

Transportation Study Lincoln Yards North and South Planned Developments

Chicago, Illinois



Prepared For:



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1. Introduction

This report summarizes the methodologies, results, and findings of a transportation study conducted by Kenig, Lindgren, O’Hara, Aboona, Inc. (KLOA, Inc.) for the proposed Lincoln Yards North and South planned developments (Lincoln Yards PDs) to be located in Chicago, Illinois. Overall, the Lincoln Yards PDs consist of several properties generally bounded by Cortland Street and Dickens Avenue on the north, Kingsbury Street and the Chicago River south of Cortland Street on the east, North Avenue on the south, and Elston Avenue on the west. **Figure 1** shows the locations of the two Lincoln Yards sites. (All figures are located in the Appendix.). As proposed, the Lincoln Yards PDs are to consist of two mixed-use, planned developments.

Lincoln Yards North generally consists of the former Finkl Steel campus that is approximately bounded by Dickens Avenue on the north, Kingsbury Street on the east, and the Chicago River on the south and west (see Figure 1). In addition, Lincoln Yards North includes the SIMS parcel located south of Cortland Street bounded by the Chicago River on the east and Elston Avenue on the west. As proposed, Lincoln Yards North will contain the following uses and approximate densities:

- 3,119 residential units
- 3,775,000 square feet of office space
- 319,700 square feet of commercial space
- 200 hotel rooms
- 4,028 parking spaces

Lincoln Yards South generally consists of the former City of Chicago Fleet Management Facility bounded by the Chicago River on the north and east, Throop Street on the west, and the Home Depot Store on the south (see Figure 1). In addition, Lincoln Yards South includes several parcels located on the west side of Throop Street north of North Avenue. As proposed, Lincoln Yards South will contain the following uses and approximate densities:

- 1,240 residential units
- 3,763,532 square feet of office space
- 460,000 square feet of commercial space
- 200 hotel rooms
- A music venue
- 2,130 parking spaces

Figure 1 shows the location of the Lincoln Yards PDs in relation to the area street system and **Figure 2** shows an aerial view of the Lincoln Yards PDs.

Lincoln Yards PDs Transportation Improvements

As part of the overall Lincoln Yards PDs, a number of traffic and transportation related infrastructure improvements are proposed that include street vacations, new streets, and new Chicago River bridges as well as enhanced pedestrian, bicycle, and transit accommodations and facilities that will be implemented in phases. The following summarizes the proposed traffic and transportation related infrastructure improvements.

Street Improvements and/or Modifications

- The vacation of Southport Avenue (between Kingsbury Street and Cortland Street), the northern portion of Throop Street, and portions of Dominick Street, McLean Avenue, and Wabansia Avenue.
- The extension of Dominick Street between McLean Avenue and Concord Place that will include a new Chicago River bridge.
- The extension of Concord Place between Throop Street and the west side of the Chicago River.
- The extension of Armitage Avenue between the Chicago River and Kingsbury Street/Southport Avenue.
- The improvements/modifications along various area streets and at various area intersections, including capacity upgrades and traffic control enhancements.

Pedestrian, Bicycle, and Transit Improvements

- The extension of the 606 Trail from Ashland Avenue to just east of Dominick Street extended that will include crossings over/under the Chicago River, I-90/I-94, the Union Pacific Railroad tracks, and Ashland Avenue.
- The construction of river walks along both the east and west sides of the Chicago River within the Lincoln Yards PD limits that will generally extend from just north of Armitage Avenue extended to Concord Place extended.
- The establishment of three new water taxi stations serving the Lincoln Yards PDs and the area. The preliminary locations would be just south of Webster Avenue, just north of the 606 Trail extension, and just south of the Concord Place extended.
- The addition of new bike lanes to be incorporated along many of the streets that will extend through the Lincoln Yards PDs and Divvy stations to be provided at multiple locations within the Lincoln Yards PDs.
- The establishment of shuttle bus services that will provide service between the Lincoln Yards PDs and the local CTA and Metra train stations.

CDOT and North Branch Framework Transportation Improvements

In addition, numerous infrastructure improvements are planned and/or proposed by CDOT or identified in the *North Branch Framework* plan performed by the City of Chicago. Several of the improvements are summarized below:

- *Ashland Avenue/Armitage Avenue/Elston Avenue Triangle Intersection.* The three closely spaced intersections are planned to be separated by rerouting Elston Avenue to the east around the intersection. Similar to the Elston Avenue/Fullerton Avenue/Damen Avenue intersection project, the realignment of Elston Avenue will separate the existing three closely spaced intersections that operate as one intersection into three separate intersections.
- *Reconstruction of the Union Pacific Viaducts over Armitage Avenue.* The two Union Pacific railroad viaducts located along Armitage Avenue between Ashland Avenue and I-90/I-94 are planned to be reconstructed or replaced. With the reconstruction or replacement of the viaduct, Armitage Avenue will be widened to provide two lanes in each direction.
- *Extension of Kingsbury Street.* Kingsbury Street is planned to be extended through the General Iron parcel from Cortland Street to Clifton Avenue. With this extension, Kingsbury Street will provide local access between Southport Avenue on the north and Halsted Street on the south. It was assumed that the traffic signal at Cortland Street with Marcey Street will be relocated to the intersection of Cortland Street with Kingsbury Street.
- *North Branch Framework North-South Transitway.* A north-south transitway is proposed to extend along the North Branch area from the downtown train stations to north of North Avenue.

Other Regional Transportation Improvements

The following summarizes other regional infrastructure improvements that are proposed in the area.

- *Armitage Avenue Bridge.* A new east-west Chicago River crossing is planned along the Armitage Avenue corridor that will extend Armitage Avenue from its terminus with Mendell Street across the river and through the Lincoln Yards PDs to Southport Avenue/Kingsbury Street. As discussed previously, the extension of Armitage Avenue between the east side of the Chicago River and Southport Avenue/Kingsbury Street will be constructed as part of the Lincoln Yards PDs.

- *Concord Place Bridge.* A new east-west Chicago River crossing is planned along the Concord Place corridor that will extend Concord Place from its terminus with Throop Street through the Lincoln Yards PDs and across the Chicago River to Kingsbury Street. The Concord Place/Wisconsin Street corridor will extend between Clybourn Avenue and Elston Avenue. As discussed previously, the extension of Concord Place between Throop Street and the west side of the Chicago River will be constructed as part of the Lincoln Yards PDs.
- *Metra Station Enhancements and Relocation.* The existing Clybourn Avenue Metra station is planned to be enhanced and, ultimately, relocated just south of the 606 Trail extension along with the development of a new multi-modal center.

Figure 3a illustrates the infrastructure improvements proposed to be constructed as part of Phase One of the Lincoln Yards PDs and **Figure 3b** illustrates the infrastructure improvements proposed as part of the total buildout of the Lincoln Yards PDs, proposed/planned by CDOT and other agencies, and other area regional improvements.

The purpose of this study was to examine background traffic conditions, assess the impact that the proposed Lincoln Yards PDs will have on traffic conditions in the area, and determine the transportation improvements that will be necessary to accommodate traffic generated by the proposed Lincoln Yards PDs.

The sections of this report present the following:

- Existing street conditions
- Description of the proposed Lincoln Yards PDs
- Directional distribution of the proposed Lincoln Yards PDs
- Vehicle trip generation for the proposed Lincoln Yards PDs
- Future traffic conditions
- Traffic analyses for the weekday morning and weekday evening peak hours
- Evaluation and recommendations with respect to the adequacy of the adjacent transportation system

Traffic capacity analyses were conducted for the weekday morning and weekday evening peak hours for the following conditions:

1. Existing Conditions - Analyze the capacity of the existing street system using existing peak hour traffic volumes in the surrounding area.
2. Phase One Projected Conditions – Analyze the capacity of the future street system using the projected traffic volumes that include the existing traffic volumes, background traffic growth, and the traffic estimated to be generated by Phase One of the Lincoln Yards PDs.
3. Total Projected Conditions – Analyze the capacity of the future street system using the projected traffic volumes that include the existing traffic volumes, background traffic growth, and the traffic estimated to be generated by the total buildout of the Lincoln Yards PDs.

2. Existing Conditions

Existing transportation conditions in the vicinity of the Lincoln Yards PDs were documented based on field visits conducted by KLOA, Inc. in order to obtain a database for projecting future conditions. The following provides a description of the geographical location of the Lincoln Yards PDs, physical characteristics of the area street system including lane usage and traffic control devices, area public transportation and alternative modes of transportation, and existing peak hour vehicle, pedestrian, and bicycle volumes.

Site Location

The Lincoln Yards PDs are located on the boundary of the Lincoln Park, Bucktown, and Wicker Park neighborhoods of Chicago, Illinois, which primarily offer a mixture of residential, office, commercial, entertainment, and institutional uses. Lincoln Yards North generally consists of the former Finkl Steel campus and the SIMS parcel. Lincoln Yards South generally consists of the City of Chicago Fleet Management Facility and several parcels located on the west side of Throop Street north of North Avenue. I-90/94 is located just west of the Lincoln Yards PDs with local interchanges at Fullerton Avenue, Damen Avenue/Webster Avenue, Armitage Avenue, and North Avenue.

Study Area

Based on the approval of the Chicago Department of Transportation (CDOT), the study area for the traffic study is generally bounded by Webster Avenue on the north, Clybourn Avenue on the east, North Avenue on the south and I-90/I-94 on the west. The study area includes the following 37 intersections:

1. Damen Avenue with I-90/I-94 off-ramp
2. Webster Avenue with Damen Avenue
3. Webster Avenue with I-90/I-94 on-ramp
4. Webster Avenue with Elston Avenue
5. Webster Avenue with Ashland Avenue
6. Webster Avenue with Dominick Street
7. Webster Avenue with Clybourn Avenue
8. Webster Avenue with Southport Avenue
9. Armitage Avenue with I-90/I-94 eastbound ramps
10. Armitage Avenue with I-90/I-94 westbound ramps
11. Armitage Avenue with Ashland Avenue
12. Armitage Avenue with Elston Avenue
13. Armitage Avenue with Racine Avenue
14. Cortland Street with Ashland Avenue
15. Cortland Street with Elston Avenue
16. Cortland Street with Kingsbury Street
17. Cortland Street with Marcey Street
18. Cortland Street with Clybourn Avenue and Racine Avenue

19. North Avenue with Ashland Avenue
20. North Avenue with I-90/I-94 eastbound ramps
21. North Avenue with I-90/I-94 westbound ramps
22. North Avenue with Elston Avenue
23. North Avenue with Throop Street
24. North Avenue with Kingsbury Street
25. North Avenue with Sheffield Avenue
26. North Avenue with Freemont Street
27. North Avenue with Clybourn Avenue and Dayton Street
28. North Avenue with Halsted Street
29. Elston Avenue with Kohl's/Best Buy access drive
30. Elston Avenue with Ashland Avenue
31. Elston Avenue with Willow Street
32. Elston Avenue with Wabansia Avenue
33. Elston Avenue with Concord Place
34. Clybourn Avenue with Southport Avenue and Shakespeare Avenue
35. Clybourn Avenue with Magnolia Avenue
36. Clybourn Avenue with Sheffield Avenue and Willow Street
37. Clybourn Avenue with Wisconsin Street

Existing Street System Characteristics

Some of the key characteristics of the existing streets and intersections within the study area are described below and illustrated in **Figures 4 and 5**.

- All streets are under the jurisdiction of the Chicago Department of Transportation (CDOT) except the following streets:
 - North Avenue, Clybourn Avenue, Elston Avenue northwest of Ashland Avenue, and the I-90/I-94 ramps are under the jurisdiction of the Illinois Department of Transportation (IDOT).
 - Ashland Avenue is under the jurisdiction of the Cook County Department of Transportation and Highways (CCDTH).
- Traffic signal control is provided at all of the study intersections, except the following:
 - Webster Avenue with I-90/I-94 on-ramp (no control)
 - Webster Avenue with Dominick Street (two-way stop sign control)
 - Webster Avenue with Southport Avenue (all-way stop sign control)
 - Armitage Avenue with Racine Avenue (all-way stop sign control)
 - Cortland Street with Kingsbury Street (two-way stop sign control)
 - Elston Avenue with Willow Street (two-way stop sign control)
 - Elston Avenue with Wabansia Avenue (two-way stop sign control)
 - Elston Avenue with Concord Place (two-way stop sign control)
 - Clybourn Avenue with Wisconsin Street (one-way stop sign control)

- Generally all of the streets evaluated as part of the study provide two-way travel except the I-90/I-94 ramps.
- Exclusive left-turn lanes are provided at the following intersections:
 - Damen Avenue with I-90/I-94 off-ramp (I-90/I-94 ramp approach)
 - Webster Avenue with Damen Avenue (all approaches)
 - Webster Avenue with Elston Avenue (Elston approaches)
 - Webster Avenue with Ashland Avenue (all approaches)
 - Webster Avenue with Clybourn Avenue (Clybourn and EB Webster approaches)
 - Armitage Avenue with I-90/I-94 eastbound ramps (I-90/I-94 ramp approach)
 - Armitage Avenue with I-90/I-94 westbound ramps (I-90/I-94 ramp approach)
 - Armitage Avenue with Ashland Avenue (Ashland approaches)
 - Armitage Avenue with Elston Avenue (Elston northbound approach)
 - Cortland Street with Elston Avenue (Elston approaches)
 - Cortland Street with Clybourn Avenue and Racine Avenue (all approaches)
 - North Avenue with Ashland Avenue (all approaches)
 - North Avenue with I-90/I-94 eastbound ramps (all approaches)
 - North Avenue with I-90/I-94 westbound ramps (all approaches)
 - North Avenue with Elston Avenue (all approaches)
 - North Avenue with Throop Street (all approaches)
 - North Avenue with Kingsbury Street (North and SB Kingsbury approaches)
 - North Avenue with Sheffield Avenue (all approaches)
 - North Avenue with Fremont Street (all approaches)
 - North Avenue with Clybourn Avenue and Dayton Street (all approaches)
 - North Avenue with Halsted Street (all approaches)
 - Elston Avenue with Kohl's/Best Buy access drive (all approaches)
 - Elston Avenue with Ashland Avenue (Ashland approaches)
 - Clybourn Avenue/Southport Avenue/Shakespeare Avenue (Clybourn approaches)
 - Clybourn Avenue with Magnolia Avenue (Clybourn approaches)
 - Clybourn Avenue/Sheffield Avenue/Willow Street (Clybourn approaches)
 - Clybourn Avenue with Wisconsin Street (Clybourn approach)
- Protected left-turn phases are provided at the following intersections:
 - Webster Avenue with Damen Avenue
 - Webster Avenue with Ashland Avenue
 - Webster Avenue with Clybourn Avenue
 - Armitage Avenue with I-90/I-94 eastbound ramps
 - Armitage Avenue with I-90/I-94 westbound ramps
 - Armitage Avenue with Ashland Avenue
 - Armitage Avenue with Elston Avenue
 - Cortland Street with Elston Avenue
 - Cortland Street with Marcey Street
 - Cortland Street with Clybourn Avenue and Racine Avenue
 - North Avenue with Ashland Avenue

- North Avenue with I-90/I-94 eastbound ramps
 - North Avenue with I-90/I-94 westbound ramps
 - North Avenue with Elston Avenue
 - North Avenue with Throop Street
 - North Avenue with Kingsbury Street
 - North Avenue with Sheffield Avenue
 - North Avenue with Freemont Street
 - North Avenue with Clybourn Avenue and Dayton Street
 - North Avenue with Halsted Street
 - Elston Avenue with Kohl's/Best Buy access drive
 - Elston Avenue with Ashland Avenue
- Pedestrian countdown timers are installed at the following signalized intersections:
 - Damen Avenue with I-90/I-94 off-ramp
 - Webster Avenue with Damen Avenue
 - Webster Avenue with Elston Avenue
 - Webster Avenue with Ashland Avenue
 - Webster Avenue with Clybourn Avenue
 - Armitage Avenue with I-90/I-94 eastbound ramps
 - Armitage Avenue with I-90/I-94 westbound ramps
 - Armitage Avenue with Ashland Avenue
 - Armitage Avenue with Elston Avenue
 - Cortland Street with Ashland Avenue
 - Cortland Street with Elston Avenue
 - Cortland Street with Marcey Street
 - Cortland Street with Clybourn Avenue and Racine Avenue
 - North Avenue with Ashland Avenue
 - North Avenue with I-90/I-94 eastbound ramps
 - North Avenue with I-90/I-94 westbound ramps
 - North Avenue with Throop Street
 - North Avenue with Kingsbury Street
 - North Avenue with Sheffield Avenue
 - North Avenue with Freemont Street
 - North Avenue with Halsted Street
 - Elston Avenue with Kohl's/Best Buy access drive
 - Elston Avenue with Ashland Avenue
 - Clybourn Avenue with Southport Avenue and Shakespeare Avenue
 - Clybourn Avenue with Magnolia Avenue
 - Clybourn Avenue with Sheffield Avenue and Willow Street

Public Transportation

The public transportation serving the area is summarized below and illustrated in **Figure 6**.

Metra Commuter Rail Service. Both the Metra Union Pacific North and Union Pacific Northwest lines serve the area via the Clybourn station, which is located on the south side of Armitage Avenue at Ashland Avenue. The Clybourn station is located just northwest of the Lincoln Yards PDs.

CTA Rapid Transit. The area is served by the Chicago Transit Authority (CTA) rapid transit via the Red, Blue, Brown, and Purple Lines as follows:

- The *CTA Red Line* provides 24-hour rapid transit train service between Howard Street and the 95th/Dan Ryan station located along the Dan Ryan Expressway at 95th Street via downtown Chicago. Local stations include (1) the Fullerton station which is located at the Fullerton Avenue/Sheffield Avenue intersection and (2) the Clybourn station which is located at the Clybourn Avenue/North Avenue intersection. Both stations are located approximately 1.0 miles from the center of the Lincoln Yards PDs.
- The *CTA Blue Line* provides 24-hour rapid transit train service between Chicago-O'Hare International Airport and the Forest Park station via downtown Chicago. Local stations include (1) the Damen station which is located at the Milwaukee Avenue/Damen Avenue/North Avenue intersection approximately 1.25 miles from the center of the Lincoln Yards PDs and (2) the Western station which is located at the Milwaukee Avenue/Western Avenue intersection approximately 1.5 miles from the center of the Lincoln Yards PDs.
- The *CTA Brown Line* provides daily rapid transit service between downtown and the Kimball station located at Kimball Avenue and Lawrence Avenue. The Armitage station is located at the Armitage Avenue/Sheffield Avenue intersection approximately 0.5 miles from the center of the Lincoln Yards PDs.
- The *CTA Purple Line* provides daily rapid transit train service between Linden Street in Wilmette and Howard Street in Chicago via Evanston. Additionally, during weekday rush periods, express service continues to downtown Chicago. The Armitage station is located at the Armitage Avenue/Sheffield Avenue intersection approximately 0.5 miles from the center of the Lincoln Yards PDs.

CTA Bus Routes. The area is also served by the following CTA bus routes, all of which have bus stops within the Lincoln Yards PDs or within walking distance:

- CTA Route 8 – Halsted
- CTA Route 9 – Ashland
- CTA Route 9X – Ashland Express
- CTA Route 37 – Sedgwick
- CTA Route 50 – Damen
- CTA Route 72 – North
- CTA Route 73 – Armitage
- CTA Route 74 – Fullerton
- CTA Route 132 – Goose Island Express

Alternative Modes of Transportation

The alternative modes of transportation serving the area are summarized below and illustrated in **Figure 7**.

Pedestrian Accommodations. Sidewalks are generally located on all streets and standard or high-visibility crosswalks are provided at most intersections. **Figure 5** shows the location and type of crosswalks in the study area. In addition, pedestrian traffic signals, many with countdown timers, are provide at the signalized intersections within the study area.

Bike Facilities. The area is served by multiple bike routes, including Clybourn Avenue which has a barrier-separated bike lane through the study area and Cortland Street, Armitage Avenue, Elston Avenue, Damen Avenue, and Halsted Avenue all provide separate striped bike lanes.

Mode-Sharing Transportation Availability. A number of Divvy bike sharing stations are located within the area. In addition, car-sharing facilities are available at multiple locations within walking distance of the Lincoln Yards PDs.

Existing Traffic Volumes

In order to determine current vehicle, pedestrian, and bicycle conditions within the study area, KLOA, Inc. performed weekday morning (7:00 A.M. to 9:00 A.M.) and weekday evening (4:00 P.M. to 6:00 P.M.) peak period counts at the following intersections:

Tuesday, February 23, 2016

- Armitage Avenue with the I-90/I-94 Eastbound Ramps
- Armitage Avenue with the I-90/I-94 Westbound Ramps
- Armitage Avenue with Ashland Avenue
- Armitage Avenue with Elston Avenue
- Cortland Street with Ashland Avenue
- Cortland Street with Elston Avenue
- Ashland Avenue with Elston Avenue

Wednesday, February 24, 2016

- North Avenue with Clybourn Avenue
- North Avenue with Halsted Street
- North Avenue with Kingsbury Avenue
- North Avenue with the I-90/I-94 Westbound Ramps
- North Avenue with the I-90/I-94 Eastbound Ramps
- North Avenue with Sheffield Avenue
- North Avenue with Elston Avenue

Thursday, February 25, 2016

- Elston Avenue with Webster Avenue
- Cortland Street with Kingsbury Street
- Cortland Street with Clybourn Avenue and Racine Avenue
- Cortland Street with Marcey Street
- Webster Avenue with Southport Avenue
- Webster Avenue with Damen Avenue
- Webster Avenue with the I-90/I-94 Eastbound Ramps
- Damen Avenue with the I-90/I-94 Westbound Ramps

Tuesday, April 5, 2016

- Armitage Avenue with Racine Avenue
- North Avenue and Throop Avenue

Wednesday, April 13, 2016:

- Elston Avenue with Best Buy/Kohl's Shopping Center
- Elston Avenue with Wabansia Avenue and Willow Street
- Ashland Avenue with Wabansia Avenue
- Sheffield Avenue with Clybourn Avenue and Willow Street

Monday and Tuesday, December 10 and 11, 2018

- Clybourn Avenue with Wisconsin Street

In addition, previous counts conducted in 2015 at the following intersections were utilized for this study:

- North Avenue with Ashland Avenue
- Webster Avenue with Ashland Avenue
- Webster Avenue with Dominick Street
- Webster Avenue with Clybourn Avenue
- Southport Avenue with Clybourn Avenue and Shakespeare Avenue

The results of the traffic counts showed that the weekday morning peak hour of traffic for the study area generally occurred from 7:30 A.M. to 8:30 A.M. and the weekday evening peak hour generally occurred from 5:00 P.M. to 6:00 P.M. **Figure 8** illustrates the existing peak hour vehicle traffic volumes. In addition, Figure 8 contains Average Daily Traffic (ADT) volumes obtained from the IDOT and CDOT web pages. **Figure 9** illustrates the existing peak hour pedestrian and bicycle volumes, showing the direction of travel.

3. North Branch Framework Plan and Design Guidelines

The following provides a summary of the North Branch Framework Plan and Design Guidelines as provided on the City of Chicago website:

The North Branch Framework is a land use plan for 760 acres along the Chicago River between Kinzie Street and Fullerton Avenue. It is the first framework developed as a part of Mayor Emanuel’s Industrial Corridor Modernization Initiative, a multi-year effort to review Chicago’s designated industrial corridors.

The plan, adopted by the Chicago Plan Commission in May 2017, includes modern land use parameters that will be used by the Chicago Plan Commission, City Council, and the public to assess future development proposals and land use transitions in the North Branch.

The framework’s three main goals are to:

- *Maintain the corridor as an economic engine and vital job center*
- *Provide better access for all transportation modes*
- *Enhance the area’s unique natural and built environment*

The Lincoln Yards PDs encompass a large section of the northern portion of the North Branch area. As such, to properly evaluate the impact of the Lincoln Yards PDs on the transportation system, it was critical to understand the transportation recommendations of the North Branch Framework Plan and Design Guidelines and incorporate them in the study as appropriate.

Transportation Key Recommendations

The executive summary for the *North Branch Framework*¹ prepared by the City of Chicago, the Chicago Department of Planning and Development (DPD), and the Chicago Department of Transportation (CDOT) developed Key Recommendations for the following categories:

- Land Use
- Open Space
- Transportation
- Design Guidelines

As outlined in the *North Branch Framework*, the Transportation Key Recommendations include the implementation of “more than a dozen infrastructure projects and other enhancements to improve circulation on an expanded roadway network; enhance and create alternatives to existing travel routes to improve walking, biking, and access to transit; and consider a multi-modal transit way that runs through the center of the corridor connecting to downtown”.

¹ Mayor Emanuel’s *Industrial Corridor Modernization, North Branch Framework*, published by the City of Chicago, the Department of Planning and Development, and the Department of Transportation and adopted by the Chicago Plan Commission on May 18, 2017.

The *North Branch Framework* identified CDOT capital projects, some of which are in the various planning, design, and construction phases and developed seven Transportation Principles which are summarized below. These projects identified for the north sub-area of the North Branch Framework, which is generally located north of North Avenue/Division Street and includes the Lincoln Yards PDs, are highlighted in blue below.

CDOT Capital Projects

The following summarizes the CDOT capital projects that have been identified in the North Branch area that are either in the planning, design, or construction phase:

- Division Street at North Branch Bridge Reconstruction
- Division Street at North Branch Canal Bridge Reconstruction
- Chicago Street/Halsted Street Bridge Reconstruction
- **Webster Avenue Bridge Reconstruction**
- **Fullerton Avenue Bridge Reconstruction**
- **Cortland Street Bridge Reconstruction**
- Chicago Avenue/Halsted Street Viaduct Reconstruction
- **Damen Avenue/Fullerton Street/Elston Avenue Intersection Reconfiguration (completed)**
- **Ashland Avenue/Armitage Avenue/Elston Avenue Intersection Reconfiguration and Viaduct Reconstruction**

Transportation Principles

Principle 2.1: Improve Traffic Circulation

The intent of this Principle is to “*improve traffic circulation through strategic reconfiguration projects for existing roadways*”. Many of the CDOT projects identified above are or will mitigate some of these circulation issues. Further, the *North Branch Framework* recommends that as large parcels are developed, additional improvements be considered to enhance circulation through the parcels and the general area. The *North Branch Framework* also recommends that CDOT should study ways to enhance vehicle connectivity through new vehicle bridges and improved intersection operations, including the following:

- **Dominick Street/Throop Street bridge and extension (new north-south corridor)**
- **Blackhawk Street bridges and extension (new east-west corridor)**
- **Ashland Avenue/Armitage Avenue/Elston Avenue intersection improvements**
- **Clybourn Avenue/Sheffield Avenue/Willow Street intersection improvements**
- **Clybourn Avenue/Racine Avenue/Cortland Street intersection improvements**

Principle 2.2: Supporting Chicago Transit Authority (CTA) Plans

The intent of this Principle is to “*manage traffic and improve circulation by supporting Chicago Transit Authority (CTA) plans for enhanced bus service in and around the corridor*”. Improvements to be considered as identified in the *North Branch Framework* include the following:

- **Dedicated bus lanes**
- **Bus bypass lanes at busy intersections**
- **Dedicated bus signals**
- **Enhanced bus stop amenities**
- **Improvements to expedite boarding**
- **Dedicated service to area train stations**

Principle 2.3: Implement New Traffic Management Technologies

The intent of this Principle is to “*implement technology to more effectively manage vehicular traffic and improve circulation*”. As summarized in the *North Branch Framework*, the operation of the existing street system should be enhanced through more modern transportation infrastructure and intelligent traffic control technologies, including:

- **Smart traffic signals**
- **Transit signal prioritization (TSP)**
- **Real-time, coordinated traffic signals**

Principle 2.4: Enhance Walking and Bike Connections and Experience

The intent of this Principle is to “*improve access to existing transit by improving connectivity and experience for walkers and biking*”. In order to increase the use of public transportation and alternative modes of transportation, the *North Branch Framework* recommends **new pedestrian and bike connections and enhancements to existing connections**.

Principle 2.5: Increased Multi-Modal Connections

The intent of this Principle is to “*manage vehicular traffic and improve circulation by considering increased multi-modal connections in new developments*”. The *North Branch Framework* recommends extensions of the street network and additional pedestrian bridges, including the following:

- **The 606 extension**
- **Concord Place/Wabansia Avenue pedestrian bridge**
- Weed Street pedestrian bridge
- Elston Avenue pedestrian bridge
- Hobbie Street pedestrian bridge
- Erie Street pedestrian bridge

Principle 2.6: North-South Transitway

The intent of this Principle is to “*assess the feasibility of a north-south transitway*”. As summarized in the *North Branch Framework*, it is recommended that a new right-of-way dedicated to transit, pedestrians, and cyclists be developed to provide direct transit service to the North Branch area and safe and convenient connections to surrounding neighborhoods and transit hubs. The transitway is envisioned to extend from the downtown train stations through the North Branch area.

Principle 2.7: Traffic Management Operations

The intent of this Principle is to “*promote private partnerships to coordinate traffic management options*”. Initiatives identified in the *North Branch Framework* to be considered as parcels are developed include the following:

- **Guaranteed ride home car pool programs**
- **Parking pay-outs for non-drivers**
- **Dissemination of information via real time displays**
- **Flexible work schedules**

Additional Recommendations

The *North Branch Framework* also included the following additional recommendations:

- **The upgrade and/or relocation of the Clybourn Metra station**
- **Extended/enhanced water taxi service and stops within the North Branch area**

As can be seen above, many of the transportation infrastructure improvements are planned and/or proposed within or within proximity to the Lincoln Yards PDs. All of these infrastructure improvements will help mitigate the existing and projected traffic conditions in the area and will help to provide alternative modes of transportation other than the automobile. Many of the transportation infrastructure improvements were incorporated in the Lincoln Yards PDs and, as will be discussed later, a number of the transportation infrastructure improvements were also assumed in the study of projected conditions.

4. Traffic Characteristics of the Planned Developments

In order to properly evaluate future traffic conditions in the surrounding area, it was necessary to determine the traffic characteristics of the proposed Lincoln Yards PDs, including the directional distribution and volumes of traffic that they will generate.

Site Location and Existing Uses

Lincoln Yards North generally consists of the former Finkl Steel campus that is approximately bounded by Dickens Avenue on the north, Kingsbury Street on the east, and the Chicago River on the south and west. In addition, Lincoln Yards North includes the SIMS parcel located south of Cortland Street bounded by the Chicago River on the east and Elston Avenue on the west.

Lincoln Yards South generally consists of the former City of Chicago Fleet Management Facility bounded by the Chicago River on the north and east, Throop Street on the west, and the Home Depot Store on the south. In addition, Lincoln Yards South includes several parcels located on the west side of Throop Street north of North Avenue.

Proposed Lincoln Yards PDs Plan

As proposed, the Lincoln Yards PDs are to consist of two mixed-use, planned developments. **Table 1** summarizes land uses and densities proposed for both the Lincoln Yards North and South planned developments at total buildout while **Table 2** shows the land uses and densities for Phase One.

Table 1

LINCOLN YARDS PDS - PROPOSED LAND USES AND DENSITIES – TOTAL BUILDOUT

	Lincoln Yards North	Lincoln Yards South	Total
Residential (units)	3,119	1,240	4,359
Office (square feet)	3,775,000	3,763,532	7,538,532
Commercial (square feet)	319,700	460,000	779,700
Hotel (rooms)	200	200	400
Parking (spaces)	4,028	2,130	6,158

Table 2

LINCOLN YARDS PDS - PROPOSED LAND USES AND DENSITIES – PHASE ONE

	Lincoln Yards North	Lincoln Yards South	Total
Residential (units)	0	0	0
Office (square feet)	1,465,872	0	1,465,872
Commercial (square feet)	89,619	0	89,619
Hotel (rooms)	0	0	0
Parking (spaces)	1,958	0	1,958

Parking and General Access

The following summarizes and **Figure 10** illustrates the primary parking proposed to be provided as part of the Lincoln Yards PDs and the general access to the parking:

- Primary parking for the Lincoln Yards North PD office, commercial, and apartment land uses located on the east side of the Chicago River will be provided via a shared parking garage to provide approximately 1,555 parking spaces. In addition, users of the parks and public spaces within the Lincoln Yards PD's will also be accommodated within the shared parking garage. The garage will be located on a site bounded by Dickens Avenue on the north, Southport Avenue on the east, Armitage Avenue extended on the south, and Dominick Street on the west. Primary access to the garage is proposed to be provided via Dickens Avenue. It should be noted that the shared parking garage is consistent with the recommendation of the *North Branch Framework* plan.
- Parking for the Lincoln Yards North condominium units located on the east side of the Chicago River will be provided within each of the condominium buildings. Each condominium building will generally have one or more access drives serving the parking. Given the location of the condominium buildings, the access drives will generally be located along Kingsbury Street and Dominick Street between Armitage Avenue extended and Cortland Street.
- Parking for the Lincoln Yards North mixed-use buildings to be located on the west side of the Chicago River (SIMS parcel) will be provided via an approximate 780-space parking garage. The garage is to be located south of Cortland Street bounded by the Chicago River on the east and Elston Avenue on the west. Access to the garage is proposed to be provided via both Elston Avenue and Cortland Street.
- Primary parking for the majority of the uses within the Lincoln Yards South PD will be provided via two shared parking garages with a total of 1,370 parking spaces. The garages are to be located on sites located on the west side of Throop Street both north and south of Concord Place. Access to the garages is proposed to be provided via Throop Street, Wabansia Avenue, and Concord Place. It should be noted that shared parking garages are consistent with the recommendation of the *North Branch Framework* plan.

It is important to note that each office building will have parking for the use of executives.

Proposed Infrastructure Improvements and Modifications

As part of the overall Lincoln Yards PDs, a number of traffic and transportation related infrastructure improvements are proposed that include street vacations, new streets, and Chicago River crossings/bridges, as well as enhanced pedestrian, bicycle, and transit accommodations and facilities that will be implemented in phases. The following summarizes and **Figures 3a** and **3b** illustrate the proposed traffic and transportation related infrastructure improvements.

Street Improvements and/or Modifications

- The vacation of Southport Avenue (between Kingsbury Street and Cortland Street), the northern portion of Throop Street, and portions of Dominick Street, McLean Avenue, and Wabansia Avenue.
- The extension of Dominick Street between McLean Avenue and Concord Place which will include a new Chicago River bridge.
- The extension of Concord Place between Throop Street and the west side of the Chicago River.
- The extension of Armitage Avenue between the Chicago River and Kingsbury Street/Southport Avenue.
- The improvements/modifications along various area streets and at various area intersections, including capacity upgrades and traffic control enhancements.

Pedestrian, Bicycle, and Transit Improvements

- The extension of the 606 Trail from Ashland Avenue to just east of Dominick Street extended that will include crossings over/under the Chicago River, I-90/I-94, the Union Pacific Railroad tracks, and Ashland Avenue.
- The construction of river walks along both the east and west sides of the Chicago River within the Lincoln Yards PDs that will generally extend from just north of Armitage Avenue extended to Concord Place extended.
- The enhancement of the existing Clybourn Avenue Metra station and, ultimately, the relocation of the Clybourn Avenue Metra station and development of a new multi-modal center to be constructed just south of the 606 Trail extension.
- The establishment of three new water taxi stations serving the Lincoln Yards PDs and the area. The preliminary locations would be just south of Webster Avenue, just north of the 606 Trail extension, and just south of the Concord Place extension.
- The addition of new bike lanes to be incorporated along many of the streets that will extend through the Lincoln Yards PDs and Divvy stations to be provided at multiple locations within the Lincoln Yards PDs.
- The establishment of shuttle bus services that will provide service between the Lincoln Yards PDs and the local CTA and Metra train stations.

CDOT and North Branch Framework Transportation Improvements

The following street network area improvements planned and/or proposed by CDOT or identified in the *North Branch Framework* report performed by the City of Chicago were assumed to be completed by the total buildout of the Lincoln Yards PDs:

- *Ashland Avenue/Armitage Avenue/Elston Avenue Triangle Intersection.* The convergence of Ashland Avenue, Armitage Avenue, and Elston Avenue forms three closely spaced intersections that function as one six-legged intersection that currently operates very poorly. The intersections are proposed to be separated by rerouting Elston Avenue to the east around the intersection.

Similar to the Elston Avenue/Fullerton Avenue/Damen Avenue intersection project, the realignment of Elston Avenue will provide significant operational and safety benefits compared to the existing operation of the triangle intersection of Ashland Avenue/Armitage Avenue/Elston Avenue. The existing three closely spaced intersections that operate as one intersection will be separated and will operate as three separate intersections. All three intersections will be able to operate independently from one another, which allows for a more efficient operation. Further, the increased spacing between the intersections allows for longer turn lanes and increased stacking between the intersections, which will reduce the impacts of stacking into through lanes and through downstream intersections. In addition, the angled intersections of Elston Avenue/Armitage Avenue and Elston Avenue/Ashland Avenue will be replaced with more perpendicular intersections, which provides for safer operations for all modes of transportation. This will result in safer conditions for pedestrians and bicyclists by decreasing the crossing distance through the intersections and reducing the exposure to motorized vehicles.

- *Reconstruction of the Union Pacific Viaducts over Armitage Avenue.* The reconstruction and/or replacement of the two Union Pacific railroad viaducts located along Armitage Avenue between Ashland Avenue and I-90/I-94 was identified as an infrastructure improvement in the *North Branch Framework*. With the reconstruction and/or replacement of the viaducts, Armitage Avenue will be widened to provide two lanes in each direction.
- *Extension of Kingsbury Street.* Kingsbury Street is planned to be extended through the General Iron parcel from Cortland Street to Clifton Avenue with a two-lane cross-section and left-turn lanes at Cortland Street. With the extension, Kingsbury Street will provide local access between Southport Avenue and Halsted Street as well as serve the potential transitway. It was assumed that the traffic signal at Cortland Street with Marcey Street will be relocated to the intersection of Cortland Street with Kingsbury Street.

Other Regional Transportation Improvements

Armitage Avenue Bridge. A new east-west, Chicago River crossing is planned along the Armitage Avenue corridor that will extend Armitage Avenue from its terminus at Mendell Street across the river and through the Lincoln Yards PDs to Southport Avenue/Kingsbury Street. As discussed previously, the extension of Armitage Avenue between the east side of the Chicago River and Southport Avenue/Kingsbury Street will be constructed as part of the Lincoln Yards PDs. The Armitage Avenue bridge and the extension through the Lincoln Yards PDs will provide another east-west corridor that crosses the Chicago River, providing relief to the existing bridges as well as direct access between the Lincoln Yard PDs and the Armitage Avenue interchange with I-90/I-94. As currently planned, the Armitage Avenue extension and bridge will provide one vehicle lane and one bike lane in each direction with separate left-turn lanes provided at major intersections.

Concord Place Bridge. A new east-west Chicago River crossing is planned along the Concord Place corridor that will extend Concord Place from its terminus with Throop Street through the Lincoln Yards PDs and across the Chicago River to Kingsbury Street. The Concord Place/Wisconsin Street corridor will extend between Clybourn Avenue and Elston Avenue. As discussed previously, the extension of Concord Place between Throop Street and the west side of the Chicago River will be constructed as part of the Lincoln Yards PDs.

Directional Distribution

The directions from which the traffic will approach and depart the Lincoln Yards PDs were estimated based on (1) the existing travel patterns as determined from the traffic counts, (2) the characteristics of the local and regional street systems, (3) the proposed modifications to the street system, and (4) previous studies conducted in the area. **Figure 11** illustrates the directional distribution for Phase One and total buildout of the Lincoln Yards PDs. While the regional directional distributions for Phase One and the total buildout are anticipated to be similar, the local directional distributions will vary given the timing of the various improvements and modifications to the street system.

Trip Generation Estimates

The number of vehicle trips to be generated by the Lincoln Yards PDs will be reduced due to the following characteristics of the planned developments and the area:

- *Mixed-Use Nature of the Planned Developments.* The Lincoln Yards North and South planned developments are proposed to consist of dense, mixed-use developments that will contain residential, office, hotel, commercial, and entertainment uses.
- *Location of the Planned Developments.* The Lincoln Yards PDs are located within or adjacent to three dense, urban neighborhoods (Lincoln Park, Bucktown, and Wicker Park) that contain a large population of people who live and work within walking distance of the Lincoln Yards PDs. Adding to the area activity is the many people who patronize/attend the various commercial establishments, restaurants, institutions, and entertainment venues in the three neighborhoods.
- *Alternative Modes of Transportation Serving the Area.* The Lincoln Yards PDs are located adjacent to or within walking distance of the Clybourn Avenue Metra station, several CTA rapid transit stations, and a number of CTA bus lines. In addition, the area includes extensive pedestrian facilities, bike lanes along several streets, and a number of Divvy bike sharing stations, all of which are proposed to be expanded within and through the Lincoln Yards PDs.
- *Proposed Lincoln Yards and Area Infrastructure Improvements.* Both the Lincoln Yards PDs and the City of Chicago as presented in the *North Branch Framework* have a number of infrastructure improvements proposed within the PDs or the area that will further promote alternative modes of transportation. Several of the more significant proposals include (1) new water taxi stations, (2) the extension of the 606 Trail into the Lincoln Yards PDs, (3) the proposed *North Branch Framework* Transitway, (4) enhancements to the existing Clybourn Avenue Metra station, and, ultimately, (5) the relocation of the Clybourn Avenue Metra station and development of a mobility center.

As such, the number of new trips generated by the Lincoln Yards PDs will be reduced due to captive market effects, multipurpose trips, and the available public and non-motorized transportation serving the area.

Nelson\Nygaard was retained to perform a trip generation analysis for the Lincoln Yards PDs. The Nelson\Nygaard memorandum, which is included in the Appendix, has established a set of trip generation reduction estimates that account for the unique characteristics of the neighborhoods, the mixed-use nature of the developments, and the anticipated transportation demand management strategies. Reductions were established for the (1) job-housing balance, (2) transit access, (3) biking and walking infrastructure, (4) parking management, (5) parking provision, and (6) additional transportation demand management strategies. **Table 3** shows the projected modal split for the total buildout of the Lincoln Yards PDs, which clearly shows the number of trips that will be reduced due to alternative modes of transportation. **Table 4** shows the trip reductions by land use for Phase One and total buildout. **Table 5** shows the estimated morning and evening peak hour and daily trips to be generated by the Lincoln Yards North and South PDs for Phase One and total buildout.

Table 3
PROJECTED MODAL SPLIT – TOTAL BUILDOUT

Mode of Transportation	Percentage
Personal Automobile	39%
CTA Bus	22%
CTA Train	9%
Metra Train	4%
Bike	2%
Walk	7%
Uber/Lyft	9%
Work At Home	8%

Note: The trip generation reductions were determined by Nelson\Nygaard Consulting Associates and summarized in their *Lincoln Yards PDs – Vehicle Trip Generation Methodology & Estimation* memorandum dated December 17, 2018 located in the Appendix.

Table 4
TRIP REDUCTION ASSUMPTIONS BY USE AND PHASE

Land Use	Phase One	Total Buildout
Residential	n/a	66%
Office	41%	63%
Commercial	40%	54%
Hotel	n/a	22%

Note: The trip generation reductions were determined by Nelson\Nygaard Consulting Associates and summarized in their *Lincoln Yards PDs – Vehicle Trip Generation Methodology & Estimation* memorandum dated December 17, 2018 located in the Appendix.

Table 5
 LINCOLN YARDS PDS
 TRIP GENERATION ESTIMATES BY PLANNED DEVELOPMENT AND PHASE

	Lincoln Yards North			Lincoln Yards South			Lincoln Yards North and South		
	In	Out	Total	In	Out	Total	In	Out	Total
Phase One									
Morning Peak Hour	784	161	945	0	0	0	784	161	945
Evening Peak Hour	282	878	1,160	0	0	0	282	878	1,160
Total Buildout									
Morning Peak Hour	1,450	600	2,050	1,215	385	1,600	2,665	985	3,650
Evening Peak Hour	779	1,642	2,421	663	1,446	2,109	1,442	3,088	4,530
Note: The trip generation reductions were determined by Nelson\Nygaard Consulting Associates and summarized in their <i>Lincoln Yards PDS – Vehicle Trip Generation Methodology & Estimation</i> memorandum dated December 17, 2018 located in the Appendix.									

5. Projected Traffic Conditions

In order to project future traffic conditions, the study included the planned or proposed improvements in the area and other projected growth in the area.

Lincoln Yards PDs Traffic Assignment

The estimated weekday morning and weekday evening peak hour traffic volumes that will be generated by Phase One and the total buildout of the proposed Lincoln Yards PDs were assigned to the street system in accordance with the previously described directional distribution and are illustrated in the following figures.

- **Figure 12** illustrates the traffic assignment of the new vehicle trips for Phase One of the Lincoln Yards PDs. It should be noted that the traffic assignment assumed the street network improvements proposed as part of Phase One of the Lincoln Yards PDs and illustrated in Figure 3a.
- **Figure 13** illustrates the traffic assignment of the new vehicle trips for the total buildout of the Lincoln Yards PDs. It should be noted that the traffic assignment assumed the street network improvements planned or proposed by CDOT and other agencies and those proposed as part of the Lincoln Yards PDs and other regional improvements and illustrated in Figure 3b.

Background Traffic Conditions

To account for any additional increase in traffic due to other factors or developments not previously discussed, an ambient growth factor of 0.5 percent per year was also applied to the study area over a ten-year period. In addition, the traffic study included the traffic to be generated by the proposed mixed-use development (Elston Triangle) to be located in the southeast quadrant of the intersection of Elston Avenue and Webster Avenue. It should be noted that the C.H. Robinson office building located in the southwest quadrant of the Webster Avenue/Dominick Street intersection is included in the LYN PD and the traffic projected to be generated by LYN PD. Furthermore, in order to account for the increase in population in the study area, pedestrian volumes were increased by 100 percent at each existing intersection. **Figure 14** illustrates the existing plus background traffic volumes.

Redistribution of Existing Traffic

In addition to the traffic to be generated by the Lincoln Yards PDs that will be carried by the Armitage Avenue, Dominick Street, and Concord Place bridges, which will provide direct access to the Lincoln Yards PDs, existing traffic was also redistributed as part of the study as summarized below:

- A portion of the traffic traveling from eastbound Armitage Avenue to southbound Elston Avenue to eastbound Cortland Street and the reverse route was redistributed to the Armitage Avenue bridge/extension and the Dominick Street extension.
- The majority of the left-turn traffic between Cortland Street and Marcey Street was redistributed to the intersection of Cortland Street with Marcey Street.

Figure 15 illustrates the existing plus background plus redistributed traffic volumes.

Total Projected Traffic Volumes

The following figures illustrates the total projected traffic volumes.

Figure 16 illustrates the Phase One total projected traffic volumes which include the existing traffic volumes plus the background growth plus the traffic to be generated by Phase One of the Lincoln Yards PDs.

Figure 17 illustrates the total buildout projected traffic volumes which include the existing traffic volumes plus the background growth plus the redistribution of the existing traffic plus the traffic to be generated by the total buildout of the Lincoln Yards PDs. In addition, Figure 17 shows the projected daily traffic volumes along several of the area streets.

6. Traffic Analysis and Findings

The following provides an evaluation conducted for the weekday morning and weekday evening peak hours. The analysis includes conducting capacity analyses to determine how well the street system and access drives are projected to operate and what street improvements or modifications are required to accommodate the projected traffic volumes.

Traffic Analyses

Intersection analyses were performed for the weekday morning and weekday evening peak hours for the existing and total projected traffic volumes.

The traffic analyses were performed using the methodologies outlined in the Transportation Research Board's *Highway Capacity Manual (HCM), 2010* and analyzed using Synchro 10 software. The analyses for the traffic-signal controlled intersections were accomplished using existing cycle lengths and phasings to determine the average overall vehicle delay and levels of service.

The analyses for the unsignalized intersections determine the average control delay to vehicles at an intersection. Control delay is the elapsed time from a vehicle joining the queue at a stop sign (includes the time required to decelerate to a stop) until its departure from the stop sign and resumption of free flow speed. The methodology analyzes each intersection approach controlled by a stop sign and considers traffic volumes on all approaches and lane characteristics.

The ability of an intersection to accommodate traffic flow is expressed in terms of level of service, which is assigned a letter from A to F based on the average control delay experienced by vehicles passing through the intersection. The *Highway Capacity Manual* definitions for levels of service and the corresponding control delay for signalized intersections and unsignalized intersections are included in **Table 6**.

Summaries of the traffic analysis results showing the level of service and overall intersection delay (measured in seconds) for the existing and total projected conditions are summarized in tables located in the Appendix. The capacity analyses summary sheets are included in the Appendix. The following figures illustrate the intersection level of service for the signalized intersections.

- **Figure 18a** illustrates the existing signalized level of service.
- **Figure 18b** illustrates the projected signalized level of service for the Phase One of the Lincoln Yards PDs and assumes the Phase One infrastructure improvements illustrated in Figure 3a and the various improvements summarized in Chapter 7.
- **Figure 18c** illustrates the projected signalized level of service for the total buildout of the Lincoln Yards PDs and assume the infrastructure improvements illustrated in Figure 3b and the various improvements summarized in Chapter 8.

Table 6
LEVEL OF SERVICE CRITERIA

Signalized Intersections		
Level of Service	Interpretation	Average Control Delay (seconds per vehicle)
A	Favorable progression. Most vehicles arrive during the green indication and travel through the intersection without stopping.	≤10
B	Good progression, with more vehicles stopping than for Level of Service A.	>10 - 20
C	Individual cycle failures (i.e., one or more queued vehicles are not able to depart as a result of insufficient capacity during the cycle) may begin to appear. Number of vehicles stopping is significant, although many vehicles still pass through the intersection without stopping.	>20 - 35
D	The volume-to-capacity ratio is high and either progression is ineffective or the cycle length is too long. Many vehicles stop and individual cycle failures are noticeable.	>35 - 55
E	Progression is unfavorable. The volume-to-capacity ratio is high and the cycle length is long. Individual cycle failures are frequent.	>55 - 80
F	The volume-to-capacity ratio is very high, progression is very poor, and the cycle length is long. Most cycles fail to clear the queue.	>80.0
Unsignalized Intersections		
Level of Service	Average Total Delay (sec/veh)	
A	0 - 10	
B	> 10 - 15	
C	> 15 - 25	
D	> 25 - 35	
E	> 35 - 50	
F	> 50	

Source: *Highway Capacity Manual*, 2010.

Discussion and Recommendations

It is important to note that the various infrastructure improvements proposed and planned by CDOT and/or other agencies and proposed as part of the Lincoln Yards PDs will greatly expand and improve the existing street network, enhance the public transportation and alternative modes of transportation serving the area, and reduce reliance on the automobile. As such, the various infrastructure improvements will help mitigate the existing operations and the impact of the Lincoln Yards PDs.

In addition to the various infrastructure improvements proposed and planned by CDOT, other agencies, and proposed as part of the Lincoln Yards PDs, geometric and/or traffic control recommendations were developed at the various existing, relocated, and new intersections in order to help mitigate the impact of the Lincoln Yards PDs and the other projected growth. While the majority of the intersections are projected to operate at acceptable levels of service, some of the intersection approaches and/or individual movements are projected to operate at or near capacity with extended delays and queueing.

Chapter 7 summarizes the geometric improvements and traffic control modifications required as part of Phase One of the Lincoln Yards PDs.

Chapter 8 summarizes the geometric improvements and traffic control modifications required as part of the total buildout of the Lincoln Yards PDs.

7. Phase One Recommendations

Lincoln Yards PDs Street Network Improvements

Figure 19 illustrates and **Table 7** summarizes the street network improvements proposed as part of Phase One of the Lincoln Yards PDs. In addition, Table 7 also summarizes the street or intersection geometry and/or traffic control that will be required to mitigate the projected traffic volumes.

Existing Area Intersection Improvements and Modifications

Figure 20 illustrates and **Table 8** summarizes the recommended geometric and traffic control improvements and modifications to help mitigate existing conditions and the impact of Phase One of the Lincoln Yards PDs and the other projected growth. Recommendations were developed for several intersections within the study area.

