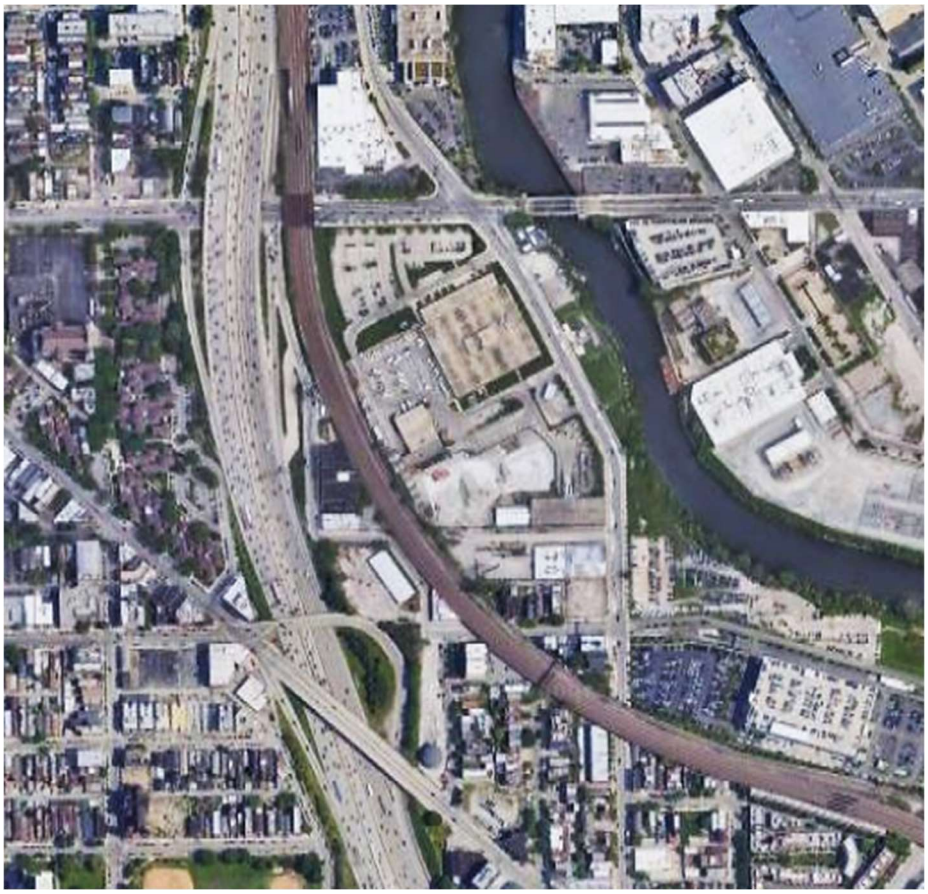
TRAFFIC IMPACT STUDY

REPORT FOR:

1241 W DIVISION STREET REDEVELOPMENT



DIVISION STREET & ELSTON AVENUE
CHICAGO, ILLINOIS

PREPARED BY:

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V3 Project No. 20779

April 22, 2021
Updated November 18, 2021

TABLE OF CONTENTS

FIGURES

TABLES

APPENDICES

EXECUTIVE SUMMARY

The purpose of this study is to evaluate the potential traffic impacts of a proposed warehouse development in the southwest quadrant of Division Street & Elston Avenue in Chicago, Illinois.

The building consists of a multi-level warehouse with a 253,920 square foot footprint and a maximum floor area of 594,296 square feet across two warehouse floors, two intermediary mezzanine levels, and office space. The building is being designed for maximum flexibility, as an end user is not under contract at this time. The end user will customize the building to fit the planned uses at the site, with customization options that include internal building layout, size, type and number of tractor-trailer loading docks, and parking or non-truck loading areas on the mezzanine levels and building roof level. The site is designed to be compatible with a variety of industrial warehousing uses, including but not limited to supply chain warehousing, retail distribution centers, local deliver fulfilment centers, and parcel hubs. The development is anticipated to open in 2023.

For the purposes of this study, a theoretical warehouse configuration is assumed in order to estimate potential future traffic volumes. In this case, the assumed use is a fulfillment center with a local delivery component. In facilities of this type, bulk/unsorted cargo arrives at the site via tractor-trailer trucks, employees sort the cargo into individual parcels, and the parcels are loaded into vehicles for local delivery. The local delivery vehicle is typically a commercial van. The final end user may install a different warehouse configuration. However, this use represents the configuration that is likely to produce the highest overall trip generation and result in the most conservative analysis.

Due to the ongoing impacts of the COVID-19 pandemic, it is possible that any current field-collected peak hour volumes may not be representative of typical traffic volumes at this location. Therefore, baseline volumes are estimated based on the traffic volumes presented in the Morton Salt Redevelopment Traffic Impact Study prepared by Sam Schwartz and dated August 14, 2020. Volumes are adjusted to existing year 2021 and horizon year 2024 (one year after building opening) using CMAP growth rates, current supplemental traffic counts, and historical 24-hour traffic counts.

Project trip generation considers three separate trip types: passenger car, truck, and local delivery vehicles. Since the final end user of the site is not known at this time, the passenger car and truck estimates are based on the methodology for general warehouse uses presented in the Institute of Transportation Engineers *Trip Generation Manual, 10th Edition.* A custom trip generation rate is presented for the local delivery vehicle trips, which is based on the site characteristics and operational data from similar sites of this type.

Based on the results of the capacity analysis, it is determined that the most significant operational deficiency in the study area occurs at the intersection of Division Street & Elston Avenue, which exhibits several approaches operating at level of service E or F in multiple time periods in the 2021 existing condition. The issues stem from the narrow Division Street bridge

over the North Branch of the Chicago River, which creates a significant choke point on the corridor. CDOT is aware of this issue and is underway with planning reconstruction. It is believed that the reconstruction will not be completed prior to 2024 and is not considered in this study.

The most notable level of service change that occurs following the addition of site generated traffic occurs on the northbound approach at the intersection of Division Street & Elston Avenue, which falls from LOS E to LOS F during the weekday pm peak hour. It is likely that this issue will be mitigated when the Division Street bridge is reconstructed and widened to accommodate additional traffic east of Elston Avenue. However, it is recommended that short term mitigation is considered as part of the warehouse development since the site contributes traffic to the northbound approach.

One option for mitigation is retiming the signal to better balance delay. Shifting five seconds of green time from the eastbound and westbound approaches on Division Street to the northbound and southbound approaches on Elston Avenue during the weekday pm peak hour greatly reduces the delay on the northbound approach, while only moderately increasing the delay on the Division Street approaches. With this retiming plan, the overall intersection level of service improves from LOS E to LOS D. However, the northbound left turn movement is found to be significantly over capacity.

CDOT has indicated that the installation of a northbound left turn arrow and the implementation of a protected-permitted signal phase will be required to mitigate this capacity issue. The implementation of the northbound protected left turn phase results in operational improvements on the northbound approach and negligible impacts on the eastbound and westbound approaches. However, the new protected phase has a detrimental impact on the southbound approach. Despite this impact, the protected left turn phase can be added in the weekday am and midday time periods without reallocation of green times between Elston Avenue and Division Street. It is recommended that four seconds of green time is reallocated from Division Street to Elston Avenue during the weekday pm peak hour to better balance overall delays between all four approaches.

CDOT has acknowledged that this signal and intersection will be reconstructed as part of the Division Street bridge replacement but the start date of construction has not been finalized and likely will not be completed earlier than 2024. This mitigation may be waived at the discretion of CDOT if there will be less than six months between the time of building occupancy and the commencement of any Division Street Bridge related MOT that would alter the signal at the intersection.

No specific capacity related mitigation options are recommended at the proposed driveways as part of the warehouse development. It is typical that minor-leg stop controlled approaches to busy urban roadways may experience high delays during peak hour operations. All delays on the minor road approaches are observed to be less than 60 seconds and all queue lengths are projected to be less than two vehicles. The anticipated turning paths for trucks at the proposed

driveways will impact existing sidewalks and bicycle lanes. Mitigation for these impacts should be addressed through geometric and pavement marking modifications that are developed in coordination with CDOT throughout the geometric design process.

Overall, it is recommended that the final end user of the site produce and implement a traffic management plan tailored to the specific uses at this warehouse. Warehouse facilities, especially those in urban environments, typically implement traffic management plans that dictate when each vehicle type can enter and exit the site. This management plan often places employee shift changes outside of traditional commuter hours and prohibits any inbound or outbound truck and local delivery trips during the adjacent roadway peak hours. In many cases, the traffic management plan will result in minimal trips of any type during the traditional roadway peak hours and may offset the typical operational hours of each of the trip types to improve internal site circulation.

I. INTRODUCTION

V3 Companies has been retained by the Logistics Property Company to conduct a traffic impact study for a warehouse and distribution development located in the southwest quadrant of the intersection of Division Street & Elston Street in Chicago, Illinois. The site is bounded by Division Street to the north, Elston Avenue to the east, Cortez Street to the south, and railroad tracks to the west. A location map is included as **Figure 1**.

The building consists of a multi-level warehouse with a 253,920 square foot footprint and a maximum floor area of 594,296 square feet across two warehouse floors, two intermediary mezzanine levels, and office space. The building is being designed for maximum flexibility, as an end user is not under contract at this time. The end user will customize the building to fit the planned uses at the site, with customization options that include internal building layout, size, type and number of tractor-trailer loading docks, and parking or non-truck loading areas on the mezzanine and roof levels. The site is designed to be compatible with a variety of industrial warehousing uses, including but not limited to supply chain warehousing, retail distribution centers, local deliver distribution centers, and parcel hubs.

A multi-level deck structure serves the warehouse, with truck docks on the ground level and upper deck, and mezzanine levels above the two truck levels. The mezzanine levels will be customized by the end user, but could include passenger car parking, general storage/operational area, or non-truck loading areas. The end user also has the option to customize the roof level, with options including but not limited to general passenger car parking, non-truck commercial vehicle parking, and logistical operations. A separate parking garage is also included on the site to serve passenger cars, with a grade-separated pedestrian structure providing access between the garage and warehouse building. The site could accommodate up to 1,634 parking stalls across the parking garage, two mezzanine levels, and warehouse roof depending on the mezzanine and roof configuration selected by the end user. The site plan for the proposed development with each level is included as **Figure 2**.

The warehouse portion of the development is accessed via one driveway on Division Street and two side-by-side driveways on Elston Avenue. The Division Street driveway is proposed to be right in/right out/left out for non-truck traffic and right in only for trucks. The restricted movements at the intersection is reinforced through signage and geometric configuration. The north driveway on Elston Avenue is a full access driveway with direct access to the ground level of the site. The south driveway on Elston Avenue is an exit only driveway that provides direct access from the second level truck docks to Elston Avenue. All proposed driveways are expected to consist of one approach lane.

Internal ramps are provided that allow for vehicles to travel between the ground level, the two mezzanine levels, the second truck dock level, and the roof level. All vehicles will enter the warehouse site at the ground level. A one-way up truck ramp will provide access to the upper truck level, where loading docks will be accessed via driver's side backing maneuvers. All trucks will exit the upper level via a one-way down truck ramp with access to Elston Avenue. Two-way

ramps provide connectivity between the ground floor, the two mezzanine levels, and the roof level for non-truck traffic. The two-way ramps will not have access to the upper truck level. A two-way helical ramp is also provided in the northwest portion of the site. This ramp is for non-truck traffic and can be configured to provide access on all levels of the structure as well as the roof level. The roof level includes a deck level above the upper mezzanine and the roof area of the warehouse.

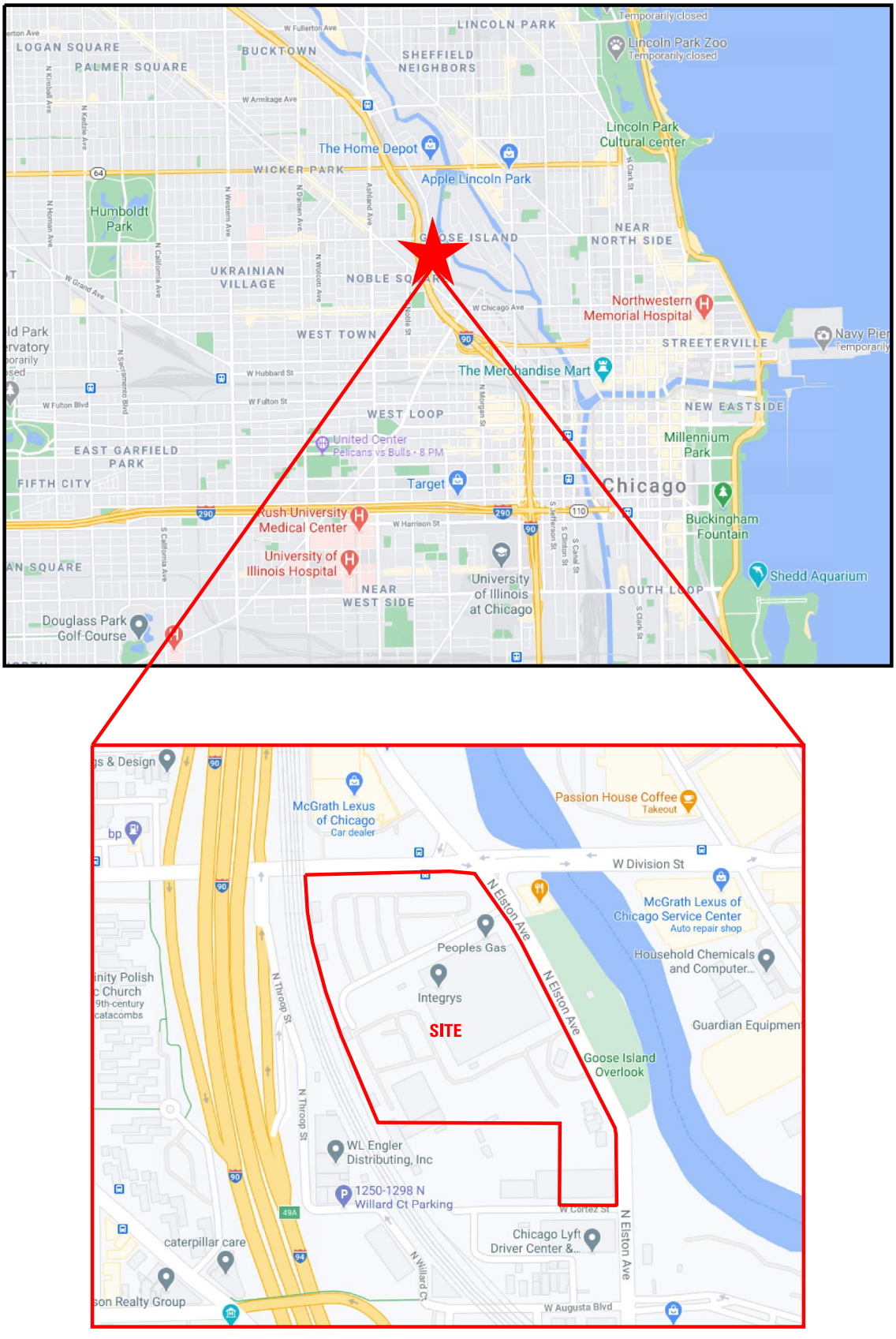
The one-way traffic flow for trucks on the upper level and separate truck and non-truck ramps maximizes the separation of truck and non-truck traffic within the site. A conceptual rendering of the potential internal ramp configurations is included as **Figure 3**.

The purpose of this study is to evaluate the potential traffic impacts of the proposed warehouse development for traffic estimates projected to 2024, which is one year beyond the planned completion date in 2023. The study includes the following intersections:

- Division Street & EB I-90/94 Ramps (Signalized)
- Division Street & WB I-90/94 Ramps (Signalized)
- Division Street & Elston Avenue (Signalized)
- Division Street & North Branch Street (Signalized)
- Elston Avenue & Cortez Street (Unsignalized)
- Elston Avenue & Augusta Boulevard (Signalized)

For the purposes of this study, a theoretical warehouse configuration is assumed in order to estimate potential future traffic volumes. In this case, the assumed use is a fulfillment center with a local delivery component. In facilities of this type, bulk/unsorted cargo arrives at the site via tractor-trailer trucks, employees sort the cargo into individual parcels, and the parcels are loaded into vehicles for local delivery. The local delivery vehicle is typically a commercial van. The final end user may install a different warehouse configuration. However, this use represents the configuration that is likely to produce the most overall trip generation and result in the most conservative analysis.

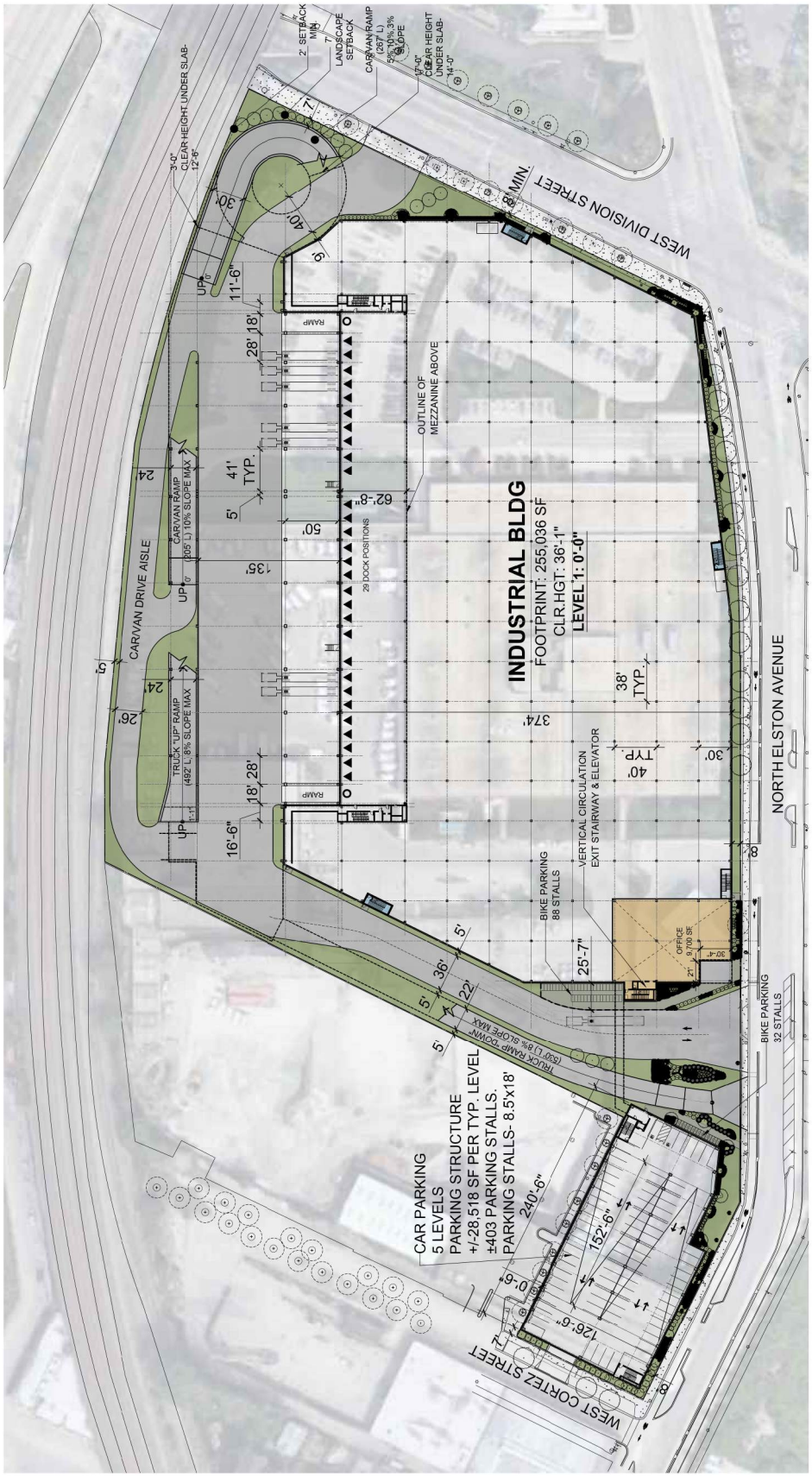
This report includes a description of existing conditions, data collection and capacity analysis, evaluation of data, and conclusions. This report includes consideration of the weekday am peak hour of the roadway network, a midday peak hour representing the projected peak hour of the proposed facility, and the weekday pm peak hour of the roadway network.



1241 W DIVISION STREET REDEVELOPMENT

FIGURE 1
SITE LOCATION MAP

CHICAGO ILLINOIS



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1241 W DIVISION STREET REDEVELOPMENT

FIGURE 2A
CONCEPTUAL SITE PLAN
GROUND LEVEL

CHICAGO ILLINOIS

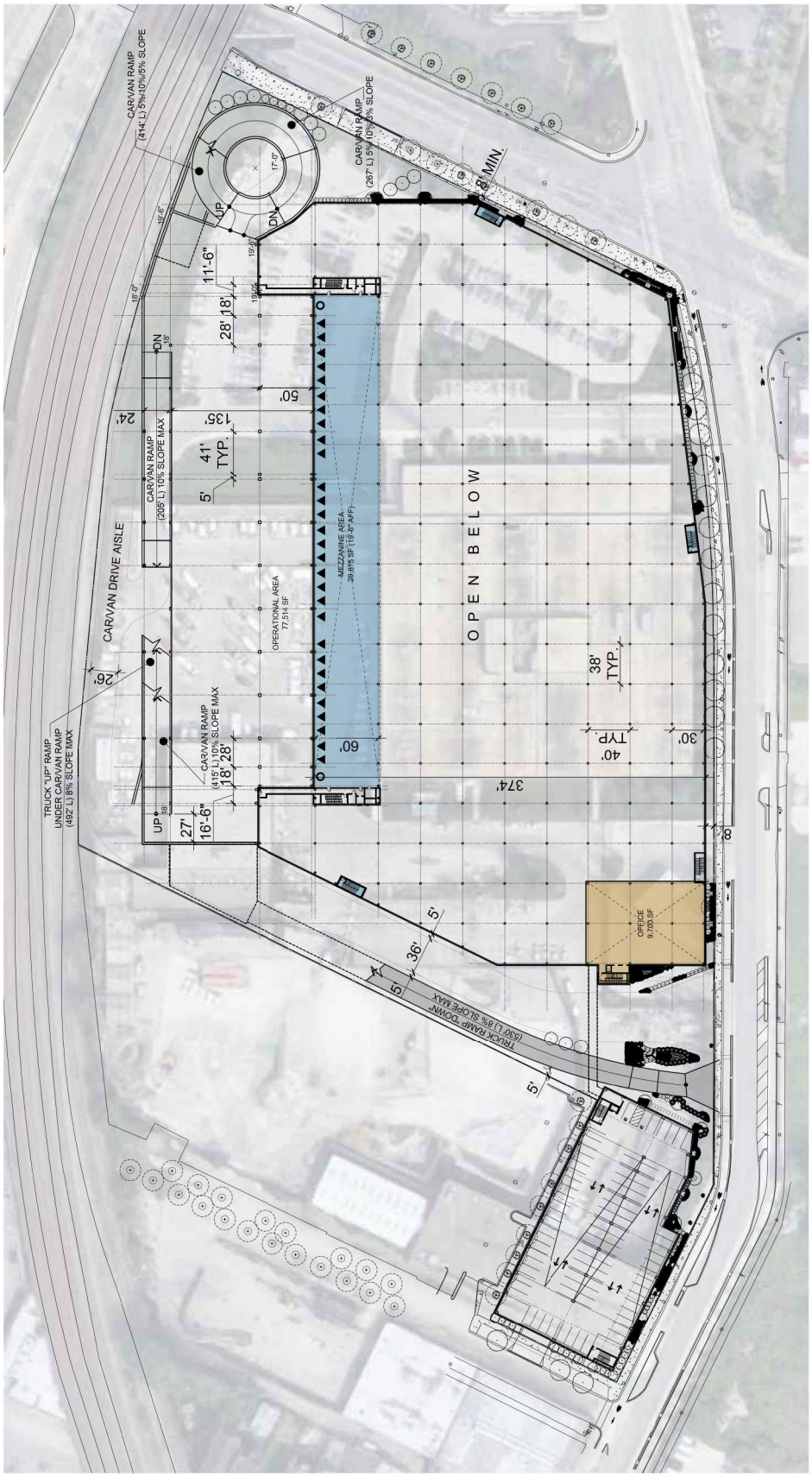

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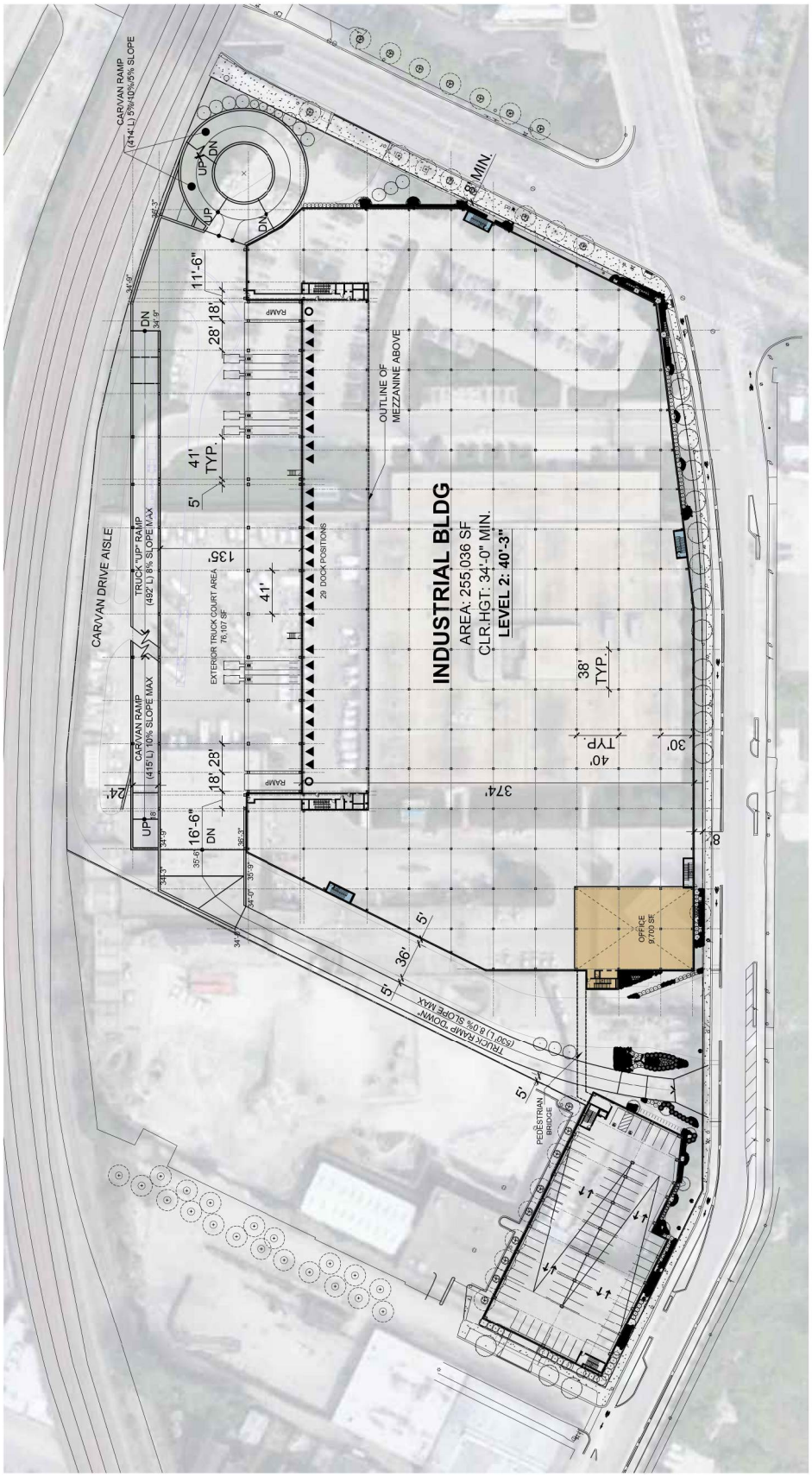
FIGURE 2B
CONCEPTUAL SITE PLAN
LOWER MEZZANINE

CHICAGO ILLINOIS



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1241 W DIVISION STREET REDEVELOPMENT

FIGURE 2C
CONCEPTUAL SITE PLAN
UPPER TRUCK LEVEL

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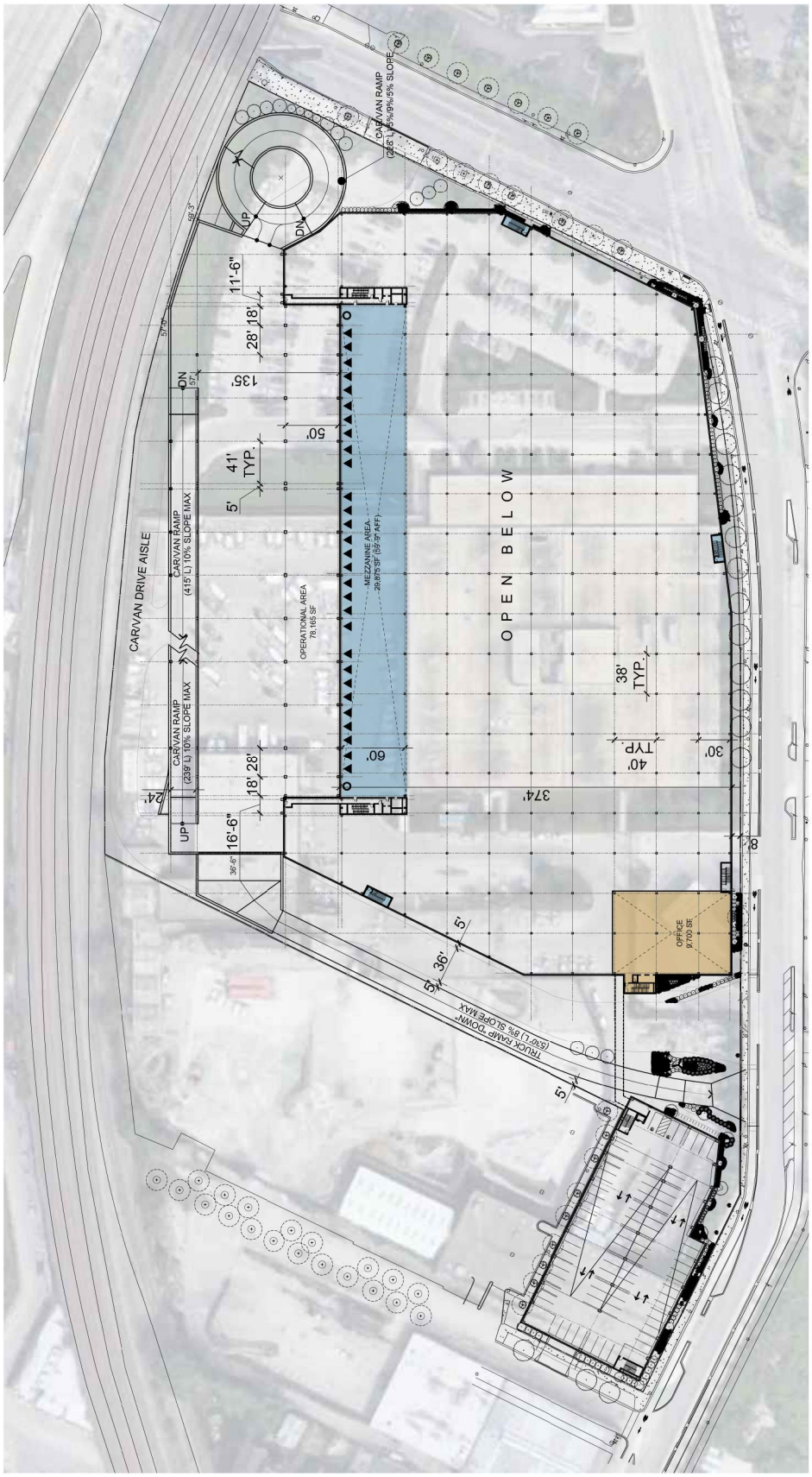

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1241 W DIVISION STREET REDEVELOPMENT

FIGURE 2D
CONCEPTUAL SITE PLAN
UPPER MEZZANINE

CHICAGO ILLINOIS

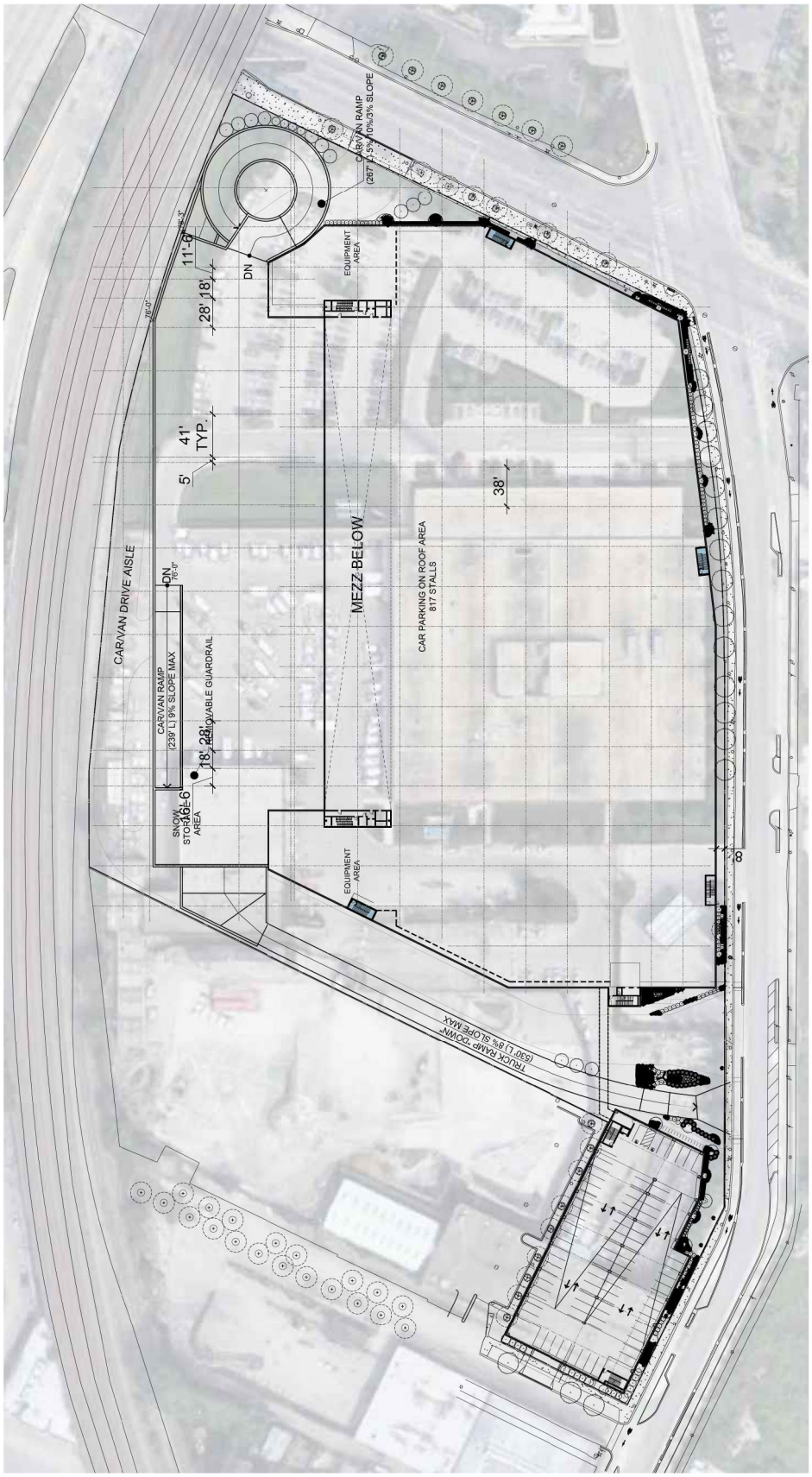

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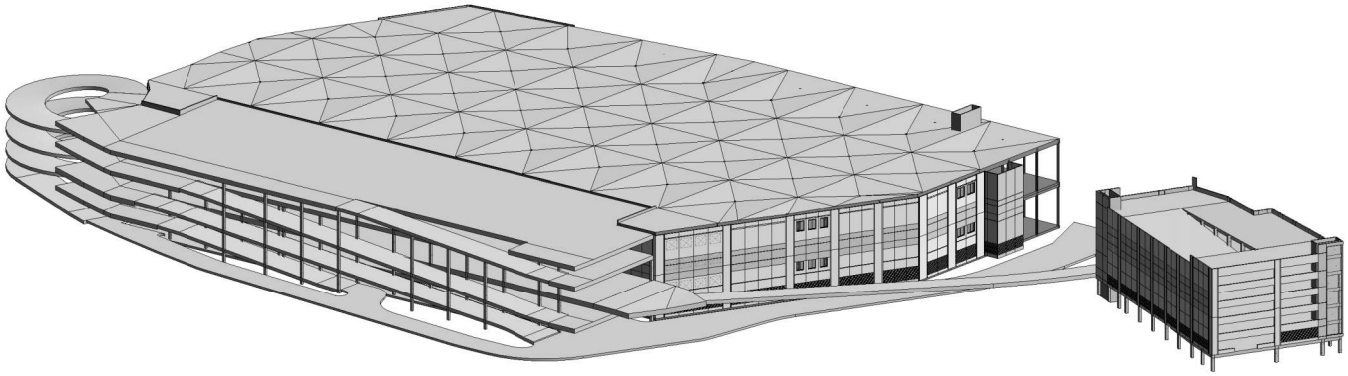
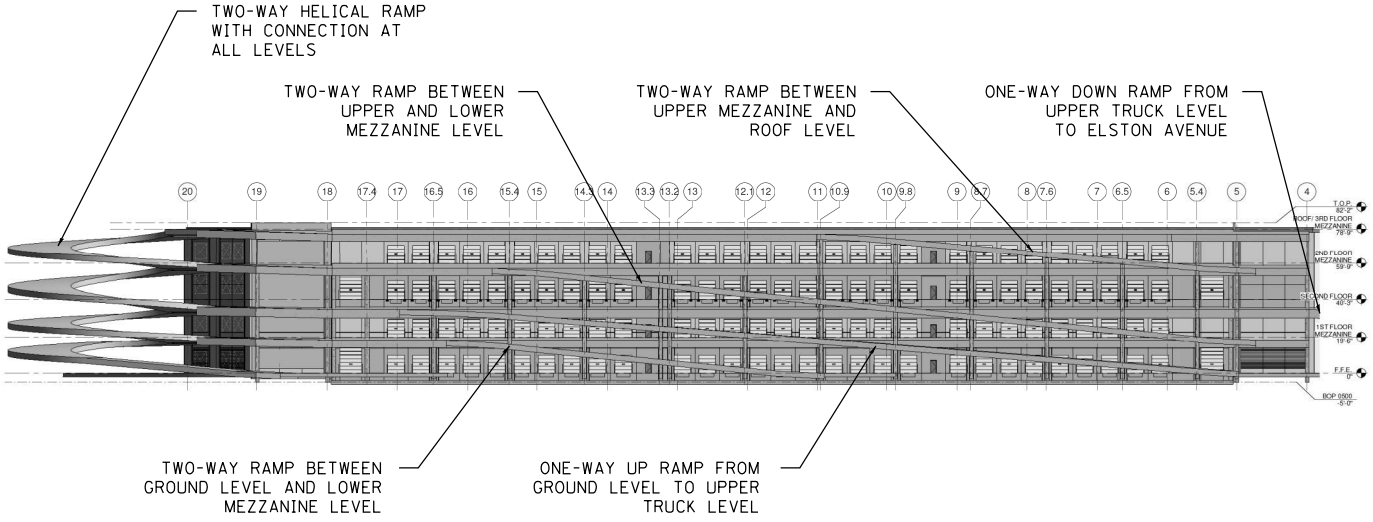
FIGURE 2E
CONCEPTUAL SITE PLAN
ROOF LEVEL

CHICAGO ILLINOIS





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1241 W DIVISION STREET REDEVELOPMENT

FIGURE 3
CONCEPTUAL INTERNAL RAMP CONFIGURATION

CHICAGO ILLINOIS

II. PROJECT CONDITIONS

Land Uses

The land uses near the project site primarily consists of industrial, commercial, service, and residential uses. West of the project site is a north-south railroad line that runs parallel to I-90/I-94 while the North Branch of the Chicago River runs north-south to the east. The surrounding land uses are illustrated in **Figure 4**.

Roadway System

The characteristics of the roadways in the vicinity of the site are presented below. The existing lane configurations in the study area are illustrated in **Figure 5**.

Roadway Descriptions

Division Street is classified as a major collector with a four-lane cross-section that includes sidewalk and curb and gutter along the site frontage. A 30 mph speed limit is assumed, per City ordinance. At its signalized intersection with I-90/I-94 eastbound and westbound ramps, Elston Avenue, and North Branch Street, Division Street widens to include either an exclusive left turn lane or a striped median. East of Elston Avenue, Division Street narrows to one lane in each direction due to cross-section constraints on the existing bridge over the Chicago River. East of North Branch Street, Division Street remains a two-lane cross-section but with on-street parking in both the eastbound and westbound directions. There are no dedicated bicycle facilities incorporated along Division Street within the study area. Division Street is under the jurisdiction of the City of Chicago.

Elston Avenue is classified as a major collector with a two-lane cross-section that includes sidewalk and curb and gutter along the project site. A 30 mph speed limit is posted for Elston Avenue with an additionally posted 25 mph speed limit for the roadway's curve located between Cortez Street and Division Street. At the intersection with Division Street, Elston Avenue transitions to include a left turn lane and a right turn lane in both the northbound and southbound directions. Elston Avenue includes channelized bicycle lanes along with dedicated street parking in both northbound and southbound directions. Elston Avenue is under the jurisdiction of the City of Chicago.

North Branch Road is classified as a local road with an unstriped two-lane cross-section that includes sidewalk and curb and gutter. A 30 mph speed limit is assumed, per City ordinance. The roadway's cross-section north of Division Street includes on-street parking in both the northbound and southbound directions. North Branch Road is under the jurisdiction of the City of Chicago.

Cortez Street is classified as a local road with an unstriped two-lane cross-section. There are no dedicated pedestrian or bicycle facilities along Cortez Street. Cortez Street is stop controlled at Elston Avenue intersection and is under the jurisdiction of the City of Chicago.

Augusta Boulevard is classified as a local road with an unstriped two-lane cross-section that includes sidewalk and curb and gutter. The roadway's cross-section includes on-street parking in both the eastbound and westbound directions and does not include any dedicated bicycle facilities. Augusta Boulevard is under the jurisdiction of the City of Chicago.

Intersection Descriptions

The intersections of *Division Street and I-90/I-94 interchange ramps* are four-leg, signalized intersections with the on and off ramps operating with one-way traffic. At the west intersection (eastbound I-90/I-94 ramps), the approaches consists of one dedicated left turn lane and one shared left/through/right turn lane on the southbound approach, one through and one shared through/right turn lane on the eastbound approach, and one left turn lane and two through lanes on the westbound approach. At the east intersection (westbound I-90/I-94 ramps), the approaches consists of one left turn lane, one shared through/right turn lane, and one right turn lane on the northbound approach, one left turn lane and two through lanes on the eastbound approach, and one through and one shared through/right turn lane on the westbound approach. Both signals are pre-timed with 90 second cycle lengths. Pedestrian signals are provided on all interchange ramp crossings but are not provided for crossing Division Street at either intersection.

The intersection of *Division Street and Elston Avenue* is a four-leg, signalized intersection with signalized pedestrian crosswalks in all directions. Both the northbound and southbound approaches of Elston Avenue consist of one left turn lane, one through lane, one right turn lane, and one channelized bicycle lane. The westbound approach is striped as one shared left/through/right turn lane. However, the road cross section widens west of the existing river bridge and the approach is observed to operate as a shared left/through lane with a separate right turn pocket. The eastbound approach consists of two travel lanes, which widens to allow one left turn lane, one through lane, and one right turn lane at the intersection. The outside lane is striped as a trap right turn lane starting approximately 250 feet west of the intersection since the roadway section narrows east of the intersection. The signal is pre-timed with a 90 second cycle length.

The intersection of *Division Street and North Branch Street* is a four-leg, signalized intersection with signalized pedestrian crosswalks. All four approaches are striped with a single approach lane. However, the wide lanes allow for vehicles to select additional lanes. The eastbound and westbound approaches are observed to operate as one shared left/through lane and one shared through/right turn lane. The northbound and southbound approaches are observed to operate as one shared left/through lane and one right turn lane. The signal is actuated with a 90 second cycle length.

The intersection of *Cortez Street and Elston Avenue* is a three-leg intersection that is stop controlled for the eastbound approach of Cortez Street. At the intersection, Elston Avenue consists of one approach lane in each direction with a channelized bicycle lane along both sides of the road. A pedestrian crosswalk is provided to cross Cortez Street.

The intersection of *Augusta Boulevard and Elston Avenue* is a four-leg, signalized intersection with signalized pedestrian crosswalks on the all legs except on the north leg. The eastbound, northbound and southbound approaches consist of one approach lane. The fourth leg of the intersection is a private driveway for the Fletcher Jones Service Center. The westbound approach to the intersection consists of one shared left/through lane and one right turn lane. The signal is actuated with a 90 second cycle length.

Existing Transit & Bicycle Facilities

A number of non-auto modes of transportation are provided in the study area, including bus and rail transit, bicycle infrastructure, and Divvy bikeshare stations. he characteristics of these non-auto modes of transportation are summarized below.

Transit

The following CTA bus routes have stops that are within one half-mile of the proposed development:

- *Route 70 (Division)* provides daily service between Austin Avenue and Dearborn Street. Eastbound and westbound bus stops are located on Division Street west of Elston Avenue.
- *Route 72 (North)* provides daily service between Harlem Avenue and Clark Street. Eastbound and westbound stops are provided on North Avenue at Elston Avenue.
- *Route N9 (Ashland)* provides daily overnight service between the intersection of North Avenue & Clark Street and the CTA Red Line Station at 95th Street. Eastbound and westbound bus stops are located on Division Street west of Elston Avenue.

Two CTA rail stations are located within one mile of the site. This includes a Blue Line station at Division & Ashland (0.4 miles) and a Red Line station at North & Clybourn (1.0 miles). The bus services detailed above provide an opportunity to improve access to both of the CTA rail options.

A Metra Station is locating near Ashland & Armitage, approximately 1.2 miles from the site. This station provides service for the Union Pacific North (to Kenosha) and Union Pacific Northwest (to Harvard/McHenry)

Bicycle Facilities

Elston Avenue is a priority bicycle corridor. One-way bicycle lanes are provided both northbound and southbound on Elston Avenue. The bicycle lanes are physically divided from the on-street parking and travel lanes by a curb barrier where possible.

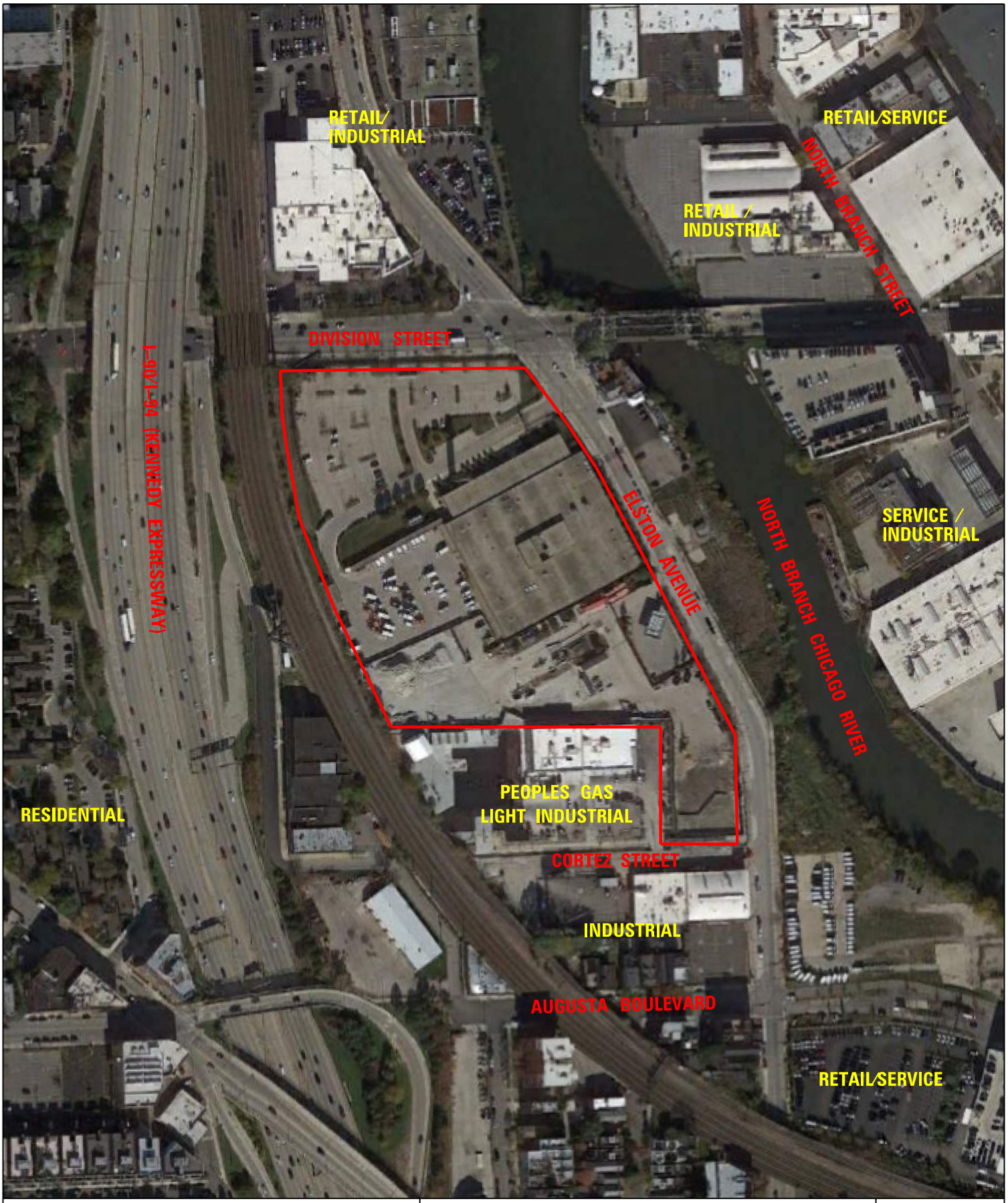
It is our understanding that CDOT has started planning for additional bicycle facilities on Division Street. However, no specific plans were available at the time of this study and improvements are not expected to be completed prior to your study year of 2024. Therefore, future bicycle facilities on Division Street are not considered in this study.

The site plan includes on-site bicycle parking areas for use by site users. The designated parking areas are located on both sides of the proposed Elston Driveways, adjacent to the parking garage and warehouse building. The final size and configuration of the bicycle parking areas will be customized by the end user to satisfy code requirements and meet the needs of the final site use.

Divvy Bikeshare Stations

Several Divvy stations are located in the area. The nearest stations are detailed below, sorted by proximity:

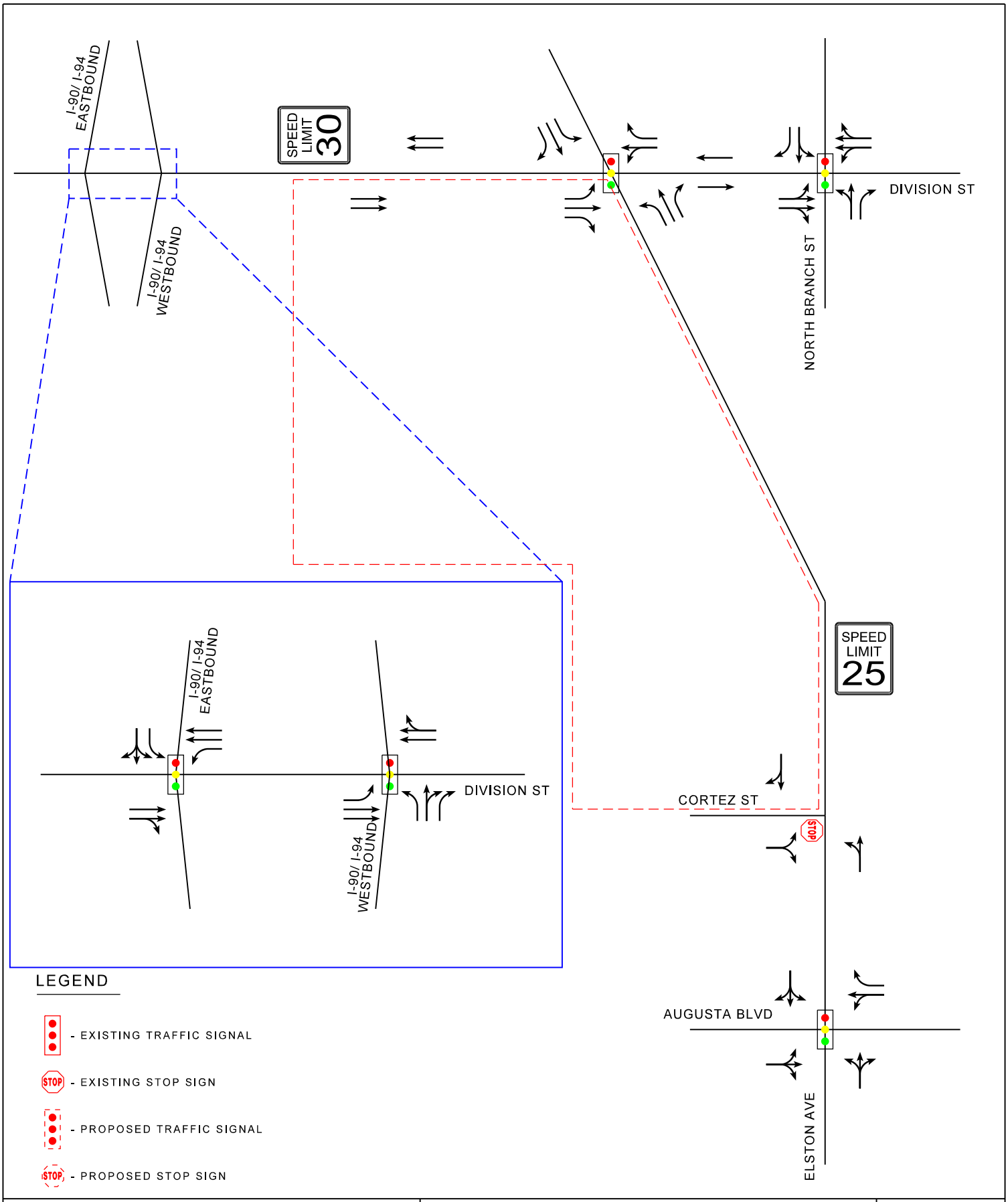
- Cherry Avenue & Blackhawk Street (0.5 miles) – 14 docking stations
- Ashland Avenue & Division Street (0.6 miles) – 26 docking stations
- Noble Street & Milwaukee Avenue (0.6 miles) – 15 docking stations
- Halsted Street & North Branch Street (0.7 miles) – 14 docking stations
- Ashland Avenue & Blackhawk Street (0.7 miles) –15 docking stations



1241 W DIVISION STREET REDEVELOPMENT

FIGURE 4
LAND USE MAP

CHICAGO ILLINOIS



1241 W DIVISION STREET REDEVELOPMENT

FIGURE 5
EXISTING LANE CONFIGURATION

CHICAGO ILLINOIS

Traffic Volumes

Due to the ongoing impacts of the COVID-19 pandemic, it possible that any current field-collected peak hour volumes may not be representative of typical traffic volumes within the study area. Alternative methodology to develop base year traffic volumes was developed in coordination with the CDOT Traffic Review team. In lieu of current counts, the existing 2021 traffic volumes are estimated from the Morton Salt Redevelopment Traffic Impact Study prepared by Sam Schwartz, dated August 14, 2020, and adjusted as detailed below.

Base Year 2020 – Weekday AM and Weekday PM Peak Hour
In the Morton Salt Study, peak hour traffic counts were collected at numerous intersections including the intersection of Division Street & Elston Avenue. At the direction of CDOT, several additional intersections were added to the study area of the Morton Salt Study along Division Street at the I-90/I-94 Interchange Ramps and at North Branch Street. As noted in that study, these intersections were added during the COVID-19 pandemic, so the existing volumes were developed in coordination with CDOT rather than with field-collected traffic counts. The traffic volumes from the Morton Salt Study are considered to be base year 2020 for the weekday am and pm peak hours.

Traffic volumes and other supporting information from the Morton Salt Study are provided in **Appendix A**.

Base Year 2021 – Weekday AM and Weekday PM Peak Hour
The base year 2020 volumes have been estimated to base year 2021 volumes for this traffic study by applying one year of growth using the Chicago Metropolitan Agency for Planning (CMAP) rates defined in the Morton Salt Study.

This study area also includes the intersections of Elston Avenue & Cortez Street and Elston Avenue & Augusta Boulevard, which were not in the Morton Salt study area. Traffic counts were conducted at these intersections on Thursday, January 28, 2021, from 7:00 am to 9:00 am and from 4:00 pm to 6:00 pm. Additionally, a 24-hour traffic count was conducted on Elston Avenue between Division Street and Elston Street near the location of the proposed site driveways. A summary of collected traffic volumes is provided in **Appendix B**.

As noted previously, it is anticipated that the collected traffic volumes are impacted by the ongoing COVID-19 pandemic. It is observed that the calculated base year 2021 volumes are higher than the counts collected in January 2021. Therefore, the through movements at the intersections on Elston Avenue are replaced by the higher volumes that balance with the base year 2021 volumes at the intersection of Division Street & Elston Avenue.

Base Year 2021 – Weekday Midday Peak Hour
Large-scale warehouse operations may generate more traffic outside of the traditional weekday peak hours. Therefore, this study also considers a midday peak hour. For this site, it is assumed

that the peak hour of generation for the warehouse will occur from 10:00 am to 11:00 am, which will be detailed in the trip generation section.

Again, due to the ongoing COVID-19 pandemic, it is not practical to conduct a midday peak hour count at this time. Instead, the midday peak hour volume is estimated based on the hourly distribution of traffic on Division Street and Elston Avenue. IDOT publishes hourly volumes on Division Street west of Elston Avenue and Elston Avenue north of Division Street. V3 conducted a 24-hour count on Elston Avenue south of Division Street.

Overall, the following observations can be made when the total volume between 10:00 am and 11:00 am is compared to the traditional peak hour that occurs between 7:00 am and 9:00 am:

- Traffic volumes on Division Street are approximately 95 percent of am peak hour traffic from 10:00 am to 11:00 am.
- Traffic volumes on Elston Street are approximately 70 percent of am peak hour traffic from 10:00 am to 11:00 am.

These adjustment factors are applied to the am peak hour of the base year 2021 Existing Traffic Volumes to estimate the midday peak hour. Historical 24-hour counts used to determine the midday peak hour adjustment are provided in **Appendix C**.

The 2021 Existing Traffic Volumes based on the above assumptions are illustrated in **Figure 6**. Also illustrated are the pedestrian and bicycle crossing volumes at each of the study area intersections.

External Developments

External Land Use Developments
There are several planned developments in the area that are likely to contribute traffic volumes to the study area roadways. The two major developments are the Morton Salt Redevelopment located near Elston Avenue & Blackhawk Street and the Lincoln Yards development located northeast of the intersection of North Avenue & Elston Avenue.

