
Confl. Peds. (#/hr)	50		84	84		50	118		76	76		118
Peak Hour Factor	0.92	0.93	0.70	0.64	0.91	0.92	0.70	0.92	0.89	0.70	0.93	0.73
Adj. Flow (vph)	0	211	40	128	325	0	44	0	64	196	503	312
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	251	0	128	325	0	44	0	64	196	815	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		2		1	2		1		1	1		2
Detector Template		Thru		Left	Thru		Left		Right	Left		Thru
Leading Detector (ft)		100		20	100		20		20	20		100
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)		6		20	6		20		20	20		6
Detector 1 Type		Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)		0.0		0.0	0.0		0.0		0.0	0.0		0.0
Detector 1 Queue (s)		0.0		0.0	0.0		0.0		0.0	0.0		0.0
Detector 1 Delay (s)		0.0		0.0	0.0		0.0		0.0	0.0		0.0
Detector 2 Position(ft)		94			94							94
Detector 2 Size(ft)		6			6							6
Detector 2 Type		Cl+Ex			Cl+Ex							Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0							0.0
Turn Type		NA		Perm	NA		D.Pm		Perm	Perm		NA

Lanes, Volumes, Timings
86: 3rd St & Fillmore St

09/10/2020

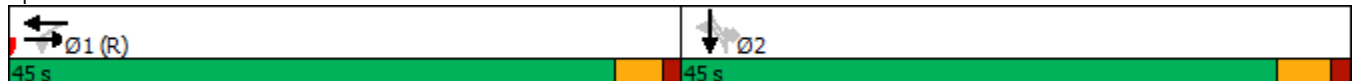


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Protected Phases		1			1							2
Permitted Phases				1			2		2	2		
Detector Phase		1		1	1		2		2	2		2
Switch Phase												
Minimum Initial (s)		15.0		15.0	15.0		15.0		15.0	15.0		15.0
Minimum Split (s)		23.4		23.4	23.4		25.1		25.1	25.1		25.1
Total Split (s)		45.0		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%		50.0%
Maximum Green (s)		40.6		40.6	40.6		39.9		39.9	39.9		39.9
Yellow Time (s)		3.2		3.2	3.2		3.6		3.6	3.6		3.6
All-Red Time (s)		1.2		1.2	1.2		1.5		1.5	1.5		1.5
Lost Time Adjust (s)		0.0		0.0	0.0		0.0		0.0	0.0		0.0
Total Lost Time (s)		4.4		4.4	4.4		5.1		5.1	5.1		5.1
Lead/Lag		Lead		Lead	Lead		Lag		Lag	Lag		Lag
Lead-Lag Optimize?		Yes		Yes	Yes		Yes		Yes	Yes		Yes
Vehicle Extension (s)		1.0		1.0	1.0		1.0		1.0	1.0		1.0
Recall Mode		C-Max		C-Max	C-Max		None		None	None		None
Walk Time (s)		8.0		8.0	8.0		8.0		8.0	8.0		8.0
Flash Dont Walk (s)		9.0		9.0	9.0		12.0		12.0	12.0		12.0
Pedestrian Calls (#/hr)		0		0	0		0		0	0		0
Act Effect Green (s)		55.7		55.7	55.7		24.8		24.8	24.8		24.8
Actuated g/C Ratio		0.62		0.62	0.62		0.28		0.28	0.28		0.28
v/c Ratio		0.12		0.21	0.15		0.56		0.15	0.45		0.81
Control Delay		7.4		10.0	8.3		52.4		6.3	28.8		29.5
Queue Delay		0.0		0.0	0.0		0.0		0.0	0.0		0.0
Total Delay		7.4		10.0	8.3		52.4		6.3	28.8		29.5
LOS		A		A	A		D		A	C		C
Approach Delay		7.4			8.7			25.1				29.4
Approach LOS		A			A			C				C

Intersection Summary

Area Type: Other
 Cycle Length: 90
 Actuated Cycle Length: 90
 Offset: 4 (4%), Referenced to phase 1:EBWB, Start of Green
 Natural Cycle: 50
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.81
 Intersection Signal Delay: 21.0
 Intersection LOS: C
 Intersection Capacity Utilization 63.1%
 ICU Level of Service B
 Analysis Period (min) 15

Splits and Phases: 86: 3rd St & Fillmore St



Lanes, Volumes, Timings
89: 7th St & Roosevelt St

09/10/2020



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔↔	↔			↔↔		↔	↔↔↔		↔	↔↔↔	
Traffic Volume (vph)	276	111	48	36	94	105	46	1082	22	56	1769	289
Future Volume (vph)	276	111	48	36	94	105	46	1082	22	56	1769	289
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	165		0	150		0	150		0	160		0
Storage Lanes	2		0	1		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.97	1.00	1.00	0.95	0.95	0.95	1.00	0.91	0.91	1.00	0.91	0.91
Frt		0.955			0.933			0.997			0.979	
Flt Protected	0.950				0.992		0.950			0.950		
Satd. Flow (prot)	3433	1779	0	0	3276	0	1770	5070	0	1770	4979	0
Flt Permitted	0.950				0.870		0.049			0.221		
Satd. Flow (perm)	3433	1779	0	0	2873	0	91	5070	0	412	4979	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		15			84			3			26	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		348			917			1498			338	
Travel Time (s)		7.9			20.8			34.0			7.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	300	121	52	39	102	114	50	1176	24	61	1923	314
Shared Lane Traffic (%)												
Lane Group Flow (vph)	300	173	0	0	255	0	50	1200	0	61	2237	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)		24			24			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	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
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	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Split	NA		Perm	NA		pm+pt	NA		Perm	NA	
Protected Phases	1	1			2		7	4			8	
Permitted Phases				2			4			8		

Lanes, Volumes, Timings
89: 7th St & Roosevelt St

09/10/2020

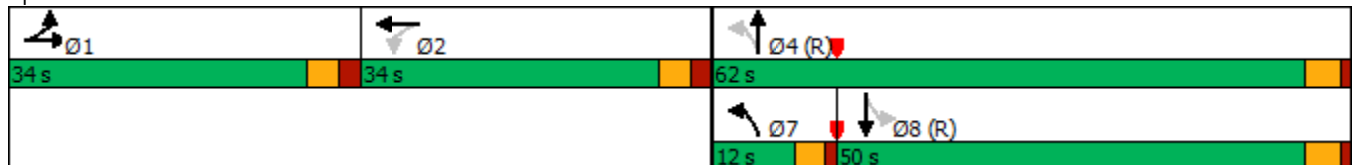


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	1	1		2	2		7	4		8	8	
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	15.0		15.0	15.0	
Minimum Split (s)	33.2	33.2		33.2	33.2		9.5	24.7		24.7	24.7	
Total Split (s)	34.0	34.0		34.0	34.0		12.0	62.0		50.0	50.0	
Total Split (%)	26.2%	26.2%		26.2%	26.2%		9.2%	47.7%		38.5%	38.5%	
Maximum Green (s)	28.8	28.8		28.8	28.8		8.0	57.3		45.3	45.3	
Yellow Time (s)	3.2	3.2		3.2	3.2		3.0	3.6		3.6	3.6	
All-Red Time (s)	2.0	2.0		2.0	2.0		1.0	1.1		1.1	1.1	
Lost Time Adjust (s)	0.0	0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.2	5.2			5.2		4.0	4.7		4.7	4.7	
Lead/Lag	Lead	Lead		Lag	Lag		Lead			Lag	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes			Yes	Yes	
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	1.0		1.0	1.0	
Recall Mode	None	None		None	None		None	C-Max		C-Max	C-Max	
Walk Time (s)	8.0	8.0		8.0	8.0			8.0		8.0	8.0	
Flash Dont Walk (s)	20.0	20.0		20.0	20.0			12.0		12.0	12.0	
Pedestrian Calls (#/hr)	0	0		0	0			0		0	0	
Act Effect Green (s)	16.7	16.7			12.3		86.6	85.9		77.8	77.8	
Actuated g/C Ratio	0.13	0.13			0.09		0.67	0.66		0.60	0.60	
v/c Ratio	0.68	0.72			0.73		0.37	0.36		0.25	0.75	
Control Delay	61.8	65.8			50.5		18.4	11.0		19.9	22.9	
Queue Delay	0.0	0.0			0.0		0.0	0.0		0.0	0.0	
Total Delay	61.8	65.8			50.5		18.4	11.0		19.9	22.9	
LOS	E	E			D		B	B		B	C	
Approach Delay		63.2			50.5			11.3			22.8	
Approach LOS		E			D			B			C	

Intersection Summary

Area Type: Other
 Cycle Length: 130
 Actuated Cycle Length: 130
 Offset: 18 (14%), Referenced to phase 4:NBTL and 8:SBTL, Start of Green
 Natural Cycle: 145
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.75
 Intersection Signal Delay: 25.6
 Intersection LOS: C
 Intersection Capacity Utilization 74.9%
 ICU Level of Service D
 Analysis Period (min) 15

Splits and Phases: 89: 7th St & Roosevelt St



Lanes, Volumes, Timings
90: 4th St & Roosevelt St

09/10/2020



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↘	↑			↑↑		↘	↑↑	↘			
Traffic Volume (vph)	78	341	0	0	298	57	35	212	1	0	0	0
Future Volume (vph)	78	341	0	0	298	57	35	212	1	0	0	0
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		100	0		0	0		0
Storage Lanes	1		0	0		0	1		1	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00
Ped Bike Factor	0.98				0.99				0.96			
Frt					0.973				0.850			
Flt Protected	0.950						0.950					
Satd. Flow (prot)	1770	1863	0	0	3413	0	1770	3539	1583	0	0	0
Flt Permitted	0.440						0.950					
Satd. Flow (perm)	802	1863	0	0	3413	0	1770	3539	1515	0	0	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					32				80			
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		222			162			447			277	
Travel Time (s)		5.0			3.7			10.2			6.3	
Confl. Peds. (#/hr)	32		11	11		32			10	10		
Peak Hour Factor	0.85	0.88	0.92	0.92	0.89	0.79	0.80	0.73	0.25	0.92	0.92	0.92
Adj. Flow (vph)	92	388	0	0	335	72	44	290	4	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	92	388	0	0	407	0	44	290	4	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												
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			2		1	2	1			
Detector Template	Left	Thru			Thru		Left	Thru	Right			
Leading Detector (ft)	20	100			100		20	100	20			
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		20	6	20			
Detector 1 Type	Cl+Ex	Cl+Ex			Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex			
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0			0.0		0.0	0.0	0.0			
Detector 1 Queue (s)	0.0	0.0			0.0		0.0	0.0	0.0			
Detector 1 Delay (s)	0.0	0.0			0.0		0.0	0.0	0.0			
Detector 2 Position(ft)		94			94			94				
Detector 2 Size(ft)		6			6			6				
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				
Turn Type	pm+pt	NA			NA		Perm	NA	Perm			

Lanes, Volumes, Timings
90: 4th St & Roosevelt St

09/10/2020

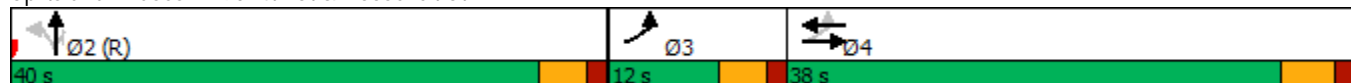


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Protected Phases	3	4			4			2				
Permitted Phases	4						2		2			
Detector Phase	3	4			4		2	2	2			
Switch Phase												
Minimum Initial (s)	4.0	15.0			15.0		15.0	15.0	15.0			
Minimum Split (s)	9.5	27.0			27.0		23.6	23.6	23.6			
Total Split (s)	12.0	38.0			38.0		40.0	40.0	40.0			
Total Split (%)	13.3%	42.2%			42.2%		44.4%	44.4%	44.4%			
Maximum Green (s)	7.4	33.0			33.0		35.4	35.4	35.4			
Yellow Time (s)	3.2	3.6			3.6		3.2	3.2	3.2			
All-Red Time (s)	1.4	1.4			1.4		1.4	1.4	1.4			
Lost Time Adjust (s)	0.0	0.0			0.0		0.0	0.0	0.0			
Total Lost Time (s)	4.6	5.0			5.0		4.6	4.6	4.6			
Lead/Lag	Lead	Lag			Lag							
Lead-Lag Optimize?	Yes	Yes			Yes							
Vehicle Extension (s)	3.0	3.0			3.0		3.0	3.0	3.0			
Recall Mode	None	None			None		C-Max	C-Max	C-Max			
Walk Time (s)		8.0			8.0		7.0	7.0	7.0			
Flash Dont Walk (s)		14.0			14.0		12.0	12.0	12.0			
Pedestrian Calls (#/hr)		0			0		0	0	0			
Act Effct Green (s)	32.2	25.9			25.9		44.9	44.9	44.9			
Actuated g/C Ratio	0.36	0.29			0.29		0.50	0.50	0.50			
v/c Ratio	0.25	0.73			0.41		0.05	0.16	0.01			
Control Delay	7.1	16.6			24.0		15.5	14.8	0.0			
Queue Delay	0.1	0.2			0.0		0.0	0.0	0.0			
Total Delay	7.2	16.9			24.0		15.5	14.8	0.0			
LOS	A	B			C		B	B	A			
Approach Delay		15.0			24.0			14.7				
Approach LOS		B			C			B				

Intersection Summary

Area Type: Other
 Cycle Length: 90
 Actuated Cycle Length: 90
 Offset: 29 (32%), Referenced to phase 2:NBTL and 6:, Start of Green
 Natural Cycle: 65
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.73
 Intersection Signal Delay: 17.9
 Intersection LOS: B
 Intersection Capacity Utilization 54.3%
 ICU Level of Service A
 Analysis Period (min) 15

Splits and Phases: 90: 4th St & Roosevelt St



Lanes, Volumes, Timings
91: 3rd St & Roosevelt St

09/10/2020



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑		↖	↑					↗	↑↑	
Traffic Volume (vph)	0	369	44	60	297	0	0	0	0	56	684	137
Future Volume (vph)	0	369	44	60	297	0	0	0	0	56	684	137
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	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95
Ped Bike Factor		1.00		0.99						0.98	0.99	
Frt		0.984										0.971
Flt Protected				0.950						0.950		
Satd. Flow (prot)	0	3467	0	1770	1863	0	0	0	0	1770	3402	0
Flt Permitted				0.297						0.950		
Satd. Flow (perm)	0	3467	0	546	1863	0	0	0	0	1737	3402	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		17										38
Link Speed (mph)		30			30			30				30
Link Distance (ft)		454			222			330				272
Travel Time (s)		10.3			5.0			7.5				6.2
Confl. Peds. (#/hr)	26		23	23		26	14		13	13		14
Peak Hour Factor	0.92	0.81	0.79	0.83	0.94	0.92	0.92	0.92	0.92	0.70	0.98	0.83
Adj. Flow (vph)	0	456	56	72	316	0	0	0	0	80	698	165
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	512	0	72	316	0	0	0	0	80	863	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		2		1	2					1		2
Detector Template		Thru		Left	Thru					Left		Thru
Leading Detector (ft)		100		20	100					20		100
Trailing Detector (ft)		0		0	0					0		0
Detector 1 Position(ft)		0		0	0					0		0
Detector 1 Size(ft)		6		20	6					20		6
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		0.0	0.0					0.0		0.0
Detector 2 Position(ft)		94			94							94
Detector 2 Size(ft)		6			6							6
Detector 2 Type		Cl+Ex			Cl+Ex							Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0							0.0
Turn Type		NA		pm+pt	NA					Perm		NA
Protected Phases		4		3	4							2
Permitted Phases				4						2		
Detector Phase		4		3	4					2		2

Lanes, Volumes, Timings
91: 3rd St & Roosevelt St

09/10/2020

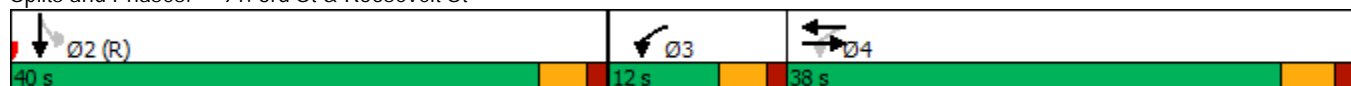


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)		15.0		4.0	15.0					15.0	15.0	
Minimum Split (s)		27.0		9.5	27.0					23.6	23.6	
Total Split (s)		38.0		12.0	38.0					40.0	40.0	
Total Split (%)		42.2%		13.3%	42.2%					44.4%	44.4%	
Maximum Green (s)		33.0		7.4	33.0					35.4	35.4	
Yellow Time (s)		3.6		3.2	3.6					3.2	3.2	
All-Red Time (s)		1.4		1.4	1.4					1.4	1.4	
Lost Time Adjust (s)		0.0		0.0	0.0					0.0	0.0	
Total Lost Time (s)		5.0		4.6	5.0					4.6	4.6	
Lead/Lag		Lag		Lead	Lag							
Lead-Lag Optimize?		Yes		Yes	Yes							
Vehicle Extension (s)		1.0		1.0	1.0					1.0	1.0	
Recall Mode		None		None	None					C-Max	C-Max	
Walk Time (s)		8.0			8.0					7.0	7.0	
Flash Dont Walk (s)		14.0			14.0					12.0	12.0	
Pedestrian Calls (#/hr)		0			0					0	0	
Act Effct Green (s)		20.3		25.8	20.3					51.3	51.3	
Actuated g/C Ratio		0.23		0.29	0.23					0.57	0.57	
v/c Ratio		0.64		0.30	0.75					0.08	0.44	
Control Delay		33.8		13.9	26.5					11.8	13.1	
Queue Delay		0.0		0.0	0.1					0.0	0.0	
Total Delay		33.8		13.9	26.6					11.8	13.1	
LOS		C		B	C					B	B	
Approach Delay		33.8			24.2							13.0
Approach LOS		C			C							B

Intersection Summary

Area Type:	Other
Cycle Length:	90
Actuated Cycle Length:	90
Offset:	29 (32%), Referenced to phase 2:SBTL, Start of Green
Natural Cycle:	65
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.75
Intersection Signal Delay:	21.1
Intersection LOS:	C
Intersection Capacity Utilization	54.3%
ICU Level of Service	A
Analysis Period (min)	15

Splits and Phases: 91: 3rd St & Roosevelt St



Lanes, Volumes, Timings
107: 3rd Ave & Fillmore St

09/10/2020



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕↕				
Traffic Volume (vph)	0	532	0	0	144	46	0	97	0	0	0	0
Future Volume (vph)	0	532	0	0	144	46	0	97	0	0	0	0
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	0.95	0.95	0.95	1.00	1.00	1.00
Fr t	0.967											
Flt Protected												
Satd. Flow (prot)	0	1863	0	0	1801	0	0	3539	0	0	0	0
Flt Permitted												
Satd. Flow (perm)	0	1863	0	0	1801	0	0	3539	0	0	0	0
Link Speed (mph)	30		30				30			30		
Link Distance (ft)	736				818			369			418	
Travel Time (s)	16.7				18.6			8.4			9.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	578	0	0	157	50	0	105	0	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	578	0	0	207	0	0	105	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)	0				0			0			0	
Link Offset(ft)	0				0			0			0	
Crosswalk Width(ft)	16				16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	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	
Sign Control	Stop		Stop				Stop			Stop		

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	44.8%
Analysis Period (min)	15
	ICU Level of Service A

Lanes, Volumes, Timings
132: 1st St & Taylor St

09/10/2020



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT	Ø1
Lane Configurations							
Traffic Volume (vph)	0	150	90	150	0	327	
Future Volume (vph)	0	150	90	150	0	327	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	
Frt	0.865		0.916				
Flt Protected							
Satd. Flow (prot)	1611	0	1706	0	0	1863	
Flt Permitted							
Satd. Flow (perm)	1611	0	1706	0	0	1863	
Right Turn on Red		Yes		Yes			
Satd. Flow (RTOR)	911		92				
Link Speed (mph)	30		30			30	
Link Distance (ft)	366		763			395	
Travel Time (s)	8.3		17.3			9.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	
Adj. Flow (vph)	0	163	98	163	0	355	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	163	0	261	0	0	355	
Enter Blocked Intersection	No	No	No	No	No	No	
Lane Alignment	Left	Right	Left	Right	Left	Left	
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		9	15		
Number of Detectors	1		2		1	2	
Detector Template	Left		Thru		Left	Thru	
Leading Detector (ft)	20		100		20	100	
Trailing Detector (ft)	0		0		0	0	
Detector 1 Position(ft)	0		0		0	0	
Detector 1 Size(ft)	20		6		20	6	
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	
Detector 2 Position(ft)			94			94	
Detector 2 Size(ft)			6			6	
Detector 2 Type			Cl+Ex			Cl+Ex	
Detector 2 Channel							
Detector 2 Extend (s)			0.0			0.0	
Turn Type	Prot		NA			NA	
Protected Phases	2		4			8	1
Permitted Phases					8		
Detector Phase	2		4		8	8	
Switch Phase							
Minimum Initial (s)	3.9		5.0		1.0	1.0	5.0

Lanes, Volumes, Timings
132: 1st St & Taylor St

09/10/2020

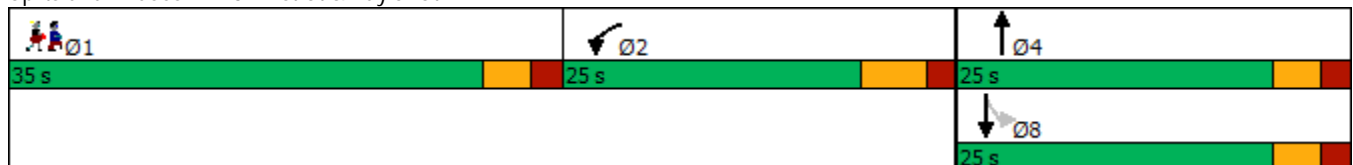


Lane Group	WBL	WBR	NBT	NBR	SBL	SBT	Ø1
Minimum Split (s)	10.0		10.0		10.0	10.0	35.0
Total Split (s)	25.0		25.0		25.0	25.0	35.0
Total Split (%)	29.4%		29.4%		29.4%	29.4%	41%
Maximum Green (s)	18.9		20.0		20.0	20.0	30.0
Yellow Time (s)	4.1		3.0		3.0	3.0	3.0
All-Red Time (s)	2.0		2.0		2.0	2.0	2.0
Lost Time Adjust (s)	0.0		0.0				0.0
Total Lost Time (s)	6.1		5.0				5.0
Lead/Lag	Lag						Lead
Lead-Lag Optimize?	Yes						Yes
Vehicle Extension (s)	2.0		2.0		2.0	2.0	3.0
Recall Mode	Max		None		None	None	None
Walk Time (s)							10.0
Flash Dont Walk (s)							20.0
Pedestrian Calls (#/hr)							0
Act Effect Green (s)	19.0		13.0			13.0	
Actuated g/C Ratio	0.44		0.30			0.30	
v/c Ratio	0.13		0.45			0.63	
Control Delay	0.2		10.4			18.5	
Queue Delay	0.0		0.0			0.0	
Total Delay	0.2		10.4			18.5	
LOS	A		B			B	
Approach Delay	0.2		10.4			18.5	
Approach LOS	A		B			B	

Intersection Summary

Area Type:	Other
Cycle Length:	85
Actuated Cycle Length:	43.1
Natural Cycle:	60
Control Type:	Actuated-Uncoordinated
Maximum v/c Ratio:	0.63
Intersection Signal Delay:	12.0
Intersection LOS:	B
Intersection Capacity Utilization:	35.7%
ICU Level of Service:	A
Analysis Period (min):	15

Splits and Phases: 132: 1st St & Taylor St



Lanes, Volumes, Timings
159: Madison St & 1st Ave

09/10/2020



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↙↘					↙↘↘↘
Traffic Volume (vph)	53	0	0	0	0	723
Future Volume (vph)	53	0	0	0	0	723
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	105	0		0	0	
Storage Lanes	1	0		0	0	
Taper Length (ft)	25				25	
Lane Util. Factor	0.97	1.00	1.00	1.00	0.86	0.86
Frt						
Flt Protected	0.950					
Satd. Flow (prot)	3433	0	0	0	0	6408
Flt Permitted	0.950					
Satd. Flow (perm)	3433	0	0	0	0	6408
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)						
Link Speed (mph)	30		30			30
Link Distance (ft)	394		282			409
Travel Time (s)	9.0		6.4			9.3
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	58	0	0	0	0	786
Shared Lane Traffic (%)						
Lane Group Flow (vph)	58	0	0	0	0	786
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	24		0			0
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Number of Detectors	1				1	2
Detector Template	Left				Left	Thru
Leading Detector (ft)	20				20	100
Trailing Detector (ft)	0				0	0
Detector 1 Position(ft)	0				0	0
Detector 1 Size(ft)	20				20	6
Detector 1 Type	Cl+Ex				Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0				0.0	0.0
Detector 1 Queue (s)	0.0				0.0	0.0
Detector 1 Delay (s)	0.0				0.0	0.0
Detector 2 Position(ft)						94
Detector 2 Size(ft)						6
Detector 2 Type						Cl+Ex
Detector 2 Channel						
Detector 2 Extend (s)						0.0
Turn Type	Prot					NA
Protected Phases	2					4
Permitted Phases					4	

Lanes, Volumes, Timings
159: Madison St & 1st Ave

09/10/2020



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Detector Phase	2				4	4
Switch Phase						
Minimum Initial (s)	15.0				15.0	15.0
Minimum Split (s)	28.2				23.5	23.5
Total Split (s)	35.0				55.0	55.0
Total Split (%)	38.9%				61.1%	61.1%
Maximum Green (s)	29.8				50.6	50.6
Yellow Time (s)	3.0				3.2	3.2
All-Red Time (s)	2.2				1.2	1.2
Lost Time Adjust (s)	0.0					0.0
Total Lost Time (s)	5.2					4.4
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0				3.0	3.0
Recall Mode	C-Max				None	None
Walk Time (s)	8.0				8.0	8.0
Flash Dont Walk (s)	15.0				9.0	9.0
Pedestrian Calls (#/hr)	0				0	0
Act Effct Green (s)	61.1					19.3
Actuated g/C Ratio	0.68					0.21
v/c Ratio	0.02					0.57
Control Delay	1.4					33.0
Queue Delay	0.0					0.0
Total Delay	1.4					33.0
LOS	A					C
Approach Delay	1.4					33.0
Approach LOS	A					C

Intersection Summary




















Area Type:	Other
Cycle Length:	90
Actuated Cycle Length:	90
Offset:	4 (4%), Referenced to phase 2:WBL and 6:, Start of Green
Natural Cycle:	55
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.57
Intersection Signal Delay:	30.9
Intersection LOS:	C
Intersection Capacity Utilization	55.8%
ICU Level of Service	B
Analysis Period (min)	15

Splits and Phases: 159: Madison St & 1st Ave



Lanes, Volumes, Timings
193: Central Ave & Jefferson St

09/10/2020

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  						  				
Traffic Volume (vph)	130	794	0	0	0	0	0	702	165	0	0	0
Future Volume (vph)	130	794	0	0	0	0	0	702	165	0	0	0
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	100		0	0		0	0		0	0		0
Storage Lanes	1		0	0		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.86	1.00	1.00	1.00	1.00	1.00	0.91	0.91	1.00	1.00	1.00
Ped Bike Factor	0.86							0.99				
Flt								0.973				
Flt Protected	0.950											
Satd. Flow (prot)	1770	6408	0	0	0	0	0	4903	0	0	0	0
Flt Permitted	0.950											
Satd. Flow (perm)	1531	6408	0	0	0	0	0	4903	0	0	0	0
Right Turn on Red	Yes		Yes			Yes			No			Yes
Satd. Flow (RTOR)	85											
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		364			171			421			337	
Travel Time (s)		8.3			3.9			9.6			7.7	
Confl. Peds. (#/hr)	110		38	38		110	82		31	31		82
Peak Hour Factor	0.83	0.88	0.92	0.92	0.92	0.92	0.92	0.87	0.94	0.92	0.92	0.92
Adj. Flow (vph)	157	902	0	0	0	0	0	807	176	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	157	902	0	0	0	0	0	983	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		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	2						2				
Detector Template	Left	Thru						Thru				
Leading Detector (ft)	20	100						100				
Trailing Detector (ft)	0	0						0				
Detector 1 Position(ft)	0	0						0				
Detector 1 Size(ft)	20	6						6				
Detector 1 Type	Cl+Ex	Cl+Ex						Cl+Ex				
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0						0.0				
Detector 1 Queue (s)	0.0	0.0						0.0				
Detector 1 Delay (s)	0.0	0.0						0.0				
Detector 2 Position(ft)		94						94				
Detector 2 Size(ft)		6						6				
Detector 2 Type		Cl+Ex						Cl+Ex				
Detector 2 Channel												
Detector 2 Extend (s)		0.0						0.0				
Turn Type	Perm	NA						NA				

Lanes, Volumes, Timings
 193: Central Ave & Jefferson St

09/10/2020



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Protected Phases		4						2				
Permitted Phases	4											
Detector Phase	4	4						2				
Switch Phase												
Minimum Initial (s)	5.0	5.0						5.0				
Minimum Split (s)	26.5	26.5						25.5				
Total Split (s)	40.0	40.0						50.0				
Total Split (%)	44.4%	44.4%						55.6%				
Maximum Green (s)	35.5	35.5						45.5				
Yellow Time (s)	3.5	3.5						3.5				
All-Red Time (s)	1.0	1.0						1.0				
Lost Time Adjust (s)	0.0	0.0						0.0				
Total Lost Time (s)	4.5	4.5						4.5				
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0						3.0				
Recall Mode	None	None						C-Max				
Walk Time (s)	8.0	8.0						8.0				
Flash Dont Walk (s)	14.0	14.0						13.0				
Pedestrian Calls (#/hr)	0	0						0				
Act Effct Green (s)	22.8	22.8						58.2				
Actuated g/C Ratio	0.25	0.25						0.65				
v/c Ratio	0.35	0.56						0.31				
Control Delay	14.4	30.1						3.4				
Queue Delay	0.0	0.0						0.0				
Total Delay	14.4	30.1						3.4				
LOS	B	C						A				
Approach Delay		27.8						3.4				
Approach LOS		C						A				

Intersection Summary

Area Type:	Other
Cycle Length:	90
Actuated Cycle Length:	90
Offset:	0 (0%), Referenced to phase 2:NBT and 6:, Start of Green
Natural Cycle:	55
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.56
Intersection Signal Delay:	16.0
Intersection LOS:	B
Intersection Capacity Utilization:	41.9%
ICU Level of Service:	A
Analysis Period (min):	15

Splits and Phases: 193: Central Ave & Jefferson St



Lanes, Volumes, Timings
268: 7th St & Van Buren St

09/10/2020



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	144	373	108	128	581	118	204	839	97	146	957	405
Future Volume (vph)	144	373	108	128	581	118	204	839	97	146	957	405
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	165		200	195		0	165		0	250		225
Storage Lanes	1		0	1		0	1		0	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	0.95	1.00	0.91	0.91	1.00	0.91	1.00
Ped Bike Factor			0.91	0.96	0.97		0.99	0.99		0.99		0.94
Fr _t			0.850		0.972			0.983				0.850
Fl _t Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3539	1583	1770	3346	0	1770	4952	0	1770	5085	1583
Fl _t Permitted	0.123			0.428			0.187			0.226		
Satd. Flow (perm)	229	3539	1438	764	3346	0	346	4952	0	416	5085	1494
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			116		19			21				219
Link Speed (mph)		30			30			30				30
Link Distance (ft)		710			482			1136				497
Travel Time (s)		16.1			11.0			25.8				11.3
Confl. Peds. (#/hr)	89		52	52		89	28		44	44		28
Peak Hour Factor	0.90	0.91	0.93	0.94	0.91	0.82	0.70	0.93	0.84	0.79	0.93	0.92
Adj. Flow (vph)	160	410	116	136	638	144	291	902	115	185	1029	440
Shared Lane Traffic (%)												
Lane Group Flow (vph)	160	410	116	136	782	0	291	1017	0	185	1029	440
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	2	1	1	2		1	2		1	2	1
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100		20	100		20	100	20
Trailing Detector (ft)	0	0	0	0	0		0	0		0	0	0
Detector 1 Position(ft)	0	0	0	0	0		0	0		0	0	0
Detector 1 Size(ft)	20	6	20	20	6		20	6		20	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)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94				94
Detector 2 Size(ft)		6			6			6				6
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				0.0
Turn Type	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA		pm+pt	NA	Perm

Lanes, Volumes, Timings
268: 7th St & Van Buren St

09/10/2020

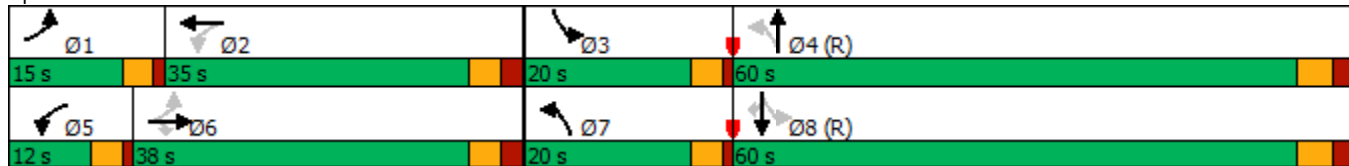


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Protected Phases	1	6		5	2		7	4		3	8	
Permitted Phases	6		6	2			4			8		8
Detector Phase	1	6	6	5	2		7	4		3	8	8
Switch Phase												
Minimum Initial (s)	5.0	15.0	15.0	5.0	15.0		5.0	15.0		5.0	15.0	15.0
Minimum Split (s)	9.5	30.6	30.6	9.5	30.6		9.5	29.5		9.5	29.5	29.5
Total Split (s)	15.0	38.0	38.0	12.0	35.0		20.0	60.0		20.0	60.0	60.0
Total Split (%)	11.5%	29.2%	29.2%	9.2%	26.9%		15.4%	46.2%		15.4%	46.2%	46.2%
Maximum Green (s)	11.0	32.4	32.4	8.0	29.4		16.0	54.5		16.0	54.5	54.5
Yellow Time (s)	3.0	3.2	3.2	3.0	3.2		3.0	3.6		3.0	3.6	3.6
All-Red Time (s)	1.0	2.4	2.4	1.0	2.4		1.0	1.9		1.0	1.9	1.9
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	4.0	5.6	5.6	4.0	5.6		4.0	5.5		4.0	5.5	5.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	2.0	1.0	1.0	2.0	1.0		2.0	1.0		2.0	1.0	1.0
Recall Mode	None	None	None	None	None		None	C-Max		None	C-Max	C-Max
Walk Time (s)		8.0	8.0		8.0			8.0			8.0	8.0
Flash Dont Walk (s)		17.0	17.0		17.0			16.0			16.0	16.0
Pedestrian Calls (#/hr)		0	0		0			0			0	0
Act Effect Green (s)	44.7	32.6	32.6	39.3	29.8		75.4	59.7		68.3	56.0	56.0
Actuated g/C Ratio	0.34	0.25	0.25	0.30	0.23		0.58	0.46		0.53	0.43	0.43
v/c Ratio	0.78	0.46	0.26	0.47	1.00		0.81	0.45		0.56	0.47	0.57
Control Delay	57.1	43.4	8.2	36.3	81.0		33.6	24.5		19.8	27.6	16.8
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	57.1	43.4	8.2	36.3	81.0		33.6	24.5		19.8	27.6	16.8
LOS	E	D	A	D	F		C	C		B	C	B
Approach Delay		40.6			74.4			26.5			23.8	
Approach LOS		D			E			C			C	

Intersection Summary

Area Type: Other
 Cycle Length: 130
 Actuated Cycle Length: 130
 Offset: 46 (35%), Referenced to phase 4:NBTL and 8:SBTL, Start of Green
 Natural Cycle: 90
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 1.00
 Intersection Signal Delay: 37.3
 Intersection LOS: D
 Intersection Capacity Utilization 76.0%
 ICU Level of Service D
 Analysis Period (min) 15

Splits and Phases: 268: 7th St & Van Buren St



Lanes, Volumes, Timings
274: 7th Ave & Van Buren St

09/10/2020



Lane Group	EBT	EBR	WBT	WBR	WBR2	NBL2	NBL	NBT	NBR	SBT	SBR	SBR2
Lane Configurations	↑↑↑		↑↑		↔		↔		↑↑↑		↑↑↑	
Traffic Volume (vph)	565	113	273	80	78	40	108	820	73	1423	139	7
Future Volume (vph)	565	113	273	80	78	40	108	820	73	1423	139	7
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)		160		160			185		0		0	
Storage Lanes		1		2			1		0		0	
Taper Length (ft)							25					
Lane Util. Factor	0.91	0.91	0.95	0.88	0.95	0.91	0.86	0.86	0.91	0.91	0.91	0.91
Ped Bike Factor	0.99						1.00	1.00		0.99		
Frt	0.975			0.850				0.989		0.986		
Flt Protected							0.950	0.999				
Satd. Flow (prot)	4901	0	3539	2787	0	0	1522	4736	0	4988	0	0
Flt Permitted							0.950	0.788				
Satd. Flow (perm)	4901	0	3539	2787	0	0	1515	3736	0	4988	0	0
Right Turn on Red		Yes			Yes				Yes			Yes
Satd. Flow (RTOR)	28			112				10		1		
Link Speed (mph)	30		30					30		30		
Link Distance (ft)	418		746					390		1240		
Travel Time (s)	9.5		17.0					8.9		28.2		
Confl. Peds. (#/hr)		37			6	24			13		24	
Peak Hour Factor	0.91	0.91	0.90	0.77	0.75	0.92	0.77	0.83	0.91	0.95	0.92	0.92
Adj. Flow (vph)	621	124	303	104	104	43	140	988	80	1498	151	8
Shared Lane Traffic (%)							10%					
Lane Group Flow (vph)	745	0	303	208	0	0	169	1082	0	1657	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Right	Left	Left	Left	Right	Left	Right	Right
Median Width(ft)	0		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)		9		9	9	15	15		9		9	9
Number of Detectors	2		2	1		1	1	2		2		
Detector Template	Thru		Thru	Right		Left	Left	Thru		Thru		
Leading Detector (ft)	100		100	20		20	20	100		100		
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)	6		6	20		20	20	6		6		
Detector 1 Type	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex		
Detector 1 Channel												
Detector 1 Extend (s)	0.0		0.0	0.0		0.0	0.0	0.0		0.0		
Detector 1 Queue (s)	0.0		0.0	0.0		0.0	0.0	0.0		0.0		
Detector 1 Delay (s)	0.0		0.0	0.0		0.0	0.0	0.0		0.0		
Detector 2 Position(ft)	94		94					94		94		
Detector 2 Size(ft)	6		6					6		6		
Detector 2 Type	Cl+Ex		Cl+Ex					Cl+Ex		Cl+Ex		
Detector 2 Channel												
Detector 2 Extend (s)	0.0		0.0					0.0		0.0		
Turn Type	NA		NA	Prot		Prot	Prot	NA		NA		

Lanes, Volumes, Timings
274: 7th Ave & Van Buren St

09/10/2020



Lane Group	SEL	SER	SER2
Lane Configurations	TT	E	
Traffic Volume (vph)	425	365	4
Future Volume (vph)	425	365	4
Ideal Flow (vphpl)	1900	1900	1900
Storage Length (ft)	215	215	
Storage Lanes	1	1	
Taper Length (ft)	25		
Lane Util. Factor	0.97	0.91	0.95
Ped Bike Factor			
Frt	0.971	0.850	
Flt Protected	0.961		
Satd. Flow (prot)	3372	1441	0
Flt Permitted	0.961		
Satd. Flow (perm)	3372	1441	0
Right Turn on Red			Yes
Satd. Flow (RTOR)		113	
Link Speed (mph)	30		
Link Distance (ft)	540		
Travel Time (s)	12.3		
Confl. Peds. (#/hr)			24
Peak Hour Factor	0.78	0.85	0.50
Adj. Flow (vph)	545	429	8
Shared Lane Traffic (%)		30%	
Lane Group Flow (vph)	674	308	0
Enter Blocked Intersection	No	No	No
Lane Alignment	Left	Right	Right
Median Width(ft)	24		
Link Offset(ft)	0		
Crosswalk Width(ft)	16		
Two way Left Turn Lane			
Headway Factor	1.00	1.00	1.00
Turning Speed (mph)	15	9	9
Number of Detectors	1	1	
Detector Template	Left	Right	
Leading Detector (ft)	20	20	
Trailing Detector (ft)	0	0	
Detector 1 Position(ft)	0	0	
Detector 1 Size(ft)	20	20	
Detector 1 Type	Cl+Ex	Cl+Ex	
Detector 1 Channel			
Detector 1 Extend (s)	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	
Detector 2 Position(ft)			
Detector 2 Size(ft)			
Detector 2 Type			
Detector 2 Channel			
Detector 2 Extend (s)			
Turn Type	Prot	Prot	

Lanes, Volumes, Timings
274: 7th Ave & Van Buren St

09/10/2020



Lane Group	EBT	EBR	WBT	WBR	WBR2	NBL2	NBL	NBT	NBR	SBT	SBR	SBR2
Protected Phases	2		2	2		7	7	4		8		
Permitted Phases												
Detector Phase	2		2	2		7	7	4		8		
Switch Phase												
Minimum Initial (s)	8.0		8.0	8.0		5.0	5.0	15.0		15.0		
Minimum Split (s)	32.3		32.3	32.3		9.5	9.5	29.8		29.8		
Total Split (s)	34.0		34.0	34.0		12.0	12.0	61.0		49.0		
Total Split (%)	25.0%		25.0%	25.0%		8.8%	8.8%	44.9%		36.0%		
Maximum Green (s)	27.7		27.7	27.7		8.0	8.0	54.2		42.2		
Yellow Time (s)	3.6		3.6	3.6		3.0	3.0	3.6		3.6		
All-Red Time (s)	2.7		2.7	2.7		1.0	1.0	3.2		3.2		
Lost Time Adjust (s)	0.0		0.0	0.0			0.0	0.0		0.0		
Total Lost Time (s)	6.3		6.3	6.3			4.0	6.8		6.8		
Lead/Lag	Lag		Lag	Lag		Lead	Lead			Lag		
Lead-Lag Optimize?	Yes		Yes	Yes		Yes	Yes			Yes		
Vehicle Extension (s)	3.0		3.0	3.0		3.0	3.0	3.0		3.0		
Recall Mode	C-Max		C-Max	C-Max		None	None	None		None		
Walk Time (s)	8.0		8.0	8.0				8.0		8.0		
Flash Dont Walk (s)	18.0		18.0	18.0				15.0		15.0		
Pedestrian Calls (#/hr)	0		0	0				0		0		
Act Effect Green (s)	30.8		30.8	30.8			8.0	54.2		42.2		
Actuated g/C Ratio	0.23		0.23	0.23			0.06	0.40		0.31		
v/c Ratio	0.66		0.38	0.29			1.90	1.22		1.07		
Control Delay	49.8		47.0	21.7			476.1	144.9		88.8		
Queue Delay	0.0		0.0	0.0			0.0	0.0		0.0		
Total Delay	49.8		47.0	21.7			476.1	144.9		88.8		
LOS	D		D	C			F	F		F		
Approach Delay	49.8		36.7					189.6		88.8		
Approach LOS	D		D					F		F		

Intersection Summary

Area Type:	Other
Cycle Length:	136
Actuated Cycle Length:	136
Offset:	68 (50%), Referenced to phase 2:EBWB, Start of Green
Natural Cycle:	140
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	1.90
Intersection Signal Delay:	96.0
Intersection LOS:	F
Intersection Capacity Utilization:	108.2%
ICU Level of Service:	G
Analysis Period (min):	15

Splits and Phases: 274: 7th Ave & Van Buren St



Lanes, Volumes, Timings
 274: 7th Ave & Van Buren St

09/10/2020



Lane Group	SEL	SER	SER2
Protected Phases	1	1	
Permitted Phases			
Detector Phase	1	1	
Switch Phase			
Minimum Initial (s)	10.0	10.0	
Minimum Split (s)	26.2	26.2	
Total Split (s)	41.0	41.0	
Total Split (%)	30.1%	30.1%	
Maximum Green (s)	34.8	34.8	
Yellow Time (s)	3.6	3.6	
All-Red Time (s)	2.6	2.6	
Lost Time Adjust (s)	0.0	0.0	
Total Lost Time (s)	6.2	6.2	
Lead/Lag	Lead	Lead	
Lead-Lag Optimize?	Yes	Yes	
Vehicle Extension (s)	3.0	3.0	
Recall Mode	None	None	
Walk Time (s)	8.0	8.0	
Flash Dont Walk (s)	12.0	12.0	
Pedestrian Calls (#/hr)	0	0	
Act Effct Green (s)	31.7	31.7	
Actuated g/C Ratio	0.23	0.23	
v/c Ratio	0.86	0.73	
Control Delay	61.5	40.4	
Queue Delay	0.0	0.0	
Total Delay	61.5	40.4	
LOS	E	D	
Approach Delay	54.9		
Approach LOS	D		

Intersection Summary

Lanes, Volumes, Timings
282: Lincoln St/Lincoln & Central Ave

09/10/2020



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	42	334	0	0	255	83	139	753	145	0	0	0
Future Volume (vph)	42	334	0	0	255	83	139	753	145	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	0.95	0.91	0.91	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00				1.00			1.00	0.98			
Frt					0.960				0.850			
Flt Protected	0.950							0.992				
Satd. Flow (prot)	1770	3539	0	0	3381	0	0	5045	1583	0	0	0
Flt Permitted	0.528							0.992				
Satd. Flow (perm)	980	3539	0	0	3381	0	0	5043	1556	0	0	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					61				213			
Link Speed (mph)		30			30			30				30
Link Distance (ft)		369			394			310				278
Travel Time (s)		8.4			9.0			7.0				6.3
Confl. Peds. (#/hr)	5		1	1		5	1		4	4		1
Peak Hour Factor	0.66	0.86	0.92	0.92	0.92	0.83	0.87	0.91	0.68	0.92	0.92	0.92
Adj. Flow (vph)	64	388	0	0	277	100	160	827	213	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	64	388	0	0	377	0	0	987	213	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			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	2			2		1	2	1			
Detector Template	Left	Thru			Thru		Left	Thru	Right			
Leading Detector (ft)	20	100			100		20	100	20			
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		20	6	20			
Detector 1 Type	Cl+Ex	Cl+Ex			Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex			
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0			0.0		0.0	0.0	0.0			
Detector 1 Queue (s)	0.0	0.0			0.0		0.0	0.0	0.0			
Detector 1 Delay (s)	0.0	0.0			0.0		0.0	0.0	0.0			
Detector 2 Position(ft)		94			94			94				
Detector 2 Size(ft)		6			6			6				
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				
Turn Type	Perm	NA			NA		Perm	NA	Perm			
Protected Phases		1			1			2				
Permitted Phases	1						2		2			
Detector Phase	1	1			1		2	2	2			

Lanes, Volumes, Timings
 282: Lincoln St/Lincoln & Central Ave

09/10/2020



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	15.0	15.0			15.0		15.0	15.0	15.0			
Minimum Split (s)	24.9	24.9			24.9		24.1	24.1	24.1			
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%			
Maximum Green (s)	45.1	45.1			45.1		34.9	34.9	34.9			
Yellow Time (s)	3.6	3.6			3.6		3.6	3.6	3.6			
All-Red Time (s)	1.3	1.3			1.3		1.5	1.5	1.5			
Lost Time Adjust (s)	0.0	0.0			0.0			0.0	0.0			
Total Lost Time (s)	4.9	4.9			4.9			5.1	5.1			
Lead/Lag	Lead	Lead			Lead		Lag	Lag	Lag			
Lead-Lag Optimize?	Yes	Yes			Yes		Yes	Yes	Yes			
Vehicle Extension (s)	3.0	3.0			3.0		3.0	3.0	3.0			
Recall Mode	C-Max	C-Max			C-Max		None	None	None			
Walk Time (s)	8.0	8.0			8.0		8.0	8.0	8.0			
Flash Dont Walk (s)	12.0	12.0			12.0		11.0	11.0	11.0			
Pedestrian Calls (#/hr)	0	0			0		0	0	0			
Act Effct Green (s)	51.7	51.7			51.7			28.3	28.3			
Actuated g/C Ratio	0.57	0.57			0.57			0.31	0.31			
v/c Ratio	0.11	0.19			0.19			0.62	0.34			
Control Delay	16.3	15.3			8.7			27.7	4.4			
Queue Delay	0.0	0.0			0.0			0.0	0.0			
Total Delay	16.3	15.3			8.7			27.7	4.4			
LOS	B	B			A			C	A			
Approach Delay		15.4			8.7			23.5				
Approach LOS		B			A			C				