Traffic signal warrant analyses are provided in the Appendix for any of the intersections where a traffic signal is recommended.

Table 7

PHASE ONE - LINCOLN YARDS PDS STREET NETWORK IMPROVEMENTS

Street/Intersection	Improvement/Modification/Design
Dominick Street Upgrades/Improvements and Extension	<p>Dominick Street will be upgraded and improved between Dickens Avenue and Armitage Avenue extended which is assumed to be designed as follows:</p> <ul style="list-style-type: none"> • One vehicle lane in each direction • One bike lane in each direction or a shared vehicle/bike lane • On-street parking/loading on both sides of the street • Separate turn lanes at Armitage Avenue and Dickens Avenue <p>Dominick Street will be extended between Armitage Avenue extended and Cortland Street and will provide one lane in each direction.</p>
Armitage Avenue Extension	<p>The extension of Armitage Avenue between Dominick Street and Kingsbury Street/Southport Avenue which is assumed to be designed as follows:</p> <ul style="list-style-type: none"> • One vehicle lane in each direction • One bike lane in each direction • On-street parking/loading on both sides of the street • Separate turn lanes at Dominick Street and Southport Avenue
Southport Avenue between Armitage Avenue extended and Dickens Avenue	<p>Southport Avenue will be upgraded and improved between Dickens Avenue and Armitage Avenue and will provide the following:</p> <ul style="list-style-type: none"> • One vehicle lane in each direction • One bike lane in each direction • On-street parking/loading on both sides of the street • Separate turn lanes at Armitage Avenue
Dickens Avenue between Southport Avenue and Dominick Street	<p>Dickens Avenue will be upgraded and improved between Southport Avenue and Dominick Street and will provide the following:</p> <ul style="list-style-type: none"> • One vehicle lane in each direction • On-street parking/loading on both sides of the street • Separate turn lanes at Dominick Street and Southport Avenue
<p>Street extensions, improvements, and upgrades will consist of pavement enhancements, additional turn lanes, traffic control modifications, high visibility crosswalks, pedestrian countdown timers at signalized intersections, and/or streetscape improvements and will include on-street parking and bike lanes accommodations along the various streets.</p>	

Table 7, Continued

PHASE ONE - LINCOLN YARDS PDS STREET NETWORK IMPROVEMENTS

Street/Intersection	Improvement/Modification/Design
Armitage Avenue Extended with Dominick Street Extended	<ul style="list-style-type: none"> • <i>Armitage Avenue Approach:</i> A separate left-turn lane and a separate right-turn lane • <i>Dominick Street Southbound Approach:</i> A separate left-turn lane and a through lane • <i>Dominick Street Northbound Approach:</i> A shared through/right-turn lane • <i>Intersection Traffic Control:</i> One-way stop sign control on the Armitage Avenue approach
Armitage Avenue Extended with Southport Avenue and Kingsbury Street	<ul style="list-style-type: none"> • <i>Armitage Avenue Approach:</i> A separate left-turn lane and a separate right-turn lane • <i>Southport Avenue Approach:</i> A separate left-turn lane and a separate right-turn lane • <i>Kingsbury Street Approach:</i> A shared left-turn/right-turn lane • <i>Intersection Traffic Control:</i> One-way stop sign control on the Armitage Avenue approach
Cortland Street with Dominick Street Extended	<ul style="list-style-type: none"> • <i>Cortland Street Eastbound Approach:</i> A separate left-turn lane and a shared through/right-turn lane • <i>Cortland Street Westbound Approach:</i> A shared through/right-turn lane • <i>Dominick Street Southbound Approach:</i> A separate left-turn lane and a separate right-turn lane • <i>Intersection Traffic Control:</i> Traffic signal control with pedestrian countdown signals
Dickens Avenue with Dominick Street	<ul style="list-style-type: none"> • <i>Dominick Street Southbound Approach:</i> A separate left-turn lane and a through lane • <i>Dickens Avenue Westbound Approach:</i> A separate left-turn lane and a separate right-turn lane • <i>Dominick Street Northbound Approach:</i> A shared through/right-turn lane • <i>Intersection Traffic Control:</i> One-way stop sign control on the Dickens Avenue approach
Dickens Avenue with Southport Avenue	<ul style="list-style-type: none"> • <i>Southport Avenue Southbound Approach:</i> A shared through/right-turn lane • <i>Dickens Avenue Eastbound Approach:</i> A separate left-turn lane and a separate right-turn lane • <i>Southport Avenue Northbound Approach:</i> A shared through/left-turn lane • <i>Intersection Traffic Control:</i> One-way stop sign control on the Dickens Avenue approach
<p>Street extensions, improvements, and upgrades will consist of pavement enhancements, additional turn lanes, traffic control modifications, high visibility crosswalks, pedestrian countdown timers at signalized intersections, and/or streetscape improvements and will include on-street parking and bike lanes accommodations along the various streets.</p>	

Table 8

PHASE ONE - AREA INTERSECTION IMPROVEMENTS AND MODIFICATIONS

Intersection	Improvement/Modification
Dominick Street with Webster Avenue	<ul style="list-style-type: none"> • Restripe the northbound Dominick Street approach to provide a separate left-turn lane and a shared through/right-turn lane. This will require the elimination of on-street parking. • The installation of a traffic signal with pedestrian countdown signals • A separate left-turn lane may be required on Webster Avenue that will require the elimination of some on-street parking.
Elston Avenue with Cortland Street	<ul style="list-style-type: none"> • The addition of a right-turn lane on the westbound approach of Cortland Street • The addition of a westbound Cortland Street right-turn overlap phase • Traffic signal timing modifications
Ashland Avenue with Webster Avenue	<ul style="list-style-type: none"> • Traffic signal timing modifications
Armitage Avenue with Westbound I-90/94 Ramps	<ul style="list-style-type: none"> • Traffic signal timing modifications
Cortland Street with Clybourn Avenue and Racine Avenue	<ul style="list-style-type: none"> • The addition of a northbound separate left-turn phase (arrow) • Traffic signal timing modifications
Webster Avenue with Southport Avenue	<ul style="list-style-type: none"> • The installation of a traffic signal with pedestrian countdown signals
Webster Avenue with Damen Avenue	<ul style="list-style-type: none"> • The addition of westbound Webster Avenue separate left-turn phase (arrow) • Traffic signal modifications
Webster Avenue with Elston Avenue	<ul style="list-style-type: none"> • Traffic signal timing modifications • Traffic signal offset modifications • The addition of northbound and southbound Elston Avenue separate left-turn phases (arrows) • The extension of the northbound Elston Avenue left-turn lane to provide 115 feet of storage • Consideration should be given to adding a right-turn lane on the westbound approach of Webster Avenue by eliminating the existing curb extension and on-street parking and providing a westbound Webster Avenue right-turn overlap phase (arrow)

8. Total Buildout Recommendations

Figure 21 illustrates and **Table 9** summarizes the major regional improvements proposed/planned in the area. In addition, Table 9 also summarizes the street or intersection geometry and/or traffic control that both (1) will be required to mitigate the projected traffic volumes and (2) can physically be accommodated. While Figure 21 and Table 9 highlight only the street network improvements, it is important to note that numerous other infrastructure improvements are planned and/or proposed by CDOT and identified in the *North Branch Framework* plan that include new transportation technologies (e.g. smart traffic signals, etc.), new and/or enhanced public transit (e.g. bus operations and facilities, north-south transitway, etc.), and/or alternative modes of transportation (e.g. bike lanes, pedestrian paths and bridges, etc.).

Traffic signal warrant analyses are provided in the Appendix for any intersections where a traffic signal is recommended.

Table 9

PROPOSED/PLANNED REGIONAL IMPROVEMENTS

Street/Intersection	Improvement/Modification/Design
Armitage Avenue Bridge	<p>A new bridge over the Chicago River that will provide an additional east-west corridor crossing the Chicago River. The bridge will redistribute traffic from the existing bridges and provide direct access between the Lincoln Yard PDs and the Armitage Avenue interchange with I-90/I-94. The bridge is assumed to be designed as follows:</p> <ul style="list-style-type: none"> • One vehicle lane in each direction • One bike lane in each direction and sidewalks • Separate turn lanes at intersections on both sides of the bridge
Concord Place Bridge	<p>A new bridge over the Chicago River that will provide an additional east-west corridor crossing the Chicago River. The bridge will redistribute traffic from the existing bridges and provide access between the Lincoln Yards PDs and Kingsbury Street as well as Clybourn Avenue via Wisconsin Street. The bridge is assumed to be designed with one vehicle lane in each direction</p>
Kingsbury Street Extension	<p>The extension of Kingsbury Street between Cortland Street and Clifton Avenue (General Iron site). With the extension, Kingsbury Street will provide alternative north-south local access between Southport Avenue and Halsted Street that will serve the Lincoln Yards PDs and the area. The extension is assumed to be designed as follows:</p> <ul style="list-style-type: none"> • One vehicle lane in each direction • Separate turn lanes at Cortland Street • Traffic signal control at Cortland Street
Reconstruction or Replacement of the Union Pacific Railroad Viaducts along Armitage Avenue	<p>The reconstruction/replacement of the two Union Pacific railroad viaducts located along Armitage Avenue between Ashland Avenue and I-90/I-94. With the reconstruction and/or replacement of the viaducts, Armitage Avenue is assumed to be widened to provide two lanes in each direction.</p>

Table 9, Continued
 PROPOSED/PLANNED REGIONAL IMPROVEMENTS

Street/Intersection	Improvement/Modification/Design
Ashland Avenue with Armitage Avenue and Elston Avenue Triangle Intersection (Elston Avenue Realignment)	<p>The three closely spaced intersections are proposed to be separated by rerouting Elston Avenue to the east around the intersection. Similar to the Elston Avenue/Fullerton Avenue/Damen Avenue intersection project, the Elston Avenue realignment will eliminate the six-legged intersection and create three separate intersections that will be coordinated but operate independently from one another. The Elston Avenue realignment is assumed to be designed as follows:</p> <ul style="list-style-type: none"> • One vehicle lane in each direction • One bike lane in each direction • Separate turn lanes and traffic signals at major intersections as summarized below
Realigned Elston Avenue with Ashland Avenue	<ul style="list-style-type: none"> • <i>Elston Avenue Approaches:</i> A shared through/left-turn lane and a separate right-turn lane • <i>Ashland Avenue Approaches:</i> A separate left-turn lane, a through lane, and a shared through/right-turn lane • <i>Intersection Traffic Control:</i> Traffic signal control with pedestrian countdown signals
Realigned Elston Avenue with Armitage Avenue	<ul style="list-style-type: none"> • <i>Elston Avenue Approaches:</i> A separate left-turn lane and a shared through/right-turn lane • <i>Armitage Avenue Westbound Approach:</i> A separate left-turn lane and a shared through/right-turn lane • <i>Armitage Avenue Eastbound Approach:</i> A shared through/left-turn lane and a right-turn lane • <i>Intersection Traffic Control:</i> Traffic signal control with pedestrian countdown signals
Realigned Elston Avenue with Cortland Street	<ul style="list-style-type: none"> • <i>Elston Avenue Southbound Approach:</i> A separate left-turn lane and a shared through/right-turn lane • <i>Cortland Street Approaches:</i> A separate left-turn lane, a through lane, and a separate right-turn lane • <i>Elston Avenue Northbound Approach:</i> A separate left-turn lane, a through lane, and a separate right-turn lane • <i>Intersection Traffic Control:</i> Traffic signal control with pedestrian countdown signals

Lincoln Yards PDs Street Network Improvements

Figure 22 illustrates and **Table 10** summarizes the street network improvements proposed as part of the Lincoln Yards PDs. In addition, Table 10 also summarizes the street or intersection geometry and/or traffic control that will be required to mitigate the projected traffic volumes. While Figure 22 and Table 10 highlight only the street network improvements, it is important that numerous other infrastructure improvements are proposed as part of the Lincoln Yards PDs that include new and/or enhanced alternative modes of transportation serving the area.

Table 10

TOTAL BUILDOUT - LINCOLN YARDS PDS STREET NETWORK IMPROVEMENTS

Street/Intersection	Improvement/Modification/Design
Dominick Street Extension and Bridge	<p>The extension of Dominick Street between McLean Avenue and Concord Place that will include a new Chicago River bridge. With the extension and bridge, Dominick Street will provide another north-south corridor crossing the Chicago River extending between Webster Street and North Avenue that will serve the Lincoln Yards PDs and the area. The extension and bridge are assumed to be designed as follows:</p> <ul style="list-style-type: none"> • One vehicle lane in each direction • One bike lane in each direction or a shared vehicle/bike lane • On-street parking/loading on both sides of the street • Separate turn lanes at major intersections • Traffic signal control at major intersections
Armitage Avenue Extension	<p>The extension of Armitage Avenue between the Chicago River and Kingsbury Street/Southport Avenue. With the proposed Armitage Avenue bridge, the extension provides an additional east-west corridor that crosses the Chicago River and provides direct access between the Lincoln Yard PDs and the Armitage Avenue interchange with I-90/I-94. The extension is assumed to be designed as follows:</p> <ul style="list-style-type: none"> • One vehicle lane in each direction • One bike lane in each direction • On-street parking/loading on both sides of the street • Separate turn lanes at major intersections • Traffic signal control at major intersections
Concord Place Extension	<p>The upgrades and improvements of the existing section of Concord Place between Elston Avenue and Dominick Street and the extension of Concord Place between Throop Street and the west side of the Chicago River. With the proposed Concord Place bridge, Concord Place will provide another east-west corridor crossing the Chicago River extending between Clybourn Avenue via Wisconsin Avenue and Elston Avenue that will serve the Lincoln Yards South PD and the area. The improvements to the existing section of Concord Place and the extension are assumed to be designed as follows:</p> <ul style="list-style-type: none"> • One vehicle lane in each direction • On-street parking on both sides of the street (excluding the bridge) • Separate turn lanes at major intersections
<p>Street extensions, improvements, and upgrades will consist of pavement enhancements, additional turn lanes, traffic control modifications, high visibility crosswalks, pedestrian countdown timers at signalized intersections, and/or streetscape improvements and will include on-street parking and bike lanes accommodations along the various streets.</p>	

Table 10, Continued

TOTAL BUILDOUT - LINCOLN YARDS PDS STREET NETWORK IMPROVEMENTS

Street/Intersection	Improvement/Modification/Design
Kingsbury Street between Southport Avenue and Cortland Street	<p>Kingsbury Street will be upgraded and improved between Southport Avenue and Cortland Street and will provide the following:</p> <ul style="list-style-type: none"> • One vehicle lane in each direction • May include one bike lane in each direction • On-street parking/loading on both sides of the street • Separate turn lanes at Cortland Street and Armitage Avenue • Traffic signal control at major intersections
Cortland Street within Lincoln Yards PD Limits	<p>Cortland Street will be upgraded and improved within the PD limits and will provide the following:</p> <ul style="list-style-type: none"> • One vehicle lane in each direction with bus stops and drop-off/pick-up zones • Off-street bike lanes in each direction • Separate turn lanes at Elston Avenue and Dominick Street • Traffic signal control at major intersections
Southport Avenue between Armitage Avenue extended and Dickens Avenue	<p>Southport Avenue will be upgraded and improved between Dickens Avenue and Armitage Avenue and will provide the following:</p> <ul style="list-style-type: none"> • One vehicle lane in each direction • One bike lane in each direction • On-street parking/loading on both sides of the street • Separate turn lanes at Armitage Avenue
Wabansia Avenue and Willow Street within Lincoln Yards PD Limits	<p>Wabansia Avenue and Willow Street will be upgraded and improved between Elston Avenue and Dominick Street and will generally provide the following:</p> <ul style="list-style-type: none"> • One vehicle lane in each direction • On-street parking on both sides of the street • Separate turn lanes at Throop Street
Armitage Avenue Extended with Dominick Street Extended Intersection	<ul style="list-style-type: none"> • <i>Armitage Avenue and Dominick Street Approaches:</i> A separate left-turn lane and a shared through/right-turn lane • <i>Intersection Traffic Control:</i> Traffic signal control with pedestrian countdown signals
Armitage Avenue Extended with Southport Avenue and Kingsbury Street Intersection	<ul style="list-style-type: none"> • <i>Armitage Avenue Approach:</i> A separate left-turn lane and a separate right-turn lane • <i>Southport Avenue Approach:</i> A separate left-turn lane and a separate right-turn lane • <i>Kingsbury Street Approach:</i> A separate left-turn lane and a separate right-turn lane • <i>Intersection Traffic Control:</i> One-way stop sign control on Armitage Avenue extended
<p>Street extensions, improvements, and upgrades will consist of pavement enhancements, additional turn lanes, traffic control modifications, high visibility crosswalks, pedestrian countdown timers at signalized intersections, and/or streetscape improvements and will include on-street parking and bike lanes accommodations along the various streets.</p>	

Table 10, Continued

TOTAL BUILDOUT - LINCOLN YARDS PDS STREET NETWORK IMPROVEMENTS

Street/Intersection	Improvement/Modification/Design
Cortland Street with Dominick Street Extended Intersection	<ul style="list-style-type: none"> • <i>Cortland Street and Dominick Street Approaches:</i> A separate left-turn lane and a shared through/right-turn lane • <i>Intersection Traffic Control:</i> Traffic signal control with pedestrian countdown signals
Cortland Street with Kingsbury Street Intersection	<ul style="list-style-type: none"> • <i>Cortland Street and Kingsbury Street Approaches:</i> A separate left-turn lane and a shared through/right-turn lane • <i>Intersection Traffic Control:</i> Traffic signal control with pedestrian countdown signals
Cortland Street with Marcey Street Intersection	<ul style="list-style-type: none"> • Elimination of the existing traffic signal • Install stop sign on Marcey Street
Dickens Avenue with Dominick Street Intersection	<ul style="list-style-type: none"> • <i>Dominick Street Southbound Approach:</i> A separate left-turn lane and a through lane • <i>Dickens Avenue Westbound Approach:</i> A separate left-turn lane and a separate right-turn lane • <i>Dominick Street Northbound Approach:</i> A shared through/right-turn lane • <i>Intersection Traffic Control:</i> One-way stop sign control on Dickens Avenue
Dickens Avenue with Southport Avenue Intersection	<ul style="list-style-type: none"> • <i>Dominick Street Southbound Approach:</i> A shared through/right-turn lane • <i>Dickens Avenue Eastbound Approach:</i> A separate left-turn lane and a separate right-turn lane • <i>Southport Avenue Northbound Approach:</i> A shared through/left-turn lane • <i>Intersection Traffic Control:</i> One-way stop sign control
Dominick Street with Wabansia Avenue Intersection	<ul style="list-style-type: none"> • <i>Dominick Street Southbound Approach:</i> A shared through/right-turn lane • <i>Wabansia Avenue Eastbound Approach:</i> A separate left-turn lane and a sperate right-turn lane • <i>Dominick Street Northbound Approach:</i> A separate left-turn lane and a through lane
Dominick Street with Concord Place Intersection	<ul style="list-style-type: none"> • <i>Dominick Street and Concord Place Approaches:</i> A separate left-turn lane and a shared through/right-turn lane on all approaches
<p>Street extensions, improvements, and upgrades will consist of pavement enhancements, additional turn lanes, traffic control modifications, high visibility crosswalks, pedestrian countdown timers at signalized intersections, and/or streetscape improvements and will include on-street parking and bike lanes accommodations along the various streets.</p>	

Existing Area Intersection Improvements and Modifications

Figures 22 and 23 illustrate and **Table 11** summarizes the recommended geometric and traffic control improvements and modifications to help mitigate existing conditions and the impact of the Lincoln Yards PDs and the other projected growth. Recommendations were developed for many of the intersections within the study area. The details of the recommended traffic signal timing and offset modifications are located in the Appendix.

Table 11

TOTAL BUILDOUT - AREA INTERSECTION IMPROVEMENTS AND MODIFICATIONS

Intersection	Improvement/Modification
Ashland Avenue with Elston Avenue Intersection	<ul style="list-style-type: none"> • Traffic signal timing modifications • Traffic signal offset modifications
Ashland Avenue with Armitage Avenue Intersection	<ul style="list-style-type: none"> • The addition of northbound Ashland Avenue separate left-turn phase (arrow) • Traffic signal timing modifications • Traffic signal offset modifications • Consideration should be given, with the reconstruction and/or replacement of the Union Pacific viaducts, to widening Armitage Avenue to provide two through lanes in each direction and a separate left-turn lane on both approaches at Ashland Avenue.
Elston Avenue with Armitage Avenue Intersection	<ul style="list-style-type: none"> • Traffic signal timing modifications • Traffic signal offset modifications
I-90/94 Westbound Ramps with Armitage Avenue Intersection	<ul style="list-style-type: none"> • Traffic signal timing modifications
Elston Avenue with Webster Avenue Intersection	<ul style="list-style-type: none"> • Traffic signal timing modifications • Traffic signal offset modifications • The addition of northbound and southbound Elston Avenue separate left-turn phases (arrows) and a westbound Webster Avenue right-turn overlap phase (arrow) • The extension of the northbound Elston Avenue left-turn lane to provide 115 feet of storage • Consideration should be given to adding a right-turn lane on the westbound approach of Webster Avenue by eliminating the existing curb extension and on-street parking and providing a westbound Webster Avenue right-turn overlap phase
Elston Avenue with Cortland Street Intersection	<ul style="list-style-type: none"> • The addition of separate left-turn phases (arrows) on northbound Elston Avenue and eastbound and westbound Cortland Street • The addition of right-turn overlap phases (arrows) on westbound Cortland Street and northbound Elston Avenue • Traffic signal timing modifications
Elston Avenue with Wabansia Avenue Intersection	<ul style="list-style-type: none"> • Restripe the westbound approach of Wabansia Avenue to provide a separate left-turn lane and a shared through/right-turn lane. This will require the elimination of on-street parking. • The installation of a traffic signal with pedestrian countdown signals

Table 11, continued

TOTAL BUILDOUT - AREA INTERSECTION IMPROVEMENTS AND MODIFICATIONS

Intersection	Improvement/Modification
Elston Avenue with Concord Place Intersection	<ul style="list-style-type: none"> • Restripe the southbound approach of Elston Avenue to provide a separate left-turn lane and a shared through/right-turn lane. This will require the elimination of on-street parking. • Restripe the westbound approach of Concord Place to provide a separate left-turn lane and a right-turn lane. This will require the elimination of on-street parking. • The installation of a traffic signal with pedestrian countdown signals
Elston Avenue with North Avenue Intersection	<ul style="list-style-type: none"> • Traffic signal timing modifications • Traffic signal offset modifications • The extension of the southbound Elston Avenue right-turn lane to provide 150 feet of storage • The extension of the eastbound North Avenue left-turn lane to provide 300 feet of storage • The installation of countdown pedestrian signals
North Avenue with Clybourn Avenue and Dayton Street Intersection	<ul style="list-style-type: none"> • The installation of countdown pedestrian signals
Clybourn Avenue with Sheffield Avenue and Willow Street Intersection	<ul style="list-style-type: none"> • The addition of southeast-bound Clybourn Avenue separate left-turn phase (arrow) • Traffic signal timing modifications
Clybourn Avenue with Wisconsin Street Intersection	<ul style="list-style-type: none"> • The installation of a traffic signal with pedestrian countdown signals
Clybourn Avenue with Cortland Street and Racine Avenue	<ul style="list-style-type: none"> • The addition of a northwest-bound Clybourn Avenue separate left-turn phase (arrow) • Traffic signal timing modifications
Southport Avenue with Webster Avenue Intersection	<ul style="list-style-type: none"> • The installation of a traffic signal with pedestrian countdown signals
Damen Avenue with Webster Avenue Intersection	<ul style="list-style-type: none"> • The addition of westbound Webster Avenue separate left-turn phase (arrow) • Traffic signal timing modifications
Dominick Street with Webster Avenue Intersection	<ul style="list-style-type: none"> • Restripe/widen the northbound Dominick Street to provide a separate left-turn lane and a shared through/right-turn lane. This will require the elimination of on-street parking. • The installation of a traffic signal with pedestrian countdown signals
Throop Street with North Avenue Intersection	<ul style="list-style-type: none"> • Traffic signal timing modifications • Traffic signal offset modifications

9. Travel Demand Measures

Travel Demand Measures (TDM) provide strategies that the proposed Lincoln Yards PDs can implement that have been effective at reducing the number of vehicle trips generated by a new development. These strategies are meant to not only reduce the traffic to and from the PDs but also to reduce parking demand, increase the use of alternate modes of transportation and public transit ridership, and promote active lifestyles less dependent on personal vehicles.

TDM programs have been demonstrated to be highly effective at reducing the amount of vehicle trips created by new or existing developments. These programs are developed based on a comprehensive review of the best parking and transportation demand management practices conducted by private developments and communities throughout the United States. The measures work together as a mutually-reinforcing group of strategies that are most effective when applied simultaneously.

The following suggestions and recommendations are strategies that have been effective in large mixed-use developments such as the Lincoln Yards PDs:

Carpool Matching Services can be provided by employers to match employees who live near each other and work similar schedules to carpool to and from the office. Van-pool services may also be provided.

Preferential Carpool Parking provides preferential treatment to those employees who carpool. Benefits can include a discounted cost for parking or the use of the “better” parking spaces within the parking garage.

Guaranteed/Emergency Ride Home reimburses non-driving employees for occasional taxi cab or ride-share rides when traveling to or from work outside of the normal commuting times.

Flextime provides formal policies allowing employees to work non-conventional schedules to reduce parking and traffic demand that occur during typical peak periods.

Telecommuting provides formal policies allowing employees to work remotely. Residential buildings in the area may consider the provision of high-speed internet access to further encourage this option.

Bicycle-Sharing (Divvy) Stations should be provided in the area to accommodate the proposed increase in population. The location and number of docks at each of these new stations should be determined based on employment centers and residential buildings in coordination with Divvy Bike Sharing. Employers/residential operators may choose to subsidize membership costs in order to reduce parking and traffic.

Car-Sharing should be provided throughout the development within the on-site parking garages. Coordination with car-share providers should determine the number and location of these vehicles. Employers/residential operators may choose to subsidize membership costs in order to reduce parking and traffic.

Changing Facilities promote bicycle commuting by allowing employees to shower and get ready for work after their commute. This may also include agreements with nearby health clubs for the use of their facilities.

Bike Storage and Bike Repair Facilities within employment centers and residential buildings provide a secure place to store bicycles out of the elements. In addition, the space and tools to perform minor repairs when necessary will further encourage bicycle commuting.

Charging for Parking is an effective method to reduce traffic to and from the development as well as reduce the demand for on-site parking.

Real-Time Transit Monitors should be provided within public areas or building lobbies to inform potential transit users of approaching trains and buses.

Distribute Information in order to inform new residents and employees of transit options, programs, and incentives.

10. Conclusion

This report summarizes the methodologies, results, and findings of a transportation study conducted by Kenig, Lindgren, O’Hara, Aboona, Inc. (KLOA, Inc.) for the proposed Lincoln Yards North and South Planned Developments (Lincoln Yards PDs) to be located in Chicago, Illinois. Overall, the Lincoln Yards PDs consist of several properties bounded by Cortland Street and Dickens Avenue on the north, Kingsbury Street and the Chicago River on the east, North Avenue on the south, and Elston Avenue on the west. As proposed, the Lincoln Yards PDs are to consist of two mixed-use, planned developments. Based on the preceding analyses and recommendations, the following conclusions have been made:

- The Lincoln Yards PDs are proposed to consist of dense, mixed-use developments that will contain residential, office, hotel, commercial, and entertainment uses. Further, they are located within or adjacent to three dense, urban neighborhoods (Lincoln Park, Bucktown, and Wicker Park) that contain a large population of people who live and work within walking distance of the Lincoln Yards PDs. As such, the Lincoln Yards PDs will be a live, work, and play community that will promote interaction between uses within the Lincoln Yards PDs and the adjacent neighborhoods and reduce reliance on the automobile.
- The Lincoln Yards PDs are located within the northern sub-area of the North Branch area which consists of approximately 760 acres of land along the Chicago River between Kinzie Street and Fullerton Avenue. Recently approved by the City of Chicago, the *North Branch Framework* Plan was prepared to provide modern land use parameters for the area to be used by the Chicago Plan Commission, City Council, and the public to assess future development proposals and land use transitions in the North Branch.
- The Transportation Key Recommendations within the *North Branch Framework* included the implementation of “more than a dozen infrastructure projects and other enhancements to improve circulation on an expanded roadway network; enhance and create alternatives to existing travel routes, and to improve walking, biking, and access to transit.” The following lists some of the area infrastructure improvements/projects planned and/or proposed by CDOT, identified in the *North Branch Framework* plan, or other regional improvements:
 - Reconstruction of the Cortland Street bridge over the Chicago River
 - New bridges over the Chicago River with the extension of Dominick Street and Armitage Avenue
 - New Concord Place bridge over the Chicago River
 - Reconfiguration of the Ashland Avenue/Armitage Avenue/Elston Avenue Intersection (Elston Avenue realignment)
 - Extension of Kingsbury Street through the General Iron site
 - Enhancement and relocation of the Clybourn Metra station
 - New north-south transitway through the North Branch area
 - New and enhanced pedestrian and bicycle facilities and accommodations

- As part of the overall Lincoln Yards PDs, a number of traffic and transportation related infrastructure improvements are proposed that include street vacations, new streets, and new bridges over the Chicago River as well as enhanced pedestrian, bicycle, and transit accommodations and facilities that will be implemented in phases. The following lists some of the traffic and transportation related infrastructure improvements proposed as part of the Lincoln Yards PDs, many of which were identified in the *North Branch Framework* plan:
 - The Dominick Street bridge and extension through the Lincoln Yards PDs
 - The Concord Place extension through the Lincoln Yards PDs
 - The Armitage Avenue extension through the Lincoln Yards PDs
 - 606 Trail extension through the Lincoln Yards PDs
 - River walks on both sides of the Chicago River within the Lincoln Yards PD limits
 - Bike lanes, pedestrian paths, and other bike/pedestrian infrastructure within and through the Lincoln Yards PDs
 - Water taxi stations at several locations within the Lincoln Yards PDs
 - Shuttle bus service between the Lincoln Yards PDs and the various CTA and Metra train stations

- The results of the study have shown that the various infrastructure improvements proposed and planned by CDOT, identified in the *North Branch Framework Plan*, other required improvements, and proposed as part of the Lincoln Yards PDs will greatly expand and improve the existing street network, enhance the public transportation and alternative modes of transportation serving the area, and reduce reliance on the automobile. As such, the various infrastructure improvements will help mitigate the existing operations and the impact of the Lincoln Yards PDs.

- The Lincoln Yards PDs are located adjacent to or within walking distance of the Clybourn Avenue Metra station, several CTA rapid transit stations, and a number of CTA bus lines. In addition, the area includes extensive pedestrian facilities, bike lanes along several streets, and a number of Divvy bike sharing stations, all of which are proposed to be expanded within and through the Lincoln Yards PDs.

- The number of vehicle trips to be generated by the Lincoln Yards PDs will be reduced with the implementation of the Travel Demand Measures recommendations and due to the following characteristics of the planned developments and the area:
 - The mixed-use, dense nature of the Lincoln Yards PDs
 - The location of the Lincoln Yards PDs within or adjacent to three dense, urban neighborhoods (Lincoln Park, Bucktown, and Wicker Park)
 - The public transportation and alternative modes of transportation serving the area
 - The extensive infrastructure improvements planned by CDOT and other agencies, identified in the *North Branch Framework Plan*, and proposed as part of the Lincoln Yards PDs

As such, the number of new trips generated by the Lincoln Yards PDs will be reduced due to captive market effects, multipurpose trips, and the available public and non-motorized transportation serving the area.

- The implementation of the Travel Demand Measures will help reduce the impact of the development on the area street system as well as reduce parking demand, increase the use of alternative modes of transportation and public transit ridership, and promote active lifestyles less dependent on personal vehicles.
- The following figures illustrate and tables summarize the street network and intersection improvements and traffic control modifications proposed or required as part of Phase One of the Lincoln Yards PDs:
 - **Figure 19** illustrates and **Table 7** summarizes the street network improvements proposed as part of Phase One of the Lincoln Yards PDs.
 - **Figure 20** illustrates and **Table 8** summarizes the recommended geometric and traffic control improvements and modifications to help mitigate existing conditions and the impact of Phase One of the Lincoln Yards PDs.

With these infrastructure improvements and modifications, the majority of the intersections within the study area are projected to operate at acceptable levels of service or the same levels of service with some of the intersections projected to operate at or near capacity with the additional traffic generated by Phase One of the Lincoln Yards PDs. If the projected traffic volumes are realized, some of the approaches and individual movements at these intersections may experience additional delays and queuing.

- The following figures illustrate and tables summarize the street network and intersection improvements and traffic control modifications planned, proposed, and/or required as part of the total buildout of the Lincoln Yards PDs:
 - **Figure 21** illustrates and **Table 9** summarizes the major regional improvements proposed/planned in the area.
 - **Figure 22** illustrates and **Table 10** summarizes the street network improvements proposed as part of the total buildout of the Lincoln Yards PDs.
 - **Figures 22 and 23** illustrate and **Table 11** summarizes the recommended geometric and traffic control improvements and modifications to help mitigate existing conditions and the impact of the Lincoln Yards PDs and the other projected growth.

With these infrastructure improvements and modifications, the majority of the intersections within the study area are projected to operate at acceptable levels of service or the same levels of service with some of the intersections projected to operate at or near capacity with the additional traffic generated by the total buildout of the Lincoln Yards PDs. If the projected traffic volumes are realized, some of the approaches and individual movements at these intersections may experience additional delays and queuing.

- The City of Chicago may require that updated and/or additional traffic studies be completed as part of future development phases. Based on the results of the studies, additional infrastructure improvements may be recommended.

Appendix

Figures

Capacity Analysis Summary Tables

Nelson/Nygaard Report

Preliminary Traffic Signal Warrant Analyses

Summary of Synchro/SimTraffic Model Calibration

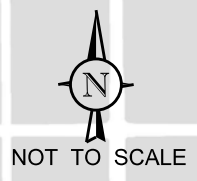
Recommended Signal Timing and Offset

Modifications

Traffic Count Summary Sheets

Capacity Analysis Output Sheets

Figures





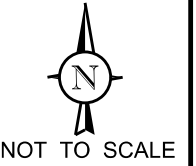
LINCOLN YARDS PDS
CHICAGO, ILLINOIS

SITE LOCATION

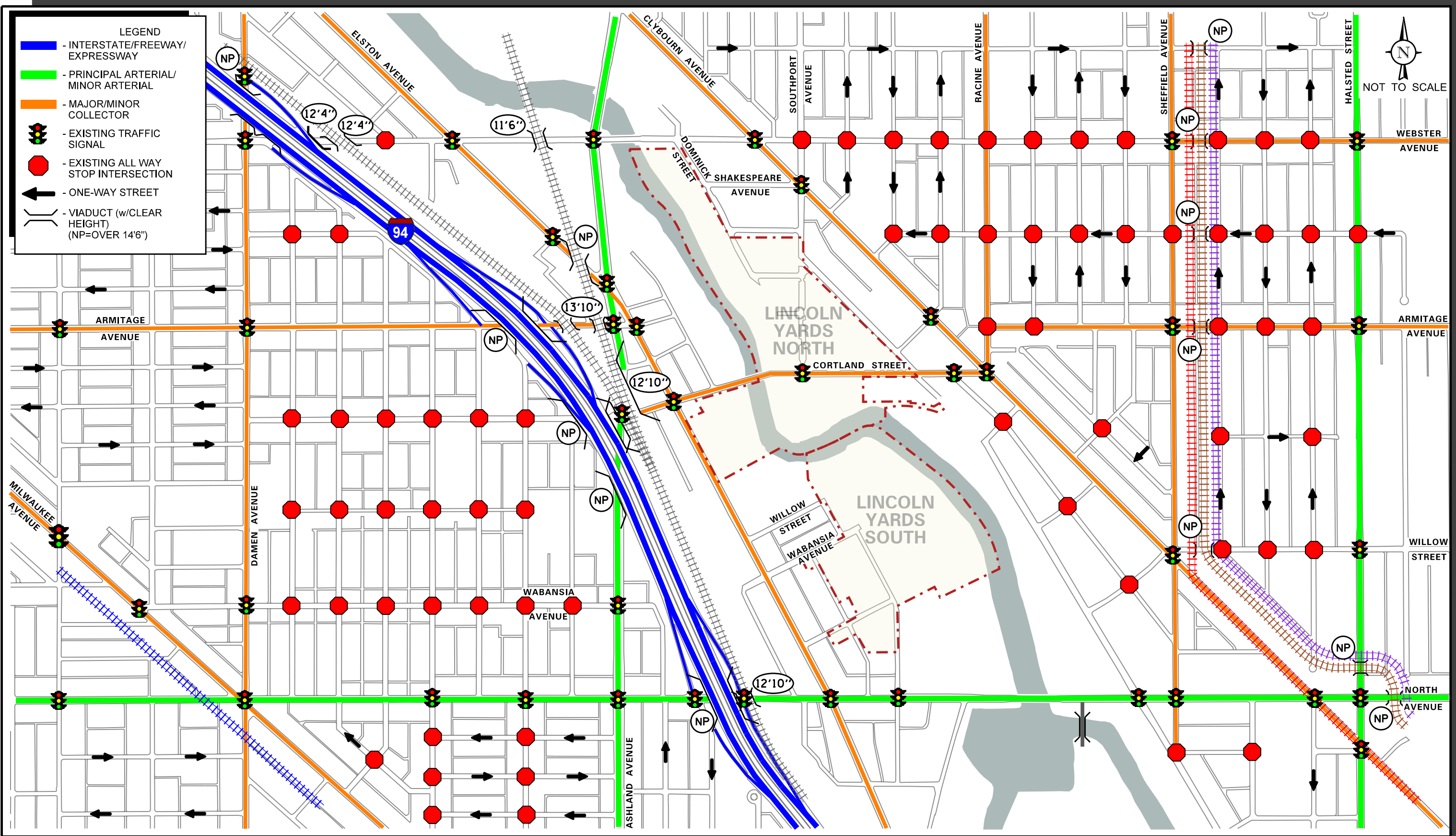


Job No: 16-070 Figure: 2

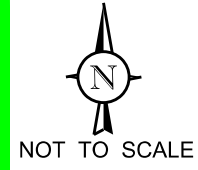
Lincoln Yards Development and Infrastructure



NOTE:
THIS FIGURE DOES NOT ILLUSTRATE THE RECOMMENDED EXTERNAL INTERSECTIONS GEOMETRIC IMPROVEMENTS AND/OR TRAFFIC CONTROL MODIFICATIONS

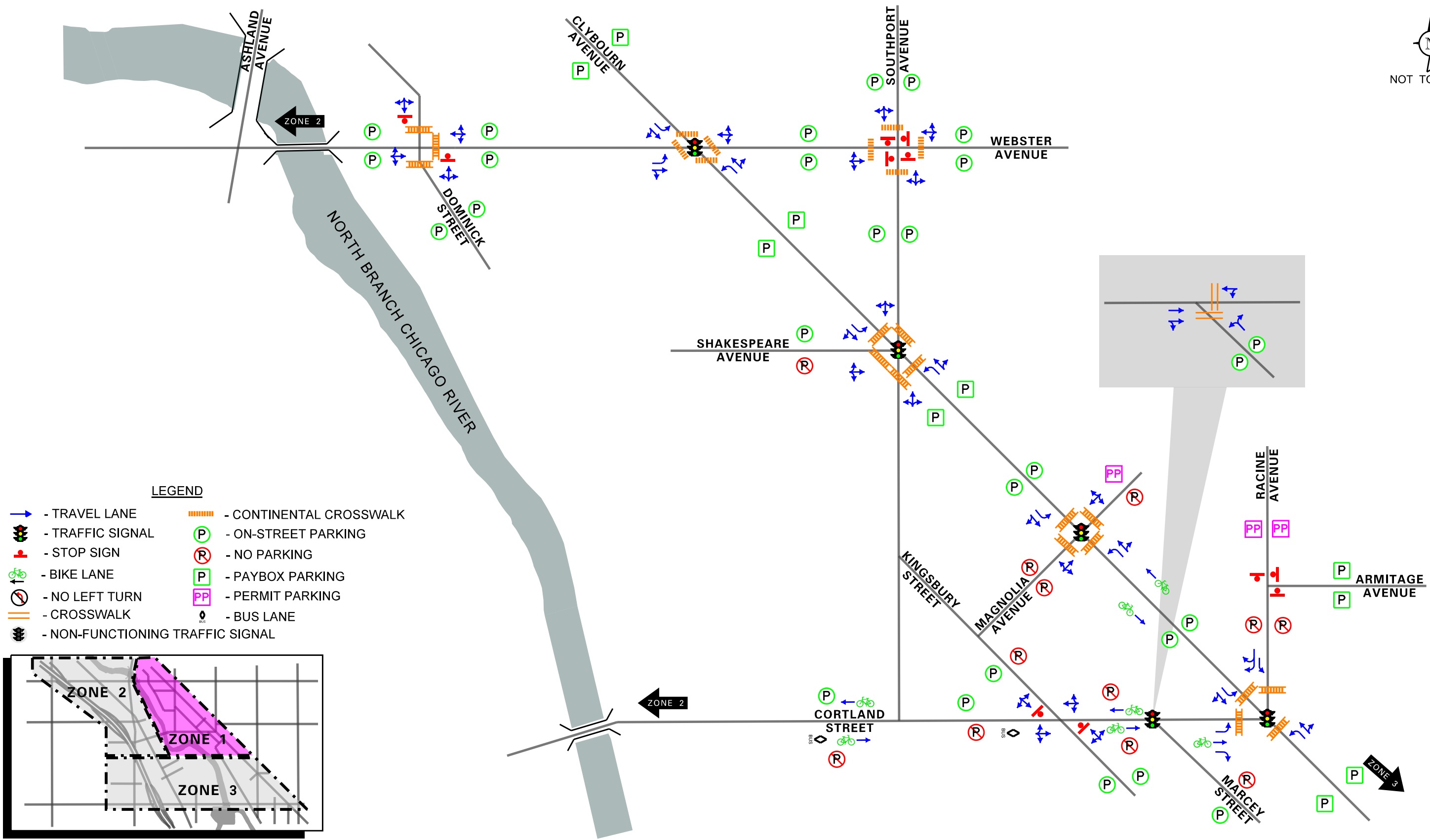
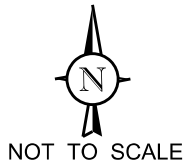


- LEGEND**
- █ - INTERSTATE/FREEWAY/ EXPRESSWAY
 - █ - PRINCIPAL ARTERIAL/ MINOR ARTERIAL
 - █ - MAJOR/MINOR COLLECTOR
 - EXISTING TRAFFIC SIGNAL
 - EXISTING ALL WAY STOP INTERSECTION
 - ONE-WAY STREET
 - VIADUCT (w/CLEAR HEIGHT) (NP=OVER 14'6")



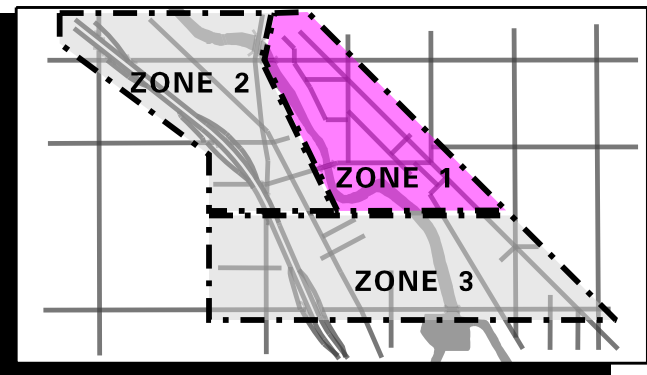
LINCOLN YARDS PDS
CHICAGO, ILLINOIS

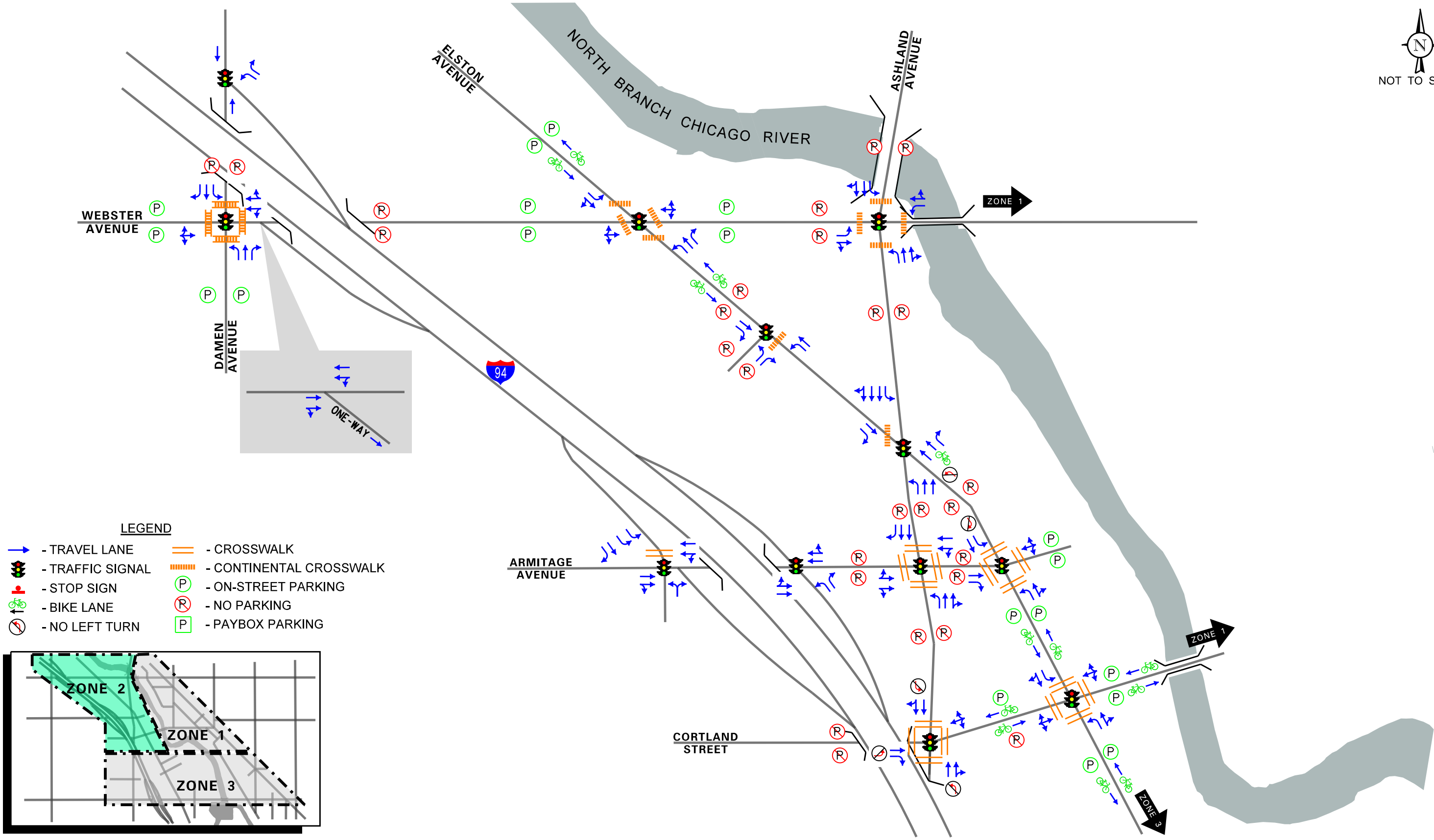
EXISTING STREET SYSTEM



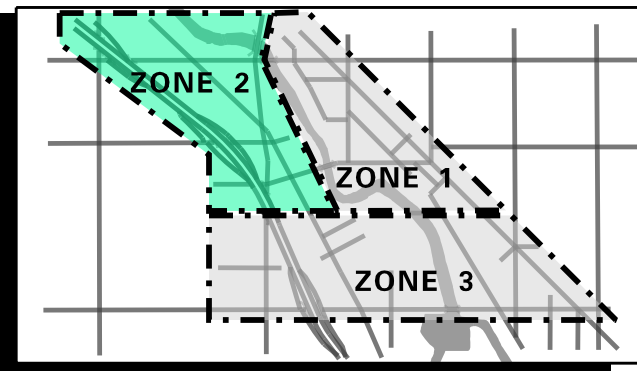
LEGEND

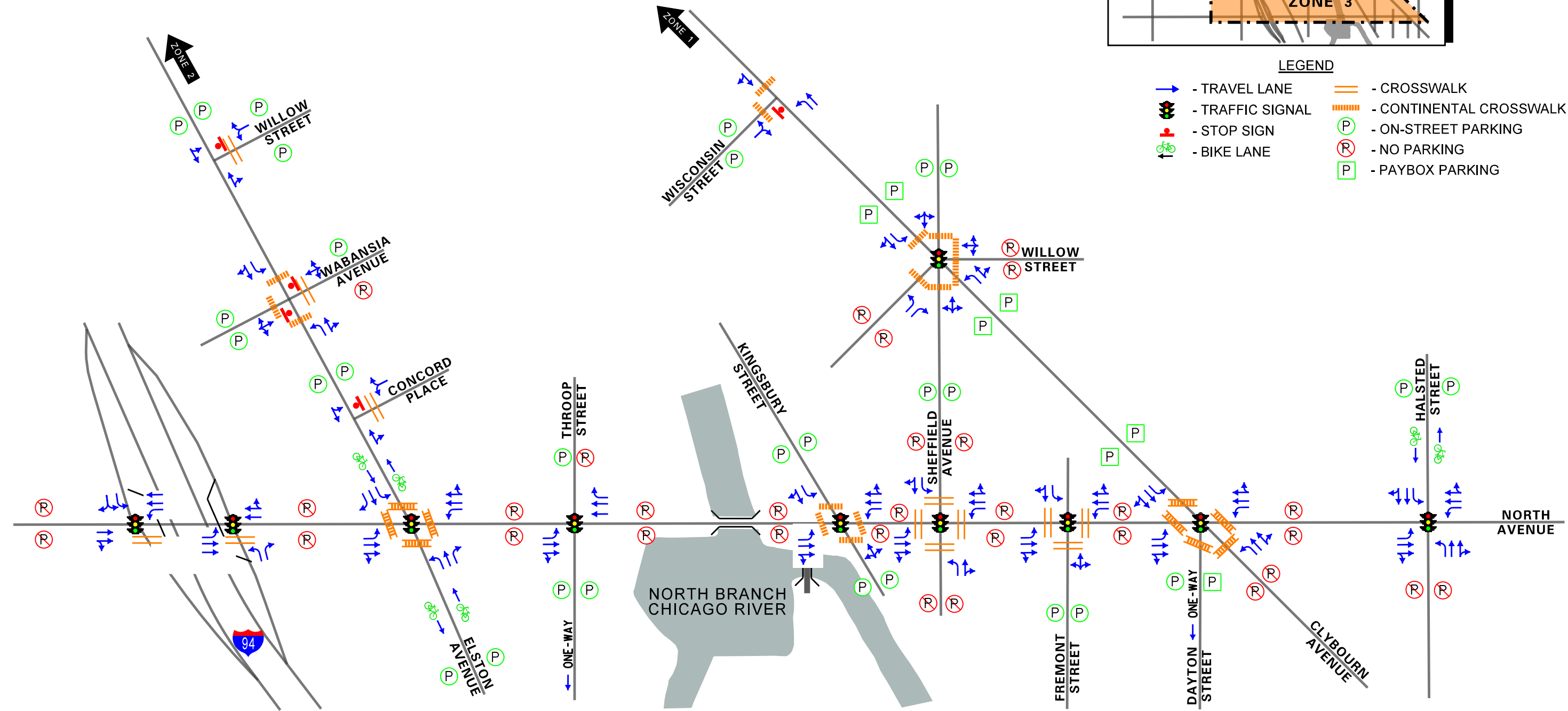
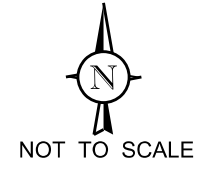
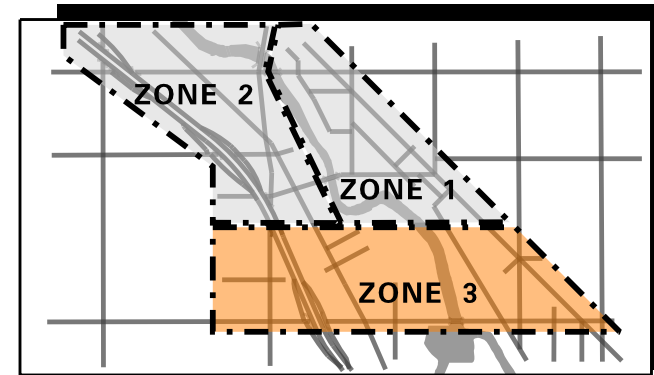
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- TRAFFIC SIGNAL
- STOP SIGN
- BIKE LANE
- NO LEFT TURN
- CROSSWALK
- NON-FUNCTIONING TRAFFIC SIGNAL
- CONTINENTAL CROSSWALK
- ON-STREET PARKING
- NO PARKING
- PAYBOX PARKING
- PERMIT PARKING
- BUS LANE