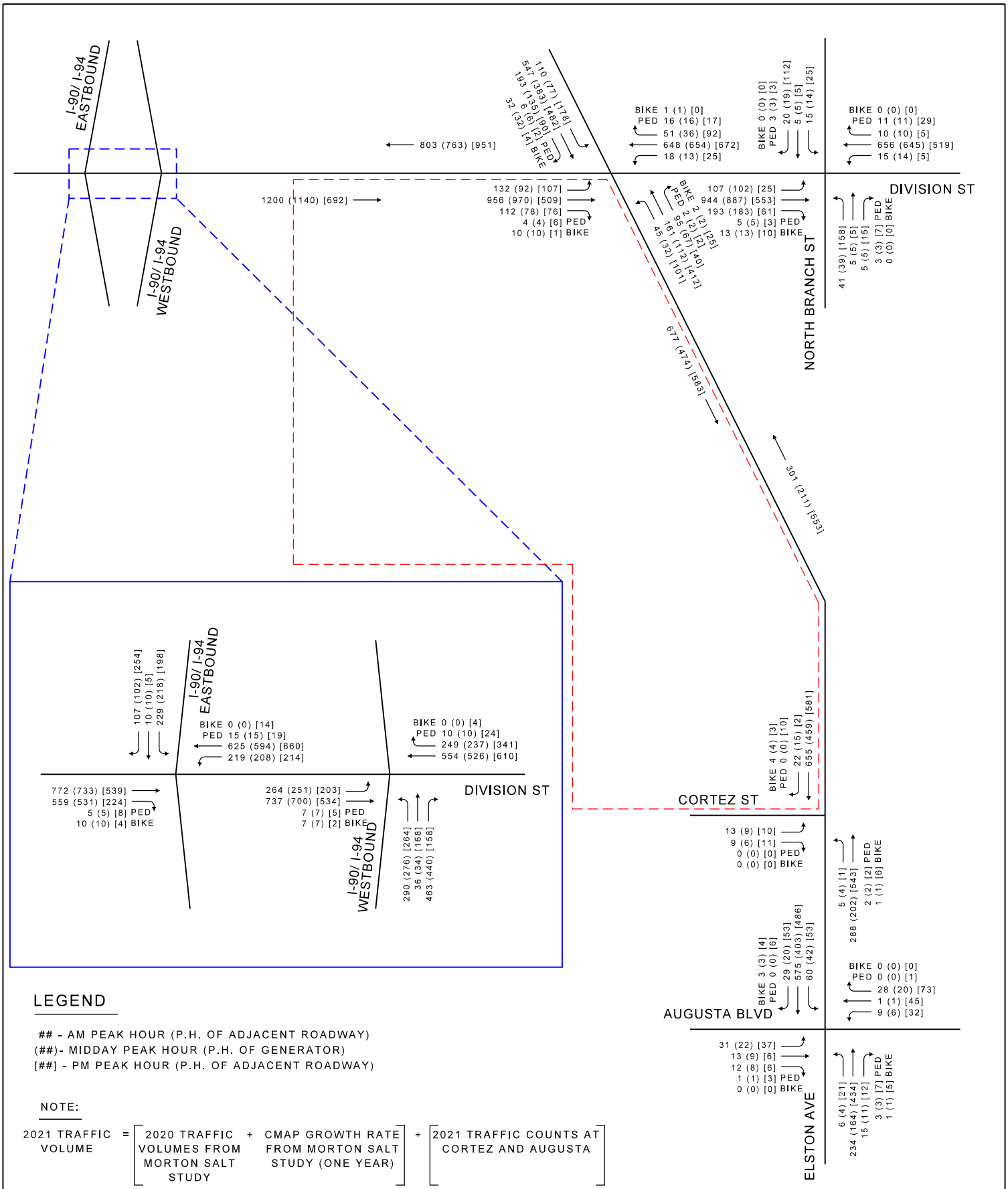
The Morton Salt Redevelopment will convert the currently vacant industrial property to a combination of office, bar/restaurant, and special event space. The Lincoln Yards development will convert currently vacant industrial properties into a mixed-use development that includes office, retail, recreation, and residential uses. Traffic related to both of these developments will be accounted for in the build year analysis of this traffic study.

External Roadway/Transit Developments
There are two potential external roadway/transit developments that could have impacts on the study area intersections when completed.

First, planning is underway for the reconstruction of the Division Street bridge over the North Branch of the Chicago River. This location is a known bottle neck since the bridge consists of

only a single travel lane in each direction. It is our understanding that the design of the reconstruction is underway or near completion. However, it is believed that construction funding has not been secured and the reconstruction is unlikely to occur by the study year of 2024. Therefore, the reconstruction of the Division Street bridge is not considered as part of this study.

Second, it is understood that CDOT is studying possible corridors for a dedicated transitway between the North Branch of the Chicago River and the rail hubs at Union Station and Ogilvie Transportation Center. The transitway would likely include high-capacity bus or rail service with additional accommodations for pedestrians and cyclists. The potential corridor will likely be through Goose Island which could provide access to the transitway within one quarter-mile of the proposed development. However, the implementation of this infrastructure project could be as late as 2037. Therefore, the future transitway is not considered as part of this study.



LEGEND

- AM PEAK HOUR (P.H. OF ADJACENT ROADWAY)
(##)- MIDDAY PEAK HOUR (P.H. OF GENERATOR)
[##] - PM PEAK HOUR (P.H. OF ADJACENT ROADWAY)

NOTE:

2021 TRAFFIC VOLUME = [2020 TRAFFIC VOLUMES FROM MORTON SALT STUDY] + [CMAP GROWTH RATE FROM MORTON SALT STUDY (ONE YEAR)] + [2021 TRAFFIC COUNTS AT CORTEZ AND AUGUSTA]

1241 W DIVISION STREET REDEVELOPMENT

FIGURE 6
2021 EXISTING TRAFFIC VOLUMES

CHICAGO ILLINOIS

III. TRAFFIC FORECASTS

Trip Generation

The proposed development consists of a new multi-level warehouse/distribution building with a maximum total floor area of 594,296 square feet and an adjacent parking garage. Although no specific end user has been identified at this time, the assumed use at the site is a fulfilment center with local delivery component in order to achieve the most conservative estimate of potential trip generation. In facilities of this type, bulk/unsorted cargo arrives at the site via tractor-trailer trucks, employees sort the cargo into individual parcels, and the parcels are loaded into small vehicles for local delivery.

The development is anticipated to generate three types of trips:

- Passenger Cars
  - Warehouse/front office employees
- Trucks
  - Traditional tractor-trailer trucks using the full-size loading docks
  - Generally arrive at the site with a full load and depart the site empty
- Local Delivery Vehicles
  - Bulk deliveries from the traditional tractor-trailers are processed/sorted and loaded into the small vehicles for “door to door” local delivery
  - Generally arrive at the site empty and depart the site with a full load

It is worth noting that fulfilment center facilities typically include traffic management plans that dictate when each vehicle type can enter and exit the site. This management plan often places employee shift changes outside of traditional work hours and prohibits any inbound or outbound truck and local delivery trips during the adjacent roadway peak hours. In many cases, the traffic management plan will result in zero trips of any type during the traditional roadway peak hours and separate the typical operation hours of each of the trip types to improve internal site circulation.

However, since an end user is not known at this time, this study will consider passenger car and truck trip generation as if this is a traditional warehouse facility, which includes trips during the traditional roadway peak hours. Local delivery trips are estimated separately, since it is likely that a traffic management plan will be put in place if the final end user configures the site as a fulfilment center facility.

Passenger Car & Truck Methodology

The passenger car and truck trip generation is estimated using the Institute of Transportation Engineers (ITE) *Trip Generation Manual, 10th Edition.* The *Manual* includes several land uses that could describe fulfilment center-style facilities, which would include all trip types. However, these land use codes are recent additions to the manual and are based on small data sets with high variability. Therefore, the passenger car and truck trips are estimated based on the following land use code:

Warehousing (ITE Land Use Code 150) – Warehouses are primarily devoted to the storage of materials, but they may also include office and maintenance areas.

The ITE *Trip Generation Manual, 10th Edition* assigns trip generation rates for each land use based on gross area. Separate generation rates/fitted curve equations and directional distributions are provided for weekday am and weekday pm periods based on the peak hour of the adjacent road network, and for the am peak hour of the generator.

The *Manual* indicates that the vehicle type for this land use is typically 80 percent passenger cars and 20 percent heavy vehicles. This ratio is applied to the overall peak hour trip generation to estimate the number of passenger cars and heavy vehicles generated during the peak hours.

It is worth noting that if the warehouse is operated as a fulfilment center with local delivery facilities, a traffic management plan will likely put into place that will reduce the volumes during the roadway peak hours. However, since the end user is not known at this time, no reduction will be applied for potential traffic management plans in order to produce conservative trip generation estimates during the analysis scenarios.

Additionally, it is possible that employees at warehouse facilities could utilize non-automobile modes of transportation including transit and cycling. These modes of transportation would reduce the total number of passenger car trips associated with the site. However, since this site will likely have non-traditional shift change times, no reduction is applied for non-automobile trips.

Local Delivery Methodology
As noted previously, the land use codes in the *Manual* that could include local delivery trips are based on small data sets. For that reason, a site-specific generation rate is developed based on the site configuration and operational data from comparable local delivery fulfilment center sites.

The following observations have been made from the traffic management plans and operation data of similar sites. Local delivery vehicles typically arrive at the site at off-peak times, often many hours before they will be loaded and released. The loading of the local delivery vehicles sometimes occurs overnight for release the next day. Releasing of the loaded vehicles typically occurs over a one- or two-hour period, with a typical release beginning at approximately 10:00 am. This time period avoids the peak hours of the adjacent roadways and allows for deliveries to be made during daylight hours. The empty vehicles either return to the site as they complete their delivery manifest or at a designated time, which also typically occurs outside of traditional peak hours. The return time of the local delivery vehicles may be part of the traffic management plan, which could dictate that the vehicles return in clusters outside of the traditional roadway peak hours. A sample traffic management plan for a fulfilment center of this type is included in **Appendix D**. The location of the site is anonymized due to the proprietary nature of this information.

At the proposed development, all local delivery vehicles enter the site through the ground level driveways and can access the two mezzanine levels through two-way ramps that are separated from the truck traffic. The mezzanine configurations will be customized by the final end user, but the maximum width of the loading area is expected to be approximately 450 feet on each of the mezzanine levels. This configuration would allow for approximately 50 local delivery vehicles to be simultaneously loaded on each level, or 100 total vehicles. It is possible that loaded local delivery vehicles could be moved into designated parking stalls on the mezzanine levels, allowing more vehicles to be loaded. The final end user may elect to use only a portion of the potential mezzanine loading dock width or install loading areas on only one of the two mezzanine levels.

Based on the operations of similar sites and the site characteristics, it is estimated that a total of 430 local delivery trips could enter and exit the site per day. A traffic management plan will be instituted that dictates the release schedule for these vehicles. Given the dense urbanized location of this warehouse, it is assumed that the vehicles will be released in waves over at least a two-hour period. Therefore, it is determined that up to 100 local delivery vehicles could be released during the peak hour of the generator. Local delivery vehicles will return to the site outside of all peak hours. Limited local delivery vehicle movements are included during the weekday am and pm peak hours, although the future traffic management plan may restrict all movements of this type during these time periods.

Trip Generation Summary

A summary of trip generation for the 594,296 square foot warehouse facility is provided in **Table 1**. The anticipated hourly trip distribution by vehicle type for a typical 24 hour period is provided in Appendix E.

Table 1: Trip Generation

Vehicle Type	Daily	AM Peak Hour of Adjacent Roadway			Peak Hour of Generator (Assumed 10:00 am to 11:00 am)			PM Peak Hour of Adjacent Roadway		
		In	Out	Total	In	Out	Total	In	Out	Total
Passenger Car [1]	788	60	18	**78**	50	26	**76**	22	58	**80**
Truck [2]	197	15	4	**19**	12	7	**19**	5	14	**19**
Local Delivery Vehicle [3]	430	5	5	**10**	5	100	**105**	5	5	**10**
Total Trip Generation:	**1,415**	**80**	**27**	**107**	**67**	**133**	**200**	**32**	**77**	**109**

1. ITE Trip Gen Manual - Land Use Code 150 - Warehousing, 80% Passenger Car

2. ITE Trip Gen Manual - Land Use Code 150 - Warehousing, 20% Truck

3. Custom Rate base on site configuration and existing data from sites with similar Local Delivery operations

Trip Distribution and Assignment

The direction from which traffic approaches and departs a site is a function of numerous variables, including location of residences, location of employment centers, location of commercial/retail centers, available roadway systems, location and number of access points, and level of congestion on adjacent road systems. The directional distribution of new traffic generated by the site is assigned differently for each vehicle type.

Passenger Car Methodology
The directional distribution of passenger cars is assigned based on existing traffic patterns in the area. Passenger cars are expected to be split evenly between the interstate and local streets. The trips on the local street network are expected to be somewhat evenly split between Division Street to the west, Elston Street to the north, and Elston Street to the south. Few trips are anticipated to use Division Street to the east since these drivers will be familiar with the known congestion at the Division Street bridge over the North Branch of the Chicago River.

Passenger cars are anticipated to enter and exit both the main warehouse site and the separate parking garage on Cortez Street. Although the final parking configuration will be determined by the end user, it is assumed that total passenger cars will somewhat favor the main warehouse facility over the parking garage structure since parking areas may be designated on the mezzanine and roof levels. Passenger cars can enter and exit the site via the Division Street right in/right out driveway and the Elston Avenue full access driveway.

The projected trip distribution of passenger car trips is summarized in **Table 2**. The directional distributions and assignment for passenger car trips is illustrated in **Figure 7**.

Table 2: Trip Distribution – Passenger Cars

Travel To/From	Distribution
I-90/94 North of Division Street	25%
I-90/94 South of Division Street	25%
Division Street West of I-90/94	15%
Division Street East of North Branch Street	5%
Elston Avenue North of Division Street	15%
Elston Avenue South of Augusta Street	15%
Augusta Street West of Elston Avenue	0%
Total:	100%

Truck Methodology

The directional distribution of trucks is based on interstate access in the area. Given the likely operations of the proposed warehouse, all truck traffic is expected to be non-local/regional trips. Therefore, all trucks are assumed to arrive and depart the site via the I-90/I-94 interchange on Division Street. Total traffic is assumed to be evenly split between eastbound and westbound I-90/I-94.

Trucks will enter the site via both the right in/right out driveway on Division Street and the full access driveway on Elston Avenue. Outbound trips occur through the two driveways on Elston Avenue with all trips heading north to Division to return to the interstate.

The projected trip distribution of truck trips is summarized in **Table 3.** The directional distribution and assignment of truck trips is illustrated in **Figure 8**.

Table 3: Trip Distribution – Trucks

Travel To/From	Distribution
I-90/94 North of Division Street	50%
I-90/94 South of Division Street	50%
Division Street West of I-90/94	0%
Division Street East of North Branch Street	0%
Elston Avenue North of Division Street	0%
Elston Avenue South of Augusta Street	0%
Augusta Street West of Elston Avenue	0%
Total:	100%

Local Delivery Methodology

The direction distribution of local delivery trips is based on the likely operations at the site. Since these trips are largely local and not regional, local delivery trips are assumed to favor the local street network in the area rather than the interstate. In particular, local delivery trips are anticipated to favor Division Street to the west and Elston Avenue to the north and south to access dense residential areas in those directions. It is anticipated that few trips will travel on Division Street to the east due to the known choke point at the Division Street bridge over the North Branch of the Chicago River.

The projected trip distribution of local delivery trips is summarized in **Table 4.** The directional distribution and assignment of local delivery trips is illustrated in **Figure 9**.

Table 4: Trip Distribution – Local Delivery

Travel To/From	Distribution
I-90/94 North of Division Street	15%
I-90/94 South of Division Street	15%
Division Street West of I-90/94	20%
Division Street East of North Branch Street	5%
Elston Avenue North of Division Street	20%
Elston Avenue South of Augusta Street	25%
Augusta Street West of Elston Avenue	0%
Total:	100%

Trip Distribution and Assignment Summary
The assignments of new passenger car trips, truck trips, and local delivery trips are totaled to achieve the total trip assignment, which is illustrated in **Figure 10**.

No Build Traffic Volumes

The study year for this project is 2024, which is one year after the anticipated opening of the proposed development. The no build projection accounts for non-project related growth in the area, as well as new traffic associated with the Morton Salt Redevelopment and the Lincoln Yards Development.

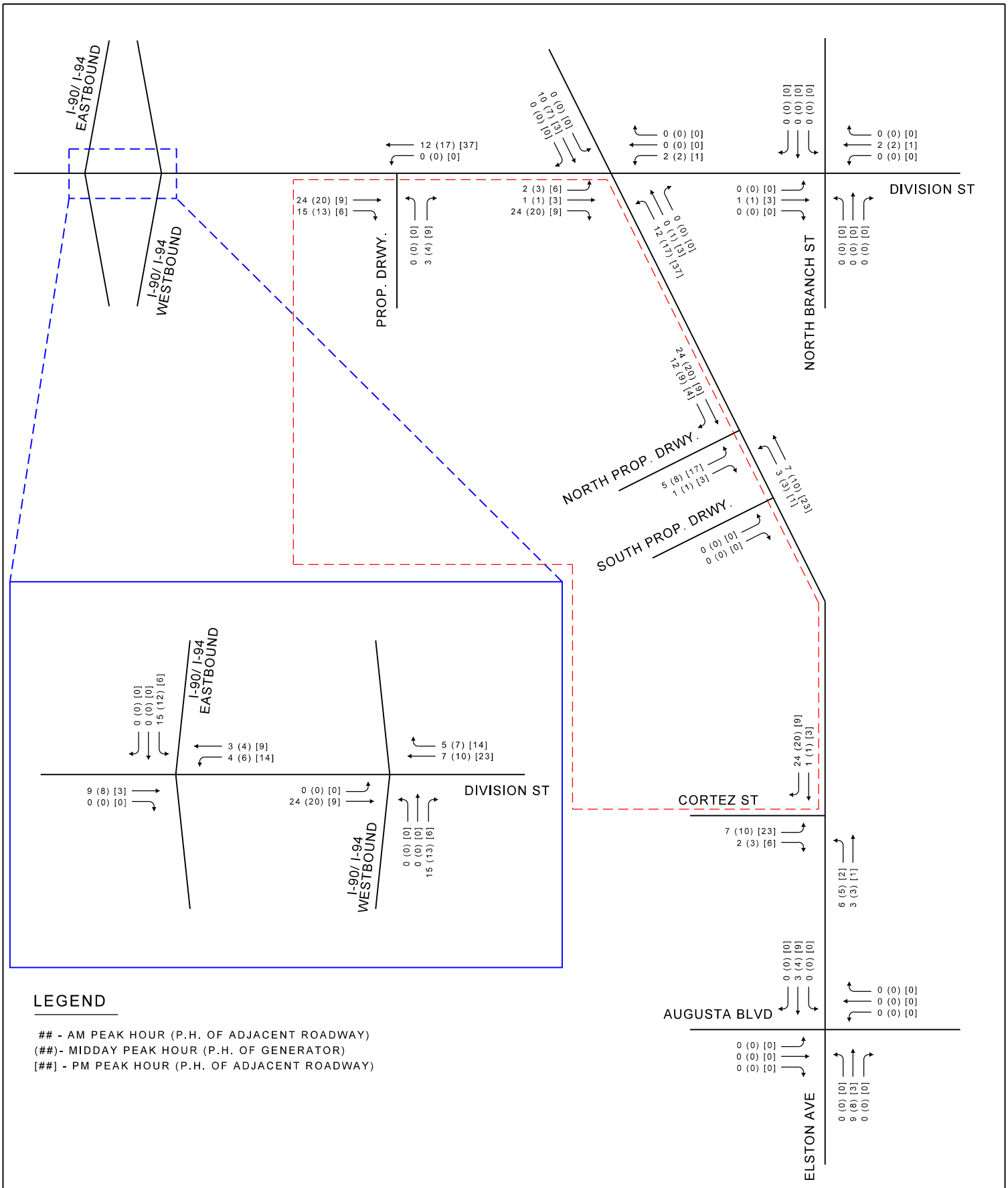
The 2024 no build traffic volumes are calculated based on the 2023 build traffic volumes from the Morton Salt Redevelopment study. The build condition in the Morton Salt Redevelopment study included background growth rates from CMAP, traffic generated by the redeveloped Morton Salt site, and anticipated traffic from the Lincoln Yards development.

The volumes on Division Street are calculated by applying one year of the CMAP growth rate from the Morton Salt Study to the 2023 build scenario volumes. Since the turning movement volumes at Elston Avenue & Cortez Street and Elston Avenue & Augusta Boulevard were collected as part of this study in 2021, three years of the CMAP growth rate are applied to these movements. The volumes on Elston Avenue are adjusted to ensure that all volumes balance.

The 2024 No Build traffic volumes are illustrated in **Figure 11**.

Build Traffic Volumes

The total project trips are added to the no build volume to estimate the 2024 Build Traffic Volumes, which is illustrated in **Figure 12**.



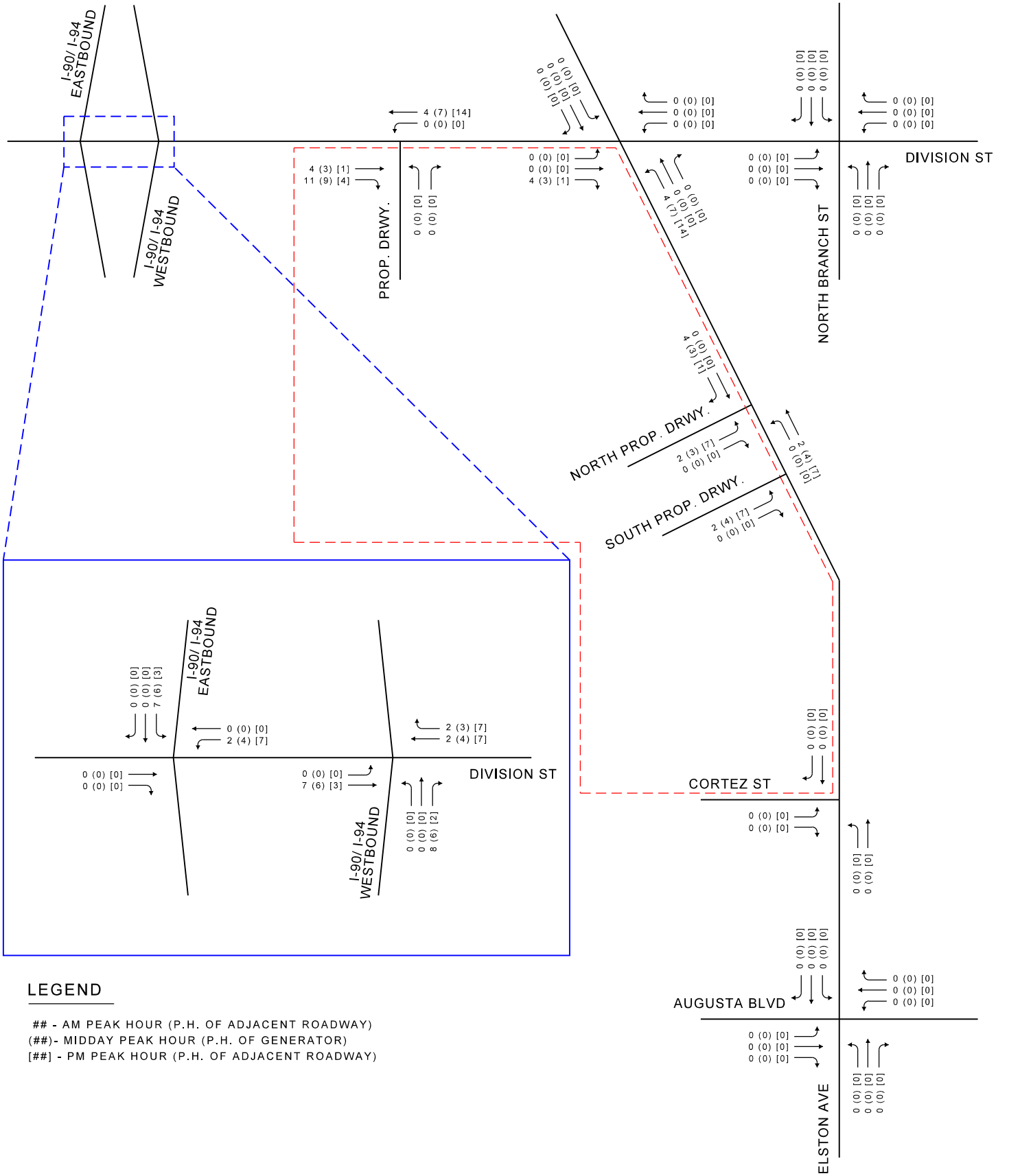
LEGEND

- AM PEAK HOUR (P.H. OF ADJACENT ROADWAY)
(##)- MIDDAY PEAK HOUR (P.H. OF GENERATOR)
[##] - PM PEAK HOUR (P.H. OF ADJACENT ROADWAY)

1241 W DIVISION STREET REDEVELOPMENT

FIGURE 7
TRAFFIC VOLUMES
PASSENGER CAR

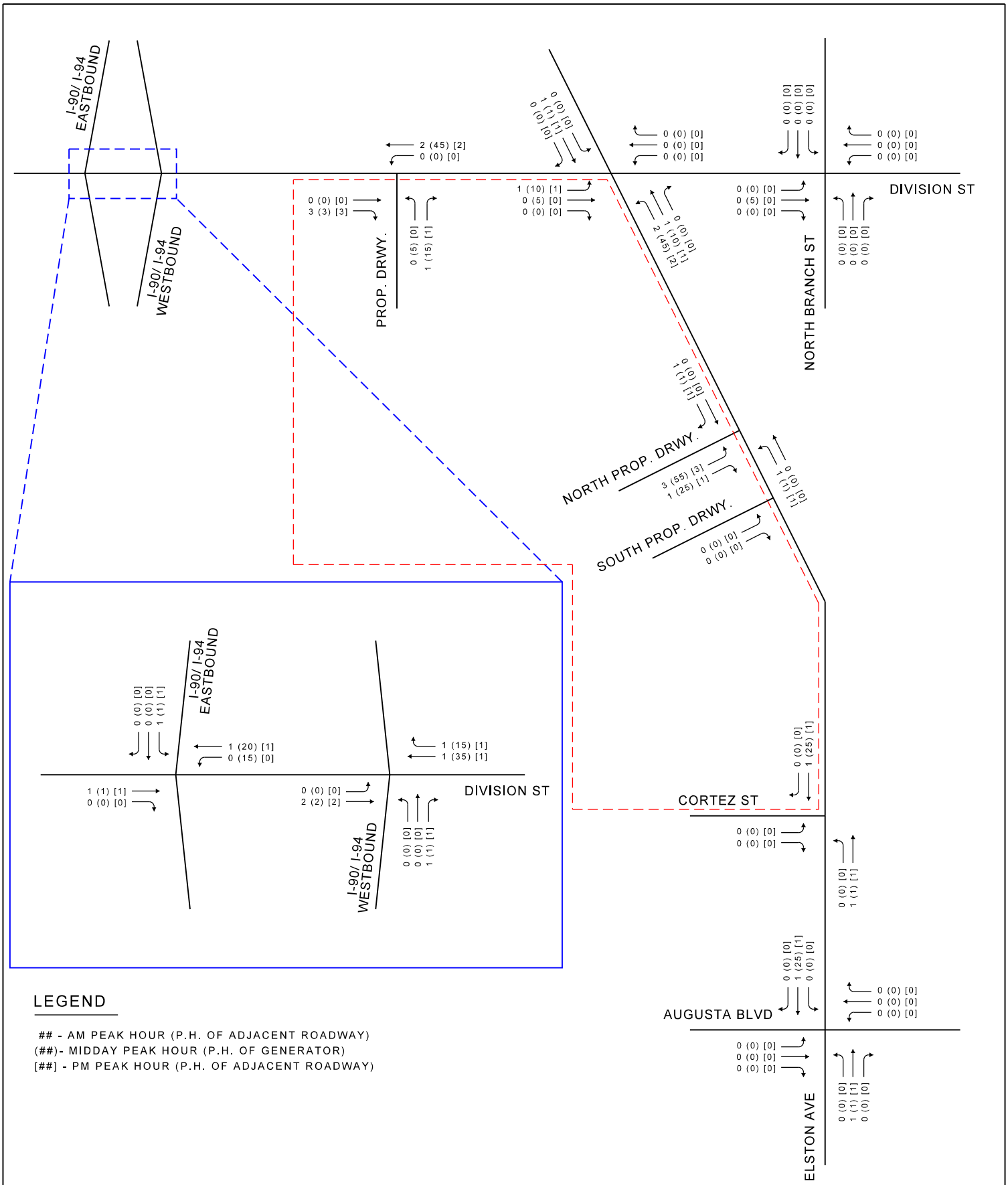
CHICAGO ILLINOIS



1241 W DIVISION STREET REDEVELOPMENT

FIGURE 8
TRAFFIC VOLUMES
TRUCK

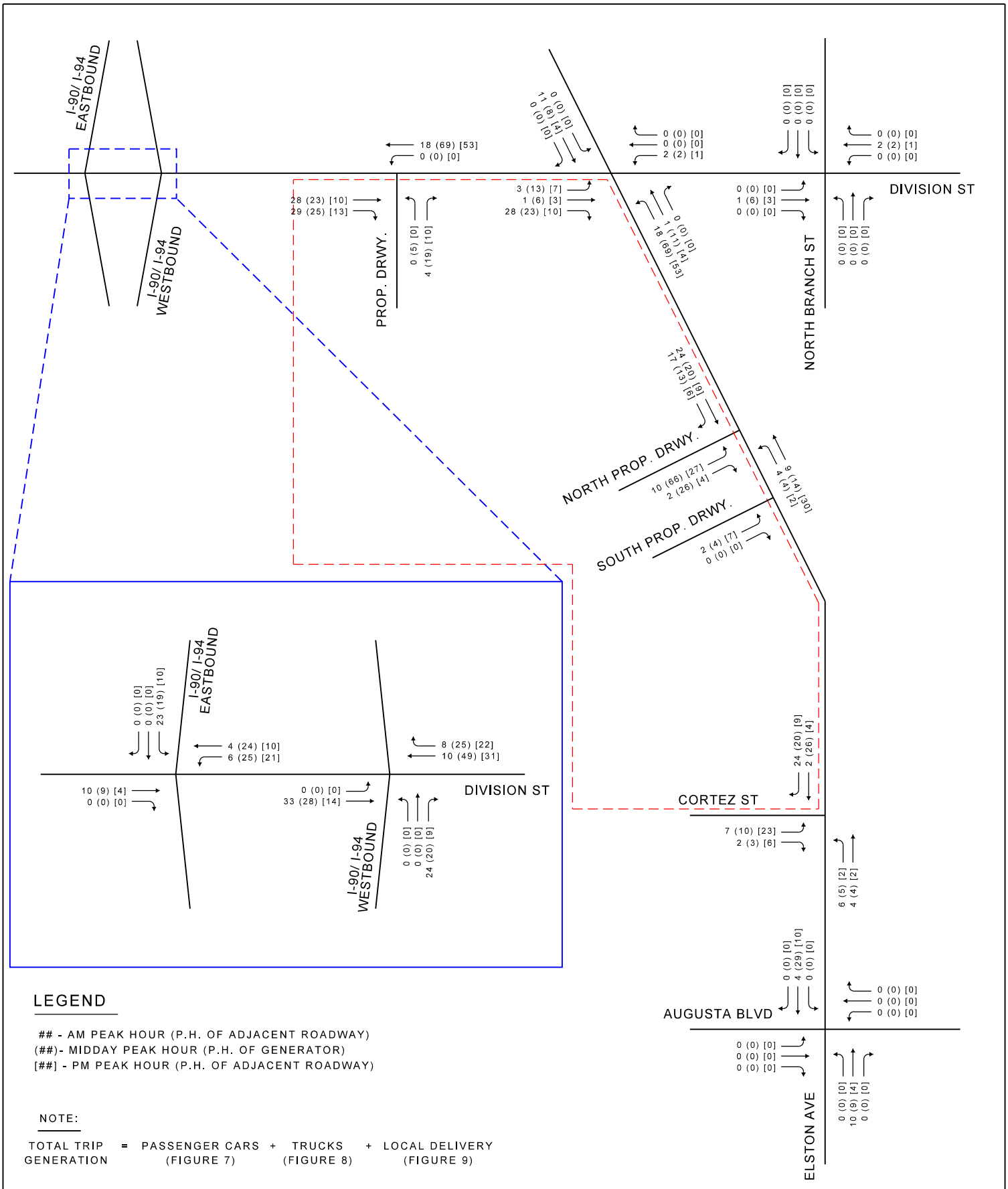
CHICAGO ILLINOIS



1241 W DIVISION STREET REDEVELOPMENT

FIGURE 9
TRAFFIC VOLUMES
LOCAL DELIVERY

CHICAGO ILLINOIS



LEGEND

- AM PEAK HOUR (P.H. OF ADJACENT ROADWAY)
(##)- MIDDAY PEAK HOUR (P.H. OF GENERATOR)
[##] - PM PEAK HOUR (P.H. OF ADJACENT ROADWAY)

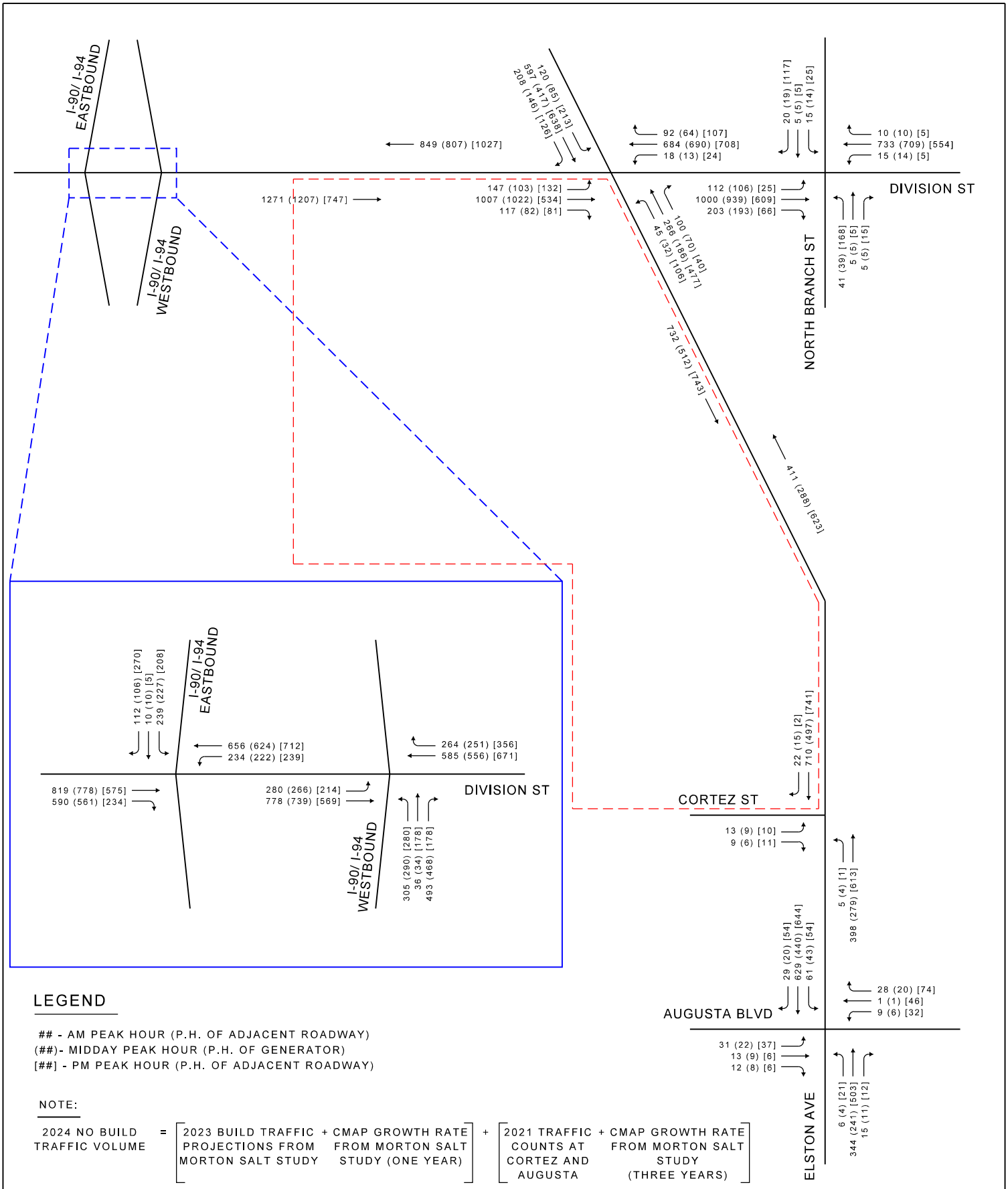
NOTE:

TOTAL TRIP GENERATION = PASSENGER CARS (FIGURE 7) + TRUCKS (FIGURE 8) + LOCAL DELIVERY (FIGURE 9)

1241 W DIVISION STREET REDEVELOPMENT

FIGURE 10
TOTAL PROJECT TRAFFIC VOLUME

CHICAGO ILLINOIS



LEGEND

- AM PEAK HOUR (P.H. OF ADJACENT ROADWAY)
(##)- MIDDAY PEAK HOUR (P.H. OF GENERATOR)
[##] - PM PEAK HOUR (P.H. OF ADJACENT ROADWAY)

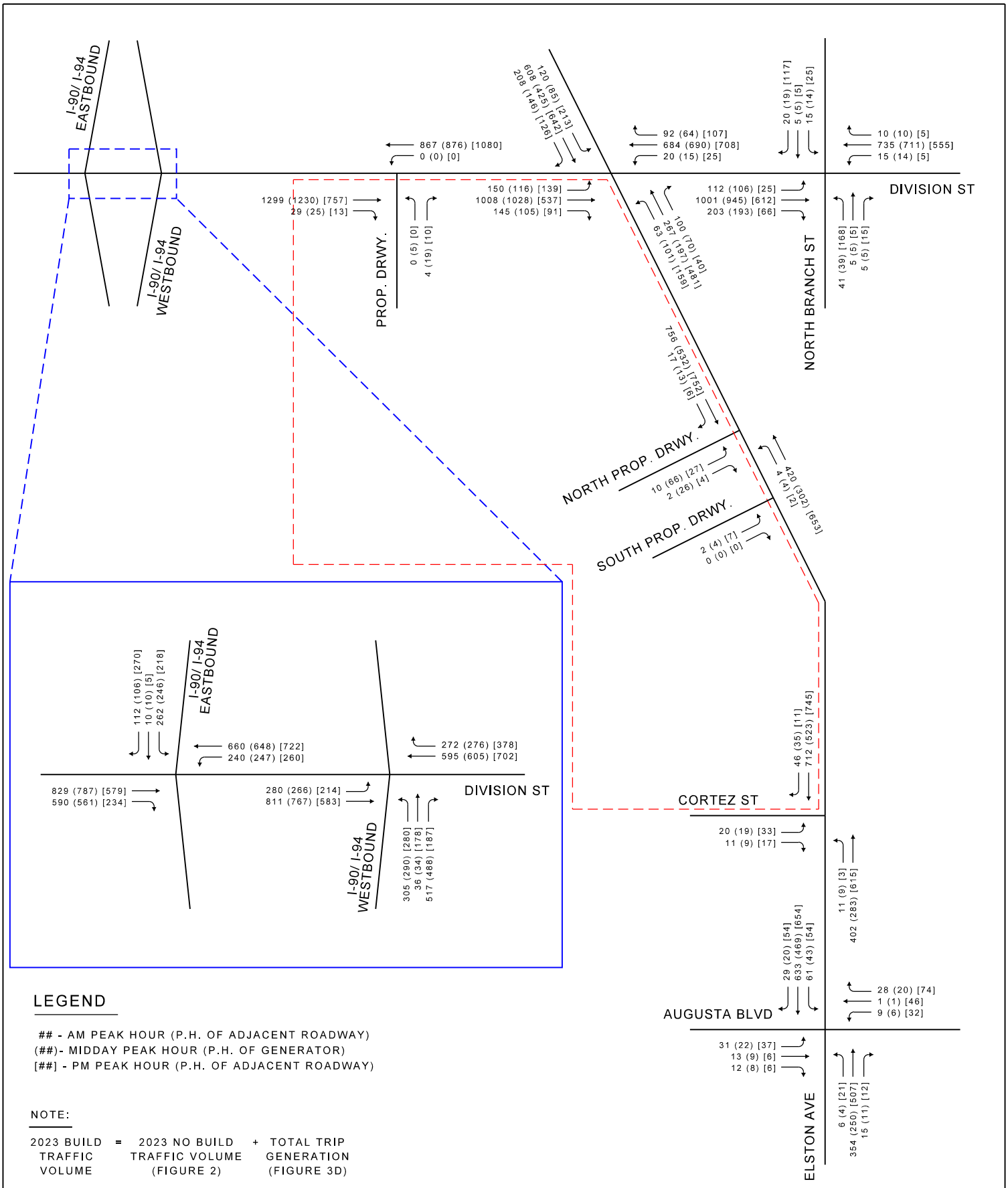
NOTE:

2024 NO BUILD TRAFFIC VOLUME = [2023 BUILD TRAFFIC PROJECTIONS FROM MORTON SALT STUDY + CMAP GROWTH RATE FROM MORTON SALT STUDY (ONE YEAR)] + [2021 TRAFFIC COUNTS AT CORTEZ AND AUGUSTA + CMAP GROWTH RATE FROM MORTON SALT STUDY (THREE YEARS)]

1241 W DIVISION STREET REDEVELOPMENT

FIGURE 11
2024 NO BUILD TRAFFIC VOLUME

CHICAGO ILLINOIS



LEGEND

- AM PEAK HOUR (P.H. OF ADJACENT ROADWAY)
(##)- MIDDAY PEAK HOUR (P.H. OF GENERATOR)
[##] - PM PEAK HOUR (P.H. OF ADJACENT ROADWAY)

NOTE:

2023 BUILD TRAFFIC VOLUME = 2023 NO BUILD TRAFFIC VOLUME (FIGURE 2) + TOTAL TRIP GENERATION (FIGURE 3D)

1241 W DIVISION STREET REDEVELOPMENT

FIGURE 12
2024 BUILD TRAFFIC VOLUMES

CHICAGO ILLINOIS

IV. TRAFFIC ANALYSIS

On-Site Circulation

Passenger Car Circulation

Depending on the configuration selected by the end user, passenger cars can park either on the mezzanine and roof levels or in the parking garage. Cars entering the main warehouse site will use the same driveways as all other traffic. However, non-truck and truck traffic are separated after vehicles enter the site. Cars will use the two-way non-truck ramps or the helical ramp to access the mezzanine levels and roof. The two-way non-truck ramps will not have access to the upper truck level. The helical ramp will provide access on all levels, but it is not anticipated that passenger cars will access the upper truck level. Cars exiting the main warehouse site will share exit driveways on the ground level with all other traffic, but it is worth noting that exiting truck traffic at the ground level is reduced since all trucks from the upper truck level exit via a separate truck-only exit ramp.

Alternatively, passenger cars can park in the parking garage accessed from Cortez Street. The parking garage will be connected to the warehouse facility via a grade-separated pedestrian walkway to remove conflicts with the proposed vehicle driveways on Elston Avenue.

It is recommended that the final end user at the site create and implement a parking management plan that will provide guidance on who is eligible to park on the mezzanine or roof levels and the parking garage. It is advantageous to direct warehouse staff to park in the garage to reduce interactions between passenger cars and the commercial trucks and local delivery vehicles. However, since the end user is not known at this time, specific recommendations for a parking management plan are not proposed and this study assumes passenger cars will use both the parking garage and mezzanine levels.

Truck Circulation

All trucks enter the site through the ground level driveways, where they will receive information about which dock to use. Trucks staying on the ground level will proceed directly to the loading docks while trucks directed to the upper level will proceed to the one-way up ramp in the southwest corner of the site. All ground level trucks will exit through the full access north driveway on Elston Avenue, which may include passenger car and local delivery traffic. All trucks exiting the upper level will use the truck-only one-way exit ramp to the south Elston Avenue driveway.

It is recommended that the final end user at the site implements a traffic management plan that limits the interaction of truck and non-truck traffic at the full access driveway on Elston Avenue. The management plan could restrict truck departures from the ground level during the local delivery vehicle release periods, or limit passenger car activity from the mezzanine levels during periods of increased truck activity.

It is also worth noting that the internal and external truck turning paths are critical to efficient operation of the site. It is anticipated that the proposed driveways on Elston Avenue will require modifications to the existing on-street parking lanes and barrier-separated bicycle lanes. The final configuration of these lanes near the proposed driveways should be developed in coordination with CDOT as the geometric plans are refined.

Various illustrations of truck turning movements are included in **Appendix F**.

Local Delivery Vehicle Circulation

All local delivery trips enter the site through the ground level driveways on Division Street and Elston Avenue. Upon entering the site, local delivery vehicles are directed to either the first or second mezzanine levels. Internally, the local delivery vehicle circulation is similar to the passenger car circulation. Local delivery vehicles will use the two-way non-truck ramps or the helical ramp to access the mezzanine levels. The two-way non-truck ramps do not provide access to the upper truck level. Local delivery vehicles exiting the warehouse site will share exit driveways on the ground level with all other traffic, but it is worth noting that exiting truck traffic at the ground level is reduced since all trucks from the upper truck level exit via a separate truck-only exit ramp.

As with the truck circulation, it is recommended that the final end user of the site implements a traffic management plan that limits the interaction of passenger car and commercial truck and non-truck traffic at the full-access driveway on Elston Avenue.

Sight Distance Evaluation

It is noted that the proposed driveways on Elston Avenue are located near an existing curve on Elston Avenue north of Cortez Street. For this reason, the intersection sight distance is checked for all movements exiting the proposed Elston Driveways.

Intersection sight distance refers to the corner sight distance available at an intersection that allows a driver approaching an intersection to observe the actions of vehicles on the crossing legs and comfortably respond.

In this case, the required sight distance is 335 feet based on a design speed of 30 mph. Sight triangles are drawn based on a 15-foot offset from the outside curb line (west of the bike lane). The sight distance is verified in the south direction for both outbound left and right turns because the right turn movement may partially encroach on the northbound through movement.

It is found that all driveways meet the sight distance requirements. It should be noted that a corner clip is included on the parking garage to eliminate a potential sight obstruction at the proposed Elston driveways.

Exhibits illustrating the intersection sight distance triangles are included in **Appendix G**.

Capacity Analysis

The operation of a facility is evaluated based on level of service (LOS) calculations obtained by analytical methods defined in the Transportation Research Board's *Highway Capacity Manual (HCM), 6th Edition*. The concept of LOS is defined as a quality measure describing operational conditions within a traffic stream, generally in terms of such service measures as speed and travel time, freedom to maneuver, traffic interruptions, and comfort and convenience.

There are six LOS letter designations, from A to F, with LOS A representing the best operating conditions and LOS F the worst.

The LOS of an intersection is based on the average control delay per vehicle. For a signalized intersection, the delay is calculated for each lane group and then aggregated for each approach and for the intersection as a whole. Generally, the LOS is reported for the intersection as a whole. For an unsignalized intersection, the delay is only calculated and reported for each minor movement. An overall intersection LOS is not calculated.

There are different LOS criteria for signalized and unsignalized intersections primarily due to driver perceptions of transportation facilities. The perception is that a signalized intersection is expected to carry higher traffic volumes and experience a greater average delay than an unsignalized intersection. The LOS criteria for signalized and unsignalized intersections are provided in **Table 5**.

Table 5: Level of Service Definitions for Signalized and Unsignalized Intersections

Level of Service	Signalized Intersection Control Delay (seconds/vehicle)	Unsignalized Intersection Control Delay (seconds/vehicle)
A	≤ 10	≤ 10.0
B	> 10.0 and ≤ 20.0	> 10.0 and ≤ 15.0
C	> 20.0 and ≤ 35.0	> 15.0 and ≤ 25.0
D	> 35.0 and ≤ 55.0	> 25.0 and ≤ 35.0
E	> 55.0 and ≤ 80.0	> 35.0 and ≤ 50.0
F	> 80.0	> 50.0

Source: Transportation Research Board, *Highway Capacity Manual 6th Edition*, National Research Council, 2016.

Typically, various state and local governments adopt standards varying between LOS C and LOS E, depending on the area's size and roadway characteristics.

Capacity analysis was performed with Synchro 11 (Version 11.0.168.0), a macrosimulation tool based on the methodologies found in the Highway Capacity Manual. Models were created for the weekday am, weekday midday, and weekday pm peak hours for the 2021 Existing, 2024 No Build, and 2024 Build scenarios.

The study includes the following intersections:

- Division Street & EB I-90/94 Ramps (Signalized)
- Division Street & WB I-90/94 Ramps (Signalized)
- Division Street & Elston Avenue (Signalized)
- Division Street & North Branch Street (Signalized)
- Elston Avenue & Cortez Street (Unsignalized)
- Elston Avenue & Augusta Boulevard (Signalized)
- Division Street & Proposed Driveway
- Elston Avenue & Proposed North Full-Access Driveway
- Elston Avenue & Proposed South Exit-Only Driveway

2021 Existing

The capacity analysis results for the 2021 Existing scenarios are summarized in **Figure 13**. Supporting capacity analysis worksheets are provided in **Appendix H**.

In the 2021 existing condition, all approaches and the overall intersections operate at LOS D or better, with the exception of the intersection of Division Street & Elston Avenue. High delays and poor levels of service are observed at this intersection on the eastbound and westbound approaches during the weekday am and pm peak hours due to the known choke point at the Division Street bridge over the North Branch of the Chicago River. The intersection operates at LOS F during both the weekday am and midday peak hours.

This deficiency is already known to CDOT, as plans are underway to reconstruct the narrow bridge to remove the chokepoint.

Direction	Intersection	Weekday AM Peak Hour		Weekday Midday Peak Hour		Weekday PM Peak Hour	
		Delay (s/veh)	LOS	Delay (s/veh)	LOS	Delay (s/veh)	LOS
Division Street & EB I-90/94 Ramps							
EB	Approach	26.3	C	23.1	C	16.8	B
WB	Left	172.9	F	151.7	F	23.7	C
	Through	8.9	A	8.9	A	8.5	A
	Approach	51.4	D	46.0	D	12.2	B
SB	Left	25.3	C	25.0	C	24.9	C
	Through	11.0	B	10.4	B	10.0	B
	Approach	18.4	B	17.9	B	15.8	B
Intersection		*33.6*	*C*	*30.1*	*C*	*14.7*	*B*
Division Street & WB I-90/94 Ramps							
EB	Left	30.2	C	24.4	C	32.8	C
	Through	7.5	A	7.4	A	6.9	A
	Approach	13.5	B	11.9	B	14.1	B
WB	Approach	14.8	B	14.4	B	12.3	B
NB	Left	28.4	C	27.8	C	27.0	C
	Through/Right	10.5	B	8.3	A	23.7	C
	Right	10.1	B	7.9	A	5.1	A
	Approach	17.0	B	15.4	B	20.7	C
Intersection		*15.0*	*B*	*13.7*	*B*	*15.0*	*B*
Divison Street & Elston Avenue							
EB	Left	57.8	E	29.6	C	24.8	C
	Through	67.5	E	72.6	E	9.8	A
	Right	3.2	A	3.6	A	0.7	A
	Approach	60.5	E	64.4	E	11.1	B
WB	Left/Through	334.5	F	255.3	F	22.7	C
	Right	5.7	A	4.7	A	5.6	A
	Approach	311.2	F	242.6	F	20.7	C
NB	Left	45.8	D	20.1	C	44.9	D
	Through	19.5	B	18.7	B	27.4	C
	Right	5.9	A	4.4	A	11.5	B
	Approach	19.1	B	14.4	B	29.4	C
SB	Left	27.3	C	23.1	C	29.6	C
	Through	38.9	D	27.2	C	31.1	C
	Right	7.3	A	5.4	A	4.9	A
	Approach	32.2	C	23.4	C	24.7	C
Intersection		*107.2*	*F*	*98.5*	*F*	*21.1*	*C*
Division Street & North Branch Street							
EB	Approach	4.7	A	4.3	A	4.5	A
WB	Approach	3.3	A	3.2	A	5.9	A
NB	Left/Through	42.4	D	42.0	D	44.9	D
	Right	9.2	A	9.2	A	15.1	B
	Approach	39.4	D	38.9	D	42.3	D
SB	Left/Through	37.5	D	37.5	D	27.5	C
	Right	15.3	B	15.4	B	7.2	A
	Approach	26.2	C	26.2	C	11.5	B
Intersection		*5.5*	*A*	*5.2*	*A*	*10.2*	*B*
Elston Avenue & Cortez Street							
NB	Left/Through	9.2	A	8.5	A	11.3	B
EB	Approach	22.7	C	15.7	C	20.8	C
Elston Avenue & Augusta Street							
EB	Approach	39.6	D	38.5	D	38.3	D
WB	Left/Through	36.7	D	37.9	D	45.6	D
	Right	5.0	A	1.5	A	12.2	B
	Approach	13.3	B	11.2	B	29.4	C
NB	Approach	2.4	A	1.9	A	3.9	A
SB	Approach	7.3	A	2.7	A	5.5	A
Intersection		*8.0*	*A*	*4.8*	*A*	*9.1*	*A*

1241 W DIVISION STREET REDEVELOPMENT

FIGURE 13
CAPACITY ANALYSIS
2021 EXISTING

CHICAGO ILLINOIS

2024 No Build

The capacity analysis results for the 2024 No Build scenarios are summarized in **Figure 14**. Supporting capacity analysis worksheets are provided in **Appendix I**.

The roadway network in the no build scenario includes the improvements presented in the Morton Salt Redevelopment study. Most notably, the addition of a protected left turn phase was added on the eastbound approach to the intersection of Division Street & Elston Avenue as part of the no build scenario at the direction of CDOT. This improvement is included in both the no build and build scenarios in this study.

In the 2024 no build condition delays tend to increase for most approaches, but there are few changes in levels of service. At the intersection of Division Street & EB I-90/94 Ramps, the westbound approach falls from LOS D to LOS E during the weekday am peak hour. It is common to experience high delay at dense urban intersections with physical constraints on lane geometry. In this case, the geometry is limited by several factors, including the close intersection spacing at the interchange, the width of the I-90/94 bridge and the width of the railroad bridge. It is unlikely that CDOT will implement mitigation for this level of delay by 2024, but may address this issue through regional improvements in the future.

The other location that exhibits notable changes in levels of service is the intersection of Division Street & Elston Avenue. As noted previously, several movements are overcapacity in the existing condition due to the choke point on Division Street east of Elston Avenue. In the 2024 no build condition, the eastbound approach falls from LOS E to LOS F during both the weekday am and pm peak hours. Additionally, the northbound approach falls from LOS C to LOS E during the weekday pm peak hour. It is worth noting that the westbound approach was already at LOS F during the weekday am and midday peak hours in the existing condition, but the delays on this approach increase significantly in the no build scenario. As noted previously, CDOT planning is underway to mitigate these issues by reconstructing the Division Street bridge.

Direction	Intersection	Weekday AM Peak Hour		Weekday Midday Peak Hour		Weekday PM Peak Hour	
		Delay (s/veh)	LOS	Delay (s/veh)	LOS	Delay (s/veh)	LOS
Division Street & EB I-90/94 Ramps							
EB	Approach	32.0	C	26.8	C	17.5	B
WB	Left	205.6	F	178.6	F	31.9	C
	Through	8.9	A	8.9	A	8.3	A
	Approach	60.7	E	53.4	D	14.2	B
SB	Left	25.6	C	25.3	C	25.2	C
	Through	11.3	B	10.8	B	12.9	B
	Approach	18.7	B	18.3	B	17.7	B
Intersection		*39.8*	*D*	*34.5*	*C*	*16.2*	*B*
Division Street & WB I-90/94 Ramps							
EB	Left	41.2	D	30.7	C	44.9	D
	Through	7.6	A	7.5	A	6.9	A
	Approach	16.5	B	13.6	B	17.3	B
WB	Approach	17.1	B	16.7	B	16.6	B
NB	Left	29.1	C	28.4	C	27.6	C
	Through/Right	13.0	B	10.7	B	24.1	C
	Right	12.7	B	10.4	B	5.0	A
	Approach	18.8	B	17.1	B	20.8	C
Intersection		*17.4*	*B*	*15.6*	*B*	*17.9*	*B*
Divison Street & Elston Avenue							
EB	Left	174.2	F	69.7	E	90.1	F
	Through	89.2	F	95.5	F	10.2	B
	Right	3.6	A	3.9	A	0.8	A
	Approach	91.2	F	87.1	F	23.3	C
WB	Left/Through	520.8	F	419.9	F	43.0	D
	Right	4.9	A	3.1	A	5.3	A
	Approach	460.9	F	385.2	F	38.2	D
NB	Left	63.6	E	21.5	C	260.4	F
	Through	22.4	C	20.6	C	31.6	C
	Right	7..9	F	5.8	A	4.9	A
	Approach	23.4	C	17.1	B	68.7	E
SB	Left	38.1	D	25.0	C	61.8	E
	Through	47.4	D	28.7	C	51.1	D
	Right	8.1	A	5.2	A	8.1	A
	Approach	40.2	D	24.8	C	43.1	D
Intersection		*155.5*	*F*	*144.9*	*F*	*42.2*	*D*
Division Street & North Branch Street							
EB	Approach	5.1	A	4.8	A	4.5	A
WB	Approach	3.5	A	3.4	A	6.2	A
NB	Left/Through	42.4	D	42.0	D	45.7	D
	Right	9.2	A	9.2	A	14.9	B
	Approach	39.4	D	38.9	D	43.2	D
SB	Left/Through	37.5	D	37.5	D	27.2	C
	Right	15.3	B	15.4	B	7.1	A
	Approach	26.2	C	26.2	C	11.1	B
Intersection		*5.7*	*A*	*5.5*	*A*	*10.3*	*B*
Elston Avenue & Cortez Street							
NB	Left/Through	9.4	A	8.6	A	12.6	B
EB	Approach	28.0	D	17.6	C	28.1	D
Elston Avenue & Augusta Street							
EB	Approach	39.6	D	38.6	D	38.1	D
WB	Left/Through	36.7	D	37.9	D	45.6	D
	Right	5.0	A	1.5	A	12.2	B
	Approach	13.3	B	11.2	B	29.4	C
NB	Approach	2.9	A	2.2	A	4.4	A
SB	Approach	9.2	A	3.3	A	10.6	B
Intersection		*8.8*	*A*	*4.9*	*A*	*11.2*	*B*

1241 W DIVISION STREET REDEVELOPMENT

FIGURE 14
CAPACITY ANALYSIS
2024 NO BUILD

CHICAGO ILLINOIS

2024 Build

The capacity analysis results for the 2024 Build Scenarios are summarized in **Figure 15**. Supporting capacity analysis worksheets are provided in **Appendix J**.

In the 2024 build scenario delays tend to increase for most approaches, but there are few changes in levels of service. The only intersections with approaches with notable changes in levels of service are Division Street & EB I-90/94 Ramps, Division Street & Elston Avenue, and Elston Avenue & Cortez Street.

At the intersection of Division Street & EB I-90/94 Ramps, the westbound approach falls from LOS D to LOS E during the weekday midday peak hour. This level of service matches the performance during the weekday am peak hour in the no build condition. As noted previously, it is common to experience high delay at dense urban intersections with physical constraints on lane geometry. In this case, the geometry is limited by several factors, including the close intersection spacing at the interchange, the width of the I-90/I-94 bridge, and the width of the railroad bridge. Since the weekday midday peak hour performance is comparable to the peak hour performance present in the no build scenario, no specific mitigation is recommended as part of the proposed warehouse redevelopment.

At the intersection of Division Street & Elston Avenue, the northbound approach falls from LOS E to LOS F during the weekday pm peak hour. It is likely that this issue will be mitigated when the Division Street bridge is reconstructed to remove the choke point. However, it is recommended that short term mitigation is considered as part of the warehouse redevelopment since the site is contributing traffic to the northbound approach. Mitigation options are discussed in a subsequent section.

All movements at the proposed driveways operate at LOS D or better with the exception of the eastbound approach at the north and south proposed Elston Avenue driveways and the eastbound approach at the intersection of Elston Avenue & Cortez Street, which operate at LOS E or F during at least one peak hour. The highest delay occurs on the south Elston Avenue driveway, which operates at LOS F during the weekday pm peak hour. The high delay is due to the fact that only trucks make this movement, and all movements are left turns. However, it is worth noting that only seven trucks are projected to make this turn during the pm peak hour and the projected queue lengths are less than one vehicle.

Overall, no specific capacity-related mitigation options are recommended at the proposed driveways as part of the warehouse development. It is typical that minor-leg stop controlled approaches to busy urban roadways may experience high delays during peak hour operations. All delays on the minor road approaches are observed to be less than 60 seconds and all queue lengths are projected to be less than two vehicles. However, it is recommended that the final end user implement a traffic management plan that further restricts site related traffic during roadway peak hours. As noted in the on-site circulation section, The anticipated turning paths for trucks at the proposed driveways will impact the existing sidewalks and bicycle lanes. Mitigation for these impacts should be addressed through geometric and pavement marking

modifications that are developed in coordination with CDOT throughout the geometric design process.