Intersection Summary



















Area Type:	Other
Cycle Length:	90
Actuated Cycle Length:	90
Offset:	24 (27%), Referenced to phase 1:EBWB, Start of Green
Natural Cycle:	50
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.62
Intersection Signal Delay:	19.0
Intersection LOS:	B
Intersection Capacity Utilization:	59.0%
ICU Level of Service:	B
Analysis Period (min):	15

Splits and Phases: 282: Lincoln St/Lincoln & Central Ave



Lanes, Volumes, Timings
318: Roosevelt St & 5th Ave

09/10/2020

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	397	72	36	252	0	0	0	0	81	330	62
Future Volume (vph)	0	397	72	36	252	0	0	0	0	81	330	62
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	66		0	0		0	140		0
Storage Lanes	0		0	1		0	0		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95
Ped Bike Factor		0.99		0.99						0.99	0.99	
Frt		0.979									0.970	
Flt Protected				0.950						0.950		
Satd. Flow (prot)	0	1811	0	1770	1863	0	0	0	0	1770	3395	0
Flt Permitted				0.430						0.950		
Satd. Flow (perm)	0	1811	0	794	1863	0	0	0	0	1745	3395	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		15									26	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		730			521			190			276	
Travel Time (s)		16.6			11.8			4.3			6.3	
Confl. Peds. (#/hr)	17		15	15		17	8		3	3		8
Peak Hour Factor	0.92	0.89	0.86	0.82	0.85	0.92	0.92	0.92	0.92	0.81	0.91	0.70
Adj. Flow (vph)	0	446	84	44	296	0	0	0	0	100	363	89
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	530	0	44	296	0	0	0	0	100	452	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		2		1	2					1	2	
Detector Template		Thru		Left	Thru					Left	Thru	
Leading Detector (ft)		100		20	100					20	100	
Trailing Detector (ft)		0		0	0					0	0	
Detector 1 Position(ft)		0		0	0					0	0	
Detector 1 Size(ft)		6		20	6					20	6	
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		0.0	0.0					0.0	0.0	
Detector 2 Position(ft)		94			94						94	
Detector 2 Size(ft)		6			6						6	
Detector 2 Type		Cl+Ex			Cl+Ex						Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0						0.0	
Turn Type		NA		Perm	NA					Perm	NA	

Lanes, Volumes, Timings
318: Roosevelt St & 5th Ave

09/10/2020



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Protected Phases		1			1							2
Permitted Phases				1						2		
Detector Phase		1		1	1					2	2	
Switch Phase												
Minimum Initial (s)		15.0		15.0	15.0					15.0	15.0	
Minimum Split (s)		23.3		23.3	23.3					23.2	23.2	
Total Split (s)		80.0		80.0	80.0					40.0	40.0	
Total Split (%)		66.7%		66.7%	66.7%					33.3%	33.3%	
Maximum Green (s)		75.7		75.7	75.7					35.8	35.8	
Yellow Time (s)		3.2		3.2	3.2					3.2	3.2	
All-Red Time (s)		1.1		1.1	1.1					1.0	1.0	
Lost Time Adjust (s)		0.0		0.0	0.0					0.0	0.0	
Total Lost Time (s)		4.3		4.3	4.3					4.2	4.2	
Lead/Lag		Lead		Lead	Lead					Lag	Lag	
Lead-Lag Optimize?		Yes		Yes	Yes					Yes	Yes	
Vehicle Extension (s)		1.0		1.0	1.0					1.0	1.0	
Recall Mode		C-Max		C-Max	C-Max					None	None	
Walk Time (s)		8.0		8.0	8.0					8.0	8.0	
Flash Dont Walk (s)		8.0		8.0	8.0					5.0	5.0	
Pedestrian Calls (#/hr)		0		0	0					0	0	
Act Effect Green (s)		92.2		92.2	92.2					19.3	19.3	
Actuated g/C Ratio		0.77		0.77	0.77					0.16	0.16	
v/c Ratio		0.38		0.07	0.21					0.36	0.80	
Control Delay		3.4		4.1	4.2					47.4	56.2	
Queue Delay		0.0		0.0	0.0					0.0	0.0	
Total Delay		3.4		4.1	4.2					47.4	56.2	
LOS		A		A	A					D	E	
Approach Delay		3.4			4.2						54.6	
Approach LOS		A			A						D	

Intersection Summary



















Area Type: Other
 Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 20 (17%), Referenced to phase 1:EBWB, Start of Green
 Natural Cycle: 50
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.80
 Intersection Signal Delay: 23.5
 Intersection LOS: C
 Intersection Capacity Utilization 61.2%
 ICU Level of Service B
 Analysis Period (min) 15

Splits and Phases: 318: Roosevelt St & 5th Ave



Lanes, Volumes, Timings
319: 3rd Ave & Roosevelt St

09/10/2020

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	38	447	0	0	253	46	21	101	33	0	0	0
Future Volume (vph)	38	447	0	0	253	46	21	101	33	0	0	0
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	87		0	0		0	90		90	0		0
Storage Lanes	1		0	0		0	1		1	0		0
Taper Length (ft)	25			25			25			25		
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	0.97				0.99		0.97		0.95			
Frt					0.978				0.850			
Flt Protected	0.950						0.950					
Satd. Flow (prot)	1770	1863	0	0	1800	0	1770	3539	1583	0	0	0
Flt Permitted	0.552						0.950					
Satd. Flow (perm)	995	1863	0	0	1800	0	1720	3539	1505	0	0	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					18				44			
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		219			930			263			303	
Travel Time (s)		5.0			21.1			6.0			6.9	
Confl. Peds. (#/hr)	27		13	13		27	7		16	16		7
Peak Hour Factor	0.79	0.92	0.92	0.92	0.90	0.82	0.75	0.68	0.75	0.92	0.92	0.92
Adj. Flow (vph)	48	486	0	0	281	56	28	149	44	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	48	486	0	0	337	0	28	149	44	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												
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			2		1	2	1			
Detector Template	Left	Thru			Thru		Left	Thru	Right			
Leading Detector (ft)	20	100			100		20	100	20			
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		20	6	20			
Detector 1 Type	Cl+Ex	Cl+Ex			Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex			
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0			0.0		0.0	0.0	0.0			
Detector 1 Queue (s)	0.0	0.0			0.0		0.0	0.0	0.0			
Detector 1 Delay (s)	0.0	0.0			0.0		0.0	0.0	0.0			
Detector 2 Position(ft)		94			94			94				
Detector 2 Size(ft)		6			6			6				
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				
Turn Type	Perm	NA			NA		Perm	NA	Perm			

Lanes, Volumes, Timings
319: 3rd Ave & Roosevelt St

09/10/2020



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Protected Phases		1			1			2				
Permitted Phases	1						2		2			
Detector Phase	1	1			1		2	2	2			
Switch Phase												
Minimum Initial (s)	15.0	15.0			15.0		15.0	15.0	15.0			
Minimum Split (s)	22.5	22.5			22.5		24.5	24.5	24.5			
Total Split (s)	85.0	85.0			85.0		35.0	35.0	35.0			
Total Split (%)	70.8%	70.8%			70.8%		29.2%	29.2%	29.2%			
Maximum Green (s)	80.5	80.5			80.5		30.4	30.4	30.4			
Yellow Time (s)	3.2	3.2			3.2		3.6	3.6	3.6			
All-Red Time (s)	1.3	1.3			1.3		1.0	1.0	1.0			
Lost Time Adjust (s)	0.0	0.0			0.0		0.0	0.0	0.0			
Total Lost Time (s)	4.5	4.5			4.5		4.6	4.6	4.6			
Lead/Lag	Lead	Lead			Lead		Lag	Lag	Lag			
Lead-Lag Optimize?	Yes	Yes			Yes		Yes	Yes	Yes			
Vehicle Extension (s)	1.0	1.0			1.0		1.0	1.0	1.0			
Recall Mode	C-Max	C-Max			C-Max		None	None	None			
Walk Time (s)	7.0	7.0			7.0		9.0	9.0	9.0			
Flash Dont Walk (s)	9.0	9.0			9.0		6.0	6.0	6.0			
Pedestrian Calls (#/hr)	0	0			0		0	0	0			
Act Effct Green (s)	95.9	95.9			95.9		15.0	15.0	15.0			
Actuated g/C Ratio	0.80	0.80			0.80		0.12	0.12	0.12			
v/c Ratio	0.06	0.33			0.23		0.13	0.34	0.19			
Control Delay	2.7	3.8			3.2		48.5	50.3	15.9			
Queue Delay	0.0	0.0			0.0		0.0	0.0	0.0			
Total Delay	2.7	3.8			3.2		48.5	50.3	15.9			
LOS	A	A			A		D	D	B			
Approach Delay		3.7			3.2			43.2				
Approach LOS		A			A			D				

Intersection Summary

Area Type:	Other
Cycle Length:	120
Actuated Cycle Length:	120
Offset:	28 (23%), Referenced to phase 1:EBWB, Start of Green
Natural Cycle:	50
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.34
Intersection Signal Delay:	11.6
Intersection LOS:	B
Intersection Capacity Utilization:	61.2%
ICU Level of Service:	B
Analysis Period (min):	15

Splits and Phases: 319: 3rd Ave & Roosevelt St



Lanes, Volumes, Timings
353: 7th St & Lincoln St

09/10/2020



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	49	244	27	300	179	17	55	1052	150	24	632	123
Future Volume (vph)	49	244	27	300	179	17	55	1052	150	24	632	123
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	180		0	75		0	180		0	180		0
Storage Lanes	1		1	1		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.91	0.91	1.00	0.91	0.91
Frt			0.850		0.987			0.981			0.976	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1863	1583	1770	1839	0	1770	4989	0	1770	4963	0
Flt Permitted	0.557			0.484			0.950			0.196		
Satd. Flow (perm)	1038	1863	1583	902	1839	0	1770	4989	0	365	4963	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			57		4			36			38	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		810			319			764			1234	
Travel Time (s)		18.4			7.3			17.4			28.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	53	265	29	326	195	18	60	1143	163	26	687	134
Shared Lane Traffic (%)												
Lane Group Flow (vph)	53	265	29	326	213	0	60	1306	0	26	821	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	2	1	1	2		1	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100	20	20	100		20	100		20	100	
Trailing Detector (ft)	0	0	0	0	0		0	0		0	0	
Detector 1 Position(ft)	0	0	0	0	0		0	0		0	0	
Detector 1 Size(ft)	20	6	20	20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA	Perm	Perm	NA		Prot	NA		Perm	NA	
Protected Phases		2			2		7	4			8	
Permitted Phases	2		2	2						8		

Lanes, Volumes, Timings
353: 7th St & Lincoln St

09/10/2020

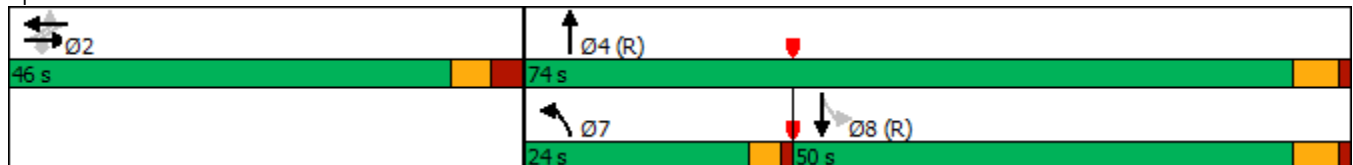


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	2	2	2	2	2		7	4		8	8	
Switch Phase												
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0		2.0	15.0		15.0	15.0	
Minimum Split (s)	33.5	33.5	33.5	33.5	33.5		9.5	27.0		24.3	24.3	
Total Split (s)	46.0	46.0	46.0	46.0	46.0		24.0	74.0		50.0	50.0	
Total Split (%)	38.3%	38.3%	38.3%	38.3%	38.3%		20.0%	61.7%		41.7%	41.7%	
Maximum Green (s)	39.5	39.5	39.5	39.5	39.5		20.0	68.7		44.7	44.7	
Yellow Time (s)	3.6	3.6	3.6	3.6	3.6		3.0	4.0		4.0	4.0	
All-Red Time (s)	2.9	2.9	2.9	2.9	2.9		1.0	1.3		1.3	1.3	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.5	6.5	6.5	6.5	6.5		4.0	5.3		5.3	5.3	
Lead/Lag							Lead			Lag	Lag	
Lead-Lag Optimize?							Yes			Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None	None	None	None		None	C-Max		C-Max	C-Max	
Walk Time (s)	7.0	7.0	7.0	7.0	7.0			8.0		8.0	8.0	
Flash Dont Walk (s)	20.0	20.0	20.0	20.0	20.0			11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0	0	0	0			0		0	0	
Act Effect Green (s)	39.5	39.5	39.5	39.5	39.5		9.4	68.7		57.2	57.2	
Actuated g/C Ratio	0.33	0.33	0.33	0.33	0.33		0.08	0.57		0.48	0.48	
v/c Ratio	0.16	0.43	0.05	1.10	0.35		0.43	0.45		0.15	0.34	
Control Delay	30.1	34.2	1.9	120.9	32.0		61.6	15.0		23.0	19.9	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	30.1	34.2	1.9	120.9	32.0		61.6	15.0		23.0	19.9	
LOS	C	C	A	F	C		E	B		C	B	
Approach Delay		30.9			85.7			17.0			20.0	
Approach LOS		C			F			B			C	

Intersection Summary




















Area Type: Other
 Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 60 (50%), Referenced to phase 4:NBT and 8:SBTL, Start of Green
 Natural Cycle: 70
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 1.10
 Intersection Signal Delay: 31.3
 Intersection LOS: C
 Intersection Capacity Utilization 85.3%
 ICU Level of Service E
 Analysis Period (min) 15

Splits and Phases: 353: 7th St & Lincoln St



Lanes, Volumes, Timings
369: 3rd St & Lincoln St

09/10/2020

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	656	25	4	383	0	11	0	32	17	9	33
Future Volume (vph)	0	656	25	4	383	0	11	0	32	17	9	33
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	105		0	0		156	145		0
Storage Lanes	0		0	1		0	1		1	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor							0.97		0.98	1.00	0.97	
Frt		0.995							0.850		0.883	
Flt Protected				0.950			0.950			0.950		
Satd. Flow (prot)	0	3522	0	1770	3539	0	1770	0	1583	1770	1594	0
Flt Permitted				0.226			0.727			0.950		
Satd. Flow (perm)	0	3522	0	421	3539	0	1318	0	1559	1763	1594	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		8							35			36
Link Speed (mph)		30			30			30				30
Link Distance (ft)		254			288			273				181
Travel Time (s)		5.8			6.5			6.2				4.1
Confl. Peds. (#/hr)							23		3	3		23
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	713	27	4	416	0	12	0	35	18	10	36
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	740	0	4	416	0	12	0	35	18	46	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		2		1	2		1		1	1		2
Detector Template		Thru		Left	Thru		Left		Right	Left		Thru
Leading Detector (ft)		100		20	100		20		20	20		100
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)		6		20	6		20		20	20		6
Detector 1 Type		Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)		0.0		0.0	0.0		0.0		0.0	0.0		0.0
Detector 1 Queue (s)		0.0		0.0	0.0		0.0		0.0	0.0		0.0
Detector 1 Delay (s)		0.0		0.0	0.0		0.0		0.0	0.0		0.0
Detector 2 Position(ft)		94			94							94
Detector 2 Size(ft)		6			6							6
Detector 2 Type		Cl+Ex			Cl+Ex							Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0							0.0
Turn Type		NA		Perm	NA		D.Pm		Perm	Perm		NA

Lanes, Volumes, Timings

369: 3rd St & Lincoln St

09/10/2020



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Protected Phases		1			1							2
Permitted Phases				1			2		2	2		
Detector Phase		1		1	1		2		2	2		2
Switch Phase												
Minimum Initial (s)		15.0		15.0	15.0		5.0		5.0	5.0		5.0
Minimum Split (s)		26.6		26.6	26.6		27.5		27.5	27.5		27.5
Total Split (s)		64.0		64.0	64.0		30.0		30.0	30.0		30.0
Total Split (%)		68.1%		68.1%	68.1%		31.9%		31.9%	31.9%		31.9%
Maximum Green (s)		59.4		59.4	59.4		25.5		25.5	25.5		25.5
Yellow Time (s)		3.6		3.6	3.6		3.0		3.0	3.0		3.0
All-Red Time (s)		1.0		1.0	1.0		1.5		1.5	1.5		1.5
Lost Time Adjust (s)		0.0		0.0	0.0		0.0		0.0	0.0		0.0
Total Lost Time (s)		4.6		4.6	4.6		4.5		4.5	4.5		4.5
Lead/Lag		Lead		Lead	Lead		Lag		Lag	Lag		Lag
Lead-Lag Optimize?		Yes		Yes	Yes		Yes		Yes	Yes		Yes
Vehicle Extension (s)		3.0		3.0	3.0		3.0		3.0	3.0		3.0
Recall Mode		None		None	None		C-Max		C-Max	C-Max		C-Max
Walk Time (s)		8.0		8.0	8.0		8.0		8.0	8.0		8.0
Flash Dont Walk (s)		14.0		14.0	14.0		15.0		15.0	15.0		15.0
Pedestrian Calls (#/hr)		0		0	0		0		0	0		0
Act Effect Green (s)		32.0		32.0	32.0		52.9		52.9	52.9		52.9
Actuated g/C Ratio		0.34		0.34	0.34		0.56		0.56	0.56		0.56
v/c Ratio		0.62		0.03	0.35		0.02		0.04	0.02		0.05
Control Delay		27.1		17.0	23.0		12.4		4.8	12.2		5.9
Queue Delay		0.0		0.0	0.0		0.0		0.0	0.0		0.0
Total Delay		27.1		17.0	23.0		12.4		4.8	12.2		5.9
LOS		C		B	C		B		A	B		A
Approach Delay		27.1			22.9			6.7				7.7
Approach LOS		C			C			A				A

Intersection Summary




















Area Type:	Other
Cycle Length:	94
Actuated Cycle Length:	94
Offset:	70 (74%), Referenced to phase 2:NBSB, Start of Green
Natural Cycle:	55
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.62
Intersection Signal Delay:	24.0
Intersection LOS:	C
Intersection Capacity Utilization	53.6%
ICU Level of Service	A
Analysis Period (min)	15

Splits and Phases: 369: 3rd St & Lincoln St



Lanes, Volumes, Timings
386: 7th Ave & Jefferson St

09/10/2020

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	202	944	51	0	0	0	0	1119	262	652	649	0
Future Volume (vph)	202	944	51	0	0	0	0	1119	262	652	649	0
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	0		125	135		0
Storage Lanes	1		1	0		0	0		1	2		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.86	0.86	1.00	1.00	1.00	1.00	1.00	0.91	1.00	0.97	0.95	1.00
Frt			0.850							0.850		
Flt Protected	0.950	0.999								0.950		
Satd. Flow (prot)	1522	4801	1583	0	0	0	0	5085	1583	3433	3539	0
Flt Permitted	0.950	0.999								0.950		
Satd. Flow (perm)	1522	4801	1583	0	0	0	0	5085	1583	3433	3539	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			61						65			
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		690			1074			2278			382	
Travel Time (s)		15.7			24.4			51.8			8.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	220	1026	55	0	0	0	0	1216	285	709	705	0
Shared Lane Traffic (%)	10%											
Lane Group Flow (vph)	198	1048	55	0	0	0	0	1216	285	709	705	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			24			24	
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	2	1					2	1	1	2	
Detector Template	Left	Thru	Right					Thru	Right	Left	Thru	
Leading Detector (ft)	20	100	20					100	20	20	100	
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	20					6	20	20	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex					Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0					0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0					0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0					0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		94						94			94	
Detector 2 Size(ft)		6						6			6	
Detector 2 Type		Cl+Ex						Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0						0.0			0.0	
Turn Type	Perm	NA	Perm					NA	Perm	Prot	NA	
Protected Phases		6						4		3	8	
Permitted Phases	6		6						4			

Lanes, Volumes, Timings
386: 7th Ave & Jefferson St

09/10/2020

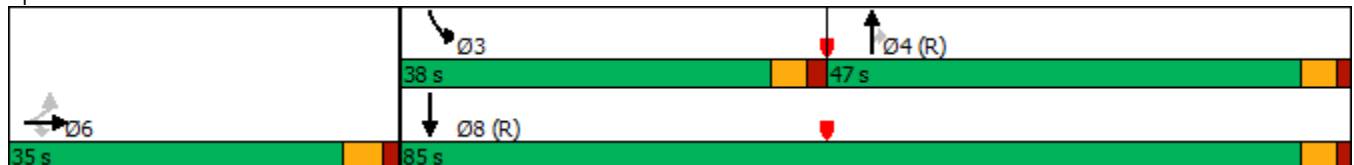


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	6	6	6					4	4	3	8	
Switch Phase												
Minimum Initial (s)	15.0	15.0	15.0					15.0	15.0	8.0	15.0	
Minimum Split (s)	30.2	30.2	30.2					25.7	25.7	14.4	25.7	
Total Split (s)	35.0	35.0	35.0					47.0	47.0	38.0	85.0	
Total Split (%)	29.2%	29.2%	29.2%					39.2%	39.2%	31.7%	70.8%	
Maximum Green (s)	29.8	29.8	29.8					42.3	42.3	33.0	80.3	
Yellow Time (s)	3.6	3.6	3.6					3.2	3.2	3.2	3.2	
All-Red Time (s)	1.6	1.6	1.6					1.5	1.5	1.8	1.5	
Lost Time Adjust (s)	0.0	0.0	0.0					0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.2	5.2	5.2					4.7	4.7	5.0	4.7	
Lead/Lag								Lag	Lag	Lead		
Lead-Lag Optimize?								Yes	Yes	Yes		
Vehicle Extension (s)	3.0	3.0	3.0					3.0	3.0	3.0	3.0	
Recall Mode	None	None	None					C-Max	C-Max	None	C-Max	
Walk Time (s)	8.0	8.0	8.0					8.0	8.0		8.0	
Flash Dont Walk (s)	17.0	17.0	17.0					13.0	13.0		13.0	
Pedestrian Calls (#/hr)	0	0	0					0	0		0	
Act Effct Green (s)	29.7	29.7	29.7					46.0	46.0	29.4	80.4	
Actuated g/C Ratio	0.25	0.25	0.25					0.38	0.38	0.24	0.67	
v/c Ratio	0.53	0.88	0.13					0.62	0.44	0.84	0.30	
Control Delay	45.0	53.3	8.3					32.3	24.2	44.4	5.5	
Queue Delay	0.8	1.4	0.0					0.1	0.0	1.4	0.5	
Total Delay	45.7	54.7	8.3					32.4	24.2	45.8	6.0	
LOS	D	D	A					C	C	D	A	
Approach Delay		51.4						30.8			26.0	
Approach LOS		D						C			C	

Intersection Summary

Area Type: Other
 Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 24 (20%), Referenced to phase 4:NBT and 8:SBT, Start of Green
 Natural Cycle: 80
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.88
 Intersection Signal Delay: 35.5
 Intersection LOS: D
 Intersection Capacity Utilization 78.4%
 ICU Level of Service D
 Analysis Period (min) 15

Splits and Phases: 386: 7th Ave & Jefferson St



Lanes, Volumes, Timings
468: 5th St & Van Buren St

09/10/2020



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↘	↑↑			↑↑	↗		↔↔↔				
Traffic Volume (vph)	8	787	0	0	1090	29	50	101	7	0	0	0
Future Volume (vph)	8	787	0	0	1090	29	50	101	7	0	0	0
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	132		0	0		205	0		0	0		0
Storage Lanes	1		0	0		1	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	0.91	0.91	0.91	1.00	1.00	1.00
Frt						0.850		0.993				
Flt Protected	0.950							0.985				
Satd. Flow (prot)	1770	3539	0	0	3539	1583	0	4974	0	0	0	0
Flt Permitted	0.181							0.985				
Satd. Flow (perm)	337	3539	0	0	3539	1583	0	4974	0	0	0	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						76		8				
Link Speed (mph)		30			30			30				30
Link Distance (ft)		750			710			232				452
Travel Time (s)		17.0			16.1			5.3				10.3
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	9	855	0	0	1185	32	54	110	8	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	9	855	0	0	1185	32	0	172	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		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	2			2	1	1	2				
Detector Template	Left	Thru			Thru	Right	Left	Thru				
Leading Detector (ft)	20	100			100	20	20	100				
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	20	20	6				
Detector 1 Type	Cl+Ex	Cl+Ex			Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex				
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0			0.0	0.0	0.0	0.0				
Detector 1 Queue (s)	0.0	0.0			0.0	0.0	0.0	0.0				
Detector 1 Delay (s)	0.0	0.0			0.0	0.0	0.0	0.0				
Detector 2 Position(ft)		94			94			94				
Detector 2 Size(ft)		6			6			6				
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				
Turn Type	pm+pt	NA			NA	Perm	Perm	NA				
Protected Phases	1	6			2			4				
Permitted Phases	6					2	4					

Lanes, Volumes, Timings
468: 5th St & Van Buren St

09/10/2020

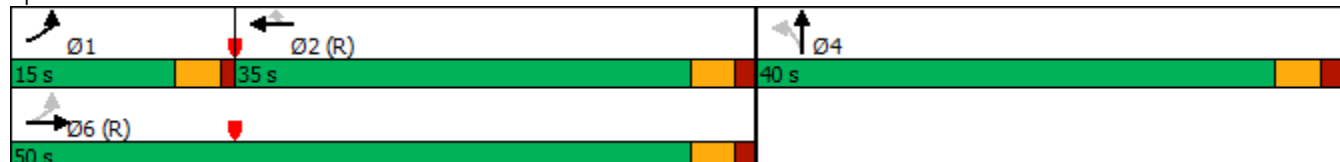


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	1	6			2	2	4	4				
Switch Phase												
Minimum Initial (s)	5.0	15.0			15.0	15.0	15.0	15.0				
Minimum Split (s)	9.5	24.5			24.5	24.5	32.3	32.3				
Total Split (s)	15.0	50.0			35.0	35.0	40.0	40.0				
Total Split (%)	16.7%	55.6%			38.9%	38.9%	44.4%	44.4%				
Maximum Green (s)	11.0	45.5			30.5	30.5	34.7	34.7				
Yellow Time (s)	3.0	3.0			3.0	3.0	3.0	3.0				
All-Red Time (s)	1.0	1.5			1.5	1.5	2.3	2.3				
Lost Time Adjust (s)	0.0	0.0			0.0	0.0		0.0				
Total Lost Time (s)	4.0	4.5			4.5	4.5		5.3				
Lead/Lag	Lead				Lag				Lag			
Lead-Lag Optimize?	Yes				Yes				Yes			
Vehicle Extension (s)	2.0	1.0			1.0	1.0	1.0	1.0				
Recall Mode	None	C-Max			C-Max	C-Max	None	None				
Walk Time (s)		8.0			8.0	8.0	8.0	8.0				
Flash Dont Walk (s)		12.0			12.0	12.0	19.0	19.0				
Pedestrian Calls (#/hr)		0			0	0	0	0				
Act Effct Green (s)	65.7	65.2			63.4	63.4		15.0				
Actuated g/C Ratio	0.73	0.72			0.70	0.70		0.17				
v/c Ratio	0.03	0.33			0.48	0.03		0.21				
Control Delay	3.5	4.9			7.1	0.1		31.6				
Queue Delay	0.0	0.0			0.0	0.0		0.0				
Total Delay	3.5	4.9			7.1	0.1		31.6				
LOS	A	A			A	A		C				
Approach Delay		4.9			6.9			31.6				
Approach LOS		A			A			C				

Intersection Summary

Area Type: Other
 Cycle Length: 90
 Actuated Cycle Length: 90
 Offset: 58 (64%), Referenced to phase 2:WBT and 6:EBTL, Start of Green
 Natural Cycle: 75
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.48
 Intersection Signal Delay: 8.0
 Intersection LOS: A
 Intersection Capacity Utilization 50.8%
 ICU Level of Service A
 Analysis Period (min) 15

Splits and Phases: 468: 5th St & Van Buren St



Lanes, Volumes, Timings
524: 5th St/4th St & Fillmore St

09/10/2020



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	300	173	0	0	141	150	19	119	150	0	0	0
Future Volume (vph)	300	173	0	0	141	150	19	119	150	0	0	0
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	127		0	0		0	0		0	0		0
Storage Lanes	1		0	0		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	0.95	0.91	0.91	0.91	1.00	1.00	1.00
Frt					0.923			0.922				
Flt Protected	0.950							0.997				
Satd. Flow (prot)	1770	3539	0	0	3267	0	0	4675	0	0	0	0
Flt Permitted	0.560							0.997				
Satd. Flow (perm)	1043	3539	0	0	3267	0	0	4675	0	0	0	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					163			163				
Link Speed (mph)		30			30			30				30
Link Distance (ft)		619			843			271				347
Travel Time (s)		14.1			19.2			6.2				7.9
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	326	188	0	0	153	163	21	129	163	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	326	188	0	0	316	0	0	313	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		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	2			2		1	2				
Detector Template	Left	Thru			Thru		Left	Thru				
Leading Detector (ft)	20	100			100		20	100				
Trailing Detector (ft)	0	0			0		0	0				
Detector 1 Position(ft)	0	0			0		0	0				
Detector 1 Size(ft)	20	6			6		20	6				
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	0.0			0.0		0.0	0.0				
Detector 2 Position(ft)		94			94			94				
Detector 2 Size(ft)		6			6			6				
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				
Turn Type	Perm	NA			NA		Perm	NA				
Protected Phases		1			1			2				
Permitted Phases	1						2					

Lanes, Volumes, Timings
524: 5th St/4th St & Fillmore St

09/10/2020



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	1	1			1		2	2				
Switch Phase												
Minimum Initial (s)	15.0	15.0			15.0		15.0	15.0				
Minimum Split (s)	25.7	25.7			25.7		31.4	31.4				
Total Split (s)	58.0	58.0			58.0		32.0	32.0				
Total Split (%)	64.4%	64.4%			64.4%		35.6%	35.6%				
Maximum Green (s)	53.3	53.3			53.3		26.6	26.6				
Yellow Time (s)	3.2	3.2			3.2		3.6	3.6				
All-Red Time (s)	1.5	1.5			1.5		1.8	1.8				
Lost Time Adjust (s)	0.0	0.0			0.0			0.0				
Total Lost Time (s)	4.7	4.7			4.7			5.4				
Lead/Lag	Lead	Lead			Lead		Lag	Lag				
Lead-Lag Optimize?	Yes	Yes			Yes		Yes	Yes				
Vehicle Extension (s)	1.0	1.0			1.0		1.0	1.0				
Recall Mode	C-Max	C-Max			C-Max		None	None				
Walk Time (s)	9.0	9.0			9.0		8.0	8.0				
Flash Dont Walk (s)	12.0	12.0			12.0		18.0	18.0				
Pedestrian Calls (#/hr)	0	0			0		0	0				
Act Effct Green (s)	64.9	64.9			64.9			15.0				
Actuated g/C Ratio	0.72	0.72			0.72			0.17				
v/c Ratio	0.43	0.07			0.13			0.34				
Control Delay	12.7	6.8			1.9			16.7				
Queue Delay	0.0	0.0			0.0			0.0				
Total Delay	12.7	6.8			1.9			16.7				
LOS	B	A			A			B				
Approach Delay		10.6			1.9			16.7				
Approach LOS		B			A			B				

Intersection Summary

Area Type:	Other
Cycle Length:	90
Actuated Cycle Length:	90
Offset:	5 (6%), Referenced to phase 1:EBWB, Start of Green
Natural Cycle:	60
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.43
Intersection Signal Delay:	9.9
Intersection LOS:	A
Intersection Capacity Utilization:	54.0%
ICU Level of Service:	A
Analysis Period (min):	15

Splits and Phases: 524: 5th St/4th St & Fillmore St



Lanes, Volumes, Timings
528: 1st Ave & Washington St

09/10/2020



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations				↔↔	↑↑↑↑						↑↑↑↑	↔↔
Traffic Volume (vph)	0	0	0	441	549	0	0	0	0	0	612	0
Future Volume (vph)	0	0	0	441	549	0	0	0	0	0	612	0
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	145		0	0		0	0		160
Storage Lanes	0		0	2		0	0		0	0		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	0.97	0.86	1.00	1.00	1.00	1.00	1.00	0.91	1.00
Frt												
Flt Protected				0.950								
Satd. Flow (prot)	0	0	0	3433	6408	0	0	0	0	0	5085	1863
Flt Permitted				0.950								
Satd. Flow (perm)	0	0	0	3433	6408	0	0	0	0	0	5085	1863
Right Turn on Red			Yes	Yes		Yes			Yes			No
Satd. Flow (RTOR)				135								
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		345			373			143			322	
Travel Time (s)		7.8			8.5			3.3			7.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	479	597	0	0	0	0	0	665	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	479	597	0	0	0	0	0	665	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)		24			24			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	2						2	1
Detector Template				Left	Thru						Thru	Right
Leading Detector (ft)				20	100						100	20
Trailing Detector (ft)				0	0						0	0
Detector 1 Position(ft)				0	0						0	0
Detector 1 Size(ft)				20	6						6	20
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
Detector 2 Position(ft)					94						94	
Detector 2 Size(ft)					6						6	
Detector 2 Type					Cl+Ex						Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)					0.0						0.0	
Turn Type				Perm	NA						NA	custom
Protected Phases					8						2	5
Permitted Phases				8								

Lanes, Volumes, Timings
528: 1st Ave & Washington St

09/10/2020

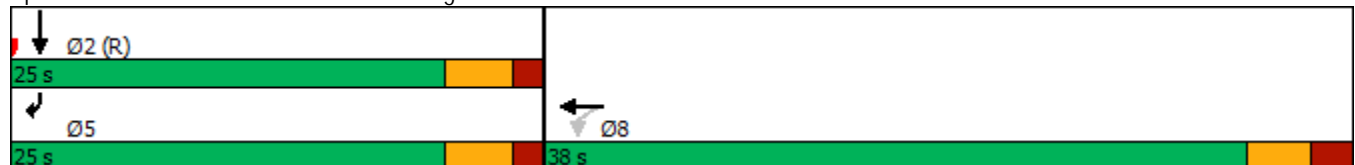


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase				8	8						2	5
Switch Phase												
Minimum Initial (s)				10.0	10.0						10.0	2.0
Minimum Split (s)				27.1	27.1						24.7	7.0
Total Split (s)				38.0	38.0						25.0	25.0
Total Split (%)				60.3%	60.3%						39.7%	39.7%
Maximum Green (s)				32.9	32.9						20.3	20.3
Yellow Time (s)				3.0	3.0						3.2	3.2
All-Red Time (s)				2.1	2.1						1.5	1.5
Lost Time Adjust (s)				0.0	0.0						0.0	0.0
Total Lost Time (s)				5.1	5.1						4.7	4.7
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)				3.0	3.0						3.0	3.0
Recall Mode				Ped	Ped						C-Max	Max
Walk Time (s)				8.0	8.0						8.0	8.0
Flash Dont Walk (s)				14.0	14.0						12.0	9.0
Pedestrian Calls (#/hr)				0	0						0	4
Act Effect Green (s)				22.9	22.9						30.3	
Actuated g/C Ratio				0.36	0.36						0.48	
v/c Ratio				0.36	0.26						0.27	
Control Delay				10.9	14.2						10.4	
Queue Delay				0.0	0.0						0.0	
Total Delay				10.9	14.2						10.4	
LOS				B	B						B	
Approach Delay					12.7						10.4	
Approach LOS					B						B	

Intersection Summary

Area Type: Other
 Cycle Length: 63
 Actuated Cycle Length: 63
 Offset: 25 (40%), Referenced to phase 2:SBT, Start of Green
 Natural Cycle: 55
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.36
 Intersection Signal Delay: 11.8 Intersection LOS: B
 Intersection Capacity Utilization 41.9% ICU Level of Service A
 Analysis Period (min) 15

Splits and Phases: 528: 1st Ave & Washington St



Lanes, Volumes, Timings
534: 5th St & Washington St

09/10/2020



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↑↑↑	↑		↑↑↑				
Traffic Volume (vph)	0	0	0	0	1350	57	0	64	0	0	0	0
Future Volume (vph)	0	0	0	0	1350	57	0	64	0	0	0	0
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		295	0		0	0		0
Storage Lanes	0		0	0		1	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	0.91	1.00	0.91	0.91	1.00	1.00	1.00	1.00
Frt						0.850						
Flt Protected												
Satd. Flow (prot)	0	0	0	0	5085	1583	0	5085	0	0	0	0
Flt Permitted												
Satd. Flow (perm)	0	0	0	0	5085	1583	0	5085	0	0	0	0
Right Turn on Red			Yes			No	Yes		Yes			Yes
Satd. Flow (RTOR)												
Link Speed (mph)		30			30			30				30
Link Distance (ft)		735			736			312				384
Travel Time (s)		16.7			16.7			7.1				8.7
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	0	1467	62	0	70	0	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	1467	62	0	70	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0				0
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
Headway Factor	1.00	1.00	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					2	1	1	2				
Detector Template					Thru	Right	Left	Thru				
Leading Detector (ft)					100	20	20	100				
Trailing Detector (ft)					0	0	0	0				
Detector 1 Position(ft)					0	0	0	0				
Detector 1 Size(ft)					6	20	20	6				
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				
Detector 2 Position(ft)					94			94				
Detector 2 Size(ft)					6			6				
Detector 2 Type					Cl+Ex			Cl+Ex				
Detector 2 Channel												
Detector 2 Extend (s)					0.0			0.0				
Turn Type					NA	Prot		NA				
Protected Phases					2	2		4				
Permitted Phases								4				

Lanes, Volumes, Timings
534: 5th St & Washington St

09/10/2020

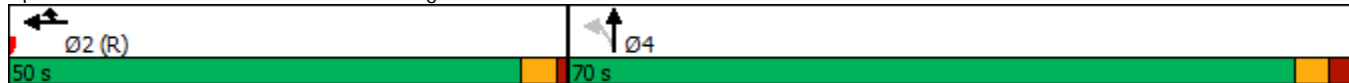


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase					2	2	4	4				
Switch Phase												
Minimum Initial (s)					5.0	5.0	10.0	10.0				
Minimum Split (s)					38.2	38.2	27.1	27.1				
Total Split (s)					50.0	50.0	70.0	70.0				
Total Split (%)					41.7%	41.7%	58.3%	58.3%				
Maximum Green (s)					45.8	45.8	64.9	64.9				
Yellow Time (s)					3.2	3.2	3.0	3.0				
All-Red Time (s)					1.0	1.0	2.1	2.1				
Lost Time Adjust (s)					0.0	0.0		0.0				
Total Lost Time (s)					4.2	4.2		5.1				
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)					3.0	3.0	3.0	3.0				
Recall Mode					C-Max	C-Max	None	None				
Walk Time (s)					17.0	17.0	8.0	8.0				
Flash Dont Walk (s)					17.0	17.0	14.0	14.0				
Pedestrian Calls (#/hr)					4	4	0	0				
Act Effct Green (s)					104.6	104.6		10.0				
Actuated g/C Ratio					0.87	0.87		0.08				
v/c Ratio					0.33	0.04		0.17				
Control Delay					2.3	1.9		52.2				
Queue Delay					0.0	0.0		0.0				
Total Delay					2.3	1.9		52.2				
LOS					A	A		D				
Approach Delay					2.3			52.2				
Approach LOS					A			D				

Intersection Summary

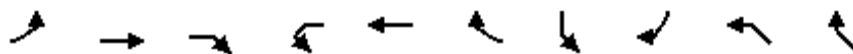
Area Type: Other
 Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 106 (88%), Referenced to phase 2:WBT and 6:, Start of Green
 Natural Cycle: 70
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.33
 Intersection Signal Delay: 4.5
 Intersection LOS: A
 Intersection Capacity Utilization 42.2%
 ICU Level of Service A
 Analysis Period (min) 15

Splits and Phases: 534: 5th St & Washington St



Lanes, Volumes, Timings
536: 5th St

09/10/2020

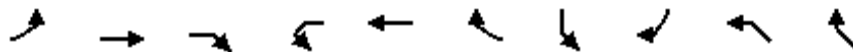


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SBL	SBR	NWL	NWR	Ø4	Ø10
Lane Configurations		↑↑↑	↑									
Traffic Volume (vph)	460	573	162	0	0	0	0	0	0	0		
Future Volume (vph)	460	573	162	0	0	0	0	0	0	0		
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900		
Lane Util. Factor	0.91	0.91	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		
Fr t			0.850									
Flt Protected		0.978										
Satd. Flow (prot)	0	4973	1583	0	0	0	0	0	0	0		
Flt Permitted		0.978										
Satd. Flow (perm)	0	4973	1583	0	0	0	0	0	0	0		
Right Turn on Red	Yes		Yes			Yes		Yes				
Satd. Flow (RTOR)		243	176									
Link Speed (mph)		30			30		30		30			
Link Distance (ft)		117			725		309		218			
Travel Time (s)		2.7			16.5		7.0		5.0			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92		
Adj. Flow (vph)	500	623	176	0	0	0	0	0	0	0		
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1123	176	0	0	0	0	0	0	0		
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No		
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Right	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		
Turning Speed (mph)	15		9	15		9	15	9	15	9		
Number of Detectors	1	2	1									
Detector Template	Left	Thru	Right									
Leading Detector (ft)	20	100	20									
Trailing Detector (ft)	0	0	0									
Detector 1 Position(ft)	0	0	0									
Detector 1 Size(ft)	20	6	20									
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex									
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0									
Detector 1 Queue (s)	0.0	0.0	0.0									
Detector 1 Delay (s)	0.0	0.0	0.0									
Detector 2 Position(ft)		94										
Detector 2 Size(ft)		6										
Detector 2 Type		Cl+Ex										
Detector 2 Channel												
Detector 2 Extend (s)		0.0										
Turn Type	Perm	NA	custom									
Protected Phases		6	1								4	10
Permitted Phases	6											
Detector Phase	6	6	1									
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0								5.0	5.0

Lanes, Volumes, Timings

536: 5th St

09/10/2020

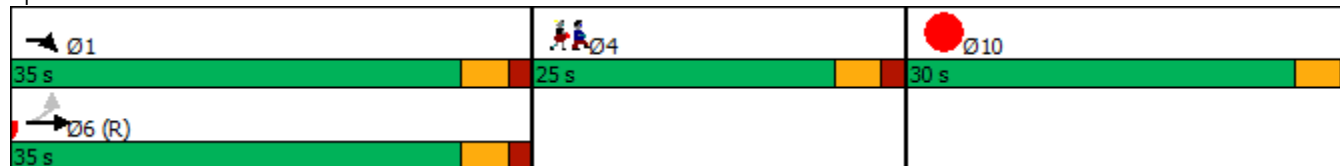


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SBL	SBR	NWL	NWR	Ø4	Ø10
Minimum Split (s)	30.0	30.0	30.0								25.0	30.0
Total Split (s)	35.0	35.0	35.0								25.0	30.0
Total Split (%)	38.9%	38.9%	38.9%								28%	33%
Maximum Green (s)	30.2	30.2	30.2								20.2	26.0
Yellow Time (s)	3.2	3.2	3.2								3.0	3.0
All-Red Time (s)	1.6	1.6	1.6								1.8	1.0
Lost Time Adjust (s)		0.0	0.0									
Total Lost Time (s)		4.8	4.8									
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0								3.0	3.0
Recall Mode	C-Max	C-Max	None								None	None
Walk Time (s)	8.0	8.0									8.0	11.0
Flash Dont Walk (s)	8.0	8.0									12.0	15.0
Pedestrian Calls (#/hr)	0	0									0	4
Act Effect Green (s)		83.0	83.0									
Actuated g/C Ratio		0.92	0.92									
v/c Ratio		0.24	0.12									
Control Delay		2.0	1.1									
Queue Delay		0.0	0.0									
Total Delay		2.0	1.1									
LOS		A	A									
Approach Delay		1.8										
Approach LOS		A										

Intersection Summary


















Area Type:	Other
Cycle Length:	90
Actuated Cycle Length:	90
Offset:	2 (2%), Referenced to phase 6:EBTL, Start of Green
Natural Cycle:	85
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.24
Intersection Signal Delay:	1.8
Intersection LOS:	A
Intersection Capacity Utilization:	29.5%
ICU Level of Service:	A
Analysis Period (min):	15

Splits and Phases: 536: 5th St



Lanes, Volumes, Timings
540: 1st St & Jefferson St

09/10/2020

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	29	960	34	0	0	0	0	91	54	3	245	0
Future Volume (vph)	29	960	34	0	0	0	0	91	54	3	245	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		145	0		0	110		0	0		0
Storage Lanes	0		1	0		0	1		2	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.86	0.86	1.00	1.00	1.00	1.00	1.00	1.00	0.88	1.00	1.00	1.00
Ped Bike Factor		1.00							0.97		1.00	
Fr _t			0.850						0.850			
Fl _t Protected		0.999									0.999	
Satd. Flow (prot)	0	6401	1583	0	0	0	0	1863	2787	0	1861	0
Fl _t Permitted		0.999									0.997	
Satd. Flow (perm)	0	6400	1583	0	0	0	0	1863	2706	0	1857	0
Right Turn on Red			No			Yes			No			Yes
Satd. Flow (RTOR)												
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		251			390			573			105	
Travel Time (s)		5.7			8.9			13.0			2.4	
Confl. Peds. (#/hr)	5		34						21	21		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	32	1043	37	0	0	0	0	99	59	3	266	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1075	37	0	0	0	0	99	59	0	269	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	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	2	
Detector Template	Left	Thru	Right					Thru	Right	Left	Thru	
Leading Detector (ft)	20	100	20					100	20	20	100	
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	20					6	20	20	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex					Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0					0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0					0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0					0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		94						94			94	
Detector 2 Size(ft)		6						6			6	
Detector 2 Type		Cl+Ex						Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0						0.0			0.0	
Turn Type	Perm	NA	custom					NA	Perm	Perm	NA	

Lanes, Volumes, Timings
540: 1st St & Jefferson St

09/10/2020

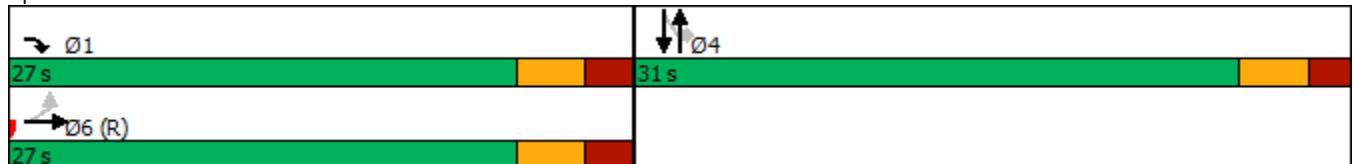


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Protected Phases		6	1					4				4
Permitted Phases	6								4	4		
Detector Phase	6	6	1					4	4	4		4
Switch Phase												
Minimum Initial (s)	2.0	2.0	10.0					10.0	10.0	10.0		10.0
Minimum Split (s)	27.1	27.1	75.0					26.0	26.0	26.0		26.0
Total Split (s)	27.0	27.0	27.0					31.0	31.0	31.0		31.0
Total Split (%)	46.6%	46.6%	46.6%					53.4%	53.4%	53.4%		53.4%
Maximum Green (s)	21.9	21.9	21.9					26.1	26.1	26.1		26.1
Yellow Time (s)	3.0	3.0	3.0					3.0	3.0	3.0		3.0
All-Red Time (s)	2.1	2.1	2.1					1.9	1.9	1.9		1.9
Lost Time Adjust (s)		0.0	0.0					0.0	0.0			0.0
Total Lost Time (s)		5.1	5.1					4.9	4.9			4.9
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0					3.0	3.0	3.0		3.0
Recall Mode	C-Max	C-Max	Max					None	None	None		None
Walk Time (s)	8.0	8.0	12.0					8.0	8.0	8.0		8.0
Flash Dont Walk (s)	14.0	14.0	12.0					13.0	13.0	13.0		13.0
Pedestrian Calls (#/hr)	0	0	4					0	0	0		0
Act Effect Green (s)		33.5	33.5					14.5	14.5			14.5
Actuated g/C Ratio		0.58	0.58					0.25	0.25			0.25
v/c Ratio		0.29	0.04					0.21	0.09			0.58
Control Delay		7.1	7.1					16.8	15.1			23.5
Queue Delay		0.0	0.0					0.0	0.0			0.0
Total Delay		7.1	7.1					16.8	15.1			23.5
LOS		A	A					B	B			C
Approach Delay		7.1						16.1				23.5
Approach LOS		A						B				C