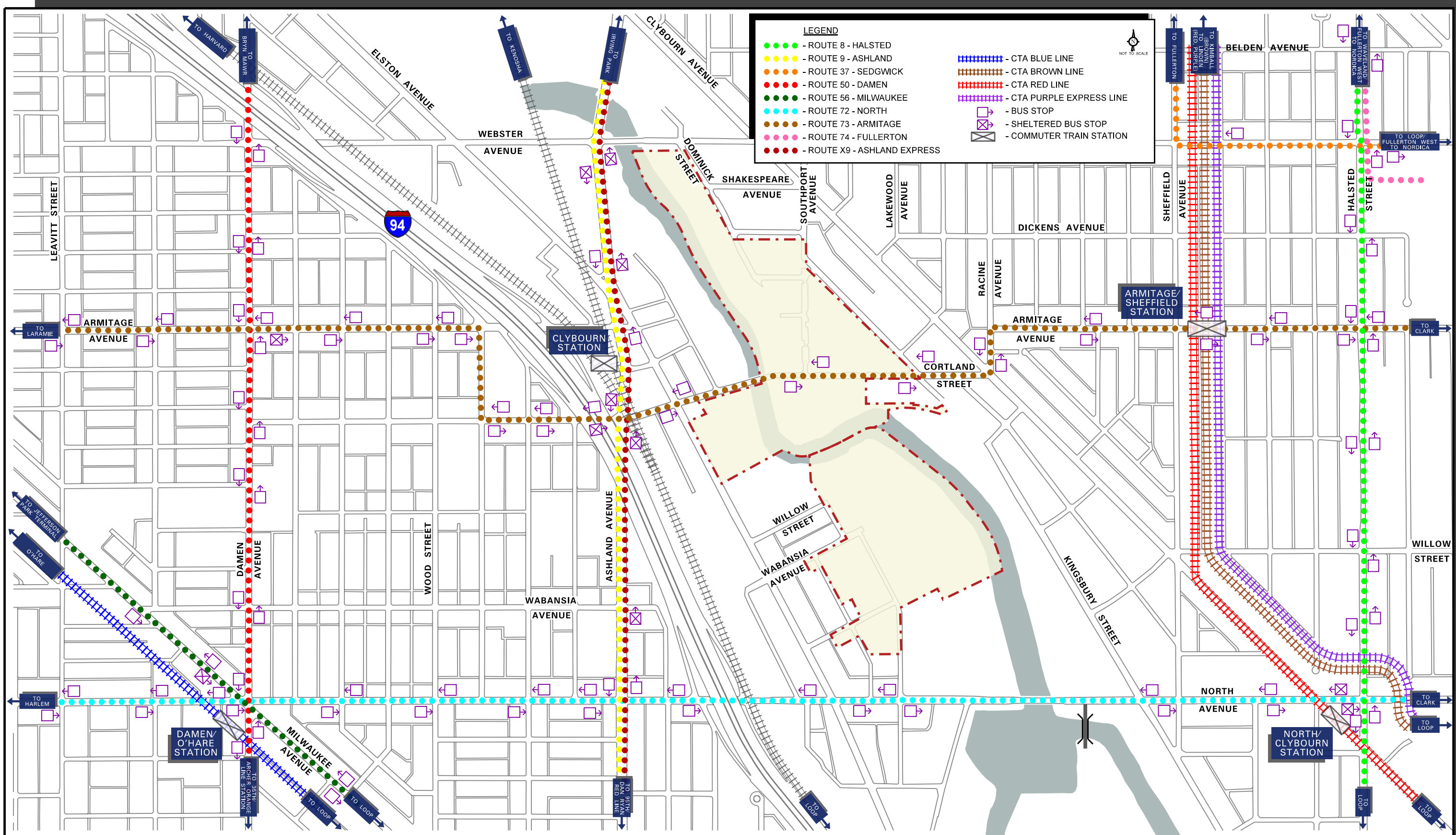


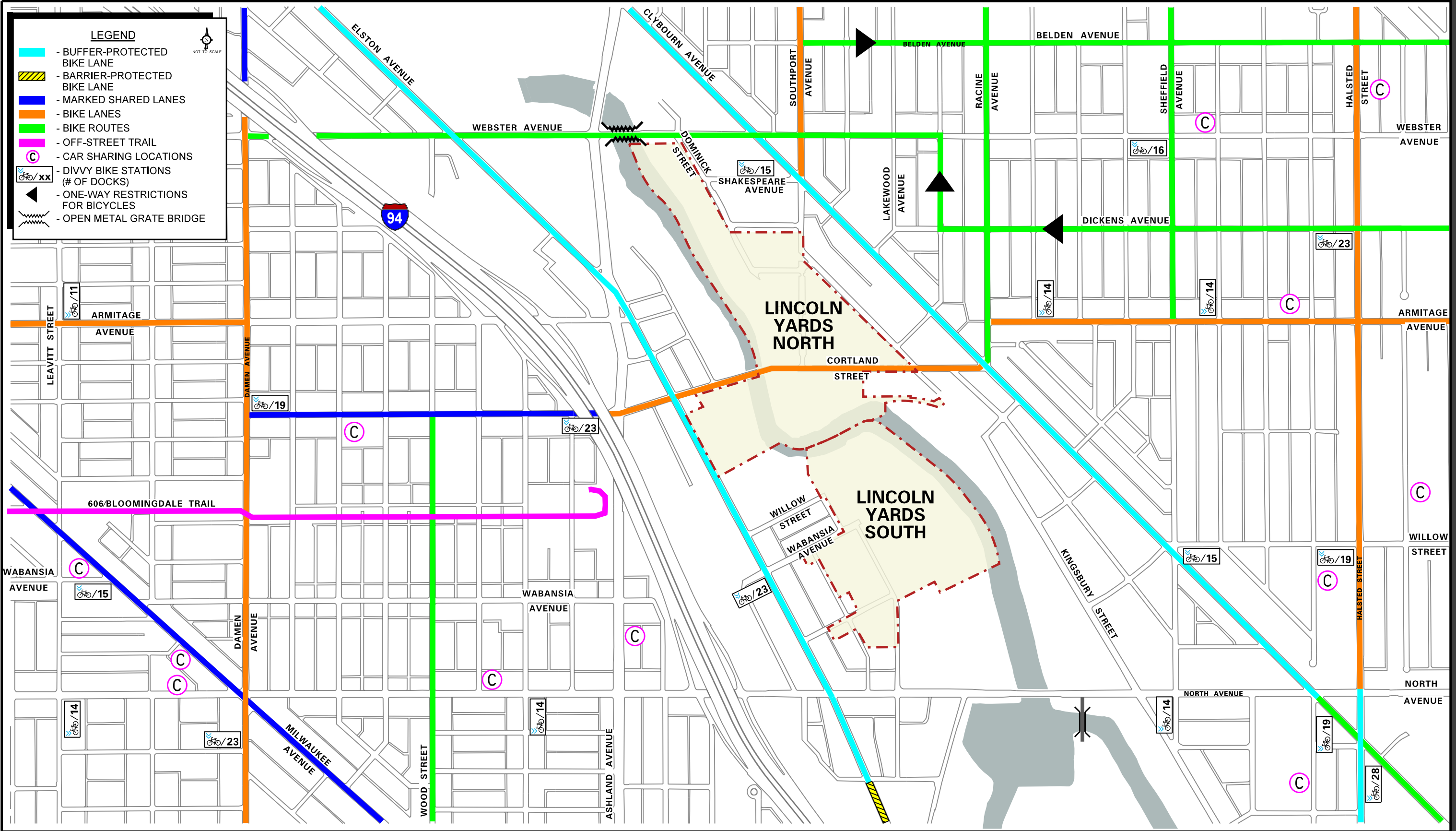
- LEGEND**
- TRAVEL LANE
 - TRAFFIC SIGNAL
 - STOP SIGN
 - BIKE LANE
 - NO LEFT TURN
 - CROSSWALK
 - CONTINENTAL CROSSWALK
 - ON-STREET PARKING
 - NO PARKING
 - PAYBOX PARKING





- LEGEND**
- TRAVEL LANE
 - TRAFFIC SIGNAL
 - STOP SIGN
 - BIKE LANE
 - CROSSWALK
 - CONTINENTAL CROSSWALK
 - ON-STREET PARKING
 - NO PARKING
 - PAYBOX PARKING

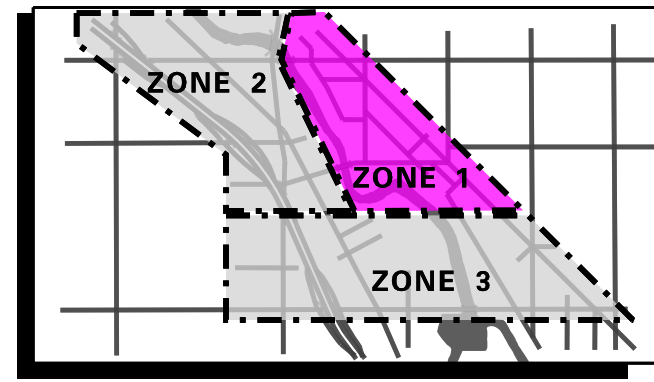
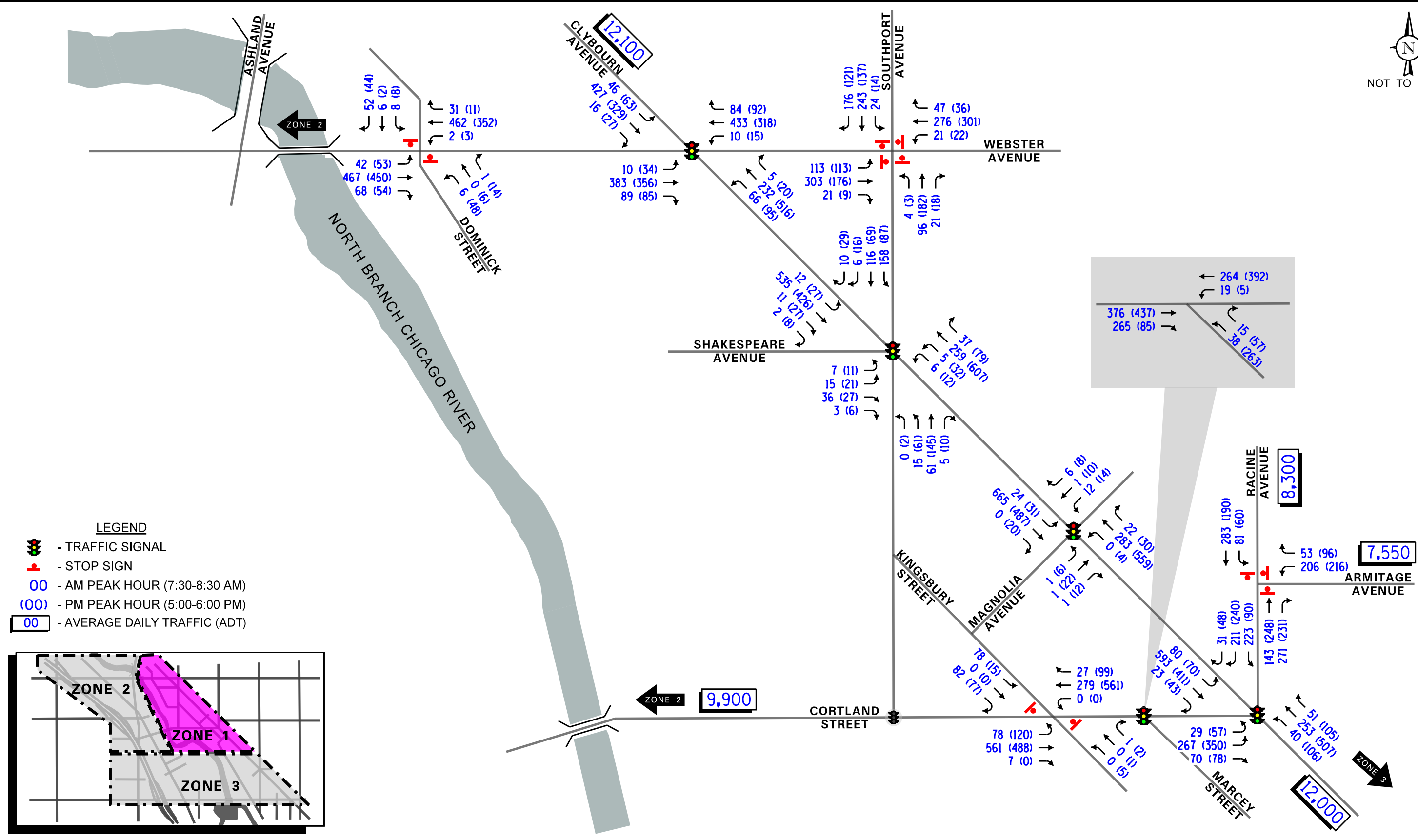
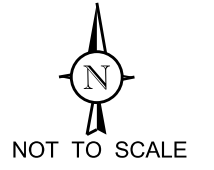


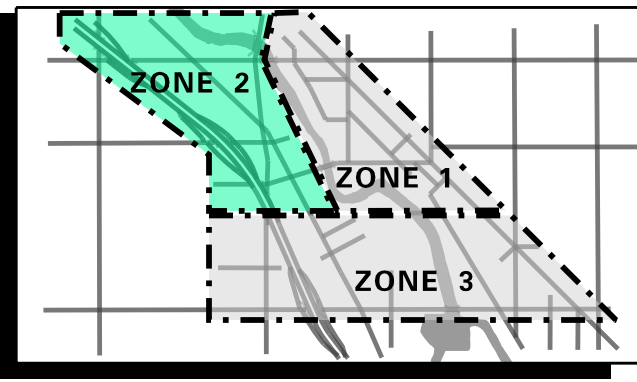
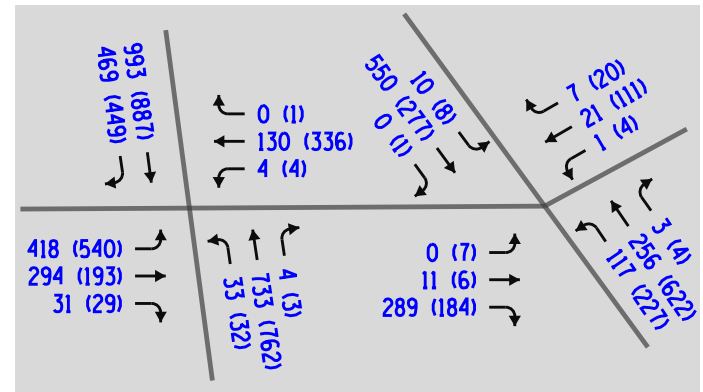
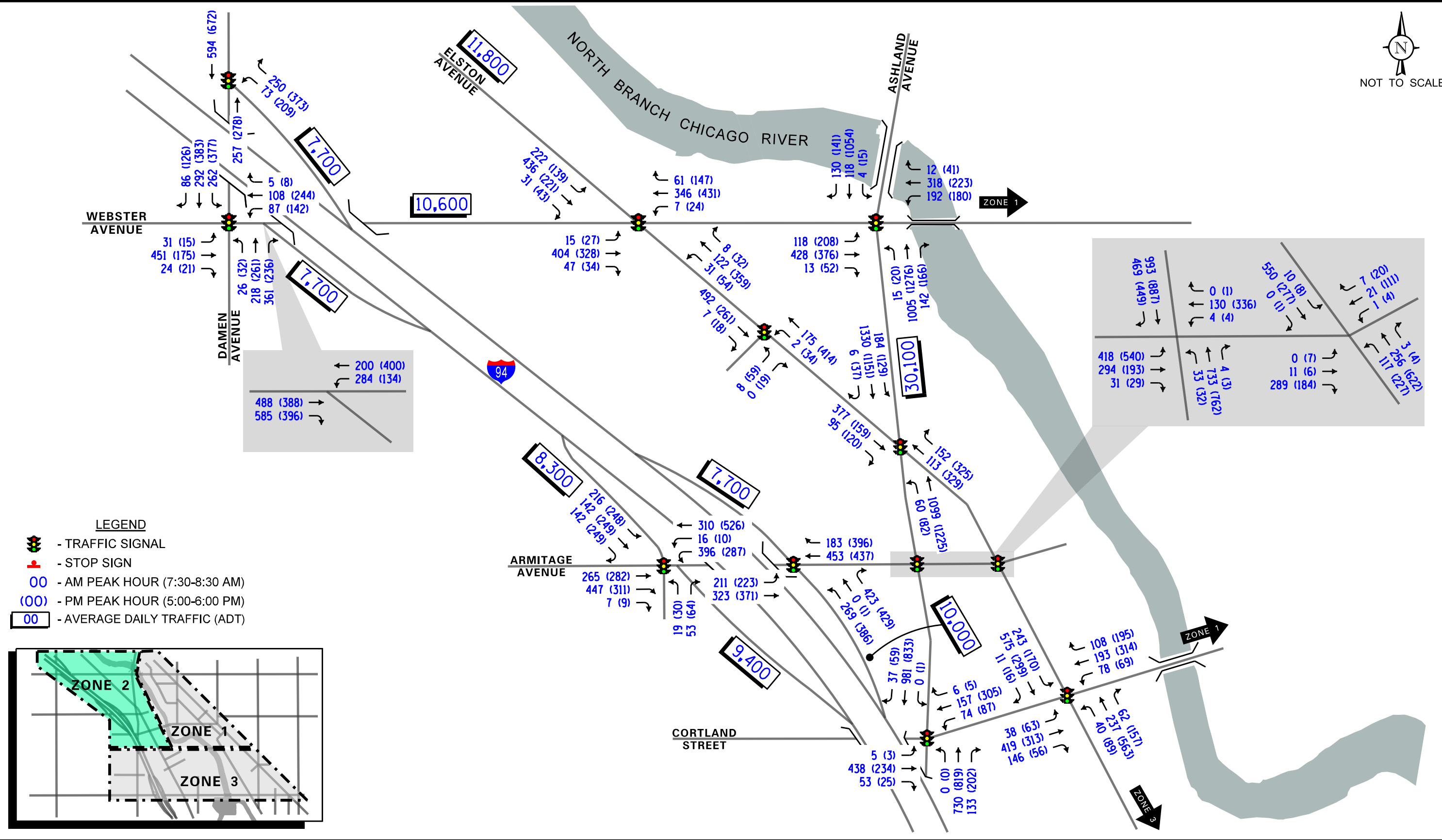
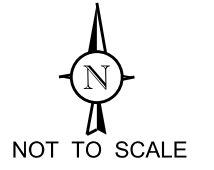




LEGEND

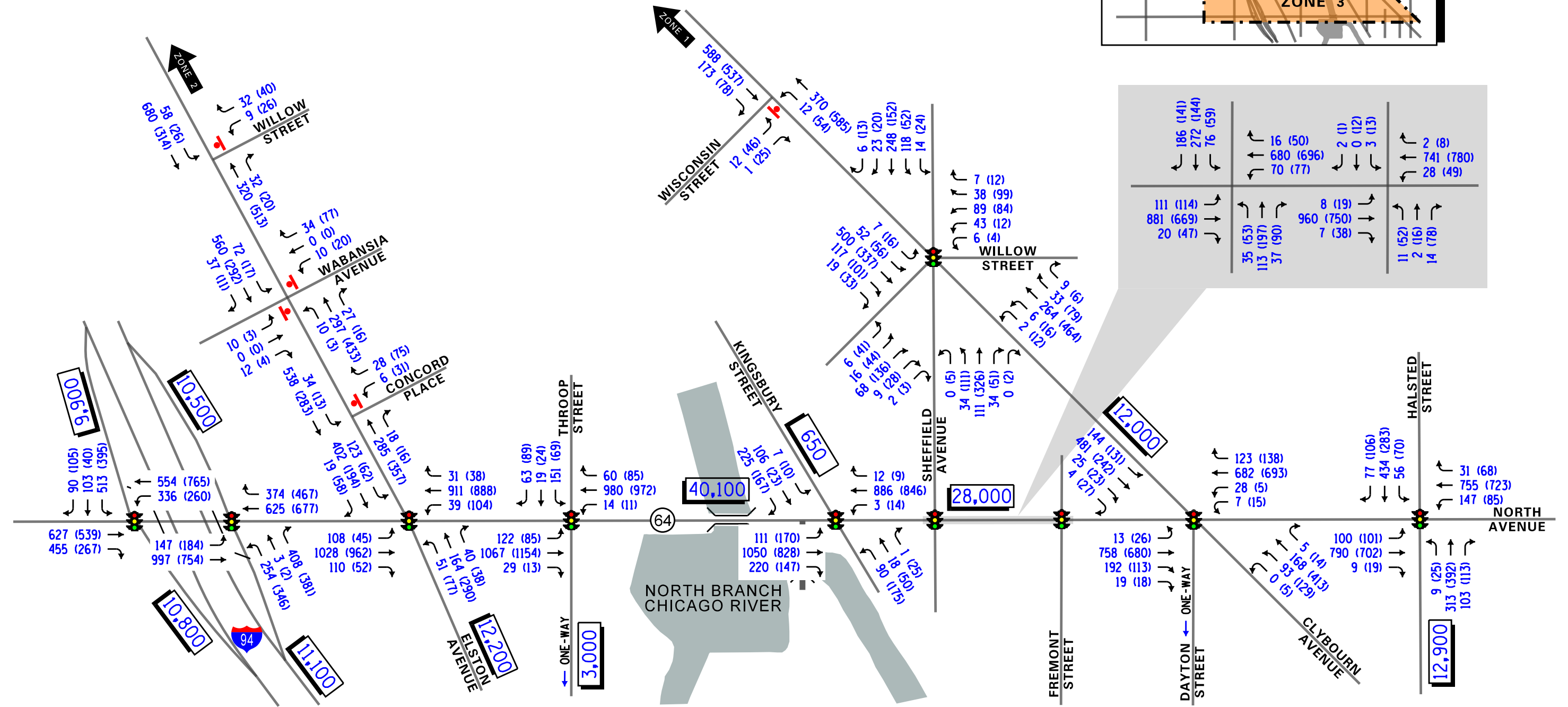
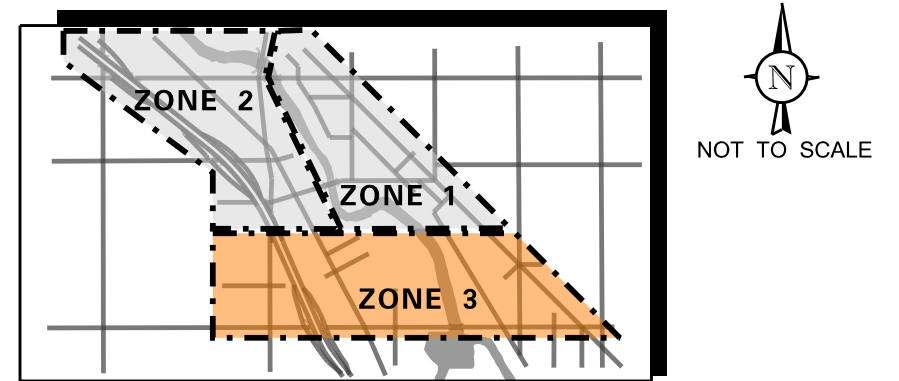
- BUFFER-PROTECTED BIKE LANE
- BARRIER-PROTECTED BIKE LANE
- MARKED SHARED LANES
- BIKE LANES
- BIKE ROUTES
- OFF-STREET TRAIL
- CAR SHARING LOCATIONS
- DIVVY BIKE STATIONS (# OF DOCKS)
- ONE-WAY RESTRICTIONS FOR BICYCLES
- OPEN METAL GRATE BRIDGE

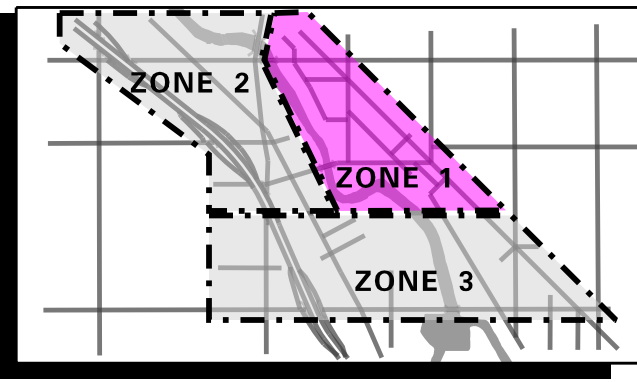
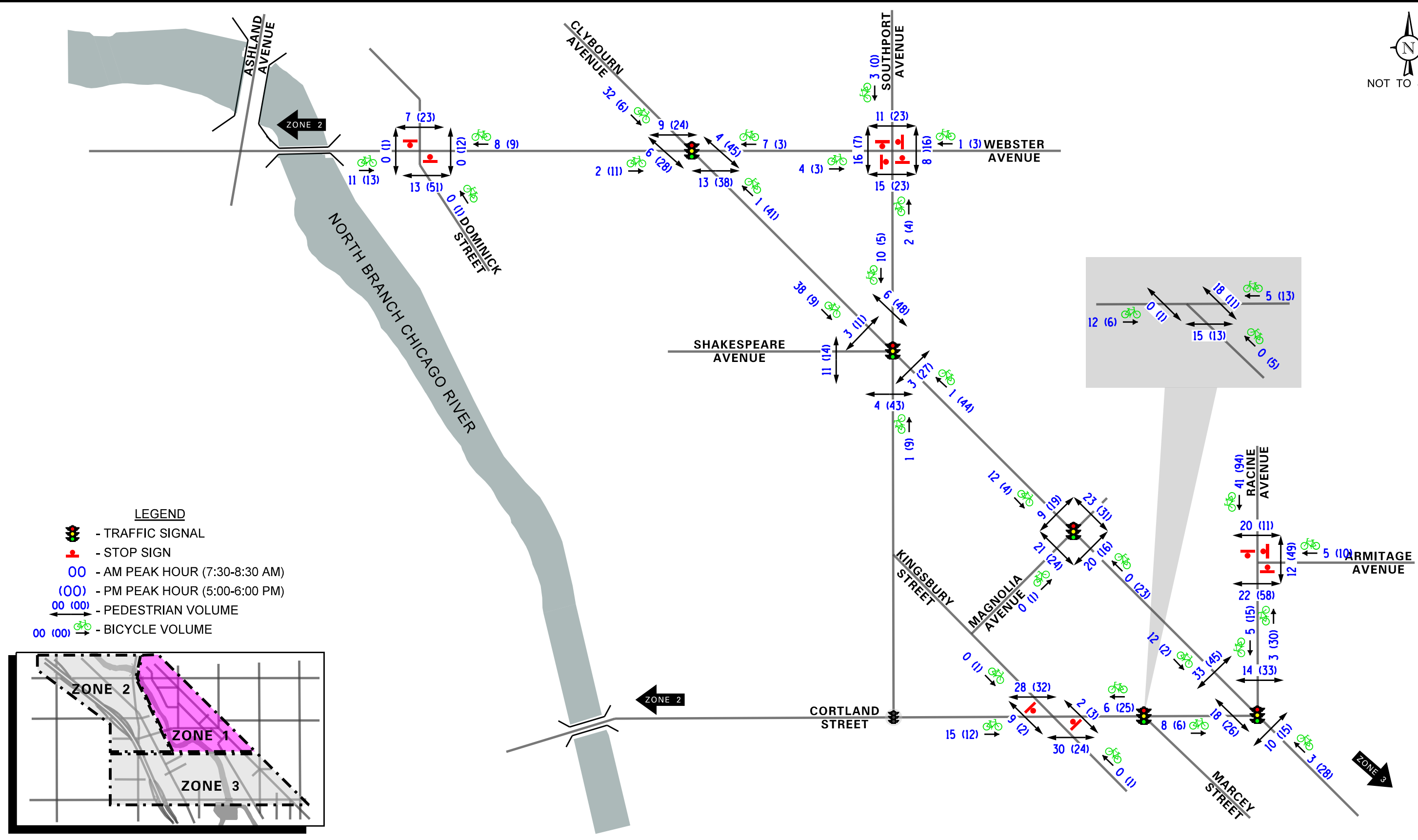
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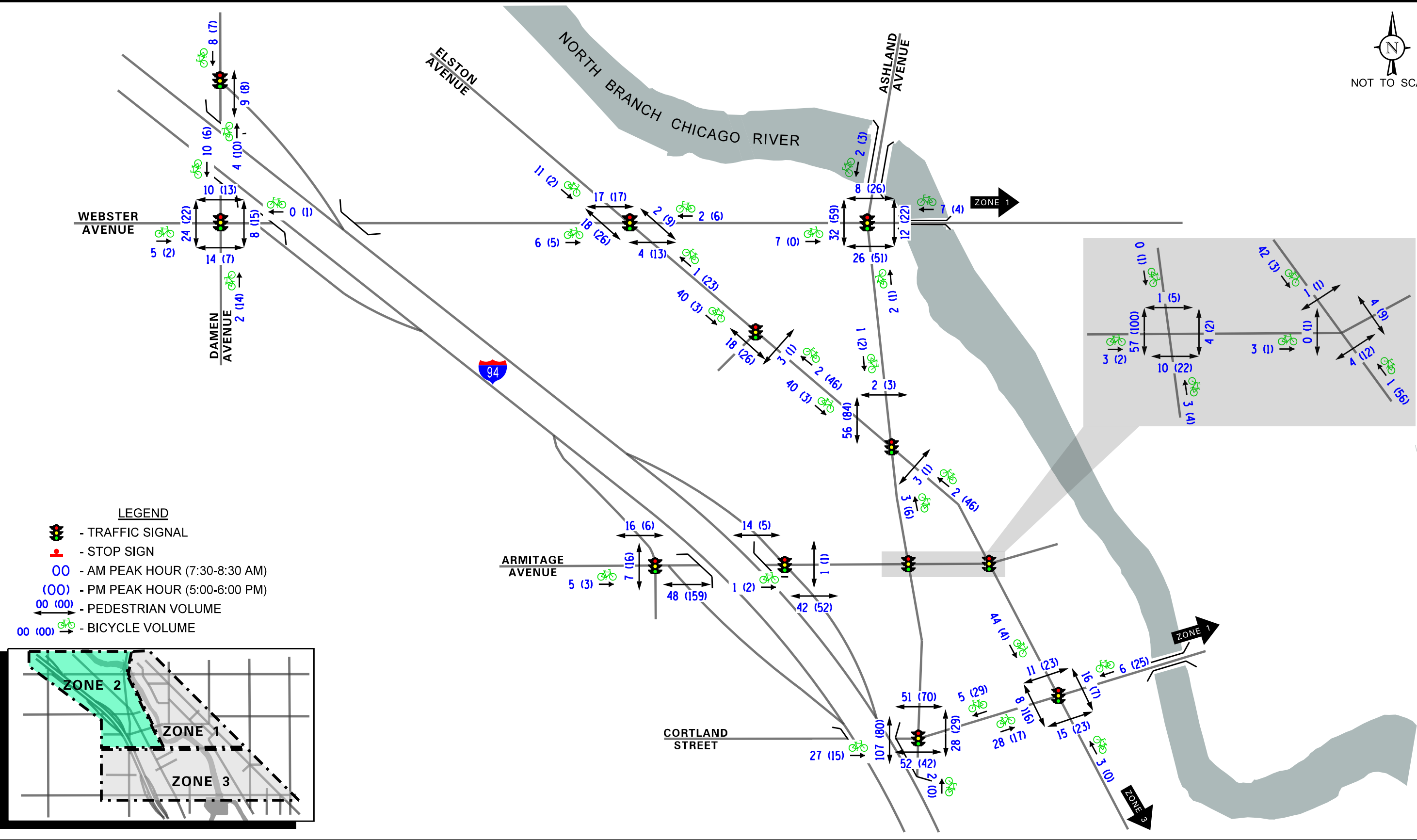









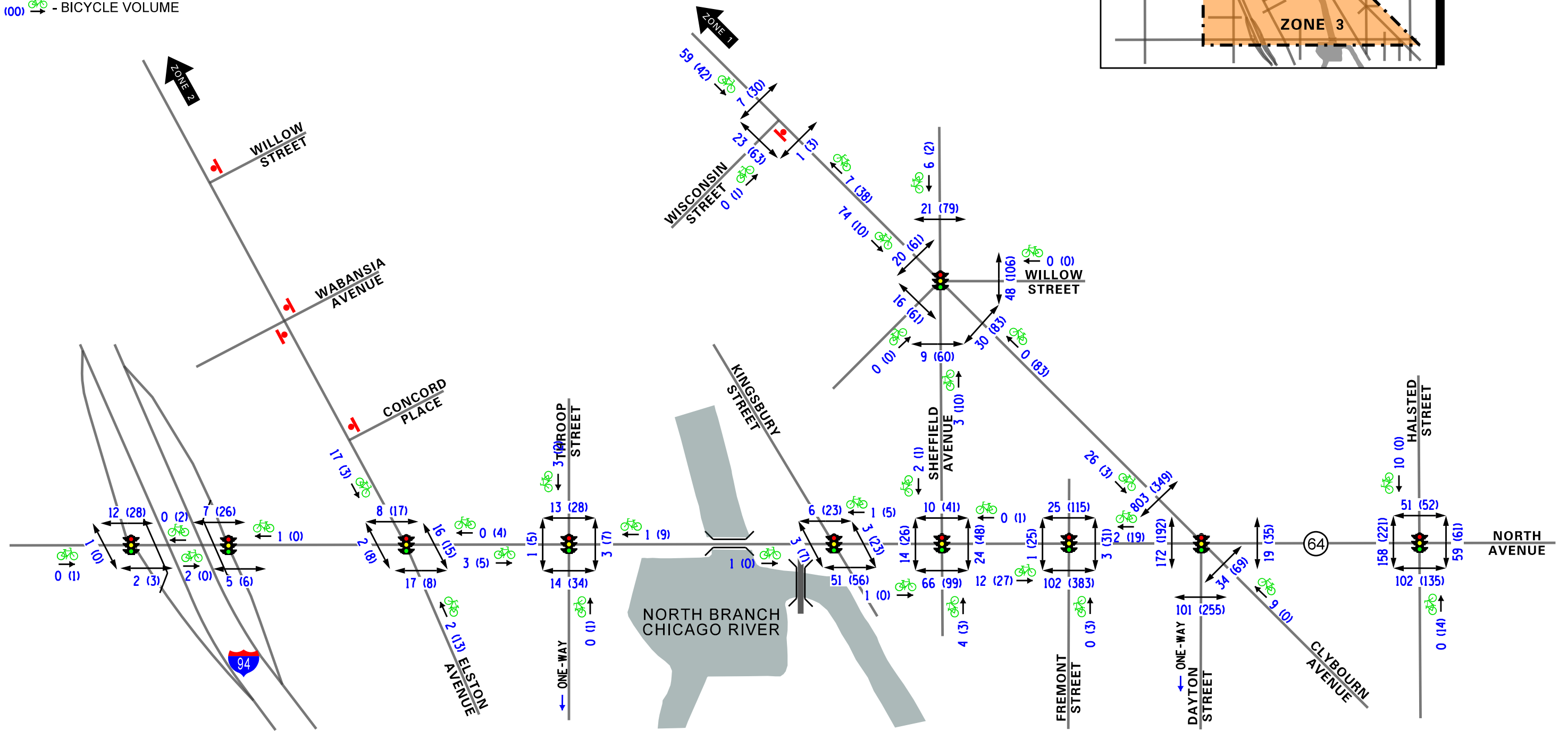
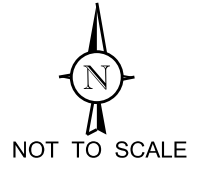
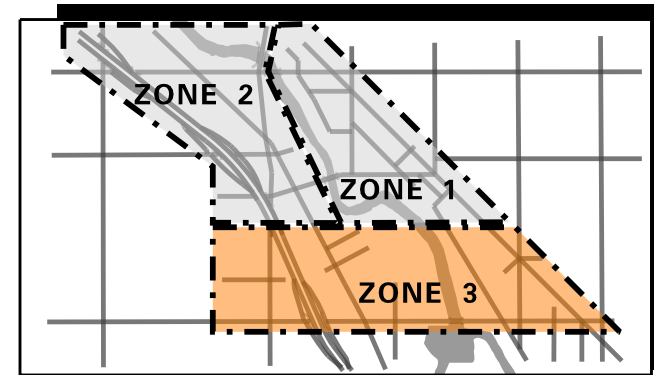
- LEGEND**
-  - TRAFFIC SIGNAL
 -  - STOP SIGN
 - 00** - AM PEAK HOUR (7:30-8:30 AM)
 - (00)** - PM PEAK HOUR (5:00-6:00 PM)
 - 00** - AVERAGE DAILY TRAFFIC (ADT)

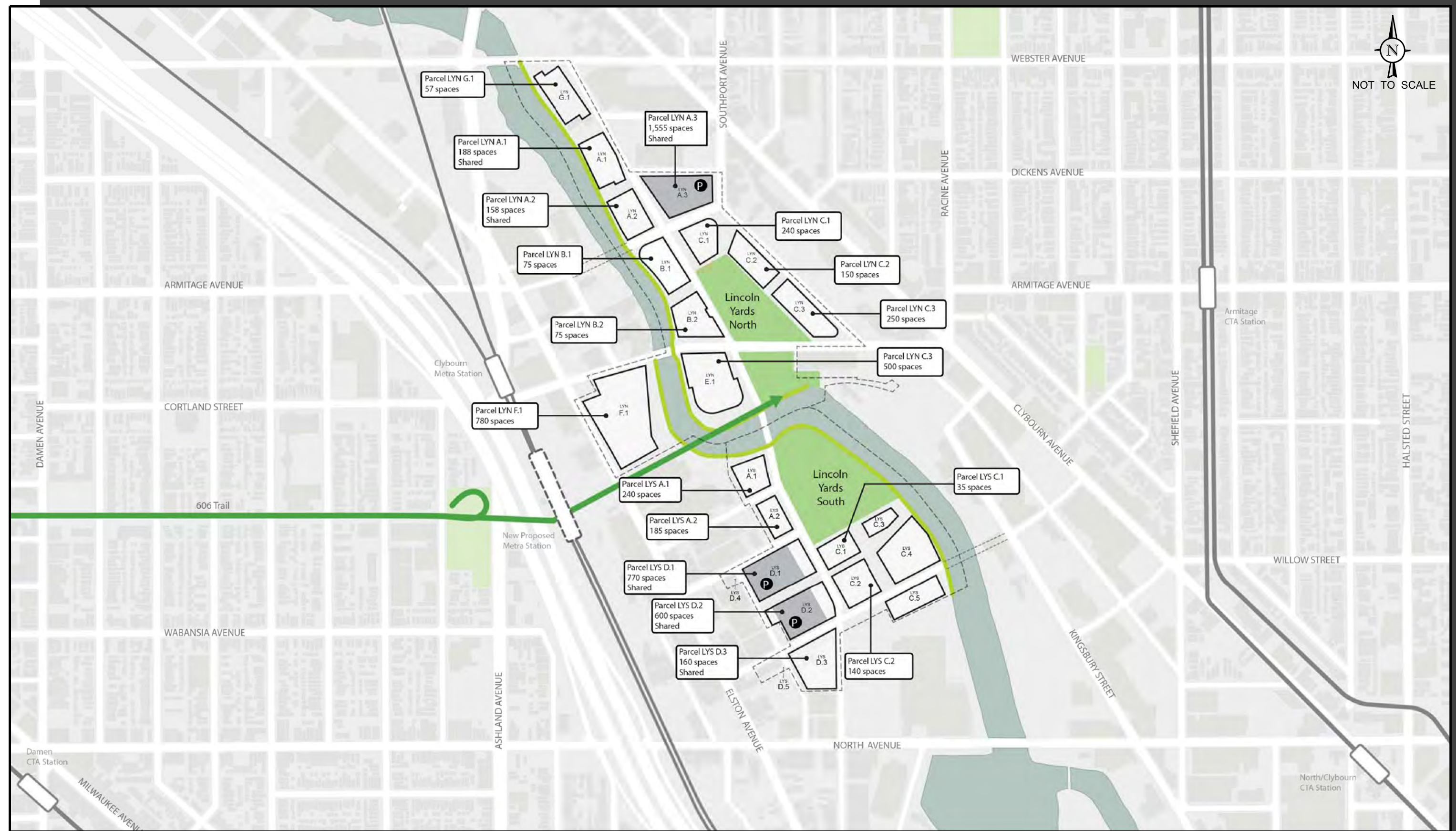
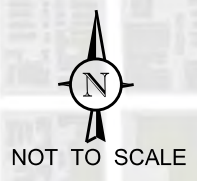


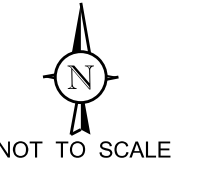
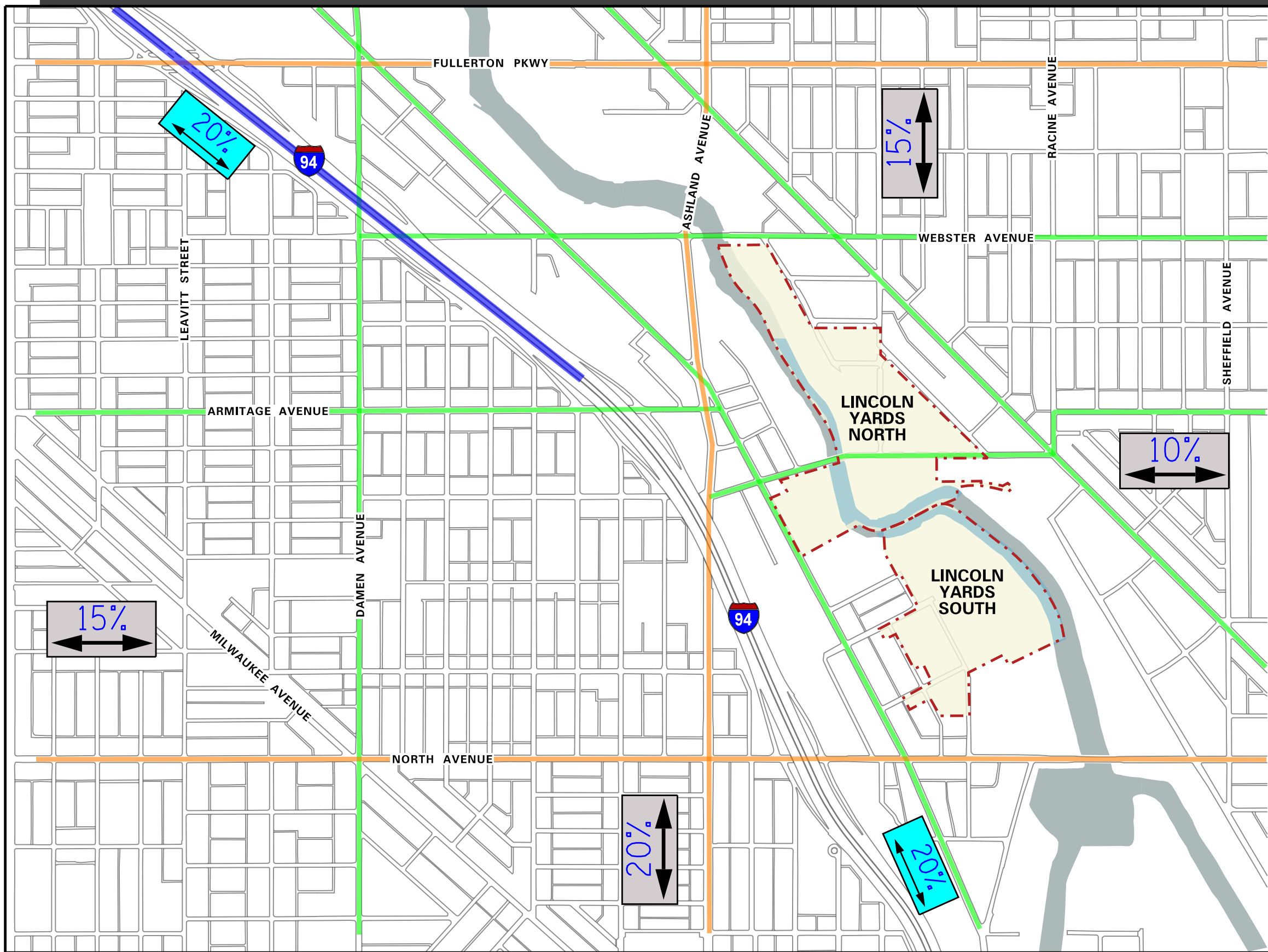




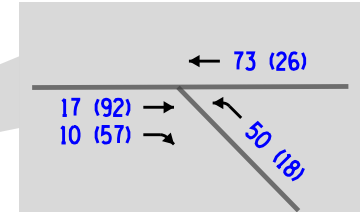
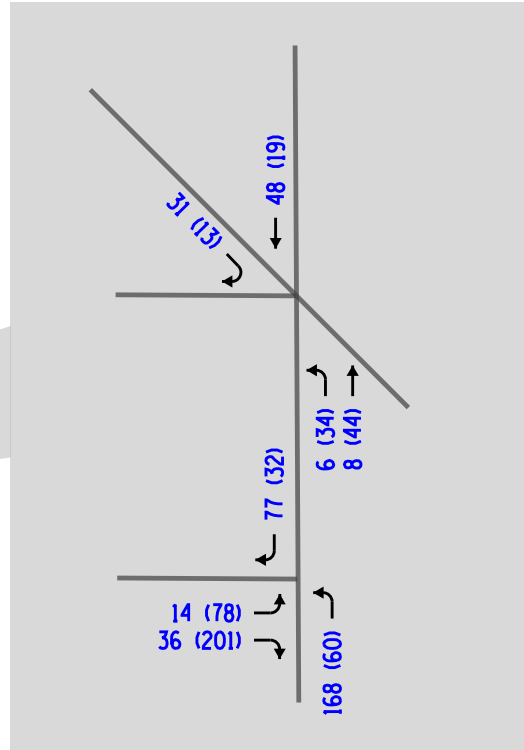
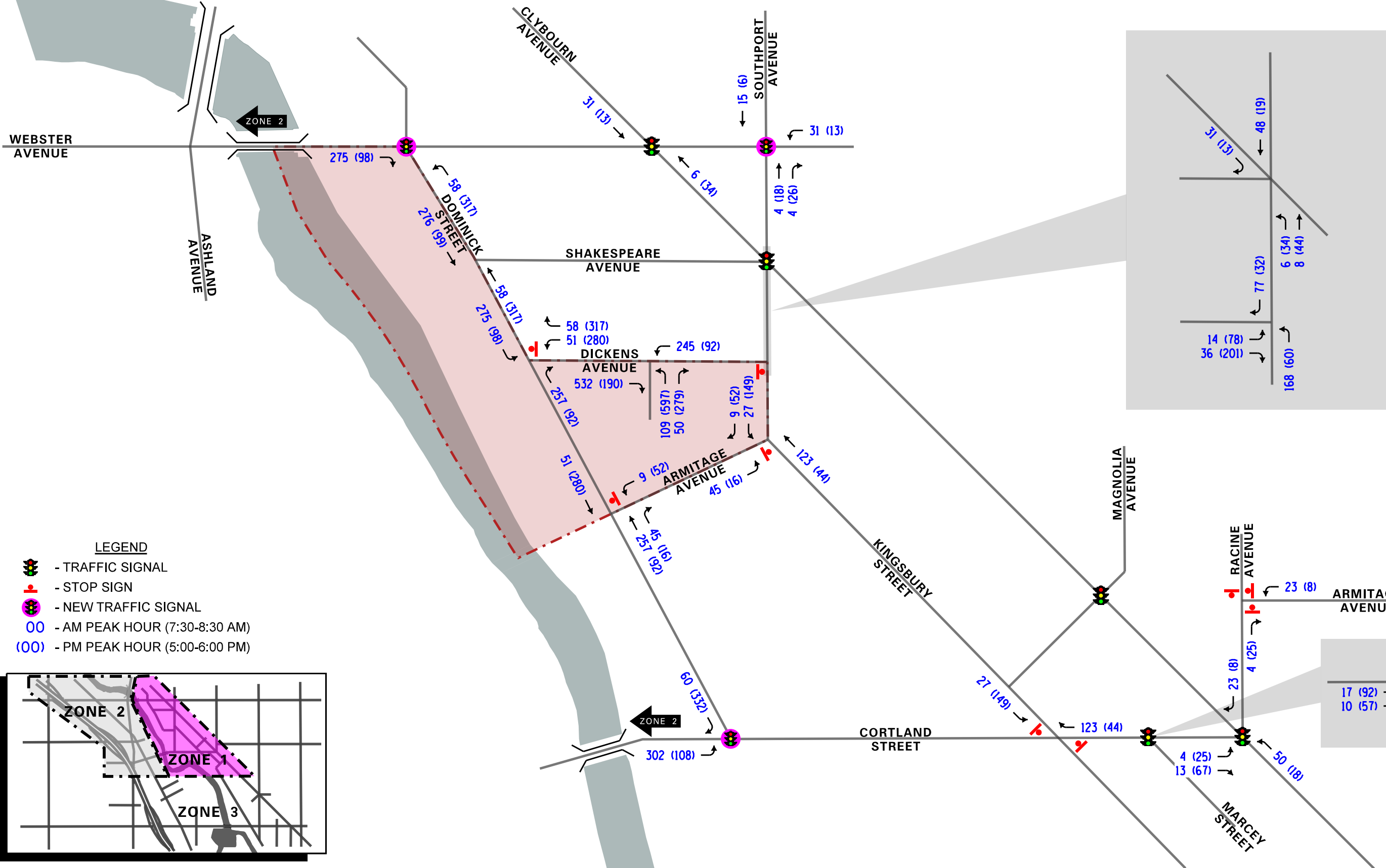
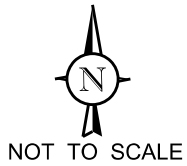
- LEGEND**
-  - TRAFFIC SIGNAL
 -  - STOP SIGN
 - 00 - AM PEAK HOUR (7:30-8:30 AM)
 - (00) - PM PEAK HOUR (5:00-6:00 PM)
 -   - PEDESTRIAN VOLUME
 -  - BICYCLE VOLUME