Direction	Intersection	Weekday AM Peak Hour		Weekday Midday Peak Hour		Weekday PM Peak Hour	
		Delay (s/veh)	LOS	Delay (s/veh)	LOS	Delay (s/veh)	LOS
Division Street & EB I-90/94 Ramps							
EB	Approach	33.0	C	27.4	C	17.6	B
WB	Left	218.4	F	233.7	F	38.2	D
	Through	8.8	A	8.0	A	7.5	A
	Approach	64.7	E	70.6	E	16.1	B
SB	Left	26.1	C	25.7	C	25.5	C
	Through	13.7	B	12.9	B	13.4	B
	Approach	20.1	C	19.5	B	18.2	B
Intersection		*41.7*	*D*	*41.2*	*D*	*17.1*	*B*
Division Street & WB I-90/94 Ramps							
EB	Left	44.9	D	42.4	D	54.1	D
	Through	8.1	A	7.8	A	7.0	A
	Approach	17.6	B	16.7	B	19.7	B
WB	Approach	17.0	B	17.5	B	16.5	B
NB	Left	29.1	C	28.4	C	27.6	C
	Through/Right	14.9	B	12.3	B	24.2	C
	Right	14.7	B	12.1	B	5.0	A
	Approach	19.9	B	18.0	B	20.6	C
Intersection		*18.1*	*B*	*17.4*	*B*	*18.6*	*B*
Divison Street & Elston Avenue							
EB	Left	189.5	F	97.7	F	102.8	F
	Through	89.5	F	98.6	F	10.3	B
	Right	4.7	A	3.6	A	0.8	A
	Approach	91.7	F	90.5	F	26.0	C
WB	Left/Through	564.2	F	461.1	F	43.9	D
	Right	4.9	A	3.1	A	5.3	A
	Approach	499.5	F	423.0	F	39.0	D
NB	Left	117.7	F	38.7	D	545.6	F
	Through	27.8	C	21.2	C	32.1	C
	Right	13.0	B	6.1	A	5.0	A
	Approach	37.5	D	23.1	C	150.4	F
SB	Left	38.3	D	25.4	C	64.6	E
	Through	50.1	D	29.1	C	52.1	D
	Right	4.8	A	5.2	A	5.9	A
	Approach	41.7	D	25.2	C	43.7	D
Intersection		*165.2*	*F*	*152.4*	*F*	*60.5*	*E*
Division Street & North Branch Street							
EB	Approach	5.2	A	4.8	A	4.5	A
WB	Approach	3.5	A	3.4	A	6.2	A
NB	Left/Through	42.4	D	42.0	D	45.7	D
	Right	9.2	A	9.2	A	14.9	B
	Approach	39.4	D	38.9	D	43.2	D
SB	Left/Through	37.5	D	37.5	D	27.2	C
	Right	15.3	B	15.4	B	7.1	A
	Approach	26.2	C	26.2	C	11.1	B
Intersection		*5.8*	*A*	*5.5*	*A*	*10.2*	*B*
Elston Avenue & Cortez Street							
NB	Left/Through	9.6	A	8.6	A	12.8	B
EB	Approach	29.7	D	19.5	C	45.1	E
Elston Avenue & Augusta Street							
EB	Approach	39.6	D	38.6	D	38.1	D
WB	Left/Through	36.7	D	37.9	D	45.6	D
	Right	5.0	A	1.5	A	12.2	B
	Approach	13.3	B	11.2	B	29.4	C
NB	Approach	2.9	A	2.2	A	4.4	A
SB	Approach	5.7	A	3.0	A	10.3	B
Intersection		*6.6*	*A*	*4.6*	*A*	*11.1*	*B*
Division Street & Proposed Driveway							
NB	Approach	14.6	B	14.4	B	11.2	B
Elston Avenue & Proposed North Driveway (Full Access)							
NB	Left/Through	9.4	A	8.8	A	9.4	A
EB	Approach	25.2	D	19.1	C	42.9	E
Elston Avenue & Proposed South Driveway (Exit Only)							
EB	Approach	36.6	E	23.3	C	56.1	F

1241 W DIVISION STREET REDEVELOPMENT

FIGURE 15
CAPACITY ANALYSIS
2024 BUILD

CHICAGO ILLINOIS

2024 Build - Mitigation

As noted in the 2024 Build analysis, the northbound delays at the intersection of Division Street & Elston Avenue are exceptionally high, especially during the weekday pm peak hour. It is known that there are capacity issues on multiple movements at this intersection due to the choke point at the Division Street bridge over the North Branch of the Chicago River. Overall capacity at the intersection will be improved once the reconstruction of the bridge is completed.

In the short term, one option for mitigation is retiming the signal to better balance delay. Transferring five seconds of green time from the eastbound and westbound approaches on Division Street to the northbound and southbound approaches on Elston Avenue greatly reduces the delay on the northbound approach, while only moderately increasing the delay on the Division Street approaches. With this retiming plan, the overall intersection level of service improves from LOS E to LOS D. Despite this improvement in LOS it is observed that the volume to capacity ratio for the northbound left turn movement is 1.50, which is higher than typically desirable. CDOT has indicated that the installation of a northbound left turn arrow and a protected-permitted phase scheme will be required to mitigate this capacity issue.

The implementation of the northbound protected left turn phase results in operational improvements on the northbound approach and negligible impacts on the eastbound and westbound approaches. However, the new protected phase increases the delay of the southbound approach. Despite this impact, the protected left turn phase can be added in the weekday am and midday time periods without reallocation of green time between Elston Avenue and Division Street. It is recommended that four seconds of green time is reallocated from Division Street to Elston Avenue during the weekday pm peak hour to better balance overall delays between all four approaches.

CDOT has acknowledged that this signal and intersection will be reconstructed as part of the Division Street bridge replacement but the start date of construction has not been finalized and likely will not be completed earlier than 2024. This mitigation may be waived at the discretion of CDOT if there will be less than six months between the time of building occupancy and the commencement of any Division Street Bridge related MOT that would alter the signal at the intersection.

The capacity analysis results for the two mitigation options at the intersection of Division Street & Elston Avenue are summarized in **Figure 16**. Supporting capacity analysis worksheets are provided in **Appendix H**.

MITIGATION OPTION 1: RETIMED SIGNAL

Direction	Intersection	Weekday AM Peak Hour *		Weekday Midday Peak Hour *		Weekday PM Peak Hour	
		Delay (s/veh)	LOS	Delay (s/veh)	LOS	Delay (s/veh)	LOS
Divison Street & Elston Avenue							
EB	Left	189.5	F	97.7	F	113.3	F
	Through	89.5	F	98.6	F	12.8	B
	Right	4.7	A	3.6	A	0.9	A
	Approach	91.7	F	90.5	F	29.7	C
WB	Left/Through	564.2	F	461.1	F	83.9	F
	Right	4.9	A	3.1	A	6.5	A
	Approach	499.5	F	423.0	F	73.8	E
NB	Left	117.7	F	38.7	D	290.6	F
	Through	27.8	C	21.2	C	23.9	C
	Right	13.0	B	6.1	A	3.2	A
	Approach	37.5	D	23.1	C	84.9	F
SB	Left	38.3	D	25.4	C	32.1	C
	Through	50.1	D	29.1	C	33.2	C
	Right	4.8	A	5.2	A	6.0	A
	Approach	41.7	D	25.2	C	27.2	C
Intersection		*165.2*	*F*	*152.4*	*F*	*51.8*	*D*

* Unchanged from the "Build" Analysis

MITIGATION OPTION 2: PERMITTED–PROTECTED NORTHBOUND LEFT

Direction	Intersection	Weekday AM Peak Hour		Weekday Midday Peak Hour		Weekday PM Peak Hour	
		Delay (s/veh)	LOS	Delay (s/veh)	LOS	Delay (s/veh)	LOS
Divison Street & Elston Avenue							
EB	Left	189.5	F	97.3	F	113.4	F
	Through	89.5	F	98.2	F	11.8	B
	Right	3.1	A	3.4	A	0.7	A
	Approach	91.2	F	90.2	F	28.9	C
WB	Left/Through	564.2	F	461.1	F	73.8	E
	Right	2.2	A	1.0	A	3.2	A
	Approach	499.2	F	422.9	F	64.8	E
NB	Left	35.2	D	40.3	D	151.2	F
	Through	26.1	C	21.2	C	24.7	C
	Right	11.5	B	6.1	A	3.1	A
	Approach	24.0	C	23.6	C	53.0	D
SB	Left	42.3	D	31.1	C	39.2	D
	Through	113.7	F	41.1	D	67.6	E
	Right	6.6	A	5.8	A	8.0	A
	Approach	84.1	F	34.3	C	51.0	D
Intersection		*174.7*	*F*	*154.2*	*F*	*49.8*	*D*

1241 W DIVISION STREET REDEVELOPMENT

FIGURE 16
CAPACITY ANALYSIS
2024 MITIGATION

CHICAGO ILLINOIS

Queue Length Analysis

A summary of the 95th-Percentile queues is provided in **Figure 17**.

Proposed Lane Configuration

Based on the analysis results, it is determined that no lane alterations are recommended at the existing study area intersections and all proposed driveways operate acceptably with single approach and departure lanes. As noted previously, it is recommended that the traffic signal at Division Street and Elston Avenue is modified to provide protected-permitted operations.

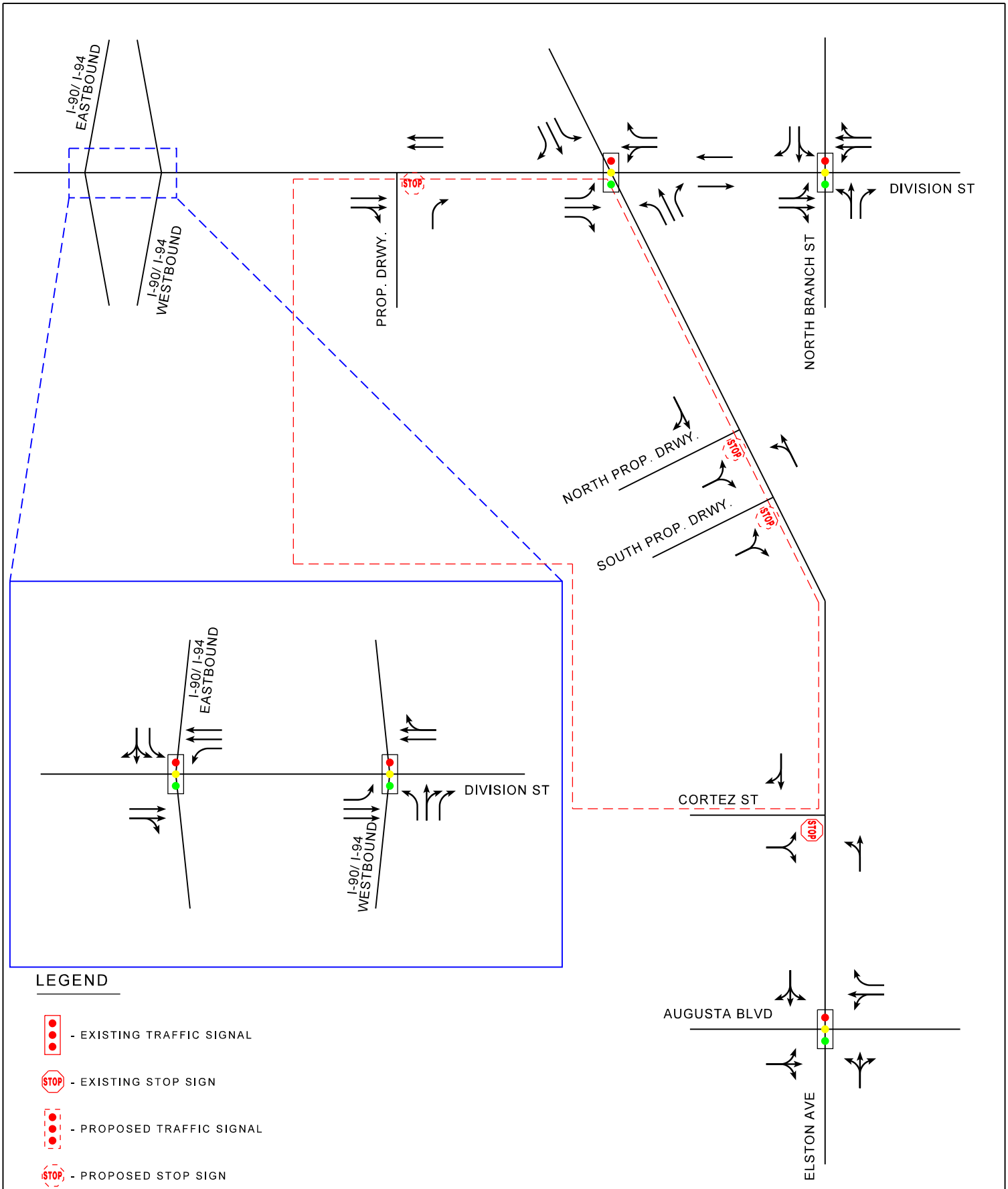
The final proposed lane configuration is illustrated in **Figure 18**.

Direction	Intersection	2021 Existing			2024 No Build			2024 Build with Mitigation		
		Weekday AM Peak Hour	Weekday Midday Peak	Weekday PM Peak Hour	Weekday AM Peak Hour	Weekday Midday Peak	Weekday PM Peak Hour	Weekday AM Peak Hour	Weekday Midday Peak	Weekday PM Peak Hour
Division Street & EB I-90/94 Ramps										
EB	Approach	436	376	200	518	469	217	525	477	218
WB	Left	275	258	84	299	279	122	308	319	144
	Through	100	96	97	104	100	100	104	97	98
SB	Left	144	137	143	150	143	150	160	150	156
	Through	78	73	107	83	77	136	100	90	141
Division Street & WB I-90/94 Ramps										
EB	Left	66	55	131	99	67	180	107	107	199
	Through	80	78	65	80	78	68	87	85	72
WB	Approach	68	63	167	68	63	180	67	79	184
NB	Left	220	209	195	233	220	207	233	220	207
	Through/Right	104	84	140	126	105	149	144	120	149
	Right	97	77	42	122	101	44	142	116	45
Divison Street & Elston Avenue										
EB	Left	185	119	123	158	100	95	167	115	167
	Through	884	904	121	954	976	132	957	984	957
	Right	20	14	3	26	19	3	28	21	28
WB	Left/Through	822	791	508	915	889	647	734	687	734
	Right	17	12	31	21	13	33	11	4	11
NB	Left	78	33	125	82	33	185	59	93	59
	Through	102	75	287	164	120	337	213	126	213
	Right	33	21	28	42	27	16	59	28	59
SB	Left	158	107	88	214	120	168	217	132	217
	Through	481	278	352	549	309	570	641	385	641
	Right	44	29	45	50	30	72	42	31	42
Division Street & North Branch Street										
EB	Approach	118	106	76	112	102	80	120	101	79
WB	Approach	82	79	91	95	89	97	95	89	97
NB	Left/Through	60	56	147	60	56	156	60	56	156
	Right	6	6	17	6	6	17	6	6	17
SB	Left/Through	32	31	35	32	31	35	32	31	35
	Right	21	20	39	21	20	40	21	20	40
Elston Avenue & Cortez Street										
NB	Left/Through	0	0	0	0	0	0	0	0	0
EB	Approach	10	3	8	13	5	13	18	10	43
Elston Avenue & Augusta Street										
EB	Approach	63	50	59	63	50	59	63	50	59
WB	Left/Through	21	17	88	21	17	89	21	17	89
	Right	10	2	38	10	2	38	10	2	38
NB	Approach	52	32	128	80	46	158	83	48	159
SB	Approach	170	44	122	181	68	206	56	68	201
Division Street & Proposed Driveway										
NB	Approach	-	-	-	-	-	-	0	5	3
Elston Avenue & Proposed North Driveway (Full Access)										
NB	Left/Through	-	-	-	-	-	-	0	0	0
EB	Approach	-	-	-	-	-	-	5	28	25
Elston Avenue & Proposed South Driveway (Exit Only)										
EB	Approach	-	-	-	-	-	-	3	3	8

1241 W DIVISION STREET REDEVELOPMENT

FIGURE 17
95% PERCENTILE QUEUE (FEET)

CHICAGO ILLINOIS



1241 W DIVISION STREET REDEVELOPMENT

FIGURE 18 PROPOSED LANE CONFIGURATION

CHICAGO ILLINOIS

V. CONCLUSIONS

Based on the results of the capacity analysis, it is determined that the most significant operational deficiency in the study area occurs at the intersection of Division Street & Elston Avenue, which exhibits several approaches operating at level of service E or F in multiple time periods in the 2021 existing condition. The issues stem from the two-lane Division Street bridge over the North Branch of the Chicago River which creates a significant choke point on the corridor. CDOT is aware of this issue and is underway with planning the reconstruction of the bridge with additional travel lanes. It is believed that the reconstruction will not be completed prior to 2024 and is not considered in this study.

The most notable level of service change that occurs following the addition of site generated traffic occurs on the northbound approach at the intersection of Division Street & Elston Avenue, which falls from LOS E to LOS F during the weekday pm peak hour. It is likely that this issue will be mitigated when the Division Street bridge is reconstructed to remove the choke point. However, it is recommended that short term mitigation is considered as part of the warehouse development since the site is likely to contribute traffic to the northbound approach.

One option for mitigation is retiming the signal to better balance delay. Shifting five seconds of green time from the eastbound and westbound approaches on Division Street to the northbound and southbound approaches on Elston Avenue during the weekday pm peak hour greatly reduces the delay on the northbound approach, while only moderately increasing the delay on the Division Street approaches. With this retiming plan, the overall intersection level of service improves from LOS E to LOS D. However, the northbound left turn movement is found to be significantly over capacity.

CDOT has indicated that the installation of a northbound left turn arrow and the implementation of a protected-permitted phase scheme will be required to mitigate this capacity issue. The implementation of the northbound protected left turn phase results in operational improvements on the northbound approach and negligible impacts on the eastbound and westbound approaches. However, the new protected phase increases the delay of the southbound approach. Despite this impact, the protected left turn phase can be added in the weekday am and midday time periods without reallocation of green times between Elston Avenue and Division Street. It is recommended that four seconds of green time is reallocated from Division Street to Elston Avenue during the weekday pm peak hour to better balance overall delays between all four approaches.

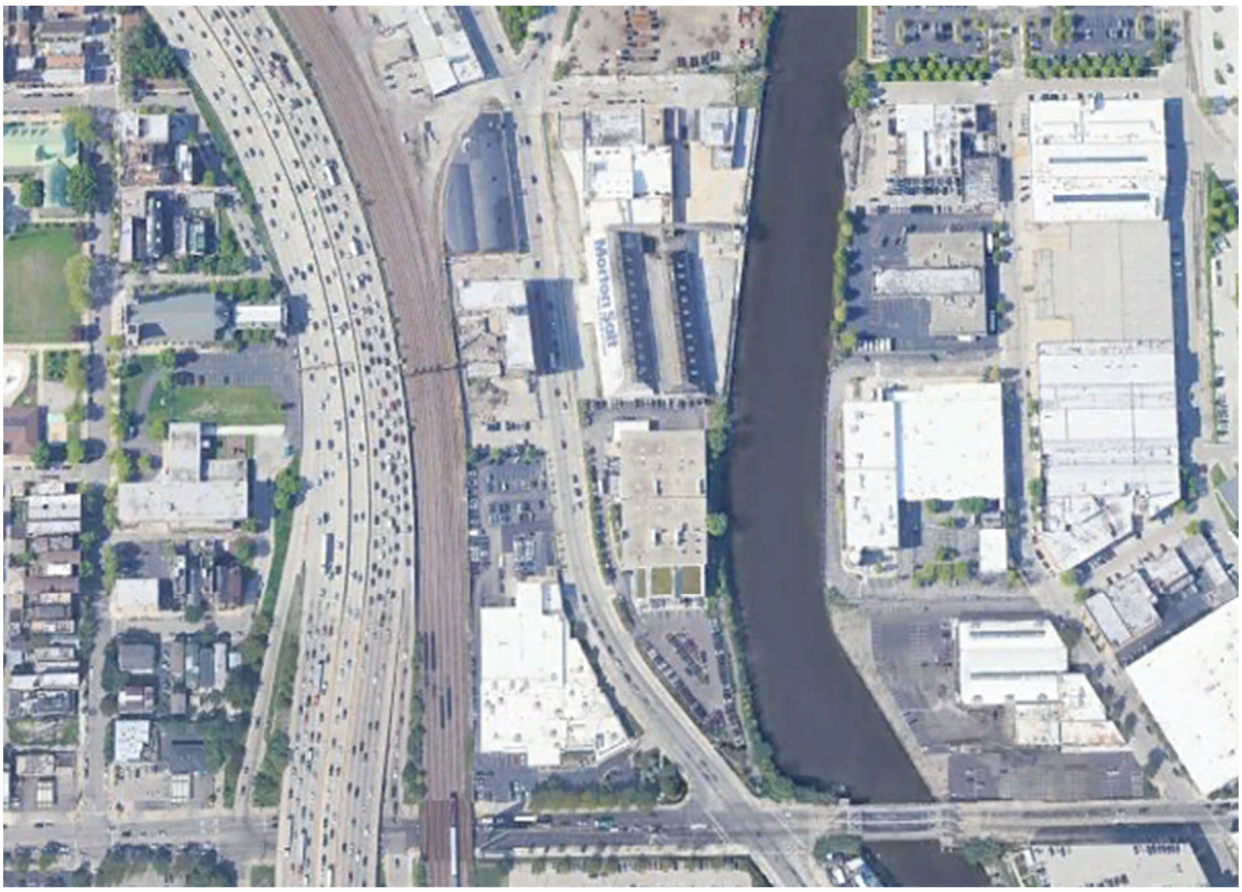
CDOT has acknowledged that this signal and intersection will be reconstructed as part of the Division Street bridge replacement but the start date of construction has not been finalized and likely will not be completed earlier than 2024. This mitigation may be waived at the discretion of CDOT if there will be less than six months between the time of building occupancy and the commencement of any Division Street Bridge related MOT that would alter the signal at the intersection.

No specific capacity-related mitigation options are recommended at the proposed driveways as part of the warehouse development. It is typical that minor-leg stop controlled approaches to urban arterials may experience high delays during peak hour operations. All delays on the minor road approaches are observed to be less than 60 seconds and all queue lengths are projected to be less than two vehicles. The anticipated turning paths for trucks at the proposed driveways will impact the existing sidewalks and bicycle lanes. Mitigation for these impacts should be addressed through geometric and pavement marking modifications that are developed in coordination with CDOT throughout the geometric design process.

Overall, it is recommended that the final end user of the site produce and implement a traffic management plan tailored to the specific uses at the proposed warehouse. Fulfilment centers, especially those in urban environments, typically implement traffic management plans that dictate when each vehicle type can enter and exit the site. This management plan often places employee shift changes outside of traditional work hours and prohibits any inbound or outbound truck and local delivery trips during the adjacent roadway peak hours. In many cases, the traffic management plan will result in zero trips of any type during the traditional roadway peak hours and may offset the typical operational hours of each of the trip types to improve internal site circulation.

APPENDIX A

MORTON SALT REDEVELOPMENT
TRAFFIC IMPACT STUDY EXCERPTS



TRAFFIC IMPACT STUDY

Morton Salt Redevelopment – Chicago, Illinois

August 14, 2020

Prepared for Blue Star Properties

Blue Star Properties
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Executive Summary

Under the leadership of Blue Star Properties and R2 Companies, an adaptive reuse is proposed for the former Morton Salt warehousing and packaging facility to provide a combination of office, bar/restaurant, and special event uses. The subject site is located in the heart of the North Branch Industrial Modernization Corridor, which was recently subjected to a rezoning effort by the City of Chicago to allow mixed-use development in this historically industrial neighborhood. Given the substantial growth anticipated as a result of the new zoning designations, several major infrastructure projects have been identified by the City to provide multimodal connectivity and address traffic congestion, including a new transitway enabling users to travel efficiently through the North Branch Corridor and to/from major rail hubs in Chicago's West Loop. The subject project is one of the first redevelopment proposals brought forward in this part of the North Branch Corridor and is therefore expected to be operational before those major infrastructure improvements are in place. As such, this study focuses on the near-term demands of the proposed redevelopment project in order to identify recommendations for promoting safe and efficient transportation conditions in the vicinity of the site. This strategy results in a conservative assessment of site-related travel behaviors and impacts that would be expected to lessen as future infrastructure improvements identified by the City are implemented.

To that end, a technical methodology was developed to evaluate typical weekday commuter conditions after site completion, as well as a conservative, maximum-attendance special event on a Saturday evening. This evaluation was informed by a mode share survey completed at a nearby venue featuring similar transportation characteristics and land uses, which revealed that many patrons currently travel by personal auto or with the use of a taxi or Transportation Network Provider (such as Uber or Lyft). Thus, the location of surface parking is highly influential on traffic routing to/from the site and, as a result, on the impact of the proposed development on area roadways. An assumption was therefore made in consultation with the development team to allow this traffic impact analysis to be prepared. If the location of surface parking changes, then revisions to the recommendations in this traffic study may be required.

Based on the analyses detailed in this study, several recommendations were identified to manage existing and future transportation needs within the area, including:

- Improvements to the intersection of Elston Avenue/Magnolia Avenue/Blackhawk Street, including a new traffic signal, high-visibility crosswalks, and the use of striping and bollards to eliminate an existing slip lane and shorten pedestrian crossing distances.
- Restriping improvements to the intersection of North Avenue/Magnolia Avenue to provide a dedicated westbound left-turn lane.
- Traffic management strategies for use during large-scale events, such as the use of geofencing to manage curbside pick-up/drop-off activity and active communication with event attendees about nearby transit options and recommended routing to event parking.

As additional mixed-use development occurs throughout the North Branch Corridor, it is anticipated that the peak-condition event traffic projections that inform this study will decrease, since many patrons will have the opportunity to arrive in the vicinity of the venue earlier and stay later to take advantage of increased bar and restaurant options—not to mention the pressure relieved with planned infrastructure improvements like a Blackhawk Street bridge connection, reconstruction of the Division Street bridge that acts as an existing bottleneck, and the North Branch Transitway that is conceptually planned to run within

1,000 feet of the Morton Salt site. In the meantime, the recommendations identified in this study are expected to address existing deficiencies adjacent to the site and accommodate the added demands of the proposed development under near-term conditions. It is also notable that traffic data analyzed as a part of this study reflects pre-pandemic traffic patterns and mode splits and assumes a return to these conditions prior to completion of the proposed development.

Figure 3

Existing (2020) Traffic Volumes

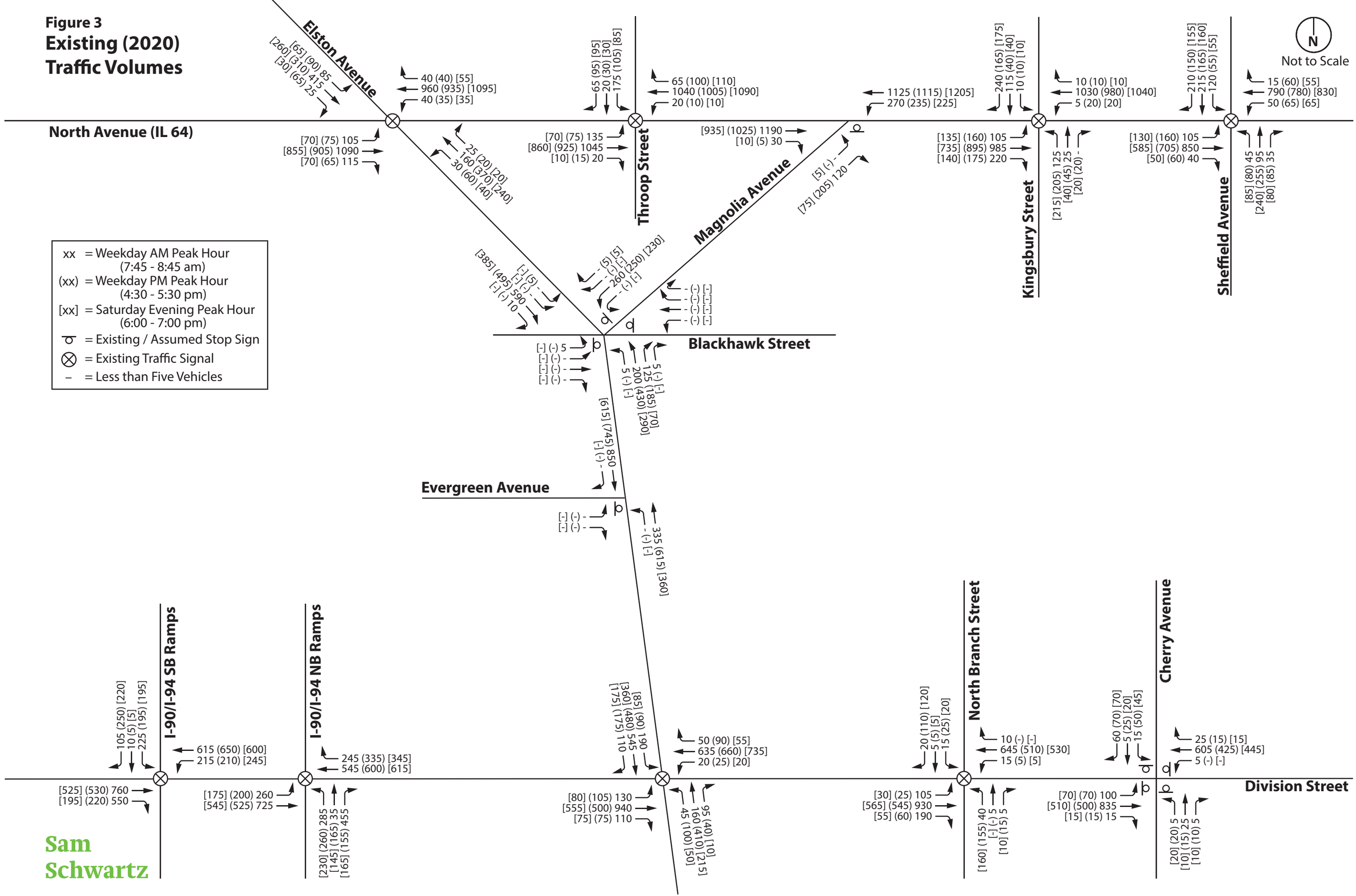
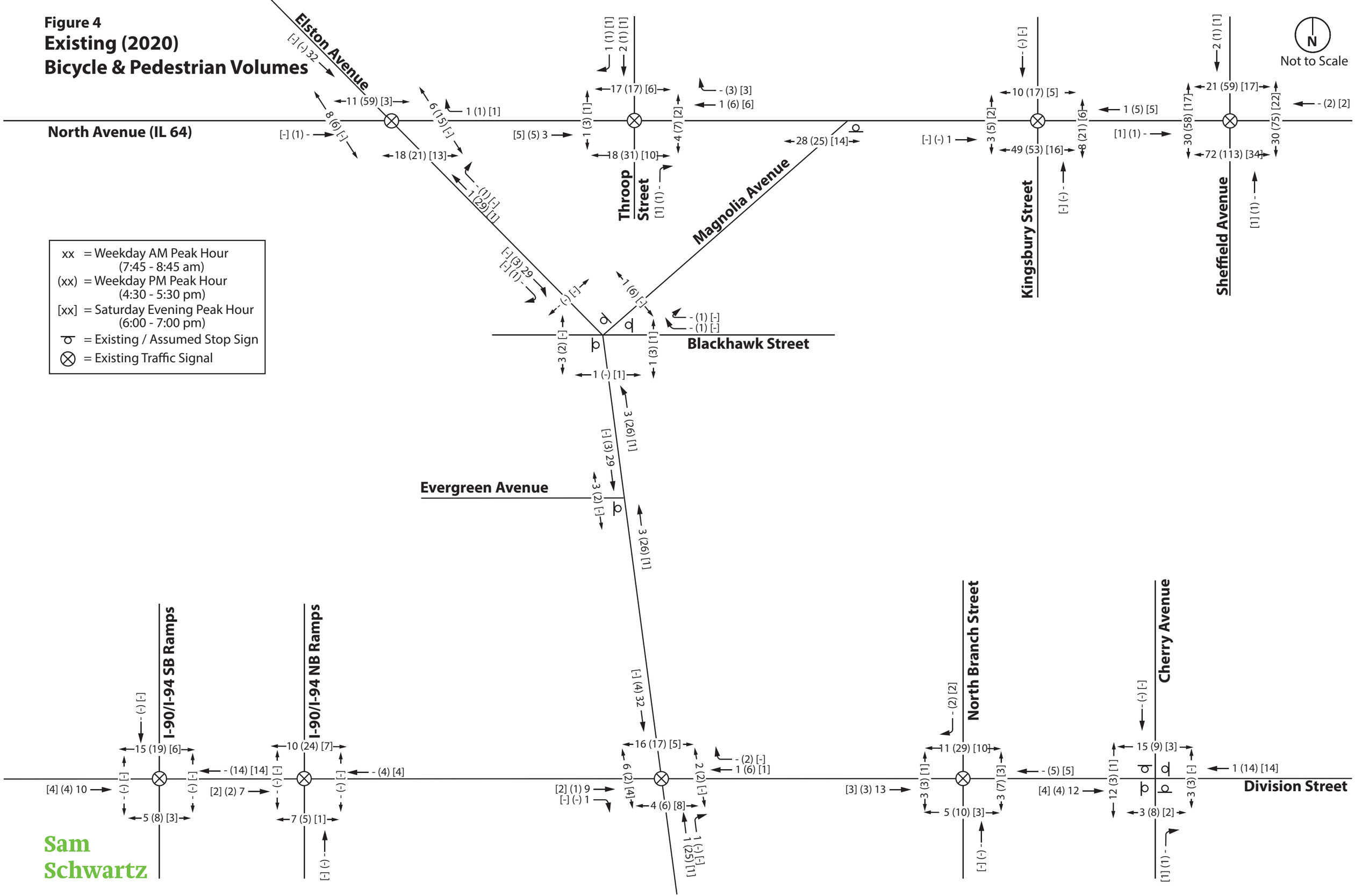


Figure 4

Existing (2020) Bicycle & Pedestrian Volumes



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3.2. Future No-Build Traffic Projections

A primary source of future traffic growth anticipated within the study area is Lincoln Yards, one of the first mixed-used developments proposed following rezoning within North Branch Industrial Modernization Corridor. Based on discussions with CDOT staff, projected traffic volumes for Phase 1 development of that site were referenced from a January 18, 2019, traffic study prepared by Kenig, Lindgren, O'Hara, Aboona, Inc., which is excerpted in the Appendix of this report. The projected Phase 1 traffic volumes were carried through the North Avenue/Elston Avenue study intersection; at the intersection of Division Street and Elston Avenue, Lincoln Yards trips were assigned to/from the south and to/from the east in a manner proportional to existing turning movements at that intersection.

To account for additional background growth that may occur within the study area through the Year 2023 design horizon, Year 2050 Average Daily Traffic (ADT) projections were obtained from CMAP for roadways within the study area. Based on the relatively modest growth projected by CMAP, it is assumed that future traffic volumes generated by Lincoln Yards are not accounted for in the CMAP model. Compounded annual growth rates were derived for each roadway segment, as summarized below:

- North Avenue: 0.2%
- Elston Avenue: 0.4%
- Division Street: 1.7%
- I-90/94 Ramps: 1.7%
- North Branch Street: 1.7%
- Cherry Avenue: 1.7%
- Magnolia Avenue: 0.2%
- Throop Street: 0.2%
- Kingsbury Street: 0.4%
- Sheffield Avenue: 0.5%

The above growth rates were applied to existing traffic volumes on each respective study roadway. The resulting volumes were then balanced across the study area. This background growth, together with projected site traffic from Lincoln Yards Phase 1, was added to existing volumes to yield Year 2023 Future No-Build traffic projections, illustrated in **Figure 7**.

Figure 11

Future (2023) Build Traffic Projections

Not to Scale

xx = Weekday AM Peak Hour (7:45 - 8:45 am)
(xx) = Weekday PM Peak Hour (4:30 - 5:30 pm)
[xx] = Saturday Evening Peak Hour (6:00 - 7:00 pm)
= Existing / Assumed Stop Sign
= Proposed Stop Sign
= Existing Traffic Signal
= Proposed Traffic Signal
– = Less than Five Vehicles

Elston Avenue
North Avenue (IL 64)
Throop Street
Magnolia Avenue
Kingsbury Street
Sheffield Avenue
Blackhawk Street
Evergreen Avenue
SITE
I-90/I-94 SB Ramps
I-90/I-94 NB Ramps
North Branch Street
Cherry Avenue
Division Street

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APPENDIX B

TRAFFIC COUNT DATA

Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

LOCATION: N Elston Ave -- W Augusta Blvd
CITY/STATE: Chicago, IL

QC JOB #: 15355501
DATE: Thu, Jan 28 2021

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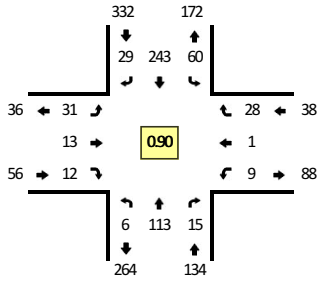
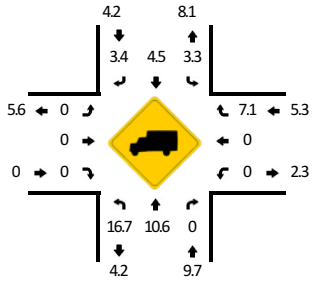
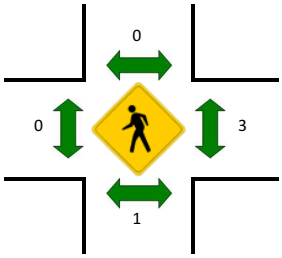
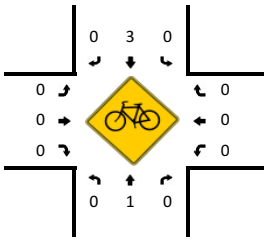
Peak 15-Min: 8:45 AM -- 9:00 AM

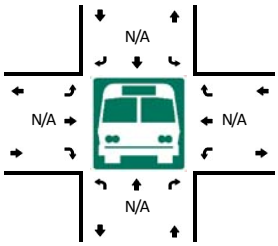


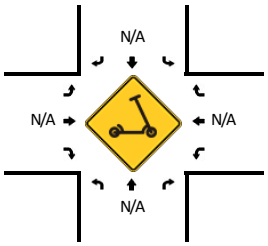


Quality Counts
DATA THAT DRIVES COMMUNITIES









15-Min Count Period Beginning At	N Elston Ave (Northbound)				N Elston Ave (Southbound)				W Augusta Blvd (Eastbound)				W Augusta Blvd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	10	4	0	9	27	1	0	4	1	2	0	3	1	3	0	65	
7:15 AM	0	25	3	0	14	34	6	0	3	5	0	0	0	0	2	0	92	
7:30 AM	0	19	3	0	12	41	6	0	3	4	0	0	3	0	0	0	91	
7:45 AM	1	31	4	0	22	51	5	0	6	4	2	0	1	1	6	0	134	382
8:00 AM	2	25	7	0	19	41	9	0	7	7	4	0	1	1	8	0	131	448
8:15 AM	1	33	3	0	15	58	6	0	12	1	4	0	3	0	5	0	141	497
8:30 AM	1	28	0	0	16	61	4	0	7	4	2	0	1	0	8	0	132	538
8:45 AM	2	27	5	0	10	83	10	0	5	1	2	0	4	0	7	0	156	560

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	8	108	20	0	40	332	40	0	20	4	8	0	16	0	28	0	624
Heavy Trucks	4	8	0		0	16	4		0	0	0		0	0	4		36
Buses																	
Pedestrians		4				0				0				0			4
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

Comments:

Report generated on 2/3/2021 7:46 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

LOCATION: N Elston Ave -- W Augusta Blvd
CITY/STATE: Chicago, IL

QC JOB #: 15355502
DATE: Thu, Jan 28 2021

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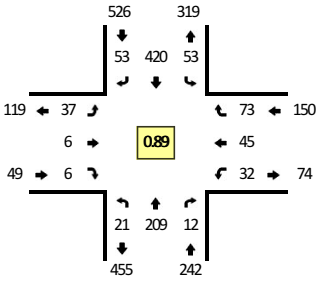
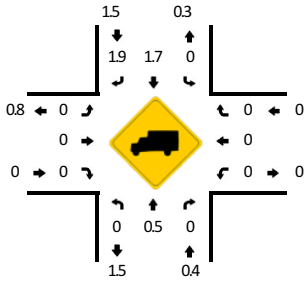
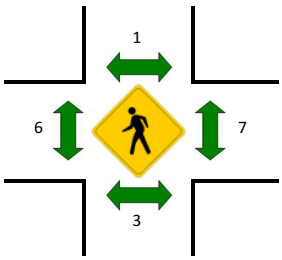
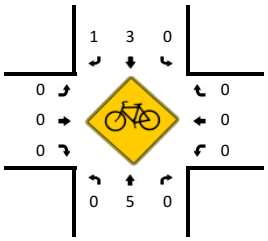
Peak 15-Min: 5:15 PM -- 5:30 PM

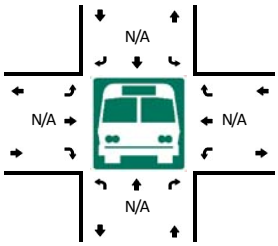


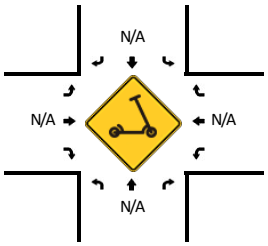


Quality Counts
DATA THAT DRIVES COMMUNITIES









15-Min Count Period Beginning At	N Elston Ave (Northbound)				N Elston Ave (Southbound)				W Augusta Blvd (Eastbound)				W Augusta Blvd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	4	38	4	0	14	106	13	0	7	1	5	0	9	4	19	2	226	
4:15 PM	3	41	4	0	15	130	12	0	7	3	4	0	6	8	13	1	247	
4:30 PM	1	53	5	0	14	88	14	0	8	1	2	0	7	4	13	1	211	
4:45 PM	9	38	2	0	15	94	8	0	5	3	0	0	9	6	21	1	211	895
5:00 PM	3	52	5	0	11	117	13	0	14	2	0	0	10	21	16	0	264	933
5:15 PM	6	59	3	0	15	128	17	0	12	0	3	0	4	10	14	1	272	958
5:30 PM	3	60	2	0	12	81	15	0	6	1	3	0	6	8	22	1	220	967
5:45 PM	5	43	4	0	9	91	10	0	6	0	1	0	7	8	17	0	201	957

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	24	236	12	0	60	512	68	0	48	0	12	0	16	40	56	4	1088
Heavy Trucks	0	4	0		0	4	0		0	0	0		0	0	0		8
Buses																	
Pedestrians		0				0				4				8			12
Bicycles	0	4	0		0	4	0		0	0	0		0	0	0		8
Scooters																	

Comments:

Report generated on 2/3/2021 7:46 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

LOCATION: N Elston Ave -- W Cortez St
CITY/STATE: Chicago, IL

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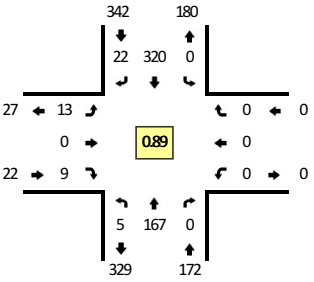
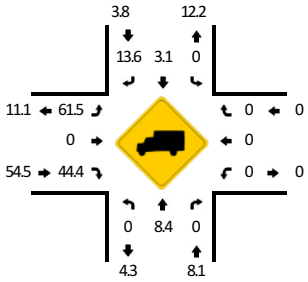
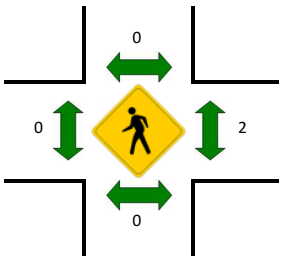
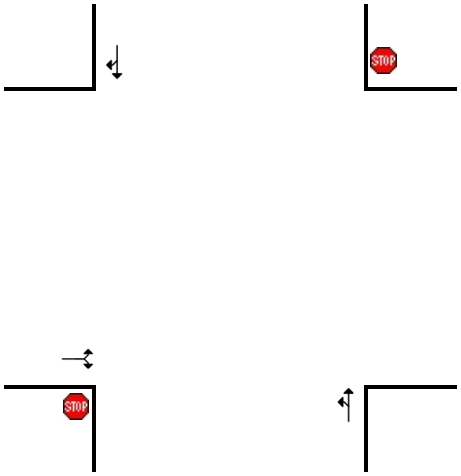
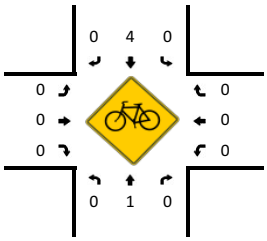
Peak 15-Min: 8:45 AM -- 9:00 AM

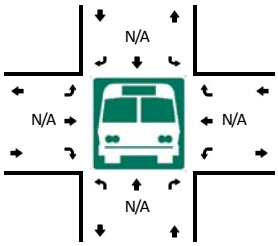


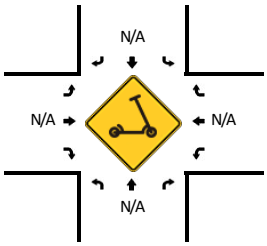












15-Min Count Period Beginning At	N Elston Ave (Northbound)				N Elston Ave (Southbound)				W Cortez St (Eastbound)				W Cortez St (Westbound)				Total	Hourly Totals
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7:00 AM	1	16	0	0	0	38	4	0	0	0	0	0	0	0	0	0	59	
7:15 AM	0	30	0	0	0	51	5	0	0	0	2	0	0	0	0	0	88	
7:30 AM	2	20	0	0	0	61	4	0	3	0	0	0	0	0	0	0	90	
7:45 AM	3	40	0	0	0	76	5	0	1	0	0	0	0	0	0	0	125	362
8:00 AM	3	37	0	0	0	67	5	0	1	0	0	0	0	0	0	0	113	416
8:15 AM	2	48	0	0	0	78	10	0	5	0	1	0	0	0	0	0	144	472
8:30 AM	0	43	0	0	0	78	4	0	2	0	2	0	0	0	0	0	129	511
8:45 AM	0	39	0	0	0	97	3	0	5	0	6	0	0	0	0	0	150	536

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	156	0	0	0	388	12	0	20	0	24	0	0	0	0	0	600
Heavy Trucks	0	8	0		0	8	0		12	0	12		0	0	0		40
Buses																	
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

Comments:

Report generated on 2/3/2021 7:46 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Type of peak hour being reported: Intersection Peak | Method for determining peak hour: Total Entering Volume

LOCATION: N Elston Ave -- W Cortez St | **QC JOB #:** 15355504
CITY/STATE: Chicago, IL | **DATE:** Thu, Jan 28 2021

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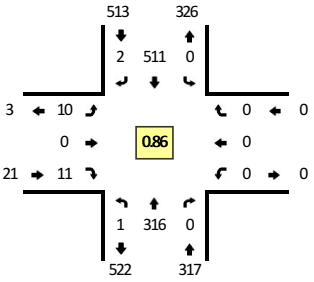
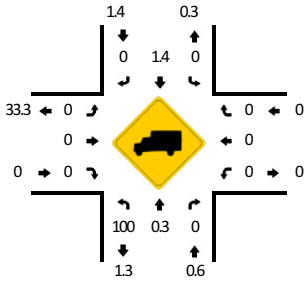
Peak 15-Min: 5:15 PM -- 5:30 PM





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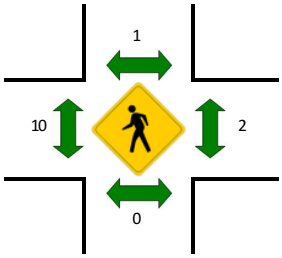
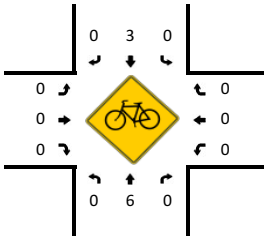
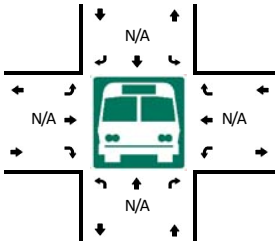
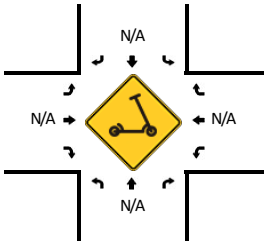








15-Min Count Period Beginning At	N Elston Ave (Northbound)				N Elston Ave (Southbound)				W Cortez St (Eastbound)				W Cortez St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	66	0	0	0	133	2	0	1	0	2	0	0	0	0	0	204	
4:15 PM	0	61	0	0	0	148	1	0	9	0	11	0	0	0	0	0	230	
4:30 PM	0	74	0	0	0	111	0	0	1	0	3	0	0	0	0	0	189	
4:45 PM	0	64	0	0	0	112	1	0	3	0	5	0	0	0	0	0	185	808
5:00 PM	1	81	0	0	0	138	1	0	1	0	1	0	0	0	0	0	223	827
5:15 PM	0	84	0	0	0	154	0	0	5	0	4	0	0	0	0	0	247	844
5:30 PM	0	87	0	0	0	107	0	0	1	0	1	0	0	0	0	0	196	851
5:45 PM	0	67	0	0	0	108	0	0	0	0	0	0	0	0	0	0	175	841

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	336	0	0	0	616	0	0	20	0	16	0	0	0	0	0	988
Heavy Trucks	0	4	0		0	4	0		0	0	0		0	0	0		8
Buses																	
Pedestrians		0				4				12				8			24
Bicycles	0	8	0		0	4	0		0	0	0		0	0	0		12
Scooters																	

Comments:

Report generated on 2/3/2021 7:46 AM | SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Quality Counts
DATA THAT DRIVES COMMUNITIES

Location: Elston Ave btwn Cortez St & Division St
Date: 1/28/2021
Site Code: 15355505

Start Time	Southbound	Northbound	Total	% of Peak Hout	Note
12:00 AM	10	8	18	3.5%	
01:00 AM	6	2	8	1.5%	
02:00 AM	6	5	11	2.1%	
03:00 AM	4	1	5	1.0%	
04:00 AM	7	8	15	2.9%	
05:00 AM	41	25	66	12.7%	
06:00 AM	98	44	142	27.3%	
07:00 AM	242	109	351	67.4%	
08:00 AM	341	180	521	100.0%	AM Peak Hour
09:00 AM	256	171	427	82.0%	
10:00 AM	224	153	377	72.4%	PH of Generator
11:00 AM	266	209	475	91.2%	
12:00 PM	293	221	514	61.5%	
01:00 PM	258	224	482	57.7%	
02:00 PM	480	230	710	84.9%	
03:00 PM	530	252	782	93.5%	
04:00 PM	506	278	784	93.8%	
05:00 PM	509	327	836	100.0%	PM Peak Hour
06:00 PM	298	165	463	55.4%	
07:00 PM	119	79	198	23.7%	
08:00 PM	81	49	130	15.6%	
09:00 PM	55	21	76	9.1%	
10:00 PM	38	20	58	6.9%	
11:00 PM	23	31	54	6.5%	
Total	**4691**	**2812**	**7503**		

APPENDIX C

HISTORICAL 24-HOUR COUNTS

Location Info	
Location ID	016 4794
Type	LINK
Functional Class	5
Located On	Division St
Between	Milwaukee Ave AND Halsted St
Direction	2-WAY
Community	CHICAGO
MPO_ID	
HPMS ID	
Agency	Illinois DOT

Count Data Info	
Start Date	6/4/2018
End Date	6/5/2018
Start Time	9:00 AM
End Time	9:00 AM
Direction	2-WAY
Notes	
Count Source	DIVISION ST
File Name	D1Submittal12k-016.mdb
Weather	
Study	
Owner	idotco
QC Status	Accepted

Interval: 60 mins

Time	Hourly Count	% of Peak Hour	Note
00:00 - 01:00	246	26%	
01:00 - 02:00	165	17%	
02:00 - 03:00	109	11%	
03:00 - 04:00	151	16%	
04:00 - 05:00	283	30%	
05:00 - 06:00	413	43%	
06:00 - 07:00	782	82%	
07:00 - 08:00	920	96%	
08:00 - 09:00	932	98%	
09:00 - 10:00	954	100%	AM Peak Hour of Roadway
10:00 - 11:00	906	95%	Peak Hour of Generator
11:00 - 12:00	935	98%	
12:00 - 13:00	921	95%	
13:00 - 14:00	939	97%	
14:00 - 15:00	945	97%	
15:00 - 16:00	863	89%	
16:00 - 17:00	803	83%	
17:00 - 18:00	785	81%	
18:00 - 19:00	936	96%	
19:00 - 20:00	972	100%	PM Peak Hour of Roadway
20:00 - 21:00	970	100%	
21:00 - 22:00	764	79%	
22:00 - 23:00	572	59%	
23:00 - 24:00	405	42%	
TOTAL	16671		

Illinois DOT

016 6492 Weekly Volume Report - Mon 05/14/2018 - Sun 05/20/2018

Location ID:	016 6492	**Type:**	LINK
Located On:	Elston Ave		
From Road:	North Ave	**To Road:**	Milwaukee Ave
Direction	2-WAY		
Community:	CHICAGO	**Period:**	Mon 05/14/2018 - Sun 05/20/2018
AADT:	14400		

Start Time	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Avg	
12:00 AM		45						45	3.7%
1:00 AM		34						34	2.8%
2:00 AM		36						36	3.0%
3:00 AM		57						57	4.7%
4:00 AM		77						77	6.3%
5:00 AM		195						195	16.0%
6:00 AM		530						530	43.5%
7:00 AM		1156						1156	95.0%
8:00 AM		1217						1217	100.0%
9:00 AM	965							965	79.3%
10:00 AM	778							778	63.9%
11:00 AM	753							753	61.9%
12:00 PM	899							899	60.5%
1:00 PM	882							882	59.4%
2:00 PM	1007							1007	67.8%
3:00 PM	1152							1152	77.5%
4:00 PM	1366							1366	91.9%
5:00 PM	1486							1486	100.0%
6:00 PM	1073							1073	72.2%
7:00 PM	1060							1060	71.3%
8:00 PM	877							877	59.0%
9:00 PM	555							555	37.3%
10:00 PM	170							170	11.4%
11:00 PM	99							99	6.7%
Total	**13122**	**3347**	**0**	**0**	**0**	**0**	**0**		
24HrTotal	16469							16469	
AM Pk Hr									
AM Peak								0	
PM Pk Hr									
PM Peak								0	
% Peak Hr									
% Peak Hr	9.02%							9.02%	

APPENDIX D

SAMPLE FULFILMENT CENTER TRAFFIC MANAGEMENT PLAN

ANONYMIZED FULFILMENT CENTER WITH LOCAL DELIVERY SITE DEVELOPED BY LPC - 2020 OPERATION PLAN (CONFIDENTIALITY REQUIRED)

Building Size	750,000

Time	Autos			Trucks			Local Delivery			Total		
	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total
0:00	0	0	0	2	2	4	0	0	0	2	2	4
1:00	115	0	115	1	2	3	0	0	0	116	2	118
2:00	0	0	0	2	1	3	0	0	0	2	1	3
3:00	0	0	0	1	2	3	0	0	0	1	2	3
4:00	0	0	0	2	1	3	0	0	0	2	1	3
5:00	37	0	37	1	2	3	0	0	0	38	2	40
6:00	0	0	0	2	1	3	0	0	0	2	1	3
7:00	0	0	0	1	2	3	0	0	0	1	2	3
8:00	0	0	0	1	1	2	0	0	0	1	1	2
9:00	140	0	140	2	1	3	0	0	0	142	1	143
10:00	125	0	125	1	1	2	0	252	252	126	253	379
11:00	6	0	6	0	1	1	0	13	13	6	14	20
12:00	0	115	115	0	0	0	0	0	0	0	115	115
13:00	67	0	67	0	0	0	0	0	0	67	0	67
14:00	0	37	37	0	0	0	0	0	0	0	37	37
15:00	0	0	0	0	0	0	0	0	0	0	0	0
16:00	70	35	105	1	0	1	0	0	0	71	35	106
17:00	0	35	35	0	1	1	0	0	0	0	36	36
18:00	0	30	30	1	1	2	0	0	0	1	31	32
19:00	0	63	63	2	1	3	126	0	126	128	64	192
20:00	0	176	176	1	1	2	138	0	138	139	177	316
21:00	0	26	26	1	2	3	1	0	1	2	28	30
22:00	0	43	43	2	1	3	0	0	0	2	44	46
23:00	0	0	0	1	1	2	0	0	0	1	1	2
Full Day	**560**	**560**	**1,120**	**25**	**25**	**50**	**265**	**265**	**530**	**850**	**850**	**1,700**
Distribution and Rate	**0.5**	**0.5**	**1.49**	**0.5**	**0.5**	**0.07**	**0.5**	**0.5**	**0.71**	**0.5**	**0.5**	**2.27**

Trip Type	AM										PM									
	Peak Hour of Adj. Roadway					Peak Hour of Generator					Peak Hour of Adj. Roadway					Peak Hour of Generator				
	8:00-9:00 am					10:00-11:00 am					4:00-5:00 pm					8:00-9:00 pm				
Vehicle Type	In	Out	Total	% of Daily	Rate	In	Out	Total	% of Daily	Rate	In	Out	Total	% of Daily	Rate	In	Out	Total	% of Daily	Rate
Passenger Car	0	0	0	0%	0.00	125	0	125	11%	0.17	70	35	105	9%	0.14	0	176	176	16%	0.23
Truck	1	1	2	4%	0.00	1	1	2	4%	0.00	1	0	1	2%	0.00	1	1	2	4%	0.00
Local Delivery	0	0	0	0%	0.00	0	252	252	48%	0.34	0	0	0	0%	0.00	138	0	138	26%	0.18
Total	1	1	2	0%	0.00	126	253	379	22%	0.51	71	35	106	6%	0.14	139	177	316	19%	0.42
Distribution and Rate	50%	50%	-	-	-	33%	67%	-	-	-	67%	33%	-	-	-	44%	56%	-	-	-

APPENDIX E

HOURLY TRIP DISTRIBUTION BY VEHICLE TYPE

TRIPS PER HOUR BY VEHICLE TYPE

Building Size	594,296

Time	Personal Car	Heavy Vehicle	Local Delivery	*Total*
0:00	1	1	0	***2***
1:00	3	1	0	***4***
2:00	3	1	0	***4***
3:00	5	1	0	***6***
4:00	10	2	0	***12***
5:00	22	5	0	***27***
6:00	44	11	0	***55***
7:00	51	13	0	***64***
8:00	78	19	10	***107***
9:00	45	12	105	***162***
10:00	76	19	105	***200***
11:00	53	13	0	***66***
12:00	60	15	0	***75***
13:00	46	12	0	***58***
14:00	49	12	0	***61***
15:00	70	18	0	***88***
16:00	80	19	0	***99***
17:00	46	12	0	***58***
18:00	19	5	0	***24***
19:00	6	2	105	***113***
20:00	5	0	105	***110***
21:00	5	1	0	***6***
22:00	5	1	0	***6***
23:00	6	2	0	***8***
Full Day	***788***	***197***	***430***	***1,415***

APPENDIX F

TRUCK AUTOTURN MOVEMENTS

W DIVISION ST

40 Delivery Van
V3 Custom

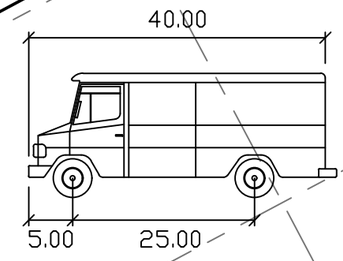
40 Delivery Van
V3 Custom

40 Delivery Van
V3 Custom

40 Delivery Van
V3 Custom

40 Delivery Van
V3 Custom

40 Delivery Van
V3 Custom



40 Delivery Van

	feet
Width	: 8.00
Track	: 8.00
Lock to Lock Time	: 6.0
Steering Angle	: 40.0

7325 Janes Avenue
Woodridge, IL 60517
630.724.9200 phone
www.v3co.com

DIVISION AND ELSTON

CHICAGO ILLINOIS

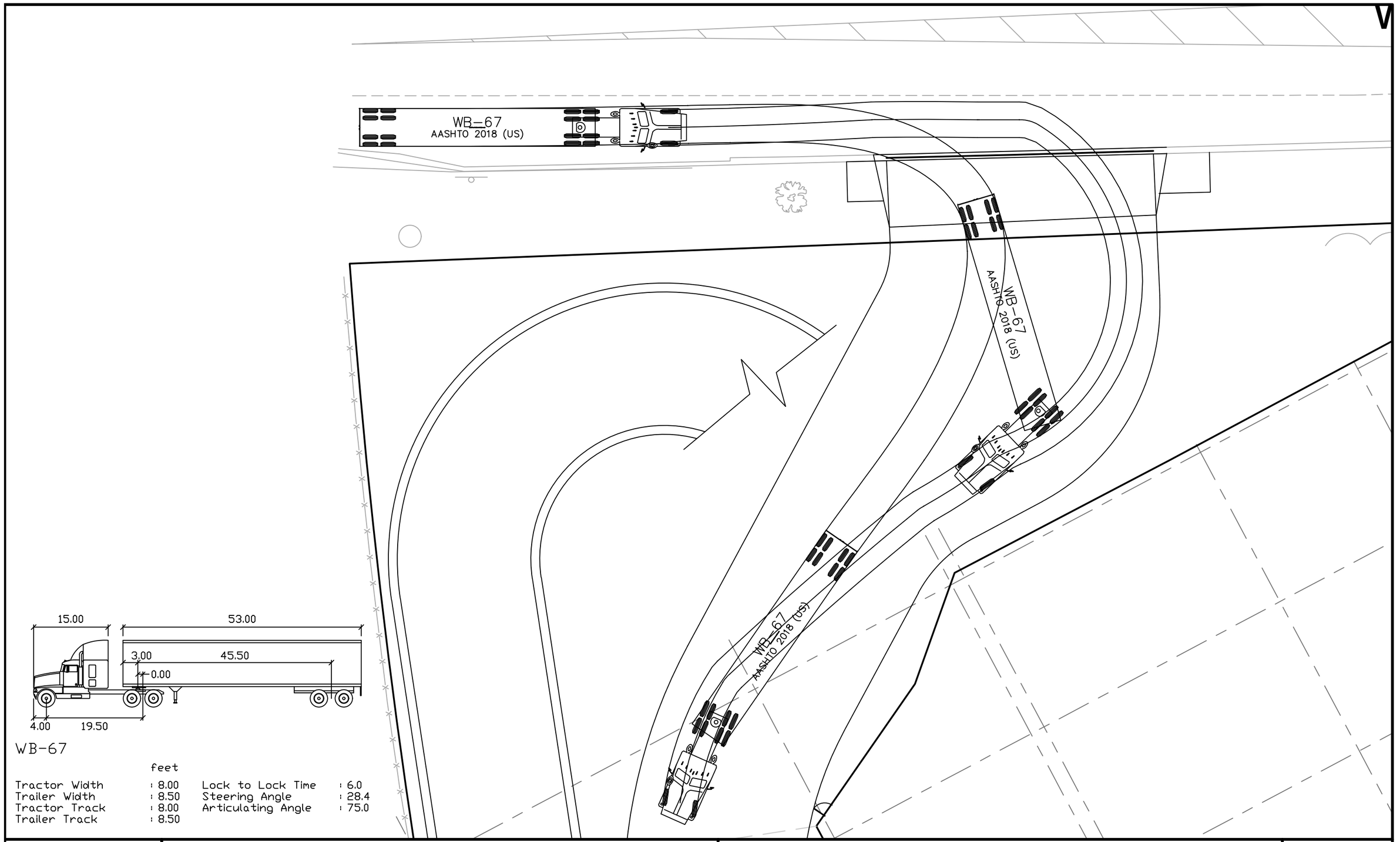
DELIVERY VAN EXHIBIT

DATE: 05-25-21

N

0 20 40

SCALE: 1"=40'



