441 CANAL STREET MIXED-USE DEVELOPMENT

TRAFFIC/TRANSPORTATION STUDY AND TDM/PARKING MANAGEMENT PLAN

Prepared for:

Heyman Properties, LLC

Client Ref: 141.15708.00002

February 2022





February 1, 2022

Mr. Jack McNamara, Vice President Heyman Properties, LLC C/O Heyman Enterprises 667 Madison Avenue, 20th Floor New York, NY 10065

RE: Traffic/Transportation Study and TDM/Parking Management Plan **441 Canal Street Mixed-Use Development** Stamford, Connecticut SLR #141.15708.00002

Dear Mr. McNamara:

At your request, we have conducted this study to assess the transportation aspects of the proposed 441 Canal Street mixed-use development in the South End of Stamford. This proposed development, which will replace existing buildings on the site, is to be 18 floors tall and contain around 401 residential units and 6,800 square feet (SF) of commercial space. This study encompasses review and analysis of predevelopment area roadway traffic conditions and operations, assessment of area crash history and safety, estimation of the amount of new traffic that will be generated by this proposed development, and analyses of anticipated future traffic operations at and near the site after this proposed mixed-use development has opened. This study has also been prepared based on input and feedback from the City of Stamford Traffic, Transportation and Parking (TTP) Department and the Connecticut Department of Transportation (CTDOT). Figure 1 shows the site location and surrounding area. It is noted that this development is a Transit Oriented Development (TOD), as it is located only around one-third of a mile from, only 3 to 4 blocks east of, the Stamford Transportation Center.

SITE ENVIRONS AND EXISTING CONDITIONS

The key intersections surrounding the site that have been analyzed as part of this study are the following:

- 1. Canal Street at North State Street (signalized)
- 2. Canal Street at South State Street (signalized)
- 3. Canal Street at Dock Street/Jefferson Street (signalized)
- 4. Dock Street at John Street (unsignalized)
- 5. Dock Street at Pacific Street (signalized)
- 6. Atlantic Street at Station Place/Dock Street (signalized)
- 7. Atlantic Street at South State Street (signalized)
- 8. Atlantic Street at North State Street (signalized)
- 9. Canal Street at proposed site driveway (unsignalized)
- 10. John Street at proposed site driveway (unsignalized)



North State Street and South State Street are a one-way pair of roads that provide access to on- and offramps for Interstate 95 (I-95) (Connecticut Turnpike) with two to three travel lanes and additional turning lanes at key intersections. North State Street carries westbound traffic while South State Street carries eastbound traffic. Although the speed limit for these roads is not posted within the study area, the City of Stamford has a blanket approval for a speed limit of 25 miles per hour (mph) unless posted and/or approved otherwise.

Canal Street and Atlantic Street run approximately north/south and are collector streets. The posted speed limit on Canal Street is 25 mph. Canal Street currently has two lanes in each direction adjacent to the site, as well as additional turn lanes at its intersection with Dock Street/Jefferson Street.

Dock Street/Jefferson Street (also known as the Urban Transitway) runs approximately east/west with two travel lanes in each direction and additional turning lanes at major intersections. One of the two travel lanes in either direction is reserved for high-occupancy vehicles with two or more persons per vehicle. Dock Street additionally has bicycle lanes.

John Street and Pacific Street are side streets (particularly John Street) that run approximately north/south with one travel lane in each direction. We understand that John Street is to be restriped as part of the adjacent 523 Canal Street development (Studio Green on Canal) to shift the centerline slightly to the west, retaining one lane in each direction, in order to add on-street parking along part(s) of the east side of John Street.

Crash History Analysis

Crash data for the streets adjacent to the site was obtained from the Connecticut Crash Data Repository (CTCDR) for the pre-COVID 3-year period of January 1, 2017, through December 31, 2019. This crash data is shown in Table 1, summarized by location, accident severity, and collision type.



TABLE 1 **Crash History Summary**

		CRAS	SH SE	VERITY	1		1	ГҮРЕ С	F COL	LISIO	N	
LOCATION:	SERIOUS INJURY OR FATAL	SUSPECTED MINOR INJURY	POSSIBLE INJURY	PROPERTY DAMAGE ONLY	TOTAL	ANGLE	SIDESWIPE, SAME DIRECTION	HEAD-ON	REAR-END	FIXED-OBJECT	PEDESTRIAN	TOTAL
Canal Street along site frontage		1		1	2	1				1		2
Canal Street at Dock Street/Jefferson Street		4	5	36	45	14	6	1	22	1	1	45
Dock Street along site frontage					0							0
Dock Street at John Street		1	1	2	4	2			1		1	4
John Street along site frontage					0							0
TOTAL	0	6	6	39	51	17	6	1	23	2	2	51

Source: Connecticut Crash Data Repository from January 1, 2017 through December 31, 2019

In total, 51 crashes were reported during the 3-year period in the vicinity of the site. Approximately 76 percent of reported collisions resulted in property damage only and there were no serious injuries or fatalities reported. The most common collision type was the rear-end collision at 45 percent, followed by angle collisions at 33 percent and same-direction sideswipes at 12 percent. Considering the high volume of vehicles that travel through the study area, there do not appear to be any unusual trends in the crash history. Rear-end crashes, for instance, are unfortunately fairly common at high-traffic signalized intersections.

It is noted that there were two crashes that occurred that involved pedestrians, one at the signalized intersection of Canal Street and Dock Street/Jefferson Street and one at the unsignalized intersection of Dock Street at John Street. The one at Canal Street and Dock/Jefferson occurred on February 10, 2017, a Friday, at approximately 2:45 p.m. where a pedestrian was reportedly on Canal Street walking southbound and while crossing Dock Street was struck by a right turning vehicle. Wintry weather may have played a factor. It is not known if the pedestrian was crossing with the pedestrian walk signal, which operates concurrently with the Canal Street north-south artery traffic flow. The other collision involving a pedestrian, which occurred at the intersection of Dock Street and John Street, interestingly happened only 5 days later on February 15, 2017, a Wednesday, at approximately 4:50 p.m. during wet weather. This



occurred where a pedestrian was reportedly in the crosswalk on John Street when he/she was struck by a vehicle about to make a right turn from the John Street stop-sign controlled approach onto Dock Street. Both of these pedestrian collisions reportedly resulted in minor injuries.

Baseline Roadway Traffic Volumes

Due to the COVID-19 pandemic and its overall effect on reducing current travel and traffic patterns, new intersection turning movement traffic counts were unable to be conducted at the study intersections. Based on correspondence with the City of Stamford TTP Department and CTDOT, the baseline traffic volumes were established using the 2021 Combined Traffic Volumes from the Gateway Tower Expansion traffic study prepared by Fuss & O'Neill, dated February 11, 2021. Since the 2021 Combined Volumes from the Gateway study did not include the intersections of Dock Street at Pacific Street and Dock Street at John Street, traffic volumes from the 583 Pacific Street Traffic Study and the 523 Canal Street study were used and adjusted pro rata to balance with the Gateway 2021 Combined Volumes. Figure 2 shows the baseline morning and afternoon peak-hour traffic volumes.

PROPOSED DEVELOPMENT, ACCESS, AND SITE TRAFFIC

The site is located on the south side of Dock Street between John Street and Canal Street. The proposed development will consist of approximately 401 total residential units and 6,800 SF of ground floor retail. Of the 401 residential units, just over three-quarters are to be 1-bedroom or studio units. A specific tenant for the ground-floor commercial space has not been determined at this time. For the purpose of this traffic study, it is conservatively assumed that this approximately 6,800 SF may be restaurant. Should a different commercial tenant, or multiple tenants, occupy this space, it would likely produce less traffic than one larger restaurant. The development is to have an internal parking garage with approximately 429 on-site parking spaces, meeting the zoning regulation requirements without any sharing. Vehicle access to/from the site will be provided primarily via two driveways, one at Canal Street and one at John Street, both of which are to be located as far as possible from nearby city intersections on the site's respective frontages.

Site-Generated Traffic Estimates

Peak-hour vehicle trips projected to be generated by the proposed development were estimated based on statistical data contained in the Institute of Transportation Engineers' (ITE) Trip Generation¹ publication. ITE Land Use Code (LUC) #222, Multifamily Housing (High-Rise), was used to estimate the number of trips that will be generated by the residential portion of the development. Since a tenant(s) for the approximately 6,800 SF of commercial space has not yet been identified, LUC #932, High Turnover Sit-Down Restaurant, was used to estimate vehicle trips generated by this portion of the development. LUC #932 has a higher trip rate than that of general retail and is therefore a more conservative estimate of potential traffic that may be generated by this approximately 6,800 SF portion of the building.

¹ Trip Generation, 10th Edition. Institute of Transportation Engineers, 2017



Since ITE base data is largely based on single-use suburban sites with minimal access to transit, it is appropriate to adjust initial ITE trip generation estimates to more accurately reflect that this site is mixeduse and within a city setting with nearby transit. The site is noted to be within walking distance of a major transit station (the Stamford Transportation Center train and bus station), as well as on local bus routes and near shuttles, which allows for the use of a 20 percent TOD/walk credit for the trip estimates based on advice from CTDOT. The development itself is also to be mixed-use, allowing for another 5 percent credit per CTDOT procedures. As conservative measures, note that no credit was taken to account for the removal of any existing traffic associated with the prior land uses on this site that will be replaced, and no credit was taken for commercial traffic that would be vehicular pass-by traffic. Table 2 summarizes the trip generation estimates for the 441 Canal Street development.

TABLE 2 **Estimated Site-Generated Vehicular Traffic**

			NU	MBER OF	VEHICLE	TRIPS	
LAND USE	ITE LAND USE#		KDAY MC			DAY AFTE PEAK HOU	
		IN	OUT	TOTAL	IN	OUT	TOTAL
Multifamily Housing, high-rise (401 units)	222	40	75	115	75	55	130
25% TOD and Internal-Capture	e credit ¹	-10	-20	-30	-20	-15	-35
Residential Total		30	55	85	55	40	95
High Turnover Sit-down Restaurant (6,800 square feet)	932	40	35	75	40	30	70
25% TOD and Internal-Capture	e credit 1	-10	-10	-20	-10	-10	-20
Commercial Total		30	25	55	30	20	50
Grand Total		60	80	140	85	60	145

Trip Generation, 11th Edition. Institute of Transportation Engineers, 2021

Site Traffic Distribution and Routing

The geographic distribution and routing of the site-generated traffic was estimated based on review of Journey-to-Work census data and the general roadway traffic patterns in the vicinity of the site. Given differences in travel patterns between residential and commercial land uses, separate trip distributions were created for each land use. The estimated site traffic distributions are shown in Figures 3 and 4 for the residential and retail land uses, respectively. Note that as a conservative measure, most of the estimated new vehicular site traffic was routed for this study via Dock Street or Canal Street. Some

^{1.} Per CTDOT-allowed procedures.



motorists may ultimately decide to also utilize Market Street and/or Henry Street to get where they are going, particularly if headed toward the west, southwest, or northwest of the site. Figures 5 and 6 show the estimated site-generated traffic routed through the study intersections based on these distributions for the weekday morning and afternoon peak hours.

FUTURE ROADWAY TRAFFIC VOLUMES AND OPERATIONS

Future roadway traffic volumes were estimated both with and without the proposed development in place in order to determine possible traffic impacts. For the purposes of this study, the proposed 441 Canal Street development is anticipated to open in 2024.

The background traffic scenario is reflective of future conditions before the new development is built and was estimated by expanding the baseline traffic volumes to the estimated opening year of 2024 using an annual growth rate of 0.6 percent, per input from CTDOT. Additionally, the anticipated future site trips from the following approved developments were added to the network:

- 523 Canal
- 860 Canal
- True North

The Gateway Combined 2021 volumes, which were used as the baseline volumes in this analysis, already include the following developments:

- Atlantic Station
- The Smyth
- Davenport Landing
- Harbor Point
- **URBY Stamford**
- Woodland at Pacific
- Metro Green
- CTDOT STC Parking Garage
- **Gateway Tower Expansion**

The resultant projected future year 2024 volumes reflect conditions just before the proposed development would open and can be seen on Figure 7 as the background traffic volumes. These volumes were approved by both CTDOT and TTP.

The combined traffic scenario is reflective of future conditions after the proposed development is built and opened and was estimated by adding the estimated new traffic generated by the development (shown in Figures 5 and 6) to the future background traffic (shown in Figure 7). The resultant estimated 2024 future combined (build) traffic volumes are shown on Figure 8 for the weekday morning and afternoon peak hours.



Traffic Capacity Analyses

The future traffic volumes at the study intersections were evaluated by means of the Synchro software package, which use the methodologies of the Highway Capacity Manual. At the direction of the City of Stamford TTP Department, the signal phasing and timings for the signalized study intersections used in our analysis were based on signal timings provided by the City. Note that these signal timings may be different from past years and past area traffic studies because the City periodically adjusts how the signals are timed.

The quality of operations is measured and expressed as a level of service (LOS). LOS is defined as a measure of inconvenience that motorists experience. The levels are expressed with letter designations of A through F. In areas such as city areas, downtowns, and many TOD areas, LOS E during peak hours is often deemed acceptable and can indicate an efficient tradeoff between traffic flow and the amount of land devoted to the movement of motor vehicles. A more detailed explanation of LOS can be found in the Appendix.

Table 3 summarizes the findings of future overall LOS at the study intersections without (background) and with (combined) the estimated traffic generated by the proposed development, using the current signal timings. A comparison of background versus combined conditions is the assessment of whether or not the proposed development will noticeably affect traffic operations. The individual worksheets for each of the intersections and a more detailed LOS table are provided in the Appendix.

As can be seen in Table 3, traffic conditions between the background and combined scenarios are expected to remain the same in many areas. Some intersections are nonetheless expected to operate with poor LOS during peak hours in the future regardless of whether this proposed development occurs. For example, the signalized intersection of Canal Street at North State Street is expected to operate during the morning peak hour at overall LOS E with (Combined traffic conditions) or without (Background traffic conditions) new traffic added to the roadway network from this development. No change in LOS between Background and Combined traffic conditions indicates no notable impact caused by this development.

At some other signalized intersections nearby during certain peak periods, the new traffic associated with this development would result in a single letter reduction in LOS. For example, the intersection of Canal Street at South State Street is expected to decrease in overall LOS from E to F during the afternoon peak hour (between Background and Combined traffic conditions). The intersection of Canal Street at Dock Street/Jefferson Street would decrease in overall LOS from D to E during both weekday peak hours. However, investigation of modifications that could be made to adjust how the signals are timed found that in all cases where an overall LOS at a traffic signal would decrease in overall letter grade this could be mitigated through timing change adjustments. The results where signal timing adjustments would mitigate a decrease in overall LOS or improve existing LOS are shown in parentheses on Table 3.



TABLE 3 Level of Service Summary

	WEEKDAY N PEAK H		WEEKDAY AFTERNOON PEAK HOUR			
MOVEMENTS	BACKGROUND	COMBINED	BACKGROUND	COMBINED		
0	VERALL SIGNALIZE	ED LOS				
Canal Street at North State Street	E	E (D)	D	D (C)		
Canal Street at South State Street	D	D	E	F (E)		
Canal Street at Dock Street/Jefferson Street	D	D	D	E (C)		
Dock Street at Pacific Street	С	С	С	С		
Atlantic Street at Station Place/Dock Street	С	С	С	С		
Atlantic Street at South State Street	В	В	С	С		
Atlantic Street at North State Street	D	D (C)	D	D (C)		
	UNSIGNALIZEL)				
Dock Street at John Street	_					
Eastbound Left	В	В	Α	А		
Westbound Left	В	В	В	С		
Northbound Left/Through/Right	E	Е	F	F		
Southbound Left	E	E	F	F		
Southbound Through/Right	В	В	В	В		
Canal Street at proposed site driveway						
Eastbound Left/Right	-	Α	-	А		
Northbound Left	-	С	-	D		
John Street at proposed site driveway						
Westbound Left/Right	-	А	-	А		
Southbound Left	-	Α	-	A		

^{():} with signal timing adjustment

Signal timing adjustments were also investigated for several other intersections in the study area and in some cases were found to improve upon an overall LOS (or improve upon signal delays and queuing but not to the extent of changing a LOS grade) even if unnecessary as a mitigation measure for this



development. To simplify Table 3, only signal timing adjustments that would result in an overall LOS improvement are denoted in parentheses. The City of Stamford TTP Department may wish to adjust signal timings based on this information as they periodically do, especially as traffic patterns evolve while Stamford continues to grow. Signal timings should continue to be adjusted and fine-tuned periodically as traffic patterns change, especially after new major developments come online such as this one and the other major developments that are included in our Background Traffic profile. Further details on these intersection operations and signal timing adjustment-related changes can be found in the Appendix.

At the unsignalized study intersections, the westbound left movement at the John Street at Dock Street intersection is the only movement expected to experience a decrease in LOS, and a minor decrease at that, due to the new traffic from this proposed 441 Canal Street development. With exceptions at the northbound approach of John Street at Dock Street and the opposite private driveway opposite John Street, no individual movements at the stop-sign controlled study intersections are expected to experience poor LOS during peak hours under Background and Combined conditions. And it is noted that these particular underlying delays at the John Street approach are due primarily to high volumes of passing traffic on Dock Street. Such is the case with stop-sign controlled approaches to higher traffic roads, even when the number of vehicles (particularly left-turning vehicles) egressing from a side street or driveway may be relatively low. The poor LOS that can be expected in the future for the left turn from John Street to Dock Street during the afternoon peak hour, for instance, will be similarly experienced at other left turns from other unsignalized side streets along Dock Street. It should also be noted that some motorists who become familiar with this site and the general area traffic patterns, especially motorists who routinely drive this area, will likely adjust their routing as necessary to avoid known delays associated with one route versus another. For example, some motorists may anticipate that there will be some delays egressing the site from John Street to Dock Street and instead will utilize the Canal Street driveway to get on their way or egress from John Street to Market Street to then drive to their destination.

The traffic flow analysis also takes into account anticipated restriping of Canal Street along the site frontage and to the south to have one northbound lane, one southbound lane, a center left-turn lane, and on-street parking on the west side of Canal Street instead of the existing four total vehicle lanes (the current two lanes in each direction). The change to Canal Street was a condition of approval of the adjacent 523 Canal Street redevelopment (Studio Green on Canal). The City of Stamford TTP Department indicated that this change will be made at some point in 2022 prior to the future background and combined traffic analysis conditions of this study. This change is what is known as a 'road-diet,' which can have other benefits such as slowing vehicle speeds and thus increasing safety in urban environments.

TRANSPORTATION DEMAND MANAGEMENT (TDM)/PARKING MANAGEMENT PLAN

As per the relatively new sections 19.F and 19.G of the Stamford Zoning Regulations, this portion of the study has been prepared as a combined TDM and Parking Management Plan for the proposed 441 Canal Street development. "... PMPs [Parking Management Plans], by themselves or in conjunction with the Transportation Demand Management Plans, are intended to discourage use of single occupancy passenger vehicles." More specifically, the regulations seek to achieve that at least 20 percent of employees and residents commute to work by travel modes other than single occupancy vehicles (SOVs)



- for example by using transit, carpooling, car sharing, telecommuting, bicycling, and/or walking. This is a worthy aim to help achieve less automobile congestion, emissions, and so on.

Alternate Travel Mode Options

The site's location, approximately one-third of a mile from the Stamford Transportation Center, and in the South End mixed-use urban neighborhood near downtown, lends itself to fewer trips to/from the site by automobile and instead by other more sustainable modes of transportation. A 20 percent to 25 percent reduction from ITE base vehicle trip generation estimates, quantified in Table 2, is anticipated due in large part to the site's location alone. The Stamford Transportation Center includes both rail service (Metro North, Amtrak, and Shore Line East) and the CTtransit Stamford Local System's bus hub, not to mention regional bus service, as well as local shuttle service. CTtransit bus routes 326 and 327, and the Harbor Point-Downtown shuttle (City Trolley), go directly past 441 Canal Street. The 441 Canal Street development will also have secure bicycle parking within the building for over 100 bicycles. Furthermore, with regard to the site's location, review of the latest available Census data (American Community Service 5-year Estimates circa 2019) finds that only around 57.5 percent of workers who reside in the South End (Census Tract 222) commute to work by driving alone; approximately 10.5 percent carpool, 17.5 percent use public transportation, 7.5 percent walk to work, 4 percent work from home, and 3 percent use other means (including some by bicycle). If future 441 Canal Street residents practice similar travel characteristics, this will bode well to meeting the 20 percent+ goal.

Parking

There are to be approximately 429 parking spaces within the 441 Canal Street development, exceeding the Stamford Zoning Regulation parking requirement for this development. It bears mentioning that municipal minimal parking requirements can be at odds with SOV reduction goals. Per the regulations, most of the parking is required for the 401 residential units and approximately 10 of the spaces are required for the commercial component of the development. Although it is noted that if the commercial component is ultimately occupied by several smaller tenants, then no parking would be required for the site commercial use(s).

The ultimate mix of how parking on the site will be used between the residential and commercial, and as a whole, may also turn out to be different. Review of ITE data, for instance, indicates that multifamily highrise residential buildings on average generate just less than one parked car per unit during peak times and that high-rises near rail transit may only use half a parking space per unit on the whole, or one parked car for every two residential units. Review of parking count data in our files of multifamily residential buildings in central Stamford indicates that a development this close to the Stamford Transportation Center and with just over three-quarters of the units to be one-bedroom and studio units may end up using around 0.75 parking spaces per unit in the aggregate during peak periods, which would be around 300 parked vehicles within the approximately 429 spaces. And these are during the residential parking peak period, which is typically overnight and also when commercial parking usage is little to none. During the daytime and possibly the evening when the commercial use(s) on the site would be open (and note again that the commercial is a relatively small component of this development), residential parking demand is lower than



its overnight peak. Moreover, patrons of the commercial who drive to the site will likely be most inclined to park on street.

The approximately 429 on-site parking spaces will be self-park. Within the total, there are to be approximately 22 handicap spaces and 44 electric vehicle charging (EV) spaces. There is to be bicycle parking within the site for over 100 bicycles as mentioned above. There will also be loading within the site for box trucks, as well as the ability for truck loading on Canal Street and John Street with the forthcoming addition of on-street parking.

Access to the on-site parking is to be gate-controlled at both site driveways, one at Canal Street and one at John Street. Parking for residents within the site will be unassigned and unbundled. Unbundled parking is where a monthly parking pass will not automatically be included in the cost of rent. Instead, residents who want to park may pay separately for a monthly parking pass. Unbundled parking is generally a proven method to lower residential parking demand and can allow those residents without a car to not have to pay for parking (that would otherwise be embedded in their lease) that they do not need. Virtually every multifamily development in the downtown and South End unbundles parking. Residents who have a monthly parking pass should be instructed to first park on the upper levels of the site's parking garage. The ground-level parking is to have approximately 49 spaces (out of the total on-site parking supply), of which 10 may be designated for commercial tenant(s) use (in accordance with the zoning regulation) and the remaining approximately 39 ground level spaces could be allowed to effectively be shared-parking between commercial and residential (e.g., commercial daytime/evening use and overnight residential use), though it should again be noted that shared parking is not needed to satisfy zoning parking requirements. Building management can determine, how they see fit, the extent to which commercial tenant staff/employees may be offered monthly parking within the site and also to what extent commercial patron parking and visitor parking within the site could be allowed and managed (e.g., through hourly pay-parking, store-purchase validation, etc.).

New on-street parking adjacent to the site on Canal Street and John Street, which is expected to be installed/striped in the coming year as part of the 523 Canal Street development, should be signed as 2hour parking like other existing on-street parking nearby in the South End, with the exception of 2 to 4 onstreet spaces that we suggest be short-term (e.g., 15-minute parking) for curbside pickup/dropoff/delivery. The on-street parking adjacent to the site should also be monitored and the City may wish to increasingly manage on-street parking in the public right-of-way through the use of parking meters to spur increased turnover of spaces.

TDM/Parking Management – Monitor, Evaluate, and Increasingly Manage if Necessary

Periodic follow-up traffic and parking studies should be done after this development has opened and is mostly occupied (i.e., more than three-quarters occupied) to quantify and evaluate its actual traffic and parking demands. The number of peak-hour vehicle trips to/from the site should be counted to determine if it is meeting the aforementioned 20 percent reduction goal (see Table 2), and the peak number of parked vehicles at the site should also be counted to determine if parking should be better managed.



If the goal is not met that at least one in five residents and employees travel to/from this site by means other than by SOVs, that there be a 20 percent reduction from ITE base vehicle trip generation estimates, then the 441 Canal Street development should implement TDM/automobile-use reduction measure. These could include, but may not necessarily be limited to, one or more of the following:

- Provide transit information to residents and employees of the site
- Provide reduced-cost or free transit passes to residents and employees
- o Introduce CarShare vehicles to the site (e.g., Zipcar, or a similar service)
- Increase the cost to park on site: resident monthly parking, commercial employee parking, commercial patron hourly parking

Moreover, if parking usage in the site is found to be regularly at capacity, then a higher level of parking management may be needed. This could include, but may not be limited to, one or more of the following:

- Charge more to park (as mentioned above)
- Remove the ability for some users to park on the site
- o Increase parking supply on site (e.g., valet, stackers, tandem parking)

If parking turns out to be greatly oversupplied within the site, then it may make sense to lease excess supply to a third party and/or repurpose the excess for a different use.

If the future on-street parking adjacent to the site on Canal Street and John Street is found to be regularly at capacity for extended periods of the day, then the City may wish to introduce parking meters and to adjust meter pricing as necessary.

RECOMMENDATIONS

The following are recommendations and proposed improvements to enhance traffic operations and nonmotorists' mobility in connection with this development:

We recommend that the City of Stamford retime traffic signals near the site after this development is built and opened, particularly at the Canal Street intersections with North State Street, South State Street, and Dock Street/Jefferson Street. Again, it is important to note that timing changes at only some of the area intersections during some periods of the day may be minimally necessary as mitigation for this proposed development. These are Canal Street at South State Street and Canal Street at Dock Street/Jefferson Street during the weekday afternoon peak hour. We understand that the City of Stamford periodically adjusts and fine-tunes signal timings as traffic patterns change while the city grows, and should continue to do so when appropriate, such as after every new major development that comes online, and may wish to consult the suggested timing changes that have been analyzed as part of this study that are detailed in the Appendix.



- A curb extension/bumpout is to be installed at the southeast corner of Dock Street at John Street at the site frontage. This will provide some degree of safety improvement for pedestrians by shortening the crosswalk distance. As noted above, a crash occurred at this location involving a pedestrian in February 2017. John Street is to be restriped as part of the adjacent 523 Canal Street redevelopment to shift the centerline slightly to the west in order to add on-street parking along the east side of John Street. This provides the opportunity to install a curb extension/bumpout at this corner.
- New sidewalks will be installed along the site frontage as necessary upon construction of the new building on this site.
- Periodic monitoring and evaluation traffic counts of the site (peak-hour counts) should be undertaken after the site is built and three-quarters occupied to understand if the 20 percent SOV reduction goal is being met (see Table 2). If the site traffic counts are found to not be 20 percent less than the ITE base vehicle trip generation projections, then TDM measures (as mentioned earlier) should be implemented. The applicant is happy to accept a condition of approval requiring this reporting.
- Periodic monitoring and evaluation parking counts of the site (at different times of day and at night) should be undertaken after the site is built and three-quarters occupied to understand if the site is underparked or overparked, and as necessary to adjust how the parking is managed. The applicant is happy to accept a condition of approval requiring this reporting.
- The future on-street parking adjacent to the site on Canal Street and John Street should have 2 to 4 short-term (e.g., 15 minute) parking spaces for pickup/drop-off/delivery, with the remaining spaces signed as 2-hour parking. The on-street parking should also be monitored to determine if it should be increasingly managed by the City through the use of parking meters.

CONCLUSION

This study was conducted to assess the transportation aspects of the proposed development to be located at 441 Canal Street in Stamford, Connecticut. To determine a profile of existing/baseline conditions, field reconnaissance and data assembly efforts were undertaken. Estimates of the amount of new traffic that will be generated by the proposed development were made based on industry statistical data, and intersection capacity analyses were performed comparing future traffic scenarios at and nearby the site both without and with the new development in place. It was found that the new traffic generated by this development may cause some relatively minor reductions in LOS traffic operations at some area intersections. However, these could be mitigated through signal timing adjustments. These and other improvements are recommended to enhance area traffic operations in the future and to enhance nonmotorist mobility, which are listed above. Lastly, traffic and parking counts of the site should be conducted after it is built and mostly occupied to determine if it is meeting City-regulation vehicular traffic reduction goals and if TDM measures should be implemented for the site and/or if parking at/adjacent to the site should be managed differently.



We hope this report is useful to you and the City of Stamford. If you have any questions or need further information, please do not hesitate to contact either of the undersigned.

Sincerely,

SLR International Corporation

David G. Sullivan, PE

U.S. Manager of Traffic & Transportation Planning

Neil C. Olinski, MS, PTP

Senior Transportation Planner

Enclosures

141.15708.00002.f122.rpt

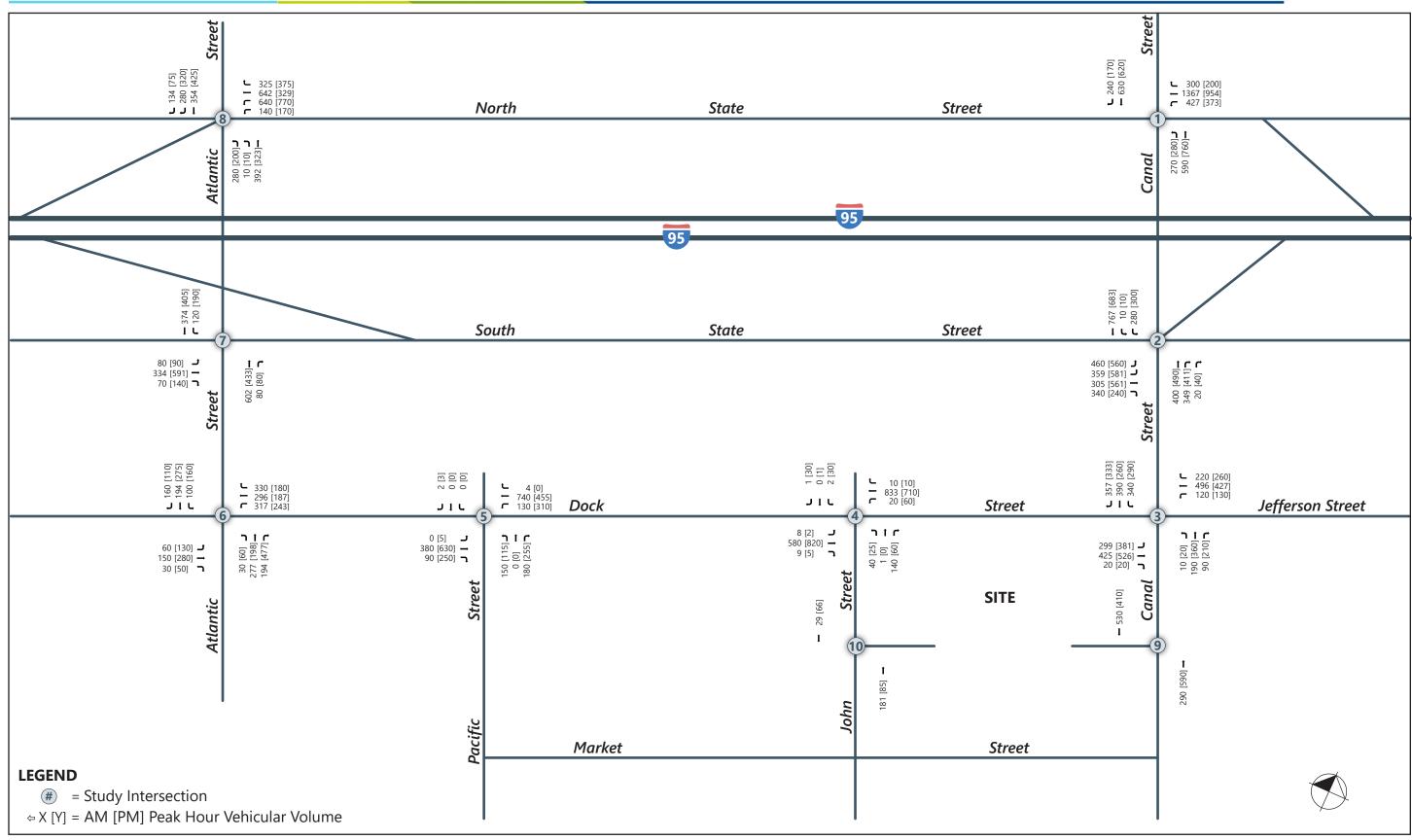
FIGURE 1



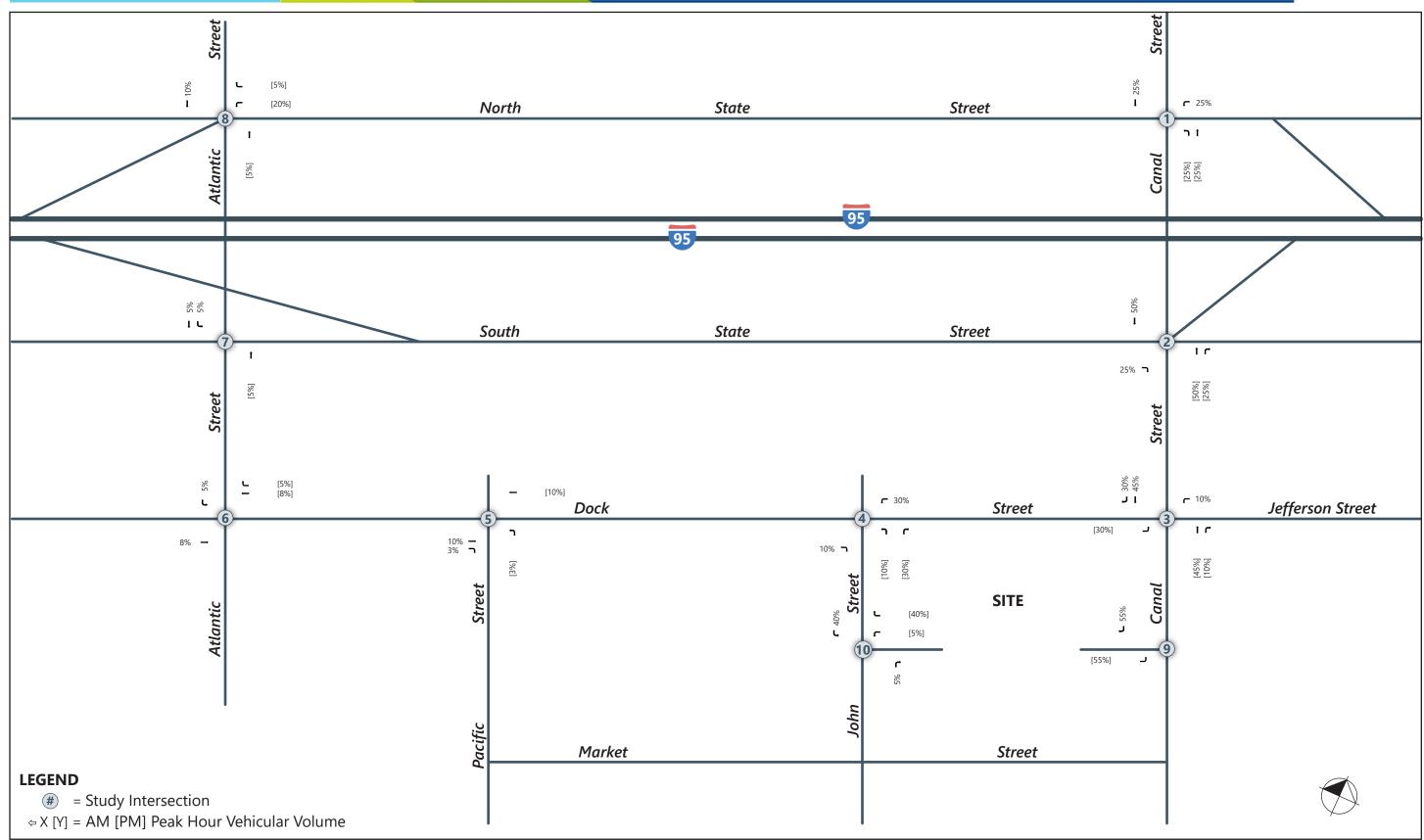


SITE LOCATION MAP

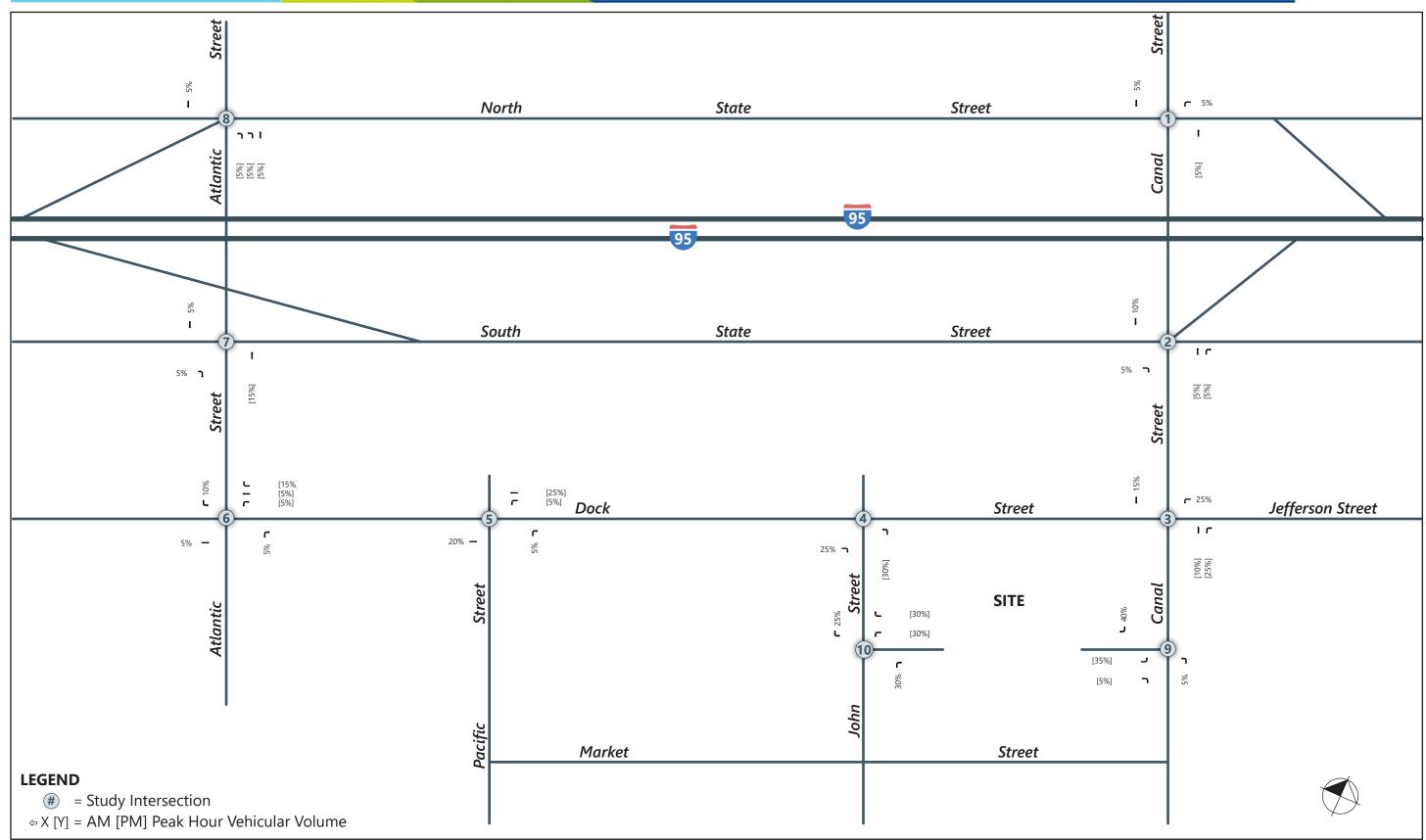














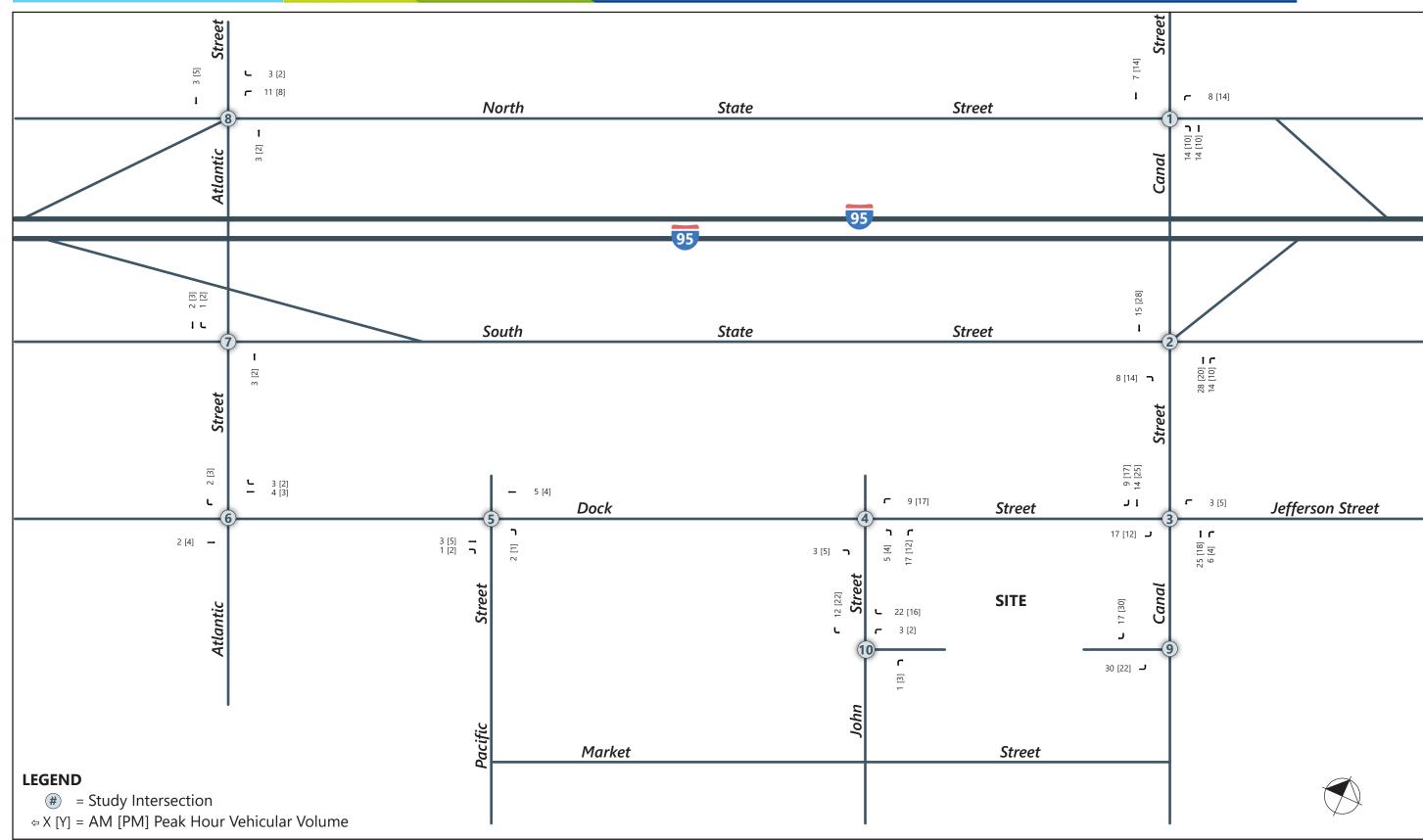
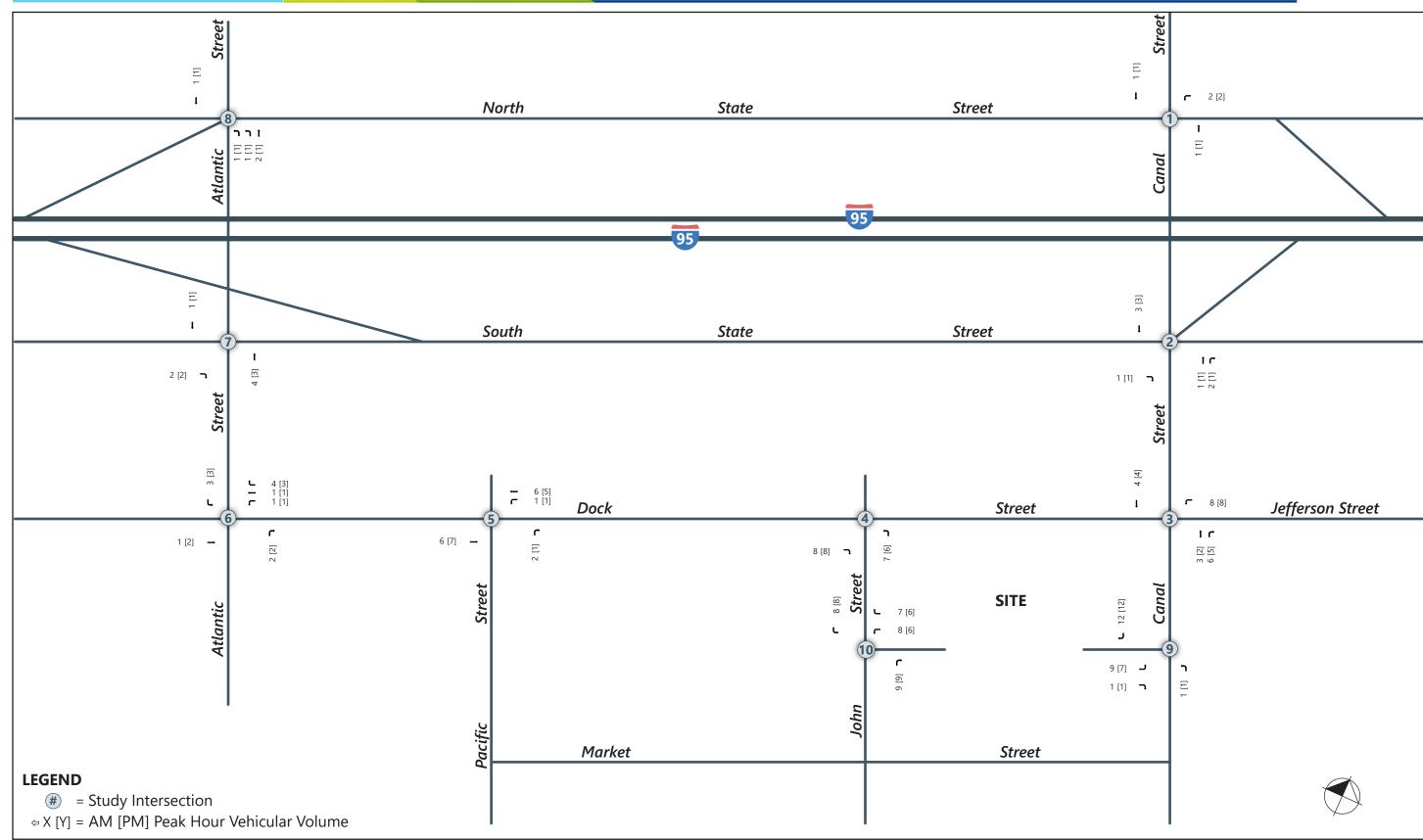