Intersection Summary

Area Type: Other
 Cycle Length: 58
 Actuated Cycle Length: 58
 Offset: 30 (52%), Referenced to phase 2: and 6:EBTL, Start of Green
 Natural Cycle: 105
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.58
 Intersection Signal Delay: 10.9
 Intersection LOS: B
 Intersection Capacity Utilization 56.8%
 ICU Level of Service B
 Analysis Period (min) 15

Splits and Phases: 540: 1st St & Jefferson St



Lanes, Volumes, Timings
543: 1st Ave & Jefferson St

09/10/2020



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑	↑							↑↑	↑↑↑	
Traffic Volume (vph)	0	828	301	0	0	0	0	0	0	176	429	0
Future Volume (vph)	0	828	301	0	0	0	0	0	0	176	429	0
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	0		0	135		0
Storage Lanes	0		1	0		0	0		0	2		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.86	0.86	1.00	1.00	1.00	1.00	1.00	1.00	0.81	0.81	1.00
Ped Bike Factor		0.97	0.67							0.74	0.99	
Flt		0.987	0.850									
Flt Protected										0.950	0.998	
Satd. Flow (prot)	0	4609	1362	0	0	0	0	0	0	2867	4517	0
Flt Permitted										0.950	0.998	
Satd. Flow (perm)	0	4609	915	0	0	0	0	0	0	2117	4467	0
Right Turn on Red			Yes			Yes			Yes	Yes		Yes
Satd. Flow (RTOR)		15	283							206	72	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		802			364			409			202	
Travel Time (s)		18.2			8.3			9.3			4.6	
Confl. Peds. (#/hr)	82		308	308		82	207		186	186		207
Peak Hour Factor	0.92	0.93	0.82	0.92	0.92	0.92	0.92	0.92	0.92	0.77	0.84	0.92
Adj. Flow (vph)	0	890	367	0	0	0	0	0	0	229	511	0
Shared Lane Traffic (%)			23%							10%		
Lane Group Flow (vph)	0	974	283	0	0	0	0	0	0	206	534	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			24			24	
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		2	1							1	2	
Detector Template		Thru	Right							Left	Thru	
Leading Detector (ft)		100	20							20	100	
Trailing Detector (ft)		0	0							0	0	
Detector 1 Position(ft)		0	0							0	0	
Detector 1 Size(ft)		6	20							20	6	
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	
Detector 2 Position(ft)		94									94	
Detector 2 Size(ft)		6									6	
Detector 2 Type		Cl+Ex									Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0									0.0	
Turn Type		NA	Perm							Perm	NA	

Lane Group	Ø7
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Peak Hour Factor	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	

Lanes, Volumes, Timings
543: 1st Ave & Jefferson St

09/10/2020



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Protected Phases		6										8
Permitted Phases			6							8		
Detector Phase		6	6							8	8	
Switch Phase												
Minimum Initial (s)		10.0	10.0							10.0	10.0	
Minimum Split (s)		25.0	25.0							27.0	27.0	
Total Split (s)		25.0	25.0							32.0	32.0	
Total Split (%)		28.1%	28.1%							36.0%	36.0%	
Maximum Green (s)		20.1	20.1							27.4	27.4	
Yellow Time (s)		3.0	3.0							3.2	3.2	
All-Red Time (s)		1.9	1.9							1.4	1.4	
Lost Time Adjust (s)		0.0	0.0							0.0	0.0	
Total Lost Time (s)		4.9	4.9							4.6	4.6	
Lead/Lag										Lag	Lag	
Lead-Lag Optimize?										Yes	Yes	
Vehicle Extension (s)		3.0	3.0							3.0	3.0	
Recall Mode		C-Max	C-Max							None	None	
Walk Time (s)		8.0	8.0							8.0	8.0	
Flash Dont Walk (s)		12.0	12.0							11.0	11.0	
Pedestrian Calls (#/hr)		0	0							0	0	
Act Effect Green (s)		56.6	56.6							16.5	16.5	
Actuated g/C Ratio		0.64	0.64							0.19	0.19	
v/c Ratio		0.33	0.41							0.37	0.60	
Control Delay		11.4	4.9							6.2	30.9	
Queue Delay		0.0	0.0							0.0	0.0	
Total Delay		11.4	4.9							6.2	30.9	
LOS		B	A							A	C	
Approach Delay		9.9									24.0	
Approach LOS		A									C	

Intersection Summary

Area Type: Other
 Cycle Length: 89
 Actuated Cycle Length: 89
 Offset: 18 (20%), Referenced to phase 6:EBT, Start of Green
 Natural Cycle: 85
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.60
 Intersection Signal Delay: 15.1
 Intersection LOS: B
 Intersection Capacity Utilization 57.8%
 ICU Level of Service B
 Analysis Period (min) 15

Splits and Phases: 543: 1st Ave & Jefferson St



Lane Group	Ø7
Protected Phases	7
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	32.0
Total Split (s)	32.0
Total Split (%)	36%
Maximum Green (s)	28.0
Yellow Time (s)	3.0
All-Red Time (s)	1.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	Lead
Lead-Lag Optimize?	Yes
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	12.0
Flash Dont Walk (s)	16.0
Pedestrian Calls (#/hr)	4
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Intersection Summary	

Lanes, Volumes, Timings
548: Washington St & 1st St

09/10/2020



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↑↑↑	↑↑		↑			↑	↑
Traffic Volume (vph)	0	0	0	47	1052	49	27	104	0	0	64	109
Future Volume (vph)	0	0	0	47	1052	49	27	104	0	0	64	109
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	0		0	0		115
Storage Lanes	0		0	0		2	0		0	0		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	0.91	0.91	0.88	1.00	1.00	1.00	1.00	0.95	0.95
Frt						0.850					0.955	0.850
Flt Protected					0.998			0.990				
Satd. Flow (prot)	0	0	0	0	5075	2787	0	1844	0	0	1690	1504
Flt Permitted					0.998			0.914				
Satd. Flow (perm)	0	0	0	0	5075	2787	0	1703	0	0	1690	1504
Right Turn on Red			Yes			No			Yes			No
Satd. Flow (RTOR)												
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		398			393			261			409	
Travel Time (s)		9.0			8.9			5.9			9.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	51	1143	53	29	113	0	0	70	118
Shared Lane Traffic (%)												25%
Lane Group Flow (vph)	0	0	0	0	1194	53	0	142	0	0	100	88
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	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	1	2			2	1
Detector Template				Left	Thru	Right	Left	Thru			Thru	Right
Leading Detector (ft)				20	100	20	20	100			100	20
Trailing Detector (ft)				0	0	0	0	0			0	0
Detector 1 Position(ft)				0	0	0	0	0			0	0
Detector 1 Size(ft)				20	6	20	20	6			6	20
Detector 1 Type				Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex			Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)				0.0	0.0	0.0	0.0	0.0			0.0	0.0
Detector 1 Queue (s)				0.0	0.0	0.0	0.0	0.0			0.0	0.0
Detector 1 Delay (s)				0.0	0.0	0.0	0.0	0.0			0.0	0.0
Detector 2 Position(ft)					94			94			94	
Detector 2 Size(ft)					6			6			6	
Detector 2 Type					Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)					0.0			0.0			0.0	
Turn Type				Perm	NA	custom	Perm	NA			NA	Perm
Protected Phases					6	1		4			8	
Permitted Phases				6			4					8

Lanes, Volumes, Timings
548: Washington St & 1st St

09/10/2020

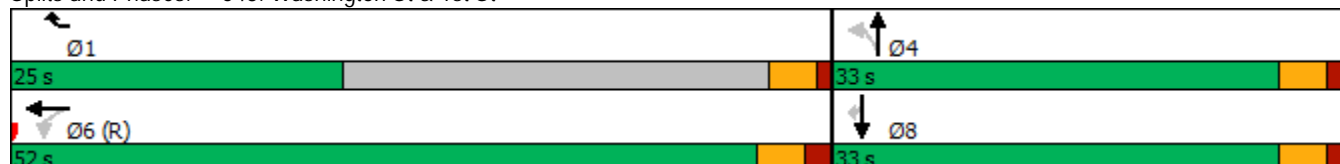


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase				6	6	1	4	4			8	8
Switch Phase												
Minimum Initial (s)				10.0	10.0	10.0	5.0	5.0			10.0	10.0
Minimum Split (s)				27.8	27.8	25.0	27.8	27.8			27.8	27.8
Total Split (s)				52.0	52.0	25.0	33.0	33.0			33.0	33.0
Total Split (%)				61.2%	61.2%	29.4%	38.8%	38.8%			38.8%	38.8%
Maximum Green (s)				47.2	47.2	21.0	28.2	28.2			28.2	28.2
Yellow Time (s)				3.0	3.0	3.0	3.0	3.0			3.0	3.0
All-Red Time (s)				1.8	1.8	1.0	1.8	1.8			1.8	1.8
Lost Time Adjust (s)					0.0	0.0		0.0			0.0	0.0
Total Lost Time (s)					4.8	4.0		4.8			4.8	4.8
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)				3.0	3.0	3.0	3.0	3.0			3.0	3.0
Recall Mode				C-Max	C-Max	Max	None	None			None	None
Walk Time (s)				8.0	8.0	8.0	8.0	8.0			8.0	8.0
Flash Dont Walk (s)				12.0	12.0	12.0	15.0	15.0			15.0	15.0
Pedestrian Calls (#/hr)				0	0	0	0	0			0	0
Act Effect Green (s)					62.6	63.4		12.8			12.8	12.8
Actuated g/C Ratio					0.74	0.75		0.15			0.15	0.15
v/c Ratio					0.32	0.03		0.55			0.40	0.39
Control Delay					4.4	3.4		41.5			36.5	36.9
Queue Delay					0.3	0.0		0.0			0.0	0.0
Total Delay					4.6	3.4		41.5			36.5	36.9
LOS					A	A		D			D	D
Approach Delay					4.6			41.5			36.7	
Approach LOS					A			D			D	

Intersection Summary

Area Type:	Other
Cycle Length:	85
Actuated Cycle Length:	85
Offset:	10 (12%), Referenced to phase 2: and 6:WBTL, Start of Green
Natural Cycle:	60
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.55
Intersection Signal Delay:	11.7
Intersection LOS:	B
Intersection Capacity Utilization:	48.6%
ICU Level of Service:	A
Analysis Period (min):	15

Splits and Phases: 548: Washington St & 1st St



Lanes, Volumes, Timings
550: 3rd St & Washington St

09/10/2020



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↑↑↑	↑					↑↓	
Traffic Volume (vph)	0	0	0	91	1234	45	0	0	0	0	135	183
Future Volume (vph)	0	0	0	91	1234	45	0	0	0	0	135	183
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		209	0		0	0		0
Storage Lanes	0		0	0		1	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	0.91	0.91	1.00	1.00	1.00	1.00	1.00	0.95	0.95
Ped Bike Factor					0.99						0.93	
Fr t						0.850					0.914	
Flt Protected					0.997							
Satd. Flow (prot)	0	0	0	0	5070	1583	0	0	0	0	3000	0
Flt Permitted					0.997							
Satd. Flow (perm)	0	0	0	0	5034	1583	0	0	0	0	3000	0
Right Turn on Red			Yes	Yes		No			Yes			No
Satd. Flow (RTOR)					21							
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		410			735			220			248	
Travel Time (s)		9.3			16.7			5.0			5.6	
Confl. Peds. (#/hr)				65		145						82
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	99	1341	49	0	0	0	0	147	199
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	1440	49	0	0	0	0	346	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	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
Detector Template				Left	Thru	Right						Thru
Leading Detector (ft)				20	100	20						100
Trailing Detector (ft)				0	0	0						0
Detector 1 Position(ft)				0	0	0						0
Detector 1 Size(ft)				20	6	20						6
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
Detector 2 Position(ft)					94							94
Detector 2 Size(ft)					6							6
Detector 2 Type					Cl+Ex							Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)					0.0							0.0
Turn Type				Perm	NA	custom						NA

Lanes, Volumes, Timings
550: 3rd St & Washington St

09/10/2020

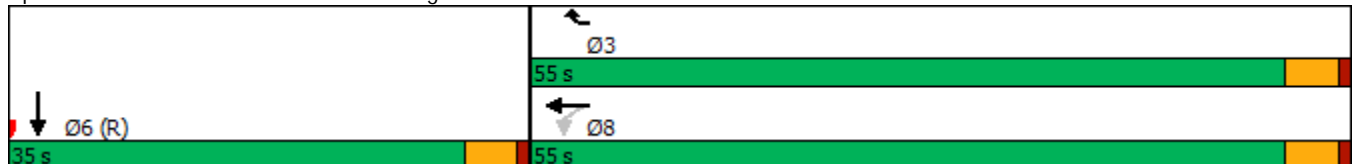


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Protected Phases					8	3					6	
Permitted Phases				8								
Detector Phase				8	8	3					6	
Switch Phase												
Minimum Initial (s)				5.0	5.0	5.0					5.0	
Minimum Split (s)				24.5	24.5	29.5					23.5	
Total Split (s)				55.0	55.0	55.0					35.0	
Total Split (%)				61.1%	61.1%	61.1%					38.9%	
Maximum Green (s)				50.5	50.5	50.5					30.5	
Yellow Time (s)				3.5	3.5	3.5					3.5	
All-Red Time (s)				1.0	1.0	1.0					1.0	
Lost Time Adjust (s)					0.0	0.0					0.0	
Total Lost Time (s)					4.5	4.5					4.5	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)				3.0	3.0	3.0					3.0	
Recall Mode				None	None	None					C-Max	
Walk Time (s)				8.0	8.0	12.0					8.0	
Flash Dont Walk (s)				9.0	9.0	13.0					11.0	
Pedestrian Calls (#/hr)				0	0	4					0	
Act Effect Green (s)					39.8	39.8					41.2	
Actuated g/C Ratio					0.44	0.44					0.46	
v/c Ratio					0.64	0.07					0.25	
Control Delay					20.3	12.6					17.0	
Queue Delay					0.0	0.0					0.0	
Total Delay					20.3	12.6					17.0	
LOS					C	B					B	
Approach Delay					20.0						17.0	
Approach LOS					C						B	

Intersection Summary

Area Type: Other
 Cycle Length: 90
 Actuated Cycle Length: 90
 Offset: 0 (0%), Referenced to phase 2: and 6:SBT, Start of Green
 Natural Cycle: 55
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.64
 Intersection Signal Delay: 19.4
 Intersection Capacity Utilization 49.0%
 Analysis Period (min) 15
 Intersection LOS: B
 ICU Level of Service A

Splits and Phases: 550: 3rd St & Washington St



Lanes, Volumes, Timings
554: 1st Ave & Van Buren St

09/10/2020



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑		↖	↑↑					↖	↑↑↑	
Traffic Volume (vph)	0	762	87	176	517	0	0	0	0	168	550	53
Future Volume (vph)	0	762	87	176	517	0	0	0	0	168	550	53
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	95		0	0		0	0		0
Storage Lanes	0		0	2		0	0		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	1.00	0.91	0.91
Ped Bike Factor		0.99		0.98						0.80	0.98	
Fr _t		0.985									0.986	
Fl _t Protected				0.950						0.950		
Satd. Flow (prot)	0	3450	0	1770	3539	0	0	0	0	1770	4933	0
Fl _t Permitted				0.147						0.950		
Satd. Flow (perm)	0	3450	0	269	3539	0	0	0	0	1421	4933	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		19									20	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		402			359			358			373	
Travel Time (s)		9.1			8.2			8.1			8.5	
Confl. Peds. (#/hr)	171		78	78		171	131		73	73		131
Peak Hour Factor	0.92	0.92	0.92	0.86	0.90	0.92	0.92	0.92	0.92	0.86	0.87	0.83
Adj. Flow (vph)	0	828	95	205	574	0	0	0	0	195	632	64
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	923	0	205	574	0	0	0	0	195	696	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		2		1	2					1	2	
Detector Template		Thru		Left	Thru					Left	Thru	
Leading Detector (ft)		100		20	100					20	100	
Trailing Detector (ft)		0		0	0					0	0	
Detector 1 Position(ft)		0		0	0					0	0	
Detector 1 Size(ft)		6		20	6					20	6	
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		0.0	0.0					0.0	0.0	
Detector 2 Position(ft)		94			94						94	
Detector 2 Size(ft)		6			6						6	
Detector 2 Type		Cl+Ex			Cl+Ex						Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0						0.0	
Turn Type		NA		pm+pt	NA					Prot	NA	

Lanes, Volumes, Timings
554: 1st Ave & Van Buren St

09/10/2020

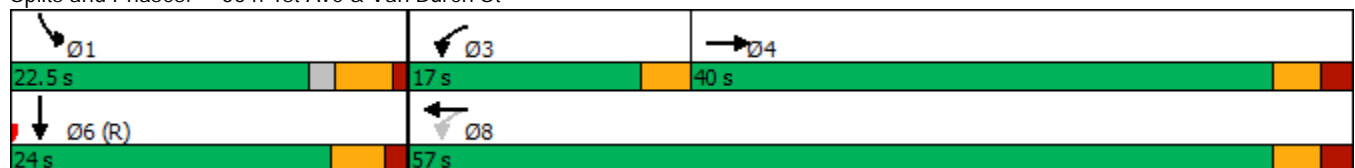


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Protected Phases		4		3	8					1	6	
Permitted Phases				8								
Detector Phase		4		3	8					1	6	
Switch Phase												
Minimum Initial (s)		10.0		5.0	10.0					5.0	10.0	
Minimum Split (s)		26.0		12.0	26.0					22.5	23.7	
Total Split (s)		40.0		17.0	57.0					22.5	24.0	
Total Split (%)		49.4%		21.0%	70.4%					27.8%	29.6%	
Maximum Green (s)		35.0		14.0	52.0					18.0	19.3	
Yellow Time (s)		3.0		3.0	3.0					3.5	3.2	
All-Red Time (s)		2.0		0.0	2.0					1.0	1.5	
Lost Time Adjust (s)		0.0		0.0	0.0					0.0	0.0	
Total Lost Time (s)		5.0		3.0	5.0					4.5	4.7	
Lead/Lag		Lag		Lead								
Lead-Lag Optimize?												
Vehicle Extension (s)		3.0		3.0	3.0					3.0	3.0	
Recall Mode		None		None	None					None	C-Max	
Walk Time (s)		8.0			8.0					4.0	8.0	
Flash Dont Walk (s)		13.0			13.0					5.0	11.0	
Pedestrian Calls (#/hr)		0			0					4	0	
Act Effect Green (s)		29.5		44.8	42.8					28.7	28.5	
Actuated g/C Ratio		0.36		0.55	0.53					0.35	0.35	
v/c Ratio		0.73		0.60	0.31					0.31	0.40	
Control Delay		25.0		17.6	10.6					23.0	21.4	
Queue Delay		0.4		0.0	0.0					0.0	0.0	
Total Delay		25.4		17.6	10.6					23.0	21.4	
LOS		C		B	B					C	C	
Approach Delay		25.4			12.5						21.7	
Approach LOS		C			B						C	

Intersection Summary






















Area Type: Other
 Cycle Length: 81
 Actuated Cycle Length: 81
 Offset: 8 (10%), Referenced to phase 6:SBT, Start of Green
 Natural Cycle: 65
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.73
 Intersection Signal Delay: 20.2
 Intersection LOS: C
 Intersection Capacity Utilization 61.4%
 ICU Level of Service B
 Analysis Period (min) 15

Splits and Phases: 554: 1st Ave & Van Buren St



Lanes, Volumes, Timings
555: Van Buren St & Central Ave

09/10/2020

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 			 			 				
Traffic Volume (vph)	103	742	0	0	665	90	86	418	94	0	0	0
Future Volume (vph)	103	742	0	0	665	90	86	418	94	0	0	0
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	100		0	0		0	180		0	0		0
Storage Lanes	1		0	0		0	1		1	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	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	0.97				0.98		0.50		0.80			
Fr _t					0.980				0.850			
Fl _t Protected	0.950						0.950					
Satd. Flow (prot)	1770	3539	0	0	3388	0	1770	3539	1583	0	0	0
Fl _t Permitted	0.244						0.950					
Satd. Flow (perm)	439	3539	0	0	3388	0	888	3539	1264	0	0	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					26				108			
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		359			431			367			358	
Travel Time (s)		8.2			9.8			8.3			8.1	
Confl. Peds. (#/hr)	150		94	94		150	84		163	163		84
Peak Hour Factor	0.76	0.96	0.92	0.92	0.91	0.78	0.77	0.77	0.87	0.92	0.92	0.92
Adj. Flow (vph)	136	773	0	0	731	115	112	543	108	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	136	773	0	0	846	0	112	543	108	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)		24			24			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	2			2		1	2	1			
Detector Template	Left	Thru			Thru		Left	Thru	Right			
Leading Detector (ft)	20	100			100		20	100	20			
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		20	6	20			
Detector 1 Type	Cl+Ex	Cl+Ex			Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex			
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0			0.0		0.0	0.0	0.0			
Detector 1 Queue (s)	0.0	0.0			0.0		0.0	0.0	0.0			
Detector 1 Delay (s)	0.0	0.0			0.0		0.0	0.0	0.0			
Detector 2 Position(ft)		94			94			94				
Detector 2 Size(ft)		6			6			6				
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				
Turn Type	pm+pt	NA			NA		Prot	NA	Perm			

Lanes, Volumes, Timings
 555: Van Buren St & Central Ave

09/10/2020

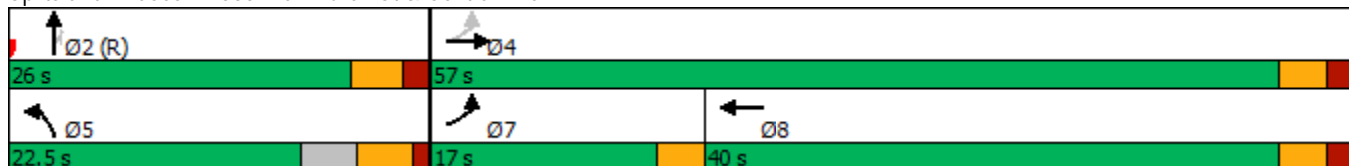


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Protected Phases	7	4			8		5	2				
Permitted Phases	4									2		
Detector Phase	7	4			8		5	2	2			
Switch Phase												
Minimum Initial (s)	5.0	10.0			10.0		5.0	10.0	10.0			
Minimum Split (s)	9.5	28.6			28.6		22.5	25.9	25.9			
Total Split (s)	17.0	57.0			40.0		22.5	26.0	26.0			
Total Split (%)	20.5%	68.7%			48.2%		27.1%	31.3%	31.3%			
Maximum Green (s)	14.0	52.4			35.4		18.0	21.1	21.1			
Yellow Time (s)	3.0	3.0			3.0		3.5	3.2	3.2			
All-Red Time (s)	0.0	1.6			1.6		1.0	1.7	1.7			
Lost Time Adjust (s)	0.0	0.0			0.0		0.0	0.0	0.0			
Total Lost Time (s)	3.0	4.6			4.6		4.5	4.9	4.9			
Lead/Lag	Lead				Lag							
Lead-Lag Optimize?	Yes				Yes							
Vehicle Extension (s)	3.0	3.0			3.0		3.0	3.0	3.0			
Recall Mode	Min	Max			Max		None	C-Max	C-Max			
Walk Time (s)		13.0			13.0		3.0	8.0	8.0			
Flash Dont Walk (s)		10.0			10.0		4.0	13.0	13.0			
Pedestrian Calls (#/hr)		0			0		4	0	0			
Act Effct Green (s)	54.0	52.4			41.5		21.5	21.1	21.1			
Actuated g/C Ratio	0.65	0.63			0.50		0.26	0.25	0.25			
v/c Ratio	0.33	0.35			0.50		0.24	0.60	0.27			
Control Delay	7.7	7.7			14.8		26.1	30.6	7.3			
Queue Delay	0.0	0.5			0.0		0.0	0.0	0.0			
Total Delay	7.7	8.3			14.8		26.1	30.6	7.3			
LOS	A	A			B		C	C	A			
Approach Delay		8.2			14.8			26.6				
Approach LOS		A			B			C				

Intersection Summary

Area Type: Other
 Cycle Length: 83
 Actuated Cycle Length: 83
 Offset: 0 (0%), Referenced to phase 2:NBT, Start of Green
 Natural Cycle: 65
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.60
 Intersection Signal Delay: 16.0
 Intersection LOS: B
 Intersection Capacity Utilization 61.4%
 ICU Level of Service B
 Analysis Period (min) 15

Splits and Phases: 555: Van Buren St & Central Ave



Lanes, Volumes, Timings
557: 1st Ave & Bus-Only (Transit Station)

09/10/2020



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT	SWL	SWR	
Lane Configurations									
Traffic Volume (vph)	0	0	0	0	0	724	0	0	
Future Volume (vph)	0	0	0	0	0	724	0	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	0.91	1.00	1.00	
Frt									
Flt Protected									
Satd. Flow (prot)	1863	0	0	0	0	5085	1863	0	
Flt Permitted									
Satd. Flow (perm)	1863	0	0	0	0	5085	1863	0	
Right Turn on Red								Yes	
Satd. Flow (RTOR)									
Link Speed (mph)	30		30			30		30	
Link Distance (ft)	158		373			826		174	
Travel Time (s)	3.6		8.5			18.8		4.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Adj. Flow (vph)	0	0	0	0	0	787	0	0	
Shared Lane Traffic (%)									
Lane Group Flow (vph)	0	0	0	0	0	787	0	0	
Enter Blocked Intersection	No	No	No	No	No	No	No	No	
Lane Alignment	Left	Right	Left	Right	Left	Left	Left	Right	
Median Width(ft)	12		0			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	
Turning Speed (mph)	15	9		9	15		15	9	
Number of Detectors	1					2		1	
Detector Template	Left					Thru		Left	
Leading Detector (ft)	20					100		20	
Trailing Detector (ft)	0					0		0	
Detector 1 Position(ft)	0					0		0	
Detector 1 Size(ft)	20					6		20	
Detector 1 Type	Cl+Ex					Cl+Ex		Cl+Ex	
Detector 1 Channel									
Detector 1 Extend (s)	0.0					0.0		0.0	
Detector 1 Queue (s)	0.0					0.0		0.0	
Detector 1 Delay (s)	0.0					0.0		0.0	
Detector 2 Position(ft)						94			
Detector 2 Size(ft)						6			
Detector 2 Type						Cl+Ex			
Detector 2 Channel									
Detector 2 Extend (s)						0.0			
Turn Type	Prot					NA		Prot	
Protected Phases	8					6!		6!	
Permitted Phases									
Detector Phase	8					6		6	
Switch Phase									
Minimum Initial (s)	1.0					20.0		20.0	

Lanes, Volumes, Timings
 557: 1st Ave & Bus-Only (Transit Station)

09/10/2020



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT	SWL	SWR
Minimum Split (s)	26.7					36.3	36.3	
Total Split (s)	27.0					53.0	53.0	
Total Split (%)	33.8%					66.3%	66.3%	
Maximum Green (s)	20.3					47.7	47.7	
Yellow Time (s)	3.2					3.2	3.2	
All-Red Time (s)	3.5					2.1	2.1	
Lost Time Adjust (s)	0.0					0.0	0.0	
Total Lost Time (s)	6.7					5.3	5.3	
Lead/Lag								
Lead-Lag Optimize?								
Vehicle Extension (s)	3.0					3.0	3.0	
Recall Mode	None					C-Max	C-Max	
Walk Time (s)	8.0					20.0	20.0	
Flash Dont Walk (s)	12.0					8.0	8.0	
Pedestrian Calls (#/hr)	0					0	0	
Act Effect Green (s)						80.0		
Actuated g/C Ratio						1.00		
v/c Ratio						0.15		
Control Delay						0.1		
Queue Delay						0.0		
Total Delay						0.1		
LOS						A		
Approach Delay						0.1		
Approach LOS						A		

Intersection Summary

Area Type: Other
 Cycle Length: 80
 Actuated Cycle Length: 80
 Offset: 46 (58%), Referenced to phase 6:SBSW, Start of Green
 Natural Cycle: 65
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.15
 Intersection Signal Delay: 0.1
 Intersection LOS: A
 Intersection Capacity Utilization 21.1%
 ICU Level of Service A
 Analysis Period (min) 15
 ! Phase conflict between lane groups.

Splits and Phases: 557: 1st Ave & Bus-Only (Transit Station)



Lanes, Volumes, Timings

559: Central Ave & Bus-Only (Transit Station)/Polk St

09/10/2020



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕				↗	↖	↕↔	↗			
Traffic Volume (vph)	0	0	0	0	0	0	0	593	0	0	0	0
Future Volume (vph)	0	0	0	0	0	0	0	593	0	0	0	0
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	0.91	0.91	1.00	1.00	1.00
Frt												
Flt Protected												
Satd. Flow (prot)	0	1863	0	0	0	1863	1863	3390	1695	0	0	0
Flt Permitted												
Satd. Flow (perm)	0	1863	0	0	0	1863	1863	3390	1695	0	0	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)												
Link Speed (mph)		30			30			30				30
Link Distance (ft)		137			278			358				409
Travel Time (s)		3.1			6.3			8.1				9.3
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	0	0	0	0	645	0	0	0	0
Shared Lane Traffic (%)												
0%												
Lane Group Flow (vph)	0	0	0	0	0	0	0	645	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			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	2				1	1	2	1			
Detector Template	Left	Thru				Right	Left	Thru	Right			
Leading Detector (ft)	20	100				20	20	100	20			
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				20	20	6	20			
Detector 1 Type	Cl+Ex	Cl+Ex				Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex			
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0				0.0	0.0	0.0	0.0			
Detector 1 Queue (s)	0.0	0.0				0.0	0.0	0.0	0.0			
Detector 1 Delay (s)	0.0	0.0				0.0	0.0	0.0	0.0			
Detector 2 Position(ft)		94						94				
Detector 2 Size(ft)		6						6				
Detector 2 Type		Cl+Ex						Cl+Ex				
Detector 2 Channel												
Detector 2 Extend (s)		0.0						0.0				
Turn Type												
Protected Phases		4				Perm	Prot	NA	Perm			
Permitted Phases	4					6	5	2		2		
Detector Phase	4	4				6	5	2	2			
Switch Phase												
Minimum Initial (s)	5.0	5.0				8.0	5.0	10.0	10.0			

Lanes, Volumes, Timings

559: Central Ave & Bus-Only (Transit Station)/Polk St

09/10/2020

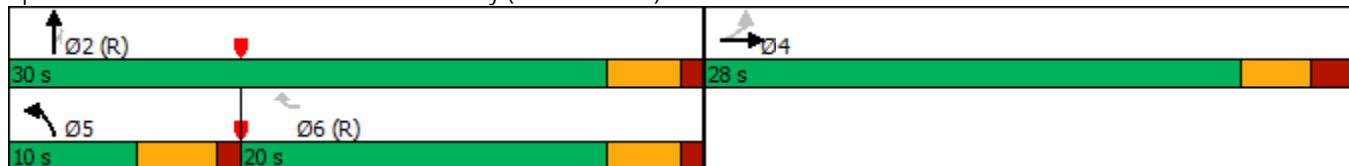


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Split (s)	24.8	24.8				23.2	9.5	23.2	23.2			
Total Split (s)	28.0	28.0				20.0	10.0	30.0	30.0			
Total Split (%)	48.3%	48.3%				34.5%	17.2%	51.7%	51.7%			
Maximum Green (s)	23.2	23.2				15.8	5.5	25.8	25.8			
Yellow Time (s)	3.0	3.0				3.2	3.5	3.2	3.2			
All-Red Time (s)	1.8	1.8				1.0	1.0	1.0	1.0			
Lost Time Adjust (s)		0.0				0.0	0.0	0.0	0.0			
Total Lost Time (s)		4.8				4.2	4.5	4.2	4.2			
Lead/Lag						Lag	Lead					
Lead-Lag Optimize?						Yes	Yes					
Vehicle Extension (s)	3.0	3.0				3.0	3.0	3.0	3.0			
Recall Mode	None	None				C-Max	None	C-Max	C-Max			
Walk Time (s)	8.0	8.0				8.0		8.0	8.0			
Flash Dont Walk (s)	12.0	12.0				8.0		8.0	8.0			
Pedestrian Calls (#/hr)	0	0				0		0	0			
Act Effect Green (s)								58.0				
Actuated g/C Ratio								1.00				
v/c Ratio								0.19				
Control Delay								0.1				
Queue Delay								0.0				
Total Delay								0.1				
LOS								A				
Approach Delay								0.1				
Approach LOS								A				

Intersection Summary

Area Type:	Other
Cycle Length:	58
Actuated Cycle Length:	58
Offset:	22 (38%), Referenced to phase 2:NBT and 6:WBR, Start of Green
Natural Cycle:	60
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.19
Intersection Signal Delay:	0.1
Intersection LOS:	A
Intersection Capacity Utilization:	19.9%
ICU Level of Service:	A
Analysis Period (min):	15

Splits and Phases: 559: Central Ave & Bus-Only (Transit Station)/Polk St



Lanes, Volumes, Timings
562: 1st Ave & Fillmore St

09/10/2020



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↗			↖					↘	↗↖↘	
Traffic Volume (vph)	0	234	75	45	123	0	0	0	0	59	656	66
Future Volume (vph)	0	234	75	45	123	0	0	0	0	59	656	66
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	0		0	260		0
Storage Lanes	0		0	0		0	0		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.91	0.91
Ped Bike Factor		0.99			0.99					0.90	0.99	
Fr _t		0.963									0.986	
Fl _t Protected					0.986					0.950		
Satd. Flow (prot)	0	1768	0	0	1837	0	0	0	0	1770	4959	0
Fl _t Permitted					0.820					0.950		
Satd. Flow (perm)	0	1768	0	0	1517	0	0	0	0	1593	4959	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		33									36	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		818			362			826			465	
Travel Time (s)		18.6			8.2			18.8			10.6	
Confl. Peds. (#/hr)	62		51	51		62	51		50	50		51
Peak Hour Factor	0.92	0.91	0.78	0.80	0.88	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	257	96	56	140	0	0	0	0	64	713	72
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	353	0	0	196	0	0	0	0	64	785	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			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		2		1	2					1	2	
Detector Template		Thru		Left	Thru					Left	Thru	
Leading Detector (ft)		100		20	100					20	100	
Trailing Detector (ft)		0		0	0					0	0	
Detector 1 Position(ft)		0		0	0					0	0	
Detector 1 Size(ft)		6		20	6					20	6	
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		0.0	0.0					0.0	0.0	
Detector 2 Position(ft)		94			94						94	
Detector 2 Size(ft)		6			6						6	
Detector 2 Type		Cl+Ex			Cl+Ex						Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0						0.0	
Turn Type		NA		Perm	NA					Prot	NA	

Lanes, Volumes, Timings
562: 1st Ave & Fillmore St

09/10/2020

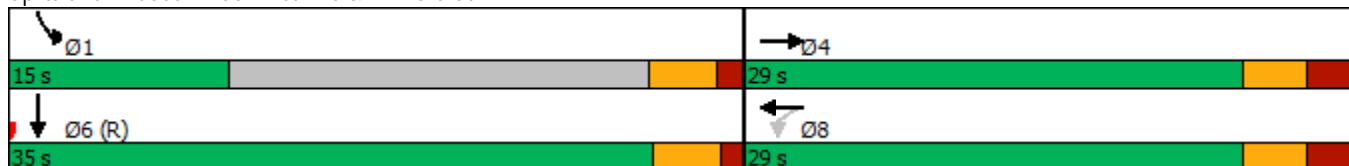


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Protected Phases		4			8					1	6	
Permitted Phases				8								
Detector Phase		4		8	8					1	6	
Switch Phase												
Minimum Initial (s)		7.0		7.0	7.0					5.0	10.0	
Minimum Split (s)		28.2		28.2	28.2					15.0	23.3	
Total Split (s)		29.0		29.0	29.0					15.0	35.0	
Total Split (%)		45.3%		45.3%	45.3%					23.4%	54.7%	
Maximum Green (s)		23.8		23.8	23.8					10.5	30.7	
Yellow Time (s)		3.0		3.0	3.0					3.2	3.2	
All-Red Time (s)		2.2		2.2	2.2					1.3	1.1	
Lost Time Adjust (s)		0.0			0.0					0.0	0.0	
Total Lost Time (s)		5.2			5.2					4.5	4.3	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)		3.0		3.0	3.0					3.0	3.0	
Recall Mode		Ped		Ped	Ped					None	C-Max	
Walk Time (s)		8.0		8.0	8.0					8.0	8.0	
Flash Dont Walk (s)		15.0		15.0	15.0					8.0	8.0	
Pedestrian Calls (#/hr)		0		0	0					4	0	
Act Effct Green (s)		23.2			23.2					31.1	31.3	
Actuated g/C Ratio		0.36			0.36					0.49	0.49	
v/c Ratio		0.53			0.36					0.07	0.32	
Control Delay		18.1			17.2					9.2	9.9	
Queue Delay		0.0			0.0					0.0	0.0	
Total Delay		18.1			17.2					9.2	9.9	
LOS		B			B					A	A	
Approach Delay		18.1			17.2						9.8	
Approach LOS		B			B						A	

Intersection Summary

Area Type: Other
 Cycle Length: 64
 Actuated Cycle Length: 64
 Offset: 36 (56%), Referenced to phase 2: and 6:SBT, Start of Green
 Natural Cycle: 55
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.53
 Intersection Signal Delay: 12.9
 Intersection LOS: B
 Intersection Capacity Utilization 65.1%
 ICU Level of Service C
 Analysis Period (min) 15

Splits and Phases: 562: 1st Ave & Fillmore St



Lanes, Volumes, Timings
574: Roosevelt St

09/10/2020



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑	↗	↖	↑↑					↘	↑↑	↗
Traffic Volume (vph)	0	797	17	7	1125	0	0	0	0	51	643	23
Future Volume (vph)	0	797	17	7	1125	0	0	0	0	51	643	23
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	0		0	237		150
Storage Lanes	0		1	1		0	0		0	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	0.95	1.00
Frt			0.850									0.850
Flt Protected				0.950						0.950		
Satd. Flow (prot)	0	1863	1583	1770	3539	0	0	0	0	1770	3539	1583
Flt Permitted				0.124						0.950		
Satd. Flow (perm)	0	1863	1583	231	3539	0	0	0	0	1770	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			82									97
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		930			259			164			410	
Travel Time (s)		21.1			5.9			3.7			9.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	866	18	8	1223	0	0	0	0	55	699	25
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	866	18	8	1223	0	0	0	0	55	699	25
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		2	1	1	2					1	2	1
Detector Template		Thru	Right	Left	Thru					Left	Thru	Right
Leading Detector (ft)		100	20	20	100					20	100	20
Trailing Detector (ft)		0	0	0	0					0	0	0
Detector 1 Position(ft)		0	0	0	0					0	0	0
Detector 1 Size(ft)		6	20	20	6					20	6	20
Detector 1 Type		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex					Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)		0.0	0.0	0.0	0.0					0.0	0.0	0.0
Detector 1 Queue (s)		0.0	0.0	0.0	0.0					0.0	0.0	0.0
Detector 1 Delay (s)		0.0	0.0	0.0	0.0					0.0	0.0	0.0
Detector 2 Position(ft)		94			94							94
Detector 2 Size(ft)		6			6							6
Detector 2 Type		Cl+Ex			Cl+Ex							Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0							0.0
Turn Type		NA	Perm	pm+pt	NA					Prot	NA	Perm
Protected Phases		2		1	6					3	8	
Permitted Phases			2	6								8

Lanes, Volumes, Timings
574: Roosevelt St

09/10/2020

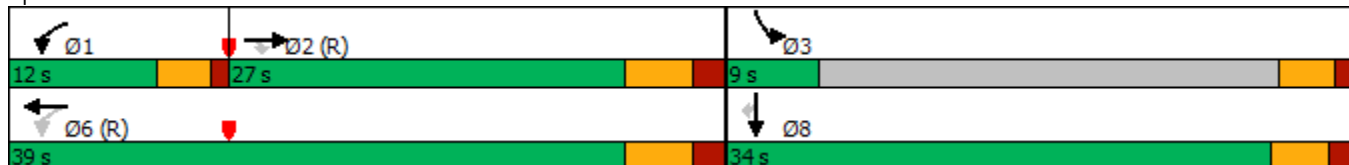


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase		2	2	1	6					3	8	8
Switch Phase												
Minimum Initial (s)		5.0	5.0	5.0	10.0					5.0	10.0	10.0
Minimum Split (s)		26.5	26.5	12.0	26.5					9.0	24.5	24.5
Total Split (s)		27.0	27.0	12.0	39.0					9.0	34.0	34.0
Total Split (%)		37.0%	37.0%	16.4%	53.4%					12.3%	46.6%	46.6%
Maximum Green (s)		21.5	21.5	8.0	33.5					5.0	29.5	29.5
Yellow Time (s)		3.6	3.6	3.0	3.6					3.0	3.2	3.2
All-Red Time (s)		1.9	1.9	1.0	1.9					1.0	1.3	1.3
Lost Time Adjust (s)		0.0	0.0	0.0	0.0					0.0	0.0	0.0
Total Lost Time (s)		5.5	5.5	4.0	5.5					4.0	4.5	4.5
Lead/Lag		Lag	Lag	Lead								
Lead-Lag Optimize?		Yes	Yes	Yes								
Vehicle Extension (s)		3.0	3.0	3.0	3.0					3.0	3.0	3.0
Recall Mode		C-Max	C-Max	None	C-Max					None	Max	Max
Walk Time (s)		6.0	6.0		6.0					6.0	8.0	8.0
Flash Dont Walk (s)		15.0	15.0		15.0					6.0	12.0	12.0
Pedestrian Calls (#/hr)		0	0		0					4	0	0
Act Effect Green (s)		31.5	31.5	35.0	33.5					20.4	29.5	29.5
Actuated g/C Ratio		0.43	0.43	0.48	0.46					0.28	0.40	0.40
v/c Ratio		1.08	0.02	0.03	0.75					0.11	0.49	0.04
Control Delay		79.4	0.1	0.3	8.0					15.5	17.6	0.1
Queue Delay		8.3	0.0	0.0	0.0					0.0	0.0	0.0
Total Delay		87.7	0.1	0.3	8.0					15.5	17.6	0.1
LOS		F	A	A	A					B	B	A
Approach Delay		86.0			8.0						16.9	
Approach LOS		F			A						B	

Intersection Summary

Area Type: Other
 Cycle Length: 73
 Actuated Cycle Length: 73
 Offset: 11 (15%), Referenced to phase 2:EBT and 6:WBTL, Start of Green
 Natural Cycle: 90
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 1.08
 Intersection Signal Delay: 34.2
 Intersection LOS: C
 Intersection Capacity Utilization 75.6%
 ICU Level of Service D
 Analysis Period (min) 15

Splits and Phases: 574: Roosevelt St



Lanes, Volumes, Timings
575: Portland St & Central Ave

09/10/2020



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	0	9	532	30	0	0
Future Volume (vph)	0	9	532	30	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	1.00
Ped Bike Factor			0.99			
Frt		0.865	0.992			
Flt Protected						
Satd. Flow (prot)	0	1611	3492	0	0	0
Flt Permitted						
Satd. Flow (perm)	0	1611	3492	0	0	0
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		374	14			
Link Speed (mph)	30		30			30
Link Distance (ft)	275		166			244
Travel Time (s)	6.3		3.8			5.5
Confl. Peds. (#/hr)				21		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	10	578	33	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	10	611	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	0		0			0
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Number of Detectors		1	2			
Detector Template		Right	Thru			
Leading Detector (ft)		20	100			
Trailing Detector (ft)		0	0			
Detector 1 Position(ft)		0	0			
Detector 1 Size(ft)		20	6			
Detector 1 Type		Cl+Ex	Cl+Ex			
Detector 1 Channel						
Detector 1 Extend (s)		0.0	0.0			
Detector 1 Queue (s)		0.0	0.0			
Detector 1 Delay (s)		0.0	0.0			
Detector 2 Position(ft)			94			
Detector 2 Size(ft)			6			
Detector 2 Type			Cl+Ex			
Detector 2 Channel						
Detector 2 Extend (s)			0.0			
Turn Type		Prot	NA			
Protected Phases		3	4			
Permitted Phases						
Detector Phase		3	4			

Lanes, Volumes, Timings
575: Portland St & Central Ave

09/10/2020



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Switch Phase						
Minimum Initial (s)		5.0	5.0			
Minimum Split (s)		26.0	21.0			
Total Split (s)		26.0	94.0			
Total Split (%)		21.7%	78.3%			
Maximum Green (s)		21.0	89.9			
Yellow Time (s)		3.6	3.0			
All-Red Time (s)		1.4	1.1			
Lost Time Adjust (s)		0.0	0.0			
Total Lost Time (s)		5.0	4.1			
Lead/Lag		Lead	Lag			
Lead-Lag Optimize?		Yes	Yes			
Vehicle Extension (s)		3.0	3.0			
Recall Mode		None	None			
Walk Time (s)			8.0			
Flash Dont Walk (s)			8.0			
Pedestrian Calls (#/hr)			0			
Act Effect Green (s)		5.5	117.1			
Actuated g/C Ratio		0.05	0.98			
v/c Ratio		0.02	0.18			
Control Delay		0.1	0.4			
Queue Delay		0.0	0.0			
Total Delay		0.1	0.4			
LOS		A	A			
Approach Delay	0.1		0.4			
Approach LOS	A		A			

Intersection Summary

Area Type:	Other
Cycle Length:	120
Actuated Cycle Length:	120
Offset:	0 (0%), Referenced to phase 2: and 6:, Start of Green
Natural Cycle:	50
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.18
Intersection Signal Delay:	0.4
Intersection LOS:	A
Intersection Capacity Utilization:	27.5%
ICU Level of Service:	A
Analysis Period (min):	15

Splits and Phases: 575: Portland St & Central Ave



Lanes, Volumes, Timings
576: Portland St & Central Ave

09/10/2020



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	27	0	0	701	22
Future Volume (vph)	0	27	0	0	701	22
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	0.95
Ped Bike Factor		0.90			1.00	
Frt		0.865			0.995	
Flt Protected						
Satd. Flow (prot)	0	1611	0	0	3515	0
Flt Permitted						
Satd. Flow (perm)	0	1457	0	0	3515	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		269			7	
Link Speed (mph)	30			30	30	
Link Distance (ft)	182			66	156	
Travel Time (s)	4.1			1.5	3.5	
Confl. Peds. (#/hr)		38				12
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	29	0	0	762	24
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	29	0	0	786	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Number of Detectors		1			2	
Detector Template		Right			Thru	
Leading Detector (ft)		20			100	
Trailing Detector (ft)		0			0	
Detector 1 Position(ft)		0			0	
Detector 1 Size(ft)		20			6	
Detector 1 Type		Cl+Ex			Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)		0.0			0.0	
Detector 1 Queue (s)		0.0			0.0	
Detector 1 Delay (s)		0.0			0.0	
Detector 2 Position(ft)					94	
Detector 2 Size(ft)					6	
Detector 2 Type					Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)					0.0	
Turn Type		Perm			NA	
Protected Phases					6	
Permitted Phases		4				
Detector Phase		4			6	

Lanes, Volumes, Timings
576: Portland St & Central Ave

09/10/2020



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Switch Phase						
Minimum Initial (s)		5.0			10.0	
Minimum Split (s)		21.0			24.3	
Total Split (s)		27.0			93.0	
Total Split (%)		22.5%			77.5%	
Maximum Green (s)		22.9			87.7	
Yellow Time (s)		3.0			3.6	
All-Red Time (s)		1.1			1.7	
Lost Time Adjust (s)		0.0			0.0	
Total Lost Time (s)		4.1			5.3	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)		3.0			3.0	
Recall Mode		None			C-Max	
Walk Time (s)		8.0			8.0	
Flash Dont Walk (s)		8.0			8.0	
Pedestrian Calls (#/hr)		0			0	
Act Effct Green (s)		5.5			111.1	
Actuated g/C Ratio		0.05			0.93	
v/c Ratio		0.09			0.24	
Control Delay		0.6			1.0	
Queue Delay		0.0			0.0	
Total Delay		0.6			1.0	
LOS		A			A	
Approach Delay	0.6				1.0	
Approach LOS	A				A	

Intersection Summary

Area Type:	Other
Cycle Length:	120
Actuated Cycle Length:	120
Offset:	0 (0%), Referenced to phase 6:SBT, Start of Green
Natural Cycle:	50
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.24
Intersection Signal Delay:	1.0
Intersection LOS:	A
Intersection Capacity Utilization:	38.9%
ICU Level of Service:	A
Analysis Period (min):	15