WB-67

	feet		
Tractor Width	: 8.00	Lock to Lock Time	: 6.0
Trailer Width	: 8.50	Steering Angle	: 28.4
Tractor Track	: 8.00	Articulating Angle	: 75.0
Trailer Track	: 8.50		

7325 Janes Avenue
Woodridge, IL 60517
630.724.9200 phone
www.v3co.com

DIVISION AND ELSTON

CHICAGO *ILLINOIS*

WB 67 DELIVERY TRUCK EXHIBIT

DATE: 05-25-21

0 20 40

SCALE: 1"=40'

N:\2020\20779\Drawings\ACAD\LD\S03\Misc Drawings\Delivery Truck Exhibit.dwg 05/25/21

WB-67

feet

Tractor Width	: 8.00	Lock to Lock Time	: 6.0
Trailer Width	: 8.50	Steering Angle	: 28.4
Tractor Track	: 8.00	Articulating Angle	: 75.0
Trailer Track	: 8.50		

7325 Janes Avenue
Woodridge, IL 60517
630.724.9200 phone
www.v3co.com

DIVISION & ELSTON

CHICAGO IL

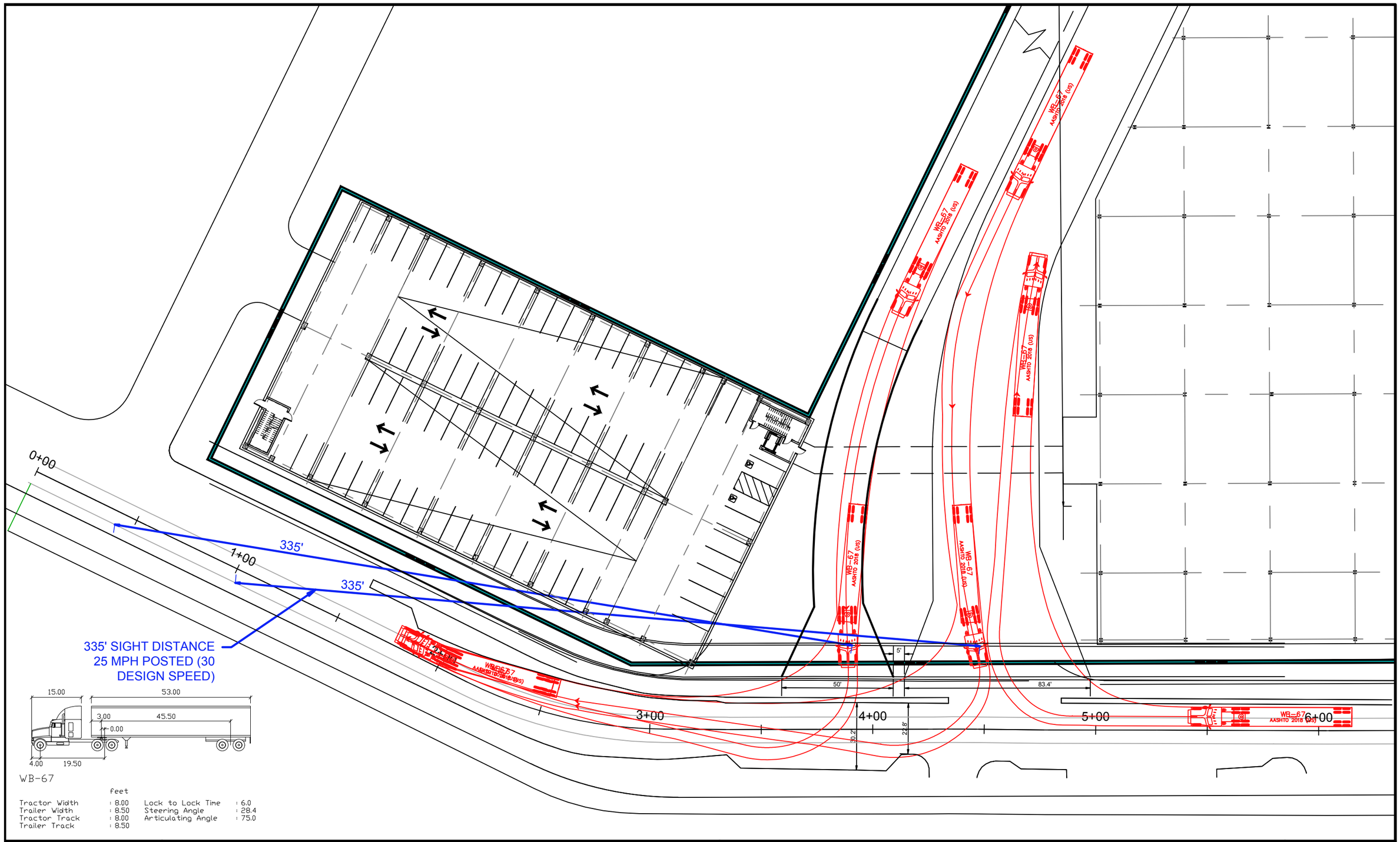
ELSTON TRUCK TURN LEFT TURN

DATE: 03-31-21

0 20 40

SCALE: 1"=40'

N:\2020\20779\Drawings\ACAD\LD\S03\Misc Drawings\Truck Turn MDC.dwg 03/30/21



WB-67

	feet		
Tractor Width	8.00	Lock to Lock Time	6.0
Trailer Width	8.50	Steering Angle	28.4
Tractor Track	8.00	Articulating Angle	75.0
Trailer Track	8.50		

7325 Janes Avenue
Woodridge, IL 60517
630.724.9200 phone
www.v3co.com

DIVISION & ELSTON

CHICAGO IL

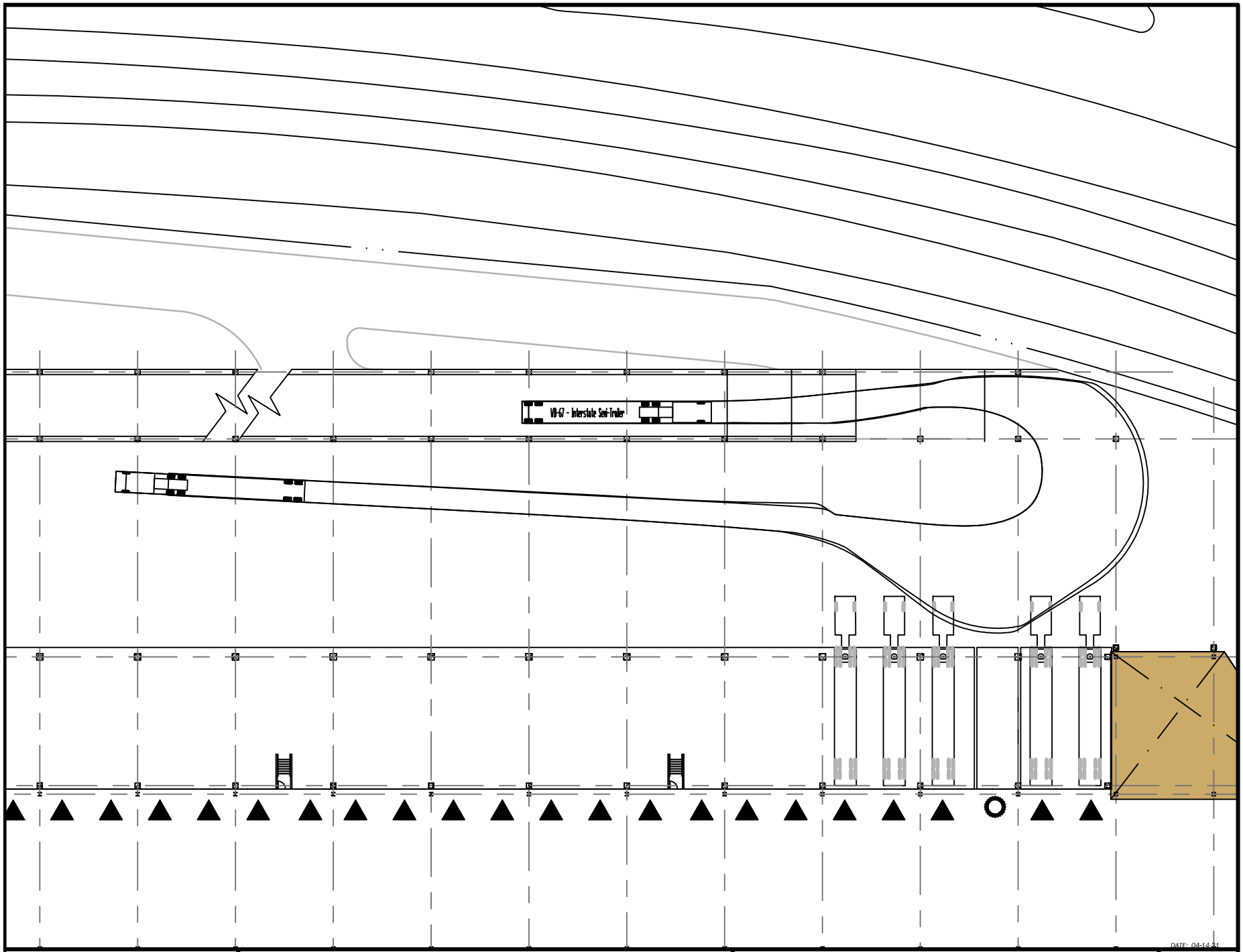
ELSTON TRUCK TURN RIGHT TURN

DATE: 03-31-21

0 20 40

SCALE: 1"=40'

N:\2020\20779\Drawings\ACAD\LD\S03\Misc Drawings\Truck Turn MDC.dwg 03/30/21



7325 Janes Avenue
Woodridge, IL 60517
630.724.9200 phone
630.724.9202 fax
www.v3co.com

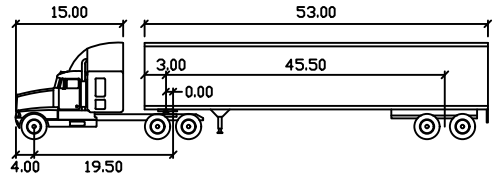
DIVISION & ELSTON

INTERNAL TRUCK TURNS

DATE: 04-14-21

SCALE: 1"=50'

N:\2020\20779\Drawings\ACAD\LD\S03\Misc Drawings\Truck Turn MDC.dwg 4/14/2021



WB-67

	feet		
Tractor Width	8.00	Lock to Lock Time	6.0
Trailer Width	8.50	Steering Angle	28.4
Tractor Track	8.00	Articulating Angle	75.0
Trailer Track	8.50		

7325 Janes Avenue
Woodridge, IL 60517
630.724.9200 phone
630.724.9202 fax
www.v3co.com

DIVISION & ELSTON

INTERNAL TRUCK TURNS

DATE: 04-14-21

SCALE: 1"=40'

N:\2020\20779\Drawings\ACAD\LD\S03\Misc Drawings\Truck Turn MDC.dwg 4/14/2021

APPENDIX G

INTERSECTION SIGHT DISTANCE EXHIBITS

WB-67

feet

Tractor Width	: 8.00	Lock to Lock Time	: 6.0
Trailer Width	: 8.50	Steering Angle	: 28.4
Tractor Track	: 8.00	Articulating Angle	: 75.0
Trailer Track	: 8.50		

7325 Janes Avenue
Woodridge, IL 60517
630.724.9200 phone
www.v3co.com

DIVISION & ELSTON

CHICAGO IL

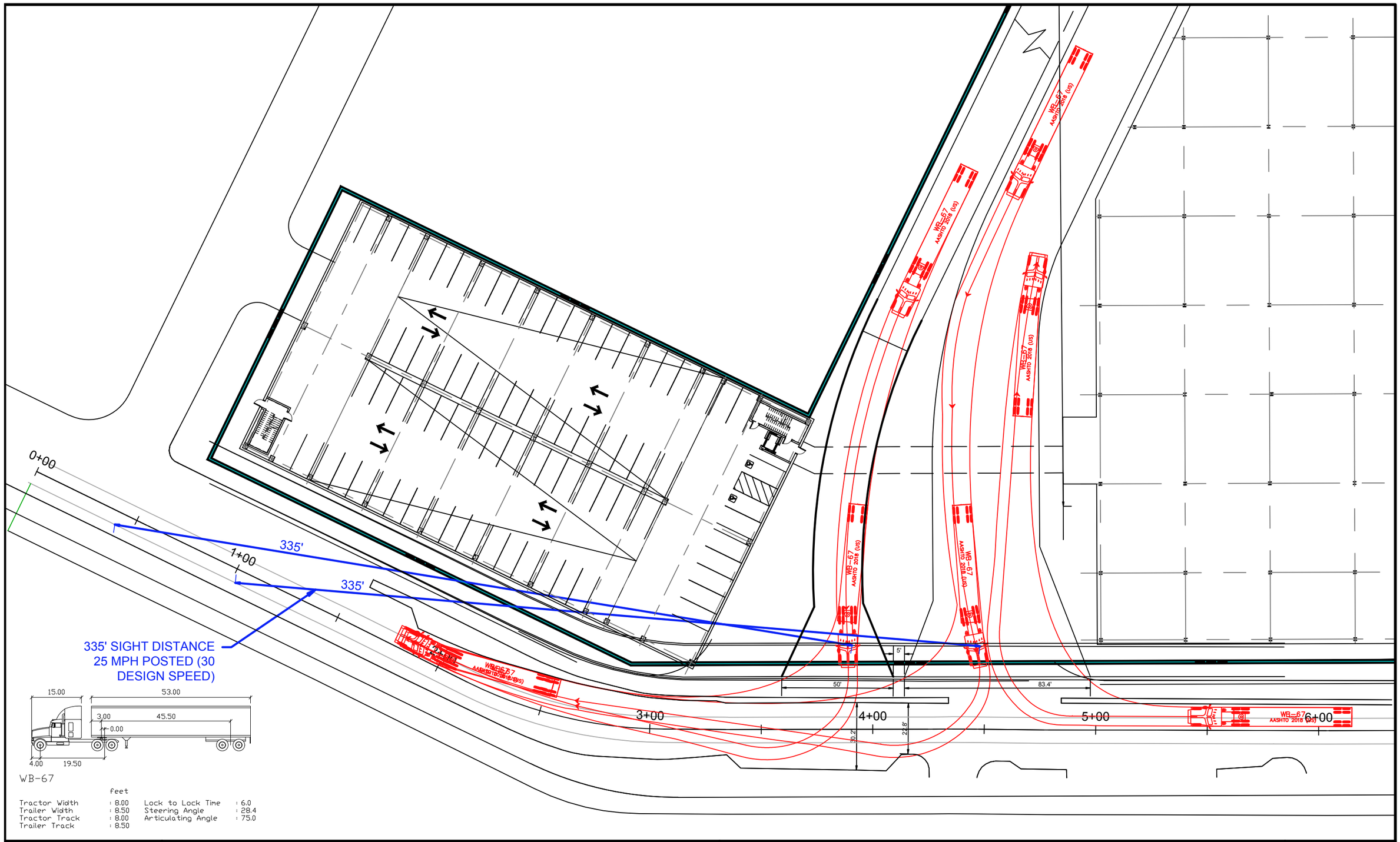
ELSTON TRUCK TURN LEFT TURN

DATE: 03-31-21

0 20 40

SCALE: 1"=40'

N:\2020\20779\Drawings\ACAD\LD\S03\Misc Drawings\Truck Turn MDC.dwg 03/30/21



WB-67

	feet		
Tractor Width	8.00	Lock to Lock Time	6.0
Trailer Width	8.50	Steering Angle	28.4
Tractor Track	8.00	Articulating Angle	75.0
Trailer Track	8.50		

7325 Janes Avenue
Woodridge, IL 60517
630.724.9200 phone
www.v3co.com

DIVISION & ELSTON

CHICAGO IL

ELSTON TRUCK TURN RIGHT TURN

DATE: 03-31-21

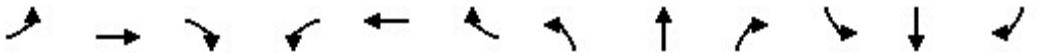
0 20 40

SCALE: 1"=40'

N:\2020\20779\Drawings\ACAD\LD\S03\Misc Drawings\Truck Turn MDC.dwg 03/30/21

APPENDIX H

CAPACITY ANALYSIS
2021 EXISTING



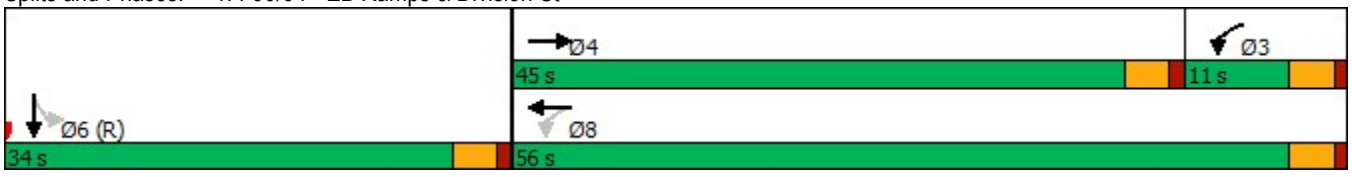
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	772	559	219	625	0	0	0	0	229	10	107
Future Volume (vph)	0	772	559	219	625	0	0	0	0	229	10	107
Ideal Flow (vphpl)	1900	1900	1900	1900	2000	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	11	12	10	11	12	12	12	12	11	11	12
Storage Length (ft)	0		0	0		0	0		0	95		0
Storage Lanes	0		0	1		0	0		0	1		0
Taper Length (ft)	25			25			25			150		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	0.95	0.95	1.00
Ped Bike Factor		0.99		1.00								
Frt		0.937									0.904	
Flt Protected				0.950						0.950	0.985	
Satd. Flow (prot)	0	3120	0	1478	3465	0	0	0	0	1535	1498	0
Flt Permitted				0.089						0.950	0.985	
Satd. Flow (perm)	0	3120	0	138	3465	0	0	0	0	1535	1498	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		267									106	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1630			280			940			875	
Travel Time (s)		37.0			6.4			21.4			19.9	
Confl. Peds. (#/hr)	15		5	5		15						
Confl. Bikes (#/hr)			10									
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	0%	5%	1%	14%	6%	0%	0%	0%	0%	8%	0%	2%
Adj. Flow (vph)	0	804	582	228	651	0	0	0	0	239	10	111
Shared Lane Traffic (%)										22%		
Lane Group Flow (vph)	0	1386	0	228	651	0	0	0	0	186	174	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Right	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		10			10			11			11	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.04	1.00	1.09	0.98	1.00	1.00	1.00	1.00	1.04	1.04	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type		NA		pm+pt	NA					Perm	NA	
Protected Phases		4		3	8						6	
Permitted Phases				8						6		
Minimum Split (s)		45.0		11.0	56.0					34.0	34.0	
Total Split (s)		45.0		11.0	56.0					34.0	34.0	
Total Split (%)		50.0%		12.2%	62.2%					37.8%	37.8%	
Maximum Green (s)		41.0		7.0	52.0					30.0	30.0	
Yellow Time (s)		3.0		3.0	3.0					3.0	3.0	
All-Red Time (s)		1.0		1.0	1.0					1.0	1.0	
Lost Time Adjust (s)		0.0		0.0	0.0					0.0	0.0	
Total Lost Time (s)		4.0		4.0	4.0					4.0	4.0	
Lead/Lag		Lead		Lag								
Lead-Lag Optimize?		Yes		Yes								
Walk Time (s)		27.0			27.0							

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Flash Dont Walk (s)		14.0			14.0							
Pedestrian Calls (#/hr)		0			0							
Act Effct Green (s)		41.0		52.0	52.0					30.0	30.0	
Actuated g/C Ratio		0.46		0.58	0.58					0.33	0.33	
v/c Ratio		0.89		1.25	0.33					0.36	0.31	
Control Delay		26.3		172.9	8.4					25.3	11.0	
Queue Delay		0.0		0.0	0.5					0.0	0.0	
Total Delay		26.3		172.9	8.9					25.3	11.0	
LOS		C		F	A					C	B	
Approach Delay		26.3			51.4						18.4	
Approach LOS		C			D						B	
Queue Length 50th (ft)		306		~127	79					83	28	
Queue Length 95th (ft)		#436		#275	100					144	78	
Internal Link Dist (ft)		1550			200			860			795	
Turn Bay Length (ft)										95		
Base Capacity (vph)		1566		183	2002					511	570	
Starvation Cap Reductn		0		0	835					0	0	
Spillback Cap Reductn		0		0	0					0	0	
Storage Cap Reductn		0		0	0					0	0	
Reduced v/c Ratio		0.89		1.25	0.56					0.36	0.31	

Intersection Summary

Area Type: Other
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 0 (0%), Referenced to phase 2: and 6:SBTL, Start of Green
Natural Cycle: 90
Control Type: Pretimed
Maximum v/c Ratio: 1.25
Intersection Signal Delay: 33.6 Intersection LOS: C
Intersection Capacity Utilization 74.9% ICU Level of Service D
Analysis Period (min) 15
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 1: I-90/94 - EB Ramps & Division St



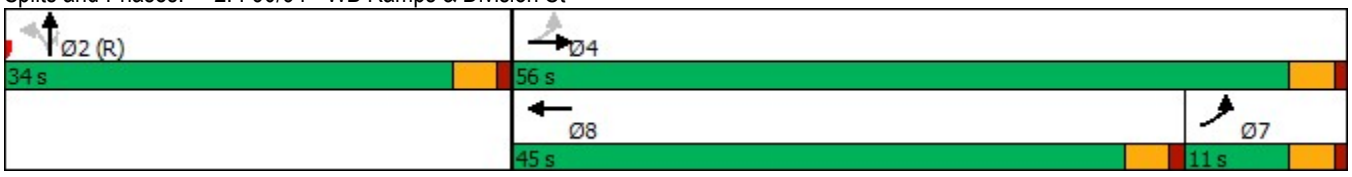
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	264	737	0	0	554	249	290	36	463	0	0	0
Future Volume (vph)	264	737	0	0	554	249	290	36	463	0	0	0
Ideal Flow (vphpl)	1900	2000	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	11	12	12	11	12	11	11	11	12	12	12
Storage Length (ft)	0		0	0		0	75		75	0		0
Storage Lanes	1		0	0		0	1		1	0		0
Taper Length (ft)	25			25			40			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00
Ped Bike Factor	1.00				0.99							
Frt					0.953			0.871	0.850			
Flt Protected	0.950						0.950					
Satd. Flow (prot)	1668	3401	0	0	2999	0	1728	1434	1399	0	0	0
Flt Permitted	0.244						0.950					
Satd. Flow (perm)	427	3401	0	0	2999	0	1728	1434	1399	0	0	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					105			182	182			
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		280			321			913			753	
Travel Time (s)		6.4			7.3			20.8			17.1	
Confl. Peds. (#/hr)	10		7	7		10						
Confl. Bikes (#/hr)			7									
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	1%	8%	0%	0%	12%	5%	1%	6%	6%	0%	0%	0%
Adj. Flow (vph)	278	776	0	0	583	262	305	38	487	0	0	0
Shared Lane Traffic (%)									47%			
Lane Group Flow (vph)	278	776	0	0	845	0	305	267	258	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Right	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		10			10			11			11	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.09	0.98	1.00	1.00	1.04	1.00	1.04	1.04	1.04	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	pm+pt	NA			NA		Perm	NA	Perm			
Protected Phases	7	4			8			2				
Permitted Phases	4						2		2			
Minimum Split (s)	11.0	56.0			45.0		34.0	34.0	34.0			
Total Split (s)	11.0	56.0			45.0		34.0	34.0	34.0			
Total Split (%)	12.2%	62.2%			50.0%		37.8%	37.8%	37.8%			
Maximum Green (s)	7.0	52.0			41.0		30.0	30.0	30.0			
Yellow Time (s)	3.0	3.0			3.0		3.0	3.0	3.0			
All-Red Time (s)	1.0	1.0			1.0		1.0	1.0	1.0			
Lost Time Adjust (s)	0.0	0.0			0.0		0.0	0.0	0.0			
Total Lost Time (s)	4.0	4.0			4.0		4.0	4.0	4.0			
Lead/Lag	Lag				Lead							
Lead-Lag Optimize?	Yes				Yes							
Walk Time (s)		27.0			27.0							

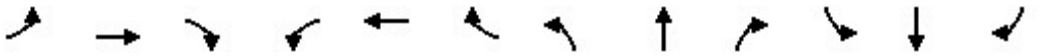
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Flash Dont Walk (s)		14.0			14.0							
Pedestrian Calls (#/hr)		4			0							
Act Effct Green (s)	52.0	52.0			41.0		30.0	30.0	30.0			
Actuated g/C Ratio	0.58	0.58			0.46		0.33	0.33	0.33			
v/c Ratio	0.81	0.39			0.59		0.53	0.45	0.44			
Control Delay	30.2	6.6			14.8		28.4	10.5	10.1			
Queue Delay	0.0	0.9			0.0		0.0	0.0	0.0			
Total Delay	30.2	7.5			14.8		28.4	10.5	10.1			
LOS	C	A			B		C	B	B			
Approach Delay		13.5			14.8			17.0				
Approach LOS		B			B			B				
Queue Length 50th (ft)	46	68			100		139	35	31			
Queue Length 95th (ft)	m66	m80			m68		220	104	97			
Internal Link Dist (ft)		200			241			833			673	
Turn Bay Length (ft)							75		75			
Base Capacity (vph)	343	1965			1423		576	599	587			
Starvation Cap Reductn	0	851			0		0	0	0			
Spillback Cap Reductn	0	185			0		0	9	9			
Storage Cap Reductn	0	0			0		0	0	0			
Reduced v/c Ratio	0.81	0.70			0.59		0.53	0.45	0.45			

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:, Start of Green			
Natural Cycle: 90			
Control Type: Pretimed			
Maximum v/c Ratio: 0.81			
Intersection Signal Delay: 15.0		Intersection LOS: B	
Intersection Capacity Utilization 74.9%		ICU Level of Service D	
Analysis Period (min) 15			

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

Splits and Phases: 2: I-90/94 - WB Ramps & Division St





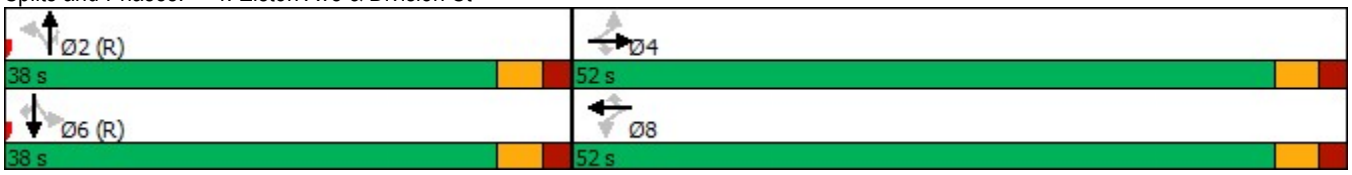
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	132	956	112	18	648	51	45	161	95	193	547	110
Future Volume (vph)	132	956	112	18	648	51	45	161	95	193	547	110
Ideal Flow (vphpl)	1900	2000	1900	1900	1900	1900	1900	2000	1900	1900	2000	1900
Lane Width (ft)	11	11	11	12	11	11	10	10	10	11	11	12
Storage Length (ft)	130		0	0		55	100		60	195		160
Storage Lanes	1		1	0		1	1		1	1		1
Taper Length (ft)	70			25			85			85		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00		0.97		1.00	0.96	1.00		0.99	1.00		0.96
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950				0.999		0.950			0.950		
Satd. Flow (prot)	1491	1824	1516	0	1698	1346	1604	1778	1478	1694	1895	1369
Flt Permitted	0.203				0.477		0.145			0.630		
Satd. Flow (perm)	317	1824	1469	0	811	1298	245	1778	1456	1122	1895	1319
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			108			24			80			94
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		315			780			752			1021	
Travel Time (s)		7.2			17.7			17.1			23.2	
Confl. Peds. (#/hr)	16		4	4		16	6		2	2		6
Confl. Bikes (#/hr)			10			1			2			32
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	17%	6%	3%	9%	8%	16%	5%	5%	2%	3%	2%	18%
Adj. Flow (vph)	140	1017	119	19	689	54	48	171	101	205	582	117
Shared Lane Traffic (%)												
Lane Group Flow (vph)	140	1017	119	0	708	54	48	171	101	205	582	117
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		11			11			11			11	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.04	0.98	1.04	1.00	1.04	1.04	1.09	1.02	1.09	1.04	0.98	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2		2	6		6
Minimum Split (s)	52.0	52.0	52.0	52.0	52.0	52.0	38.0	38.0	38.0	38.0	38.0	38.0
Total Split (s)	52.0	52.0	52.0	52.0	52.0	52.0	38.0	38.0	38.0	38.0	38.0	38.0
Total Split (%)	57.8%	57.8%	57.8%	57.8%	57.8%	57.8%	42.2%	42.2%	42.2%	42.2%	42.2%	42.2%
Maximum Green (s)	47.0	47.0	47.0	47.0	47.0	47.0	33.0	33.0	33.0	33.0	33.0	33.0
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)	22.0	22.0	22.0	22.0	22.0	22.0	5.0	5.0	5.0	5.0	5.0	5.0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Flash Dont Walk (s)	25.0	25.0	25.0	25.0	25.0	25.0	28.0	28.0	28.0	28.0	28.0	28.0
Pedestrian Calls (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Act Effct Green (s)	47.0	47.0	47.0		47.0	47.0	33.0	33.0	33.0	33.0	33.0	33.0
Actuated g/C Ratio	0.52	0.52	0.52		0.52	0.52	0.37	0.37	0.37	0.37	0.37	0.37
v/c Ratio	0.85	1.07	0.15		1.67	0.08	0.54	0.26	0.17	0.50	0.84	0.22
Control Delay	57.8	67.5	3.2		334.5	5.7	45.8	19.5	5.9	27.3	38.9	7.3
Queue Delay	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	57.8	67.5	3.2		334.5	5.7	45.8	19.5	5.9	27.3	38.9	7.3
LOS	E	E	A		F	A	D	B	A	C	D	A
Approach Delay		60.5			311.2			19.1			32.2	
Approach LOS		E			F			B			C	
Queue Length 50th (ft)	39	~639	1		~603	4	18	62	5	89	298	8
Queue Length 95th (ft)	#185	#884	20		#822	17	#78	102	33	158	#481	44
Internal Link Dist (ft)		235			700			672			941	
Turn Bay Length (ft)	130					55	100		60	195		160
Base Capacity (vph)	165	952	818		423	689	89	651	584	411	694	543
Starvation Cap Reductn	0	0	0		0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0		0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0		0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.85	1.07	0.15		1.67	0.08	0.54	0.26	0.17	0.50	0.84	0.22

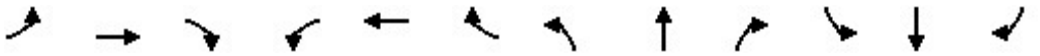
Intersection Summary

Area Type: Other
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 82 (91%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 100
Control Type: Pretimed
Maximum v/c Ratio: 1.67
Intersection Signal Delay: 107.2 Intersection LOS: F
Intersection Capacity Utilization 141.8% ICU Level of Service H
Analysis Period (min) 15
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 4: Elston Ave & Division St



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	107	944	193	15	656	10	41	5	5	15	5	20
Future Volume (vph)	107	944	193	15	656	10	41	5	5	15	5	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	11	12	12	11	12	12	9	9	12	10	10
Storage Length (ft)	0		0	0		0	0		10	0		65
Storage Lanes	0		0	0		0	0		1	0		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.99			1.00			1.00	0.98		1.00	0.97
Frt		0.977			0.998				0.850			0.850
Flt Protected		0.996			0.999			0.957			0.963	
Satd. Flow (prot)	0	3201	0	0	3196	0	0	1489	1093	0	1160	1383
Flt Permitted		0.793			0.914			0.741			0.809	
Satd. Flow (perm)	0	2548	0	0	2924	0	0	1148	1076	0	972	1348
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		46			3				12			22
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		780			2016			791			859	
Travel Time (s)		17.7			45.8			18.0			19.5	
Confl. Peds. (#/hr)	11		5	5		11	3		3	3		3
Confl. Bikes (#/hr)			13									
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
Heavy Vehicles (%)	1%	7%	1%	7%	9%	0%	11%	0%	33%	41%	67%	9%
Adj. Flow (vph)	116	1026	210	16	713	11	45	5	5	16	5	22
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1352	0	0	740	0	0	50	5	0	21	22
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.04	1.00	1.00	1.04	1.00	1.00	1.14	1.14	1.00	1.09	1.09
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100		20	100		20	100	20	20	100	20
Trailing Detector (ft)	0	0		0	0		0	0	0	0	0	0
Detector 1 Position(ft)	0	0		0	0		0	0	0	0	0	0
Detector 1 Size(ft)	20	6		20	6		20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	

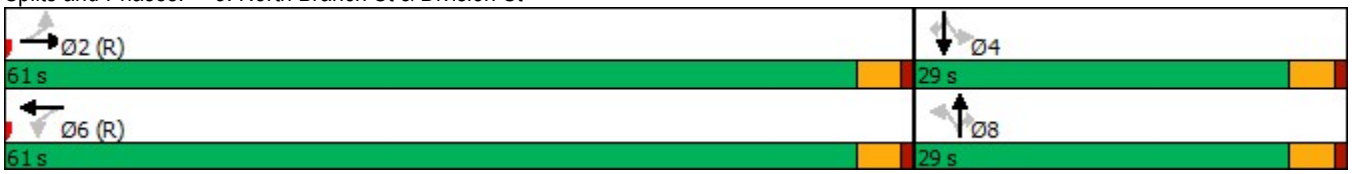


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8		8	4		4
Detector Phase	2	2		6	6		8	8	8	4	4	4
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	61.0	61.0		61.0	61.0		29.0	29.0	29.0	29.0	29.0	29.0
Total Split (s)	61.0	61.0		61.0	61.0		29.0	29.0	29.0	29.0	29.0	29.0
Total Split (%)	67.8%	67.8%		67.8%	67.8%		32.2%	32.2%	32.2%	32.2%	32.2%	32.2%
Maximum Green (s)	57.0	57.0		57.0	57.0		25.0	25.0	25.0	25.0	25.0	25.0
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)		0.0			0.0			0.0	0.0		0.0	0.0
Total Lost Time (s)		4.0			4.0			4.0	4.0		4.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		5.0	5.0	5.0	5.0	5.0	5.0
Recall Mode	C-Max	C-Max		C-Max	C-Max		Min	Min	Min	Min	Min	Min
Walk Time (s)	44.0	44.0		44.0	44.0							
Flash Dont Walk (s)	13.0	13.0		13.0	13.0							
Pedestrian Calls (#/hr)	0	0		0	0							
Act Effct Green (s)		71.0			71.0			11.0	11.0		11.0	11.0
Actuated g/C Ratio		0.79			0.79			0.12	0.12		0.12	0.12
v/c Ratio		0.67			0.32			0.36	0.04		0.18	0.12
Control Delay		4.7			3.3			42.4	9.2		37.5	15.3
Queue Delay		0.0			0.0			0.0	0.0		0.0	0.0
Total Delay		4.7			3.3			42.4	9.2		37.5	15.3
LOS		A			A			D	A		D	B
Approach Delay		4.7			3.3			39.4			26.2	
Approach LOS		A			A			D			C	
90th %ile Green (s)	67.1	67.1		67.1	67.1		14.9	14.9	14.9	14.9	14.9	14.9
90th %ile Term Code	Coord	Coord		Coord	Coord		Gap	Gap	Gap	Hold	Hold	Hold
70th %ile Green (s)	69.5	69.5		69.5	69.5		12.5	12.5	12.5	12.5	12.5	12.5
70th %ile Term Code	Coord	Coord		Coord	Coord		Gap	Gap	Gap	Hold	Hold	Hold
50th %ile Green (s)	71.1	71.1		71.1	71.1		10.9	10.9	10.9	10.9	10.9	10.9
50th %ile Term Code	Coord	Coord		Coord	Coord		Gap	Gap	Gap	Hold	Hold	Hold
30th %ile Green (s)	72.7	72.7		72.7	72.7		9.3	9.3	9.3	9.3	9.3	9.3
30th %ile Term Code	Coord	Coord		Coord	Coord		Gap	Gap	Gap	Hold	Hold	Hold
10th %ile Green (s)	74.5	74.5		74.5	74.5		7.5	7.5	7.5	7.5	7.5	7.5
10th %ile Term Code	Coord	Coord		Coord	Coord		Gap	Gap	Gap	Gap	Gap	Gap
Queue Length 50th (ft)		123			46			27	0		11	0
Queue Length 95th (ft)		m118			82			60	6		32	21
Internal Link Dist (ft)		700			1936			711			779	
Turn Bay Length (ft)									10			65
Base Capacity (vph)		2019			2306			318	307		270	390
Starvation Cap Reductn		0			0			0	0		0	0
Spillback Cap Reductn		0			0			0	0		0	0

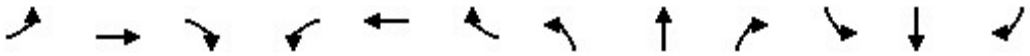
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Storage Cap Reductn		0			0			0	0		0	0
Reduced v/c Ratio		0.67			0.32			0.16	0.02		0.08	0.06

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 29 (32%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green			
Natural Cycle: 90			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.67			
Intersection Signal Delay: 5.5		Intersection LOS: A	
Intersection Capacity Utilization 114.2%		ICU Level of Service H	
Analysis Period (min) 15			
m Volume for 95th percentile queue is metered by upstream signal.			

Splits and Phases: 5: North Branch St & Division St



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	31	13	12	9	1	28	6	234	15	60	575	29
Future Volume (vph)	31	13	12	9	1	28	6	234	15	60	575	29
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	10	10	10	11	11	11	11	11	11
Storage Length (ft)	0		0	0		75	0		0	0		0
Storage Lanes	0		0	0		1	0		0	0		0
Taper Length (ft)	25			105			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00			1.00			1.00			1.00	
Frt		0.971				0.850		0.992			0.994	
Flt Protected		0.973			0.957			0.999			0.995	
Satd. Flow (prot)	0	1727	0	0	1697	1409	0	1645	0	0	1733	0
Flt Permitted		0.821			0.869			0.986			0.946	
Satd. Flow (perm)	0	1457	0	0	1538	1409	0	1624	0	0	1647	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		13				61		6			6	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		965			828			1019			288	
Travel Time (s)		21.9			18.8			23.2			6.5	
Confl. Peds. (#/hr)			1	1					3	3		
Confl. Bikes (#/hr)									1			3
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	0%	0%	0%	0%	0%	7%	17%	11%	0%	3%	5%	3%
Adj. Flow (vph)	34	14	13	10	1	31	7	260	17	67	639	32
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	61	0	0	11	31	0	284	0	0	738	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.04	1.04	1.04	1.09	1.09	1.09	1.04	1.04	1.04	1.04	1.04	1.04
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2		1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100	20	20	100		20	100	
Trailing Detector (ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Position(ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Size(ft)	20	6		20	6	20	20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	

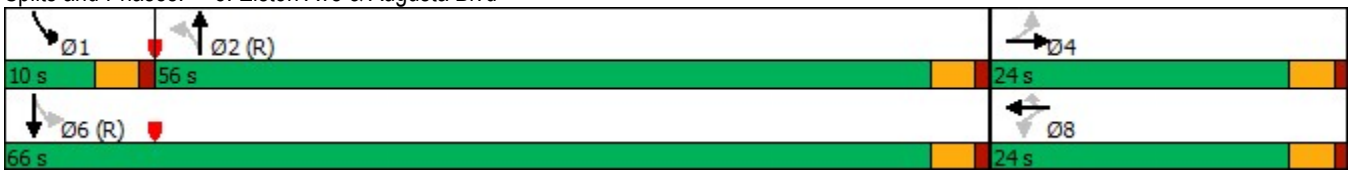


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA	Perm	Perm	NA		pm+pt	NA	
Protected Phases		4			8			2		1	6	
Permitted Phases	4			8		8	2			6		
Detector Phase	4	4		8	8	8	2	2		1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Minimum Split (s)	24.0	24.0		22.5	22.5	22.5	56.0	56.0		9.5	56.0	
Total Split (s)	24.0	24.0		24.0	24.0	24.0	56.0	56.0		10.0	66.0	
Total Split (%)	26.7%	26.7%		26.7%	26.7%	26.7%	62.2%	62.2%		11.1%	73.3%	
Maximum Green (s)	20.0	20.0		20.0	20.0	20.0	52.0	52.0		6.0	62.0	
Yellow Time (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0	0.0		0.0			0.0	
Total Lost Time (s)		4.0			4.0	4.0		4.0			4.0	
Lead/Lag							Lag	Lag		Lead		
Lead-Lag Optimize?							Yes	Yes		Yes		
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	Min	Min		Min	Min	Min	C-Max	C-Max		None	C-Max	
Walk Time (s)	7.0	7.0					38.0	38.0			38.0	
Flash Dont Walk (s)	13.0	13.0					14.0	14.0			14.0	
Pedestrian Calls (#/hr)	0	0					0	0			0	
Act Effct Green (s)		8.4			8.4	8.4		73.6			73.6	
Actuated g/C Ratio		0.09			0.09	0.09		0.82			0.82	
v/c Ratio		0.41			0.08	0.17		0.21			0.55	
Control Delay		39.6			36.7	5.0		2.4			7.3	
Queue Delay		0.0			0.0	0.0		0.0			0.0	
Total Delay		39.6			36.7	5.0		2.4			7.3	
LOS		D			D	A		A			A	
Approach Delay		39.6			13.3			2.4			7.3	
Approach LOS		D			B			A			A	
90th %ile Green (s)	11.8	11.8		11.8	11.8	11.8	70.2	70.2		0.0	70.2	
90th %ile Term Code	Gap	Gap		Hold	Hold	Hold	Coord	Coord		Skip	Coord	
70th %ile Green (s)	9.7	9.7		9.7	9.7	9.7	72.3	72.3		0.0	72.3	
70th %ile Term Code	Gap	Gap		Hold	Hold	Hold	Coord	Coord		Skip	Coord	
50th %ile Green (s)	8.2	8.2		8.2	8.2	8.2	73.8	73.8		0.0	73.8	
50th %ile Term Code	Gap	Gap		Hold	Hold	Hold	Coord	Coord		Skip	Coord	
30th %ile Green (s)	6.7	6.7		6.7	6.7	6.7	75.3	75.3		0.0	75.3	
30th %ile Term Code	Gap	Gap		Hold	Hold	Hold	Coord	Coord		Skip	Coord	
10th %ile Green (s)	5.5	5.5		5.5	5.5	5.5	76.5	76.5		0.0	76.5	
10th %ile Term Code	Gap	Gap		Gap	Gap	Gap	Coord	Coord		Skip	Coord	
Queue Length 50th (ft)		26			6	0		24			77	
Queue Length 95th (ft)		63			21	10		52			m170	
Internal Link Dist (ft)		885			748			939			208	
Turn Bay Length (ft)						75						
Base Capacity (vph)		333			341	360		1329			1348	
Starvation Cap Reductn		0			0	0		0			0	
Spillback Cap Reductn		0			0	0		0			0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Storage Cap Reductn		0			0	0		0			0	
Reduced v/c Ratio		0.18			0.03	0.09		0.21			0.55	

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green			
Natural Cycle: 90			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.55			
Intersection Signal Delay: 8.0		Intersection LOS: A	
Intersection Capacity Utilization 79.2%		ICU Level of Service D	
Analysis Period (min) 15			
m Volume for 95th percentile queue is metered by upstream signal.			

Splits and Phases: 8: Elston Ave & Augusta Blvd



Intersection	
Int Delay, s/veh	0.6

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	13	9	5	288	655	22
Future Vol, veh/h	13	9	5	288	655	22
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	89	89	89	89	89	89
Heavy Vehicles, %	62	44	0	8	3	14
Mvmt Flow	15	10	6	324	736	25

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1085	749	761	0	-	0
Stage 1	749	-	-	-	-	-
Stage 2	336	-	-	-	-	-
Critical Hdwy	7.02	6.64	4.1	-	-	-
Critical Hdwy Stg 1	6.02	-	-	-	-	-
Critical Hdwy Stg 2	6.02	-	-	-	-	-
Follow-up Hdwy	4.058	3.696	2.2	-	-	-
Pot Cap-1 Maneuver	185	351	860	-	-	-
Stage 1	375	-	-	-	-	-
Stage 2	608	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	183	351	860	-	-	-
Mov Cap-2 Maneuver	183	-	-	-	-	-
Stage 1	372	-	-	-	-	-
Stage 2	608	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	22.7	0.2	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	860	-	228	-	-
HCM Lane V/C Ratio	0.007	-	0.108	-	-
HCM Control Delay (s)	9.2	0	22.7	-	-
HCM Lane LOS	A	A	C	-	-
HCM 95th %tile Q(veh)	0	-	0.4	-	-

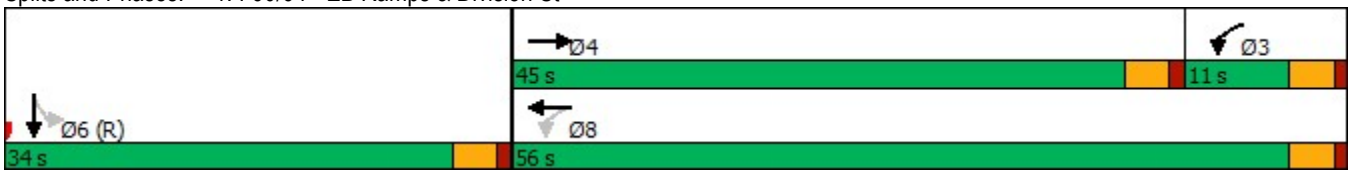
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	733	531	208	594	0	0	0	0	218	10	102
Future Volume (vph)	0	733	531	208	594	0	0	0	0	218	10	102
Ideal Flow (vphpl)	1900	1900	1900	1900	2000	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	11	12	10	11	12	12	12	12	11	11	12
Storage Length (ft)	0		0	0		0	0		0	95		0
Storage Lanes	0		0	1		0	0		0	1		0
Taper Length (ft)	25			25			25			150		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	0.95	0.95	1.00
Ped Bike Factor		0.99		1.00								
Frt		0.937									0.904	
Flt Protected				0.950						0.950	0.985	
Satd. Flow (prot)	0	3120	0	1478	3465	0	0	0	0	1535	1498	0
Flt Permitted				0.089						0.950	0.985	
Satd. Flow (perm)	0	3120	0	138	3465	0	0	0	0	1535	1498	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		267									106	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1630			280			940			875	
Travel Time (s)		37.0			6.4			21.4			19.9	
Confl. Peds. (#/hr)	15		5	5		15						
Confl. Bikes (#/hr)			10									
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	0%	5%	1%	14%	6%	0%	0%	0%	0%	8%	0%	2%
Adj. Flow (vph)	0	764	553	217	619	0	0	0	0	227	10	106
Shared Lane Traffic (%)										22%		
Lane Group Flow (vph)	0	1317	0	217	619	0	0	0	0	177	166	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Right	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		10			10			11			11	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.04	1.00	1.09	0.98	1.00	1.00	1.00	1.00	1.04	1.04	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type		NA		pm+pt	NA					Perm	NA	
Protected Phases		4		3	8						6	
Permitted Phases				8						6		
Minimum Split (s)		45.0		11.0	56.0					34.0	34.0	
Total Split (s)		45.0		11.0	56.0					34.0	34.0	
Total Split (%)		50.0%		12.2%	62.2%					37.8%	37.8%	
Maximum Green (s)		41.0		7.0	52.0					30.0	30.0	
Yellow Time (s)		3.0		3.0	3.0					3.0	3.0	
All-Red Time (s)		1.0		1.0	1.0					1.0	1.0	
Lost Time Adjust (s)		0.0		0.0	0.0					0.0	0.0	
Total Lost Time (s)		4.0		4.0	4.0					4.0	4.0	
Lead/Lag		Lead		Lag								
Lead-Lag Optimize?		Yes		Yes								
Walk Time (s)		27.0			27.0							

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Flash Dont Walk (s)		14.0			14.0							
Pedestrian Calls (#/hr)		0			0							
Act Effct Green (s)		41.0		52.0	52.0					30.0	30.0	
Actuated g/C Ratio		0.46		0.58	0.58					0.33	0.33	
v/c Ratio		0.84		1.19	0.31					0.35	0.29	
Control Delay		23.1		151.7	8.5					25.0	10.4	
Queue Delay		0.0		0.0	0.4					0.0	0.0	
Total Delay		23.1		151.7	8.9					25.0	10.4	
LOS		C		F	A					C	B	
Approach Delay		23.1			46.0						17.9	
Approach LOS		C			D						B	
Queue Length 50th (ft)		275		~113	75					78	25	
Queue Length 95th (ft)		376		#258	96					137	73	
Internal Link Dist (ft)		1550			200			860			795	
Turn Bay Length (ft)										95		
Base Capacity (vph)		1566		183	2002					511	570	
Starvation Cap Reductn		0		0	835					0	0	
Spillback Cap Reductn		0		0	0					0	0	
Storage Cap Reductn		0		0	0					0	0	
Reduced v/c Ratio		0.84		1.19	0.53					0.35	0.29	

Intersection Summary

Area Type: Other
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 0 (0%), Referenced to phase 2: and 6:SBTL, Start of Green
Natural Cycle: 90
Control Type: Pretimed
Maximum v/c Ratio: 1.19
Intersection Signal Delay: 30.1 Intersection LOS: C
Intersection Capacity Utilization 73.4% ICU Level of Service D
Analysis Period (min) 15
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 1: I-90/94 - EB Ramps & Division St



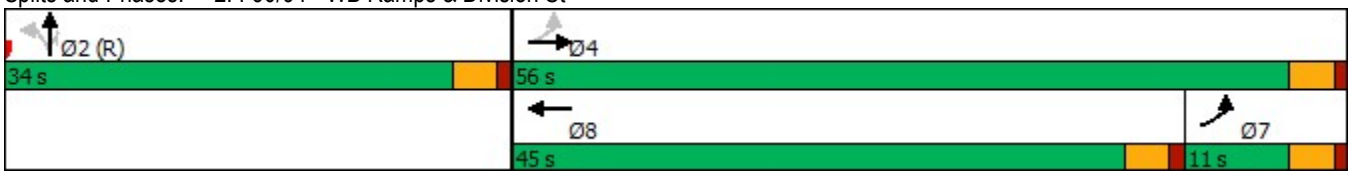
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	251	700	0	0	526	237	276	34	440	0	0	0
Future Volume (vph)	251	700	0	0	526	237	276	34	440	0	0	0
Ideal Flow (vphpl)	1900	2000	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	11	12	12	11	12	11	11	11	12	12	12
Storage Length (ft)	0		0	0		0	75		75	0		0
Storage Lanes	1		0	0		0	1		1	0		0
Taper Length (ft)	25			25			40			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00
Ped Bike Factor	1.00				0.99							
Frt					0.953			0.871	0.850			
Flt Protected	0.950						0.950					
Satd. Flow (prot)	1668	3401	0	0	2999	0	1728	1434	1399	0	0	0
Flt Permitted	0.263						0.950					
Satd. Flow (perm)	460	3401	0	0	2999	0	1728	1434	1399	0	0	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					105			199	199			
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		280			321			913			753	
Travel Time (s)		6.4			7.3			20.8			17.1	
Confl. Peds. (#/hr)	10		7	7		10						
Confl. Bikes (#/hr)			7									
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	1%	8%	0%	0%	12%	5%	1%	6%	6%	0%	0%	0%
Adj. Flow (vph)	264	737	0	0	554	249	291	36	463	0	0	0
Shared Lane Traffic (%)									47%			
Lane Group Flow (vph)	264	737	0	0	803	0	291	254	245	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Right	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		10			10			11			11	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.09	0.98	1.00	1.00	1.04	1.00	1.04	1.04	1.04	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	pm+pt	NA			NA		Perm	NA	Perm			
Protected Phases	7	4			8			2				
Permitted Phases	4						2		2			
Minimum Split (s)	11.0	56.0			45.0		34.0	34.0	34.0			
Total Split (s)	11.0	56.0			45.0		34.0	34.0	34.0			
Total Split (%)	12.2%	62.2%			50.0%		37.8%	37.8%	37.8%			
Maximum Green (s)	7.0	52.0			41.0		30.0	30.0	30.0			
Yellow Time (s)	3.0	3.0			3.0		3.0	3.0	3.0			
All-Red Time (s)	1.0	1.0			1.0		1.0	1.0	1.0			
Lost Time Adjust (s)	0.0	0.0			0.0		0.0	0.0	0.0			
Total Lost Time (s)	4.0	4.0			4.0		4.0	4.0	4.0			
Lead/Lag	Lag				Lead							
Lead-Lag Optimize?	Yes				Yes							
Walk Time (s)		27.0			27.0							

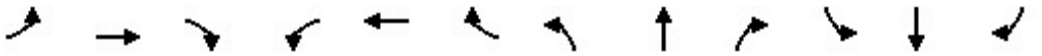
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Flash Dont Walk (s)		14.0			14.0							
Pedestrian Calls (#/hr)		4			0							
Act Effct Green (s)	52.0	52.0			41.0		30.0	30.0	30.0			
Actuated g/C Ratio	0.58	0.58			0.46		0.33	0.33	0.33			
v/c Ratio	0.74	0.38			0.56		0.51	0.42	0.41			
Control Delay	24.4	6.6			14.4		27.8	8.3	7.9			
Queue Delay	0.0	0.8			0.0		0.0	0.0	0.0			
Total Delay	24.4	7.4			14.4		27.8	8.3	7.9			
LOS	C	A			B		C	A	A			
Approach Delay		11.9			14.4			15.4				
Approach LOS		B			B			B				
Queue Length 50th (ft)	44	65			86		131	22	18			
Queue Length 95th (ft)	m55	m78			m63		209	84	77			
Internal Link Dist (ft)		200			241			833			673	
Turn Bay Length (ft)							75		75			
Base Capacity (vph)	359	1965			1423		576	610	599			
Starvation Cap Reductn	0	851			0		0	0	0			
Spillback Cap Reductn	0	190			0		0	11	11			
Storage Cap Reductn	0	0			0		0	0	0			
Reduced v/c Ratio	0.74	0.66			0.56		0.51	0.42	0.42			

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:, Start of Green			
Natural Cycle: 90			
Control Type: Pretimed			
Maximum v/c Ratio: 0.74			
Intersection Signal Delay: 13.7		Intersection LOS: B	
Intersection Capacity Utilization 73.4%		ICU Level of Service D	
Analysis Period (min) 15			

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

Splits and Phases: 2: I-90/94 - WB Ramps & Division St





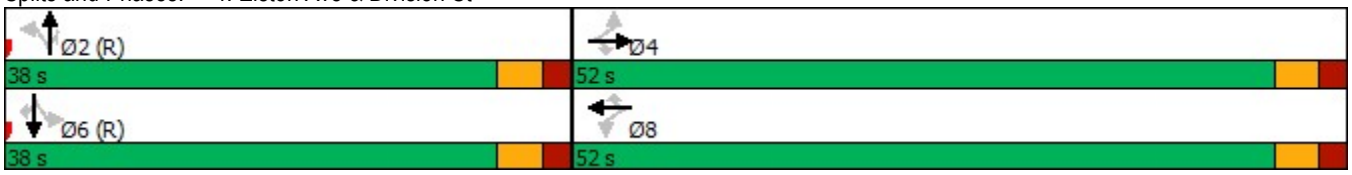
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	92	970	78	13	654	36	32	112	67	135	383	77
Future Volume (vph)	92	970	78	13	654	36	32	112	67	135	383	77
Ideal Flow (vphpl)	1900	2000	1900	1900	1900	1900	1900	2000	1900	1900	2000	1900
Lane Width (ft)	11	11	11	12	11	11	10	10	10	11	11	12
Storage Length (ft)	130		0	0		55	100		60	195		160
Storage Lanes	1		1	0		1	1		1	1		1
Taper Length (ft)	70			25			85			85		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00		0.97		1.00	0.96	1.00		0.99	1.00		0.96
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950				0.999		0.950			0.950		
Satd. Flow (prot)	1491	1824	1516	0	1699	1346	1604	1778	1478	1694	1895	1369
Flt Permitted	0.202				0.535		0.338			0.681		
Satd. Flow (perm)	316	1824	1469	0	910	1298	570	1778	1456	1213	1895	1319
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			74			24			71			82
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		315			780			752			1021	
Travel Time (s)		7.2			17.7			17.1			23.2	
Confl. Peds. (#/hr)	16		4	4		16	6		2	2		6
Confl. Bikes (#/hr)			10			1			2			32
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	17%	6%	3%	9%	8%	16%	5%	5%	2%	3%	2%	18%
Adj. Flow (vph)	98	1032	83	14	696	38	34	119	71	144	407	82
Shared Lane Traffic (%)												
Lane Group Flow (vph)	98	1032	83	0	710	38	34	119	71	144	407	82
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		11			11			11			11	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.04	0.98	1.04	1.00	1.04	1.04	1.09	1.02	1.09	1.04	0.98	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2		2	6		6
Minimum Split (s)	52.0	52.0	52.0	52.0	52.0	52.0	38.0	38.0	38.0	38.0	38.0	38.0
Total Split (s)	52.0	52.0	52.0	52.0	52.0	52.0	38.0	38.0	38.0	38.0	38.0	38.0
Total Split (%)	57.8%	57.8%	57.8%	57.8%	57.8%	57.8%	42.2%	42.2%	42.2%	42.2%	42.2%	42.2%
Maximum Green (s)	47.0	47.0	47.0	47.0	47.0	47.0	33.0	33.0	33.0	33.0	33.0	33.0
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)	22.0	22.0	22.0	22.0	22.0	22.0	5.0	5.0	5.0	5.0	5.0	5.0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Flash Dont Walk (s)	25.0	25.0	25.0	25.0	25.0	25.0	28.0	28.0	28.0	28.0	28.0	28.0
Pedestrian Calls (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Act Effct Green (s)	47.0	47.0	47.0		47.0	47.0	33.0	33.0	33.0	33.0	33.0	33.0
Actuated g/C Ratio	0.52	0.52	0.52		0.52	0.52	0.37	0.37	0.37	0.37	0.37	0.37
v/c Ratio	0.59	1.08	0.10		1.49	0.06	0.16	0.18	0.12	0.32	0.59	0.15
Control Delay	29.6	72.6	3.6		255.3	4.7	20.1	18.7	4.4	23.1	27.2	5.4
Queue Delay	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	29.6	72.6	3.6		255.3	4.7	20.1	18.7	4.4	23.1	27.2	5.4
LOS	C	E	A		F	A	C	B	A	C	C	A
Approach Delay		64.4			242.6			14.4			23.4	
Approach LOS		E			F			B			C	
Queue Length 50th (ft)	24	~655	0		~574	2	12	42	0	58	184	0
Queue Length 95th (ft)	#119	#904	14		#791	12	33	75	21	107	278	29
Internal Link Dist (ft)		235			700			672			941	
Turn Bay Length (ft)	130					55	100		60	195		160
Base Capacity (vph)	165	952	802		475	689	209	651	578	444	694	535
Starvation Cap Reductn	0	0	0		0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0		0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0		0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.59	1.08	0.10		1.49	0.06	0.16	0.18	0.12	0.32	0.59	0.15

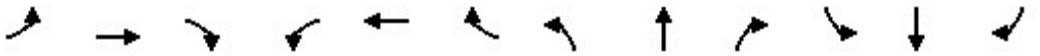
Intersection Summary

Area Type: Other
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 82 (91%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 100
Control Type: Pretimed
Maximum v/c Ratio: 1.49
Intersection Signal Delay: 98.5 Intersection LOS: F
Intersection Capacity Utilization 127.7% ICU Level of Service H
Analysis Period (min) 15
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 4: Elston Ave & Division St



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	102	887	183	14	645	10	39	5	5	14	5	19
Future Volume (vph)	102	887	183	14	645	10	39	5	5	14	5	19
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	11	12	12	11	12	12	9	9	12	10	10
Storage Length (ft)	0		0	0		0	0		10	0		65
Storage Lanes	0		0	0		0	0		1	0		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.99			1.00			1.00	0.98		1.00	0.97
Frt		0.977			0.998				0.850			0.850
Flt Protected		0.996			0.999			0.957			0.964	
Satd. Flow (prot)	0	3202	0	0	3196	0	0	1490	1093	0	1159	1383
Flt Permitted		0.797			0.920			0.745			0.814	
Satd. Flow (perm)	0	2561	0	0	2943	0	0	1154	1076	0	976	1348
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		46			3				12			21
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		780			2016			791			859	
Travel Time (s)		17.7			45.8			18.0			19.5	
Confl. Peds. (#/hr)	11		5	5		11	3		3	3		3
Confl. Bikes (#/hr)			13									
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
Heavy Vehicles (%)	1%	7%	1%	7%	9%	0%	11%	0%	33%	41%	67%	9%
Adj. Flow (vph)	111	964	199	15	701	11	42	5	5	15	5	21
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1274	0	0	727	0	0	47	5	0	20	21
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.04	1.00	1.00	1.04	1.00	1.00	1.14	1.14	1.00	1.09	1.09
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100		20	100		20	100	20	20	100	20
Trailing Detector (ft)	0	0		0	0		0	0	0	0	0	0
Detector 1 Position(ft)	0	0		0	0		0	0	0	0	0	0
Detector 1 Size(ft)	20	6		20	6		20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	

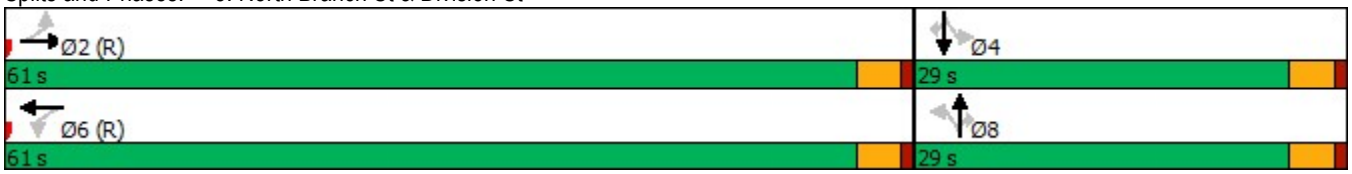


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8		8	4		4
Detector Phase	2	2		6	6		8	8	8	4	4	4
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	61.0	61.0		61.0	61.0		29.0	29.0	29.0	29.0	29.0	29.0
Total Split (s)	61.0	61.0		61.0	61.0		29.0	29.0	29.0	29.0	29.0	29.0
Total Split (%)	67.8%	67.8%		67.8%	67.8%		32.2%	32.2%	32.2%	32.2%	32.2%	32.2%
Maximum Green (s)	57.0	57.0		57.0	57.0		25.0	25.0	25.0	25.0	25.0	25.0
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)		0.0			0.0			0.0	0.0		0.0	0.0
Total Lost Time (s)		4.0			4.0			4.0	4.0		4.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		5.0	5.0	5.0	5.0	5.0	5.0
Recall Mode	C-Max	C-Max		C-Max	C-Max		Min	Min	Min	Min	Min	Min
Walk Time (s)	44.0	44.0		44.0	44.0							
Flash Dont Walk (s)	13.0	13.0		13.0	13.0							
Pedestrian Calls (#/hr)	0	0		0	0							
Act Effct Green (s)		71.2			71.2			10.8	10.8		10.8	10.8
Actuated g/C Ratio		0.79			0.79			0.12	0.12		0.12	0.12
v/c Ratio		0.63			0.31			0.34	0.04		0.17	0.12
Control Delay		4.3			3.2			42.0	9.2		37.5	15.4
Queue Delay		0.0			0.0			0.0	0.0		0.0	0.0
Total Delay		4.3			3.2			42.0	9.2		37.5	15.4
LOS		A			A			D	A		D	B
Approach Delay		4.3			3.2			38.9			26.2	
Approach LOS		A			A			D			C	
90th %ile Green (s)	67.4	67.4		67.4	67.4		14.6	14.6	14.6	14.6	14.6	14.6
90th %ile Term Code	Coord	Coord		Coord	Coord		Gap	Gap	Gap	Hold	Hold	Hold
70th %ile Green (s)	69.7	69.7		69.7	69.7		12.3	12.3	12.3	12.3	12.3	12.3
70th %ile Term Code	Coord	Coord		Coord	Coord		Gap	Gap	Gap	Hold	Hold	Hold
50th %ile Green (s)	71.3	71.3		71.3	71.3		10.7	10.7	10.7	10.7	10.7	10.7
50th %ile Term Code	Coord	Coord		Coord	Coord		Gap	Gap	Gap	Hold	Hold	Hold
30th %ile Green (s)	72.9	72.9		72.9	72.9		9.1	9.1	9.1	9.1	9.1	9.1
30th %ile Term Code	Coord	Coord		Coord	Coord		Gap	Gap	Gap	Hold	Hold	Hold
10th %ile Green (s)	74.5	74.5		74.5	74.5		7.5	7.5	7.5	7.5	7.5	7.5
10th %ile Term Code	Coord	Coord		Coord	Coord		Gap	Gap	Gap	Gap	Gap	Gap
Queue Length 50th (ft)		103			44			25	0		10	0
Queue Length 95th (ft)		m106			79			56	6		31	20
Internal Link Dist (ft)		700			1936			711			779	
Turn Bay Length (ft)									10			65
Base Capacity (vph)		2034			2327			320	307		271	389
Starvation Cap Reductn		0			0			0	0		0	0
Spillback Cap Reductn		0			0			0	0		0	0

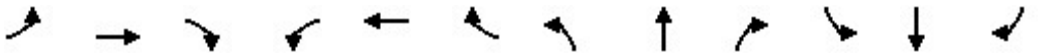
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Storage Cap Reductn		0			0			0	0		0	0
Reduced v/c Ratio		0.63			0.31			0.15	0.02		0.07	0.05

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 29 (32%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green			
Natural Cycle: 90			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.63			
Intersection Signal Delay: 5.2		Intersection LOS: A	
Intersection Capacity Utilization 114.1%		ICU Level of Service H	
Analysis Period (min) 15			
m Volume for 95th percentile queue is metered by upstream signal.			