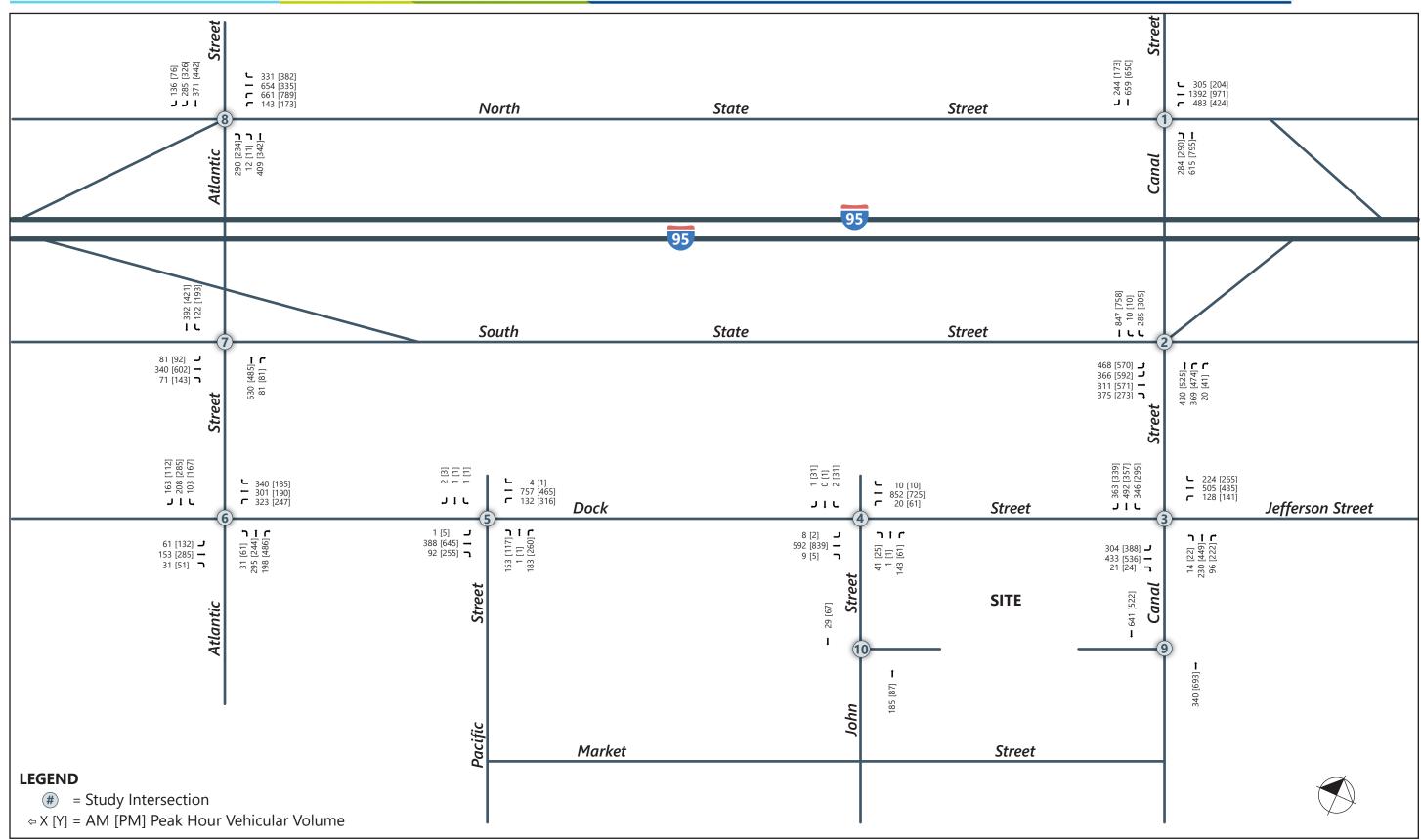
FIGURE 6



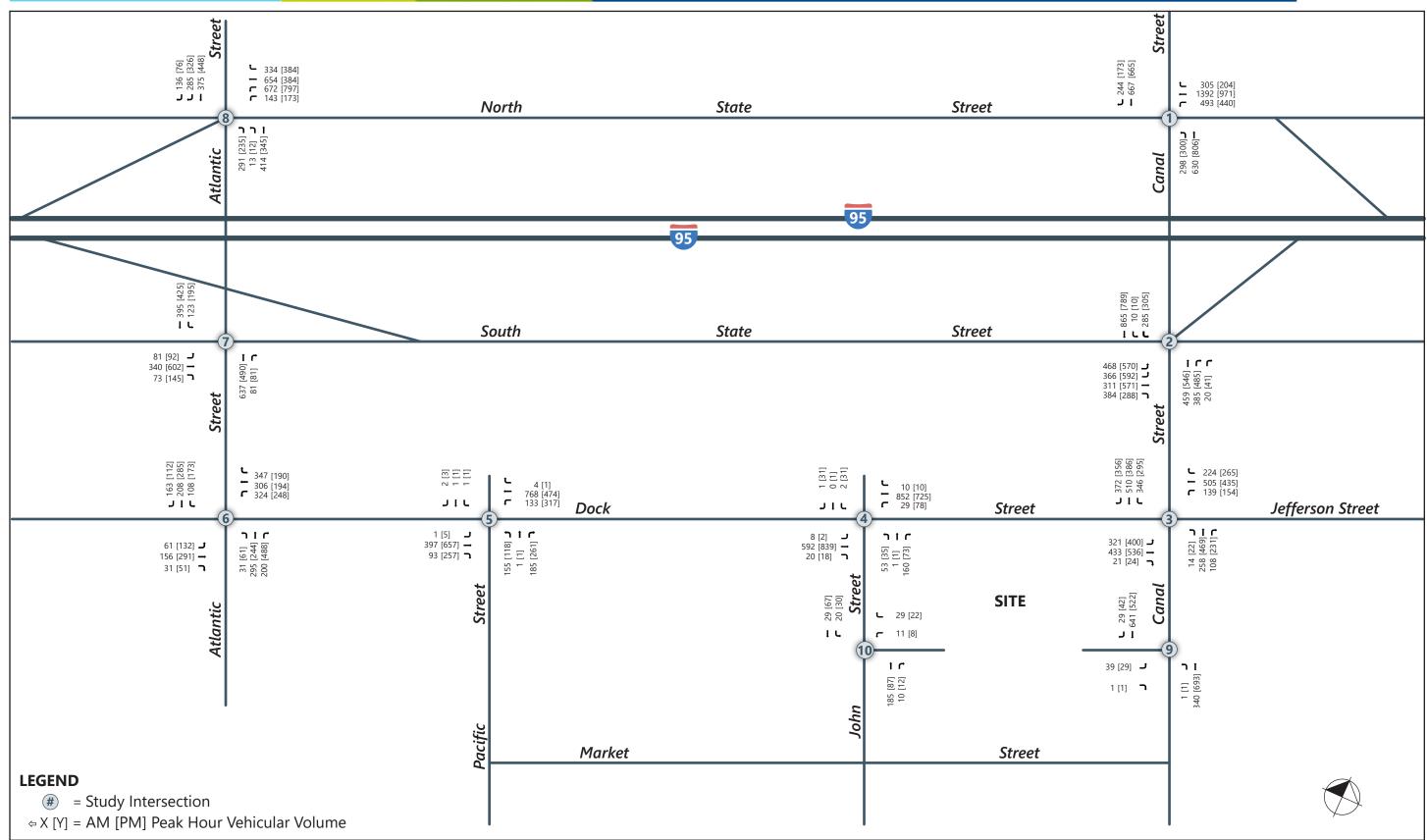


SITE-GENERATED TRAFFIC









APPENDIX

LEVEL OF SERVICE FOR SIGNALIZED INTERSECTIONS (MOTORIZED VEHICLE MODE)

Level of service for signalized intersections is defined in terms of control delay, which is a measure of driver discomfort, frustration, fuel consumption, and increased travel time. The delay experienced by a motorist is made up of a number of factors that relate to control, geometrics, traffic, and incidents. Total delay is the difference between the travel time actually experienced and the reference travel time that would result during base conditions: in the absence of traffic control, geometric delay, any incidents, and any other vehicles. Specifically, LOS criteria for traffic signals are stated in terms of the average control delay per vehicle, typically for a 15-min analysis period. Delay is a complex measure and depends on a number of variables, including the quality of progression, the cycle length, the green ratio, and the v/c ratio for the lane group. The criteria are given below.

LEVEL-OF	LEVEL-OF SERVICE CRITERIA FOR SIGNALIZED INTERSECTIONS MOTORIZED VEHICLE MODE											
LOS By Volume	-to-Capacity Ratio ¹	CONTROL DIVINI										
v/c ≤ 1.0	v/c > 1.0	CONTROL DELAY (s/veh)										
A	F	≤ 10										
В	F	> 10 AND ≤ 20										
C	F	> 20 AND ≤ 35										
D	F	> 35 AND ≤ 55										
E	F	> 55 AND ≤ 80										
F	F	> 80										

¹ For approach-based and intersection-wide assessments, LOS is defined solely by control delay.

Specific descriptions of each LOS for signalized intersections are provided below:

<u>Level of Service A</u> describes operations with a control delay of 10 s/veh and 20 s/veh and a volume-to-capacity ratio no greater than 1.0. This level is typically assigned when the volume-to-capacity ratio is low and either progression is exceptionally favorable or the cycle length is very short. If LOS A is the result of favorable progression, most vehicles arrive during the green indication and travel through the intersection without stopping.

Level of Service B describes operations with control delay between 10 and 20 s/veh and a volume-to-capacity ratio no greater than 1.0. This level is typically assigned when the volume-to-capacity ratio is low and either progression is highly favorable or the cycle length is short. More vehicles stop than with LOS A.

<u>Level of Service C</u> describes operations with control delay between 20 and 35 s/veh and a volume-to-capacity ratio no greater than 1.0. This level is typically assigned when progression is favorable or the cycle length is moderate. Individual *cycle failures* (i.e., one or more queued vehicles are not able to depart as a result of insufficient capacity during the cycle) may begin to appear at this level. The number of vehicles stopping is significant, although many vehicles still pass through the intersection without stopping.

Level of Service D describes operations with control delay between 35 and 55 s/veh and a volume-to-capacity ratio no greater than 1.0. This level is typically assigned when the volume-to-capacity ratio is high and either progression is ineffective or the cycle length is long. Many vehicles stop and individual cycle failures are noticeable.

<u>Level of Service E</u> describes operations with control delay between 55 and 80 s/veh and a volume-to-capacity ratio no greater than 1.0. This level is typically assigned when the volume-to-capacity ratio is high, progression is unfavorable, and the cycle length is long. Individual cycle failures are frequent.

<u>Level of Service F</u> describes operations with control delay exceeding 80 s/veh or a volume-to-capacity ratio greater than 1.0. This level is typically assigned when the volume-to-capacity ratio is very high, progression is very poor, and the cycle length is long. Most cycles fail to clear the queue.

Reference: <u>Highway Capacity Manual 6</u>, Transportation Research Board, 2016.

LEVEL OF SERVICE FOR TWO-WAY STOP SIGN CONTROLLED INTERSECTIONS

The level of service for a TWSC (two-way stop controlled) intersection is determined by the computed or measured control delay and is defined for each minor movement. Level of service is not defined for the intersection as a whole. Control delay includes initial deceleration delay, queue move-up time, stopped delay, and final acceleration delay. LOS criteria are given in the Table. LOS criteria are given below:

LEVEL-OF SERVICE CRITER	LEVEL-OF SERVICE CRITERIA FOR AWSC INTERSECTIONS											
LOS¹	CONTROL DELAY (s/veh)											
A	≤ 10											
В	> 10 AND ≤ 15											
С	> 15 AND ≤ 25											
D	> 25 AND ≤ 35											
E	> 35 AND ≤ 50											
F	> 50											

Note: LOS criteria apply to each lane on a given approach and to each approach on the minor street.

LOS is not calculated for major-street approaches or for the intersection as a whole.

LOS F is assigned to a movement if the volume-to-capacity ratio exceeds 1.0, regardless of the control delay

Reference: Highway Capacity Manual Version 6.0, Transportation Research Board, 2016.

441 Canal Traffic Street Study - LOS Summary Table

	ri Canai irattic Stre	VEEKDAY MORNIN	-	W	EEKDAY AFTERNO	ON
		PEAK HOUR			PEAK HOUR	
MOVEMENTS	BACKGROUND	COMBINED	COMBINED WITH TIMING CHANGES	BACKGROUND	COMBINED	COMBINED WITH TIMING CHANGES
		SIGNALIZE	D			
Canal Street at North State Street						
Westbound Left/Through/Right	F	F	D	D	D	D
Northbound Left	F	F	E	F	F	С
Northbound Through	В	В	В	С	С	В
Southbound Through/Right	D	D	E	D	D	С
OVERALL	E	E	D	D	D	С
Canal Street at South State Street						
Eastbound Left/Slight Left	F	F	E	F	F	F
Eastbound Slight Left	E	E	E	F	F	F
Eastbound Through	С	С	С	С	С	С
Eastbound Right	E	E	D	D	D	С
Northbound Through/Right/Slight Right	С	С	В	F	F	D
Southbound Left/Slight Left/Through	С	С	E	D	Е	D
OVERALL	D	D	D	E	F	E
Canal Street at Dock Street/Jefferson Street			_			
Eastbound Left	E	F	D	F	F	D
Eastbound Through/Right	D	D	С	D	D	С
Westbound Left	С	С	С	С	С	С
Westbound Through/Right	E	E	E	F	F	D
Northbound Left/Through	D	D	С	D	D	D
Northbound Right	Α	Α	А	Α	Α	В
Southbound Left	С	С	С	В	С	С
Southbound Through/Right	С	С	С	В	В	С
Southbound Right	Α	Α	А	Α	Α	Α
OVERALL	D	D	D	D	E	С
Dock Street at Pacific Street			_			
Eastbound Left	В	В	В	В	В	В
Eastbound Through/Right	В	В	С	С	С	С
Westbound Left	В	В	А	С	С	D
Westbound Through/Right	В	В	Α	В	В	А
Northbound Left/Through/Right	D	D	D	D	D	D
Southbound Left/Through/Right	С	С	С	В	В	В
OVERALL	С	C	С	С	C	С

Atlantic Street at Station Place/Dock Street						
Eastbound Left	С	С	С	С	С	С
Eastbound Through/Right	Е	E	Е	E	Е	E
Westbound Left	D	D	D	С	С	С
Westbound Through	D	D	D	С	С	С
Westbound Right	Α	А	В	Α	Α	А
Northbound Left	В	В	В	С	С	С
Northbound Through	С	С	С	С	С	С
Northbound Right	Α	Α	Α	Α	Α	Α
Southbound Left	А	Α	В	В	В	В
Southbound Through	В	В	В	В	В	С
Southbound Right	А	Α	Α	Α	Α	Α
OVERALL	С	С	С	С	С	С
Atlantic Street at South State Street		•				
Eastbound Left	D	D	D	С	С	С
Eastbound Through/Right	D	D	D	D	D	D
Northbound Through	А	Α	Α	В	В	В
Northbound Right	А	Α	Α	А	Α	В
Southbound Left	А	Α	Α	В	В	В
Southbound Through	А	Α	Α	А	Α	Α
OVERALL	В	В	В	С	С	С
Atlantic Street at North State Street						
Westbound Left/Through/Right	D	D	С	D	D	С
Northbound Left	D	D	С	D	D	С
Northbound Through	В	В	В	В	В	В
Southbound Through	D	D	С	D	D	С
Southbound Right	F	F	E	E	Е	Е
OVERALL	D	D	С	D	D	С
		UNSIGNALIZ	ZED			
Dock Street at John Street						
Northbound Left/Through	E	E	E	F	F	F
Northbound Right	В	В	В	В	В	В
Eastbound Left	В	В	В	А	Α	А
Westbound Left	В	В	В	В	С	С
Southbound Left	Е	E	Е	F	F	F
Southbound Through/Right	В	В	В	В	В	В
Canal Street at proposed site driveway						
Northbound Left	-	Α	А	-	Α	А
Eastbound Left/Right	-	С	С	-	D	D
John Street at proposed site driveway						
Westbound Left/Right	-	А	А	-	Α	А
Southbound Left	-	Α	А	-	Α	А

	۶	→	•	•	←	•	4	†	/	/	↓	4	
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations					नााः		7	† †			∱ 1>		
Traffic Volume (vph)	0	0	0	483	1392	305	284	615	0	0	659	244	
Future Volume (vph)	0	0	0	483	1392	305	284	615	0	0	659	244	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Lane Util. Factor	1.00	1.00	1.00	0.86	0.86	0.86	1.00	0.95	1.00	1.00	0.95	0.95	
Frt					0.979						0.959		
FIt Protected					0.989		0.950						
Satd. Flow (prot)	0	0	0	0	6204	0	1770	3539	0	0	3394	0	
FIt Permitted		•	•	•	0.989	•	0.102	0.500	•	•	0004	•	
Satd. Flow (perm)	0	0	0	0	6204	0	190	3539	0	0	3394	0	
Right Turn on Red			Yes		20	Yes			Yes		47	Yes	
Satd. Flow (RTOR)		00			38			00			47		
Link Speed (mph)		30			30			30			30		
Link Distance (ft)		1209			425			225			425		
Travel Time (s)	0.00	27.5	0.00	0.00	9.7	0.00	0.00	5.1	0.00	0.00	9.7	0.00	
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	525	1513	332	309	668	0	0	716	265	
Shared Lane Traffic (%)	^		_	_	0070	_	000	000	_	_	004		
Lane Group Flow (vph)	0	0	0	0	2370	0	309	668	0	0	981	0	
Turn Type				Split	NA		D.P+P	NA			NA		
Protected Phases				4	4		1	12			2		
Permitted Phases				•			2						
Detector Phase				4	4		1						
Switch Phase											4= 0		
Minimum Initial (s)				7.0	7.0		7.0				15.0		
Minimum Split (s)				34.5	34.5		11.0				33.4		
Total Split (s)				50.0	50.0		27.0				43.0		
Total Split (%)				41.7%	41.7%		22.5%				35.8%		
Maximum Green (s)				43.5	43.5		23.0				37.6		
Yellow Time (s)				3.3	3.3		3.0				3.3		
All-Red Time (s)				3.2	3.2		1.0				2.1		
Lost Time Adjust (s)					0.0		0.0				-1.0		
Total Lost Time (s)					6.5		4.0				4.4		
Lead/Lag							Lead				Lag		
Lead-Lag Optimize?											Yes		
Vehicle Extension (s)				3.0	3.0		3.0				0.2		
Recall Mode				None	None		Min				C-Min		
Walk Time (s)				7.0	7.0						7.0		
Flash Dont Walk (s)				21.0	21.0						21.0		
Pedestrian Calls (#/hr)				0	0		00.0	00.0			0		
Act Effct Green (s)					43.5		62.0	66.0			40.1		
Actuated g/C Ratio					0.36		0.52	0.55			0.33		
v/c Ratio					1.04		0.81	0.34			0.84		
Control Delay					68.1		43.0	8.8			43.4		
Queue Delay					23.7		57.6	2.6			0.4		
Total Delay					91.9		100.7	11.3			43.9		
LOS Approach Delev					F		F	B			D 43.0		
Approach Delay					91.9			39.6			43.9		
Approach LOS					F 1027		200	200 D			D 771		
Stops (vph)					1937		286	300			771		
Fuel Used(gal)					48		5 319	4 260			15 1065		
CO Emissions (g/hr)					3367 655		62	268			207		
NOx Emissions (g/hr)								52 62					
VOC Emissions (g/hr) Dilemma Vehicles (#)					780		74 0	62			247 0		
()					- 572			155					
Queue Length 50th (ft)					~572 #648		190 m266	155 114			361 #458		
Queue Length 95th (ft)		1100					111200						
Internal Link Dist (ft)		1129			345			145			345		
Turn Bay Length (ft)					0070		400	1040			1105		
Base Capacity (vph)					2273		403	1946			1165		
Starvation Cap Reductn					0		147	1122			0		
Spillback Cap Reductn					121		0	0			27		
Storage Cap Reductn					0		0	0			0		
Reduced v/c Ratio					1.10		1.21	0.81			0.86		
ntersection Summary													

Area Type: Other Cycle Length: 120
Actuated Cycle Length: 120 Offset: 107 (89%), Referenced to phase 2:NBSB, Start of Yellow Natural Cycle: 90 Control Type: Actuated-Coordinated Maximum v/c Ratio: 1.04 Intersection Signal Delay: 69.2 Intersection LOS: E Intersection Capacity Utilization 86.8% ICU Level of Service E Analysis Period (min) 15 Volume exceeds capacity, queue is theoretically infinite. Queue shown is maximum after two cycles. # 95th percentile volume exceeds capacity, queue may be longer. Queue shown is maximum after two cycles. m Volume for 95th percentile queue is metered by upstream signal. Splits and Phases: 1: Canal St & North State St **↑**01 **7**ø4

Line Buller 1.5		•	_#	-	*	†	7	~	(w	\	↓			
Lame Configurations 7	Lane Group	EBL2	EBL	EBT	EBR	NBT	NBR		SBL2	SBL	SBT	Ø1	Ø3	
Traffic Volume (php)									<u> </u>			~ .	~~	
Filture Volume (roph)							369	20	285	10				
	\													
Lane Wider (n)	(, ,						1900				1900			
Fit Producted	Lane Width (ft)													
Fit Producted	Lane Util. Factor	0.91	0.95	0.95	1.00	0.95	0.95	0.95		0.95	0.95			
Sald, Flow (proty) 1557 1625 3421 1531 3288 0 0 0 0 3449 Filternemed 0.950 0.558 Sald, Flow (perm) 1557 1625 3421 1531 3288 0 0 0 0 0 1975 Sald, Flow (perm) 1557 1625 3421 1531 3288 0 0 0 0 0 1975 Sald, Flow (perm) 1557 1625 3421 1531 3288 0 0 0 0 1975 Sald, Flow (perm) 1570 450 225 Travel Time (s) 265 502 229 10 864 Sald, Flow (prot) 478 378 379 378 383 439 377 20 291 10 864 Sald, Flow (prot) 478 Sald, Flow (p	Frt					0.929								
File Permitted	Flt Protected	0.950	0.950								0.987			
Sald. Flow (perm) 1557 1625 3421 1531 3288 0 0 0 0 1975 Right Turn on Red No	Satd. Flow (prot)	1557	1625	3421	1531	3288	0	0	0	0	3493			
Right Turn on Red	Flt Permitted	0.950	0.950								0.558			
Said. Flow (FTOR) Link Debatingth) 30 30 Link Debatone (ft) 1170 450 225 Travel Time(s) 266 102 51 Peak Hour (grith) 478 373 317 383 439 377 20 291 10 884 Shared Lane Traffic (%) 1178 Lane Group Flow (grith) 478 373 317 383 439 377 20 291 10 884 Shared Lane Traffic (%) 1178 Lane Group Flow (grith) 425 426 317 381 383 836 0 0 0 0 0 1055 Lane Group Flow (grith) 478 484 4 4 2 13 13 13 20 20 20 20 20 20 20 20 101al Spirit (%) 315 101al Spirit (%) 315 330 330 330 330 330 330 330	Satd. Flow (perm)	1557	1625	3421	1531	3288	0		0	0	1975			
Link Speak (mph) Link Distance (ft) 170 170 1870 1870 1870 1870 1870 1870 1	Right Turn on Red				No			No						
Link Distance (ft)	Satd. Flow (RTOR)													
Travel Time (s)	Link Speed (mph)			30										
Peak Hour Factor	Link Distance (ft)			1170		450					225			
Adi, Flow (yoh) Adi, Flow (yoh	Travel Time (s)					10.2								
Shared Lane Traffic (%)	Peak Hour Factor		0.98							0.98				
Lane Group Flow (vph)	Adj. Flow (vph)	478	373	317	383	439	377	20	291	10	864			
Turn Type Split Split NA Prot NA DP-P DP-P NA Protected Phases 4 4 4 4 2 13 3 12 3 1 3 3 2 2 2 2 2 2 2 2	Shared Lane Traffic (%)													
Protected Phases	Lane Group Flow (vph)	425	426	317	383	836	0	0						
Permitted Phases	Turn Type	Split	Split	NA	Prot	NA			D.P+P	D.P+P	NA			
Delector Phase 4	Protected Phases			4	4	2			13	13	123	1	3	
Switch Phase	Permitted Phases								2	2				
Minimum Rpilat (s)	Detector Phase	4	4	4	4				13	13				
Minimum Spilt (s)	Switch Phase													
Total Split (%)	Minimum Initial (s)		7.0	7.0	7.0	15.0						5.0	5.0	
Total Split (%)	Minimum Split (s)	33.0	33.0	33.0	33.0	33.0						10.0	9.5	
Maximum Green (s) 40.0 40.0 40.0 30.0 30.0 30.0 30.0 30.0 35.0 35.0 35.0 35.0 35.0 35.0 35.0 35.0 35.0 35.0 35.0 35.0 35.0 35.0 35.0 35.0 30.0 35.0 35.0 30.0 30.0 35.0 30.0 35.0 35.0 30.0 <td>Total Split (s)</td> <td>45.0</td> <td>45.0</td> <td>45.0</td> <td>45.0</td> <td>39.0</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>20.0</td> <td>16.0</td> <td></td>	Total Split (s)	45.0	45.0	45.0	45.0	39.0						20.0	16.0	
Yellow Time (s)	Total Split (%)	37.5%	37.5%	37.5%	37.5%	32.5%						17%	13%	
All-Red Time (s)	Maximum Green (s)	40.0	40.0	40.0	40.0	34.0						15.0	11.5	
Lost Time Adjust (s)	Yellow Time (s)	3.0	3.0	3.0	3.0	3.0						3.0	3.5	
Total Lost Time (s) 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 Lead/Lag Lag L	All-Red Time (s)	2.0	2.0	2.0	2.0	2.0						2.0	1.0	
Lead/Lag Lag Lead	Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0								
Lead-Lag Optimize? Vehicle Extension (s)	Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0								
Vehicle Extension (s) 2.0 2.0 2.0 2.0 2.0 2.0 2.0 2.0 2.0 2.0 Recall Mode None None None C-Min None None Max Walk Time (s) 7.0	Lead/Lag	Lag	Lag	Lag	Lag	Lag						Lead	Lead	
Recall Mode None None None None C-Min None Max Walk Time (s) 7.0 8.0 2.0 2.0 2.0 2.0 2.0 2.0 2.0 2.0 2.0 2.2 2.2 </td <td>Lead-Lag Optimize?</td> <td></td>	Lead-Lag Optimize?													
Walk Time (s) 7.0	Vehicle Extension (s)	2.0	2.0	2.0	2.0	0.2						2.0	2.0	
Flash Dont Walk (s)	Recall Mode	None	None	None	None	C-Min						None	Max	
Pedestrian Calls (#/hr) 0 0 0 0 0 Act Effet Green (s) 35.3 35.5 0.52 0.91 Control Delay 68.3 62.0 33.2 57.8 25.9 23.2 Queue Delay 87.2 74.0 33.2 57.8 28.1 25.5 Approach LOS E C C C C C <td>Walk Time (s)</td> <td>7.0</td> <td>7.0</td> <td>7.0</td> <td>7.0</td> <td>7.0</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>	Walk Time (s)	7.0	7.0	7.0	7.0	7.0								
Act Effet Green (s) 35.3 35.2 35.9 35.2 35.2	Flash Dont Walk (s)	21.0	21.0	21.0	21.0	21.0								
Actuated g/C Ratio 0.29 0.29 0.29 0.49 0.58 v/c Ratio 0.93 0.89 0.31 0.85 0.52 0.91 Control Delay 68.3 62.0 33.2 57.8 25.9 23.2 Queue Delay 18.9 12.0 0.0 0.0 2.2 2.3 Total Delay 87.2 74.0 33.2 57.8 28.1 25.5 LOS F E C E C C Approach LOS E C C C Stops (vph) 379 378 246 341 692 615 Fuel Used(gal) 12 11 6 10 11 11 CO Emissions (g/hr) 816 780 440 679 770 754 NOx Emissions (g/hr) 159 152 86 132 150 147 VOC Emissions (g/hr) 189 181 102 157 179 175 Dilemma Vehicles (#) 0 0 0 0 0 0 <td>Pedestrian Calls (#/hr)</td> <td></td> <td></td> <td></td> <td></td> <td>0</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>	Pedestrian Calls (#/hr)					0								
v/c Ratio 0.93 0.89 0.31 0.85 0.52 0.91 Control Delay 68.3 62.0 33.2 57.8 25.9 23.2 Queue Delay 18.9 12.0 0.0 0.0 2.2 2.3 Total Delay 87.2 74.0 33.2 57.8 28.1 25.5 LOS F E C E C C Approach Delay 65.3 28.1 25.5 C Approach LOS E C C C Stops (vph) 379 378 246 341 692 615 Fuel Used(gal) 12 11 6 10 11 11 11 CO Emissions (g/hr) 816 780 440 679 770 754 754 NOx Emissions (g/hr) 159 152 86 132 150 147 147 VOC Emissions (g/hr) 189 181 102 157	Act Effct Green (s)													
Control Delay 68.3 62.0 33.2 57.8 25.9 23.2 Queue Delay 18.9 12.0 0.0 0.0 2.2 2.3 Total Delay 87.2 74.0 33.2 57.8 28.1 25.5 LOS F E C C C Approach Delay 65.3 28.1 25.5 Approach LOS E C C Stops (vph) 379 378 246 341 692 615 Fuel Used(gal) 12 11 6 10 11 11 11 CO Emissions (g/hr) 816 780 440 679 770 754 754 NOx Emissions (g/hr) 189 181 102 157 179 175 Dilemma Vehicles (#) 0 0 0 0 0 0 Queue Length 95th (ft) 1337 321 105 272 275 151 Queue Length 95th (ft) #375 445 387 m410 m#173 Internal Link	Actuated g/C Ratio	0.29	0.29	0.29	0.29	0.49					0.58			
Queue Delay 18.9 12.0 0.0 0.0 2.2 2.3 Total Delay 87.2 74.0 33.2 57.8 28.1 25.5 LOS F E C E C Approach LOS E C C Stops (vph) 379 378 246 341 692 615 Fuel Used(gal) 12 11 6 10 11 11 CO Emissions (g/hr) 816 780 440 679 770 754 NOx Emissions (g/hr) 159 152 86 132 150 147 VOC Emissions (g/hr) 189 181 102 157 179 175 Dilemma Vehicles (#) 0 0 0 0 0 Queue Length 50th (ft) 337 321 105 272 275 151 Queue Length 95th (ft) #515 #475 145 387 m410 m#173 Internal Link Dist (ft) 1090 370 145 Turn Bay Length (ft) 519 <td></td>														
Total Delay 87.2 74.0 33.2 57.8 28.1 25.5 LOS F E C E C C Approach LOS E C C C Stops (vph) 379 378 246 341 692 615 Fuel Used(gal) 12 11 6 10 11 11 CO Emissions (g/hr) 816 780 440 679 770 754 NOx Emissions (g/hr) 159 152 86 132 150 147 VOC Emissions (g/hr) 189 181 102 157 179 175 Dilemma Vehicles (#) 0 0 0 0 0 0 Queue Length 50th (ft) 337 321 105 272 275 151 Queue Length 95th (ft) #515 #475 145 387 m410 m#173 Internal Link Dist (ft) 1090 370 145 145	Control Delay													
LOS F E C E C C Approach Delay 65.3 28.1 25.5 Approach LOS E C C Stops (yph) 379 378 246 341 692 615 Fuel Used(gal) 12 11 6 10 11 11 11 C CO Emissions (g/hr) 816 780 440 679 770 754 T 754 NOx Emissions (g/hr) 159 152 86 132 150 147 T 147 VOC Emissions (g/hr) 189 181 102 157 179 175 175 175 Dilemma Vehicles (#) 0 151 0 0 0 </td <td>Queue Delay</td> <td></td>	Queue Delay													
Approach Delay 65.3 28.1 25.5 Approach LOS E C C Stops (vph) 379 378 246 341 692 615 Fuel Used(gal) 12 11 6 10 11 11 CO Emissions (g/hr) 816 780 440 679 770 754 NOx Emissions (g/hr) 159 152 86 132 150 147 VOC Emissions (g/hr) 189 181 102 157 179 175 Dilemma Vehicles (#) 0 0 0 0 0 0 Queue Length 50th (ft) 337 321 105 272 275 151 Queue Length 95th (ft) #515 #475 145 387 m410 m#173 Internal Link Dist (ft) 1090 370 145 Turn Bay Length (ft) 8ase Capacity (vph) 519 541 1140 510 1607 1285 Starvation Cap Reductn 0 0 0 0 0 23 <th< td=""><td>Total Delay</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></th<>	Total Delay													
Approach LOS		F	Е		Е									
Stops (vph) 379 378 246 341 692 615 Fuel Used(gal) 12 11 6 10 11 11 CO Emissions (g/hr) 816 780 440 679 770 754 NOx Emissions (g/hr) 159 152 86 132 150 147 VOC Emissions (g/hr) 189 181 102 157 179 175 Dilemma Vehicles (#) 0 0 0 0 0 Queue Length 50th (ft) 337 321 105 272 275 151 Queue Length 95th (ft) #515 #475 145 387 m410 m#173 Internal Link Dist (ft) 1090 370 145 Turn Bay Length (ft) 8ase Capacity (vph) 519 541 1140 510 1607 1285 Starvation Cap Reductn 0 0 0 0 0 23 Storage Cap Reductn 93 97 0 0 0 23 Storage Cap Reductn 0 0 0 0 0 0														
Fuel Used(gal) 12 11 6 10 11 11 CO Emissions (g/hr) 816 780 440 679 770 754 NOx Emissions (g/hr) 159 152 86 132 150 147 VOC Emissions (g/hr) 189 181 102 157 179 175 Dilemma Vehicles (#) 0 0 0 0 0 0 Queue Length 50th (ft) 337 321 105 272 275 151 Queue Length 95th (ft) #515 #475 145 387 m410 m#173 Internal Link Dist (ft) 1090 370 145 Turn Bay Length (ft) 8ase Capacity (vph) 519 541 1140 510 1607 1285 Starvation Cap Reductn 0 0 0 0 0 52 Spillback Cap Reductn 93 97 0 0 0 23 Storage Cap Reductn 0 0 0 0 0 0	Approach LOS													
CO Emissions (g/hr) 816 780 440 679 770 754 NOx Emissions (g/hr) 159 152 86 132 150 147 VOC Emissions (g/hr) 189 181 102 157 179 175 Dilemma Vehicles (#) 0 0 0 0 0 0 0 Queue Length 50th (ft) 337 321 105 272 275 151 Queue Length 95th (ft) #515 #475 145 387 m410 m#173 Internal Link Dist (ft) 1090 370 145 Turn Bay Length (ft) Base Capacity (vph) 519 541 1140 510 1607 1285 Starvation Cap Reductn 0 0 0 0 0 0 0 23 Storage Cap Reductn 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Stops (vph)													
NOx Emissions (g/hr) 159 152 86 132 150 147 VOC Emissions (g/hr) 189 181 102 157 179 175 Dilemma Vehicles (#) 0 0 0 0 0 Queue Length 50th (ft) 337 321 105 272 275 151 Queue Length 95th (ft) #515 #475 145 387 m410 m#173 Internal Link Dist (ft) 1090 370 145 Turn Bay Length (ft) 519 541 1140 510 1607 1285 Starvation Cap Reductn 0 0 0 602 52 Spillback Cap Reductn 93 97 0 0 0 23 Storage Cap Reductn 0 0 0 0 0 0	Fuel Used(gal)													
VOC Emissions (g/hr) 189 181 102 157 179 175 Dilemma Vehicles (#) 0 0 0 0 0 Queue Length 50th (ft) 337 321 105 272 275 151 Queue Length 95th (ft) #515 #475 145 387 m410 m#173 Internal Link Dist (ft) 1090 370 145 Turn Bay Length (ft) 8ase Capacity (vph) 519 541 1140 510 1607 1285 Starvation Cap Reductn 0 0 0 602 52 Spillback Cap Reductn 93 97 0 0 0 23 Storage Cap Reductn 0 0 0 0 0 0 0	CO Emissions (g/hr)													
Dilemma Vehicles (#) 0 0 0 0 0 Queue Length 50th (ft) 337 321 105 272 275 151 Queue Length 95th (ft) #515 #475 145 387 m410 m#173 Internal Link Dist (ft) 1090 370 145 Turn Bay Length (ft) 519 541 1140 510 1607 1285 Starvation Cap Reductn 0 0 0 602 52 Spillback Cap Reductn 93 97 0 0 0 23 Storage Cap Reductn 0 0 0 0 0 0 0	NOx Emissions (g/hr)													
Queue Length 50th (ft) 337 321 105 272 275 151 Queue Length 95th (ft) #515 #475 145 387 m410 m#173 Internal Link Dist (ft) 1090 370 145 Turn Bay Length (ft) 510 1607 1285 Starvation Cap Reductn 0 0 0 602 52 Spillback Cap Reductn 93 97 0 0 0 23 Storage Cap Reductn 0 0 0 0 0 0	VOC Emissions (g/hr)													
Queue Length 95th (ft) #515 #475 145 387 m410 m#173 Internal Link Dist (ft) 1090 370 145 Turn Bay Length (ft) Base Capacity (vph) 519 541 1140 510 1607 1285 Starvation Cap Reductn 0 0 0 602 52 Spillback Cap Reductn 93 97 0 0 0 23 Storage Cap Reductn 0 0 0 0 0 0	Dilemma Vehicles (#)													
Internal Link Dist (ft) 1090 370 145 Turn Bay Length (ft) Base Capacity (vph) 519 541 1140 510 1607 1285 Starvation Cap Reductn 0 0 0 602 52 Spillback Cap Reductn 93 97 0 0 0 23 Storage Cap Reductn 0 0 0 0 0														
Turn Bay Length (ft) Base Capacity (vph) 519 541 1140 510 1607 1285 Starvation Cap Reductn 0 0 0 602 52 Spillback Cap Reductn 93 97 0 0 0 23 Storage Cap Reductn 0 0 0 0 0	Queue Length 95th (ft)	#515	#475		387									
Base Capacity (vph) 519 541 1140 510 1607 1285 Starvation Cap Reductn 0 0 0 602 52 Spillback Cap Reductn 93 97 0 0 0 23 Storage Cap Reductn 0 0 0 0 0	Internal Link Dist (ft)			1090		370					145			
Starvation Cap Reductn 0 0 0 602 52 Spillback Cap Reductn 93 97 0 0 0 23 Storage Cap Reductn 0 0 0 0 0	Turn Bay Length (ft)													
Spillback Cap Reductn 93 97 0 0 0 23 Storage Cap Reductn 0 0 0 0 0	Base Capacity (vph)													
Spillback Cap Reductn 93 97 0 0 0 23 Storage Cap Reductn 0 0 0 0 0	Starvation Cap Reductn			0	0	602								
Storage Cap Reductn 0 0 0 0 0 0	Spillback Cap Reductn	93	97	0	0	0					23			
Reduced v/c Ratio 1.00 0.96 0.28 0.75 0.83 0.94	Storage Cap Reductn													
	Reduced v/c Ratio	1.00	0.96	0.28	0.75	0.83					0.94			

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 112 (93%), Referenced to phase 2:NBSB, Start of Yellow

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.93

Intersection Signal Delay: 43.5

Intersection Capacity Utilization 92.0%

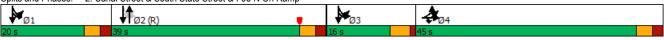
Analysis Period (min) 15

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

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

Splits and Phases: 2: Canal Street & South State Street & I-95 N On Ramp



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_ane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations	*	↑ 1>		ሻ	↑ ↑			41∱	7		1	7	
Traffic Volume (vph)	304	433	21	128	505	224	14	230	96	346	492	363	
Future Volume (vph)	304	433	21	128	505	224	14	230	96	346	492	363	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	0		0	160		0	150		120	0		120	
Storage Lanes	1		0	1		0	1		1	1		1	
Taper Length (ft)	25			55			25			60			
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	
Frt		0.993			0.954				0.850			0.850	
FIt Protected	0.950			0.950				0.997		0.950			
Satd. Flow (prot)	1770	3514	0	1770	3376	0	0	3529	1583	1770	1863	1583	
FIt Permitted	0.126			0.479				0.909		0.585			
Satd. Flow (perm)	235	3514	0	892	3376	0	0	3217	1583	1090	1863	1583	
Right Turn on Red			Yes			Yes			Yes			Yes	
Satd. Flow (RTOR)		4			57				101			241	
Link Speed (mph)		30			30			30			30		
Link Distance (ft)		384			422			263			450		
Travel Time (s)	2.05	8.7	0.05	0.05	9.6	0.05	0.05	6.0	0.05	0.05	10.2	0.05	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	
Adj. Flow (vph)	320	456	22	135	532	236	15	242	101	364	518	382	
Shared Lane Traffic (%)	200	470	^	405	700	^	^	0.57	404	004	F40	000	
Lane Group Flow (vph)	320	478	0	135	768	0	0	257	101	364	518	382	
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA	Perm	pm+pt	NA	Perm	
Protected Phases	1	6		5	2			4		3	3 4	2.4	
Permitted Phases	6	C		2	0		4	4	4	3 4	2.4	3 4	
Detector Phase Switch Phase	1	6		5	2		4	4	4	3	3 4	34	
	E 0	7.0		ΕΛ	7.0		15.0	15.0	15.0	7.0			
Minimum Initial (s)	5.0 9.0	7.0 34.1		5.0 9.0	7.0 34.1		15.0	15.0 36.6	15.0	7.0			
Minimum Split (s)	23.0	34.1			34.1		36.6 37.0	36.6 37.0	36.6 37.0	11.0 23.0			
Total Split (s)	19.2%	30.8%		23.0 19.2%	30.8%		30.8%	30.8%	30.8%	19.2%			
Total Split (%) Maximum Green (s)	19.2%	30.6%		19.2%	30.6%		30.6%	30.6%	30.6%	19.2%			
Yellow Time (s)	3.0	3.3		3.0	3.3		3.3	3.3	3.3	3.0			
All-Red Time (s)	1.0	2.8		1.0	2.8		3.3	3.3	3.3	1.0			
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		3.3	0.0	0.0	0.0			
Total Lost Time (s)	4.0	6.1		4.0	6.1			6.6	6.6	4.0			
Lead/Lag	Lead	Lag		Lead	Lag		Lag	Lag	Lag	Lead			
Lead-Lag Optimize?	LCau	Lag		Load	Lag		Lag	Lag	Lag	Load			
Vehicle Extension (s)	3.0	0.2		3.0	0.2		3.0	3.0	3.0	3.0			
Recall Mode	None	None		None	None		C-Min	C-Min	C-Min	None			
Walk Time (s)	None	7.0		TTOTIC	7.0		7.0	7.0	7.0	TTOTIC			
Flash Dont Walk (s)		21.0			21.0		23.0	23.0	23.0				
Pedestrian Calls (#/hr)		0			0		0	0	0				
Act Effct Green (s)	52.9	35.8		40.9	27.8			33.5	33.5	55.1	59.1	59.1	
Actuated g/C Ratio	0.44	0.30		0.34	0.23			0.28	0.28	0.46	0.49	0.49	
v/c Ratio	0.93	0.45		0.35	0.93			0.29	0.20	0.60	0.56	0.42	
Control Delay	64.5	35.4		23.0	59.9			35.8	7.8	20.4	21.0	6.7	
Queue Delay	4.4	0.0		0.0	3.0			0.0	0.0	0.0	4.4	0.8	
Total Delay	68.9	35.4		23.0	62.9			35.8	7.8	20.4	25.4	7.4	
LOS	Е	D		С	Е			D	Α	С	С	Α	
Approach Delay		48.8			56.9			27.9			18.5		
Approach LOS		D			Е			С			В		
Stops (vph)	210	354		83	644			188	14	211	319	122	
Fuel Used(gal)	6	7		2	17			3	0	4	6	2	
CO Emissions (g/hr)	424	461		124	1155			232	30	267	391	171	
NOx Emissions (g/hr)	82	90		24	225			45	6	52	76	33	
VOC Emissions (g/hr)	98	107		29	268			54	7	62	91	40	
Dilemma Vehicles (#)	0	0		0	0			0	0	0	0	0	
Queue Length 50th (ft)	188	154		61	284			83	0	162	259	47	
Queue Length 95th (ft)	#355	209		99	#358			124	44	m190	m303	m66	
Internal Link Dist (ft)		304			342			183			370		
Turn Day Longth (ft)				160					120			120	
ruili bay Leligili (ii)								000	-44	000	047	000	
	346	1051		502	911			898	514	608	917	902	
Turn Bay Length (ft) Base Capacity (vph) Starvation Cap Reductn	346 0 11	1051 0		502	911 0 73			898	514	0	316	259	