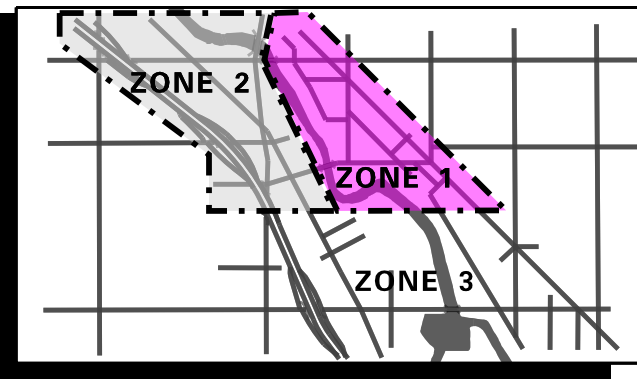


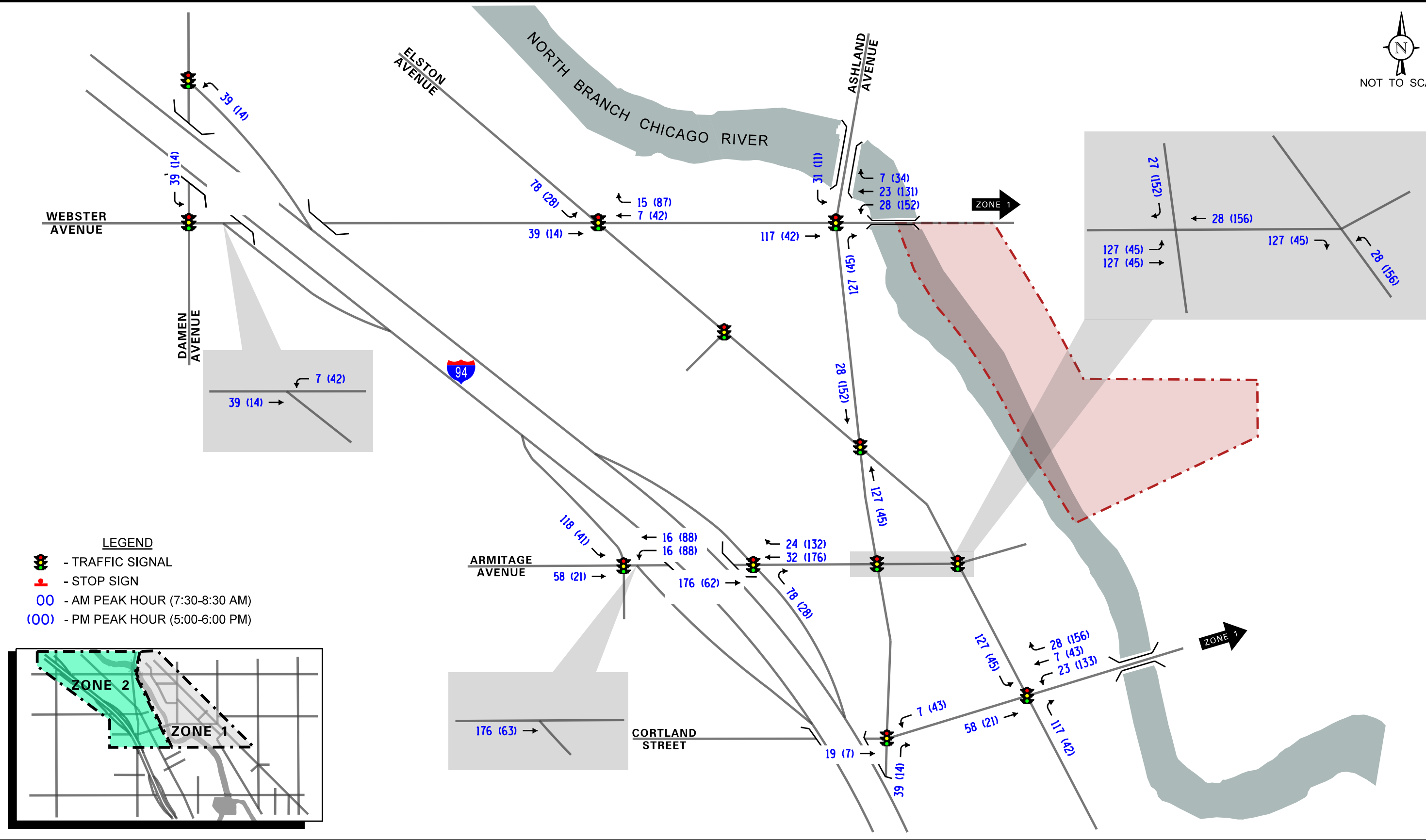
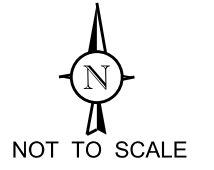


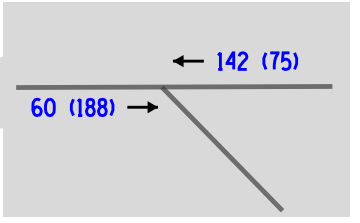
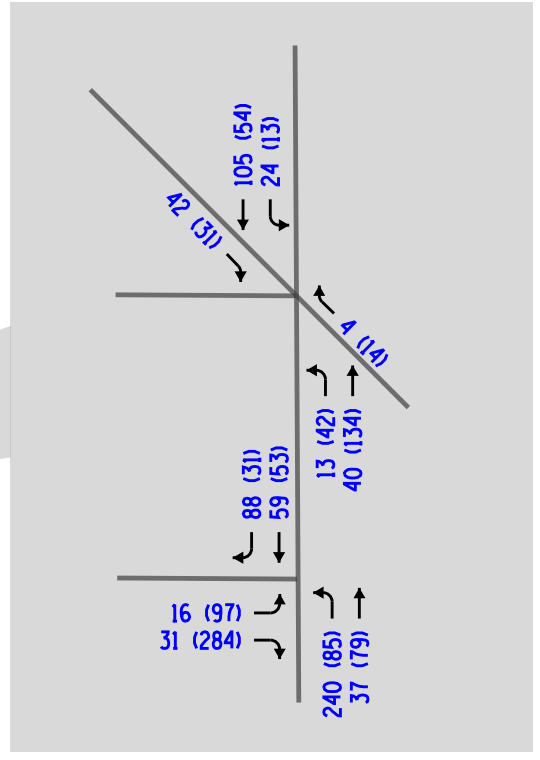
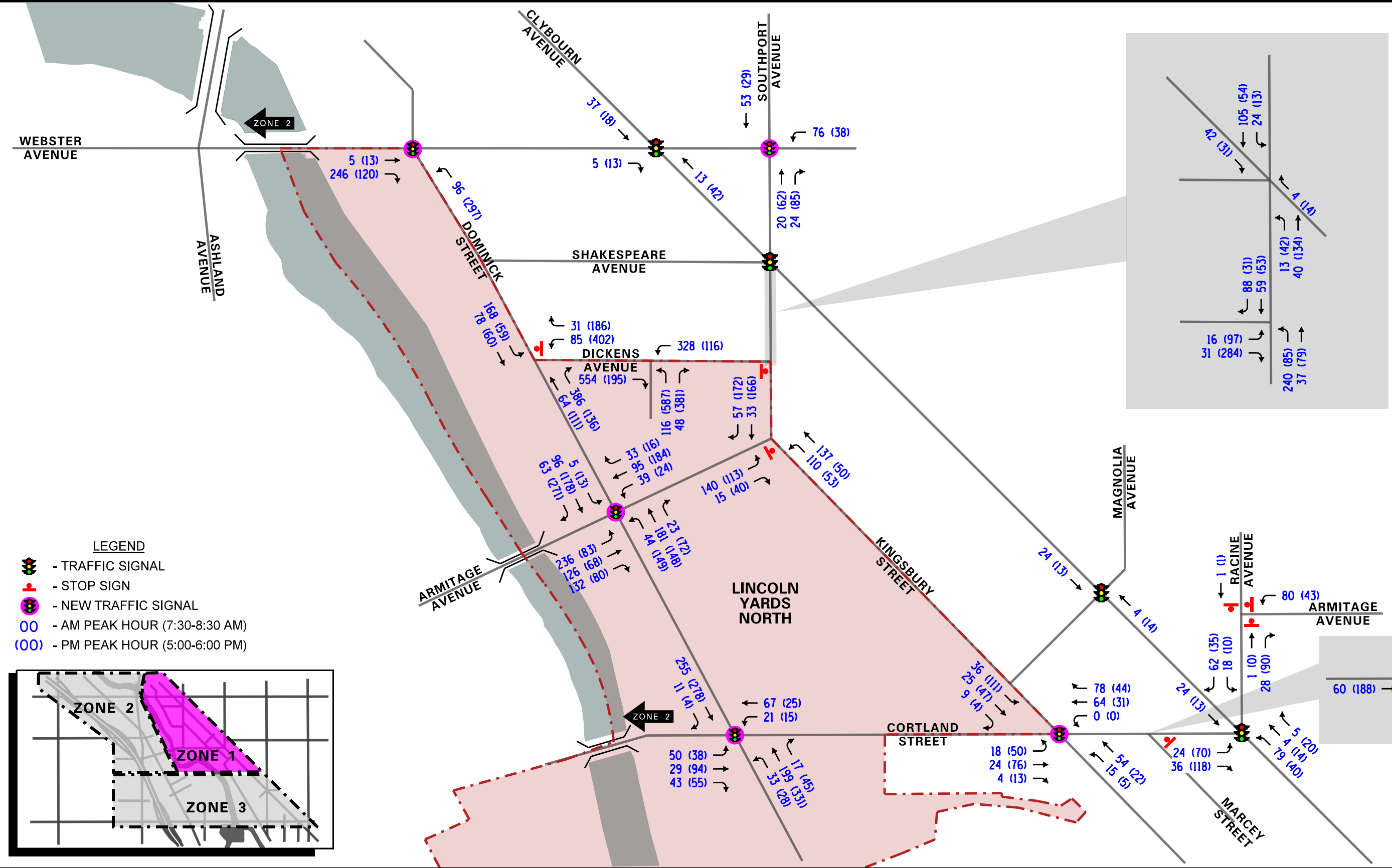
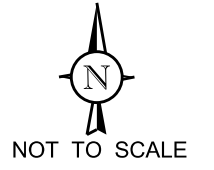
TO AND FROM THE NORTHWEST ON I-90/I-94	= 20%
TO AND FROM THE SOUTHWEST ON I-90/I-94	= 20%
TO AND FROM THE NORTH ON THE LOCAL STREET SYSTEM	= 15%
TO AND FROM THE EAST ON THE LOCAL STREET SYSTEM	= 10%
TO AND FROM THE SOUTH ON THE LOCAL STREET SYSTEM	= 20%
TO AND FROM THE WEST ON THE LOCAL STREET SYSTEM	= 15%
TOTAL	= 100%



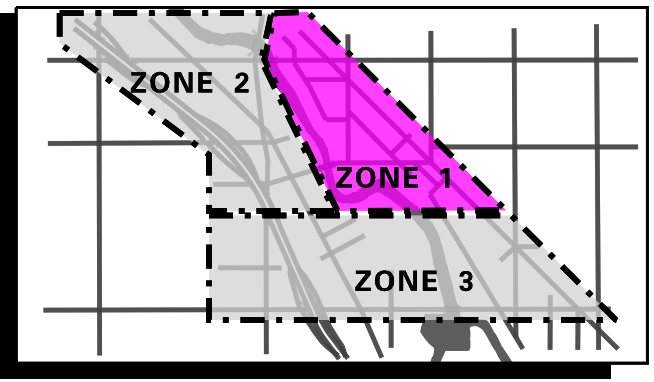
- LEGEND**
- TRAFFIC SIGNAL
 - STOP SIGN
 - NEW TRAFFIC SIGNAL
 - 00 - AM PEAK HOUR (7:30-8:30 AM)
 - (00) - PM PEAK HOUR (5:00-6:00 PM)





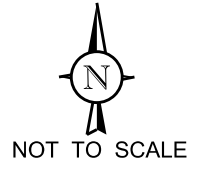


- LEGEND**
- TRAFFIC SIGNAL
 - STOP SIGN
 - NEW TRAFFIC SIGNAL
 - 00 - AM PEAK HOUR (7:30-8:30 AM)
 - (00) - PM PEAK HOUR (5:00-6:00 PM)

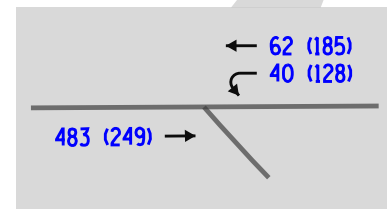
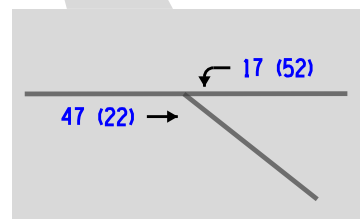
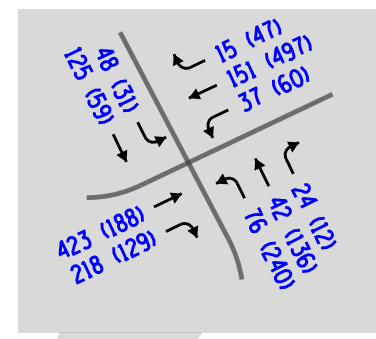
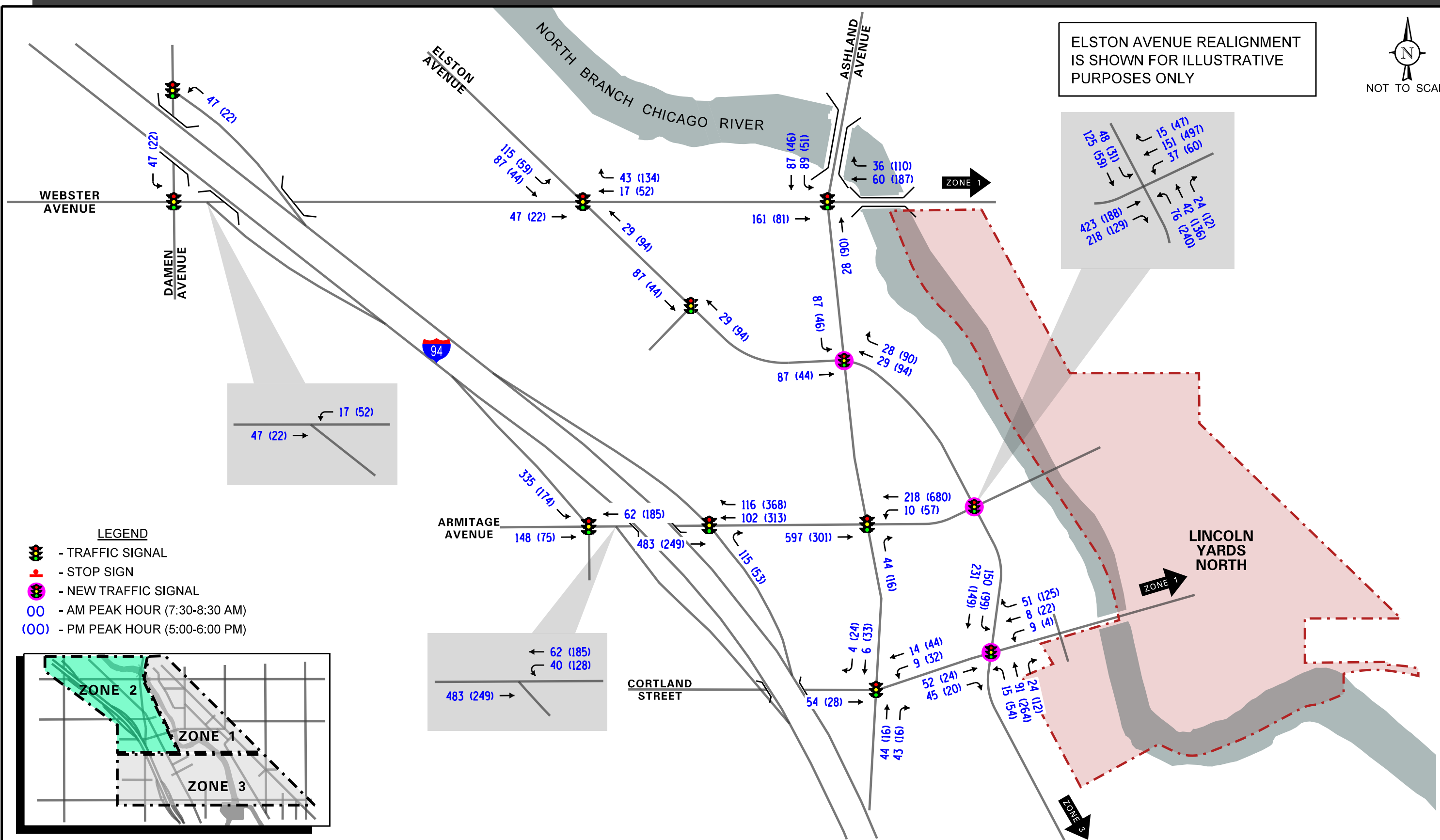


LINCOLN YARDS PDS
CHICAGO, ILLINOIS

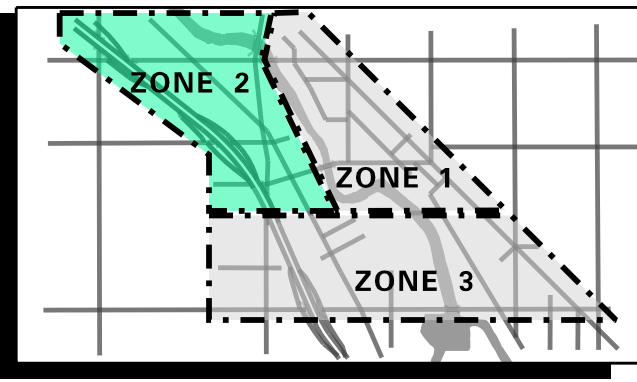
TOTAL BUILDOUT - SITE-GENERATED TRAFFIC VOLUMES - ZONE 1






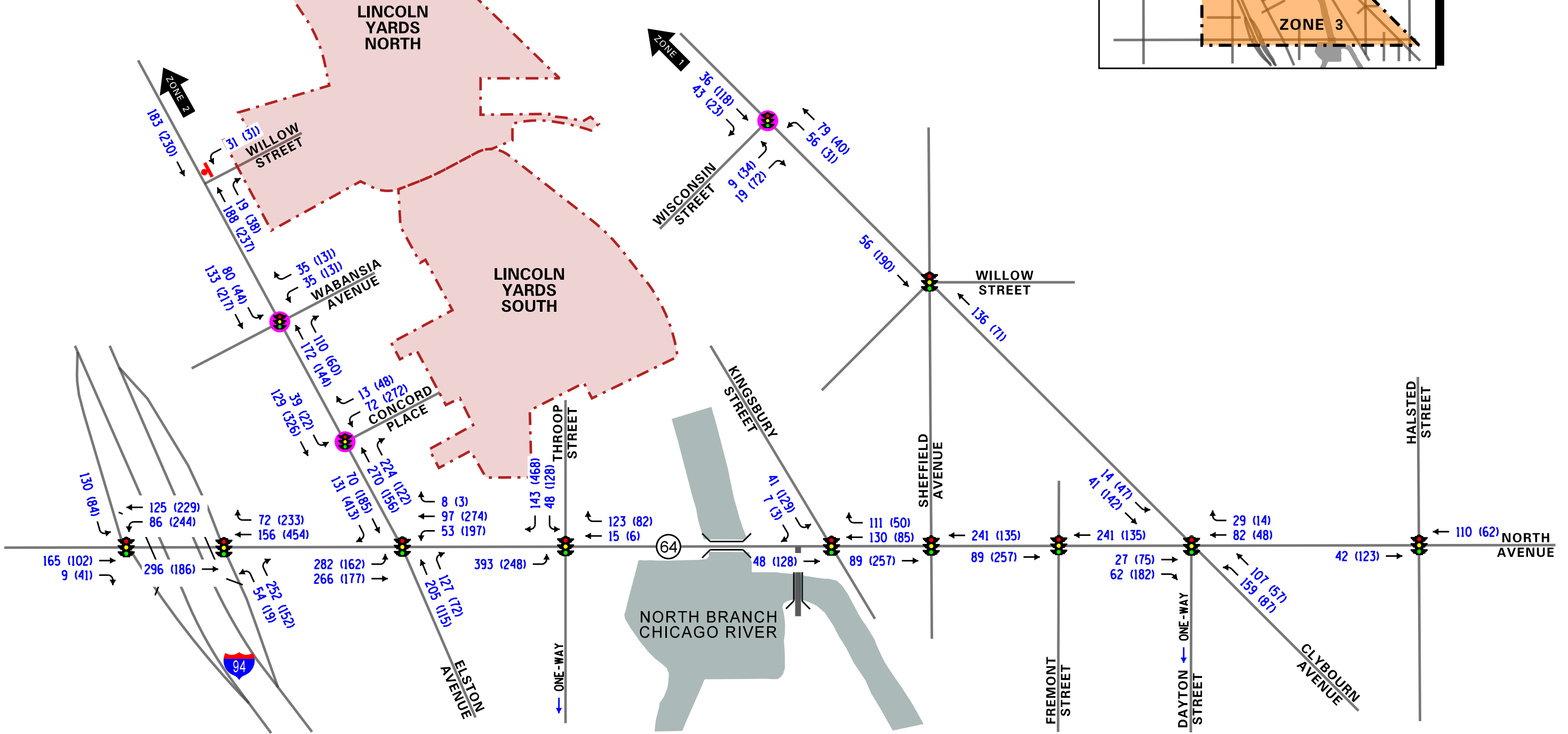
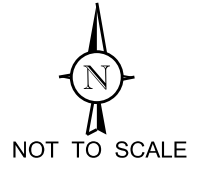
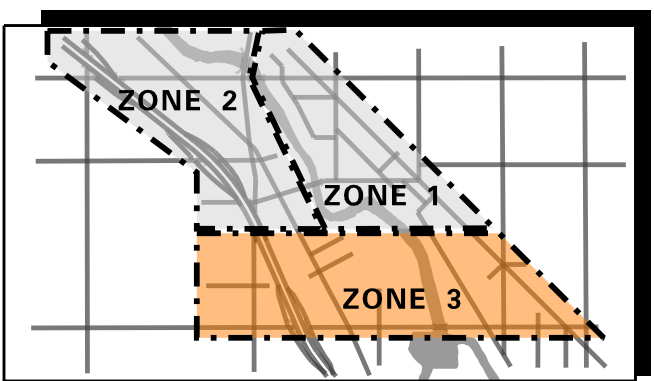
ELSTON AVENUE REALIGNMENT IS SHOWN FOR ILLUSTRATIVE PURPOSES ONLY

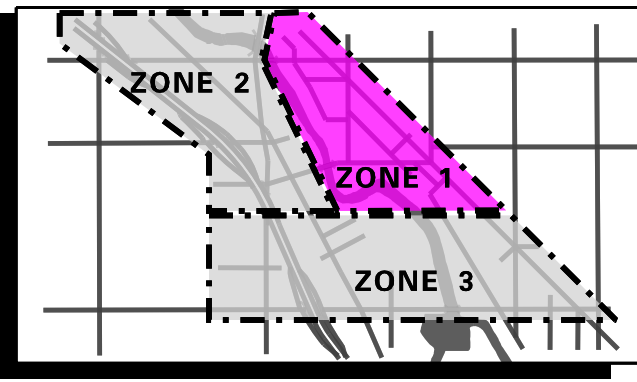
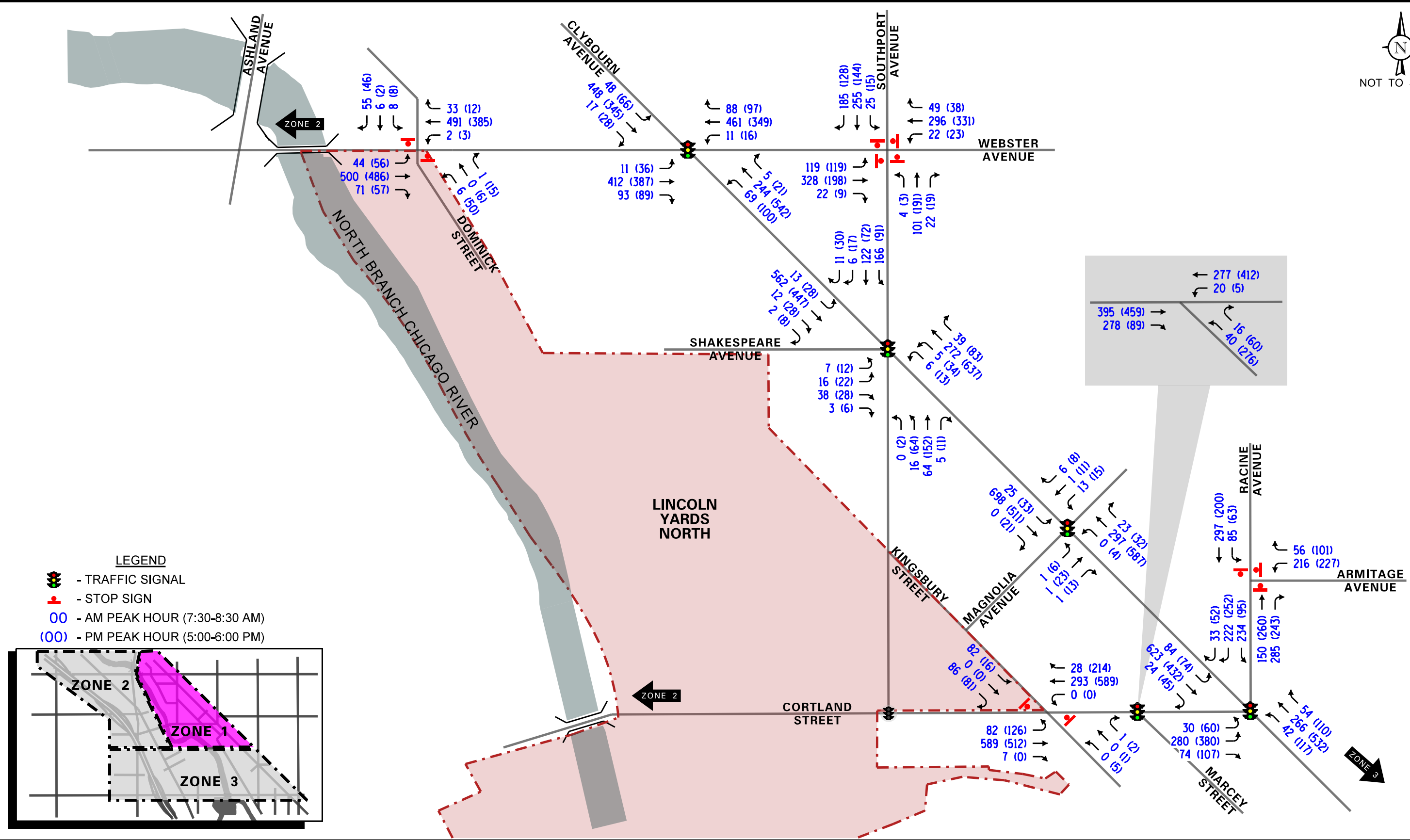


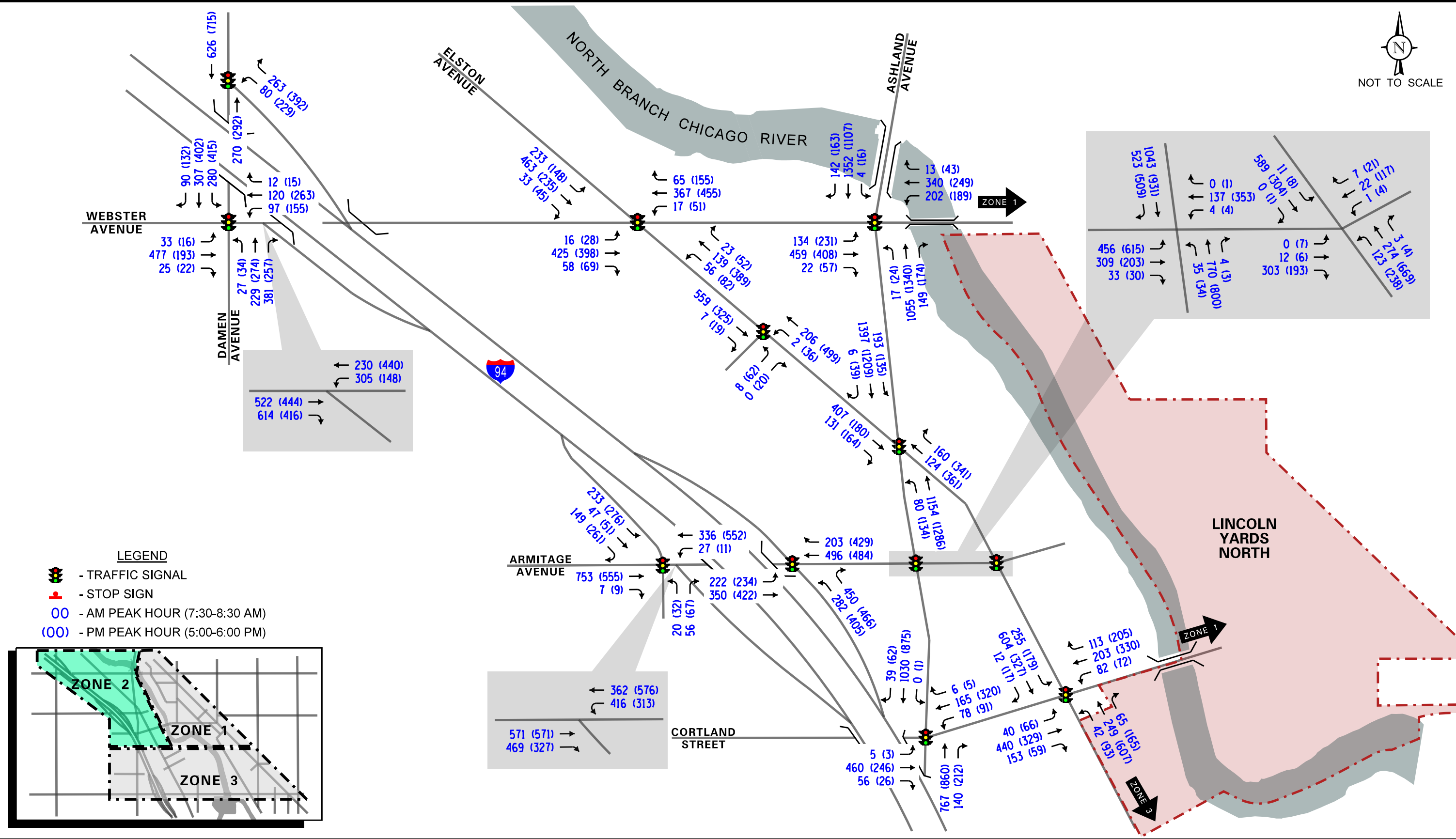
- LEGEND**
- TRAFFIC SIGNAL
 - STOP SIGN
 - NEW TRAFFIC SIGNAL
 - 00 - AM PEAK HOUR (7:30-8:30 AM)
 - (00) - PM PEAK HOUR (5:00-6:00 PM)

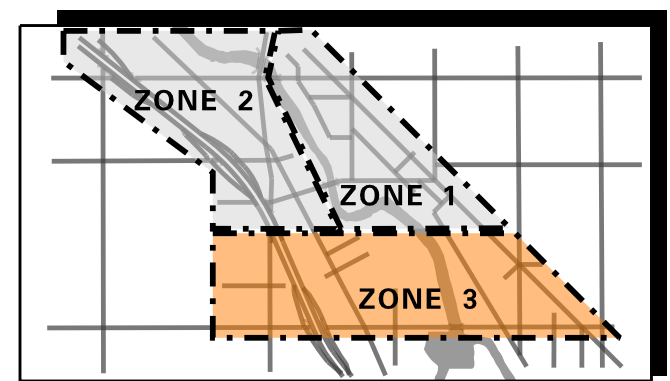
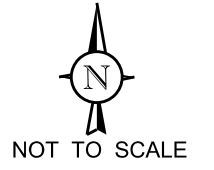


- LEGEND**
-  - TRAFFIC SIGNAL
 -  - STOP SIGN
 -  - NEW TRAFFIC SIGNAL
 - 00 - AM PEAK HOUR (7:30-8:30 AM)
 - (00) - PM PEAK HOUR (5:00-6:00 PM)

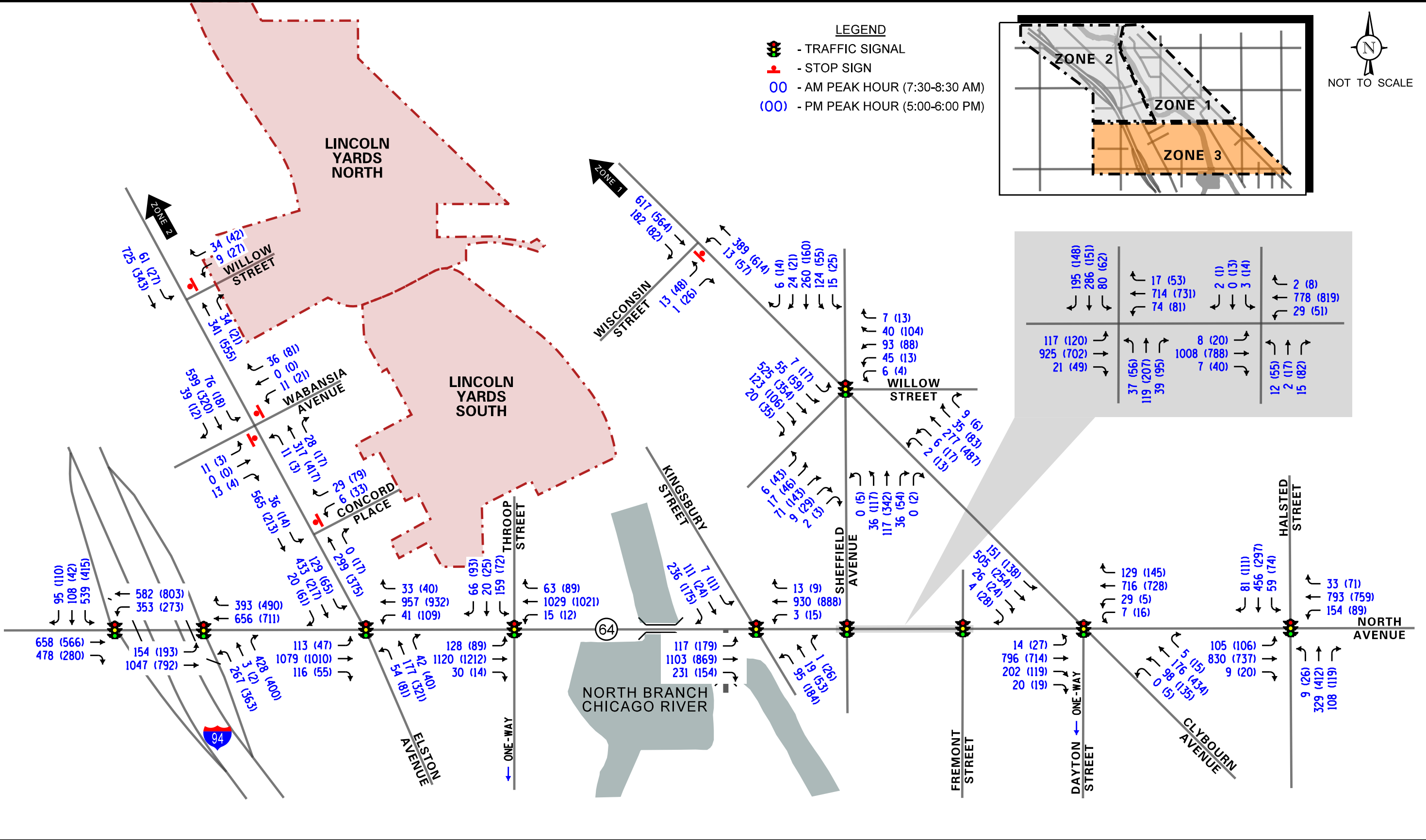


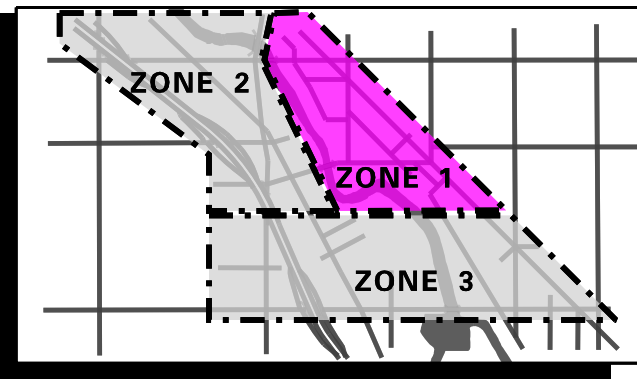
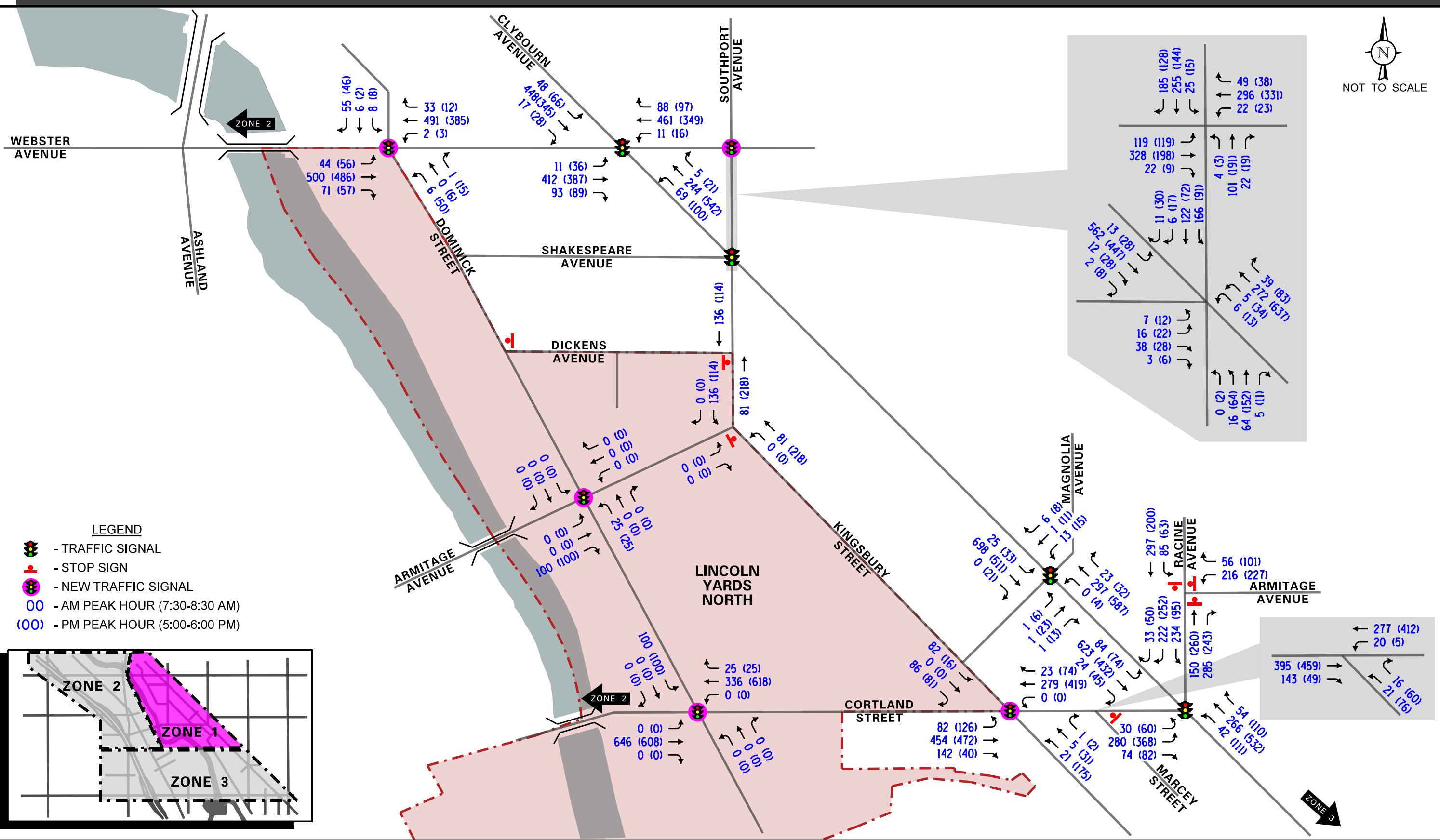
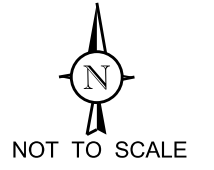




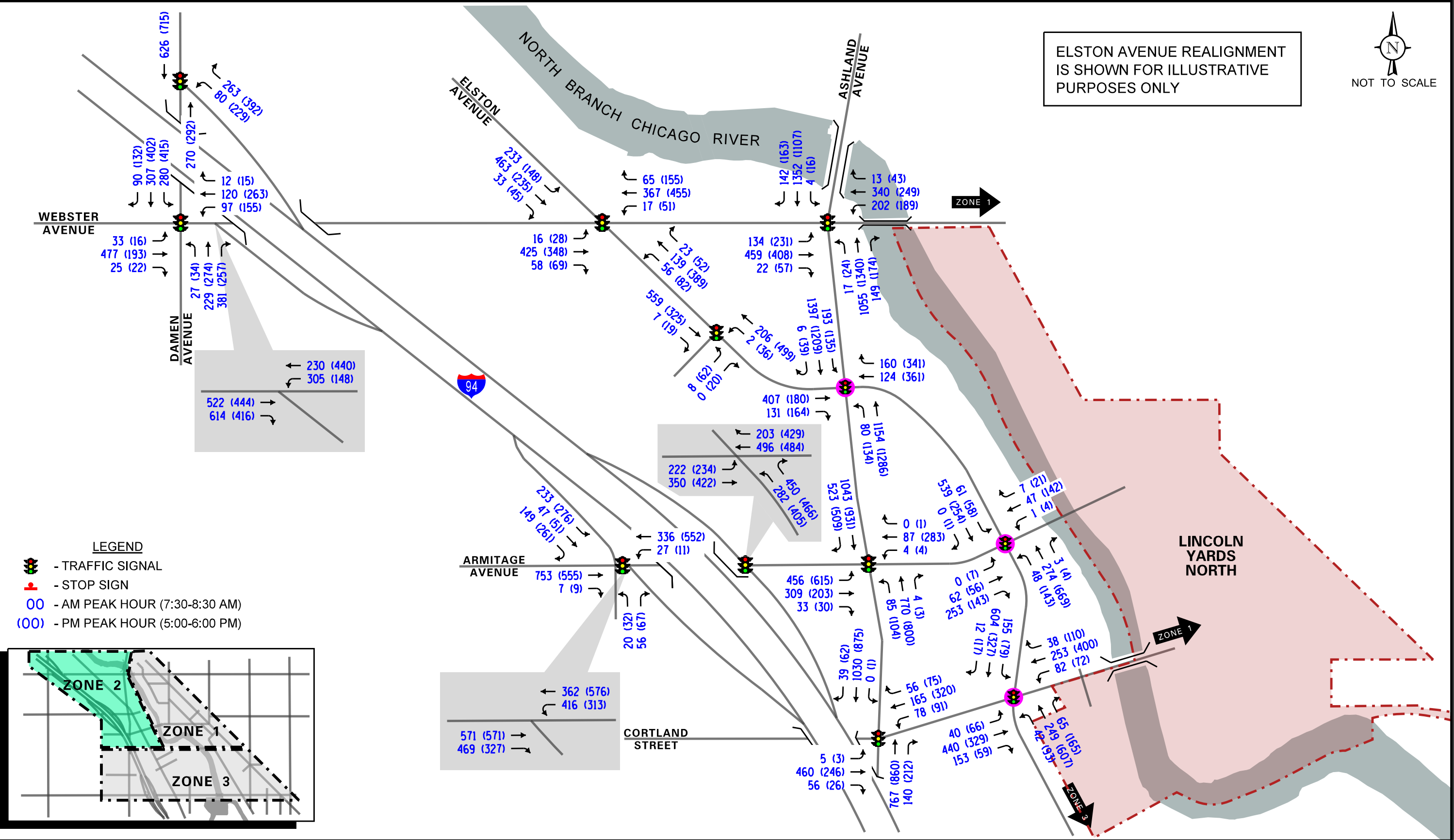
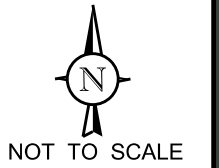


- LEGEND**
- TRAFFIC SIGNAL
 - STOP SIGN
 - 00 - AM PEAK HOUR (7:30-8:30 AM)
 - (00) - PM PEAK HOUR (5:00-6:00 PM)

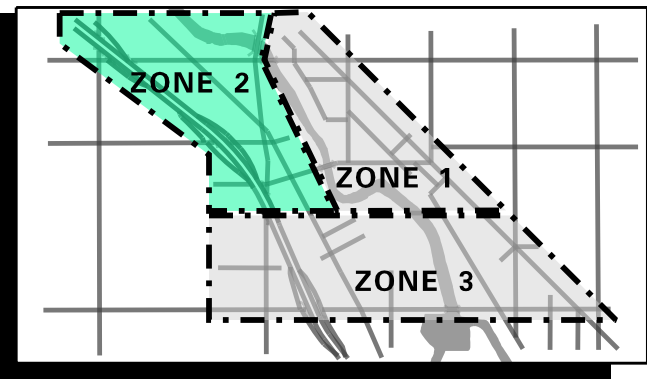


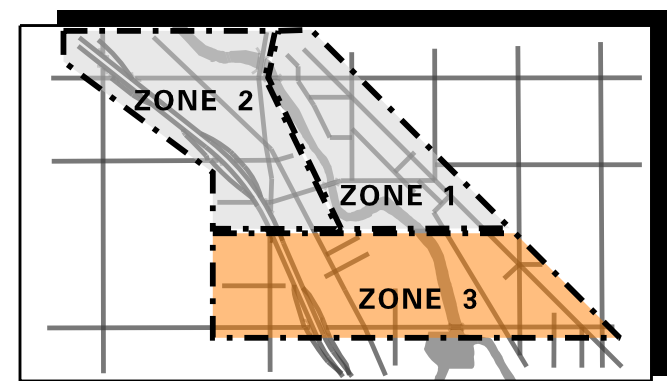
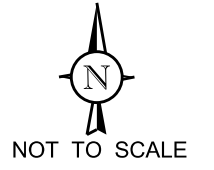


ELSTON AVENUE REALIGNMENT IS SHOWN FOR ILLUSTRATIVE PURPOSES ONLY

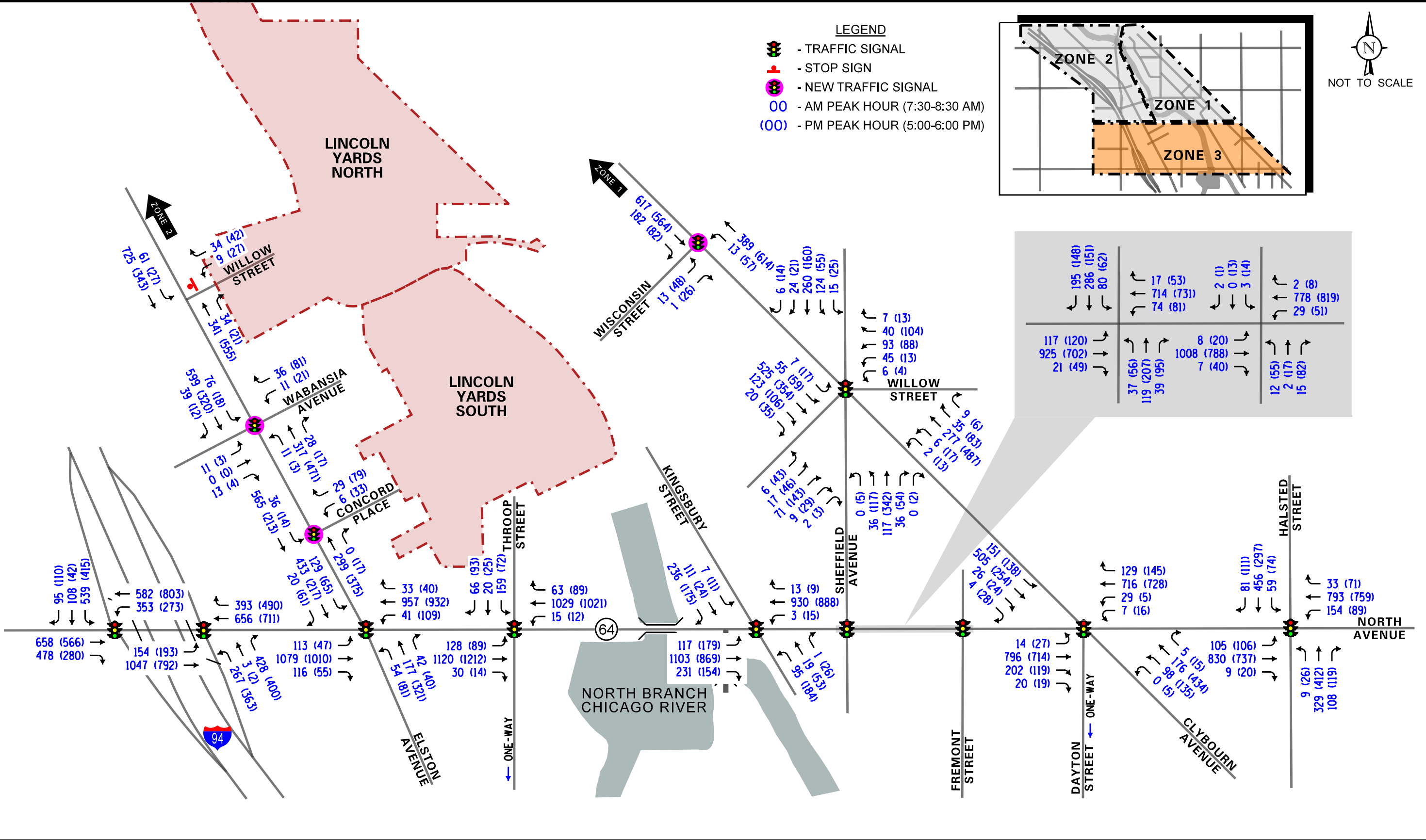


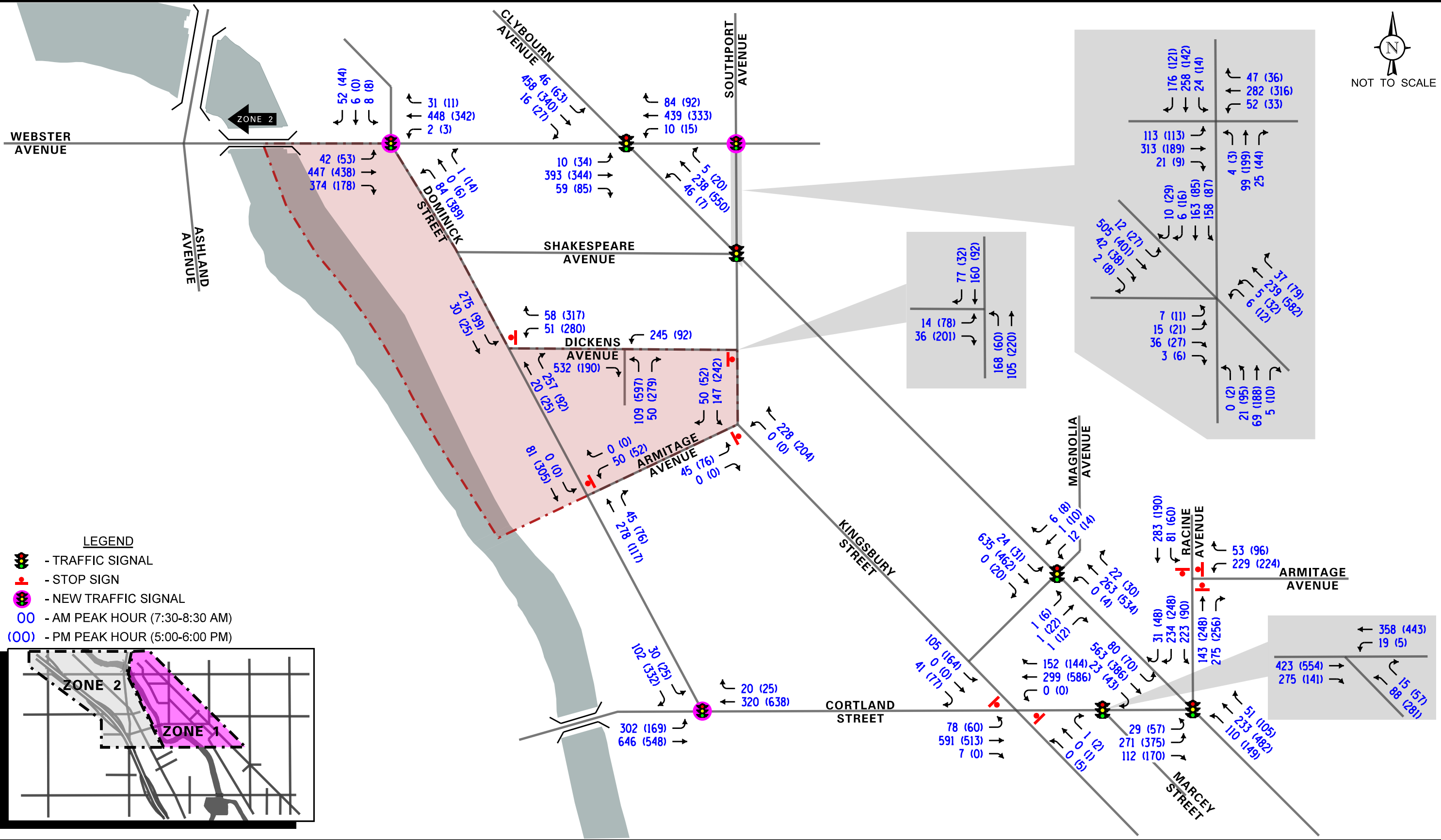
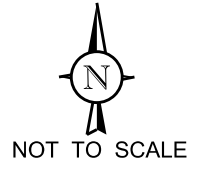
- LEGEND**
- TRAFFIC SIGNAL
 - STOP SIGN
 - 00 - AM PEAK HOUR (7:30-8:30 AM)
 - (00) - PM PEAK HOUR (5:00-6:00 PM)