Splits and Phases: 576: Portland St & Central Ave



Lanes, Volumes, Timings
578: 1st Ave & McKinley St

09/10/2020



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	19	8	3	119	0	0	0	0	6	645	16
Future Volume (vph)	0	19	8	3	119	0	0	0	0	6	645	16
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	1.00	1.00	1.00	0.91	0.91
Fr _t		0.959									0.996	
Flt Protected					0.999					0.950		
Satd. Flow (prot)	0	1786	0	0	1861	0	0	0	0	1770	5065	0
Flt Permitted					0.993					0.950		
Satd. Flow (perm)	0	1786	0	0	1850	0	0	0	0	1770	5065	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		9										8
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		270			212			270			240	
Travel Time (s)		6.1			4.8			6.1			5.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	21	9	3	129	0	0	0	0	7	701	17
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	30	0	0	132	0	0	0	0	7	718	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			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		2		1	2					1	2	
Detector Template		Thru		Left	Thru					Left	Thru	
Leading Detector (ft)		100		20	100					20	100	
Trailing Detector (ft)		0		0	0					0	0	
Detector 1 Position(ft)		0		0	0					0	0	
Detector 1 Size(ft)		6		20	6					20	6	
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		0.0	0.0					0.0	0.0	
Detector 2 Position(ft)		94			94							94
Detector 2 Size(ft)		6			6							6
Detector 2 Type		Cl+Ex			Cl+Ex							Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0							0.0
Turn Type		NA		Perm	NA					Prot	NA	
Protected Phases		4			8					1	6	
Permitted Phases				8								
Detector Phase		4		8	8					1	6	
Switch Phase												
Minimum Initial (s)		7.0		7.0	7.0					5.0	5.0	

Lanes, Volumes, Timings
578: 1st Ave & McKinley St

09/10/2020

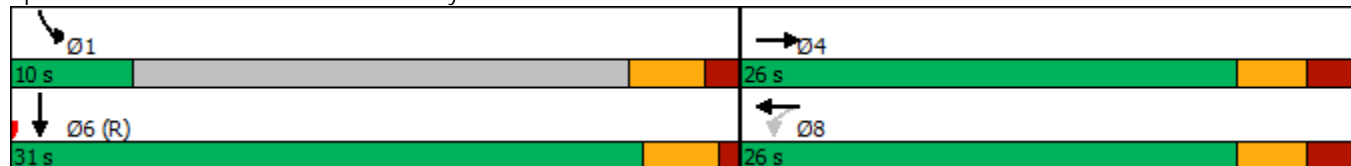


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Split (s)		26.0		26.0	26.0					27.8	23.2	
Total Split (s)		26.0		26.0	26.0					10.0	31.0	
Total Split (%)		45.6%		45.6%	45.6%					17.5%	54.4%	
Maximum Green (s)		21.0		21.0	21.0					5.2	26.8	
Yellow Time (s)		3.0		3.0	3.0					3.2	3.2	
All-Red Time (s)		2.0		2.0	2.0					1.6	1.0	
Lost Time Adjust (s)		0.0			0.0					0.0	0.0	
Total Lost Time (s)		5.0			5.0					4.8	4.2	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)		3.0		3.0	3.0					3.0	3.0	
Recall Mode		None		None	None					None	C-Max	
Walk Time (s)		8.0		8.0	8.0					11.0	8.0	
Flash Dont Walk (s)		13.0		13.0	13.0					12.0	8.0	
Pedestrian Calls (#/hr)		0		0	0					4	0	
Act Effect Green (s)		9.6			9.6					41.0	41.4	
Actuated g/C Ratio		0.17			0.17					0.72	0.73	
v/c Ratio		0.10			0.42					0.01	0.19	
Control Delay		15.6			24.9					4.2	3.7	
Queue Delay		0.0			0.0					0.0	0.0	
Total Delay		15.6			24.9					4.2	3.7	
LOS		B			C					A	A	
Approach Delay		15.6			24.9						3.7	
Approach LOS		B			C						A	

Intersection Summary

Area Type: Other
 Cycle Length: 57
 Actuated Cycle Length: 57
 Offset: 26 (46%), Referenced to phase 2: and 6:SBT, Start of Green
 Natural Cycle: 55
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.42
 Intersection Signal Delay: 7.3
 Intersection Capacity Utilization 29.2%
 Analysis Period (min) 15
 Intersection LOS: A
 ICU Level of Service A

Splits and Phases: 578: 1st Ave & McKinley St



Lanes, Volumes, Timings
612: Roosevelt St & 7th Ave

09/10/2020



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	136	252	59	43	88	124	8	834	39	310	2049	53
Future Volume (vph)	136	252	59	43	88	124	8	834	39	310	2049	53
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		110	85		85	0		0	0		0
Storage Lanes	1		0	1		1	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.91	0.91	1.00	0.95	0.95
Frt		0.972				0.850		0.993			0.996	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1811	0	1770	1863	1583	1770	5050	0	1770	3525	0
Flt Permitted	0.681			0.165			0.058			0.257		
Satd. Flow (perm)	1269	1811	0	307	1863	1583	108	5050	0	479	3525	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		9				135		9			5	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		305			730			302			296	
Travel Time (s)		6.9			16.6			6.9			6.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	148	274	64	47	96	135	9	907	42	337	2227	58
Shared Lane Traffic (%)												
Lane Group Flow (vph)	148	338	0	47	96	135	9	949	0	337	2285	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	2		1	2	1	1	2		1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100	20	20	100		20	100	
Trailing Detector (ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Position(ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Size(ft)	20	6		20	6	20	20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA	Perm	Perm	NA		D.P+P	NA	
Protected Phases		6			2			4		3	8	
Permitted Phases	6			2		2	4			4		

Lanes, Volumes, Timings
612: Roosevelt St & 7th Ave

09/10/2020

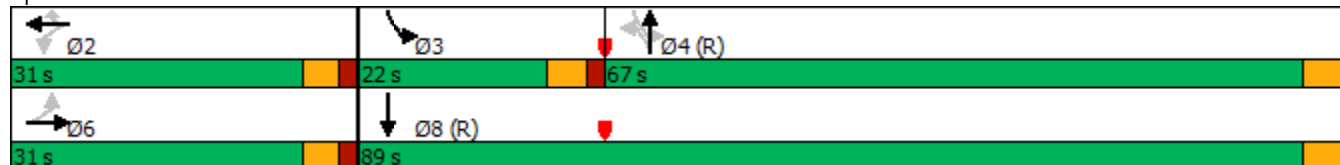


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	6	6		2	2	2	4	4		3	8	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0	5.0	15.0	15.0		5.0	15.0	
Minimum Split (s)	28.9	28.9		28.9	28.9	28.9	23.6	23.6		10.1	23.6	
Total Split (s)	31.0	31.0		31.0	31.0	31.0	67.0	67.0		22.0	89.0	
Total Split (%)	25.8%	25.8%		25.8%	25.8%	25.8%	55.8%	55.8%		18.3%	74.2%	
Maximum Green (s)	26.1	26.1		26.1	26.1	26.1	62.4	62.4		16.9	84.4	
Yellow Time (s)	3.2	3.2		3.2	3.2	3.2	3.6	3.6		3.6	3.6	
All-Red Time (s)	1.7	1.7		1.7	1.7	1.7	1.0	1.0		1.5	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.9	4.9		4.9	4.9	4.9	4.6	4.6		5.1	4.6	
Lead/Lag							Lag	Lag		Lead		
Lead-Lag Optimize?							Yes	Yes		Yes		
Vehicle Extension (s)	2.0	2.0		2.0	2.0	2.0	1.0	1.0		2.0	1.0	
Recall Mode	None	None		None	None	None	C-Max	C-Max		None	C-Max	
Walk Time (s)	9.0	9.0		9.0	9.0	9.0	8.0	8.0			8.0	
Flash Dont Walk (s)	15.0	15.0		15.0	15.0	15.0	11.0	11.0			11.0	
Pedestrian Calls (#/hr)	0	0		0	0	0	0	0			0	
Act Effect Green (s)	24.2	24.2		24.2	24.2	24.2	68.4	68.4		80.7	86.3	
Actuated g/C Ratio	0.20	0.20		0.20	0.20	0.20	0.57	0.57		0.67	0.72	
v/c Ratio	0.58	0.91		0.77	0.26	0.32	0.15	0.33		0.73	0.90	
Control Delay	52.5	73.9		99.8	34.0	5.6	22.0	14.6		17.8	20.4	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	52.5	73.9		99.8	34.0	5.6	22.0	14.6		17.8	20.4	
LOS	D	E		F	C	A	C	B		B	C	
Approach Delay		67.4			31.3			14.6			20.1	
Approach LOS		E			C			B			C	

Intersection Summary

Area Type: Other
 Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 85 (71%), Referenced to phase 4:NBSB and 8:SBT, Start of Green
 Natural Cycle: 90
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.91
 Intersection Signal Delay: 24.9
 Intersection LOS: C
 Intersection Capacity Utilization 107.7%
 ICU Level of Service G
 Analysis Period (min) 15

Splits and Phases: 612: Roosevelt St & 7th Ave



Lanes, Volumes, Timings
616: 7th St & Washington St

09/10/2020



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					←←←←	↖	↖↖	↑↑↑			↑↑↑	↗
Traffic Volume (vph)	0	0	0	238	1008	234	268	1051	0	0	723	379
Future Volume (vph)	0	0	0	238	1008	234	268	1051	0	0	723	379
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		265	0		0	0		0
Storage Lanes	0		0	0		1	2		0	0		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	0.86	0.86	1.00	0.97	0.91	1.00	1.00	0.81	0.81
Ped Bike Factor					1.00	0.97	0.99				0.99	0.96
Fr						0.850					0.969	0.850
Flt Protected					0.991		0.950					
Satd. Flow (prot)	0	0	0	0	6350	1583	3433	5085	0	0	5805	1283
Flt Permitted					0.991		0.950					
Satd. Flow (perm)	0	0	0	0	6339	1543	3413	5085	0	0	5805	1238
Right Turn on Red			Yes			No			Yes			No
Satd. Flow (RTOR)												
Link Speed (mph)		30			30			30				30
Link Distance (ft)		736			849			372				1136
Travel Time (s)		16.7			19.3			8.5				25.8
Confl. Peds. (#/hr)	12		9	9		12	17		12	12		17
Peak Hour Factor	0.92	0.92	0.92	0.97	0.91	0.70	0.88	0.92	0.92	0.92	0.91	0.88
Adj. Flow (vph)	0	0	0	245	1108	334	305	1142	0	0	795	431
Shared Lane Traffic (%)												49%
Lane Group Flow (vph)	0	0	0	0	1353	334	305	1142	0	0	1006	220
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			24			24	
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	2	1	1	2			2	1
Detector Template				Left	Thru	Right	Left	Thru			Thru	Right
Leading Detector (ft)				20	100	20	20	100			100	20
Trailing Detector (ft)				0	0	0	0	0			0	0
Detector 1 Position(ft)				0	0	0	0	0			0	0
Detector 1 Size(ft)				20	6	20	20	6			6	20
Detector 1 Type				Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex			Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)				0.0	0.0	0.0	0.0	0.0			0.0	0.0
Detector 1 Queue (s)				0.0	0.0	0.0	0.0	0.0			0.0	0.0
Detector 1 Delay (s)				0.0	0.0	0.0	0.0	0.0			0.0	0.0
Detector 2 Position(ft)					94			94			94	
Detector 2 Size(ft)					6			6			6	
Detector 2 Type					Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)					0.0			0.0			0.0	
Turn Type				Perm	NA	Perm	Prot	NA			NA	Perm

Lanes, Volumes, Timings
616: 7th St & Washington St

09/10/2020

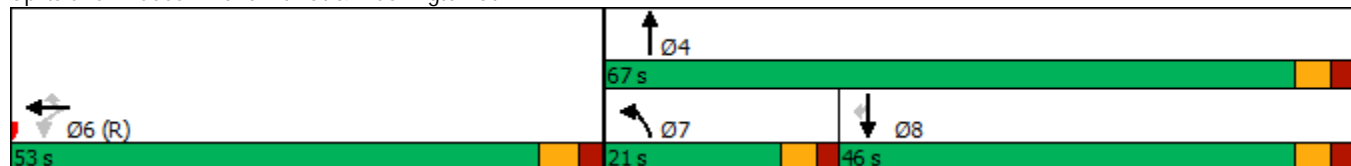


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Protected Phases					6		7	4			8	
Permitted Phases				6		6						8
Detector Phase				6	6	6	7	4			8	8
Switch Phase												
Minimum Initial (s)				10.0	10.0	10.0	10.0	10.0			10.0	10.0
Minimum Split (s)				53.0	53.0	53.0	21.0	67.0			46.0	46.0
Total Split (s)				53.0	53.0	53.0	21.0	67.0			46.0	46.0
Total Split (%)				44.2%	44.2%	44.2%	17.5%	55.8%			38.3%	38.3%
Maximum Green (s)				47.1	47.1	47.1	15.7	61.7			40.7	40.7
Yellow Time (s)				3.6	3.6	3.6	3.2	3.2			3.2	3.2
All-Red Time (s)				2.3	2.3	2.3	2.1	2.1			2.1	2.1
Lost Time Adjust (s)					0.0	0.0	0.0	0.0			0.0	0.0
Total Lost Time (s)					5.9	5.9	5.3	5.3			5.3	5.3
Lead/Lag							Lead				Lag	Lag
Lead-Lag Optimize?							Yes				Yes	Yes
Vehicle Extension (s)				3.0	3.0	3.0	3.0	3.0			3.0	3.0
Recall Mode				C-Max	C-Max	C-Max	None	None			None	None
Walk Time (s)				8.0	8.0	8.0		8.0			8.0	8.0
Flash Dont Walk (s)				24.0	24.0	24.0		18.0			18.0	18.0
Pedestrian Calls (#/hr)				4	4	4		0			0	0
Act Effect Green (s)					55.9	55.9	14.6	52.9			33.0	33.0
Actuated g/C Ratio					0.47	0.47	0.12	0.44			0.28	0.28
v/c Ratio					0.46	0.47	0.73	0.51			0.63	0.65
Control Delay					23.5	26.4	61.6	24.5			39.5	46.8
Queue Delay					0.0	0.0	0.0	0.8			0.0	0.0
Total Delay					23.5	26.4	61.6	25.3			39.5	46.8
LOS					C	C	E	C			D	D
Approach Delay					24.0			32.9			40.8	
Approach LOS					C			C			D	

Intersection Summary

Area Type: Other
 Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 60 (50%), Referenced to phase 2: and 6:WBTL, Start of Green
 Natural Cycle: 120
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.73
 Intersection Signal Delay: 31.7
 Intersection LOS: C
 Intersection Capacity Utilization 69.2%
 ICU Level of Service C
 Analysis Period (min) 15

Splits and Phases: 616: 7th St & Washington St



Lanes, Volumes, Timings
624: Central Ave & Washington St

09/10/2020



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↑↑↑	↑↑	↑	↑↑↑				
Traffic Volume (vph)	0	0	0	0	1068	19	81	686	0	0	0	0
Future Volume (vph)	0	0	0	0	1068	19	81	686	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	100		0	0		0
Storage Lanes	0		0	0		2	1		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	0.91	0.88	1.00	0.91	1.00	1.00	1.00	1.00
Frt						0.850						
Flt Protected							0.950					
Satd. Flow (prot)	0	0	0	0	5085	2787	1770	5085	0	0	0	0
Flt Permitted							0.950					
Satd. Flow (perm)	0	0	0	0	5085	2787	1770	5085	0	0	0	0
Right Turn on Red			Yes			No	Yes		Yes			Yes
Satd. Flow (RTOR)							75					
Link Speed (mph)		30			30			30				30
Link Distance (ft)		373			398			337				417
Travel Time (s)		8.5			9.0			7.7				9.5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	0	1161	21	88	746	0	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	1161	21	88	746	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			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					2	1	1	2				
Detector Template					Thru	Right	Left	Thru				
Leading Detector (ft)					100	20	20	100				
Trailing Detector (ft)					0	0	0	0				
Detector 1 Position(ft)					0	0	0	0				
Detector 1 Size(ft)					6	20	20	6				
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				
Detector 2 Position(ft)					94			94				
Detector 2 Size(ft)					6			6				
Detector 2 Type					Cl+Ex			Cl+Ex				
Detector 2 Channel												
Detector 2 Extend (s)					0.0			0.0				
Turn Type					NA	Perm	Perm	NA				
Protected Phases					2			4				
Permitted Phases						2	4					

Lane Group	Ø12
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphp)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	
Protected Phases	12
Permitted Phases	

Lanes, Volumes, Timings
624: Central Ave & Washington St

09/10/2020



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase					2	2	4	4				
Switch Phase												
Minimum Initial (s)					10.0	10.0	10.0	10.0				
Minimum Split (s)					30.8	30.8	24.8	24.8				
Total Split (s)					61.0	61.0	38.0	38.0				
Total Split (%)					55.0%	55.0%	34.2%	34.2%				
Maximum Green (s)					56.2	56.2	33.2	33.2				
Yellow Time (s)					3.0	3.0	3.0	3.0				
All-Red Time (s)					1.8	1.8	1.8	1.8				
Lost Time Adjust (s)					0.0	0.0	0.0	0.0				
Total Lost Time (s)					4.8	4.8	4.8	4.8				
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)					3.0	3.0	3.0	3.0				
Recall Mode					C-Max	C-Max	None	None				
Walk Time (s)					14.0	14.0	8.0	8.0				
Flash Dont Walk (s)					12.0	12.0	12.0	12.0				
Pedestrian Calls (#/hr)					0	0	0	0				
Act Effct Green (s)					74.3	74.3	24.2	24.2				
Actuated g/C Ratio					0.67	0.67	0.22	0.22				
v/c Ratio					0.34	0.01	0.20	0.67				
Control Delay					9.5	9.4	10.7	42.5				
Queue Delay					0.4	0.0	0.0	0.2				
Total Delay					9.9	9.4	10.7	42.7				
LOS					A	A	B	D				
Approach Delay					9.9			39.3				
Approach LOS					A			D				

Intersection Summary

Area Type: Other
 Cycle Length: 111
 Actuated Cycle Length: 111
 Offset: 35 (32%), Referenced to phase 2:WBT and 6:, Start of Green
 Natural Cycle: 70
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.67
 Intersection Signal Delay: 22.1
 Intersection LOS: C
 Intersection Capacity Utilization 41.9%
 ICU Level of Service A
 Analysis Period (min) 15




















Splits and Phases: 624: Central Ave & Washington St



Lane Group	Ø12
Detector Phase	
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	12.0
Total Split (s)	12.0
Total Split (%)	11%
Maximum Green (s)	7.2
Yellow Time (s)	3.0
All-Red Time (s)	1.8
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	0.2
Recall Mode	None
Walk Time (s)	6.0
Flash Dont Walk (s)	6.0
Pedestrian Calls (#/hr)	4
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Intersection Summary	

Lanes, Volumes, Timings
627: Central Ave & Roosevelt St

09/10/2020

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	35	813	0	0	1124	19	7	457	12	0	0	0
Future Volume (vph)	35	813	0	0	1124	19	7	457	12	0	0	0
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	100		0	240		260	0		0
Storage Lanes	1		0	2		1	1		1	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00
Frt						0.850			0.850			
Flt Protected	0.950						0.950					
Satd. Flow (prot)	1770	1863	0	0	3539	1583	1770	3539	1583	0	0	0
Flt Permitted	0.121						0.950					
Satd. Flow (perm)	225	1863	0	0	3539	1583	1770	3539	1583	0	0	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						111			109			
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		259			395			564			278	
Travel Time (s)		5.9			9.0			12.8			6.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	38	884	0	0	1222	21	8	497	13	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	38	884	0	0	1222	21	8	497	13	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												
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			2	1	1	2	1			
Detector Template	Left	Thru			Thru	Right	Left	Thru	Right			
Leading Detector (ft)	20	100			100	20	20	100	20			
Trailing Detector (ft)	0	0			0	0	0	0	0			
Detector 1 Position(ft)	0	0			0	0	0	0	0			
Detector 1 Size(ft)	20	6			6	20	20	6	20			
Detector 1 Type	Cl+Ex	Cl+Ex			Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex			
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0			0.0	0.0	0.0	0.0	0.0			
Detector 1 Queue (s)	0.0	0.0			0.0	0.0	0.0	0.0	0.0			
Detector 1 Delay (s)	0.0	0.0			0.0	0.0	0.0	0.0	0.0			
Detector 2 Position(ft)		94			94			94				
Detector 2 Size(ft)		6			6			6				
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				
Turn Type	pm+pt	NA			NA	Perm	Prot	NA	Perm			
Protected Phases	5	2			6		7	4				
Permitted Phases	2					6			4			

Lanes, Volumes, Timings
627: Central Ave & Roosevelt St

09/10/2020

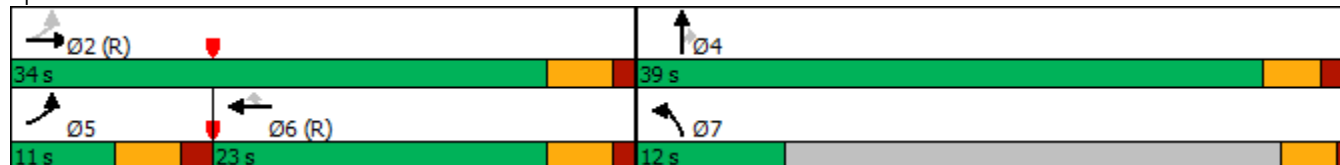


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	5	2			6	6	7	4	4			
Switch Phase												
Minimum Initial (s)	5.0	10.0			10.0	10.0	5.0	10.0	10.0			
Minimum Split (s)	10.4	22.9			22.9	22.9	9.0	27.0	27.0			
Total Split (s)	11.0	34.0			23.0	23.0	12.0	39.0	39.0			
Total Split (%)	15.1%	46.6%			31.5%	31.5%	16.4%	53.4%	53.4%			
Maximum Green (s)	5.6	29.1			18.1	18.1	8.0	34.0	34.0			
Yellow Time (s)	3.6	3.6			3.6	3.6	3.0	3.2	3.2			
All-Red Time (s)	1.8	1.3			1.3	1.3	1.0	1.8	1.8			
Lost Time Adjust (s)	0.0	0.0			0.0	0.0	0.0	0.0	0.0			
Total Lost Time (s)	5.4	4.9			4.9	4.9	4.0	5.0	5.0			
Lead/Lag	Lead				Lag				Lag			
Lead-Lag Optimize?	Yes				Yes				Yes			
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	3.0	3.0			
Recall Mode	None	C-Max			C-Max	C-Max	None	None	None			
Walk Time (s)		6.0			6.0	6.0	3.0	8.0	8.0			
Flash Dont Walk (s)		12.0			12.0	12.0	4.0	14.0	14.0			
Pedestrian Calls (#/hr)		0			0	0	4	0	0			
Act Effct Green (s)	46.2	46.7			39.5	39.5	9.1	16.4	16.4			
Actuated g/C Ratio	0.63	0.64			0.54	0.54	0.12	0.22	0.22			
v/c Ratio	0.14	0.74			0.64	0.02	0.04	0.62	0.03			
Control Delay	11.4	14.5			16.7	0.1	23.9	28.6	0.1			
Queue Delay	0.0	13.5			0.0	0.0	0.0	0.0	0.0			
Total Delay	11.4	28.0			16.7	0.1	23.9	28.6	0.1			
LOS	B	C			B	A	C	C	A			
Approach Delay		27.3			16.4			27.8				
Approach LOS		C			B			C				

Intersection Summary

Area Type: Other
 Cycle Length: 73
 Actuated Cycle Length: 73
 Offset: 10 (14%), Referenced to phase 2:EBTL and 6:WBT, Start of Green
 Natural Cycle: 70
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.74
 Intersection Signal Delay: 22.4
 Intersection LOS: C
 Intersection Capacity Utilization 75.6%
 ICU Level of Service D
 Analysis Period (min) 15

Splits and Phases: 627: Central Ave & Roosevelt St



Lanes, Volumes, Timings
632: Central Ave & McKinley St

09/10/2020



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↕	↕↕				
Traffic Volume (vph)	11	13	0	0	91	5	31	461	32	0	0	0
Future Volume (vph)	11	13	0	0	91	5	31	461	32	0	0	0
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	1.00	1.00
Frts					0.994			0.990				
Flt Protected		0.977					0.950					
Satd. Flow (prot)	0	1820	0	0	1852	0	1770	3504	0	0	0	0
Flt Permitted		0.819					0.950					
Satd. Flow (perm)	0	1526	0	0	1852	0	1770	3504	0	0	0	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					5			18				
Link Speed (mph)		30			30			30				30
Link Distance (ft)		179			173			428				154
Travel Time (s)		4.1			3.9			9.7				3.5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	12	14	0	0	99	5	34	501	35	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	26	0	0	104	0	34	536	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			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	2			2		1	2				
Detector Template	Left	Thru			Thru		Left	Thru				
Leading Detector (ft)	20	100			100		20	100				
Trailing Detector (ft)	0	0			0		0	0				
Detector 1 Position(ft)	0	0			0		0	0				
Detector 1 Size(ft)	20	6			6		20	6				
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	0.0			0.0		0.0	0.0				
Detector 2 Position(ft)		94			94			94				
Detector 2 Size(ft)		6			6			6				
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				
Turn Type	Perm	NA			NA		Prot	NA				
Protected Phases		4			8		5	2				
Permitted Phases	4											
Detector Phase	4	4			8		5	2				
Switch Phase												
Minimum Initial (s)	5.0	5.0			5.0		5.0	5.0				

Lanes, Volumes, Timings
632: Central Ave & McKinley St

09/10/2020

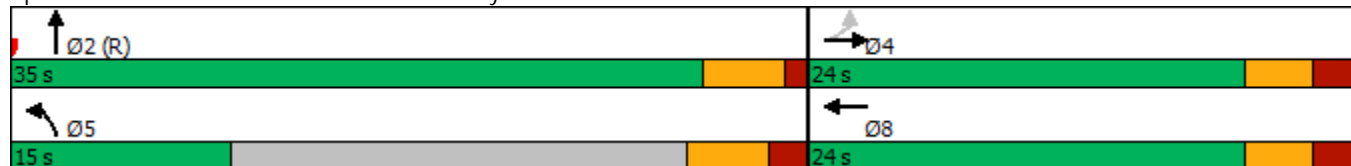


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Split (s)	23.8	23.8			23.8		26.3	23.6				
Total Split (s)	24.0	24.0			24.0		15.0	35.0				
Total Split (%)	40.7%	40.7%			40.7%		25.4%	59.3%				
Maximum Green (s)	19.2	19.2			19.2		9.7	30.4				
Yellow Time (s)	3.0	3.0			3.0		3.6	3.6				
All-Red Time (s)	1.8	1.8			1.8		1.7	1.0				
Lost Time Adjust (s)		0.0			0.0		0.0	0.0				
Total Lost Time (s)		4.8			4.8		5.3	4.6				
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0			3.0		3.0	3.0				
Recall Mode	None	None			None		None	C-Max				
Walk Time (s)	8.0	8.0			8.0		10.0	8.0				
Flash Dont Walk (s)	11.0	11.0			11.0		11.0	8.0				
Pedestrian Calls (#/hr)	0	0			0		4	0				
Act Effect Green (s)		8.5			8.5		43.5	44.0				
Actuated g/C Ratio		0.14			0.14		0.74	0.75				
v/c Ratio		0.12			0.38		0.03	0.20				
Control Delay		21.8			25.2		3.7	3.4				
Queue Delay		0.0			0.0		0.0	0.0				
Total Delay		21.8			25.2		3.7	3.4				
LOS		C			C		A	A				
Approach Delay		21.8			25.2			3.4				
Approach LOS		C			C			A				

Intersection Summary

Area Type:	Other
Cycle Length:	59
Actuated Cycle Length:	59
Offset:	31 (53%), Referenced to phase 2:NBT, Start of Green
Natural Cycle:	55
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.38
Intersection Signal Delay:	7.3
Intersection LOS:	A
Intersection Capacity Utilization:	29.6%
ICU Level of Service:	A
Analysis Period (min):	15

Splits and Phases: 632: Central Ave & McKinley St



Lanes, Volumes, Timings
643: 7th St & Jefferson St

09/10/2020



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↙ ↘							↑		↙ ↘	↑	
Traffic Volume (vph)	127	514	53	0	0	0	0	1190	274	202	748	0
Future Volume (vph)	127	514	53	0	0	0	0	1190	274	202	748	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	360		455	0		0	137		0	0		0
Storage Lanes	1		0	0		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.76	0.76	0.81	1.00	1.00	1.00	1.00	0.86	0.86	1.00	0.91	1.00
Ped Bike Factor	1.00	1.00						1.00		1.00		
Frt		0.979						0.973				
Flt Protected	0.950	0.998								0.950		
Satd. Flow (prot)	1345	6898	0	0	0	0	0	6209	0	1770	5085	0
Flt Permitted	0.950	0.998								0.133		
Satd. Flow (perm)	1342	6897	0	0	0	0	0	6209	0	248	5085	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		59						78				
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		725			756			611			372	
Travel Time (s)		16.5			17.2			13.9			8.5	
Confl. Peds. (#/hr)	3		9	9		3	2		12	12		2
Peak Hour Factor	0.84	0.94	0.58	0.92	0.92	0.92	0.92	0.88	0.93	0.90	0.92	0.92
Adj. Flow (vph)	151	547	91	0	0	0	0	1352	295	224	813	0
Shared Lane Traffic (%)	15%											
Lane Group Flow (vph)	128	661	0	0	0	0	0	1647	0	224	813	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	2						2		1	2	
Detector Template	Left	Thru						Thru		Left	Thru	
Leading Detector (ft)	20	100						100		20	100	
Trailing Detector (ft)	0	0						0		0	0	
Detector 1 Position(ft)	0	0						0		0	0	
Detector 1 Size(ft)	20	6						6		20	6	
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	0.0						0.0		0.0	0.0	
Detector 2 Position(ft)		94						94			94	
Detector 2 Size(ft)		6						6			6	
Detector 2 Type		Cl+Ex						Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0						0.0			0.0	
Turn Type	Perm	NA						NA		pm+pt	NA	

Lanes, Volumes, Timings
643: 7th St & Jefferson St

09/10/2020

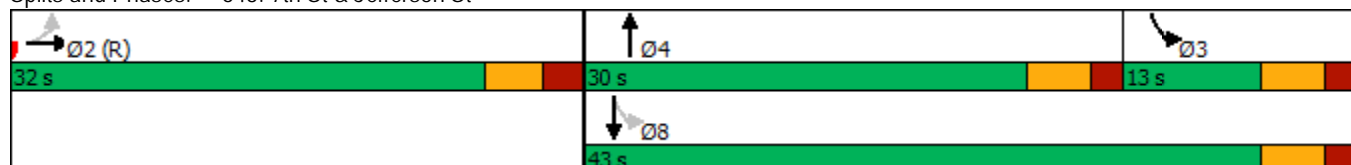


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Protected Phases		2						4		3	8	
Permitted Phases	2									8		
Detector Phase	2	2						4		3	8	
Switch Phase												
Minimum Initial (s)	9.5	9.5						10.0		7.0	10.0	
Minimum Split (s)	15.0	15.0						30.0		12.3	43.0	
Total Split (s)	32.0	32.0						30.0		13.0	43.0	
Total Split (%)	42.7%	42.7%						40.0%		17.3%	57.3%	
Maximum Green (s)	26.5	26.5						24.7		7.7	37.7	
Yellow Time (s)	3.2	3.2						3.6		3.6	3.6	
All-Red Time (s)	2.3	2.3						1.7		1.7	1.7	
Lost Time Adjust (s)	0.0	0.0						0.0		0.0	0.0	
Total Lost Time (s)	5.5	5.5						5.3		5.3	5.3	
Lead/Lag								Lead		Lag		
Lead-Lag Optimize?								Yes		Yes		
Vehicle Extension (s)	3.0	3.0						3.0		3.0	3.0	
Recall Mode	C-Max	C-Max						None		None	None	
Walk Time (s)	8.0	8.0						8.0			8.0	
Flash Dont Walk (s)	19.0	19.0						16.0			16.0	
Pedestrian Calls (#/hr)	0	0						0			0	
Act Effct Green (s)	26.6	26.6						24.7		37.6	37.6	
Actuated g/C Ratio	0.35	0.35						0.33		0.50	0.50	
v/c Ratio	0.27	0.27						0.79		0.81	0.32	
Control Delay	19.3	16.0						24.9		49.0	11.5	
Queue Delay	0.0	0.0						0.0		0.0	0.0	
Total Delay	19.3	16.0						24.9		49.0	11.5	
LOS	B	B						C		D	B	
Approach Delay		16.5						24.9			19.6	
Approach LOS		B						C			B	

Intersection Summary

Area Type: Other
 Cycle Length: 75
 Actuated Cycle Length: 75
 Offset: 60 (80%), Referenced to phase 2:EBTL, Start of Green
 Natural Cycle: 60
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.81
 Intersection Signal Delay: 21.4
 Intersection LOS: C
 Intersection Capacity Utilization 69.2%
 ICU Level of Service C
 Analysis Period (min) 15













Splits and Phases: 643: 7th St & Jefferson St



Lanes, Volumes, Timings

699: Jefferson St

09/10/2020

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑	↗							↘	↑↑↑	
Traffic Volume (vph)	0	947	35	0	0	0	0	0	0	80	139	0
Future Volume (vph)	0	947	35	0	0	0	0	0	0	80	139	0
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		163	0		0	0		0	140		0
Storage Lanes	0		1	0		0	0		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.86	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.86	0.86	1.00
Ped Bike Factor			0.96							0.95	0.99	
Frt			0.850									
Flt Protected										0.950	0.992	
Satd. Flow (prot)	0	6408	1583	0	0	0	0	0	0	1522	4767	0
Flt Permitted										0.950	0.992	
Satd. Flow (perm)	0	6408	1520	0	0	0	0	0	0	1452	4731	0
Right Turn on Red			No			Yes			Yes	Yes		Yes
Satd. Flow (RTOR)										57	30	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		437			375			340			438	
Travel Time (s)		9.9			8.5			7.7			10.0	
Confl. Peds. (#/hr)			49							52		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1029	38	0	0	0	0	0	0	87	151	0
Shared Lane Traffic (%)										34%		
Lane Group Flow (vph)	0	1029	38	0	0	0	0	0	0	57	181	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			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		2	1							1	2	
Detector Template		Thru	Right							Left	Thru	
Leading Detector (ft)		100	20							20	100	
Trailing Detector (ft)		0	0							0	0	
Detector 1 Position(ft)		0	0							0	0	
Detector 1 Size(ft)		6	20							20	6	
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	
Detector 2 Position(ft)		94									94	
Detector 2 Size(ft)		6									6	
Detector 2 Type		Cl+Ex									Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0									0.0	
Turn Type		NA	Perm							Perm	NA	

Lanes, Volumes, Timings

699: Jefferson St

09/10/2020



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Protected Phases		6										8
Permitted Phases			6							8		
Detector Phase		6	6							8	8	
Switch Phase												
Minimum Initial (s)		5.0	5.0							5.0	5.0	
Minimum Split (s)		37.5	37.5							27.0	27.0	
Total Split (s)		37.5	37.5							27.0	27.0	
Total Split (%)		58.1%	58.1%							41.9%	41.9%	
Maximum Green (s)		33.0	33.0							22.0	22.0	
Yellow Time (s)		3.0	3.0							3.0	3.0	
All-Red Time (s)		1.5	1.5							2.0	2.0	
Lost Time Adjust (s)		0.0	0.0							0.0	0.0	
Total Lost Time (s)		4.5	4.5							5.0	5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)		3.0	3.0							3.0	3.0	
Recall Mode		C-Max	C-Max							None	None	
Walk Time (s)		16.0	16.0							8.0	8.0	
Flash Dont Walk (s)		17.0	17.0							14.0	14.0	
Pedestrian Calls (#/hr)		4	4							0	0	
Act Effect Green (s)		47.6	47.6							7.4	7.4	
Actuated g/C Ratio		0.74	0.74							0.11	0.11	
v/c Ratio		0.22	0.03							0.26	0.32	
Control Delay		2.9	2.7							11.4	22.9	
Queue Delay		0.0	0.0							0.0	0.0	
Total Delay		2.9	2.7							11.4	22.9	
LOS		A	A							B	C	
Approach Delay		2.9									20.2	
Approach LOS		A									C	

Intersection Summary

Area Type: Other
 Cycle Length: 64.5
 Actuated Cycle Length: 64.5
 Offset: 44 (68%), Referenced to phase 2: and 6:EBT, Start of Green
 Natural Cycle: 65
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.32
 Intersection Signal Delay: 6.0
 Intersection LOS: A
 Intersection Capacity Utilization 49.0%
 ICU Level of Service A
 Analysis Period (min) 15

Splits and Phases: 699: Jefferson St





Appendix D
PM Syncho Analysis

Lanes, Volumes, Timings
7: Central Ave & Bus-Only (Transit Station)/Polk St

09/10/2020



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations		↕			↕		↕	↕↔	↕				
Traffic Volume (vph)	0	0	0	0	0	150	0	484	0	0	0	0	
Future Volume (vph)	0	0	0	0	0	150	0	484	0	0	0	0	
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	0.91	0.91	1.00	1.00	1.00	
Fr t						0.865							
Flt Protected													
Satd. Flow (prot)	0	1863	0	0	1611	0	1863	3390	1695	0	0	0	
Flt Permitted													
Satd. Flow (perm)	0	1863	0	0	1611	0	1863	3390	1695	0	0	0	
Right Turn on Red			Yes			Yes			Yes				
Satd. Flow (RTOR)					233								
Link Speed (mph)	30				30			30			30		
Link Distance (ft)	137				278			358			806		
Travel Time (s)	3.1				6.3			8.1			18.3		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Adj. Flow (vph)	0	0	0	0	0	163	0	526	0	0	0	0	
Shared Lane Traffic (%)										0%			
Lane Group Flow (vph)	0	0	0	0	163	0	0	526	0	0	0	0	
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No	
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right	
Median Width(ft)	0				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	2			2			1	2	1			
Detector Template	Left	Thru			Thru			Left	Thru	Right			
Leading Detector (ft)	20	100			100			20	100	20			
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			20	6	20			
Detector 1 Type	Cl+Ex	Cl+Ex			Cl+Ex			Cl+Ex	Cl+Ex	Cl+Ex			
Detector 1 Channel													
Detector 1 Extend (s)	0.0	0.0			0.0			0.0	0.0	0.0			
Detector 1 Queue (s)	0.0	0.0			0.0			0.0	0.0	0.0			
Detector 1 Delay (s)	0.0	0.0			0.0			0.0	0.0	0.0			
Detector 2 Position(ft)	94				94			94					
Detector 2 Size(ft)	6				6			6					
Detector 2 Type	Cl+Ex				Cl+Ex			Cl+Ex					
Detector 2 Channel													
Detector 2 Extend (s)	0.0				0.0			0.0					
Turn Type					NA			Prot	NA	Perm			
Protected Phases	4				8			5	2				
Permitted Phases	4									2			
Detector Phase	4	4			8			5	2	2			
Switch Phase													
Minimum Initial (s)	5.0	5.0			5.0			5.0	10.0	10.0			

Lanes, Volumes, Timings

7: Central Ave & Bus-Only (Transit Station)/Polk St

09/10/2020

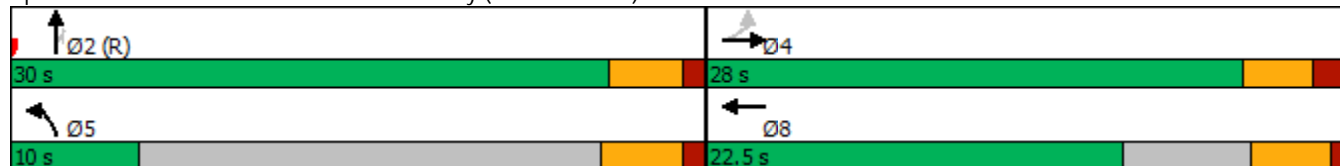


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Split (s)	24.8	24.8			22.5		9.5	23.2	23.2			
Total Split (s)	28.0	28.0			22.5		10.0	30.0	30.0			
Total Split (%)	48.3%	48.3%			38.8%		17.2%	51.7%	51.7%			
Maximum Green (s)	23.2	23.2			18.0		5.5	25.8	25.8			
Yellow Time (s)	3.0	3.0			3.5		3.5	3.2	3.2			
All-Red Time (s)	1.8	1.8			1.0		1.0	1.0	1.0			
Lost Time Adjust (s)		0.0			0.0		0.0	0.0	0.0			
Total Lost Time (s)		4.8			4.5		4.5	4.2	4.2			
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0			3.0		3.0	3.0	3.0			
Recall Mode	None	None			None		None	C-Max	C-Max			
Walk Time (s)	8.0	8.0			7.0			8.0	8.0			
Flash Dont Walk (s)	12.0	12.0			11.0			8.0	8.0			
Pedestrian Calls (#/hr)	0	0			0			0	0			
Act Effect Green (s)					6.1			46.0				
Actuated g/C Ratio					0.11			0.79				
v/c Ratio					0.43			0.20				
Control Delay					5.2			2.3				
Queue Delay					0.0			0.0				
Total Delay					5.2			2.3				
LOS					A			A				
Approach Delay					5.2			2.3				
Approach LOS					A			A				

Intersection Summary




















Area Type:	Other
Cycle Length:	58
Actuated Cycle Length:	58
Offset:	12 (21%), Referenced to phase 2:NBT and 6:, Start of Green
Natural Cycle:	50
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.43
Intersection Signal Delay:	3.0
Intersection LOS:	A
Intersection Capacity Utilization:	29.9%
ICU Level of Service:	A
Analysis Period (min):	15

Splits and Phases: 7: Central Ave & Bus-Only (Transit Station)/Polk St



Lanes, Volumes, Timings
30: Madison St & Central Ave

09/10/2020

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	54	23	0	0	5	30	5	271	15	0	0	0
Future Volume (vph)	54	23	0	0	5	30	5	271	15	0	0	0
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	100		0	0		0	0		0	0		0
Storage Lanes	1		0	0		1	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.91	0.91	0.91	1.00	1.00	1.00
Frt						0.850		0.992				
Flt Protected	0.950							0.999				
Satd. Flow (prot)	1770	1863	0	0	1863	1583	0	5040	0	0	0	0
Flt Permitted	0.754							0.999				
Satd. Flow (perm)	1405	1863	0	0	1863	1583	0	5040	0	0	0	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						33		15				
Link Speed (mph)		30			30			30				30
Link Distance (ft)		394			255			257				421
Travel Time (s)		9.0			5.8			5.8				9.6
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	59	25	0	0	5	33	5	295	16	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	59	25	0	0	5	33	0	316	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		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	2			2	1	1	2				
Detector Template	Left	Thru			Thru	Right	Left	Thru				
Leading Detector (ft)	20	100			100	20	20	100				
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	20	20	6				
Detector 1 Type	Cl+Ex	Cl+Ex			Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex				
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0			0.0	0.0	0.0	0.0				
Detector 1 Queue (s)	0.0	0.0			0.0	0.0	0.0	0.0				
Detector 1 Delay (s)	0.0	0.0			0.0	0.0	0.0	0.0				
Detector 2 Position(ft)		94			94			94				
Detector 2 Size(ft)		6			6			6				
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				
Turn Type	Perm	NA			NA	Perm	Perm	NA				
Protected Phases		2			6			4				
Permitted Phases	2					6	4					

Lanes, Volumes, Timings
30: Madison St & Central Ave

09/10/2020

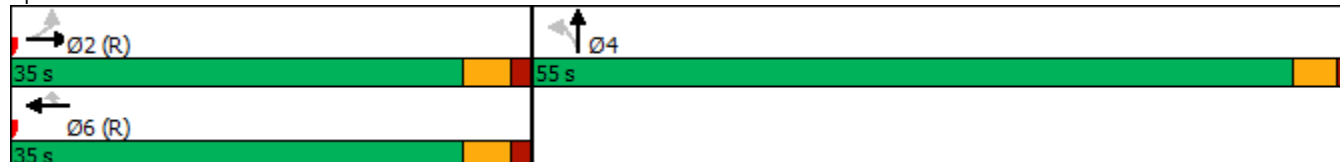


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	2	2			6	6	4	4				
Switch Phase												
Minimum Initial (s)	15.0	15.0			15.0	15.0	15.0	15.0				
Minimum Split (s)	23.7	23.7			23.7	23.7	23.2	23.2				
Total Split (s)	35.0	35.0			35.0	35.0	55.0	55.0				
Total Split (%)	38.9%	38.9%			38.9%	38.9%	61.1%	61.1%				
Maximum Green (s)	30.3	30.3			30.3	30.3	50.8	50.8				
Yellow Time (s)	3.2	3.2			3.2	3.2	3.0	3.0				
All-Red Time (s)	1.5	1.5			1.5	1.5	1.2	1.2				
Lost Time Adjust (s)	0.0	0.0			0.0	0.0		0.0				
Total Lost Time (s)	4.7	4.7			4.7	4.7		4.2				
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	3.0				
Recall Mode	C-Max	C-Max			C-Max	C-Max	None	None				
Walk Time (s)	8.0	8.0			8.0	8.0	8.0	8.0				
Flash Dont Walk (s)	9.0	9.0			9.0	9.0	9.0	9.0				
Pedestrian Calls (#/hr)	0	0			0	0	0	0				
Act Effct Green (s)	66.1	66.1			66.1	66.1		15.0				
Actuated g/C Ratio	0.73	0.73			0.73	0.73		0.17				
v/c Ratio	0.06	0.02			0.00	0.03		0.37				
Control Delay	0.1	0.0			3.2	1.2		33.1				
Queue Delay	0.0	0.0			0.0	0.0		0.0				
Total Delay	0.1	0.0			3.2	1.2		33.1				
LOS	A	A			A	A		C				
Approach Delay		0.1			1.5			33.1				
Approach LOS		A			A			C				

Intersection Summary

Area Type: Other
 Cycle Length: 90
 Actuated Cycle Length: 90
 Offset: 50 (56%), Referenced to phase 2:EBTL and 6:WBT, Start of Green
 Natural Cycle: 50
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.37
 Intersection Signal Delay: 24.0
 Intersection LOS: C
 Intersection Capacity Utilization 33.8%
 ICU Level of Service A
 Analysis Period (min) 15
 Description: Counts grown from 2015 AECOM

Splits and Phases: 30: Madison St & Central Ave



Lanes, Volumes, Timings
37: Lincoln/Lincoln St & 1st Ave

09/10/2020



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑		↖	↑↑					↘	↑↑	↗
Traffic Volume (vph)	0	315	145	87	518	0	0	0	0	41	693	87
Future Volume (vph)	0	315	145	87	518	0	0	0	0	41	693	87
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	0		0	0		250
Storage Lanes	0		0	1		0	0		0	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	1.00	0.95	1.00
Ped Bike Factor										1.00		0.97
Fr t		0.943										0.850
Fl t Protected				0.950						0.950		
Satd. Flow (prot)	0	3337	0	1770	3539	0	0	0	0	1770	3539	1583
Fl t Permitted				0.265						0.950		
Satd. Flow (perm)	0	3337	0	494	3539	0	0	0	0	1765	3539	1531
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		41										140
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		708			369			199			327	
Travel Time (s)		16.1			8.4			4.5			7.4	
Confl. Peds. (#/hr)										2		15
Peak Hour Factor	0.92	0.90	0.67	0.84	0.88	0.92	0.92	0.92	0.92	0.64	0.76	0.62
Adj. Flow (vph)	0	350	216	104	589	0	0	0	0	64	912	140
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	566	0	104	589	0	0	0	0	64	912	140
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		2		1	2					1	2	1
Detector Template		Thru		Left	Thru					Left	Thru	Right
Leading Detector (ft)		100		20	100					20	100	20
Trailing Detector (ft)		0		0	0					0	0	0
Detector 1 Position(ft)		0		0	0					0	0	0
Detector 1 Size(ft)		6		20	6					20	6	20
Detector 1 Type		Cl+Ex		Cl+Ex	Cl+Ex					Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)		0.0		0.0	0.0					0.0	0.0	0.0
Detector 1 Queue (s)		0.0		0.0	0.0					0.0	0.0	0.0
Detector 1 Delay (s)		0.0		0.0	0.0					0.0	0.0	0.0
Detector 2 Position(ft)		94			94							94
Detector 2 Size(ft)		6			6							6
Detector 2 Type		Cl+Ex			Cl+Ex							Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0							0.0
Turn Type		NA		Perm	NA					Perm	NA	Perm