J. Carlai Street & L	JOCK Office	t/ocnci	3011 Oti	CCL									TTT Garlar Guido
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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Storage Cap Reductn	0	0		0	0			0	0	0	0	0	
Reduced v/c Ratio	0.96	0.45		0.27	0.92			0.29	0.20	0.60	0.86	0.59	
Intersection Summary													
Area Type:	Other												
Cycle Length: 120													
Actuated Cycle Length: 120)												
Offset: 117 (98%), Referen	ced to phase 4:	NBSB, Sta	art of Yello	W									
Natural Cycle: 95													
Control Type: Actuated-Coo	ordinated												
Maximum v/c Ratio: 0.93													
Intersection Signal Delay: 3	37.2			In	tersection	LOS: D							
Intersection Capacity Utiliza	ation 93.6%			IC	U Level of	f Service F							
Analysis Period (min) 15													
# 95th percentile volume	exceeds capaci	ty, queue	may be lo	nger.									
Queue shown is maximu	um after two cyc	cles.											
m Volume for 95th percer	ntile queue is m	etered by	upstream :	signal.									
		-											
Splits and Phases: 3: Ca	nal Street & Do	ck Street/	Jefferson S	Street									
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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations	ሻ	↑ ↑		ሻ	↑ ↑			4			4		
Traffic Volume (vph)	1	388	92	132	757	4	153	1	183	1	1	2	
Future Volume (vph)	1	388	92	132	757	4	153	1	183	1	1	2	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	90		0	90		0	0		0	0		0	
Storage Lanes	1		0	1		0	0		0	0		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	1.00	1.00	
Frt		0.971			0.999			0.927			0.932		
Flt Protected	0.950			0.950				0.978			0.988		
Satd. Flow (prot)	1770	3437	0	1770	3536	0	0	1689	0	0	1715	0	
FIt Permitted	0.331			0.390				0.853			0.948		
Satd. Flow (perm)	617	3437	0	726	3536	0	0	1473	0	0	1646	0	
Right Turn on Red			Yes			Yes			Yes		_	Yes	
Satd. Flow (RTOR)		27						57			2		
Link Speed (mph)		30			30			30			30		
Link Distance (ft)		510			228			158			352		
Travel Time (s)	0.00	11.6	2.00	0.00	5.2	0.00	0.00	3.6	0.00	0.00	8.0	0.00	
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)	1	422	100	143	823	4	166	1	199	1	1	2	
Shared Lane Traffic (%)		500	^	4.10	00-	•	•	000	•	^		^	
Lane Group Flow (vph)	1	522	0	143	827	0	0	366	0	0	4	0	
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA		
Protected Phases	1	6		5	2			4			4		
Permitted Phases	6			2			4			4			
Detector Phase	1	6		5	2		4	4		4	4		
Switch Phase		4= 0			4= 0								
Minimum Initial (s)	5.0	15.0		5.0	15.0		7.0	7.0		7.0	7.0		
Minimum Split (s)	10.0	35.0		10.0	35.0		35.0	35.0		35.0	35.0		
Total Split (s)	25.0	45.0		25.0	45.0		45.0	45.0		45.0	45.0		
Total Split (%)	21.7%	39.1%		21.7%	39.1%		39.1%	39.1%		39.1%	39.1%		
Maximum Green (s)	20.0	40.0		20.0	40.0		40.0	40.0		40.0	40.0		
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0		
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0		
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0			0.0		
Total Lost Time (s)	5.0	5.0		5.0	5.0			5.0			5.0		
Lead/Lag	Lead	Lag		Lead	Lag								
Lead-Lag Optimize?													
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0		
Recall Mode	None	C-Min		None	C-Min		None	None		None	None		
Walk Time (s)		7.0			7.0		7.0	7.0		7.0	7.0		
Flash Dont Walk (s)		23.0			23.0		23.0	23.0		23.0	23.0		
Pedestrian Calls (#/hr)	22.2	0		-4-	0		0	0		0	0		
Act Effct Green (s)	66.0	60.4		74.7	72.6			30.3			30.3		
Actuated g/C Ratio	0.57	0.53		0.65	0.63			0.26			0.26		
v/c Ratio	0.00	0.29		0.26	0.37			0.85			0.01		
Control Delay	11.0	16.6		10.3	12.6			51.7			21.2		
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0		
Total Delay	11.0	16.6		10.3	12.6			51.7			21.2		
LOS	В	B		В	В			D			C		
Approach Delay		16.6			12.3			51.7			21.3		
Approach LOS		B			В			D			C		
Stops (vph)	1	254		52	365			269			3		
Fuel Used(gal)	0	5		1	7			5			0		
CO Emissions (g/hr)	1	345		76	487			381			3		
NOx Emissions (g/hr)	0	67		15	95			74			1		
VOC Emissions (g/hr)	0	80		18	113			88			1		
Dilemma Vehicles (#)	0	0		0	0			0			0		
Queue Length 50th (ft)	0	103		38	136			220			1		
Queue Length 95th (ft)	3	176		80	272			305			9		
Internal Link Dist (ft)		430			148			78			272		
Turn Bay Length (ft)	90	,		90									
Base Capacity (vph)	601	1818		653	2231			549			573		
Starvation Cap Reductn	0	0		0	0			0			0		
Spillback Cap Reductn	0	0		0	0			0			0		

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Storage Cap Reductn	0	0		0	0			0			0		
Reduced v/c Ratio	0.00	0.29		0.22	0.37			0.67			0.01		
Intersection Summary													
Area Type: O	ther												
Cycle Length: 115													
Actuated Cycle Length: 115													
Offset: 0 (0%), Referenced to ph	nase 2:WB1	TL and 6:E	BTL, Star	t of Yellow	ı								
Natural Cycle: 80													
Control Type: Actuated-Coordinate	ated												
Maximum v/c Ratio: 0.85													
Intersection Signal Delay: 21.3				Int	ersection	LOS: C							
Intersection Capacity Utilization	64.1%			IC	U Level of	Service C							
Analysis Period (min) 15													
Splits and Phases: 5: Pacific S	Street & Do	ck Street											
≯ _{Ø1}	- ₹	Ø2 (R)					•	₩ _{ø4}					
25 s	45 s							45 s					
√ ø5	4	Ø6 (R)					•						
25 s	45 s												

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations	*	ĵ.		*	1	7	ች	^	7	ሻ	^	7	
Traffic Volume (vph)	61	153	31	323	301	340	31	295	198	103	208	163	
Future Volume (vph)	61	153	31	323	301	340	31	295	198	103	208	163	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	100		0	210		0	100		130	70		110	
Storage Lanes	1		0	1		1	1		1	1		1	
Taper Length (ft)	25			10			50			45			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Frt		0.974				0.850			0.850			0.850	
Flt Protected	0.950			0.950			0.950			0.950			
Satd. Flow (prot)	1770	1814	0	1770	1863	1583	1770	3539	1583	1770	3539	1583	
Flt Permitted	0.563		_	0.319			0.611			0.497			
Satd. Flow (perm)	1049	1814	0	594	1863	1583	1138	3539	1583	926	3539	1583	
Right Turn on Red			No			Yes			Yes			Yes	
Satd. Flow (RTOR)					00	370			215			177	
Link Speed (mph)		30			30			30			30		
Link Distance (ft)		348			510			366			301		
Travel Time (s)	2.22	7.9	0.00		11.6	0.00	0.00	8.3	0.00		6.8	0.00	
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)	66	166	34	351	327	370	34	321	215	112	226	177	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	66	200	0	351	327	370	34	321	215	112	226	177	
Turn Type	pm+pt	NA		pm+pt	NA	pm+ov	pm+pt	NA	custom	pm+pt	NA	custom	
Protected Phases	3	8		7	4	5	1	6	_	5	2		
Permitted Phases	8			4		4	6		2	2		6	
Detector Phase	3	8		7	4	5	1		2	5		6	
Switch Phase													
Minimum Initial (s)	5.0	7.0		5.0	7.0	5.0	5.0	15.0	15.0	5.0	15.0	15.0	
Minimum Split (s)	10.0	34.0		10.0	34.0	10.0	10.0	34.0	34.0	10.0	34.0	34.0	
Total Split (s)	30.0	40.0		30.0	40.0	14.0	14.0	36.0	36.0	14.0	36.0	36.0	
Total Split (%)	25.0%	33.3%		25.0%	33.3%	11.7%	11.7%	30.0%	30.0%	11.7%	30.0%	30.0%	
Maximum Green (s)	26.0	35.0		26.0	35.0	10.0	10.0	31.0	31.0	10.0	31.0	31.0	
Yellow Time (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	1.0	2.0		1.0	2.0	1.0	1.0	2.0	2.0	1.0	2.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	4.0	5.0		4.0	5.0	4.0	4.0	5.0	5.0	4.0	5.0	5.0	
Lead/Lag	Lead	Lag		Lead	Lag	Lead	Lead	Lag	Lag	Lead	Lag	Lag	
Lead-Lag Optimize?													
Vehicle Extension (s)	3.0	3.0		3.0	3.0	2.0	3.0	0.2	0.2	2.0	0.2	0.2	
Recall Mode	None	None		None	None	None	None	C-Max	C-Max	None	C-Max	C-Max	
Walk Time (s)		7.0			7.0			7.0	7.0		7.0	7.0	
Flash Dont Walk (s)		22.0			22.0			22.0	22.0		22.0	22.0	
Pedestrian Calls (#/hr)		0			0			0	0		0	0	
Act Effct Green (s)	27.9	18.6		47.5	36.2	49.2	59.1	51.4	56.6	63.2	56.6	51.4	
Actuated g/C Ratio	0.23	0.16		0.40	0.30	0.41	0.49	0.43	0.47	0.53	0.47	0.43	
v/c Ratio	0.22	0.71		0.75	0.58	0.43	0.06	0.21	0.25	0.21	0.14	0.23	
Control Delay	24.2	61.8		36.8	40.0	3.5	16.1	23.9	4.2	8.6	10.9	3.4	
Queue Delay	0.0	0.0		0.8	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.4	
Total Delay	24.2	61.8		37.6	40.0	3.8	16.1	23.9	4.2	8.6	10.9	3.8	
LOS	С	E		D	D	Α	В	С	Α	Α	В	Α	
Approach Delay		52.5			26.4			16.0			8.0		
Approach LOS		D			С			В			Α		
Stops (vph)	44	170		232	249	23	16	186	18	39	78	20	
Fuel Used(gal)	1	4		5	5	2	0	3	1	1	1	1	
CO Emissions (g/hr)	50	262		349	351	121	19	231	58	45	97	42	
NOx Emissions (g/hr)	10	51		68	68	23	4	45	11	9	19	8	
VOC Emissions (g/hr)	11	61		81	81	28	5	54	13	10	22	10	
Dilemma Vehicles (#)	0	0		0	0	0	0	0	0	0	0	0	
Queue Length 50th (ft)	31	149		198	216	0	12	83	0	35	37	2	
Queue Length 95th (ft)	54	217		256	294	52	33	132	51	59	54	5	
Internal Link Dist (ft)		268			430			286			221		
Turn Bay Length (ft)	100			210			100		130	70		110	
Base Capacity (vph)	550	529		490	574	887	643	1516	860	561	1670	779	
Starvation Cap Reductn	0	0		26	0	119	0	0	0	0	0	288	
Spillback Cap Reductn	0	0		0	0	0	0	0	0	0	0	0	

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Storage Cap Reductn	0	0		0	0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.12	0.38		0.76	0.57	0.48	0.05	0.21	0.25	0.20	0.14	0.36	
Intersection Summary													
Area Type:	Other												
Cycle Length: 120													
Actuated Cycle Length: 120													
Offset: 37 (31%), Referenced to	phase 2:S	BTL and 6	:NBTL, St	tart of Yello	ow								
Natural Cycle: 90													
Control Type: Actuated-Coordin	nated												
Maximum v/c Ratio: 0.75													
Intersection Signal Delay: 22.9				Int	tersection	LOS: C							
Intersection Capacity Utilization	61.0%			IC	U Level of	f Service B							
Analysis Period (min) 15													
Splits and Phases: 6: Atlantic	Street & S	tation Plac	e/Dock St	treet									
↑ Ø1	1)			•	_ ≯ _ø₃				₩ Ø4				
14 s 36 s				3	0 s				40 s				
▼ø5 ¶ø6 (R	1)			•	√ Ø7				- Ø8				
14 s 36 s				3	0 s				40 s				

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations	ሻ	↑ ↑						^	7	ሻ	^		
Traffic Volume (vph)	81	340	71	0	0	0	0	630	81	122	392	0	
Future Volume (vph)	81	340	71	0	0	0	0	630	81	122	392	0	
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	0.95	1.00	1.00	0.95	1.00	
Frt		0.974							0.850				
Flt Protected	0.950									0.950			
Satd. Flow (prot)	1770	3447	0	0	0	0	0	3539	1583	1770	3539	0	
Flt Permitted	0.950									0.324			
Satd. Flow (perm)	1770	3447	0	0	0	0	0	3539	1583	604	3539	0	
Right Turn on Red			Yes			Yes			Yes			Yes	
Satd. Flow (RTOR)		21							92				
Link Speed (mph)		30			30			30			30		
Link Distance (ft)		294			1170			301			244		
Travel Time (s)	0.00	6.7	0.00	0.00	26.6	0.00	0.00	6.8	0.00	0.00	5.5	0.00	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	
Adj. Flow (vph)	92	386	81	0	0	0	0	716	92	139	445	0	
Shared Lane Traffic (%)	20	407	_	^	^	^	^	740	00	400	445	_	
Lane Group Flow (vph)	92	467	0	0	0	0	0	716	92 Darm	139	445	0	
Turn Type	Perm	NA						NA	Perm	pm+pt	NA		
Protected Phases		4						2	0	1	6		
Permitted Phases	4	4						_	2	6	_		
Detector Phase	4	4						2	2	1	6		
Switch Phase	7.0	7.0						45.0	45.0		45.0		
Minimum Initial (s)	7.0	7.0						15.0	15.0	5.0	15.0		
Minimum Split (s)	34.0	34.0						34.0	34.0	10.0	27.0		
Total Split (s)	40.0	40.0						54.0	54.0	26.0	54.0		
Total Split (%)	33.3%	33.3%						45.0%	45.0%	21.7%	45.0%		
Maximum Green (s)	35.0	35.0						49.0	49.0	21.0	49.0		
Yellow Time (s)	3.0	3.0						3.0	3.0	3.0	3.0		
All-Red Time (s)	2.0 -1.0	2.0 -1.0						2.0 -1.0	2.0 -1.0	2.0	2.0 -1.0		
Lost Time Adjust (s)	4.0	-1.0 4.0						-1.0 4.0	4.0	0.0 5.0	-1.0 4.0		
Total Lost Time (s) Lead/Lag	4.0	4.0									4.0		
Lead-Lag Optimize?								Lag Yes	Lag Yes	Lead Yes			
Vehicle Extension (s)	2.0	2.0						0.2	0.2	2.0	0.2		
Recall Mode	None	None						C-Max	C-Max	Z.U Min	C-Max		
Walk Time (s)	7.0	7.0						7.0	7.0	IVIIII	7.0		
Flash Dont Walk (s)	22.0	22.0						15.0	15.0		15.0		
Pedestrian Calls (#/hr)	0	0						15.0	15.0		15.0		
Act Effct Green (s)	21.5	21.5						78.3	78.3	89.5	90.5		
Actuated g/C Ratio	0.18	0.18						0.65	0.65	0.75	0.75		
v/c Ratio	0.10	0.74						0.03	0.03	0.73	0.17		
Control Delay	43.8	51.3						8.4	1.8	6.7	3.5		
Queue Delay	0.0	0.0						0.4	0.0	0.7	0.3		
Total Delay	43.8	51.3						8.8	1.8	7.0	3.8		
LOS	43.0 D	D D						0.0 A	Α	7.0 A	3.0 A		
Approach Delay		50.1						8.0			4.6		
Approach LOS		D						Α			4.0 A		
Stops (vph)	68	361						194	6	43	78		
Fuel Used(gal)	1	7						4	0	1	1		
CO Emissions (g/hr)	90	506						254	18	44	102		
NOx Emissions (g/hr)	17	98						49	3	9	20		
VOC Emissions (g/hr)	21	117						59	4	10	24		
Dilemma Vehicles (#)	0	0						0	0	0	0		
Queue Length 50th (ft)	63	174						80	1	20	33		
Queue Length 95th (ft)	104	213						135	13	m33	m46		
Internal Link Dist (ft)	101	214			1090			221	.0		164		
Turn Bay Length (ft)		_17			.000						101		
Base Capacity (vph)	531	1048						2307	1064	654	2668		
Starvation Cap Reductn	0	0						1007	0	201	1590		
Spillback Cap Reductn	0	0						26	0	0	0		
Storage Cap Reductn	0	0						0	0	0	0		
Reduced v/c Ratio	0.17	0.45						0.55	0.09	0.31	0.41		
	0.17	0.40						0.00	3.00	3.01	J. T I		
Intersection Summary													

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 46 (38%), Referenced to phase 2:NBT and 6:SBTL, Start of Yellow

Natural Cycle: 80

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.74

Intersection Signal Delay: 19.0

Intersection Capacity Utilization 46.7%

Analysis Period (min) 15

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

Splits and Phases: 7: South State St & Atlantic St

26 s

40 s

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Lane Group	WBL2	WBL	WBT	WBR	NBL2	NBL	NBT	SBT	SBR	SBR2	Ø2	Ø3	Ø5	
Lane Configurations			नाकि			ă	^	^	7					
Traffic Volume (vph)	143	661	654	331	290	12	409	371	285	136				
Future Volume (vph)	143	661	654	331	290	12	409	371	285	136				
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900				
Lane Util. Factor	0.86	0.86	0.86	0.86	0.95	1.00	0.95	0.95	1.00	0.95				
Frt			0.972			0.050			0.850					
Flt Protected	0	٥	0.978	0	0	0.950	2520	2520	4500	٥				
Satd. Flow (prot) Flt Permitted	0	0	6091 0.978	U	0	1770 0.344	3539	3539	1583	0				
Satd. Flow (perm)	0	0	6091	0	0	641	3539	3539	1583	0				
Right Turn on Red	U	U	0091	No	U	041	3333	3333	1303	No				
Satd. Flow (RTOR)				INO						INO				
Link Speed (mph)			30				25	25						
Link Distance (ft)			1209				244	742						
Travel Time (s)			27.5				6.7	20.2						
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85				
Adj. Flow (vph)	168	778	769	389	341	14	481	436	335	160				
Shared Lane Traffic (%)														
Lane Group Flow (vph)	0	0	2104	0	0	355	481	436	495	0				
Turn Type	Split	Split	NA		custom	custom	NA	NA	Perm					
Protected Phases	4	4	4		3 5	35	23	6			2	3	5	
Permitted Phases					2	2			6					
Detector Phase	4	4	4		3 5	35			6					
Switch Phase														
Minimum Initial (s)	10.0	10.0	10.0					15.0	15.0		15.0	5.0	5.0	
Minimum Split (s)	31.0	31.0	31.0					20.0	20.0		26.0	10.0	10.0	
Total Split (s)	57.0	57.0	57.0					39.0	39.0		39.0	12.0	12.0	
Total Split (%)	47.5%	47.5%	47.5%					32.5%	32.5%		33%	10%	10%	
Maximum Green (s)	52.0	52.0	52.0					34.0	34.0		34.0	7.0	7.0	
Yellow Time (s)	3.0	3.0	3.0					3.0	3.0		3.0	3.0	3.0	
All-Red Time (s)	2.0	2.0	2.0					2.0	2.0		2.0	2.0	2.0	
Lost Time Adjust (s)			0.0					0.0	0.0					
Total Lost Time (s)			5.0					5.0	5.0				اممما	
Lead/Lag Lead-Lag Optimize?								Lag	Lag				Lead	
Vehicle Extension (s)	2.0	2.0	2.0					0.2	0.2		0.2	2.0	2.0	
Recall Mode	None	None	None					None	None		C-Max	None	None	
Walk Time (s)	7.0	7.0	7.0					140110	140110		7.0	140110	140110	
Flash Dont Walk (s)	19.0	19.0	19.0								14.0			
Pedestrian Calls (#/hr)	0	0	0								0			
Act Effct Green (s)			51.0			54.0	59.0	35.0	35.0					
Actuated g/C Ratio			0.42			0.45	0.49	0.29	0.29					
v/c Ratio			1.26dl			0.85	0.28	0.42	1.07					
Control Delay			35.8			36.9	11.6	36.2	104.3					
Queue Delay			0.0			0.0	0.6	0.0	0.0					
Total Delay			35.8			36.9	12.2	36.2	104.3					
LOS			D			D	В	D	F					
Approach Delay			35.8				22.7	72.4						
Approach LOS			D				С	Е						
Stops (vph)			1666			207	142	294	350					
Fuel Used(gal)			39			4	2	6	13					
CO Emissions (g/hr)			2734			258	165	434	905					
NOx Emissions (g/hr)			532			50	32	84	176					
VOC Emissions (g/hr)			634			60	38	101	210					
Dilemma Vehicles (#)			0 470			147	0 52	145	426					
Queue Length 50th (ft) Queue Length 95th (ft)			470 m464			147 #123	52 57	145 182	~436 #591					
Internal Link Dist (ft)			1129			#123	164	662	#331					
Turn Bay Length (ft)			1123				104	002						
Base Capacity (vph)			2639			419	1739	1031	461					
Starvation Cap Reductn			2039			0	836	0	0					
Spillback Cap Reductn			0			0	0.00	0	0					
Storage Cap Reductn			0			0	0	0	0					
Reduced v/c Ratio			0.80			0.85	0.53	0.42	1.07					
			0.00			3.00	0.00	U.7Z	1.01					
Intersection Summary														

Area Type:	Other	
Cycle Length: 120		
Actuated Cycle Length: 120		
Offset: 22 (18%), Referenced	to phase 2:NBTL, Start of Yellow	
Natural Cycle: 90		
Control Type: Actuated-Coor	dinated	
Maximum v/c Ratio: 1.07		
ntersection Signal Delay: 41		Intersection LOS: D
ntersection Capacity Utilizati	ion 91.9%	ICU Level of Service F
Analysis Period (min) 15		
 Volume exceeds capacity 	y, queue is theoretically infinite.	
Queue shown is maximun	n after two cycles.	
95th percentile volume ex	xceeds capacity, queue may be longer.	
Queue shown is maximun	n after two cycles.	
n Volume for 95th percenti	ile queue is metered by upstream signal.	
Il Defacto Left Lane. Reco	ode with 1 though lane as a left lane.	

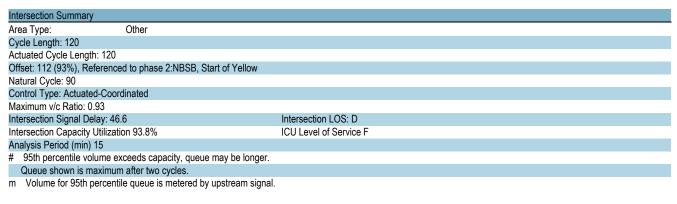
Splits and Phases: 8: Atlantic St & North State St



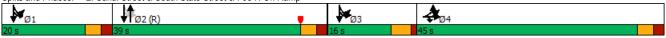
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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations					साक		ሻ	† †			↑ ↑		
Traffic Volume (vph)	0	0	0	493	1392	305	298	630	0	0	667	244	
Future Volume (vph)	0	0	0	493	1392	305	298	630	0	0	667	244	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Lane Util. Factor	1.00	1.00	1.00	0.86	0.86	0.86	1.00	0.95	1.00	1.00	0.95	0.95	
Frt					0.979						0.960		
Flt Protected					0.989		0.950						
Satd. Flow (prot)	0	0	0	0	6204	0	1770	3539	0	0	3398	0	
Flt Permitted					0.989		0.104						
Satd. Flow (perm)	0	0	0	0	6204	0	194	3539	0	0	3398	0	
Right Turn on Red			Yes			Yes			Yes			Yes	
Satd. Flow (RTOR)					38						46		
Link Speed (mph)		30			30			30			30		
Link Distance (ft)		1209			425			225			425		
Travel Time (s)	0.00	27.5	0.00	0.00	9.7	0.00	0.00	5.1	0.00	0.00	9.7	0.00	
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	536	1513	332	324	685	0	0	725	265	
Shared Lane Traffic (%)	^	0	0	0	0204	0	204	COF	^	0	990	^	
Lane Group Flow (vph)	0	0	0	0	2381 NA	U	324 D.P+P	685 NA	0	0	NA	0	
Turn Type				Split									
Protected Phases Permitted Phases				4	4		1 2	1 2			2		
Detector Phase				4	4		1						
Switch Phase				4	4		1						
Minimum Initial (s)				7.0	7.0		7.0				15.0		
Minimum Split (s)				34.5	34.5		11.0				33.4		
Total Split (s)				50.0	50.0		27.0				43.0		
Total Split (%)				41.7%	41.7%		22.5%				35.8%		
Maximum Green (s)				43.5	43.5		23.0				37.6		
Yellow Time (s)				3.3	3.3		3.0				3.3		
All-Red Time (s)				3.2	3.2		1.0				2.1		
Lost Time Adjust (s)				0.2	0.0		0.0				-1.0		
Total Lost Time (s)					6.5		4.0				4.4		
Lead/Lag					0.0		Lead				Lag		
Lead-Lag Optimize?											Yes		
Vehicle Extension (s)				3.0	3.0		3.0				0.2		
Recall Mode				None	None		Min				C-Min		
Walk Time (s)				7.0	7.0						7.0		
Flash Dont Walk (s)				21.0	21.0						21.0		
Pedestrian Calls (#/hr)				0	0						0		
Act Effct Green (s)					43.5		62.0	66.0			39.6		
Actuated g/C Ratio					0.36		0.52	0.55			0.33		
v/c Ratio					1.05		0.83	0.35			0.86		
Control Delay					69.7		45.5	8.4			44.9		
Queue Delay					21.9		56.7	2.9			0.8		
Total Delay					91.6		102.2	11.3			45.7		
LOS					F		F	В			D		
Approach Delay					91.6			40.5			45.7		
Approach LOS					F			D			D		
Stops (vph)					1946		301	297			783		
Fuel Used(gal)					49		5	4			16		
CO Emissions (g/hr)					3432		346	268			1096		
NOx Emissions (g/hr)					668		67	52			213		
VOC Emissions (g/hr)					795		80	62			254		
Dilemma Vehicles (#)					0		0	0			0		
Queue Length 50th (ft)					~578		203	139			366		
Queue Length 95th (ft)		1100			#653		m#309	113			#482		
Internal Link Dist (ft)		1129			345			145			345		
Turn Bay Length (ft)					0070		400	1040			1150		
Base Capacity (vph)					2273		403	1946			1152		
Starvation Cap Reductn					0		147	1119			0		
Spillback Cap Reductn					127		0	0			35		
Storage Cap Reductn					0		0	0			0		
Reduced v/c Ratio					1.11		1.27	0.83			0.89		
Intersection Summary													

Area Type: Other Cycle Length: 120
Actuated Cycle Length: 120 Offset: 107 (89%), Referenced to phase 2:NBSB, Start of Yellow Natural Cycle: 90 Control Type: Actuated-Coordinated Maximum v/c Ratio: 1.05 Intersection Signal Delay: 69.4 Intersection LOS: E Intersection Capacity Utilization 87.9% ICU Level of Service E Analysis Period (min) 15 ~ Volume exceeds capacity, queue is theoretically infinite. Queue shown is maximum after two cycles. # 95th percentile volume exceeds capacity, queue may be longer. Queue shown is maximum after two cycles. m Volume for 95th percentile queue is metered by upstream signal. Splits and Phases: 1: Canal St & North State St **√**01 **7**ø4

	•	_#	→	*	†	7	*	¥	\	↓			
Lane Group	EBL2	EBL	EBT	EBR	NBT	NBR	NBR2	SBL2	SBL	SBT	Ø1	Ø3	
Lane Configurations	ሻ	ă	† †	7	† 1>					414			
Traffic Volume (vph)	468	366	311	384	459	385	20	285	10	865			
Future Volume (vph)	468	366	311	384	459	385	20	285	10	865			
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900			
Lane Width (ft)	11	11	11	11	12	12	12	12	12	12			
Lane Util. Factor	0.91	0.95	0.95	1.00	0.95	0.95	0.95	0.95	0.95	0.95			
Frt				0.850	0.930								
Flt Protected	0.950	0.950				_	_	_	_	0.987			
Satd. Flow (prot)	1557	1625	3421	1531	3291	0	0	0	0	3493			
Flt Permitted	0.950	0.950	0.404	4=0.4	0004	•		•		0.548			
Satd. Flow (perm)	1557	1625	3421	1531	3291	0	0	0	0	1939			
Right Turn on Red				No			No						
Satd. Flow (RTOR)			00		00					00			
Link Speed (mph)			30		30					30			
Link Distance (ft)			1170		450					225			
Travel Time (s)	0.00	0.00	26.6	0.00	10.2	0.00	0.00	0.00	0.00	5.1			
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98			
Adj. Flow (vph)	478 11%	373	317	392	468	393	20	291	10	883			
Shared Lane Traffic (%) Lane Group Flow (vph)	425	426	317	392	881	0	0	0	0	1184			
Turn Type			NA	392 Prot	NA	U	U	D.P+P	D.P+P	1184 NA			
Protected Phases	Split 4	Split 4	NA 4	Prot 4	NA 2			13	13	123	1	3	
Permitted Phases	4	4	4	4	2			2	2	123		3	
Detector Phase	4	4	4	4				13	13				
Switch Phase	4	4	4	4				13	13				
Minimum Initial (s)	7.0	7.0	7.0	7.0	15.0						5.0	5.0	
Minimum Split (s)	33.0	33.0	33.0	33.0	33.0						10.0	9.5	
Total Split (s)	45.0	45.0	45.0	45.0	39.0						20.0	16.0	
Total Split (%)	37.5%	37.5%	37.5%	37.5%	32.5%						17%	13%	
Maximum Green (s)	40.0	40.0	40.0	40.0	34.0						15.0	11.5	
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0						3.0	3.5	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0						2.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0								
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0								
Lead/Lag	Lag	Lag	Lag	Lag	Lag						Lead	Lead	
Lead-Lag Optimize?		Ŭ	, i	, ,	- J								
Vehicle Extension (s)	2.0	2.0	2.0	2.0	0.2						2.0	2.0	
Recall Mode	None	None	None	None	C-Min						None	Max	
Walk Time (s)	7.0	7.0	7.0	7.0	7.0								
Flash Dont Walk (s)	21.0	21.0	21.0	21.0	21.0								
Pedestrian Calls (#/hr)	0	0	0	0	0								
Act Effct Green (s)	35.3	35.3	35.3	35.3	58.7					69.7			
Actuated g/C Ratio	0.29	0.29	0.29	0.29	0.49					0.58			
v/c Ratio	0.93	0.89	0.31	0.87	0.55					0.93			
Control Delay	68.5	62.2	33.4	60.4	28.2					25.3			
Queue Delay	22.6	14.7	0.0	0.0	3.9					4.1			
Total Delay	91.1	76.9	33.4	60.4	32.1					29.4			
LOS	F	Е	С	Е	С					С			
Approach Delay			67.8		32.1					29.4			
Approach LOS			E		C					С			
Stops (vph)	379	381	247	350	743					636			
Fuel Used(gal)	12	11	6	10	12					12			
CO Emissions (g/hr)	817	782	441	710	845					805			
NOx Emissions (g/hr)	159	152	86	138	164					157			
VOC Emissions (g/hr)	189	181	102	165	196					187			
Dilemma Vehicles (#)	0	0	0	0	0					0			
Queue Length 50th (ft)	338	322	105	280	324					154			
Queue Length 95th (ft)	#512	#475	146	#404	m425					m#190			
Internal Link Dist (ft)			1090		370					145			
Turn Bay Length (ft)	F40	F 4.4	1110	F40	1000					1000			
Base Capacity (vph)	519	541	1140	510	1608					1268			
Starvation Cap Reductn	0	104	0	0	625					52			
Spillback Cap Reductn	99	104	0		37					28 0			
Storage Cap Reductn Reduced v/c Ratio	0 1.01	0.97	0.28	0 0.77	0 0.90					0.97			
Neuluceu V/C RaliO	1.01	0.97	0.20	0.77	0.90					0.97			



Splits and Phases: 2: Canal Street & South State Street & I-95 N On Ramp



Said. Flow (proft) 1770 3514 0 1770 3376 0 0 3529 1583 1770 1883 1583		۶	→	•	*	←	4	1	<u>†</u>	<i>></i>	/	 	4	
Lises Configurations Triffed Volume (riph) 231 433 21 139 505 224 14 228 108 346 510 372 Future Volume (riph) 1900 1900 1900 1900 1900 1900 1900 1900	Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Traffic Volume (uph)														
Future Volume (vph) 1900 1900 1900 1900 1900 1900 1900 190				21			224	14						
Storage Length (ff)			433	21	139	505	224	14	258	108	346	510	372	
Storage Langh (ff)	Ideal Flow (vphpl)		1900		1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Lanes		0		0	160		0	150		120	0		120	
Limbe UNIF Sector 1,00				0	1		0	1		1	1		1	
Fit Horizoted 0.950	Taper Length (ft)	25			55			25			60			
Filt Protected	Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	
Said. Flow (proty) 1770 3514 0 1770 3376 0 0 3529 1583 1770 1863 1583 Flow	Frt		0.993			0.954				0.850			0.850	
Fit Permitted	Flt Protected	0.950			0.950				0.997		0.950			
Sald. Flow (perm)	Satd. Flow (prot)	1770	3514	0	1770	3376	0	0	3529	1583	1770	1863	1583	
Right Turn On Red	FIt Permitted	0.126			0.478				0.911		0.553			
Said, Flow (RTOR) Init Speed (mph) 30 30 30 30 30 30 30 30 30 3	Satd. Flow (perm)	235	3514	0	890	3376		0	3224	1583	1030	1863	1583	
Link Spead (mph)	Right Turn on Red			Yes			Yes			Yes			Yes	
Link Distance (f) 384 422 263 450	Satd. Flow (RTOR)		4			57				114			238	
Travel Time (s)	Link Speed (mph)		30			30			30			30		
Peak Hour Factor	Link Distance (ft)		384			422			263			450		
Adj. Flow (ryh) Adj. Flow (ryh	Travel Time (s)		8.7			9.6			6.0			10.2		
Shared Lane Treffic (%) Lane Group Flow (uph) 338	Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	
Shared Lane Treffic (%) Lane Group From (ynh) 338	Adj. Flow (vph)	338	456	22	146	532	236	15	272	114	364		392	
Turn Type														
Turn Type	Lane Group Flow (vph)	338	478	0	146	768	0	0	287	114	364	537	392	
Protected Phases 6 2 4 4 3 3 4 4 5 4 5 4 5 5 5 5 5 5 5 5 5 5	,	pm+pt	NA			NA		Perm	NA	Perm	pm+pt	NA	Perm	
Permitted Phases 6 2 4 4 4 3 3 3 4 3 4														
Detector Phase 1 6 5 2 4 4 4 3 3 4 3 4 3 5		6	•					4		4			3 4	
Switch Phase	Detector Phase		6			2			4			3 4	3 4	
Minimum Spilt (s) 9.0 34.1 9.0 34.1 36.6 36.6 36. 36. 11.0		•	•		-	_		•	•	•	-		• •	
Minimum Split (s)		5.0	7.0		5.0	7.0		15.0	15.0	15.0	7.0			
Total Split (%) 19.2% 30.8% 19.2% 30.8% 30.8% 30.8% 30.8% 30.8% 30.8% 19.2% 30.8% 30.9% 30.0% 3	()													
Total Spiti (%)														
Maximum Green (s) 19,0 30,9 19,0 30,4 30,4 19,0 Yellow Time (s) 3,0 3,3 3,0 3,3 3,3 3,3 3,3 3,3 3,3 3,3 3,0 3,3 3,3 3,3 3,3 3,3 3,0 1,0 Lost Time (s) 0,0														
Yellow Time (s) 3.0 3.3 3.0 3.3														
All-Red Time (s) 1.0 2.8 1.0 2.8 3.3 3.3 3.3 1.0 Lost Time Adjust (s) 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.														
Lost Time Adjust (s)														
Total Lost Time (s)								0.0						
Lead/Lag Lead Lag L	, , ,													
Lead-Lag Optimize? Vehicle Extension (s) 3.0 0.2 3.0 0.2 3.0 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 C-Min C-Min C-Min None None Recall Mode None None None C-Min C-Min C-Min C-Min None None Recall Mode None None <t< td=""><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>Lag</td><td></td><td></td><td></td><td></td><td></td><td></td></t<>								Lag						
Vehicle Extension (s) 3.0 0.2 3.0 0.2 3.0 3.0 3.0 3.0 Recall Mode None None None None None C-Min C-Min C-Min None Walk Time (s) 7.0 7.0 7.0 7.0 7.0 7.0 Flash Dont Walk (s) 21.0 21.0 23.0 23.0 23.0 Pedestrian Calls (#hr) 0 0 0 0 0 Act Effet Green (s) 52.9 35.4 41.4 27.8 33.5 35.5 55.1 59.1 59.1 Act Effet Green (s) 52.9 35.4 41.4 27.8 33.5 35.5 55.1 59.1 59.1 Act Effet Green (s) 0.46 0.49 <t< td=""><td></td><td></td><td>Lug</td><td></td><td>Loud</td><td>Lug</td><td></td><td>Lug</td><td>Lug</td><td>Lug</td><td>Loud</td><td></td><td></td><td></td></t<>			Lug		Loud	Lug		Lug	Lug	Lug	Loud			
Recall Mode None None None None None C-Min C-Min C-Min C-Min None		3.0	0.2		3.0	0.2		3.0	3.0	3.0	3.0			
Walk Time (s) 7.0 2.0 2.0 2.0 2.0 2.0 2.0 2.0 2.0 2.0 2.0 2.0 <														
Padestrian Calls (#Ihr)		140110			None						Hone			
Pedestrian Calls (#/hr) 0 0 0 0 0 Act Effct Green (s) 52.9 35.4 41.4 27.8 33.5 55.1 59.1 59.1 Actuated g/C Ratio 0.44 0.30 0.34 0.23 0.28 0.28 0.46 0.49 0.49 v/c Ratio 0.98 0.46 0.37 0.93 0.32 0.22 0.62 0.59 0.44 Control Delay 75.6 35.8 23.3 59.9 36.3 7.5 20.3 21.2 6.9 Queue Delay 10.2 0.0 0.0 4.8 0.0 0.0 5.1 0.8 Total Delay 85.8 35.8 23.3 64.7 36.3 7.5 20.3 21.2 6.9 Queue Delay 10.2 0.0 0.0 4.8 0.0 0.0 0.0 5.1 0.8 Total Delay 56.5 58.1 28.1 19.0 19.0 19.0 19.0 19.0														
Act Effct Green (s) 52.9 35.4 41.4 27.8 33.5 33.5 55.1 59.1 59.1 Actuated g/C Ratio 0.44 0.30 0.34 0.23 0.28 0.28 0.46 0.49 0.49 v/c Ratio 0.98 0.46 0.37 0.93 0.32 0.22 0.62 0.59 0.44 Control Delay 75.6 35.8 23.3 59.9 36.3 7.5 20.3 21.2 6.9 Queue Delay 10.2 0.0 0.0 4.8 0.0 0.0 0.0 5.1 0.8 Total Delay 85.8 35.8 23.3 64.7 36.3 7.5 20.3 26.3 7.8 LOS F D C E D A C C A Approach Loys 56.5 58.1 28.1 19.0 B 19.0 B Stops (vph) 220 357 90 644 212 16 176 335 131 131 F E E E E C<	· · · · · · · · · · · · · · · · · · ·													
Actuated g/C Ratio 0.44 0.30 0.34 0.23 0.28 0.28 0.46 0.49 0.49 v/c Ratio 0.98 0.46 0.37 0.93 0.32 0.22 0.62 0.59 0.44 Control Delay 75.6 35.8 23.3 59.9 36.3 7.5 20.3 21.2 6.9 Queue Delay 10.2 0.0 0.0 4.8 0.0 0.0 0.0 5.1 0.8 Total Delay 85.8 35.8 23.3 64.7 36.3 7.5 20.3 26.3 7.8 LOS F D C E D A C C A Approach Delay 56.5 58.1 28.1 19.0 19.0 4 4 19.0 4 4 19.0 4 4 19.0 4 6 3 131 19.0 4 6 3 131 19.0 4 6 3 120 19.0 4 6 3 131 16 16 16 3	\ /	52.0	•		/1 /	•		U	•	•	55.1	50.1	50 1	
v/c Ratio 0.98 0.46 0.37 0.93 0.32 0.22 0.62 0.59 0.44 Control Delay 75.6 35.8 23.3 59.9 36.3 7.5 20.3 21.2 6.9 Queue Delay 10.2 0.0 0.0 4.8 0.0 0.0 5.1 0.8 Total Delay 85.8 35.8 23.3 64.7 36.3 7.5 20.3 26.3 7.8 LOS F D C E D A C C A Approach Delay 56.5 58.1 28.1 19.0 Approach LOS E E E C B Stops (vph) 220 357 90 644 212 16 176 335 131 Fuel Used(gal) 7 7 2 17 4 0 4 6 3 CO Emissions (g/hr) 498 464 135 1155 <t< td=""><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></t<>														
Control Delay 75.6 35.8 23.3 59.9 36.3 7.5 20.3 21.2 6.9 Queue Delay 10.2 0.0 0.0 4.8 0.0 0.0 0.0 5.1 0.8 Total Delay 85.8 35.8 23.3 64.7 36.3 7.5 20.3 26.3 7.8 LOS F D C E D A C C A Approach LOS E E E C B B Stops (vph) 220 357 90 644 212 16 176 335 131 Fuel Used(gal) 7 7 2 17 4 0 4 6 3 CO Emissions (g/hr) 498 464 135 1155 262 33 253 408 179 NOX Emissions (g/hr) 97 90 26 225 51 6 49 79 35														
Queue Delay 10.2 0.0 0.0 4.8 0.0 0.0 0.0 5.1 0.8 Total Delay 85.8 35.8 23.3 64.7 36.3 7.5 20.3 26.3 7.8 LOS F D C E D A C C A Approach LOS E E E C B B B Stops (vph) 220 357 90 644 212 16 176 335 131 Fuel Used(gal) 7 7 2 17 4 0 4 6 3 CO Emissions (g/hr) 498 464 135 1155 262 33 253 408 179 NOx Emissions (g/hr) 97 90 26 225 51 6 49 79 35 VOC Emissions (g/hr) 115 108 31 268 61 8 59 95 41 Dilemma Vehicles (#) 0 0														
Total Delay 85.8 35.8 23.3 64.7 36.3 7.5 20.3 26.3 7.8 LOS F D C E D A C C A Approach Delay 56.5 58.1 28.1 19.0 Approach LOS E E E C B Stops (vph) 220 357 90 644 212 16 176 335 131 Fuel Used(gal) 7 7 7 2 17 4 0 4 6 3 CO Emissions (g/hr) 498 464 135 1155 262 33 253 408 179 NOX Emissions (g/hr) 97 90 26 225 51 6 49 79 35 VOC Emissions (g/hr) 115 108 31 268 61 8 59 95 41 Dilemma Vehicles (#) 0 0 0 0 0 0 0 0 0 0 Queue Length 50th (ft) 205 155 66 284 94 0 161 271 48 Queue Length 95th (ft) #390 211 106 #358 137 46 m184 m308 m69 Internal Link Dist (ft) 304 342 183 370 Turn Bay Length (ft) 160 120 Base Capacity (vph) 346 1038 502 911 899 523 589 917 900 Starvation Cap Reductn 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0														
LOS F D C E D A C C A Approach Delay 56.5 58.1 28.1 19.0 Approach LOS E E E C B Stops (vph) 220 357 90 644 212 16 176 335 131 Fuel Used(gal) 7 7 2 17 4 0 4 6 3 CO Emissions (g/hr) 498 464 135 1155 262 33 253 408 179 NOx Emissions (g/hr) 97 90 26 225 51 6 49 79 35 VOC Emissions (g/hr) 115 108 31 268 61 8 59 95 41 Dilemma Vehicles (#) 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	, · · · · · · · · · · · · · · · · · · ·													
Approach Delay 56.5 58.1 28.1 19.0 Approach LOS E E E C C B Stops (vph) 220 357 90 644 212 16 176 335 131 Fuel Used(gal) 7 7 7 2 17 4 0 4 6 3 CO Emissions (g/hr) 498 464 135 1155 262 33 253 408 179 NOX Emissions (g/hr) 97 90 26 225 51 6 49 79 35 VOC Emissions (g/hr) 115 108 31 268 61 8 59 95 41 Dilemma Vehicles (#) 0 0 0 0 0 0 0 0 0 0 0 Queue Length 50th (ft) 205 155 66 284 94 0 161 271 48 Queue Length 95th (ft) #390 211 106 #358 137 46 m184 m308 m69 Internal Link Dist (ft) 304 342 183 370 Turn Bay Length (ft) 160 120 120 Base Capacity (vph) 346 1038 502 911 899 523 589 917 900 Starvation Cap Reductn 0 0 0 0 0 0 0 0 0 308 255														
Approach LOS E E E C B Stops (vph) 220 357 90 644 212 16 176 335 131 Fuel Used(gal) 7 7 2 17 4 0 4 6 3 CO Emissions (g/hr) 498 464 135 1155 262 33 253 408 179 NOx Emissions (g/hr) 97 90 26 225 51 6 49 79 35 VOC Emissions (g/hr) 115 108 31 268 61 8 59 95 41 Dilemma Vehicles (#) 0 <		F			C					А	C		A	
Stops (vph) 220 357 90 644 212 16 176 335 131 Fuel Used(gal) 7 7 2 17 4 0 4 6 3 CO Emissions (g/hr) 498 464 135 1155 262 33 253 408 179 NOx Emissions (g/hr) 97 90 26 225 51 6 49 79 35 VOC Emissions (g/hr) 115 108 31 268 61 8 59 95 41 Dilemma Vehicles (#) 0														
Fuel Used(gal) 7 7 2 17 4 0 4 6 3 CO Emissions (g/hr) 498 464 135 1155 262 33 253 408 179 NOx Emissions (g/hr) 97 90 26 225 51 6 49 79 35 VOC Emissions (g/hr) 115 108 31 268 61 8 59 95 41 Dilemma Vehicles (#) 0 0 0 0 0 0 0 0 0 0 0 0 Queue Length 50th (ft) 205 155 66 284 94 0 161 271 48 Queue Length 95th (ft) #390 211 106 #358 137 46 m184 m308 m69 Internal Link Dist (ft) 304 342 183 370 Turn Bay Length (ft) 160 120 120 120 Base Capacity (vph) 346 1038 502 911 899 523 589 917<	• •	220			00					16	176		121	
CO Emissions (g/hr)														
NOx Emissions (g/hr) 97 90 26 225 51 6 49 79 35 VOC Emissions (g/hr) 115 108 31 268 61 8 59 95 41 Dilemma Vehicles (#) 0														
VOC Emissions (g/hr) 115 108 31 268 61 8 59 95 41 Dilemma Vehicles (#) 0 <t< td=""><td>ισ ,</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></t<>	ισ ,													
Dilemma Vehicles (#) 0														
Queue Length 50th (ft) 205 155 66 284 94 0 161 271 48 Queue Length 95th (ft) #390 211 106 #358 137 46 m184 m308 m69 Internal Link Dist (ft) 304 342 183 370 Turn Bay Length (ft) 160 120 120 Base Capacity (vph) 346 1038 502 911 899 523 589 917 900 Starvation Cap Reductn 0 0 0 0 0 0 308 255	(0)													
Queue Length 95th (ft) #390 211 106 #358 137 46 m184 m308 m69 Internal Link Dist (ft) 304 342 183 370 Turn Bay Length (ft) 160 120 120 Base Capacity (vph) 346 1038 502 911 899 523 589 917 900 Starvation Cap Reductn 0 0 0 0 0 0 308 255														
Internal Link Dist (ft) 304 342 183 370 Turn Bay Length (ft) 160 120 120 Base Capacity (vph) 346 1038 502 911 899 523 589 917 900 Starvation Cap Reductn 0 0 0 0 0 0 308 255														
Turn Bay Length (ft) 160 120 120 Base Capacity (vph) 346 1038 502 911 899 523 589 917 900 Starvation Cap Reductn 0 0 0 0 0 0 308 255		#390			106					46	m184		m69	
Base Capacity (vph) 346 1038 502 911 899 523 589 917 900 Starvation Cap Reductn 0 0 0 0 0 0 308 255			304			342			183			370		
Starvation Cap Reductn 0 0 0 0 0 0 308 255			,											
Spillback Cap Reductn 14 0 0 93 0 0 0 0														
	Spillback Cap Reductn	14	0		0	93			0	0	0	0	0	