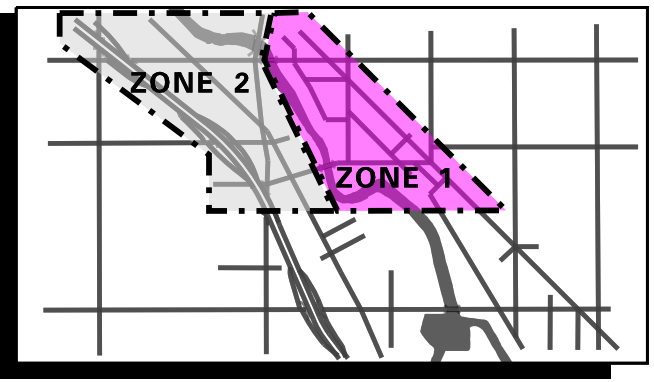


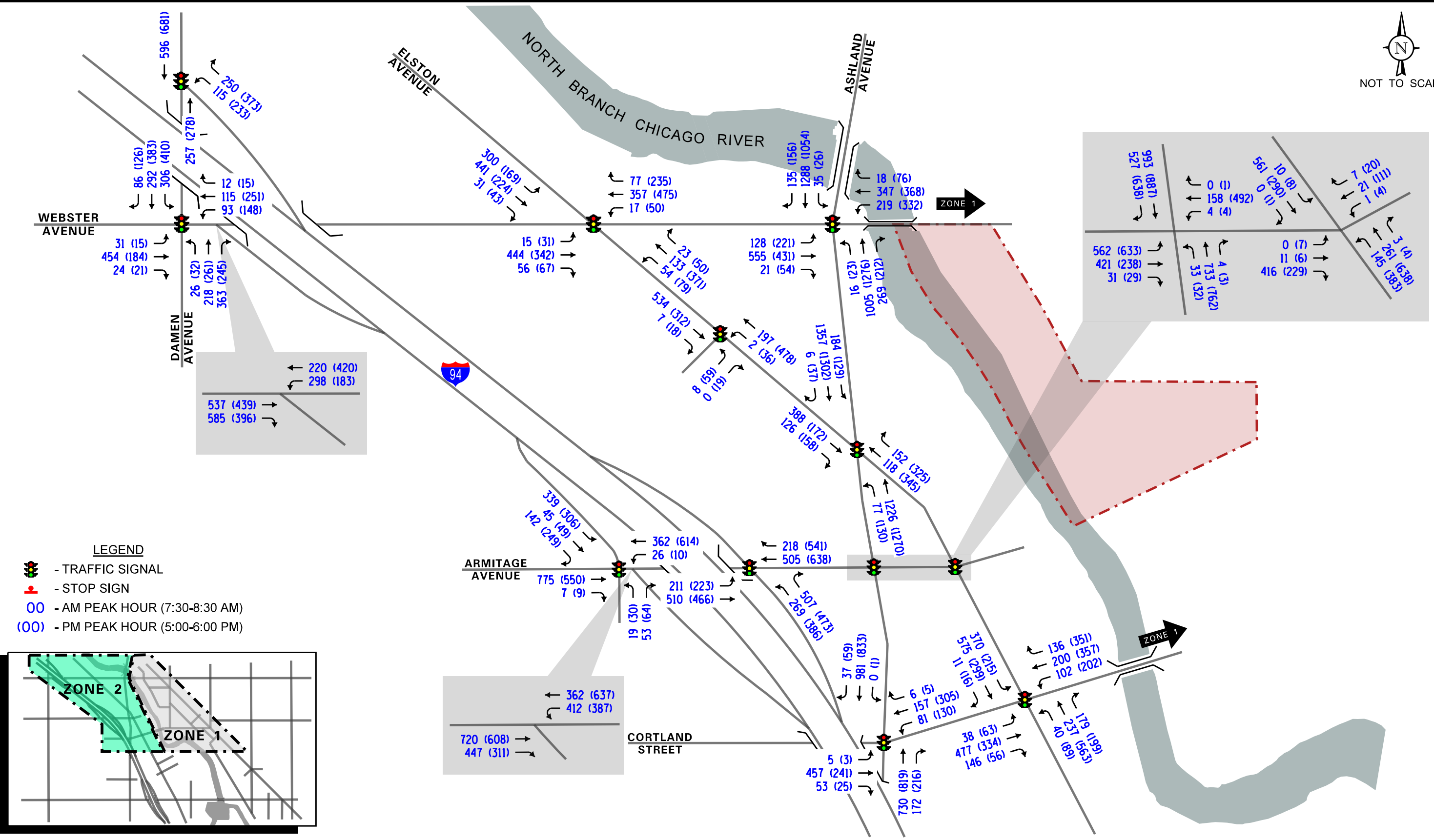
- LEGEND**
- TRAFFIC SIGNAL
 - STOP SIGN
 - NEW TRAFFIC SIGNAL
 - 00 - AM PEAK HOUR (7:30-8:30 AM)
 - (00) - PM PEAK HOUR (5:00-6:00 PM)

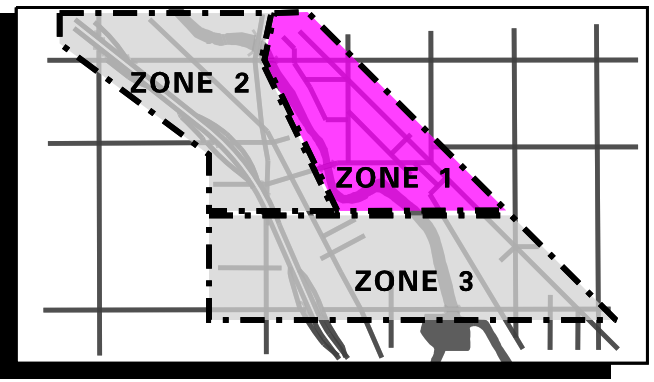
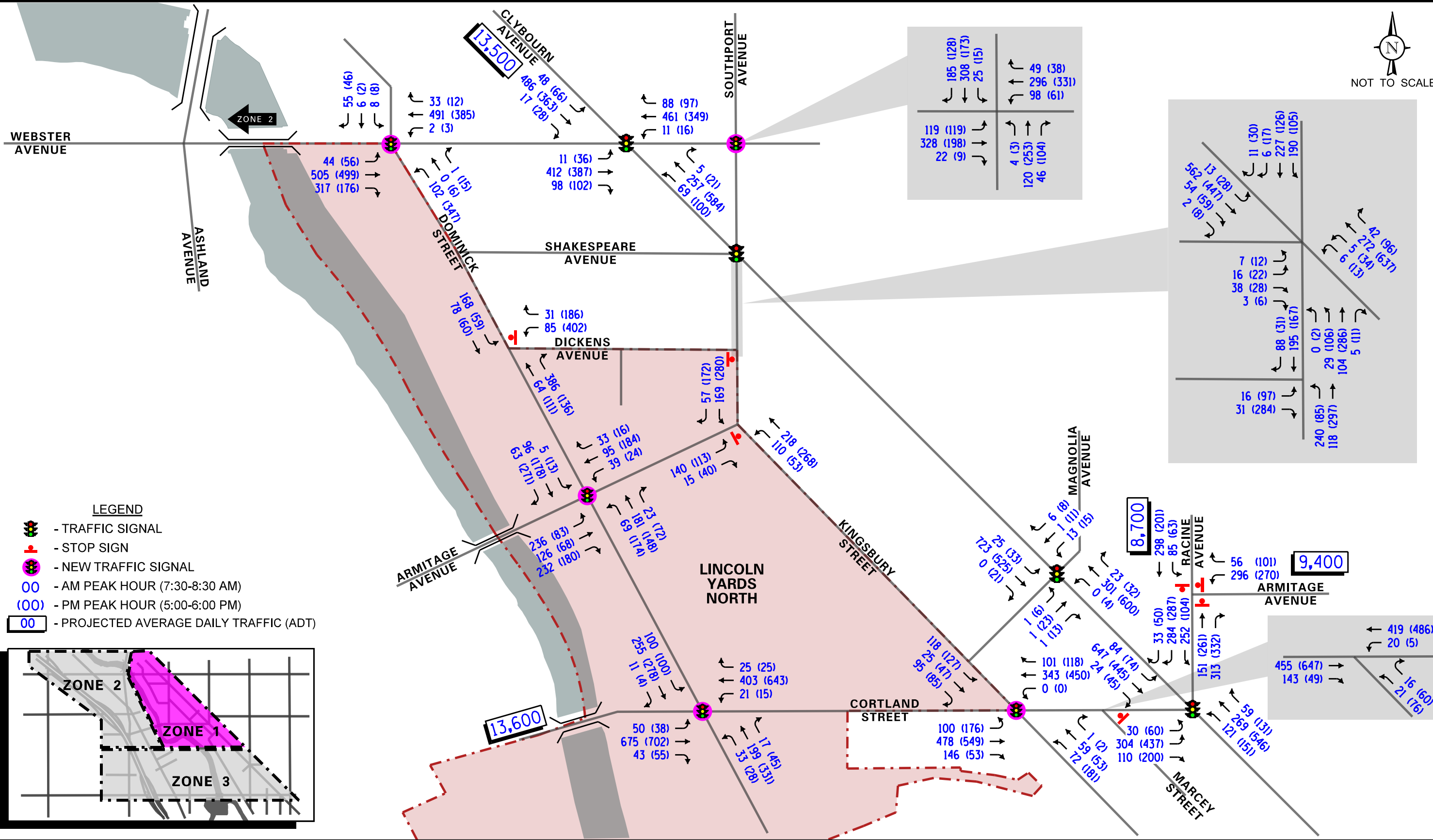
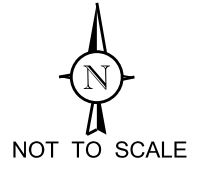


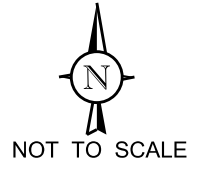


- LEGEND**
- TRAFFIC SIGNAL
 - STOP SIGN
 - NEW TRAFFIC SIGNAL
 - OO - AM PEAK HOUR (7:30-8:30 AM)
 - (OO) - PM PEAK HOUR (5:00-6:00 PM)

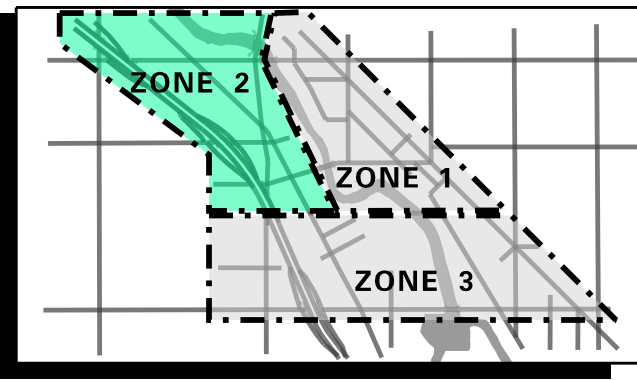
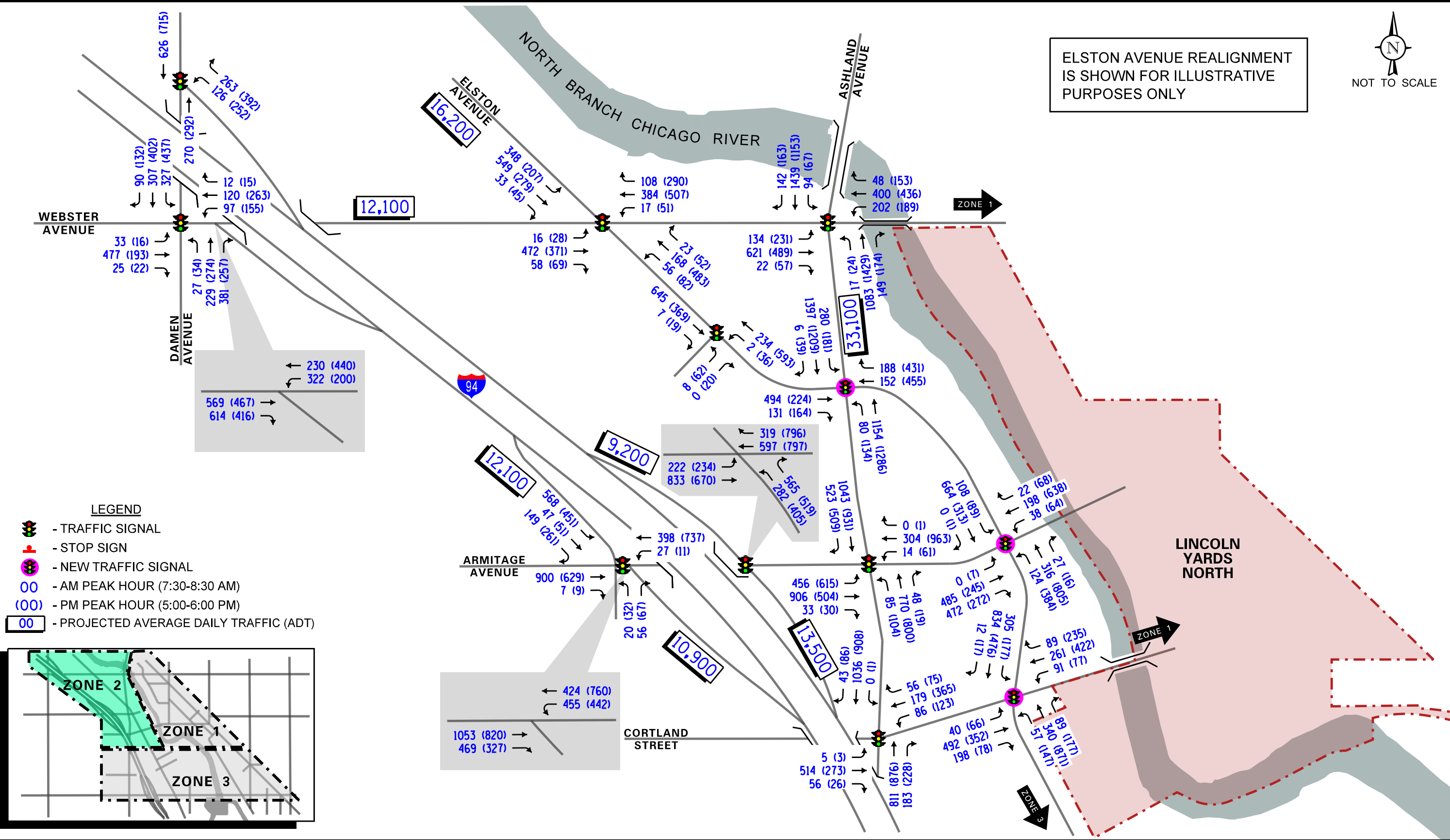


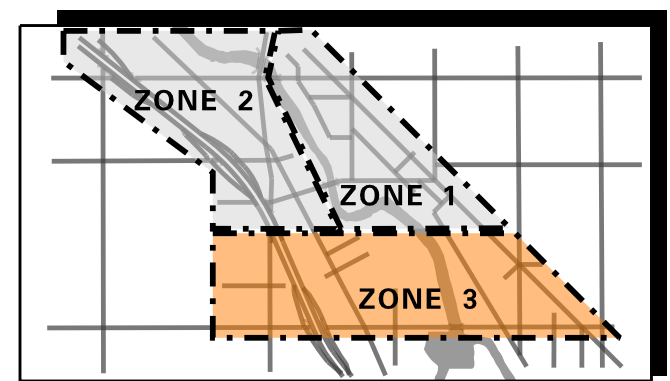
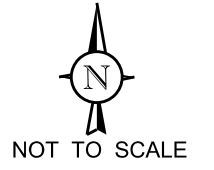




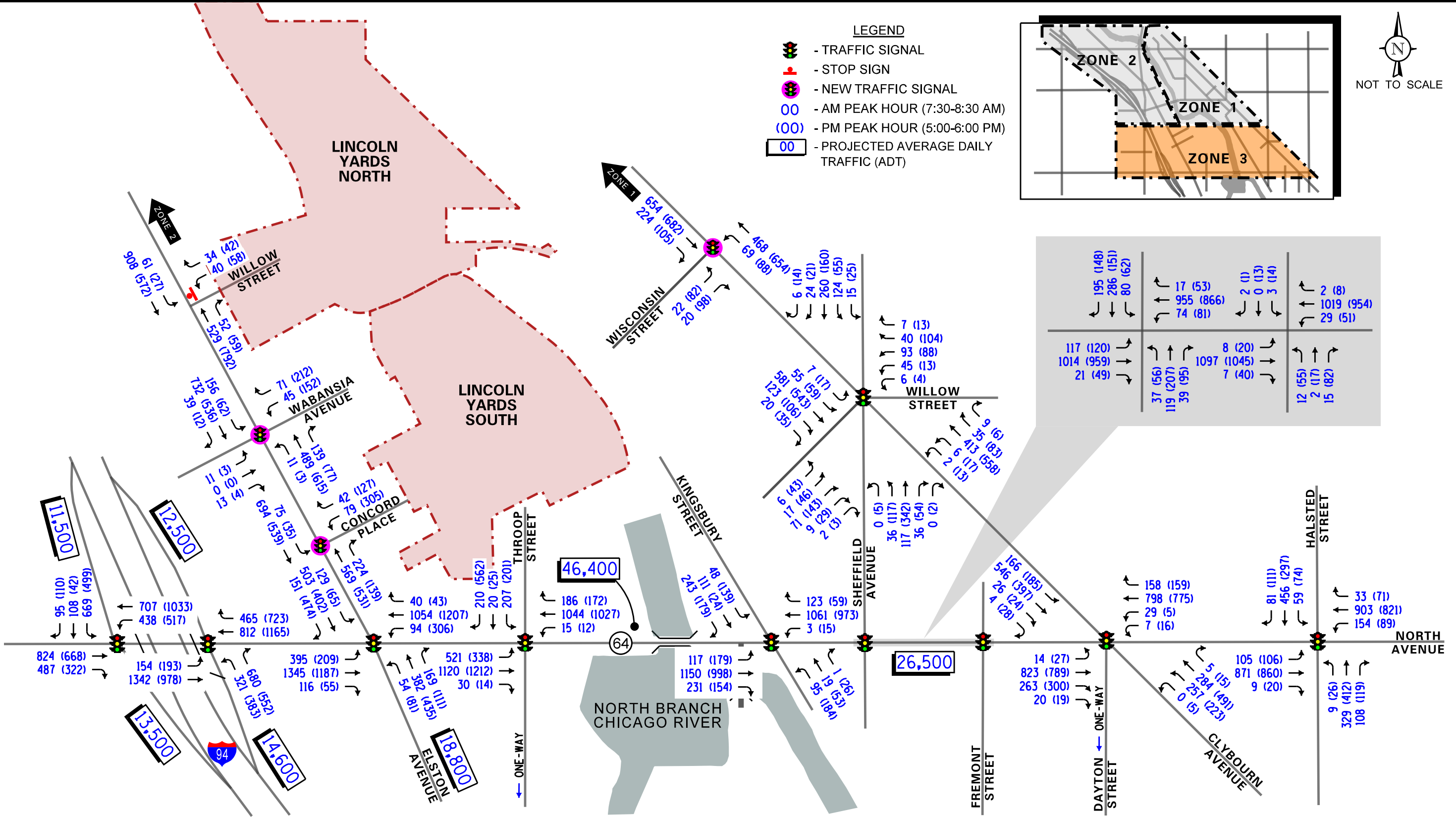


ELSTON AVENUE REALIGNMENT IS SHOWN FOR ILLUSTRATIVE PURPOSES ONLY





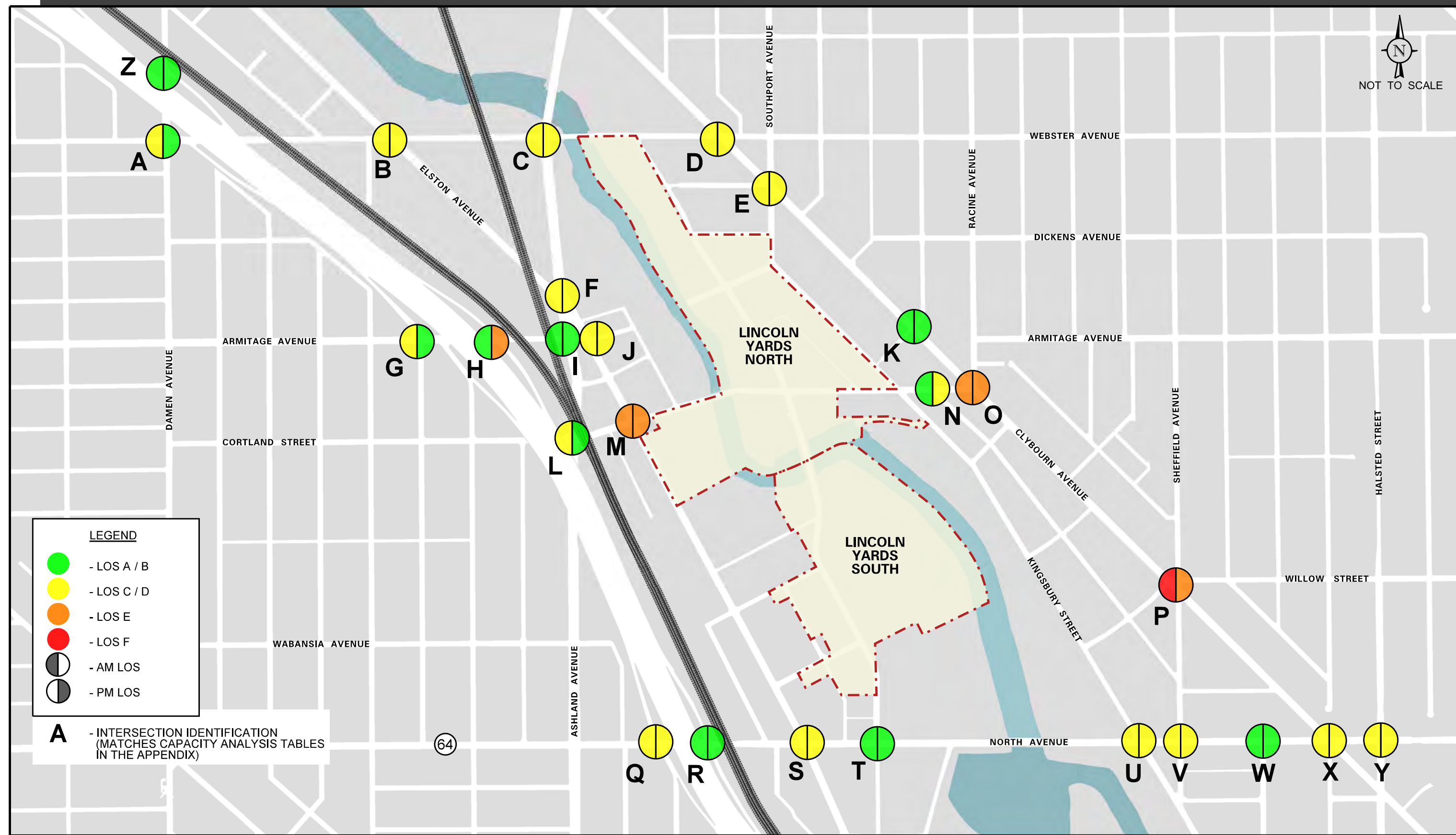
- LEGEND**
- TRAFFIC SIGNAL
 - STOP SIGN
 - NEW TRAFFIC SIGNAL
 - 00 - AM PEAK HOUR (7:30-8:30 AM)
 - (00) - PM PEAK HOUR (5:00-6:00 PM)
 - 00 - PROJECTED AVERAGE DAILY TRAFFIC (ADT)

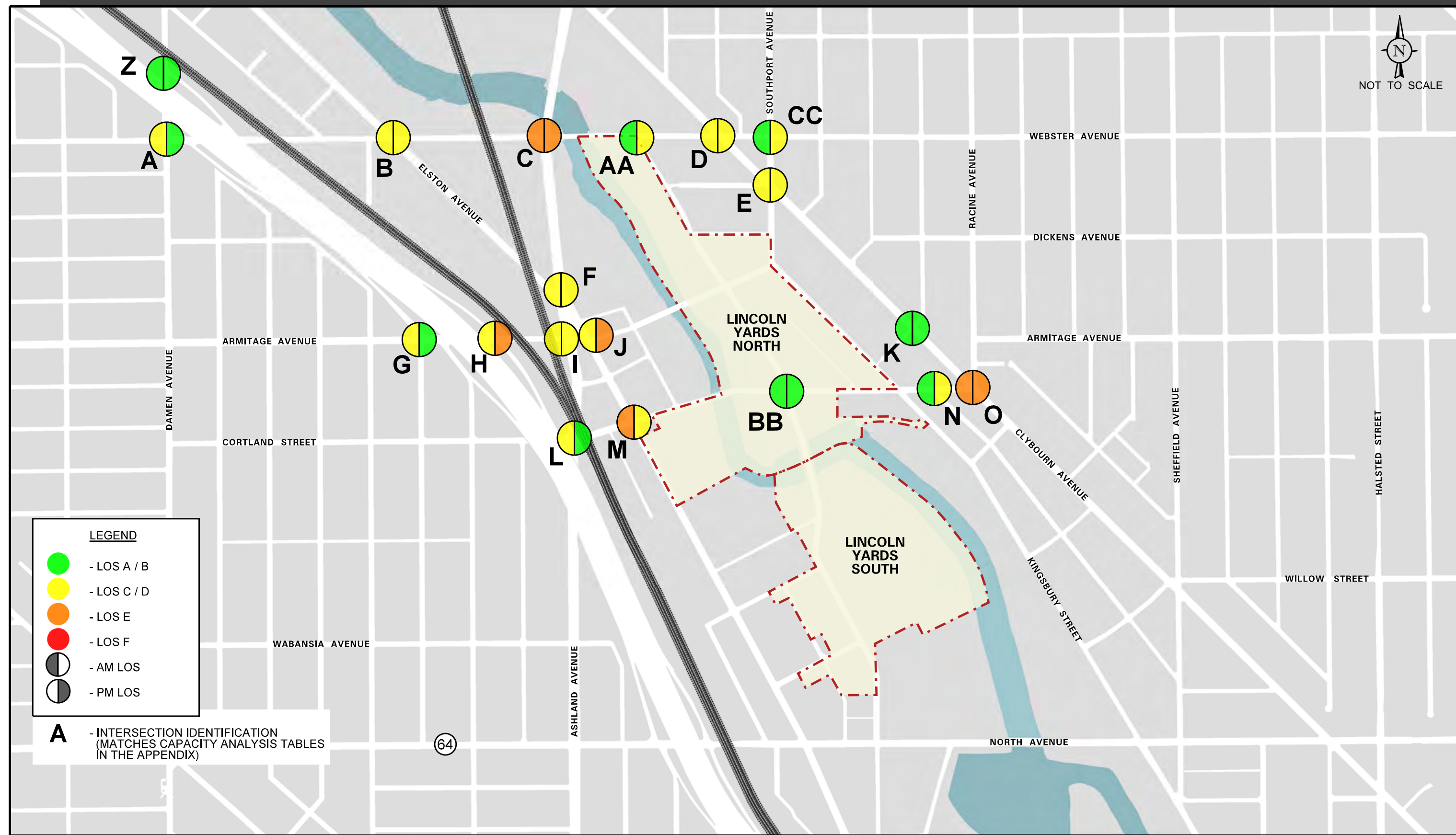
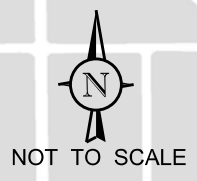


LEGEND

- - LOS A / B
- - LOS C / D
- - LOS E
- - LOS F
- AM LOS
- PM LOS

A - INTERSECTION IDENTIFICATION
(MATCHES CAPACITY ANALYSIS TABLES
IN THE APPENDIX)

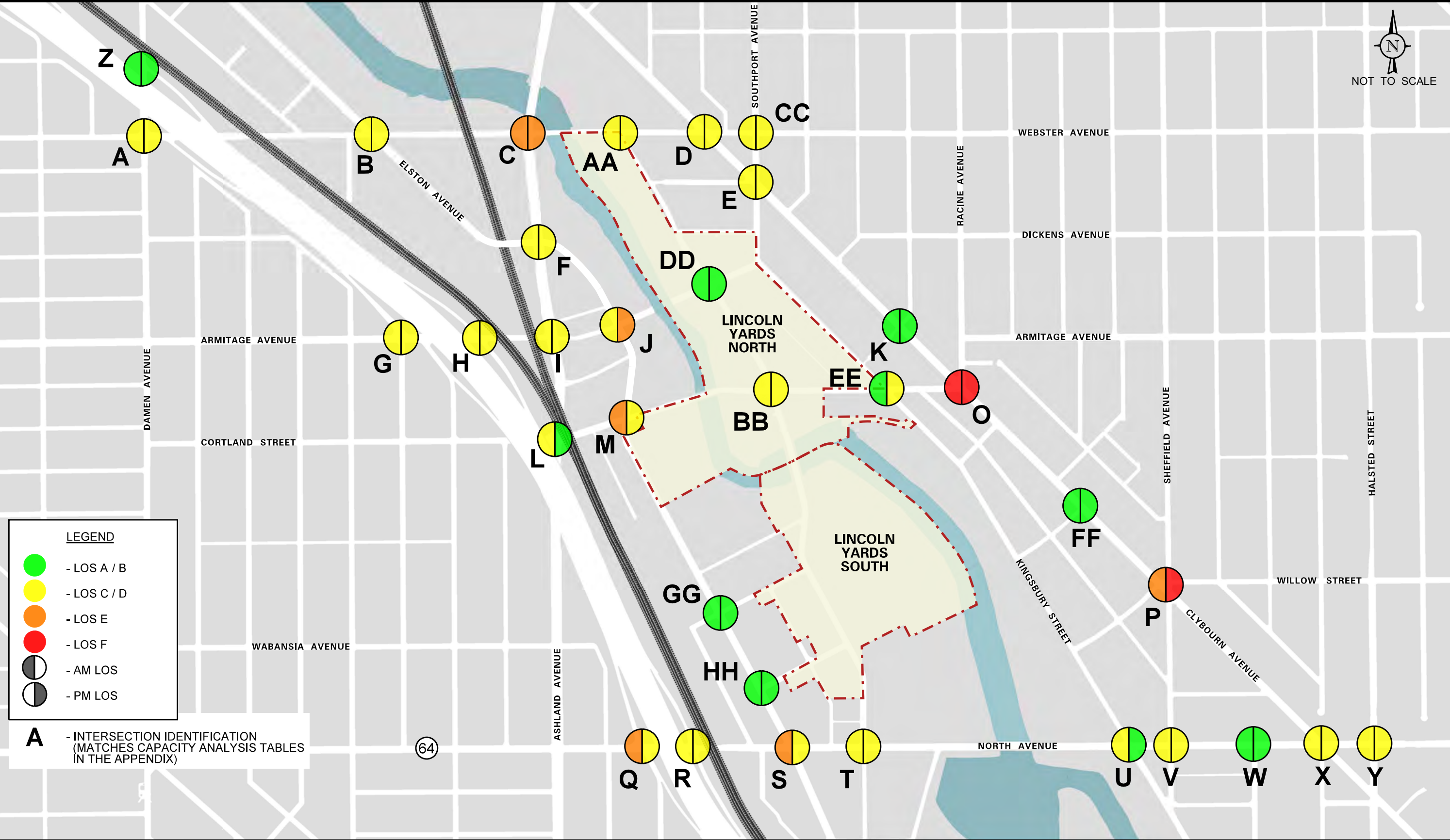
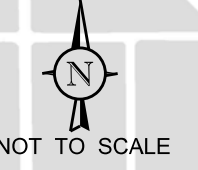




LEGEND

- - LOS A / B
- - LOS C / D
- - LOS E
- - LOS F
- AM LOS
- PM LOS

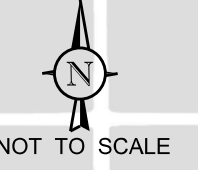
A - INTERSECTION IDENTIFICATION
(MATCHES CAPACITY ANALYSIS TABLES
IN THE APPENDIX)



LEGEND

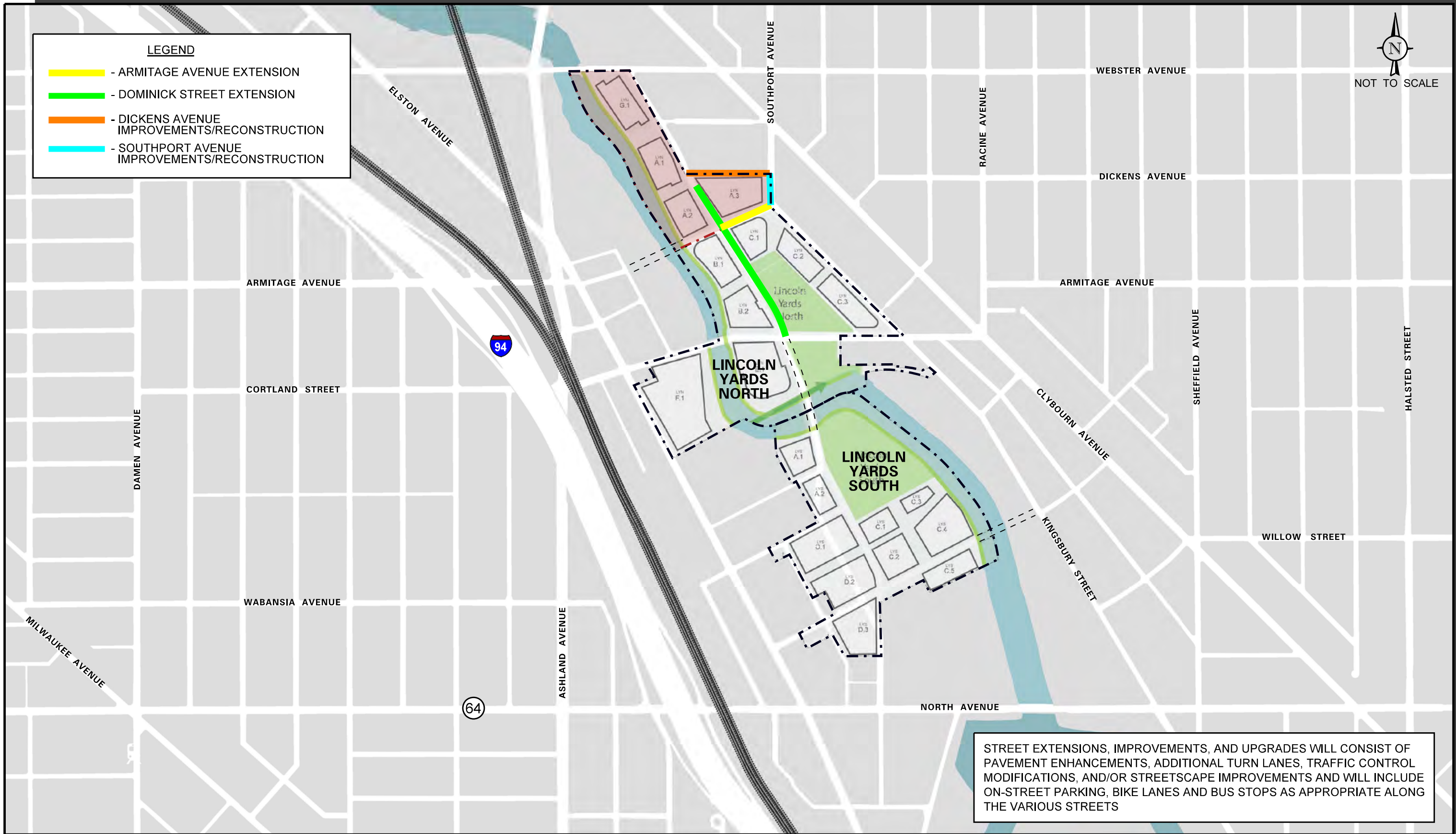
- - LOS A / B
- - LOS C / D
- - LOS E
- - LOS F
- AM LOS
- PM LOS

A - INTERSECTION IDENTIFICATION
(MATCHES CAPACITY ANALYSIS TABLES
IN THE APPENDIX)

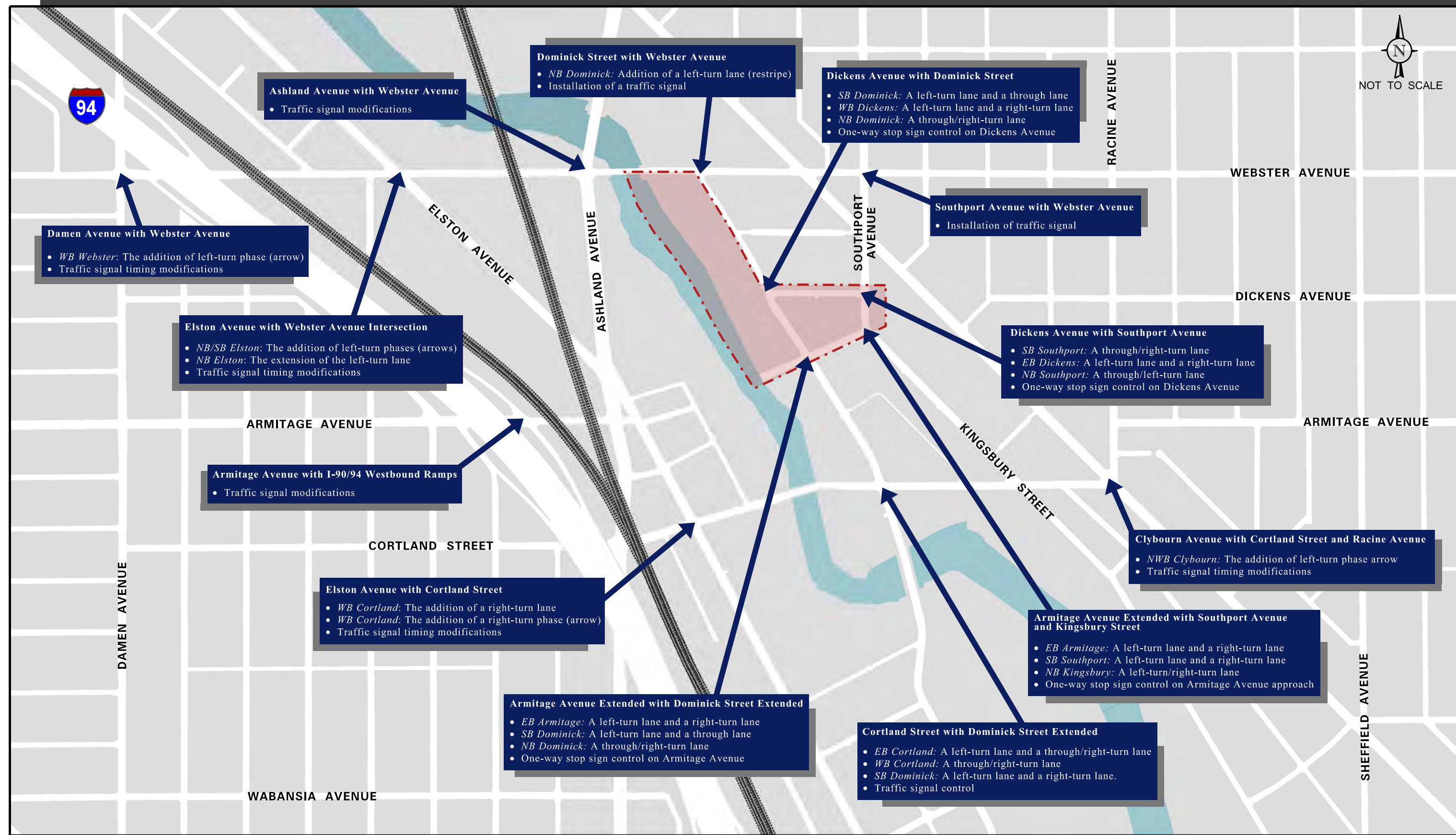
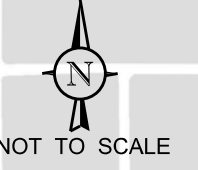


LEGEND

- ARMITAGE AVENUE EXTENSION
- DOMINICK STREET EXTENSION
- DICKENS AVENUE IMPROVEMENTS/RECONSTRUCTION
- SOUTHPORT AVENUE IMPROVEMENTS/RECONSTRUCTION



STREET EXTENSIONS, IMPROVEMENTS, AND UPGRADES WILL CONSIST OF PAVEMENT ENHANCEMENTS, ADDITIONAL TURN LANES, TRAFFIC CONTROL MODIFICATIONS, AND/OR STREETScape IMPROVEMENTS AND WILL INCLUDE ON-STREET PARKING, BIKE LANES AND BUS STOPS AS APPROPRIATE ALONG THE VARIOUS STREETS



Damen Avenue with Webster Avenue

- *WB Webster*: The addition of left-turn phase (arrow)
- Traffic signal timing modifications

Ashland Avenue with Webster Avenue

- Traffic signal modifications

Dominick Street with Webster Avenue

- *NB Dominick*: Addition of a left-turn lane (restripe)
- Installation of a traffic signal

Dickens Avenue with Dominick Street

- *SB Dominick*: A left-turn lane and a through lane
- *WB Dickens*: A left-turn lane and a right-turn lane
- *NB Dominick*: A through/right-turn lane
- One-way stop sign control on Dickens Avenue

Southport Avenue with Webster Avenue

- Installation of traffic signal

Elston Avenue with Webster Avenue Intersection

- *NB/SB Elston*: The addition of left-turn phases (arrows)
- *NB Elston*: The extension of the left-turn lane
- Traffic signal timing modifications

Dickens Avenue with Southport Avenue

- *SB Southport*: A through/right-turn lane
- *EB Dickens*: A left-turn lane and a right-turn lane
- *NB Southport*: A through/left-turn lane
- One-way stop sign control on Dickens Avenue

Armitage Avenue with I-90/94 Westbound Ramps

- Traffic signal modifications

Clybourn Avenue with Cortland Street and Racine Avenue

- *NWB Clybourn*: The addition of left-turn phase arrow
- Traffic signal timing modifications

Elston Avenue with Cortland Street

- *WB Cortland*: The addition of a right-turn lane
- *WB Cortland*: The addition of a right-turn phase (arrow)
- Traffic signal timing modifications

Armitage Avenue Extended with Southport Avenue and Kingsbury Street

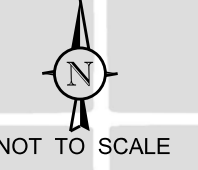
- *EB Armitage*: A left-turn lane and a right-turn lane
- *SB Southport*: A left-turn lane and a right-turn lane
- *NB Kingsbury*: A left-turn/right-turn lane
- One-way stop sign control on Armitage Avenue approach

Armitage Avenue Extended with Dominick Street Extended

- *EB Armitage*: A left-turn lane and a right-turn lane
- *SB Dominick*: A left-turn lane and a through lane
- *NB Dominick*: A through/right-turn lane
- One-way stop sign control on Armitage Avenue

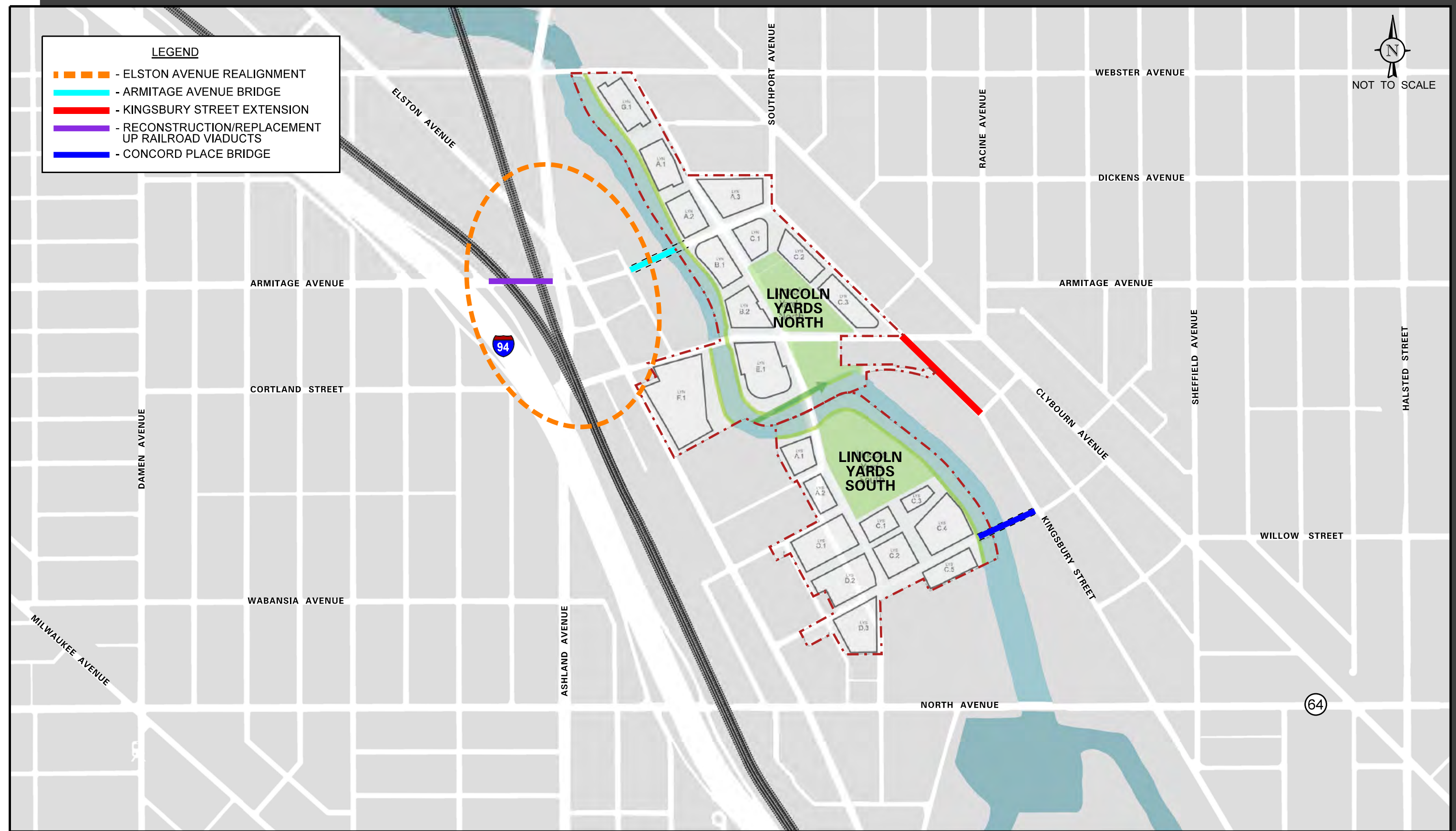
Cortland Street with Dominick Street Extended

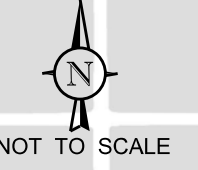
- *EB Cortland*: A left-turn lane and a through/right-turn lane
- *WB Cortland*: A through/right-turn lane
- *SB Dominick*: A left-turn lane and a right-turn lane.
- Traffic signal control



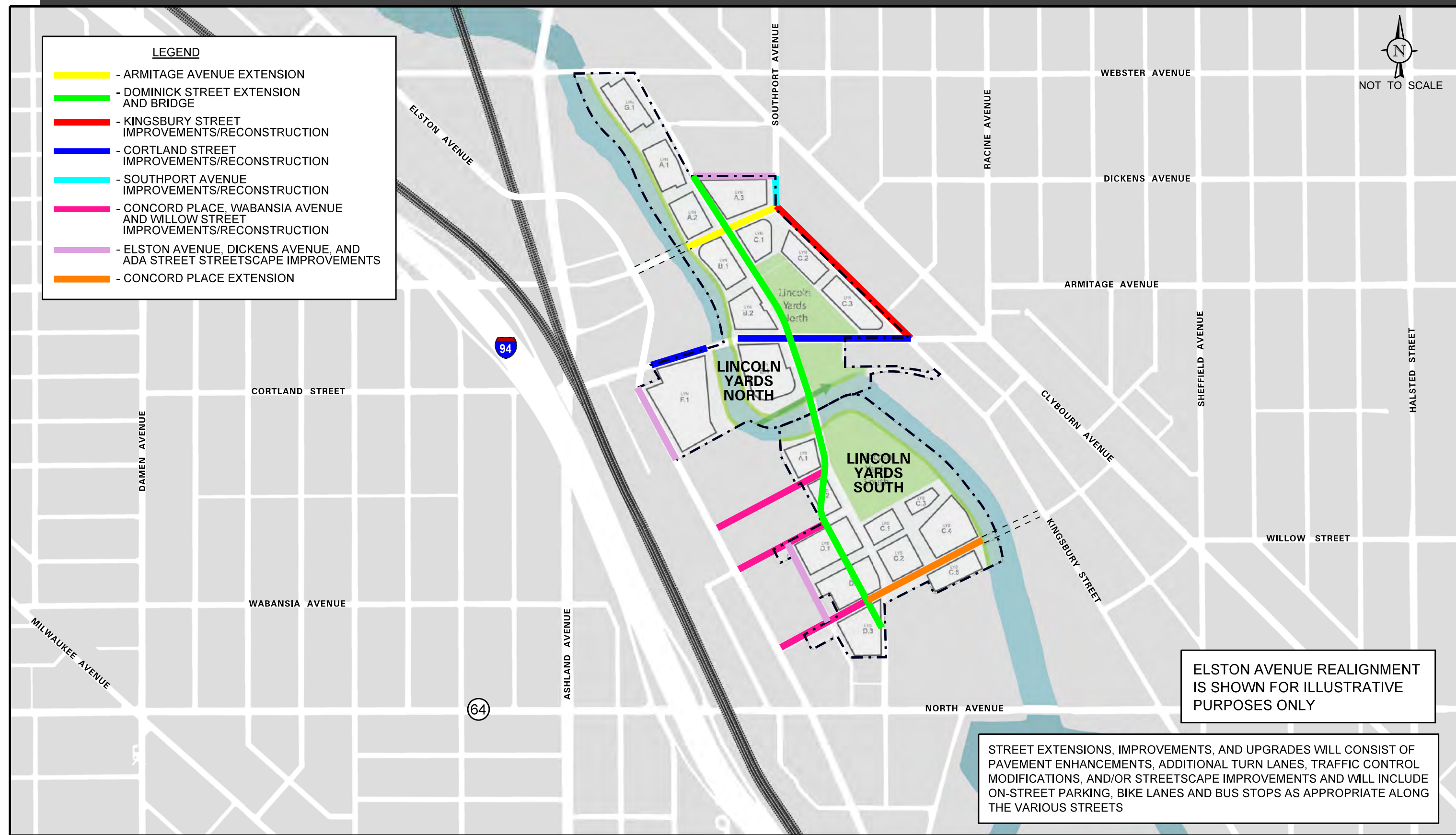
LEGEND

- - - - ELSTON AVENUE REALIGNMENT
- - ARMITAGE AVENUE BRIDGE
- - KINGSBURY STREET EXTENSION
- - RECONSTRUCTION/REPLACEMENT UP RAILROAD VIADUCTS
- - CONCORD PLACE BRIDGE