Splits and Phases: 5: North Branch St & Division St



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	22	9	8	6	1	20	4	164	11	42	403	20
Future Volume (vph)	22	9	8	6	1	20	4	164	11	42	403	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	10	10	10	11	11	11	11	11	11
Storage Length (ft)	0		0	0		75	0		0	0		0
Storage Lanes	0		0	0		1	0		0	0		0
Taper Length (ft)	25			105			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00			1.00			1.00			1.00	
Frt		0.972				0.850		0.992			0.994	
Flt Protected		0.973			0.958			0.999			0.995	
Satd. Flow (prot)	0	1729	0	0	1699	1409	0	1646	0	0	1733	0
Flt Permitted		0.824			0.784			0.994			0.960	
Satd. Flow (perm)	0	1464	0	0	1388	1409	0	1637	0	0	1672	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		9				61		6			6	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		965			828			1019			288	
Travel Time (s)		21.9			18.8			23.2			6.5	
Confl. Peds. (#/hr)			1	1					3	3		
Confl. Bikes (#/hr)									1			3
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	0%	0%	0%	0%	0%	7%	17%	11%	0%	3%	5%	3%
Adj. Flow (vph)	24	10	9	7	1	22	4	182	12	47	448	22
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	43	0	0	8	22	0	198	0	0	517	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.04	1.04	1.04	1.09	1.09	1.09	1.04	1.04	1.04	1.04	1.04	1.04
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2		1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100	20	20	100		20	100	
Trailing Detector (ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Position(ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Size(ft)	20	6		20	6	20	20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	

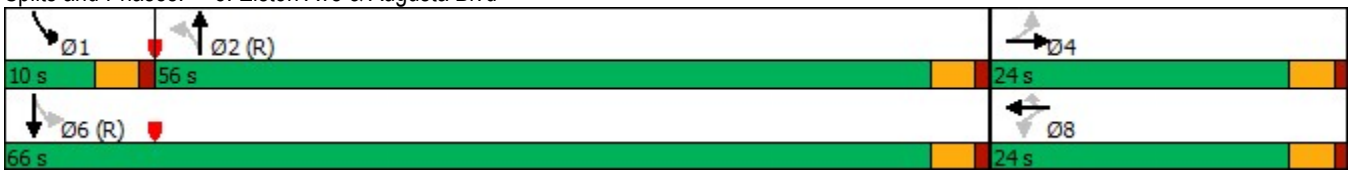


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA	Perm	Perm	NA		pm+pt	NA	
Protected Phases		4			8			2		1	6	
Permitted Phases	4			8		8	2			6		
Detector Phase	4	4		8	8	8	2	2		1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Minimum Split (s)	24.0	24.0		22.5	22.5	22.5	56.0	56.0		9.5	56.0	
Total Split (s)	24.0	24.0		24.0	24.0	24.0	56.0	56.0		10.0	66.0	
Total Split (%)	26.7%	26.7%		26.7%	26.7%	26.7%	62.2%	62.2%		11.1%	73.3%	
Maximum Green (s)	20.0	20.0		20.0	20.0	20.0	52.0	52.0		6.0	62.0	
Yellow Time (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0	0.0		0.0			0.0	
Total Lost Time (s)		4.0			4.0	4.0		4.0			4.0	
Lead/Lag							Lag	Lag		Lead		
Lead-Lag Optimize?							Yes	Yes		Yes		
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	Min	Min		Min	Min	Min	C-Max	C-Max		None	C-Max	
Walk Time (s)	7.0	7.0					38.0	38.0			38.0	
Flash Dont Walk (s)	13.0	13.0					14.0	14.0			14.0	
Pedestrian Calls (#/hr)	0	0					0	0			0	
Act Effct Green (s)		7.6			7.6	7.6		74.4			74.4	
Actuated g/C Ratio		0.08			0.08	0.08		0.83			0.83	
v/c Ratio		0.33			0.07	0.13		0.15			0.37	
Control Delay		38.5			37.9	1.5		1.9			2.7	
Queue Delay		0.0			0.0	0.0		0.0			0.0	
Total Delay		38.5			37.9	1.5		1.9			2.7	
LOS		D			D	A		A			A	
Approach Delay		38.5			11.2			1.9			2.7	
Approach LOS		D			B			A			A	
90th %ile Green (s)	10.4	10.4		10.4	10.4	10.4	71.6	71.6		0.0	71.6	
90th %ile Term Code	Gap	Gap		Hold	Hold	Hold	Coord	Coord		Skip	Coord	
70th %ile Green (s)	8.6	8.6		8.6	8.6	8.6	73.4	73.4		0.0	73.4	
70th %ile Term Code	Gap	Gap		Hold	Hold	Hold	Coord	Coord		Skip	Coord	
50th %ile Green (s)	7.4	7.4		7.4	7.4	7.4	74.6	74.6		0.0	74.6	
50th %ile Term Code	Gap	Gap		Hold	Hold	Hold	Coord	Coord		Skip	Coord	
30th %ile Green (s)	6.1	6.1		6.1	6.1	6.1	75.9	75.9		0.0	75.9	
30th %ile Term Code	Gap	Gap		Hold	Hold	Hold	Coord	Coord		Skip	Coord	
10th %ile Green (s)	5.5	5.5		5.5	5.5	5.5	76.5	76.5		0.0	76.5	
10th %ile Term Code	Gap	Gap		Gap	Gap	Gap	Coord	Coord		Skip	Coord	
Queue Length 50th (ft)		19			4	0		14			22	
Queue Length 95th (ft)		50			17	2		32			m44	
Internal Link Dist (ft)		885			748			939			208	
Turn Bay Length (ft)						75						
Base Capacity (vph)		332			308	360		1354			1383	
Starvation Cap Reductn		0			0	0		0			0	
Spillback Cap Reductn		0			0	0		0			0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Storage Cap Reductn		0			0	0		0			0	
Reduced v/c Ratio		0.13			0.03	0.06		0.15			0.37	

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green			
Natural Cycle: 90			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.37			
Intersection Signal Delay: 4.8		Intersection LOS: A	
Intersection Capacity Utilization 62.1%		ICU Level of Service B	
Analysis Period (min) 15			
m Volume for 95th percentile queue is metered by upstream signal.			

Splits and Phases: 8: Elston Ave & Augusta Blvd



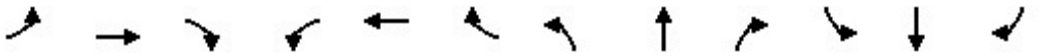
Intersection	
Int Delay, s/veh	0.4

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	9	6	4	202	459	15
Future Vol, veh/h	9	6	4	202	459	15
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	89	89	89	89	89	89
Heavy Vehicles, %	62	44	0	8	3	14
Mvmt Flow	10	7	4	227	516	17

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	760	525	533	0	-	0
Stage 1	525	-	-	-	-	-
Stage 2	235	-	-	-	-	-
Critical Hdwy	7.02	6.64	4.1	-	-	-
Critical Hdwy Stg 1	6.02	-	-	-	-	-
Critical Hdwy Stg 2	6.02	-	-	-	-	-
Follow-up Hdwy	4.058	3.696	2.2	-	-	-
Pot Cap-1 Maneuver	300	478	1045	-	-	-
Stage 1	489	-	-	-	-	-
Stage 2	682	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	299	478	1045	-	-	-
Mov Cap-2 Maneuver	299	-	-	-	-	-
Stage 1	487	-	-	-	-	-
Stage 2	682	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	15.7	0.2	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1045	-	352	-	-
HCM Lane V/C Ratio	0.004	-	0.048	-	-
HCM Control Delay (s)	8.5	0	15.7	-	-
HCM Lane LOS	A	A	C	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

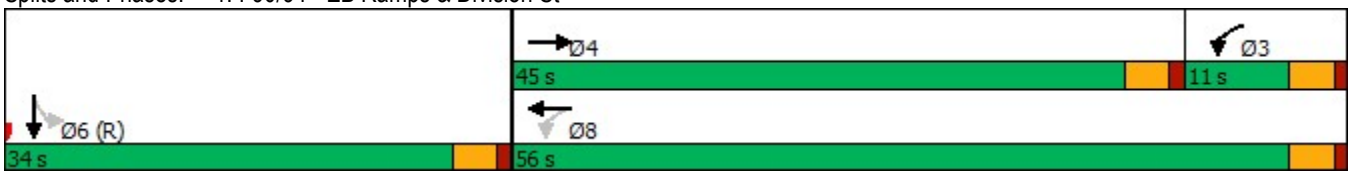


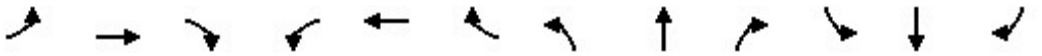
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	539	224	214	660	0	0	0	0	198	5	254
Future Volume (vph)	0	539	224	214	660	0	0	0	0	198	5	254
Ideal Flow (vphpl)	1900	1900	1900	1900	2000	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	11	12	10	11	12	12	12	12	11	11	12
Storage Length (ft)	0		0	0		0	0		0	95		0
Storage Lanes	0		0	1		0	0		0	1		0
Taper Length (ft)	25			25			25			150		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	0.95	0.95	1.00
Ped Bike Factor		0.99		1.00								
Frt		0.956									0.863	
Flt Protected				0.950						0.950	0.996	
Satd. Flow (prot)	0	3236	0	1604	3601	0	0	0	0	1625	1476	0
Flt Permitted				0.263						0.950	0.996	
Satd. Flow (perm)	0	3236	0	443	3601	0	0	0	0	1625	1476	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		93									208	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1630			280			940			875	
Travel Time (s)		37.0			6.4			21.4			19.9	
Confl. Peds. (#/hr)	19		8	8		19						
Confl. Bikes (#/hr)			4			14						
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	0%	3%	0%	5%	2%	0%	0%	0%	0%	2%	33%	1%
Adj. Flow (vph)	0	567	236	225	695	0	0	0	0	208	5	267
Shared Lane Traffic (%)										10%		
Lane Group Flow (vph)	0	803	0	225	695	0	0	0	0	187	293	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Right	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		10			10			11			11	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.04	1.00	1.09	0.98	1.00	1.00	1.00	1.00	1.04	1.04	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type		NA		pm+pt	NA					Perm	NA	
Protected Phases		4		3	8						6	
Permitted Phases				8						6		
Minimum Split (s)		45.0		11.0	56.0					34.0	34.0	
Total Split (s)		45.0		11.0	56.0					34.0	34.0	
Total Split (%)		50.0%		12.2%	62.2%					37.8%	37.8%	
Maximum Green (s)		41.0		7.0	52.0					30.0	30.0	
Yellow Time (s)		3.0		3.0	3.0					3.0	3.0	
All-Red Time (s)		1.0		1.0	1.0					1.0	1.0	
Lost Time Adjust (s)		0.0		0.0	0.0					0.0	0.0	
Total Lost Time (s)		4.0		4.0	4.0					4.0	4.0	
Lead/Lag		Lead		Lag								
Lead-Lag Optimize?		Yes		Yes								
Walk Time (s)		27.0			27.0							

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Flash Dont Walk (s)		14.0			14.0							
Pedestrian Calls (#/hr)		0			0							
Act Effct Green (s)		41.0		52.0	52.0					30.0	30.0	
Actuated g/C Ratio		0.46		0.58	0.58					0.33	0.33	
v/c Ratio		0.53		0.65	0.33					0.35	0.47	
Control Delay		16.8		23.7	8.0					24.9	10.0	
Queue Delay		0.0		0.0	0.5					0.0	0.0	
Total Delay		16.8		23.7	8.5					24.9	10.0	
LOS		B		C	A					C	A	
Approach Delay		16.8			12.2						15.8	
Approach LOS		B			B						B	
Queue Length 50th (ft)		145		47	78					83	35	
Queue Length 95th (ft)		200		84	97					143	107	
Internal Link Dist (ft)		1550			200			860			795	
Turn Bay Length (ft)										95		
Base Capacity (vph)		1524		346	2080					541	630	
Starvation Cap Reductn		0		0	892					0	0	
Spillback Cap Reductn		0		0	0					0	0	
Storage Cap Reductn		0		0	0					0	0	
Reduced v/c Ratio		0.53		0.65	0.59					0.35	0.47	

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 0 (0%), Referenced to phase 2: and 6:SBTL, Start of Green			
Natural Cycle: 90			
Control Type: Pretimed			
Maximum v/c Ratio: 0.65			
Intersection Signal Delay: 14.7		Intersection LOS: B	
Intersection Capacity Utilization 70.0%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 1: I-90/94 - EB Ramps & Division St





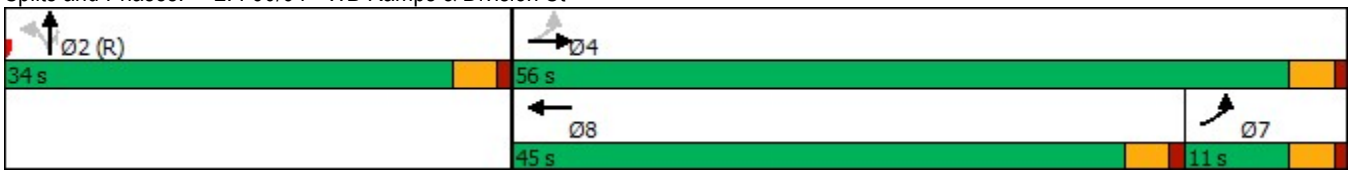
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	203	534	0	0	610	341	264	168	158	0	0	0
Future Volume (vph)	203	534	0	0	610	341	264	168	158	0	0	0
Ideal Flow (vphpl)	1900	2000	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	11	12	12	11	12	11	11	11	12	12	12
Storage Length (ft)	0		0	0		0	75		75	0		0
Storage Lanes	1		0	0		0	1		1	0		0
Taper Length (ft)	25			25			40			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00
Ped Bike Factor	0.99				0.98							
Frt					0.946			0.987	0.850			
Flt Protected	0.950						0.950					
Satd. Flow (prot)	1668	3566	0	0	3140	0	1745	1715	1412	0	0	0
Flt Permitted	0.190						0.950					
Satd. Flow (perm)	332	3566	0	0	3140	0	1745	1715	1412	0	0	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					158			6	147			
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		280			321			913			753	
Travel Time (s)		6.4			7.3			20.8			17.1	
Confl. Peds. (#/hr)	24		5	5		24						
Confl. Bikes (#/hr)			2			4						
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	1%	3%	0%	0%	4%	2%	0%	0%	5%	0%	0%	0%
Adj. Flow (vph)	209	551	0	0	629	352	272	173	163	0	0	0
Shared Lane Traffic (%)									10%			
Lane Group Flow (vph)	209	551	0	0	981	0	272	189	147	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Right	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		10			10			11			11	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.09	0.98	1.00	1.00	1.04	1.00	1.04	1.04	1.04	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	pm+pt	NA			NA		Perm	NA	Perm			
Protected Phases	7	4			8			2				
Permitted Phases	4						2		2			
Minimum Split (s)	11.0	56.0			45.0		34.0	34.0	34.0			
Total Split (s)	11.0	56.0			45.0		34.0	34.0	34.0			
Total Split (%)	12.2%	62.2%			50.0%		37.8%	37.8%	37.8%			
Maximum Green (s)	7.0	52.0			41.0		30.0	30.0	30.0			
Yellow Time (s)	3.0	3.0			3.0		3.0	3.0	3.0			
All-Red Time (s)	1.0	1.0			1.0		1.0	1.0	1.0			
Lost Time Adjust (s)	0.0	0.0			0.0		0.0	0.0	0.0			
Total Lost Time (s)	4.0	4.0			4.0		4.0	4.0	4.0			
Lead/Lag	Lag				Lead							
Lead-Lag Optimize?	Yes				Yes							
Walk Time (s)		27.0			27.0							

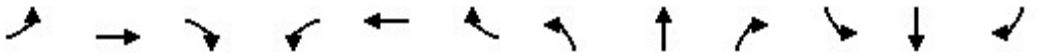
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Flash Dont Walk (s)		14.0			14.0							
Pedestrian Calls (#/hr)		4			0							
Act Effct Green (s)	52.0	52.0			41.0		30.0	30.0	30.0			
Actuated g/C Ratio	0.58	0.58			0.46		0.33	0.33	0.33			
v/c Ratio	0.71	0.27			0.65		0.47	0.33	0.26			
Control Delay	32.8	6.7			12.3		27.0	23.7	5.1			
Queue Delay	0.0	0.3			0.0		0.0	0.0	0.0			
Total Delay	32.8	6.9			12.3		27.0	23.7	5.1			
LOS	C	A			B		C	C	A			
Approach Delay		14.1			12.3			20.7				
Approach LOS		B			B			C				
Queue Length 50th (ft)	46	50			80		121	81	0			
Queue Length 95th (ft)	#131	65			167		195	140	42			
Internal Link Dist (ft)		200			241			833			673	
Turn Bay Length (ft)							75		75			
Base Capacity (vph)	295	2060			1516		581	575	568			
Starvation Cap Reductn	0	840			0		0	0	0			
Spillback Cap Reductn	0	0			0		0	0	0			
Storage Cap Reductn	0	0			0		0	0	0			
Reduced v/c Ratio	0.71	0.45			0.65		0.47	0.33	0.26			

Intersection Summary

Area Type: Other
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:, Start of Green
Natural Cycle: 90
Control Type: Pretimed
Maximum v/c Ratio: 0.71
Intersection Signal Delay: 15.0 Intersection LOS: B
Intersection Capacity Utilization 70.0% ICU Level of Service C
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 2: I-90/94 - WB Ramps & Division St





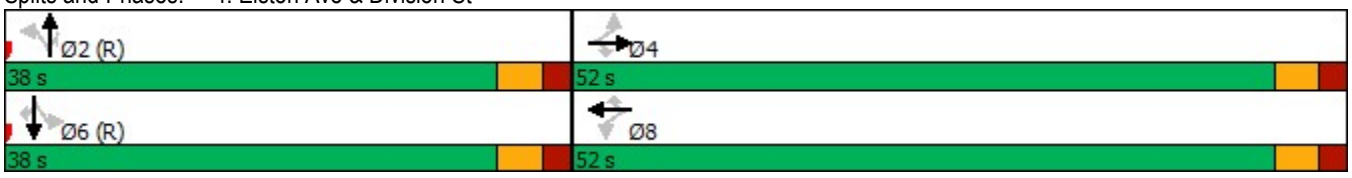
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	107	509	76	25	672	92	101	412	40	90	482	178
Future Volume (vph)	107	509	76	25	672	92	101	412	40	90	482	178
Ideal Flow (vphpl)	1900	2000	1900	1900	1900	1900	1900	2000	1900	1900	2000	1900
Lane Width (ft)	11	11	11	12	11	11	10	10	10	11	11	12
Storage Length (ft)	130		0	0		55	100		60	195		160
Storage Lanes	1		1	0		1	1		1	1		1
Taper Length (ft)	70			25			85			85		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00		0.97		1.00	0.96	1.00		0.97	1.00		0.98
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950				0.998		0.950			0.950		
Satd. Flow (prot)	1678	1877	1546	0	1781	1546	1685	1848	1507	1694	1895	1538
Flt Permitted	0.200				0.973		0.243			0.323		
Satd. Flow (perm)	352	1877	1505	0	1737	1482	431	1848	1464	576	1895	1513
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			78			35			24			173
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		315			780			752			1021	
Travel Time (s)		7.2			17.7			17.1			23.2	
Confl. Peds. (#/hr)	17		6	6		17	2		2	2		2
Confl. Bikes (#/hr)			1			8			25			4
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	4%	3%	1%	0%	3%	1%	0%	1%	0%	3%	2%	5%
Adj. Flow (vph)	109	519	78	26	686	94	103	420	41	92	492	182
Shared Lane Traffic (%)												
Lane Group Flow (vph)	109	519	78	0	712	94	103	420	41	92	492	182
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		11			11			11			11	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.04	0.98	1.04	1.00	1.04	1.04	1.09	1.02	1.09	1.04	0.98	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2		2	6		6
Minimum Split (s)	52.0	52.0	52.0	52.0	52.0	52.0	38.0	38.0	38.0	38.0	38.0	38.0
Total Split (s)	52.0	52.0	52.0	52.0	52.0	52.0	38.0	38.0	38.0	38.0	38.0	38.0
Total Split (%)	57.8%	57.8%	57.8%	57.8%	57.8%	57.8%	42.2%	42.2%	42.2%	42.2%	42.2%	42.2%
Maximum Green (s)	47.0	47.0	47.0	47.0	47.0	47.0	33.0	33.0	33.0	33.0	33.0	33.0
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)	22.0	22.0	22.0	22.0	22.0	22.0	5.0	5.0	5.0	5.0	5.0	5.0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Flash Dont Walk (s)	25.0	25.0	25.0	25.0	25.0	25.0	28.0	28.0	28.0	28.0	28.0	28.0
Pedestrian Calls (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Act Effct Green (s)	47.0	47.0	47.0		47.0	47.0	33.0	33.0	33.0	33.0	33.0	33.0
Actuated g/C Ratio	0.52	0.52	0.52		0.52	0.52	0.37	0.37	0.37	0.37	0.37	0.37
v/c Ratio	0.60	0.53	0.09		0.79	0.12	0.65	0.62	0.07	0.44	0.71	0.27
Control Delay	24.8	9.8	0.7		22.7	5.6	44.9	27.4	11.5	29.6	31.1	4.9
Queue Delay	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	24.8	9.8	0.7		22.7	5.6	44.9	27.4	11.5	29.6	31.1	4.9
LOS	C	A	A		C	A	D	C	B	C	C	A
Approach Delay		11.1			20.7			29.4			24.7	
Approach LOS		B			C			C			C	
Queue Length 50th (ft)	17	81	0		350	9	43	169	5	39	235	3
Queue Length 95th (ft)	#123	121	3		508	31	#125	287	28	88	352	45
Internal Link Dist (ft)		235			700			672			941	
Turn Bay Length (ft)	130					55	100		60	195		160
Base Capacity (vph)	183	980	823		907	790	158	677	552	211	694	664
Starvation Cap Reductn	0	0	0		0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0		0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0		0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.60	0.53	0.09		0.79	0.12	0.65	0.62	0.07	0.44	0.71	0.27

Intersection Summary

Area Type: Other
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 82 (91%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 90
Control Type: Pretimed
Maximum v/c Ratio: 0.79
Intersection Signal Delay: 21.1 Intersection LOS: C
Intersection Capacity Utilization 128.1% ICU Level of Service H
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 4: Elston Ave & Division St



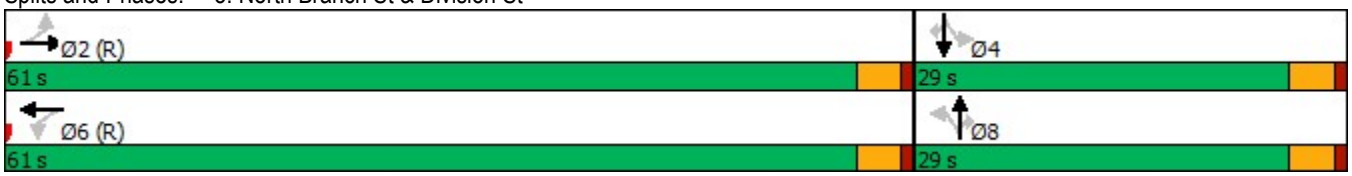
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	25	553	61	5	519	5	158	5	15	25	5	112
Future Volume (vph)	25	553	61	5	519	5	158	5	15	25	5	112
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	11	12	12	11	12	12	9	9	12	10	10
Storage Length (ft)	0		0	0		0	0		10	0		65
Storage Lanes	0		0	0		0	0		1	0		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00			1.00			0.99	0.98		1.00	0.97
Frt		0.986			0.999				0.850			0.850
Flt Protected		0.998						0.954			0.960	
Satd. Flow (prot)	0	3313	0	0	3353	0	0	1600	1264	0	1407	1478
Flt Permitted		0.923			0.951			0.710			0.758	
Satd. Flow (perm)	0	3063	0	0	3189	0	0	1185	1239	0	1106	1436
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		24			2				12			117
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		780			2016			791			859	
Travel Time (s)		17.7			45.8			18.0			19.5	
Confl. Peds. (#/hr)	29		10	10		29	3		7	7		3
Confl. Bikes (#/hr)			3			5						2
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	7%	3%	5%	0%	4%	0%	2%	0%	15%	25%	0%	2%
Adj. Flow (vph)	26	576	64	5	541	5	165	5	16	26	5	117
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	666	0	0	551	0	0	170	16	0	31	117
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.04	1.00	1.00	1.04	1.00	1.00	1.14	1.14	1.00	1.09	1.09
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100		20	100		20	100	20	20	100	20
Trailing Detector (ft)	0	0		0	0		0	0	0	0	0	0
Detector 1 Position(ft)	0	0		0	0		0	0	0	0	0	0
Detector 1 Size(ft)	20	6		20	6		20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8		8	4		4
Detector Phase	2	2		6	6		8	8	8	4	4	4
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	61.0	61.0		61.0	61.0		29.0	29.0	29.0	29.0	29.0	29.0
Total Split (s)	61.0	61.0		61.0	61.0		29.0	29.0	29.0	29.0	29.0	29.0
Total Split (%)	67.8%	67.8%		67.8%	67.8%		32.2%	32.2%	32.2%	32.2%	32.2%	32.2%
Maximum Green (s)	57.0	57.0		57.0	57.0		25.0	25.0	25.0	25.0	25.0	25.0
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)		0.0			0.0			0.0	0.0		0.0	0.0
Total Lost Time (s)		4.0			4.0			4.0	4.0		4.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		5.0	5.0	5.0	5.0	5.0	5.0
Recall Mode	C-Max	C-Max		C-Max	C-Max		Min	Min	Min	Min	Min	Min
Walk Time (s)	44.0	44.0		44.0	44.0							
Flash Dont Walk (s)	13.0	13.0		13.0	13.0							
Pedestrian Calls (#/hr)	0	0		0	0							
Act Effct Green (s)		62.7			62.7			19.3	19.3		19.3	19.3
Actuated g/C Ratio		0.70			0.70			0.21	0.21		0.21	0.21
v/c Ratio		0.31			0.25			0.67	0.06		0.13	0.29
Control Delay		4.5			5.9			44.9	15.1		27.5	7.2
Queue Delay		0.0			0.0			0.0	0.0		0.0	0.0
Total Delay		4.5			5.9			44.9	15.1		27.5	7.2
LOS		A			A			D	B		C	A
Approach Delay		4.5			5.9			42.3			11.5	
Approach LOS		A			A			D			B	
90th %ile Green (s)	57.0	57.0		57.0	57.0		25.0	25.0	25.0	25.0	25.0	25.0
90th %ile Term Code	Coord	Coord		Coord	Coord		Max	Max	Max	Hold	Hold	Hold
70th %ile Green (s)	59.1	59.1		59.1	59.1		22.9	22.9	22.9	22.9	22.9	22.9
70th %ile Term Code	Coord	Coord		Coord	Coord		Gap	Gap	Gap	Hold	Hold	Hold
50th %ile Green (s)	62.2	62.2		62.2	62.2		19.8	19.8	19.8	19.8	19.8	19.8
50th %ile Term Code	Coord	Coord		Coord	Coord		Gap	Gap	Gap	Hold	Hold	Hold
30th %ile Green (s)	65.3	65.3		65.3	65.3		16.7	16.7	16.7	16.7	16.7	16.7
30th %ile Term Code	Coord	Coord		Coord	Coord		Gap	Gap	Gap	Hold	Hold	Hold
10th %ile Green (s)	69.9	69.9		69.9	69.9		12.1	12.1	12.1	12.1	12.1	12.1
10th %ile Term Code	Coord	Coord		Coord	Coord		Gap	Gap	Gap	Hold	Hold	Hold
Queue Length 50th (ft)		43			52			88	2		14	0
Queue Length 95th (ft)		76			91			147	17		35	39
Internal Link Dist (ft)		700			1936			711			779	
Turn Bay Length (ft)									10			65
Base Capacity (vph)		2141			2222			329	352		307	483
Starvation Cap Reductn		0			0			0	0		0	0
Spillback Cap Reductn		0			0			0	0		0	0

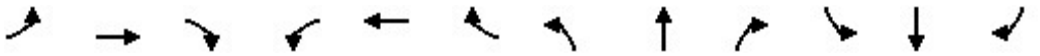
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Storage Cap Reductn		0			0			0	0		0	0
Reduced v/c Ratio		0.31			0.25			0.52	0.05		0.10	0.24

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 29 (32%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green			
Natural Cycle: 90			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.67			
Intersection Signal Delay: 10.2		Intersection LOS: B	
Intersection Capacity Utilization 73.8%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 5: North Branch St & Division St



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	37	6	6	32	45	73	21	434	12	53	486	53
Future Volume (vph)	37	6	6	32	45	73	21	434	12	53	486	53
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	10	10	10	11	11	11	11	11	11
Storage Length (ft)	0		0	0		75	0		0	0		0
Storage Lanes	0		0	0		1	0		0	0		0
Taper Length (ft)	25			105			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00			1.00	0.98		1.00			1.00	
Frt		0.983				0.850		0.997			0.988	
Flt Protected		0.964			0.980			0.998			0.996	
Satd. Flow (prot)	0	1735	0	0	1738	1507	0	1809	0	0	1771	0
Flt Permitted		0.731			0.881			0.962			0.921	
Satd. Flow (perm)	0	1313	0	0	1558	1474	0	1744	0	0	1637	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		7				82		2			13	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		965			828			1019			288	
Travel Time (s)		21.9			18.8			23.2			6.5	
Confl. Peds. (#/hr)	1		3	3		1	6		7	7		6
Confl. Bikes (#/hr)									5			4
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	1%	0%	0%	2%	2%
Adj. Flow (vph)	42	7	7	36	51	82	24	488	13	60	546	60
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	56	0	0	87	82	0	525	0	0	666	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.04	1.04	1.04	1.09	1.09	1.09	1.04	1.04	1.04	1.04	1.04	1.04
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2		1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100	20	20	100		20	100	
Trailing Detector (ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Position(ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Size(ft)	20	6		20	6	20	20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	

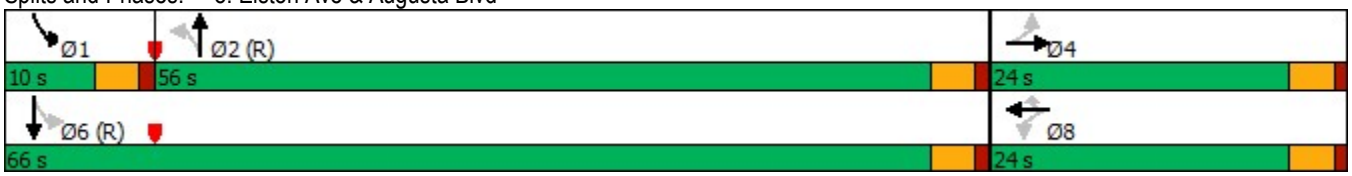


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA	Perm	Perm	NA		pm+pt	NA	
Protected Phases		4			8			2		1	6	
Permitted Phases	4			8		8	2			6		
Detector Phase	4	4		8	8	8	2	2		1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Minimum Split (s)	24.0	24.0		22.5	22.5	22.5	56.0	56.0		9.5	56.0	
Total Split (s)	24.0	24.0		24.0	24.0	24.0	56.0	56.0		10.0	66.0	
Total Split (%)	26.7%	26.7%		26.7%	26.7%	26.7%	62.2%	62.2%		11.1%	73.3%	
Maximum Green (s)	20.0	20.0		20.0	20.0	20.0	52.0	52.0		6.0	62.0	
Yellow Time (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0	0.0		0.0			0.0	
Total Lost Time (s)		4.0			4.0	4.0		4.0			4.0	
Lead/Lag							Lag	Lag		Lead		
Lead-Lag Optimize?							Yes	Yes		Yes		
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	Min	Min		Min	Min	Min	C-Max	C-Max		None	C-Max	
Walk Time (s)	7.0	7.0					38.0	38.0			38.0	
Flash Dont Walk (s)	13.0	13.0					14.0	14.0			14.0	
Pedestrian Calls (#/hr)	0	0					0	0			0	
Act Effct Green (s)		10.4			10.4	10.4		71.6			71.6	
Actuated g/C Ratio		0.12			0.12	0.12		0.80			0.80	
v/c Ratio		0.36			0.49	0.34		0.38			0.51	
Control Delay		38.3			45.6	12.2		3.9			5.5	
Queue Delay		0.0			0.0	0.0		0.0			0.0	
Total Delay		38.3			45.6	12.2		3.9			5.5	
LOS		D			D	B		A			A	
Approach Delay		38.3			29.4			3.9			5.5	
Approach LOS		D			C			A			A	
90th %ile Green (s)	14.6	14.6		14.6	14.6	14.6	67.4	67.4		0.0	67.4	
90th %ile Term Code	Hold	Hold		Gap	Gap	Gap	Coord	Coord		Skip	Coord	
70th %ile Green (s)	12.1	12.1		12.1	12.1	12.1	69.9	69.9		0.0	69.9	
70th %ile Term Code	Hold	Hold		Gap	Gap	Gap	Coord	Coord		Skip	Coord	
50th %ile Green (s)	10.4	10.4		10.4	10.4	10.4	71.6	71.6		0.0	71.6	
50th %ile Term Code	Hold	Hold		Gap	Gap	Gap	Coord	Coord		Skip	Coord	
30th %ile Green (s)	8.6	8.6		8.6	8.6	8.6	73.4	73.4		0.0	73.4	
30th %ile Term Code	Hold	Hold		Gap	Gap	Gap	Coord	Coord		Skip	Coord	
10th %ile Green (s)	6.1	6.1		6.1	6.1	6.1	75.9	75.9		0.0	75.9	
10th %ile Term Code	Hold	Hold		Gap	Gap	Gap	Coord	Coord		Skip	Coord	
Queue Length 50th (ft)		26			47	0		64			30	
Queue Length 95th (ft)		59			88	38		128			122	
Internal Link Dist (ft)		885			748			939			208	
Turn Bay Length (ft)						75						
Base Capacity (vph)		297			346	391		1388			1305	
Starvation Cap Reductn		0			0	0		0			0	
Spillback Cap Reductn		0			0	0		0			0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Storage Cap Reductn		0			0	0		0			0	
Reduced v/c Ratio		0.19			0.25	0.21		0.38			0.51	

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green			
Natural Cycle: 90			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.51			
Intersection Signal Delay: 9.1		Intersection LOS: A	
Intersection Capacity Utilization 65.6%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 8: Elston Ave & Augusta Blvd



Intersection	
Int Delay, s/veh	0.4

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	10	11	1	543	581	2
Future Vol, veh/h	10	11	1	543	581	2
Conflicting Peds, #/hr	1	0	10	0	0	10
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	86	86	86	86	86	86
Heavy Vehicles, %	0	0	100	1	2	0
Mvmt Flow	12	13	1	631	676	2

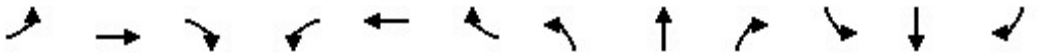
Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1321	687	688	0	-	0
Stage 1	687	-	-	-	-	-
Stage 2	634	-	-	-	-	-
Critical Hdwy	6.4	6.2	5.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	3.1	-	-	-
Pot Cap-1 Maneuver	174	450	581	-	-	-
Stage 1	503	-	-	-	-	-
Stage 2	532	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	170	446	575	-	-	-
Mov Cap-2 Maneuver	170	-	-	-	-	-
Stage 1	496	-	-	-	-	-
Stage 2	527	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	20.8	0	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	575	-	252	-	-
HCM Lane V/C Ratio	0.002	-	0.097	-	-
HCM Control Delay (s)	11.3	0	20.8	-	-
HCM Lane LOS	B	A	C	-	-
HCM 95th %tile Q(veh)	0	-	0.3	-	-

APPENDIX I

CAPACITY ANALYSIS
2024 NO BUILD



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	819	590	234	656	0	0	0	0	239	10	112
Future Volume (vph)	0	819	590	234	656	0	0	0	0	239	10	112
Ideal Flow (vphpl)	1900	1900	1900	1900	2000	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	11	12	10	11	12	12	12	12	11	11	12
Storage Length (ft)	0		0	0		0	0		0	95		0
Storage Lanes	0		0	1		0	0		0	1		0
Taper Length (ft)	25			25			25			150		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	0.95	0.95	1.00
Ped Bike Factor		0.99		1.00								
Frt		0.937									0.904	
Flt Protected				0.950						0.950	0.985	
Satd. Flow (prot)	0	3120	0	1478	3465	0	0	0	0	1535	1498	0
Flt Permitted				0.089						0.950	0.985	
Satd. Flow (perm)	0	3120	0	138	3465	0	0	0	0	1535	1498	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		266									108	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1630			280			940			875	
Travel Time (s)		37.0			6.4			21.4			19.9	
Confl. Peds. (#/hr)	15		5	5		15						
Confl. Bikes (#/hr)			10									
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	0%	5%	1%	14%	6%	0%	0%	0%	0%	8%	0%	2%
Adj. Flow (vph)	0	853	615	244	683	0	0	0	0	249	10	117
Shared Lane Traffic (%)										22%		
Lane Group Flow (vph)	0	1468	0	244	683	0	0	0	0	194	182	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Right	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		10			10			11			11	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.04	1.00	1.09	0.98	1.00	1.00	1.00	1.00	1.04	1.04	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type		NA		pm+pt	NA					Perm	NA	
Protected Phases		4		3	8						6	
Permitted Phases				8						6		
Minimum Split (s)		45.0		11.0	56.0					34.0	34.0	
Total Split (s)		45.0		11.0	56.0					34.0	34.0	
Total Split (%)		50.0%		12.2%	62.2%					37.8%	37.8%	
Maximum Green (s)		41.0		7.0	52.0					30.0	30.0	
Yellow Time (s)		3.0		3.0	3.0					3.0	3.0	
All-Red Time (s)		1.0		1.0	1.0					1.0	1.0	
Lost Time Adjust (s)		0.0		0.0	0.0					0.0	0.0	
Total Lost Time (s)		4.0		4.0	4.0					4.0	4.0	
Lead/Lag		Lead		Lag								
Lead-Lag Optimize?		Yes		Yes								
Walk Time (s)		27.0			27.0							

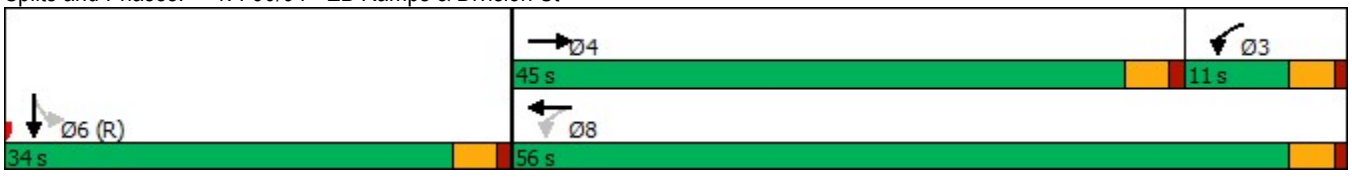
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Flash Dont Walk (s)		14.0			14.0							
Pedestrian Calls (#/hr)		0			0							
Act Effct Green (s)		41.0		52.0	52.0					30.0	30.0	
Actuated g/C Ratio		0.46		0.58	0.58					0.33	0.33	
v/c Ratio		0.94		1.33	0.34					0.38	0.32	
Control Delay		32.0		205.6	8.4					25.6	11.3	
Queue Delay		0.0		0.0	0.5					0.0	0.0	
Total Delay		32.0		205.6	8.9					25.6	11.3	
LOS		C		F	A					C	B	
Approach Delay		32.0			60.7						18.7	
Approach LOS		C			E						B	
Queue Length 50th (ft)		345		~147	83					87	30	
Queue Length 95th (ft)		#518		#299	104					150	83	
Internal Link Dist (ft)		1550			200			860			795	
Turn Bay Length (ft)										95		
Base Capacity (vph)		1566		183	2002					511	571	
Starvation Cap Reductn		0		0	838					0	0	
Spillback Cap Reductn		0		0	0					0	0	
Storage Cap Reductn		0		0	0					0	0	
Reduced v/c Ratio		0.94		1.33	0.59					0.38	0.32	

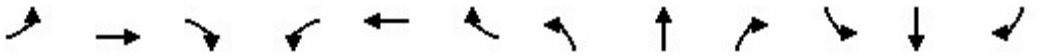
Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 0 (0%), Referenced to phase 2: and 6:SBTL, Start of Green			
Natural Cycle: 90			
Control Type: Pretimed			
Maximum v/c Ratio: 1.33			
Intersection Signal Delay: 39.8		Intersection LOS: D	
Intersection Capacity Utilization 76.6%		ICU Level of Service D	
Analysis Period (min) 15			

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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

Splits and Phases: 1: I-90/94 - EB Ramps & Division St





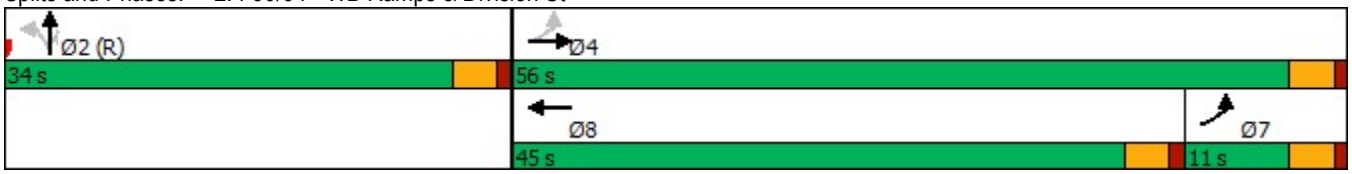
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	280	778	0	0	585	264	305	36	493	0	0	0
Future Volume (vph)	280	778	0	0	585	264	305	36	493	0	0	0
Ideal Flow (vphpl)	1900	2000	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	11	12	12	11	12	11	11	11	12	12	12
Storage Length (ft)	0		0	0		0	75		75	0		0
Storage Lanes	1		0	0		0	1		1	0		0
Taper Length (ft)	25			25			40			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00
Ped Bike Factor	1.00				0.99							
Frt					0.953			0.870	0.850			
Flt Protected	0.950						0.950					
Satd. Flow (prot)	1668	3401	0	0	2999	0	1728	1432	1399	0	0	0
Flt Permitted	0.224						0.950					
Satd. Flow (perm)	392	3401	0	0	2999	0	1728	1432	1399	0	0	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					106			164	164			
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		280			321			913			753	
Travel Time (s)		6.4			7.3			20.8			17.1	
Confl. Peds. (#/hr)	10		7	7		10						
Confl. Bikes (#/hr)			7									
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	1%	8%	0%	0%	12%	5%	1%	6%	6%	0%	0%	0%
Adj. Flow (vph)	295	819	0	0	616	278	321	38	519	0	0	0
Shared Lane Traffic (%)									47%			
Lane Group Flow (vph)	295	819	0	0	894	0	321	282	275	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Right	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		10			10			11			11	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.09	0.98	1.00	1.00	1.04	1.00	1.04	1.04	1.04	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	pm+pt	NA			NA		Perm	NA	Perm			
Protected Phases	7	4			8			2				
Permitted Phases	4						2		2			
Minimum Split (s)	11.0	56.0			45.0		34.0	34.0	34.0			
Total Split (s)	11.0	56.0			45.0		34.0	34.0	34.0			
Total Split (%)	12.2%	62.2%			50.0%		37.8%	37.8%	37.8%			
Maximum Green (s)	7.0	52.0			41.0		30.0	30.0	30.0			
Yellow Time (s)	3.0	3.0			3.0		3.0	3.0	3.0			
All-Red Time (s)	1.0	1.0			1.0		1.0	1.0	1.0			
Lost Time Adjust (s)	0.0	0.0			0.0		0.0	0.0	0.0			
Total Lost Time (s)	4.0	4.0			4.0		4.0	4.0	4.0			
Lead/Lag	Lag				Lead							
Lead-Lag Optimize?	Yes				Yes							
Walk Time (s)		27.0			27.0							

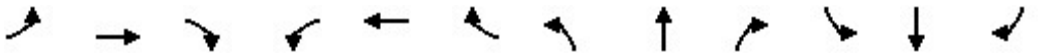
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Flash Dont Walk (s)		14.0			14.0							
Pedestrian Calls (#/hr)		4			0							
Act Effct Green (s)	52.0	52.0			41.0		30.0	30.0	30.0			
Actuated g/C Ratio	0.58	0.58			0.46		0.33	0.33	0.33			
v/c Ratio	0.91	0.42			0.63		0.56	0.48	0.48			
Control Delay	41.2	6.5			17.1		29.1	12.9	12.7			
Queue Delay	0.0	1.1			0.0		0.0	0.0	0.0			
Total Delay	41.2	7.6			17.1		29.1	13.0	12.7			
LOS	D	A			B		C	B	B			
Approach Delay		16.5			17.1			18.8				
Approach LOS		B			B			B				
Queue Length 50th (ft)	58	71			121		148	50	47			
Queue Length 95th (ft)	m#99	m80			m68		233	126	122			
Internal Link Dist (ft)		200			241			833			673	
Turn Bay Length (ft)							75		75			
Base Capacity (vph)	325	1965			1423		576	586	575			
Starvation Cap Reductn	0	851			0		0	0	0			
Spillback Cap Reductn	0	243			0		0	11	11			
Storage Cap Reductn	0	0			0		0	0	0			
Reduced v/c Ratio	0.91	0.74			0.63		0.56	0.49	0.49			

Intersection Summary

Area Type: Other
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:, Start of Green
Natural Cycle: 90
Control Type: Pretimed
Maximum v/c Ratio: 0.91
Intersection Signal Delay: 17.4 Intersection LOS: B
Intersection Capacity Utilization 76.6% ICU Level of Service D
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: I-90/94 - WB Ramps & Division St





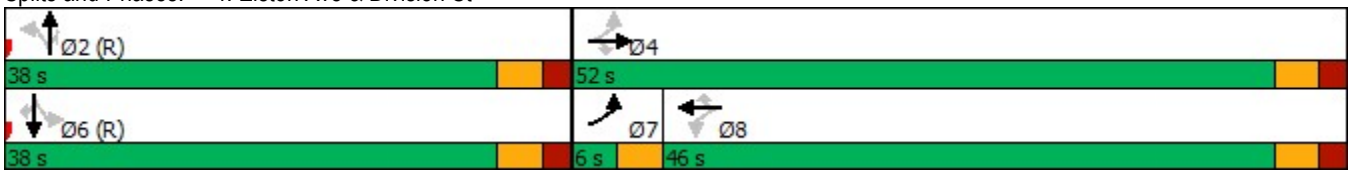
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	147	1007	117	18	684	92	45	266	100	208	597	120
Future Volume (vph)	147	1007	117	18	684	92	45	266	100	208	597	120
Ideal Flow (vphpl)	1900	2000	1900	1900	1900	1900	1900	2000	1900	1900	2000	1900
Lane Width (ft)	11	11	11	12	11	11	10	10	10	11	11	12
Storage Length (ft)	130		0	0		55	100		60	195		160
Storage Lanes	1		1	0		1	1		1	1		1
Taper Length (ft)	70			25			85			85		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00		0.97		1.00	0.96	1.00		0.99	1.00		0.96
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950				0.999		0.950			0.950		
Satd. Flow (prot)	1491	1824	1516	0	1699	1346	1604	1778	1478	1694	1895	1369
Flt Permitted	0.098				0.462		0.121			0.486		
Satd. Flow (perm)	153	1824	1469	0	785	1295	204	1778	1456	866	1895	1319
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			105			61			69			94
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		315			780			752			1021	
Travel Time (s)		7.2			17.7			17.1			23.2	
Confl. Peds. (#/hr)	16		4	4		16	6		2	2		6
Confl. Bikes (#/hr)			10			1			2			32
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	17%	6%	3%	9%	8%	16%	5%	5%	2%	3%	2%	18%
Adj. Flow (vph)	156	1071	124	19	728	98	48	283	106	221	635	128
Shared Lane Traffic (%)												
Lane Group Flow (vph)	156	1071	124	0	747	98	48	283	106	221	635	128
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		11			11			11			11	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.04	0.98	1.04	1.00	1.04	1.04	1.09	1.02	1.09	1.04	0.98	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases	7	4			8			2			6	
Permitted Phases	4		4	8		8	2		2	6		6
Minimum Split (s)	6.0	52.0	52.0	46.0	46.0	46.0	38.0	38.0	38.0	38.0	38.0	38.0
Total Split (s)	6.0	52.0	52.0	46.0	46.0	46.0	38.0	38.0	38.0	38.0	38.0	38.0
Total Split (%)	6.7%	57.8%	57.8%	51.1%	51.1%	51.1%	42.2%	42.2%	42.2%	42.2%	42.2%	42.2%
Maximum Green (s)	3.0	47.0	47.0	41.0	41.0	41.0	33.0	33.0	33.0	33.0	33.0	33.0
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	0.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	3.0	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead			Lag	Lag	Lag						
Lead-Lag Optimize?	Yes			Yes	Yes	Yes						
Walk Time (s)		22.0	22.0	22.0	22.0	22.0	5.0	5.0	5.0	5.0	5.0	5.0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Flash Dont Walk (s)		25.0	25.0	19.0	19.0	19.0	28.0	28.0	28.0	28.0	28.0	28.0
Pedestrian Calls (#/hr)		0	0	0	0	0	0	0	0	0	0	0
Act Effct Green (s)	49.0	47.0	47.0		41.0	41.0	33.0	33.0	33.0	33.0	33.0	33.0
Actuated g/C Ratio	0.54	0.52	0.52		0.46	0.46	0.37	0.37	0.37	0.37	0.37	0.37
v/c Ratio	1.23	1.12	0.15		2.09	0.16	0.65	0.43	0.18	0.70	0.91	0.24
Control Delay	174.2	89.2	3.6		520.8	4.9	63.6	22.4	7.9	38.1	47.4	8.1
Queue Delay	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	174.2	89.2	3.6		520.8	4.9	63.6	22.4	7.9	38.1	47.4	8.1
LOS	F	F	A		F	A	E	C	A	D	D	A
Approach Delay		91.2			460.9			23.4			40.2	
Approach LOS		F			F			C			D	
Queue Length 50th (ft)	~56	~709	3		~671	5	20	110	12	105	338	12
Queue Length 95th (ft)	#158	#954	26		#915	21	#82	164	42	#214	#549	50
Internal Link Dist (ft)		235			700			672			941	
Turn Bay Length (ft)	130					55	100		60	195		160
Base Capacity (vph)	127	952	817		357	623	74	651	577	317	694	543
Starvation Cap Reductn	0	0	0		0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0		0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0		0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.23	1.13	0.15		2.09	0.16	0.65	0.43	0.18	0.70	0.91	0.24

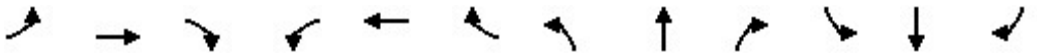
Intersection Summary

Area Type: Other
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 82 (91%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 140
Control Type: Pretimed
Maximum v/c Ratio: 2.09
Intersection Signal Delay: 155.5 Intersection LOS: F
Intersection Capacity Utilization 143.0% ICU Level of Service H
Analysis Period (min) 15
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 4: Elston Ave & Division St



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	112	1000	203	15	733	10	41	5	5	15	5	20
Future Volume (vph)	112	1000	203	15	733	10	41	5	5	15	5	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	11	12	12	11	12	12	9	9	12	10	10
Storage Length (ft)	0		0	0		0	0		10	0		65
Storage Lanes	0		0	0		0	0		1	0		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.99			1.00			1.00	0.98		1.00	0.97
Frt		0.977			0.998				0.850			0.850
Flt Protected		0.996			0.999			0.957			0.963	
Satd. Flow (prot)	0	3201	0	0	3195	0	0	1489	1093	0	1160	1383
Flt Permitted		0.773			0.915			0.741			0.809	
Satd. Flow (perm)	0	2484	0	0	2927	0	0	1148	1076	0	972	1348
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		45			3				12			22
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		780			2016			791			859	
Travel Time (s)		17.7			45.8			18.0			19.5	
Confl. Peds. (#/hr)	11		5	5		11	3		3	3		3
Confl. Bikes (#/hr)			13									
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
Heavy Vehicles (%)	1%	7%	1%	7%	9%	0%	11%	0%	33%	41%	67%	9%
Adj. Flow (vph)	122	1087	221	16	797	11	45	5	5	16	5	22
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1430	0	0	824	0	0	50	5	0	21	22
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.04	1.00	1.00	1.04	1.00	1.00	1.14	1.14	1.00	1.09	1.09
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100		20	100		20	100	20	20	100	20
Trailing Detector (ft)	0	0		0	0		0	0	0	0	0	0
Detector 1 Position(ft)	0	0		0	0		0	0	0	0	0	0
Detector 1 Size(ft)	20	6		20	6		20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	

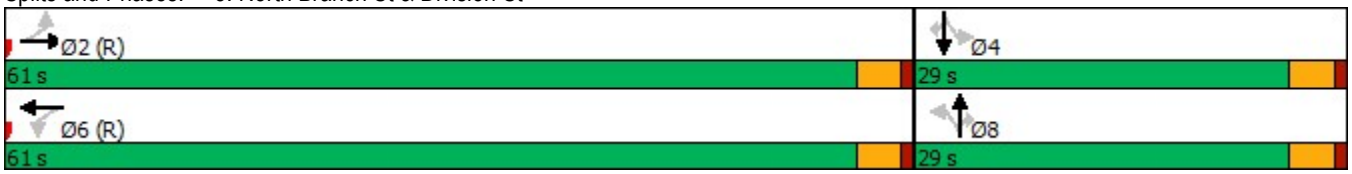


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8		8	4		4
Detector Phase	2	2		6	6		8	8	8	4	4	4
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	61.0	61.0		61.0	61.0		29.0	29.0	29.0	29.0	29.0	29.0
Total Split (s)	61.0	61.0		61.0	61.0		29.0	29.0	29.0	29.0	29.0	29.0
Total Split (%)	67.8%	67.8%		67.8%	67.8%		32.2%	32.2%	32.2%	32.2%	32.2%	32.2%
Maximum Green (s)	57.0	57.0		57.0	57.0		25.0	25.0	25.0	25.0	25.0	25.0
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)		0.0			0.0			0.0	0.0		0.0	0.0
Total Lost Time (s)		4.0			4.0			4.0	4.0		4.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		5.0	5.0	5.0	5.0	5.0	5.0
Recall Mode	C-Max	C-Max		C-Max	C-Max		Min	Min	Min	Min	Min	Min
Walk Time (s)	44.0	44.0		44.0	44.0							
Flash Dont Walk (s)	13.0	13.0		13.0	13.0							
Pedestrian Calls (#/hr)	0	0		0	0							
Act Effct Green (s)		71.0			71.0			11.0	11.0		11.0	11.0
Actuated g/C Ratio		0.79			0.79			0.12	0.12		0.12	0.12
v/c Ratio		0.73			0.36			0.36	0.04		0.18	0.12
Control Delay		5.1			3.5			42.4	9.2		37.5	15.3
Queue Delay		0.0			0.0			0.0	0.0		0.0	0.0
Total Delay		5.1			3.5			42.4	9.2		37.5	15.3
LOS		A			A			D	A		D	B
Approach Delay		5.1			3.5			39.4			26.2	
Approach LOS		A			A			D			C	
90th %ile Green (s)	67.1	67.1		67.1	67.1		14.9	14.9	14.9	14.9	14.9	14.9
90th %ile Term Code	Coord	Coord		Coord	Coord		Gap	Gap	Gap	Hold	Hold	Hold
70th %ile Green (s)	69.5	69.5		69.5	69.5		12.5	12.5	12.5	12.5	12.5	12.5
70th %ile Term Code	Coord	Coord		Coord	Coord		Gap	Gap	Gap	Hold	Hold	Hold
50th %ile Green (s)	71.1	71.1		71.1	71.1		10.9	10.9	10.9	10.9	10.9	10.9
50th %ile Term Code	Coord	Coord		Coord	Coord		Gap	Gap	Gap	Hold	Hold	Hold
30th %ile Green (s)	72.7	72.7		72.7	72.7		9.3	9.3	9.3	9.3	9.3	9.3
30th %ile Term Code	Coord	Coord		Coord	Coord		Gap	Gap	Gap	Hold	Hold	Hold
10th %ile Green (s)	74.5	74.5		74.5	74.5		7.5	7.5	7.5	7.5	7.5	7.5
10th %ile Term Code	Coord	Coord		Coord	Coord		Gap	Gap	Gap	Gap	Gap	Gap
Queue Length 50th (ft)		116			53			27	0		11	0
Queue Length 95th (ft)		m112			95			60	6		32	21
Internal Link Dist (ft)		700			1936			711			779	
Turn Bay Length (ft)									10			65
Base Capacity (vph)		1968			2308			318	307		270	390
Starvation Cap Reductn		0			0			0	0		0	0
Spillback Cap Reductn		0			0			0	0		0	0

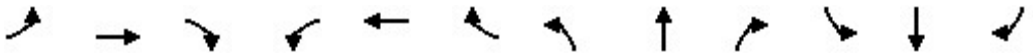
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Storage Cap Reductn		0			0			0	0		0	0
Reduced v/c Ratio		0.73			0.36			0.16	0.02		0.08	0.06

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 29 (32%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green			
Natural Cycle: 90			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.73			
Intersection Signal Delay: 5.7		Intersection LOS: A	
Intersection Capacity Utilization 114.2%		ICU Level of Service H	
Analysis Period (min) 15			
m Volume for 95th percentile queue is metered by upstream signal.			