Lanes, Volumes, Timings
37: Lincoln/Lincoln St & 1st Ave

09/10/2020



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Protected Phases		1			1						2	
Permitted Phases				1						2		2
Detector Phase		1		1	1					2	2	2
Switch Phase												
Minimum Initial (s)		15.0		15.0	15.0					15.0	15.0	15.0
Minimum Split (s)		23.8		23.8	23.8					24.1	24.1	24.1
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%
Maximum Green (s)		45.2		45.2	45.2					34.9	34.9	34.9
Yellow Time (s)		3.6		3.6	3.6					3.6	3.6	3.6
All-Red Time (s)		1.2		1.2	1.2					1.5	1.5	1.5
Lost Time Adjust (s)		0.0		0.0	0.0					0.0	0.0	0.0
Total Lost Time (s)		4.8		4.8	4.8					5.1	5.1	5.1
Lead/Lag		Lead		Lead	Lead					Lag	Lag	Lag
Lead-Lag Optimize?		Yes		Yes	Yes					Yes	Yes	Yes
Vehicle Extension (s)		1.0		1.0	1.0					1.0	1.0	1.0
Recall Mode		None		None	None					None	None	None
Walk Time (s)		8.0		8.0	8.0					8.0	8.0	8.0
Flash Dont Walk (s)		11.0		11.0	11.0					11.0	11.0	11.0
Pedestrian Calls (#/hr)		0		0	0					0	0	0
Act Effect Green (s)		21.9		21.9	21.9					58.2	58.2	58.2
Actuated g/C Ratio		0.24		0.24	0.24					0.65	0.65	0.65
v/c Ratio		0.67		0.87	0.68					0.06	0.40	0.13
Control Delay		31.9		87.9	37.7					7.7	9.1	2.0
Queue Delay		0.0		0.0	0.0					0.0	0.0	0.0
Total Delay		31.9		87.9	37.7					7.7	9.1	2.0
LOS		C		F	D					A	A	A
Approach Delay		31.9			45.2						8.1	
Approach LOS		C			D						A	

Intersection Summary























Area Type:	Other
Cycle Length:	90
Actuated Cycle Length:	90
Offset:	86 (96%), Referenced to phase 6., Start of Green
Natural Cycle:	50
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.87
Intersection Signal Delay:	24.6
Intersection LOS:	C
Intersection Capacity Utilization:	57.3%
ICU Level of Service:	B
Analysis Period (min):	15

Splits and Phases: 37: Lincoln/Lincoln St & 1st Ave



Lanes, Volumes, Timings
39: 7th Ave & Grant St

09/10/2020

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	24	161	129	60	438	164	126	772	37	91	801	39
Future Volume (vph)	24	161	129	60	438	164	126	772	37	91	801	39
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	165		0	150		0	115		175	160		0
Storage Lanes	1		0	1		0	1		1	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	0.95	1.00	1.00	0.95	0.95
Ped Bike Factor	1.00	0.99		1.00	1.00		1.00		0.98	1.00	1.00	
Frt		0.936			0.960				0.850		0.993	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3294	0	1770	3385	0	1770	3539	1583	1770	3512	0
Flt Permitted	0.194			0.453			0.268			0.285		
Satd. Flow (perm)	361	3294	0	843	3385	0	499	3539	1557	530	3512	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		136			56				52			8
Link Speed (mph)		30			30			30				30
Link Distance (ft)		432			474			1028				2278
Travel Time (s)		9.8			10.8			23.4				51.8
Confl. Peds. (#/hr)	1		1	1		1	1		3	3		1
Peak Hour Factor	0.75	0.76	0.81	0.79	0.88	0.89	0.81	0.88	0.71	0.81	0.91	0.89
Adj. Flow (vph)	32	212	159	76	498	184	156	877	52	112	880	44
Shared Lane Traffic (%)												
Lane Group Flow (vph)	32	371	0	76	682	0	156	877	52	112	924	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	2		1	2		1	2	1	1		2
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100	20	20		100
Trailing Detector (ft)	0	0		0	0		0	0	0	0		0
Detector 1 Position(ft)	0	0		0	0		0	0	0	0		0
Detector 1 Size(ft)	20	6		20	6		20	6	20	20		6
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0		0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0		0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0		0.0
Detector 2 Position(ft)		94			94			94				94
Detector 2 Size(ft)		6			6			6				6
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				0.0
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	Perm		NA

Lanes, Volumes, Timings
39: 7th Ave & Grant St

09/10/2020



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Protected Phases		2			2			1			1	
Permitted Phases	2			2			1		1	1		
Detector Phase	2	2		2	2		1	1	1	1	1	
Switch Phase												
Minimum Initial (s)	2.0	2.0		2.0	2.0		2.0	2.0	2.0	2.0	2.0	
Minimum Split (s)	27.2	27.2		27.2	27.2		28.0	28.0	28.0	28.0	28.0	
Total Split (s)	40.0	40.0		40.0	40.0		62.0	62.0	62.0	62.0	62.0	
Total Split (%)	39.2%	39.2%		39.2%	39.2%		60.8%	60.8%	60.8%	60.8%	60.8%	
Maximum Green (s)	34.8	34.8		34.8	34.8		57.0	57.0	57.0	57.0	57.0	
Yellow Time (s)	3.6	3.6		3.6	3.6		3.6	3.6	3.6	3.6	3.6	
All-Red Time (s)	1.6	1.6		1.6	1.6		1.4	1.4	1.4	1.4	1.4	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.2	5.2		5.2	5.2		5.0	5.0	5.0	5.0	5.0	
Lead/Lag	Lag	Lag		Lag	Lag		Lead	Lead	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		2.0	2.0	2.0	2.0	2.0	
Recall Mode	None	None		None	None		C-Max	C-Max	C-Max	C-Max	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0		8.0	8.0	8.0	8.0	8.0	
Flash Dont Walk (s)	15.0	15.0		15.0	15.0		12.0	12.0	12.0	12.0	12.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0	0	0	0	
Act Effect Green (s)	26.8	26.8		26.8	26.8		65.0	65.0	65.0	65.0	65.0	
Actuated g/C Ratio	0.26	0.26		0.26	0.26		0.64	0.64	0.64	0.64	0.64	
v/c Ratio	0.34	0.38		0.34	0.73		0.49	0.39	0.05	0.33	0.41	
Control Delay	38.5	19.2		33.1	35.8		18.5	10.4	2.9	13.7	10.5	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay	38.5	19.2		33.1	35.8		18.5	10.4	2.9	13.7	10.5	
LOS	D	B		C	D		B	B	A	B	B	
Approach Delay		20.8			35.5			11.2			10.9	
Approach LOS		C			D			B			B	

Intersection Summary

Area Type: Other
 Cycle Length: 102
 Actuated Cycle Length: 102
 Offset: 11 (11%), Referenced to phase 1:NBSB, Start of Green
 Natural Cycle: 60
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.73
 Intersection Signal Delay: 17.9 Intersection LOS: B
 Intersection Capacity Utilization 68.1% ICU Level of Service C
 Analysis Period (min) 15

Splits and Phases: 39: 7th Ave & Grant St



Lanes, Volumes, Timings
50: 3rd Ave /3rd Ave & Jefferson St

09/10/2020



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↶	↷						↑↑↑				
Traffic Volume (vph)	66	876	0	0	0	0	0	125	15	0	0	0
Future Volume (vph)	66	876	0	0	0	0	0	125	15	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.81	0.81	1.00	1.00	1.00	1.00	1.00	0.91	0.91	1.00	1.00	1.00
Frts								0.984				
Flt Protected	0.950											
Satd. Flow (prot)	1433	6035	0	0	0	0	0	5004	0	0	0	0
Flt Permitted	0.950											
Satd. Flow (perm)	1433	6035	0	0	0	0	0	5004	0	0	0	0
Right Turn on Red	Yes		Yes			Yes			Yes			Yes
Satd. Flow (RTOR)	65	18						16				
Link Speed (mph)		30			30			30				30
Link Distance (ft)		390			802			180				190
Travel Time (s)		8.9			18.2			4.1				4.3
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	72	952	0	0	0	0	0	136	16	0	0	0
Shared Lane Traffic (%)	10%											
Lane Group Flow (vph)	65	959	0	0	0	0	0	152	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		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	2						2				
Detector Template	Left	Thru						Thru				
Leading Detector (ft)	20	100						100				
Trailing Detector (ft)	0	0						0				
Detector 1 Position(ft)	0	0						0				
Detector 1 Size(ft)	20	6						6				
Detector 1 Type	Cl+Ex	Cl+Ex						Cl+Ex				
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0						0.0				
Detector 1 Queue (s)	0.0	0.0						0.0				
Detector 1 Delay (s)	0.0	0.0						0.0				
Detector 2 Position(ft)		94						94				
Detector 2 Size(ft)		6						6				
Detector 2 Type		Cl+Ex						Cl+Ex				
Detector 2 Channel												
Detector 2 Extend (s)		0.0						0.0				
Turn Type	Perm	NA						NA				
Protected Phases		4						2				
Permitted Phases	4											
Detector Phase	4	4						2				
Switch Phase												
Minimum Initial (s)	5.0	5.0						5.0				

Lanes, Volumes, Timings
 50: 3rd Ave /3rd Ave & Jefferson St

09/10/2020



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Split (s)	22.5	22.5						22.5				
Total Split (s)	57.0	57.0						33.0				
Total Split (%)	63.3%	63.3%						36.7%				
Maximum Green (s)	52.5	52.5						28.5				
Yellow Time (s)	3.5	3.5						3.5				
All-Red Time (s)	1.0	1.0						1.0				
Lost Time Adjust (s)	0.0	0.0						0.0				
Total Lost Time (s)	4.5	4.5						4.5				
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0						3.0				
Recall Mode	None	None						C-Max				
Walk Time (s)	7.0	7.0						7.0				
Flash Dont Walk (s)	11.0	11.0						11.0				
Pedestrian Calls (#/hr)	0	0						0				
Act Effct Green (s)	24.4	24.4						56.6				
Actuated g/C Ratio	0.27	0.27						0.63				
v/c Ratio	0.15	0.58						0.05				
Control Delay	6.6	28.8						6.7				
Queue Delay	0.0	0.0						0.0				
Total Delay	6.6	28.8						6.7				
LOS	A	C						A				
Approach Delay		27.4						6.7				
Approach LOS		C						A				

Intersection Summary

Area Type:	Other
Cycle Length:	90
Actuated Cycle Length:	90
Offset:	1 (1%), Referenced to phase 2:NBT and 6:, Start of Green
Natural Cycle:	45
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.58
Intersection Signal Delay:	24.7
Intersection LOS:	C
Intersection Capacity Utilization:	29.6%
ICU Level of Service:	A
Analysis Period (min):	15

Splits and Phases: 50: 3rd Ave /3rd Ave & Jefferson St



Lanes, Volumes, Timings
51: 7th Ave & Washington St

09/10/2020



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations				↙	↑↑↑	↗	↙	↑↑↑			↑↔	
Traffic Volume (vph)	0	0	0	200	912	501	53	1220	0	0	949	34
Future Volume (vph)	0	0	0	200	912	501	53	1220	0	0	949	34
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	60		0	0		0
Storage Lanes	0		0	1		2	1		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	0.91	0.88	1.00	0.91	1.00	1.00	0.95	0.95
Ped Bike Factor				0.95		0.88					1.00	
Frt						0.850					0.990	
Flt Protected				0.950			0.950					
Satd. Flow (prot)	0	0	0	1770	5085	2787	1770	5085	0	0	3494	0
Flt Permitted				0.950			0.189					
Satd. Flow (perm)	0	0	0	1686	5085	2458	352	5085	0	0	3494	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						65						7
Link Speed (mph)		30			30			30				30
Link Distance (ft)		631			745			382				400
Travel Time (s)		14.3			16.9			8.7				9.1
Confl. Peds. (#/hr)				29		66	18					18
Peak Hour Factor	0.92	0.92	0.92	0.79	0.93	0.91	0.88	0.83	0.92	0.92	0.96	0.50
Adj. Flow (vph)	0	0	0	253	981	551	60	1470	0	0	989	68
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	253	981	551	60	1470	0	0	1057	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			24			24	
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	2	1	1	2				2
Detector Template				Left	Thru	Right	Left	Thru				Thru
Leading Detector (ft)				20	100	20	20	100				100
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	20	20	6				6
Detector 1 Type				Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex				Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)				0.0	0.0	0.0	0.0	0.0				0.0
Detector 1 Queue (s)				0.0	0.0	0.0	0.0	0.0				0.0
Detector 1 Delay (s)				0.0	0.0	0.0	0.0	0.0				0.0
Detector 2 Position(ft)					94			94				94
Detector 2 Size(ft)					6			6				6
Detector 2 Type					Cl+Ex			Cl+Ex				Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)					0.0			0.0				0.0
Turn Type				Perm	NA	Perm	pm+pt	NA				NA

Lanes, Volumes, Timings
51: 7th Ave & Washington St

09/10/2020

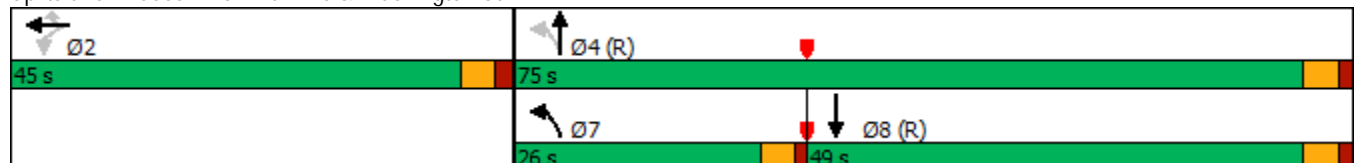


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Protected Phases					2		7	4			8	
Permitted Phases				2		2	4					
Detector Phase				2	2	2	7	4			8	
Switch Phase												
Minimum Initial (s)				15.0	15.0	15.0	2.0	15.0			15.0	
Minimum Split (s)				26.9	26.9	26.9	9.5	24.6			24.6	
Total Split (s)				45.0	45.0	45.0	26.0	75.0			49.0	
Total Split (%)				37.5%	37.5%	37.5%	21.7%	62.5%			40.8%	
Maximum Green (s)				40.1	40.1	40.1	22.0	70.4			44.4	
Yellow Time (s)				3.2	3.2	3.2	3.0	3.2			3.2	
All-Red Time (s)				1.7	1.7	1.7	1.0	1.4			1.4	
Lost Time Adjust (s)				0.0	0.0	0.0	0.0	0.0			0.0	
Total Lost Time (s)				4.9	4.9	4.9	4.0	4.6			4.6	
Lead/Lag							Lead				Lag	
Lead-Lag Optimize?							Yes				Yes	
Vehicle Extension (s)				1.0	1.0	1.0	2.0	1.0			1.0	
Recall Mode				None	None	None	None	C-Max			C-Max	
Walk Time (s)				8.0	8.0	8.0		8.0			8.0	
Flash Dont Walk (s)				14.0	14.0	14.0		12.0			12.0	
Pedestrian Calls (#/hr)				0	0	0		0			0	
Act Effect Green (s)				32.1	32.1	32.1	79.0	78.4			70.0	
Actuated g/C Ratio				0.27	0.27	0.27	0.66	0.65			0.58	
v/c Ratio				0.56	0.72	0.78	0.20	0.44			0.52	
Control Delay				41.9	42.6	43.4	9.8	10.4			17.6	
Queue Delay				0.0	0.0	0.0	0.0	0.4			0.1	
Total Delay				41.9	42.6	43.4	9.8	10.8			17.8	
LOS				D	D	D	A	B			B	
Approach Delay					42.7			10.8			17.8	
Approach LOS					D			B			B	

Intersection Summary

Area Type: Other
 Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 65 (54%), Referenced to phase 4:NBTL and 8:SBT, Start of Green
 Natural Cycle: 65
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.78
 Intersection Signal Delay: 25.5
 Intersection LOS: C
 Intersection Capacity Utilization 60.2%
 ICU Level of Service B
 Analysis Period (min) 15

Splits and Phases: 51: 7th Ave & Washington St



Lanes, Volumes, Timings

53: 3rd Ave

09/10/2020



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↑↑↑↑			↑↑↑				
Traffic Volume (vph)	0	0	0	0	1448	57	0	191	0	0	0	0
Future Volume (vph)	0	0	0	0	1448	57	0	191	0	0	0	0
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	0.81	0.81	0.91	0.91	1.00	1.00	1.00	1.00
Fr t					0.994							
Flt Protected												
Satd. Flow (prot)	0	0	0	0	7499	0	0	5085	0	0	0	0
Flt Permitted												
Satd. Flow (perm)	0	0	0	0	7499	0	0	5085	0	0	0	0
Right Turn on Red			Yes			Yes	Yes		Yes			Yes
Satd. Flow (RTOR)					16							
Link Speed (mph)		30			30			30				30
Link Distance (ft)		183			450			187				405
Travel Time (s)		4.2			10.2			4.3				9.2
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	0	1574	62	0	208	0	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	1636	0	0	208	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0				0
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
Headway Factor	1.00	1.00	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					2		1	2				
Detector Template					Thru		Left	Thru				
Leading Detector (ft)					100		20	100				
Trailing Detector (ft)					0		0	0				
Detector 1 Position(ft)					0		0	0				
Detector 1 Size(ft)					6		20	6				
Detector 1 Type					Cl+Ex		Cl+Ex	Cl+Ex				
Detector 1 Channel												
Detector 1 Extend (s)					0.0		0.0	0.0				
Detector 1 Queue (s)					0.0		0.0	0.0				
Detector 1 Delay (s)					0.0		0.0	0.0				
Detector 2 Position(ft)					94			94				
Detector 2 Size(ft)					6			6				
Detector 2 Type					Cl+Ex			Cl+Ex				
Detector 2 Channel												
Detector 2 Extend (s)					0.0			0.0				
Turn Type					NA			NA				
Protected Phases					2			4				
Permitted Phases							4					
Detector Phase					2		4	4				
Switch Phase												
Minimum Initial (s)					15.0		15.0	15.0				

Lanes, Volumes, Timings

53: 3rd Ave

09/10/2020



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Split (s)					23.5		30.7	30.7				
Total Split (s)					53.0		37.0	37.0				
Total Split (%)					58.9%		41.1%	41.1%				
Maximum Green (s)					48.5		32.3	32.3				
Yellow Time (s)					3.0		3.0	3.0				
All-Red Time (s)					1.5		1.7	1.7				
Lost Time Adjust (s)					0.0			0.0				
Total Lost Time (s)					4.5			4.7				
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)					1.0		1.0	1.0				
Recall Mode					C-Max		None	None				
Walk Time (s)					8.0		13.0	13.0				
Flash Dont Walk (s)					11.0		13.0	13.0				
Pedestrian Calls (#/hr)					0		0	0				
Act Effect Green (s)					65.8			15.0				
Actuated g/C Ratio					0.73			0.17				
v/c Ratio					0.30			0.25				
Control Delay					4.3			33.0				
Queue Delay					0.0			0.0				
Total Delay					4.3			33.0				
LOS					A			C				
Approach Delay					4.3			33.0				
Approach LOS					A			C				

Intersection Summary

Area Type:	Other
Cycle Length:	90
Actuated Cycle Length:	90
Offset:	61 (68%), Referenced to phase 2:WBT, Start of Green
Natural Cycle:	55
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.30
Intersection Signal Delay:	7.5
Intersection LOS:	A
Intersection Capacity Utilization:	37.7%
ICU Level of Service:	A
Analysis Period (min):	15

Splits and Phases: 53: 3rd Ave



Lanes, Volumes, Timings
55: 5th Ave & Fillmore St

09/10/2020























Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔						↔↔	
Traffic Volume (vph)	0	178	0	0	389	0	0	0	0	0	100	0
Future Volume (vph)	0	178	0	0	389	0	0	0	0	0	100	0
Ideal Flow (vphp)	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	1.00	1.00	0.95	0.95	0.95
Frt												
Flt Protected												
Satd. Flow (prot)	0	1863	0	0	1863	0	0	0	0	0	3539	0
Flt Permitted												
Satd. Flow (perm)	0	1863	0	0	1863	0	0	0	0	0	3539	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		580			750			460			447	
Travel Time (s)		13.2			17.0			10.5			10.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	193	0	0	423	0	0	0	0	0	109	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	193	0	0	423	0	0	0	0	0	109	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	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
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	42.6%
Analysis Period (min)	15
	ICU Level of Service A

Lanes, Volumes, Timings
78: 3rd St & Van Buren St

09/10/2020

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	41	1038	26	84	697	72	4	24	10	91	319	96
Future Volume (vph)	41	1038	26	84	697	72	4	24	10	91	319	96
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	81		0	152		0	95		0	144		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	0.95	0.95
Ped Bike Factor	0.95	1.00			0.96		0.96	0.98		0.95	0.97	
Frt		0.995			0.980			0.950			0.961	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3515	0	1770	3334	0	1770	1729	0	1770	3315	0
Flt Permitted	0.291			0.181			0.308			0.726		
Satd. Flow (perm)	517	3515	0	337	3334	0	550	1729	0	1279	3315	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		4			22			16			66	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		400			750			390			272	
Travel Time (s)		9.1			17.0			8.9			6.2	
Confl. Peds. (#/hr)	102		29	29		102	64		43	43		64
Peak Hour Factor	0.85	0.91	0.72	0.88	0.95	0.62	0.50	0.75	0.62	0.76	0.95	0.80
Adj. Flow (vph)	48	1141	36	95	734	116	8	32	16	120	336	120
Shared Lane Traffic (%)												
Lane Group Flow (vph)	48	1177	0	95	850	0	8	48	0	120	456	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	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
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	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA	

Lanes, Volumes, Timings
78: 3rd St & Van Buren St

09/10/2020



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Protected Phases	5	6		5	6			4			8	
Permitted Phases	6			6			4			8		
Detector Phase	5	6		5	6		4	4		8	8	
Switch Phase												
Minimum Initial (s)	2.0	15.0		2.0	15.0		15.0	15.0		15.0	15.0	
Minimum Split (s)	9.5	23.5		9.5	23.5		24.9	24.9		24.9	24.9	
Total Split (s)	14.0	36.0		14.0	36.0		40.0	40.0		40.0	40.0	
Total Split (%)	15.6%	40.0%		15.6%	40.0%		44.4%	44.4%		44.4%	44.4%	
Maximum Green (s)	11.0	31.5		11.0	31.5		35.1	35.1		35.1	35.1	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.2	3.2		3.2	3.2	
All-Red Time (s)	0.0	1.5		0.0	1.5		1.7	1.7		1.7	1.7	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	3.0	4.5		3.0	4.5		4.9	4.9		4.9	4.9	
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	2.0	1.0		2.0	1.0		2.0	2.0		2.0	2.0	
Recall Mode	None	C-Max		None	C-Max		None	None		None	None	
Walk Time (s)		8.0			8.0		8.0	8.0		8.0	8.0	
Flash Dont Walk (s)		9.0			9.0		12.0	12.0		12.0	12.0	
Pedestrian Calls (#/hr)		0			0		0	0		0	0	
Act Effect Green (s)	62.6	55.9		62.6	55.9		17.1	17.1		17.1	17.1	
Actuated g/C Ratio	0.70	0.62		0.70	0.62		0.19	0.19		0.19	0.19	
v/c Ratio	0.11	0.54		0.29	0.41		0.08	0.14		0.50	0.67	
Control Delay	4.8	12.0		4.2	9.1		30.0	22.2		39.4	33.7	
Queue Delay	0.0	1.3		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	4.8	13.2		4.2	9.1		30.0	22.2		39.4	33.7	
LOS	A	B		A	A		C	C		D	C	
Approach Delay		12.9			8.6			23.3			34.9	
Approach LOS		B			A			C			C	

Intersection Summary

Area Type:	Other
Cycle Length:	90
Actuated Cycle Length:	90
Offset:	29 (32%), Referenced to phase 2: and 6:EBWB, Start of Green
Natural Cycle:	60
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.67
Intersection Signal Delay:	16.2
Intersection LOS:	B
Intersection Capacity Utilization:	61.6%
ICU Level of Service:	B
Analysis Period (min):	15

Splits and Phases: 78: 3rd St & Van Buren St



Lanes, Volumes, Timings
86: 3rd Ave & Fillmore St

09/10/2020



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	178	0	0	389	51	0	449	0	0	0	0
Future Volume (vph)	0	178	0	0	389	51	0	449	0	0	0	0
Ideal Flow (vphp)	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	0.95	0.95	0.95	1.00	1.00	1.00
Fr t	0.984											
Flt Protected												
Satd. Flow (prot)	0	1863	0	0	1833	0	0	3539	0	0	0	0
Flt Permitted												
Satd. Flow (perm)	0	1863	0	0	1833	0	0	3539	0	0	0	0
Link Speed (mph)	30		30				30			30		
Link Distance (ft)	750		812				421			395		
Travel Time (s)	17.0		18.5				9.6			9.0		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	193	0	0	423	55	0	488	0	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	193	0	0	478	0	0	488	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)	0		0				0			0		
Link Offset(ft)	0		0				0			0		
Crosswalk Width(ft)	16		16				16			16		
Two way Left Turn Lane												
Headway Factor	1.00	1.00	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
Sign Control	Stop		Stop				Stop			Stop		

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	42.6%
Analysis Period (min)	15
	ICU Level of Service A

Lanes, Volumes, Timings
89: 7th St & Roosevelt St

09/10/2020



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	321	204	60	67	201	91	49	1782	48	71	1080	225
Future Volume (vph)	321	204	60	67	201	91	49	1782	48	71	1080	225
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	165		0	150		0	150		0	160		0
Storage Lanes	2		0	1		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.97	1.00	1.00	0.95	0.95	0.95	1.00	0.91	0.91	1.00	0.91	0.91
Frt		0.966			0.962			0.996			0.974	
Flt Protected	0.950				0.991		0.950			0.950		
Satd. Flow (prot)	3433	1799	0	0	3374	0	1770	5065	0	1770	4953	0
Flt Permitted	0.950				0.817		0.100			0.064		
Satd. Flow (perm)	3433	1799	0	0	2782	0	186	5065	0	119	4953	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		11			32			3			34	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		348			917			1498			338	
Travel Time (s)		7.9			20.8			34.0			7.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	349	222	65	73	218	99	53	1937	52	77	1174	245
Shared Lane Traffic (%)												
Lane Group Flow (vph)	349	287	0	0	390	0	53	1989	0	77	1419	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)		24			24			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	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
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	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Split	NA		Perm	NA		pm+pt	NA		Perm	NA	
Protected Phases	1	1			2		7	4			8	
Permitted Phases				2			4			8		

Lanes, Volumes, Timings
89: 7th St & Roosevelt St

09/10/2020



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	1	1		2	2		7	4		8	8	
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	15.0		15.0	15.0	
Minimum Split (s)	33.2	33.2		33.2	33.2		9.5	24.7		24.7	24.7	
Total Split (s)	44.0	44.0		34.0	34.0		12.0	57.0		45.0	45.0	
Total Split (%)	32.6%	32.6%		25.2%	25.2%		8.9%	42.2%		33.3%	33.3%	
Maximum Green (s)	38.8	38.8		28.8	28.8		8.0	52.3		40.3	40.3	
Yellow Time (s)	3.2	3.2		3.2	3.2		3.0	3.6		3.6	3.6	
All-Red Time (s)	2.0	2.0		2.0	2.0		1.0	1.1		1.1	1.1	
Lost Time Adjust (s)	0.0	0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.2	5.2			5.2		4.0	4.7		4.7	4.7	
Lead/Lag	Lead	Lead		Lag	Lag		Lead			Lag	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes			Yes	Yes	
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	1.0		1.0	1.0	
Recall Mode	None	None		None	None		None	C-Max		C-Max	C-Max	
Walk Time (s)	8.0	8.0		8.0	8.0			8.0		8.0	8.0	
Flash Dont Walk (s)	20.0	20.0		20.0	20.0			12.0		12.0	12.0	
Pedestrian Calls (#/hr)	0	0		0	0			0		0	0	
Act Effct Green (s)	26.0	26.0			22.0		72.6	71.9		63.0	63.0	
Actuated g/C Ratio	0.19	0.19			0.16		0.54	0.53		0.47	0.47	
v/c Ratio	0.53	0.81			0.81		0.30	0.74		1.40	0.61	
Control Delay	51.0	66.9			63.5		23.0	28.2		292.4	30.3	
Queue Delay	0.0	0.0			0.0		0.0	0.0		0.0	0.0	
Total Delay	51.0	66.9			63.5		23.0	28.2		292.4	30.3	
LOS	D	E			E		C	C		F	C	
Approach Delay		58.1			63.5			28.0			43.8	
Approach LOS		E			E			C			D	

Intersection Summary

Area Type:	Other
Cycle Length:	135
Actuated Cycle Length:	135
Offset:	53 (39%), Referenced to phase 4:NBTL and 8:SBTL, Start of Green
Natural Cycle:	145
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	1.40
Intersection Signal Delay:	40.4
Intersection LOS:	D
Intersection Capacity Utilization:	89.3%
ICU Level of Service:	E
Analysis Period (min):	15

Splits and Phases: 89: 7th St & Roosevelt St



Lanes, Volumes, Timings
90: 4th St & Roosevelt St

09/10/2020



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	151	386	0	0	350	61	40	677	7	0	0	0
Future Volume (vph)	151	386	0	0	350	61	40	677	7	0	0	0
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		100	0		0	0		0
Storage Lanes	1		0	0		0	1		1	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00
Ped Bike Factor	0.98				0.99		1.00		0.93			
Flt					0.976				0.850			
Flt Protected	0.950						0.950					
Satd. Flow (prot)	1770	1863	0	0	3425	0	1770	3539	1583	0	0	0
Flt Permitted	0.399						0.950					
Satd. Flow (perm)	729	1863	0	0	3425	0	1767	3539	1474	0	0	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					28				80			
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		222			162			447			277	
Travel Time (s)		5.0			3.7			10.2			6.3	
Confl. Peds. (#/hr)	33					33	1		21			
Peak Hour Factor	0.90	0.87	0.92	0.92	0.89	0.80	0.91	0.87	0.44	0.92	0.92	0.92
Adj. Flow (vph)	168	444	0	0	393	76	44	778	16	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	168	444	0	0	469	0	44	778	16	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												
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			2		1	2	1			
Detector Template	Left	Thru			Thru		Left	Thru	Right			
Leading Detector (ft)	20	100			100		20	100	20			
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		20	6	20			
Detector 1 Type	Cl+Ex	Cl+Ex			Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex			
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0			0.0		0.0	0.0	0.0			
Detector 1 Queue (s)	0.0	0.0			0.0		0.0	0.0	0.0			
Detector 1 Delay (s)	0.0	0.0			0.0		0.0	0.0	0.0			
Detector 2 Position(ft)		94			94			94				
Detector 2 Size(ft)		6			6			6				
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				
Turn Type	pm+pt	NA			NA		Perm	NA	Perm			

Lanes, Volumes, Timings
90: 4th St & Roosevelt St

09/10/2020



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Protected Phases	3	4			4			2				
Permitted Phases	4						2		2			
Detector Phase	3	4			4		2	2	2			
Switch Phase												
Minimum Initial (s)	4.0	15.0			15.0		15.0	15.0	15.0			
Minimum Split (s)	9.5	27.0			27.0		23.6	23.6	23.6			
Total Split (s)	18.0	37.0			37.0		35.0	35.0	35.0			
Total Split (%)	20.0%	41.1%			41.1%		38.9%	38.9%	38.9%			
Maximum Green (s)	13.4	32.0			32.0		30.4	30.4	30.4			
Yellow Time (s)	3.2	3.6			3.6		3.2	3.2	3.2			
All-Red Time (s)	1.4	1.4			1.4		1.4	1.4	1.4			
Lost Time Adjust (s)	0.0	0.0			0.0		0.0	0.0	0.0			
Total Lost Time (s)	4.6	5.0			5.0		4.6	4.6	4.6			
Lead/Lag	Lead	Lag			Lag							
Lead-Lag Optimize?	Yes	Yes			Yes							
Vehicle Extension (s)	3.0	3.0			3.0		3.0	3.0	3.0			
Recall Mode	None	None			None		C-Max	C-Max	C-Max			
Walk Time (s)		8.0			8.0		7.0	7.0	7.0			
Flash Dont Walk (s)		14.0			14.0		12.0	12.0	12.0			
Pedestrian Calls (#/hr)		0			0		0	0	0			
Act Effct Green (s)	38.6	27.9			27.9		37.6	37.6	37.6			
Actuated g/C Ratio	0.43	0.31			0.31		0.42	0.42	0.42			
v/c Ratio	0.39	0.77			0.43		0.06	0.53	0.02			
Control Delay	9.8	22.4			23.7		19.1	22.6	0.0			
Queue Delay	0.2	0.6			0.0		0.0	0.0	0.0			
Total Delay	10.0	23.0			23.7		19.1	22.6	0.0			
LOS	A	C			C		B	C	A			
Approach Delay		19.4			23.7			22.0				
Approach LOS		B			C			C				

Intersection Summary

Area Type: Other
 Cycle Length: 90
 Actuated Cycle Length: 90
 Offset: 75 (83%), Referenced to phase 2:NBTL and 6:, Start of Green
 Natural Cycle: 65
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.77
 Intersection Signal Delay: 21.6
 Intersection LOS: C
 Intersection Capacity Utilization 55.3%
 ICU Level of Service B
 Analysis Period (min) 15

Splits and Phases: 90: 4th St & Roosevelt St



Lanes, Volumes, Timings
91: 3rd St & Roosevelt St

09/10/2020



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑		↖	↑					↖	↑↑	
Traffic Volume (vph)	0	448	27	72	334	0	0	0	0	71	441	63
Future Volume (vph)	0	448	27	72	334	0	0	0	0	71	441	63
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	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95
Ped Bike Factor		1.00		0.98						0.98	0.99	
Frt		0.991									0.976	
Flt Protected				0.950						0.950		
Satd. Flow (prot)	0	3497	0	1770	1863	0	0	0	0	1770	3409	0
Flt Permitted				0.329						0.950		
Satd. Flow (perm)	0	3497	0	604	1863	0	0	0	0	1729	3409	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		8										26
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		454			222			330			272	
Travel Time (s)		10.3			5.0			7.5			6.2	
Confl. Peds. (#/hr)			29	29						16		27
Peak Hour Factor	0.92	0.92	0.84	0.72	0.83	0.92	0.92	0.92	0.92	0.68	0.83	0.63
Adj. Flow (vph)	0	487	32	100	402	0	0	0	0	104	531	100
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	519	0	100	402	0	0	0	0	104	631	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		2		1	2					1	2	
Detector Template		Thru		Left	Thru					Left	Thru	
Leading Detector (ft)		100		20	100					20	100	
Trailing Detector (ft)		0		0	0					0	0	
Detector 1 Position(ft)		0		0	0					0	0	
Detector 1 Size(ft)		6		20	6					20	6	
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		0.0	0.0					0.0	0.0	
Detector 2 Position(ft)		94			94						94	
Detector 2 Size(ft)		6			6						6	
Detector 2 Type		Cl+Ex			Cl+Ex						Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0						0.0	
Turn Type		NA		pm+pt	NA					Perm	NA	
Protected Phases		4		3	4						2	
Permitted Phases				4						2		
Detector Phase		4		3	4					2	2	

Lanes, Volumes, Timings
91: 3rd St & Roosevelt St

09/10/2020



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)		15.0		4.0	15.0					15.0	15.0	
Minimum Split (s)		27.0		9.5	27.0					23.6	23.6	
Total Split (s)		37.0		18.0	37.0					35.0	35.0	
Total Split (%)		41.1%		20.0%	41.1%					38.9%	38.9%	
Maximum Green (s)		32.0		13.4	32.0					30.4	30.4	
Yellow Time (s)		3.6		3.2	3.6					3.2	3.2	
All-Red Time (s)		1.4		1.4	1.4					1.4	1.4	
Lost Time Adjust (s)		0.0		0.0	0.0					0.0	0.0	
Total Lost Time (s)		5.0		4.6	5.0					4.6	4.6	
Lead/Lag		Lag		Lead	Lag							
Lead-Lag Optimize?		Yes		Yes	Yes							
Vehicle Extension (s)		1.0		1.0	1.0					1.0	1.0	
Recall Mode		None		None	None					C-Max	C-Max	
Walk Time (s)		8.0			8.0					7.0	7.0	
Flash Dont Walk (s)		14.0			14.0					12.0	12.0	
Pedestrian Calls (#/hr)		0			0					0	0	
Act Effct Green (s)		23.9		30.2	23.9					47.0	47.0	
Actuated g/C Ratio		0.27		0.34	0.27					0.52	0.52	
v/c Ratio		0.55		0.35	0.81					0.12	0.35	
Control Delay		29.5		14.8	33.9					14.8	14.9	
Queue Delay		0.1		0.0	0.0					0.0	0.0	
Total Delay		29.5		14.8	33.9					14.8	14.9	
LOS		C		B	C					B	B	
Approach Delay		29.5			30.1						14.9	
Approach LOS		C			C						B	

Intersection Summary

Area Type:	Other
Cycle Length:	90
Actuated Cycle Length:	90
Offset:	75 (83%), Referenced to phase 2:SBTL, Start of Green
Natural Cycle:	65
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.81
Intersection Signal Delay:	23.6
Intersection LOS:	C
Intersection Capacity Utilization:	55.3%
ICU Level of Service:	B
Analysis Period (min):	15

Splits and Phases: 91: 3rd St & Roosevelt St



Lanes, Volumes, Timings
120: Portland St & Central Ave

09/10/2020



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	0	98	693	18	0	0
Future Volume (vph)	0	98	693	18	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	1.00
Ped Bike Factor			0.99			
Frt		0.865	0.996			
Flt Protected						
Satd. Flow (prot)	0	1611	3506	0	0	0
Flt Permitted						
Satd. Flow (perm)	0	1611	3506	0	0	0
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		196	4			
Link Speed (mph)	30		30			30
Link Distance (ft)	275		166			244
Travel Time (s)	6.3		3.8			5.5
Confl. Peds. (#/hr)				50		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	107	753	20	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	107	773	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	0		0			0
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Number of Detectors		1	2			
Detector Template		Right	Thru			
Leading Detector (ft)		20	100			
Trailing Detector (ft)		0	0			
Detector 1 Position(ft)		0	0			
Detector 1 Size(ft)		20	6			
Detector 1 Type		Cl+Ex	Cl+Ex			
Detector 1 Channel						
Detector 1 Extend (s)		0.0	0.0			
Detector 1 Queue (s)		0.0	0.0			
Detector 1 Delay (s)		0.0	0.0			
Detector 2 Position(ft)			94			
Detector 2 Size(ft)			6			
Detector 2 Type			Cl+Ex			
Detector 2 Channel						
Detector 2 Extend (s)			0.0			
Turn Type		Prot	NA			
Protected Phases		4	2			
Permitted Phases						
Detector Phase		4	2			

Lanes, Volumes, Timings
 120: Portland St & Central Ave

09/10/2020



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Switch Phase						
Minimum Initial (s)		5.0	10.0			
Minimum Split (s)		23.1	15.0			
Total Split (s)		37.0	83.0			
Total Split (%)		30.8%	69.2%			
Maximum Green (s)		32.9	78.0			
Yellow Time (s)		3.0	3.6			
All-Red Time (s)		1.1	1.4			
Lost Time Adjust (s)		0.0	0.0			
Total Lost Time (s)		4.1	5.0			
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)		3.0	3.0			
Recall Mode		None	C-Max			
Walk Time (s)		8.0	8.0			
Flash Dont Walk (s)		8.0	8.0			
Pedestrian Calls (#/hr)		0	0			
Act Effct Green (s)		5.5	105.4			
Actuated g/C Ratio		0.05	0.88			
v/c Ratio		0.41	0.25			
Control Delay		4.8	1.3			
Queue Delay		0.0	0.0			
Total Delay		4.8	1.3			
LOS		A	A			
Approach Delay	4.8		1.3			
Approach LOS	A		A			

Intersection Summary

Area Type:	Other
Cycle Length:	120
Actuated Cycle Length:	120
Offset:	0 (0%), Referenced to phase 2:NBT, Start of Green
Natural Cycle:	40
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.41
Intersection Signal Delay:	1.8
Intersection LOS:	A
Intersection Capacity Utilization:	33.5%
ICU Level of Service:	A
Analysis Period (min):	15

Splits and Phases: 120: Portland St & Central Ave



Lanes, Volumes, Timings
124: Portland St & Central Ave

09/10/2020



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	26	0	0	588	46
Future Volume (vph)	0	26	0	0	588	46
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	0.95
Ped Bike Factor		0.85			0.99	
Frt		0.865			0.989	
Flt Protected						
Satd. Flow (prot)	0	1611	0	0	3464	0
Flt Permitted						
Satd. Flow (perm)	0	1375	0	0	3464	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		303			17	
Link Speed (mph)	30			30	30	
Link Distance (ft)	182			66	156	
Travel Time (s)	4.1			1.5	3.5	
Confl. Peds. (#/hr)		61				33
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	28	0	0	639	50
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	28	0	0	689	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Number of Detectors		1			2	
Detector Template		Right			Thru	
Leading Detector (ft)		20			100	
Trailing Detector (ft)		0			0	
Detector 1 Position(ft)		0			0	
Detector 1 Size(ft)		20			6	
Detector 1 Type		Cl+Ex			Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)		0.0			0.0	
Detector 1 Queue (s)		0.0			0.0	
Detector 1 Delay (s)		0.0			0.0	
Detector 2 Position(ft)					94	
Detector 2 Size(ft)					6	
Detector 2 Type					Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)					0.0	
Turn Type		Perm			NA	
Protected Phases					6	
Permitted Phases		4				
Detector Phase		4			6	

Lanes, Volumes, Timings
 124: Portland St & Central Ave

09/10/2020



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Switch Phase						
Minimum Initial (s)		5.0			10.0	
Minimum Split (s)		21.0			23.3	
Total Split (s)		29.0			91.0	
Total Split (%)		24.2%			75.8%	
Maximum Green (s)		24.9			85.7	
Yellow Time (s)		3.0			3.6	
All-Red Time (s)		1.1			1.7	
Lost Time Adjust (s)		0.0			0.0	
Total Lost Time (s)		4.1			5.3	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)		3.0			3.0	
Recall Mode		None			C-Max	
Walk Time (s)		8.0			8.0	
Flash Dont Walk (s)		8.0			8.0	
Pedestrian Calls (#/hr)		0			0	
Act Effct Green (s)		5.5			111.1	
Actuated g/C Ratio		0.05			0.93	
v/c Ratio		0.08			0.21	
Control Delay		0.4			0.9	
Queue Delay		0.0			0.0	
Total Delay		0.4			0.9	
LOS		A			A	
Approach Delay	0.4				0.9	
Approach LOS	A				A	

Intersection Summary

Area Type:	Other
Cycle Length:	120
Actuated Cycle Length:	120
Offset:	0 (0%), Referenced to phase 6:SBT, Start of Green
Natural Cycle:	45
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.21
Intersection Signal Delay:	0.9
Intersection LOS:	A
Intersection Capacity Utilization:	38.2%
ICU Level of Service:	A
Analysis Period (min):	15

Splits and Phases: 124: Portland St & Central Ave



Lanes, Volumes, Timings
 129: 1st Ave & Bus-Only (Transit Station)

09/10/2020



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT	SWL	SWR
Lane Configurations								
Traffic Volume (vph)	300	0	0	0	0	574	0	0
Future Volume (vph)	300	0	0	0	0	574	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	0.91	1.00	1.00
Frt								
Flt Protected	0.950							
Satd. Flow (prot)	1770	0	0	0	0	5085	1863	0
Flt Permitted	0.950							
Satd. Flow (perm)	1770	0	0	0	0	5085	1863	0
Right Turn on Red								Yes
Satd. Flow (RTOR)								
Link Speed (mph)	30		30			30	30	
Link Distance (ft)	158		373			826	213	
Travel Time (s)	3.6		8.5			18.8	4.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	326	0	0	0	0	624	0	0
Shared Lane Traffic (%)								
Lane Group Flow (vph)	326	0	0	0	0	624	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left	Left	Right
Median Width(ft)	12		0			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
Turning Speed (mph)	15	9		9	15		15	9
Number of Detectors	1					2	1	
Detector Template	Left					Thru	Left	
Leading Detector (ft)	20					100	20	
Trailing Detector (ft)	0					0	0	
Detector 1 Position(ft)	0					0	0	
Detector 1 Size(ft)	20					6	20	
Detector 1 Type	Cl+Ex					Cl+Ex	Cl+Ex	
Detector 1 Channel								
Detector 1 Extend (s)	0.0					0.0	0.0	
Detector 1 Queue (s)	0.0					0.0	0.0	
Detector 1 Delay (s)	0.0					0.0	0.0	
Detector 2 Position(ft)						94		
Detector 2 Size(ft)						6		
Detector 2 Type						Cl+Ex		
Detector 2 Channel								
Detector 2 Extend (s)						0.0		
Turn Type	Prot					NA	Prot	
Protected Phases	8					6!	6!	
Permitted Phases								
Detector Phase	8					6	6	
Switch Phase								
Minimum Initial (s)	1.0					20.0	20.0	

Lanes, Volumes, Timings
 129: 1st Ave & Bus-Only (Transit Station)

09/10/2020



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT	SWL	SWR
Minimum Split (s)	26.7					36.3	36.3	
Total Split (s)	27.0					53.0	53.0	
Total Split (%)	33.8%					66.3%	66.3%	
Maximum Green (s)	20.3					47.7	47.7	
Yellow Time (s)	3.2					3.2	3.2	
All-Red Time (s)	3.5					2.1	2.1	
Lost Time Adjust (s)	0.0					0.0	0.0	
Total Lost Time (s)	6.7					5.3	5.3	
Lead/Lag								
Lead-Lag Optimize?								
Vehicle Extension (s)	3.0					3.0	3.0	
Recall Mode	None					C-Max	C-Max	
Walk Time (s)	8.0					20.0	20.0	
Flash Dont Walk (s)	12.0					8.0	8.0	
Pedestrian Calls (#/hr)	0					0	0	
Act Effect Green (s)	18.2					49.8		
Actuated g/C Ratio	0.23					0.62		
v/c Ratio	0.81					0.20		
Control Delay	45.5					7.0		
Queue Delay	0.0					0.0		
Total Delay	45.5					7.0		
LOS	D					A		
Approach Delay	45.5					7.0		
Approach LOS	D					A		

Intersection Summary

Area Type: Other
 Cycle Length: 80
 Actuated Cycle Length: 80
 Offset: 46 (58%), Referenced to phase 6:SBSW, Start of Green
 Natural Cycle: 65
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.81
 Intersection Signal Delay: 20.2
 Intersection LOS: C
 Intersection Capacity Utilization 43.3%
 ICU Level of Service A
 Analysis Period (min) 15
 ! Phase conflict between lane groups.