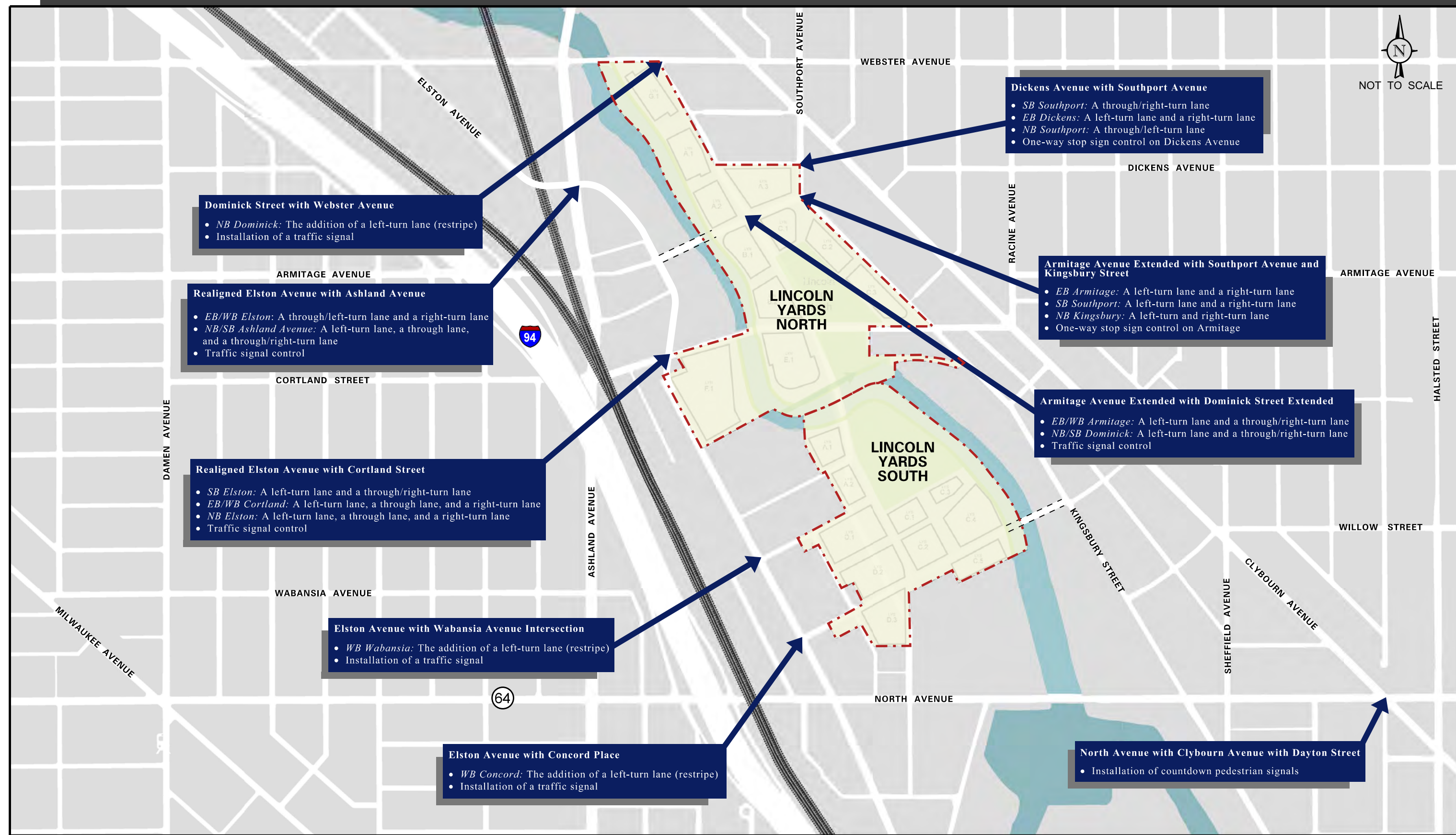
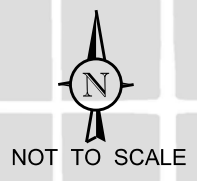


- LEGEND**
- - ARMITAGE AVENUE EXTENSION
 - - DOMINICK STREET EXTENSION AND BRIDGE
 - - KINGSBURY STREET IMPROVEMENTS/RECONSTRUCTION
 - - CORTLAND STREET IMPROVEMENTS/RECONSTRUCTION
 - - SOUTHPORT AVENUE IMPROVEMENTS/RECONSTRUCTION
 - - CONCORD PLACE, WABANSIA AVENUE AND WILLOW STREET IMPROVEMENTS/RECONSTRUCTION
 - - ELSTON AVENUE, DICKENS AVENUE, AND ADA STREET STREETScape IMPROVEMENTS
 - - CONCORD PLACE EXTENSION



ELSTON AVENUE REALIGNMENT IS SHOWN FOR ILLUSTRATIVE PURPOSES ONLY

STREET EXTENSIONS, IMPROVEMENTS, AND UPGRADES WILL CONSIST OF PAVEMENT ENHANCEMENTS, ADDITIONAL TURN LANES, TRAFFIC CONTROL MODIFICATIONS, AND/OR STREETScape IMPROVEMENTS AND WILL INCLUDE ON-STREET PARKING, BIKE LANES AND BUS STOPS AS APPROPRIATE ALONG THE VARIOUS STREETS



Dominick Street with Webster Avenue

- *NB Dominick*: The addition of a left-turn lane (restripe)
- Installation of a traffic signal

Dickens Avenue with Southport Avenue

- *SB Southport*: A through/right-turn lane
- *EB Dickens*: A left-turn lane and a right-turn lane
- *NB Southport*: A through/left-turn lane
- One-way stop sign control on Dickens Avenue

Realigned Elston Avenue with Ashland Avenue

- *EB/WB Elston*: A through/left-turn lane and a right-turn lane
- *NB/SB Ashland Avenue*: A left-turn lane, a through lane, and a through/right-turn lane
- Traffic signal control

Armitage Avenue Extended with Southport Avenue and Kingsbury Street

- *EB Armitage*: A left-turn lane and a right-turn lane
- *SB Southport*: A left-turn lane and a right-turn lane
- *NB Kingsbury*: A left-turn and right-turn lane
- One-way stop sign control on Armitage

Realigned Elston Avenue with Cortland Street

- *SB Elston*: A left-turn lane and a through/right-turn lane
- *EB/WB Cortland*: A left-turn lane, a through lane, and a right-turn lane
- *NB Elston*: A left-turn lane, a through lane, and a right-turn lane
- Traffic signal control

Armitage Avenue Extended with Dominick Street Extended

- *EB/WB Armitage*: A left-turn lane and a through/right-turn lane
- *NB/SB Dominick*: A left-turn lane and a through/right-turn lane
- Traffic signal control

Elston Avenue with Wabansia Avenue Intersection

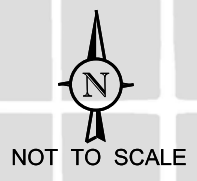
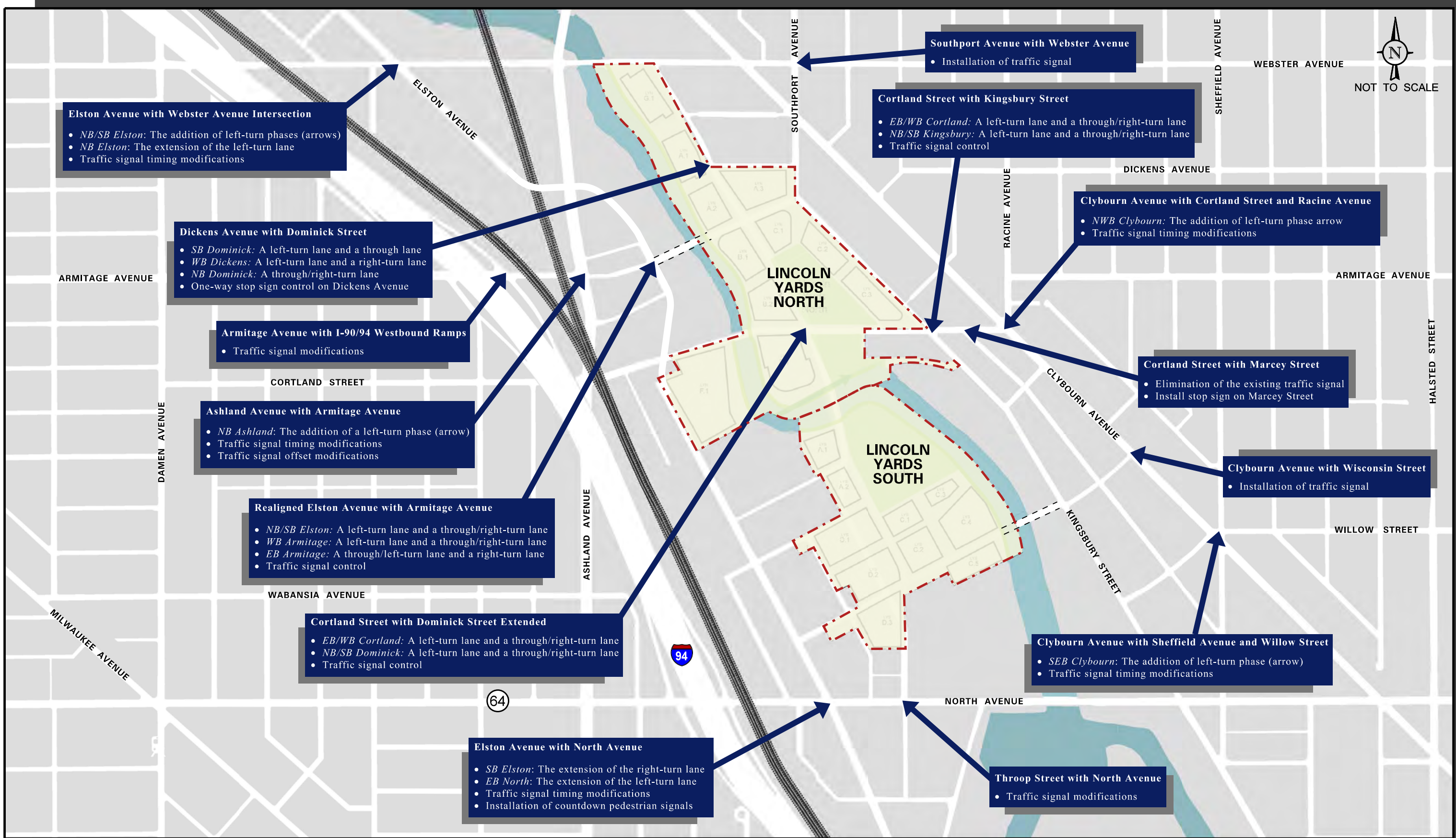
- *WB Wabansia*: The addition of a left-turn lane (restripe)
- Installation of a traffic signal

Elston Avenue with Concord Place

- *WB Concord*: The addition of a left-turn lane (restripe)
- Installation of a traffic signal

North Avenue with Clybourn Avenue with Dayton Street

- Installation of countdown pedestrian signals



Capacity Analysis Summary Tables

Table A
 CAPACITY ANALYSIS RESULTS
 WEBSTER AVENUE WITH DAMEN AVENUE

	Peak Hour	Eastbound		Westbound			Northbound			Southbound			Overall
		L	T/R	L	T	R	L	T	R	L	T	R	
Existing Conditions	Weekday Morning Peak Hour	B 16.8	E 57.0	E 72.5	B 17.9	A 0.0	C 24.9	C 24.1	B 11.7	B 13.8	B 13.4	A 6.3	C 27.7
		D – 54.5		D – 41.3			B – 16.7			B – 12.6			
	Weekday Evening Peak Hour	B 16.5	B 19.8	C 22.7	C 21.6	A 0.0	C 22.5	B 17.5	A 3.6	B 15.8	A 9.9	A 3.1	B 14.3
		B – 19.5		C – 21.6			B – 11.6			B – 11.4			
Phase 1 Conditions	Weekday Morning Peak Hour	B 18.6	D 50.8	B 17.0	B 14.0	A 0.1	C 31.8	C 30.3	B 10.6	C 20.1	B 14.7	A 3.3	C 24.8
		D – 48.9		B – 14.5			B – 18.6			B – 15.7			
	Weekday Evening Peak Hour	C 22.1	C 28.3	B 18.9	C 20.4	A 0.1	C 30.9	C 24.3	A 5.6	C 26.0	B 13.1	A 2.3	B 18.5
		C – 27.9		B – 19.2			B – 16.1			B – 17.4			
Total Buildout Conditions	Weekday Morning Peak Hour	B 17.9	D 51.4	B 16.4	B 13.4	A 0.1	C 31.7	C 29.5	B 13.5	C 29.2	B 15.8	A 3.5	C 26.8
		D – 49.3		B – 14.0			B – 20.0			C – 20.3			
	Weekday Evening Peak Hour	C 21.3	C 27.4	B 18.2	B 19.8	A 0.1	C 31.6	C 23.6	A 5.7	D 51.4	B 14.2	A 2.4	C 23.5
		C – 27.0		B – 18.5			B – 15.9			C – 29.3			
L = Left-Turn Movement; T = Through Movement; R = Right-Turn Movement Delay is measured in seconds.													

Table B
 CAPACITY ANALYSIS RESULTS
 WEBSTER AVENUE WITH ELSTON AVENUE

	Peak Hour	Eastbound		Westbound		Southeast-bound		Northwest-bound			Overall
		L	T/R	L	T/R	L	T/R	L	T	R	
Existing Conditions	Weekday Morning Peak Hour	C 33.1		B 17.9	C 29.3	C 20.1	C 27.5	B 16.8	B 16.4	A 2.1	C 27.4
				C – 29.1		C – 25.1		B – 15.8			
	Weekday Evening Peak Hour	C 25.7		B 19.0	D 46.6	C 21.1	B 18.4	B 16.3	C 20.6	A 6.9	C 29.2
				D – 45.5		B – 19.4		B – 19.1			
Phase 1 Conditions	Weekday Morning Peak Hour	C 21.4	D 43.8	B 15.8	C 28.7	B 18.4	C 32.6	B 13.2	B 19.1	A 1.2	C 30.4
		D – 43.1		C – 28.2		C – 27.1		B – 15.6			
	Weekday Evening Peak Hour	C 26.0	C 22.8	B 12.7	E 58.7	C 25.4	C 32.0	B 18.2	D 36.7	A 7.6	D 37.7
		C – 23.0		E – 55.6		C – 29.4		C – 30.9			
Total Buildout Conditions	Weekday Morning Peak Hour	C 21.7	D 46.4	B 13.8	C 28.8	C 24.3	D 44.8	B 15.8	B 18.9	A 1.2	C 34.9
		D – 45.7		C – 28.3		D – 37.1		B – 16.6			
	Weekday Evening Peak Hour	D 38.8	C 23.1	B 12.0	F 94.4	D 51.8	C 34.8	B 18.0	D 42.6	A 7.8	D 53.4
		C – 24.0		F – 89.4		D – 41.4		D – 36.4			

L = Left-Turn Movement; T = Through Movement; R = Right-Turn Movement
 Delay is measured in seconds.

Table C
 CAPACITY ANALYSIS RESULTS
 WEBSTER AVENUE WITH ASHLAND AVENUE

	Peak Hour	Eastbound		Westbound		Northbound		Southbound		Overall
		L	T/R	L	T/R	L	T/R	L	T/R	
Existing Conditions	Weekday Morning Peak Hour	B 19.8	D 47.4	F 99+	D 44.4	A 5.5	C 20.4	B 10.8	C 31.8	D 38.4
		D – 41.6		F – 96.1		C – 20.2		C – 31.8		
	Weekday Evening Peak Hour	C 34.5	D 50.0	F 99+	D 41.5	A 7.4	C 24.7	B 12.1	C 24.6	C 34.8
		D – 44.9		F – 83.9		C – 24.5		C – 24.5		
Phase I Conditions	Weekday Morning Peak Hour	B 19.4	F 91.3	F 99+	D 39.3	A 6.1	D 35.0	B 16.9	E 61.6	E 56.5
		E – 78.2		E – 68.6		C – 34.7		E – 60.5		
	Weekday Evening Peak Hour	D 51.9	F 95.8	F 96.5	D 42.2	B 10.5	E 64.4	B 16.0	D 35.9	E 58.8
		F – 82.0		E – 65.6		E – 63.6		D – 35.4		
Total Buildout Conditions	Weekday Morning Peak Hour	C 34.5	F 99+	F 99+	D 48.1	B 10.2	D 39.3	C 28.8	F 85.6	E 76.9
		F – 99+		F – 83.9		D – 38.9		F – 82.4		
	Weekday Evening Peak Hour	F 99+	F 99+	F 99+	F 98.7	B 10.1	E 64.6	B 18.6	C 32.7	E 73.8
		F – 99+		F – 99+		E – 63.8		C – 32.0		

L = Left-Turn Movement; T = Through Movement; R = Right-Turn Movement
 Delay is measured in seconds.

Table D
 CAPACITY ANALYSIS RESULTS
 WEBSTER AVENUE WITH CLYBOURN AVENUE

	Peak Hour	Eastbound		Westbound		Southeast-bound		Northwest-bound		Overall
		L	T/R	L	T/R	L	T/R	L	T/R	
Existing Conditions	Weekday Morning Peak Hour	B 12.9	C 30.5	C 23.2	D 42.7	B 19.0	C 31.2	B 12.2	B 14.8	C 31.0
		C – 30.1		D – 42.3		C – 30.1		B – 14.2		
Existing Conditions	Weekday Evening Peak Hour	B 15.7	C 29.3	C 23.4	C 34.0	C 34.9	C 26.6	B 11.0	D 44.1	C 34.1
		C – 28.3		C – 33.7		C – 27.8		D – 43.1		
Phase 1 Conditions	Weekday Morning Peak Hour	C 22.3	D 48.5	C 20.2	E 70.8	B 19.0	C 33.7	B 11.8	B 14.9	D 44.5
		D – 48.0		E – 69.8		C – 32.4		B – 14.4		
Phase 1 Conditions	Weekday Evening Peak Hour	B 13.0	C 24.4	B 18.2	C 28.0	C 29.2	C 27.0	B 12.0	C 31.5	C 27.2
		C – 23.6		C – 27.6		C – 27.4		C – 29.4		
Total Buildout Conditions	Weekday Morning Peak Hour	C 22.0	E 65.6	C 23.3	F 86.4	B 18.5	C 33.2	B 13.4	B 14.5	D 52.8
		E – 64.7		F – 85.1		C – 31.9		B – 14.2		
Total Buildout Conditions	Weekday Evening Peak Hour	A 9.1	C 22.1	C 20.6	C 29.2	C 29.7	C 26.5	B 13.4	C 32.3	C 26.9
		C – 21.2		C – 28.9		C – 27.0		C – 29.7		

L = Left-Turn Movement; T = Through Movement; R = Right-Turn Movement
 Delay is measured in seconds.

Table E
 CAPACITY ANALYSIS RESULTS
 SOUTHPORT AVENUE/SHAKESPEARE AVENUE WITH CLYBOURN AVENUE

	Peak Hour	Eastbound	Northbound	Southbound	Southeast-bound		Northwest-bound		Overall
		L/R	L/T/R	L/T/R	L	T/R	L	T/R	
Existing Conditions	Weekday Morning Peak Hour	A 7.0	C 23.4	C 31.8	B 14.7	D 35.1	A 9.8	B 11.2	C 26.4
					C – 34.6		B – 11.1		
Existing Conditions	Weekday Evening Peak Hour	A 8.8	C 30.6	C 33.7	C 30.9	C 23.3	B 10.4	C 32.1	C 28.2
					C – 23.7		C – 30.8		
Phase 1 Conditions	Weekday Morning Peak Hour	A 7.0	C 23.7	D 35.3	B 14.5	D 35.3	B 18.9	C 20.9	C 29.9
					C – 34.9		C – 20.8		
Phase 1 Conditions	Weekday Evening Peak Hour	A 8.8	D 38.8	D 36.1	C 30.9	C 23.3	B 15.6	D 38.3	C 32.5
					C – 23.8		D – 36.9		
Total Buildout Conditions	Weekday Morning Peak Hour	A 7.1	C 24.9	E 61.8	B 13.5	D 37.6	B 20.0	B 19.8	D 38.1
					D – 37.1		B – 19.8		
Total Buildout Conditions	Weekday Evening Peak Hour	A 9.6	E 74.0	E 65.6	C 31.6	C 24.5	B 17.3	D 44.0	D 46.0
					C – 24.9		D – 42.4		

L = Left-Turn Movement; T = Through Movement; R = Right-Turn Movement
 Delay is measured in seconds.

Table F
CAPACITY ANALYSIS RESULTS
ELSTON AVENUE WITH ASHLAND AVENUE

	Peak Hour	Northwest-bound		Southeast-bound		Northbound		Southbound		Overall
		T	R	T	R	L	T	L	T/R	
Existing Conditions	Weekday Morning Peak Hour	B 14.4	A 1.6	F 99+	A 6.5	B 15.5	B 20.0	B 11.9	B 18.4	C 27.4
		A – 7.0		F – 84.4		B – 19.8		B – 17.6		
	Weekday Evening Peak Hour	C 26.0	A 7.3	C 30.8	A 8.1	B 15.5	C 20.3	B 15.2	C 23.2	C 20.4
		B – 16.7		C – 21.0		C – 20.0		C – 22.5		
Phase 1 Conditions	Weekday Morning Peak Hour	B 12.5	A 4.7	F 99+	B 10.4	C 20.2	E 57.3	B 10.2	B 16.5	D 38.1
		A – 8.1		E – 78.4		E – 55.1		B – 15.7		
	Weekday Evening Peak Hour	B 19.6	A 5.0	C 31.3	A 9.1	F 97.3	C 34.0	B 12.3	C 20.1	C 25.8
		B – 12.6		C – 20.7		D – 39.9		B – 19.4		
Total Buildout Conditions	Weekday Morning Peak Hour	D 45.3	A 3.9	E 56.1	B 10.7	C 28.9	C 24.9	B 17.3	C 20.2	C 26.0
		C – 22.4		D – 46.5		C – 25.2		B – 19.7		
	Weekday Evening Peak Hour	D 40.6	E 63.0	C 32.0	A 5.9	C 23.5	B 17.6	D 40.5	D 42.7	C 34.0
		D – 51.5		C – 21.0		B – 18.1		D – 42.4		

L = Left-Turn Movement; T = Through Movement; R = Right-Turn Movement
Delay is measured in seconds.

Table G1
 CAPACITY ANALYSIS RESULTS
 ARMITAGE AVENUE WITH I-90/I-94 EASTBOUND OFF-RAMP

	Peak Hour	Eastbound	Westbound	Northbound	Southeast-bound			Overall
		T/R	L/T	L/T/R	L	T	R	
Existing Conditions	Weekday Morning Peak Hour	D 36.3	A 1.0	A 3.6	D 37.8	D 35.6	A 8.4	C 24.8
				C – 27.1				
Existing Conditions	Weekday Evening Peak Hour	C 29.6	A 1.2	A 7.5	D 40.7	D 37.7	A 9.2	B 18.8
				C – 26.1				
Phase 1 Conditions	Weekday Morning Peak Hour	D 38.5	A 1.2	A 3.6	D 41.2	D 35.6	A 8.4	C 27.3
				C – 31.8				
Phase 1 Conditions	Weekday Evening Peak Hour	C 28.9	A 2.0	A 7.5	D 42.6	D 37.7	A 9.2	B 18.8
				C – 28.4				
Total Buildout Conditions	Weekday Morning Peak Hour	D 48.7	A 1.7	A 3.8	D 52.6	C 34.8	A 8.1	D 35.9
				D – 42.8				
Total Buildout Conditions	Weekday Evening Peak Hour	C 31.3	A 6.5	A 7.9	D 48.0	D 36.8	B 13.9	C 23.4
				D – 35.6				

L = Left-Turn Movement; T = Through Movement; R = Right-Turn Movement
 Delay is measured in seconds.

Table G2
 CAPACITY ANALYSIS RESULTS
 ARMITAGE AVENUE WITH I-90/I-94 EASTBOUND ON-RAMP

	Peak Hour	Eastbound	Westbound	Overall
		T/R	L/T	
Existing Conditions	Weekday Morning Peak Hour	A 0.7	B 14.3	A 6.5
	Weekday Evening Peak Hour	B 11.2	A 0.4	A 5.6
Phase 1 Conditions	Weekday Morning Peak Hour	A 0.8	B 13.8	A 6.0
	Weekday Evening Peak Hour	A 0.4	B 15.0	A 8.1
Total Buildout Conditions	Weekday Morning Peak Hour	A 2.5	C 20.2	A 9.0
	Weekday Evening Peak Hour	A 0.9	E 58.2	C 30.2

L = Left-Turn Movement; T = Through Movement; R = Right-Turn Movement
 Delay is measured in seconds.

Table H
 CAPACITY ANALYSIS RESULTS
 ARMITAGE AVENUE WITH I-90/I-94 WESTBOUND RAMPS

	Peak Hour	Eastbound		Westbound	Northwest-bound		Overall
		L	T	T/R	L	R	
Existing Conditions	Weekday Morning Peak Hour	B 19.5	A 3.6	C 25.8	D 37.3	A 7.1	B 18.6
		A – 9.9			B – 18.8		
	Weekday Evening Peak Hour	E 69.5	A 6.0	F 99+	D 48.6	A 10.0	E 66.5
		C – 29.8			C – 28.3		
Phase 1 Conditions	Weekday Morning Peak Hour	D 39.8	A 4.5	D 37.2	D 37.3	C 30.4	C 28.4
		B – 14.8			C – 32.8		
	Weekday Evening Peak Hour	F 99+	A 5.4	F 98.3	E 76.9	C 21.6	E 71.4
		E – 56.6			D – 46.5		
Total Buildout Conditions	Weekday Morning Peak Hour	B 16.7	A 5.1	C 24.2	D 36.4	F 99+	D 36.0
		A – 7.5			F – 84.4		
	Weekday Evening Peak Hour	E 68.4	A 7.7	E 55.2	D 51.1	D 51.9	D 45.8
		C – 23.4			D – 51.6		

L = Left-Turn Movement; T = Through Movement; R = Right-Turn Movement
 Delay is measured in seconds.

Table I
 CAPACITY ANALYSIS RESULTS
 ARMITAGE AVENUE WITH ASHLAND AVENUE

	Peak Hour	Northbound		Southbound		Westbound	Eastbound	Overall
		L	T/R	T	R	L/T	L/T/R	
Existing Conditions	Weekday Morning Peak Hour	C 25.1	B 18.1	A 4.5	A 4.0	C 26.7	D 36.7	B 16.6
		B – 18.4		A – 4.4				
	Weekday Evening Peak Hour	C 32.5	C 24.8	A 9.0	B 11.0	D 42.6	B 14.8	B 18.1
		C – 25.1		A – 9.7				
Phase 1 Conditions	Weekday Morning Peak Hour	C 25.8	C 23.3	A 4.2	A 6.2	B 17.1	F 86.3	C 33.4
		C – 23.5		A – 4.9				
	Weekday Evening Peak Hour	E 57.4	C 25.7	B 11.2	E 63.6	F 99+	B 18.5	D 37.7
		C – 27.0		C – 33.1				
Total Buildout Conditions	Weekday Morning Peak Hour	D 45.2	B 16.4	C 24.1	A 1.6	C 30.9	F 82.7	D 40.3
		B – 19.2		B – 16.6				
	Weekday Evening Peak Hour	D 54.3	C 27.9	D 39.7	B 15.3	F 85.4	C 33.6	D 43.9
		C – 30.9		C – 31.0				

L = Left-Turn Movement; T = Through Movement; R = Right-Turn Movement
 Delay is measured in seconds.

Table J
 CAPACITY ANALYSIS RESULTS
 ARMITAGE AVENUE WITH ELSTON AVENUE

	Peak Hour	Northwest-bound		Southeast-bound		Westbound		Eastbound		Overall
		L	T/R	L	T	L	T/R	L/T	R	
Existing Conditions	Weekday Morning Peak Hour	C 23.7	B 17.4	B 15.6	F 84.5	C 25.4		C 27.9	A 5.3	D 46.1
		B – 19.3		F – 83.4				A – 6.2		
	Weekday Evening Peak Hour	B 15.5	B 15.5	C 24.8	C 30.9	F 99+		B 18.9	A 1.4	D 36.7
		B – 15.5		C – 30.7				A – 2.5		
Phase 1 Conditions	Weekday Morning Peak Hour	D 36.6	C 21.4	B 16.6	F 82.4	C 33.2		C 29.9	C 27.4	D 48.8
		C – 26.8		F – 81.2				C – 27.5		
	Weekday Evening Peak Hour	D 50.1	C 27.6	C 24.1	C 33.5	F 99+		C 20.5	A 1.8	E 57.1
		D – 36.0		C – 33.3				A – 2.8		
Total Buildout Conditions	Weekday Morning Peak Hour	C 31.0	C 25.8	F 99+	D 38.4	D 54.0	C 26.4	D 50.5	C 23.2	D 48.1
		C – 27.2		F – 80.2		C – 30.5		D – 37.0		
	Weekday Evening Peak Hour	E 73.8	E 58.2	F 99+	D 38.4	C 26.0	F 80.9	D 49.8	A 5.5	E 62.7
		E – 63.2		F – 81.8		E – 76.3		C – 26.8		

L = Left-Turn Movement; T = Through Movement; R = Right-Turn Movement
 Delay is measured in seconds.

Table K
 CAPACITY ANALYSIS RESULTS
 MAGNOLIA AVENUE WITH CLYBOURN AVENUE

	Peak Hour	Northwest-bound		Southeast-bound		Northeast-bound	Southwest-bound	Overall
		L	T/R	L	T/R	L/T/R	L/T/R	
Existing Conditions	Weekday Morning Peak Hour	--	A 0.6	A 1.1	A 2.9	C 32.3	C 30.4	A 2.8
		A – 0.6		A – 2.8				
	Weekday Evening Peak Hour	A 2.4	A 2.3	A 2.5	A 4.1	C 28.8	C 24.8	A 4.3
		A – 2.3		A – 4.0				
Phase 1 Conditions	Weekday Morning Peak Hour	--	A 1.3	A 1.1	A 2.0	C 32.3	C 30.4	A 2.4
		A – 1.3		A – 1.9				
	Weekday Evening Peak Hour	A 3.2	A 4.9	A 2.5	A 3.9	C 28.8	C 24.8	A 5.6
		A – 4.9		A – 3.8				
Total Buildout Conditions	Weekday Morning Peak Hour	--	A 1.4	A 1.1	A 2.6	C 32.3	C 30.5	A 2.8
		A – 1.4		A – 2.6				
	Weekday Evening Peak Hour	A 3.2	A 5.6	A 2.5	A 4.6	C 23.6	C 25.3	A 6.2
		A – 5.6		A – 4.5				

L = Left-Turn Movement; T = Through Movement; R = Right-Turn Movement
 Delay is measured in seconds.

Table L
 CAPACITY ANALYSIS RESULTS
 CORTLAND STREET WITH ASHLAND AVENUE

	Peak Hour	Northbound	Southbound	Westbound		Eastbound		Overall
		T/R	T/R	L	T/R	T	R	
Existing Conditions	Weekday Morning Peak Hour	C 20.5	A 5.1	B 19.7	A 9.6	F 99+	C 27.8	C 30.0
				B – 12.7		F – 99+		
	Weekday Evening Peak Hour	C 21.8	A 3.3	C 28.1	C 29.2	C 33.2	C 26.6	B 17.3
				C – 28.9		C – 32.6		
Phase 1 Conditions	Weekday Morning Peak Hour	C 21.5	A 5.7	B 12.6	A 9.3	F 99+	C 27.8	C 29.3
				B – 10.4		F – 99+		
	Weekday Evening Peak Hour	C 22.0	A 3.1	B 11.6	A 8.5	C 34.0	C 26.6	B 14.7
				A – 9.4		C – 33.3		
Total Buildout Conditions	Weekday Morning Peak Hour	C 21.5	A 4.2	D 42.1	B 10.7	E 79.2	C 27.3	C 25.1
				B – 19.1		E – 74.2		
	Weekday Evening Peak Hour	C 22.3	A 4.0	C 22.8	C 24.9	C 34.2	C 26.0	B 17.7
				C – 24.4		C – 33.5		

L = Left-Turn Movement; T = Through Movement; R = Right-Turn Movement
 Delay is measured in seconds.

Table M
 CAPACITY ANALYSIS RESULTS
 CORTLAND STREET WITH ELSTON AVENUE

	Peak Hour	Northwest-bound			Southeast-bound		Westbound			Eastbound			Overall
		L	T	R	L	T/R	L	T	R	L	T	R	
Existing Conditions	Weekday Morning Peak Hour	E 69.8	C 24.3	A 7.5	B 10.5	C 23.6	F 99+	D 38.1		C 26.7	F 99+		E 78.4
		C – 26.6			B – 19.9		E – 72.3			F – 99+			
	Weekday Evening Peak Hour	F 99+	C 32.0	B 10.8	B 11.9	B 10.3	C 30.4	F 99+		F 99+	D 47.6		E 59.9
		D – 52.5			B – 10.9		F – 99+			E – 59.5			
Phase 1 Conditions	Weekday Morning Peak Hour	E 72.2	C 28.1	A 6.2	C 24.2	B 19.3	C 30.4	B 17.5	A 7.2	C 34.9	F 99+		E 62.6
		C – 23.4			C – 21.2		B – 17.3			F – 99+			
	Weekday Evening Peak Hour	F 99+	C 34.2	A 7.9	C 27.9	B 10.5	E 76.1	C 28.1	A 7.0	C 31.7	E 66.7		D 39.7
		D – 51.3			B – 17.6		C – 30.6			E – 61.8			
Total Buildout Conditions	Weekday Morning Peak Hour	B 16.0	C 25.7	A 4.0	B 13.0	F 99+	D 39.6	C 33.9	B 10.0	C 25.6	F 99+	B 18.7	E 64.6
		C – 20.6			F – 80.6		C – 30.3			F – 89.6			
	Weekday Evening Peak Hour	B 11.5	F 90.2	A 7.7	E 73.3	C 34.2	B 15.1	D 51.0	A 5.8	F 99+	D 43.2	A 5.7	D 51.4
		E – 68.3			D – 44.5		C – 32.8			D – 47.5			
L = Left-Turn Movement; T = Through Movement; R = Right-Turn Movement Delay is measured in seconds.													

Table N
 CAPACITY ANALYSIS RESULTS
 CORTLAND STREET WITH MARCEY STREET

	Peak Hour	Eastbound	Westbound	Northwest-bound	Overall
		T/R	L/T	L/R	
Existing Conditions	Weekday Morning Peak Hour	A 7.3	A 6.0	C 32.0	A 8.2
	Weekday Evening Peak Hour	C 20.6	B 16.5	E 59.7	C 29.5
Phase 1 Conditions	Weekday Morning Peak Hour	B 16.4	B 11.9	D 43.4	B 17.3
	Weekday Evening Peak Hour	C 31.8	C 23.5	E 62.1	D 36.2

L = Left-Turn Movement; T = Through Movement; R = Right-Turn Movement
 Delay is measured in seconds.

Table O
 CAPACITY ANALYSIS RESULTS
 CLYBOURN AVENUE WITH RACINE AVENUE/CORTLAND STREET

	Peak Hour	Northwest-bound		Southeast-bound		Eastbound		Southbound		Overall
		L	T/R	L	T/R	L	R	L	R	
Existing Conditions	Weekday Morning Peak Hour	D 42.5	B 19.9	A 7.5	D 36.2	F 99+	C 30.7	D 41.2	F 99+	E 62.1
		C – 22.6		C – 32.9		F – 99+		F – 99+		
	Weekday Evening Peak Hour	C 21.7	C 32.2	B 13.1	A 7.8	F 99+	C 29.7	C 33.7	F 99+	E 67.4
		C – 30.7		A – 8.5		F – 99+		F – 99+		
Phase 1 Conditions	Weekday Morning Peak Hour	D 42.9	B 16.4	B 19.2	D 50.2	F 99+	D 40.6	D 50.6	F 99+	E 67.4
		C – 23.8		D – 46.5		F – 99+		F – 95.7		
	Weekday Evening Peak Hour	B 18.5	C 24.5	C 22.9	C 25.5	F 99+	D 48.7	D 38.2	F 99+	E 77.0
		C – 23.2		C – 25.1		F – 99+		F – 99+		
Total Buildout Conditions	Weekday Morning Peak Hour	E 64.2	B 17.1	B 19.4	E 71.6	F 99+	C 38.3	D 56.0	F 99+	F 83.8
		C – 29.8		E – 65.8		F – 99+		F – 99+		
	Weekday Evening Peak Hour	C 25.7	D 35.0	D 37.8	C 30.6	F 99+	D 44.5	C 39.4	F 99+	F 99.7
		C – 33.3		C – 31.5		F – 99+		F – 99+		

L = Left-Turn Movement; T = Through Movement; R = Right-Turn Movement
 Delay is measured in seconds.

Table P
 CAPACITY ANALYSIS RESULTS
 CLYBOURN AVENUE WITH SHEFFIELD AVENUE/WILLOW STREET

	Peak Hour	Northeast-bound		Westbound		Northbound		Southbound		Southeast-bound		Northwest-bound		Overall
		L	T/R	L	T/R	L	T/R	L	T/R	L	T/R	L	T/R	
Existing Conditions	Weekday Morning Peak Hour	C 32.5	C 34.6	C 34.5	D 41.3	C 23.8	C 24.1	C 31.6	D 35.9	C 25.2	F 99+	C 29.4	D 37.3	F 87.6
		C – 34.1		D – 39.5		C – 24.0		C – 34.5		F – 99+		D – 37.0		
	Weekday Evening Peak Hour	E 79.8	D 42.2	C 31.8	E 65.3	C 23.9	D 44.2	F 86.3	C 29.6	F 99+	C 33.5	D 44.0	F 80.7	E 56.6
		E – 55.1		E – 63.3		D – 43.4		D – 46.1		D – 45.7		E – 78.9		
Total Buildout Conditions	Weekday Morning Peak Hour	C 31.5	C 33.3	C 33.1	D 39.0	C 27.3	C 27.5	D 38.7	D 42.9	C 30.5	F 99+	C 32.6	E 63.9	E 78.5
		C – 32.9		D – 37.4		C – 27.5		D – 41.5		F – 99+		E – 63.4		
	Weekday Evening Peak Hour	F 85.3	D 38.5	C 31.9	E 59.2	D 43.8	E 56.1	F 99+	C 31.2	E 62.1	E 74.6	E 55.2	F 99+	F 82.6
		D – 54.2		E – 57.1		D – 53.3		F – 82.0		E – 73.4		F – 99+		
L = Left-Turn Movement; T = Through Movement; R = Right-Turn Movement Delay is measured in seconds.														

Table Q
 CAPACITY ANALYSIS RESULTS
 NORTH AVENUE WITH I-90/I-94 EASTBOUND RAMPS

	Peak Hour	Southeast-bound		Westbound		Eastbound	Overall
		L	T/R	L	T	L/T	
Existing Conditions	Weekday Morning Peak Hour	D 49.9	D 45.5	C 33.8	A 5.2	C 23.1	C 27.2
		D – 47.7		B – 16.0			
	Weekday Evening Peak Hour	D 42.6	C 31.0	C 21.6	A 6.4	C 29.2	C 24.4
		D – 37.0		B – 10.2			
Total Buildout Conditions	Weekday Morning Peak Hour	E 71.2	E 58.2	F 99+	A 9.4	E 70.7	E 63.0
		E – 65.1		D – 52.5			
	Weekday Evening Peak Hour	F 99+	F 95.4	B 15.1	A 3.6	E 66.0	D 47.2
		F – 99+		A – 7.4			
L = Left-Turn Movement; T = Through Movement; R = Right-Turn Movement Delay is measured in seconds.							

Table R
 CAPACITY ANALYSIS RESULTS
 NORTH AVENUE WITH I-90/I-94 WESTBOUND RAMPS

	Peak Hour	Northwest-bound		Westbound		Eastbound		Overall
		L	R	T	R	L	T	
Existing Conditions	Weekday Morning Peak Hour	D 37.7	D 40.0	A 3.8		A 6.8	A 6.3	B 13.2
		D – 39.1		A – 6.4				
	Weekday Evening Peak Hour	D 49.6	D 39.0	B 14.5		B 12.9	A 8.3	B 19.2
		D – 44.0		A – 9.0				
Total Buildout Conditions	Weekday Morning Peak Hour	C 30.1	F 99.2	A 6.4	A 1.6	B 19.4	D 35.4	D 35.4
		E – 77.0		A – 4.6		C – 33.7		
	Weekday Evening Peak Hour	C 34.8	D 49.0	C 26.3	A 9.7	B 18.6	E 73.4	D 42.4
		D – 43.2		B – 19.9		E – 64.3		

L = Left-Turn Movement; T = Through Movement; R = Right-Turn Movement
 Delay is measured in seconds.

Table S
 CAPACITY ANALYSIS RESULTS
 NORTH AVENUE WITH ELSTON AVENUE

	Peak Hour	Northwest-bound			Southeast-bound			Westbound		Eastbound		Overall
		L	T	R	L	T	R	L	T/R	L	T/R	
Existing Conditions	Weekday Morning Peak Hour	C 21.2	C 29.7	C 25.7	C 20.7	E 58.6	A 0.2	B 12.6	B 14.3	B 18.1	C 25.9	C 25.9
		C – 27.4			D – 48.0			B – 14.2		C – 25.2		
	Weekday Evening Peak Hour	B 20.0	D 38.3	C 25.8	C 20.4	C 31.3	A 3.8	D 39.2	A 9.1	A 7.1	C 31.0	C 23.5
		C – 33.6			C – 24.0			B – 11.8		C – 30.2		
Total Buildout Conditions	Weekday Morning Peak Hour	C 23.8	D 43.9	C 22.5	C 28.9	E 78.7	A 3.8	D 38.9	F 99.4	F 99+	F 85.4	E 78.6
		D – 36.1			E – 56.0			F – 94.6		F – 91.7		
	Weekday Evening Peak Hour	C 29.6	E 68.8	C 32.8	C 30.6	E 60.9	C 29.3	E 75.6	D 41.7	D 46.8	C 34.1	D 44.5
		E – 57.3			D – 42.9			D – 48.4		D – 36.0		
L = Left-Turn Movement; T = Through Movement; R = Right-Turn Movement Delay is measured in seconds.												

Table T
 CAPACITY ANALYSIS RESULTS
 NORTH AVENUE WITH THROOP STREET

	Peak Hour	Southbound		Eastbound		Westbound			Overall
		L	T/R	L	T/R	L	T	R	
Existing Conditions	Weekday Morning Peak Hour	C 32.2	B 11.4	A 9.6	A 3.4	B 14.6	C 20.3	A 6.1	B 12.4
		C – 24.9		A – 4.0		B – 19.4			
	Weekday Evening Peak Hour	D 42.3	B 18.1	B 12.0	A 4.9	B 18.8	C 28.0	A 7.7	B 15.9
		C – 27.2		A – 5.6		C – 26.5			
Total Buildout Conditions	Weekday Morning Peak Hour	E 67.6	B 13.3	E 57.2	A 3.4	B 18.9	C 28.2	A 3.3	C 24.2
		D – 39.0		C – 20.2		C – 24.4			
	Weekday Evening Peak Hour	D 45.9	F 99+	E 71.6	B 15.6	B 11.8	B 17.1	A 2.1	D 46.8
		F – 99+		C – 27.7		B – 14.9			
L = Left-Turn Movement; T = Through Movement; R = Right-Turn Movement Delay is measured in seconds.									

Table U
 CAPACITY ANALYSIS RESULTS
 NORTH AVENUE WITH KINGSBURY STREET

	Peak Hour	Northwest-bound		Southeast-bound		Westbound		Eastbound		Overall
		L	T/R	L	T/R	L	T/R	L	T/R	
Existing Conditions	Weekday Morning Peak Hour	F 99+		C 25.6	C 27.7	A 4.0	A 8.3	B 11.2	C 21.7	C 23.8
				C – 27.7		A – 8.3		C – 20.9		
	Weekday Evening Peak Hour	F 99+		C 25.7	A 8.2	A 3.0	A 7.3	A 9.1	B 14.3	C 26.8
				A – 9.1		A – 7.3		B – 13.6		
Total Buildout Conditions	Weekday Morning Peak Hour	F 99+	C 25.1	C 27.8	C 30.1	A 4.0	A 9.2	B 13.1	B 19.1	C 20.7
		F – 99+		C – 29.8		A – 9.2		B – 18.6		
	Weekday Evening Peak Hour	E 71.4	C 20.6	C 33.5	A 8.2	A 2.9	A 6.7	B 15.3	B 13.1	B 15.4
		E – 56.2		B – 18.5		A – 6.6		B – 13.4		
L = Left-Turn Movement; T = Through Movement; R = Right-Turn Movement Delay is measured in seconds.										

Table V
 CAPACITY ANALYSIS RESULTS
 NORTH AVENUE WITH SHEFFIELD AVENUE

	Peak Hour	Northbound		Southbound		Westbound		Eastbound		Overall
		L	T/R	L	T/R	L	T/R	L	T/R	
Existing Conditions	Weekday Morning Peak Hour	B 16.6	C 21.3	B 12.4	D 37.0	C 26.4	C 34.9	B 11.4	B 16.7	C 25.7
		C – 20.4		C – 33.5		C – 34.2		B – 16.1		
	Weekday Evening Peak Hour	B 16.4	C 26.3	B 13.7	C 20.8	C 24.4	D 37.2	B 14.1	B 14.7	C 23.6
		C – 24.7		B – 19.6		D – 36.0		B – 14.6		
Total Buildout Conditions	Weekday Morning Peak Hour	B 18.6	C 21.8	B 13.0	D 41.2	C 30.3	D 36.7	D 51.4	D 35.0	D 35.6
		C – 21.2		D – 37.2		D – 36.2		D – 36.7		
	Weekday Evening Peak Hour	B 17.6	C 27.4	B 14.9	C 21.6	C 27.6	D 35.1	C 33.0	D 36.3	C 32.2
		C – 25.9		C – 20.5		C – 34.5		D – 35.9		
L = Left-Turn Movement; T = Through Movement; R = Right-Turn Movement Delay is measured in seconds.										

Table W
 CAPACITY ANALYSIS RESULTS
 NORTH AVENUE WITH FREMONT STREET

	Peak Hour	Northbound	Southbound		Westbound		Eastbound		Overall
		L/T/R	L	T/R	L	T/R	L	T/R	
Existing Conditions	Weekday Morning Peak Hour	C 30.8	D 37.7	A 0.0	A 1.3	A 2.0	A 1.5	A 3.0	A 3.0
			C – 22.6		A – 1.9		A – 3.0		
	Weekday Evening Peak Hour	C 34.4	C 32.3	C 29.3	A 2.8	A 4.1	A 2.3	A 3.6	A 6.3
			C – 30.8		A – 4.0		A – 3.6		
Total Buildout Conditions	Weekday Morning Peak Hour	C 30.7	D 37.7	A 0.0	A 2.0	A 2.8	A 1.9	A 3.1	A 3.4
			C – 22.6		A – 2.8		A – 3.1		
	Weekday Evening Peak Hour	D 36.5	C 31.8	C 28.8	A 3.8	A 5.1	A 3.4	A 4.7	A 7.3
			C – 30.3		A – 5.0		A – 4.7		
L = Left-Turn Movement; T = Through Movement; R = Right-Turn Movement Delay is measured in seconds.									

Table X
 CAPACITY ANALYSIS RESULTS
 NORTH AVENUE WITH CLYBOURN AVENUE/DAYTON STREET

	Peak Hour	Northwest-bound		Southeast-bound		Westbound		Eastbound		Overall
		L	T/R	L	T/R	L	T/R	L	T/R	
Existing Conditions	Weekday Morning Peak Hour	D 37.0	C 27.1	C 34.7	D 47.3	A 3.2	A 3.1	A 9.2	B 17.4	C 20.7
		C – 30.6		D – 44.5		A – 3.1		B – 17.2		
	Weekday Evening Peak Hour	C 34.4	C 31.2	D 52.3	D 41.8	A 3.6	A 4.5	B 18.1	C 27.5	C 24.1
		C – 32.0		D – 45.0		A – 4.5		C – 27.3		
Total Buildout Conditions	Weekday Morning Peak Hour	F 99+	C 32.1	D 36.4	D 52.8	A 4.6	A 2.9	A 6.7	B 16.5	D 40.9
		F – 99+		D – 49.1		A – 2.9		B – 16.4		
	Weekday Evening Peak Hour	F 99+	D 39.3	E 56.7	D 46.6	A 3.9	A 4.0	B 14.1	C 21.6	C 30.7
		E – 63.5		D – 49.5		A – 4.0		C – 21.4		
L = Left-Turn Movement; T = Through Movement; R = Right-Turn Movement Delay is measured in seconds.										

Table Y
 CAPACITY ANALYSIS RESULTS
 NORTH AVENUE WITH HALSTED STREET

	Peak Hour	Northbound		Southbound		Westbound		Eastbound		Overall
		L	T/R	L	T/R	L	T/R	L	T/R	
Existing Conditions	Weekday Morning Peak Hour	C 29.0	E 55.0	B 17.1	D 36.2	D 35.2	C 28.2	C 24.4	D 36.1	D 35.8
		D – 54.5		C – 34.3		C – 29.3		C – 34.8		
	Weekday Evening Peak Hour	D 41.6	F 84.5	B 19.2	C 24.3	B 16.4	C 31.6	C 31.3	C 27.5	D 38.1
		F – 82.4		C – 23.5		C – 30.1		C – 28.1		
Total Buildout Conditions	Weekday Morning Peak Hour	C 29.3	E 67.5	C 21.6	E 60.0	E 62.1	C 29.7	D 38.4	C 30.6	D 42.2
		E – 66.8		E – 56.2		C – 34.3		C – 31.5		
	Weekday Evening Peak Hour	D 44.4	F 82.3	C 22.7	C 27.7	C 21.3	C 31.4	C 25.9	C 32.2	D 39.5
		F – 80.5		C – 26.9		C – 30.5		C – 31.5		
L = Left-Turn Movement; T = Through Movement; R = Right-Turn Movement Delay is measured in seconds.										