Splits and Phases: 5: North Branch St & Division St



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	31	13	12	9	1	28	6	344	15	61	629	29
Future Volume (vph)	31	13	12	9	1	28	6	344	15	61	629	29
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	10	10	10	11	11	11	11	11	11
Storage Length (ft)	0		0	0		75	0		0	0		0
Storage Lanes	0		0	0		1	0		0	0		0
Taper Length (ft)	25			105			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00			1.00			1.00			1.00	
Frt		0.971				0.850		0.994			0.995	
Flt Protected		0.973			0.957			0.999			0.996	
Satd. Flow (prot)	0	1727	0	0	1697	1409	0	1647	0	0	1736	0
Flt Permitted		0.821			0.869			0.989			0.936	
Satd. Flow (perm)	0	1457	0	0	1538	1409	0	1630	0	0	1631	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		13				61		4			5	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		965			828			1019			288	
Travel Time (s)		21.9			18.8			23.2			6.5	
Confl. Peds. (#/hr)			1	1					3	3		
Confl. Bikes (#/hr)									1			3
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	0%	0%	0%	0%	0%	7%	17%	11%	0%	3%	5%	3%
Adj. Flow (vph)	34	14	13	10	1	31	7	382	17	68	699	32
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	61	0	0	11	31	0	406	0	0	799	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.04	1.04	1.04	1.09	1.09	1.09	1.04	1.04	1.04	1.04	1.04	1.04
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2		1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100	20	20	100		20	100	
Trailing Detector (ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Position(ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Size(ft)	20	6		20	6	20	20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	

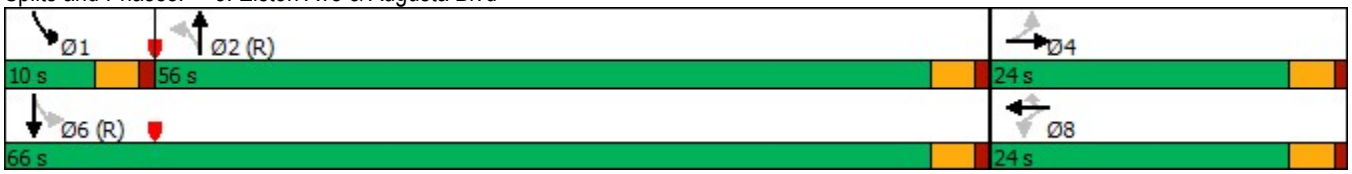


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA	Perm	Perm	NA		pm+pt	NA	
Protected Phases		4			8			2		1	6	
Permitted Phases	4			8		8	2			6		
Detector Phase	4	4		8	8	8	2	2		1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Minimum Split (s)	24.0	24.0		22.5	22.5	22.5	56.0	56.0		9.5	56.0	
Total Split (s)	24.0	24.0		24.0	24.0	24.0	56.0	56.0		10.0	66.0	
Total Split (%)	26.7%	26.7%		26.7%	26.7%	26.7%	62.2%	62.2%		11.1%	73.3%	
Maximum Green (s)	20.0	20.0		20.0	20.0	20.0	52.0	52.0		6.0	62.0	
Yellow Time (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0	0.0		0.0			0.0	
Total Lost Time (s)		4.0			4.0	4.0		4.0			4.0	
Lead/Lag							Lag	Lag		Lead		
Lead-Lag Optimize?							Yes	Yes		Yes		
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	Min	Min		Min	Min	Min	C-Max	C-Max		None	C-Max	
Walk Time (s)	7.0	7.0					38.0	38.0			38.0	
Flash Dont Walk (s)	13.0	13.0					14.0	14.0			14.0	
Pedestrian Calls (#/hr)	0	0					0	0			0	
Act Effct Green (s)		8.4			8.4	8.4		73.6			73.6	
Actuated g/C Ratio		0.09			0.09	0.09		0.82			0.82	
v/c Ratio		0.41			0.08	0.17		0.30			0.60	
Control Delay		39.6			36.7	5.0		2.9			9.2	
Queue Delay		0.0			0.0	0.0		0.0			0.0	
Total Delay		39.6			36.7	5.0		2.9			9.2	
LOS		D			D	A		A			A	
Approach Delay		39.6			13.3			2.9			9.2	
Approach LOS		D			B			A			A	
90th %ile Green (s)	11.8	11.8		11.8	11.8	11.8	70.2	70.2		0.0	70.2	
90th %ile Term Code	Gap	Gap		Hold	Hold	Hold	Coord	Coord		Skip	Coord	
70th %ile Green (s)	9.7	9.7		9.7	9.7	9.7	72.3	72.3		0.0	72.3	
70th %ile Term Code	Gap	Gap		Hold	Hold	Hold	Coord	Coord		Skip	Coord	
50th %ile Green (s)	8.2	8.2		8.2	8.2	8.2	73.8	73.8		0.0	73.8	
50th %ile Term Code	Gap	Gap		Hold	Hold	Hold	Coord	Coord		Skip	Coord	
30th %ile Green (s)	6.7	6.7		6.7	6.7	6.7	75.3	75.3		0.0	75.3	
30th %ile Term Code	Gap	Gap		Hold	Hold	Hold	Coord	Coord		Skip	Coord	
10th %ile Green (s)	5.5	5.5		5.5	5.5	5.5	76.5	76.5		0.0	76.5	
10th %ile Term Code	Gap	Gap		Gap	Gap	Gap	Coord	Coord		Skip	Coord	
Queue Length 50th (ft)		26			6	0		38			119	
Queue Length 95th (ft)		63			21	10		80			m181	
Internal Link Dist (ft)		885			748			939			208	
Turn Bay Length (ft)						75						
Base Capacity (vph)		333			341	360		1334			1335	
Starvation Cap Reductn		0			0	0		0			0	
Spillback Cap Reductn		0			0	0		0			0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Storage Cap Reductn		0			0	0		0			0	
Reduced v/c Ratio		0.18			0.03	0.09		0.30			0.60	

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green			
Natural Cycle: 90			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.60			
Intersection Signal Delay: 8.8		Intersection LOS: A	
Intersection Capacity Utilization 86.6%		ICU Level of Service E	
Analysis Period (min) 15			
m Volume for 95th percentile queue is metered by upstream signal.			

Splits and Phases: 8: Elston Ave & Augusta Blvd



Intersection	
Int Delay, s/veh	0.6

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	13	9	5	398	710	22
Future Vol, veh/h	13	9	5	398	710	22
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	89	89	89	89	89	89
Heavy Vehicles, %	62	44	0	8	3	14
Mvmt Flow	15	10	6	447	798	25

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1270	811	823	0	-	0
Stage 1	811	-	-	-	-	-
Stage 2	459	-	-	-	-	-
Critical Hdwy	7.02	6.64	4.1	-	-	-
Critical Hdwy Stg 1	6.02	-	-	-	-	-
Critical Hdwy Stg 2	6.02	-	-	-	-	-
Follow-up Hdwy	4.058	3.696	2.2	-	-	-
Pot Cap-1 Maneuver	140	322	816	-	-	-
Stage 1	349	-	-	-	-	-
Stage 2	527	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	139	322	816	-	-	-
Mov Cap-2 Maneuver	139	-	-	-	-	-
Stage 1	346	-	-	-	-	-
Stage 2	527	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	28	0.1	0
HCM LOS	D		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	816	-	181	-	-
HCM Lane V/C Ratio	0.007	-	0.137	-	-
HCM Control Delay (s)	9.4	0	28	-	-
HCM Lane LOS	A	A	D	-	-
HCM 95th %tile Q(veh)	0	-	0.5	-	-

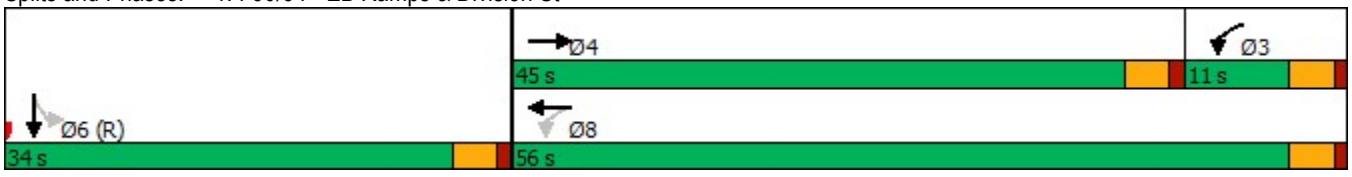
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	778	561	222	624	0	0	0	0	227	10	106
Future Volume (vph)	0	778	561	222	624	0	0	0	0	227	10	106
Ideal Flow (vphpl)	1900	1900	1900	1900	2000	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	11	12	10	11	12	12	12	12	11	11	12
Storage Length (ft)	0		0	0		0	0		0	95		0
Storage Lanes	0		0	1		0	0		0	1		0
Taper Length (ft)	25			25			25			150		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	0.95	0.95	1.00
Ped Bike Factor		0.99		1.00								
Frt		0.937									0.904	
Flt Protected				0.950						0.950	0.985	
Satd. Flow (prot)	0	3120	0	1478	3465	0	0	0	0	1535	1498	0
Flt Permitted				0.089						0.950	0.985	
Satd. Flow (perm)	0	3120	0	138	3465	0	0	0	0	1535	1498	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		265									106	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1630			280			940			875	
Travel Time (s)		37.0			6.4			21.4			19.9	
Confl. Peds. (#/hr)	15		5	5		15						
Confl. Bikes (#/hr)			10									
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	0%	5%	1%	14%	6%	0%	0%	0%	0%	8%	0%	2%
Adj. Flow (vph)	0	810	584	231	650	0	0	0	0	236	10	110
Shared Lane Traffic (%)										22%		
Lane Group Flow (vph)	0	1394	0	231	650	0	0	0	0	184	172	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Right	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		10			10			11			11	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.04	1.00	1.09	0.98	1.00	1.00	1.00	1.00	1.04	1.04	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type		NA		pm+pt	NA					Perm	NA	
Protected Phases		4		3	8						6	
Permitted Phases				8						6		
Minimum Split (s)		45.0		11.0	56.0					34.0	34.0	
Total Split (s)		45.0		11.0	56.0					34.0	34.0	
Total Split (%)		50.0%		12.2%	62.2%					37.8%	37.8%	
Maximum Green (s)		41.0		7.0	52.0					30.0	30.0	
Yellow Time (s)		3.0		3.0	3.0					3.0	3.0	
All-Red Time (s)		1.0		1.0	1.0					1.0	1.0	
Lost Time Adjust (s)		0.0		0.0	0.0					0.0	0.0	
Total Lost Time (s)		4.0		4.0	4.0					4.0	4.0	
Lead/Lag		Lead		Lag								
Lead-Lag Optimize?		Yes		Yes								
Walk Time (s)		27.0			27.0							

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Flash Dont Walk (s)		14.0			14.0							
Pedestrian Calls (#/hr)		0			0							
Act Effct Green (s)		41.0		52.0	52.0					30.0	30.0	
Actuated g/C Ratio		0.46		0.58	0.58					0.33	0.33	
v/c Ratio		0.89		1.26	0.32					0.36	0.30	
Control Delay		26.8		178.6	8.4					25.3	10.8	
Queue Delay		0.0		0.0	0.5					0.0	0.0	
Total Delay		26.8		178.6	8.9					25.3	10.8	
LOS		C		F	A					C	B	
Approach Delay		26.8			53.4						18.3	
Approach LOS		C			D						B	
Queue Length 50th (ft)		310		~130	78					82	27	
Queue Length 95th (ft)		#469		#279	100					143	77	
Internal Link Dist (ft)		1550			200			860			795	
Turn Bay Length (ft)										95		
Base Capacity (vph)		1565		183	2002					511	570	
Starvation Cap Reductn		0		0	837					0	0	
Spillback Cap Reductn		0		0	0					0	0	
Storage Cap Reductn		0		0	0					0	0	
Reduced v/c Ratio		0.89		1.26	0.56					0.36	0.30	

Intersection Summary

Area Type: Other
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 0 (0%), Referenced to phase 2: and 6:SBTL, Start of Green
Natural Cycle: 90
Control Type: Pretimed
Maximum v/c Ratio: 1.26
Intersection Signal Delay: 34.5 Intersection LOS: C
Intersection Capacity Utilization 75.0% ICU Level of Service D
Analysis Period (min) 15
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 1: I-90/94 - EB Ramps & Division St



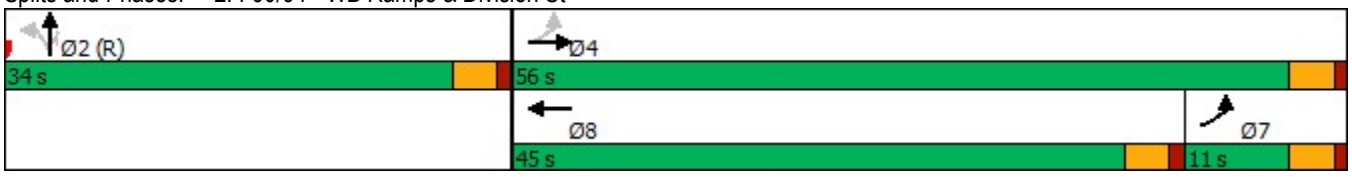
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	266	739	0	0	556	251	290	34	468	0	0	0
Future Volume (vph)	266	739	0	0	556	251	290	34	468	0	0	0
Ideal Flow (vphpl)	1900	2000	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	11	12	12	11	12	11	11	11	12	12	12
Storage Length (ft)	0		0	0		0	75		75	0		0
Storage Lanes	1		0	0		0	1		1	0		0
Taper Length (ft)	25			25			40			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00
Ped Bike Factor	1.00				0.99							
Frt					0.953			0.870	0.850			
Flt Protected	0.950						0.950					
Satd. Flow (prot)	1668	3401	0	0	2999	0	1728	1432	1399	0	0	0
Flt Permitted	0.243						0.950					
Satd. Flow (perm)	425	3401	0	0	2999	0	1728	1432	1399	0	0	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					106			181	181			
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		280			321			913			753	
Travel Time (s)		6.4			7.3			20.8			17.1	
Confl. Peds. (#/hr)	10		7	7		10						
Confl. Bikes (#/hr)			7									
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	1%	8%	0%	0%	12%	5%	1%	6%	6%	0%	0%	0%
Adj. Flow (vph)	280	778	0	0	585	264	305	36	493	0	0	0
Shared Lane Traffic (%)									47%			
Lane Group Flow (vph)	280	778	0	0	849	0	305	268	261	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Right	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		10			10			11			11	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.09	0.98	1.00	1.00	1.04	1.00	1.04	1.04	1.04	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	pm+pt	NA			NA		Perm	NA	Perm			
Protected Phases	7	4			8			2				
Permitted Phases	4						2		2			
Minimum Split (s)	11.0	56.0			45.0		34.0	34.0	34.0			
Total Split (s)	11.0	56.0			45.0		34.0	34.0	34.0			
Total Split (%)	12.2%	62.2%			50.0%		37.8%	37.8%	37.8%			
Maximum Green (s)	7.0	52.0			41.0		30.0	30.0	30.0			
Yellow Time (s)	3.0	3.0			3.0		3.0	3.0	3.0			
All-Red Time (s)	1.0	1.0			1.0		1.0	1.0	1.0			
Lost Time Adjust (s)	0.0	0.0			0.0		0.0	0.0	0.0			
Total Lost Time (s)	4.0	4.0			4.0		4.0	4.0	4.0			
Lead/Lag	Lag				Lead							
Lead-Lag Optimize?	Yes				Yes							
Walk Time (s)		27.0			27.0							

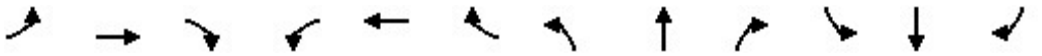
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Flash Dont Walk (s)		14.0			14.0							
Pedestrian Calls (#/hr)		4			0							
Act Effct Green (s)	52.0	52.0			41.0		30.0	30.0	30.0			
Actuated g/C Ratio	0.58	0.58			0.46		0.33	0.33	0.33			
v/c Ratio	0.82	0.40			0.60		0.53	0.45	0.44			
Control Delay	30.7	6.5			16.7		28.4	10.7	10.4			
Queue Delay	0.0	0.9			0.0		0.0	0.0	0.0			
Total Delay	30.7	7.5			16.7		28.4	10.7	10.4			
LOS	C	A			B		C	B	B			
Approach Delay		13.6			16.7			17.1				
Approach LOS		B			B			B				
Queue Length 50th (ft)	45	67			105		139	36	33			
Queue Length 95th (ft)	m67	m78			m63		220	105	101			
Internal Link Dist (ft)		200			241			833			673	
Turn Bay Length (ft)							75		75			
Base Capacity (vph)	342	1965			1423		576	598	587			
Starvation Cap Reductn	0	851			0		0	0	0			
Spillback Cap Reductn	0	245			0		0	12	12			
Storage Cap Reductn	0	0			0		0	0	0			
Reduced v/c Ratio	0.82	0.70			0.60		0.53	0.46	0.45			

Intersection Summary

Area Type: Other
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:, Start of Green
Natural Cycle: 90
Control Type: Pretimed
Maximum v/c Ratio: 0.82
Intersection Signal Delay: 15.6 Intersection LOS: B
Intersection Capacity Utilization 75.0% ICU Level of Service D
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: I-90/94 - WB Ramps & Division St





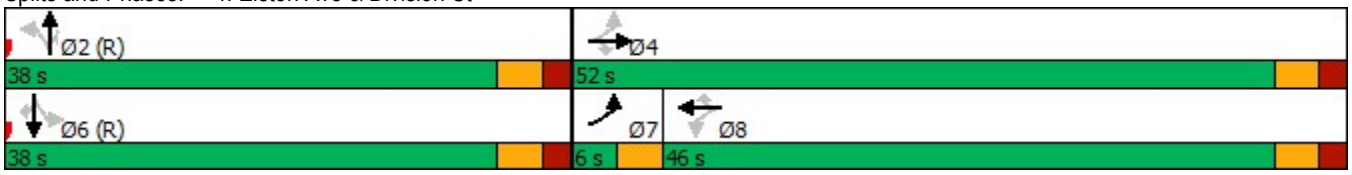
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	103	1022	82	13	690	64	32	186	70	146	417	85
Future Volume (vph)	103	1022	82	13	690	64	32	186	70	146	417	85
Ideal Flow (vphpl)	1900	2000	1900	1900	1900	1900	1900	2000	1900	1900	2000	1900
Lane Width (ft)	11	11	11	12	11	11	10	10	10	11	11	12
Storage Length (ft)	130		0	0		55	100		60	195		160
Storage Lanes	1		1	0		1	1		1	1		1
Taper Length (ft)	70			25			85			85		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00		0.97		1.00	0.96	1.00		0.99	1.00		0.96
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950				0.999		0.950			0.950		
Satd. Flow (prot)	1491	1824	1516	0	1699	1346	1604	1778	1478	1694	1895	1369
Flt Permitted	0.097				0.519		0.296			0.594		
Satd. Flow (perm)	152	1824	1469	0	882	1295	499	1778	1456	1058	1895	1319
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			74			61			66			90
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		315			780			752			1021	
Travel Time (s)		7.2			17.7			17.1			23.2	
Confl. Peds. (#/hr)	16		4	4		16	6		2	2		6
Confl. Bikes (#/hr)			10			1			2			32
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	17%	6%	3%	9%	8%	16%	5%	5%	2%	3%	2%	18%
Adj. Flow (vph)	110	1087	87	14	734	68	34	198	74	155	444	90
Shared Lane Traffic (%)												
Lane Group Flow (vph)	110	1087	87	0	748	68	34	198	74	155	444	90
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		11			11			11			11	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.04	0.98	1.04	1.00	1.04	1.04	1.09	1.02	1.09	1.04	0.98	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases	7	4			8			2			6	
Permitted Phases	4		4	8		8	2		2	6		6
Minimum Split (s)	6.0	52.0	52.0	46.0	46.0	46.0	38.0	38.0	38.0	38.0	38.0	38.0
Total Split (s)	6.0	52.0	52.0	46.0	46.0	46.0	38.0	38.0	38.0	38.0	38.0	38.0
Total Split (%)	6.7%	57.8%	57.8%	51.1%	51.1%	51.1%	42.2%	42.2%	42.2%	42.2%	42.2%	42.2%
Maximum Green (s)	3.0	47.0	47.0	41.0	41.0	41.0	33.0	33.0	33.0	33.0	33.0	33.0
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	0.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	3.0	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead			Lag	Lag	Lag						
Lead-Lag Optimize?	Yes			Yes	Yes	Yes						
Walk Time (s)		22.0	22.0	22.0	22.0	22.0	5.0	5.0	5.0	5.0	5.0	5.0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Flash Dont Walk (s)		25.0	25.0	19.0	19.0	19.0	28.0	28.0	28.0	28.0	28.0	28.0
Pedestrian Calls (#/hr)		0	0	0	0	0	0	0	0	0	0	0
Act Effct Green (s)	49.0	47.0	47.0		41.0	41.0	33.0	33.0	33.0	33.0	33.0	33.0
Actuated g/C Ratio	0.54	0.52	0.52		0.46	0.46	0.37	0.37	0.37	0.37	0.37	0.37
v/c Ratio	0.87	1.14	0.11		1.87	0.11	0.19	0.30	0.13	0.40	0.64	0.17
Control Delay	69.7	95.5	3.9		419.9	3.1	21.5	20.6	5.8	25.0	28.7	5.2
Queue Delay	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	69.7	95.5	3.9		419.9	3.1	21.5	20.6	5.8	25.0	28.7	5.2
LOS	E	F	A		F	A	C	C	A	C	C	A
Approach Delay		87.1			385.2			17.1			24.8	
Approach LOS		F			F			B			C	
Queue Length 50th (ft)	31	~726	1		~645	1	12	74	1	64	206	0
Queue Length 95th (ft)	#100	#976	19		#889	13	33	120	27	120	309	30
Internal Link Dist (ft)		235			700			672			941	
Turn Bay Length (ft)	130					55	100		60	195		160
Base Capacity (vph)	127	952	802		401	623	182	651	575	387	694	540
Starvation Cap Reductn	0	0	0		0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0		0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0		0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.87	1.14	0.11		1.87	0.11	0.19	0.30	0.13	0.40	0.64	0.17

Intersection Summary

Area Type: Other
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 82 (91%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 110
Control Type: Pretimed
Maximum v/c Ratio: 1.87
Intersection Signal Delay: 144.9 Intersection LOS: F
Intersection Capacity Utilization 133.7% ICU Level of Service H
Analysis Period (min) 15
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 4: Elston Ave & Division St



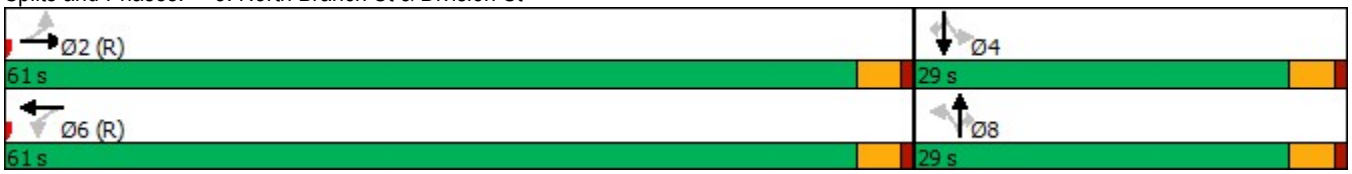
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	106	939	193	14	709	10	39	5	5	14	5	19
Future Volume (vph)	106	939	193	14	709	10	39	5	5	14	5	19
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	11	12	12	11	12	12	9	9	12	10	10
Storage Length (ft)	0		0	0		0	0		10	0		65
Storage Lanes	0		0	0		0	0		1	0		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.99			1.00			1.00	0.98		1.00	0.97
Frt		0.977			0.998				0.850			0.850
Flt Protected		0.996			0.999			0.957			0.964	
Satd. Flow (prot)	0	3201	0	0	3195	0	0	1490	1093	0	1159	1383
Flt Permitted		0.783			0.920			0.745			0.814	
Satd. Flow (perm)	0	2516	0	0	2943	0	0	1154	1076	0	976	1348
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		46			3				12			21
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		780			2016			791			859	
Travel Time (s)		17.7			45.8			18.0			19.5	
Confl. Peds. (#/hr)	11		5	5		11	3		3	3		3
Confl. Bikes (#/hr)			13									
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
Heavy Vehicles (%)	1%	7%	1%	7%	9%	0%	11%	0%	33%	41%	67%	9%
Adj. Flow (vph)	115	1021	210	15	771	11	42	5	5	15	5	21
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1346	0	0	797	0	0	47	5	0	20	21
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.04	1.00	1.00	1.04	1.00	1.00	1.14	1.14	1.00	1.09	1.09
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100		20	100		20	100	20	20	100	20
Trailing Detector (ft)	0	0		0	0		0	0	0	0	0	0
Detector 1 Position(ft)	0	0		0	0		0	0	0	0	0	0
Detector 1 Size(ft)	20	6		20	6		20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8		8	4		4
Detector Phase	2	2		6	6		8	8	8	4	4	4
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	61.0	61.0		61.0	61.0		29.0	29.0	29.0	29.0	29.0	29.0
Total Split (s)	61.0	61.0		61.0	61.0		29.0	29.0	29.0	29.0	29.0	29.0
Total Split (%)	67.8%	67.8%		67.8%	67.8%		32.2%	32.2%	32.2%	32.2%	32.2%	32.2%
Maximum Green (s)	57.0	57.0		57.0	57.0		25.0	25.0	25.0	25.0	25.0	25.0
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)		0.0			0.0			0.0	0.0		0.0	0.0
Total Lost Time (s)		4.0			4.0			4.0	4.0		4.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		5.0	5.0	5.0	5.0	5.0	5.0
Recall Mode	C-Max	C-Max		C-Max	C-Max		Min	Min	Min	Min	Min	Min
Walk Time (s)	44.0	44.0		44.0	44.0							
Flash Dont Walk (s)	13.0	13.0		13.0	13.0							
Pedestrian Calls (#/hr)	0	0		0	0							
Act Effct Green (s)		71.2			71.2			10.8	10.8		10.8	10.8
Actuated g/C Ratio		0.79			0.79			0.12	0.12		0.12	0.12
v/c Ratio		0.67			0.34			0.34	0.04		0.17	0.12
Control Delay		4.8			3.4			42.0	9.2		37.5	15.4
Queue Delay		0.0			0.0			0.0	0.0		0.0	0.0
Total Delay		4.8			3.4			42.0	9.2		37.5	15.4
LOS		A			A			D	A		D	B
Approach Delay		4.8			3.4			38.9			26.2	
Approach LOS		A			A			D			C	
90th %ile Green (s)	67.4	67.4		67.4	67.4		14.6	14.6	14.6	14.6	14.6	14.6
90th %ile Term Code	Coord	Coord		Coord	Coord		Gap	Gap	Gap	Hold	Hold	Hold
70th %ile Green (s)	69.7	69.7		69.7	69.7		12.3	12.3	12.3	12.3	12.3	12.3
70th %ile Term Code	Coord	Coord		Coord	Coord		Gap	Gap	Gap	Hold	Hold	Hold
50th %ile Green (s)	71.3	71.3		71.3	71.3		10.7	10.7	10.7	10.7	10.7	10.7
50th %ile Term Code	Coord	Coord		Coord	Coord		Gap	Gap	Gap	Hold	Hold	Hold
30th %ile Green (s)	72.9	72.9		72.9	72.9		9.1	9.1	9.1	9.1	9.1	9.1
30th %ile Term Code	Coord	Coord		Coord	Coord		Gap	Gap	Gap	Hold	Hold	Hold
10th %ile Green (s)	74.5	74.5		74.5	74.5		7.5	7.5	7.5	7.5	7.5	7.5
10th %ile Term Code	Coord	Coord		Coord	Coord		Gap	Gap	Gap	Gap	Gap	Gap
Queue Length 50th (ft)		110			50			25	0		10	0
Queue Length 95th (ft)		m102			89			56	6		31	20
Internal Link Dist (ft)		700			1936			711			779	
Turn Bay Length (ft)									10			65
Base Capacity (vph)		1998			2327			320	307		271	389
Starvation Cap Reductn		0			0			0	0		0	0
Spillback Cap Reductn		0			0			0	0		0	0

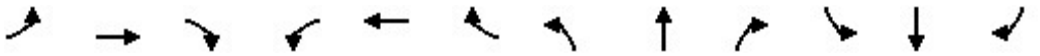
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Storage Cap Reductn		0			0			0	0		0	0
Reduced v/c Ratio		0.67			0.34			0.15	0.02		0.07	0.05

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 29 (32%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green			
Natural Cycle: 90			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.67			
Intersection Signal Delay: 5.5		Intersection LOS: A	
Intersection Capacity Utilization 114.1%		ICU Level of Service H	
Analysis Period (min) 15			
m Volume for 95th percentile queue is metered by upstream signal.			

Splits and Phases: 5: North Branch St & Division St



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	22	9	8	6	1	20	4	241	11	43	440	20
Future Volume (vph)	22	9	8	6	1	20	4	241	11	43	440	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	10	10	10	11	11	11	11	11	11
Storage Length (ft)	0		0	0		75	0		0	0		0
Storage Lanes	0		0	0		1	0		0	0		0
Taper Length (ft)	25			105			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00			1.00			1.00			1.00	
Frt		0.972				0.850		0.994			0.995	
Flt Protected		0.973			0.958			0.999			0.996	
Satd. Flow (prot)	0	1729	0	0	1699	1409	0	1647	0	0	1736	0
Flt Permitted		0.824			0.784			0.995			0.954	
Satd. Flow (perm)	0	1464	0	0	1388	1409	0	1641	0	0	1663	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		9				61		4			5	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		965			828			1019			288	
Travel Time (s)		21.9			18.8			23.2			6.5	
Confl. Peds. (#/hr)			1	1					3	3		
Confl. Bikes (#/hr)									1			3
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	0%	0%	0%	0%	0%	7%	17%	11%	0%	3%	5%	3%
Adj. Flow (vph)	24	10	9	7	1	22	4	268	12	48	489	22
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	43	0	0	8	22	0	284	0	0	559	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.04	1.04	1.04	1.09	1.09	1.09	1.04	1.04	1.04	1.04	1.04	1.04
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2		1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100	20	20	100		20	100	
Trailing Detector (ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Position(ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Size(ft)	20	6		20	6	20	20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	

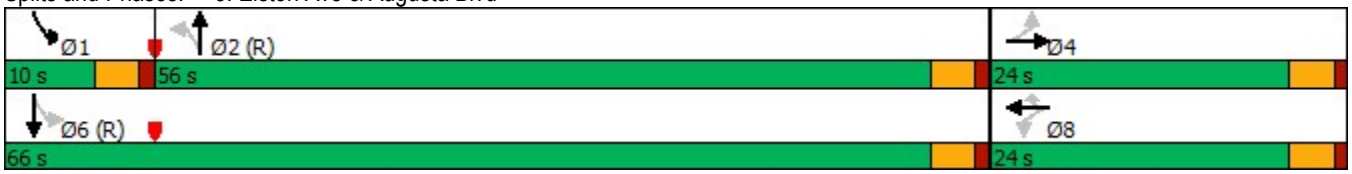


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA	Perm	Perm	NA		pm+pt	NA	
Protected Phases		4			8			2		1	6	
Permitted Phases	4			8		8	2			6		
Detector Phase	4	4		8	8	8	2	2		1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Minimum Split (s)	24.0	24.0		22.5	22.5	22.5	56.0	56.0		9.5	56.0	
Total Split (s)	24.0	24.0		24.0	24.0	24.0	56.0	56.0		10.0	66.0	
Total Split (%)	26.7%	26.7%		26.7%	26.7%	26.7%	62.2%	62.2%		11.1%	73.3%	
Maximum Green (s)	20.0	20.0		20.0	20.0	20.0	52.0	52.0		6.0	62.0	
Yellow Time (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0	0.0		0.0			0.0	
Total Lost Time (s)		4.0			4.0	4.0		4.0			4.0	
Lead/Lag							Lag	Lag		Lead		
Lead-Lag Optimize?							Yes	Yes		Yes		
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	Min	Min		Min	Min	Min	C-Max	C-Max		None	C-Max	
Walk Time (s)	7.0	7.0					38.0	38.0			38.0	
Flash Dont Walk (s)	13.0	13.0					14.0	14.0			14.0	
Pedestrian Calls (#/hr)	0	0					0	0			0	
Act Effct Green (s)		7.6			7.6	7.6		74.4			74.4	
Actuated g/C Ratio		0.08			0.08	0.08		0.83			0.83	
v/c Ratio		0.33			0.07	0.13		0.21			0.41	
Control Delay		38.6			37.9	1.5		2.2			3.3	
Queue Delay		0.0			0.0	0.0		0.0			0.0	
Total Delay		38.6			37.9	1.5		2.2			3.3	
LOS		D			D	A		A			A	
Approach Delay		38.6			11.2			2.2			3.3	
Approach LOS		D			B			A			A	
90th %ile Green (s)	10.3	10.3		10.3	10.3	10.3	71.7	71.7		0.0	71.7	
90th %ile Term Code	Gap	Gap		Hold	Hold	Hold	Coord	Coord		Skip	Coord	
70th %ile Green (s)	8.6	8.6		8.6	8.6	8.6	73.4	73.4		0.0	73.4	
70th %ile Term Code	Gap	Gap		Hold	Hold	Hold	Coord	Coord		Skip	Coord	
50th %ile Green (s)	7.4	7.4		7.4	7.4	7.4	74.6	74.6		0.0	74.6	
50th %ile Term Code	Gap	Gap		Hold	Hold	Hold	Coord	Coord		Skip	Coord	
30th %ile Green (s)	6.1	6.1		6.1	6.1	6.1	75.9	75.9		0.0	75.9	
30th %ile Term Code	Gap	Gap		Hold	Hold	Hold	Coord	Coord		Skip	Coord	
10th %ile Green (s)	5.5	5.5		5.5	5.5	5.5	76.5	76.5		0.0	76.5	
10th %ile Term Code	Gap	Gap		Gap	Gap	Gap	Coord	Coord		Skip	Coord	
Queue Length 50th (ft)		19			4	0		22			25	
Queue Length 95th (ft)		50			17	2		46			m68	
Internal Link Dist (ft)		885			748			939			208	
Turn Bay Length (ft)						75						
Base Capacity (vph)		332			308	360		1357			1376	
Starvation Cap Reductn		0			0	0		0			0	
Spillback Cap Reductn		0			0	0		0			0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Storage Cap Reductn		0			0	0		0			0	
Reduced v/c Ratio		0.13			0.03	0.06		0.21			0.41	

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green			
Natural Cycle: 90			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.41			
Intersection Signal Delay: 4.9		Intersection LOS: A	
Intersection Capacity Utilization 65.2%		ICU Level of Service C	
Analysis Period (min) 15			
m Volume for 95th percentile queue is metered by upstream signal.			

Splits and Phases: 8: Elston Ave & Augusta Blvd



Intersection	
Int Delay, s/veh	0.4

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	9	6	4	279	497	15
Future Vol, veh/h	9	6	4	279	497	15
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	89	89	89	89	89	89
Heavy Vehicles, %	62	44	0	8	3	14
Mvmt Flow	10	7	4	313	558	17

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	888	567	575	0	-	0
Stage 1	567	-	-	-	-	-
Stage 2	321	-	-	-	-	-
Critical Hdwy	7.02	6.64	4.1	-	-	-
Critical Hdwy Stg 1	6.02	-	-	-	-	-
Critical Hdwy Stg 2	6.02	-	-	-	-	-
Follow-up Hdwy	4.058	3.696	2.2	-	-	-
Pot Cap-1 Maneuver	249	452	1008	-	-	-
Stage 1	465	-	-	-	-	-
Stage 2	618	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	248	452	1008	-	-	-
Mov Cap-2 Maneuver	248	-	-	-	-	-
Stage 1	463	-	-	-	-	-
Stage 2	618	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	17.6	0.1	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1008	-	303	-	-
HCM Lane V/C Ratio	0.004	-	0.056	-	-
HCM Control Delay (s)	8.6	0	17.6	-	-
HCM Lane LOS	A	A	C	-	-
HCM 95th %tile Q(veh)	0	-	0.2	-	-

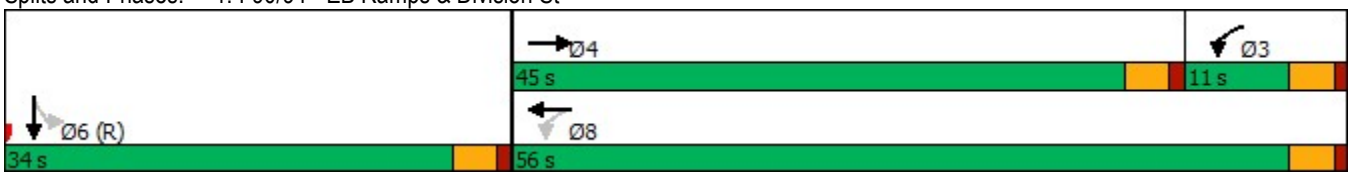
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	575	234	239	712	0	0	0	0	208	5	270
Future Volume (vph)	0	575	234	239	712	0	0	0	0	208	5	270
Ideal Flow (vphpl)	1900	1900	1900	1900	2000	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	11	12	10	11	12	12	12	12	11	11	12
Storage Length (ft)	0		0	0		0	0		0	95		0
Storage Lanes	0		0	1		0	0		0	1		0
Taper Length (ft)	25			25			25			150		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	0.95	0.95	1.00
Ped Bike Factor		0.99		1.00								
Frt		0.957									0.863	
Flt Protected				0.950						0.950	0.996	
Satd. Flow (prot)	0	3240	0	1604	3601	0	0	0	0	1625	1476	0
Flt Permitted				0.242						0.950	0.996	
Satd. Flow (perm)	0	3240	0	408	3601	0	0	0	0	1625	1476	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		89									183	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1630			280			940			875	
Travel Time (s)		37.0			6.4			21.4			19.9	
Confl. Peds. (#/hr)	19		8	8		19						
Confl. Bikes (#/hr)			4			14						
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	0%	3%	0%	5%	2%	0%	0%	0%	0%	2%	33%	1%
Adj. Flow (vph)	0	605	246	252	749	0	0	0	0	219	5	284
Shared Lane Traffic (%)										10%		
Lane Group Flow (vph)	0	851	0	252	749	0	0	0	0	197	311	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Right	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		10			10			11			11	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.04	1.00	1.09	0.98	1.00	1.00	1.00	1.00	1.04	1.04	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type		NA		pm+pt	NA					Perm	NA	
Protected Phases		4		3	8						6	
Permitted Phases				8						6		
Minimum Split (s)		45.0		11.0	56.0					34.0	34.0	
Total Split (s)		45.0		11.0	56.0					34.0	34.0	
Total Split (%)		50.0%		12.2%	62.2%					37.8%	37.8%	
Maximum Green (s)		41.0		7.0	52.0					30.0	30.0	
Yellow Time (s)		3.0		3.0	3.0					3.0	3.0	
All-Red Time (s)		1.0		1.0	1.0					1.0	1.0	
Lost Time Adjust (s)		0.0		0.0	0.0					0.0	0.0	
Total Lost Time (s)		4.0		4.0	4.0					4.0	4.0	
Lead/Lag		Lead		Lag								
Lead-Lag Optimize?		Yes		Yes								
Walk Time (s)		27.0			27.0							

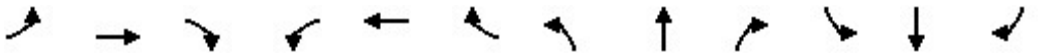
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Flash Dont Walk (s)		14.0			14.0							
Pedestrian Calls (#/hr)		0			0							
Act Effct Green (s)		41.0		52.0	52.0					30.0	30.0	
Actuated g/C Ratio		0.46		0.58	0.58					0.33	0.33	
v/c Ratio		0.56		0.77	0.36					0.36	0.51	
Control Delay		17.5		31.9	7.7					25.2	12.9	
Queue Delay		0.0		0.0	0.6					0.0	0.0	
Total Delay		17.5		31.9	8.3					25.2	12.9	
LOS		B		C	A					C	B	
Approach Delay		17.5			14.2						17.7	
Approach LOS		B			B						B	
Queue Length 50th (ft)		160		51	81					88	55	
Queue Length 95th (ft)		217		m#122	100					150	136	
Internal Link Dist (ft)		1550			200			860			795	
Turn Bay Length (ft)										95		
Base Capacity (vph)		1524		328	2080					541	614	
Starvation Cap Reductn		0		0	886					0	0	
Spillback Cap Reductn		0		0	0					0	0	
Storage Cap Reductn		0		0	0					0	0	
Reduced v/c Ratio		0.56		0.77	0.63					0.36	0.51	

Intersection Summary

Area Type: Other
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 0 (0%), Referenced to phase 2: and 6:SBTL, Start of Green
Natural Cycle: 90
Control Type: Pretimed
Maximum v/c Ratio: 0.77
Intersection Signal Delay: 16.2 Intersection LOS: B
Intersection Capacity Utilization 71.6% ICU Level of Service C
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: 1: I-90/94 - EB Ramps & Division St





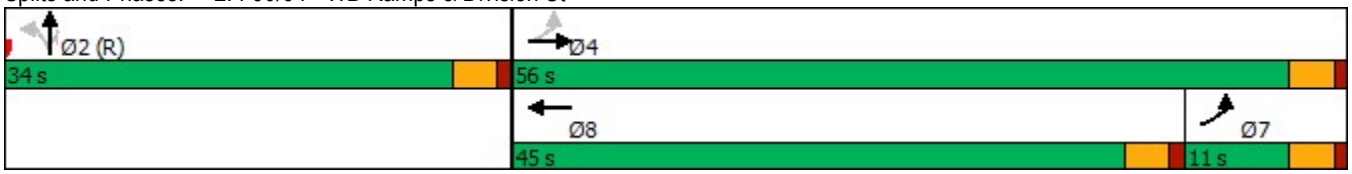
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	214	569	0	0	671	356	280	178	178	0	0	0
Future Volume (vph)	214	569	0	0	671	356	280	178	178	0	0	0
Ideal Flow (vphpl)	1900	2000	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	11	12	12	11	12	11	11	11	12	12	12
Storage Length (ft)	0		0	0		0	75		75	0		0
Storage Lanes	1		0	0		0	1		1	0		0
Taper Length (ft)	25			25			40			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00
Ped Bike Factor	1.00				0.98							
Frt					0.948			0.987	0.850			
Flt Protected	0.950						0.950					
Satd. Flow (prot)	1668	3566	0	0	3148	0	1745	1715	1412	0	0	0
Flt Permitted	0.162						0.950					
Satd. Flow (perm)	283	3566	0	0	3148	0	1745	1715	1412	0	0	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					142			6	166			
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		280			321			913			753	
Travel Time (s)		6.4			7.3			20.8			17.1	
Confl. Peds. (#/hr)	24		5	5		24						
Confl. Bikes (#/hr)			2			4						
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	1%	3%	0%	0%	4%	2%	0%	0%	5%	0%	0%	0%
Adj. Flow (vph)	221	587	0	0	692	367	289	184	184	0	0	0
Shared Lane Traffic (%)									10%			
Lane Group Flow (vph)	221	587	0	0	1059	0	289	202	166	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Right	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		10			10			11			11	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.09	0.98	1.00	1.00	1.04	1.00	1.04	1.04	1.04	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	pm+pt	NA			NA		Perm	NA	Perm			
Protected Phases	7	4			8			2				
Permitted Phases	4						2		2			
Minimum Split (s)	11.0	56.0			45.0		34.0	34.0	34.0			
Total Split (s)	11.0	56.0			45.0		34.0	34.0	34.0			
Total Split (%)	12.2%	62.2%			50.0%		37.8%	37.8%	37.8%			
Maximum Green (s)	7.0	52.0			41.0		30.0	30.0	30.0			
Yellow Time (s)	3.0	3.0			3.0		3.0	3.0	3.0			
All-Red Time (s)	1.0	1.0			1.0		1.0	1.0	1.0			
Lost Time Adjust (s)	0.0	0.0			0.0		0.0	0.0	0.0			
Total Lost Time (s)	4.0	4.0			4.0		4.0	4.0	4.0			
Lead/Lag	Lag				Lead							
Lead-Lag Optimize?	Yes				Yes							
Walk Time (s)		27.0			27.0							

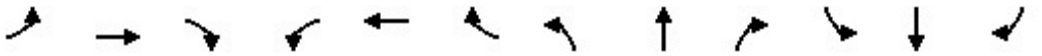
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Flash Dont Walk (s)		14.0			14.0							
Pedestrian Calls (#/hr)		4			0							
Act Effct Green (s)	52.0	52.0			41.0		30.0	30.0	30.0			
Actuated g/C Ratio	0.58	0.58			0.46		0.33	0.33	0.33			
v/c Ratio	0.82	0.28			0.70		0.50	0.35	0.29			
Control Delay	44.9	6.6			16.6		27.6	24.1	5.0			
Queue Delay	0.0	0.3			0.0		0.0	0.0	0.0			
Total Delay	44.9	6.9			16.6		27.6	24.1	5.0			
LOS	D	A			B		C	C	A			
Approach Delay		17.3			16.6			20.8				
Approach LOS		B			B			C				
Queue Length 50th (ft)	63	53			152		130	87	0			
Queue Length 95th (ft)	#180	68			m180		207	149	44			
Internal Link Dist (ft)		200			241			833			673	
Turn Bay Length (ft)							75		75			
Base Capacity (vph)	271	2060			1511		581	575	581			
Starvation Cap Reductn	0	835			0		0	0	0			
Spillback Cap Reductn	0	0			0		0	0	0			
Storage Cap Reductn	0	0			0		0	0	0			
Reduced v/c Ratio	0.82	0.48			0.70		0.50	0.35	0.29			

Intersection Summary

Area Type: Other
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:, Start of Green
Natural Cycle: 90
Control Type: Pretimed
Maximum v/c Ratio: 0.82
Intersection Signal Delay: 17.9 Intersection LOS: B
Intersection Capacity Utilization 71.6% ICU Level of Service C
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: I-90/94 - WB Ramps & Division St





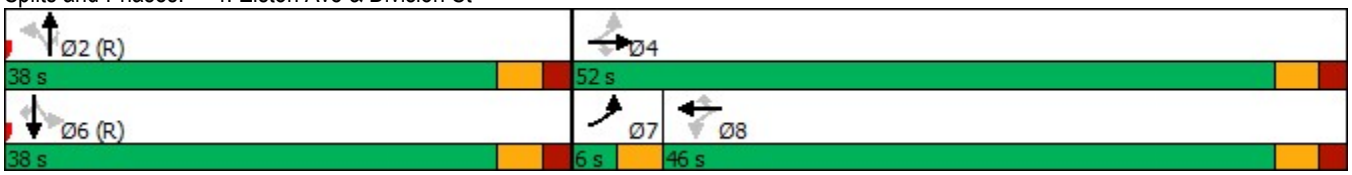
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	132	534	81	24	708	107	106	477	40	126	638	213
Future Volume (vph)	132	534	81	24	708	107	106	477	40	126	638	213
Ideal Flow (vphpl)	1900	2000	1900	1900	1900	1900	1900	2000	1900	1900	2000	1900
Lane Width (ft)	11	11	11	12	11	11	10	10	10	11	11	12
Storage Length (ft)	130		0	0		55	100		60	195		160
Storage Lanes	1		1	0		1	1		1	1		1
Taper Length (ft)	70			25			85			85		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00		0.97		1.00	0.96	1.00		0.97	1.00		0.98
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950				0.998		0.950			0.950		
Satd. Flow (prot)	1678	1877	1546	0	1781	1546	1685	1848	1507	1694	1895	1538
Flt Permitted	0.098				0.975		0.121			0.248		
Satd. Flow (perm)	172	1877	1505	0	1740	1477	214	1848	1464	442	1895	1513
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			83			61			61			156
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		315			780			752			1021	
Travel Time (s)		7.2			17.7			17.1			23.2	
Confl. Peds. (#/hr)	17		6	6		17	2		2	2		2
Confl. Bikes (#/hr)			1			8			25			4
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	4%	3%	1%	0%	3%	1%	0%	1%	0%	3%	2%	5%
Adj. Flow (vph)	135	545	83	24	722	109	108	487	41	129	651	217
Shared Lane Traffic (%)												
Lane Group Flow (vph)	135	545	83	0	746	109	108	487	41	129	651	217
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		11			11			11			11	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.04	0.98	1.04	1.00	1.04	1.04	1.09	1.02	1.09	1.04	0.98	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases	7	4			8			2			6	
Permitted Phases	4		4	8		8	2		2	6		6
Minimum Split (s)	6.0	52.0	52.0	46.0	46.0	46.0	38.0	38.0	38.0	38.0	38.0	38.0
Total Split (s)	6.0	52.0	52.0	46.0	46.0	46.0	38.0	38.0	38.0	38.0	38.0	38.0
Total Split (%)	6.7%	57.8%	57.8%	51.1%	51.1%	51.1%	42.2%	42.2%	42.2%	42.2%	42.2%	42.2%
Maximum Green (s)	3.0	47.0	47.0	41.0	41.0	41.0	33.0	33.0	33.0	33.0	33.0	33.0
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	0.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	3.0	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead			Lag	Lag	Lag						
Lead-Lag Optimize?	Yes			Yes	Yes	Yes						
Walk Time (s)		22.0	22.0	22.0	22.0	22.0	5.0	5.0	5.0	5.0	5.0	5.0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Flash Dont Walk (s)		25.0	25.0	19.0	19.0	19.0	28.0	28.0	28.0	28.0	28.0	28.0
Pedestrian Calls (#/hr)		0	0	0	0	0	0	0	0	0	0	0
Act Effct Green (s)	49.0	47.0	47.0		41.0	41.0	33.0	33.0	33.0	33.0	33.0	33.0
Actuated g/C Ratio	0.54	0.52	0.52		0.46	0.46	0.37	0.37	0.37	0.37	0.37	0.37
v/c Ratio	0.94	0.56	0.10		0.94	0.15	1.38	0.72	0.07	0.80	0.94	0.33
Control Delay	90.1	10.2	0.8		43.0	5.3	260.4	31.6	4.9	61.8	51.1	8.1
Queue Delay	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	90.1	10.2	0.8		43.0	5.3	260.4	31.6	4.9	61.8	51.1	8.1
LOS	F	B	A		D	A	F	C	A	E	D	A
Approach Delay		23.3			38.2			68.7			43.1	
Approach LOS		C			D			E			D	
Queue Length 50th (ft)	44	86	0		414	7	~81	211	0	65	352	23
Queue Length 95th (ft)	#95	132	3		#647	33	#185	337	m16	#168	#570	72
Internal Link Dist (ft)		235			700			672			941	
Turn Bay Length (ft)	130					55	100		60	195		160
Base Capacity (vph)	143	980	825		792	706	78	677	575	162	694	653
Starvation Cap Reductn	0	0	0		0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0		0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0		0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.94	0.56	0.10		0.94	0.15	1.38	0.72	0.07	0.80	0.94	0.33

Intersection Summary

Area Type: Other
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 82 (91%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 100
Control Type: Pretimed
Maximum v/c Ratio: 1.38
Intersection Signal Delay: 42.2 Intersection LOS: D
Intersection Capacity Utilization 132.2% ICU Level of Service H
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: 4: Elston Ave & Division St



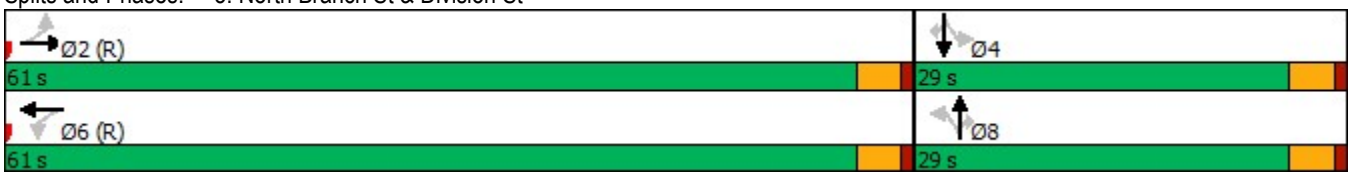
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	25	609	66	5	554	5	168	5	15	25	5	117
Future Volume (vph)	25	609	66	5	554	5	168	5	15	25	5	117
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	11	12	12	11	12	12	9	9	12	10	10
Storage Length (ft)	0		0	0		0	0		10	0		65
Storage Lanes	0		0	0		0	0		1	0		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00			1.00			0.99	0.98		1.00	0.97
Frt		0.986			0.999				0.850			0.850
Flt Protected		0.998						0.954			0.960	
Satd. Flow (prot)	0	3314	0	0	3353	0	0	1600	1264	0	1407	1478
Flt Permitted		0.923			0.951			0.709			0.756	
Satd. Flow (perm)	0	3064	0	0	3189	0	0	1183	1239	0	1103	1436
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		24			2				12			122
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		780			2016			791			859	
Travel Time (s)		17.7			45.8			18.0			19.5	
Confl. Peds. (#/hr)	29		10	10		29	3		7	7		3
Confl. Bikes (#/hr)			3			5						2
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	7%	3%	5%	0%	4%	0%	2%	0%	15%	25%	0%	2%
Adj. Flow (vph)	26	634	69	5	577	5	175	5	16	26	5	122
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	729	0	0	587	0	0	180	16	0	31	122
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.04	1.00	1.00	1.04	1.00	1.00	1.14	1.14	1.00	1.09	1.09
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100		20	100		20	100	20	20	100	20
Trailing Detector (ft)	0	0		0	0		0	0	0	0	0	0
Detector 1 Position(ft)	0	0		0	0		0	0	0	0	0	0
Detector 1 Size(ft)	20	6		20	6		20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8		8	4		4
Detector Phase	2	2		6	6		8	8	8	4	4	4
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	61.0	61.0		61.0	61.0		29.0	29.0	29.0	29.0	29.0	29.0
Total Split (s)	61.0	61.0		61.0	61.0		29.0	29.0	29.0	29.0	29.0	29.0
Total Split (%)	67.8%	67.8%		67.8%	67.8%		32.2%	32.2%	32.2%	32.2%	32.2%	32.2%
Maximum Green (s)	57.0	57.0		57.0	57.0		25.0	25.0	25.0	25.0	25.0	25.0
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)		0.0			0.0			0.0	0.0		0.0	0.0
Total Lost Time (s)		4.0			4.0			4.0	4.0		4.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		5.0	5.0	5.0	5.0	5.0	5.0
Recall Mode	C-Max	C-Max		C-Max	C-Max		Min	Min	Min	Min	Min	Min
Walk Time (s)	44.0	44.0		44.0	44.0							
Flash Dont Walk (s)	13.0	13.0		13.0	13.0							
Pedestrian Calls (#/hr)	0	0		0	0							
Act Effct Green (s)		62.2			62.2			19.8	19.8		19.8	19.8
Actuated g/C Ratio		0.69			0.69			0.22	0.22		0.22	0.22
v/c Ratio		0.34			0.27			0.69	0.06		0.13	0.30
Control Delay		4.5			6.2			45.7	14.9		27.2	7.1
Queue Delay		0.0			0.0			0.0	0.0		0.0	0.0
Total Delay		4.5			6.2			45.7	14.9		27.2	7.1
LOS		A			A			D	B		C	A
Approach Delay		4.5			6.2			43.2			11.1	
Approach LOS		A			A			D			B	
90th %ile Green (s)	57.0	57.0		57.0	57.0		25.0	25.0	25.0	25.0	25.0	25.0
90th %ile Term Code	Coord	Coord		Coord	Coord		Max	Max	Max	Hold	Hold	Hold
70th %ile Green (s)	58.3	58.3		58.3	58.3		23.7	23.7	23.7	23.7	23.7	23.7
70th %ile Term Code	Coord	Coord		Coord	Coord		Gap	Gap	Gap	Hold	Hold	Hold
50th %ile Green (s)	61.5	61.5		61.5	61.5		20.5	20.5	20.5	20.5	20.5	20.5
50th %ile Term Code	Coord	Coord		Coord	Coord		Gap	Gap	Gap	Hold	Hold	Hold
30th %ile Green (s)	64.7	64.7		64.7	64.7		17.3	17.3	17.3	17.3	17.3	17.3
30th %ile Term Code	Coord	Coord		Coord	Coord		Gap	Gap	Gap	Hold	Hold	Hold
10th %ile Green (s)	69.4	69.4		69.4	69.4		12.6	12.6	12.6	12.6	12.6	12.6
10th %ile Term Code	Coord	Coord		Coord	Coord		Gap	Gap	Gap	Hold	Hold	Hold
Queue Length 50th (ft)		43			58			94	2		14	0
Queue Length 95th (ft)		80			97			156	17		35	40
Internal Link Dist (ft)		700			1936			711			779	
Turn Bay Length (ft)									10			65
Base Capacity (vph)		2124			2203			328	352		306	487
Starvation Cap Reductn		0			0			0	0		0	0
Spillback Cap Reductn		0			0			0	0		0	0

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		0.34			0.27			0.55	0.05		0.10	0.25

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 29 (32%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green			
Natural Cycle: 90			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.69			
Intersection Signal Delay: 10.3		Intersection LOS: B	
Intersection Capacity Utilization 74.6%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 5: North Branch St & Division St



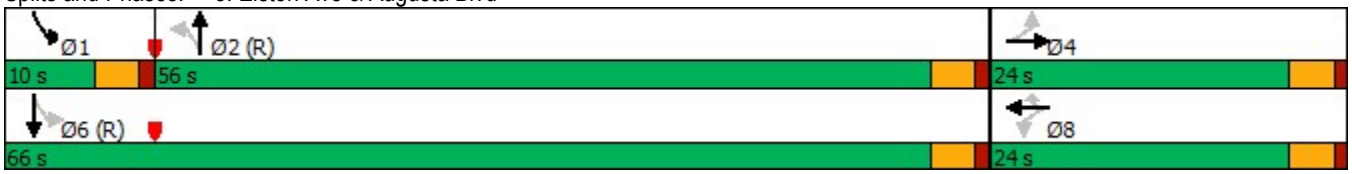
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	37	6	6	32	46	74	21	503	12	54	644	54
Future Volume (vph)	37	6	6	32	46	74	21	503	12	54	644	54
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	10	10	10	11	11	11	11	11	11
Storage Length (ft)	0		0	0		75	0		0	0		0
Storage Lanes	0		0	0		1	0		0	0		0
Taper Length (ft)	25			105			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00			1.00	0.98		1.00			1.00	
Frt		0.983				0.850		0.997			0.990	
Flt Protected		0.964			0.980			0.998			0.996	
Satd. Flow (prot)	0	1735	0	0	1738	1507	0	1809	0	0	1775	0
Flt Permitted		0.731			0.882			0.958			0.927	
Satd. Flow (perm)	0	1313	0	0	1560	1474	0	1737	0	0	1651	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		7				83		2			10	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		965			828			1019			288	
Travel Time (s)		21.9			18.8			23.2			6.5	
Confl. Peds. (#/hr)	1		3	3		1	6		7	7		6
Confl. Bikes (#/hr)									5			4
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	1%	0%	0%	2%	2%
Adj. Flow (vph)	42	7	7	36	52	83	24	565	13	61	724	61
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	56	0	0	88	83	0	602	0	0	846	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.04	1.04	1.04	1.09	1.09	1.09	1.04	1.04	1.04	1.04	1.04	1.04
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2		1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100	20	20	100		20	100	
Trailing Detector (ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Position(ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Size(ft)	20	6		20	6	20	20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA	Perm	Perm	NA		pm+pt	NA	
Protected Phases		4			8			2		1	6	
Permitted Phases	4			8		8	2			6		
Detector Phase	4	4		8	8	8	2	2		1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Minimum Split (s)	24.0	24.0		22.5	22.5	22.5	56.0	56.0		9.5	56.0	
Total Split (s)	24.0	24.0		24.0	24.0	24.0	56.0	56.0		10.0	66.0	
Total Split (%)	26.7%	26.7%		26.7%	26.7%	26.7%	62.2%	62.2%		11.1%	73.3%	
Maximum Green (s)	20.0	20.0		20.0	20.0	20.0	52.0	52.0		6.0	62.0	
Yellow Time (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0	0.0		0.0			0.0	
Total Lost Time (s)		4.0			4.0	4.0		4.0			4.0	
Lead/Lag							Lag	Lag		Lead		
Lead-Lag Optimize?							Yes	Yes		Yes		
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	Min	Min		Min	Min	Min	C-Max	C-Max		None	C-Max	
Walk Time (s)	7.0	7.0					38.0	38.0			38.0	
Flash Dont Walk (s)	13.0	13.0					14.0	14.0			14.0	
Pedestrian Calls (#/hr)	0	0					0	0			0	
Act Effct Green (s)		10.4			10.4	10.4		71.6			71.6	
Actuated g/C Ratio		0.12			0.12	0.12		0.80			0.80	
v/c Ratio		0.35			0.49	0.34		0.44			0.64	
Control Delay		38.1			45.6	12.2		4.4			10.6	
Queue Delay		0.0			0.0	0.0		0.0			0.0	
Total Delay		38.1			45.6	12.2		4.4			10.6	
LOS		D			D	B		A			B	
Approach Delay		38.1			29.4			4.4			10.6	
Approach LOS		D			C			A			B	
90th %ile Green (s)	14.7	14.7		14.7	14.7	14.7	67.3	67.3		0.0	67.3	
90th %ile Term Code	Hold	Hold		Gap	Gap	Gap	Coord	Coord		Skip	Coord	
70th %ile Green (s)	12.2	12.2		12.2	12.2	12.2	69.8	69.8		0.0	69.8	
70th %ile Term Code	Hold	Hold		Gap	Gap	Gap	Coord	Coord		Skip	Coord	
50th %ile Green (s)	10.4	10.4		10.4	10.4	10.4	71.6	71.6		0.0	71.6	
50th %ile Term Code	Hold	Hold		Gap	Gap	Gap	Coord	Coord		Skip	Coord	
30th %ile Green (s)	8.7	8.7		8.7	8.7	8.7	73.3	73.3		0.0	73.3	
30th %ile Term Code	Hold	Hold		Gap	Gap	Gap	Coord	Coord		Skip	Coord	
10th %ile Green (s)	6.1	6.1		6.1	6.1	6.1	75.9	75.9		0.0	75.9	
10th %ile Term Code	Hold	Hold		Gap	Gap	Gap	Coord	Coord		Skip	Coord	
Queue Length 50th (ft)		26			48	0		79			255	
Queue Length 95th (ft)		59			89	38		158			m206	
Internal Link Dist (ft)		885			748			939			208	
Turn Bay Length (ft)						75						
Base Capacity (vph)		297			346	392		1382			1315	
Starvation Cap Reductn		0			0	0		0			0	
Spillback Cap Reductn		0			0	0		0			0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Storage Cap Reductn		0			0	0		0			0	
Reduced v/c Ratio		0.19			0.25	0.21		0.44			0.64	

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green			
Natural Cycle: 90			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.64			
Intersection Signal Delay: 11.2		Intersection LOS: B	
Intersection Capacity Utilization 75.5%		ICU Level of Service D	
Analysis Period (min) 15			
m Volume for 95th percentile queue is metered by upstream signal.			