	۶	→	•	•	←	•	4	†	/	/	ļ	4	
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Storage Cap Reductn	0	0		0	0			0	0	0	0	0	
Reduced v/c Ratio	1.02	0.46		0.29	0.94			0.32	0.22	0.62	0.88	0.61	
Intersection Summary													
Area Type:	Other												
Cycle Length: 120													
Actuated Cycle Length: 120													
Offset: 117 (98%), Reference	ed to phase 4:I	NBSB, Sta	rt of Yello	N									
Natural Cycle: 95													
Control Type: Actuated-Coor	dinated												
Maximum v/c Ratio: 0.98													
Intersection Signal Delay: 39).4			In	tersection	LOS: D							
Intersection Capacity Utilizat	ion 95.5%			IC	U Level of	Service F							
Analysis Period (min) 15													
# 95th percentile volume e	xceeds capaci	ty, queue i	may be lor	iger.									
Queue shown is maximur	n after two cyc	les.											
m Volume for 95th percent	ile queue is me	etered by i	upstream s	signal.									
Splits and Phases: 3: Can	al Street & Do	ck Street/J	lefferson S	treet									
<u> </u>	+					4/-			48	7.0			



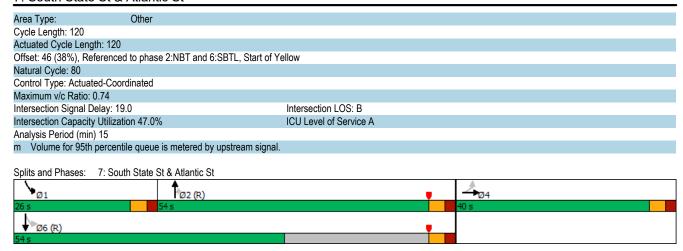
	۶	→	•	•	←	4	4	†	/	/	ļ	4	
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations	7	↑ ↑		7	↑ 1>			4			4		
Traffic Volume (vph)	1	397	93	133	768	4	155	1	185	1	1	2	
Future Volume (vph)	1	397	93	133	768	4	155	1	185	1	1	2	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	90		0	90		0	0		0	0		0	
Storage Lanes	1		0	1		0	0		0	0		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	1.00	1.00	
Frt		0.972			0.999			0.927			0.932		
Flt Protected	0.950			0.950				0.978			0.988		
Satd. Flow (prot)	1770	3440	0	1770	3536	0	0	1689	0	0	1715	0	
Flt Permitted	0.326			0.383				0.853			0.948		
Satd. Flow (perm)	607	3440	0	713	3536	0	0	1473	0	0	1646	0	
Right Turn on Red			Yes			Yes			Yes			Yes	
Satd. Flow (RTOR)		27						57			2		
Link Speed (mph)		30			30			30			30		
Link Distance (ft)		510			228			158			352		
Travel Time (s)		11.6			5.2			3.6			8.0		
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)	1	432	101	145	835	4	168	1	201	1	1	2	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	1	533	0	145	839	0	0	370	0	0	4	0	
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA		
Protected Phases	1	6		5	2			4			4		
Permitted Phases	6			2			4			4			
Detector Phase	1	6		5	2		4	4		4	4		
Switch Phase													
Minimum Initial (s)	5.0	15.0		5.0	15.0		7.0	7.0		7.0	7.0		
Minimum Split (s)	10.0	35.0		10.0	35.0		35.0	35.0		35.0	35.0		
Total Split (s)	25.0	45.0		25.0	45.0		45.0	45.0		45.0	45.0		
Total Split (%)	21.7%	39.1%		21.7%	39.1%		39.1%	39.1%		39.1%	39.1%		
Maximum Green (s)	20.0	40.0		20.0	40.0		40.0	40.0		40.0	40.0		
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0		
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0		
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0			0.0		
Total Lost Time (s)	5.0	5.0		5.0	5.0			5.0			5.0		
Lead/Lag	Lead	Lag		Lead	Lag								
Lead-Lag Optimize?													
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0		
Recall Mode	None	C-Min		None	C-Min		None	None		None	None		
Walk Time (s)		7.0			7.0		7.0	7.0		7.0	7.0		
Flash Dont Walk (s)		23.0			23.0		23.0	23.0		23.0	23.0		
Pedestrian Calls (#/hr)		0			0		0	0		0	0		
Act Effct Green (s)	65.6	60.1		74.5	72.4			30.5			30.5		
Actuated g/C Ratio	0.57	0.52		0.65	0.63			0.27			0.27		
v/c Ratio	0.00	0.29		0.26	0.38			0.86			0.01		
Control Delay	11.0	16.9		10.5	12.8			52.1			21.2		
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0		
Total Delay	11.0	16.9		10.5	12.8			52.1			21.2		
LOS	В	В		В	В			D			С		
Approach Delay		16.9			12.4			52.1			21.3		
Approach LOS		В			В			D			С		
Stops (vph)	1	262		52	374			274			3		
Fuel Used(gal)	0	5		1	7			6			0		
CO Emissions (g/hr)	1	355		77	497			387			3		
NOx Emissions (g/hr)	0	69		15	97			75			1		
VOC Emissions (g/hr)	0	82		18	115			90			1		
Dilemma Vehicles (#)	0	0		0	0			0			0		
Queue Length 50th (ft)	0	106		38	141			223			1		
Queue Length 95th (ft)		180		81	276			309			9		
	3										070		
Internal Link Dist (ft)		430			148			78			272		
Internal Link Dist (ft) Turn Bay Length (ft)	90	430		90									
Internal Link Dist (ft) Turn Bay Length (ft) Base Capacity (vph)	90 595	430 1809		645	2224			549			573		
Internal Link Dist (ft) Turn Bay Length (ft)	90	430											

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Storage Cap Reductn	0	0		0	0			0			0		
Reduced v/c Ratio	0.00	0.29		0.22	0.38			0.67			0.01		
Intersection Summary													
Area Type: O	ther												
Cycle Length: 115													
Actuated Cycle Length: 115													
Offset: 0 (0%), Referenced to ph	ase 2:WB1	TL and 6:E	BTL, Star	t of Yellow	ı								
Natural Cycle: 80													
Control Type: Actuated-Coordinated	ated												
Maximum v/c Ratio: 0.86													
Intersection Signal Delay: 21.5				Int	ersection	LOS: C							
Intersection Capacity Utilization	64.7%			IC	U Level of	Service C							
Analysis Period (min) 15													
Splits and Phases: 5: Pacific S	Street & Do	ck Street											
≯ _{Ø1}	- ₹	Ø2 (R)					•	₩ _{ø4}					
25 s	45 s							45 s					
√ ø5	4	106 (R)					•						
25 s	45 s												

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations	ሻ	1		ሻ		7	*	^	7	ሻ	^	7	
Traffic Volume (vph)	61	156	31	324	306	347	31	295	200	108	208	163	
Future Volume (vph)	61	156	31	324	306	347	31	295	200	108	208	163	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	100		0	210		0	100		130	70		110	
Storage Lanes	1		0	1		1	1		1	1		1	
Taper Length (ft)	25			10			50			45			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Frt		0.975				0.850			0.850			0.850	
Flt Protected	0.950			0.950			0.950			0.950			
Satd. Flow (prot)	1770	1816	0	1770	1863	1583	1770	3539	1583	1770	3539	1583	
Flt Permitted	0.560			0.314			0.611			0.495			
Satd. Flow (perm)	1043	1816	0	585	1863	1583	1138	3539	1583	922	3539	1583	
Right Turn on Red			No			Yes			Yes			Yes	
Satd. Flow (RTOR)						377			217			177	
Link Speed (mph)		30			30			30			30		
Link Distance (ft)		348			510			366			301		
Travel Time (s)		7.9			11.6			8.3			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)	66	170	34	352	333	377	34	321	217	117	226	177	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	66	204	0	352	333	377	34	321	217	117	226	177	
Turn Type	pm+pt	NA	·	pm+pt	NA	pm+ov	pm+pt	NA	custom	pm+pt	NA	custom	
Protected Phases	3	8		7	4	5	1	6		5	2		
Permitted Phases	8	•		4	•	4	6	•	2	2	_	6	
Detector Phase	3	8		7	4	5	1		2	5		6	
Switch Phase	•	•		•	•	•	•		=	Ū		J	
Minimum Initial (s)	5.0	7.0		5.0	7.0	5.0	5.0	15.0	15.0	5.0	15.0	15.0	
Minimum Split (s)	10.0	34.0		10.0	34.0	10.0	10.0	34.0	34.0	10.0	34.0	34.0	
Total Split (s)	30.0	40.0		30.0	40.0	14.0	14.0	36.0	36.0	14.0	36.0	36.0	
Total Split (%)	25.0%	33.3%		25.0%	33.3%	11.7%	11.7%	30.0%	30.0%	11.7%	30.0%	30.0%	
Maximum Green (s)	26.0	35.0		26.0	35.0	10.0	10.0	31.0	31.0	10.0	31.0	31.0	
Yellow Time (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	1.0	2.0		1.0	2.0	1.0	1.0	2.0	2.0	1.0	2.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	4.0	5.0		4.0	5.0	4.0	4.0	5.0	5.0	4.0	5.0	5.0	
Lead/Lag	Lead	Lag		Lead	Lag	Lead	Lead	Lag	Lag	Lead	Lag	Lag	
Lead-Lag Optimize?	Load	Lag		Load	Lag	LCau	LCau	Lag	Lag	Load	Lag	Lag	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	2.0	3.0	0.2	0.2	2.0	0.2	0.2	
Recall Mode	None	None		None	None	None	None	C-Max	C-Max	None	C-Max	C-Max	
Walk Time (s)	NOHE	7.0		INOILE	7.0	NONE	INOITE	7.0	7.0	NONE	7.0	7.0	
Flash Dont Walk (s)		22.0			22.0			22.0	22.0		22.0	22.0	
Pedestrian Calls (#/hr)		0			0			0	0		0	0	
. ,	28.2	18.9		47.8	36.4	49.7	58.7	51.0	56.4	63.1	56.4	51.0	
Act Effct Green (s) Actuated g/C Ratio	0.24	0.16		0.40	0.30	0.41	0.49	0.42	0.47	0.53	0.47	0.42	
v/c Ratio	0.24	0.70		0.40	0.59	0.41	0.49	0.42	0.47	0.33	0.47	0.42	
Control Delay	24.0	61.6		36.8	39.9	3.5	16.3	24.2	4.2	8.8	11.0	3.4	
Queue Delay	0.0	0.0		0.7	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.4	
	24.0									8.8		3.8	
Total Delay LOS	24.0 C	61.6 E		37.5 D	39.9 D	3.7 A	16.3 B	24.2 C	4.2 A	0.0 A	11.0 B	3.6 A	
	C	52.4		U		А	D		А	А		А	
Approach Delay Approach LOS		52.4 D			26.3 C			16.1 B			8.1 A		
• •	4.4			222		22	16		10	44		10	
Stops (vph)	44	174		232	254	23	16	187	18	41	78	19	
Fuel Used(gal)	1	4		5	5	2	0	3	1	1	1	1	
CO Emissions (g/hr)	49	268		349	357	123	20	233	59	47	97	42	
NOx Emissions (g/hr)	10	52		68	69	24	4	45	11	9	19	8	
VOC Emissions (g/hr)	11	62		81	83	28	5	54	14	11	22	10	
Dilemma Vehicles (#)	0	0		0	0	0	0	0	0	0	0	0	
Queue Length 50th (ft)	31	152		197	220	0	12	83	0	36	37	2	
Queue Length 95th (ft)	54	221		255	298	52	33	133	52	62	55	5	
Internal Link Dist (ft)		268			430			286			221		
Turn Bay Length (ft)	100			210			100		130	70		110	
Base Capacity (vph)	552	529		490	578	893	639	1502	858	557	1662	774	
Starvation Cap Reductn	0	0		24	0	122	0	0	0	0	0	284	
Spillback Cap Reductn	0	0		0	0	0	0	0	0	0	0	0	

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Storage Cap Reductn	0	0		0	0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.12	0.39		0.76	0.58	0.49	0.05	0.21	0.25	0.21	0.14	0.36	
Intersection Summary													
Area Type:	Other												
Cycle Length: 120													
Actuated Cycle Length: 120													
Offset: 37 (31%), Referenced to	phase 2:S	BTL and 6	:NBTL, St	art of Yello	ow								
Natural Cycle: 90													
Control Type: Actuated-Coordin	ated												
Maximum v/c Ratio: 0.75													
Intersection Signal Delay: 22.9				Int	ersection	LOS: C							
Intersection Capacity Utilization	61.5%			IC	U Level of	Service B							
Analysis Period (min) 15													
Splits and Phases: 6: Atlantic	Street & S	tation Plac	ce/Dock St	treet									
↑ Ø1		tation i lac	JOI DOOK O		≯ ø3				₩ Ø4				
14 s 36 s	,			3	0 s				40 s				
1 Ø6 (R	.)			•	ÿ7				<u></u>				
14 s 36 s					0 s				40 s				

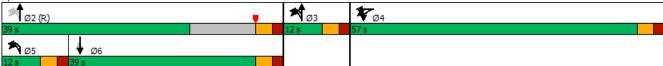
	۶	→	•	•	+	•	•	†	<i>></i>	/		4	
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations	ሻ	↑ ↑						† †	7	ሻ	† †		
Traffic Volume (vph)	81	340	73	0	0	0	0	637	81	123	395	0	
Future Volume (vph)	81	340	73	0	0	0	0	637	81	123	395	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Frt		0.973							0.850				
Flt Protected	0.950									0.950			
Satd. Flow (prot)	1770	3444	0	0	0	0	0	3539	1583	1770	3539	0	
Flt Permitted	0.950									0.320			
Satd. Flow (perm)	1770	3444	0	0	0	0	0	3539	1583	596	3539	0	
Right Turn on Red			Yes			Yes			Yes			Yes	
Satd. Flow (RTOR)		22							92				
Link Speed (mph)		30			30			30			30		
Link Distance (ft)		294			1170			301			244		
Travel Time (s)		6.7			26.6			6.8			5.5		
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	
Adj. Flow (vph)	92	386	83	0	0	0	0	724	92	140	449	0	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	92	469	0	0	0	0	0	724	92	140	449	0	
Turn Type	Perm	NA						NA	Perm	pm+pt	NA		
Protected Phases		4						2		1	6		
Permitted Phases	4								2	6			
Detector Phase	4	4						2	2	1	6		
Switch Phase													
Minimum Initial (s)	7.0	7.0						15.0	15.0	5.0	15.0		
Minimum Split (s)	34.0	34.0						34.0	34.0	10.0	27.0		
Total Split (s)	40.0	40.0						54.0	54.0	26.0	54.0		
Total Split (%)	33.3%	33.3%						45.0%	45.0%	21.7%	45.0%		
Maximum Green (s)	35.0	35.0						49.0	49.0	21.0	49.0		
Yellow Time (s)	3.0	3.0						3.0	3.0	3.0	3.0		
All-Red Time (s)	2.0	2.0						2.0	2.0	2.0	2.0		
Lost Time Adjust (s)	-1.0	-1.0						-1.0	-1.0	0.0	-1.0		
Total Lost Time (s)	4.0	4.0						4.0	4.0	5.0	4.0		
Lead/Lag								Lag	Lag	Lead			
Lead-Lag Optimize?								Yes	Yes	Yes			
Vehicle Extension (s)	2.0	2.0						0.2	0.2	2.0	0.2		
Recall Mode	None	None						C-Max	C-Max	Min	C-Max		
Walk Time (s)	7.0	7.0						7.0	7.0		7.0		
Flash Dont Walk (s)	22.0	22.0						15.0	15.0		15.0		
Pedestrian Calls (#/hr)	0	0						0	0		0		
Act Effct Green (s)	21.5	21.5						78.2	78.2	89.5	90.5		
Actuated g/C Ratio	0.18	0.18						0.65	0.65	0.75	0.75		
v/c Ratio	0.29	0.74						0.31	0.09	0.27	0.17		
Control Delay	43.8	51.3						8.5	1.8	6.8	3.5		
Queue Delay	0.0	0.0						0.4	0.0	0.3	0.3		
Total Delay	43.8	51.3						8.9	1.8	7.1	3.8		
LOS	D	D						Α	Α	Α	Α		
Approach Delay		50.1						8.1			4.6		
Approach LOS		D						Α			Α		
Stops (vph)	68	363						197	6	45	77		
Fuel Used(gal)	1	7						4	0	1	1		
CO Emissions (g/hr)	90	508						257	18	46	102		
NOx Emissions (g/hr)	17	99						50	3	9	20		
VOC Emissions (g/hr)	21	118						60	4	11	24		
Dilemma Vehicles (#)	0	0						0	0	0	0		
Queue Length 50th (ft)	63	175						81	1	20	33		
Queue Length 95th (ft)	104	213						136	14	m32	m46		
Internal Link Dist (ft)		214			1090			221			164		
Turn Bay Length (ft)													
Base Capacity (vph)	531	1048						2306	1064	649	2668		
Starvation Cap Reductn	0	0						997	0	199	1581		
Spillback Cap Reductn	0	0						43	0	0	0		
Storage Cap Reductn	0	0						0	0	0	0		
Reduced v/c Ratio	0.17	0.45						0.55	0.09	0.31	0.41		
Intersection Summary													
intersection outlinary													



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Lane Group	WBL2	WBL	WBT	WBR	NBL2	NBL	NBT	SBT	SBR	SBR2	Ø2	Ø3	Ø5	
Lane Configurations			सांक			ă	^	^	7					
Traffic Volume (vph)	143	672	654	334	291	13	414	375	285	136				
Future Volume (vph)	143	672	654	334	291	13	414	375	285	136				
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900				
Lane Util. Factor	0.86	0.86	0.86	0.86	0.95	1.00	0.95	0.95	1.00	0.95				
Frt			0.972						0.850					
Flt Protected			0.978			0.950								
Satd. Flow (prot)	0	0	6091	0	0	1770	3539	3539	1583	0				
Flt Permitted			0.978			0.339								
Satd. Flow (perm)	0	0	6091	0	0	631	3539	3539	1583	0				
Right Turn on Red				No						No				
Satd. Flow (RTOR)														
Link Speed (mph)			30				25	25						
Link Distance (ft)			1209				244	742						
Travel Time (s)			27.5				6.7	20.2						
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85				
Adj. Flow (vph)	168	791	769	393	342	15	487	441	335	160				
Shared Lane Traffic (%)														
Lane Group Flow (vph)	0	0	2121	0	0	357	487	441	495	0				
Turn Type	Split	Split	NA		custom	custom	NA	NA	Perm					
Protected Phases	4	4	4		3 5	3 5	23	6			2	3	5	
Permitted Phases					2	2			6					
Detector Phase	4	4	4		3 5	35			6					
Switch Phase														
Minimum Initial (s)	10.0	10.0	10.0					15.0	15.0		15.0	5.0	5.0	
Minimum Split (s)	31.0	31.0	31.0					20.0	20.0		26.0	10.0	10.0	
Total Split (s)	57.0	57.0	57.0					39.0	39.0		39.0	12.0	12.0	
Total Split (%)	47.5%	47.5%	47.5%					32.5%	32.5%		33%	10%	10%	
Maximum Green (s)	52.0	52.0	52.0					34.0	34.0		34.0	7.0	7.0	
Yellow Time (s)	3.0	3.0	3.0					3.0	3.0		3.0	3.0	3.0	
All-Red Time (s)	2.0	2.0	2.0					2.0	2.0		2.0	2.0	2.0	
Lost Time Adjust (s)			0.0					0.0	0.0					
Total Lost Time (s)			5.0					5.0	5.0					
Lead/Lag								Lag	Lag				Lead	
Lead-Lag Optimize?								- 3	- 3					
Vehicle Extension (s)	2.0	2.0	2.0					0.2	0.2		0.2	2.0	2.0	
Recall Mode	None	None	None					None	None		C-Max	None	None	
Walk Time (s)	7.0	7.0	7.0								7.0			
Flash Dont Walk (s)	19.0	19.0	19.0								14.0			
Pedestrian Calls (#/hr)	0	0	0								0			
Act Effct Green (s)			51.2			53.8	58.8	34.8	34.8					
Actuated g/C Ratio			0.43			0.45	0.49	0.29	0.29					
v/c Ratio			1.27dl			0.86	0.28	0.43	1.08					
Control Delay			35.8			38.7	11.7	36.4	106.0					
Queue Delay			0.0			0.0	0.6	0.0	0.0					
Total Delay			35.8			38.7	12.3	36.4	106.0					
LOS			D			D	В	D	F					
Approach Delay			35.8				23.4	73.2						
Approach LOS			D				C	E						
Stops (vph)			1684			210	145	298	350					
Fuel Used(gal)			39			4	2	6	13					
CO Emissions (g/hr)			2758			267	168	440	915					
NOx Emissions (g/hr)			537			52	33	86	178					
VOC Emissions (g/hr)			639			62	39	102	212					
Dilemma Vehicles (#)			0			0	0	0	0					
Queue Length 50th (ft)			475			148	52	147	~436					
Queue Length 95th (ft)			m466			#133	58	184	#591					
Internal Link Dist (ft)			1129				164	662	50 .					
Turn Bay Length (ft)			1120				101	302						
Base Capacity (vph)			2639			415	1734	1026	459					
Starvation Cap Reductn			0			0	829	0	0					
Spillback Cap Reductn			0			0	029	0	0					
Storage Cap Reductn			0			0	0	0	0					
Reduced v/c Ratio			0.80			0.86	0.54	0.43	1.08					
			0.00			0.00	0.34	0.43	1.00					
Intersection Summary														

Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 22 (18%), Reference	d to phase 2:NBTL, Start of Yellow		
Natural Cycle: 90			
Control Type: Actuated-Coo	rdinated		
Maximum v/c Ratio: 1.08			
Intersection Signal Delay: 42		Intersection LOS: D	
Intersection Capacity Utiliza	tion 92.6%	ICU Level of Service F	
Analysis Period (min) 15			
	ty, queue is theoretically infinite.		
Queue shown is maximu			
	exceeds capacity, queue may be longer.		
Queue shown is maximu	,		
·	tile queue is metered by upstream signal.		
dl Defacto Left Lane. Rec	ode with 1 though lane as a left lane.		

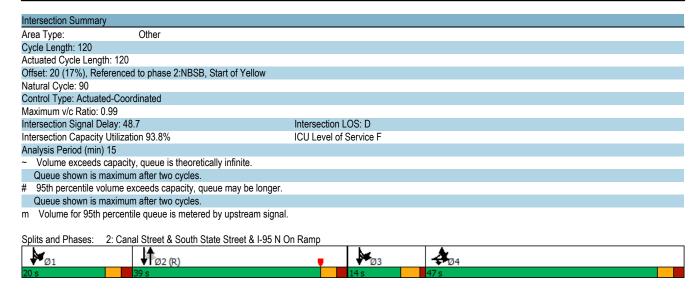
Splits and Phases: 8: Atlantic St & North State St



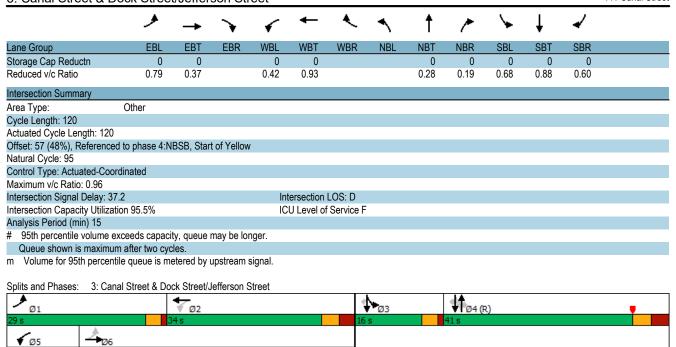
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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations					4ांकि		7	^			∱ ⊅		
Traffic Volume (vph)	0	0	0	493	1392	305	298	630	0	0	667	244	
Future Volume (vph)	0	0	0	493	1392	305	298	630	0	0	667	244	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Lane Util. Factor	1.00	1.00	1.00	0.86	0.86	0.86	1.00	0.95	1.00	1.00	0.95	0.95	
Frt					0.979						0.960		
Flt Protected					0.989		0.950						
Satd. Flow (prot)	0	0	0	0	6204	0	1770	3539	0	0	3398	0	
Flt Permitted					0.989		0.119						
Satd. Flow (perm)	0	0	0	0	6204	0	222	3539	0	0	3398	0	
Right Turn on Red			Yes			Yes			Yes			Yes	
Satd. Flow (RTOR)					40						42		
Link Speed (mph)		30			30			30			30		
Link Distance (ft)		1209			425			225			425		
Travel Time (s)		27.5			9.7			5.1			9.7		
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	536	1513	332	324	685	0	0	725	265	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	0	0	0	2381	0	324	685	0	0	990	0	
Turn Type				Split	NA		D.P+P	NA			NA		
Protected Phases				4	4		1	12			2		
Permitted Phases							2						
Detector Phase				4	4		1						
Switch Phase													
Minimum Initial (s)				7.0	7.0		7.0				15.0		
Minimum Split (s)				34.5	34.5		11.0				33.4		
Total Split (s)				53.0	53.0		32.0				35.0		
Total Split (%)				44.2%	44.2%		26.7%				29.2%		
Maximum Green (s)				46.5	46.5		28.0				29.6		
Yellow Time (s)				3.3	3.3		3.0				3.3		
All-Red Time (s)				3.2	3.2		1.0				2.1		
Lost Time Adjust (s)					0.0		0.0				-1.0		
Total Lost Time (s)					6.5		4.0				4.4		
Lead/Lag							Lead				Lag		
Lead-Lag Optimize?											Yes		
Vehicle Extension (s)				3.0	3.0		3.0				0.2		
Recall Mode				None	None		Min				C-Min		
Walk Time (s)				7.0	7.0						7.0		
Flash Dont Walk (s)				21.0	21.0						21.0		
Pedestrian Calls (#/hr)				0	0						0		
Act Effct Green (s)					46.5		59.0	63.0			34.6		
Actuated g/C Ratio					0.39		0.49	0.52			0.29		
v/c Ratio					0.98		0.78	0.37			0.98		
Control Delay					50.1		34.8	8.4			65.2		
Queue Delay					4.5		30.1	4.1			6.5		
Total Delay					54.6		64.9	12.6			71.6		
LOS					D		E	В			E		
Approach Delay					54.6			29.4			71.6		
Approach LOS					D			С			E		
Stops (vph)					1967		228	254			735		
Fuel Used(gal)					40		4	4			19		
CO Emissions (g/hr)					2831		272	251			1340		
NOx Emissions (g/hr)					551		53	49			261		
VOC Emissions (g/hr)					656		63	58			311		
Dilemma Vehicles (#)					0		0	0			0		
Queue Length 50th (ft)					517		162	105			~413		
Queue Length 95th (ft)					#615		m239	124			#581		
Internal Link Dist (ft)		1129			345			145			345		
Turn Bay Length (ft)					310			110			310		
Base Capacity (vph)					2428		474	1857			1010		
Starvation Cap Reductn					0		156	1070			0		
Spillback Cap Reductn					55		0	0			29		
Storage Cap Reductn					0		0	0			0		
Reduced v/c Ratio					1.00		1.02	0.87			1.01		
					1.00		1.02	0.01			1.01		
Intersection Summary													

Area Type: Other Cycle Length: 120 Actuated Cycle Length: 120 Offset: 113 (94%), Referenced to phase 2:NBSB, Start of Yellow Natural Cycle: 90 Control Type: Actuated-Coordinated Maximum v/c Ratio: 0.98 Intersection Signal Delay: 52.6 Intersection LOS: D Intersection Capacity Utilization 87.9% ICU Level of Service E Analysis Period (min) 15 Volume exceeds capacity, queue is theoretically infinite. Queue shown is maximum after two cycles. # 95th percentile volume exceeds capacity, queue may be longer. Queue shown is maximum after two cycles. m Volume for 95th percentile queue is metered by upstream signal. Splits and Phases: 1: Canal St & North State St **√**01 **₹**ø4 ₩<mark>ø2 (R)</mark>

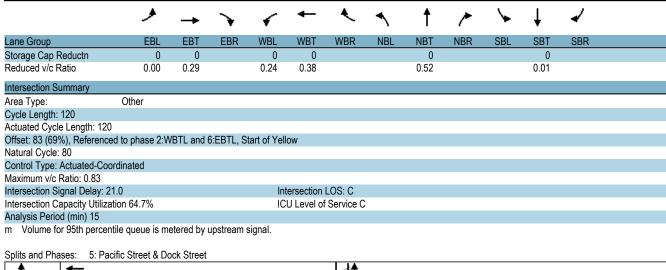
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Lane Group	EBL2	EBL	EBT	EBR	NBT	NBR	NBR2	SBL2	SBL	SBT	Ø1	Ø3	
Lane Configurations	ሻ	ă	^	7	↑ 1>					414	10.1	,,,,,	
Traffic Volume (vph)	468	366	311	384	459	385	20	285	10	865			
Future Volume (vph)	468	366	311	384	459	385	20	285	10	865			
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900			
Lane Width (ft)	11	11	11	11	12	12	12	12	12	12			
Lane Util. Factor	0.91	0.95	0.95	1.00	0.95	0.95	0.95	0.95	0.95	0.95			
Frt				0.850	0.930								
Flt Protected	0.950	0.950								0.987			
Satd. Flow (prot)	1557	1625	3421	1531	3291	0	0	0	0	3493			
FIt Permitted	0.950	0.950								0.545			
Satd. Flow (perm)	1557	1625	3421	1531	3291	0	0	0	0	1929			
Right Turn on Red				No			No						
Satd. Flow (RTOR)													
Link Speed (mph)			30		30					30			
Link Distance (ft)			1170		450					225			
Travel Time (s)			26.6		10.2					5.1			
Peak Hour Factor	0.92	0.98	0.98	0.98	0.98	0.98	0.92	0.92	0.98	0.98			
Adj. Flow (vph)	509	373	317	392	468	393	22	310	10	883			
Shared Lane Traffic (%)	13%	400	0.47	200	000	^	^	^	^	4000			
Lane Group Flow (vph)	443	439	317	392	883	0	0	0	0	1203			
Turn Type	Split	Split	NA	Prot	NA			D.P+P	D.P+P	NA 122	4	2	
Protected Phases	4	4	4	4	2			13	13	123	1	3	
Permitted Phases	4	4	4	4				13	2				
Detector Phase Switch Phase	4	4	4	4				13	13				
	7.0	7.0	7.0	7.0	15.0						ΕO	F 0	
Minimum Initial (s) Minimum Split (s)	7.0 33.0	7.0 33.0	7.0 33.0	7.0 33.0	15.0 33.0						5.0 10.0	5.0 9.5	
Total Split (s)	47.0	47.0	47.0	47.0	39.0						20.0	14.0	
Total Split (%)	39.2%	39.2%	39.2%	39.2%	32.5%						17%	12%	
Maximum Green (s)	42.0	42.0	42.0	42.0	34.0						15.0	9.5	
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0						3.0	3.5	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0						2.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0						2.0	1.0	
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0								
Lead/Lag	Lag	Lag	Lag	Lag	Lag						Lead	Lead	
Lead-Lag Optimize?	Lug	Lug	Lug	Lug	Lug						Loud	Loud	
Vehicle Extension (s)	2.0	2.0	2.0	2.0	0.2						2.0	2.0	
Recall Mode	None	None	None	None	C-Min						None	Max	
Walk Time (s)	7.0	7.0	7.0	7.0	7.0						110110	Max	
Flash Dont Walk (s)	21.0	21.0	21.0	21.0	21.0								
Pedestrian Calls (#/hr)	0	0	0	0	0								
Act Effct Green (s)	36.9	36.9	36.9	36.9	59.1					68.1			
Actuated g/C Ratio	0.31	0.31	0.31	0.31	0.49					0.57			
v/c Ratio	0.92	0.88	0.30	0.83	0.55					0.99			
Control Delay	59.2	51.5	27.2	47.3	18.8					30.2			
Queue Delay	6.4	3.8	0.0	0.2	1.0					37.2			
Total Delay	65.6	55.3	27.2	47.5	19.8					67.4			
LOS	Е	Е	С	D	В					Е			
Approach Delay			50.6		19.8					67.4			
Approach LOS			D		В					Е			
Stops (vph)	309	320	187	288	500					512			
Fuel Used(gal)	10	10	6	9	9					12			
CO Emissions (g/hr)	723	707	391	615	636					838			
NOx Emissions (g/hr)	141	138	76	120	124					163			
VOC Emissions (g/hr)	168	164	91	142	147					194			
Dilemma Vehicles (#)	0	0	0	0	0					0			
Queue Length 50th (ft)	264	247	75	208	156					~124			
Queue Length 95th (ft)	#513	346	101	295	m247					m#224			
Internal Link Dist (ft)			1090		370					145			
Turn Bay Length (ft)													
Base Capacity (vph)	544	568	1197	535	1619					1211			
Starvation Cap Reductn	0	0	0	0	450					124			
Spillback Cap Reductn	65	68	0	7	26					49			
Storage Cap Reductn	0	0	0	0	0					0			
Reduced v/c Ratio	0.92	0.88	0.26	0.74	0.76					1.11			



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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations	*	† 1>		*	† 1>			41∱	7	7	†	7	
Traffic Volume (vph)	321	433	21	139	505	224	14	258	108	346	510	372	
Future Volume (vph)	321	433	21	139	505	224	14	258	108	346	510	372	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	0		0	160		0	0		120	0		120	
Storage Lanes	1		0	1		0	0		1	1		1	
Taper Length (ft)	25		0.05	55	0.05		25	0.05	4.00	60	1.00	4.00	
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	
Frt Flt Protected	0.950	0.993		0.950	0.954			0.997	0.850	0.950		0.850	
Satd. Flow (prot)	1770	3514	0	1770	3376	0	0	3529	1583	1770	1863	1583	
Flt Permitted	0.129	3314	U	0.479	3370	U	U	0.913	1303	0.562	1003	1303	
Satd. Flow (perm)	240	3514	0	892	3376	0	0	3231	1583	1047	1863	1583	
Right Turn on Red	210	0014	Yes	002	0010	Yes		0201	Yes	10-11	1000	Yes	
Satd. Flow (RTOR)		5	100		55	100			137			227	
Link Speed (mph)		30			30			30			30		
Link Distance (ft)		384			422			263			450		
Travel Time (s)		8.7			9.6			6.0			10.2		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	
Adj. Flow (vph)	338	456	22	146	532	236	15	272	114	364	537	392	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	338	478	0	146	768	0	0	287	114	364	537	392	
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA	Perm	pm+pt	NA	Perm	
Protected Phases	1	6		5	2			4		3	3 4	2.4	
Permitted Phases	6	•		2	•		4		4	3 4	0.4	3 4	
Detector Phase	1	6		5	2		4	4	4	3	3 4	3 4	
Switch Phase	5.0	7.0		5.0	7.0		15.0	15.0	15.0	7.0			
Minimum Initial (s)	9.0	34.1		9.0	34.1		36.6	36.6	36.6	11.0			
Minimum Split (s) Total Split (s)	29.0	50.0		13.0	34.1		41.0	41.0	41.0	16.0			
Total Split (%)	24.2%	41.7%		10.8%	28.3%		34.2%	34.2%	34.2%	13.3%			
Maximum Green (s)	25.0	43.9		9.0	27.9		34.4	34.4	34.4	12.0			
Yellow Time (s)	3.0	3.3		3.0	3.3		3.3	3.3	3.3	3.0			
All-Red Time (s)	1.0	2.8		1.0	2.8		3.3	3.3	3.3	1.0			
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0	0.0	0.0			
Total Lost Time (s)	4.0	6.1		4.0	6.1			6.6	6.6	4.0			
Lead/Lag	Lead	Lag		Lead	Lag		Lag	Lag	Lag	Lead			
Lead-Lag Optimize?													
Vehicle Extension (s)	3.0	0.2		3.0	0.2		3.0	3.0	3.0	3.0			
Recall Mode	None	None		None	None		C-Min	C-Min	C-Min	None			
Walk Time (s)		7.0			7.0		7.0	7.0	7.0				
Flash Dont Walk (s)		21.0			21.0		23.0	23.0	23.0				
Pedestrian Calls (#/hr)	0	0		07.0	0		0	0	0			=0.0	
Act Effct Green (s)	55.2	40.3		37.8	26.9			38.2	38.2	52.8	56.8	56.8	
Actuated g/C Ratio v/c Ratio	0.46 0.86	0.34 0.40		0.32	0.22 0.96			0.32 0.28	0.32 0.19	0.44 0.68	0.47 0.61	0.47 0.45	
Control Delay	52.7	33.3		24.0	66.4			32.6	4.0	26.3	24.8	8.7	
Queue Delay	0.0	0.0		0.0	0.0			0.0	0.0	0.0	5.2	0.7	
Total Delay	52.7	33.3		24.0	66.4			32.6	4.0	26.3	30.0	9.4	
LOS	D	C		C	E			C	A	C	C	A	
Approach Delay		41.3			59.7			24.5			22.7		
Approach LOS		D			Е			С			С		
Stops (vph)	271	346		97	631			203	9	317	385	129	
Fuel Used(gal)	6	6		2	17			3	0	5	6	3	
CO Emissions (g/hr)	412	444		139	1219			244	25	337	454	187	
NOx Emissions (g/hr)	80	86		27	237			48	5	66	88	36	
VOC Emissions (g/hr)	96	103		32	282			57	6	78	105	43	
Dilemma Vehicles (#)	0	0		0	0			0	0	0	0	0	
Queue Length 50th (ft)	213	146		62	288			90	0	185	316	77	
Queue Length 95th (ft)	#330	208		101	#408			131	30	m227	m379	m119	
Internal Link Dist (ft)		304		400	342			183	400		370	100	
Turn Bay Length (ft)	400	1000		160	007			1000	120	F22	004	120	
Base Capacity (vph)	428	1288		348	827			1028	597	533	881	868	
Starvation Cap Reductn Spillback Cap Reductn	0	0		0	0			0	0	0	274 0	214 0	
Opinioack Cap Reductifi	U	U		U	U			U	U	U	U	U	



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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations	*	∱ 1≽		ሻ	↑ ↑			4			4		
Traffic Volume (vph)	1	397	93	133	768	4	155	1	185	1	1	2	
Future Volume (vph)	1	397	93	133	768	4	155	1	185	1	1	2	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	90		0	90		0	0		0	0		0	
Storage Lanes	1		0	1		0	0		0	0		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	1.00	1.00	
Frt		0.972			0.999			0.927			0.932		
Flt Protected	0.950			0.950				0.978			0.988		
Satd. Flow (prot)	1770	3440	0	1770	3536	0	0	1689	0	0	1715	0	
Flt Permitted	0.324			0.383				0.853			0.949		
Satd. Flow (perm)	604	3440	0	713	3536	0	0	1473	0	0	1648	0	
Right Turn on Red			Yes			Yes			Yes			Yes	
Satd. Flow (RTOR)		24						66			2		
Link Speed (mph)		30			30			30			30		
Link Distance (ft)		510			228			158			352		
Travel Time (s)		11.6			5.2			3.6			8.0		
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)	1	432	101	145	835	4	168	1	201	1	1	2	
Shared Lane Traffic (%)				. 10			. 30		_7,			_	
Lane Group Flow (vph)	1	533	0	145	839	0	0	370	0	0	4	0	
Turn Type	pm+pt	NA		pm+pt	NA	•	Perm	NA		Perm	NA		
Protected Phases	1	6		5	2		. 51111	4		. 51111	4		
Permitted Phases	6	U		2	2		4	7		4	7		
Detector Phase	1	6		5	2		4	4		4	4		
Switch Phase		U		J	2		7	7		4	4		
Minimum Initial (s)	5.0	15.0		5.0	15.0		7.0	7.0		7.0	7.0		
Minimum Split (s)	10.0	35.0		10.0	35.0		35.0	35.0		35.0	35.0		
	10.0	40.0		20.0	50.0		60.0	60.0		60.0	60.0		
Total Split (s)	8.3%	33.3%		16.7%	41.7%		50.0%	50.0%		50.0%	50.0%		
Total Split (%)	5.0			15.0	41.7%			55.0			55.0		
Maximum Green (s)	3.0	35.0 3.0		3.0	3.0		55.0 3.0	3.0		55.0 3.0	3.0		
Yellow Time (s)							2.0						
All-Red Time (s)	2.0	2.0		2.0	2.0 0.0		2.0	2.0		2.0	2.0		
Lost Time Adjust (s)	0.0			0.0				0.0			0.0		
Total Lost Time (s)	5.0	5.0		5.0	5.0			5.0			5.0		
Lead/Lag	Lead	Lag		Lead	Lag								
Lead-Lag Optimize?													
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0		
Recall Mode	None	C-Min		None	C-Min		None	None		None	None		
Walk Time (s)		7.0			7.0		7.0	7.0		7.0	7.0		
Flash Dont Walk (s)		23.0			23.0		23.0	23.0		23.0	23.0		
Pedestrian Calls (#/hr)		0			0		0	0		0	0		
Act Effct Green (s)	67.7	62.7		77.4	75.4			32.6			32.6		
Actuated g/C Ratio	0.56	0.52		0.64	0.63			0.27			0.27		
v/c Ratio	0.00	0.29		0.27	0.38			0.83			0.01		
Control Delay	18.0	26.0		5.8	8.6			48.1			21.0		
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0		
Total Delay	18.0	26.0		5.8	8.6			48.1			21.0		
LOS	В	С		Α	Α			D			С		
Approach Delay		26.0			8.2			48.1			21.0		
Approach LOS		С			Α			D			С		
Stops (vph)	1	366		36	328			261			3		
Fuel Used(gal)	0	7		1	6			5			0		
CO Emissions (g/hr)	1	459		61	434			363			3		
NOx Emissions (g/hr)	0	89		12	84			71			1		
VOC Emissions (g/hr)	0	106		14	101			84			1		
Dilemma Vehicles (#)	0	0		0	0			0			0		
Queue Length 50th (ft)	0	166		15	47			226			1		
Queue Length 95th (ft)	m2	255		m64	m323			299			9		
Internal Link Dist (ft)		430			148			78			272		
Turn Bay Length (ft)	90			90									
Base Capacity (vph)	389	1810		592	2221			710			756		
Starvation Cap Reductn	0	0		0	0			0			0		
Spillback Cap Reductn	0	0		0	0			0			0		
Spinousia Oup (Toudou)	U	U		U	U			U			U		