Table Z
 CAPACITY ANALYSIS RESULTS
 DAMEN AVENUE WITH I-90/94 WESTBOUND RAMP

	Peak Hour	Northwest-bound		Northbound	Southbound	Overall
		L	R	T	T	
Existing Conditions	Weekday Morning Peak Hour	B 18.3	A 5.5	A 1.3	B 12.2	A 8.8
		A – 8.4				
	Weekday Evening Peak Hour	C 22.5	A 5.8	A 1.2	B 13.9	B 10.8
		B – 11.8				
Phase 1 Conditions	Weekday Morning Peak Hour	B 19.4	A 5.5	A 7.9	B 12.1	B 10.6
		A – 9.9				
	Weekday Evening Peak Hour	C 23.6	A 5.8	A 7.9	B 14.1	B 12.4
		B – 12.7				
Total Buildout Conditions	Weekday Morning Peak Hour	B 18.8	A 5.3	A 8.1	B 12.8	B 10.8
		A – 9.7				
	Weekday Evening Peak Hour	C 23.1	A 5.6	A 8.1	B 15.1	B 12.8
		B – 12.4				

L = Left-Turn Movement; T = Through Movement; R = Right-Turn Movement
 Delay is measured in seconds.

Table AA
 CAPACITY ANALYSIS RESULTS
 WEBSTER AVENUE WITH DOMINICK STREET

	Peak Hour	Eastbound	Westbound	Northbound		Southbound	Overall
		L/T/R	L/T/R	L	T/R	L/T/R	
Phase I Conditions	Weekday Morning Peak Hour	B 19.7	A 2.1	D 47.2	A 0.0	B 15.7	B 15.4
				D – 46.6			
	Weekday Evening Peak Hour	B 18.5	C 25.0	D 54.3	B 14.3	A 9.8	C 29.1
				D – 52.4			
Total Buildout Conditions	Weekday Morning Peak Hour	D 53.6	A 2.7	D 46.1	A 0.0	B 15.6	C 34.3
				D – 45.7			
	Weekday Evening Peak Hour	D 49.6	C 22.1	D 38.2	B 12.0	A 9.1	D 38.0
				D – 36.7			

L = Left-Turn Movement; T = Through Movement; R = Right-Turn Movement
 Delay is measured in seconds.

Table BB
 CAPACITY ANALYSIS RESULTS
 CORTLAND STREET WITH DOMINICK STREET

	Peak Hour	Northbound		Southbound		Westbound		Eastbound		Overall
		L	T/R	L	T/R	L	T/R	L	T/R	
Phase I Conditions	Weekday Morning Peak Hour			D 39.3	B 11.5	C 25.2		A 2.7	A 3.6	A 9.9
				B – 17.9				A – 3.3		
	Weekday Evening Peak Hour			C 27.8	B 13.0	B 10.5		C 22.9	B 15.8	B 14.1
				B – 14.0				B – 17.4		
Total Buildout Conditions	Weekday Morning Peak Hour	C 25.6	D 40.7	C 21.1	C 32.4	A 8.8	B 16.1	A 5.8	C 30.6	C 27.1
		D – 38.6		C – 29.3		B – 15.8		C – 29.0		
	Weekday Evening Peak Hour	C 22.2	D 47.7	C 32.4	D 39.0	B 16.6	D 41.9	B 17.8	E 56.1	D 46.0
		D – 46.0		D – 37.3		D – 41.4		D – 54.3		
L = Left-Turn Movement; T = Through Movement; R = Right-Turn Movement Delay is measured in seconds.										

Table CC
 CAPACITY ANALYSIS RESULTS
 WEBSTER AVENUE WITH SOUTHPORT AVENUE

	Peak Hour	Eastbound	Westbound	Northbound	Southbound	Overall
		L/T/R	L/T/R	L/T/R	L/T/R	
Phase I Conditions	Weekday Morning Peak Hour	D 38.9	C 23.9	B 17.1	D 44.5	C 34.7
	Weekday Evening Peak Hour	B 11.6	C 20.2	C 23.7	C 21.0	B 18.9
Total Buildout Conditions	Weekday Morning Peak Hour	D 41.9	C 33.2	B 17.5	F 90.5	D 52.6
	Weekday Evening Peak Hour	B 11.9	C 23.4	D 35.1	C 23.7	C 23.8

L = Left-Turn Movement; T = Through Movement; R = Right-Turn Movement
 Delay is measured in seconds.

Table DD
 CAPACITY ANALYSIS RESULTS
 ARMITAGE AVENUE WITH DOMINICK STREET

	Peak Hour	Northbound		Southbound		Westbound		Eastbound		Overall
		L	T/R	L	T/R	L	T/R	L	T/R	
Total Buildout Conditions	Weekday Morning Peak Hour	A 3.5	A 3.2	B 11.2	A 8.2	C 27.8	B 19.4	C 21.8	A 6.5	B 11.3
		A – 3.3		A – 8.3		C – 21.4		B – 12.6		
	Weekday Evening Peak Hour	A 5.4	A 0.9	B 10.2	B 11.5	C 25.3	C 27.1	D 41.1	C 28.6	B 16.3
		A – 2.9		B – 11.4		C – 26.9		C – 31.8		
L = Left-Turn Movement; T = Through Movement; R = Right-Turn Movement Delay is measured in seconds.										

Table EE
 CAPACITY ANALYSIS RESULTS
 CORTLAND STREET WITH KINGSBURY STREET

	Peak Hour	Eastbound		Westbound		Southeast-bound		Northwest-bound		Overall
		L	T/R	L	T/R	L	T/R	L	T/R	
Total Buildout Conditions	Weekday Morning Peak Hour	A 7.1	B 13.0	--	C 20.2	C 33.5	B 14.4	C 30.7	D 36.6	B 18.1
		B – 12.2		C – 20.2		C – 23.9		C – 33.4		
	Weekday Evening Peak Hour	A 5.2	B 11.5	--	D 41.1	C 29.6	C 20.1	C 31.4	C 31.5	C 24.5
		B – 10.1		D – 41.1		C – 24.8		C – 31.4		

L = Left-Turn Movement; T = Through Movement; R = Right-Turn Movement
 Delay is measured in seconds.

Table FF
 CAPACITY ANALYSIS RESULTS
 CLYBOURN AVENUE WITH WISCONSIN STREET

	Peak Hour	Southeast-bound	Northwest-bound		Northeast-bound	Overall
		T/R	L	T	L/R	
Total Buildout Conditions	Weekday Morning Peak Hour	B 19.4	B 12.8	A 7.7	B 17.5	B 15.3
			A – 8.3			
	Weekday Evening Peak Hour	B 14.2	B 10.9	B 10.9	C 24.0	B 13.8
			B – 10.9			

L = Left-Turn Movement; T = Through Movement; R = Right-Turn Movement
 Delay is measured in seconds.

Table GG
 CAPACITY ANALYSIS RESULTS
 ELSTON AVENUE WITH WABANSIA AVENUE

	Peak Hour	Eastbound	Westbound		Northbound		Southbound		Overall
		L/T/R	L	R	L	T/R	L	T/R	
Total Buildout Conditions	Weekday Morning Peak Hour	C 23.4	D 39.6	B 10.0	A 2.9	A 3.9	A 7.9	A 9.3	A 8.2
			C – 21.5		A – 3.9		A – 9.1		
	Weekday Evening Peak Hour	B 14.0	E 61.5	A 9.4	A 4.7	A 7.0	A 6.3	A 7.1	B 12.3
			C – 31.2		A – 6.9		A – 7.1		

L = Left-Turn Movement; T = Through Movement; R = Right-Turn Movement
 Delay is measured in seconds.

Table HH
 CAPACITY ANALYSIS RESULTS
 ELSTON AVENUE WITH CONCORD PLACE

	Peak Hour	Westbound		Northbound	Southbound		Overall
		L	R	T/R	L	T	
Total Buildout Conditions	Weekday Morning Peak Hour	E 56.8	B 15.7	A 2.3	A 2.5	A 2.9	A 5.4
		D – 42.5			A – 2.9		
	Weekday Evening Peak Hour	E 77.9	A 9.0	A 5.2	A 4.3	A 5.8	B 18.9
		E – 57.6			A – 5.7		

L = Left-Turn Movement; T = Through Movement; R = Right-Turn Movement
 Delay is measured in seconds.

Table II
 CAPACITY ANALYSIS RESULTS
 ELSTON AVENUE WITH BEST BUY/KOHL'S ACCESS DRIVE

	Peak Hour	Southeast-bound		Northwest-bound		Northeast-bound		Overall
		T	R	L	T	L	R	
Existing Conditions	Weekday Morning Peak Hour	A 3.4	A 0.4	A 2.0	A 2.6	C 32.0	--	A 3.5
		A – 3.4		A – 2.6		C – 32.0		
	Weekday Evening Peak Hour	B 17.5	A 0.8	A 7.8	C 21.0	C 21.3	A 5.4	B 18.5
		B – 16.4		B – 20.0		B – 17.4		
Phase 1 Conditions	Weekday Morning Peak Hour	A 6.5	A 1.0	A 2.0	A 1.7	C 32.0	--	A 5.4
		A – 6.4		A – 1.7		C – 32.0		
	Weekday Evening Peak Hour	B 18.5	A 0.8	A 7.8	B 11.7	C 21.3	A 5.4	B 14.1
		B – 17.5		B – 11.5		B – 17.4		
Total Buildout Conditions	Weekday Morning Peak Hour	A 7.7	A 1.1	A 2.0	A 1.8	C 32.0	--	A 6.3
		A – 7.7		A – 1.8		C – 32.0		
	Weekday Evening Peak Hour	B 19.8	A 0.8	A 7.9	B 14.3	C 21.3	A 5.3	B 15.9
		B – 18.9		B – 14.0		B – 17.4		

L = Left-Turn Movement; T = Through Movement; R = Right-Turn Movement
 Delay is measured in seconds.

Table JJ
 CAPACITY ANALYSIS RESULTS
 EXISTING CONDITIONS – UNSIGNALIZED

Intersection	Weekday Morning Peak Hour		Weekday Evening Peak Hour	
	LOS	Delay	LOS	Delay
Dominick Street with Webster Avenue				
• Eastbound Left Turn	A	8.6	A	8.3
• Westbound Left Turn	A	8.6	A	8.8
• Northbound Approach	D	30.0	D	34.3
• Southbound Approach	C	16.4	B	14.5
Southport Avenue with Webster Avenue				
• Eastbound Approach	F	81.6	F	71.4
• Westbound Approach	F	57.9	D	31.1
• Northbound Approach	C	17.7	C	18.6
• Southbound Approach	F	71.3	C	21.7
Cortland Street with Kingsbury Street				
• Eastbound Left Turn	A	8.5	A	9.8
• Westbound Left Turn	--	--	--	--
• Northbound Approach	B	13.2	E	46.0
• Southbound Approach	F	56.7	C	24.9
Racine Avenue with Armitage Avenue				
• Westbound Approach	B	12.9	B	14.4
• Northbound Through	B	10.2	B	13.9
• Northbound Right Turn	B	11.2	B	10.9
• Southbound Approach	B	14.5	B	12.3
Elston Avenue with Concord Place				
• Westbound Approach	B	12.0	B	13.5
• Southbound Left Turn	A	8.0	A	8.2
LOS = Level of Service Delay is measured in seconds.				

Table JJ, Continued
 CAPACITY ANALYSIS RESULTS
 EXISTING CONDITIONS – UNSIGNALIZED

Intersection	Weekday Morning Peak Hour		Weekday Evening Peak Hour	
	LOS	Delay	LOS	Delay
Elston Avenue with Wabansia Avenue				
• Eastbound Approach	C	21.3	C	15.0
• Westbound Approach	C	15.3	B	14.7
• Northbound Left Turn	A	8.9	A	7.9
• Southbound Left Turn	A	8.2	A	8.4
Elston Avenue with Willow Street				
• Westbound Approach	B	14.6	C	16.6
• Southbound Left Turn	A	8.2	A	8.7
LOS = Level of Service Delay is measured in seconds.				

Table KK
 CAPACITY ANALYSIS RESULTS
 PHASE 1 CONDITIONS – UNSIGNALIZED

Intersection	Weekday Morning Peak Hour		Weekday Evening Peak Hour	
	LOS	Delay	LOS	Delay
Southport Avenue with Webster Avenue				
• Eastbound Approach	F	83.5	C	21.1
• Westbound Approach	F	51.8	D	27.7
• Northbound Approach	C	17.9	C	17.5
• Southbound Approach	F	79.6	C	18.3
Racine Avenue with Armitage Avenue				
• Westbound Approach	B	14.5	C	15.4
• Northbound Through	B	10.6	B	13.3
• Northbound Right Turn	B	12.0	B	11.3
• Southbound Approach	C	15.8	B	12.8
Cortland Street with Kingsbury Street				
• Eastbound Left Turn	A	9.1	A	9.8
• Westbound Left Turn	A	1.0	A	1.0
• Northbound Approach	B	13.4	E	40.4
• Southbound Approach	F	99+	F	99+
Elston Avenue with Wabansia Avenue				
• Eastbound Approach	D	28.5	C	15.0
• Westbound Approach	C	20.3	B	14.7
• Northbound Left Turn	A	9.0	A	7.9
• Southbound Left Turn	A	8.9	A	8.4
Elston Avenue with Willow Street				
• Westbound Approach	C	18.9	C	16.6
• Southbound Left Turn	A	8.9	A	8.7
LOS = Level of Service Delay is measured in seconds.				

Table KK, Cont'd.
 CAPACITY ANALYSIS RESULTS
 PHASE 1 CONDITIONS - UNSIGNALIZED

Intersection	Weekday Morning Peak Hour		Weekday Evening Peak Hour	
	LOS	Delay	LOS	Delay
Elston Avenue with Concord Place				
• Westbound Approach	B	14.6	B	13.5
• Southbound Left Turn	A	8.6	A	8.2
Southport Avenue with Dickens Avenue				
• Eastbound Left Turn	C	16.0	B	13.4
• Eastbound Right Turn	A	9.6	B	10.0
• Northbound Left Turn	A	8.2	A	7.6
Dominick Street with Dickens Avenue				
• Westbound Left Turn	C	21.6	C	16.2
• Westbound Right Turn	A	9.4	B	10.6
• Southbound Left Turn	A	8.8	A	7.7
Dominick Street with Armitage Avenue				
• Westbound Approach	B	11.7	B	12.6
• Southbound Left Turn	A	1.0	A	1.0
LOS = Level of Service Delay is measured in seconds.				

Table LL
 CAPACITY ANALYSIS RESULTS
 TOTAL BUILDOUT CONDITIONS – UNSIGNALIZED

Intersection	Weekday Morning Peak Hour		Weekday Evening Peak Hour	
	LOS	Delay	LOS	Delay
Racine Avenue with Armitage Avenue				
• Westbound Approach	C	19.2	C	19.6
• Northbound Through	B	11.5	B	14.7
• Northbound Right Turn	B	14.5	B	14.5
• Southbound Approach	C	19.1	B	14.3
Elston Avenue with Willow Street				
• Westbound Approach	F	56.4	F	89.3
• Southbound Left Turn	A	9.1	B	10.4
Armitage Avenue with Kingsbury Street and Southport Avenue				
• Eastbound Left Turn	C	20.1	C	24.0
• Eastbound Right Turn	A	9.3	B	11.5
• Northbound Left Turn	A	8.0	A	8.8
Marcey Street with Cortland Street				
• Westbound Left Turn	A	9.1	A	9.4
• Northwest-bound Approach	C	20.4	E	42.3
Dominick Street with Dickens Avenue				
• Westbound Left Turn	C	20.6	D	29.5
• Westbound Right Turn	B	10.0	B	12.4
• Southeast-bound Left Turn	A	9.0	A	8.2
Southport Avenue with Dickens Avenue				
• Eastbound Left Turn	C	21.4	C	23.2
• Eastbound Right Turn	A	9.8	B	14.5
• Northbound Left Turn	A	8.6	A	8.1
LOS = Level of Service Delay is measured in seconds.				

Nelson/Nygaard Report
Lincoln Yards Planned Development –
Vehicle Trip Generation
Methodology and Estimation



MEMORANDUM

To: Luay Aboona, KLOA

From: Nelson\Nygaard

Date: December 17, 2018

Subject: Lincoln Yards Planned Developments – Vehicle Trip Generation Methodology & Estimation – **REVISED #5**

The following memorandum outlines the methodology to estimate vehicle trips generated by the Lincoln Yards Planned Developments. As discussed below, the methodology uses traditional trip generation rates provided in the Institute of Transportation Engineers (ITE) *Trip Generation Manual* and then specific adjustments were incorporated to refine (and reduce) daily and weekday peak-hour vehicle trips based on a number of factors that influence travel behavior. The vehicle trip generation estimation is also discussed by phase and metrics/assumptions under each phase are provided herein.

PHASED DEVELOPMENT - ASSUMPTIONS

The following discussion presents the land-use and infrastructure development assumptions over the course of the entire project schedule. It is noted that the overall development schedule is subject to change; however, it is currently assumed that Lincoln Yards would be developed in phases and also divided into specific zones located in “Lincoln Yard North” and “Lincoln Yards South”. It is assumed that the North Dominick Zone in Lincoln Yards North would be developed in Phase 1, and other zones would be developed in later phases, respectively. **Table 1** summarizes the land use program for the Lincoln Yards Planned Developments.

Table 1: Lincoln Yards Land Use Program, Phase 1 and Full Buildout

Development Zone	Land Use			
	Residential (units)	Office (sq. ft.)	Hospitality ¹ (rooms)	Retail (sq. ft.)
Phase 1 (LYN – North Dominick)	--	1,465,872	--	89,619
Full Buildout	4,359	7,538,532	400	779,700

Notes:

1. “Hospitality” refers to planned hotel rooms.

Source: Sterling Bay; SOM, December 2018.

Table 2 summarizes the planned infrastructure improvements by planned development zone.

Table 2: Lincoln Yards Transportation Infrastructure Improvement by Zone

Planned Improvement	Development Zone			
	LYN - North Dominick	LYN -Park	LYN - West River	LYS - Dominick South
Dominick Street Extension to Cortland Street	●			
Armitage Avenue Extension	●			
Webster/Dominick Traffic Signal	●			
Shuttle Service and Stops	●			
Construction of Dominick, Kingsbury, and Cortland streets and streetscape		●		
Cortland Traffic Signals		●		
Elston Avenue Streetscape			●	
Cortland Street Extension			●	
Dominick/Throop Extension				
Willow, Wabansia, Concord, Ada avenues and streetscape				●
Elston/Wabansia traffic signal				●
Additional Water Taxi Stops	●		●	●
Improvements to Existing Metra Station ¹	●			
606 Extension & Bridge				●
Relocate Metra Station ¹			●	

Source: Sterling Bay; SOM, September 2018.

Notes:

1. Improvements to Existing Metra Station would be superseded by a full relocation of the Metra station

It is noted that the planned improvements do not include the potential Armitage Bridge Extension or reconfiguration to Elston/Ashland/Armitage intersection. The determination as to whether these improvements are warranted will be based on the analysis findings of the traffic study and/or appropriate approvals by City staff. The trip generation methodology contained here does not assume the implementation of the transitway proposed in the North Branch Draft Framework Plan.

METHODOLOGY

The estimation of vehicle trips was based on the planned land-use and infrastructure program and phasing for each development area within Lincoln Yards. It is noted that for purposes of the estimation of typical daily and weekday peak-hour vehicle trips, the analysis accounted for vehicle trips associated with the office, administration and related operations for the planned music venue and sports stadium, which accounts for the full-time employees that would travel to/from these facilities on a daily basis. The analysis does not account for the sporadic increase in vehicle trips associated with scheduled events at these uses. Moreover, the majority of vehicle trips that would be generated by these uses would occur during scheduled events on specific dates and times, and not on a daily basis nor regularly occur during typical weekday peak commute periods.

Similarly, the vehicle trip estimation does not account for the planned acres of public open space, parkland, and River Walk space within the development. These publicly-accessible spaces would mostly generate internal trips from patrons already at the site for other purposes (e.g., office employees, retail customers, etc.); however, it is reasonable to assume that these uses would also attract a varying degree of external trips from those living and working outside of the site. Because the amount of external trips would not be measurable at this point in time, the estimation does not include vehicle trips associated with these uses.

The vehicle trip generation methodology uses the ITE *Trip Generation Manual* (10th Edition) to determine baseline daily and weekday morning (AM) and evening (PM) peak-hour vehicle trips¹. The traditional impact methodologies of the ITE *Trip Generation Manual* are regularly used to conduct local area or use-specific traffic studies, as they include the most comprehensive sources of empirical data on the traffic impacts of different land uses. That said, *Trip Generation* is generally well suited for auto-oriented, stand-alone suburban sites, from where the vast majority of data were collected. For downtown mixed-use areas or neighborhoods with good public transportation, ITE simply advises that traffic engineers either collect local data or adjust the ITE average trip generation rate to account for reduced auto use – hence the ad hoc approach used by project proponents.

The methods of performing a traffic study often fail to account for a variety of potential conditions that have been shown to have significant impacts on vehicle trip rates, such as parking pricing, quality of bike facilities, live-work mix, or housing density. The traditional methodology for conducting traffic studies is well established in the transportation planning and traffic engineering profession. The first step – which is the only element considered for revision in this study – is to calculate the number of vehicle trips that will be generated by each land use. Engineers draw from the *Trip Generation* manual, which notes that:

“The average trip generation rates... were primarily collected at suburban locations having little or no transit service, nearby pedestrian amenities, or transportation demand management (TDM) programs. At specific sites, the user may wish to modify trip generation rates presented in this document to reflect the presence of public transportation service, ridesharing or other TDM measures, enhanced pedestrian and bicycle trip-making opportunities, or other special characteristics of the site or surrounding area (Institute of Transportation Engineers, 2010).”

Accordingly, adjustments to the trip generation estimation were applied because of the existing transportation network, accessibility to available modes, and because the project would promote increased modal connectivity and multimodal facilities aimed to reduce dependency on vehicle trips for all trip purposes, and provide a mixed-use development. As previously discussed, there are a number of planned infrastructure improvements that would result in a connected, multimodal network that supports transit and other non-driving modes; key adjustments factors are described in detailed below.

¹ ITE Land Use Codes used: Land Use 220 (Multifamily Housing [High-Rise]); Land Use 820 (Shopping Center); Land Use Code 710 (General Office Building); and Land Use Code 310 (Hotel). *Trip Generation Manual* 10th Edition, Volume 2: Data; ITE, 2017. For purposes of this analysis and to provide a conservative estimation of potential vehicle demand, land uses categorized as “suburban-urban” were applied as opposed to land uses categorized as “dense, mixed-use urban, or city core”, to avoid overestimating vehicle trip reductions.

1. Jobs-housing balance

The balance between jobs and housing serves as an indicator of the overall mix of uses, which has a significant impact on travel behavior. Fewer people will choose to drive if they can access more types of destinations with short walking or bicycling trips. More people will use transit if it is serving multiple types of locations within a short ride; for example, a transit line that accesses both daytime uses such as jobs as well as evening uses such as housing is likely to have greater use.

Multiple sources enumerate the auto trip-reducing impact of a good land use mix. For this approach, Robert Cervero and Reid Ewing's 2010 meta-analysis of more than 200 studies provides well-documented and supported research. Based on elasticities identified in this study, the methodology for Lincoln Yards estimates the observed or future jobs-housing balance as compared to an "ideal" housing balance of 1.5 jobs per household,² with percentage adjustments ranging from +3% (poor use mix) to -9%³ (ideal use mix).

In addition, the methodology gives a small bonus for the presence of local-serving retail of another 2%. This is on the lower end of the spectrum of established research, both to be conservative and to avoid double-counting any trips reduced from the jobs-housing mix balance calculation.

2. Transit Access

The presence of high-quality transit is a clear factor in auto trip reduction in Chicago and for Lincoln Yards in particular. Frequency of service is one of the most important factors in defining the quality of transit service. Drawing upon previously defined methods to define a transit service frequency variable, the methodology measures local transit service frequency against an index of ideal transit service.⁴ The index used for Chicago is 900 transit vehicle departures, which is approximately one high-frequency rapid transit station on 4-minute average headways (such as CTA 'L' service in the core of downtown) plus four bus lines at 15-minute headways.⁵ For the purposes of this analysis, current Metra, CTA heavy rail ("L") and bus service within a half-mile distance from the Lincoln Yards site were considered⁶.

The elasticity of transit service as related to driving is challenging to calculate as only a proportion of a given set of transit trips would have been made by private auto. Kuzmyak et al found that

² This number assumes some households have two wage earners, while others have one. For example, a jobs-housing balance above this would indicate that there are more jobs than there is housing to hold those workers. For more information, see Cervero, R., "Jobs-Housing Balancing and Regional Mobility," University of California Transportation Center, 1989.

³ This number based on research linking jobs-housing balance to an elasticity of demand for VMT. For more information, see Ewing, R. & Cervero, R., 2010. Travel and the Built Environment: A Meta-Analysis. Journal of the American Planning Association, 76(3), pp. 265-294.

⁴ Holtzclaw, J., Clear, R., Dittmar, H., Goldstein, D., & Haas, P. (2002). Location Efficiency: Neighborhood and Socio-Economic Characteristics Determine Auto Ownership and Use – Studies in Chicago, Los Angeles and San Francisco. Transportation Planning and Technology, 25(1), 1-27.

⁵ 4-minute average headways over approximately 16 hours is 240 trains per day in each direction, for a total of 480 trains. Meanwhile, 15-minute average headways over approximately 16 hours is 64 buses per day in one direction. Including both directions for four bus routes yields 512 buses per day.

⁶ Specific transit service includes CTA Armitage Brown/Purple lines, North/Clybourn Red Line, Fullerton Red Line, Damen Blue Line, and CTA bus lines 9, 73, 74, 132; and Metra UP-N/UP-NW Clybourn.

proportion to vary between 18% and 67%.⁷ Thus, a conservative assumption is that 15% of trips that would have been made by private auto are on transit instead simply because it is available.⁸ Therefore, the maximum transit reduction in the methodology is 15%.

While the quality of service is important, so is access to that service. For example, a train station that can only be accessed from one side of the tracks requires circuitous walking routes, while one that is not located near bicycle facilities is challenging for bicycle access. Therefore, the methodology mitigates the potential transit reduction if biking and walking infrastructure is limited; in order to achieve the maximum transit reduction, the bike/walk index (see below) must be the highest possible.

3. Biking and Walking Infrastructure

Academics and practitioners alike have developed a myriad of ways to catalog and assess the quality of biking and walking infrastructure. This methodology strives for simplicity and simply measures:

- Density of intersections per square mile, which is a good measure of block size and how easy it is to walk from A to B. The methodology compares this to an average threshold of approximately 300 intersections per square mile, which is approximately, what a grid of 300 foot blocks would yield.⁹
- What percentage of the local links have sidewalks on both sides. For maximum reduction, this must be 100%.
- What percentage of local links have bicycle facilities. For maximum reduction, this must be 100%.

Cumulatively, the maximum reduction for these three measures adds to 9%.¹⁰

4. Parking Provision

This measure simply involves providing less parking supply than is required by a local jurisdiction, with adequate analysis findings to substantiate that the provision of fewer parking spaces would not result in any adverse effects both environmentally and also allows for the development to continue to be marketable for future residential and commercial tenants. Reducing the on-site supply is a tactful way to constrain parking conditions and to influence travel behavior for various users. For example, if a development does not provide on-site parking for customers of the retail uses, primarily because the development would be locally-served (and easy to walk/bike to), these users will be far less inclined to drive to the development. In the event that customers are unaware that there is no parking for them, they will likely drive to the development and then be required to search for other nearby parking. Upon a second or third trip, they will likely shift their travel mode due to the level of inconvenience of not having any parking available at the development, or paying a premium fee to park their vehicle over a specific

⁷ Kuzmyak, J., Pratt, R. H., Douglas, G., & Spielberg, F. (2003). Traveler Response to Transportation System Changes. Chapter 15 – Land Use and Site Design. Washington, DC: Transit Cooperative Research Program.

⁸ This level of caution avoids double-counting; other modeled factors such as TDM programming will also encourage the use of transit over private vehicles.

⁹ This is directly in the middle of LEED ND certification scale for connectivity. For more information, see <https://www.usgbc.org/Docs/Archive/General/Docs6146.pdf> p.13

¹⁰ This number based on research linking multimodal transportation infrastructure to an elasticity of demand for VMT. For more information, see Ewing, R. & Cervero, R., 2010. Travel and the Built Environment: A Meta-Analysis. Journal of the American Planning Association, 76(3), pp. 265-294.

amount of time. Therefore, due to this shift in travel mode behavior and constraining of parking (or limiting parking availability for specific users) can reduce overall auto/parking demand.

Overall, if parking supply is limited, fewer people will choose to drive. Thus, the model compares parking generation rates from ITE's *Parking Generation* handbook to the amount of parking planned as part of a given development. *Parking Generation* primarily reports rates that are from "suburban sites with isolated single land uses with free parking."¹¹ These rates are therefore assumed to represent unconstrained parking demand. The percentage reduction is calculated by comparing proposed parking provision to this unconstrained rate. In addition, it is assumed that other parking management measurements would be in place to limit spillover parking, where people drive to the site and then park elsewhere.

It is also noted that the Lincoln Yards development will supply between 49 to 55% less than required per Section (§) 17-7-0410 of the City's Municipal Code. The majority of parking provided within the development site will be shared among various uses and patrons, which allows for more flexibility in the amount of parking to be provided and maximizing the parking supply to accommodate the temporal distribution in demand throughout the day. Office, retail, and other non-residential uses will be allowed to share parking during daytime periods, while entertainment and eating-drinking establishments will be able to use this supply during nighttime activities. It is assumed that the majority, if not all, residential parking will be dedicated, reserved parking (which will be unbundled, and set at a market-rate monthly or annual cost for each tenant), and will not be available to the public or non-residential users. The establishment of a reduced parking program and sharing of parking is in compliance with §17-10-0700 of the City Municipal Code.

To limit double-counting the impact of limited parking with other trip reduction effects, the parking supply reduction is only applied if the impact is greater than the impact from other trip reduction measures. If applicable, the model applies a reduction of 50% of the total parking supply impact to create a conservative estimate.

5. Transportation Demand Management

The Lincoln Yards project would implement a robust Transportation Demand Management (TDM) program for all users, including future residents, employees, and visitors. TDM program work to reduce peak vehicle trips by shifting the mode or the time that people choose for travel to a destination. In addition to parking management strategies such as pricing (described above), these measures include telecommuting and/or compressed schedules, car-share availability, showers/changing facilities, etc. However, other common measures for large-scale residential and office developments, including providing free/subsidized transit passes, a dedicated TDM Coordinator, or a Guaranteed Ride Home program were not included as these measures cannot be administered by the City or property management, nor can such entities guarantee that such programs would be in place upon project completion.

The model accounts for a small percentage of future employees telecommuting (work from home), secured on-site bike parking, showers/changing facilities, access to car share vehicles and preferential carpool/vanpool parking. Given the difficulty associated with identifying the individual impact of each of these TDM program elements on vehicle trips when these are most frequently combined with other TDM elements, the reduction is determined based on the number of these elements included in the TDM program. The model assumes up to an additional 2%

¹¹ Institute of Transportation Engineers, *Parking Generation*, 4th Edition, p. 3

credit, based on findings from Kumzyak et al., 2010.¹² The model also takes into consideration the transit and bike/pedestrian environment in this equation.

Additional Reduction Factors for Future Consideration

The following vehicle trip reduction factors may be considered in the future but were not accounted for in the analysis. Therefore, the following are for informational purposes and only and that such measures may be implemented as Lincoln Yards develops over time.

Parking Pricing

Pricing parking is an excellent tool to reveal the true cost of driving to a destination, and thus to help travelers choose more efficient modes. It is important to note that the majority of planned parking within Lincoln Yards will be located in centralized locations (i.e., close proximity to buildings), and available and to be shared among various tenants and their users. None of the planned parking facilities will be solely owned and operated by a single tenant, but these tenants will have the opportunity to buy and/or lease (at a market rate cost) for a specific number of parking spaces as they deem necessary. The planned parking facilities will be both owned and operated by the property owners and/or third-party company to maintain the facility and manage operations. As such, these facilities will be operated as an enterprise operation, which pays for itself through user fees.

Similar to how parking is managed and utilized in Chicago's Central Business District (CBD), parking within Lincoln Yards will be priced at a market rate for all users, including residents, employees, and visitors. Therefore, if residents wish to park they will be required to pay a daily, monthly or annual rate for their dedicated parking spot, or they may wish to lease out their space through a shared parking agreement. Similarly, if an employee wishes to drive and park on a daily basis, they will be required to pay the daily fee out of pocket. Employers may wish to subsidize the cost of parking by not requiring employees to pay but they will be responsible for the daily, monthly, or annual fees associated with leasing parking spaces (and employers may wish to lease fewer dedicated spaces due to the incurred costs, see discussion below). These situations are quite common in major metropolitan cities, including Chicago, where the cost of parking is separated from the cost of the housing unit or non-residential space (i.e., "unbundled parking"), and employers provide other options, subsidies, financial incentives, and/or transportation programs to offset the need to pay for employee parking¹³.

For example, Centro, a major technology company with over 230 employees with their headquarters at 11 E. Madison Street in downtown Chicago does not provide any dedicated parking for their employees nor parking subsidies; however, offer pre-tax transit benefits, which is common for many employers to help offset the costs for daily, monthly, and annual public transit passes¹⁴. Employers located within the Prudential Plaza and Aon Center located east of Michigan Avenue in the downtown center do not offer parking for their employees but provide

¹² Pratt, R. H., 2000. Traveler Response to Transportation System Changes. Chapter 13 – Parking Pricing and Fees. TCRP Report 95.

¹³ It is noted that Chicago's Metropolitan Planning Council (MPC) is currently interviewing employers in Chicago on their transportation policies and to inventory resources that are provided and/or offered to employees throughout Chicago.

¹⁴ Communication with Lindsay Bayley, Senior Planner, Chicago Metropolitan Agency for Planning (CMAP); May 9, 2018.

pre-tax commuter benefits and recently rolled out a fleet of electric buses to transport employees between Union, Ogilvie, and LaSalle Street train stations and Prudential Plaza and Aon Center¹⁵.

Because there is premium cost on parking (similar to Chicago's CBD) and it is assumed that future residents/employees will be able to utilize high-quality transit, bikeshare (or their own bike), and receive similar transportation benefits/incentives as is common practice for Chicago businesses, there would be an expected decrease in vehicle trips and parking demand.

Ride-Hail Services

The influx in ride-hail services from Transportation Network Companies (TNCs), such as Uber and Lyft, are playing major role in the evolving mobility ecosystem. Although travel and rider data is scarce, municipalities have made great strides in collaborating with these private companies to understand travel patterns and behaviors of ride-hail activities. Recent articles have captured city's efforts in scrubbing trip data and started to model the data collected on a macroscopic level.

In San Francisco, researchers have found that 15% of all auto trips and 9% of total trips were made by ride-hail services. In Boston, the Metropolitan Area Planning Council (MAPC) found through a survey of over 1,000 ride-hail passengers indicated that more than 40% of passengers would have taken transit if ride-hail services had not been available, and about 12% would have walked or bike; creating an argument that such services are showing signs of decreasing transit ridership. Similar research efforts are being made in Chicago to better understand the mode shift between public transit and ride-hail services.¹⁶

Regarding the effects of ride-hail services on parking demand, a recent article and study findings indicated that the use of ride-hail services have reduced parking demand at major airports between 5 and 20%, with travelers opting to use these services than driving and parking their own private vehicle at the airport. In addition, hotels are experiences up to a 70% decline in parking by business travelers; however, there is less of an impact from leisure (non-business) travelers driving/parking at the hotel. Restaurants and bars are experiencing up to an 80% reduction in parking demand from ride-hail services, primarily due to convenience, cost of parking, and eliminating the risk of drinking and driving.¹⁷

The Lincoln Yards project will provide passenger loading zones in dedicated spaces throughout the site and thus, allow for such activities to be performed by ride-hail services (including Autonomous Vehicles, in the foreseeable future). The overall effect of these services will continue to impact how people travel on a daily basis and may or may not result in increased vehicle traffic on public streets while also reducing the need to own/park personal vehicles. Although there is no empirical methodology to estimate vehicle trips generated by ride-hail services associated with the Lincoln Yards project, the application of relatively higher trip generation rates and a conservative reduction in trips would account for the potential temporal increase in vehicle trips to/from the site by ride-hail services.

VEHICLE TRIP GENERATION ANALYSIS

The following section describes the trip generation estimation of daily and weekday AM and PM peak-hour trips generated by each phase of development. The analysis includes the vehicle trip

¹⁵ <http://www.chicagotribune.com/business/ct-prudential-plaza-electric-buses-1027-biz-20161027-story.html>

¹⁶ <https://www.citylab.com/transportation/2018/01/to-measure-the-uber-effect-cities-get-creative/550295/>

¹⁷ <https://www.cpexecutive.com/post/parking-demand-trends-the-impact-of-transportation-network-cos/>

reduction analysis and adjustments based on local context, multimodal network and accessibility, parking management and additional TDM programs. **Appendix A** presents the TDM reduction summaries for each phase of development.

Importantly, due to the urban context of the project site, proximity and connectivity to existing modes and land uses, and the proposed land-use program and multimodal improvements in and around the project site, the analysis indicates an approximate reduction between 18% and 67% of total daily and weekday peak-hour vehicle trips relative to baseline ITE estimates¹⁸.

Phase 1: Trip Generation Estimation

Taking into account of the land-use program for Phase 1 of the development (i.e., Lincoln Yards North – North Dominick) and adjusted vehicle trip reduction factors, as previously described, the project would result in approximately 11,810 daily vehicle trips; 945 weekday AM peak hour trips and 1,160 weekday PM peak hour trips. The following tables present these findings.

Table 4: Phase 1 - Daily Trip Generation Estimate

Land Use	Size ¹ (units, ksf, rooms)	ITE Trips Generated	Vehicle Trip Reduction	Percent Reduction (%)	Net Daily Trips
Residential	--	--	--	--	--
Office	1,466 ksf	14,350	-5,910	-41%	8,440
Retail	90 ksf	5,580	-2,210	-40%	3,370
Hotel	--	--	--	--	--
Total	1,556 ksf	19,930	-8,120	-41%	11,810

Notes: 1. ksf = thousand square feet and numbers are rounded to nearest ksf for office/retail uses.
Source: Nelson\Nygaard, 2018.

Table 5: Phase 1 - Weekday AM Peak Trip Generation Estimate

Land Use	Size (units, ksf, rooms)	AM Peak Trips	AM Peak Reduction	Percent Reduction	AM Net Trips	% Entering	% Exiting	Inbound Trips	Outbound Trips
Residential	--	--	--	--	--	--	--	--	--
Office	1,466 ksf	1,404	-587	-41%	826	86%	14%	710	116
Retail	90 ksf	197	-78	-40%	119	62%	38%	74	45
Hotel	--	--	--	--	--	--	--	--	--
Total	1,556 ksf	1,601	-656	--	945	--	--	784	161

Source: Nelson\Nygaard, 2018.

¹⁸ The vehicle trip reduction estimates vary by phase based on a number of factors as previously described in the Methodology section of this memorandum. That said, because each planned development includes varying levels of development and infrastructure, the vehicle trip reductions correspondingly vary by phase.

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Table 6: Phase 1 - Weekday PM Peak Trip Generation Estimate

Land Use	Size (units, ksf, rooms)	PM Peak Trips	PM Peak Reduction	Percent Reduction	PM Net Trips	% Entering	% Exiting	Inbound Trips	Outbound Trips
Residential	--	--	--	--	--	--	--	--	--
Office	1,466 ksf	1,459	-601	-41%	858	16%	84%	137	721
Retail	90 ksf	501	-199	-40%	302	48%	52%	145	157
Hotel	--	--	--	--	--	--	--	--	--
Total	1,556 ksf	1,960	-800	--	1,160	--	--	282	878

Source: NelsonNygaard, 2018.

Full Buildout: Trip Generation Estimation

Under Phase 3 of the development, the project would result in approximately 54,626 vehicle trips; 3,906 weekday AM peak hour trips and 4,783 weekday PM peak hour trips. The following tables present these findings.

Table 7: Full Buildout - Daily Trip Generation Estimate

Land Use	Size (units, ksf, rooms)	ITE Trips Generated	Vehicle Trip Reduction	Percent Reduction (%)	Net Daily Trips
Residential	4,359 units	32,913	-21,604	66%	11,309
Office	7,539 ksf	70,259	-44,028	63%	26,231
Retail	780 ksf	24,296	-13,037	54%	11,259
Hotel	400 rooms	4,089	-908	22%	3,181
Total	--	131,557	-79,577	61%	51,980

Source: NelsonNygaard, 2018.

Table 8: Full Buildout - Weekday AM Peak Trip Generation Estimate

Land Use	Size (units, ksf, rooms)	AM Peak Trips	AM Peak Reduction	Percent Reduction	AM Net Trips	% Entering	% Exiting	Inbound Trips	Outbound Trips
Residential	4,359 units	1,722	-1,130	-65%	592	23%	77%	136	456
Office	7,539 ksf	7,113	-4,457	-63%	2,656	86%	14%	2,284	372
Retail	780 ksf	542	-291	-53%	251	62%	38%	156	95
Hotel	400 rooms	195	-43	-22%	151	59%	41%	89	62
Total	--	9,571	-5,921	-61%	3,650			2,665	985

Source: NelsonNygaard, 2018.

Table 9: Full Buildout - Weekday PM Peak Trip Generation Estimate

Land Use	Size (units, ksf, rooms)	PM Peak Trips	PM Peak Reduction	Percent Reduction	PM Net Trips	% Entering	% Exiting	Inbound Trips	Outbound Trips
Residential	4,359 units	1,700	-1,116	-65%	584	63%	37%	368	216
Office	7,539 ksf	6,915	-4,333	-63%	2,582	16%	84%	413	2,169
Retail	780 ksf	2,484	-1,333	-53%	1,151	48%	52%	552	599
Hotel	400 rooms	274	-61	-22%	213	51%	49%	109	104
Total	--	11,372	-6,842	-61%	4,530			1,442	3,088

Source: Nelson\Nygaard, 2018.

TRIP GENERATION BY MODE

In addition to vehicle trip generation which evaluates the number of trips made by personal vehicles, ride share services, and other motor vehicle based modes, development-based trips were distributed across all modes in accordance with expected future mode shares.

Expected mode shares were developed in accordance with existing mode shares for the study area taken from the most recent Census Transportation Planning Package (CTPP) Data published in 2013. The non-internal trips generated by the primary trip generation methodology previously outlined that were non distributed to automobile mode were distributed across alternative modes in accordance with the CTPP data mode shares for the study area and areas east of the study area which are more representative of expected conditions following full project buildout.

Full Buildout: Daily Trip Generation by Mode

Under Phase 3 of the proposed development, roughly half of all trips will be conducted by personal automobile or ride share. The remainder of trips will be conducted via transit, bike, or walk, with a portion of trips accounted for by telecommuting. The below table displays expected mode shares for the project.

Table 10: Full Buildout – Daily Trip Generation by Mode

Mode	Trips	Mode Share
Personal Automobile	42,201	39%
Bus	23,873	22%
Subway or Elevated	10,023	9%
Rail	4,191	4%
Bicycle	2,369	2%
Walked	7,472	7%
Uber/Lyft	9,779	9%
Worked at Home	8,747	8%
Total	108,656	100%

Conclusion

As with any methodology, Nelson\Nygaard's approach is imperfect and will not match exactly what happens on the ground. The methodology as outlined above provides a planning-level understanding of the impacts of various context variables on auto trip generation. It allows the project team, the City, and the public to understand how important factors such as the intensity of uses in a proposed development by phase, access to high-quality transit, the non-motorized environment, and parking management and provision can affect auto trips.

Appendix A Vehicle Trip Reduction Summary by Phase

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Table A-1: Vehicle Trip Reduction Summary – Phase 1

TRIP GENERATION ANALYSIS			
Standard Trip Generation			Remaining
Typical Trips (ITE)			19,930
<hr/>			
Vacated Vehicle Trips	Credit	Change of Total Trips	Remaining
Local Context Reductions			
Residential Density			
Jobs-Housing Balance	-2.4%	-482	-2.42%
Local Serving Retail	-2.0%	-399	-2.00%
Affordable Housing			
<i>Total Local Context Reductions</i>		-881	-4.4%
<i>Remaining Trips</i>			19,049
<hr/>			
Transportation Network Reductions			
Transit	-12.5%	-2,498	-12.5%
Bicycle & Pedestrian	-6.0%	-1,204	-6.0%
<i>Total Transportation Network Reductions</i>		-3,703	-18.6%
<i>Remaining Trips</i>			15,346
<hr/>			
Parking Management Reductions			
Parking Supply	-15.6%	-3,044	-15.3%
Parking Fees			
<i>Employee Parking Pricing</i>			
<i>Resident Parking Pricing</i>			
<i>Customer Parking Pricing</i>			
<i>Total Parking Management Reductions</i>		-3,044	-15.3%
<i>Remaining Trips</i>			12,302
<hr/>			
Additional TDM Program Reductions			
Free Transit Passes			
<i>Employee Free Transit Pass</i>			
<i>Resident Free Transit Pass</i>			
Telecommuting	-10.0%	-393	-2.0%
Support & Marketing	-1.9%	-99	-0.5%
<i>Additional TDM Program Summary</i>		-492	-2.5%
<i>Remaining Trips</i>			11,810
<hr/>			
Final Results		Change of Total Trips	Remaining
Total Vacated Vehicle Trips		-8,120	-40.76%
Resulting Project Trips			11,810

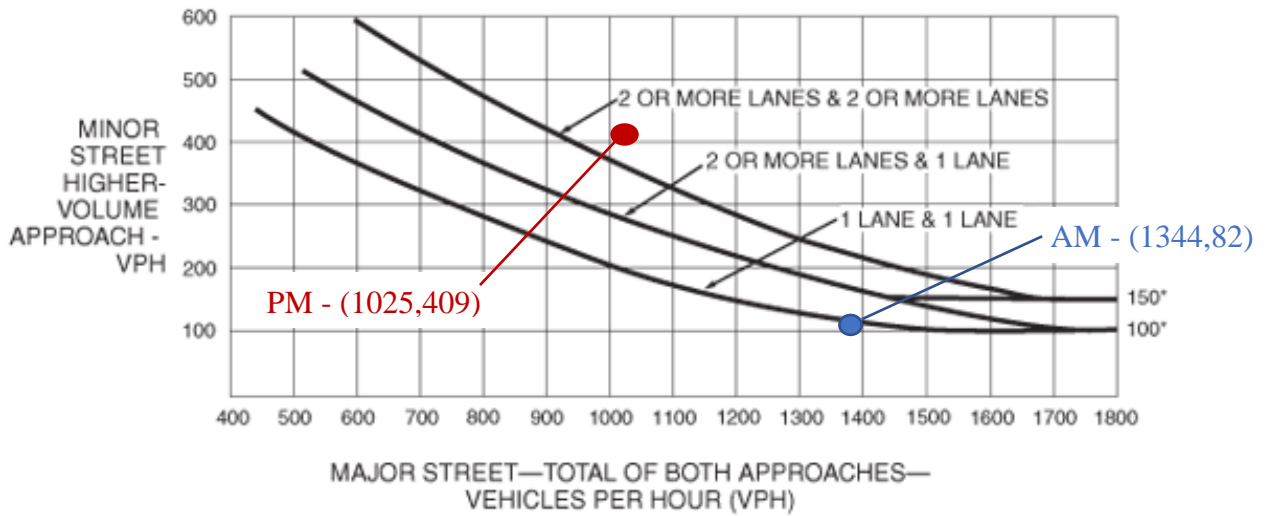
DRAFT Vehicle Trip Generation Methodology Review
Lincoln Yards Planned Developments

Table A-2: Vehicle Trip Reduction Summary – Full Buildout

TRIP GENERATION ANALYSIS				
Standard Trip Generation				Remaining
Typical Trips (ITE)				131,557
Vacated Vehicle Trips				
	Credit	Change	% of Total Trips	Remaining
Local Context Reductions				
Residential Density	-38%	-12,680	-9.64%	
Jobs-Housing Balance	-0.6%	-6,009	-4.57%	
Local Serving Retail	-2.0%	-4,212	-3.20%	
Affordable Housing				
<i>Total Local Context Reductions</i>		-22,901	-17.4%	
				<i>Remaining Trips</i> 108,656
Transportation Network Reductions				
Transit	-12.7%	-18,707	-14.2%	
Bicycle & Pedestrian	-6.2%	-9,956	-7.6%	
<i>Total Transportation Network Reductions</i>		-28,663	-21.8%	
				<i>Remaining Trips</i> 79,993
Parking Management Reductions				
Parking Supply	-27.0%	-23,223	-17.7%	
Parking Fees				
<i>Employee Parking Pricing</i>				
<i>Resident Parking Pricing</i>				
<i>Customer Parking Pricing</i>				
<i>Total Parking Management Reductions</i>		-23,223	-17.7%	
				<i>Remaining Trips</i> 56,771
Additional TDM Program Reductions				
Free Transit Passes				
<i>Employee Free Transit Pass</i>				
<i>Resident Free Transit Pass</i>				
Telecommuting	-15.0%	-3,540	-2.7%	
Support & Marketing	-3.9%	-1,251	-1.0%	
<i>Additional TDM Program Summary</i>		-4,791	-3.7%	
				<i>Remaining Trips</i> 51,946
Final Results				
		Change	% of Total Trips	Remaining
Total Vacated Vehicle Trips		-79,577	-60.5%	
				Resulting Project Trips 51,980

Preliminary Traffic Signal Warrant Analyses

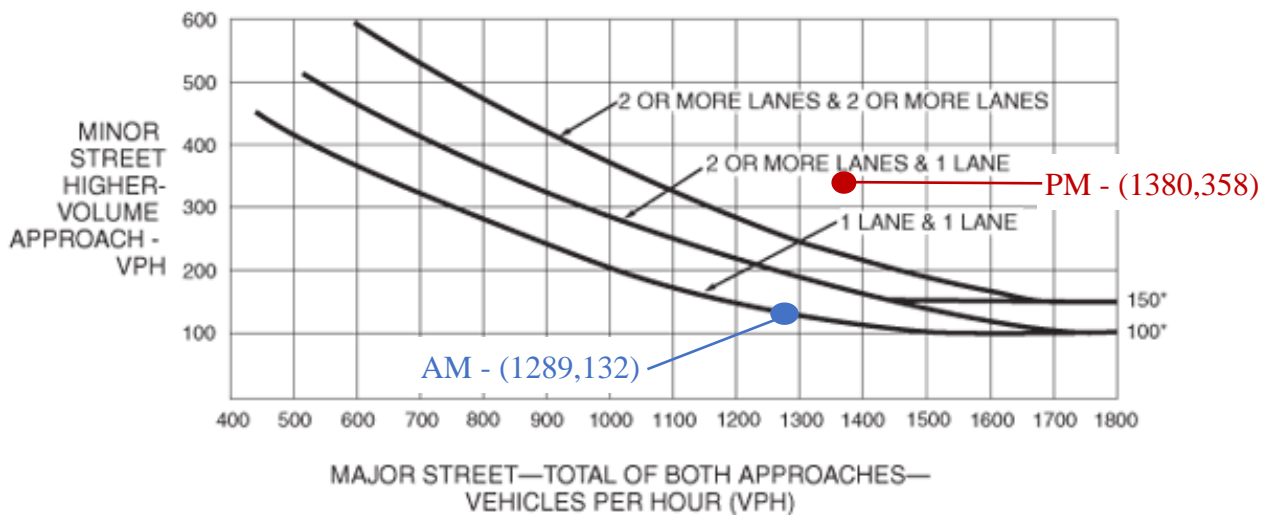
Figure 4C-3. Warrant 3, Peak Hour



*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Webster Avenue with Dominick Street – Phase One