Splits and Phases: 8: Elston Ave & Augusta Blvd



Intersection	
Int Delay, s/veh	0.4

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	10	11	1	613	741	2
Future Vol, veh/h	10	11	1	613	741	2
Conflicting Peds, #/hr	1	0	10	0	0	10
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	86	86	86	86	86	86
Heavy Vehicles, %	0	0	100	1	2	0
Mvmt Flow	12	13	1	713	862	2

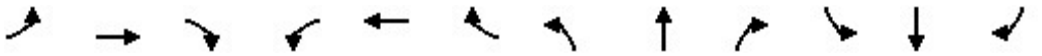
Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1589	873	874	0	-	0
Stage 1	873	-	-	-	-	-
Stage 2	716	-	-	-	-	-
Critical Hdwy	6.4	6.2	5.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	3.1	-	-	-
Pot Cap-1 Maneuver	120	352	479	-	-	-
Stage 1	412	-	-	-	-	-
Stage 2	488	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	117	349	474	-	-	-
Mov Cap-2 Maneuver	117	-	-	-	-	-
Stage 1	407	-	-	-	-	-
Stage 2	483	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	28.1	0	0
HCM LOS	D		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	474	-	180	-	-
HCM Lane V/C Ratio	0.002	-	0.136	-	-
HCM Control Delay (s)	12.6	0	28.1	-	-
HCM Lane LOS	B	A	D	-	-
HCM 95th %tile Q(veh)	0	-	0.5	-	-

APPENDIX J

CAPACITY ANALYSIS
2024 BUILD



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	829	590	240	660	0	0	0	0	262	10	112
Future Volume (vph)	0	829	590	240	660	0	0	0	0	262	10	112
Ideal Flow (vphpl)	1900	1900	1900	1900	2000	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	11	12	10	11	12	12	12	12	11	11	12
Storage Length (ft)	0		0	0		0	0		0	95		0
Storage Lanes	0		0	1		0	0		0	1		0
Taper Length (ft)	25			25			25			150		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	0.95	0.95	1.00
Ped Bike Factor		0.99		1.00								
Frt		0.938									0.909	
Flt Protected				0.950						0.950	0.983	
Satd. Flow (prot)	0	3124	0	1478	3465	0	0	0	0	1535	1500	0
Flt Permitted				0.089						0.950	0.983	
Satd. Flow (perm)	0	3124	0	138	3465	0	0	0	0	1535	1500	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		263									92	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1630			280			940			875	
Travel Time (s)		37.0			6.4			21.4			19.9	
Confl. Peds. (#/hr)	15		5	5		15						
Confl. Bikes (#/hr)			10									
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	0%	5%	1%	14%	6%	0%	0%	0%	0%	8%	0%	2%
Adj. Flow (vph)	0	864	615	250	688	0	0	0	0	273	10	117
Shared Lane Traffic (%)										24%		
Lane Group Flow (vph)	0	1479	0	250	688	0	0	0	0	207	193	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Right	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		10			10			11			11	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.04	1.00	1.09	0.98	1.00	1.00	1.00	1.00	1.04	1.04	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type		NA		pm+pt	NA					Perm	NA	
Protected Phases		4		3	8						6	
Permitted Phases				8						6		
Minimum Split (s)		45.0		11.0	56.0					34.0	34.0	
Total Split (s)		45.0		11.0	56.0					34.0	34.0	
Total Split (%)		50.0%		12.2%	62.2%					37.8%	37.8%	
Maximum Green (s)		41.0		7.0	52.0					30.0	30.0	
Yellow Time (s)		3.0		3.0	3.0					3.0	3.0	
All-Red Time (s)		1.0		1.0	1.0					1.0	1.0	
Lost Time Adjust (s)		0.0		0.0	0.0					0.0	0.0	
Total Lost Time (s)		4.0		4.0	4.0					4.0	4.0	
Lead/Lag		Lead		Lag								
Lead-Lag Optimize?		Yes		Yes								
Walk Time (s)		27.0			27.0							

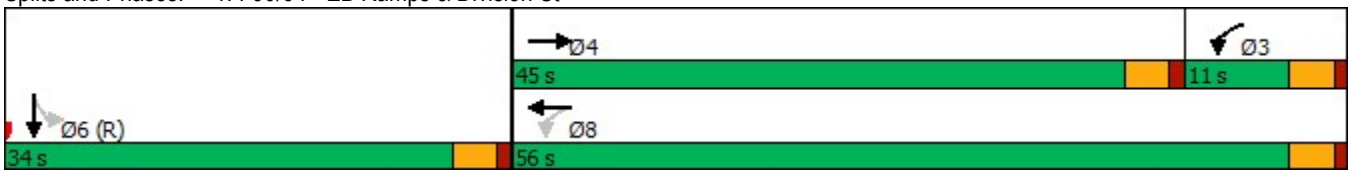
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Flash Dont Walk (s)		14.0			14.0							
Pedestrian Calls (#/hr)		0			0							
Act Effct Green (s)		41.0		52.0	52.0					30.0	30.0	
Actuated g/C Ratio		0.46		0.58	0.58					0.33	0.33	
v/c Ratio		0.94		1.37	0.34					0.41	0.34	
Control Delay		33.0		218.4	8.3					26.1	13.7	
Queue Delay		0.0		0.0	0.5					0.0	0.0	
Total Delay		33.0		218.4	8.8					26.1	13.7	
LOS		C		F	A					C	B	
Approach Delay		33.0			64.7						20.1	
Approach LOS		C			E						C	
Queue Length 50th (ft)		352		~154	83					94	43	
Queue Length 95th (ft)		#525		#308	104					160	100	
Internal Link Dist (ft)		1550			200			860			795	
Turn Bay Length (ft)										95		
Base Capacity (vph)		1566		183	2002					511	561	
Starvation Cap Reductn		0		0	842					0	0	
Spillback Cap Reductn		0		0	0					0	0	
Storage Cap Reductn		0		0	0					0	0	
Reduced v/c Ratio		0.94		1.37	0.59					0.41	0.34	

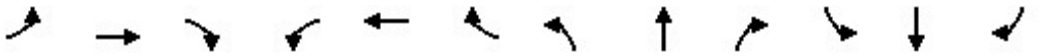
Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 0 (0%), Referenced to phase 2: and 6:SBTL, Start of Green			
Natural Cycle: 90			
Control Type: Pretimed			
Maximum v/c Ratio: 1.37			
Intersection Signal Delay: 41.7		Intersection LOS: D	
Intersection Capacity Utilization 76.6%		ICU Level of Service D	
Analysis Period (min) 15			

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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

Splits and Phases: 1: I-90/94 - EB Ramps & Division St





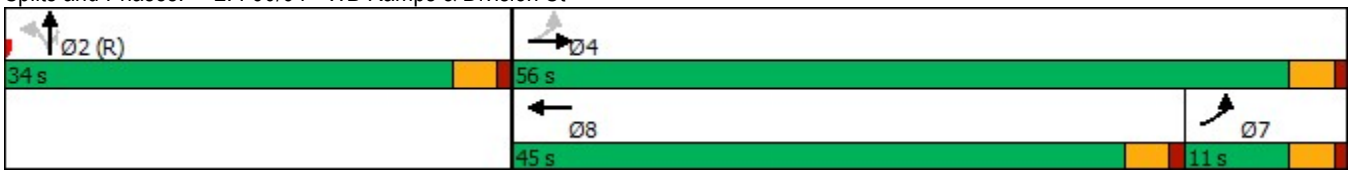
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	280	811	0	0	595	272	305	36	517	0	0	0
Future Volume (vph)	280	811	0	0	595	272	305	36	517	0	0	0
Ideal Flow (vphpl)	1900	2000	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	11	12	12	11	12	11	11	11	12	12	12
Storage Length (ft)	0		0	0		0	75		75	0		0
Storage Lanes	1		0	0		0	1		1	0		0
Taper Length (ft)	25			25			40			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00
Ped Bike Factor	1.00				0.99							
Frt					0.953			0.869	0.850			
Flt Protected	0.950						0.950					
Satd. Flow (prot)	1668	3401	0	0	2999	0	1728	1430	1399	0	0	0
Flt Permitted	0.217						0.950					
Satd. Flow (perm)	380	3401	0	0	2999	0	1728	1430	1399	0	0	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					108			151	151			
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		280			321			913			753	
Travel Time (s)		6.4			7.3			20.8			17.1	
Confl. Peds. (#/hr)	10		7	7		10						
Confl. Bikes (#/hr)			7									
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	1%	8%	0%	0%	12%	5%	1%	6%	6%	0%	0%	0%
Adj. Flow (vph)	295	854	0	0	626	286	321	38	544	0	0	0
Shared Lane Traffic (%)									47%			
Lane Group Flow (vph)	295	854	0	0	912	0	321	294	288	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Right	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		10			10			11			11	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.09	0.98	1.00	1.00	1.04	1.00	1.04	1.04	1.04	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	pm+pt	NA			NA		Perm	NA	Perm			
Protected Phases	7	4			8			2				
Permitted Phases	4						2		2			
Minimum Split (s)	11.0	56.0			45.0		34.0	34.0	34.0			
Total Split (s)	11.0	56.0			45.0		34.0	34.0	34.0			
Total Split (%)	12.2%	62.2%			50.0%		37.8%	37.8%	37.8%			
Maximum Green (s)	7.0	52.0			41.0		30.0	30.0	30.0			
Yellow Time (s)	3.0	3.0			3.0		3.0	3.0	3.0			
All-Red Time (s)	1.0	1.0			1.0		1.0	1.0	1.0			
Lost Time Adjust (s)	0.0	0.0			0.0		0.0	0.0	0.0			
Total Lost Time (s)	4.0	4.0			4.0		4.0	4.0	4.0			
Lead/Lag	Lag				Lead							
Lead-Lag Optimize?	Yes				Yes							
Walk Time (s)		27.0			27.0							

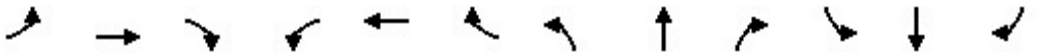
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Flash Dont Walk (s)		14.0			14.0							
Pedestrian Calls (#/hr)		4			0							
Act Effct Green (s)	52.0	52.0			41.0		30.0	30.0	30.0			
Actuated g/C Ratio	0.58	0.58			0.46		0.33	0.33	0.33			
v/c Ratio	0.92	0.43			0.64		0.56	0.51	0.51			
Control Delay	44.9	6.8			17.0		29.1	14.8	14.6			
Queue Delay	0.0	1.3			0.0		0.0	0.1	0.1			
Total Delay	44.9	8.1			17.0		29.1	14.9	14.7			
LOS	D	A			B		C	B	B			
Approach Delay		17.6			17.0			19.9				
Approach LOS		B			B			B				
Queue Length 50th (ft)	61	78			122		148	63	60			
Queue Length 95th (ft)	m#107	m87			m67		233	144	142			
Internal Link Dist (ft)		200			241			833			673	
Turn Bay Length (ft)							75		75			
Base Capacity (vph)	319	1965			1425		576	577	567			
Starvation Cap Reductn	0	842			0		0	0	0			
Spillback Cap Reductn	0	251			0		0	10	10			
Storage Cap Reductn	0	0			0		0	0	0			
Reduced v/c Ratio	0.92	0.76			0.64		0.56	0.52	0.52			

Intersection Summary

Area Type: Other
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:, Start of Green
Natural Cycle: 90
Control Type: Pretimed
Maximum v/c Ratio: 0.92
Intersection Signal Delay: 18.1 Intersection LOS: B
Intersection Capacity Utilization 76.6% ICU Level of Service D
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: I-90/94 - WB Ramps & Division St





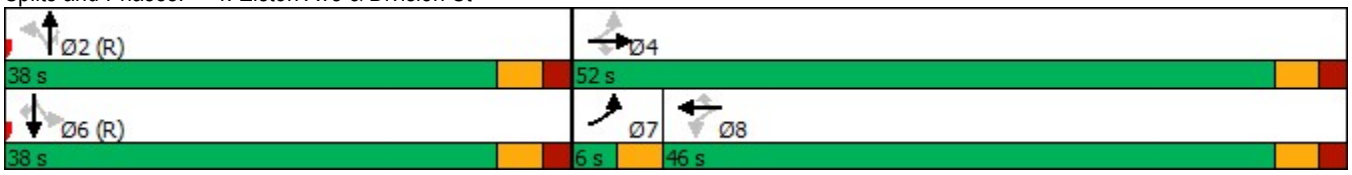
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	150	1008	145	20	684	92	63	267	100	208	608	120
Future Volume (vph)	150	1008	145	20	684	92	63	267	100	208	608	120
Ideal Flow (vphpl)	1900	2000	1900	1900	1900	1900	1900	2000	1900	1900	2000	1900
Lane Width (ft)	11	11	11	12	11	11	10	10	10	11	11	12
Storage Length (ft)	130		0	0		55	100		60	195		160
Storage Lanes	1		1	0		1	1		1	1		0
Taper Length (ft)	70			25			85			85		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00		0.97		1.00	0.96	1.00		0.99	1.00		0.96
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950				0.999		0.950			0.950		
Satd. Flow (prot)	1491	1824	1516	0	1698	1346	1604	1778	1478	1694	1895	1369
Flt Permitted	0.096				0.442		0.121			0.485		
Satd. Flow (perm)	150	1824	1469	0	751	1295	204	1778	1456	864	1895	1319
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			101			61			69			128
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		315			780			658			1021	
Travel Time (s)		7.2			17.7			15.0			23.2	
Confl. Peds. (#/hr)	16		4	4		16	6		2	2		6
Confl. Bikes (#/hr)			10			1			2			32
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	17%	6%	3%	9%	8%	16%	5%	5%	2%	3%	2%	18%
Adj. Flow (vph)	160	1072	154	21	728	98	67	284	106	221	647	128
Shared Lane Traffic (%)												
Lane Group Flow (vph)	160	1072	154	0	749	98	67	284	106	221	647	128
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		11			11			11			11	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.04	0.98	1.04	1.00	1.04	1.04	1.09	1.02	1.09	1.04	0.98	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases	7	4			8			2			6	
Permitted Phases	4		4	8		8	2		2	6		6
Minimum Split (s)	6.0	52.0	52.0	46.0	46.0	46.0	38.0	38.0	38.0	38.0	38.0	38.0
Total Split (s)	6.0	52.0	52.0	46.0	46.0	46.0	38.0	38.0	38.0	38.0	38.0	38.0
Total Split (%)	6.7%	57.8%	57.8%	51.1%	51.1%	51.1%	42.2%	42.2%	42.2%	42.2%	42.2%	42.2%
Maximum Green (s)	3.0	47.0	47.0	41.0	41.0	41.0	33.0	33.0	33.0	33.0	33.0	33.0
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	0.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	3.0	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead			Lag	Lag	Lag						
Lead-Lag Optimize?	Yes			Yes	Yes	Yes						
Walk Time (s)		22.0	22.0	22.0	22.0	22.0	5.0	5.0	5.0	5.0	5.0	5.0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Flash Dont Walk (s)		25.0	25.0	19.0	19.0	19.0	28.0	28.0	28.0	28.0	28.0	28.0
Pedestrian Calls (#/hr)		0	0	0	0	0	0	0	0	0	0	0
Act Effct Green (s)	49.0	47.0	47.0		41.0	41.0	33.0	33.0	33.0	33.0	33.0	33.0
Actuated g/C Ratio	0.54	0.52	0.52		0.46	0.46	0.37	0.37	0.37	0.37	0.37	0.37
v/c Ratio	1.27	1.13	0.19		2.19	0.16	0.91	0.44	0.18	0.70	0.93	0.23
Control Delay	189.5	89.5	4.7		564.2	4.9	117.7	27.8	13.0	38.3	50.1	4.8
Queue Delay	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	189.5	89.5	4.7		564.2	4.9	117.7	27.8	13.0	38.3	50.1	4.8
LOS	F	F	A		F	A	F	C	B	D	D	A
Approach Delay		91.7			499.5			37.5			41.7	
Approach LOS		F			F			D			D	
Queue Length 50th (ft)	~62	~712	8		~684	5	33	118	14	105	348	0
Queue Length 95th (ft)	#167	#957	37		#927	21	#123	226	63	#215	#566	35
Internal Link Dist (ft)		235			700			578			941	
Turn Bay Length (ft)	130					55	100		60	195		160
Base Capacity (vph)	126	952	815		342	623	74	651	577	316	694	564
Starvation Cap Reductn	0	0	0		0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0		0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0		0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.27	1.13	0.19		2.19	0.16	0.91	0.44	0.18	0.70	0.93	0.23

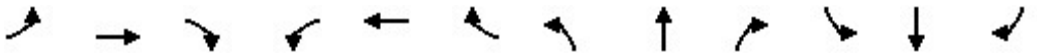
Intersection Summary

Area Type: Other
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 82 (91%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 120
Control Type: Pretimed
Maximum v/c Ratio: 2.19
Intersection Signal Delay: 165.2 Intersection LOS: F
Intersection Capacity Utilization 143.2% ICU Level of Service H
Analysis Period (min) 15
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 4: Elston Ave & Division St



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	112	1001	203	15	735	10	41	5	5	15	5	20
Future Volume (vph)	112	1001	203	15	735	10	41	5	5	15	5	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	11	12	12	11	12	12	9	9	12	10	10
Storage Length (ft)	0		0	0		0	0		10	0		65
Storage Lanes	0		0	0		0	0		1	0		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.99			1.00			1.00	0.98		1.00	0.97
Frt		0.977			0.998				0.850			0.850
Flt Protected		0.996			0.999			0.957			0.963	
Satd. Flow (prot)	0	3201	0	0	3195	0	0	1489	1093	0	1160	1383
Flt Permitted		0.773			0.915			0.741			0.809	
Satd. Flow (perm)	0	2484	0	0	2927	0	0	1148	1076	0	972	1348
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		45			3				12			22
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		780			2016			791			859	
Travel Time (s)		17.7			45.8			18.0			19.5	
Confl. Peds. (#/hr)	11		5	5		11	3		3	3		3
Confl. Bikes (#/hr)			13									
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
Heavy Vehicles (%)	1%	7%	1%	7%	9%	0%	11%	0%	33%	41%	67%	9%
Adj. Flow (vph)	122	1088	221	16	799	11	45	5	5	16	5	22
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1431	0	0	826	0	0	50	5	0	21	22
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.04	1.00	1.00	1.04	1.00	1.00	1.14	1.14	1.00	1.09	1.09
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100		20	100		20	100	20	20	100	20
Trailing Detector (ft)	0	0		0	0		0	0	0	0	0	0
Detector 1 Position(ft)	0	0		0	0		0	0	0	0	0	0
Detector 1 Size(ft)	20	6		20	6		20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	

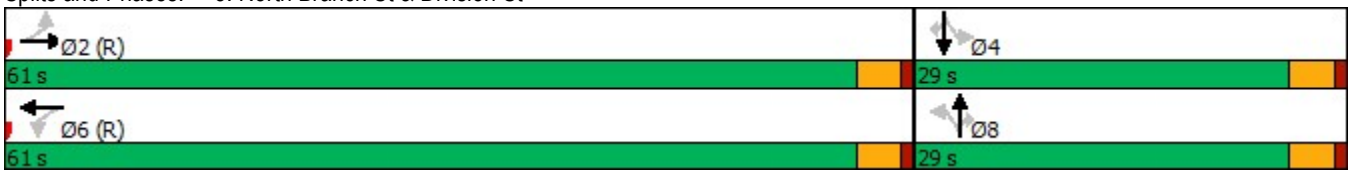


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8		8	4		4
Detector Phase	2	2		6	6		8	8	8	4	4	4
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	61.0	61.0		61.0	61.0		29.0	29.0	29.0	29.0	29.0	29.0
Total Split (s)	61.0	61.0		61.0	61.0		29.0	29.0	29.0	29.0	29.0	29.0
Total Split (%)	67.8%	67.8%		67.8%	67.8%		32.2%	32.2%	32.2%	32.2%	32.2%	32.2%
Maximum Green (s)	57.0	57.0		57.0	57.0		25.0	25.0	25.0	25.0	25.0	25.0
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)		0.0			0.0			0.0	0.0		0.0	0.0
Total Lost Time (s)		4.0			4.0			4.0	4.0		4.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		5.0	5.0	5.0	5.0	5.0	5.0
Recall Mode	C-Max	C-Max		C-Max	C-Max		Min	Min	Min	Min	Min	Min
Walk Time (s)	44.0	44.0		44.0	44.0							
Flash Dont Walk (s)	13.0	13.0		13.0	13.0							
Pedestrian Calls (#/hr)	0	0		0	0							
Act Effct Green (s)		71.0			71.0			11.0	11.0		11.0	11.0
Actuated g/C Ratio		0.79			0.79			0.12	0.12		0.12	0.12
v/c Ratio		0.73			0.36			0.36	0.04		0.18	0.12
Control Delay		5.2			3.5			42.4	9.2		37.5	15.3
Queue Delay		0.0			0.0			0.0	0.0		0.0	0.0
Total Delay		5.2			3.5			42.4	9.2		37.5	15.3
LOS		A			A			D	A		D	B
Approach Delay		5.2			3.5			39.4			26.2	
Approach LOS		A			A			D			C	
90th %ile Green (s)	67.1	67.1		67.1	67.1		14.9	14.9	14.9	14.9	14.9	14.9
90th %ile Term Code	Coord	Coord		Coord	Coord		Gap	Gap	Gap	Hold	Hold	Hold
70th %ile Green (s)	69.5	69.5		69.5	69.5		12.5	12.5	12.5	12.5	12.5	12.5
70th %ile Term Code	Coord	Coord		Coord	Coord		Gap	Gap	Gap	Hold	Hold	Hold
50th %ile Green (s)	71.1	71.1		71.1	71.1		10.9	10.9	10.9	10.9	10.9	10.9
50th %ile Term Code	Coord	Coord		Coord	Coord		Gap	Gap	Gap	Hold	Hold	Hold
30th %ile Green (s)	72.7	72.7		72.7	72.7		9.3	9.3	9.3	9.3	9.3	9.3
30th %ile Term Code	Coord	Coord		Coord	Coord		Gap	Gap	Gap	Hold	Hold	Hold
10th %ile Green (s)	74.5	74.5		74.5	74.5		7.5	7.5	7.5	7.5	7.5	7.5
10th %ile Term Code	Coord	Coord		Coord	Coord		Gap	Gap	Gap	Gap	Gap	Gap
Queue Length 50th (ft)		120			54			27	0		11	0
Queue Length 95th (ft)		m120			95			60	6		32	21
Internal Link Dist (ft)		700			1936			711			779	
Turn Bay Length (ft)									10			65
Base Capacity (vph)		1968			2308			318	307		270	390
Starvation Cap Reductn		0			0			0	0		0	0
Spillback Cap Reductn		0			0			0	0		0	0

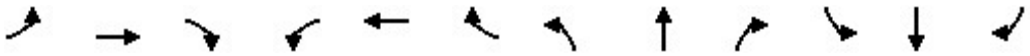
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Storage Cap Reductn		0			0			0	0		0	0
Reduced v/c Ratio		0.73			0.36			0.16	0.02		0.08	0.06

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 29 (32%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green			
Natural Cycle: 90			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.73			
Intersection Signal Delay: 5.8		Intersection LOS: A	
Intersection Capacity Utilization 114.2%		ICU Level of Service H	
Analysis Period (min) 15			
m Volume for 95th percentile queue is metered by upstream signal.			

Splits and Phases: 5: North Branch St & Division St



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	31	13	12	9	1	28	6	354	15	61	633	29
Future Volume (vph)	31	13	12	9	1	28	6	354	15	61	633	29
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	10	10	10	11	11	11	11	11	11
Storage Length (ft)	0		0	0		75	0		0	0		0
Storage Lanes	0		0	0		1	0		0	0		0
Taper Length (ft)	25			105			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00			1.00			1.00			1.00	
Frt		0.971				0.850		0.994			0.995	
Flt Protected		0.973			0.957			0.999			0.996	
Satd. Flow (prot)	0	1727	0	0	1697	1409	0	1647	0	0	1736	0
Flt Permitted		0.821			0.869			0.990			0.935	
Satd. Flow (perm)	0	1457	0	0	1538	1409	0	1632	0	0	1630	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		13				61		4			5	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		965			828			1019			288	
Travel Time (s)		21.9			18.8			23.2			6.5	
Confl. Peds. (#/hr)			1	1					3	3		
Confl. Bikes (#/hr)									1			3
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	0%	0%	0%	0%	0%	7%	17%	11%	0%	3%	5%	3%
Adj. Flow (vph)	34	14	13	10	1	31	7	393	17	68	703	32
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	61	0	0	11	31	0	417	0	0	803	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.04	1.04	1.04	1.09	1.09	1.09	1.04	1.04	1.04	1.04	1.04	1.04
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2		1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100	20	20	100		20	100	
Trailing Detector (ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Position(ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Size(ft)	20	6		20	6	20	20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	

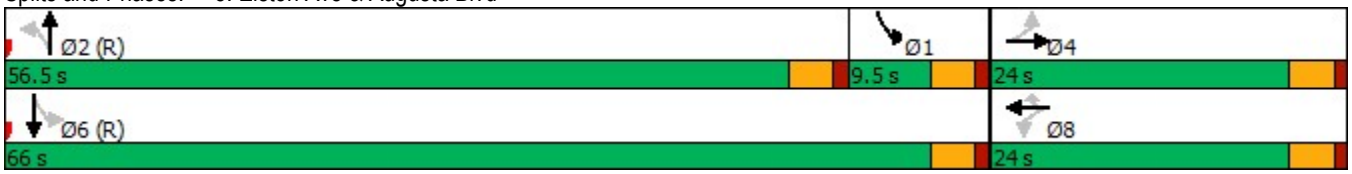


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA	Perm	Perm	NA		pm+pt	NA	
Protected Phases		4			8			2		1	6	
Permitted Phases	4			8		8	2			6		
Detector Phase	4	4		8	8	8	2	2		1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Minimum Split (s)	24.0	24.0		22.5	22.5	22.5	56.0	56.0		9.5	56.0	
Total Split (s)	24.0	24.0		24.0	24.0	24.0	56.5	56.5		9.5	66.0	
Total Split (%)	26.7%	26.7%		26.7%	26.7%	26.7%	62.8%	62.8%		10.6%	73.3%	
Maximum Green (s)	20.0	20.0		20.0	20.0	20.0	52.5	52.5		5.5	62.0	
Yellow Time (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0	0.0		0.0			0.0	
Total Lost Time (s)		4.0			4.0	4.0		4.0			4.0	
Lead/Lag							Lead	Lead		Lag		
Lead-Lag Optimize?							Yes	Yes		Yes		
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	Min	Min		Min	Min	Min	C-Max	C-Max		None	C-Max	
Walk Time (s)	7.0	7.0					38.0	38.0			38.0	
Flash Dont Walk (s)	13.0	13.0					14.0	14.0			14.0	
Pedestrian Calls (#/hr)	0	0					0	0			0	
Act Effct Green (s)		8.4			8.4	8.4		73.6			73.6	
Actuated g/C Ratio		0.09			0.09	0.09		0.82			0.82	
v/c Ratio		0.41			0.08	0.17		0.31			0.60	
Control Delay		39.6			36.7	5.0		2.9			5.7	
Queue Delay		0.0			0.0	0.0		0.0			0.0	
Total Delay		39.6			36.7	5.0		2.9			5.7	
LOS		D			D	A		A			A	
Approach Delay		39.6			13.3			2.9			5.7	
Approach LOS		D			B			A			A	
90th %ile Green (s)	11.8	11.8		11.8	11.8	11.8	70.2	70.2		0.0	70.2	
90th %ile Term Code	Gap	Gap		Hold	Hold	Hold	Coord	Coord		Skip	Coord	
70th %ile Green (s)	9.7	9.7		9.7	9.7	9.7	72.3	72.3		0.0	72.3	
70th %ile Term Code	Gap	Gap		Hold	Hold	Hold	Coord	Coord		Skip	Coord	
50th %ile Green (s)	8.2	8.2		8.2	8.2	8.2	73.8	73.8		0.0	73.8	
50th %ile Term Code	Gap	Gap		Hold	Hold	Hold	Coord	Coord		Skip	Coord	
30th %ile Green (s)	6.7	6.7		6.7	6.7	6.7	75.3	75.3		0.0	75.3	
30th %ile Term Code	Gap	Gap		Hold	Hold	Hold	Coord	Coord		Skip	Coord	
10th %ile Green (s)	5.5	5.5		5.5	5.5	5.5	76.5	76.5		0.0	76.5	
10th %ile Term Code	Gap	Gap		Gap	Gap	Gap	Coord	Coord		Skip	Coord	
Queue Length 50th (ft)		26			6	0		39			44	
Queue Length 95th (ft)		63			21	10		83			m56	
Internal Link Dist (ft)		885			748			939			208	
Turn Bay Length (ft)						75						
Base Capacity (vph)		333			341	360		1335			1334	
Starvation Cap Reductn		0			0	0		0			0	
Spillback Cap Reductn		0			0	0		0			0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Storage Cap Reductn		0			0	0		0			0	
Reduced v/c Ratio		0.18			0.03	0.09		0.31			0.60	

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green			
Natural Cycle: 90			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.60			
Intersection Signal Delay: 6.6		Intersection LOS: A	
Intersection Capacity Utilization 87.1%		ICU Level of Service E	
Analysis Period (min) 15			
m Volume for 95th percentile queue is metered by upstream signal.			

Splits and Phases: 8: Elston Ave & Augusta Blvd



Intersection	
Int Delay, s/veh	0

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	1299	29	0	867	0	4
Future Vol, veh/h	1299	29	0	867	0	4
Conflicting Peds, #/hr	0	7	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	8	38	0	8	0	0
Mvmt Flow	1367	31	0	913	0	4

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	-	-	-	706
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.9
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.3
Pot Cap-1 Maneuver	-	-	0	-	0	383
Stage 1	-	-	0	-	0	-
Stage 2	-	-	0	-	0	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	-	-	-	380
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	14.6
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT
Capacity (veh/h)	380	-	-	-
HCM Lane V/C Ratio	0.011	-	-	-
HCM Control Delay (s)	14.6	-	-	-
HCM Lane LOS	B	-	-	-
HCM 95th %tile Q(veh)	0	-	-	-

Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	10	2	4	420	756	17
Future Vol, veh/h	10	2	4	420	756	17
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	95	95	95	95	95	95
Heavy Vehicles, %	20	0	0	8	8	24
Mvmt Flow	11	2	4	442	796	18

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1255	805	814	0	-	0
Stage 1	805	-	-	-	-	-
Stage 2	450	-	-	-	-	-
Critical Hdwy	6.6	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.6	-	-	-	-	-
Critical Hdwy Stg 2	5.6	-	-	-	-	-
Follow-up Hdwy	3.68	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	174	386	822	-	-	-
Stage 1	410	-	-	-	-	-
Stage 2	606	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	173	386	822	-	-	-
Mov Cap-2 Maneuver	173	-	-	-	-	-
Stage 1	408	-	-	-	-	-
Stage 2	606	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	25.2	0.1	0
HCM LOS	D		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	822	-	191	-	-
HCM Lane V/C Ratio	0.005	-	0.066	-	-
HCM Control Delay (s)	9.4	0	25.2	-	-
HCM Lane LOS	A	A	D	-	-
HCM 95th %tile Q(veh)	0	-	0.2	-	-

Intersection	
Int Delay, s/veh	0.9

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	20	11	11	402	712	46
Future Vol, veh/h	20	11	11	402	712	46
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	89	89	89	89	89	89
Heavy Vehicles, %	40	36	0	8	3	7
Mvmt Flow	22	12	12	452	800	52

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1302	826	852	0	-	0
Stage 1	826	-	-	-	-	-
Stage 2	476	-	-	-	-	-
Critical Hdwy	6.8	6.56	4.1	-	-	-
Critical Hdwy Stg 1	5.8	-	-	-	-	-
Critical Hdwy Stg 2	5.8	-	-	-	-	-
Follow-up Hdwy	3.86	3.624	2.2	-	-	-
Pot Cap-1 Maneuver	148	325	795	-	-	-
Stage 1	372	-	-	-	-	-
Stage 2	553	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	145	325	795	-	-	-
Mov Cap-2 Maneuver	145	-	-	-	-	-
Stage 1	365	-	-	-	-	-
Stage 2	553	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	29.7	0.3	0
HCM LOS	D		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	795	-	180	-	-
HCM Lane V/C Ratio	0.016	-	0.194	-	-
HCM Control Delay (s)	9.6	0	29.7	-	-
HCM Lane LOS	A	A	D	-	-
HCM 95th %tile Q(veh)	0	-	0.7	-	-

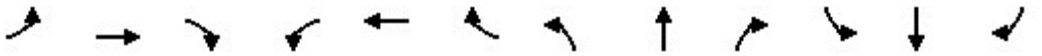
Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	2	0	0	422	758	0
Future Vol, veh/h	2	0	0	422	758	0
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, %	100	0	0	8	8	0
Mvmt Flow	2	0	0	459	824	0

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1283	824	-	0	-	0
Stage 1	824	-	-	-	-	-
Stage 2	459	-	-	-	-	-
Critical Hdwy	7.4	6.2	-	-	-	-
Critical Hdwy Stg 1	6.4	-	-	-	-	-
Critical Hdwy Stg 2	6.4	-	-	-	-	-
Follow-up Hdwy	4.4	3.3	-	-	-	-
Pot Cap-1 Maneuver	116	376	0	-	-	0
Stage 1	300	-	0	-	-	0
Stage 2	473	-	0	-	-	0
Platoon blocked, %				-	-	
Mov Cap-1 Maneuver	116	376	-	-	-	-
Mov Cap-2 Maneuver	116	-	-	-	-	-
Stage 1	300	-	-	-	-	-
Stage 2	473	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	36.6	0	0
HCM LOS	E		

Minor Lane/Major Mvmt	NBT	EBLn1	SBT
Capacity (veh/h)	-	116	-
HCM Lane V/C Ratio	-	0.019	-
HCM Control Delay (s)	-	36.6	-
HCM Lane LOS	-	E	-
HCM 95th %tile Q(veh)	-	0.1	-



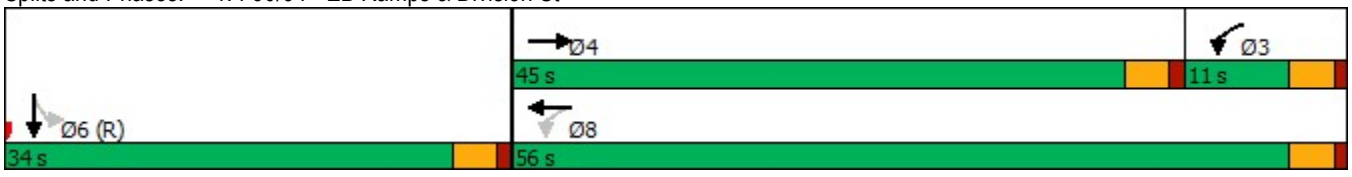
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	787	561	247	648	0	0	0	0	246	10	106
Future Volume (vph)	0	787	561	247	648	0	0	0	0	246	10	106
Ideal Flow (vphpl)	1900	1900	1900	1900	2000	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	11	12	10	11	12	12	12	12	11	11	12
Storage Length (ft)	0		0	0		0	0		0	95		0
Storage Lanes	0		0	1		0	0		0	1		0
Taper Length (ft)	25			25			25			150		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	0.95	0.95	1.00
Ped Bike Factor		0.99		1.00								
Frt		0.938									0.909	
Flt Protected				0.950						0.950	0.983	
Satd. Flow (prot)	0	3124	0	1478	3465	0	0	0	0	1535	1500	0
Flt Permitted				0.089						0.950	0.983	
Satd. Flow (perm)	0	3124	0	138	3465	0	0	0	0	1535	1500	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		262									93	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1630			280			940			875	
Travel Time (s)		37.0			6.4			21.4			19.9	
Confl. Peds. (#/hr)	15		5	5		15						
Confl. Bikes (#/hr)			10									
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	0%	5%	1%	14%	6%	0%	0%	0%	0%	8%	0%	2%
Adj. Flow (vph)	0	820	584	257	675	0	0	0	0	256	10	110
Shared Lane Traffic (%)										24%		
Lane Group Flow (vph)	0	1404	0	257	675	0	0	0	0	195	181	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Right	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		10			10			11			11	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.04	1.00	1.09	0.98	1.00	1.00	1.00	1.00	1.04	1.04	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type		NA		pm+pt	NA					Perm	NA	
Protected Phases		4		3	8						6	
Permitted Phases				8						6		
Minimum Split (s)		45.0		11.0	56.0					34.0	34.0	
Total Split (s)		45.0		11.0	56.0					34.0	34.0	
Total Split (%)		50.0%		12.2%	62.2%					37.8%	37.8%	
Maximum Green (s)		41.0		7.0	52.0					30.0	30.0	
Yellow Time (s)		3.0		3.0	3.0					3.0	3.0	
All-Red Time (s)		1.0		1.0	1.0					1.0	1.0	
Lost Time Adjust (s)		0.0		0.0	0.0					0.0	0.0	
Total Lost Time (s)		4.0		4.0	4.0					4.0	4.0	
Lead/Lag		Lead		Lag								
Lead-Lag Optimize?		Yes		Yes								
Walk Time (s)		27.0			27.0							

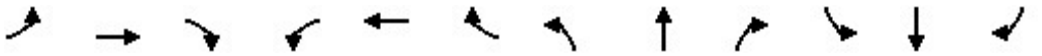
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Flash Dont Walk (s)		14.0			14.0							
Pedestrian Calls (#/hr)		0			0							
Act Effct Green (s)		41.0		52.0	52.0					30.0	30.0	
Actuated g/C Ratio		0.46		0.58	0.58					0.33	0.33	
v/c Ratio		0.90		1.40	0.34					0.38	0.32	
Control Delay		27.4		233.7	8.0					25.7	12.9	
Queue Delay		0.0		0.0	0.5					0.0	0.0	
Total Delay		27.4		233.7	8.5					25.7	12.9	
LOS		C		F	A					C	B	
Approach Delay		27.4			70.6						19.5	
Approach LOS		C			E						B	
Queue Length 50th (ft)		315		~162	77					88	36	
Queue Length 95th (ft)		#477		#319	97					150	90	
Internal Link Dist (ft)		1550			200			860			795	
Turn Bay Length (ft)										95		
Base Capacity (vph)		1565		183	2002					511	562	
Starvation Cap Reductn		0		0	848					0	0	
Spillback Cap Reductn		0		0	0					0	0	
Storage Cap Reductn		0		0	0					0	0	
Reduced v/c Ratio		0.90		1.40	0.58					0.38	0.32	

Intersection Summary

Area Type: Other
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 0 (0%), Referenced to phase 2: and 6:SBTL, Start of Green
Natural Cycle: 90
Control Type: Pretimed
Maximum v/c Ratio: 1.40
Intersection Signal Delay: 41.2 Intersection LOS: D
Intersection Capacity Utilization 75.0% ICU Level of Service D
Analysis Period (min) 15
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 1: I-90/94 - EB Ramps & Division St





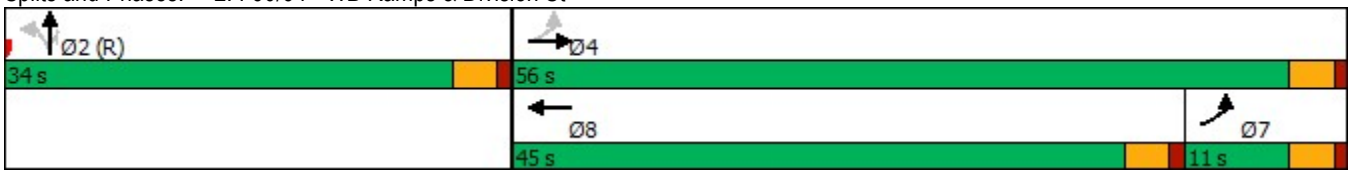
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	266	767	0	0	605	276	290	34	488	0	0	0
Future Volume (vph)	266	767	0	0	605	276	290	34	488	0	0	0
Ideal Flow (vphpl)	1900	2000	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	11	12	12	11	12	11	11	11	12	12	12
Storage Length (ft)	0		0	0		0	75		75	0		0
Storage Lanes	1		0	0		0	1		1	0		0
Taper Length (ft)	25			25			40			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00
Ped Bike Factor	1.00				0.99							
Frt					0.953			0.869	0.850			
Flt Protected	0.950						0.950					
Satd. Flow (prot)	1668	3401	0	0	2999	0	1728	1430	1399	0	0	0
Flt Permitted	0.210						0.950					
Satd. Flow (perm)	368	3401	0	0	2999	0	1728	1430	1399	0	0	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					109			169	169			
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		280			321			913			753	
Travel Time (s)		6.4			7.3			20.8			17.1	
Confl. Peds. (#/hr)	10		7	7		10						
Confl. Bikes (#/hr)			7									
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	1%	8%	0%	0%	12%	5%	1%	6%	6%	0%	0%	0%
Adj. Flow (vph)	280	807	0	0	637	291	305	36	514	0	0	0
Shared Lane Traffic (%)									47%			
Lane Group Flow (vph)	280	807	0	0	928	0	305	278	272	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Right	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		10			10			11			11	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.09	0.98	1.00	1.00	1.04	1.00	1.04	1.04	1.04	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	pm+pt	NA			NA		Perm	NA	Perm			
Protected Phases	7	4			8			2				
Permitted Phases	4						2		2			
Minimum Split (s)	11.0	56.0			45.0		34.0	34.0	34.0			
Total Split (s)	11.0	56.0			45.0		34.0	34.0	34.0			
Total Split (%)	12.2%	62.2%			50.0%		37.8%	37.8%	37.8%			
Maximum Green (s)	7.0	52.0			41.0		30.0	30.0	30.0			
Yellow Time (s)	3.0	3.0			3.0		3.0	3.0	3.0			
All-Red Time (s)	1.0	1.0			1.0		1.0	1.0	1.0			
Lost Time Adjust (s)	0.0	0.0			0.0		0.0	0.0	0.0			
Total Lost Time (s)	4.0	4.0			4.0		4.0	4.0	4.0			
Lead/Lag	Lag				Lead							
Lead-Lag Optimize?	Yes				Yes							
Walk Time (s)		27.0			27.0							

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Flash Dont Walk (s)		14.0			14.0							
Pedestrian Calls (#/hr)		4			0							
Act Effct Green (s)	52.0	52.0			41.0		30.0	30.0	30.0			
Actuated g/C Ratio	0.58	0.58			0.46		0.33	0.33	0.33			
v/c Ratio	0.89	0.41			0.65		0.53	0.47	0.47			
Control Delay	42.4	6.8			17.5		28.4	12.3	12.1			
Queue Delay	0.0	1.0			0.0		0.0	0.0	0.1			
Total Delay	42.4	7.8			17.5		28.4	12.3	12.1			
LOS	D	A			B		C	B	B			
Approach Delay		16.7			17.5			18.0				
Approach LOS		B			B			B				
Queue Length 50th (ft)	59	73			131		139	46	44			
Queue Length 95th (ft)	m#107	m85			m79		220	120	116			
Internal Link Dist (ft)		200			241			833			673	
Turn Bay Length (ft)							75		75			
Base Capacity (vph)	313	1965			1425		576	589	579			
Starvation Cap Reductn	0	844			0		0	0	0			
Spillback Cap Reductn	0	257			0		0	12	12			
Storage Cap Reductn	0	0			0		0	0	0			
Reduced v/c Ratio	0.89	0.72			0.65		0.53	0.48	0.48			

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:, Start of Green			
Natural Cycle: 90			
Control Type: Pretimed			
Maximum v/c Ratio: 0.89			
Intersection Signal Delay: 17.4		Intersection LOS: B	
Intersection Capacity Utilization 75.0%		ICU Level of Service D	
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: I-90/94 - WB Ramps & Division St



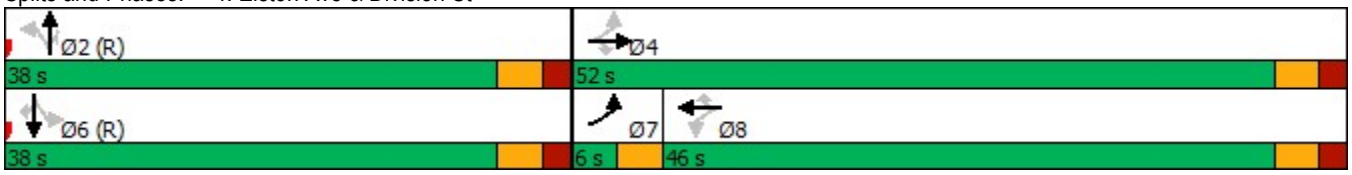
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	116	1028	105	15	690	64	101	197	70	146	425	85
Future Volume (vph)	116	1028	105	15	690	64	101	197	70	146	425	85
Ideal Flow (vphpl)	1900	2000	1900	1900	1900	1900	1900	2000	1900	1900	2000	1900
Lane Width (ft)	11	11	11	12	11	11	10	10	10	11	11	12
Storage Length (ft)	130		0	0		55	100		60	195		160
Storage Lanes	1		1	0		1	1		1	1		0
Taper Length (ft)	70			25			85			85		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00		0.97		1.00	0.96	1.00		0.99	1.00		0.96
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950				0.999		0.950			0.950		
Satd. Flow (prot)	1491	1824	1516	0	1699	1346	1604	1778	1478	1694	1895	1369
Flt Permitted	0.095				0.495		0.287			0.578		
Satd. Flow (perm)	149	1824	1469	0	842	1295	484	1778	1456	1029	1895	1319
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			94			61			65			90
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		315			780			658			1021	
Travel Time (s)		7.2			17.7			15.0			23.2	
Confl. Peds. (#/hr)	16		4	4		16	6		2	2		6
Confl. Bikes (#/hr)			10			1			2			32
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	17%	6%	3%	9%	8%	16%	5%	5%	2%	3%	2%	18%
Adj. Flow (vph)	123	1094	112	16	734	68	107	210	74	155	452	90
Shared Lane Traffic (%)												
Lane Group Flow (vph)	123	1094	112	0	750	68	107	210	74	155	452	90
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		11			11			11			11	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.04	0.98	1.04	1.00	1.04	1.04	1.09	1.02	1.09	1.04	0.98	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases	7	4			8			2			6	
Permitted Phases	4		4	8		8	2		2	6		6
Minimum Split (s)	6.0	52.0	52.0	46.0	46.0	46.0	38.0	38.0	38.0	38.0	38.0	38.0
Total Split (s)	6.0	52.0	52.0	46.0	46.0	46.0	38.0	38.0	38.0	38.0	38.0	38.0
Total Split (%)	6.7%	57.8%	57.8%	51.1%	51.1%	51.1%	42.2%	42.2%	42.2%	42.2%	42.2%	42.2%
Maximum Green (s)	3.0	47.0	47.0	41.0	41.0	41.0	33.0	33.0	33.0	33.0	33.0	33.0
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	0.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	3.0	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead			Lag	Lag	Lag						
Lead-Lag Optimize?	Yes			Yes	Yes	Yes						
Walk Time (s)		22.0	22.0	22.0	22.0	22.0	5.0	5.0	5.0	5.0	5.0	5.0

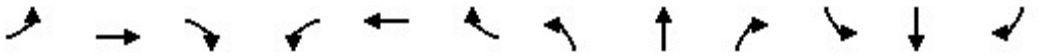
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Flash Dont Walk (s)		25.0	25.0	19.0	19.0	19.0	28.0	28.0	28.0	28.0	28.0	28.0
Pedestrian Calls (#/hr)		0	0	0	0	0	0	0	0	0	0	0
Act Effct Green (s)	49.0	47.0	47.0		41.0	41.0	33.0	33.0	33.0	33.0	33.0	33.0
Actuated g/C Ratio	0.54	0.52	0.52		0.46	0.46	0.37	0.37	0.37	0.37	0.37	0.37
v/c Ratio	0.98	1.15	0.14		1.96	0.11	0.60	0.32	0.13	0.41	0.65	0.17
Control Delay	97.7	98.6	3.6		461.1	3.1	38.7	21.2	6.1	25.4	29.1	5.2
Queue Delay	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	97.7	98.6	3.6		461.1	3.1	38.7	21.2	6.1	25.4	29.1	5.2
LOS	F	F	A		F	A	D	C	A	C	C	A
Approach Delay		90.5			423.0			23.1			25.2	
Approach LOS		F			F			C			C	
Queue Length 50th (ft)	38	~735	2		~660	1	45	81	2	65	210	0
Queue Length 95th (ft)	#117	#984	23		#903	13	#129	129	28	121	315	30
Internal Link Dist (ft)		235			700			578			941	
Turn Bay Length (ft)	130					55	100		60	195		160
Base Capacity (vph)	125	952	812		383	623	177	651	575	377	694	540
Starvation Cap Reductn	0	0	0		0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0		0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0		0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.98	1.15	0.14		1.96	0.11	0.60	0.32	0.13	0.41	0.65	0.17

Intersection Summary

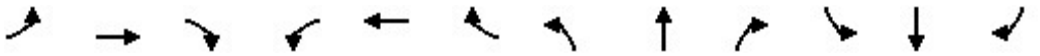
Area Type: Other
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 82 (91%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 150
Control Type: Pretimed
Maximum v/c Ratio: 1.96
Intersection Signal Delay: 152.4 Intersection LOS: F
Intersection Capacity Utilization 140.8% ICU Level of Service H
Analysis Period (min) 15
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 4: Elston Ave & Division St





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	106	945	193	14	711	10	39	5	5	14	5	19
Future Volume (vph)	106	945	193	14	711	10	39	5	5	14	5	19
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	11	12	12	11	12	12	9	9	12	10	10
Storage Length (ft)	0		0	0		0	0		10	0		65
Storage Lanes	0		0	0		0	0		1	0		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.99			1.00			1.00	0.98		1.00	0.97
Frt		0.977			0.998				0.850			0.850
Flt Protected		0.996			0.999			0.957			0.964	
Satd. Flow (prot)	0	3201	0	0	3195	0	0	1490	1093	0	1159	1383
Flt Permitted		0.783			0.920			0.745			0.814	
Satd. Flow (perm)	0	2516	0	0	2943	0	0	1154	1076	0	976	1348
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		46			3				12			21
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		780			2016			791			859	
Travel Time (s)		17.7			45.8			18.0			19.5	
Confl. Peds. (#/hr)	11		5	5		11	3		3	3		3
Confl. Bikes (#/hr)			13									
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
Heavy Vehicles (%)	1%	7%	1%	7%	9%	0%	11%	0%	33%	41%	67%	9%
Adj. Flow (vph)	115	1027	210	15	773	11	42	5	5	15	5	21
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1352	0	0	799	0	0	47	5	0	20	21
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.04	1.00	1.00	1.04	1.00	1.00	1.14	1.14	1.00	1.09	1.09
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100		20	100		20	100	20	20	100	20
Trailing Detector (ft)	0	0		0	0		0	0	0	0	0	0
Detector 1 Position(ft)	0	0		0	0		0	0	0	0	0	0
Detector 1 Size(ft)	20	6		20	6		20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	

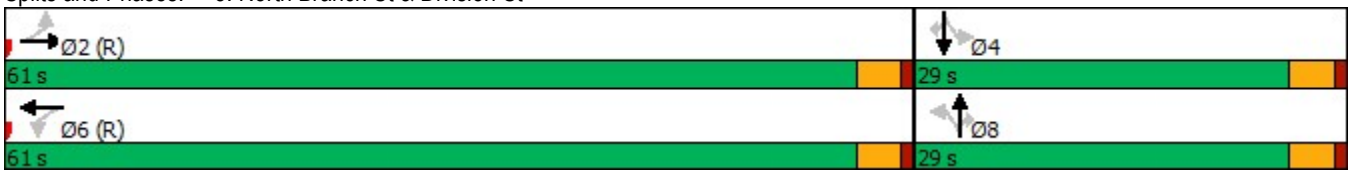


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8		8	4		4
Detector Phase	2	2		6	6		8	8	8	4	4	4
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	61.0	61.0		61.0	61.0		29.0	29.0	29.0	29.0	29.0	29.0
Total Split (s)	61.0	61.0		61.0	61.0		29.0	29.0	29.0	29.0	29.0	29.0
Total Split (%)	67.8%	67.8%		67.8%	67.8%		32.2%	32.2%	32.2%	32.2%	32.2%	32.2%
Maximum Green (s)	57.0	57.0		57.0	57.0		25.0	25.0	25.0	25.0	25.0	25.0
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)		0.0			0.0			0.0	0.0		0.0	0.0
Total Lost Time (s)		4.0			4.0			4.0	4.0		4.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		5.0	5.0	5.0	5.0	5.0	5.0
Recall Mode	C-Max	C-Max		C-Max	C-Max		Min	Min	Min	Min	Min	Min
Walk Time (s)	44.0	44.0		44.0	44.0							
Flash Dont Walk (s)	13.0	13.0		13.0	13.0							
Pedestrian Calls (#/hr)	0	0		0	0							
Act Effct Green (s)		71.2			71.2			10.8	10.8		10.8	10.8
Actuated g/C Ratio		0.79			0.79			0.12	0.12		0.12	0.12
v/c Ratio		0.68			0.34			0.34	0.04		0.17	0.12
Control Delay		4.8			3.4			42.0	9.2		37.5	15.4
Queue Delay		0.0			0.0			0.0	0.0		0.0	0.0
Total Delay		4.8			3.4			42.0	9.2		37.5	15.4
LOS		A			A			D	A		D	B
Approach Delay		4.8			3.4			38.9			26.2	
Approach LOS		A			A			D			C	
90th %ile Green (s)	67.4	67.4		67.4	67.4		14.6	14.6	14.6	14.6	14.6	14.6
90th %ile Term Code	Coord	Coord		Coord	Coord		Gap	Gap	Gap	Hold	Hold	Hold
70th %ile Green (s)	69.7	69.7		69.7	69.7		12.3	12.3	12.3	12.3	12.3	12.3
70th %ile Term Code	Coord	Coord		Coord	Coord		Gap	Gap	Gap	Hold	Hold	Hold
50th %ile Green (s)	71.3	71.3		71.3	71.3		10.7	10.7	10.7	10.7	10.7	10.7
50th %ile Term Code	Coord	Coord		Coord	Coord		Gap	Gap	Gap	Hold	Hold	Hold
30th %ile Green (s)	72.9	72.9		72.9	72.9		9.1	9.1	9.1	9.1	9.1	9.1
30th %ile Term Code	Coord	Coord		Coord	Coord		Gap	Gap	Gap	Hold	Hold	Hold
10th %ile Green (s)	74.5	74.5		74.5	74.5		7.5	7.5	7.5	7.5	7.5	7.5
10th %ile Term Code	Coord	Coord		Coord	Coord		Gap	Gap	Gap	Gap	Gap	Gap
Queue Length 50th (ft)		112			51			25	0		10	0
Queue Length 95th (ft)		m101			89			56	6		31	20
Internal Link Dist (ft)		700			1936			711			779	
Turn Bay Length (ft)									10			65
Base Capacity (vph)		1998			2327			320	307		271	389
Starvation Cap Reductn		0			0			0	0		0	0
Spillback Cap Reductn		0			0			0	0		0	0

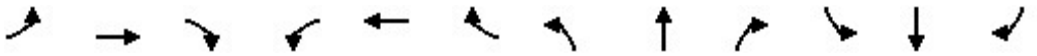
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Storage Cap Reductn		0			0			0	0		0	0
Reduced v/c Ratio		0.68			0.34			0.15	0.02		0.07	0.05

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 29 (32%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green			
Natural Cycle: 90			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.68			
Intersection Signal Delay: 5.5		Intersection LOS: A	
Intersection Capacity Utilization 114.1%		ICU Level of Service H	
Analysis Period (min) 15			
m Volume for 95th percentile queue is metered by upstream signal.			