Splits and Phases: 129: 1st Ave & Bus-Only (Transit Station)



Lanes, Volumes, Timings
159: Madison St & 1st Ave

09/10/2020



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↙↘					↙↘↘↘
Traffic Volume (vph)	14	0	0	0	87	783
Future Volume (vph)	14	0	0	0	87	783
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	105	0		0	0	
Storage Lanes	1	0		0	0	
Taper Length (ft)	25				25	
Lane Util. Factor	0.97	1.00	1.00	1.00	0.86	0.86
Frt						
Flt Protected	0.950					0.995
Satd. Flow (prot)	3433	0	0	0	0	6376
Flt Permitted	0.950					0.995
Satd. Flow (perm)	3433	0	0	0	0	6376
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)						
Link Speed (mph)	30		30			30
Link Distance (ft)	394		282			409
Travel Time (s)	9.0		6.4			9.3
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	15	0	0	0	95	851
Shared Lane Traffic (%)						
Lane Group Flow (vph)	15	0	0	0	0	946
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	24		0			0
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Number of Detectors	1				1	2
Detector Template	Left				Left	Thru
Leading Detector (ft)	20				20	100
Trailing Detector (ft)	0				0	0
Detector 1 Position(ft)	0				0	0
Detector 1 Size(ft)	20				20	6
Detector 1 Type	Cl+Ex				Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0				0.0	0.0
Detector 1 Queue (s)	0.0				0.0	0.0
Detector 1 Delay (s)	0.0				0.0	0.0
Detector 2 Position(ft)						94
Detector 2 Size(ft)						6
Detector 2 Type						Cl+Ex
Detector 2 Channel						
Detector 2 Extend (s)						0.0
Turn Type	Prot				Perm	NA
Protected Phases	2					4
Permitted Phases					4	

Lanes, Volumes, Timings
159: Madison St & 1st Ave

09/10/2020



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Detector Phase	2				4	4
Switch Phase						
Minimum Initial (s)	15.0				15.0	15.0
Minimum Split (s)	28.2				23.4	23.4
Total Split (s)	35.0				55.0	55.0
Total Split (%)	38.9%				61.1%	61.1%
Maximum Green (s)	29.8				50.6	50.6
Yellow Time (s)	3.0				3.2	3.2
All-Red Time (s)	2.2				1.2	1.2
Lost Time Adjust (s)	0.0					0.0
Total Lost Time (s)	5.2					4.4
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	1.0				1.0	1.0
Recall Mode	C-Max				None	None
Walk Time (s)	8.0				8.0	8.0
Flash Dont Walk (s)	15.0				9.0	9.0
Pedestrian Calls (#/hr)	0				0	0
Act Effct Green (s)	61.9					18.5
Actuated g/C Ratio	0.69					0.21
v/c Ratio	0.01					0.72
Control Delay	4.0					36.6
Queue Delay	0.0					0.0
Total Delay	4.0					36.6
LOS	A					D
Approach Delay	4.0					36.6
Approach LOS	A					D

Intersection Summary













Area Type: Other
 Cycle Length: 90
 Actuated Cycle Length: 90
 Offset: 4 (4%), Referenced to phase 2:WBL and 6:, Start of Green
 Natural Cycle: 55
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.72
 Intersection Signal Delay: 36.1
 Intersection LOS: D
 Intersection Capacity Utilization 48.8%
 ICU Level of Service A
 Analysis Period (min) 15
 Description: Counts grown from 2015 AECOM

Splits and Phases: 159: Madison St & 1st Ave



Lanes, Volumes, Timings
185: 3rd St & Fillmore St

09/10/2020

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑		↵	↑↑		↵		↗	↵	↑↑	
Traffic Volume (vph)	0	381	30	80	354	0	37	0	116	52	372	86
Future Volume (vph)	0	381	30	80	354	0	37	0	116	52	372	86
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	128		0	0		138	0		0
Storage Lanes	0		0	1		0	1		1	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	1.00	0.95	0.95
Ped Bike Factor		0.99		0.98			0.95		0.94	0.96	0.98	
Fr _t		0.986							0.850		0.971	
Fl _t Protected				0.950			0.950			0.950		
Satd. Flow (prot)	0	3469	0	1770	3539	0	1770	0	1583	1770	3353	0
Fl _t Permitted				0.479			0.270			0.950		
Satd. Flow (perm)	0	3469	0	870	3539	0	477	0	1495	1691	3353	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		15							157			42
Link Speed (mph)		30			30			30				30
Link Distance (ft)		767			619			367				320
Travel Time (s)		17.4			14.1			8.3				7.3
Confl. Peds. (#/hr)	34		34	34		34	85		33	33		85
Peak Hour Factor	0.92	0.88	0.68	0.91	0.89	0.92	0.71	0.92	0.74	0.62	0.90	0.86
Adj. Flow (vph)	0	433	44	88	398	0	52	0	157	84	413	100
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	477	0	88	398	0	52	0	157	84	513	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		2		1	2		1		1	1		2
Detector Template		Thru		Left	Thru		Left		Right	Left		Thru
Leading Detector (ft)		100		20	100		20		20	20		100
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)		6		20	6		20		20	20		6
Detector 1 Type		Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)		0.0		0.0	0.0		0.0		0.0	0.0		0.0
Detector 1 Queue (s)		0.0		0.0	0.0		0.0		0.0	0.0		0.0
Detector 1 Delay (s)		0.0		0.0	0.0		0.0		0.0	0.0		0.0
Detector 2 Position(ft)		94			94							94
Detector 2 Size(ft)		6			6							6
Detector 2 Type		Cl+Ex			Cl+Ex							Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0							0.0
Turn Type		NA		Perm	NA		D.Pm		Perm	Perm		NA

Lanes, Volumes, Timings
185: 3rd St & Fillmore St

09/10/2020

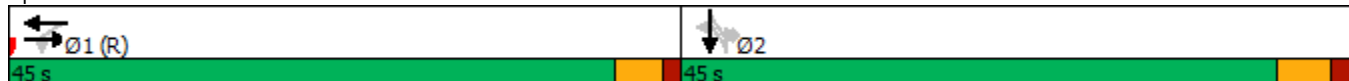


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Protected Phases		1			1							2
Permitted Phases				1			2		2	2		
Detector Phase		1		1	1		2		2	2		2
Switch Phase												
Minimum Initial (s)		15.0		15.0	15.0		15.0		15.0	15.0		15.0
Minimum Split (s)		23.4		23.4	23.4		25.1		25.1	25.1		25.1
Total Split (s)		45.0		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%		50.0%
Maximum Green (s)		40.6		40.6	40.6		39.9		39.9	39.9		39.9
Yellow Time (s)		3.2		3.2	3.2		3.6		3.6	3.6		3.6
All-Red Time (s)		1.2		1.2	1.2		1.5		1.5	1.5		1.5
Lost Time Adjust (s)		0.0		0.0	0.0		0.0		0.0	0.0		0.0
Total Lost Time (s)		4.4		4.4	4.4		5.1		5.1	5.1		5.1
Lead/Lag		Lead		Lead	Lead		Lag		Lag	Lag		Lag
Lead-Lag Optimize?		Yes		Yes	Yes		Yes		Yes	Yes		Yes
Vehicle Extension (s)		1.0		1.0	1.0		1.0		1.0	1.0		1.0
Recall Mode		C-Max		C-Max	C-Max		None		None	None		None
Walk Time (s)		8.0		8.0	8.0		8.0		8.0	8.0		8.0
Flash Dont Walk (s)		9.0		9.0	9.0		12.0		12.0	12.0		12.0
Pedestrian Calls (#/hr)		0		0	0		0		0	0		0
Act Effect Green (s)		62.3		62.3	62.3		18.2		18.2	18.2		18.2
Actuated g/C Ratio		0.69		0.69	0.69		0.20		0.20	0.20		0.20
v/c Ratio		0.20		0.15	0.16		0.54		0.37	0.25		0.72
Control Delay		5.4		4.5	3.7		52.8		7.4	30.9		36.6
Queue Delay		0.0		0.0	0.0		0.0		0.0	0.0		0.0
Total Delay		5.4		4.5	3.7		52.8		7.4	30.9		36.6
LOS		A		A	A		D		A	C		D
Approach Delay		5.4			3.9			18.7				35.8
Approach LOS		A			A			B				D

Intersection Summary

Area Type: Other
 Cycle Length: 90
 Actuated Cycle Length: 90
 Offset: 50 (56%), Referenced to phase 1:EBWB, Start of Green
 Natural Cycle: 50
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.72
 Intersection Signal Delay: 16.8 Intersection LOS: B
 Intersection Capacity Utilization 68.1% ICU Level of Service C
 Analysis Period (min) 15

Splits and Phases: 185: 3rd St & Fillmore St



Lanes, Volumes, Timings
188: 5th St/4th St & Fillmore St

09/10/2020



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↘	↗			↖			↗				↘
Traffic Volume (vph)	300	193	0	0	31	150	159	288	150	0	0	0
Future Volume (vph)	300	193	0	0	31	150	159	288	150	0	0	0
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	127		0	0		0	0		0	0		0
Storage Lanes	1		0	0		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	0.95	0.91	0.91	0.91	1.00	1.00	1.00
Frt					0.876			0.962				
Flt Protected	0.950							0.987				
Satd. Flow (prot)	1770	3539	0	0	3100	0	0	4828	0	0	0	0
Flt Permitted	0.628							0.987				
Satd. Flow (perm)	1170	3539	0	0	3100	0	0	4828	0	0	0	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					163			109				
Link Speed (mph)		30			30			30				30
Link Distance (ft)		619			843			271				347
Travel Time (s)		14.1			19.2			6.2				7.9
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	326	210	0	0	34	163	173	313	163	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	326	210	0	0	197	0	0	649	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		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	2			2		1	2				
Detector Template	Left	Thru			Thru		Left	Thru				
Leading Detector (ft)	20	100			100		20	100				
Trailing Detector (ft)	0	0			0		0	0				
Detector 1 Position(ft)	0	0			0		0	0				
Detector 1 Size(ft)	20	6			6		20	6				
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	0.0			0.0		0.0	0.0				
Detector 2 Position(ft)		94			94			94				
Detector 2 Size(ft)		6			6			6				
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				
Turn Type	Perm	NA			NA		Perm	NA				
Protected Phases		1			1			2				
Permitted Phases	1						2					

Lanes, Volumes, Timings
188: 5th St/4th St & Fillmore St

09/10/2020

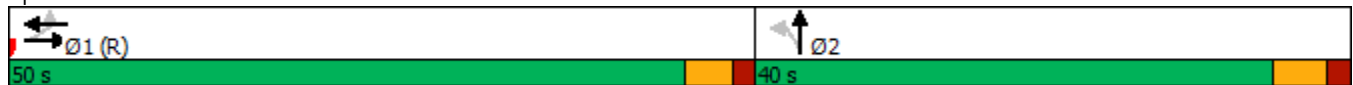


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	1	1			1		2	2				
Switch Phase												
Minimum Initial (s)	15.0	15.0			15.0		15.0	15.0				
Minimum Split (s)	25.7	25.7			25.7		31.4	31.4				
Total Split (s)	50.0	50.0			50.0		40.0	40.0				
Total Split (%)	55.6%	55.6%			55.6%		44.4%	44.4%				
Maximum Green (s)	45.3	45.3			45.3		34.6	34.6				
Yellow Time (s)	3.2	3.2			3.2		3.6	3.6				
All-Red Time (s)	1.5	1.5			1.5		1.8	1.8				
Lost Time Adjust (s)	0.0	0.0			0.0			0.0				
Total Lost Time (s)	4.7	4.7			4.7			5.4				
Lead/Lag	Lead	Lead			Lead		Lag	Lag				
Lead-Lag Optimize?	Yes	Yes			Yes		Yes	Yes				
Vehicle Extension (s)	1.0	1.0			1.0		1.0	1.0				
Recall Mode	C-Max	C-Max			C-Max		None	None				
Walk Time (s)	9.0	9.0			9.0		8.0	8.0				
Flash Dont Walk (s)	12.0	12.0			12.0		18.0	18.0				
Pedestrian Calls (#/hr)	0	0			0		0	0				
Act Effct Green (s)	64.0	64.0			64.0			15.9				
Actuated g/C Ratio	0.71	0.71			0.71			0.18				
v/c Ratio	0.39	0.08			0.09			0.69				
Control Delay	7.8	4.2			1.2			32.8				
Queue Delay	0.0	0.0			0.0			0.0				
Total Delay	7.8	4.2			1.2			32.8				
LOS	A	A			A			C				
Approach Delay		6.4			1.2			32.8				
Approach LOS		A			A			C				

Intersection Summary

















Area Type: Other
 Cycle Length: 90
 Actuated Cycle Length: 90
 Offset: 60 (67%), Referenced to phase 1:EBWB, Start of Green
 Natural Cycle: 60
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.69
 Intersection Signal Delay: 18.1
 Intersection LOS: B
 Intersection Capacity Utilization 54.0%
 ICU Level of Service A
 Analysis Period (min) 15

Splits and Phases: 188: 5th St/4th St & Fillmore St



Lanes, Volumes, Timings
193: Central Ave & Jefferson St

09/10/2020

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	260	1509	0	0	0	0	0	369	140	0	0	0
Future Volume (vph)	260	1509	0	0	0	0	0	369	140	0	0	0
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	100		0	0		0	0		0	0		0
Storage Lanes	1		0	0		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.86	1.00	1.00	1.00	1.00	1.00	0.91	0.91	1.00	1.00	1.00
Ped Bike Factor	0.77							0.93				
Flt								0.958				
Flt Protected	0.950											
Satd. Flow (prot)	1770	6408	0	0	0	0	0	4536	0	0	0	0
Flt Permitted	0.950											
Satd. Flow (perm)	1366	6408	0	0	0	0	0	4536	0	0	0	0
Right Turn on Red	Yes		Yes			Yes			No			Yes
Satd. Flow (RTOR)	236											
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		364			171			421			337	
Travel Time (s)		8.3			3.9			9.6			7.7	
Confl. Peds. (#/hr)	186								186			
Peak Hour Factor	0.87	0.90	0.92	0.92	0.92	0.92	0.92	0.90	0.88	0.92	0.92	0.92
Adj. Flow (vph)	299	1677	0	0	0	0	0	410	159	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	299	1677	0	0	0	0	0	569	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		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	2						2				
Detector Template	Left	Thru						Thru				
Leading Detector (ft)	20	100						100				
Trailing Detector (ft)	0	0						0				
Detector 1 Position(ft)	0	0						0				
Detector 1 Size(ft)	20	6						6				
Detector 1 Type	Cl+Ex	Cl+Ex						Cl+Ex				
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0						0.0				
Detector 1 Queue (s)	0.0	0.0						0.0				
Detector 1 Delay (s)	0.0	0.0						0.0				
Detector 2 Position(ft)		94						94				
Detector 2 Size(ft)		6						6				
Detector 2 Type		Cl+Ex						Cl+Ex				
Detector 2 Channel												
Detector 2 Extend (s)		0.0						0.0				
Turn Type	Perm	NA						NA				

Lanes, Volumes, Timings
 193: Central Ave & Jefferson St

09/10/2020



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Protected Phases		4						2				
Permitted Phases	4											
Detector Phase	4	4						2				
Switch Phase												
Minimum Initial (s)	5.0	5.0						5.0				
Minimum Split (s)	26.5	26.5						25.5				
Total Split (s)	54.0	54.0						36.0				
Total Split (%)	60.0%	60.0%						40.0%				
Maximum Green (s)	49.5	49.5						31.5				
Yellow Time (s)	3.5	3.5						3.5				
All-Red Time (s)	1.0	1.0						1.0				
Lost Time Adjust (s)	0.0	0.0						0.0				
Total Lost Time (s)	4.5	4.5						4.5				
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0						3.0				
Recall Mode	None	None						C-Max				
Walk Time (s)	8.0	8.0						8.0				
Flash Dont Walk (s)	14.0	14.0						13.0				
Pedestrian Calls (#/hr)	0	0						0				
Act Effect Green (s)	44.5	44.5						36.5				
Actuated g/C Ratio	0.49	0.49						0.41				
v/c Ratio	0.38	0.53						0.31				
Control Delay	4.2	15.9						10.5				
Queue Delay	0.4	0.5						0.0				
Total Delay	4.6	16.3						10.5				
LOS	A	B						B				
Approach Delay		14.6						10.5				
Approach LOS		B						B				

Intersection Summary

Area Type:	Other
Cycle Length:	90
Actuated Cycle Length:	90
Offset:	0 (0%), Referenced to phase 2:NBT and 6:, Start of Green
Natural Cycle:	55
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.53
Intersection Signal Delay:	13.7
Intersection LOS:	B
Intersection Capacity Utilization:	46.9%
ICU Level of Service:	A
Analysis Period (min):	15

Splits and Phases: 193: Central Ave & Jefferson St



Lanes, Volumes, Timings
268: 7th St & Van Buren St

09/10/2020



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	249	762	138	169	549	127	147	984	131	210	1085	203
Future Volume (vph)	249	762	138	169	549	127	147	984	131	210	1085	203
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	165		200	195		0	165		0	250		225
Storage Lanes	1		0	1		0	1		0	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	0.95	1.00	0.91	0.91	1.00	0.91	1.00
Ped Bike Factor			0.90	0.97	0.96		0.99	0.99		0.99		0.90
Fr _t			0.850		0.967			0.982				0.850
Fl _t Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3539	1583	1770	3282	0	1770	4948	0	1770	5085	1583
Fl _t Permitted	0.108			0.225			0.163			0.110		
Satd. Flow (perm)	201	3539	1419	408	3282	0	301	4948	0	204	5085	1431
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			150		25			20				219
Link Speed (mph)		30			30			30				30
Link Distance (ft)		710			482			1136				497
Travel Time (s)		16.1			11.0			25.8				11.3
Confl. Peds. (#/hr)	111		58	58		111	51		39	39		51
Peak Hour Factor	0.92	0.92	0.92	0.90	0.92	0.76	0.90	0.93	0.91	0.88	0.94	0.91
Adj. Flow (vph)	271	828	150	188	597	167	163	1058	144	239	1154	223
Shared Lane Traffic (%)												
Lane Group Flow (vph)	271	828	150	188	764	0	163	1202	0	239	1154	223
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	2	1	1	2		1	2		1	2	1
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100		20	100		20	100	20
Trailing Detector (ft)	0	0	0	0	0		0	0		0	0	0
Detector 1 Position(ft)	0	0	0	0	0		0	0		0	0	0
Detector 1 Size(ft)	20	6	20	20	6		20	6		20	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)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94				94
Detector 2 Size(ft)		6			6			6				6
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				0.0
Turn Type	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA		pm+pt	NA	Perm

Lanes, Volumes, Timings
268: 7th St & Van Buren St

09/10/2020

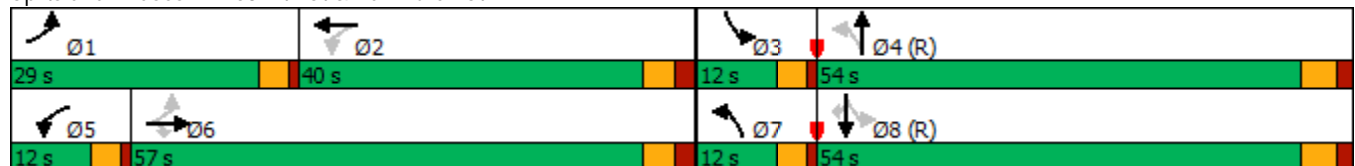


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Protected Phases	1	6		5	2		7	4		3	8	
Permitted Phases	6		6	2			4			8		8
Detector Phase	1	6	6	5	2		7	4		3	8	8
Switch Phase												
Minimum Initial (s)	5.0	15.0	15.0	5.0	15.0		5.0	15.0		5.0	15.0	15.0
Minimum Split (s)	9.5	30.6	30.6	9.5	30.6		9.5	29.5		9.5	29.5	29.5
Total Split (s)	29.0	57.0	57.0	12.0	40.0		12.0	54.0		12.0	54.0	54.0
Total Split (%)	21.5%	42.2%	42.2%	8.9%	29.6%		8.9%	40.0%		8.9%	40.0%	40.0%
Maximum Green (s)	25.0	51.4	51.4	8.0	34.4		8.0	48.5		8.0	48.5	48.5
Yellow Time (s)	3.0	3.2	3.2	3.0	3.2		3.0	3.6		3.0	3.6	3.6
All-Red Time (s)	1.0	2.4	2.4	1.0	2.4		1.0	1.9		1.0	1.9	1.9
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	4.0	5.6	5.6	4.0	5.6		4.0	5.5		4.0	5.5	5.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	2.0	1.0	1.0	2.0	1.0		2.0	1.0		2.0	1.0	1.0
Recall Mode	None	None	None	None	None		None	C-Max		None	C-Max	C-Max
Walk Time (s)		8.0	8.0		8.0			8.0			8.0	8.0
Flash Dont Walk (s)		17.0	17.0		17.0			16.0			16.0	16.0
Pedestrian Calls (#/hr)		0	0		0			0			0	0
Act Effct Green (s)	58.7	45.1	45.1	42.7	33.1		59.4	48.5		65.9	53.4	53.4
Actuated g/C Ratio	0.43	0.33	0.33	0.32	0.25		0.44	0.36		0.49	0.40	0.40
v/c Ratio	0.85	0.70	0.26	0.90	0.93		0.69	0.67		0.90	0.57	0.32
Control Delay	58.0	42.0	5.3	70.6	65.8		38.7	38.1		64.9	34.3	5.2
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	58.0	42.0	5.3	70.6	65.8		38.7	38.1		64.9	34.3	5.2
LOS	E	D	A	E	E		D	D		E	C	A
Approach Delay		41.1			66.8			38.2			34.8	
Approach LOS		D			E			D			C	

Intersection Summary

Area Type: Other
 Cycle Length: 135
 Actuated Cycle Length: 135
 Offset: 122 (90%), Referenced to phase 4:NBTL and 8:SBTL, Start of Green
 Natural Cycle: 90
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.93
 Intersection Signal Delay: 43.1
 Intersection LOS: D
 Intersection Capacity Utilization 84.5%
 ICU Level of Service E
 Analysis Period (min) 15

Splits and Phases: 268: 7th St & Van Buren St



Lanes, Volumes, Timings
274: 7th Ave & Van Buren St

09/10/2020



Lane Group	EBT	EBR	WBT	WBR	WBR2	NBL2	NBL	NBT	NBR	SBT	SBR	SBR2
Lane Configurations	↑↑↑		↑↑	↑↓			↓	↑↑↑		↑↑↑		
Traffic Volume (vph)	478	56	580	353	187	89	398	1635	67	698	72	24
Future Volume (vph)	478	56	580	353	187	89	398	1635	67	698	72	24
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)		160		160			185		0		0	
Storage Lanes		1		2			1		0		0	
Taper Length (ft)							25					
Lane Util. Factor	0.91	0.91	0.95	0.88	0.95	0.91	0.86	0.86	0.91	0.91	0.91	0.91
Ped Bike Factor	0.99			0.96			0.98	1.00		0.99		
Frt	0.985			0.850				0.995		0.982		
Flt Protected							0.950	0.999				
Satd. Flow (prot)	4965	0	3539	2787	0	0	1522	4768	0	4948	0	0
Flt Permitted							0.950	0.805				
Satd. Flow (perm)	4965	0	3539	2689	0	0	1492	3842	0	4948	0	0
Right Turn on Red		Yes			Yes				Yes			Yes
Satd. Flow (RTOR)	13			112				5		3		
Link Speed (mph)	30		30					30		30		
Link Distance (ft)	418		746					390		1240		
Travel Time (s)	9.5		17.0					8.9		28.2		
Confl. Peds. (#/hr)		51			15	37			23		37	
Peak Hour Factor	0.86	0.93	0.95	0.88	0.94	0.86	0.84	0.88	0.93	0.91	0.95	0.86
Adj. Flow (vph)	556	60	611	401	199	103	474	1858	72	767	76	28
Shared Lane Traffic (%)							10%					
Lane Group Flow (vph)	616	0	611	600	0	0	530	1977	0	871	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Right	Left	Left	Left	Right	Left	Right	Right
Median Width(ft)	0		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)		9		9	9	15	15		9		9	9
Number of Detectors	2		2	1		1	1	2		2		
Detector Template	Thru		Thru	Right		Left	Left	Thru		Thru		
Leading Detector (ft)	100		100	20		20	20	100		100		
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)	6		6	20		20	20	6		6		
Detector 1 Type	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex		
Detector 1 Channel												
Detector 1 Extend (s)	0.0		0.0	0.0		0.0	0.0	0.0		0.0		
Detector 1 Queue (s)	0.0		0.0	0.0		0.0	0.0	0.0		0.0		
Detector 1 Delay (s)	0.0		0.0	0.0		0.0	0.0	0.0		0.0		
Detector 2 Position(ft)	94		94					94		94		
Detector 2 Size(ft)	6		6					6		6		
Detector 2 Type	Cl+Ex		Cl+Ex					Cl+Ex		Cl+Ex		
Detector 2 Channel												
Detector 2 Extend (s)	0.0		0.0					0.0		0.0		
Turn Type	NA		NA	Perm		Prot	Prot	NA		NA		

Lanes, Volumes, Timings
274: 7th Ave & Van Buren St

09/10/2020



Lane Group	SEL2	SEL	SER	SER2
Lane Configurations		TT	E	
Traffic Volume (vph)	1	152	191	9
Future Volume (vph)	1	152	191	9
Ideal Flow (vphp)	1900	1900	1900	1900
Storage Length (ft)		215	215	
Storage Lanes		1	1	
Taper Length (ft)		25		
Lane Util. Factor	0.95	0.97	0.91	0.95
Ped Bike Factor				
Frt		0.951	0.850	
Flt Protected		0.968		
Satd. Flow (prot)	0	3327	1441	0
Flt Permitted		0.968		
Satd. Flow (perm)	0	3327	1441	0
Right Turn on Red				Yes
Satd. Flow (RTOR)			113	
Link Speed (mph)		30		
Link Distance (ft)		540		
Travel Time (s)		12.3		
Confl. Peds. (#/hr)				37
Peak Hour Factor	0.25	0.83	0.92	0.75
Adj. Flow (vph)	4	183	208	12
Shared Lane Traffic (%)			44%	
Lane Group Flow (vph)	0	279	128	0
Enter Blocked Intersection	No	No	No	No
Lane Alignment	Left	Left	Right	Right
Median Width(ft)		24		
Link Offset(ft)		0		
Crosswalk Width(ft)		16		
Two way Left Turn Lane				
Headway Factor	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	15	9	9
Number of Detectors	1	1	1	
Detector Template	Left	Left	Right	
Leading Detector (ft)	20	20	20	
Trailing Detector (ft)	0	0	0	
Detector 1 Position(ft)	0	0	0	
Detector 1 Size(ft)	20	20	20	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel				
Detector 1 Extend (s)	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	
Detector 2 Position(ft)				
Detector 2 Size(ft)				
Detector 2 Type				
Detector 2 Channel				
Detector 2 Extend (s)				
Turn Type	Prot	Prot	Prot	

Lanes, Volumes, Timings
274: 7th Ave & Van Buren St

09/10/2020

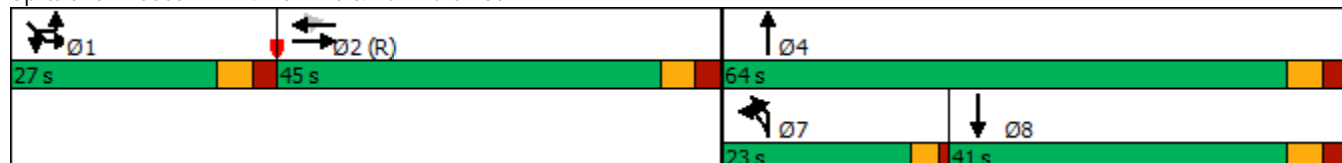


Lane Group	EBT	EBR	WBT	WBR	WBR2	NBL2	NBL	NBT	NBR	SBT	SBR	SBR2
Protected Phases	2		2			7	7	4		8		
Permitted Phases				2								
Detector Phase	2		2	2		7	7	4		8		
Switch Phase												
Minimum Initial (s)	8.0		8.0	8.0		5.0	5.0	15.0		15.0		
Minimum Split (s)	32.3		32.3	32.3		9.5	9.5	29.8		41.0		
Total Split (s)	45.0		45.0	45.0		23.0	23.0	64.0		41.0		
Total Split (%)	33.1%		33.1%	33.1%		16.9%	16.9%	47.1%		30.1%		
Maximum Green (s)	38.7		38.7	38.7		19.0	19.0	57.2		34.2		
Yellow Time (s)	3.6		3.6	3.6		3.0	3.0	3.6		3.6		
All-Red Time (s)	2.7		2.7	2.7		1.0	1.0	3.2		3.2		
Lost Time Adjust (s)	0.0		0.0	0.0			0.0	0.0		0.0		
Total Lost Time (s)	6.3		6.3	6.3			4.0	6.8		6.8		
Lead/Lag	Lag		Lag	Lag		Lead	Lead			Lag		
Lead-Lag Optimize?	Yes		Yes	Yes		Yes	Yes			Yes		
Vehicle Extension (s)	2.0		2.0	2.0		3.0	3.0	2.0		2.0		
Recall Mode	C-Max		C-Max	C-Max		None	None	None		None		
Walk Time (s)	8.0		8.0	8.0				8.0		8.0		
Flash Dont Walk (s)	18.0		18.0	18.0				15.0		15.0		
Pedestrian Calls (#/hr)	0		0	0				0		0		
Act Effect Green (s)	42.9		42.9	42.9			19.0	57.2		34.2		
Actuated g/C Ratio	0.32		0.32	0.32			0.14	0.42		0.25		
v/c Ratio	0.39		0.55	0.65			2.50	1.67		0.70		
Control Delay	36.9		41.3	36.5			712.6	330.4		49.6		
Queue Delay	0.0		0.0	0.0			0.0	0.0		0.0		
Total Delay	36.9		41.3	36.5			712.6	330.4		49.6		
LOS	D		D	D			F	F		D		
Approach Delay	36.9		38.9					411.2		49.6		
Approach LOS	D		D					F		D		

Intersection Summary

Area Type: Other
 Cycle Length: 136
 Actuated Cycle Length: 136
 Offset: 80 (59%), Referenced to phase 2:EBWB and 6:, Start of Green
 Natural Cycle: 150
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 2.50
 Intersection Signal Delay: 207.5
 Intersection LOS: F
 Intersection Capacity Utilization 108.2%
 ICU Level of Service G
 Analysis Period (min) 15

Splits and Phases: 274: 7th Ave & Van Buren St



Lanes, Volumes, Timings
 274: 7th Ave & Van Buren St

09/10/2020



Lane Group	SEL2	SEL	SER	SER2
Protected Phases	1	1	1	
Permitted Phases				
Detector Phase	1	1	1	
Switch Phase				
Minimum Initial (s)	10.0	10.0	10.0	
Minimum Split (s)	26.2	26.2	26.2	
Total Split (s)	27.0	27.0	27.0	
Total Split (%)	19.9%	19.9%	19.9%	
Maximum Green (s)	20.8	20.8	20.8	
Yellow Time (s)	3.6	3.6	3.6	
All-Red Time (s)	2.6	2.6	2.6	
Lost Time Adjust (s)		0.0	0.0	
Total Lost Time (s)		6.2	6.2	
Lead/Lag	Lead	Lead	Lead	
Lead-Lag Optimize?	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	
Recall Mode	None	None	None	
Walk Time (s)	8.0	8.0	8.0	
Flash Dont Walk (s)	12.0	12.0	12.0	
Pedestrian Calls (#/hr)	0	0	0	
Act Effct Green (s)		16.6	16.6	
Actuated g/C Ratio		0.12	0.12	
v/c Ratio		0.69	0.47	
Control Delay		66.1	18.0	
Queue Delay		0.0	0.0	
Total Delay		66.1	18.0	
LOS		E	B	
Approach Delay		51.0		
Approach LOS		D		
Intersection Summary				

Lanes, Volumes, Timings
282: Lincoln St/Lincoln & Central Ave

09/10/2020



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	33	323	0	0	486	47	112	293	62	0	0	0
Future Volume (vph)	33	323	0	0	486	47	112	293	62	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	0.95	0.91	0.91	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00				1.00			1.00	0.98			
Frt					0.980				0.850			
Flt Protected	0.950							0.985				
Satd. Flow (prot)	1770	3539	0	0	3462	0	0	5009	1583	0	0	0
Flt Permitted	0.415							0.985				
Satd. Flow (perm)	772	3539	0	0	3462	0	0	4993	1551	0	0	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					26				89			
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		369			394			310			278	
Travel Time (s)		8.4			9.0			7.0			6.3	
Confl. Peds. (#/hr)	2					2	7		6			
Peak Hour Factor	0.92	0.84	0.92	0.92	0.91	0.59	0.74	0.89	0.70	0.92	0.92	0.92
Adj. Flow (vph)	36	385	0	0	534	80	151	329	89	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	36	385	0	0	614	0	0	480	89	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			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	2			2		1	2	1			
Detector Template	Left	Thru			Thru		Left	Thru	Right			
Leading Detector (ft)	20	100			100		20	100	20			
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		20	6	20			
Detector 1 Type	Cl+Ex	Cl+Ex			Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex			
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0			0.0		0.0	0.0	0.0			
Detector 1 Queue (s)	0.0	0.0			0.0		0.0	0.0	0.0			
Detector 1 Delay (s)	0.0	0.0			0.0		0.0	0.0	0.0			
Detector 2 Position(ft)		94			94			94				
Detector 2 Size(ft)		6			6			6				
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				
Turn Type	Perm	NA			NA		Perm	NA	Perm			
Protected Phases		1			1			2				
Permitted Phases	1						2		2			
Detector Phase	1	1			1		2	2	2			

Lanes, Volumes, Timings
282: Lincoln St/Lincoln & Central Ave

09/10/2020



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	15.0	15.0			15.0		15.0	15.0	15.0			
Minimum Split (s)	24.9	24.9			24.9		24.1	24.1	24.1			
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%			
Maximum Green (s)	45.1	45.1			45.1		34.9	34.9	34.9			
Yellow Time (s)	3.6	3.6			3.6		3.6	3.6	3.6			
All-Red Time (s)	1.3	1.3			1.3		1.5	1.5	1.5			
Lost Time Adjust (s)	0.0	0.0			0.0			0.0	0.0			
Total Lost Time (s)	4.9	4.9			4.9			5.1	5.1			
Lead/Lag	Lead	Lead			Lead		Lag	Lag	Lag			
Lead-Lag Optimize?	Yes	Yes			Yes		Yes	Yes	Yes			
Vehicle Extension (s)	1.0	1.0			1.0		1.0	1.0	1.0			
Recall Mode	C-Max	C-Max			C-Max		None	None	None			
Walk Time (s)	8.0	8.0			8.0		8.0	8.0	8.0			
Flash Dont Walk (s)	12.0	12.0			12.0		11.0	11.0	11.0			
Pedestrian Calls (#/hr)	0	0			0		0	0	0			
Act Effct Green (s)	64.8	64.8			64.8			15.2	15.2			
Actuated g/C Ratio	0.72	0.72			0.72			0.17	0.17			
v/c Ratio	0.06	0.15			0.25			0.57	0.26			
Control Delay	7.9	10.6			4.4			37.3	9.6			
Queue Delay	0.0	0.0			0.0			0.0	0.0			
Total Delay	7.9	10.6			4.4			37.3	9.6			
LOS	A	B			A			D	A			
Approach Delay		10.3			4.4			32.9				
Approach LOS		B			A			C				

Intersection Summary

Area Type:	Other
Cycle Length:	90
Actuated Cycle Length:	90
Offset:	24 (27%), Referenced to phase 1:EBWB, Start of Green
Natural Cycle:	50
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.57
Intersection Signal Delay:	16.1
Intersection LOS:	B
Intersection Capacity Utilization:	57.3%
ICU Level of Service:	B
Analysis Period (min):	15

Splits and Phases: 282: Lincoln St/Lincoln & Central Ave



Lanes, Volumes, Timings
318: Roosevelt St & 5th Ave

09/10/2020



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↗		↖	↖					↖	↗	↗
Traffic Volume (vph)	0	273	23	17	498	0	0	0	0	40	112	34
Future Volume (vph)	0	273	23	17	498	0	0	0	0	40	112	34
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	66		0	0		0	140		0
Storage Lanes	0		0	1		0	0		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95
Ped Bike Factor		1.00		0.98						0.98	0.99	
Fr _t		0.987									0.966	
Flt Protected				0.950						0.950		
Satd. Flow (prot)	0	1831	0	1770	1863	0	0	0	0	1770	3393	0
Flt Permitted				0.550						0.950		
Satd. Flow (perm)	0	1831	0	1006	1863	0	0	0	0	1729	3393	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		11									29	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		730			521			190			276	
Travel Time (s)		16.6			11.8			4.3			6.3	
Confl. Peds. (#/hr)			15	15						5		3
Peak Hour Factor	0.92	0.89	0.72	0.85	0.86	0.92	0.92	0.92	0.92	0.91	0.74	0.77
Adj. Flow (vph)	0	307	32	20	579	0	0	0	0	44	151	44
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	339	0	20	579	0	0	0	0	44	195	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		2		1	2					1	2	
Detector Template		Thru		Left	Thru					Left	Thru	
Leading Detector (ft)		100		20	100					20	100	
Trailing Detector (ft)		0		0	0					0	0	
Detector 1 Position(ft)		0		0	0					0	0	
Detector 1 Size(ft)		6		20	6					20	6	
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		0.0	0.0					0.0	0.0	
Detector 2 Position(ft)		94			94						94	
Detector 2 Size(ft)		6			6						6	
Detector 2 Type		Cl+Ex			Cl+Ex						Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0						0.0	
Turn Type		NA		Perm	NA					Perm	NA	

Lanes, Volumes, Timings
318: Roosevelt St & 5th Ave

09/10/2020



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Protected Phases		1			1							2
Permitted Phases				1						2		
Detector Phase		1		1	1					2	2	
Switch Phase												
Minimum Initial (s)		15.0		15.0	15.0					15.0	15.0	
Minimum Split (s)		23.3		23.3	23.3					23.2	23.2	
Total Split (s)		89.0		89.0	89.0					31.0	31.0	
Total Split (%)		74.2%		74.2%	74.2%					25.8%	25.8%	
Maximum Green (s)		84.7		84.7	84.7					26.8	26.8	
Yellow Time (s)		3.2		3.2	3.2					3.2	3.2	
All-Red Time (s)		1.1		1.1	1.1					1.0	1.0	
Lost Time Adjust (s)		0.0		0.0	0.0					0.0	0.0	
Total Lost Time (s)		4.3		4.3	4.3					4.2	4.2	
Lead/Lag		Lead		Lead	Lead					Lag	Lag	
Lead-Lag Optimize?		Yes		Yes	Yes					Yes	Yes	
Vehicle Extension (s)		1.0		1.0	1.0					1.0	1.0	
Recall Mode		C-Max		C-Max	C-Max					None	None	
Walk Time (s)		8.0		8.0	8.0					8.0	8.0	
Flash Dont Walk (s)		8.0		8.0	8.0					5.0	5.0	
Pedestrian Calls (#/hr)		0		0	0					0	0	
Act Effect Green (s)		96.5		96.5	96.5					15.0	15.0	
Actuated g/C Ratio		0.80		0.80	0.80					0.12	0.12	
v/c Ratio		0.23		0.02	0.39					0.20	0.43	
Control Delay		1.6		2.2	4.0					49.9	44.5	
Queue Delay		0.0		0.0	0.0					0.0	0.0	
Total Delay		1.6		2.2	4.0					49.9	44.5	
LOS		A		A	A					D	D	
Approach Delay		1.6			3.9						45.5	
Approach LOS		A			A						D	

Intersection Summary

Area Type: Other
 Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 15 (13%), Referenced to phase 1:EBWB, Start of Green
 Natural Cycle: 50
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.43
 Intersection Signal Delay: 11.7
 Intersection LOS: B
 Intersection Capacity Utilization 68.5%
 ICU Level of Service C
 Analysis Period (min) 15

Splits and Phases: 318: Roosevelt St & 5th Ave



Lanes, Volumes, Timings
319: 3rd Ave & Roosevelt St

09/10/2020



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	39	280	0	0	409	114	100	576	88	0	0	0
Future Volume (vph)	39	280	0	0	409	114	100	576	88	0	0	0
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	87		0	0		0	90		90	0		0
Storage Lanes	1		0	0		0	1		1	0		0
Taper Length (ft)	25			25			25			25		
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		0.99		0.97			
Frt					0.972				0.850			
Flt Protected	0.950						0.950					
Satd. Flow (prot)	1770	1863	0	0	1794	0	1770	3539	1583	0	0	0
Flt Permitted	0.348						0.950					
Satd. Flow (perm)	648	1863	0	0	1794	0	1755	3539	1538	0	0	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					18				59			
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		219			940			263			303	
Travel Time (s)		5.0			21.4			6.0			6.9	
Confl. Peds. (#/hr)	13					14	2		7			
Peak Hour Factor	0.75	0.89	0.92	0.84	0.84	0.89	0.81	0.79	0.85	0.92	0.92	0.92
Adj. Flow (vph)	52	315	0	0	487	128	123	729	104	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	52	315	0	0	615	0	123	729	104	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												
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			2		1	2	1			
Detector Template	Left	Thru			Thru		Left	Thru	Right			
Leading Detector (ft)	20	100			100		20	100	20			
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		20	6	20			
Detector 1 Type	Cl+Ex	Cl+Ex			Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex			
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0			0.0		0.0	0.0	0.0			
Detector 1 Queue (s)	0.0	0.0			0.0		0.0	0.0	0.0			
Detector 1 Delay (s)	0.0	0.0			0.0		0.0	0.0	0.0			
Detector 2 Position(ft)		94			94			94				
Detector 2 Size(ft)		6			6			6				
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				
Turn Type	Perm	NA			NA		Perm	NA	Perm			

Lanes, Volumes, Timings
319: 3rd Ave & Roosevelt St

09/10/2020



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Protected Phases		1			1			2				
Permitted Phases	1						2		2			
Detector Phase	1	1			1		2	2	2			
Switch Phase												
Minimum Initial (s)	15.0	15.0			15.0		15.0	15.0	15.0			
Minimum Split (s)	22.5	22.5			22.5		24.5	24.5	24.5			
Total Split (s)	72.0	72.0			72.0		48.0	48.0	48.0			
Total Split (%)	60.0%	60.0%			60.0%		40.0%	40.0%	40.0%			
Maximum Green (s)	67.5	67.5			67.5		43.4	43.4	43.4			
Yellow Time (s)	3.2	3.2			3.2		3.6	3.6	3.6			
All-Red Time (s)	1.3	1.3			1.3		1.0	1.0	1.0			
Lost Time Adjust (s)	0.0	0.0			0.0		0.0	0.0	0.0			
Total Lost Time (s)	4.5	4.5			4.5		4.6	4.6	4.6			
Lead/Lag	Lead	Lead			Lead		Lag	Lag	Lag			
Lead-Lag Optimize?	Yes	Yes			Yes		Yes	Yes	Yes			
Vehicle Extension (s)	1.0	1.0			1.0		1.0	1.0	1.0			
Recall Mode	C-Max	C-Max			C-Max		None	None	None			
Walk Time (s)	7.0	7.0			7.0		9.0	9.0	9.0			
Flash Dont Walk (s)	9.0	9.0			9.0		6.0	6.0	6.0			
Pedestrian Calls (#/hr)	0	0			0		0	0	0			
Act Effct Green (s)	81.1	81.1			81.1		29.8	29.8	29.8			
Actuated g/C Ratio	0.68	0.68			0.68		0.25	0.25	0.25			
v/c Ratio	0.12	0.25			0.50		0.28	0.83	0.24			
Control Delay	13.5	11.8			11.9		36.9	51.2	17.3			
Queue Delay	0.0	0.0			0.0		0.0	0.0	0.0			
Total Delay	13.5	11.8			11.9		36.9	51.2	17.3			
LOS	B	B			B		D	D	B			
Approach Delay		12.1			11.9			45.7				
Approach LOS		B			B			D				

Intersection Summary

Area Type: Other
 Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 25 (21%), Referenced to phase 1:EBWB, Start of Green
 Natural Cycle: 55
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.83
 Intersection Signal Delay: 28.6
 Intersection LOS: C
 Intersection Capacity Utilization 68.5%
 ICU Level of Service C
 Analysis Period (min) 15

Splits and Phases: 319: 3rd Ave & Roosevelt St



Lanes, Volumes, Timings
353: 7th St & Lincoln St

09/10/2020



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	156	0	259	2	1	2	169	614	4	1	1050	120
Future Volume (vph)	156	0	259	2	1	2	169	614	4	1	1050	120
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	180		0	75		0	180		0	180		0
Storage Lanes	1		1	1		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.91	0.91	1.00	0.91	0.91
Frt			0.850		0.900			0.999			0.985	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1863	1583	1770	1676	0	1770	5080	0	1770	5009	0
Flt Permitted	0.756			0.757			0.158			0.385		
Satd. Flow (perm)	1408	1863	1583	1410	1676	0	294	5080	0	717	5009	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			347		2			1			17	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		810			319			764			1234	
Travel Time (s)		18.4			7.3			17.4			28.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	170	0	282	2	1	2	184	667	4	1	1141	130
Shared Lane Traffic (%)												
Lane Group Flow (vph)	170	0	282	2	3	0	184	671	0	1	1271	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	2	1	1	2		1	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100	20	20	100		20	100		20	100	
Trailing Detector (ft)	0	0	0	0	0		0	0		0	0	
Detector 1 Position(ft)	0	0	0	0	0		0	0		0	0	
Detector 1 Size(ft)	20	6	20	20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm		Perm	Perm	NA		pm+pt	NA		Perm	NA	
Protected Phases		2			2		7	4			8	
Permitted Phases	2		2	2			4			8		

Lanes, Volumes, Timings
353: 7th St & Lincoln St

09/10/2020

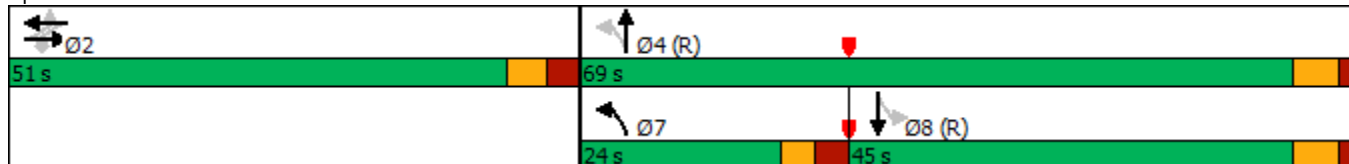


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	2	2	2	2	2		7	4		8	8	
Switch Phase												
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0		2.0	15.0		15.0	15.0	
Minimum Split (s)	33.5	33.5	33.5	33.5	33.5		9.5	24.3		26.0	26.0	
Total Split (s)	51.0	51.0	51.0	51.0	51.0		24.0	69.0		45.0	45.0	
Total Split (%)	42.5%	42.5%	42.5%	42.5%	42.5%		20.0%	57.5%		37.5%	37.5%	
Maximum Green (s)	44.5	44.5	44.5	44.5	44.5		18.0	63.7		39.7	39.7	
Yellow Time (s)	3.6	3.6	3.6	3.6	3.6		3.0	4.0		4.0	4.0	
All-Red Time (s)	2.9	2.9	2.9	2.9	2.9		3.0	1.3		1.3	1.3	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.5	6.5	6.5	6.5	6.5		6.0	5.3		5.3	5.3	
Lead/Lag							Lead			Lag	Lag	
Lead-Lag Optimize?							Yes			Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None	None	None	None		None	C-Max		C-Max	C-Max	
Walk Time (s)	7.0	7.0	7.0	7.0	7.0			8.0		8.0	8.0	
Flash Dont Walk (s)	20.0	20.0	20.0	20.0	20.0			11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0	0	0	0			0		0	0	
Act Effect Green (s)	20.5		20.5	20.5	20.5		87.0	87.7		70.4	70.4	
Actuated g/C Ratio	0.17		0.17	0.17	0.17		0.72	0.73		0.59	0.59	
v/c Ratio	0.71		0.51	0.01	0.01		0.52	0.18		0.00	0.43	
Control Delay	61.8		4.6	36.5	27.7		11.5	5.7		16.0	15.7	
Queue Delay	0.0		0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	61.8		4.6	36.5	27.7		11.5	5.7		16.0	15.7	
LOS	E		A	D	C		B	A		B	B	
Approach Delay		26.1			31.2			7.0			15.7	
Approach LOS		C			C			A			B	

Intersection Summary

Area Type: Other
 Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 85 (71%), Referenced to phase 4:NBTL and 8:SBTL, Start of Green
 Natural Cycle: 70
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.71
 Intersection Signal Delay: 14.7
 Intersection LOS: B
 Intersection Capacity Utilization 62.5%
 ICU Level of Service B
 Analysis Period (min) 15
 Description: AECOM grown 2015 counts

Splits and Phases: 353: 7th St & Lincoln St



Lanes, Volumes, Timings
369: 3rd St & Lincoln St

09/10/2020



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑		↖	↑↑		↖		↗	↖	↗	↗
Traffic Volume (vph)	0	469	9	6	756	0	53	0	47	36	46	95
Future Volume (vph)	0	469	9	6	756	0	53	0	47	36	46	95
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	105		0	0		156	145		0
Storage Lanes	0		0	1		0	1		1	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.997							0.850		0.899	
Flt Protected				0.950			0.950			0.950		
Satd. Flow (prot)	0	3529	0	1770	3539	0	1770	0	1583	1770	1675	0
Flt Permitted				0.460			0.430			0.950		
Satd. Flow (perm)	0	3529	0	857	3539	0	801	0	1583	1770	1675	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		4							51		103	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		254			288			273			181	
Travel Time (s)		5.8			6.5			6.2			4.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	510	10	7	822	0	58	0	51	39	50	103
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	520	0	7	822	0	58	0	51	39	153	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		2		1	2		1		1	1		2
Detector Template		Thru		Left	Thru		Left		Right	Left		Thru
Leading Detector (ft)		100		20	100		20		20	20		100
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)		6		20	6		20		20	20		6
Detector 1 Type		Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)		0.0		0.0	0.0		0.0		0.0	0.0		0.0
Detector 1 Queue (s)		0.0		0.0	0.0		0.0		0.0	0.0		0.0
Detector 1 Delay (s)		0.0		0.0	0.0		0.0		0.0	0.0		0.0
Detector 2 Position(ft)		94			94							94
Detector 2 Size(ft)		6			6							6
Detector 2 Type		Cl+Ex			Cl+Ex							Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0							0.0
Turn Type		NA		Perm	NA		D.Pm		Perm	Perm		NA
Protected Phases		1			1							2
Permitted Phases				1			2		2	2		