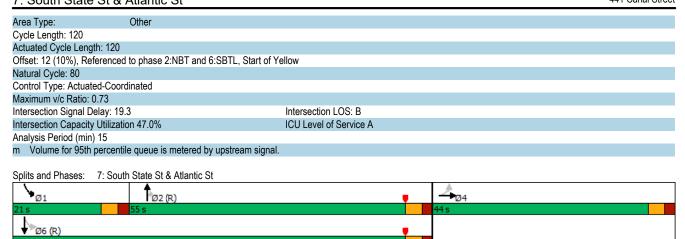


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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations	Ĭ	f)		7	†	7	7	^	7	J.	^	7	
Traffic Volume (vph)	61	156	31	324	306	347	31	295	200	108	208	163	
Future Volume (vph)	61	156	31	324	306	347	31	295	200	108	208	163	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	100		0	210		0	100		130	70		110	
Storage Lanes	1		0	1		1	1		1	1		1	
Taper Length (ft)	25			10			50			45			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Frt		0.975				0.850			0.850			0.850	
Flt Protected	0.950		_	0.950			0.950			0.950			
Satd. Flow (prot)	1770	1816	0	1770	1863	1583	1770	3539	1583	1770	3539	1583	
Flt Permitted	0.560	1010		0.314	4000	4500	0.611	0.500	4=00	0.495	0.500	4500	
Satd. Flow (perm)	1043	1816	0	585	1863	1583	1138	3539	1583	922	3539	1583	
Right Turn on Red			No			Yes			Yes			Yes	
Satd. Flow (RTOR)		00			00	377		00	217		00	177	
Link Speed (mph)		30			30			30			30		
Link Distance (ft)		348			510			366			301		
Travel Time (s)	0.00	7.9	0.00	0.00	11.6	0.00	0.00	8.3	0.00	0.00	6.8	0.00	
Peak Hour Factor Adj. Flow (vph)	0.92 66	0.92 170	0.92 34	0.92 352	0.92	0.92 377	0.92	0.92 321	0.92 217	0.92 117	0.92 226	0.92	
, (1 /	00	170	34	352	333	3//	34	321	217	117	220	177	
Shared Lane Traffic (%) Lane Group Flow (vph)	66	204	0	352	333	377	34	321	217	117	226	177	
Turn Type		NA	U		NA			NA	custom	pm+pt	NA	custom	
Protected Phases	pm+pt 3	NA 8		pm+pt 7	4	pm+ov 5	pm+pt 1	6	Custom	ріп+рі 5	2	Custom	
Permitted Phases	8	0		4	4	4	6	Ö	2	2	2	6	
Detector Phase	3	8		7	4	5	1		2	5		6	
Switch Phase	J	0		ı	4	J			2	J		U	
Minimum Initial (s)	5.0	7.0		5.0	7.0	5.0	5.0	15.0	15.0	5.0	15.0	15.0	
Minimum Split (s)	10.0	34.0		10.0	34.0	10.0	10.0	34.0	34.0	10.0	34.0	34.0	
Total Split (s)	30.0	40.0		30.0	40.0	14.0	14.0	36.0	36.0	14.0	36.0	36.0	
Total Split (%)	25.0%	33.3%		25.0%	33.3%	11.7%	11.7%	30.0%	30.0%	11.7%	30.0%	30.0%	
Maximum Green (s)	26.0	35.0		26.0	35.0	10.0	10.0	31.0	31.0	10.0	31.0	31.0	
Yellow Time (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	1.0	2.0		1.0	2.0	1.0	1.0	2.0	2.0	1.0	2.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	4.0	5.0		4.0	5.0	4.0	4.0	5.0	5.0	4.0	5.0	5.0	
Lead/Lag	Lead	Lag		Lead	Lag	Lead	Lead	Lag	Lag	Lead	Lag	Lag	
Lead-Lag Optimize?		- 3			- 3			- 5	- 5		- 3		
Vehicle Extension (s)	3.0	3.0		3.0	3.0	2.0	3.0	0.2	0.2	2.0	0.2	0.2	
Recall Mode	None	None		None	None	None	None	C-Max	C-Max	None	C-Max	C-Max	
Walk Time (s)		7.0			7.0			7.0	7.0		7.0	7.0	
Flash Dont Walk (s)		22.0			22.0			22.0	22.0		22.0	22.0	
Pedestrian Calls (#/hr)		0			0			0	0		0	0	
Act Effct Green (s)	28.2	18.9		47.8	36.4	49.7	58.7	51.0	56.4	63.1	56.4	51.0	
Actuated g/C Ratio	0.24	0.16		0.40	0.30	0.41	0.49	0.42	0.47	0.53	0.47	0.42	
v/c Ratio	0.22	0.72		0.75	0.59	0.43	0.06	0.21	0.25	0.22	0.14	0.23	
Control Delay	24.0	61.6		39.3	43.4	14.9	16.3	24.2	4.2	11.7	14.3	2.6	
Queue Delay	0.0	0.0		1.7	0.0	0.4	0.0	0.0	0.0	0.0	0.0	0.5	
Total Delay	24.0	61.6		41.0	43.4	15.3	16.3	24.2	4.2	11.7	14.3	3.1	
LOS	С	Е		D	D	В	В	С	Α	В	В	Α	
Approach Delay		52.4			32.6			16.1			9.9		
Approach LOS		D			С			В			Α		
Stops (vph)	44	174		286	285	221	16	187	18	33	99	18	
Fuel Used(gal)	1	4		5	5	4	0	3	1	1	2	1	
CO Emissions (g/hr)	49	268		382	384	255	20	233	59	48	115	40	
NOx Emissions (g/hr)	10	52		74	75	50	4	45	11	9	22	8	
VOC Emissions (g/hr)	11	62		88	89	59	5	54	14	11	27	9	
Dilemma Vehicles (#)	0	0		0	0	0	0	0	0	0	0	0	
Queue Length 50th (ft)	31	152		251	252	107	12	83	0	28	30	1	
Queue Length 95th (ft)	54	221		338	349	257	33	133	52	52	46	1	
Internal Link Dist (ft)		268			430			286			221		
Turn Bay Length (ft)	100			210			100		130	70		110	
Base Capacity (vph)	552	529		490	578	893	639	1502	858	557	1662	774	
Starvation Cap Reductn	0	0		47	0	179	0	0	0	0	0	312	
Spillback Cap Reductn	0	0		0	0	0	0	0	0	0	0	0	

Lanes, Volumes, Timings 6: Atlantic Street & Station Place/Dock Street

	•	-	•	•	←	•	4	†	-	-	ļ	4	
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Storage Cap Reductn	0	0		0	0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.12	0.39		0.79	0.58	0.53	0.05	0.21	0.25	0.21	0.14	0.38	
Intersection Summary													
Area Type:)ther												
Cycle Length: 120													
Actuated Cycle Length: 120													
Offset: 35 (29%), Referenced to	phase 2:S	BTL and 6	:NBTL, St	art of Yello	ow								
Natural Cycle: 90													
Control Type: Actuated-Coordin	ated												
Maximum v/c Ratio: 0.75													
Intersection Signal Delay: 26.1				Int	ersection	LOS: C							
Intersection Capacity Utilization	61.5%			IC	U Level of	f Service B							
Analysis Period (min) 15													
Splits and Phases: 6: Atlantic	Street & S	tation Plac	e/Dock St	reet									
↑ ø1)			•	≯ ø3				₩ Ø4				
14 s 36 s				3	0 s				40 s				
\$.)			.	√ Ø7								
14 s 36 s				3	0 s				40 s				

	۶	→	•	•	←	•	4	†	<i>></i>	/	ţ	4	
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations	ሻ	∱ β						^	7	ሻ	^		
Traffic Volume (vph)	81	340	73	0	0	0	0	637	81	123	395	0	
Future Volume (vph)	81	340	73	0	0	0	0	637	81	123	395	0	
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	0.95	1.00	1.00	0.95	1.00	
Frt		0.973							0.850				
Flt Protected	0.950			_						0.950		_	
Satd. Flow (prot)	1770	3444	0	0	0	0	0	3539	1583	1770	3539	0	
Flt Permitted	0.950	0444	•	•	•	•		0.500	4500	0.319	0.500		
Satd. Flow (perm)	1770	3444	. 0	0	0	0	0	3539	1583	594	3539	0	
Right Turn on Red			No			Yes			No			Yes	
Satd. Flow (RTOR)		00			00			00			00		
Link Speed (mph)		30			30			30			30		
Link Distance (ft)		294			1170			301			244		
Travel Time (s)	0.00	6.7	0.00	0.00	26.6	0.00	0.00	6.8	0.00	0.00	5.5	0.00	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	
Adj. Flow (vph)	92	386	83	0	0	0	0	724	92	140	449	0	
Shared Lane Traffic (%)	00	400	^	0	^	^	0	704	00	440	440	0	
Lane Group Flow (vph)	92 Dorm	469	0	0	0	0	0	724	92 Dorm	140	449	0	
Turn Type	Perm	NA						NA	Perm	pm+pt	NA		
Protected Phases Permitted Phases	4	4						2	2	1 6	6		
Detector Phase	4	4						2	2	1	6		
Switch Phase	7.0	7.0						45.0	45.0	F 0	45.0		
Minimum Initial (s)	7.0	7.0						15.0	15.0	5.0	15.0		
Minimum Split (s)	34.0	34.0						34.0	34.0	10.0	27.0		
Total Split (s)	44.0	44.0						55.0	55.0	21.0	76.0		
Total Split (%)	36.7%	36.7%						45.8%	45.8%	17.5%	63.3%		
Maximum Green (s)	39.0 3.0	39.0 3.0						50.0 3.0	50.0 3.0	16.0 3.0	71.0 3.0		
Yellow Time (s)	2.0	2.0						2.0	2.0	2.0	2.0		
All-Red Time (s)	-1.0	-1.0						-1.0	-1.0	0.0	-1.0		
Lost Time Adjust (s) Total Lost Time (s)	4.0	4.0						4.0	4.0	5.0	4.0		
Lead/Lag	4.0	4.0						Lag	Lag	Lead	4.0		
Lead-Lag Optimize?								Yes	Yes	Yes			
Vehicle Extension (s)	2.0	2.0						0.2	0.2	2.0	0.2		
Recall Mode	None	None						C-Max	C-Max	Min	C-Max		
Walk Time (s)	7.0	7.0						7.0	7.0	IVIIII	7.0		
Flash Dont Walk (s)	22.0	22.0						15.0	15.0		15.0		
Pedestrian Calls (#/hr)	0	0						0	0		0		
Act Effct Green (s)	22.3	22.3						77.3	77.3	88.7	89.7		
Actuated g/C Ratio	0.19	0.19						0.64	0.64	0.74	0.75		
v/c Ratio	0.28	0.73						0.32	0.09	0.27	0.17		
Control Delay	42.9	52.8						8.9	7.5	5.9	1.5		
Queue Delay	0.0	0.0						0.5	0.0	0.4	0.4		
Total Delay	42.9	52.8						9.4	7.5	6.3	1.8		
LOS	D	D						Α	Α	A	Α		
Approach Delay		51.2						9.2			2.9		
Approach LOS		D						Α			A		
Stops (vph)	67	377						260	26	34	33		
Fuel Used(gal)	1	7						4	0	1	1		
CO Emissions (g/hr)	88	522						286	32	40	74		
NOx Emissions (g/hr)	17	102						56	6	8	14		
VOC Emissions (g/hr)	20	121						66	7	9	17		
Dilemma Vehicles (#)	0	0						0	0	0	0		
Queue Length 50th (ft)	62	182						108	24	9	11		
Queue Length 95th (ft)	103	220						123	33	m27	m10		
Internal Link Dist (ft)		214			1090			221			164		
Turn Bay Length (ft)													
Base Capacity (vph)	590	1148						2280	1020	595	2644		
Starvation Cap Reductn	0	0						1030	0	186	1603		
Spillback Cap Reductn	0	0						124	0	0	0		
Storage Cap Reductn	0	0						0	0	0	0		
Reduced v/c Ratio	0.16	0.41						0.58	0.09	0.34	0.43		
Intersection Cummen													
Intersection Summary													



Comment Comm		•	/	—	•	*1	•	†		لِر	4			
Lame Complement Complement	Lane Group	WBL2	WBL	WBT	WBR	NBL2	NBL	NBT	SBT	SBR	SBR2	Ø2	Ø3	Ø5
Traffice Volume (upp) 143 672 684 334 291 13 414 375 285 136 ("Infull Volume (upp) 143 672 684 334 291 13 414 375 285 136 ("Infull Volume (upp) 1900 1900 1900 1900 1900 1900 1900 190														
Future Volume (phy) 190 190 190 190 190 190 190 190 190 190		143	672		334	291					136			
Community Comm														
First Horborated 1 0,972 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Lane Util. Factor								0.95					
The Protected 0.978	Frt													
Saled Flow (proty)							0.950			0.000				
File Permitted		0	0		0	0		3539	3539	1583	0			
Salid Flow (perm) O 0 0 609 0 0 8695 3539 3539 1583 0 No	(,	•			_	•								
Sign Turn on Red Sign		0	0		0	0		3539	3539	1583	0			
Sale Flow (RTOR) Init Spead (mphp) 100 25 25 25 Init Spead (mphp) 1100 1209 244 742 Inravel Time (s) 25 75 67 202 Peak Hour Factor 0.92 0.85 0.85 0.85 0.85 0.85 0.85 0.85 0.85	. ,	·	•			•					No			
Link Speed (mph)														
Link Distance (ff)				30				25	25					
Travel T														
Peak Hour Factor														
Adj. Flow (ynlp) 155 791 769 393 316 15 487 441 335 148 Ame Group Flow (ynlp) 0 0 2108 0 0 3311 487 441 483 0 Izun Type Spitt Spitt A custom custom custom ANA Perm Protected Phases 4 4 4 35 35 23 6 2 3 5 Switch Phase 310 100 100 100 150 150 150 150 50 50 50 Willimium Spitt (s) 310 3		0.92	0.85		0.85	0.92	0.85			0.85	0.92			
Share Lane Traffic (%)														
Lame Group Flow (opt) 0		100	731	103	000	310	10	701	771	000	170			
Turn Type Split Split NA		٥	0	2108	٥	٥	221	197	111	183	٥			
Protected Phases					U						U			
Permitted Phases										reiiii		0	2	E
Detector Phase 4		4	4	4				23	Ö	^		2	3	5
Switch Phase Swit		4												
Minimum Initial (s) 10.0 10.0 10.0 15.0 15.0 15.0 5.0 5.0 Minimum Spit (s) 31.0 31.0 31.0 31.0 31.0 31.0 32.0 20.0 22.0 12.0 10.0 10.0 10.0 10.0 1		4	4	4		35	35			ь				
Minimum Split (s) 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0		40.0	40.0	40.0					45.0	45.0		45.0		5.0
Total Split (s)														
Total Spitit (%)														
Maximum Green (s)														
Verlow Time (s)														
All-Red Time (s) 2.0 2.0 2.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0														
Leaf Time Adjust (s)														
Total Lost Time (s) 5.0		2.0	2.0									2.0	2.0	2.0
Lead Lag Commissions C														
Lead-Lag Optimize? Vehicle Extension (s) 2.0 2	Total Lost Time (s)			5.0						5.0				
Vehicle Extension (s) 2.0	Lead/Lag								Lag	Lag				Lead
None	Lead-Lag Optimize?													
Malk Time (s)	Vehicle Extension (s)	2.0	2.0	2.0					0.2	0.2		0.2	2.0	2.0
Plash Dont Walk (s)	Recall Mode	None	None	None					None	None		C-Max	None	None
Pedestrian Calls (#/hr) 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Walk Time (s)	7.0	7.0	7.0								7.0		
Act Effet Green (s)	Flash Dont Walk (s)	19.0	19.0	19.0								14.0		
Actuated g/C Ratio 0.37 0.51 0.55 0.35 0.35 0.35 0/c Ratio 1.46dl 0.69 0.25 0.36 0.88 0.88 0.80 0.90 0.90 0.90 0.90 0.90	Pedestrian Calls (#/hr)	0	0	0								0		
v/c Ratio 1.46dl 0.69 0.25 0.36 0.88 Control Delay 31.3 22.5 11.2 30.9 56.0 Queue Delay 0.0 0.0 0.0 0.0 0.0 Total Delay 31.3 22.6 11.8 30.9 56.0 LOS C C B C E Approach Delay 31.3 16.1 44.0 Approach LOS C B D Stops (yph) 1683 219 230 274 350 Fuel Used(gal) 38 3 6 9 CO Emissions (g/hr) 2642 200 188 404 616 NOx Emissions (g/hr) 514 39 37 79 120 VOC Emissions (g/hr) 612 46 44 94 143 Dilemma Vehicles (#) 0 0 0 0 0 Queue Length 50th (ft) 476 161 120 130 341 Queue Length 95th (ft) 492 192 131 182 #561 Internal Link Dist (ft) 1129 164 662 Turn Bay Length (ft) 128 549 Starvation C	Act Effct Green (s)			44.0			61.0	66.0	41.7	41.7				
Control Delay 31.3 22.5 11.2 30.9 56.0	Actuated g/C Ratio			0.37			0.51	0.55	0.35	0.35				
Control Delay 31.3 22.5 11.2 30.9 56.0	v/c Ratio													
Queue Delay 0.0 0.0 0.6 0.0 0.0 Total Delay 31.3 22.6 11.8 30.9 56.0 LOS C C B C E Approach Delay 31.3 16.1 44.0 Approach LOS C B D Stops (vph) 1683 219 230 274 350 Fuel Used(gal) 38 3 3 6 9 CO Emissions (g/hr) 2642 200 188 404 616 NOx Emissions (g/hr) 514 39 37 79 120 VOC Emissions (g/hr) 612 46 44 94 143 Dilemma Vehicles (#) 0 0 0 0 0 0 Queue Length 50th (ft) 476 161 120 130 341 Queue Length 95th (ft) 492 192 131 182 #561 Turn Bay Length (ft) 1129 164														
Total Delay	Queue Delay													
C	Total Delay													
Approach Delay 31.3 16.1 44.0 Approach LOS C B D Stops (vph) 1683 219 230 274 350 Fuel Used(gal) 38 3 3 6 9 CO Emissions (g/hr) 2642 200 188 404 616 NOx Emissions (g/hr) 514 39 37 79 120 VOC Emissions (g/hr) 612 46 44 94 143 Dilemma Vehicles (#) 0 0 0 0 0 Queue Length 50th (ft) 476 161 120 130 341 Queue Length 95th (ft) 492 192 131 182 #561 Internal Link Dist (ft) 1129 164 662 662 Turn Bay Length (ft) 2233 594 1946 1228 549 Starvation Cap Reductn 0 0 0 0 0 Spillback Cap Reductn 0 0 0 0 0 Storage Cap Reductn 0 0.56 <th< td=""><td>LOS</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></th<>	LOS													
Approach LOS C B D Stops (vph) 1683 219 230 274 350 Fuel Used(gal) 38 3 3 6 9 CO Emissions (g/hr) 2642 200 188 404 616 NOX Emissions (g/hr) 514 39 37 79 120 VOC Emissions (g/hr) 612 46 44 94 143 Dilemma Vehicles (#) 0 0 0 0 0 Queue Length 50th (ft) 476 161 120 130 341 Queue Length 95th (ft) 492 192 131 182 #561 Internal Link Dist (ft) 1129 164 662 Turn Bay Length (ft) Base Capacity (vph) 2233 594 1946 1228 549 Starvation Cap Reductn 0 7 1036 0 0 Storage Cap Reductn 0 0 0 0 0 0 Reduced v/c Ratio 0.94 0.56 0.54 0.36 0.88										_				
Stops (vph) 1683 219 230 274 350 Fuel Used(gal) 38 3 3 6 9 CO Emissions (g/hr) 2642 200 188 404 616 NOx Emissions (g/hr) 514 39 37 79 120 VOC Emissions (g/hr) 612 46 44 94 143 Dilemma Vehicles (#) 0 0 0 0 0 Queue Length 50th (ft) 476 161 120 130 341 Queue Length 95th (ft) 492 192 131 182 #561 Internal Link Dist (ft) 1129 164 662 662 Turn Bay Length (ft) 8ase Capacity (vph) 2233 594 1946 1228 549 Starvation Cap Reductn 0 7 1036 0 0 Spillback Cap Reductn 0 0 0 0 Storage Cap Reductn 0 0 0 0 Reduced v/c Ratio 0.94 0.56 0.54 0.36 0.88														
Fuel Used(gal) 38 3 3 6 9 CO Emissions (g/hr) 2642 200 188 404 616 NOx Emissions (g/hr) 514 39 37 79 120 VOC Emissions (g/hr) 612 46 44 94 143 Dilemma Vehicles (#) 0 0 0 0 0 Queue Length 50th (ft) 476 161 120 130 341 Queue Length 95th (ft) 492 192 131 182 #561 Internal Link Dist (ft) 1129 164 662 Turn Bay Length (ft) Base Capacity (vph) 2233 594 1946 1228 549 Starvation Cap Reductn 0 7 1036 0 0 Spillback Cap Reductn 0 0 0 0 0 0 Storage Cap Reductn 0 0 0 0 0 0 Reduced v/c Ratio 0.94 0.56 0.54 0.36 0.88							219			350				
CO Emissions (g/hr) 2642 200 188 404 616 NOX Emissions (g/hr) 514 39 37 79 120 VOC Emissions (g/hr) 612 46 44 94 143 Dilemma Vehicles (#) 0 0 0 0 0 Queue Length 50th (ft) 476 161 120 130 341 Queue Length 95th (ft) 492 192 131 182 #561 Internal Link Dist (ft) 1129 164 662 Turn Bay Length (ft) Base Capacity (vph) 2233 594 1946 1228 549 Starvation Cap Reductn 0 7 1036 0 0 Spillback Cap Reductn 0 0 0 0 0 0 Storage Cap Reductn 0 0 0 0 0 Reduced v/c Ratio 0.94 0.56 0.54 0.36 0.88	,													
NOx Emissions (g/hr) 514 39 37 79 120 VOC Emissions (g/hr) 612 46 44 94 143 Dilemma Vehicles (#) 0 0 0 0 0 0 Queue Length 50th (ft) 476 161 120 130 341 Queue Length 95th (ft) 492 192 131 182 #561 Internal Link Dist (ft) 1129 164 662 Turn Bay Length (ft) Base Capacity (vph) 2233 594 1946 1228 549 Starvation Cap Reductn 0 7 1036 0 0 Spillback Cap Reductn 0 0 0 0 0 0 Storage Cap Reductn 0 0 0 0 0 0 Reduced v/c Ratio 0.94 0.56 0.54 0.36 0.88														
VOC Emissions (g/hr) 612 46 44 94 143 Dilemma Vehicles (#) 0 0 0 0 0 Queue Length 50th (ft) 476 161 120 130 341 Queue Length 95th (ft) 492 192 131 182 #561 Internal Link Dist (ft) 1129 164 662 Turn Bay Length (ft) 8ase Capacity (vph) 2233 594 1946 1228 549 Starvation Cap Reductn 0 7 1036 0 0 Spillback Cap Reductn 0 0 0 0 Storage Cap Reductn 0 0 0 0 Reduced v/c Ratio 0.94 0.56 0.54 0.36 0.88														
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Queue Length 50th (ft) 476 161 120 130 341 Queue Length 95th (ft) 492 192 131 182 #561 Internal Link Dist (ft) 1129 164 662 Turn Bay Length (ft) Base Capacity (vph) 2233 594 1946 1228 549 Starvation Cap Reductn 0 7 1036 0 0 Spillback Cap Reductn 0 0 0 0 0 Storage Cap Reductn 0 0 0 0 0 Reduced v/c Ratio 0.94 0.56 0.54 0.36 0.88														
Queue Length 95th (ft) 492 192 131 182 #561 Internal Link Dist (ft) 1129 164 662 Turn Bay Length (ft) Base Capacity (vph) 2233 594 1946 1228 549 Starvation Cap Reductn 0 7 1036 0 0 Spillback Cap Reductn 0 0 0 0 0 Storage Cap Reductn 0 0 0 0 0 Reduced v/c Ratio 0.94 0.56 0.54 0.36 0.88														
Internal Link Dist (ft) 1129 164 662 Turn Bay Length (ft) Base Capacity (vph) 2233 594 1946 1228 549 Starvation Cap Reductn 0 7 1036 0 0 Spillback Cap Reductn 0 0 0 0 0 0 Storage Cap Reductn 0 0 0 0 0 0 Reduced v/c Ratio 0.94 0.56 0.54 0.36 0.88	0 ()													
Turn Bay Length (ft) Base Capacity (vph) 2233 594 1946 1228 549 Starvation Cap Reductn 0 7 1036 0 0 Spillback Cap Reductn 0 0 0 0 0 Storage Cap Reductn 0 0 0 0 0 Reduced v/c Ratio 0.94 0.56 0.54 0.36 0.88							192			#30 I				
Base Capacity (vph) 2233 594 1946 1228 549 Starvation Cap Reductn 0 7 1036 0 0 Spillback Cap Reductn 0 0 0 0 0 Storage Cap Reductn 0 0 0 0 0 Reduced v/c Ratio 0.94 0.56 0.54 0.36 0.88				1129				164	002					
Starvation Cap Reductn 0 7 1036 0 0 Spillback Cap Reductn 0 0 0 0 0 Storage Cap Reductn 0 0 0 0 0 Reduced v/c Ratio 0.94 0.56 0.54 0.36 0.88				0000			FC 4	1010	4000	E / 0				
Spillback Cap Reductn 0 0 0 0 0 Storage Cap Reductn 0 0 0 0 0 Reduced v/c Ratio 0.94 0.56 0.54 0.36 0.88														
Storage Cap Reductn 0 0 0 0 0 0 Reduced v/c Ratio 0.94 0.56 0.54 0.36 0.88														
Reduced v/c Ratio 0.94 0.56 0.54 0.36 0.88														
Internaction Cummon	Reduced v/c Ratio			0.94			0.56	0.54	0.36	0.88				
	Intersection Summary													

Area Type: Other Cycle Length: 120
Actuated Cycle Length: 120 Offset: 14 (12%), Referenced to phase 2:NBTL, Start of Yellow Natural Cycle: 90 Control Type: Actuated-Coordinated Maximum v/c Ratio: 0.94 Intersection Signal Delay: 31.1 Intersection LOS: C Intersection Capacity Utilization 92.6% ICU Level of Service F Analysis Period (min) 15 # 95th percentile volume exceeds capacity, queue may be longer. Queue shown is maximum after two cycles. dl Defacto Left Lane. Recode with 1 though lane as a left lane. Splits and Phases: 8: Atlantic St & North State St ≠ ø2 (R) ≉f ø3 ₹ø4 Ø6

ntersection												
nt Delay, s/veh	3.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
ane Configurations	ች	11	LDIX	Ä	↑ ↑	VVDIX.	NDL	4	NDIT	ሻ	<u> </u>	ODIT
raffic Vol., veh/h	8	592	9	20	852	10	41	1	143	2	0	1
uture Vol. veh/h	8	592	9	20	852	10	41	1	143	2	0	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
ign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	_	-	130	-	-	_	_	-	0	_	-
/eh in Median Storage, #	-	0	-	-	0	-	-	0	_	-	0	-
Grade, %	_	0	_	-	0	_	_	0	-	_	0	_
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
leavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
/lymt Flow	9	643	10	22	926	11	45	1	155	2	0	1
										_		
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	937	0	0	653	0	0	1173	1647	327	1252	1647	469
Stage 1	-	-	-	-	-	-	666	666	-	976	976	-
Stage 2	-	-	-	-	-	-	507	981	-	276	671	-
Critical Hdwy	4.14	-	-	5.34	-	-	6.99	6.54	7.14	6.99	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	7.34	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.74	5.54	-
ollow-up Hdwy	2.22	-	-	3.12	-	-	3.67	4.02	3.92	3.67	4.02	3.32
ot Cap-1 Maneuver	727	-	-	574	-	-	172	98	571	153	98	541
Stage 1	-	-	-	-	-	-	348	456	-	263	327	-
Stage 2	-	-	-	-	-	-	500	326	-	671	453	-
Platoon blocked, %		-	-		-	-						
Nov Cap-1 Maneuver	727	-		574	-	-	165	93	571	106	93	541
Nov Cap-2 Maneuver	-	-	-	-	-	-	165	93	-	106	93	-
Stage 1	-	-	-	-	-	-	344	451	-	260	315	-
Stage 2	-	-	-	-	-	-	480	314	-	481	448	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.1			0.3			26.6			30.4		
HCM LOS							D			D		
Ainer Lane/Major Mumt		NBLn1	EBL	EBT EBR	WBL	WBT	WBR	SBLn1	SBLn2			
Minor Lane/Major Mvmt					574			106				
Capacity (veh/h)		363	727			-	-		541 0.002			
HCM Cantrol Dolov (a)		0.554 26.6	0.012		0.038 11.5	-	-	0.021 39.7	11.7			
ICM Control Delay (s)			10			-	-					
ICM CETT ((4) - O(11-1)		D	В		В	-	-	E	В			
HCM 95th %tile Q(veh)		3.2	0	-	0.1	-	-	0.1	0			

ntersection												
nt Delay, s/veh	4.7											
Movement	EBL	EBT	EBR	WBI	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
ane Configurations	*	^^	LDIT	1121		WEIT	INDL	4	NOIT	<u> </u>	<u> </u>	ODIT
raffic Vol. veh/h	8	592	20	29		10	53	1	160	2	0	1
uture Vol. veh/h	8	592	20	29		10	53	1	160	2	0	1
Conflicting Peds, #/hr	0	0	0	(0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	~	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None			None	-	-	None	-	-	None
Storage Length	100	_	-	130) -	-	_	_	-	0	_	-
/eh in Median Storage, #	-	0	_		- 0	-	-	0	-	-	0	-
Grade, %		0	_		- 0	_	_	0	_	_	0	_
Peak Hour Factor	92	92	92	92		92	92	92	92	92	92	92
leavy Vehicles, %	2	2	2	2		2	2	2	2	2	2	2
Nymt Flow	9	643	22	32		11	58	1	174	2	0	1
		0.0		V.	. 020					_		•
Major/Minor	Major1			Major2	<u>)</u>		Minor1			Minor2		
Conflicting Flow All	937	0	0	665		0	1199	1673	333	1272	1679	469
Stage 1	-	-	-			-	672	672	-	996	996	-
Stage 2		-	-			-	527	1001	-	276	683	-
Critical Hdwy	4.14	-	-	5.34	-	-	6.99	6.54	7.14	6.99	6.54	6.94
Critical Hdwy Stg 1		-	-			-	7.34	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-			-	6.54	5.54	-	6.74	5.54	-
follow-up Hdwy	2.22	-	-	3.12	2 -	-	3.67	4.02	3.92	3.67	4.02	3.32
ot Cap-1 Maneuver	727	-	-	566	.	-	166	95	566	148	94	541
Stage 1	-	-	-			-	344	453	-	256	320	-
Stage 2	-	-	-			-	487	319	-	671	447	-
Platoon blocked, %		-	-		-	-						
Nov Cap-1 Maneuver	727	-	-	566	; -	-	157	89	566	96	88	541
Nov Cap-2 Maneuver	-	-	-			-	157	89	-	96	88	-
Stage 1	-	-	-			-	340	448	-	253	302	-
Stage 2	-	-	-			-	459	301	-	458	442	-
Approach	EB			WE	}		NB			SB		
HCM Control Delay, s	0.1			0.4			35.9			32.8		
HCM LOS							Е			D		
/linor Lane/Major Mvmt		NBLn1	EBL	EBT EBF		WBT	WBR	SBLn1	SBLn2			
Capacity (veh/h)		339	727	-	- 566	-	-	96	541			
HCM Lane V/C Ratio		0.686	0.012	-	- 0.056	-	-	0.023	0.002			
HCM Control Delay (s)		35.9	10	-	- 11.7	-	-	43.4	11.7			
ICM Lane LOS		Е	В	-	- B	-	-	Е	В			
ICM 95th %tile Q(veh)		4.8	0		- 0.2			0.1	0			

Intersection						
Int Delay, s/veh	0.9					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	Y	LDI	NDL	ND1) i do	ODIX
Traffic Vol, veh/h	T 39	1	1 1	T 340	641	29
Future Vol. veh/h	39	1	1	340	641	29
Conflicting Peds, #/hr	0	0	0	0	041	29
		Stop	Free	Free	Free	Free
Sign Control RT Channelized	Stop	None	Free -	None	Free -	None
						None
Storage Length	0	-	100	-	-	
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	42	1	1	370	697	32
Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1085	713	729	0	- Iviajoiz	0
	713	713	729	-	-	-
Stage 1 Stage 2	372	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12		-	-
Critical Hdwy Stg 1	5.42	0.22	4.12	-	-	-
Critical Lidury Stg 1						
Critical Hdwy Stg 2	5.42	-	- 0.040	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	240	432	875	-	-	-
Stage 1	486	-	-	-	-	-
Stage 2	697	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	240	432	875	-	-	-
Mov Cap-2 Maneuver	240	-	-	-	-	-
Stage 1	486	-	-	-	-	-
Stage 2	697	-	-	-	-	-
Approach	EB		NB		SB	
					0	
HCM Control Delay, s	23		0		U	
HCM LOS	С					
Minor Lane/Major Mvmt		NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)		875	-	243	-	-
HCM Lane V/C Ratio		0.001	_	0.179	_	_
HCM Control Delay (s)		9.1	_	23	-	_
HCM Lane LOS		A	_	C	_	_
HCM 95th %tile Q(veh)		0	_	0.6	_	_
Tom John John & (Von)		U		0.0		

Intersection						
Int Delay, s/veh	1.9					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	₩.		1		JDL	4
Traffic Vol, veh/h	11	29	185	10	20	29
Future Vol, veh/h	11	29	185	10	20	29
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-		-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	_	0	_	_	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mymt Flow	12	32	201	11	22	32
WINTER TOWN	12	JZ	201	- 11	LL	JZ
Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	283	207	0	0	212	0
Stage 1	207	-	-	-	-	-
Stage 2	76	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	707	833	_	-	1358	_
Stage 1	828	-	-	-	-	-
Stage 2	947	_	_	_		-
Platoon blocked. %	V 11		_	_		_
Mov Cap-1 Maneuver	696	833	-	-	1358	_
Mov Cap-1 Maneuver	696	-	-	-	1330	-
Stage 1	828	-	-	-	-	-
Stage 2	932	-	-	-	-	-
Staye 2	932	-	-	-	-	-
Approach	WB		NB		SB	
HCM Control Delay, s	9.8		0		3.1	
HCM LOS	A					
	,,					
Minor Lane/Major Mvmt		NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)		-	-	790	1358	-
HCM Lane V/C Ratio		_	-	0.055	0.016	_
HCM Control Delay (s)		_	_	9.8	7.7	0
HCM Lane LOS		_	-	3.0 A	Α.	A
HCM 95th %tile Q(veh)		_		0.2	0	
How sour /oule Q(ven)		•		0.2	U	-

	•	-	\rightarrow	•	←	*	4	†	~	-	↓	4	
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations					साक		ሻ	† †			↑ ↑		
Traffic Volume (vph)	0	0	0	424	971	204	290	795	0	0	650	173	
Future Volume (vph)	0	0	0	424	971	204	290	795	0	0	650	173	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
ane Util. Factor	1.00	1.00	1.00	0.86	0.86	0.86	1.00	0.95	1.00	1.00	0.95	0.95	
Frt					0.981						0.968		
FIt Protected					0.987		0.950						
Satd. Flow (prot)	0	0	0	0	6204	0	1770	3539	0	0	3426	0	
It Permitted					0.987		0.126						
Satd. Flow (perm)	0	0	0	0	6204	0	235	3539	0	0	3426	0	
Right Turn on Red			Yes			Yes			Yes			Yes	
Satd. Flow (RTOR)					34						29		
Link Speed (mph)		30			30			30			30		
Link Distance (ft)		1209			425			225			425		
Travel Time (s)		27.5			9.7			5.1			9.7		
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	461	1055	222	315	864	0	0	707	188	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	0	0	0	1738	0	315	864	0	0	895	0	
Turn Type				Split	NA		D.P+P	NA			NA		
Protected Phases				4	4		1	12			2		
Permitted Phases							2						
Detector Phase				4	4		1						
Switch Phase													
Minimum Initial (s)				7.0	7.0		7.0				15.0		
Minimum Split (s)				34.5	34.5		11.0				33.4		
Total Split (s)				50.0	50.0		27.0				43.0		
Total Split (%)				41.7%	41.7%		22.5%				35.8%		
Maximum Green (s)				43.5	43.5		23.0				37.6		
Yellow Time (s)				3.3	3.3		3.0				3.3		
All-Red Time (s)				3.2	3.2		1.0				2.1		
Lost Time Adjust (s)					0.0		0.0				-1.0		
Total Lost Time (s)					6.5		4.0				4.4		
Lead/Lag							Lead				Lag		
Lead-Lag Optimize?											Yes		
Vehicle Extension (s)				3.0	3.0		3.0				0.2		
Recall Mode				None	None		Min				C-Min		
Walk Time (s)				7.0	7.0						7.0		
Flash Dont Walk (s)				21.0	21.0						21.0		
Pedestrian Calls (#/hr)				0	0						0		
Act Effct Green (s)					43.0		62.5	66.5			40.5		
Actuated g/C Ratio					0.36		0.52	0.55			0.34		
v/c Ratio					0.77		0.79	0.44			0.76		
Control Delay					36.3		33.3	8.2			39.9		
Queue Delay					0.2		57.5	19.3			0.3		
Total Delay					36.5		90.8	27.5			40.2		
LOS					D D		F	C			D		
Approach Delay					36.5			44.4			40.2		
Approach LOS					D		004	D			D 703		
Stops (vph)					1353		221	383			703		
Fuel Used(gal)					25		4	5			13		
CO Emissions (g/hr)					1719		258	338			929		
NOx Emissions (g/hr)					334		50	66			181		
VOC Emissions (g/hr)					398		60	78			215		
Dilemma Vehicles (#)					0		156	120			0		
Queue Length 50th (ft)					336		156	128			322		
Queue Length 95th (ft)		1400			383		m212	m174			404		
Internal Link Dist (ft)		1129			345			145			345		
Turn Bay Length (ft)					0070		440	1001			4474		
Base Capacity (vph)					2270		418	1961			1174		
Starvation Cap Reductn					0		151	1106			0		
Spillback Cap Reductn					89		0	0			37		
Storage Cap Reductn					0		0	0			0		
Reduced v/c Ratio					0.80		1.18	1.01			0.79		
ntersection Summary													

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 107 (89%), Referenced to phase 2:NBSB, Start of Yellow

Natural Cycle: 80

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.79

Intersection Signal Delay: 39.8 Intersection LOS: D

Intersection Capacity Utilization 75.9% ICU Level of Service D

Analysis Period (min) 15

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

Splits and Phases: 1: Canal St & North State St

	۶	_#	→	•	†	7	<i>></i>	4	\	↓			
Lane Group	EBL2	EBL	EBT	EBR	NBT	NBR	NBR2	SBL2	SBL	SBT	Ø1	Ø3	
Lane Configurations	ሻ	ă	^	7	↑ ↑					414			
Traffic Volume (vph)	570	592	571	273	525	474	41	305	10	758			
Future Volume (vph)	570	592	571	273	525	474	41	305	10	758			
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900			
Lane Width (ft)	11	11	11	11	12	12	12	12	12	12			
Lane Util. Factor	0.91	0.95	0.95	1.00	0.95	0.95	0.95	0.95	0.95	0.95			
Frt	0.050	0.050		0.850	0.926					0.000			
Flt Protected Satd. Flow (prot)	0.950 1557	0.950 1625	3421	1531	3277	0	0	0	0	0.986 3490			
Flt Permitted	0.950	0.950	3421	1001	3211	U	U	U	U	0.505			
Satd. Flow (perm)	1557	1625	3421	1531	3277	0	0	0	0	1787			
Right Turn on Red	1007	1020	0421	No	OZIT		No	U		1707			
Satd. Flow (RTOR)													
Link Speed (mph)			30		30					30			
Link Distance (ft)			1170		450					225			
Travel Time (s)			26.6		10.2					5.1			
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98			
Adj. Flow (vph)	582	604	583	279	536	484	42	311	10	773			
Shared Lane Traffic (%)	10%												
Lane Group Flow (vph)	524	662	583	279	1062	0	0	0	0	1094			
Turn Type	Split	Split	NA	Prot	NA			D.P+P	D.P+P	NA 122	4	_	
Protected Phases	4	4	4	4	2			13	13	123	1	3	
Permitted Phases Detector Phase	4	4	4	4				13	2 13				
Switch Phase	4	4	4	4				13	13				
Minimum Initial (s)	7.0	7.0	7.0	7.0	15.0						5.0	5.0	
Minimum Split (s)	33.0	33.0	33.0	33.0	33.0						10.0	9.5	
Total Split (s)	45.0	45.0	45.0	45.0	39.0						20.0	16.0	
Total Split (%)	37.5%	37.5%	37.5%	37.5%	32.5%						17%	13%	
Maximum Green (s)	40.0	40.0	40.0	40.0	34.0						15.0	11.5	
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0						3.0	3.5	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0						2.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0								
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0								
Lead/Lag	Lag	Lag	Lag	Lag	Lag						Lead	Lead	
Lead-Lag Optimize?	0.0	0.0	0.0	0.0	0.0						0.0	0.0	
Vehicle Extension (s) Recall Mode	2.0	2.0	2.0	2.0	0.2						2.0	2.0	
Walk Time (s)	None 7.0	None 7.0	None 7.0	None 7.0	C-Min 7.0						None	Max	
Flash Dont Walk (s)	21.0	21.0	21.0	21.0	21.0								
Pedestrian Calls (#/hr)	0	0	0	0	0								
Act Effct Green (s)	40.0	40.0	40.0	40.0	54.0					65.0			
Actuated g/C Ratio	0.33	0.33	0.33	0.33	0.45					0.54			
v/c Ratio	1.01	1.22	0.51	0.55	0.72					1.13dl			
Control Delay	81.1	151.2	33.3	36.8	39.4					35.4			
Queue Delay	31.8	1.3	0.0	0.0	50.2					9.7			
Total Delay	112.9	152.6	33.3	36.8	89.5					45.1			
LOS	F	F	С	D	F					D			
Approach Delay			92.7		89.5					45.1			
Approach LOS	440	F00	F	000	F					D			
Stops (vph) Fuel Used(gal)	448 16	529 29	477 12	233 6	941 17					644 13			
CO Emissions (g/hr)	1094	2015	819	407	1202					921			
NOx Emissions (g/hr)	213	392	159	79	234					179			
VOC Emissions (g/hr)	253	467	190	94	279					213			
Dilemma Vehicles (#)	0	0	0	0	0					0			
Queue Length 50th (ft)	~450	~665	208	191	456					114			
Queue Length 95th (ft)	m#706	#920	271	m271	m484					#253			
Internal Link Dist (ft)			1090		370					145			
Turn Bay Length (ft)													
Base Capacity (vph)	519	541	1140	510	1474					1124			
Starvation Cap Reductn	0	0	0	0	615					48			
Spillback Cap Reductn	77	81	0	0	0					0			
Storage Cap Reductn	1 10	1 11	0	0	0					1.02			
Reduced v/c Ratio	1.19	1.44	0.51	0.55	1.24					1.02			

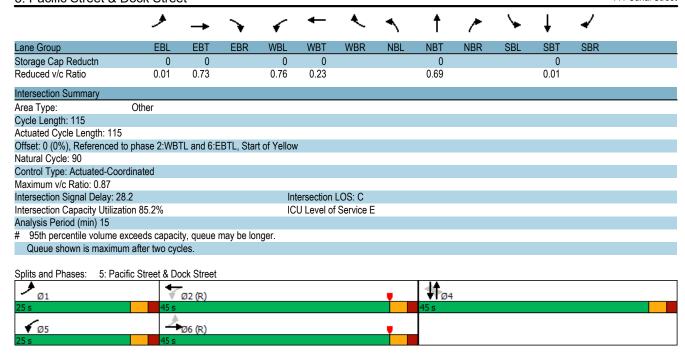
Intersection Summary Area Type: Other Cycle Length: 120 Actuated Cycle Length: 120 Offset: 112 (93%), Referenced to phase 2:NBSB, Start of Yellow Natural Cycle: 140 Control Type: Actuated-Coordinated Maximum v/c Ratio: 1.22 Intersection LOS: E Intersection Signal Delay: 79.5 Intersection Capacity Utilization 105.8% ICU Level of Service G Analysis Period (min) 15 Volume exceeds capacity, queue is theoretically infinite. Queue shown is maximum after two cycles. # 95th percentile volume exceeds capacity, queue may be longer. Queue shown is maximum after two cycles. m Volume for 95th percentile queue is metered by upstream signal. dl Defacto Left Lane. Recode with 1 though lane as a left lane. Splits and Phases: 2: Canal Street & South State Street & I-95 N On Ramp ₩ Ø2 (R) **A**_{Ø4} Ø3 Ø₀1