Splits and Phases: 5: North Branch St & Division St



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	22	9	8	6	1	20	4	250	11	43	469	20
Future Volume (vph)	22	9	8	6	1	20	4	250	11	43	469	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	10	10	10	11	11	11	11	11	11
Storage Length (ft)	0		0	0		75	0		0	0		0
Storage Lanes	0		0	0		1	0		0	0		0
Taper Length (ft)	25			105			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00			1.00			1.00			1.00	
Frt		0.972				0.850		0.994			0.995	
Flt Protected		0.973			0.958			0.999			0.996	
Satd. Flow (prot)	0	1729	0	0	1699	1409	0	1647	0	0	1736	0
Flt Permitted		0.824			0.784			0.995			0.956	
Satd. Flow (perm)	0	1464	0	0	1388	1409	0	1640	0	0	1666	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		9				61		4			5	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		965			828			1019			288	
Travel Time (s)		21.9			18.8			23.2			6.5	
Confl. Peds. (#/hr)			1	1					3	3		
Confl. Bikes (#/hr)									1			3
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	0%	0%	0%	0%	0%	7%	17%	11%	0%	3%	5%	3%
Adj. Flow (vph)	24	10	9	7	1	22	4	278	12	48	521	22
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	43	0	0	8	22	0	294	0	0	591	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.04	1.04	1.04	1.09	1.09	1.09	1.04	1.04	1.04	1.04	1.04	1.04
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2		1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100	20	20	100		20	100	
Trailing Detector (ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Position(ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Size(ft)	20	6		20	6	20	20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	

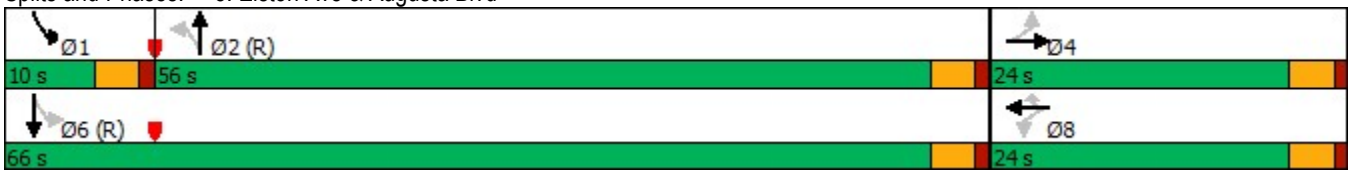


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA	Perm	Perm	NA		pm+pt	NA	
Protected Phases		4			8			2		1	6	
Permitted Phases	4			8		8	2			6		
Detector Phase	4	4		8	8	8	2	2		1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Minimum Split (s)	24.0	24.0		22.5	22.5	22.5	56.0	56.0		9.5	56.0	
Total Split (s)	24.0	24.0		24.0	24.0	24.0	56.0	56.0		10.0	66.0	
Total Split (%)	26.7%	26.7%		26.7%	26.7%	26.7%	62.2%	62.2%		11.1%	73.3%	
Maximum Green (s)	20.0	20.0		20.0	20.0	20.0	52.0	52.0		6.0	62.0	
Yellow Time (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0	0.0		0.0			0.0	
Total Lost Time (s)		4.0			4.0	4.0		4.0			4.0	
Lead/Lag							Lag	Lag		Lead		
Lead-Lag Optimize?							Yes	Yes		Yes		
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	Min	Min		Min	Min	Min	C-Max	C-Max		None	C-Max	
Walk Time (s)	7.0	7.0					38.0	38.0			38.0	
Flash Dont Walk (s)	13.0	13.0					14.0	14.0			14.0	
Pedestrian Calls (#/hr)	0	0					0	0			0	
Act Effct Green (s)		7.6			7.6	7.6		74.4			74.4	
Actuated g/C Ratio		0.08			0.08	0.08		0.83			0.83	
v/c Ratio		0.33			0.07	0.13		0.22			0.43	
Control Delay		38.6			37.9	1.5		2.2			3.0	
Queue Delay		0.0			0.0	0.0		0.0			0.0	
Total Delay		38.6			37.9	1.5		2.2			3.0	
LOS		D			D	A		A			A	
Approach Delay		38.6			11.2			2.2			3.0	
Approach LOS		D			B			A			A	
90th %ile Green (s)	10.3	10.3		10.3	10.3	10.3	71.7	71.7		0.0	71.7	
90th %ile Term Code	Gap	Gap		Hold	Hold	Hold	Coord	Coord		Skip	Coord	
70th %ile Green (s)	8.6	8.6		8.6	8.6	8.6	73.4	73.4		0.0	73.4	
70th %ile Term Code	Gap	Gap		Hold	Hold	Hold	Coord	Coord		Skip	Coord	
50th %ile Green (s)	7.4	7.4		7.4	7.4	7.4	74.6	74.6		0.0	74.6	
50th %ile Term Code	Gap	Gap		Hold	Hold	Hold	Coord	Coord		Skip	Coord	
30th %ile Green (s)	6.1	6.1		6.1	6.1	6.1	75.9	75.9		0.0	75.9	
30th %ile Term Code	Gap	Gap		Hold	Hold	Hold	Coord	Coord		Skip	Coord	
10th %ile Green (s)	5.5	5.5		5.5	5.5	5.5	76.5	76.5		0.0	76.5	
10th %ile Term Code	Gap	Gap		Gap	Gap	Gap	Coord	Coord		Skip	Coord	
Queue Length 50th (ft)		19			4	0		23			28	
Queue Length 95th (ft)		50			17	2		48			m68	
Internal Link Dist (ft)		885			748			939			208	
Turn Bay Length (ft)						75						
Base Capacity (vph)		332			308	360		1356			1378	
Starvation Cap Reductn		0			0	0		0			0	
Spillback Cap Reductn		0			0	0		0			0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Storage Cap Reductn		0			0	0		0			0	
Reduced v/c Ratio		0.13			0.03	0.06		0.22			0.43	

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green			
Natural Cycle: 90			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.43			
Intersection Signal Delay: 4.6		Intersection LOS: A	
Intersection Capacity Utilization 66.9%		ICU Level of Service C	
Analysis Period (min) 15			
m Volume for 95th percentile queue is metered by upstream signal.			

Splits and Phases: 8: Elston Ave & Augusta Blvd



Intersection	
Int Delay, s/veh	0.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	1230	25	0	876	5	19
Future Vol, veh/h	1230	25	0	876	5	19
Conflicting Peds, #/hr	0	7	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	8	38	0	8	0	0
Mvmt Flow	1295	26	0	922	5	20

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	-	-	1776	668
Stage 1	-	-	-	-	1315	-
Stage 2	-	-	-	-	461	-
Critical Hdwy	-	-	-	-	6.8	6.9
Critical Hdwy Stg 1	-	-	-	-	5.8	-
Critical Hdwy Stg 2	-	-	-	-	5.8	-
Follow-up Hdwy	-	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	0	-	75	405
Stage 1	-	-	0	-	219	-
Stage 2	-	-	0	-	607	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	-	-	74	402
Mov Cap-2 Maneuver	-	-	-	-	74	-
Stage 1	-	-	-	-	217	-
Stage 2	-	-	-	-	607	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	14.4
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT
Capacity (veh/h)	402	-	-	-
HCM Lane V/C Ratio	0.05	-	-	-
HCM Control Delay (s)	14.4	-	-	-
HCM Lane LOS	B	-	-	-
HCM 95th %tile Q(veh)	0.2	-	-	-

Intersection	
Int Delay, s/veh	1.9

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	66	26	4	302	532	13
Future Vol, veh/h	66	26	4	302	532	13
Conflicting Peds, #/hr	0	0	0	0	0	4
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	95	95	95	95	95	95
Heavy Vehicles, %	5	0	0	8	8	23
Mvmt Flow	69	27	4	318	560	14

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	897	571	578	0	-	0
Stage 1	571	-	-	-	-	-
Stage 2	326	-	-	-	-	-
Critical Hdwy	6.45	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.45	-	-	-	-	-
Critical Hdwy Stg 2	5.45	-	-	-	-	-
Follow-up Hdwy	3.545	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	307	524	1006	-	-	-
Stage 1	559	-	-	-	-	-
Stage 2	725	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	303	522	1002	-	-	-
Mov Cap-2 Maneuver	303	-	-	-	-	-
Stage 1	554	-	-	-	-	-
Stage 2	722	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	19.5	0.1	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1002	-	344	-	-
HCM Lane V/C Ratio	0.004	-	0.282	-	-
HCM Control Delay (s)	8.6	0	19.5	-	-
HCM Lane LOS	A	A	C	-	-
HCM 95th %tile Q(veh)	0	-	1.1	-	-

Intersection	
Int Delay, s/veh	0.7

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	19	9	9	283	523	35
Future Vol, veh/h	19	9	9	283	523	35
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	89	89	89	89	89	89
Heavy Vehicles, %	40	36	0	8	3	7
Mvmt Flow	21	10	10	318	588	39

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	946	608	627	0	-	0
Stage 1	608	-	-	-	-	-
Stage 2	338	-	-	-	-	-
Critical Hdwy	6.8	6.56	4.1	-	-	-
Critical Hdwy Stg 1	5.8	-	-	-	-	-
Critical Hdwy Stg 2	5.8	-	-	-	-	-
Follow-up Hdwy	3.86	3.624	2.2	-	-	-
Pot Cap-1 Maneuver	249	439	965	-	-	-
Stage 1	477	-	-	-	-	-
Stage 2	645	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	246	439	965	-	-	-
Mov Cap-2 Maneuver	246	-	-	-	-	-
Stage 1	471	-	-	-	-	-
Stage 2	645	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	19.1	0.3	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	965	-	286	-	-
HCM Lane V/C Ratio	0.01	-	0.11	-	-
HCM Control Delay (s)	8.8	0	19.1	-	-
HCM Lane LOS	A	A	C	-	-
HCM 95th %tile Q(veh)	0	-	0.4	-	-

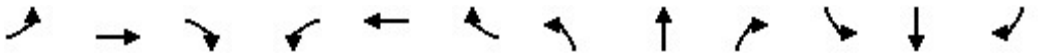
Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	4	0	0	302	558	0
Future Vol, veh/h	4	0	0	302	558	0
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, %	100	0	0	8	8	0
Mvmt Flow	4	0	0	328	607	0

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	935	607	-	0	-	0
Stage 1	607	-	-	-	-	-
Stage 2	328	-	-	-	-	-
Critical Hdwy	7.4	6.2	-	-	-	-
Critical Hdwy Stg 1	6.4	-	-	-	-	-
Critical Hdwy Stg 2	6.4	-	-	-	-	-
Follow-up Hdwy	4.4	3.3	-	-	-	-
Pot Cap-1 Maneuver	201	500	0	-	-	0
Stage 1	394	-	0	-	-	0
Stage 2	554	-	0	-	-	0
Platoon blocked, %				-	-	
Mov Cap-1 Maneuver	201	500	-	-	-	-
Mov Cap-2 Maneuver	201	-	-	-	-	-
Stage 1	394	-	-	-	-	-
Stage 2	554	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	23.3	0	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	EBLn1	SBT
Capacity (veh/h)	-	201	-
HCM Lane V/C Ratio	-	0.022	-
HCM Control Delay (s)	-	23.3	-
HCM Lane LOS	-	C	-
HCM 95th %tile Q(veh)	-	0.1	-



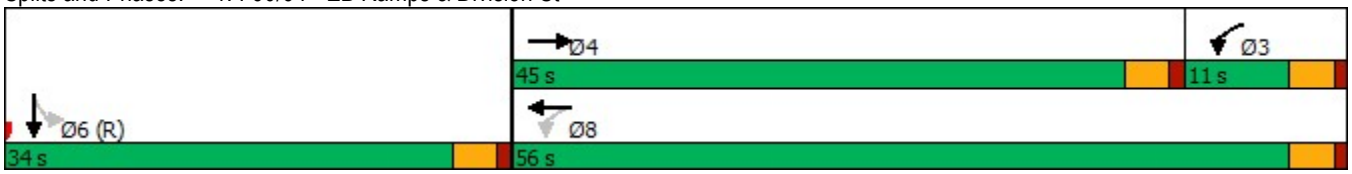
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	579	234	260	722	0	0	0	0	218	5	270
Future Volume (vph)	0	579	234	260	722	0	0	0	0	218	5	270
Ideal Flow (vphpl)	1900	1900	1900	1900	2000	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	11	12	10	11	12	12	12	12	11	11	12
Storage Length (ft)	0		0	0		0	0		0	95		0
Storage Lanes	0		0	1		0	0		0	1		0
Taper Length (ft)	25			25			25			150		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	0.95	0.95	1.00
Ped Bike Factor		0.99		1.00								
Frt		0.957									0.863	
Flt Protected				0.950						0.950	0.996	
Satd. Flow (prot)	0	3240	0	1604	3601	0	0	0	0	1625	1476	0
Flt Permitted				0.240						0.950	0.996	
Satd. Flow (perm)	0	3240	0	404	3601	0	0	0	0	1625	1476	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		89									178	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1630			280			940			875	
Travel Time (s)		37.0			6.4			21.4			19.9	
Confl. Peds. (#/hr)	19		8	8		19						
Confl. Bikes (#/hr)			4			14						
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	0%	3%	0%	5%	2%	0%	0%	0%	0%	2%	33%	1%
Adj. Flow (vph)	0	609	246	274	760	0	0	0	0	229	5	284
Shared Lane Traffic (%)										10%		
Lane Group Flow (vph)	0	855	0	274	760	0	0	0	0	206	312	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Right	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		10			10			11			11	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.04	1.00	1.09	0.98	1.00	1.00	1.00	1.00	1.04	1.04	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type		NA		pm+pt	NA					Perm	NA	
Protected Phases		4		3	8						6	
Permitted Phases				8						6		
Minimum Split (s)		45.0		11.0	56.0					34.0	34.0	
Total Split (s)		45.0		11.0	56.0					34.0	34.0	
Total Split (%)		50.0%		12.2%	62.2%					37.8%	37.8%	
Maximum Green (s)		41.0		7.0	52.0					30.0	30.0	
Yellow Time (s)		3.0		3.0	3.0					3.0	3.0	
All-Red Time (s)		1.0		1.0	1.0					1.0	1.0	
Lost Time Adjust (s)		0.0		0.0	0.0					0.0	0.0	
Total Lost Time (s)		4.0		4.0	4.0					4.0	4.0	
Lead/Lag		Lead		Lag								
Lead-Lag Optimize?		Yes		Yes								
Walk Time (s)		27.0			27.0							

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Flash Dont Walk (s)		14.0			14.0							
Pedestrian Calls (#/hr)		0			0							
Act Effct Green (s)		41.0		52.0	52.0					30.0	30.0	
Actuated g/C Ratio		0.46		0.58	0.58					0.33	0.33	
v/c Ratio		0.56		0.84	0.37					0.38	0.51	
Control Delay		17.6		38.2	7.5					25.5	13.4	
Queue Delay		0.0		0.0	0.7					0.0	0.0	
Total Delay		17.6		38.2	8.1					25.5	13.4	
LOS		B		D	A					C	B	
Approach Delay		17.6			16.1						18.2	
Approach LOS		B			B						B	
Queue Length 50th (ft)		161		54	80					92	57	
Queue Length 95th (ft)		218		m#144	98					156	141	
Internal Link Dist (ft)		1550			200			860			795	
Turn Bay Length (ft)										95		
Base Capacity (vph)		1524		326	2080					541	610	
Starvation Cap Reductn		0		0	899					0	0	
Spillback Cap Reductn		0		0	0					0	0	
Storage Cap Reductn		0		0	0					0	0	
Reduced v/c Ratio		0.56		0.84	0.64					0.38	0.51	

Intersection Summary

Area Type: Other
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 0 (0%), Referenced to phase 2: and 6:SBTL, Start of Green
Natural Cycle: 90
Control Type: Pretimed
Maximum v/c Ratio: 0.84
Intersection Signal Delay: 17.1 Intersection LOS: B
Intersection Capacity Utilization 73.0% ICU Level of Service D
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: 1: I-90/94 - EB Ramps & Division St



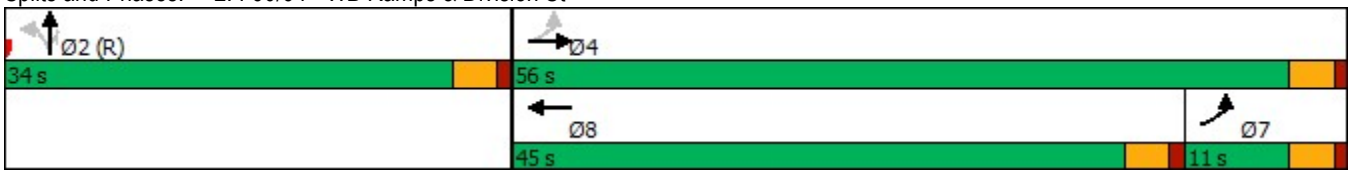
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	214	583	0	0	702	378	280	178	187	0	0	0
Future Volume (vph)	214	583	0	0	702	378	280	178	187	0	0	0
Ideal Flow (vphpl)	1900	2000	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	11	12	12	11	12	11	11	11	12	12	12
Storage Length (ft)	0		0	0		0	75		75	0		0
Storage Lanes	1		0	0		0	1		1	0		0
Taper Length (ft)	25			25			40			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00
Ped Bike Factor	1.00				0.98							
Frt					0.947			0.986	0.850			
Flt Protected	0.950						0.950					
Satd. Flow (prot)	1668	3566	0	0	3144	0	1745	1712	1412	0	0	0
Flt Permitted	0.144						0.950					
Satd. Flow (perm)	252	3566	0	0	3144	0	1745	1712	1412	0	0	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					146			6	174			
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		280			321			913			753	
Travel Time (s)		6.4			7.3			20.8			17.1	
Confl. Peds. (#/hr)	24		5	5		24						
Confl. Bikes (#/hr)			2			4						
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	1%	3%	0%	0%	4%	2%	0%	0%	5%	0%	0%	0%
Adj. Flow (vph)	221	601	0	0	724	390	289	184	193	0	0	0
Shared Lane Traffic (%)									10%			
Lane Group Flow (vph)	221	601	0	0	1114	0	289	203	174	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Right	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		10			10			11			11	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.09	0.98	1.00	1.00	1.04	1.00	1.04	1.04	1.04	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	pm+pt	NA			NA		Perm	NA	Perm			
Protected Phases	7	4			8			2				
Permitted Phases	4						2		2			
Minimum Split (s)	11.0	56.0			45.0		34.0	34.0	34.0			
Total Split (s)	11.0	56.0			45.0		34.0	34.0	34.0			
Total Split (%)	12.2%	62.2%			50.0%		37.8%	37.8%	37.8%			
Maximum Green (s)	7.0	52.0			41.0		30.0	30.0	30.0			
Yellow Time (s)	3.0	3.0			3.0		3.0	3.0	3.0			
All-Red Time (s)	1.0	1.0			1.0		1.0	1.0	1.0			
Lost Time Adjust (s)	0.0	0.0			0.0		0.0	0.0	0.0			
Total Lost Time (s)	4.0	4.0			4.0		4.0	4.0	4.0			
Lead/Lag	Lag				Lead							
Lead-Lag Optimize?	Yes				Yes							
Walk Time (s)		27.0			27.0							

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Flash Dont Walk (s)		14.0			14.0							
Pedestrian Calls (#/hr)		4			0							
Act Effct Green (s)	52.0	52.0			41.0		30.0	30.0	30.0			
Actuated g/C Ratio	0.58	0.58			0.46		0.33	0.33	0.33			
v/c Ratio	0.87	0.29			0.74		0.50	0.35	0.30			
Control Delay	54.1	6.7			16.5		27.6	24.2	5.0			
Queue Delay	0.0	0.3			0.0		0.0	0.0	0.0			
Total Delay	54.1	7.0			16.5		27.6	24.2	5.0			
LOS	D	A			B		C	C	A			
Approach Delay		19.7			16.5			20.6				
Approach LOS		B			B			C				
Queue Length 50th (ft)	70	56			167		130	88	0			
Queue Length 95th (ft)	#199	72			m184		207	149	45			
Internal Link Dist (ft)		200			241			833			673	
Turn Bay Length (ft)							75		75			
Base Capacity (vph)	255	2060			1511		581	574	586			
Starvation Cap Reductn	0	831			0		0	0	0			
Spillback Cap Reductn	0	0			0		0	0	0			
Storage Cap Reductn	0	0			0		0	0	0			
Reduced v/c Ratio	0.87	0.49			0.74		0.50	0.35	0.30			

Intersection Summary

Area Type: Other
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:, Start of Green
Natural Cycle: 90
Control Type: Pretimed
Maximum v/c Ratio: 0.87
Intersection Signal Delay: 18.6 Intersection LOS: B
Intersection Capacity Utilization 73.0% ICU Level of Service D
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: I-90/94 - WB Ramps & Division St



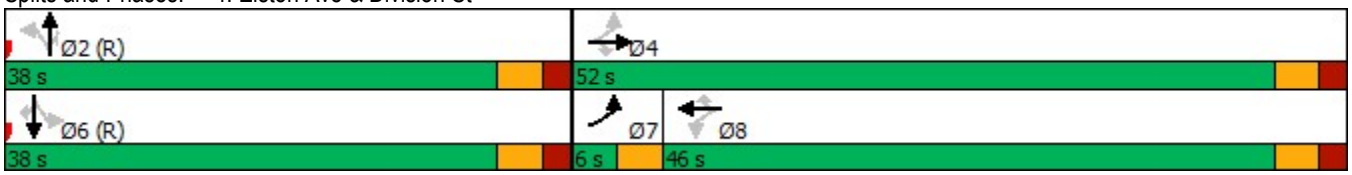
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	139	537	91	25	708	107	159	481	40	126	642	213
Future Volume (vph)	139	537	91	25	708	107	159	481	40	126	642	213
Ideal Flow (vphpl)	1900	2000	1900	1900	1900	1900	1900	2000	1900	1900	2000	1900
Lane Width (ft)	11	11	11	12	11	11	10	10	10	11	11	12
Storage Length (ft)	130		0	0		55	100		60	195		160
Storage Lanes	1		1	0		1	1		1	1		0
Taper Length (ft)	70			25			85			85		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00		0.97		1.00	0.96	1.00		0.97	1.00		0.98
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950				0.998		0.950			0.950		
Satd. Flow (prot)	1678	1877	1546	0	1781	1546	1685	1848	1507	1694	1895	1538
Flt Permitted	0.097				0.972		0.121			0.244		
Satd. Flow (perm)	171	1877	1505	0	1735	1477	214	1848	1464	435	1895	1513
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			93			61			61			188
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		315			780			658			1021	
Travel Time (s)		7.2			17.7			15.0			23.2	
Confl. Peds. (#/hr)	17		6	6		17	2		2	2		2
Confl. Bikes (#/hr)			1			8			25			4
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	4%	3%	1%	0%	3%	1%	0%	1%	0%	3%	2%	5%
Adj. Flow (vph)	142	548	93	26	722	109	162	491	41	129	655	217
Shared Lane Traffic (%)												
Lane Group Flow (vph)	142	548	93	0	748	109	162	491	41	129	655	217
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		11			11			11			11	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.04	0.98	1.04	1.00	1.04	1.04	1.09	1.02	1.09	1.04	0.98	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases	7	4			8			2			6	
Permitted Phases	4		4	8		8	2		2	6		6
Minimum Split (s)	6.0	52.0	52.0	46.0	46.0	46.0	38.0	38.0	38.0	38.0	38.0	38.0
Total Split (s)	6.0	52.0	52.0	46.0	46.0	46.0	38.0	38.0	38.0	38.0	38.0	38.0
Total Split (%)	6.7%	57.8%	57.8%	51.1%	51.1%	51.1%	42.2%	42.2%	42.2%	42.2%	42.2%	42.2%
Maximum Green (s)	3.0	47.0	47.0	41.0	41.0	41.0	33.0	33.0	33.0	33.0	33.0	33.0
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	0.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	3.0	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead			Lag	Lag	Lag						
Lead-Lag Optimize?	Yes			Yes	Yes	Yes						
Walk Time (s)		22.0	22.0	22.0	22.0	22.0	5.0	5.0	5.0	5.0	5.0	5.0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Flash Dont Walk (s)		25.0	25.0	19.0	19.0	19.0	28.0	28.0	28.0	28.0	28.0	28.0
Pedestrian Calls (#/hr)		0	0	0	0	0	0	0	0	0	0	0
Act Effct Green (s)	49.0	47.0	47.0		41.0	41.0	33.0	33.0	33.0	33.0	33.0	33.0
Actuated g/C Ratio	0.54	0.52	0.52		0.46	0.46	0.37	0.37	0.37	0.37	0.37	0.37
v/c Ratio	0.99	0.56	0.11		0.95	0.15	2.08	0.73	0.07	0.81	0.94	0.32
Control Delay	102.8	10.3	0.8		43.9	5.3	545.6	32.1	5.0	64.6	52.1	5.9
Queue Delay	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	102.8	10.3	0.8		43.9	5.3	545.6	32.1	5.0	64.6	52.1	5.9
LOS	F	B	A		D	A	F	C	A	E	D	A
Approach Delay		26.0			39.0			150.4			43.7	
Approach LOS		C			D			F			D	
Queue Length 50th (ft)	47	88	0		416	7	~147	214	0	65	355	11
Queue Length 95th (ft)	#107	135	4		#652	33	#268	344	m15	#170	#576	57
Internal Link Dist (ft)		235			700			578			941	
Turn Bay Length (ft)	130					55	100		60	195		160
Base Capacity (vph)	143	980	830		790	706	78	677	575	159	694	673
Starvation Cap Reductn	0	0	0		0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0		0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0		0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.99	0.56	0.11		0.95	0.15	2.08	0.73	0.07	0.81	0.94	0.32

Intersection Summary

Area Type: Other
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 82 (91%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 100
Control Type: Pretimed
Maximum v/c Ratio: 2.08
Intersection Signal Delay: 60.5 Intersection LOS: E
Intersection Capacity Utilization 135.4% ICU Level of Service H
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: 4: Elston Ave & Division St



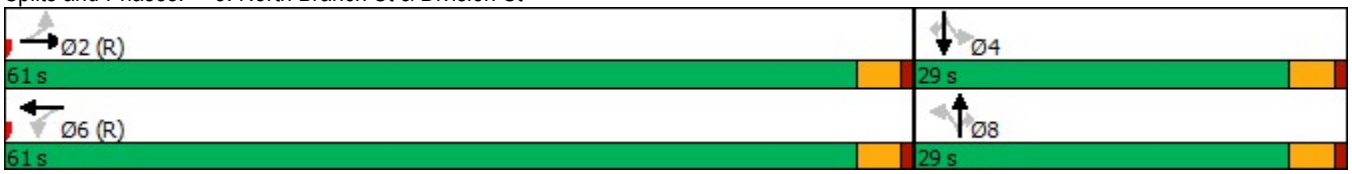
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	25	612	66	5	555	5	168	5	15	25	5	117
Future Volume (vph)	25	612	66	5	555	5	168	5	15	25	5	117
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	11	12	12	11	12	12	9	9	12	10	10
Storage Length (ft)	0		0	0		0	0		10	0		65
Storage Lanes	0		0	0		0	0		1	0		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00			1.00			0.99	0.98		1.00	0.97
Frt		0.986			0.999				0.850			0.850
Flt Protected		0.998						0.954			0.960	
Satd. Flow (prot)	0	3314	0	0	3353	0	0	1600	1264	0	1407	1478
Flt Permitted		0.923			0.951			0.709			0.756	
Satd. Flow (perm)	0	3064	0	0	3189	0	0	1183	1239	0	1103	1436
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		24			2				12			122
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		780			2016			791			859	
Travel Time (s)		17.7			45.8			18.0			19.5	
Confl. Peds. (#/hr)	29		10	10		29	3		7	7		3
Confl. Bikes (#/hr)			3			5						2
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	7%	3%	5%	0%	4%	0%	2%	0%	15%	25%	0%	2%
Adj. Flow (vph)	26	638	69	5	578	5	175	5	16	26	5	122
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	733	0	0	588	0	0	180	16	0	31	122
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.04	1.00	1.00	1.04	1.00	1.00	1.14	1.14	1.00	1.09	1.09
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100		20	100		20	100	20	20	100	20
Trailing Detector (ft)	0	0		0	0		0	0	0	0	0	0
Detector 1 Position(ft)	0	0		0	0		0	0	0	0	0	0
Detector 1 Size(ft)	20	6		20	6		20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8		8	4		4
Detector Phase	2	2		6	6		8	8	8	4	4	4
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	61.0	61.0		61.0	61.0		29.0	29.0	29.0	29.0	29.0	29.0
Total Split (s)	61.0	61.0		61.0	61.0		29.0	29.0	29.0	29.0	29.0	29.0
Total Split (%)	67.8%	67.8%		67.8%	67.8%		32.2%	32.2%	32.2%	32.2%	32.2%	32.2%
Maximum Green (s)	57.0	57.0		57.0	57.0		25.0	25.0	25.0	25.0	25.0	25.0
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)		0.0			0.0			0.0	0.0		0.0	0.0
Total Lost Time (s)		4.0			4.0			4.0	4.0		4.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		5.0	5.0	5.0	5.0	5.0	5.0
Recall Mode	C-Max	C-Max		C-Max	C-Max		Min	Min	Min	Min	Min	Min
Walk Time (s)	44.0	44.0		44.0	44.0							
Flash Dont Walk (s)	13.0	13.0		13.0	13.0							
Pedestrian Calls (#/hr)	0	0		0	0							
Act Effct Green (s)		62.2			62.2			19.8	19.8		19.8	19.8
Actuated g/C Ratio		0.69			0.69			0.22	0.22		0.22	0.22
v/c Ratio		0.35			0.27			0.69	0.06		0.13	0.30
Control Delay		4.5			6.2			45.7	14.9		27.2	7.1
Queue Delay		0.0			0.0			0.0	0.0		0.0	0.0
Total Delay		4.5			6.2			45.7	14.9		27.2	7.1
LOS		A			A			D	B		C	A
Approach Delay		4.5			6.2			43.2			11.1	
Approach LOS		A			A			D			B	
90th %ile Green (s)	57.0	57.0		57.0	57.0		25.0	25.0	25.0	25.0	25.0	25.0
90th %ile Term Code	Coord	Coord		Coord	Coord		Max	Max	Max	Hold	Hold	Hold
70th %ile Green (s)	58.3	58.3		58.3	58.3		23.7	23.7	23.7	23.7	23.7	23.7
70th %ile Term Code	Coord	Coord		Coord	Coord		Gap	Gap	Gap	Hold	Hold	Hold
50th %ile Green (s)	61.5	61.5		61.5	61.5		20.5	20.5	20.5	20.5	20.5	20.5
50th %ile Term Code	Coord	Coord		Coord	Coord		Gap	Gap	Gap	Hold	Hold	Hold
30th %ile Green (s)	64.7	64.7		64.7	64.7		17.3	17.3	17.3	17.3	17.3	17.3
30th %ile Term Code	Coord	Coord		Coord	Coord		Gap	Gap	Gap	Hold	Hold	Hold
10th %ile Green (s)	69.4	69.4		69.4	69.4		12.6	12.6	12.6	12.6	12.6	12.6
10th %ile Term Code	Coord	Coord		Coord	Coord		Gap	Gap	Gap	Hold	Hold	Hold
Queue Length 50th (ft)		43			59			94	2		14	0
Queue Length 95th (ft)		m79			97			156	17		35	40
Internal Link Dist (ft)		700			1936			711			779	
Turn Bay Length (ft)									10			65
Base Capacity (vph)		2124			2203			328	352		306	487
Starvation Cap Reductn		0			0			0	0		0	0
Spillback Cap Reductn		0			0			0	0		0	0

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		0.35			0.27			0.55	0.05		0.10	0.25

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 29 (32%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green			
Natural Cycle: 90			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.69			
Intersection Signal Delay: 10.2		Intersection LOS: B	
Intersection Capacity Utilization 74.6%		ICU Level of Service D	
Analysis Period (min) 15			
m Volume for 95th percentile queue is metered by upstream signal.			

Splits and Phases: 5: North Branch St & Division St



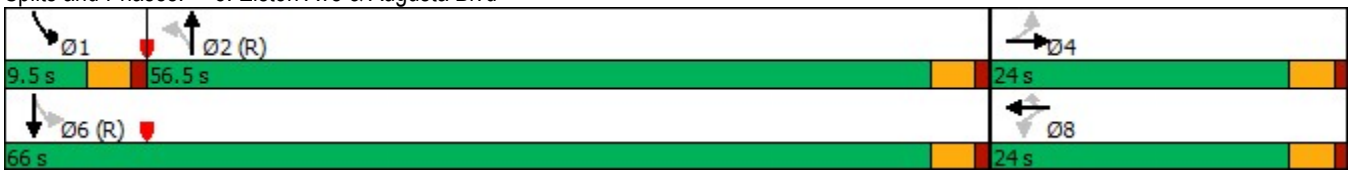
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	37	6	6	32	46	74	21	507	12	54	654	54
Future Volume (vph)	37	6	6	32	46	74	21	507	12	54	654	54
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	10	10	10	11	11	11	11	11	11
Storage Length (ft)	0		0	0		75	0		0	0		0
Storage Lanes	0		0	0		1	0		0	0		0
Taper Length (ft)	25			105			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00			1.00	0.98		1.00			1.00	
Frt		0.983				0.850		0.997			0.990	
Flt Protected		0.964			0.980			0.998			0.996	
Satd. Flow (prot)	0	1735	0	0	1738	1507	0	1809	0	0	1775	0
Flt Permitted		0.731			0.882			0.957			0.927	
Satd. Flow (perm)	0	1313	0	0	1560	1474	0	1735	0	0	1651	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		7				83		2			10	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		965			828			1019			288	
Travel Time (s)		21.9			18.8			23.2			6.5	
Confl. Peds. (#/hr)	1		3	3		1	6		7	7		6
Confl. Bikes (#/hr)									5			4
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	1%	0%	0%	2%	2%
Adj. Flow (vph)	42	7	7	36	52	83	24	570	13	61	735	61
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	56	0	0	88	83	0	607	0	0	857	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.04	1.04	1.04	1.09	1.09	1.09	1.04	1.04	1.04	1.04	1.04	1.04
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2		1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100	20	20	100		20	100	
Trailing Detector (ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Position(ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Size(ft)	20	6		20	6	20	20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA	Perm	Perm	NA		pm+pt	NA	
Protected Phases		4			8			2		1	6	
Permitted Phases	4			8		8	2			6		
Detector Phase	4	4		8	8	8	2	2		1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Minimum Split (s)	24.0	24.0		22.5	22.5	22.5	56.0	56.0		9.5	56.0	
Total Split (s)	24.0	24.0		24.0	24.0	24.0	56.5	56.5		9.5	66.0	
Total Split (%)	26.7%	26.7%		26.7%	26.7%	26.7%	62.8%	62.8%		10.6%	73.3%	
Maximum Green (s)	20.0	20.0		20.0	20.0	20.0	52.5	52.5		5.5	62.0	
Yellow Time (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0	0.0		0.0			0.0	
Total Lost Time (s)		4.0			4.0	4.0		4.0			4.0	
Lead/Lag							Lag	Lag		Lead		
Lead-Lag Optimize?							Yes	Yes		Yes		
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	Min	Min		Min	Min	Min	C-Max	C-Max		None	C-Max	
Walk Time (s)	7.0	7.0					38.0	38.0			38.0	
Flash Dont Walk (s)	13.0	13.0					14.0	14.0			14.0	
Pedestrian Calls (#/hr)	0	0					0	0			0	
Act Effct Green (s)		10.4			10.4	10.4		71.6			71.6	
Actuated g/C Ratio		0.12			0.12	0.12		0.80			0.80	
v/c Ratio		0.35			0.49	0.34		0.44			0.65	
Control Delay		38.1			45.6	12.2		4.4			10.3	
Queue Delay		0.0			0.0	0.0		0.0			0.0	
Total Delay		38.1			45.6	12.2		4.4			10.3	
LOS		D			D	B		A			B	
Approach Delay		38.1			29.4			4.4			10.3	
Approach LOS		D			C			A			B	
90th %ile Green (s)	14.7	14.7		14.7	14.7	14.7	67.3	67.3		0.0	67.3	
90th %ile Term Code	Hold	Hold		Gap	Gap	Gap	Coord	Coord		Skip	Coord	
70th %ile Green (s)	12.2	12.2		12.2	12.2	12.2	69.8	69.8		0.0	69.8	
70th %ile Term Code	Hold	Hold		Gap	Gap	Gap	Coord	Coord		Skip	Coord	
50th %ile Green (s)	10.4	10.4		10.4	10.4	10.4	71.6	71.6		0.0	71.6	
50th %ile Term Code	Hold	Hold		Gap	Gap	Gap	Coord	Coord		Skip	Coord	
30th %ile Green (s)	8.7	8.7		8.7	8.7	8.7	73.3	73.3		0.0	73.3	
30th %ile Term Code	Hold	Hold		Gap	Gap	Gap	Coord	Coord		Skip	Coord	
10th %ile Green (s)	6.1	6.1		6.1	6.1	6.1	75.9	75.9		0.0	75.9	
10th %ile Term Code	Hold	Hold		Gap	Gap	Gap	Coord	Coord		Skip	Coord	
Queue Length 50th (ft)		26			48	0		80			126	
Queue Length 95th (ft)		59			89	38		159			m201	
Internal Link Dist (ft)		885			748			939			208	
Turn Bay Length (ft)						75						
Base Capacity (vph)		297			346	392		1380			1315	
Starvation Cap Reductn		0			0	0		0			0	
Spillback Cap Reductn		0			0	0		0			0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Storage Cap Reductn		0			0	0		0			0	
Reduced v/c Ratio		0.19			0.25	0.21		0.44			0.65	

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green			
Natural Cycle: 90			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.65			
Intersection Signal Delay: 11.1		Intersection LOS: B	
Intersection Capacity Utilization 76.1%		ICU Level of Service D	
Analysis Period (min) 15			
m Volume for 95th percentile queue is metered by upstream signal.			

Splits and Phases: 8: Elston Ave & Augusta Blvd



Intersection	
Int Delay, s/veh	0.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	757	13	0	1080	0	10
Future Vol, veh/h	757	13	0	1080	0	10
Conflicting Peds, #/hr	0	5	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	4	33	0	4	0	0
Mvmt Flow	797	14	0	1137	0	11

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	-	-	-	411
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.9
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.3
Pot Cap-1 Maneuver	-	-	0	-	0	596
Stage 1	-	-	0	-	0	-
Stage 2	-	-	0	-	0	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	-	-	-	593
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	11.2
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT
Capacity (veh/h)	593	-	-	-
HCM Lane V/C Ratio	0.018	-	-	-
HCM Control Delay (s)	11.2	-	-	-
HCM Lane LOS	B	-	-	-
HCM 95th %tile Q(veh)	0.1	-	-	-

Intersection	
Int Delay, s/veh	0.9

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	27	4	2	653	752	6
Future Vol, veh/h	27	4	2	653	752	6
Conflicting Peds, #/hr	0	0	0	0	0	10
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	95	95	95	95	95	95
Heavy Vehicles, %	26	0	0	2	2	17
Mvmt Flow	28	4	2	687	792	6

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1496	805	808	0	-	0
Stage 1	805	-	-	-	-	-
Stage 2	691	-	-	-	-	-
Critical Hdwy	6.66	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.66	-	-	-	-	-
Critical Hdwy Stg 2	5.66	-	-	-	-	-
Follow-up Hdwy	3.734	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	119	386	826	-	-	-
Stage 1	401	-	-	-	-	-
Stage 2	456	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	116	382	818	-	-	-
Mov Cap-2 Maneuver	116	-	-	-	-	-
Stage 1	395	-	-	-	-	-
Stage 2	451	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	42.9	0	0
HCM LOS	E		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	818	-	127	-	-
HCM Lane V/C Ratio	0.003	-	0.257	-	-
HCM Control Delay (s)	9.4	0	42.9	-	-
HCM Lane LOS	A	A	E	-	-
HCM 95th %tile Q(veh)	0	-	1	-	-

Intersection	
Int Delay, s/veh	1.6

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	33	17	3	615	745	11
Future Vol, veh/h	33	17	3	615	745	11
Conflicting Peds, #/hr	1	0	10	0	0	10
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	86	86	86	86	86	86
Heavy Vehicles, %	0	0	100	1	2	0
Mvmt Flow	38	20	3	715	866	13

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1605	883	889	0	-	0
Stage 1	883	-	-	-	-	-
Stage 2	722	-	-	-	-	-
Critical Hdwy	6.4	6.2	5.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	3.1	-	-	-
Pot Cap-1 Maneuver	117	348	472	-	-	-
Stage 1	408	-	-	-	-	-
Stage 2	485	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	113	345	468	-	-	-
Mov Cap-2 Maneuver	113	-	-	-	-	-
Stage 1	399	-	-	-	-	-
Stage 2	480	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	45.1	0.1	0
HCM LOS	E		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	468	-	146	-	-
HCM Lane V/C Ratio	0.007	-	0.398	-	-
HCM Control Delay (s)	12.8	0	45.1	-	-
HCM Lane LOS	B	A	E	-	-
HCM 95th %tile Q(veh)	0	-	1.7	-	-

Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	7	0	0	648	756	0
Future Vol, veh/h	7	0	0	648	756	0
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, %	100	0	0	2	2	0
Mvmt Flow	8	0	0	704	822	0

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1526	822	-	0	-	0
Stage 1	822	-	-	-	-	-
Stage 2	704	-	-	-	-	-
Critical Hdwy	7.4	6.2	-	-	-	-
Critical Hdwy Stg 1	6.4	-	-	-	-	-
Critical Hdwy Stg 2	6.4	-	-	-	-	-
Follow-up Hdwy	4.4	3.3	-	-	-	-
Pot Cap-1 Maneuver	78	377	0	-	-	0
Stage 1	301	-	0	-	-	0
Stage 2	349	-	0	-	-	0
Platoon blocked, %				-	-	
Mov Cap-1 Maneuver	78	377	-	-	-	-
Mov Cap-2 Maneuver	78	-	-	-	-	-
Stage 1	301	-	-	-	-	-
Stage 2	349	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	56.1	0	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	EBLn1	SBT
Capacity (veh/h)	-	78	-
HCM Lane V/C Ratio	-	0.098	-
HCM Control Delay (s)	-	56.1	-
HCM Lane LOS	-	F	-
HCM 95th %tile Q(veh)	-	0.3	-

APPENDIX K

CAPACITY ANALYSIS
2024 BUILD MITIGATION

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	139	536	90	25	708	107	159	481	40	126	642	213
Future Volume (vph)	139	536	90	25	708	107	159	481	40	126	642	213
Ideal Flow (vphpl)	1900	2000	1900	1900	1900	1900	1900	2000	1900	1900	2000	1900
Lane Width (ft)	11	11	11	12	11	11	10	10	10	11	11	12
Storage Length (ft)	130		0	0		55	100		60	195		160
Storage Lanes	1		1	0		1	1		1	1		0
Taper Length (ft)	70			25			85			85		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor			0.97		1.00	0.95	1.00		0.97	1.00		0.98
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950				0.998		0.950			0.950		
Satd. Flow (prot)	1678	1877	1546	0	1781	1546	1685	1848	1507	1694	1895	1538
Flt Permitted	0.103				0.971		0.145			0.299		
Satd. Flow (perm)	182	1877	1504	0	1733	1471	257	1848	1467	533	1895	1514
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			92			61			61			165
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		315			780			658			1021	
Travel Time (s)		7.2			17.7			15.0			23.2	
Confl. Peds. (#/hr)	17		6	6		17	2		2	2		2
Confl. Bikes (#/hr)			1			8			25			4
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	4%	3%	1%	0%	3%	1%	0%	1%	0%	3%	2%	5%
Adj. Flow (vph)	142	547	92	26	722	109	162	491	41	129	655	217
Shared Lane Traffic (%)												
Lane Group Flow (vph)	142	547	92	0	748	109	162	491	41	129	655	217
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		11			11			11			11	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.04	0.98	1.04	1.00	1.04	1.04	1.09	1.02	1.09	1.04	0.98	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases	7	4			8			2			6	
Permitted Phases	4		4	8		8	2		2	6		6
Minimum Split (s)	6.0	47.0	47.0	41.0	41.0	41.0	42.0	42.0	42.0	42.0	42.0	42.0
Total Split (s)	6.0	47.0	47.0	41.0	41.0	41.0	43.0	43.0	43.0	43.0	43.0	43.0
Total Split (%)	6.7%	52.2%	52.2%	45.6%	45.6%	45.6%	47.8%	47.8%	47.8%	47.8%	47.8%	47.8%
Maximum Green (s)	3.0	42.0	42.0	36.0	36.0	36.0	38.0	38.0	38.0	38.0	38.0	38.0
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	0.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	3.0	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead			Lag	Lag	Lag						
Lead-Lag Optimize?	Yes			Yes	Yes	Yes						
Walk Time (s)		17.0	17.0	17.0	17.0	17.0	5.0	5.0	5.0	5.0	5.0	5.0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Flash Dont Walk (s)		25.0	25.0	19.0	19.0	19.0	28.0	28.0	28.0	28.0	28.0	28.0
Pedestrian Calls (#/hr)		0	0	0	0	0	0	0	0	0	0	0
Act Effct Green (s)	44.0	42.0	42.0		36.0	36.0	38.0	38.0	38.0	38.0	38.0	38.0
Actuated g/C Ratio	0.49	0.47	0.47		0.40	0.40	0.42	0.42	0.42	0.42	0.42	0.42
v/c Ratio	1.03	0.63	0.12		1.08	0.17	1.50	0.63	0.06	0.57	0.82	0.30
Control Delay	113.5	12.8	0.9		83.6	6.5	290.6	23.9	3.2	32.1	33.2	6.0
Queue Delay	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	113.5	12.8	0.9		83.6	6.5	290.6	23.9	3.2	32.1	33.2	6.0
LOS	F	B	A		F	A	F	C	A	C	C	A
Approach Delay		29.7			73.8			84.9			27.2	
Approach LOS		C			E			F			C	
Queue Length 50th (ft)	~49	93	0		~486	7	~131	193	0	54	320	17
Queue Length 95th (ft)	#112	142	4		#712	38	#252	302	m11	122	#513	60
Internal Link Dist (ft)		235			700			578			941	
Turn Bay Length (ft)	130					55	100		60	195		160
Base Capacity (vph)	138	875	750		693	625	108	780	654	225	800	734
Starvation Cap Reductn	0	0	0		0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0		0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0		0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.03	0.63	0.12		1.08	0.17	1.50	0.63	0.06	0.57	0.82	0.30

Intersection Summary

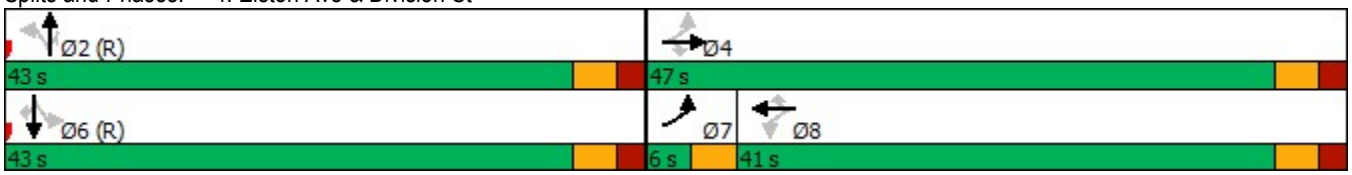
Area Type: Other
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 82 (91%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 100
Control Type: Pretimed
Maximum v/c Ratio: 1.50
Intersection Signal Delay: 51.8 Intersection LOS: D
Intersection Capacity Utilization 131.2% ICU Level of Service H
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: 4: Elston Ave & Division St



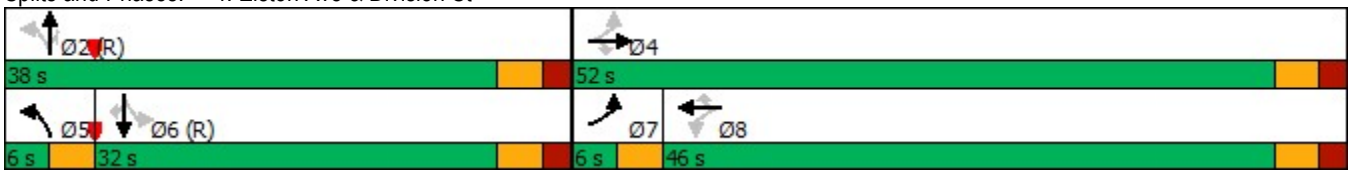
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	150	1008	145	20	684	92	63	267	100	208	608	120
Future Volume (vph)	150	1008	145	20	684	92	63	267	100	208	608	120
Ideal Flow (vphpl)	1900	2000	1900	1900	1900	1900	1900	2000	1900	1900	2000	1900
Lane Width (ft)	11	11	11	12	11	11	10	10	10	11	11	12
Storage Length (ft)	130		0	0		55	100		60	195		160
Storage Lanes	1		1	0		1	1		1	1		0
Taper Length (ft)	70			25			85			85		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00		0.97		1.00	0.96			0.99	1.00		0.96
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950				0.999		0.950			0.950		
Satd. Flow (prot)	1491	1824	1516	0	1698	1346	1604	1778	1478	1694	1895	1369
Flt Permitted	0.096				0.442		0.133			0.586		
Satd. Flow (perm)	150	1824	1469	0	751	1295	225	1778	1456	1044	1895	1312
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			132			97			69			124
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		315			780			658			1021	
Travel Time (s)		7.2			17.7			15.0			23.2	
Confl. Peds. (#/hr)	16		4	4		16	6		2	2		6
Confl. Bikes (#/hr)			10			1			2			32
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	17%	6%	3%	9%	8%	16%	5%	5%	2%	3%	2%	18%
Adj. Flow (vph)	160	1072	154	21	728	98	67	284	106	221	647	128
Shared Lane Traffic (%)												
Lane Group Flow (vph)	160	1072	154	0	749	98	67	284	106	221	647	128
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		11			11			11			11	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.04	0.98	1.04	1.00	1.04	1.04	1.09	1.02	1.09	1.04	0.98	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	pm+pt	NA	Perm	Perm	NA	Perm
Protected Phases	7	4			8		5	2			6	
Permitted Phases	4		4	8		8	2		2	6		6
Minimum Split (s)	6.0	52.0	52.0	46.0	46.0	46.0	6.0	38.0	38.0	32.0	32.0	32.0
Total Split (s)	6.0	52.0	52.0	46.0	46.0	46.0	6.0	38.0	38.0	32.0	32.0	32.0
Total Split (%)	6.7%	57.8%	57.8%	51.1%	51.1%	51.1%	6.7%	42.2%	42.2%	35.6%	35.6%	35.6%
Maximum Green (s)	3.0	47.0	47.0	41.0	41.0	41.0	3.0	33.0	33.0	27.0	27.0	27.0
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	0.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	3.0	5.0	5.0		5.0	5.0	3.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead			Lag	Lag	Lag	Lead			Lag	Lag	Lag
Lead-Lag Optimize?	Yes			Yes	Yes	Yes	Yes			Yes	Yes	Yes
Walk Time (s)		22.0	22.0	22.0	22.0	22.0		5.0	5.0	5.0	5.0	5.0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Flash Dont Walk (s)		25.0	25.0	19.0	19.0	19.0		28.0	28.0	22.0	22.0	22.0
Pedestrian Calls (#/hr)		0	0	0	0	0		0	0	0	0	0
Act Effct Green (s)	49.0	47.0	47.0		41.0	41.0	35.0	33.0	33.0	27.0	27.0	27.0
Actuated g/C Ratio	0.54	0.52	0.52		0.46	0.46	0.39	0.37	0.37	0.30	0.30	0.30
v/c Ratio	1.27	1.13	0.19		2.19	0.15	0.50	0.44	0.18	0.71	1.14	0.27
Control Delay	189.3	89.2	3.1		564.2	2.2	35.2	26.1	11.5	42.3	113.7	6.6
Queue Delay	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	189.3	89.2	3.1		564.2	2.2	35.2	26.1	11.5	42.3	113.7	6.6
LOS	F	F	A		F	A	D	C	B	D	F	A
Approach Delay		91.2			499.2			24.0			84.1	
Approach LOS		F			F			C			F	
Queue Length 50th (ft)	~61	~712	2		~695	1	22	112	12	111	~434	2
Queue Length 95th (ft)	#167	#957	28		#734	11	#59	213	59	#217	#641	42
Internal Link Dist (ft)		235			700			578			941	
Turn Bay Length (ft)	130					55	100		60	195		160
Base Capacity (vph)	126	952	830		342	642	133	651	577	313	568	480
Starvation Cap Reductn	0	0	0		0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0		0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0		0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.27	1.13	0.19		2.19	0.15	0.50	0.44	0.18	0.71	1.14	0.27

Intersection Summary

Area Type: Other
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 150
Control Type: Pretimed
Maximum v/c Ratio: 2.19
Intersection Signal Delay: 174.7 Intersection LOS: F
Intersection Capacity Utilization 143.2% ICU Level of Service H
Analysis Period (min) 15
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 4: Elston Ave & Division St



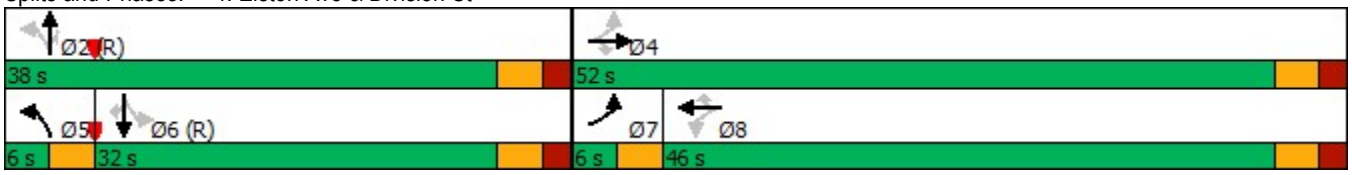
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	116	1028	105	15	690	64	101	197	70	146	425	85
Future Volume (vph)	116	1028	105	15	690	64	101	197	70	146	425	85
Ideal Flow (vphpl)	1900	2000	1900	1900	1900	1900	1900	2000	1900	1900	2000	1900
Lane Width (ft)	11	11	11	12	11	11	10	10	10	11	11	12
Storage Length (ft)	130		0	0		55	100		60	195		160
Storage Lanes	1		1	0		1	1		1	1		0
Taper Length (ft)	70			25			85			85		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00		0.97		1.00	0.96	1.00		0.99	1.00		0.96
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950				0.999		0.950			0.950		
Satd. Flow (prot)	1491	1824	1516	0	1699	1346	1604	1778	1478	1694	1895	1369
Flt Permitted	0.095				0.495		0.182			0.626		
Satd. Flow (perm)	149	1824	1468	0	842	1291	307	1778	1456	1115	1895	1312
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			94			97			65			97
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		315			780			658			1021	
Travel Time (s)		7.2			17.7			15.0			23.2	
Confl. Peds. (#/hr)	16		4	4		16	6		2	2		6
Confl. Bikes (#/hr)			10			1			2			32
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	17%	6%	3%	9%	8%	16%	5%	5%	2%	3%	2%	18%
Adj. Flow (vph)	123	1094	112	16	734	68	107	210	74	155	452	90
Shared Lane Traffic (%)												
Lane Group Flow (vph)	123	1094	112	0	750	68	107	210	74	155	452	90
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		11			11			11			11	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.04	0.98	1.04	1.00	1.04	1.04	1.09	1.02	1.09	1.04	0.98	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	pm+pt	NA	Perm	Perm	NA	Perm
Protected Phases	7	4			8		5	2			6	
Permitted Phases	4		4	8		8	2		2	6		6
Minimum Split (s)	6.0	47.0	47.0	41.0	41.0	41.0	6.0	38.0	38.0	32.0	32.0	32.0
Total Split (s)	6.0	52.0	52.0	46.0	46.0	46.0	6.0	38.0	38.0	32.0	32.0	32.0
Total Split (%)	6.7%	57.8%	57.8%	51.1%	51.1%	51.1%	6.7%	42.2%	42.2%	35.6%	35.6%	35.6%
Maximum Green (s)	3.0	47.0	47.0	41.0	41.0	41.0	3.0	33.0	33.0	27.0	27.0	27.0
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	0.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	3.0	5.0	5.0		5.0	5.0	3.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead			Lag	Lag	Lag	Lead			Lag	Lag	Lag
Lead-Lag Optimize?	Yes			Yes	Yes	Yes	Yes			Yes	Yes	Yes
Walk Time (s)		17.0	17.0	17.0	17.0	17.0		5.0	5.0	5.0	5.0	5.0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Flash Dont Walk (s)		25.0	25.0	19.0	19.0	19.0		28.0	28.0	22.0	22.0	22.0
Pedestrian Calls (#/hr)		0	0	0	0	0		0	0	0	0	0
Act Effct Green (s)	49.0	47.0	47.0		41.0	41.0	35.0	33.0	33.0	27.0	27.0	27.0
Actuated g/C Ratio	0.54	0.52	0.52		0.46	0.46	0.39	0.37	0.37	0.30	0.30	0.30
v/c Ratio	0.98	1.15	0.14		1.96	0.11	0.66	0.32	0.13	0.46	0.80	0.20
Control Delay	97.3	98.2	3.4		461.1	1.0	40.3	21.2	6.1	31.1	41.1	5.8
Queue Delay	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	97.3	98.2	3.4		461.1	1.0	40.3	21.2	6.1	31.1	41.1	5.8
LOS	F	F	A		F	A	D	C	A	C	D	A
Approach Delay		90.2			422.9			23.6			34.3	
Approach LOS		F			F			C			C	
Queue Length 50th (ft)	37	~735	1		~672	0	37	81	2	71	235	0
Queue Length 95th (ft)	#115	#984	21		#687	4	#93	126	28	132	#385	31
Internal Link Dist (ft)		235			700			578			941	
Turn Bay Length (ft)	130					55	100		60	195		160
Base Capacity (vph)	125	952	811		383	640	162	651	575	334	568	461
Starvation Cap Reductn	0	0	0		0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0		0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0		0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.98	1.15	0.14		1.96	0.11	0.66	0.32	0.13	0.46	0.80	0.20

Intersection Summary

Area Type: Other
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 125
Control Type: Pretimed
Maximum v/c Ratio: 1.96
Intersection Signal Delay: 154.2 Intersection LOS: F
Intersection Capacity Utilization 140.8% ICU Level of Service H
Analysis Period (min) 15
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 4: Elston Ave & Division St



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	139	537	91	25	708	107	159	481	40	126	642	213
Future Volume (vph)	139	537	91	25	708	107	159	481	40	126	642	213
Ideal Flow (vphpl)	1900	2000	1900	1900	1900	1900	1900	2000	1900	1900	2000	1900
Lane Width (ft)	11	11	11	12	11	11	10	10	10	11	11	12
Storage Length (ft)	130		0	0		55	100		60	195		160
Storage Lanes	1		1	0		1	1		1	1		0
Taper Length (ft)	70			25			85			85		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00		0.97		1.00	0.95			0.97	1.00		0.98
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950				0.998		0.950			0.950		
Satd. Flow (prot)	1678	1877	1546	0	1781	1546	1685	1848	1507	1694	1895	1538
Flt Permitted	0.100				0.971		0.118			0.345		
Satd. Flow (perm)	176	1877	1504	0	1733	1473	209	1848	1467	615	1895	1513
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			93			97			61			164
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		315			780			658			1021	
Travel Time (s)		7.2			17.7			15.0			23.2	
Confl. Peds. (#/hr)	17		6	6		17	2		2	2		2
Confl. Bikes (#/hr)			1			8			25			4
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	4%	3%	1%	0%	3%	1%	0%	1%	0%	3%	2%	5%
Adj. Flow (vph)	142	548	93	26	722	109	162	491	41	129	655	217
Shared Lane Traffic (%)												
Lane Group Flow (vph)	142	548	93	0	748	109	162	491	41	129	655	217
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		11			11			11			11	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.04	0.98	1.04	1.00	1.04	1.04	1.09	1.02	1.09	1.04	0.98	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	pm+pt	NA	Perm	Perm	NA	Perm
Protected Phases	7	4			8		5	2			6	
Permitted Phases	4		4	8		8	2		2	6		6
Minimum Split (s)	6.0	48.0	48.0	42.0	42.0	42.0	6.0	38.0	38.0	32.0	32.0	32.0
Total Split (s)	6.0	48.0	48.0	42.0	42.0	42.0	6.0	42.0	42.0	36.0	36.0	36.0
Total Split (%)	6.7%	53.3%	53.3%	46.7%	46.7%	46.7%	6.7%	46.7%	46.7%	40.0%	40.0%	40.0%
Maximum Green (s)	3.0	43.0	43.0	37.0	37.0	37.0	3.0	37.0	37.0	31.0	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	3.0
All-Red Time (s)	0.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	3.0	5.0	5.0		5.0	5.0	3.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead			Lag	Lag	Lag	Lead			Lag	Lag	Lag
Lead-Lag Optimize?	Yes			Yes	Yes	Yes	Yes			Yes	Yes	Yes
Walk Time (s)		18.0	18.0	18.0	18.0	18.0		5.0	5.0	5.0	5.0	5.0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Flash Dont Walk (s)		25.0	25.0	19.0	19.0	19.0		28.0	28.0	22.0	22.0	22.0
Pedestrian Calls (#/hr)		0	0	0	0	0		0	0	0	0	0
Act Effct Green (s)	45.0	43.0	43.0		37.0	37.0	39.0	37.0	37.0	31.0	31.0	31.0
Actuated g/C Ratio	0.50	0.48	0.48		0.41	0.41	0.43	0.41	0.41	0.34	0.34	0.34
v/c Ratio	1.03	0.61	0.12		1.05	0.16	1.17	0.65	0.06	0.61	1.00	0.35
Control Delay	113.4	11.8	0.7		73.8	3.2	151.2	24.7	3.1	39.2	67.6	8.0
Queue Delay	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	113.4	11.8	0.7		73.8	3.2	151.2	24.7	3.1	39.2	67.6	8.0
LOS	F	B	A		E	A	F	C	A	D	E	A
Approach Delay		28.9			64.8			53.0			51.0	
Approach LOS		C			E			D			D	
Queue Length 50th (ft)	~48	88	0		~474	3	~69	195	0	60	~371	20
Queue Length 95th (ft)	#124	132	2		#700	22	#189	295	m11	#139	#601	71
Internal Link Dist (ft)		235			700			578			941	
Turn Bay Length (ft)	130					55	100		60	195		160
Base Capacity (vph)	138	896	767		712	662	139	759	639	211	652	628
Starvation Cap Reductn	0	0	0		0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0		0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0		0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.03	0.61	0.12		1.05	0.16	1.17	0.65	0.06	0.61	1.00	0.35

Intersection Summary

Area Type: Other
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 90
Control Type: Pretimed
Maximum v/c Ratio: 1.17
Intersection Signal Delay: 49.8 Intersection LOS: D
Intersection Capacity Utilization 131.2% ICU Level of Service H
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: 4: Elston Ave & Division St