Lanes, Volumes, Timings

369: 3rd St & Lincoln St

09/10/2020



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase		1		1	1		2		2	2	2	
Switch Phase												
Minimum Initial (s)		15.0		15.0	15.0		5.0		5.0	5.0	5.0	
Minimum Split (s)		26.6		26.6	26.6		27.5		27.5	27.5	27.5	
Total Split (s)		64.0		64.0	64.0		30.0		30.0	30.0	30.0	
Total Split (%)		68.1%		68.1%	68.1%		31.9%		31.9%	31.9%	31.9%	
Maximum Green (s)		59.4		59.4	59.4		25.5		25.5	25.5	25.5	
Yellow Time (s)		3.6		3.6	3.6		3.0		3.0	3.0	3.0	
All-Red Time (s)		1.0		1.0	1.0		1.5		1.5	1.5	1.5	
Lost Time Adjust (s)		0.0		0.0	0.0		0.0		0.0	0.0	0.0	
Total Lost Time (s)		4.6		4.6	4.6		4.5		4.5	4.5	4.5	
Lead/Lag		Lag		Lag	Lag		Lead		Lead	Lead	Lead	
Lead-Lag Optimize?		Yes		Yes	Yes		Yes		Yes	Yes	Yes	
Vehicle Extension (s)		1.0		1.0	1.0		2.0		2.0	2.0	2.0	
Recall Mode		C-Max		C-Max	C-Max		None		None	None	None	
Walk Time (s)		8.0		8.0	8.0		8.0		8.0	8.0	8.0	
Flash Dont Walk (s)		14.0		14.0	14.0		15.0		15.0	15.0	15.0	
Pedestrian Calls (#/hr)		0		0	0		0		0	0	0	
Act Effect Green (s)		75.6		75.6	75.6		9.3		9.3	9.3	9.3	
Actuated g/C Ratio		0.80		0.80	0.80		0.10		0.10	0.10	0.10	
v/c Ratio		0.18		0.01	0.29		0.73		0.25	0.22	0.59	
Control Delay		2.5		2.7	2.9		86.1		13.9	40.3	24.5	
Queue Delay		0.0		0.0	0.0		0.0		0.0	0.0	0.0	
Total Delay		2.5		2.7	2.9		86.1		13.9	40.3	24.5	
LOS		A		A	A		F		B	D	C	
Approach Delay		2.5			2.9			52.4				27.7
Approach LOS		A			A			D				C

Intersection Summary



























Area Type:	Other
Cycle Length:	94
Actuated Cycle Length:	94
Offset:	70 (74%), Referenced to phase 1:EBWB, Start of Green
Natural Cycle:	55
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.73
Intersection Signal Delay:	8.9
Intersection LOS:	A
Intersection Capacity Utilization:	43.4%
ICU Level of Service:	A
Analysis Period (min):	15

Splits and Phases: 369: 3rd St & Lincoln St



Lanes, Volumes, Timings
386: 7th Ave & Jefferson St

09/10/2020

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  						  		 	 	
Traffic Volume (vph)	534	473	144	0	0	0	0	979	39	201	958	0
Future Volume (vph)	534	473	144	0	0	0	0	979	39	201	958	0
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	0		125	135		0
Storage Lanes	1		1	0		0	0		1	2		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.86	0.86	1.00	1.00	1.00	1.00	1.00	0.91	1.00	0.97	0.95	1.00
Frt			0.850						0.850			
Flt Protected	0.950	0.982								0.950		
Satd. Flow (prot)	1522	4719	1583	0	0	0	0	5085	1583	3433	3539	0
Flt Permitted	0.950	0.982								0.950		
Satd. Flow (perm)	1522	4719	1583	0	0	0	0	5085	1583	3433	3539	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			157						65			
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		690			1074			2278			382	
Travel Time (s)		15.7			24.4			51.8			8.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	580	514	157	0	0	0	0	1064	42	218	1041	0
Shared Lane Traffic (%)	50%											
Lane Group Flow (vph)	290	804	157	0	0	0	0	1064	42	218	1041	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			24			24	
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	2	1					2	1	1	2	
Detector Template	Left	Thru	Right					Thru	Right	Left	Thru	
Leading Detector (ft)	20	100	20					100	20	20	100	
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	20					6	20	20	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex					Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0					0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0					0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0					0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		94						94			94	
Detector 2 Size(ft)		6						6			6	
Detector 2 Type		Cl+Ex						Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0						0.0			0.0	
Turn Type	Perm	NA	Perm					NA	Perm	Prot	NA	
Protected Phases		6						4		3	8	
Permitted Phases	6		6						4			

Lanes, Volumes, Timings
386: 7th Ave & Jefferson St

09/10/2020

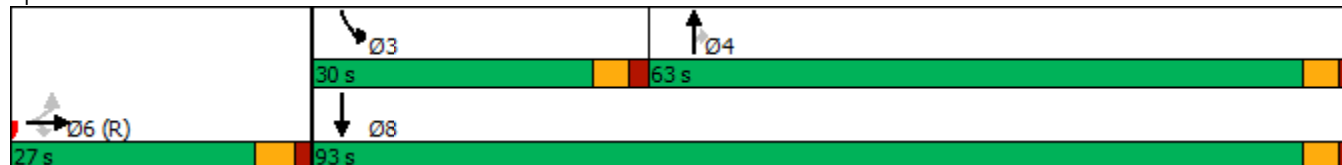


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	6	6	6					4	4	3	8	
Switch Phase												
Minimum Initial (s)	15.0	15.0	15.0					15.0	15.0	8.0	15.0	
Minimum Split (s)	27.0	27.0	27.0					25.7	25.7	23.0	25.7	
Total Split (s)	27.0	27.0	27.0					63.0	63.0	30.0	93.0	
Total Split (%)	22.5%	22.5%	22.5%					52.5%	52.5%	25.0%	77.5%	
Maximum Green (s)	21.8	21.8	21.8					58.3	58.3	25.0	88.3	
Yellow Time (s)	3.6	3.6	3.6					3.2	3.2	3.2	3.2	
All-Red Time (s)	1.6	1.6	1.6					1.5	1.5	1.8	1.5	
Lost Time Adjust (s)	0.0	0.0	0.0					0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.2	5.2	5.2					4.7	4.7	5.0	4.7	
Lead/Lag								Lag	Lag	Lead		
Lead-Lag Optimize?								Yes	Yes	Yes		
Vehicle Extension (s)	3.0	3.0	3.0					3.0	3.0	3.0	3.0	
Recall Mode	C-Max	C-Max	C-Max					None	None	None	None	
Walk Time (s)	8.0	8.0	8.0					8.0	8.0		8.0	
Flash Dont Walk (s)	17.0	17.0	17.0					13.0	13.0		13.0	
Pedestrian Calls (#/hr)	0	0	0					0	0		0	
Act Effct Green (s)	56.0	56.0	56.0					36.2	36.2	12.9	54.1	
Actuated g/C Ratio	0.47	0.47	0.47					0.30	0.30	0.11	0.45	
v/c Ratio	0.41	0.37	0.19					0.69	0.08	0.59	0.65	
Control Delay	25.5	22.6	4.3					39.1	2.9	55.9	21.7	
Queue Delay	0.0	0.0	0.0					0.0	0.0	0.0	0.0	
Total Delay	25.5	22.6	4.3					39.1	2.9	55.9	21.7	
LOS	C	C	A					D	A	E	C	
Approach Delay		21.0						37.7			27.6	
Approach LOS		C						D			C	

Intersection Summary

Area Type:	Other
Cycle Length:	120
Actuated Cycle Length:	120
Offset:	30 (25%), Referenced to phase 2: and 6:EBTL, Start of Green
Natural Cycle:	80
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.69
Intersection Signal Delay:	28.4
Intersection LOS:	C
Intersection Capacity Utilization:	60.2%
ICU Level of Service:	B
Analysis Period (min):	15

Splits and Phases: 386: 7th Ave & Jefferson St



Lanes, Volumes, Timings
468: 5th St & Van Buren St

09/10/2020



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↘	↑↑			↑↑	↗		↔↔↔				
Traffic Volume (vph)	40	1024	0	0	729	24	69	382	65	0	0	0
Future Volume (vph)	40	1024	0	0	729	24	69	382	65	0	0	0
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	132		0	0		205	0		0	0		0
Storage Lanes	1		0	0		1	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	0.91	0.91	0.91	1.00	1.00	1.00
Frt						0.850		0.981				
Flt Protected	0.950							0.993				
Satd. Flow (prot)	1770	3539	0	0	3539	1583	0	4954	0	0	0	0
Flt Permitted	0.299							0.993				
Satd. Flow (perm)	557	3539	0	0	3539	1583	0	4954	0	0	0	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						76		32				
Link Speed (mph)		30			30			30				30
Link Distance (ft)		750			710			232				452
Travel Time (s)		17.0			16.1			5.3				10.3
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	43	1113	0	0	792	26	75	415	71	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	43	1113	0	0	792	26	0	561	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		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	2			2	1	1	2				
Detector Template	Left	Thru			Thru	Right	Left	Thru				
Leading Detector (ft)	20	100			100	20	20	100				
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	20	20	6				
Detector 1 Type	Cl+Ex	Cl+Ex			Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex				
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0			0.0	0.0	0.0	0.0				
Detector 1 Queue (s)	0.0	0.0			0.0	0.0	0.0	0.0				
Detector 1 Delay (s)	0.0	0.0			0.0	0.0	0.0	0.0				
Detector 2 Position(ft)		94			94			94				
Detector 2 Size(ft)		6			6			6				
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				
Turn Type	pm+pt	NA			NA	Perm	Perm	NA				
Protected Phases	1	6			2			4				
Permitted Phases	6					2	4					

Lanes, Volumes, Timings
468: 5th St & Van Buren St

09/10/2020

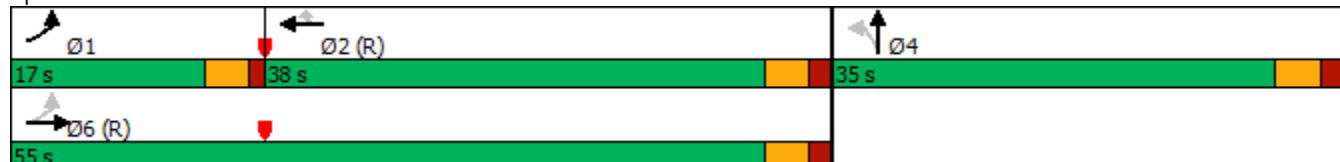


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	1	6			2	2	4	4				
Switch Phase												
Minimum Initial (s)	5.0	15.0			15.0	15.0	15.0	15.0				
Minimum Split (s)	9.5	24.5			24.5	24.5	32.3	32.3				
Total Split (s)	17.0	55.0			38.0	38.0	35.0	35.0				
Total Split (%)	18.9%	61.1%			42.2%	42.2%	38.9%	38.9%				
Maximum Green (s)	13.0	50.5			33.5	33.5	29.7	29.7				
Yellow Time (s)	3.0	3.0			3.0	3.0	3.0	3.0				
All-Red Time (s)	1.0	1.5			1.5	1.5	2.3	2.3				
Lost Time Adjust (s)	0.0	0.0			0.0	0.0		0.0				
Total Lost Time (s)	4.0	4.5			4.5	4.5		5.3				
Lead/Lag	Lead				Lag		Lag					
Lead-Lag Optimize?	Yes				Yes		Yes					
Vehicle Extension (s)	2.0	1.0			1.0	1.0	1.0	1.0				
Recall Mode	None	C-Max			C-Max	C-Max	None	None				
Walk Time (s)		8.0			8.0	8.0	8.0	8.0				
Flash Dont Walk (s)		12.0			12.0	12.0	19.0	19.0				
Pedestrian Calls (#/hr)		0			0	0	0	0				
Act Effct Green (s)	65.2	64.7			59.0	59.0		15.5				
Actuated g/C Ratio	0.72	0.72			0.66	0.66		0.17				
v/c Ratio	0.09	0.44			0.34	0.02		0.64				
Control Delay	7.7	10.4			8.1	0.0		36.1				
Queue Delay	0.0	0.0			0.0	0.0		0.0				
Total Delay	7.7	10.4			8.1	0.0		36.1				
LOS	A	B			A	A		D				
Approach Delay		10.3			7.9			36.1				
Approach LOS		B			A			D				

Intersection Summary

Area Type: Other
 Cycle Length: 90
 Actuated Cycle Length: 90
 Offset: 1 (1%), Referenced to phase 2:WBT and 6:EBTL, Start of Green
 Natural Cycle: 70
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.64
 Intersection Signal Delay: 15.2
 Intersection LOS: B
 Intersection Capacity Utilization 49.0%
 ICU Level of Service A
 Analysis Period (min) 15

Splits and Phases: 468: 5th St & Van Buren St



Lanes, Volumes, Timings
528: 1st Ave & Washington St

09/10/2020



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	206	1332	0	0	0	0	0	770	0
Future Volume (vph)	0	0	0	206	1332	0	0	0	0	0	770	0
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	145		180	0		0	0		160
Storage Lanes	0		0	2		1	0		0	0		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	0.97	0.86	1.00	1.00	1.00	1.00	1.00	0.91	1.00
Frt												
Flt Protected				0.950								
Satd. Flow (prot)	0	0	0	3433	6408	0	0	0	0	0	5085	1863
Flt Permitted				0.950								
Satd. Flow (perm)	0	0	0	3433	6408	0	0	0	0	0	5085	1863
Right Turn on Red			Yes	Yes		Yes			Yes			No
Satd. Flow (RTOR)				63								
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		345			373			143			322	
Travel Time (s)		7.8			8.5			3.3			7.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	224	1448	0	0	0	0	0	837	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	224	1448	0	0	0	0	0	837	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)		24			24			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	2						2	1
Detector Template				Left	Thru						Thru	Right
Leading Detector (ft)				20	100						100	20
Trailing Detector (ft)				0	0						0	0
Detector 1 Position(ft)				0	0						0	0
Detector 1 Size(ft)				20	6						6	20
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
Detector 2 Position(ft)					94						94	
Detector 2 Size(ft)					6						6	
Detector 2 Type					Cl+Ex						Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)					0.0						0.0	
Turn Type				Perm	NA						NA	custom
Protected Phases					8						2	5
Permitted Phases				8								

Lanes, Volumes, Timings
528: 1st Ave & Washington St

09/10/2020

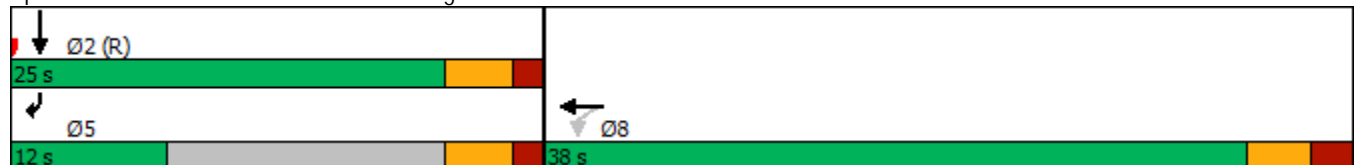


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase				8	8						2	5
Switch Phase												
Minimum Initial (s)				10.0	10.0						10.0	2.3
Minimum Split (s)				27.1	27.1						24.7	7.0
Total Split (s)				38.0	38.0						25.0	12.0
Total Split (%)				60.3%	60.3%						39.7%	19.0%
Maximum Green (s)				32.9	32.9						20.3	7.3
Yellow Time (s)				3.0	3.0						3.2	3.2
All-Red Time (s)				2.1	2.1						1.5	1.5
Lost Time Adjust (s)				0.0	0.0						0.0	0.0
Total Lost Time (s)				5.1	5.1						4.7	4.7
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)				3.0	3.0						3.0	3.0
Recall Mode				Ped	Ped						C-Max	Max
Walk Time (s)				8.0	8.0						8.0	8.0
Flash Dont Walk (s)				14.0	14.0						12.0	9.0
Pedestrian Calls (#/hr)				0	0						0	4
Act Effct Green (s)				29.2	29.2						24.0	
Actuated g/C Ratio				0.46	0.46						0.38	
v/c Ratio				0.14	0.49						0.43	
Control Delay				6.2	12.0						16.3	
Queue Delay				0.0	0.0						0.0	
Total Delay				6.2	12.0						16.3	
LOS				A	B						B	
Approach Delay					11.2						16.3	
Approach LOS					B						B	

Intersection Summary

Area Type: Other
 Cycle Length: 63
 Actuated Cycle Length: 63
 Offset: 25 (40%), Referenced to phase 2:SBT, Start of Green
 Natural Cycle: 55
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.49
 Intersection Signal Delay: 12.9 Intersection LOS: B
 Intersection Capacity Utilization 42.3% ICU Level of Service A
 Analysis Period (min) 15

Splits and Phases: 528: 1st Ave & Washington St



Lanes, Volumes, Timings
534: 5th St & Washington St

09/10/2020



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↑↑↑	↑		↑↑↑				
Traffic Volume (vph)	0	0	0	0	1392	103	0	94	0	0	0	0
Future Volume (vph)	0	0	0	0	1392	103	0	94	0	0	0	0
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		295	0		0	0		0
Storage Lanes	0		0	0		1	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	0.91	1.00	0.91	0.91	1.00	1.00	1.00	1.00
Frt						0.850						
Flt Protected												
Satd. Flow (prot)	0	0	0	0	5085	1583	0	5085	0	0	0	0
Flt Permitted												
Satd. Flow (perm)	0	0	0	0	5085	1583	0	5085	0	0	0	0
Right Turn on Red			Yes			No	Yes		Yes			Yes
Satd. Flow (RTOR)												
Link Speed (mph)		30			30			30				30
Link Distance (ft)		735			736			312				384
Travel Time (s)		16.7			16.7			7.1				8.7
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	0	1513	112	0	102	0	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	1513	112	0	102	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0				0
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
Headway Factor	1.00	1.00	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					2	1	1	2				
Detector Template					Thru	Right	Left	Thru				
Leading Detector (ft)					100	20	20	100				
Trailing Detector (ft)					0	0	0	0				
Detector 1 Position(ft)					0	0	0	0				
Detector 1 Size(ft)					6	20	20	6				
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				
Detector 2 Position(ft)					94			94				
Detector 2 Size(ft)					6			6				
Detector 2 Type					Cl+Ex			Cl+Ex				
Detector 2 Channel												
Detector 2 Extend (s)					0.0			0.0				
Turn Type					NA	Prot		NA				
Protected Phases					2	2		4				
Permitted Phases								4				

Lanes, Volumes, Timings
534: 5th St & Washington St

09/10/2020

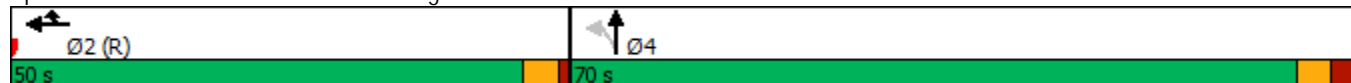


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase					2	2	4	4				
Switch Phase												
Minimum Initial (s)					5.0	5.0	10.0	10.0				
Minimum Split (s)					38.2	38.2	27.1	27.1				
Total Split (s)					50.0	50.0	70.0	70.0				
Total Split (%)					41.7%	41.7%	58.3%	58.3%				
Maximum Green (s)					45.8	45.8	64.9	64.9				
Yellow Time (s)					3.2	3.2	3.0	3.0				
All-Red Time (s)					1.0	1.0	2.1	2.1				
Lost Time Adjust (s)					0.0	0.0		0.0				
Total Lost Time (s)					4.2	4.2		5.1				
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)					3.0	3.0	3.0	3.0				
Recall Mode					C-Max	C-Max	None	None				
Walk Time (s)					17.0	17.0	8.0	8.0				
Flash Dont Walk (s)					17.0	17.0	14.0	14.0				
Pedestrian Calls (#/hr)					0	0	0	0				
Act Effct Green (s)					100.7	100.7		10.0				
Actuated g/C Ratio					0.84	0.84		0.08				
v/c Ratio					0.35	0.08		0.24				
Control Delay					0.7	0.7		53.0				
Queue Delay					0.0	0.0		0.0				
Total Delay					0.7	0.7		53.0				
LOS					A	A		D				
Approach Delay					0.7			53.0				
Approach LOS					A			D				

Intersection Summary

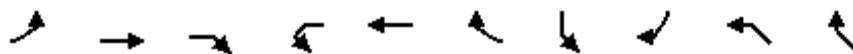
Area Type: Other
 Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 0 (0%), Referenced to phase 2:WBT and 6:, Start of Green
 Natural Cycle: 70
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.35
 Intersection Signal Delay: 3.8
 Intersection Capacity Utilization 43.0%
 Analysis Period (min) 15
 Intersection LOS: A
 ICU Level of Service A

Splits and Phases: 534: 5th St & Washington St



Lanes, Volumes, Timings
536: 5th St

09/10/2020

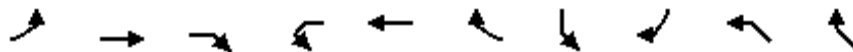


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SBL	SBR	NWL	NWR	Ø4	Ø10
Lane Configurations		↑↑↑	↑									
Traffic Volume (vph)	85	1055	409	0	0	0	0	0	0	0		
Future Volume (vph)	85	1055	409	0	0	0	0	0	0	0		
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900		
Lane Util. Factor	0.91	0.91	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		
Fr t			0.850									
Flt Protected		0.996										
Satd. Flow (prot)	0	5065	1583	0	0	0	0	0	0	0		
Flt Permitted		0.996										
Satd. Flow (perm)	0	5065	1583	0	0	0	0	0	0	0		
Right Turn on Red	Yes		Yes			Yes		Yes				
Satd. Flow (RTOR)		70	445									
Link Speed (mph)		30			30		30		30			
Link Distance (ft)		215			725		309		217			
Travel Time (s)		4.9			16.5		7.0		4.9			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92		
Adj. Flow (vph)	92	1147	445	0	0	0	0	0	0	0		
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1239	445	0	0	0	0	0	0	0		
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No		
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Right	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		
Turning Speed (mph)	15		9	15		9	15	9	15	9		
Number of Detectors	1	2	1									
Detector Template	Left	Thru	Right									
Leading Detector (ft)	20	100	20									
Trailing Detector (ft)	0	0	0									
Detector 1 Position(ft)	0	0	0									
Detector 1 Size(ft)	20	6	20									
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex									
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0									
Detector 1 Queue (s)	0.0	0.0	0.0									
Detector 1 Delay (s)	0.0	0.0	0.0									
Detector 2 Position(ft)		94										
Detector 2 Size(ft)		6										
Detector 2 Type		Cl+Ex										
Detector 2 Channel												
Detector 2 Extend (s)		0.0										
Turn Type	Perm	NA	custom									
Protected Phases		6	1								4	10
Permitted Phases	6											
Detector Phase	6	6	1									
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0								5.0	5.0

Lanes, Volumes, Timings

536: 5th St

09/10/2020

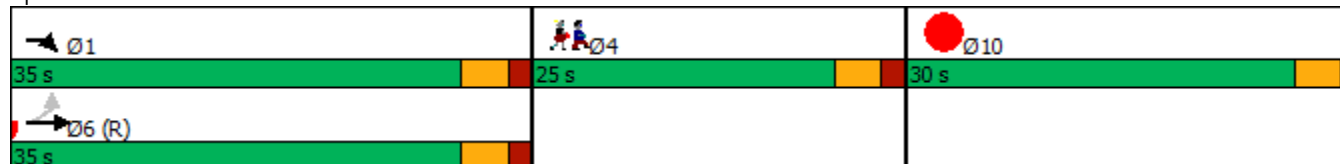


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SBL	SBR	NWL	NWR	Ø4	Ø10
Minimum Split (s)	30.0	30.0	30.0								24.8	30.0
Total Split (s)	35.0	35.0	35.0								25.0	30.0
Total Split (%)	38.9%	38.9%	38.9%								28%	33%
Maximum Green (s)	30.2	30.2	30.2								20.2	26.0
Yellow Time (s)	3.2	3.2	3.2								3.0	3.0
All-Red Time (s)	1.6	1.6	1.6								1.8	1.0
Lost Time Adjust (s)		0.0	0.0									
Total Lost Time (s)		4.8	4.8									
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0								3.0	3.0
Recall Mode	C-Max	C-Max	None								None	None
Walk Time (s)	8.0	8.0									8.0	11.0
Flash Dont Walk (s)	8.0	8.0									12.0	15.0
Pedestrian Calls (#/hr)	0	0									0	4
Act Effect Green (s)		83.0	83.0									
Actuated g/C Ratio		0.92	0.92									
v/c Ratio		0.26	0.30									
Control Delay		2.4	1.1									
Queue Delay		0.0	0.0									
Total Delay		2.4	1.1									
LOS		A	A									
Approach Delay		2.0										
Approach LOS		A										

Intersection Summary

Area Type:	Other
Cycle Length:	90
Actuated Cycle Length:	90
Offset:	2 (2%), Referenced to phase 6:EBTL, Start of Green
Natural Cycle:	85
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.30
Intersection Signal Delay:	2.0
Intersection LOS:	A
Intersection Capacity Utilization:	29.3%
ICU Level of Service:	A
Analysis Period (min):	15

Splits and Phases: 536: 5th St



Lanes, Volumes, Timings
540: 1st St & Jefferson St

09/10/2020



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		4111	1					1	11		1	
Traffic Volume (vph)	69	1443	93	0	0	0	0	109	89	0	136	0
Future Volume (vph)	69	1443	93	0	0	0	0	109	89	0	136	0
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		145	0		0	110		0	0		0
Storage Lanes	0		1	0		0	1		2	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.86	0.86	1.00	1.00	1.00	1.00	1.00	1.00	0.88	1.00	1.00	1.00
Frt			0.850						0.850			
Flt Protected		0.998										
Satd. Flow (prot)	0	6395	1583	0	0	0	0	1863	2787	0	1863	0
Flt Permitted		0.998										
Satd. Flow (perm)	0	6395	1583	0	0	0	0	1863	2787	0	1863	0
Right Turn on Red			No			Yes			No			Yes
Satd. Flow (RTOR)												
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		251			390			619			105	
Travel Time (s)		5.7			8.9			14.1			2.4	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	75	1568	101	0	0	0	0	118	97	0	148	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1643	101	0	0	0	0	118	97	0	148	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	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	2	
Detector Template	Left	Thru	Right					Thru	Right	Left	Thru	
Leading Detector (ft)	20	100	20					100	20	20	100	
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	20					6	20	20	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex					Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0					0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0					0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0					0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		94						94			94	
Detector 2 Size(ft)		6						6			6	
Detector 2 Type		Cl+Ex						Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0						0.0			0.0	
Turn Type	Perm	NA	custom					NA	Perm		NA	
Protected Phases		6	1					4			4	
Permitted Phases	6								4	4		

Lanes, Volumes, Timings
540: 1st St & Jefferson St

09/10/2020

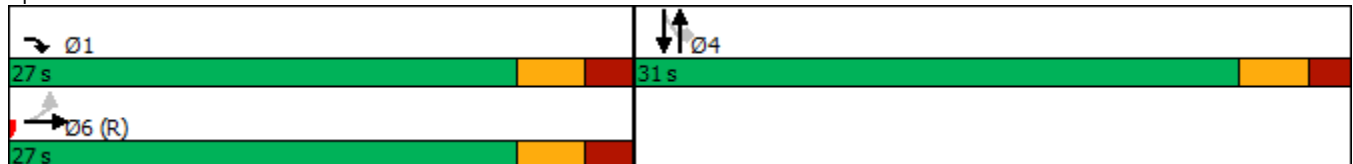


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	6	6	1					4	4	4	4	
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0					5.0	5.0	5.0	5.0	
Minimum Split (s)	27.1	27.1	31.1					25.9	25.9	25.9	25.9	
Total Split (s)	27.0	27.0	27.0					31.0	31.0	31.0	31.0	
Total Split (%)	46.6%	46.6%	46.6%					53.4%	53.4%	53.4%	53.4%	
Maximum Green (s)	21.9	21.9	21.9					26.1	26.1	26.1	26.1	
Yellow Time (s)	3.0	3.0	3.0					3.0	3.0	3.0	3.0	
All-Red Time (s)	2.1	2.1	2.1					1.9	1.9	1.9	1.9	
Lost Time Adjust (s)		0.0	0.0					0.0	0.0		0.0	
Total Lost Time (s)		5.1	5.1					4.9	4.9		4.9	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0					3.0	3.0	3.0	3.0	
Recall Mode	C-Max	C-Max	Max					None	None	None	None	
Walk Time (s)	8.0	8.0	12.0					8.0	8.0	8.0	8.0	
Flash Dont Walk (s)	14.0	14.0	12.0					13.0	13.0	13.0	13.0	
Pedestrian Calls (#/hr)	0	0	4					0	0	0	0	
Act Effect Green (s)		40.8	40.8					10.5	10.5		10.5	
Actuated g/C Ratio		0.70	0.70					0.18	0.18		0.18	
v/c Ratio		0.37	0.09					0.35	0.19		0.44	
Control Delay		5.2	5.2					22.4	19.5		24.3	
Queue Delay		0.0	0.0					0.0	0.0		0.0	
Total Delay		5.2	5.2					22.4	19.5		24.3	
LOS		A	A					C	B		C	
Approach Delay		5.2						21.1			24.3	
Approach LOS		A						C			C	

Intersection Summary

















Area Type: Other
 Cycle Length: 58
 Actuated Cycle Length: 58
 Offset: 30 (52%), Referenced to phase 2: and 6:EBTL, Start of Green
 Natural Cycle: 60
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.44
 Intersection Signal Delay: 8.2
 Intersection LOS: A
 Intersection Capacity Utilization 45.7%
 ICU Level of Service A
 Analysis Period (min) 15
 Description: E->N left & NB thru movement take from model, rest from counts. These movements not serviced at time of count due to constructino.

Splits and Phases: 540: 1st St & Jefferson St



Lanes, Volumes, Timings
541: 1st Ave & Jefferson St

09/10/2020

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	1001	163	0	0	0	0	0	0	728	754	0
Future Volume (vph)	0	1001	163	0	0	0	0	0	0	728	754	0
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	0		0	135		0
Storage Lanes	0		1	0		0	0		0	2		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.86	0.86	1.00	1.00	1.00	1.00	1.00	1.00	0.81	0.81	1.00
Ped Bike Factor		1.00	0.78							0.88	0.98	
Flt		0.997	0.850									
Flt Protected										0.950	0.991	
Satd. Flow (prot)	0	4772	1362	0	0	0	0	0	0	2867	4486	0
Flt Permitted										0.950	0.991	
Satd. Flow (perm)	0	4772	1066	0	0	0	0	0	0	2536	4387	0
Right Turn on Red			Yes			Yes			Yes	Yes		Yes
Satd. Flow (RTOR)		3	179							710	75	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		802			364			409			202	
Travel Time (s)		18.2			8.3			9.3			4.6	
Confl. Peds. (#/hr)			149							82		
Peak Hour Factor	0.92	0.93	0.82	0.92	0.92	0.92	0.92	0.92	0.92	0.79	0.84	0.92
Adj. Flow (vph)	0	1076	199	0	0	0	0	0	0	922	898	0
Shared Lane Traffic (%)			10%							23%		
Lane Group Flow (vph)	0	1096	179	0	0	0	0	0	0	710	1110	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			24			24	
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		2	1							1	2	
Detector Template		Thru	Right							Left	Thru	
Leading Detector (ft)		100	20							20	100	
Trailing Detector (ft)		0	0							0	0	
Detector 1 Position(ft)		0	0							0	0	
Detector 1 Size(ft)		6	20							20	6	
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	
Detector 2 Position(ft)		94									94	
Detector 2 Size(ft)		6									6	
Detector 2 Type		Cl+Ex									Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0									0.0	
Turn Type		NA	Perm							Perm	NA	

Lane Group	Ø7
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Peak Hour Factor	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	

Lanes, Volumes, Timings
541: 1st Ave & Jefferson St

09/10/2020



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Protected Phases		6										8
Permitted Phases			6							8		
Detector Phase		6	6							8	8	
Switch Phase												
Minimum Initial (s)		5.0	5.0							5.0	5.0	
Minimum Split (s)		23.6	23.6							23.6	23.6	
Total Split (s)		25.0	25.0							32.0	32.0	
Total Split (%)		28.1%	28.1%							36.0%	36.0%	
Maximum Green (s)		20.4	20.4							27.4	27.4	
Yellow Time (s)		3.2	3.2							3.2	3.2	
All-Red Time (s)		1.4	1.4							1.4	1.4	
Lost Time Adjust (s)		0.0	0.0							0.0	0.0	
Total Lost Time (s)		4.6	4.6							4.6	4.6	
Lead/Lag										Lag	Lag	
Lead-Lag Optimize?										Yes	Yes	
Vehicle Extension (s)		3.0	3.0							3.0	3.0	
Recall Mode		C-Max	C-Max							Max	Max	
Walk Time (s)		8.0	8.0							8.0	8.0	
Flash Dont Walk (s)		11.0	11.0							11.0	11.0	
Pedestrian Calls (#/hr)		0	0							0	0	
Act Effect Green (s)		20.4	20.4							53.0	53.0	
Actuated g/C Ratio		0.23	0.23							0.60	0.60	
v/c Ratio		1.00	0.47							0.40	0.42	
Control Delay		62.6	9.2							2.3	12.1	
Queue Delay		0.0	0.0							0.2	0.4	
Total Delay		62.6	9.2							2.5	12.5	
LOS		E	A							A	B	
Approach Delay		55.1									8.6	
Approach LOS		E									A	

Intersection Summary

Area Type:	Other
Cycle Length:	89
Actuated Cycle Length:	89
Offset:	18 (20%), Referenced to phase 6:EBT, Start of Green
Natural Cycle:	90
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	1.00
Intersection Signal Delay:	27.8
Intersection LOS:	C
Intersection Capacity Utilization:	46.2%
ICU Level of Service:	A
Analysis Period (min):	15

Splits and Phases: 541: 1st Ave & Jefferson St



Lane Group	Ø7
Protected Phases	7
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	32.0
Total Split (s)	32.0
Total Split (%)	36%
Maximum Green (s)	27.5
Yellow Time (s)	3.5
All-Red Time (s)	1.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	Lead
Lead-Lag Optimize?	Yes
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	12.0
Flash Dont Walk (s)	16.0
Pedestrian Calls (#/hr)	4
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Intersection Summary	

Lanes, Volumes, Timings
548: 1st St & Washington St

09/10/2020



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↑↑↑	↑↑		↑			↑	↑
Traffic Volume (vph)	0	0	0	49	1367	80	51	116	0	0	144	90
Future Volume (vph)	0	0	0	49	1367	80	51	116	0	0	144	90
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		160	0		0	0		115
Storage Lanes	0		0	0		2	0		0	0		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	0.91	0.91	0.88	1.00	1.00	1.00	1.00	0.95	0.95
Frt						0.850					0.991	0.850
Flt Protected					0.998			0.985				
Satd. Flow (prot)	0	0	0	0	5075	2787	0	1835	0	0	1754	1504
Flt Permitted					0.998			0.866				
Satd. Flow (perm)	0	0	0	0	5075	2787	0	1613	0	0	1754	1504
Right Turn on Red			Yes			No			Yes			No
Satd. Flow (RTOR)												
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		398			393			261			409	
Travel Time (s)		9.0			8.9			5.9			9.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	53	1486	87	55	126	0	0	157	98
Shared Lane Traffic (%)												10%
Lane Group Flow (vph)	0	0	0	0	1539	87	0	181	0	0	167	88
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	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	1	2			2	1
Detector Template				Left	Thru	Right	Left	Thru			Thru	Right
Leading Detector (ft)				20	100	20	20	100			100	20
Trailing Detector (ft)				0	0	0	0	0			0	0
Detector 1 Position(ft)				0	0	0	0	0			0	0
Detector 1 Size(ft)				20	6	20	20	6			6	20
Detector 1 Type				Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex			Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)				0.0	0.0	0.0	0.0	0.0			0.0	0.0
Detector 1 Queue (s)				0.0	0.0	0.0	0.0	0.0			0.0	0.0
Detector 1 Delay (s)				0.0	0.0	0.0	0.0	0.0			0.0	0.0
Detector 2 Position(ft)					94			94			94	
Detector 2 Size(ft)					6			6			6	
Detector 2 Type					Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)					0.0			0.0			0.0	
Turn Type				Perm	NA	custom	Perm	NA			NA	Perm
Protected Phases					6	1		4			8	
Permitted Phases				6			4					8

Lanes, Volumes, Timings

548: 1st St & Washington St

09/10/2020

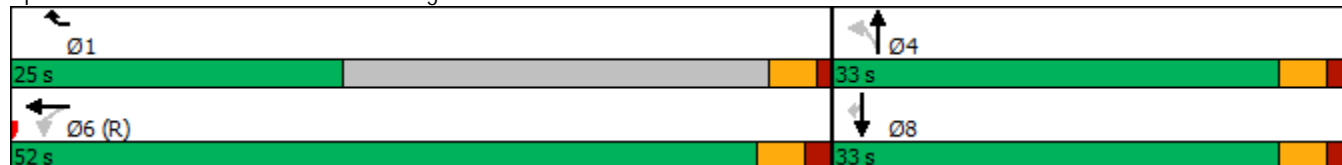


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase				6	6	1	4	4			8	8
Switch Phase												
Minimum Initial (s)				10.0	10.0	10.0	5.0	5.0			10.0	10.0
Minimum Split (s)				24.8	24.8	25.0	27.8	27.8			24.8	24.8
Total Split (s)				52.0	52.0	25.0	33.0	33.0			33.0	33.0
Total Split (%)				61.2%	61.2%	29.4%	38.8%	38.8%			38.8%	38.8%
Maximum Green (s)				47.2	47.2	21.0	28.2	28.2			28.2	28.2
Yellow Time (s)				3.0	3.0	3.0	3.0	3.0			3.0	3.0
All-Red Time (s)				1.8	1.8	1.0	1.8	1.8			1.8	1.8
Lost Time Adjust (s)					0.0	0.0		0.0			0.0	0.0
Total Lost Time (s)					4.8	4.0		4.8			4.8	4.8
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)				3.0	3.0	3.0	3.0	3.0			3.0	3.0
Recall Mode				C-Max	C-Max	Max	Max	Max			Max	Max
Walk Time (s)				8.0	8.0	8.0	8.0	8.0			8.0	8.0
Flash Dont Walk (s)				12.0	12.0	12.0	15.0	15.0			12.0	12.0
Pedestrian Calls (#/hr)				0	0	0	0	0			0	0
Act Effect Green (s)					47.2	48.0		28.2			28.2	28.2
Actuated g/C Ratio					0.56	0.56		0.33			0.33	0.33
v/c Ratio					0.55	0.06		0.34			0.29	0.18
Control Delay					13.0	8.5		23.6			22.7	21.4
Queue Delay					0.8	0.0		0.0			0.0	0.0
Total Delay					13.8	8.5		23.6			22.7	21.4
LOS					B	A		C			C	C
Approach Delay					13.5			23.6			22.2	
Approach LOS					B			C			C	

Intersection Summary

Area Type: Other
 Cycle Length: 85
 Actuated Cycle Length: 85
 Offset: 43 (51%), Referenced to phase 2: and 6:WBTL, Start of Green
 Natural Cycle: 55
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.55
 Intersection Signal Delay: 15.5 Intersection LOS: B
 Intersection Capacity Utilization 57.7% ICU Level of Service B
 Analysis Period (min) 15

Splits and Phases: 548: 1st St & Washington St



Lanes, Volumes, Timings
550: 3rd St & Washington St

09/10/2020



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↑↑↑	↑					↑↑	
Traffic Volume (vph)	0	0	0	157	1081	26	0	0	0	0	251	134
Future Volume (vph)	0	0	0	157	1081	26	0	0	0	0	251	134
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		209	0		0	0		0
Storage Lanes	0		0	0		1	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	0.91	0.91	1.00	1.00	1.00	1.00	1.00	0.95	0.95
Frt						0.850					0.948	
Flt Protected					0.994							
Satd. Flow (prot)	0	0	0	0	5055	1583	0	0	0	0	3355	0
Flt Permitted					0.994							
Satd. Flow (perm)	0	0	0	0	5055	1583	0	0	0	0	3355	0
Right Turn on Red			Yes	Yes		No			Yes			No
Satd. Flow (RTOR)					46							
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		410			735			220			248	
Travel Time (s)		9.3			16.7			5.0			5.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	171	1175	28	0	0	0	0	273	146
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	1346	28	0	0	0	0	419	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	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
Detector Template				Left	Thru	Right						Thru
Leading Detector (ft)				20	100	20						100
Trailing Detector (ft)				0	0	0						0
Detector 1 Position(ft)				0	0	0						0
Detector 1 Size(ft)				20	6	20						6
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
Detector 2 Position(ft)					94							94
Detector 2 Size(ft)					6							6
Detector 2 Type					Cl+Ex							Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)					0.0							0.0
Turn Type				Perm	NA	custom						NA
Protected Phases					8	3						6
Permitted Phases				8								

Lanes, Volumes, Timings
550: 3rd St & Washington St

09/10/2020

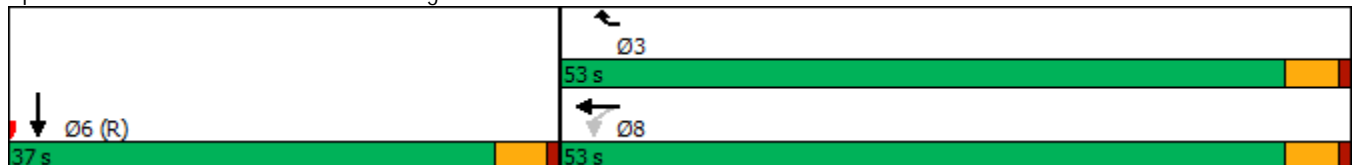


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase				8	8	3					6	
Switch Phase												
Minimum Initial (s)				5.0	5.0	5.0					5.0	
Minimum Split (s)				23.5	23.5	29.5					24.5	
Total Split (s)				53.0	53.0	53.0					37.0	
Total Split (%)				58.9%	58.9%	58.9%					41.1%	
Maximum Green (s)				48.5	48.5	48.5					32.5	
Yellow Time (s)				3.5	3.5	3.5					3.5	
All-Red Time (s)				1.0	1.0	1.0					1.0	
Lost Time Adjust (s)					0.0	0.0					0.0	
Total Lost Time (s)					4.5	4.5					4.5	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)				3.0	3.0	3.0					3.0	
Recall Mode				None	None	None					C-Max	
Walk Time (s)				8.0	8.0	12.0					8.0	
Flash Dont Walk (s)				9.0	9.0	13.0					12.0	
Pedestrian Calls (#/hr)				0	0	4					0	
Act Effect Green (s)					36.4	36.4					44.6	
Actuated g/C Ratio					0.40	0.40					0.50	
v/c Ratio					0.65	0.04					0.25	
Control Delay					22.0	14.0					14.8	
Queue Delay					0.0	0.0					0.0	
Total Delay					22.0	14.0					14.8	
LOS					C	B					B	
Approach Delay					21.8						14.8	
Approach LOS					C						B	

Intersection Summary

Area Type:	Other
Cycle Length:	90
Actuated Cycle Length:	90
Offset:	0 (0%), Referenced to phase 2: and 6:SBT, Start of Green
Natural Cycle:	55
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.65
Intersection Signal Delay:	20.2
Intersection LOS:	C
Intersection Capacity Utilization:	42.8%
ICU Level of Service:	A
Analysis Period (min):	15

Splits and Phases: 550: 3rd St & Washington St



Lanes, Volumes, Timings
554: 1st Ave & Van Buren St






















09/10/2020



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑		↖	↑↑					↖	↑↑↑	
Traffic Volume (vph)	0	729	66	83	924	0	0	0	0	102	463	54
Future Volume (vph)	0	729	66	83	924	0	0	0	0	102	463	54
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	95		0	0		0	0		0
Storage Lanes	0		0	1		0	0		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	1.00	0.91	0.91
Ped Bike Factor		0.99		0.98						0.73	0.99	
Frt		0.986									0.983	
Flt Protected				0.950						0.950		
Satd. Flow (prot)	0	3459	0	1770	3539	0	0	0	0	1770	4940	0
Flt Permitted				0.156						0.950		
Satd. Flow (perm)	0	3459	0	286	3539	0	0	0	0	1297	4940	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		17									26	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		402			359			358			373	
Travel Time (s)		9.1			8.2			8.1			8.5	
Confl. Peds. (#/hr)			71	71						99		73
Peak Hour Factor	0.92	0.91	0.79	0.94	0.97	0.92	0.92	0.92	0.92	0.85	0.87	0.79
Adj. Flow (vph)	0	801	84	88	953	0	0	0	0	120	532	68
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	885	0	88	953	0	0	0	0	120	600	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		2		1	2					1	2	
Detector Template		Thru		Left	Thru					Left	Thru	
Leading Detector (ft)		100		20	100					20	100	
Trailing Detector (ft)		0		0	0					0	0	
Detector 1 Position(ft)		0		0	0					0	0	
Detector 1 Size(ft)		6		20	6					20	6	
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		0.0	0.0					0.0	0.0	
Detector 2 Position(ft)		94			94						94	
Detector 2 Size(ft)		6			6						6	
Detector 2 Type		Cl+Ex			Cl+Ex						Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0						0.0	
Turn Type		NA		pm+pt	NA					Prot	NA	

Lanes, Volumes, Timings
555: Van Buren St & Central Ave

09/10/2020

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 			 			 				
Traffic Volume (vph)	145	675	0	0	889	93	139	386	120	0	0	0
Future Volume (vph)	145	675	0	0	889	93	139	386	120	0	0	0
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	100		0	0		0	180		0	0		0
Storage Lanes	1		0	0		0	1		1	0		0
Taper Length (ft)	25			25			25		25			
Lane Util. Factor	1.00	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					0.99		0.67		0.78			
Fr _t					0.995				0.850			
Fl _t Protected	0.950						0.950					
Satd. Flow (prot)	1770	3539	0	0	3502	0	1770	3539	1583	0	0	0
Fl _t Permitted	0.092						0.950					
Satd. Flow (perm)	171	3539	0	0	3502	0	1185	3539	1242	0	0	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					5				136			
Link Speed (mph)		30			30			30				30
Link Distance (ft)		359			431			367				358
Travel Time (s)		8.2			9.8			8.3				8.1
Confl. Peds. (#/hr)	157					157	127		175			
Peak Hour Factor	0.91	0.87	0.92	0.92	0.25	0.80	0.96	0.89	0.88	0.92	0.92	0.92
Adj. Flow (vph)	159	776	0	0	3556	116	145	434	136	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	159	776	0	0	3672	0	145	434	136	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												
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			2		1	2	1			
Detector Template	Left	Thru			Thru		Left	Thru	Right			
Leading Detector (ft)	20	100			100		20	100	20			
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		20	6	20			
Detector 1 Type	Cl+Ex	Cl+Ex			Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex			
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0			0.0		0.0	0.0	0.0			
Detector 1 Queue (s)	0.0	0.0			0.0		0.0	0.0	0.0			
Detector 1 Delay (s)	0.0	0.0			0.0		0.0	0.0	0.0			
Detector 2 Position(ft)		94			94			94				
Detector 2 Size(ft)		6			6			6				
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				
Turn Type	pm+pt	NA			NA		Prot	NA	Perm			