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations	ሻ	∱ ∱		*	↑ ↑			414	7	ሻ	†	7	
Traffic Volume (vph)	388	536	24	141	435	265	22	449	222	295	357	339	
Future Volume (vph)	388	536	24	141	435	265	22	449	222	295	357	339	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	0	1000	0	160		0	150	.000	120	0	1000	120	
Storage Lanes	1		0	1		0	1		1	1		1	
Taper Length (ft)	25		•	55		•	25		•	60		•	
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	
Frt	1.00	0.994	0.00	1.00	0.943	0.00	0.00	0.00	0.850	1.00	1.00	0.850	
Flt Protected	0.950	0.004		0.950	0.040			0.998	0.000	0.950		0.000	
Satd. Flow (prot)	1770	3518	0	1770	3337	0	0	3532	1583	1770	1863	1583	
Flt Permitted	0.134	3310	U	0.352	0001	0	U	0.920	1000	0.372	1000	1000	
Satd. Flow (perm)	250	3518	0	656	3337	0	0	3256	1583	693	1863	1583	
Right Turn on Red	230	3310	Yes	030	3331	Yes	U	3230	Yes	033	1003	Yes	
Satd. Flow (RTOR)		4	165		103	168			209			310	
		30			30			30	209		30	310	
Link Speed (mph)					422			263					
Link Distance (ft)		384									450		
Travel Time (s)	0.05	8.7	0.05	0.05	9.6	0.05	0.05	6.0	0.05	0.05	10.2	0.05	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	
Adj. Flow (vph)	408	564	25	148	458	279	23	473	234	311	376	357	
Shared Lane Traffic (%)	400	=00	•	4.40			•	100	004	0.1.1	0=0	^	
Lane Group Flow (vph)	408	589	0	148	737	0	0	496	234	311	376	357	
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA	Perm	pm+pt	NA	Perm	
Protected Phases	1	6		5	2			4		3	3 4		
Permitted Phases	6			2			4		4	3 4		3 4	
Detector Phase	1	6		5	2		4	4	4	3	3 4	3 4	
Switch Phase													
Minimum Initial (s)	5.0	7.0		5.0	7.0		15.0	15.0	15.0	7.0			
Minimum Split (s)	9.0	34.1		9.0	34.1		36.6	36.6	36.6	11.0			
Total Split (s)	23.0	37.0		23.0	37.0		37.0	37.0	37.0	23.0			
Total Split (%)	19.2%	30.8%		19.2%	30.8%		30.8%	30.8%	30.8%	19.2%			
Maximum Green (s)	19.0	30.9		19.0	30.9		30.4	30.4	30.4	19.0			
Yellow Time (s)	3.0	3.3		3.0	3.3		3.3	3.3	3.3	3.0			
All-Red Time (s)	1.0	2.8		1.0	2.8		3.3	3.3	3.3	1.0			
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0	0.0	0.0			
Total Lost Time (s)	4.0	6.1		4.0	6.1			6.6	6.6	4.0			
Lead/Lag	Lead	Lag		Lead	Lag		Lag	Lag	Lag	Lead			
Lead-Lag Optimize?		- 3			- 3		- 3	- 3	- 3				
Vehicle Extension (s)	3.0	0.2		3.0	0.2		3.0	3.0	3.0	3.0			
Recall Mode	None	None		None	None		C-Min	C-Min	C-Min	None			
Walk Time (s)		7.0		110110	7.0		7.0	7.0	7.0	110110			
Flash Dont Walk (s)		21.0			21.0		23.0	23.0	23.0				
Pedestrian Calls (#/hr)		0			0		0	0	0				
Act Effct Green (s)	51.0	33.2		39.7	25.9		U	36.2	36.2	57.0	61.0	61.0	
Actuated g/C Ratio	0.42	0.28		0.33	0.22			0.30	0.30	0.48	0.51	0.51	
v/c Ratio	1.18	0.60		0.33	0.22			0.51	0.38	0.48	0.40	0.37	
Control Delay	137.4	40.2		26.1	56.7			37.9	8.6	19.8	15.7	2.8	
Queue Delay	2.6	0.0		0.0	51.5			0.0	0.0	0.0	1.2	0.5	
Total Delay	139.9	40.2		26.1	108.2			37.9	8.6	19.8	16.8	3.3	
LOS	139.9 F	40.2 D		26.1 C	108.2 F			37.9 D	8.6 A	19.8 B	10.8 B	3.3 A	
	Г			C					А	Б		А	
Approach LOS		81.0			94.5			28.5			13.1		
Approach LOS	050	F		0.4	F 500			C	20	450	B	45	
Stops (vph)	258	470		94	589			385	36	158	173	45	
Fuel Used(gal)	13	9		2	15			7	1	3	3	2	
CO Emissions (g/hr)	939	619		144	1066			470	73	217	234	114	
NOx Emissions (g/hr)	183	120		28	207			92	14	42	46	22	
VOC Emissions (g/hr)	218	143		33	247			109	17	50	54	26	
Dilemma Vehicles (#)	0	0		0	0			0	0	0	0	0	
Queue Length 50th (ft)	~322	206		70	257			168	14	100	126	23	
Queue Length 95th (ft)	#509	264		108	319			237	82	m137	m163	m16	
Internal Link Dist (ft)		304			342			183			370		
Turn Bay Length (ft)				160					120			120	
Base Capacity (vph)	346	980		433	935			980	623	503	946	956	
Starvation Cap Reductn	0	0		0	0			0	0	0	351	264	
Spillback Cap Reductn	69	0		0	358			0	0	0	0	0	
•													

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Storage Cap Reductn	0	0		0	0			0	0	0	0	0	
Reduced v/c Ratio	1.47	0.60		0.34	1.28			0.51	0.38	0.62	0.63	0.52	
Intersection Summary													
Area Type:	Other												
Cycle Length: 120													
Actuated Cycle Length: 120													
Offset: 117 (98%), Reference	ed to phase 4:	NBSB, Sta	art of Yello	w									
Natural Cycle: 95													
Control Type: Actuated-Coo	rdinated												
Maximum v/c Ratio: 1.18													
Intersection Signal Delay: 54	1.4			In	tersection	LOS: D							
Intersection Capacity Utilizat	tion 91.1%			IC	U Level of	Service F							
Analysis Period (min) 15													
 Volume exceeds capacit 	ty, queue is the	oretically	infinite.										
Queue shown is maximul	m after two cyc	les.											
# 95th percentile volume e	exceeds capaci	ty, queue	may be lor	nger.									
Queue shown is maximum													

M Volume for 95th percentile queue is metered by upstream signal.Splits and Phases: 3: Canal Street & Dock Street/Jefferson Street

Lane Group Lane Configurations Traffic Volume (vph) Future Volume (vph) Ideal Flow (vphpl) Storage Length (ft) Storage Lanes Taper Length (ft) Lane Util. Factor Frt Fit Protected Satd. Flow (prot) Fit Permitted Satd. Flow (perm) Right Turn on Red Satd. Flow (RTOR) Link Speed (mph) Link Distance (ft) Travel Time (s)	EBL 5 5 1900 90 1 25 1.00 0.950 1770 0.466 868	645 645 1900 0.95 0.958 3391 3391 56	255 255 1900 0 0 0.95	WBL 316 316 1900 90 1 25 1.00 0.950 1770 0.161 300	WBT 465 465 1900 0.95	WBR 1 1 1900 0 0 0.95	117 117 1900 0 0 25 1.00	NBT 1 1 1900 1.00 0.907	260 260 1900 0 0	SBL 1 1 1900 0 0 25 1.00	\$BT 1 1 1900	3 3 1900 0 0	
Traffic Volume (vph) Future Volume (vph) Ideal Flow (vphpl) Storage Length (ft) Storage Lanes Taper Length (ft) Lane Util. Factor Frt Fft Protected Satd. Flow (prot) Fit Permitted Satd. Flow (perm) Right Turn on Red Satd. Flow (RTOR) Link Speed (mph) Link Distance (ft)	5 5 1900 90 1 25 1.00 0.950 1770 0.466	0.95 0.958 3391 56	255 1900 0 0 0.95	316 316 1900 90 1 25 1.00 0.950 1770 0.161	465 465 1900	1 1900 0 0 0	117 1900 0 0 25	1 1 1900 1.00 0.907	260 1900 0 0	1 1900 0 0 25	1 1 1900	3 1900 0 0	
Future Volume (vph) Ideal Flow (vphpl) Storage Length (ft) Storage Lanes Taper Length (ft) Lane Util. Factor Frt Fit Protected Satd. Flow (prot) Fit Permitted Satd. Flow (perm) Right Turn on Red Satd. Flow (RTOR) Link Speed (mph) Link Distance (ft)	5 1900 90 1 25 1.00 0.950 1770 0.466	0.95 0.958 3391 3391 56	255 1900 0 0 0.95	316 1900 90 1 25 1.00 0.950 1770 0.161	465 1900 0.95	1 1900 0 0 0	117 1900 0 0 25	1 1900 1.00 0.907	260 1900 0 0	1 1900 0 0 25	1 1900	3 1900 0 0	
Ideal Flow (vphpl) Storage Length (ft) Storage Lanes Taper Length (ft) Lane Util. Factor Frt Fit Protected Satd. Flow (prot) Fit Permitted Satd. Flow (perm) Right Turn on Red Satd. Flow (RTOR) Link Speed (mph) Link Distance (ft)	1900 90 1 25 1.00 0.950 1770 0.466	0.95 0.958 3391 3391 56	1900 0 0 0.95	1900 90 1 25 1.00 0.950 1770 0.161	0.95	1900 0 0	1900 0 0 25	1.00 0.907	1900 0 0	1900 0 0 25	1900	1900 0 0	
Storage Length (ft) Storage Lanes Taper Length (ft) Lane Util. Factor Frt Fit Protected Satd. Flow (prot) Fit Permitted Satd. Flow (perm) Right Turn on Red Satd. Flow (RTOR) Link Speed (mph) Link Distance (ft)	90 1 25 1.00 0.950 1770 0.466	0.95 0.958 3391 3391 56	0 0 0.95	90 1 25 1.00 0.950 1770 0.161	0.95	0 0	0 0 25	1.00 0.907	0	0 0 25	1.00	0	
Storage Lanes Taper Length (ft) Lane Util. Factor Frt Fit Protected Satd. Flow (prot) Fit Permitted Satd. Flow (perm) Right Turn on Red Satd. Flow (RTOR) Link Speed (mph) Link Distance (ft)	1 25 1.00 0.950 1770 0.466	0.958 3391 3391 56	0 0.95	1 25 1.00 0.950 1770 0.161		0.95	0 25	0.907	0	0 25		0	
Taper Length (ft) Lane Util. Factor Frt Fit Protected Satd. Flow (prot) Fit Permitted Satd. Flow (perm) Right Turn on Red Satd. Flow (RTOR) Link Speed (mph) Link Distance (ft)	25 1.00 0.950 1770 0.466	0.958 3391 3391 56	0.95	25 1.00 0.950 1770 0.161		0.95	25	0.907		25			
Lane Util. Factor Frt Fit Protected Satd. Flow (prot) Fit Permitted Satd. Flow (perm) Right Turn on Red Satd. Flow (RTOR) Link Speed (mph) Link Distance (ft)	1.00 0.950 1770 0.466	0.958 3391 3391 56	0	1.00 0.950 1770 0.161				0.907	1.00			1.00	
Frt Fit Protected Satd. Flow (prot) Fit Permitted Satd. Flow (perm) Right Turn on Red Satd. Flow (RTOR) Link Speed (mph) Link Distance (ft)	0.950 1770 0.466	0.958 3391 3391 56	0	0.950 1770 0.161			1.00	0.907	1.00	1.00		1.00	
Fit Protected Satd. Flow (prot) Fit Permitted Satd. Flow (perm) Right Turn on Red Satd. Flow (RTOR) Link Speed (mph) Link Distance (ft)	1770 0.466	3391 3391 56	0	1770 0.161	3539						0 0 4 0		
Satd. Flow (prot) Flt Permitted Satd. Flow (perm) Right Turn on Red Satd. Flow (RTOR) Link Speed (mph) Link Distance (ft)	1770 0.466	3391 56	0	1770 0.161	3539			0.000			0.919		
Fit Permitted Satd. Flow (perm) Right Turn on Red Satd. Flow (RTOR) Link Speed (mph) Link Distance (ft)	0.466	3391 56	0	0.161	3539		^	0.985	0	^	0.990	0	
Satd. Flow (perm) Right Turn on Red Satd. Flow (RTOR) Link Speed (mph) Link Distance (ft)		56				0	0	1664 0.894	0	0	1695 0.953	0	
Right Turn on Red Satd. Flow (RTOR) Link Speed (mph) Link Distance (ft)	000	56			2520	0	0	1510	0	0	1631	0	
Satd. Flow (RTOR) Link Speed (mph) Link Distance (ft)			165	500	3539	Yes	U	1510	Yes	U	1031	Yes	
Link Speed (mph) Link Distance (ft)						res		106	res		3	res	
Link Distance (ft)					30			30			30		
		510			228			158			352		
Havor Hillo (3)		11.6			5.2			3.6			8.0		
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)	5	701	277	343	505	0.92	127	0.92	283	0.92	0.92	0.92	
Shared Lane Traffic (%)	3	701	LII	010	000		121		200			- 3	
Lane Group Flow (vph)	5	978	0	343	506	0	0	411	0	0	5	0	
Turn Type	pm+pt	NA	•	pm+pt	NA	•	Perm	NA	v	Perm	NA	· ·	
Protected Phases	1	6		5	2			4			4		
Permitted Phases	6			2	_		4	•		4	•		
Detector Phase	1	6		5	2		4	4		4	4		
Switch Phase				_									
Minimum Initial (s)	5.0	15.0		5.0	15.0		7.0	7.0		7.0	7.0		
Minimum Split (s)	10.0	35.0		10.0	35.0		35.0	35.0		35.0	35.0		
Total Split (s)	25.0	45.0		25.0	45.0		45.0	45.0		45.0	45.0		
Total Split (%)	21.7%	39.1%		21.7%	39.1%		39.1%	39.1%		39.1%	39.1%		
Maximum Green (s)	20.0	40.0		20.0	40.0		40.0	40.0		40.0	40.0		
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0		
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0		
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0			0.0		
Total Lost Time (s)	5.0	5.0		5.0	5.0			5.0			5.0		
Lead/Lag	Lead	Lag		Lead	Lag								
Lead-Lag Optimize?													
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0		
Recall Mode	None	C-Min		None	C-Min		None	None		None	None		
Walk Time (s)		7.0			7.0		7.0	7.0		7.0	7.0		
Flash Dont Walk (s)		23.0			23.0		23.0	23.0		23.0	23.0		
Pedestrian Calls (#/hr)		0			0		0	0		0	0		
Act Effct Green (s)	57.3	51.6		74.8	72.6			30.2			30.2		
Actuated g/C Ratio	0.50	0.45		0.65	0.63			0.26			0.26		
v/c Ratio	0.01	0.63		0.80	0.23			0.87			0.01		
Control Delay	11.6	27.2		31.6	11.3			47.7			19.8		
Queue Delay	0.0	0.5		0.0	0.0			0.0			0.0		
Total Delay	11.6	27.7		31.6	11.3			47.7			19.8		
LOS	В	C		С	B			D			B		
Approach LOS		27.6 C			19.5			47.7			19.8		
Approach LOS Stops (vph)	2			160	B 202			D			B 3		
Fuel Used(gal)	3	660 12		160				273 6			0		
CO Emissions (g/hr)	3	854		4 291	4 281			395			4		
NOx Emissions (g/hr)	ა 1	166		57	55			393 77			1		
VOC Emissions (g/hr)	1	198		67	65			91			1		
Dilemma Vehicles (#)	0	190		0	00			0			0		
Queue Length 50th (ft)	1	280		122	74			222			1		
Queue Length 95th (ft)	7	409		#292	157			315			10		
Internal Link Dist (ft)	I	430		#232	148			78			272		
Turn Bay Length (ft)	90	430		90	140			70			212		
Base Capacity (vph)	693	1551		450	2234			594			569		
Starvation Cap Reductn	093	210		0	0			0			0		
Spillback Cap Reductn	0	0		0	0			0			0		



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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations	ሻ	ĵ»		7	†	7	ሻ	^	7	ሻ	^	7	
Traffic Volume (vph)	132	285	51	247	190	185	61	244	486	167	285	112	
Future Volume (vph)	132	285	51	247	190	185	61	244	486	167	285	112	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	100		0	210		0	100		130	70		110	
Storage Lanes	1		0	1		1	1		1	1		1	
Taper Length (ft)	25			10			50			45			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Frt		0.977				0.850			0.850			0.850	
Flt Protected	0.950			0.950			0.950			0.950			
Satd. Flow (prot)	1770	1820	0	1770	1863	1583	1770	3539	1583	1770	3539	1583	
Flt Permitted	0.628			0.174			0.563			0.538			
Satd. Flow (perm)	1170	1820	0	324	1863	1583	1049	3539	1583	1002	3539	1583	
Right Turn on Red			No			Yes			Yes			Yes	
Satd. Flow (RTOR)						201			528			122	
Link Speed (mph)		30			30			30			30		
Link Distance (ft)		348			510			366			301		
Travel Time (s)		7.9			11.6			8.3			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)	143	310	55	268	207	201	66	265	528	182	310	122	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	143	365	0	268	207	201	66	265	528	182	310	122	
Turn Type	pm+pt	NA		pm+pt	NA	pm+ov	pm+pt	NA	custom	pm+pt	NA	custom	
Protected Phases	3	8		7	4	5	1	6		5	2		
Permitted Phases	8			4		4	6		2	2		6	
Detector Phase	3	8		7	4	5	1		2	5		6	
Switch Phase													
Minimum Initial (s)	5.0	7.0		5.0	7.0	5.0	5.0	15.0	15.0	5.0	15.0	15.0	
Minimum Split (s)	10.0	34.0		10.0	34.0	10.0	10.0	34.0	34.0	10.0	34.0	34.0	
Total Split (s)	30.0	40.0		30.0	40.0	14.0	14.0	36.0	36.0	14.0	36.0	36.0	
Total Split (%)	25.0%	33.3%		25.0%	33.3%	11.7%	11.7%	30.0%	30.0%	11.7%	30.0%	30.0%	
Maximum Green (s)	26.0	35.0		26.0	35.0	10.0	10.0	31.0	31.0	10.0	31.0	31.0	
Yellow Time (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	1.0	2.0		1.0	2.0	1.0	1.0	2.0	2.0	1.0	2.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	4.0	5.0		4.0	5.0	4.0	4.0	5.0	5.0	4.0	5.0	5.0	
Lead/Lag	Lead	Lag		Lead	Lag	Lead	Lead	Lag	Lag	Lead	Lag	Lag	
Lead-Lag Optimize?													
Vehicle Extension (s)	3.0	3.0		3.0	3.0	2.0	3.0	0.2	0.2	2.0	0.2	0.2	
Recall Mode	None	None		None	None	None	None	C-Max	C-Max	None	C-Max	C-Max	
Walk Time (s)		7.0			7.0			7.0	7.0		7.0	7.0	
Flash Dont Walk (s)		22.0			22.0			22.0	22.0		22.0	22.0	
Pedestrian Calls (#/hr)		0			0			0	0		0	0	
Act Effct Green (s)	41.2	28.7		54.3	37.7	52.0	52.3	43.4	46.7	55.6	46.7	43.4	
Actuated g/C Ratio	0.34	0.24		0.45	0.31	0.43	0.44	0.36	0.39	0.46	0.39	0.36	
v/c Ratio	0.31	0.84		0.68	0.35	0.25	0.13	0.21	0.56	0.35	0.23	0.19	
Control Delay	20.6	60.5		30.4	32.0	2.9	21.0	29.6	5.6	12.9	16.9	4.2	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.3	0.0	
Total Delay	20.6	60.5		30.4	32.0	2.9	21.0	29.6	5.6	13.1	17.1	4.2	
LOS	С	E		С	C	Α	С	C	Α	В	В	Α	
Approach Delay		49.2			22.7			14.2			13.4		
Approach LOS		D		4==	C			B			В		
Stops (vph)	86	313		155	139	13	36	170	43	73	161	25	
Fuel Used(gal)	1	7		3	3	1	1	3	2	1	3	0	
CO Emissions (g/hr)	97	474		235	193	64	44	217	152	86	177	35	
NOx Emissions (g/hr)	19	92		46	38	12	9	42	30	17	34	7	
VOC Emissions (g/hr)	22	110		55	45	15	10	50	35	20	41	8	
Dilemma Vehicles (#)	0	0		0	0	0	0	0	0	0	0	0	
				129	122	0	27	75	0	61	62	1	
Queue Length 50th (ft)	64	269											
Queue Length 50th (ft) Queue Length 95th (ft)	64 86	361		176	169	37	64	125	95	m101	m123	m7	
Queue Length 50th (ft) Queue Length 95th (ft) Internal Link Dist (ft)	86			176	169 430	37		125 286			m123 221		
Queue Length 50th (ft) Queue Length 95th (ft) Internal Link Dist (ft) Turn Bay Length (ft)	86 100	361 268		176 210	430		100	286	130	70	221	110	
Queue Length 50th (ft) Queue Length 95th (ft) Internal Link Dist (ft) Turn Bay Length (ft) Base Capacity (vph)	86 100 648	361 268 530		176 210 459	430 617	808	100 535	286 1280	130 938	70 529	221 1377	110 650	
Queue Length 50th (ft) Queue Length 95th (ft) Internal Link Dist (ft) Turn Bay Length (ft)	86 100	361 268		176 210	430		100	286	130	70	221	110	

	•	→	•	•	←	•	4	†	/	-	ţ	4	
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Storage Cap Reductn	0	0		0	0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.22	0.69		0.58	0.34	0.25	0.12	0.21	0.56	0.38	0.37	0.19	

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 37 (31%), Referenced to phase 2:SBTL and 6:NBTL, Start of Yellow

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.84 Intersection Signal Delay: 22.9 Intersection Capacity Utilization 69.1%

Intersection LOS: C

ICU Level of Service C

Analysis Period (min) 15

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

Splits and Phases: 6: Atlantic Street & Station Place/Dock Street



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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations	ሻ	∱ ∱						† †	7	ሻ	† †		
Traffic Volume (vph)	92	602	143	0	0	0	0	485	81	193	421	0	
Future Volume (vph)	92	602	143	0	0	0	0	485	81	193	421	0	
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	0.95	1.00	1.00	0.95	1.00	
Frt		0.971							0.850				
Flt Protected	0.950									0.950			
Satd. Flow (prot)	1770	3437	0	0	0	0	0	3539	1583	1770	3539	0	
Flt Permitted	0.950									0.365			
Satd. Flow (perm)	1770	3437	0	0	0	0	0	3539	1583	680	3539	0	
Right Turn on Red			Yes			Yes			Yes			Yes	
Satd. Flow (RTOR)		25							92				
Link Speed (mph)		30			30			30			30		
Link Distance (ft)		294			1170			301			244		
Travel Time (s)	0.00	6.7	0.00	0.00	26.6	0.00	0.00	6.8	0.00	0.00	5.5	0.00	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	
Adj. Flow (vph)	105	684	163	0	0	0	0	551	92	219	478	0	
Shared Lane Traffic (%)	405	0.47	^	0	0	0	0	FF4	00	040	470	0	
Lane Group Flow (vph)	105	847	0	0	0	0	0	551	92 Dorm	219	478	0	
Turn Type	Perm	NA						NA	Perm	pm+pt	NA		
Protected Phases		4						2	2	1	6		
Permitted Phases Detector Phase	4	4						2	2	6	6		
Switch Phase	4	4								ı	Ö		
Minimum Initial (s)	7.0	7.0						15.0	15.0	5.0	15.0		
Minimum Split (s)	34.0	34.0						34.0	34.0	10.0	27.0		
Total Split (s)	40.0	40.0						54.0	54.0	26.0	54.0		
Total Split (%)	33.3%	33.3%						45.0%	45.0%	21.7%	45.0%		
Maximum Green (s)	35.0	35.0						49.0	49.0	21.7	49.0		
Yellow Time (s)	3.0	3.0						3.0	3.0	3.0	3.0		
All-Red Time (s)	2.0	2.0						2.0	2.0	2.0	2.0		
Lost Time Adjust (s)	-1.0	-1.0						-1.0	-1.0	0.0	-1.0		
Total Lost Time (s)	4.0	4.0						4.0	4.0	5.0	4.0		
Lead/Lag								Lag	Lag	Lead			
Lead-Lag Optimize?								Yes	Yes	Yes			
Vehicle Extension (s)	2.0	2.0						0.2	0.2	2.0	0.2		
Recall Mode	None	None						C-Max	C-Max	Min	C-Max		
Walk Time (s)	7.0	7.0						7.0	7.0		7.0		
Flash Dont Walk (s)	22.0	22.0						15.0	15.0		15.0		
Pedestrian Calls (#/hr)	0	0						0	0		0		
Act Effct Green (s)	33.7	33.7						62.6	62.6	77.3	78.3		
Actuated g/C Ratio	0.28	0.28						0.52	0.52	0.64	0.65		
v/c Ratio	0.21	0.86						0.30	0.11	0.41	0.21		
Control Delay	33.5	49.6						17.0	4.2	12.5	6.8		
Queue Delay	0.0	0.0						0.4	0.0	0.6	0.3		
Total Delay	33.5	49.6						17.5	4.2	13.1	7.1		
LOS	С	D						В	Α	В	Α		
Approach Delay		47.8						15.6			9.0		
Approach LOS		D						В			A		
Stops (vph)	68	672						209	12	93	106		
Fuel Used(gal)	1	13						4	0	1	2		
CO Emissions (g/hr)	85	904						278	23	96	137		
NOx Emissions (g/hr)	17	176						54	4	19	27		
VOC Emissions (g/hr)	20	210						64	5	22	32		
Dilemma Vehicles (#)	0	212						0	0	0	0		
Queue Length 50th (ft) Queue Length 95th (ft)	61 104	312 377						98 136	0 18	46 m67	51 66		
Internal Link Dist (ft)	104	214			1090			221	10	11107	164		
Turn Bay Length (ft)		214			1090			ZZI			104		
Base Capacity (vph)	531	1048						1846	869	628	2309		
Starvation Cap Reductn	0	0						790	009	165	1204		
Spillback Cap Reductn	15	0						790 25	0	0	0		
Storage Cap Reductin	0	0						25	0	0	0		
Reduced v/c Ratio	0.20	0.81						0.52	0.11	0.47	0.43		
	0.20	0.01						0.02	0.11	0.47	0.43		
Intersection Summary													

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 46 (38%), Referenced to phase 2:NBT and 6:SBTL, Start of Yellow

Natural Cycle: 80

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.86

Intersection Signal Delay: 26.9

Intersection Capacity Utilization 56.1%

Analysis Period (min) 15

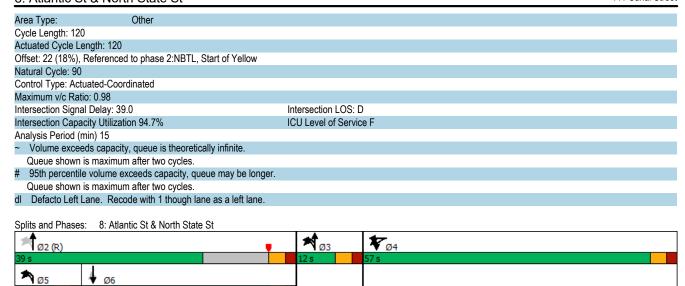
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 7: South State St & Atlantic St

26 s

40 s

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Lane Group	WBL2	WBL	WBT	WBR	NBL2	NBL	NBT	SBT	SBR	SBR2	Ø2	Ø3	Ø5	
Lane Configurations			नाकि			ă	^	^	7					
Traffic Volume (vph)	173	789	335	382	234	11	342	442	326	76				
Future Volume (vph)	173	789	335	382	234	11	342	442	326	76				
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900				
Lane Util. Factor	0.86	0.86	0.86	0.86	0.95	1.00	0.95	0.95	1.00	0.95				
Frt			0.966						0.850					
Flt Protected			0.972			0.950			0.000					
Satd. Flow (prot)	0	0	6017	0	0	1770	3539	3539	1583	0				
Flt Permitted		•	0.972	•	•	0.295	0000	0000	1000	· ·				
Satd. Flow (perm)	0	0	6017	0	0	550	3539	3539	1583	0				
Right Turn on Red		•	0011	No	•	000	0000	0000	1000	No				
Satd. Flow (RTOR)				110						110				
Link Speed (mph)			30				25	25						
Link Opeca (mph) Link Distance (ft)			1209				244	742						
Travel Time (s)			27.5				6.7	20.2						
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85				
Adj. Flow (vph)	204	928	394	449	275	13	402	520	384	89				
	204	320	394	449	213	13	402	320	304	09				
Shared Lane Traffic (%)	^	0	1075	0	0	200	402	E00	473	0				
Lane Group Flow (vph)	0 Colit	0 Colit	1975	U	0 oustom	288		520		0				
Turn Type	Split	Split	NA		custom	custom	NA	NA	Perm		_	_	_	
Protected Phases	4	4	4		3 5	3 5	2 3	6	^		2	3	5	
Permitted Phases					2	2			6					
Detector Phase	4	4	4		3 5	3 5			6					
Switch Phase														
Minimum Initial (s)	10.0	10.0	10.0					15.0	15.0		15.0	5.0	5.0	
Minimum Split (s)	31.0	31.0	31.0					20.0	20.0		26.0	10.0	10.0	
Total Split (s)	57.0	57.0	57.0					39.0	39.0		39.0	12.0	12.0	
Total Split (%)	47.5%	47.5%	47.5%					32.5%	32.5%		33%	10%	10%	
Maximum Green (s)	52.0	52.0	52.0					34.0	34.0		34.0	7.0	7.0	
Yellow Time (s)	3.0	3.0	3.0					3.0	3.0		3.0	3.0	3.0	
All-Red Time (s)	2.0	2.0	2.0					2.0	2.0		2.0	2.0	2.0	
Lost Time Adjust (s)			0.0					0.0	0.0					
Total Lost Time (s)			5.0					5.0	5.0					
Lead/Lag								Lag	Lag				Lead	
Lead-Lag Optimize?														
Vehicle Extension (s)	2.0	2.0	2.0					0.2	0.2		0.2	2.0	2.0	
Recall Mode	None	None	None					None	None		C-Max	None	None	
Walk Time (s)	7.0	7.0	7.0								7.0			
Flash Dont Walk (s)	19.0	19.0	19.0								14.0			
Pedestrian Calls (#/hr)	0	0	0								0			
Act Effct Green (s)	•	•	50.0			55.0	60.0	36.7	36.7					
Actuated g/C Ratio			0.42			0.46	0.50	0.31	0.31					
v/c Ratio			1.54dl			0.74	0.23	0.48	0.98					
Control Delay			36.6			33.6	10.7	36.3	78.1					
Queue Delay			0.0			1.5	0.5	0.0	0.0					
Total Delay			36.6			35.1	11.2	36.3	78.1					
LOS			30.0 D			33.1 D	11.2 B	50.5 D	70.1 E					
Approach Delay			36.6			U	21.2	56.2						
Approach LOS			30.0 D				21.2 C	50.2 E						
						208	91	354	333					
Stops (vph)			1529											
Fuel Used(gal)			37			3	2	7	10					
CO Emissions (g/hr)			2572			209	126	519	714					
NOx Emissions (g/hr)			501			41	25	101	139					
VOC Emissions (g/hr)			596			48	29	120	165					
Dilemma Vehicles (#)			0			0	0	0	0					
Queue Length 50th (ft)			427			66	48	176	~391					
Queue Length 95th (ft)			440			130	55	217	#556					
Internal Link Dist (ft)			1129				164	662						
Turn Bay Length (ft)														
Base Capacity (vph)			2607			397	1770	1082	484					
Starvation Cap Reductn			0			29	913	0	0					
Spillback Cap Reductn			0			0	0	0	0					
Storage Cap Reductn			0			0	0	0	0					
Reduced v/c Ratio			0.76			0.78	0.47	0.48	0.98					
Intersection Summary														



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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations					सामि		ሻ	† †			↑ ↑		
Traffic Volume (vph)	0	0	0	440	971	204	300	806	0	0	665	173	
Future Volume (vph)	0	0	0	440	971	204	300	806	0	0	665	173	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Lane Util. Factor	1.00	1.00	1.00	0.86	0.86	0.86	1.00	0.95	1.00	1.00	0.95	0.95	
Frt					0.981						0.969		
Flt Protected					0.987		0.950						
Satd. Flow (prot)	0	0	0	0	6204	0	1770	3539	0	0	3429	0	
Flt Permitted					0.987		0.116						
Satd. Flow (perm)	0	0	0	0	6204	0	216	3539	0	0	3429	0	
Right Turn on Red			Yes			Yes			Yes			Yes	
Satd. Flow (RTOR)					34						29		
Link Speed (mph)		30			30			30			30		
Link Distance (ft)		1209			425			225			425		
Travel Time (s)		27.5			9.7			5.1			9.7		
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	478	1055	222	326	876	0	0	723	188	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	0	0	0	1755	0	326	876	0	0	911	0	
Turn Type				Split	NA		D.P+P	NA			NA		
Protected Phases				4	4		1	12			2		
Permitted Phases							2						
Detector Phase				4	4		1						
Switch Phase													
Minimum Initial (s)				7.0	7.0		7.0				15.0		
Minimum Split (s)				34.5	34.5		11.0				33.4		
Total Split (s)				50.0	50.0		27.0				43.0		
Total Split (%)				41.7%	41.7%		22.5%				35.8%		
Maximum Green (s)				43.5	43.5		23.0				37.6		
Yellow Time (s)				3.3	3.3		3.0				3.3		
All-Red Time (s)				3.2	3.2		1.0				2.1		
Lost Time Adjust (s)					0.0		0.0				-1.0		
Total Lost Time (s)					6.5		4.0				4.4		
Lead/Lag							Lead				Lag		
Lead-Lag Optimize?											Yes		
Vehicle Extension (s)				3.0	3.0		3.0				0.2		
Recall Mode				None	None		Min				C-Min		
Walk Time (s)				7.0	7.0						7.0		
Flash Dont Walk (s)				21.0	21.0						21.0		
Pedestrian Calls (#/hr)				0	0						0		
Act Effct Green (s)					43.0		62.5	66.5			40.0		
Actuated g/C Ratio					0.36		0.52	0.55			0.33		
v/c Ratio					0.78		0.82	0.45			0.78		
Control Delay					36.5		37.8	8.3			41.0		
Queue Delay					0.2		56.9	23.2			1.2		
Total Delay LOS					36.7		94.7 F	31.5 C			42.2 D		
					D 26.7		F	48.7			42.2		
Approach LOS					36.7			48.7 D					
Approach LOS					D 1371		245	386			724		
Stops (vph)					1371 25		245 4	386 5			724 14		
Fuel Used(gal)							293	343			963		
CO Emissions (g/hr) NOx Emissions (g/hr)					1742		293 57	343 67			187		
					339								
VOC Emissions (g/hr)					404 0		68 0	80			223 0		
Dilemma Vehicles (#) Queue Length 50th (ft)					340		175	127			330		
					388		m234	m183			413		
Queue Length 95th (ft)		1129			345		111234	m 183			345		
Internal Link Dist (ft)		1129			345			145			J45		
Turn Bay Length (ft)					2270		411	1960			1163		
Base Capacity (vph)													
Starvation Cap Reductn					100		151	1105			0		
Spillback Cap Reductn					100		0	0			97		
Storage Cap Reductn					0		1 25	1.02			0		
Reduced v/c Ratio					0.81		1.25	1.02			0.85		

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 107 (89%), Referenced to phase 2:NBSB, Start of Yellow

Natural Cycle: 80

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.82

Intersection Signal Delay: 41.7 Intersection LOS: D

Intersection Capacity Utilization 77.3% ICU Level of Service D

Analysis Period (min) 15

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

Splits and Phases: 1: Canal St & North State St

	•	_#	-	•	†	7	/	₩	\	↓			
Lane Group	EBL2	EBL	EBT	EBR	NBT	NBR	NBR2	SBL2	SBL	SBT	Ø1	Ø3	
Lane Configurations	ሻ	ă	^	7	† 1>					414			
Traffic Volume (vph)	570	592	571	288	546	485	41	305	10	789			
Future Volume (vph)	570	592	571	288	546	485	41	305	10	789			
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900			
Lane Width (ft)	11	11	11	11	12	12	12	12	12	12			
Lane Util. Factor	0.91	0.95	0.95	1.00	0.95	0.95	0.95	0.95	0.95	0.95			
Frt				0.850	0.926								
Flt Protected	0.950	0.950								0.986			
Satd. Flow (prot)	1557	1625	3421	1531	3277	0	0	0	0	3490			
FIt Permitted	0.950	0.950								0.505			
Satd. Flow (perm)	1557	1625	3421	1531	3277	0	0	0	0	1787			
Right Turn on Red				No			No						
Satd. Flow (RTOR)			00		00								
Link Speed (mph)			30		30					30			
Link Distance (ft)			1170		450					225			
Travel Time (s) Peak Hour Factor	0.98	0.98	26.6 0.98	0.98	10.2 0.98	0.98	0.98	0.98	0.98	5.1 0.98			
Adj. Flow (vph) Shared Lane Traffic (%)	582 10%	604	583	294	557	495	42	311	10	805			
Lane Group Flow (vph)	524	662	583	294	1094	0	0	0	0	1126			
Turn Type	Split	Split	NA	Prot	NA	U	U	D.P+P	D.P+P	NA			
Protected Phases	3piit 4	3piit	4	4	2			13	13	123	1	3	
Permitted Phases	7	7	7	7	2			2	2	123		3	
Detector Phase	4	4	4	4				13	13				
Switch Phase	7	7	7	7				10	1 0				
Minimum Initial (s)	7.0	7.0	7.0	7.0	15.0						5.0	5.0	
Minimum Split (s)	33.0	33.0	33.0	33.0	33.0						10.0	9.5	
Total Split (s)	45.0	45.0	45.0	45.0	39.0						20.0	16.0	
Total Split (%)	37.5%	37.5%	37.5%	37.5%	32.5%						17%	13%	
Maximum Green (s)	40.0	40.0	40.0	40.0	34.0						15.0	11.5	
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0						3.0	3.5	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0						2.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0								
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0								
Lead/Lag	Lag	Lag	Lag	Lag	Lag						Lead	Lead	
Lead-Lag Optimize?		Ţ,	Ţ.	Ţ,	Ţ.								
Vehicle Extension (s)	2.0	2.0	2.0	2.0	0.2						2.0	2.0	
Recall Mode	None	None	None	None	C-Min						None	Max	
Walk Time (s)	7.0	7.0	7.0	7.0	7.0								
Flash Dont Walk (s)	21.0	21.0	21.0	21.0	21.0								
Pedestrian Calls (#/hr)	0	0	0	0	0								
Act Effct Green (s)	40.0	40.0	40.0	40.0	54.0					65.0			
Actuated g/C Ratio	0.33	0.33	0.33	0.33	0.45					0.54			
v/c Ratio	1.01	1.22	0.51	0.58	0.74					1.17dl			
Control Delay	81.2	151.3	33.4	37.9	40.7					41.7			
Queue Delay	32.1	1.6	0.0	0.0	50.0					13.9			
Total Delay	113.3	152.9	33.4	37.9	90.8					55.6			
LOS	F	F	C	D	F					E			
Approach Delay			92.7		90.8					55.6			
Approach LOS	4.40	F00	F	0.47	F					E			
Stops (vph)	448	529	478	247	978					669			
Fuel Used(gal)	16	29	12	6	18					15			
CO Emissions (g/hr)	1095	2016	820	434	1262					1048			
NOx Emissions (g/hr)	213	392 467	160	84 101	246					204			
VOC Emissions (g/hr)	254	467	190	101	292					243			
Dilemma Vehicles (#)	0 ~451	0 ~665	0 208	0 203	0 470					0 ~126			
Queue Length 50th (ft)	~451									~126 #158			
Queue Length 95th (ft)	m#708	#922	m271 1090	m286	m493 370					#158 145			
Internal Link Dist (ft) Turn Bay Length (ft)			1090		3/0					140			
Base Capacity (vph)	519	541	1140	510	1474					1124			
Starvation Cap Reductn	0	0	0	0	615					48			
Spillback Cap Reductin	91	95	0	0	10					0			
Storage Cap Reductn	0	0	0	0	0					0			
Reduced v/c Ratio	1.22	1.48	0.51	0.58	1.27					1.05			
133dood 7/0 13ddo	1.22	1.70	0.01	0.00	1.41					1.00			

Intersection Summary Area Type: Other Cycle Length: 120 Actuated Cycle Length: 120 Offset: 112 (93%), Referenced to phase 2:NBSB, Start of Yellow Natural Cycle: 150 Control Type: Actuated-Coordinated Maximum v/c Ratio: 1.22 Intersection LOS: F Intersection Signal Delay: 82.5 Intersection Capacity Utilization 107.6% ICU Level of Service G Analysis Period (min) 15 Volume exceeds capacity, queue is theoretically infinite. Queue shown is maximum after two cycles. # 95th percentile volume exceeds capacity, queue may be longer. Queue shown is maximum after two cycles. m Volume for 95th percentile queue is metered by upstream signal. dl Defacto Left Lane. Recode with 1 though lane as a left lane. Splits and Phases: 2: Canal Street & South State Street & I-95 N On Ramp ₩ Ø2 (R) Ø3 **4**_{Ø4} Ø₀1

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations	ሻ	∱ ∱		*	↑ ↑			41∱	7	ሻ	†	7	
Traffic Volume (vph)	400	536	24	154	435	265	22	469	231	295	386	356	
Future Volume (vph)	400	536	24	154	435	265	22	469	231	295	386	356	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	0		0	160		0	150		120	0		120	
Storage Lanes	1		0	1		0	1		1	1		1	
Taper Length (ft)	25			55			25			60			
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	
Frt		0.994			0.943				0.850			0.850	
Flt Protected	0.950			0.950				0.998		0.950			
Satd. Flow (prot)	1770	3518	0	1770	3337	0	0	3532	1583	1770	1863	1583	
Flt Permitted	0.134			0.338				0.919		0.354			
Satd. Flow (perm)	250	3518	0	630	3337	0	0	3253	1583	659	1863	1583	
Right Turn on Red			Yes			Yes			Yes			Yes	
Satd. Flow (RTOR)		4			103				208			301	
Link Speed (mph)		30			30			30			30		
Link Distance (ft)		384			422			263			450		
Travel Time (s)		8.7			9.6			6.0			10.2		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	
Adj. Flow (vph)	421	564	25	162	458	279	23	494	243	311	406	375	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	421	589	0	162	737	0	0	517	243	311	406	375	
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA	Perm	pm+pt	NA	Perm	
Protected Phases	1	6		5	2			4		3	3 4		
Permitted Phases	6			2			4		4	3 4		3 4	
Detector Phase	1	6		5	2		4	4	4	3	3 4	3 4	
Switch Phase													
Minimum Initial (s)	5.0	7.0		5.0	7.0		15.0	15.0	15.0	7.0			
Minimum Split (s)	9.0	34.1		9.0	34.1		36.6	36.6	36.6	11.0			
Total Split (s)	23.0	37.0		23.0	37.0		37.0	37.0	37.0	23.0			
Total Split (%)	19.2%	30.8%		19.2%	30.8%		30.8%	30.8%	30.8%	19.2%			
Maximum Green (s)	19.0	30.9		19.0	30.9		30.4	30.4	30.4	19.0			
Yellow Time (s)	3.0	3.3		3.0	3.3		3.3	3.3	3.3	3.0			
All-Red Time (s)	1.0	2.8		1.0	2.8		3.3	3.3	3.3	1.0			
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0	0.0	0.0			
Total Lost Time (s)	4.0	6.1		4.0	6.1			6.6	6.6	4.0			
Lead/Lag	Lead	Lag		Lead	Lag		Lag	Lag	Lag	Lead			
Lead-Lag Optimize?													
Vehicle Extension (s)	3.0	0.2		3.0	0.2		3.0	3.0	3.0	3.0			
Recall Mode	None	None		None	None		C-Min	C-Min	C-Min	None			
Walk Time (s)		7.0			7.0		7.0	7.0	7.0				
Flash Dont Walk (s)		21.0			21.0		23.0	23.0	23.0				
Pedestrian Calls (#/hr)		0			0		0	0	0				
Act Effct Green (s)	50.8	32.5		40.4	25.9			36.0	36.0	57.0	61.0	61.0	
Actuated g/C Ratio	0.42	0.27		0.34	0.22			0.30	0.30	0.48	0.51	0.51	
v/c Ratio	1.22	0.62		0.49	0.92			0.53	0.39	0.64	0.43	0.39	
Control Delay	151.8	41.0		26.9	56.7			38.5	9.4	20.2	15.9	3.2	
Queue Delay	3.2	0.0		0.0	51.9			0.0	0.0	0.0	1.4	0.6	
Total Delay	155.0	41.0		26.9	108.6			38.5	9.4	20.2	17.3	3.8	
LOS	F	D		С	F			D	Α	С	В	Α	
Approach Delay		88.5			93.9			29.2			13.5		
Approach LOS		F			F			С			В		
Stops (vph)	262	473		103	589			403	41	161	190	56	
Fuel Used(gal)	15	9		2	15			7	1	3	4	2	
CO Emissions (g/hr)	1049	626		159	1066			495	80	219	255	125	
NOx Emissions (g/hr)	204	122		31	207			96	16	43	50	24	
VOC Emissions (g/hr)	243	145		37	247			115	19	51	59	29	
Dilemma Vehicles (#)	0	0		0	0			0	0	0	0	0	
Queue Length 50th (ft)	~344	207		77	257			177	20	102	139	26	
Queue Length 95th (ft)	#535	266		117	319			247	91	m137	m176	m18	
Internal Link Dist (ft)		304			342			183			370		
Turn Bay Length (ft)				160					120			120	
Base Capacity (vph)	346	963		427	935			974	619	492	943	950	
Starvation Cap Reductn	0	0		0	0			0	0	0	344	261	
Spillback Cap Reductn	81	0		0	382			0	0	0	0	0	
- b	• .	•		•				•	•	•	•	•	

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Storage Cap Reductn	0	0		0	0			0	0	0	0	0	
Reduced v/c Ratio	1.59	0.61		0.38	1.33			0.53	0.39	0.63	0.68	0.54	
ntersection Summary													
Area Type:	Other												
Cycle Length: 120													

Actuated Cycle Length: 120

Offset: 117 (98%), Referenced to phase 4:NBSB, Start of Yellow

Natural Cycle: 105

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.22 Intersection Signal Delay: 56.0

Intersection LOS: E ICU Level of Service F

Intersection Capacity Utilization 93.8%

Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

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

Splits and Phases: 3: Canal Street & Dock Street/Jefferson Street



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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations	7	† 1>		ሻ	† 1>			4			4		
Traffic Volume (vph)	5	657	257	317	474	1	118	1	261	1	1	3	
Future Volume (vph)	5	657	257	317	474	1	118	1	261	1	1	3	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	90		0	90		0	0		0	0		0	
Storage Lanes	1		0	1		0	0		0	0		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	1.00	1.00	
Frt		0.958						0.907			0.919		
Flt Protected	0.950			0.950				0.985			0.990		
Satd. Flow (prot)	1770	3391	0	1770	3539	0	0	1664	0	0	1695	0	
FIt Permitted	0.461			0.154				0.894			0.953		
Satd. Flow (perm)	859	3391	0	287	3539	0	0	1510	0	0	1631	0	
Right Turn on Red			Yes			Yes			Yes			Yes	
Satd. Flow (RTOR)		55						106			3		
Link Speed (mph)		30			30			30			30		
Link Distance (ft)		510			228			158			352		
Travel Time (s)		11.6			5.2			3.6			8.0		
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)	5	714	279	345	515	1	128	1	284	1	1	3	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	5	993	0	345	516	0	0	413	0	0	5	0	
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA		
Protected Phases	1	6		5	2			4			4		
Permitted Phases	6			2			4			4			
Detector Phase	1	6		5	2		4	4		4	4		
Switch Phase													
Minimum Initial (s)	5.0	15.0		5.0	15.0		7.0	7.0		7.0	7.0		
Minimum Split (s)	10.0	35.0		10.0	35.0		35.0	35.0		35.0	35.0		
Total Split (s)	25.0	45.0		25.0	45.0		45.0	45.0		45.0	45.0		
Total Split (%)	21.7%	39.1%		21.7%	39.1%		39.1%	39.1%		39.1%	39.1%		
Maximum Green (s)	20.0	40.0		20.0	40.0		40.0	40.0		40.0	40.0		
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0		
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0		
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0			0.0		
Total Lost Time (s)	5.0	5.0		5.0	5.0			5.0			5.0		
Lead/Lag	Lead	Lag		Lead	Lag								
Lead-Lag Optimize?		Ŭ											
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0		
Recall Mode	None	C-Min		None	C-Min		None	None		None	None		
Walk Time (s)		7.0			7.0		7.0	7.0		7.0	7.0		
Flash Dont Walk (s)		23.0			23.0		23.0	23.0		23.0	23.0		
Pedestrian Calls (#/hr)		0			0		0	0		0	0		
Act Effct Green (s)	56.7	51.0		74.8	72.5			30.2			30.2		
Actuated g/C Ratio	0.49	0.44		0.65	0.63			0.26			0.26		
v/c Ratio	0.01	0.65		0.80	0.23			0.87			0.01		
Control Delay	11.6	27.9		32.9	11.4			48.0			19.8		
Queue Delay	0.0	0.6		0.0	0.0			0.0			0.0		
Total Delay	11.6	28.5		32.9	11.4			48.0			19.8		
LOS	В	C		C	В			D			В		
Approach Delay		28.4			20.0			48.0			19.8		
Approach LOS		C			В			D			В		
Stops (vph)	3	677		164	206			276			3		
Fuel Used(gal)	0	13		4	4			6			0		
CO Emissions (g/hr)	3	879		299	287			399			4		
NOx Emissions (g/hr)	1	171		58	56			78			1		
VOC Emissions (g/hr)	1	204		69	67			92			1		
Dilemma Vehicles (#)	0	0		0	0			0			0		
Queue Length 50th (ft)	1	287		131	76			224			1		
Queue Length 95th (ft)	7	418		#303	161			317			10		
Internal Link Dist (ft)		430		11000	148			78			272		
Turn Bay Length (ft)	90	730		90	170			10			212		
Base Capacity (vph)	687	1533		444	2232			594			569		
Starvation Cap Reductn	007	207		0	0			0			0		
	0	0		0	0			0			0		
Spillback Cap Reductn	U	U		U	U			U			U		

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Storage Cap Reductn	0	0		0	0			0			0		
Reduced v/c Ratio	0.01	0.75		0.78	0.23			0.70			0.01		
Intersection Summary													
Area Type:	Other												
Cycle Length: 115													
Actuated Cycle Length: 115													
Offset: 0 (0%), Referenced to p	hase 2:WB	TL and 6:E	BTL, Star	t of Yellow	1								
Natural Cycle: 90													
Control Type: Actuated-Coordin	nated												
Maximum v/c Ratio: 0.87													
Intersection Signal Delay: 28.8					ersection								
Intersection Capacity Utilization	า 85.8%			IC	U Level of	Service E							
Analysis Period (min) 15													
# 95th percentile volume exce			may be lo	nger.									
Queue shown is maximum a	after two cyc	des.											
Splits and Phases: 5: Pacific	Street & Do	ock Street											
→ _{Ø1}	4-	Ø2 (R)					•	₩ _{ø4}					
25 s	45 s							45 s					
ÿ5	4	Ø6 (R)											
25 s	45 s												

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations	ሻ	1>		7	†	7	ሻ	^	7	ሻ	^	7	
Traffic Volume (vph)	132	291	51	248	194	190	61	244	488	173	285	112	
Future Volume (vph)	132	291	51	248	194	190	61	244	488	173	285	112	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	100		0	210		0	100		130	70		110	
Storage Lanes	1		0	1		1	1		1	1		1	
Taper Length (ft)	25			10			50			45			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Frt		0.978				0.850			0.850			0.850	
Flt Protected	0.950			0.950			0.950			0.950			
Satd. Flow (prot)	1770	1822	0	1770	1863	1583	1770	3539	1583	1770	3539	1583	
Flt Permitted	0.626			0.170			0.563			0.536			
Satd. Flow (perm)	1166	1822	0	317	1863	1583	1049	3539	1583	998	3539	1583	
Right Turn on Red			No			Yes			Yes			Yes	
Satd. Flow (RTOR)						207			530			122	
Link Speed (mph)		30			30			30			30		
Link Distance (ft)		348			510			366			301		
Travel Time (s)		7.9			11.6			8.3			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)	143	316	55	270	211	207	66	265	530	188	310	122	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	143	371	0	270	211	207	66	265	530	188	310	122	
Turn Type	pm+pt	NA		pm+pt	NA	pm+ov	pm+pt	NA	custom	pm+pt	NA	custom	
Protected Phases	3	8		7	4	5	1	6		5	2		
Permitted Phases	8			4		4	6		2	2		6	
Detector Phase	3	8		7	4	5	1		2	5		6	
Switch Phase													
Minimum Initial (s)	5.0	7.0		5.0	7.0	5.0	5.0	15.0	15.0	5.0	15.0	15.0	
Minimum Split (s)	10.0	34.0		10.0	34.0	10.0	10.0	34.0	34.0	10.0	34.0	34.0	
Total Split (s)	30.0	40.0		30.0	40.0	14.0	14.0	36.0	36.0	14.0	36.0	36.0	
Total Split (%)	25.0%	33.3%		25.0%	33.3%	11.7%	11.7%	30.0%	30.0%	11.7%	30.0%	30.0%	
Maximum Green (s)	26.0	35.0		26.0	35.0	10.0	10.0	31.0	31.0	10.0	31.0	31.0	
Yellow Time (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	1.0	2.0		1.0	2.0	1.0	1.0	2.0	2.0	1.0	2.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	4.0	5.0		4.0	5.0	4.0	4.0	5.0	5.0	4.0	5.0	5.0	
Lead/Lag	Lead	Lag		Lead	Lag	Lead	Lead	Lag	Lag	Lead	Lag	Lag	
Lead-Lag Optimize?													
Vehicle Extension (s)	3.0	3.0		3.0	3.0	2.0	3.0	0.2	0.2	2.0	0.2	0.2	
Recall Mode	None	None		None	None	None	None	C-Max	C-Max	None	C-Max	C-Max	
Walk Time (s)		7.0			7.0			7.0	7.0		7.0	7.0	
Flash Dont Walk (s)		22.0			22.0			22.0	22.0		22.0	22.0	
Pedestrian Calls (#/hr)		0			0			0	0		0	0	
Act Effct Green (s)	41.5	29.0		54.7	38.2	52.5	51.9	42.9	46.3	55.3	46.3	42.9	
Actuated g/C Ratio	0.35	0.24		0.46	0.32	0.44	0.43	0.36	0.39	0.46	0.39	0.36	
v/c Ratio	0.31	0.85		0.68	0.36	0.26	0.13	0.21	0.57	0.36	0.23	0.19	
Control Delay	20.4	60.6		30.5	31.9	2.9	21.2	29.9	5.6	13.1	16.9	4.2	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.3	0.0	
Total Delay	20.4	60.6		30.5	31.9	2.9	21.2	29.9	5.6	13.3	17.2	4.2	
LOS	С	Е		С	С	Α	С	С	Α	В	В	Α	
Approach Delay		49.4			22.6			14.3			13.5		
Approach LOS		D			С			В			В		
Stops (vph)	86	317		155	142	14	36	171	44	77	160	25	
Fuel Used(gal)	1	7		3	3	1	1	3	2	1	3	0	
CO Emissions (g/hr)	97	481		236	197	66	44	218	154	90	177	35	
NOx Emissions (g/hr)	19	94		46	38	13	9	42	30	18	34	7	
VOC Emissions (g/hr)	22	112		55	46	15	10	51	36	21	41	8	
Dilemma Vehicles (#)	0	0		0	0	0	0	0	0	0	0	0	
Queue Length 50th (ft)	63	273		129	124	0	28	76	0	71	62	1	
Queue Length 95th (ft)	86	369		180	172	37	64	125	94	m103	m121	m7	
Internal Link Dist (ft)		268			430			286			221		
Turn Bay Length (ft)	100			210			100		130	70		110	
Base Capacity (vph)	651	531		459	620	816	531	1266	936	524	1366	644	
Starvation Cap Reductn	0	0		0	0	0	0	0	0	52	536	0	
Spillback Cap Reductn	0	0		0	0	0	0	0	0	0	0	0	
•													

	۶	→	•	•	←	•	4	†	/	>	ţ	✓	
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Storage Cap Reductn	0	0		0	0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.22	0.70		0.59	0.34	0.25	0.12	0.21	0.57	0.40	0.37	0.19	

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 37 (31%), Referenced to phase 2:SBTL and 6:NBTL, Start of Yellow

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.85 Intersection Signal Delay: 23.0

Intersection LOS: C

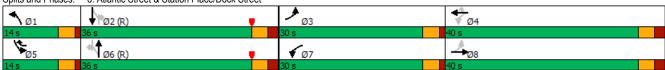
Intersection Capacity Utilization 69.9%

ICU Level of Service C

Analysis Period (min) 15

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

Splits and Phases: 6: Atlantic Street & Station Place/Dock Street



	۶	→	•	•	←	•	4	†	<i>></i>	>	ļ	4	
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations	ሻ	↑ ↑						† †	7	ሻ	† †		
Traffic Volume (vph)	92	602	145	0	0	0	0	490	81	195	425	0	
Future Volume (vph)	92	602	145	0	0	0	0	490	81	195	425	0	
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	0.95	1.00	1.00	0.95	1.00	
Frt		0.971							0.850				
Flt Protected	0.950									0.950			
Satd. Flow (prot)	1770	3437	0	0	0	0	0	3539	1583	1770	3539	0	
Flt Permitted	0.950									0.362			
Satd. Flow (perm)	1770	3437	0	0	0	0	0	3539	1583	674	3539	0	
Right Turn on Red			Yes			Yes			Yes			Yes	
Satd. Flow (RTOR)		25							92				
Link Speed (mph)		30			30			30			30		
Link Distance (ft)		294			1170			301			244		
Travel Time (s)	0.00	6.7	0.00	0.00	26.6	0.00	0.00	6.8	0.00	0.00	5.5	0.00	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	
Adj. Flow (vph)	105	684	165	0	0	0	0	557	92	222	483	0	
Shared Lane Traffic (%)	405	040	^	0	0	0	0	FF7	00	000	400	0	
Lane Group Flow (vph)	105	849	0	0	0	0	0	557	92 Darm	222	483	0	
Turn Type	Perm	NA						NA	Perm	pm+pt	NA		
Protected Phases	1	4						2	2	1	6		
Permitted Phases Detector Phase	4	4						2	2	6	6		
Switch Phase	4	4								ı	b		
Minimum Initial (s)	7.0	7.0						15.0	15.0	5.0	15.0		
Minimum Split (s)	34.0	34.0						34.0	34.0	10.0	27.0		
Total Split (s)	40.0	40.0						54.0	54.0	26.0	54.0		
Total Split (%)	33.3%	33.3%						45.0%	45.0%	21.7%	45.0%		
Maximum Green (s)	35.0	35.0						49.0	49.0	21.7	49.0		
Yellow Time (s)	3.0	3.0						3.0	3.0	3.0	3.0		
All-Red Time (s)	2.0	2.0						2.0	2.0	2.0	2.0		
Lost Time Adjust (s)	-1.0	-1.0						-1.0	-1.0	0.0	-1.0		
Total Lost Time (s)	4.0	4.0						4.0	4.0	5.0	4.0		
Lead/Lag								Lag	Lag	Lead			
Lead-Lag Optimize?								Yes	Yes	Yes			
Vehicle Extension (s)	2.0	2.0						0.2	0.2	2.0	0.2		
Recall Mode	None	None						C-Max	C-Max	Min	C-Max		
Walk Time (s)	7.0	7.0						7.0	7.0		7.0		
Flash Dont Walk (s)	22.0	22.0						15.0	15.0		15.0		
Pedestrian Calls (#/hr)	0	0						0	0		0		
Act Effct Green (s)	33.7	33.7						62.5	62.5	77.3	78.3		
Actuated g/C Ratio	0.28	0.28						0.52	0.52	0.64	0.65		
v/c Ratio	0.21	0.86						0.30	0.11	0.42	0.21		
Control Delay	33.4	49.6						17.1	4.1	12.7	6.7		
Queue Delay	0.0	0.0						0.4	0.0	0.6	0.3		
Total Delay	33.5	49.6						17.5	4.1	13.3	7.0		
LOS	С	D						В	Α	В	Α		
Approach Delay		47.8						15.6			9.0		
Approach LOS		D						В			A		
Stops (vph)	68	672						213	12	96	106		
Fuel Used(gal)	1	13						4	0	1	2		
CO Emissions (g/hr)	85	907						282	23	98	138		
NOx Emissions (g/hr)	16	176						55	4	19	27		
VOC Emissions (g/hr)	20	210						65	5	23	32		
Dilemma Vehicles (#)	0	212						100	0	0	0		
Queue Length 50th (ft) Queue Length 95th (ft)	61 104	313 379						100 138	0 18	47 m67	51 66		
Internal Link Dist (ft)	104	214			1090			221	10	11107	164		
Turn Bay Length (ft)		214			1090			ZZI			104		
Base Capacity (vph)	531	1048						1842	868	626	2308		
Starvation Cap Reductn	0	0						782	000	163	1203		
Spillback Cap Reductn	29	0						30	0	0	0		
Storage Cap Reductin	0	0						0	0	0	0		
Reduced v/c Ratio	0.21	0.81						0.53	0.11	0.48	0.44		
	U.Z I	0.01						0.00	J. 1 1	0.70	U.TT		
Intersection Summary													

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 46 (38%), Referenced to phase 2:NBT and 6:SBTL, Start of Yellow

Natural Cycle: 80

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.86

Intersection Signal Delay: 26.9

Intersection Capacity Utilization 56.4%

Analysis Period (min) 15

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

Splits and Phases: 7: South State St & Atlantic St

Description:

Area Type:

Other

Cycle Length: 120

Actuated Cycle Length: 120

Other

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 46 (38%), Referenced to phase 2:NBT and 6:SBTL, Start of Yellow

Natural Cycle: 80

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.86

Intersection LOS: C

Intersection LOS: C

Intersection LOS: C

Intersection Phases: 7: South State St. 4 Atlantic St

Analysis Period (min) 15

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

Lane Configurations		•	/	+	•	*1	•	†	+	لٍ	4			
Lame Complex (print) 797 335 384 235 12 345 448 308 76	Lane Group	WBL2	WBL	WBT	WBR	NBL2	NBL	NBT	SBT	SBR	SBR2	Ø2	Ø3	Ø5
Traffic (Volume (uph) 173 979 335 384 225 12 345 448 326 76														
Filture Volume (phi) 1900 1900 1900 1900 1900 1900 1900 190		173	797		384	235					76			
		173	797	335	384	235	12	345	448	326	76			
Lame ULR Factor 0.86 0.86 0.86 0.86 0.95 1.00 0.95 0.95 1.00 0.95 0.95 1.00 0.95 0.95 1.00 0.95 1.00 0.95 1.00 0.95 1.00 0.95 1.00 0.95 1.00 0.95	Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900			
Rit Protected	Lane Util. Factor	0.86	0.86	0.86	0.86	0.95	1.00	0.95	0.95	1.00	0.95			
Sable Flow (prody) File Plamithed	Frt			0.966						0.850				
Fit Permitted 0 972	Flt Protected			0.972			0.950							
Saled, Frow (perm)	Satd. Flow (prot)	0	0	6017	0	0	1770	3539	3539	1583	0			
Right Turn on Red 10 10 10 10 10 10 10 1	Flt Permitted			0.972			0.289							
Said. Eleve (RTOR) Link Speed (mph) 1209 244 742 Travel Time (s) 25 75 6,7 20,2 Feak Hour Factor 0,85 0,85 0,85 0,85 0,85 0,85 0,85 0,85	Satd. Flow (perm)	0	0	6017	0	0	538	3539	3539	1583	0			
Link Speak (riph)	Right Turn on Red				No						No			
Link Distance (11)	Satd. Flow (RTOR)													
Travel Time (s) Peak Hour Factor 0.85 0.85 0.85 0.85 0.85 0.85 0.85 0.85														
Peak Hour Fardor														
Adj. Flow (ryh)	Travel Time (s)													
Shared Lane Traffic (%) Lane Group Flow (%)	Peak Hour Factor													
Lame Group Flow (vph)	Adj. Flow (vph)	204	938	394	452	276	14	406	527	384	89			
Turn Type	Shared Lane Traffic (%)													
Protected Phases	Lane Group Flow (vph)				0						0			
Pemitted Phases	Turn Type									Perm				
Delector Phase 4	Protected Phases	4	4	4				23	6			2	3	5
Switch Phase Minimum Initial (c) 10.0 10.0 10.0 15.0 15.0 5.0	Permitted Phases													
Minimum Initial (s)	Detector Phase	4	4	4		3 5	3 5			6				
Minimum Split (s) 31.0 31.0 31.0 20.0 20.0 20.0 20.0 10.0 10.0 10.0 1	Switch Phase													
Total Split (s)	Minimum Initial (s)	10.0	10.0							15.0		15.0	5.0	5.0
Total Spiti (%) 47.5% 47.5% 47.5% 47.5% 47.5% 32.5% 32.5% 33.8 10% 10% Maximum Green (s) 52.0 52.0 52.0 34.0 34.0 34.0 34.0 33.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0	Minimum Split (s)													
Maximum Green (s)	Total Split (s)	57.0	57.0	57.0					39.0	39.0		39.0	12.0	12.0
Vellow Time (s) 3.0	Total Split (%)	47.5%	47.5%	47.5%					32.5%	32.5%		33%	10%	10%
All-Red Time (s) 2.0 2.0 2.0 2.0 2.0 2.0 2.0 2.0 2.0 2.0	Maximum Green (s)	52.0	52.0						34.0	34.0		34.0	7.0	
Lost Time (s) 5.0 5.0 5.0 5.0 5.0 5.0 Lead/Lag Led-Lag Optimize? Vehicle Extension (s) 2.0 2.0 2.0 2.0 2.0 2.0 2.0 2.0 2.0 2.0	Yellow Time (s)		3.0	3.0					3.0	3.0		3.0		
Total Lost Time (s) 5.0 5.0 5.0 Lead/Lag Lead-Lag Lag Lag Lag Lead Lead-Lag Lead-Lag Lead-Lag Cheinize? Vehicle Extension (s) 2.0 2.0 2.0 0.2 0.2 0.2 2.0 2.0 Recall Mode None None None None None Walk Time (s) 7.0 7.0 7.0 7.0 7.0 7.0 7.0 7.0 7.0 7.0	All-Red Time (s)	2.0	2.0	2.0					2.0	2.0		2.0	2.0	2.0
Lead-Lag Optimize? Lag Coptimize? Lag Coptimize. Lag Coptimize. Lag Coptimize. Lag	Lost Time Adjust (s)									0.0				
Lead-Lag Optimize? Vehicle Extension (s) 2.0 2.0 2.0 2.0 3.0 None None	Total Lost Time (s)			5.0					5.0	5.0				
Vehicle Extension (s) 2.0 2.	Lead/Lag								Lag	Lag				Lead
None	Lead-Lag Optimize?													
Walk Time (s) 7.0 7.0 7.0 7.0 Flash Dont Walk (s) 19.0 19.0 19.0 14.0 Pedestrian Calls (#/hr) 0 0 0 0 Act Effct Green (s) 50.2 54.8 59.8 36.5 36.5 Actuated g/C Ratio 0.42 0.46 0.50 0.30 0.30 v/c Ratio 1.54dl 0.76 0.23 0.49 0.98 Control Delay 36.4 35.2 10.7 36.7 79.9 Queue Delay 0.0 1.8 0.5 0.0 0.0 Total Delay 36.4 37.0 11.2 36.7 79.9 LOS D D B D E Approach Delay 36.4 37.0 11.2 36.7 79.9 LOS D D C E Stops (yh) 1545 214 93 360 335 Fuel Used(gal) 37 3 2 8 10 CO Emissions (g/hr) 2586 216 128	Vehicle Extension (s)	2.0	2.0	2.0					0.2	0.2		0.2	2.0	2.0
Flash Dont Walk (s) 19.0 19.0 19.0 19.0 19.0 19.0 19.0 19.0	Recall Mode		None						None	None			None	None
Pedestrian Calls (#/hr)	Walk Time (s)													
Act Effct Green (s) 50.2 54.8 59.8 36.5 36.5 Actuated g/C Ratio 0.42 0.46 0.50 0.30 0.30 0.30 0.30 0.40 (Ratio 1.54dl 0.76 0.23 0.49 0.98 0.50 0.50 0.30 0.30 0.30 0.50 0.50 0.50	Flash Dont Walk (s)		19.0											
Actuated g/C Ratio 0.42 0.46 0.50 0.30 0.30 V/c Ratio 1.54dl 0.76 0.23 0.49 0.98 Control Delay 36.4 35.2 10.7 36.7 79.9 Queue Delay 0.0 1.8 0.5 0.0 0.0 Total Delay 36.4 37.0 11.2 36.7 79.9 LOS D D B D E Approach Delay 36.4 21.9 57.1 Approach LOS D C E Stops (vph) 1545 214 93 360 335 Fuel Used(gal) 37 3 2 8 10 CO Emissions (g/hr) 2586 216 128 528 725 NOx Emissions (g/hr) 593 42 25 103 141 VOC Emissions (g/hr) 599 50 30 122 168 Dilemma Vehicles (#) 0 0 0 0 0 Queue Length 95th (ft) 446 136 55	Pedestrian Calls (#/hr)	0	0	0								0		
v/c Ratio 1.54dl 0.76 0.23 0.49 0.98 Control Delay 36.4 35.2 10.7 36.7 79.9 Queue Delay 0.0 1.8 0.5 0.0 0.0 Total Delay 36.4 37.0 11.2 36.7 79.9 LOS D D B D E Approach Delay 36.4 21.9 57.1 57.1 Approach LOS D C E Stops (vph) 1545 214 93 360 335 Fuel Used(gal) 37 3 2 8 10 CO Emissions (g/hr) 2586 216 128 528 725 NOx Emissions (g/hr) 503 42 25 103 141 VOC Emissions (g/hr) 599 50 30 122 168 Dilemma Vehicles (#) 0 0 0 0 0 Queue Length Soth (ft) 446 136 55 221 #556 Internal Link Dist (ft) 1129 164	Act Effct Green (s)						54.8		36.5	36.5				
Control Delay 36.4 35.2 10.7 36.7 79.9 Queue Delay 0.0 1.8 0.5 0.0 0.0 Total Delay 36.4 37.0 11.2 36.7 79.9 LOS D D B D E Approach Delay 36.4 21.9 57.1 Approach LOS D C E Stops (vph) 1545 214 93 360 335 Fuel Used(gal) 37 3 2 8 10 CO Emissions (g/hr) 2586 216 128 528 725 NOx Emissions (g/hr) 503 42 25 103 141 VOC Emissions (g/hr) 599 50 30 122 168 Dilemma Vehicles (#) 0 0 0 0 0 Queue Length 90th (ft) 431 66 48 179 ~392 Queue Length 95th (ft) 446 136 55 221 #556 Internal Link Dist (ft) 1129 164 662 Turn Bay Length (ft) 8 607 392 1764 1075 481 Base Capacity (vph) 2607 392	Actuated g/C Ratio													
Queue Delay 0.0 1.8 0.5 0.0 0.0 Total Delay 36.4 37.0 11.2 36.7 79.9 LOS D D B D E Approach Delay 36.4 21.9 57.1 Approach LOS D C E Stops (vph) 1545 214 93 360 335 Fuel Used(gal) 37 3 2 8 10 CO Emissions (g/hr) 2586 216 128 528 725 NOx Emissions (g/hr) 503 42 25 103 141 VOC Emissions (g/hr) 599 50 30 122 168 Dilemma Vehicles (#) 0 0 0 0 0 0 Queue Length 50th (ft) 431 66 48 179 -392 Queue Length 95th (ft) 1129 164 662 172 Turn Bay Length (ft) 129 99 0	v/c Ratio													
Total Delay 36.4 37.0 11.2 36.7 79.9 LOS D D B D E Approach Delay 36.4 21.9 57.1 S7.1 Approach LOS D C E SStops (vph) 1545 214 93 360 335 Stops (vph) 1545 214 93 360 335 Fuel Used(gal) 37 3 2 8 10 CO Emissions (g/hr) 2586 216 128 528 725 NOx Emissions (g/hr) 503 42 25 103 141 VOC Emissions (g/hr) 599 50 30 122 168 Dilemma Vehicles (#) 0 0 0 0 0 0 Queue Length 95th (ft) 431 66 48 179 ~392 24 4556 112 4556 112 164 662 170 164 662 170 164 <td< td=""><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></td<>														
D D B D E														
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Approach LOS D C E Stops (vph) 1545 214 93 360 335 Fuel Used(gal) 37 3 2 8 10 CO Emissions (g/hr) 2586 216 128 528 725 NOx Emissions (g/hr) 503 42 25 103 141 VOC Emissions (g/hr) 599 50 30 122 168 Dilemma Vehicles (#) 0 0 0 0 0 0 Queue Length 50th (ft) 431 66 48 179 -392 Queue Length 95th (ft) 446 136 55 221 #556 Internal Link Dist (ft) 1129 164 662 Turn Bay Length (ft) Base Capacity (vph) 2607 392 1764 1075 481 Starvation Cap Reductn 0 29 909 0 0 Spillback Cap Reductn 0 0 0 0 0 0 Storage Cap Reductn 0 0 0 0 0 0 Reduced v/c Ratio 0 0.76 0.80 0.47 0.49 0.98	LOS						D			Е				
Stops (vph) 1545 214 93 360 335 Fuel Used(gal) 37 3 2 8 10 CO Emissions (g/hr) 2586 216 128 528 725 NOx Emissions (g/hr) 503 42 25 103 141 VOC Emissions (g/hr) 599 50 30 122 168 Dilemma Vehicles (#) 0 0 0 0 0 Queue Length 50th (ft) 431 66 48 179 ~392 Queue Length 95th (ft) 446 136 55 221 #556 Internal Link Dist (ft) 1129 164 662 662 Turn Bay Length (ft) 8ase Capacity (vph) 2607 392 1764 1075 481 Starvation Cap Reductn 0 29 909 0 0 Spillback Cap Reductn 0 0 0 0 0 Storage Cap Reductn 0 0 0 0	Approach Delay													
Fuel Used(gal) 37 3 2 8 10 CO Emissions (g/hr) 2586 216 128 528 725 NOx Emissions (g/hr) 503 42 25 103 141 VOC Emissions (g/hr) 599 50 30 122 168 Dilemma Vehicles (#) 0 0 0 0 0 Queue Length 50th (ft) 431 66 48 179 ~392 Queue Length 95th (ft) 446 136 55 221 #556 Internal Link Dist (ft) 1129 164 662 Turn Bay Length (ft) Base Capacity (yph) 2607 392 1764 1075 481 Starvation Cap Reductn 0 29 909 0 0 Spillback Cap Reductn 0 0 0 0 0 0 Storage Cap Reductn 0 0 0 0 0 0 Reduced v/c Ratio 0.76 0.80 0.47 0.49 0.98														
CO Emissions (g/hr)	Stops (vph)													
NOx Emissions (g/hr) 503 42 25 103 141 VOC Emissions (g/hr) 599 50 30 122 168 Dilemma Vehicles (#) 0 0 0 0 0 Queue Length 50th (ft) 431 66 48 179 ~392 Queue Length 95th (ft) 446 136 55 221 #556 Internal Link Dist (ft) 1129 164 662 Turn Bay Length (ft) Base Capacity (vph) 2607 392 1764 1075 481 Starvation Cap Reductn 0 29 909 0 0 Spillback Cap Reductn 0 0 0 0 0 0 Storage Cap Reductn 0 0 0 0 0 0 Reduced v/c Ratio 0.76 0.80 0.47 0.49 0.98	Fuel Used(gal)													
VOC Emissions (g/hr) 599 50 30 122 168 Dilemma Vehicles (#) 0 0 0 0 0 Queue Length 50th (ft) 431 66 48 179 ~392 Queue Length 95th (ft) 446 136 55 221 #556 Internal Link Dist (ft) 1129 164 662 Turn Bay Length (ft) 8ase Capacity (vph) 2607 392 1764 1075 481 Starvation Cap Reductn 0 29 909 0 0 Spillback Cap Reductn 0 0 0 0 0 Storage Cap Reductn 0 0 0 0 0 0 Reduced v/c Ratio 0.76 0.80 0.47 0.49 0.98														
Dilemma Vehicles (#) 0 0 0 0 0 Queue Length 50th (ft) 431 66 48 179 ~392 Queue Length 95th (ft) 446 136 55 221 #556 Internal Link Dist (ft) 1129 164 662 Turn Bay Length (ft) 8ase Capacity (vph) 2607 392 1764 1075 481 Starvation Cap Reductn 0 29 909 0 0 Spillback Cap Reductn 0 0 0 0 0 Storage Cap Reductn 0 0 0 0 0 Reduced v/c Ratio 0.76 0.80 0.47 0.49 0.98														
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Base Capacity (vph) 2607 392 1764 1075 481 Starvation Cap Reductn 0 29 909 0 0 Spillback Cap Reductn 0 0 0 0 0 Storage Cap Reductn 0 0 0 0 0 Reduced v/c Ratio 0.76 0.80 0.47 0.49 0.98	Internal Link Dist (ft)			1129				164	662					
Starvation Cap Reductn 0 29 909 0 0 Spillback Cap Reductn 0 0 0 0 0 Storage Cap Reductn 0 0 0 0 0 Reduced v/c Ratio 0.76 0.80 0.47 0.49 0.98														
Spillback Cap Reductn 0 0 0 0 0 Storage Cap Reductn 0 0 0 0 0 Reduced v/c Ratio 0.76 0.80 0.47 0.49 0.98														
Storage Cap Reductn 0 0 0 0 0 Reduced v/c Ratio 0.76 0.80 0.47 0.49 0.98	Starvation Cap Reductn													
Reduced v/c Ratio 0.76 0.80 0.47 0.49 0.98	Spillback Cap Reductn													
	Storage Cap Reductn													
Intersection Summary	Reduced v/c Ratio			0.76			0.80	0.47	0.49	0.98				
	Intersection Summary													

Area Type: Other Cycle Length: 120 Actuated Cycle Length: 120 Offset: 22 (18%), Referenced to phase 2:NBTL, Start of Yellow Natural Cycle: 90 Control Type: Actuated-Coordinated Maximum v/c Ratio: 0.98 Intersection Signal Delay: 39.3 Intersection LOS: D Intersection Capacity Utilization 95.2% ICU Level of Service F Analysis Period (min) 15 ~ Volume exceeds capacity, queue is theoretically infinite. Queue shown is maximum after two cycles. # 95th percentile volume exceeds capacity, queue may be longer. Queue shown is maximum after two cycles. dl Defacto Left Lane. Recode with 1 though lane as a left lane. Splits and Phases: 8: Atlantic St & North State St **▼**Ø4 **★**ø3 [™]Ø2 (R) <u> Ø5</u> ∮ ø6

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations					नीकि		7	† †			∱ 1≽		
Traffic Volume (vph)	0	0	0	440	971	204	300	806	0	0	665	173	
Future Volume (vph)	0	0	0	440	971	204	300	806	0	0	665	173	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Lane Util. Factor	1.00	1.00	1.00	0.86	0.86	0.86	1.00	0.95	1.00	1.00	0.95	0.95	
Frt				0.00	0.981	0.00		0.00			0.969	0.00	
Flt Protected					0.987		0.950				0.000		
Satd. Flow (prot)	0	0	0	0	6204	0	1770	3539	0	0	3429	0	
Flt Permitted	U	U	U	U	0.987	U	0.212	5555	U	U	3423	U	
Satd. Flow (perm)	0	0	0	0	6204	0	395	3539	0	0	3429	0	
	U	U	Yes	U	0204	Yes	393	3339	Yes	U	3429	Yes	
Right Turn on Red			res		20	res			res		20	res	
Satd. Flow (RTOR)		00			32			00			32		
Link Speed (mph)		30			30			30			30		
_ink Distance (ft)		1209			425			225			425		
Travel Time (s)		27.5			9.7			5.1			9.7		
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	478	1055	222	326	876	0	0	723	188	
Shared Lane Traffic (%)													
ane Group Flow (vph)	0	0	0	0	1755	0	326	876	0	0	911	0	
Furn Type				Split	NA		D.P+P	NA			NA		
Protected Phases				4	4		1	12			2		
Permitted Phases				4	4		2	1 4					
				4	4		1						
Detector Phase				4	4		ı						
Switch Phase													
Minimum Initial (s)				7.0	7.0		7.0				15.0		
Minimum Split (s)				34.5	34.5		11.0				33.4		
Гotal Split (s)				44.0	44.0		14.0				62.0		
Total Split (%)				36.7%	36.7%		11.7%				51.7%		
Maximum Green (s)				37.5	37.5		10.0				56.6		
Yellow Time (s)				3.3	3.3		3.0				3.3		
All-Red Time (s)				3.2	3.2		1.0				2.1		
Lost Time Adjust (s)				0.2	0.0		0.0				-1.0		
Total Lost Time (s)					6.5		4.0				4.4		
					0.5								
Lead/Lag							Lead				Lag		
Lead-Lag Optimize?											Yes		
Vehicle Extension (s)				3.0	3.0		3.0				0.2		
Recall Mode				None	None		Min				C-Min		
Walk Time (s)				7.0	7.0						7.0		
Flash Dont Walk (s)				21.0	21.0						21.0		
Pedestrian Calls (#/hr)				0	0						0		
Act Effct Green (s)					37.5		68.0	72.0			57.6		
Actuated g/C Ratio					0.31		0.57	0.60			0.48		
//c Ratio					0.90		0.96	0.41			0.55		
					45.7		31.0	4.5			22.7		
Control Delay					1.4		1.1	14.7			0.8		
Queue Delay													
Total Delay					47.1		32.1	19.2			23.5		
LOS					D		С	В			C		
Approach Delay					47.1			22.7			23.5		
Approach LOS					D			С			С		
Stops (vph)					1457		129	307			552		
Fuel Used(gal)					28		3	4			10		
CO Emissions (g/hr)					1988		219	269			678		
NOx Emissions (g/hr)					387		43	52			132		
VOC Emissions (g/hr)					461		51	62			157		
Dilemma Vehicles (#)					0		0	02			0		
\ /					370		79	107			245		
Queue Length 50th (ft)													
Queue Length 95th (ft)		4400			421		m86	m111			307		
Internal Link Dist (ft)		1129			345			145			345		
Turn Bay Length (ft)													
Base Capacity (vph)					1960		338	2123			1662		
Starvation Cap Reductn					0		2	1240			0		
Spillback Cap Reductn					81		0	0			416		
Storage Cap Reductn					0		0	0			0		
Reduced v/c Ratio					0.93		0.97	0.99			0.73		
					0.00		0.01	0.00			0.70		

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 31 (26%), Referenced to phase 2:NBSB, Start of Yellow

Natural Cycle: 80

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.96

Intersection Signal Delay: 34.0 Intersection LOS: C

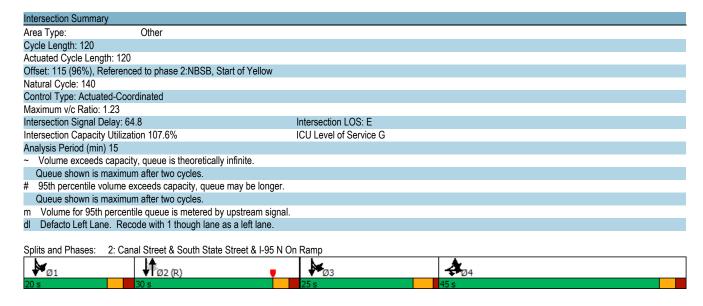
Intersection Capacity Utilization 77.3% ICU Level of Service D

Analysis Period (min) 15

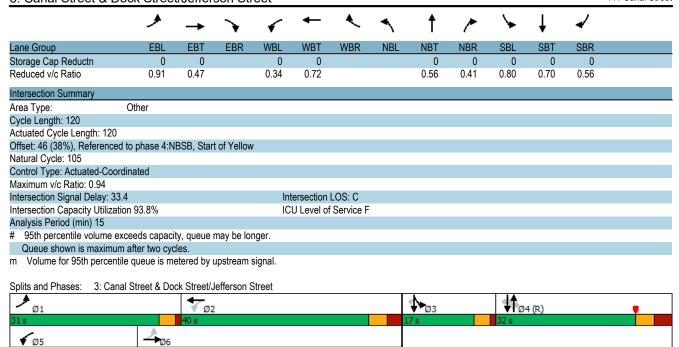
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 1: Canal St & North State St

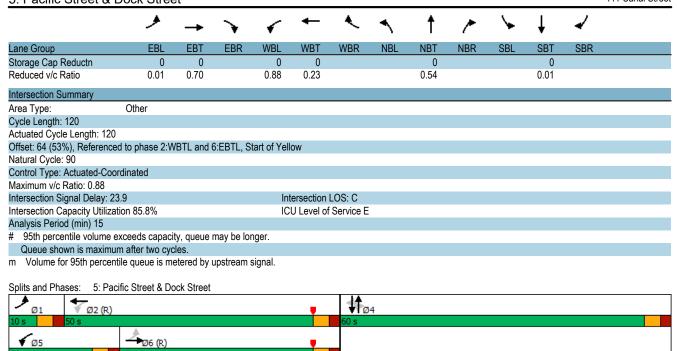
	•	_#	→	•	<u>†</u>	₹	<u> </u>	₩	\	 			
Lane Group	EBL2	EBL	EBT	EBR	NBT	NBR	NBR2	SBL2	SBL	SBT	Ø1	Ø3	
Lane Configurations	*	ă	^	7	↑ Ъ					414			
Traffic Volume (vph)	570	592	571	288	546	485	41	305	10	789			
Future Volume (vph)	570	592	571	288	546	485	41	305	10	789			
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900			
Lane Width (ft)	11	11	11	11	12	12	12	12	12	12			
Lane Util. Factor	0.91	0.95	0.95	1.00	0.95	0.95	0.95	0.95	0.95	0.95			
Frt				0.850	0.926								
Flt Protected	0.950	0.950								0.985			
Satd. Flow (prot)	1557	1625	3421	1531	3277	0	0	0	0	3486			
Flt Permitted	0.950	0.950								0.523			
Satd. Flow (perm)	1557	1625	3421	1531	3277	0	0	0	0	1851			
Right Turn on Red				No			No						
Satd. Flow (RTOR)													
Link Speed (mph)			30		30					30			
Link Distance (ft)			1170		450					225			
Travel Time (s)			26.6		10.2					5.1			
Peak Hour Factor	0.92	0.98	0.98	0.98	0.98	0.98	0.92	0.92	0.98	0.98			
Adj. Flow (vph)	620	604	583	294	557	495	45	332	10	805			
Shared Lane Traffic (%)	10%				465=								
Lane Group Flow (vph)	558	666	583	294	1097	0	0	0	0	1147			
Turn Type	Split	Split	NA	Prot	NA			D.P+P	D.P+P	NA			
Protected Phases	4	4	4	4	2			13	13	123	1	3	
Permitted Phases								2	2				
Detector Phase	4	4	4	4				13	13				
Switch Phase	7.0	7.0	7.0	7.0	45.0							5 0	
Minimum Initial (s)	7.0	7.0	7.0	7.0	15.0						5.0	5.0	
Minimum Split (s)	33.0	33.0	33.0	33.0	33.0						10.0	9.5	
Total Split (s)	45.0	45.0	45.0	45.0	30.0						20.0	25.0	
Total Split (%)	37.5%	37.5% 40.0	37.5%	37.5% 40.0	25.0%						17%	21% 20.5	
Maximum Green (s)	40.0 3.0	3.0	40.0	3.0	25.0 3.0						15.0 3.0	3.5	
Yellow Time (s) All-Red Time (s)	2.0	2.0	2.0	2.0	2.0						2.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0						2.0	1.0	
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0								
Lead/Lag	Lag	Lag	Lag	Lag	Lag						Lead	Lead	
Lead-Lag Optimize?	Lag	Lay	Lay	Lag	Lay						Leau	Leau	
Vehicle Extension (s)	2.0	2.0	2.0	2.0	0.2						2.0	2.0	
Recall Mode	None	None	None	None	C-Min						None	Max	
Walk Time (s)	7.0	7.0	7.0	7.0	7.0						NOTIC	IVIUX	
Flash Dont Walk (s)	21.0	21.0	21.0	21.0	21.0								
Pedestrian Calls (#/hr)	0	0	0	0	0								
Act Effct Green (s)	40.0	40.0	40.0	40.0	45.0					65.0			
Actuated g/C Ratio	0.33	0.33	0.33	0.33	0.38					0.54			
v/c Ratio	1.08	1.23	0.51	0.58	0.89					0.96dl			
Control Delay	91.3	148.1	25.1	29.1	38.8					37.0			
Queue Delay	10.1	0.7	0.0	0.1	0.0					15.5			
Total Delay	101.4	148.7	25.1	29.2	38.8					52.6			
LOS	F	F	С	С	D					D			
Approach Delay			85.1		38.8					52.6			
Approach LOS			F		D					D			
Stops (vph)	425	517	338	186	936					1046			
Fuel Used(gal)	17	28	10	5	17					16			
CO Emissions (g/hr)	1158	1981	699	375	1217					1121			
NOx Emissions (g/hr)	225	385	136	73	237					218			
VOC Emissions (g/hr)	268	459	162	87	282					260			
Dilemma Vehicles (#)	0	0	0	0	0					0			
Queue Length 50th (ft)	~534	~678	134	133	420					356			
Queue Length 95th (ft)	m#751	#907	m182	m210	m#507					m#438			
Internal Link Dist (ft)			1090		370					145			
Turn Bay Length (ft)													
Base Capacity (vph)	519	541	1140	510	1228					1275			
Starvation Cap Reductn	0	0	0	0	0					147			
Spillback Cap Reductn	40	42	0	10	0					11			
Storage Cap Reductn	0	0	0	0	0					0			
Reduced v/c Ratio	1.16	1.33	0.51	0.59	0.89					1.02			