Lanes, Volumes, Timings
555: Van Buren St & Central Ave

09/10/2020



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Protected Phases	7	4			8		5	2				
Permitted Phases	4									2		
Detector Phase	7	4			8		5	2	2			
Switch Phase												
Minimum Initial (s)	5.0	10.0			10.0		5.0	10.0	10.0			
Minimum Split (s)	9.5	28.6			28.6		22.5	25.9	25.9			
Total Split (s)	17.0	57.0			40.0		22.5	26.0	26.0			
Total Split (%)	20.5%	68.7%			48.2%		27.1%	31.3%	31.3%			
Maximum Green (s)	14.0	52.4			35.4		18.0	21.1	21.1			
Yellow Time (s)	3.0	3.0			3.0		3.5	3.2	3.2			
All-Red Time (s)	0.0	1.6			1.6		1.0	1.7	1.7			
Lost Time Adjust (s)	0.0	0.0			0.0		0.0	0.0	0.0			
Total Lost Time (s)	3.0	4.6			4.6		4.5	4.9	4.9			
Lead/Lag	Lead				Lag							
Lead-Lag Optimize?	Yes				Yes							
Vehicle Extension (s)	3.0	3.0			3.0		3.0	3.0	3.0			
Recall Mode	Min	Max			Max		None	C-Max	C-Max			
Walk Time (s)		13.0			13.0		3.0	8.0	8.0			
Flash Dont Walk (s)		10.0			10.0		4.0	13.0	13.0			
Pedestrian Calls (#/hr)		0			0		4	0	0			
Act Effct Green (s)	54.0	52.4			40.6		21.5	21.1	21.1			
Actuated g/C Ratio	0.65	0.63			0.49		0.26	0.25	0.25			
v/c Ratio	0.57	0.35			2.14		0.32	0.48	0.33			
Control Delay	18.2	7.8			535.9		27.2	28.5	7.1			
Queue Delay	0.0	0.5			0.0		0.0	0.0	0.0			
Total Delay	18.2	8.3			535.9		27.2	28.5	7.1			
LOS	B	A			F		C	C	A			
Approach Delay		10.0			535.9			24.1				
Approach LOS		A			F			C				

Intersection Summary

Area Type: Other
 Cycle Length: 83
 Actuated Cycle Length: 83
 Offset: 0 (0%), Referenced to phase 2:NBT, Start of Green
 Natural Cycle: 150
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 2.14
 Intersection Signal Delay: 374.7
 Intersection LOS: F
 Intersection Capacity Utilization 65.0%
 ICU Level of Service C
 Analysis Period (min) 15

Splits and Phases: 555: Van Buren St & Central Ave



Lanes, Volumes, Timings
562: 1st Ave & Fillmore St

09/10/2020



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↗			↖					↘	↕	↙
Traffic Volume (vph)	0	166	44	66	296	0	0	0	0	57	486	42
Future Volume (vph)	0	166	44	66	296	0	0	0	0	57	486	42
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	0		0	260		0
Storage Lanes	0		0	0		0	0		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.91	0.91
Ped Bike Factor		0.99			1.00					0.93	0.99	
Fr _t		0.972									0.988	
Fl _t Protected					0.991					0.950		
Satd. Flow (prot)	0	1796	0	0	1846	0	0	0	0	1770	4963	0
Fl _t Permitted					0.897					0.950		
Satd. Flow (perm)	0	1796	0	0	1665	0	0	0	0	1646	4963	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		24									30	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		812			362			826			725	
Travel Time (s)		18.5			8.2			18.8			16.5	
Confl. Peds. (#/hr)			32	32						35		68
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	180	48	72	322	0	0	0	0	62	528	46
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	228	0	0	394	0	0	0	0	62	574	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			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		2		1	2					1	2	
Detector Template		Thru		Left	Thru					Left	Thru	
Leading Detector (ft)		100		20	100					20	100	
Trailing Detector (ft)		0		0	0					0	0	
Detector 1 Position(ft)		0		0	0					0	0	
Detector 1 Size(ft)		6		20	6					20	6	
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		0.0	0.0					0.0	0.0	
Detector 2 Position(ft)		94			94						94	
Detector 2 Size(ft)		6			6						6	
Detector 2 Type		Cl+Ex			Cl+Ex						Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0						0.0	
Turn Type		NA		Perm	NA					Prot	NA	

Lanes, Volumes, Timings
562: 1st Ave & Fillmore St

09/10/2020

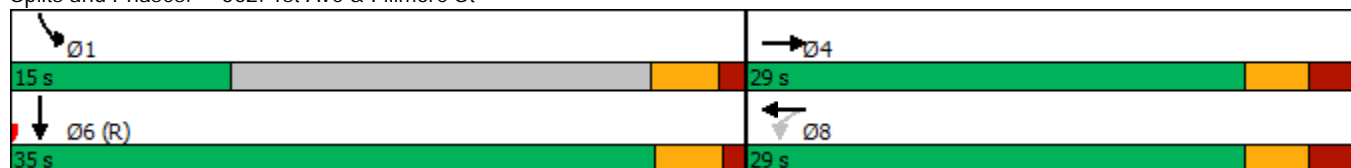


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Protected Phases		4			8					1	6	
Permitted Phases				8								
Detector Phase		4		8	8					1	6	
Switch Phase												
Minimum Initial (s)		7.0		7.0	7.0					5.0	10.0	
Minimum Split (s)		28.2		28.2	28.2					15.0	23.3	
Total Split (s)		29.0		29.0	29.0					15.0	35.0	
Total Split (%)		45.3%		45.3%	45.3%					23.4%	54.7%	
Maximum Green (s)		23.8		23.8	23.8					10.5	30.7	
Yellow Time (s)		3.0		3.0	3.0					3.2	3.2	
All-Red Time (s)		2.2		2.2	2.2					1.3	1.1	
Lost Time Adjust (s)		0.0			0.0					0.0	0.0	
Total Lost Time (s)		5.2			5.2					4.5	4.3	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)		3.0		3.0	3.0					3.0	3.0	
Recall Mode		Ped		Ped	Ped					Max	C-Max	
Walk Time (s)		8.0		8.0	8.0					8.0	8.0	
Flash Dont Walk (s)		15.0		15.0	15.0					8.0	8.0	
Pedestrian Calls (#/hr)		0		0	0					4	0	
Act Effct Green (s)		23.3			23.3					31.0	31.2	
Actuated g/C Ratio		0.36			0.36					0.48	0.49	
v/c Ratio		0.34			0.65					0.07	0.24	
Control Delay		14.8			23.0					9.3	9.3	
Queue Delay		0.0			0.0					0.0	0.0	
Total Delay		14.8			23.0					9.3	9.3	
LOS		B			C					A	A	
Approach Delay		14.8			23.0						9.3	
Approach LOS		B			C						A	

Intersection Summary

Area Type: Other
 Cycle Length: 64
 Actuated Cycle Length: 64
 Offset: 36 (56%), Referenced to phase 2: and 6:SBT, Start of Green
 Natural Cycle: 55
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.65
 Intersection Signal Delay: 14.6
 Intersection LOS: B
 Intersection Capacity Utilization 64.0%
 ICU Level of Service B
 Analysis Period (min) 15




















Splits and Phases: 562: 1st Ave & Fillmore St



Lanes, Volumes, Timings

574: Roosevelt St

09/10/2020

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	286	54	51	708	0	0	0	0	56	377	236
Future Volume (vph)	0	286	54	51	708	0	0	0	0	56	377	236
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	0		0	230		144
Storage Lanes	0		1	1		0	0		0	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	0.95	1.00
Frt			0.850									0.850
Flt Protected				0.950						0.950		
Satd. Flow (prot)	0	1863	1583	1770	3539	0	0	0	0	1770	3539	1583
Flt Permitted				0.491						0.950		
Satd. Flow (perm)	0	1863	1583	915	3539	0	0	0	0	1770	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			82									119
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		940			249			217			301	
Travel Time (s)		21.4			5.7			4.9			6.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	311	59	55	770	0	0	0	0	61	410	257
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	311	59	55	770	0	0	0	0	61	410	257
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		2	1	1	2					1	2	1
Detector Template		Thru	Right	Left	Thru					Left	Thru	Right
Leading Detector (ft)		100	20	20	100					20	100	20
Trailing Detector (ft)		0	0	0	0					0	0	0
Detector 1 Position(ft)		0	0	0	0					0	0	0
Detector 1 Size(ft)		6	20	20	6					20	6	20
Detector 1 Type		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex					Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)		0.0	0.0	0.0	0.0					0.0	0.0	0.0
Detector 1 Queue (s)		0.0	0.0	0.0	0.0					0.0	0.0	0.0
Detector 1 Delay (s)		0.0	0.0	0.0	0.0					0.0	0.0	0.0
Detector 2 Position(ft)		94			94							94
Detector 2 Size(ft)		6			6							6
Detector 2 Type		Cl+Ex			Cl+Ex							Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0							0.0
Turn Type		NA	Perm	pm+pt	NA					Prot	NA	Perm
Protected Phases		2		1	6					3	8	
Permitted Phases			2	6								8

Lanes, Volumes, Timings

574: Roosevelt St

09/10/2020

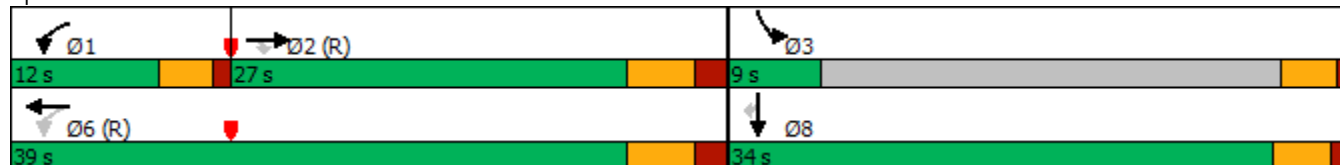


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase		2	2	1	6					3	8	8
Switch Phase												
Minimum Initial (s)		5.0	5.0	5.0	10.0					5.0	15.0	15.0
Minimum Split (s)		28.5	28.5	9.5	28.5					22.0	24.5	24.5
Total Split (s)		27.0	27.0	12.0	39.0					9.0	34.0	34.0
Total Split (%)		37.0%	37.0%	16.4%	53.4%					12.3%	46.6%	46.6%
Maximum Green (s)		21.5	21.5	8.0	33.5					5.0	29.5	29.5
Yellow Time (s)		3.6	3.6	3.0	3.6					3.0	3.2	3.2
All-Red Time (s)		1.9	1.9	1.0	1.9					1.0	1.3	1.3
Lost Time Adjust (s)		0.0	0.0	0.0	0.0					0.0	0.0	0.0
Total Lost Time (s)		5.5	5.5	4.0	5.5					4.0	4.5	4.5
Lead/Lag		Lag	Lag	Lead								
Lead-Lag Optimize?		Yes	Yes	Yes								
Vehicle Extension (s)		3.0	3.0	3.0	3.0					3.0	3.0	3.0
Recall Mode		C-Max	C-Max	None	C-Max					None	None	None
Walk Time (s)		8.0	8.0		8.0					4.0	8.0	8.0
Flash Dont Walk (s)		15.0	15.0		15.0					4.0	12.0	12.0
Pedestrian Calls (#/hr)		0	0		0					4	0	0
Act Effect Green (s)		39.3	39.3	47.3	45.8					13.9	17.2	17.2
Actuated g/C Ratio		0.54	0.54	0.65	0.63					0.19	0.24	0.24
v/c Ratio		0.31	0.07	0.08	0.35					0.18	0.49	0.56
Control Delay		12.7	2.4	5.8	7.5					22.6	25.8	17.3
Queue Delay		0.0	0.0	0.0	1.6					0.0	0.0	0.0
Total Delay		12.7	2.4	5.8	9.1					22.6	25.8	17.3
LOS		B	A	A	A					C	C	B
Approach Delay		11.0			8.9						22.6	
Approach LOS		B			A						C	

Intersection Summary

Area Type:	Other
Cycle Length:	73
Actuated Cycle Length:	73
Offset:	11 (15%), Referenced to phase 2:EBT and 6:WBTL, Start of Green
Natural Cycle:	65
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.56
Intersection Signal Delay:	14.5
Intersection LOS:	B
Intersection Capacity Utilization:	54.0%
ICU Level of Service:	A
Analysis Period (min):	15

Splits and Phases: 574: Roosevelt St



Lanes, Volumes, Timings
578: 1st Ave & McKinley St

09/10/2020



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	70	136	17	27	0	0	0	0	17	421	44
Future Volume (vph)	0	70	136	17	27	0	0	0	0	17	421	44
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	1.00	1.00	1.00	0.91	0.91
Fr't		0.911									0.986	
Flt Protected					0.981					0.950		
Satd. Flow (prot)	0	1697	0	0	1827	0	0	0	0	1770	5014	0
Flt Permitted					0.714					0.950		
Satd. Flow (perm)	0	1697	0	0	1330	0	0	0	0	1770	5014	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		148									42	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		242			199			725			250	
Travel Time (s)		5.5			4.5			16.5			5.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	76	148	18	29	0	0	0	0	18	458	48
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	224	0	0	47	0	0	0	0	18	506	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			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		2		1	2					1	2	
Detector Template		Thru		Left	Thru					Left	Thru	
Leading Detector (ft)		100		20	100					20	100	
Trailing Detector (ft)		0		0	0					0	0	
Detector 1 Position(ft)		0		0	0					0	0	
Detector 1 Size(ft)		6		20	6					20	6	
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		0.0	0.0					0.0	0.0	
Detector 2 Position(ft)		94			94						94	
Detector 2 Size(ft)		6			6						6	
Detector 2 Type		Cl+Ex			Cl+Ex						Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0						0.0	
Turn Type		NA		Perm	NA					Prot	NA	
Protected Phases		4			8					1	6	
Permitted Phases				8								
Detector Phase		4		8	8					1	6	
Switch Phase												
Minimum Initial (s)		5.0		5.0	5.0					5.0	5.0	

Lanes, Volumes, Timings
578: 1st Ave & McKinley St

09/10/2020

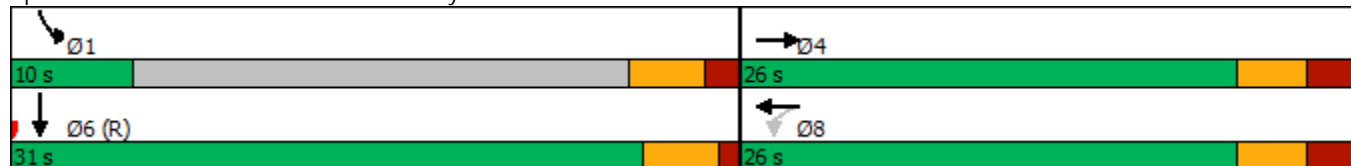


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Split (s)		26.0		26.0	26.0					27.8	23.2	
Total Split (s)		26.0		26.0	26.0					10.0	31.0	
Total Split (%)		45.6%		45.6%	45.6%					17.5%	54.4%	
Maximum Green (s)		21.0		21.0	21.0					5.2	26.8	
Yellow Time (s)		3.0		3.0	3.0					3.2	3.2	
All-Red Time (s)		2.0		2.0	2.0					1.6	1.0	
Lost Time Adjust (s)		0.0			0.0					0.0	0.0	
Total Lost Time (s)		5.0			5.0					4.8	4.2	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)		3.0		3.0	3.0					3.0	3.0	
Recall Mode		None		None	None					None	C-Max	
Walk Time (s)		8.0		8.0	8.0					11.0	8.0	
Flash Dont Walk (s)		13.0		13.0	13.0					12.0	8.0	
Pedestrian Calls (#/hr)		0		0	0					4	0	
Act Effect Green (s)		8.7			8.7					38.5	39.1	
Actuated g/C Ratio		0.15			0.15					0.68	0.69	
v/c Ratio		0.58			0.23					0.02	0.15	
Control Delay		14.6			22.4					4.2	3.4	
Queue Delay		0.0			0.0					0.0	0.0	
Total Delay		14.6			22.4					4.2	3.4	
LOS		B			C					A	A	
Approach Delay		14.6			22.4						3.4	
Approach LOS		B			C						A	

Intersection Summary

Area Type: Other
 Cycle Length: 57
 Actuated Cycle Length: 57
 Offset: 26 (46%), Referenced to phase 6:SBT, Start of Green
 Natural Cycle: 55
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.58
 Intersection Signal Delay: 7.7
 Intersection LOS: A
 Intersection Capacity Utilization 33.3%
 ICU Level of Service A
 Analysis Period (min) 15

Splits and Phases: 578: 1st Ave & McKinley St



Lanes, Volumes, Timings
612: Roosevelt St & 7th Ave

09/10/2020



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	82	111	13	63	262	219	80	2032	34	180	842	84
Future Volume (vph)	82	111	13	63	262	219	80	2032	34	180	842	84
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		110	85		85	0		0	0		0
Storage Lanes	1		0	1		1	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.91	0.91	1.00	0.95	0.95
Frt		0.984				0.850		0.998			0.986	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1833	0	1770	1863	1583	1770	5075	0	1770	3490	0
Flt Permitted	0.242			0.583			0.285			0.057		
Satd. Flow (perm)	451	1833	0	1086	1863	1583	531	5075	0	106	3490	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		5				146		3			19	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		305			730			302			296	
Travel Time (s)		6.9			16.6			6.9			6.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	89	121	14	68	285	238	87	2209	37	196	915	91
Shared Lane Traffic (%)												
Lane Group Flow (vph)	89	135	0	68	285	238	87	2246	0	196	1006	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	2		1	2	1	1	2		1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100	20	20	100		20	100	
Trailing Detector (ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Position(ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Size(ft)	20	6		20	6	20	20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA	Perm	Perm	NA		D.P+P	NA	
Protected Phases		6			2			4		3	8	
Permitted Phases	6			2		2	4			4		

Lanes, Volumes, Timings

612: Roosevelt St & 7th Ave

09/10/2020

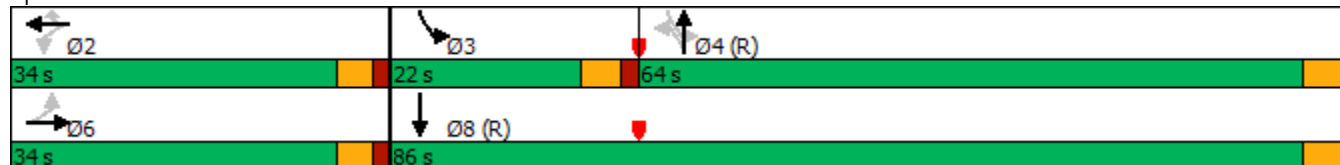


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	6	6		2	2	2	4	4		3	8	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0	5.0	15.0	15.0		5.0	15.0	
Minimum Split (s)	28.9	28.9		28.9	28.9	28.9	23.6	23.6		10.1	23.6	
Total Split (s)	34.0	34.0		34.0	34.0	34.0	64.0	64.0		22.0	86.0	
Total Split (%)	28.3%	28.3%		28.3%	28.3%	28.3%	53.3%	53.3%		18.3%	71.7%	
Maximum Green (s)	29.1	29.1		29.1	29.1	29.1	59.4	59.4		16.9	81.4	
Yellow Time (s)	3.2	3.2		3.2	3.2	3.2	3.6	3.6		3.6	3.6	
All-Red Time (s)	1.7	1.7		1.7	1.7	1.7	1.0	1.0		1.5	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.9	4.9		4.9	4.9	4.9	4.6	4.6		5.1	4.6	
Lead/Lag							Lag	Lag		Lead		
Lead-Lag Optimize?							Yes	Yes		Yes		
Vehicle Extension (s)	2.0	2.0		2.0	2.0	2.0	1.0	1.0		2.0	1.0	
Recall Mode	None	None		None	None	None	C-Max	C-Max		None	C-Max	
Walk Time (s)	9.0	9.0		9.0	9.0	9.0	8.0	8.0			8.0	
Flash Dont Walk (s)	15.0	15.0		15.0	15.0	15.0	11.0	11.0			11.0	
Pedestrian Calls (#/hr)	0	0		0	0	0	0	0			0	
Act Effect Green (s)	22.8	22.8		22.8	22.8	22.8	69.8	69.8		82.1	87.7	
Actuated g/C Ratio	0.19	0.19		0.19	0.19	0.19	0.58	0.58		0.68	0.73	
v/c Ratio	1.05	0.38		0.33	0.81	0.57	0.28	0.76		0.78	0.39	
Control Delay	157.7	42.8		54.0	71.8	30.2	18.6	22.7		50.5	7.0	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	157.7	42.8		54.0	71.8	30.2	18.6	22.7		50.5	7.0	
LOS	F	D		D	E	C	B	C		D	A	
Approach Delay		88.5			53.0			22.5			14.1	
Approach LOS		F			D			C			B	

Intersection Summary

Area Type: Other
 Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 80 (67%), Referenced to phase 4:NBSB and 8:SBT, Start of Green
 Natural Cycle: 90
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 1.05
 Intersection Signal Delay: 27.7 Intersection LOS: C
 Intersection Capacity Utilization 84.6% ICU Level of Service E
 Analysis Period (min) 15

Splits and Phases: 612: Roosevelt St & 7th Ave



Lanes, Volumes, Timings
616: 7th St & Washington St

09/10/2020



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					←←←←	↖	↖↖	↑↑↑			↑↑↑↑	↗
Traffic Volume (vph)	0	0	0	502	1171	444	68	890	0	0	1255	259
Future Volume (vph)	0	0	0	502	1171	444	68	890	0	0	1255	259
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		265	0		0	0		0
Storage Lanes	0		0	0		1	2		0	0		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	0.86	0.86	1.00	0.97	0.91	1.00	1.00	0.81	0.81
Ped Bike Factor					0.99	0.96	0.99				1.00	0.95
Fr t						0.850					0.997	0.850
Flt Protected					0.984		0.950					
Satd. Flow (prot)	0	0	0	0	6305	1583	3433	5085	0	0	6011	1283
Flt Permitted					0.984		0.950					
Satd. Flow (perm)	0	0	0	0	6268	1521	3413	5085	0	0	6011	1217
Right Turn on Red			Yes			No			Yes			No
Satd. Flow (RTOR)												
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		736			849			372			1136	
Travel Time (s)		16.7			19.3			8.5			25.8	
Confl. Peds. (#/hr)				16		25	29					29
Peak Hour Factor	0.92	0.92	0.92	0.83	0.93	0.95	0.68	0.92	0.92	0.92	0.93	0.88
Adj. Flow (vph)	0	0	0	605	1259	467	100	967	0	0	1349	294
Shared Lane Traffic (%)												10%
Lane Group Flow (vph)	0	0	0	0	1864	467	100	967	0	0	1378	265
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			24			24	
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	2	1	1	2			2	1
Detector Template				Left	Thru	Right	Left	Thru			Thru	Right
Leading Detector (ft)				20	100	20	20	100			100	20
Trailing Detector (ft)				0	0	0	0	0			0	0
Detector 1 Position(ft)				0	0	0	0	0			0	0
Detector 1 Size(ft)				20	6	20	20	6			6	20
Detector 1 Type				Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex			Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)				0.0	0.0	0.0	0.0	0.0			0.0	0.0
Detector 1 Queue (s)				0.0	0.0	0.0	0.0	0.0			0.0	0.0
Detector 1 Delay (s)				0.0	0.0	0.0	0.0	0.0			0.0	0.0
Detector 2 Position(ft)					94			94			94	
Detector 2 Size(ft)					6			6			6	
Detector 2 Type					Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)					0.0			0.0			0.0	
Turn Type				Perm	NA	Perm	Prot	NA			NA	Perm

Lanes, Volumes, Timings
616: 7th St & Washington St

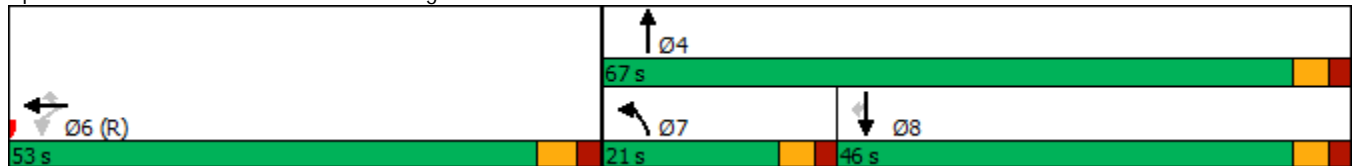
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	↖	→	↘	↙	←	↖	↙	↑	↘	↙	↓	↘
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Protected Phases					6		7	4			8	
Permitted Phases				6		6						8
Detector Phase				6	6	6	7	4			8	8
Switch Phase												
Minimum Initial (s)				10.0	10.0	10.0	10.0	10.0			10.0	10.0
Minimum Split (s)				37.9	37.9	37.9	16.7	31.3			31.3	31.3
Total Split (s)				53.0	53.0	53.0	21.0	67.0			46.0	46.0
Total Split (%)				44.2%	44.2%	44.2%	17.5%	55.8%			38.3%	38.3%
Maximum Green (s)				47.1	47.1	47.1	15.7	61.7			40.7	40.7
Yellow Time (s)				3.6	3.6	3.6	3.2	3.2			3.2	3.2
All-Red Time (s)				2.3	2.3	2.3	2.1	2.1			2.1	2.1
Lost Time Adjust (s)					0.0	0.0	0.0	0.0			0.0	0.0
Total Lost Time (s)					5.9	5.9	5.3	5.3			5.3	5.3
Lead/Lag							Lead				Lag	Lag
Lead-Lag Optimize?							Yes				Yes	Yes
Vehicle Extension (s)				3.0	3.0	3.0	3.0	3.0			3.0	3.0
Recall Mode				C-Max	C-Max	C-Max	None	None			None	None
Walk Time (s)				8.0	8.0	8.0		8.0			8.0	8.0
Flash Dont Walk (s)				24.0	24.0	24.0		18.0			18.0	18.0
Pedestrian Calls (#/hr)				4	4	4		0			0	0
Act Effect Green (s)					51.5	51.5	10.3	57.3			41.8	41.8
Actuated g/C Ratio					0.43	0.43	0.09	0.48			0.35	0.35
v/c Ratio				0.69	0.72	0.34	0.40				0.66	0.63
Control Delay					30.2	37.0	55.0	20.4			34.5	39.3
Queue Delay					0.0	0.0	0.0	0.8			0.0	0.0
Total Delay					30.2	37.0	55.0	21.1			34.5	39.3
LOS					C	D	D	C			C	D
Approach Delay					31.6			24.3			35.2	
Approach LOS					C			C			D	

Intersection Summary

Area Type: Other
 Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 60 (50%), Referenced to phase 2: and 6:WBTL, Start of Green
 Natural Cycle: 90
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.72
 Intersection Signal Delay: 31.2
 Intersection LOS: C
 Intersection Capacity Utilization 69.7%
 ICU Level of Service C
 Analysis Period (min) 15

Splits and Phases: 616: 7th St & Washington St



Lanes, Volumes, Timings
624: Central Ave & Washington St

09/10/2020



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↑↑↑	↑↑	↑	↑↑↑				
Traffic Volume (vph)	0	0	0	0	1100	82	128	448	0	0	0	0
Future Volume (vph)	0	0	0	0	1100	82	128	448	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	100		0	0		0
Storage Lanes	0		0	0		2	1		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	0.91	0.88	1.00	0.91	1.00	1.00	1.00	1.00
Frt						0.850						
Flt Protected							0.950					
Satd. Flow (prot)	0	0	0	0	5085	2787	1770	5085	0	0	0	0
Flt Permitted							0.950					
Satd. Flow (perm)	0	0	0	0	5085	2787	1770	5085	0	0	0	0
Right Turn on Red			Yes			No	Yes		Yes			Yes
Satd. Flow (RTOR)							139					
Link Speed (mph)		30			30			30				30
Link Distance (ft)		373			398			337				417
Travel Time (s)		8.5			9.0			7.7				9.5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	0	1196	89	139	487	0	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	1196	89	139	487	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			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					2	1	1	2				
Detector Template					Thru	Right	Left	Thru				
Leading Detector (ft)					100	20	20	100				
Trailing Detector (ft)					0	0	0	0				
Detector 1 Position(ft)					0	0	0	0				
Detector 1 Size(ft)					6	20	20	6				
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				
Detector 2 Position(ft)					94			94				
Detector 2 Size(ft)					6			6				
Detector 2 Type					Cl+Ex			Cl+Ex				
Detector 2 Channel												
Detector 2 Extend (s)					0.0			0.0				
Turn Type					NA	Perm	Perm	NA				
Protected Phases					2			4				
Permitted Phases						2	4					

Lane Group	Ø12
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphp)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	
Protected Phases	12
Permitted Phases	

Lanes, Volumes, Timings
624: Central Ave & Washington St

09/10/2020



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase					2	2	4	4				
Switch Phase												
Minimum Initial (s)					5.0	5.0	5.0	5.0				
Minimum Split (s)					22.8	22.8	22.8	22.8				
Total Split (s)					61.0	61.0	38.0	38.0				
Total Split (%)					55.0%	55.0%	34.2%	34.2%				
Maximum Green (s)					56.2	56.2	33.2	33.2				
Yellow Time (s)					3.0	3.0	3.0	3.0				
All-Red Time (s)					1.8	1.8	1.8	1.8				
Lost Time Adjust (s)					0.0	0.0	0.0	0.0				
Total Lost Time (s)					4.8	4.8	4.8	4.8				
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)					3.0	3.0	3.0	3.0				
Recall Mode					C-Max	C-Max	None	None				
Walk Time (s)					7.0	7.0	7.0	7.0				
Flash Dont Walk (s)					11.0	11.0	11.0	11.0				
Pedestrian Calls (#/hr)					0	0	0	0				
Act Effct Green (s)					84.2	84.2	17.2	17.2				
Actuated g/C Ratio					0.76	0.76	0.15	0.15				
v/c Ratio					0.31	0.04	0.35	0.62				
Control Delay					4.7	3.9	9.1	46.9				
Queue Delay					0.4	0.0	0.0	0.0				
Total Delay					5.2	3.9	9.1	46.9				
LOS					A	A	A	D				
Approach Delay					5.1			38.5				
Approach LOS					A			D				

Intersection Summary

Area Type:	Other
Cycle Length:	111
Actuated Cycle Length:	111
Offset:	35 (32%), Referenced to phase 2:WBT and 6:, Start of Green
Natural Cycle:	60
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.62
Intersection Signal Delay:	16.0
Intersection LOS:	B
Intersection Capacity Utilization:	42.3%
ICU Level of Service:	A
Analysis Period (min):	15




















Splits and Phases: 624: Central Ave & Washington St



Lane Group	Ø12
Detector Phase	
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	12.0
Total Split (s)	12.0
Total Split (%)	11%
Maximum Green (s)	7.2
Yellow Time (s)	3.0
All-Red Time (s)	1.8
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	7.0
Flash Dont Walk (s)	11.0
Pedestrian Calls (#/hr)	0
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Intersection Summary	

Lanes, Volumes, Timings
627: Central Ave & Roosevelt St

09/10/2020

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	8	334	0	0	747	106	12	593	3	0	0	0
Future Volume (vph)	8	334	0	0	747	106	12	593	3	0	0	0
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	100		0	240		260	0		0
Storage Lanes	1		0	2		1	1		1	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00
Frt						0.850			0.850			
Flt Protected	0.950						0.950					
Satd. Flow (prot)	1770	1863	0	0	3539	1583	1770	3539	1583	0	0	0
Flt Permitted	0.251						0.950					
Satd. Flow (perm)	468	1863	0	0	3539	1583	1770	3539	1583	0	0	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						115			114			
Link Speed (mph)		30			30			30				30
Link Distance (ft)		249			395			480				278
Travel Time (s)		5.7			9.0			10.9				6.3
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	9	363	0	0	812	115	13	645	3	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	9	363	0	0	812	115	13	645	3	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												
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			2	1	1	2	1			
Detector Template	Left	Thru			Thru	Right	Left	Thru	Right			
Leading Detector (ft)	20	100			100	20	20	100	20			
Trailing Detector (ft)	0	0			0	0	0	0	0			
Detector 1 Position(ft)	0	0			0	0	0	0	0			
Detector 1 Size(ft)	20	6			6	20	20	6	20			
Detector 1 Type	Cl+Ex	Cl+Ex			Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex			
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0			0.0	0.0	0.0	0.0	0.0			
Detector 1 Queue (s)	0.0	0.0			0.0	0.0	0.0	0.0	0.0			
Detector 1 Delay (s)	0.0	0.0			0.0	0.0	0.0	0.0	0.0			
Detector 2 Position(ft)		94			94			94				
Detector 2 Size(ft)		6			6			6				
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				
Turn Type	pm+pt	NA			NA	Perm	Prot	NA	Perm			
Protected Phases	5	2			6		7	4				
Permitted Phases	2					6			4			

Lanes, Volumes, Timings
627: Central Ave & Roosevelt St

09/10/2020

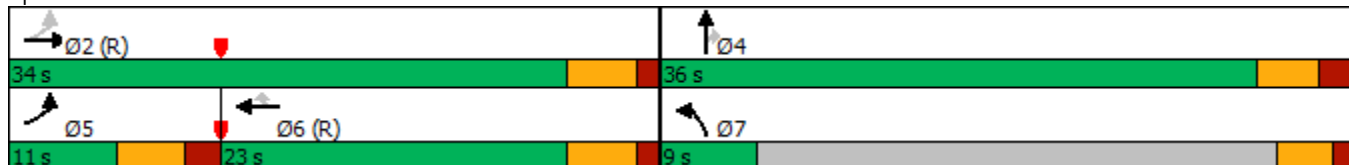


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	5	2			6	6	7	4	4			
Switch Phase												
Minimum Initial (s)	5.0	10.0			10.0	10.0	5.0	10.0	10.0			
Minimum Split (s)	10.4	23.9			14.9	14.9	22.0	27.0	27.0			
Total Split (s)	11.0	34.0			23.0	23.0	9.0	36.0	36.0			
Total Split (%)	15.7%	48.6%			32.9%	32.9%	12.9%	51.4%	51.4%			
Maximum Green (s)	5.6	29.1			18.1	18.1	5.0	31.0	31.0			
Yellow Time (s)	3.6	3.6			3.6	3.6	3.0	3.2	3.2			
All-Red Time (s)	1.8	1.3			1.3	1.3	1.0	1.8	1.8			
Lost Time Adjust (s)	0.0	0.0			0.0	0.0	0.0	0.0	0.0			
Total Lost Time (s)	5.4	4.9			4.9	4.9	4.0	5.0	5.0			
Lead/Lag	Lead				Lag				Lag			
Lead-Lag Optimize?	Yes				Yes				Yes			
Vehicle Extension (s)	2.0	2.0			2.0	2.0	2.0	2.0	2.0			
Recall Mode	None	C-Max			C-Max	C-Max	None	None	None			
Walk Time (s)		6.0			6.0	6.0	5.0	8.0	8.0			
Flash Dont Walk (s)		12.0			12.0	12.0	5.0	14.0	14.0			
Pedestrian Calls (#/hr)		0			0	0	4	0	0			
Act Effct Green (s)	41.5	42.0			39.9	39.9	9.0	18.1	18.1			
Actuated g/C Ratio	0.59	0.60			0.57	0.57	0.13	0.26	0.26			
v/c Ratio	0.02	0.32			0.40	0.12	0.06	0.70	0.01			
Control Delay	7.8	8.9			10.9	3.3	22.7	27.5	0.0			
Queue Delay	0.0	2.0			0.0	0.0	0.0	0.0	0.0			
Total Delay	7.8	10.8			10.9	3.3	22.7	27.5	0.0			
LOS	A	B			B	A	C	C	A			
Approach Delay		10.8			10.0			27.3				
Approach LOS		B			A			C				

Intersection Summary

Area Type: Other
 Cycle Length: 70
 Actuated Cycle Length: 70
 Offset: 10 (14%), Referenced to phase 2:EBTL and 6:WBT, Start of Green
 Natural Cycle: 60
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.70
 Intersection Signal Delay: 16.0
 Intersection LOS: B
 Intersection Capacity Utilization 54.0%
 ICU Level of Service A
 Analysis Period (min) 15

Splits and Phases: 627: Central Ave & Roosevelt St



Lanes, Volumes, Timings
632: Central Ave

09/10/2020



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↕	↕↔				
Traffic Volume (vph)	43	45	0	0	36	35	8	531	6	0	0	0
Future Volume (vph)	43	45	0	0	36	35	8	531	6	0	0	0
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	230		0	0		0
Storage Lanes	0		0	0		0	1		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	1.00	1.00
Frt					0.933			0.998				
Flt Protected		0.976					0.950					
Satd. Flow (prot)	0	1818	0	0	1738	0	1770	3532	0	0	0	0
Flt Permitted		0.806					0.950					
Satd. Flow (perm)	0	1501	0	0	1738	0	1770	3532	0	0	0	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					38			3				
Link Speed (mph)		30			30			30				30
Link Distance (ft)		169			139			426				240
Travel Time (s)		3.8			3.2			9.7				5.5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	47	49	0	0	39	38	9	577	7	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	96	0	0	77	0	9	584	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			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	2			2		1	2				
Detector Template	Left	Thru			Thru		Left	Thru				
Leading Detector (ft)	20	100			100		20	100				
Trailing Detector (ft)	0	0			0		0	0				
Detector 1 Position(ft)	0	0			0		0	0				
Detector 1 Size(ft)	20	6			6		20	6				
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	0.0			0.0		0.0	0.0				
Detector 2 Position(ft)		94			94			94				
Detector 2 Size(ft)		6			6			6				
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				
Turn Type	Perm	NA			NA		Prot	NA				
Protected Phases		4			8		5	2				
Permitted Phases	4											

Lanes, Volumes, Timings

632: Central Ave

09/10/2020

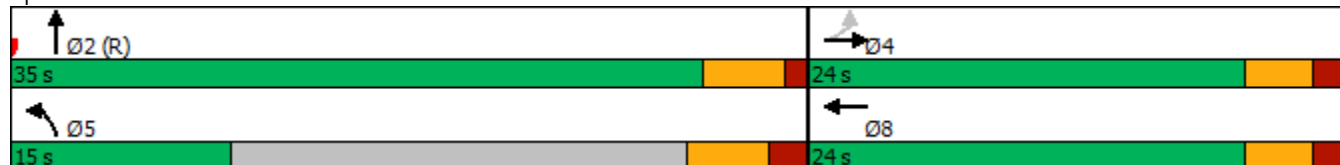


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	4	4			8		5	2				
Switch Phase												
Minimum Initial (s)	5.0	5.0			5.0		5.0	5.0				
Minimum Split (s)	23.8	23.8			23.8		106.3	23.6				
Total Split (s)	24.0	24.0			24.0		15.0	35.0				
Total Split (%)	40.7%	40.7%			40.7%		25.4%	59.3%				
Maximum Green (s)	19.2	19.2			19.2		9.7	30.4				
Yellow Time (s)	3.0	3.0			3.0		3.6	3.6				
All-Red Time (s)	1.8	1.8			1.8		1.7	1.0				
Lost Time Adjust (s)		0.0			0.0		0.0	0.0				
Total Lost Time (s)		4.8			4.8		5.3	4.6				
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0			3.0		3.0	3.0				
Recall Mode	None	None			None		None	C-Max				
Walk Time (s)	8.0	8.0			8.0		10.0	8.0				
Flash Dont Walk (s)	11.0	11.0			11.0		11.0	8.0				
Pedestrian Calls (#/hr)	0	0			0		4	0				
Act Effct Green (s)		8.9			8.9		43.1	43.7				
Actuated g/C Ratio		0.15			0.15		0.73	0.74				
v/c Ratio		0.42			0.26		0.01	0.22				
Control Delay		27.7			14.8		4.0	3.8				
Queue Delay		0.0			0.0		0.0	0.0				
Total Delay		27.7			14.8		4.0	3.8				
LOS		C			B		A	A				
Approach Delay		27.7			14.8			3.8				
Approach LOS		C			B			A				

Intersection Summary

Area Type:	Other
Cycle Length:	59
Actuated Cycle Length:	59
Offset:	31 (53%), Referenced to phase 2:NBT, Start of Green
Natural Cycle:	135
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.42
Intersection Signal Delay:	7.9
Intersection LOS:	A
Intersection Capacity Utilization:	34.1%
ICU Level of Service:	A
Analysis Period (min):	15

Splits and Phases: 632: Central Ave



Lanes, Volumes, Timings
643: 7th St & Jefferson St

09/10/2020



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↙ ↘							↑		↙ ↘	↑↑↑	
Traffic Volume (vph)	307	1253	92	0	0	0	0	678	247	279	1392	0
Future Volume (vph)	307	1253	92	0	0	0	0	678	247	279	1392	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	360		455	0		0	137		0	0		0
Storage Lanes	1		1	0		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.76	0.76	0.81	1.00	1.00	1.00	1.00	0.86	0.86	1.00	0.91	1.00
Ped Bike Factor	0.94	0.99						0.99		0.99		
Frt		0.991						0.956				
Flt Protected	0.950	0.998								0.950		
Satd. Flow (prot)	1345	6961	0	0	0	0	0	6040	0	1770	5085	0
Flt Permitted	0.950	0.998								0.159		
Satd. Flow (perm)	1270	6947	0	0	0	0	0	6040	0	294	5085	0
Right Turn on Red			No			Yes			Yes			Yes
Satd. Flow (RTOR)								30				
Link Speed (mph)		30			30			30				30
Link Distance (ft)		725			756			611				372
Travel Time (s)		16.5			17.2			13.9				8.5
Confl. Peds. (#/hr)	66		94						39	39		
Peak Hour Factor	0.82	0.85	0.89	0.92	0.92	0.92	0.93	0.93	0.83	0.94	0.88	0.92
Adj. Flow (vph)	374	1474	103	0	0	0	0	729	298	297	1582	0
Shared Lane Traffic (%)	16%											
Lane Group Flow (vph)	314	1637	0	0	0	0	0	1027	0	297	1582	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	2						2		1	2	
Detector Template	Left	Thru						Thru		Left	Thru	
Leading Detector (ft)	20	100						100		20	100	
Trailing Detector (ft)	0	0						0		0	0	
Detector 1 Position(ft)	0	0						0		0	0	
Detector 1 Size(ft)	20	6						6		20	6	
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	0.0						0.0		0.0	0.0	
Detector 2 Position(ft)		94						94			94	
Detector 2 Size(ft)		6						6			6	
Detector 2 Type		Cl+Ex						Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0						0.0			0.0	
Turn Type	Perm	NA						NA		pm+pt	NA	

Lanes, Volumes, Timings
643: 7th St & Jefferson St

09/10/2020

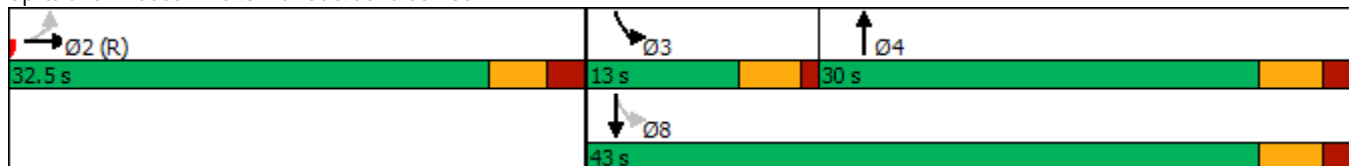


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Protected Phases		2						4		3	8	
Permitted Phases	2									8		
Detector Phase	2	2						4		3	8	
Switch Phase												
Minimum Initial (s)	10.0	10.0						10.0		5.0	10.0	
Minimum Split (s)	32.5	32.5						29.3		9.5	29.3	
Total Split (s)	32.5	32.5						30.0		13.0	43.0	
Total Split (%)	43.0%	43.0%						39.7%		17.2%	57.0%	
Maximum Green (s)	27.0	27.0						24.7		8.5	37.7	
Yellow Time (s)	3.2	3.2						3.6		3.5	3.6	
All-Red Time (s)	2.3	2.3						1.7		1.0	1.7	
Lost Time Adjust (s)	0.0	0.0						0.0		0.0	0.0	
Total Lost Time (s)	5.5	5.5						5.3		4.5	5.3	
Lead/Lag								Lag		Lead		
Lead-Lag Optimize?								Yes		Yes		
Vehicle Extension (s)	3.0	3.0						3.0		3.0	3.0	
Recall Mode	C-Max	C-Max						None		None	None	
Walk Time (s)	8.0	8.0						8.0			8.0	
Flash Dont Walk (s)	19.0	19.0						16.0			16.0	
Pedestrian Calls (#/hr)	0	0						0			0	
Act Effct Green (s)	29.4	29.4						22.3		36.1	35.3	
Actuated g/C Ratio	0.39	0.39						0.30		0.48	0.47	
v/c Ratio	0.64	0.61						0.57		0.97	0.66	
Control Delay	27.1	20.1						22.8		62.2	16.8	
Queue Delay	0.0	0.0						0.0		0.0	1.0	
Total Delay	27.1	20.1						22.8		62.2	17.9	
LOS	C	C						C		E	B	
Approach Delay		21.3						22.8			24.9	
Approach LOS		C						C			C	

Intersection Summary

Area Type: Other
 Cycle Length: 75.5
 Actuated Cycle Length: 75.5
 Offset: 0 (0%), Referenced to phase 2:EBTL, Start of Green
 Natural Cycle: 75
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.97
 Intersection Signal Delay: 23.0
 Intersection LOS: C
 Intersection Capacity Utilization 69.7%
 ICU Level of Service C
 Analysis Period (min) 15

Splits and Phases: 643: 7th St & Jefferson St



Lanes, Volumes, Timings

699: Jefferson St

09/10/2020



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑	↗							↘	↑↑↑	
Traffic Volume (vph)	0	1414	93	0	0	0	0	0	0	184	315	0
Future Volume (vph)	0	1414	93	0	0	0	0	0	0	184	315	0
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		163	0		0	0		0	140		0
Storage Lanes	0		1	0		0	0		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.86	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.86	0.86	1.00
Frt			0.850									
Flt Protected										0.950	0.992	
Satd. Flow (prot)	0	6408	1583	0	0	0	0	0	0	1522	4767	0
Flt Permitted										0.950	0.992	
Satd. Flow (perm)	0	6408	1583	0	0	0	0	0	0	1522	4767	0
Right Turn on Red			No			Yes			Yes	Yes		Yes
Satd. Flow (RTOR)										35	35	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		437			375			294			438	
Travel Time (s)		9.9			8.5			6.7			10.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1537	101	0	0	0	0	0	0	200	342	0
Shared Lane Traffic (%)										34%		
Lane Group Flow (vph)	0	1537	101	0	0	0	0	0	0	132	410	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			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		2	1							1	2	
Detector Template		Thru	Right							Left	Thru	
Leading Detector (ft)		100	20							20	100	
Trailing Detector (ft)		0	0							0	0	
Detector 1 Position(ft)		0	0							0	0	
Detector 1 Size(ft)		6	20							20	6	
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	
Detector 2 Position(ft)		94									94	
Detector 2 Size(ft)		6									6	
Detector 2 Type		Cl+Ex									Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0									0.0	
Turn Type		NA	Prot							Perm	NA	
Protected Phases		6	6									8
Permitted Phases										8		

Lanes, Volumes, Timings

699: Jefferson St

09/10/2020



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase		6	6							8	8	
Switch Phase												
Minimum Initial (s)		5.0	5.0							5.0	5.0	
Minimum Split (s)		38.1	38.1							27.1	27.1	
Total Split (s)		38.1	38.1							27.1	27.1	
Total Split (%)		58.4%	58.4%							41.6%	41.6%	
Maximum Green (s)		33.0	33.0							22.0	22.0	
Yellow Time (s)		3.0	3.0							3.0	3.0	
All-Red Time (s)		2.1	2.1							2.1	2.1	
Lost Time Adjust (s)		0.0	0.0							0.0	0.0	
Total Lost Time (s)		5.1	5.1							5.1	5.1	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)		3.0	3.0							3.0	3.0	
Recall Mode		C-Max	C-Max							Max	Max	
Walk Time (s)		16.0	16.0							8.0	8.0	
Flash Dont Walk (s)		17.0	17.0							14.0	14.0	
Pedestrian Calls (#/hr)		4	4							0	0	
Act Effect Green (s)		33.0	33.0							22.0	22.0	
Actuated g/C Ratio		0.51	0.51							0.34	0.34	
v/c Ratio		0.47	0.13							0.25	0.25	
Control Delay		11.1	9.1							13.1	14.7	
Queue Delay		0.0	0.0							0.0	0.0	
Total Delay		11.1	9.1							13.1	14.7	
LOS		B	A							B	B	
Approach Delay		10.9									14.3	
Approach LOS		B									B	

Intersection Summary

Area Type: Other
 Cycle Length: 65.2
 Actuated Cycle Length: 65.2
 Offset: 16.9 (26%), Referenced to phase 2: and 6:EBT, Start of Green
 Natural Cycle: 70
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.47
 Intersection Signal Delay: 11.8
 Intersection LOS: B
 Intersection Capacity Utilization 42.8%
 ICU Level of Service A
 Analysis Period (min) 15

Splits and Phases: 699: Jefferson St