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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations	*	↑ ↑		*	† 1>			41	7	ሻ	†	7	
Traffic Volume (vph)	400	536	24	154	435	265	22	469	231	295	386	356	
Future Volume (vph)	400	536	24	154	435	265	22	469	231	295	386	356	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	0		0	160		0	0		120	0		120	
Storage Lanes	1		0	1		0	0		1	1		1	
Taper Length (ft)	25			55			25			60			
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	
Frt		0.994			0.943				0.850			0.850	
Flt Protected	0.950			0.950				0.998		0.950			
Satd. Flow (prot)	1770	3518	0	1770	3337	0	0	3532	1583	1770	1863	1583	
Flt Permitted	0.132			0.430				0.919		0.344			
Satd. Flow (perm)	246	3518	0	801	3337	0	0	3253	1583	641	1863	1583	
Right Turn on Red			Yes			Yes			Yes			Yes	
Satd. Flow (RTOR)		4			107				197			257	
Link Speed (mph)		30			30			30			30		
Link Distance (ft)		384			422			263			450		
Travel Time (s)		8.7			9.6			6.0			10.2		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	
Adj. Flow (vph)	421	564	25	162	458	279	23	494	243	311	406	375	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	421	589	0	162	737	0	0	517	243	311	406	375	
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA	Perm	pm+pt	NA	Perm	
Protected Phases	1	6		5	2			4		3	3 4		
Permitted Phases	6			2			4		4	3 4		3 4	
Detector Phase	1	6		5	2		4	4	4	3	3 4	3 4	
Switch Phase													
Minimum Initial (s)	5.0	7.0		5.0	7.0		15.0	15.0	15.0	7.0			
Minimum Split (s)	9.0	34.1		9.0	34.1		36.6	36.6	36.6	11.0			
Total Split (s)	31.0	48.0		23.0	40.0		32.0	32.0	32.0	17.0			
Total Split (%)	25.8%	40.0%		19.2%	33.3%		26.7%	26.7%	26.7%	14.2%			
Maximum Green (s)	27.0	41.9		19.0	33.9		25.4	25.4	25.4	13.0			
Yellow Time (s)	3.0	3.3		3.0	3.3		3.3	3.3	3.3	3.0			
All-Red Time (s)	1.0	2.8		1.0	2.8		3.3	3.3	3.3	1.0			
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0	0.0	0.0			
Total Lost Time (s)	4.0	6.1		4.0	6.1			6.6	6.6	4.0			
Lead/Lag	Lead	Lag		Lead	Lag		Lag	Lag	Lag	Lead			
Lead-Lag Optimize?													
Vehicle Extension (s)	3.0	0.2		3.0	0.2		3.0	3.0	3.0	3.0			
Recall Mode	None	None		None	None		C-Min	C-Min	C-Min	None			
Walk Time (s)		7.0			7.0		7.0	7.0	7.0				
Flash Dont Walk (s)		21.0			21.0		23.0	23.0	23.0				
Pedestrian Calls (#/hr)		0			0		0	0	0				
Act Effct Green (s)	58.2	40.6		40.0	26.4			34.2	34.2	49.8	53.8	53.8	
Actuated g/C Ratio	0.48	0.34		0.33	0.22			0.28	0.28	0.42	0.45	0.45	
v/c Ratio	0.94	0.49		0.45	0.90			0.56	0.41	0.80	0.49	0.44	
Control Delay	52.2	26.3		22.3	53.5			40.8	11.4	30.9	20.4	6.5	
Queue Delay	0.0	0.0		0.0	0.0			0.0	0.0	0.0	1.6	0.5	
Total Delay	52.2	26.3		22.3	53.5			40.8	11.4	30.9	22.0	7.0	
LOS	D	С		С	D			D	В	С	С	Α	
Approach Delay		37.1			47.9			31.4			19.4		
Approach LOS		D			D			С			В		
Stops (vph)	314	437		103	579			416	48	214	279	76	
Fuel Used(gal)	7	7		2	15			7	1	4	5	2	
CO Emissions (g/hr)	502	496		149	1030			516	89	285	315	150	
NOx Emissions (g/hr)	98	96		29	200			100	17	55	61	29	
VOC Emissions (g/hr)	116	115		34	239			120	21	66	73	35	
Dilemma Vehicles (#)	0	0		0	0			0	0	0	0	0	
Queue Length 50th (ft)	277	190		67	255			182	27	132	204	57	
Queue Length 95th (ft)	#420	255		96	308			261	105	m#248	m318	m70	
Internal Link Dist (ft)		304			342			183			370		
Turn Bay Length (ft)				160					120			120	
Base Capacity (vph)	462	1264		470	1019			926	591	388	834	851	
Starvation Cap Reductn	0	0		0	0			0	0	0	256	178	
Spillback Cap Reductn	0	0		0	0			0	0	0	0	0	
•													



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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations	ሻ	† 1>		<u>ች</u>	↑ ↑			4			4		
Traffic Volume (vph)	5	657	257	317	474	1	118	1	261	1	1	3	
Future Volume (vph)	5	657	257	317	474	1	118	1	261	1	1	3	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	90		0	90		0	0		0	0		0	
Storage Lanes	1		0	1		0	0		0	0		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	1.00	1.00	
Frt		0.958						0.907			0.919		
Flt Protected	0.950			0.950				0.985			0.990		
Satd. Flow (prot)	1770	3391	0	1770	3539	0	0	1664	0	0	1695	0	
FIt Permitted	0.461			0.173				0.894			0.954		
Satd. Flow (perm)	859	3391	0	322	3539	0	0	1510	0	0	1633	0	
Right Turn on Red			Yes			Yes			Yes			Yes	
Satd. Flow (RTOR)		48						122			3		
Link Speed (mph)		30			30			30			30		
Link Distance (ft)		510			228			158			352		
Travel Time (s)		11.6			5.2			3.6			8.0		
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)	5	714	279	345	515	1	128	1	284	1	1	3	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	5	993	0	345	516	0	0	413	0	0	5	0	
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA		
Protected Phases	1	6		5	2			4			4		
Permitted Phases	6			2			4			4			
Detector Phase	1	6		5	2		4	4		4	4		
Switch Phase													
Minimum Initial (s)	5.0	15.0		5.0	15.0		7.0	7.0		7.0	7.0		
Minimum Split (s)	10.0	35.0		10.0	35.0		35.0	35.0		35.0	35.0		
Total Split (s)	10.0	40.0		20.0	50.0		60.0	60.0		60.0	60.0		
Total Split (%)	8.3%	33.3%		16.7%	41.7%		50.0%	50.0%		50.0%	50.0%		
Maximum Green (s)	5.0	35.0		15.0	45.0		55.0	55.0		55.0	55.0		
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0		
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0		
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0			0.0		
Total Lost Time (s)	5.0	5.0		5.0	5.0			5.0			5.0		
Lead/Lag	Lead	Lag		Lead	Lag								
Lead-Lag Optimize?													
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0		
Recall Mode	None	C-Min		None	C-Min		None	None		None	None		
Walk Time (s)		7.0			7.0		7.0	7.0		7.0	7.0		
Flash Dont Walk (s)		23.0			23.0		23.0	23.0		23.0	23.0		
Pedestrian Calls (#/hr)		0			0		0	0		0	0		
Act Effct Green (s)	63.2	58.2		78.2	76.2			31.8			31.8		
Actuated g/C Ratio	0.53	0.48		0.65	0.64			0.26			0.26		
v/c Ratio	0.01	0.59		0.88	0.23			0.84			0.01		
Control Delay	12.6	20.3		35.4	6.6			43.9			19.4		
Queue Delay	0.0	0.4		0.0	0.0			0.0			0.0		
Total Delay	12.6	20.7		35.4	6.6			43.9			19.4		
LOS	В	С		D	Α			D			В		
Approach Delay		20.7			18.1			43.9			19.4		
Approach LOS		С			В			D			В		
Stops (vph)	3	478		151	147			258			3		
Fuel Used(gal)	0	10		4	3			5			0		
CO Emissions (g/hr)	3	702		305	232			370			3		
NOx Emissions (g/hr)	1	137		59	45			72			1		
VOC Emissions (g/hr)	1	163		71	54			86			1		
Dilemma Vehicles (#)	0	0		0	0			0			0		
Queue Length 50th (ft)	1	175		44	25			222			1		
Queue Length 95th (ft)	m4	353		#338	183			299			10		
Internal Link Dist (ft)		430			148			78			272		
Turn Bay Length (ft)	90			90									
Base Capacity (vph)	490	1669		390	2247			758			750		
Starvation Cap Reductn	0	257		0	0			0			0		
Spillback Cap Reductn	0	0		0	0			0			0		
1	•	-		-	-			-			-		



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Traffic Volume (riph) 132 291 51 246 194 190 61 224 488 173 285 112 Future Volume (riph) 132 291 51 246 194 190 61 224 488 173 285 112 Future Volume (riph) 1900 1900 1900 1900 1900 1900 1900 190	Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Traffic Volume (riph) 132 291 51 246 194 190 61 224 488 173 285 112 Future Volume (riph) 132 291 51 246 194 190 61 224 488 173 285 112 Future Volume (riph) 1900 1900 1900 1900 1900 1900 1900 190	Lane Configurations	*	1≽		*	*	7	*	44	7	*	44	7	
				51			190	61		488				
Storage Length (ft)	Future Volume (vph)		291			194			244				112	
Storage Lanes 1			1900			1900			1900			1900		
Taper Length (R)														
Line UNIF Sector 1,00				0			1			1			1	
Fit Protected 0.950			4.00	4.00		4.00	4.00		0.05	4.00		0.05	4.00	
File Protected		1.00		1.00	1.00	1.00		1.00	0.95		1.00	0.95		
Sand Fine Flammitted		0.050	0.978		0.050		0.850	0.050		0.850	0.050		0.850	
File Permitted			1000	٥		1062	1500		2520	1500		2520	1500	
Sato Flow (perm) 1166 1822 0 317 1863 1583 149 3539 1583 988 3539 1583 788			1022	U		1003	1000		3339	1303		3339	1303	
Right Turn on Red			1822	0		1863	1583		3539	1583		3539	1583	
Salt Flow (RTOR) 10		1100	1022		017	1000		10-10	0000		330	0000		
Link Speader (mph)														
Travel Time (s) 7.9 11.6 8.3 6.8 Peak Hour Factor 0.92 0			30			30			30			30		
Peak Hour Factor 0.92 0.	Link Distance (ft)		348			510			366			301		
Agi, Flow (phr) 143 316 55 270 211 207 66 265 530 188 310 112 Lane Group Flow (phr) 143 371 0 270 211 207 66 265 530 188 310 122 Turn Type pm+pt NA pm+pt NA pm+pt NA pm+pt NA custom Pomitted Phases 3 8 7 4 5 1 6 2 2 6 Minimum Spit (s) 50 7.0 5.0 7.0 5.0 15.0 15.0 15.0 15.0 15.0 Total Spit (s) 30.0 40.0 30.0 40.0 30.0 40.0 30.0 40.0 30.0 40.0 30.0 40.0 30.0 30.0 30.0 30.0 30.0 30.0 30.0 30.0 30.0 30.0 30.0 30.0 30.0 30.0 30.0 30.0 30.0	Travel Time (s)		7.9			11.6			8.3			6.8		
Shared Lane Traffic (%) Lane Group Prior (prin) 143 371 0 270 211 207 66 265 530 188 310 122 17 17 17 17 18 18 18 18														
Lane Group Flow (pph)		143	316	55	270	211	207	66	265	530	188	310	122	
Turn Type pm+pt NA														
Protected Phases 8 8 4 4 4 5 1 6 2 2 6 6 Detector Phase 3 8 8 7 4 5 1 6 2 2 2 6 6 Detector Phase 3 8 7 4 5 1 6 2 2 2 6 6 Detector Phase 3 8 7 4 5 1 5 1 2 2 5 6 6 Switch Phase 8 7 4 5 1 1 2 2 5 6 6 Switch Phase 8 7 7 4 5 1 1 2 2 5 6 6 Switch Phase 8 7 7 8 5 1 1 2 2 5 6 6 Switch Phase 8 7 7 8 5 1 1 2 2 5 6 6 Switch Phase 8 7 7 8 5 1 1 2 2 5 6 6 Switch Phase 8 7 7 8 5 1 1 2 2 5 6 6 Switch Phase 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8				0										
Permitted Phases 8										custom			custom	
Delector Phase 3 8 7 4 5 1 2 5 6			8			4		•	6			2		
Switch Phase			0			1								
Minimum Initial (s)		3	Ö		1	4	5			2	5		Ö	
Minimum Split (s)		5.0	7.0		5.0	7.0	5.0	5.0	15.0	15.0	5.0	15.0	15.0	
Total Split (s)	` '													
Total Spill (%) Maximum Green (s) Z60 33.0 26.0 35.0 10.0 10.0 31.0 31.0 10.0 31.0 31.0 Yellow Time (s) 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0														
Maximum Green (s)														
Yellow Time (s) 3.0 4.0 5.0 4.0 5.0 4.0 5.0 4.0 5.0 4.0 5.0 4.0 5.0 5.0 4.0 5.0 4.0 5.0 4.0 5.0 4.0 5.0 4.0 5.0 4.0 5.0 4.0 5.0 4.0 5.0 4.0 5.0 4.0 5.0 4.0 5.0 4.0 5.0 4.0 5.0 4.0 5.0 4.0 5.0 4.0 4.0 4.0 5.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0														
All-Red Time (s)		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Total Lost Time (s)	All-Red Time (s)	1.0	2.0		1.0	2.0	1.0	1.0	2.0	2.0	1.0	2.0	2.0	
Lead/Lag Lead Lag Lead Lag Lead Lag Lead Lag L	Lost Time Adjust (s)		0.0			0.0	0.0					0.0		
Lead-Lag Optimize?					4.0		4.0				4.0			
Vehicle Extension (s) 3.0 3.0 3.0 3.0 3.0 2.0 3.0 0.2 0.2 2.0 0.2 0.2 0.2		Lead	Lag		Lead	Lag	Lead	Lead	Lag	Lag	Lead	Lag	Lag	
Recall Mode None None None None None None None None C-Max C-Max														
Walk Time (s) 7.0 0														
Flash Dont Walk (s)		None			None		None	None			None			
Pedestrian Calls (#/hr)	- (-)													
Act Effet Green (s) 41.5 29.0 54.7 38.2 52.5 51.9 42.9 46.3 55.3 46.3 42.9 Actuated g/C Ratio 0.35 0.24 0.46 0.32 0.44 0.43 0.36 0.39 0.46 0.39 0.36 V/c Ratio 0.31 0.85 0.68 0.36 0.26 0.13 0.21 0.57 0.36 0.23 0.19 Control Delay 20.4 60.6 33.4 20.1 1.4 21.2 29.9 5.6 17.0 20.8 3.6 Queue Delay 0.0 0.2 0.0	\ /													
Actuated g/C Ratio 0.35 0.24 0.46 0.32 0.44 0.43 0.36 0.39 0.46 0.39 0.36 v/c Ratio 0.31 0.85 0.68 0.36 0.26 0.13 0.21 0.57 0.36 0.23 0.19 Control Delay 20.4 60.6 33.4 20.1 1.4 21.2 29.9 5.6 17.0 20.8 3.6 Queue Delay 0.0 0.2 0.0 0.0 0.0 0.0 0.0 0.2 0.3 0.0 Total Delay 20.4 60.9 33.4 20.1 1.4 21.2 29.9 5.6 17.1 21.1 3.6 LOS C E C C C A C C A B C A Approach LOS D B B B B B B B B B B B B B B B B<	\ /	/15	•		5/17	•	52.5	51 0	•	•	55.3	•	-	
v/c Ratio 0.31 0.85 0.68 0.36 0.26 0.13 0.21 0.57 0.36 0.23 0.19 Control Delay 20.4 60.6 33.4 20.1 1.4 21.2 29.9 5.6 17.0 20.8 3.6 Queue Delay 0.0 0.2 0.0 0.0 0.0 0.0 0.0 0.2 0.3 0.0 Total Delay 20.4 60.9 33.4 20.1 1.4 21.2 29.9 5.6 17.1 21.1 3.6 LOS C E C C A C C A B C A Approach Delay 49.6 19.7 14.3 16.5 16.5 16.5 16.5 16.5 16.5 16.5 16.5 16.5 17.1 21.1 3.6 16.5 16.5 16.5 16.5 16.5 16.5 16.5 16.5 16.5 17.1 21.1 3.0 16.5 17.1 </td <td></td>														
Control Delay 20.4 60.6 33.4 20.1 1.4 21.2 29.9 5.6 17.0 20.8 3.6 Queue Delay 0.0 0.2 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0														
Queue Delay 0.0 0.2 0.0 0.0 0.0 0.0 0.0 0.0 0.2 0.3 0.0 Total Delay 20.4 60.9 33.4 20.1 1.4 21.2 29.9 5.6 17.1 21.1 3.6 LOS C E C C A C C A B C A Approach Delay 49.6 19.7 14.3 16.5 A A A A B C A A A B C A A B <td></td>														
Total Delay														
LOS C E C C A C C A B C A Approach Delay 49.6 19.7 14.3 16.5 Approach LOS D B B B B Stops (vph) 86 317 172 113 15 36 171 44 83 141 10 Fuel Used(gal) 1 7 4 2 1 1 3 2 1 3 0 CO Emissions (g/hr) 97 481 253 153 62 44 218 154 102 186 28 NOx Emissions (g/hr) 19 94 49 30 12 9 42 30 20 36 5 VOC Emissions (g/hr) 22 112 59 35 14 10 51 36 24 43 6 Dilemma Vehicles (#) 0 0 0 0 0			60.9		33.4	20.1	1.4			5.6	17.1		3.6	
Approach LOS D B B B B B B Stops (vph) 86 317 172 113 15 36 171 44 83 141 10 Fuel Used(gal) 1 7 4 2 1 1 3 3 2 1 3 0 CO Emissions (g/hr) 97 481 253 153 62 44 218 154 102 186 28 NOx Emissions (g/hr) 19 94 49 30 12 9 42 30 20 36 5 VOC Emissions (g/hr) 22 112 59 35 14 10 51 36 24 43 6 Dilemma Vehicles (#) 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0							Α							
Stops (vph) 86 317 172 113 15 36 171 44 83 141 10 Fuel Used(gal) 1 7 4 2 1 1 3 2 1 3 0 CO Emissions (g/hr) 97 481 253 153 62 44 218 154 102 186 28 NOx Emissions (g/hr) 19 94 49 30 12 9 42 30 20 36 5 VOC Emissions (g/hr) 22 112 59 35 14 10 51 36 24 43 6 Dilemma Vehicles (#) 0	Approach Delay		49.6			19.7			14.3			16.5		
Fuel Used(gal) 1 7 4 2 1 1 3 2 1 3 0 CO Emissions (g/hr) 97 481 253 153 62 44 218 154 102 186 28 NOx Emissions (g/hr) 19 94 49 30 12 9 42 30 20 36 5 VOC Emissions (g/hr) 22 112 59 35 14 10 51 36 24 43 6 Dilemma Vehicles (#) 0 <														
CO Emissions (g/hr) 97 481 253 153 62 44 218 154 102 186 28 NOx Emissions (g/hr) 19 94 49 30 12 9 42 30 20 36 5 VOC Emissions (g/hr) 22 112 59 35 14 10 51 36 24 43 6 Dilemma Vehicles (#) 0 0 0 0 0 0 0 0 0 0 0 0 0 Queue Length 50th (ft) 63 273 72 110 23 28 76 0 73 69 1 Queue Length 95th (ft) 86 369 231 76 0 64 125 94 m110 m92 m8 Internal Link Dist (ft) 268 430 286 221 Turn Bay Length (ft) 100 210 100 130 70 110 Base Capacity (vph) 651 531 459 620 816 531 1266 936 524 1366 644 Starvation Cap Reductn 0 0 0 0 0 0 0 0 0 51 536 0														
NOx Emissions (g/hr) 19 94 49 30 12 9 42 30 20 36 5 VOC Emissions (g/hr) 22 112 59 35 14 10 51 36 24 43 6 Dilemma Vehicles (#) 0														
VOC Emissions (g/hr) 22 112 59 35 14 10 51 36 24 43 6 Dilemma Vehicles (#) 0 <t< td=""><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></t<>														
Dilemma Vehicles (#) 0														
Queue Length 50th (ft) 63 273 72 110 23 28 76 0 73 69 1 Queue Length 95th (ft) 86 369 231 76 0 64 125 94 m110 m92 m8 Internal Link Dist (ft) 268 430 286 221 Turn Bay Length (ft) 100 210 100 130 70 110 Base Capacity (vph) 651 531 459 620 816 531 1266 936 524 1366 644 Starvation Cap Reductn 0 0 0 0 0 0 0 51 536 0	(0)													
Queue Length 95th (ft) 86 369 231 76 0 64 125 94 m110 m92 m8 Internal Link Dist (ft) 268 430 286 221 Turn Bay Length (ft) 100 210 100 130 70 110 Base Capacity (vph) 651 531 459 620 816 531 1266 936 524 1366 644 Starvation Cap Reductn 0 0 0 0 0 0 51 536 0														
Internal Link Dist (ft) 268 430 286 221 Turn Bay Length (ft) 100 210 100 130 70 110 Base Capacity (vph) 651 531 459 620 816 531 1266 936 524 1366 644 Starvation Cap Reductn 0 0 0 0 0 0 51 536 0														
Turn Bay Length (ft) 100 210 100 130 70 110 Base Capacity (vph) 651 531 459 620 816 531 1266 936 524 1366 644 Starvation Cap Reductn 0 0 0 0 0 0 51 536 0		00			231		U	04		94	111110		1110	
Base Capacity (vph) 651 531 459 620 816 531 1266 936 524 1366 644 Starvation Cap Reductn 0 0 0 0 0 0 0 51 536 0		100	200		210	430		100	200	130	70	221	110	
Starvation Cap Reductn 0 0 0 0 0 0 0 51 536 0			531			620	816		1266			1366		

6: Atlantic Street & Station Place/Dock Street

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Storage Cap Reductn	0	0		0	0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.22	0.71		0.59	0.34	0.25	0.12	0.21	0.57	0.40	0.37	0.19	

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 104 (87%), Referenced to phase 2:SBTL and 6:NBTL, Start of Yellow

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.85 Intersection Signal Delay: 22.9

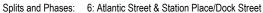
Intersection LOS: C

Intersection Capacity Utilization 69.9%

ICU Level of Service C

Analysis Period (min) 15

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





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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations	7	↑ ↑						^	7	ሻ	^		
Traffic Volume (vph)	92	602	145	0	0	0	0	490	81	195	425	0	
Future Volume (vph)	92	602	145	0	0	0	0	490	81	195	425	0	
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	0.95	1.00	1.00	0.95	1.00	
Frt		0.971							0.850				
Flt Protected	0.950									0.950			
Satd. Flow (prot)	1770	3437	0	0	0	0	0	3539	1583	1770	3539	0	
Flt Permitted	0.950									0.375			
Satd. Flow (perm)	1770	3437	0	0	0	0	0	3539	1583	699	3539	0	
Right Turn on Red			No			Yes			No			Yes	
Satd. Flow (RTOR)													
Link Speed (mph)		30			30			30			30		
Link Distance (ft)		294			1170			301			244		
Travel Time (s)		6.7			26.6			6.8			5.5		
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	
Adj. Flow (vph)	105	684	165	0	0	0	0	557	92	222	483	0	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	105	849	0	0	0	0	0	557	92	222	483	0	
Turn Type	Perm	NA						NA	Perm	pm+pt	NA		
Protected Phases		4						2		1	6		
Permitted Phases	4								2	6			
Detector Phase	4	4						2	2	1	6		
Switch Phase													
Minimum Initial (s)	7.0	7.0						15.0	15.0	5.0	15.0		
Minimum Split (s)	34.0	34.0						34.0	34.0	10.0	27.0		
Total Split (s)	40.0	40.0						70.0	70.0	10.0	54.0		
Total Split (%)	33.3%	33.3%						58.3%	58.3%	8.3%	45.0%		
Maximum Green (s)	35.0	35.0						65.0	65.0	5.0	49.0		
Yellow Time (s)	3.0	3.0						3.0	3.0	3.0	3.0		
All-Red Time (s)	2.0	2.0						2.0	2.0	2.0	2.0		
Lost Time Adjust (s)	-1.0	-1.0						-1.0	-1.0	0.0	-1.0		
Total Lost Time (s)	4.0	4.0						4.0	4.0	5.0	4.0		
Lead/Lag								Lag	Lag	Lead			
Lead-Lag Optimize?								Yes	Yes	Yes			
Vehicle Extension (s)	2.0	2.0						0.2	0.2	2.0	0.2		
Recall Mode	None	None						C-Max	C-Max	Min	C-Max		
Walk Time (s)	7.0	7.0						7.0	7.0		7.0		
Flash Dont Walk (s)	22.0	22.0						15.0	15.0		15.0		
Pedestrian Calls (#/hr)	0	0						0	0		0		
Act Effct Green (s)	34.1	34.1						67.9	67.9	76.9	77.9		
Actuated g/C Ratio	0.28	0.28						0.57	0.57	0.64	0.65		
v/c Ratio	0.21	0.87						0.28	0.10	0.45	0.21		
Control Delay	33.2	51.2						14.4	12.9	10.8	2.6		
Queue Delay	0.0	0.0						0.5	0.0	1.5	0.3		
Total Delay	33.2	51.2						14.9	12.9	12.3	2.9		
LOS Approach Dolay	С	D 49.2						B 14.6	В	В	A 5.9		
Approach Delay Approach LOS		49.2 D						14.6 B			5.9 A		
	68	686						222	33	84	68		
Stops (vph) Fuel Used(gal)	1	13						4	აა 1	1	1		
CO Emissions (g/hr)	84	929						267	41	88	99		
NOx Emissions (g/hr)	16	181						52	8	17	19		
VOC Emissions (g/hr)	20	215						62	9	20	23		
Dilemma Vehicles (#)	0	0						02	0	0	23		
Queue Length 50th (ft)	60	321						108	33	31	34		
Queue Length 95th (ft)	104	390						128	53	m61	m27		
Internal Link Dist (ft)	104	214			1090			221	JJ	11101	164		
Turn Bay Length (ft)		214			1090			221			104		
Base Capacity (vph)	531	1031						2001	894	492	2296		
Starvation Cap Reductn	0	0						947	094	134	1156		
Spillback Cap Reductn	0	0						35	0	134	0		
Storage Cap Reductin	0	0						0	0	0	0		
Reduced v/c Ratio	0.20	0.82						0.53	0.10	0.62	0.42		
	0.20	0.02						0.55	0.10	0.02	0.42		
Intersection Summary													

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 109 (91%), Referenced to phase 2:NBT and 6:SBTL, Start of Yellow

Natural Cycle: 80

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.87

Intersection Signal Delay: 26.2 Intersection LOS: C

Intersection Capacity Utilization 56.4% ICU Level of Service B

Analysis Period (min) 15

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

Splits and Phases: 7: South State St & Atlantic St

70 5

40 5

	•	/	+	•	*1	•	†		لر	4				
Lane Group	WBL2	WBL	WBT	WBR	NBL2	NBL	NBT	SBT	SBR	SBR2	Ø2	Ø3	Ø5	
Lane Configurations			नााः			ă	^	^	7			,,,,		
Traffic Volume (vph)	173	797	335	384	235	12	345	448	326	76				
Future Volume (vph)	173	797	335	384	235	12	345	448	326	76				
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900				
Lane Util. Factor	0.86	0.86	0.86	0.86	0.95	1.00	0.95	0.95	1.00	0.95				
Frt			0.966						0.850					
Flt Protected			0.972			0.950								
Satd. Flow (prot)	0	0	6017	0	0	1770	3539	3539	1583	0				
Flt Permitted			0.972			0.309								
Satd. Flow (perm)	0	0	6017	0	0	576	3539	3539	1583	0				
Right Turn on Red				No						No				
Satd. Flow (RTOR)			00				05	0.5						
Link Speed (mph)			30				25	25						
Link Distance (ft)			1209				244	742						
Travel Time (s)	0.00	0.05	27.5	0.05	0.00	0.05	6.7	20.2	0.05	0.00				
Peak Hour Factor	0.92 188	0.85 938	0.85 394	0.85 452	0.92 255	0.85 14	0.85 406	0.85 527	0.85 384	0.92 83				
Adj. Flow (vph)	100	930	394	452	255	14	400	521	304	03				
Shared Lane Traffic (%)	0	0	1972	0	0	269	406	527	467	0				
Lane Group Flow (vph) Turn Type	Split	Split	NA	U	custom	custom	NA	NA	Perm	U				
Protected Phases	Split 4	Split 4	4		3 5	3 5	23	6	reiiii		2	3	5	
Permitted Phases	4	4	4		2	2	23	U	6		2	3	5	
Detector Phase	4	4	4		3 5	35			6					
Switch Phase	-		7		3 3	33			U					
Minimum Initial (s)	10.0	10.0	10.0					15.0	15.0		15.0	5.0	5.0	
Minimum Split (s)	31.0	31.0	31.0					20.0	20.0		26.0	10.0	10.0	
Total Split (s)	52.0	52.0	52.0					39.0	39.0		39.0	17.0	12.0	
Total Split (%)	43.3%	43.3%	43.3%					32.5%	32.5%		33%	14%	10%	
Maximum Green (s)	47.0	47.0	47.0					34.0	34.0		34.0	12.0	7.0	
Yellow Time (s)	3.0	3.0	3.0					3.0	3.0		3.0	3.0	3.0	
All-Red Time (s)	2.0	2.0	2.0					2.0	2.0		2.0	2.0	2.0	
Lost Time Adjust (s)			0.0					0.0	0.0					
Total Lost Time (s)			5.0					5.0	5.0					
Lead/Lag								Lag	Lag				Lead	
Lead-Lag Optimize?								-						
Vehicle Extension (s)	2.0	2.0	2.0					0.2	0.2		0.2	2.0	2.0	
Recall Mode	None	None	None					None	None		C-Max	None	None	
Walk Time (s)	7.0	7.0	7.0								7.0			
Flash Dont Walk (s)	19.0	19.0	19.0								14.0			
Pedestrian Calls (#/hr)	0	0	0								0			
Act Effct Green (s)			46.4			58.6	63.6	40.0	40.0					
Actuated g/C Ratio			0.39			0.49	0.53	0.33	0.33					
v/c Ratio			1.65dl			0.65	0.22	0.45	0.88					
Control Delay			28.8			21.3	9.9	33.4	58.3					
Queue Delay			0.0			0.0	0.4	0.0	0.0					
Total Delay LOS			28.8			21.3	10.3 B	33.4 C	58.3 E					
			C 28.8			С	14.7	45.1						
Approach LOS														
Approach LOS Stops (vph)			C 1028			171	B 154	D 344	338					
Fuel Used(gal)			32			2	2	7	9					
CO Emissions (g/hr)			2203			156	140	503	603					
NOx Emissions (g/hr)			429			30	27	98	117					
VOC Emissions (g/hr)			511			36	32	117	140					
Dilemma Vehicles (#)			0			0	0	0	0					
Queue Length 50th (ft)			260			38	30	165	337					
Queue Length 95th (ft)			243			165	114	221	#544					
Internal Link Dist (ft)			1129			.50	164	662	,, 01-1					
Turn Bay Length (ft)			1120				101	302						
Base Capacity (vph)			2356			496	1875	1180	528					
Starvation Cap Reductn			0			0	989	0	0					
Spillback Cap Reductn			0			0	0	0	0					
Storage Cap Reductn			0			0	0	0	0					
Reduced v/c Ratio			0.84			0.54	0.46	0.45	0.88					
Intersection Summary														

Area Type: Other Cycle Length: 120
Actuated Cycle Length: 120 Offset: 105 (88%), Referenced to phase 2:NBTL, Start of Yellow Natural Cycle: 90 Control Type: Actuated-Coordinated Maximum v/c Ratio: 0.88 Intersection Signal Delay: 30.6 Intersection LOS: C Intersection Capacity Utilization 95.2% ICU Level of Service F Analysis Period (min) 15 # 95th percentile volume exceeds capacity, queue may be longer. Queue shown is maximum after two cycles. dl Defacto Left Lane. Recode with 1 though lane as a left lane. Splits and Phases: 8: Atlantic St & North State St ≉f_{Ø3} ≈¶ _{Ø2 (R)} **₹**ø4 Ø6

Anne Configurations	31 31 0 Stop one - - 92 2 34
Search S	31 31 0 Stop one - - - 92 2
Anne Configurations	31 31 0 Stop one - - - 92 2
raffic Vol, veh/h	31 0 Stop one - - - 92 2
uture Vol, veh/h 2 839 5 61 725 10 25 1 61 31 1 onflicting Peds, #/hr 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 ign Control Free Free Free Free Free Free Free Fre	0 Stop one - - - 92 2
Ign Control Free None - None - No - No - No - No - 0 - - 0 - - 0 - - 0 - - 0 - - 0 - - 0 - - 0 - - 0 - - 0 - - 0 -	Stop one - - - 92 2
Free Stop	92 2
T Channelized None None None None None torage Length 100 130 0	92 2
eh in Median Storage, # - 0 0 0 0 0 rade, % - 0 - 0 0 0 0 0 eak Hour Factor 92 92 92 92 92 92 92 92 92 92 92 92 92	92 2
eh in Median Storage, # - 0 0 0 0 0 rade, % - 0 - 0 0 0 0 rade, % - 0 - 0 0 0 0 0 eak Hour Factor 92 92 92 92 92 92 92 92 92 92 92 92 92	92 2
rade, % - 0 0 0 0 0 0 eak Hour Factor 92 92 92 92 92 92 92 92 92 92 92 92 92	92
eavy Vehicles, % 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	2
eavy Vehicles, % 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	2
vmt Flow 2 912 5 66 788 11 27 1 66 34 1 lajor/Minor Major1 Major2 Minor1 Minor2 onflicting Flow All 799 0 0 917 0 0 1446 1850 459 1295 1847 4 Stage 1 - - - - - 919 919 - 926 926 Stage 2 - - - - - 527 931 - 369 921 ritical Hdwy 4.14 - - 5.34 - - 6.99 6.54 7.14 6.99 6.54 6. ritical Hdwy Stg 1 - - - - - 7.34 5.54 - 6.54 5.54 ritical Hdwy Stg 2 - - - - - 6.54 5.54 - 6.74 5.54 onllow-up Hdwy <td></td>	
lajor/Minor Major1 Major2 Minor1 Minor2 onflicting Flow All 799 0 0 917 0 0 1446 1850 459 1295 1847 4 Stage 1 - - - - - 919 919 - 926 926 Stage 2 - - - - - 527 931 - 369 921 ritical Hdwy 4.14 - - 5.34 - - 6.99 6.54 7.14 6.99 6.54 6. ritical Hdwy Stg 1 - - - - - 7.34 5.54 - 6.54 5.54 ritical Hdwy Stg 2 - - - - - 6.54 5.54 - 6.74 5.54 ollow-up Hdwy 2.22 - - 3.12 - - 3.67 4.02 3.92 3.67 4.02 3. <	
onflicting Flow All 799 0 0 917 0 0 1446 1850 459 1295 1847 4 Stage 1 - - - - - 919 919 - 926 926 Stage 2 - - - - 527 931 - 369 921 ritical Hdwy 4.14 - - 5.34 - - 6.99 6.54 7.14 6.99 6.54 6. ritical Hdwy Stg 1 - - - - 7.34 5.54 - 6.54 5.54 ritical Hdwy Stg 2 - - - - 6.54 5.54 - 6.74 5.54 ollow-up Hdwy 2.22 - - 3.12 - - 3.67 4.02 3.92 3.67 4.02 3.	
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Stage 1 - - - - - 919 919 - 926 926 Stage 2 - - - - - 527 931 - 369 921 ritical Hdwy 4.14 - - 5.34 - - 6.99 6.54 7.14 6.99 6.54 6. ritical Hdwy Stg 1 - - - - 7.34 5.54 - 6.54 5.54 ritical Hdwy Stg 2 - - - - 6.54 5.54 - 6.74 5.54 ollow-up Hdwy 2.22 - - 3.12 - - 3.67 4.02 3.92 3.67 4.02 3.	400
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ritical Hdwy	-
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ollow-up Hdwy 2.22 3.12 3.67 4.02 3.92 3.67 4.02 3.	-
	3.32
ot Cap-1 Maneuver 819 429 113 74 470 143 74 6	600
Stage 1 232 348 - 282 346	-
Stage 2 487 344 - 590 347	-
latoon blocked. %	
	600
ov Cap-2 Maneuver 93 62 - 107 62	-
Stage 1 232 347 - 281 293	-
Stage 2 387 291 - 504 346	-
pproach EB WB NB SB	
CM Control Delay, s 0 1.1 35.5 33	
CM LOS E D	
inor Lane/Major Mvmt NBLn1 EBL EBT EBR WBL WBT WBR SBLn1 SBLn2	
apacity (veh/h) 210 819 429 107 472	
CM Lane V/C Ratio 0.45 0.003 0.155 0.315 0.074	
CM Control Delay (s) 35.5 9.4 14.9 53.4 13.2	
CM Lane LOS E A B F B	
CM 95th %tile Q(veh) 2.1 0 0.5 1.2 0.2	

Intersection												
Int Delay, s/veh	5.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	ች	^	LDIX	Ä	†	WEIT	NDL	4	HUIT	ኝ	<u> </u>	ODIT
Traffic Vol., veh/h	2	839	18	78	725	10	35	1	73	31	1	31
Future Vol. veh/h	2	839	18	78	725	10	35	1	73	31	1	31
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	_	-	130		-	-	_	-	0	_	-
/eh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	_	0	_	_	0	_	_	0	_	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Nymt Flow	2	912	20	85	788	11	38	1	79	34	1	34
		,		30								
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	799	0	0	932	0	0	1491	1895	466	1333	1900	400
Stage 1	-	-	-	-	-	-	926	926	-	964	964	-
Stage 2		-	-	-	-	-	565	969	-	369	936	-
Critical Hdwy	4.14	-	-	5.34	-	-	6.99	6.54	7.14	6.99	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	7.34	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.74	5.54	-
Follow-up Hdwy	2.22	-	-	3.12	-	-	3.67	4.02	3.92	3.67	4.02	3.32
Pot Cap-1 Maneuver	819	-	-	422	-	-	106	69	465	135	68	600
Stage 1	-	-	-	-	-	-	229	346	-	267	332	-
Stage 2	-	-	-	-	-	-	462	330	-	590	342	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	819	-	-	422	-	-	83	55	465	93	54	600
Mov Cap-2 Maneuver	-	-	-	-	-	-	83	55	-	93	54	-
Stage 1	-	-	-	-	-	-	229	345	-	266	265	-
Stage 2	-	-	-	-	-	-	347	264	-	487	341	-
•												
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0			1.5			55			38.4		
HCM LOS							F			Е		
Minor Lane/Major Mvmt		NBLn1	EBL	EBT EBR	WBL	WBT	WBR	SBLn1	SBLn2			
Capacity (veh/h)		183	819		422	-	-	93	456			
HCM Lane V/C Ratio		0.647	0.003		0.201	-	-	0.362	0.076			
HCM Control Delay (s)		55	9.4		15.7	-	-	64.2	13.5			
HCM Lane LOS		F	Α		С	-	-	F	В			

Note
Movement
Cane Configurations
Cane Configurations
Traffic Vol, veh/h 29 1 1 693 522 42 Future Vol, veh/h 29 1 1 693 522 42 Conflicting Peds, #/hr 0 0 0 0 0 0 0 0 Cign Control Stop Stop Free Free Free Free Free Storage Length 0 - None - None - None Storage Length 0 - 100
Future Vol, veh/h 29 1 1 693 522 42 Conflicting Peds, #/hr 0 0 0 0 0 0 0 0 Sign Control Stop Stop Free Free Free Free Free BT Channelized - None - None - None - None Btorage Length 0 - 100
Conflicting Peds, #/hr 0 0 0 0 0 0 0 Sign Control Stop Stop Free <
Sign Control Stop Stop Free Room Along Grade 0 - - 0 0 - - 0 0 - - - 0 0 -
RT Channelized - None - None - None Storage Length 0 - 100
Storage Length 0
Veh in Median Storage, # 0 - - 0 0 - Grade, % 0 - - 0 0 - Peak Hour Factor 92 92 92 92 92 92 Heavy Vehicles, % 2 <td< td=""></td<>
Grade, % 0 - - 0 0 - Peak Hour Factor 92 46 92 92 92 92 92 92 92 92 92
Peak Hour Factor 92 4 Major/Minor Minor Major Major Major Major 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
Heavy Vehicles, % 2 2 2 2 2 2 2 2 2
Modurat Flow 32 1 1 753 567 46 Major/Minor Minor2 Major1 Major2 Conflicting Flow All 1345 590 613 0 - 0 Stage 1 590 -
Major/Minor Minor2 Major1 Major2 Conflicting Flow All 1345 590 613 0 - 0 Stage 1 590 - - - - - - Stage 2 755 - - - - - - Critical Hdwy 6.42 6.22 4.12 - - - - Critical Hdwy Stg 1 5.42 - - - - - - Critical Hdwy Stg 2 5.42 - - - - - - Follow-up Hdwy 3.518 3.318 2.218 - - - - Pot Cap-1 Maneuver 167 508 966 - - - - Stage 1 554 - - - - - - Stage 2 464 - - - - - -
Conflicting Flow All 1345 590 613 0 - 0 Stage 1 590 Stage 2 755 Critical Hdwy 6.42 6.22 4.12 Critical Hdwy Stg 1 5.42 Critical Hdwy Stg 2 5.42 Stage 1 554 Stage 1 554 Stage 2 464
Conflicting Flow All 1345 590 613 0 - 0 Stage 1 590 Stage 2 755 Critical Hdwy 6.42 6.22 4.12 Critical Hdwy Stg 1 5.42 Critical Hdwy Stg 2 5.42 Stage 1 554 Stage 1 554 Stage 2 464
Stage 1 590 - - - - Stage 2 755 - - - - Critical Hdwy 6.42 6.22 4.12 - - Critical Hdwy Stg 1 5.42 - - - - Critical Hdwy Stg 2 5.42 - - - - Follow-up Hdwy 3.518 3.318 2.218 - - - Pot Cap-1 Maneuver 167 508 966 - - - Stage 1 554 - - - - - Stage 2 464 - - - - -
Stage 1 590 - - - - Stage 2 755 - - - - Critical Hdwy 6.42 6.22 4.12 - - Critical Hdwy Stg 1 5.42 - - - - Critical Hdwy Stg 2 5.42 - - - - Follow-up Hdwy 3.518 3.318 2.218 - - - Pot Cap-1 Maneuver 167 508 966 - - - Stage 1 554 - - - - - Stage 2 464 - - - - -
Stage 2 755 - - - - Critical Hdwy 6.42 6.22 4.12 - - Critical Hdwy Stg 1 5.42 - - - - Critical Hdwy Stg 2 5.42 - - - - Follow-up Hdwy 3.518 3.318 2.218 - - - Pot Cap-1 Maneuver 167 508 966 - - - Stage 1 554 - - - - - Stage 2 464 - - - - -
Critical Hdwy 6.42 6.22 4.12 - - Critical Hdwy Stg 1 5.42 - - - - Critical Hdwy Stg 2 5.42 - - - - Follow-up Hdwy 3.518 3.318 2.218 - - - Pot Cap-1 Maneuver 167 508 966 - - - Stage 1 554 - - - - - Stage 2 464 - - - - -
Critical Hdwy Stg 1 5.42 - - - - Critical Hdwy Stg 2 5.42 - - - - Follow-up Hdwy 3.518 3.318 2.218 - - - Pot Cap-1 Maneuver 167 508 966 - - - Stage 1 554 - - - - - Stage 2 464 - - - - -
Critical Hdwy Stg 2 5.42 - - - - Follow-up Hdwy 3.518 3.318 2.218 - - - Pot Cap-1 Maneuver 167 508 966 - - - Stage 1 554 - - - - - Stage 2 464 - - - - -
Follow-up Hdwy 3.518 3.318 2.218 Pot Cap-1 Maneuver 167 508 966 Stage 1 554
Pot Cap-1 Maneuver 167 508 966 Stage 1 554 Stage 2 464
Stage 1 554 Stage 2 464
Stage 2 464
Platoon blocked, %
Mov Cap-1 Maneuver 167 508 966
Mov Cap-1 Maneuver 167
Stage 1 553
Stage 2 464
Stage 2 404
Approach EB NB SB
HCM Control Delay, s 30.9 0
HCM LOS D
Minor Lane/Major Mvmt NBL NBT EBLn1 SBT SBR
HCM Lane V/C Ratio 0.001 - 0.191
HCM Control Delay (s) 8.7 - 30.9
HCM Lane LOS A - D
HCM 95th %tile Q(veh) 0 - 0.7

Intersection						
Int Delay, s/veh	2.2					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
		WDK		NDIK	SDL	
Lane Configurations	٧	20	}	10	20	€
Traffic Vol., veh/h	8	22 22	87 87	12	30 30	67
Future Vol, veh/h	8			12		67
Conflicting Peds, #/hr	0	0	0	_ 0	0	_ 0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	9	24	95	13	33	73
Major/Minor	Minor1		Major1		Major?	
		100		^	Major2	
Conflicting Flow All	241	102	0	0	108	0
Stage 1	102	-	-	-	-	-
Stage 2	139	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	747	953	-	-	1483	-
Stage 1	922	-	-	-	-	-
Stage 2	888	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	730	953	-	-	1483	-
Mov Cap-2 Maneuver	730	-	-		-	-
Stage 1	922	_	_	_	-	-
Stage 2	868	_	_	_	_	_
Olugo 2	000					
Approach	WB		NB		SB	
HCM Control Delay, s	9.2		0		2.3	
HCM LOS	Α					
		NDT	NDD	MDI 4	ODI	ODT
Minor Lane/Major Mvmt		NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)		-	-	881	1483	-
HCM Lane V/C Ratio		-	-	0.037	0.022	-
HCM Control Delay (s)		-	-	9.2	7.5	0
HCM Lane LOS		-	-	Α	Α	Α
HCM 95th %tile Q(veh)		-	-	0.1	0.1	-
, ,						