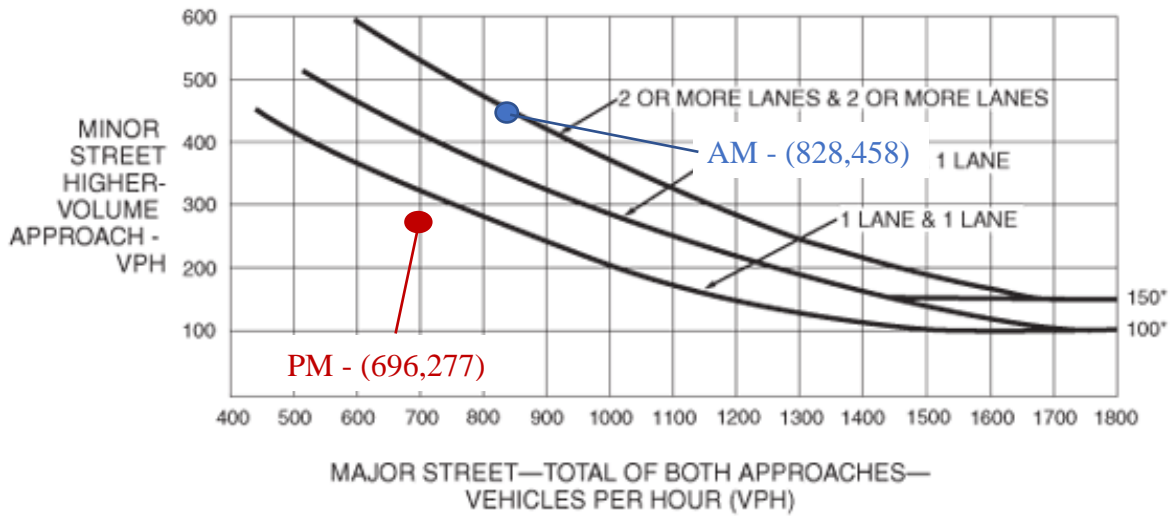
Figure 4C-3. Warrant 3, Peak Hour



*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Cortland Street with Dominick Street – Phase One

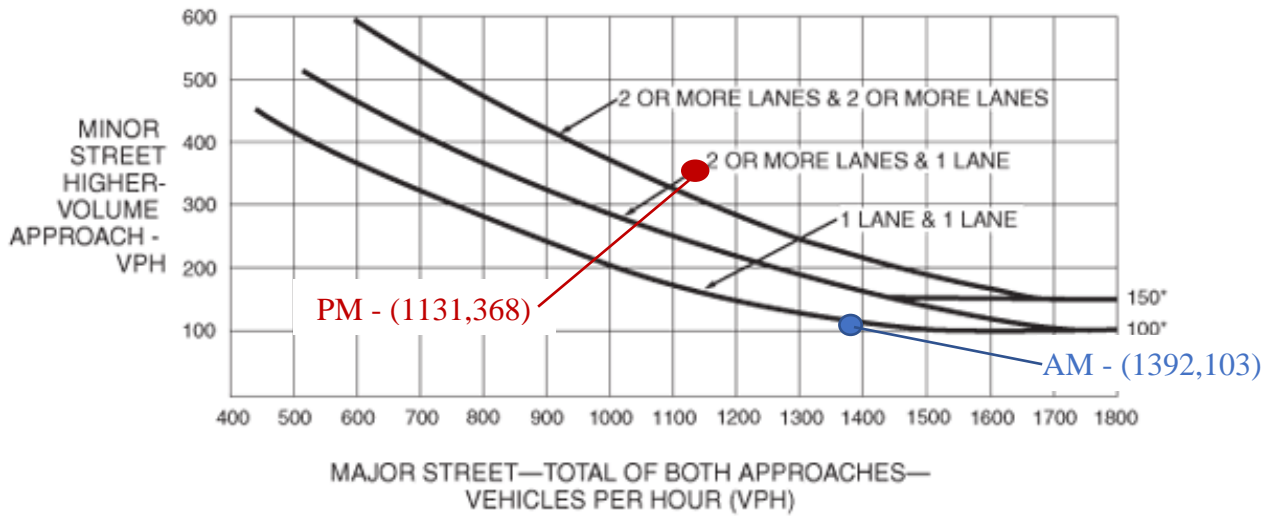
Figure 4C-3. Warrant 3, Peak Hour



*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

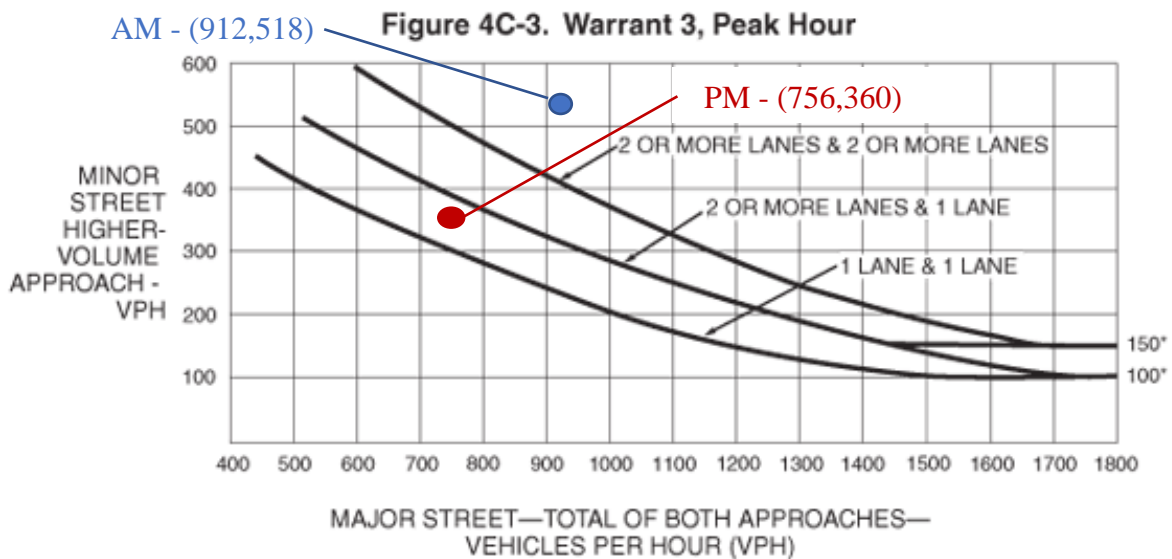
Webster Avenue with Southport Avenue – Phase One

Figure 4C-3. Warrant 3, Peak Hour



*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

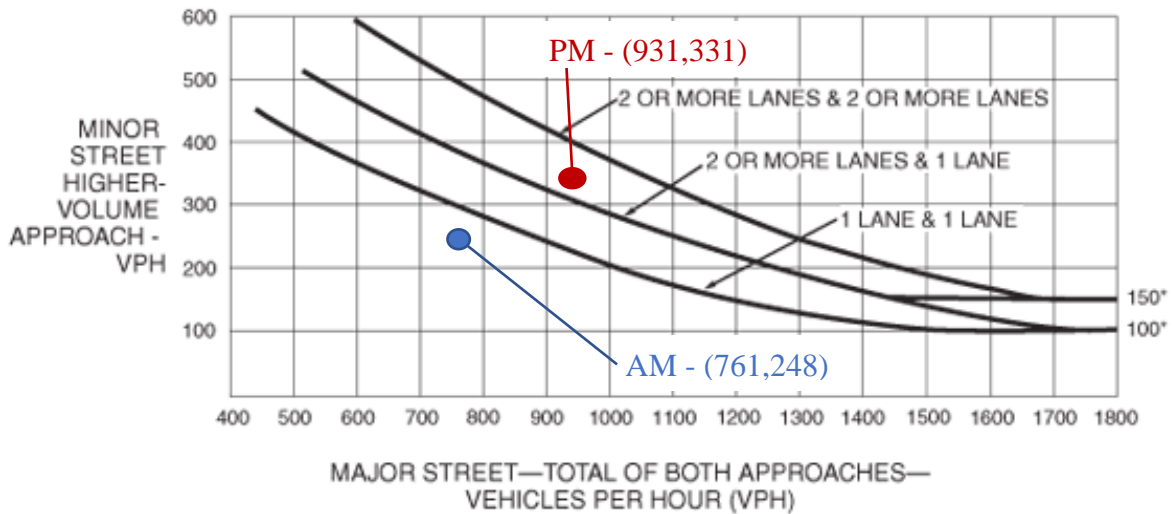
Webster Avenue with Dominick Street – Total Projected



*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Webster Avenue with Southport Avenue – Total Projected

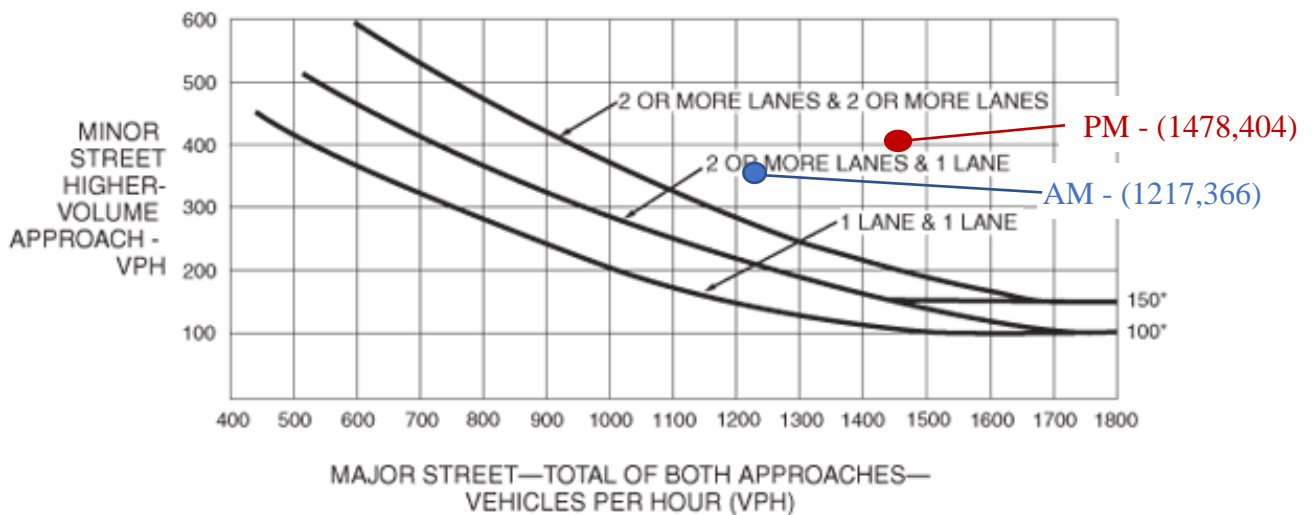
Figure 4C-3. Warrant 3, Peak Hour



*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Dominick Street with Armitage Avenue – Total Projected

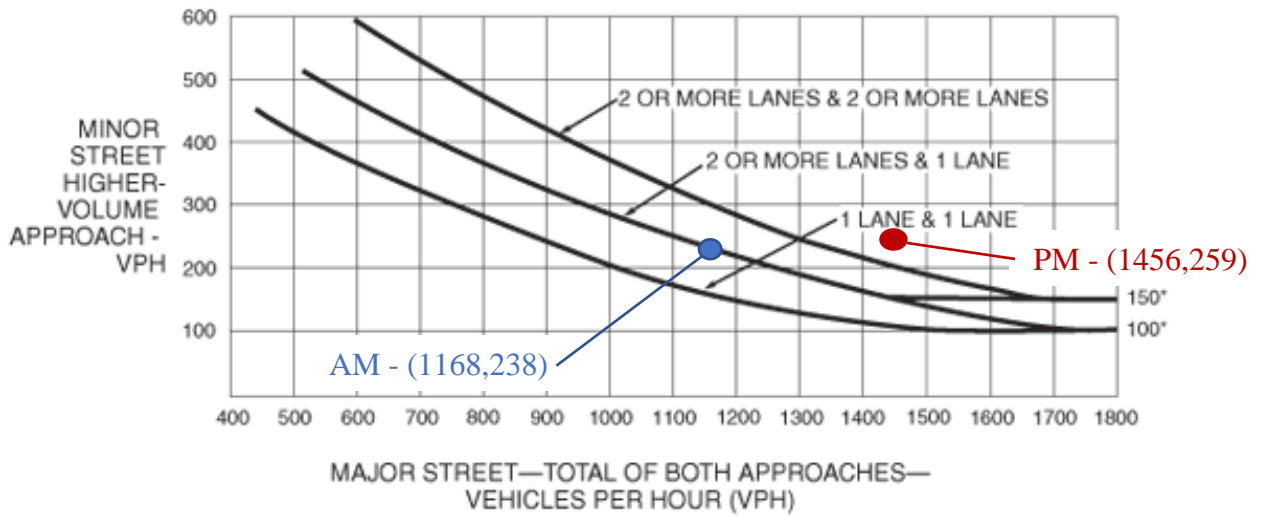
Figure 4C-3. Warrant 3, Peak Hour



*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Cortland Street with Dominick Street – Total Projected

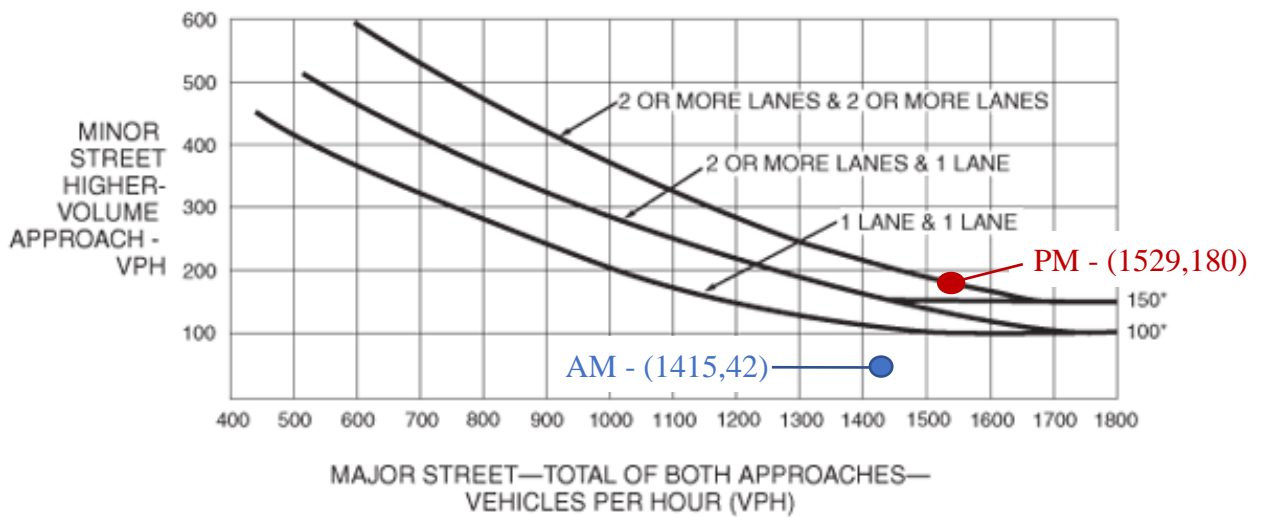
Figure 4C-3. Warrant 3, Peak Hour



*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Cortland Street with Kingsbury Street – Total Projected

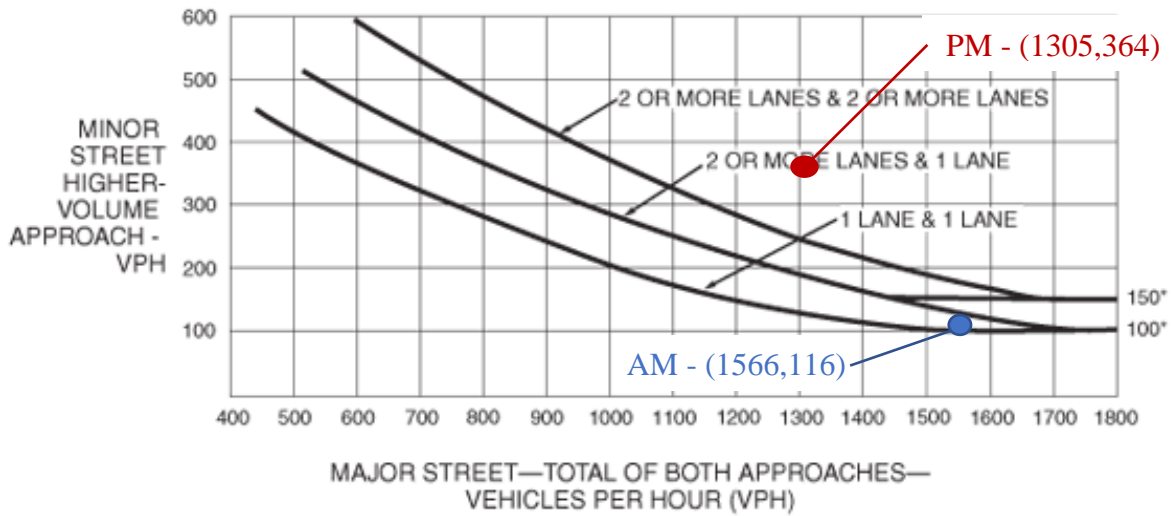
Figure 4C-3. Warrant 3, Peak Hour



*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Clybourn Avenue with Wisconsin Street – Total Projected

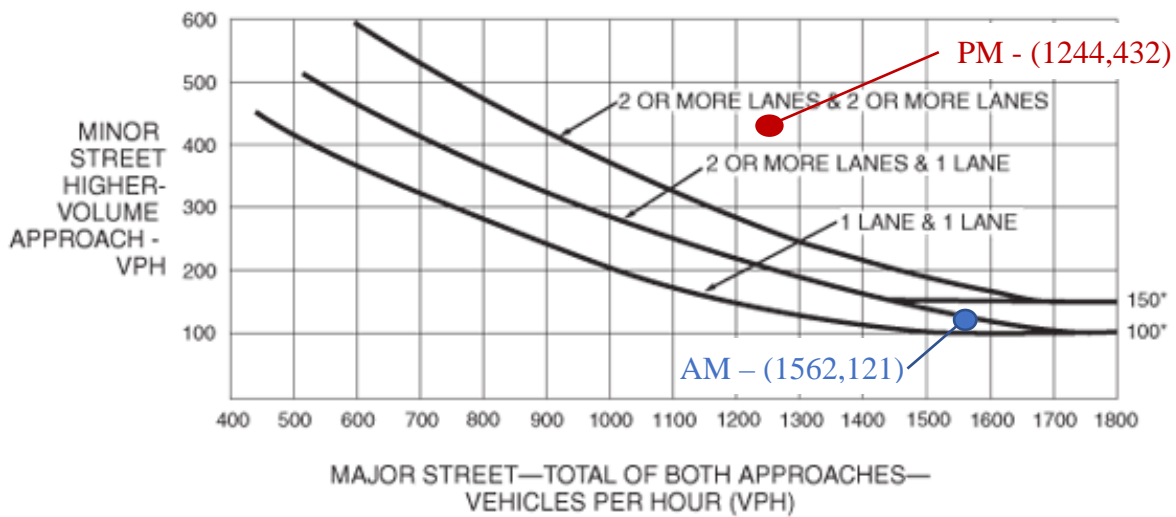
Figure 4C-3. Warrant 3, Peak Hour



*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Elston Avenue with Wabansia Avenue – Total Projected

Figure 4C-3. Warrant 3, Peak Hour



*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Elston Avenue with Concord Place – Total Projected

Summary of Synchro/SimTraffic Model Calibration

Existing Field Observations and Analyses

Synchro/SimTraffic Calibration

Existing Field Observations and Synchro/SimTraffic Analysis

Based on field observations and the results of the Synchro/SimTraffic model, the following summarizes the corridors and specific intersections in the area that experience the **heaviest** congestion:

- Westbound I-90/94 off-ramps at the interchanges with North Avenue and Armitage Avenue.
- North Avenue corridor, particularly at the following intersections:
 - North Avenue with the I-90/94 ramps
 - The triangle intersections of North Avenue with Halsted Avenue and Clybourn Avenue
- Clybourn Avenue corridor, particularly at the following intersections:
 - The triangle intersections of North Avenue with Halsted Avenue and Clybourn Avenue
 - The six-legged intersection of Clybourn Avenue with Sheffield Avenue and Willow Street
 - Clybourn Avenue with Cortland Street and Racine Avenue
- Ashland Avenue corridor, particularly at the following intersections:
 - The triangle intersections of Ashland Avenue with Armitage Avenue and Elston Avenue
 - Ashland Avenue with Webster Avenue
- Armitage Avenue corridor, particularly at the following intersections:
 - The triangle intersections of Ashland Avenue with Armitage Avenue and Elston Avenue
 - Armitage Avenue with the I-90/94 ramps
- Webster Avenue corridor, particularly at the following intersections:
 - Webster Avenue with Elston Avenue
 - Webster Avenue with Ashland Avenue
 - Webster Avenue with Southport Avenue

Primary Capacity Constraints

The following summarizes the area's primary capacity constraints, which contribute to the congestion in the area:

- Lack of east-west and north-south corridors that cross the Chicago River
- The narrow Union Pacific viaducts along Armitage Avenue which restrict the capacity of Armitage Avenue
- The I-90/94 interchanges with North Avenue and Armitage Avenue
- The following six-legged intersections in the area:
 - The triangle intersections of Ashland Avenue with Armitage Avenue with Elston Avenue
 - The triangle intersections of North Avenue with Halsted Avenue and Clybourn Avenue
 - The six-legged intersection of Clybourn Avenue with Sheffield Avenue and Willow Street
- The Clybourn Avenue with Cortland Avenue and Racine Avenue intersection
- The all-way stop-sign controlled intersection of Webster Avenue with Southport Avenue

Synchro/SimTraffic Model Calibration Adjustments

Morning Peak Hour

Webster and Damen

- Decreased the westbound left-turn headway by 5%
- Decreased the eastbound through/right headway by 12%

Ashland and Webster

- Decreased the northbound left-turn headway by 13%
- Increased the southbound through/right headway by 8%

Armitage and I-90/94 East Ramps

- Increased the mandatory distance and the positioning distance

Ashland and Armitage

- Decreased the eastbound left/through/right-turn movement by 5%

Ashland and Elston

- Decreased the eastbound headway by 13%
- Decreased the southbound left-turn headway by 9%

Armitage and Elston

- Decreased the southbound headway by 15%

Ashland and Cortland

- Decreased the eastbound headway by 13%

Elston and Cortland

- Decreased the eastbound through headway by 12%
- Increased the eastbound right turn headway by 5%
- Decreased the westbound through headway by 12%

Kingsbury and Cortland

- Decreased the eastbound through headway by 8%

Clybourn/Cortland and Racine

- Decreased the eastbound hard left headway by 15%
- Decreased the eastbound soft left headway by 13%
- Decreased the southeast-bound headway by 10%
- Decreased the northwest-bound left headway by 13%
- Increased the turning speed of the northwest-bound left turn by 5 mph

North and I-90/94 East Ramps

- Increased the eastbound headway by 15%

North and Kingsbury, North and Sheffield, North and Fremont

- Increased the eastbound headway by 13%

North and Clybourn/Dayton

- Increased the eastbound headway by 13%
- Increased the eastbound soft right by 15%

Clybourn/Sheffield/Willow

- Decreased the southeast-bound headway by 9%

Evening Peak Hour

Elston and Webster

- Decreased the eastbound left-turn headway by 10%
- Increased the westbound through headway by 14%

Ashland and Armitage

- Decreased the eastbound left/through/right-turn headway by 9%
- Decreased the westbound through headway by 3%
- Decreased the northbound left-turn headway by 14%
- Increased the southbound through headway by 13%

Ashland and Elston

- Decreased the southbound left-turn headway by 8%

Armitage and Elston

- Increased the mandatory and positioning distances for eastbound traffic
- Decreased the westbound left/through/right-turn headway by 15%
- Decreased the northbound left-turn headway by 9%
- Decreased the northbound through/right-turn headway by 15%
- Decreased the southbound through headway by 15%

Clybourn/Southport and Shakespeare

- Decreased the southeast left-turn headway by 13%
- Increased the northwest-bound through/right-turn headway by 15%
- Increased the southeast-bound and northwest-bound left-turn speed by 3 mph

Elston and Cortland

- Decreased the eastbound left-turn headway by 9%
- Decreased the westbound left-turn headway by 13%
- Decreased the westbound through headway by 8%
- Decreased the westbound right-turn headway by 13%
- Increased the northbound through headway by 3%
- Decreased the southbound left-turn headway by 14%
- Decreased the southbound through headway by 13%
- Decreased the southbound right-turn headway by 10%
- Increased the eastbound left-turn speed by 3 mph
- Decreased the southbound left-turn and right-turn speed by 3 mph

Cortland and Dominick

- Decreased the eastbound headway by 15%
- Decreased the westbound headway by 15%

Kingsbury and Cortland

- Decreased the eastbound left-turn headway by 5%
- Decreased the eastbound through headway by 5%

Clybourn/Cortland and Racine

- Decreased the eastbound hard left-turn headway by 10%
- Decreased the eastbound soft left-turn headway by 15%
- Decreased the southbound soft right-turn headway by 9%
- Decreased the southbound hard right-turn headway by 5%
- Decreased the southeast-bound left-turn headway by 14%
- Decreased the southeast-bound headway by 14%
- Decreased the northwest-bound left-turn headway by 14%
- Increased the northwest-bound through headway by 13%
- Increased the turning speed of the eastbound left turn by 3 mph
- Increased the southeast-bound left-turn speed by 4 mph
- Increased the northwest-bound left-turn speed by 3 mph

North and I-90/94 West Ramps

- Decreased the westbound left-turn headway by 14%
- Decreased the westbound through headway by 9%

North and I-90/94 East Ramps

- Decreased the westbound headway by 15%
- Decreased the westbound right-turn headway by 15%

North and Elston

- Increased the eastbound headway by 14%
- Increased the westbound headway by 14%
- Decreased the southbound headway by 12%
- Decreased the southbound right-turn headway by 14%

North and Throop, North and Sheffield

- Increased the eastbound left-turn headway by 9%
- Increased the eastbound headway by 14 %
- Increased the westbound headway by 14%

North and Fremont, North/Clybourn and Dayton

- Increased the eastbound headway by 14%
- Increased the westbound headway by 14%

Clybourn/Sheffield/Willow

- Decreased the eastbound left-turn headway by 8%
- Increased the westbound right-turn headway by 5%
- Decreased the northbound left-turn headway by 9%
- Decreased the northbound headway by 5%
- Decreased the southbound left-turn headway by 13%
- Decreased the southeast-bound left-turn headway by 13%
- Decreased the northwest-bound left-turn headway by 13%
- Decreased the northwest-bound headway by 5%
- Increased the eastbound and southeast-bound left-turn speed by 3 mph

Recommended Signal Timing and Offset Modifications

PHASE 1 – PROPOSED TRAFFIC SIGNAL TIMING MODIFICATIONS

Intersection	Improvement/Modification
Elston Avenue with Cortland Street Intersection	<p><i>Morning Peak Period</i></p> <ul style="list-style-type: none"> • Reallocate 5 seconds from SB/NB Elston Avenue and 7 seconds from the SB lead phase and allocate 9 seconds to a new WB left-turn phase and 3 seconds to the WB phase • Adjust offsets <p><i>Evening Peak Period</i></p> <ul style="list-style-type: none"> • Reallocate 3 seconds from SB/NB Elston Avenue and 2 seconds from the SB lead phase and allocate 9 seconds to the WB left-turn phase and 5 seconds to the WB phase • Adjust offsets
Ashland Avenue with Webster Avenue Intersection	<p><i>Morning Peak Period</i></p> <ul style="list-style-type: none"> • Reallocate 4 seconds from the Ashland Avenue SB/NB phase and allocate 1 second to the Webster Avenue WB/EB phase and 3 seconds to the Webster Avenue WB/EB left-turn phase <p><i>Evening Peak Period</i></p> <ul style="list-style-type: none"> • Reallocate 5 seconds from the Ashland Avenue SB/NB phase and 4 seconds from the Webster Avenue EB movement and allocate 9 seconds to the Webster Avenue WB left-turn movement and 5 seconds to the Webster Avenue EB left-turn movement
Armitage Avenue with Westbound I-90/94 Ramps Intersection	<ul style="list-style-type: none"> • Reallocate 3 seconds from the Armitage Avenue EB lead left-turn phase and allocate it to the Armitage Avenue EB/WB phase
Elston Avenue with Webster Avenue Intersection	<p><i>Morning Peak Period</i></p> <ul style="list-style-type: none"> • Reallocate 4 seconds from the SE/NW movements and 4 seconds from the E/W movement and allocate it to the recommended exclusive SE/NW left-turn phase and WB right-turn overlap • Adjust the traffic signal offset <p><i>Evening Peak Period</i></p> <ul style="list-style-type: none"> • Reallocate 15 seconds from the SE/NW movements and allocate 10 seconds to the recommended exclusive SE/NW left-turn phase and 5 seconds to the EB/WB phase • Adjust the traffic signal offset
Damen Avenue with Webster Avenue Intersection	<p><i>Morning and Evening Peak Periods</i></p> <ul style="list-style-type: none"> • Increase the cycle length to 75 seconds to provide a WB Webster Avenue exclusive left-turn phase • Adjust the traffic signal offset
Clybourn Avenue with Cortland Street and Racine Avenue Intersection	<p><i>Morning Peak Period</i></p> <ul style="list-style-type: none"> • Increase the cycle length to 90 seconds • Provide a northwest-bound exclusive left-turn phase • Adjust the offsets <p><i>Evening Peak Period</i></p> <ul style="list-style-type: none"> • Increase the cycle length to 90 seconds • Provide a northwest-bound exclusive left-turn phase • Adjust the offsets

TOTAL BUILDOUT – PROPOSED TRAFFIC SIGNAL TIMING MODIFICATIONS

Intersection	Improvement/Modification
Ashland Avenue with Elston Avenue Intersection	<p><i>Morning Peak Period</i></p> <ul style="list-style-type: none"> • Reallocate 7 seconds from the SB/NB phase and allocate it to the SB left-turn phase
Ashland Avenue with Armitage Avenue Intersection	<p><i>Morning Peak Period</i></p> <ul style="list-style-type: none"> • Eliminate the SB lead phase (13 seconds) • Reallocate 2 seconds from the SB/NB phase and allocate 7 additional seconds to the EB phase and 8 additional seconds to the EB lead phase • Provide a NB lead phase <p><i>Evening Peak Period</i></p> <ul style="list-style-type: none"> • Eliminate the SB lead phase (7 seconds) • Reallocate 5 seconds from the SB/NB phase and 9 seconds from the EB lead phase and allocate 3 additional seconds to the EB phase and 12 seconds to the WB phase • Provide a NB lead phase
Elston Avenue with Armitage Avenue Intersection	<p><i>Morning Peak Period</i></p> <ul style="list-style-type: none"> • Eliminate the EB lead phase (25 seconds) • Reallocate 9 seconds from the NB lead phase and allocate 14 additional seconds to the SB/NB movements and 20 additional seconds to the EB/WB movements • Adjust the traffic signal offset <p><i>Evening Peak Period</i></p> <ul style="list-style-type: none"> • Eliminate the EB lead phase (30 seconds) and allocate 7 seconds to the NB lead phase and 23 seconds to the EB/WB phase • Adjust the traffic signal offset
I-90/94 Westbound Ramps with Armitage Avenue Intersection	<p><i>Evening Peak Period</i></p> <ul style="list-style-type: none"> • Reallocate 1 second from the NB phase and allocate it to the EB/WB phase
Elston Avenue with Webster Avenue Intersection	<p><i>Morning Peak Period</i></p> <ul style="list-style-type: none"> • Reallocate 4 seconds from the SE/NW movements and 4 seconds from the E/W movement and allocate it to the recommended exclusive SE/NW left-turn phase and WB right-turn overlap • Adjust the traffic signal offset <p><i>Evening Peak Period</i></p> <ul style="list-style-type: none"> • Reallocate 15 seconds from the SE/NW movements and allocate 10 seconds to the recommended exclusive SE/NW left-turn phase and 5 seconds to the EB/WB phase • Adjust the traffic signal offset

TOTAL BUILDOUT – PROPOSED TRAFFIC SIGNAL TIMING MODIFICATIONS

Intersection	Improvement/Modification
Elston Avenue with Cortland Street Intersection	<p><i>Morning Peak Period</i></p> <ul style="list-style-type: none"> • Reallocate 18 seconds from the SB lead phase and 4 seconds from the EB/WB phase and allocate it to the new separate left-turn phases • Adjust the traffic signal offset <p><i>Evening Peak Period</i></p> <ul style="list-style-type: none"> • Reallocate 12 seconds from the SB lead phase and 5 seconds from the EB/WB phase and allocate it to the new separate left-turn phases • Adjust the traffic signal offset
Clybourn Avenue with Sheffield Avenue and Willow Street Intersection	<p><i>Morning Peak Period</i></p> <ul style="list-style-type: none"> • Reallocate 2 seconds from the SE/NW phase and 4 seconds from the NB/SB phase and provide them to the proposed addition of a SEB separate left-turn phase <p><i>Evening Peak Period</i></p> <ul style="list-style-type: none"> • Reallocate 2 seconds from the SB/NB phase and provide them to the SEB left-turn phase
Damen Avenue with Webster Avenue Intersection	<p><i>Morning and Evening Peak Periods</i></p> <ul style="list-style-type: none"> • Increase the cycle length to 75 seconds to provide a WB Webster Avenue exclusive left-turn phase • Adjust the traffic signal offset
North Avenue with I-90/94 Eastbound Ramps and Westbound Ramps Intersections	<p><i>Morning Peak Period</i></p> <ul style="list-style-type: none"> • Increase the cycle length to 110 seconds • Adjust the offsets <p><i>Evening Peak Period</i></p> <ul style="list-style-type: none"> • Increase the cycle length to 110 seconds • Adjust the offsets
North Avenue with Elston Avenue Intersection	<p><i>Morning Peak Period</i></p> <ul style="list-style-type: none"> • Increase the cycle length to 110 seconds • Adjust the offsets <p><i>Evening Peak Period</i></p> <ul style="list-style-type: none"> • Increase the cycle length to 110 seconds • Adjust the offsets
North Avenue with Throop Street Intersection	<p><i>Morning Peak Period</i></p> <ul style="list-style-type: none"> • Increase the cycle length to 110 seconds • Adjust the offsets <p><i>Evening Peak Period</i></p> <ul style="list-style-type: none"> • Increase the cycle length to 110 seconds • Adjust the offsets
Clybourn Avenue with Cortland Street and Racine Avenue Intersection	<p><i>Morning Peak Period</i></p> <ul style="list-style-type: none"> • Increase the cycle length to 90 seconds • Provide a northwest-bound exclusive left-turn phase • Adjust the offsets <p><i>Evening Peak Period</i></p> <ul style="list-style-type: none"> • Increase the cycle length to 90 seconds • Provide a northwest-bound exclusive left-turn phase • Adjust the offsets

Traffic Count Summary Sheets



Kenig Lindgren O'Hara Aboona, Inc.
9575 W. Higgins Rd., Suite 400

Rosemont, Illinois, United States 60018
(847)518-9990

Count Name: Armatige with I-90 SB Ramp
Site Code:
Start Date: 02/23/2016
Page No: 1

Turning Movement Data

Start Time	Armatige Avenue Eastbound						Armatige Avenue Westbound						Hermitage Avenue Northbound						I-90 SB Ramp Southbound						Int. Total
	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	
7:00 AM	0	0	178	0	3	178	0	0	51	0	0	51	0	0	0	0	12	0	0	69	0	30	2	99	328
7:15 AM	0	0	160	0	6	160	0	0	58	0	0	58	0	0	0	1	29	1	0	73	1	31	0	105	324
7:30 AM	0	0	205	0	2	205	1	0	63	0	0	64	0	0	0	0	11	0	0	61	0	31	5	92	361
7:45 AM	0	0	185	0	1	185	1	0	75	0	0	76	0	0	0	0	21	0	0	53	1	33	6	87	348
Hourly Total	0	0	728	0	12	728	2	0	247	0	0	249	0	0	0	1	73	1	0	256	2	125	13	383	1361
8:00 AM	0	0	182	1	3	183	0	0	79	0	0	79	0	0	0	0	7	0	0	55	0	39	2	94	356
8:15 AM	0	0	194	0	1	194	0	0	109	0	0	109	0	0	0	0	9	0	0	47	0	39	3	86	389
8:30 AM	0	0	187	0	2	187	0	0	66	0	1	66	0	0	0	0	20	0	0	45	0	32	2	77	330
8:45 AM	0	0	196	0	4	196	0	0	96	0	0	96	0	0	0	0	14	0	0	37	0	24	1	61	353
Hourly Total	0	0	759	1	10	760	0	0	350	0	1	350	0	0	0	0	50	0	0	184	0	134	8	318	1428
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4:00 PM	0	0	140	0	1	140	0	0	114	0	0	114	0	0	0	0	2	0	0	71	0	41	2	112	366
4:15 PM	0	0	167	0	3	167	0	0	101	0	0	101	0	0	0	0	11	0	0	58	0	66	2	124	392
4:30 PM	0	0	155	0	0	155	0	0	104	0	0	104	0	0	0	0	1	0	0	54	0	51	5	105	364
4:45 PM	0	0	143	0	6	143	0	0	130	0	0	130	0	0	0	0	16	0	0	69	0	66	3	135	408
Hourly Total	0	0	605	0	10	605	0	0	449	0	0	449	0	0	0	0	30	0	0	252	0	224	12	476	1530
5:00 PM	0	0	165	0	1	165	0	0	131	0	0	131	0	0	0	0	6	0	0	57	0	63	0	120	416
5:15 PM	0	0	163	0	8	163	0	0	118	0	0	118	0	0	0	0	24	0	0	75	0	58	1	133	414
5:30 PM	0	0	180	0	6	180	0	0	155	0	0	155	0	0	0	0	10	0	0	56	0	53	4	109	444
5:45 PM	0	0	152	0	3	152	0	0	132	0	0	132	0	0	0	0	19	0	0	60	0	75	1	135	419
Hourly Total	0	0	660	0	18	660	0	0	536	0	0	536	0	0	0	0	59	0	0	248	0	249	6	497	1693
Grand Total	0	0	2752	1	50	2753	2	0	1582	0	1	1584	0	0	0	1	212	1	0	940	2	732	39	1674	6012
Approach %	0.0	0.0	100.0	0.0	-	-	0.1	0.0	99.9	0.0	-	-	0.0	0.0	0.0	100.0	-	-	0.0	56.2	0.1	43.7	-	-	-
Total %	0.0	0.0	45.8	0.0	-	45.8	0.0	0.0	26.3	0.0	-	26.3	0.0	0.0	0.0	0.0	-	0.0	0.0	15.6	0.0	12.2	-	27.8	-
Lights	0	0	2671	1	-	2672	2	0	1531	0	-	1533	0	0	0	1	-	1	0	920	0	726	-	1646	5852
% Lights	-	-	97.1	100.0	-	97.1	100.0	-	96.8	-	-	96.8	-	-	-	100.0	-	100.0	-	97.9	0.0	99.2	-	98.3	97.3
Buses	0	0	17	0	-	17	0	0	6	0	-	6	0	0	0	0	-	0	0	4	0	0	-	4	27
% Buses	-	-	0.6	0.0	-	0.6	0.0	-	0.4	-	-	0.4	-	-	-	0.0	-	0.0	-	0.4	0.0	0.0	-	0.2	0.4
Single-Unit Trucks	0	0	40	0	-	40	0	0	39	0	-	39	0	0	0	0	-	0	0	12	0	4	-	16	95
% Single-Unit Trucks	-	-	1.5	0.0	-	1.5	0.0	-	2.5	-	-	2.5	-	-	-	0.0	-	0.0	-	1.3	0.0	0.5	-	1.0	1.6
Articulated Trucks	0	0	8	0	-	8	0	0	4	0	-	4	0	0	0	0	-	0	0	4	2	2	-	8	20
% Articulated Trucks	-	-	0.3	0.0	-	0.3	0.0	-	0.3	-	-	0.3	-	-	-	0.0	-	0.0	-	0.4	100.0	0.3	-	0.5	0.3
Bicycles on Road	0	0	16	0	-	16	0	0	2	0	-	2	0	0	0	0	-	0	0	0	0	0	-	0	18
% Bicycles on Road	-	-	0.6	0.0	-	0.6	0.0	-	0.1	-	-	0.1	-	-	-	0.0	-	0.0	-	0.0	0.0	0.0	-	0.0	0.3
Pedestrians	-	-	-	-	50	-	-	-	-	-	1	-	-	-	-	-	212	-	-	-	-	-	39	-	-



Kenig Lindgren O'Hara Aboona, Inc.
 9575 W. Higgins Rd., Suite 400
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 (847)518-9990

Count Name: Armatige with I-90 SB Ramp
 Site Code:
 Start Date: 02/23/2016
 Page No: 4

Turning Movement Peak Hour Data (7:30 AM)

Start Time	Armatige Avenue Eastbound						Armatige Avenue Westbound						Hermatige Avenue Northbound						I-90 SB Ramp Southbound						Int. Total
	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	
7:30 AM	0	0	205	0	2	205	1	0	63	0	0	64	0	0	0	0	11	0	0	61	0	31	5	92	361
7:45 AM	0	0	185	0	1	185	1	0	75	0	0	76	0	0	0	0	21	0	0	53	1	33	6	87	348
8:00 AM	0	0	182	1	3	183	0	0	79	0	0	79	0	0	0	0	7	0	0	55	0	39	2	94	356
8:15 AM	0	0	194	0	1	194	0	0	109	0	0	109	0	0	0	0	9	0	0	47	0	39	3	86	389
Total	0	0	766	1	7	767	2	0	326	0	0	328	0	0	0	0	48	0	0	216	1	142	16	359	1454
Approach %	0.0	0.0	99.9	0.1	-	-	0.6	0.0	99.4	0.0	-	-	NaN	NaN	NaN	NaN	-	-	0.0	60.2	0.3	39.6	-	-	-
Total %	0.0	0.0	52.7	0.1	-	52.8	0.1	0.0	22.4	0.0	-	22.6	0.0	0.0	0.0	0.0	-	0.0	0.0	14.9	0.1	9.8	-	24.7	-
PHF	0.000	0.000	0.934	0.250	-	0.935	0.500	0.000	0.748	0.000	-	0.752	0.000	0.000	0.000	0.000	-	0.000	0.000	0.885	0.250	0.910	-	0.955	0.934
Lights	0	0	739	1	-	740	2	0	308	0	-	310	0	0	0	0	-	0	0	207	0	139	-	346	1396
% Lights	-	-	96.5	100.0	-	96.5	100.0	-	94.5	-	-	94.5	-	-	-	-	-	-	-	95.8	0.0	97.9	-	96.4	96.0
Buses	0	0	5	0	-	5	0	0	0	0	-	0	0	0	0	0	-	0	0	1	0	0	-	1	6
% Buses	-	-	0.7	0.0	-	0.7	0.0	-	0.0	-	-	0.0	-	-	-	-	-	-	-	0.5	0.0	0.0	-	0.3	0.4
Single-Unit Trucks	0	0	12	0	-	12	0	0	17	0	-	17	0	0	0	0	-	0	0	7	0	3	-	10	39
% Single-Unit Trucks	-	-	1.6	0.0	-	1.6	0.0	-	5.2	-	-	5.2	-	-	-	-	-	-	-	3.2	0.0	2.1	-	2.8	2.7
Articulated Trucks	0	0	5	0	-	5	0	0	1	0	-	1	0	0	0	0	-	0	0	1	1	0	-	2	8
% Articulated Trucks	-	-	0.7	0.0	-	0.7	0.0	-	0.3	-	-	0.3	-	-	-	-	-	-	-	0.5	100.0	0.0	-	0.6	0.6
Bicycles on Road	0	0	5	0	-	5	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	5
% Bicycles on Road	-	-	0.7	0.0	-	0.7	0.0	-	0.0	-	-	0.0	-	-	-	-	-	-	-	0.0	0.0	0.0	-	0.0	0.3
Pedestrians	-	-	-	-	7	-	-	-	-	-	0	-	-	-	-	-	48	-	-	-	-	-	16	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	-	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-



Kenig Lindgren O'Hara Aboona, Inc.
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Count Name: Armatige with I-90 SB Ramp
Site Code:
Start Date: 02/23/2016
Page No: 6

Turning Movement Peak Hour Data (5:00 PM)

Start Time	Armatige Avenue Eastbound						Armatige Avenue Westbound						Hermatige Avenue Northbound						I-90 SB Ramp Southbound						Int. Total
	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	
5:00 PM	0	0	165	0	1	165	0	0	131	0	0	131	0	0	0	0	6	0	0	57	0	63	0	120	416
5:15 PM	0	0	163	0	8	163	0	0	118	0	0	118	0	0	0	0	24	0	0	75	0	58	1	133	414
5:30 PM	0	0	180	0	6	180	0	0	155	0	0	155	0	0	0	0	10	0	0	56	0	53	4	109	444
5:45 PM	0	0	152	0	3	152	0	0	132	0	0	132	0	0	0	0	19	0	0	60	0	75	1	135	419
Total	0	0	660	0	18	660	0	0	536	0	0	536	0	0	0	0	59	0	0	248	0	249	6	497	1693
Approach %	0.0	0.0	100.0	0.0	-	-	0.0	0.0	100.0	0.0	-	-	NaN	NaN	NaN	NaN	-	-	0.0	49.9	0.0	50.1	-	-	-
Total %	0.0	0.0	39.0	0.0	-	39.0	0.0	0.0	31.7	0.0	-	31.7	0.0	0.0	0.0	0.0	-	0.0	0.0	14.6	0.0	14.7	-	29.4	-
PHF	0.000	0.000	0.917	0.000	-	0.917	0.000	0.000	0.865	0.000	-	0.865	0.000	0.000	0.000	0.000	-	0.000	0.000	0.827	0.000	0.830	-	0.920	0.953
Lights	0	0	652	0	-	652	0	0	530	0	-	530	0	0	0	0	-	0	0	246	0	248	-	494	1676
% Lights	-	-	98.8	-	-	98.8	-	-	98.9	-	-	98.9	-	-	-	-	-	-	-	99.2	-	99.6	-	99.4	99.0
Buses	0	0	2	0	-	2	0	0	0	0	-	0	0	0	0	0	-	0	0	2	0	0	-	2	4
% Buses	-	-	0.3	-	-	0.3	-	-	0.0	-	-	0.0	-	-	-	-	-	-	-	0.8	-	0.0	-	0.4	0.2
Single-Unit Trucks	0	0	3	0	-	3	0	0	5	0	-	5	0	0	0	0	-	0	0	0	0	0	-	0	8
% Single-Unit Trucks	-	-	0.5	-	-	0.5	-	-	0.9	-	-	0.9	-	-	-	-	-	-	-	0.0	-	0.0	-	0.0	0.5
Articulated Trucks	0	0	0	0	-	0	0	0	1	0	-	1	0	0	0	0	-	0	0	0	0	1	-	1	2
% Articulated Trucks	-	-	0.0	-	-	0.0	-	-	0.2	-	-	0.2	-	-	-	-	-	-	-	0.0	-	0.4	-	0.2	0.1
Bicycles on Road	0	0	3	0	-	3	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	3
% Bicycles on Road	-	-	0.5	-	-	0.5	-	-	0.0	-	-	0.0	-	-	-	-	-	-	-	0.0	-	0.0	-	0.0	0.2
Pedestrians	-	-	-	-	18	-	-	-	-	-	0	-	-	-	-	-	59	-	-	-	-	-	6	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	-	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-



Kenig Lindgren O'Hara Aboona, Inc.
 9575 W. Higgins Rd., Suite 400
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 (847)518-9990

Count Name: Armitage Avenue with Elston Avenue
 Site Code:
 Start Date: 02/23/2016
 Page No: 1

Turning Movement Data

Start Time	Armitage Avenue Eastbound						Armitage Avenue Westbound						Elston Avenue Northbound						Elston Avenue Southbound						Int. Total
	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	
7:00 AM	0	1	2	78	0	81	1	0	3	1	1	5	1	28	34	1	2	64	0	2	74	0	0	76	226
7:15 AM	0	1	4	72	0	77	0	1	2	0	0	3	0	39	44	2	1	85	0	2	95	0	0	97	262
7:30 AM	0	0	4	73	0	77	0	0	6	0	2	6	0	31	47	0	1	78	0	2	157	0	0	159	320
7:45 AM	0	0	5	70	0	75	0	0	4	1	2	5	0	23	48	2	2	73	0	5	141	0	1	146	299
Hourly Total	0	2	15	293	0	310	1	1	15	2	5	19	1	121	173	5	6	300	0	11	467	0	1	478	1107
8:00 AM	0	0	2	71	0	73	0	1	5	2	0	8	0	37	75	0	0	112	0	1	157	0	0	158	351
8:15 AM	0	0	1	77	0	78	0	0	6	4	0	10	0	26	87	1	1	114	0	2	137	0	0	139	341
8:30 AM	0	0	3	42	0	45	0	1	5	0	0	6	0	28	64	0	0	92	0	1	159	0	0	160	303
8:45 AM	0	3	0	60	0	63	0	0	4	1	4	5	0	29	61	0	1	90	0	5	131	0	0	136	294
Hourly Total	0	3	6	250	0	259	0	2	20	7	4	29	0	120	287	1	2	408	0	9	584	0	0	593	1289
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4:00 PM	0	0	0	47	0	47	0	0	21	5	2	26	0	51	137	0	1	188	0	1	78	0	1	79	340
4:15 PM	0	0	0	48	0	48	0	2	23	1	0	26	0	75	147	1	0	223	0	1	78	0	0	79	376
4:30 PM	0	0	2	46	0	48	0	4	28	6	4	38	0	59	139	2	1	200	0	1	79	0	0	80	366
4:45 PM	0	1	8	66	1	75	0	0	29	6	0	35	0	65	151	1	2	217	0	2	89	0	1	91	418
Hourly Total	0	1	10	207	1	218	0	6	101	18	6	125	0	250	574	4	4	828	0	5	324	0	2	329	1500
5:00 PM	0	1	0	39	0	40	0	1	34	6	1	41	0	58	164	1	9	223	0	1	70	1	0	72	376
5:15 PM	0	2	2	47	0	51	0	3	27	11	3	41	0	48	174	1	0	223	0	2	78	0	1	80	395
5:30 PM	0	3	2	50	0	55	0	0	27	1	4	28	0	59	174	0	0	233	0	3	75	0	0	78	394
5:45 PM	0	1	2	49	1	52	0	0	23	2	1	25	0	62	166	2	3	230	0	2	57	0	0	59	366
Hourly Total	0	7	6	185	1	198	0	4	111	20	9	135	0	227	678	4	12	909	0	8	280	1	1	289	1531
Grand Total	0	13	37	935	2	985	1	13	247	47	24	308	1	718	1712	14	24	2445	0	33	1655	1	4	1689	5427
Approach %	0.0	1.3	3.8	94.9	-	-	0.3	4.2	80.2	15.3	-	-	0.0	29.4	70.0	0.6	-	-	0.0	2.0	98.0	0.1	-	-	-
Total %	0.0	0.2	0.7	17.2	-	18.1	0.0	0.2	4.6	0.9	-	5.7	0.0	13.2	31.5	0.3	-	45.1	0.0	0.6	30.5	0.0	-	31.1	-
Lights	0	13	35	895	-	943	1	13	242	47	-	303	1	692	1579	13	-	2285	0	31	1534	1	-	1566	5097
% Lights	-	100.0	94.6	95.7	-	95.7	100.0	100.0	98.0	100.0	-	98.4	100.0	96.4	92.2	92.9	-	93.5	-	93.9	92.7	100.0	-	92.7	93.9
Buses	0	0	0	3	-	3	0	0	1	0	-	1	0	2	4	0	-	6	0	0	2	0	-	2	12
% Buses	-	0.0	0.0	0.3	-	0.3	0.0	0.0	0.4	0.0	-	0.3	0.0	0.3	0.2	0.0	-	0.2	-	0.0	0.1	0.0	-	0.1	0.2
Single-Unit Trucks	0	0	0	24	-	24	0	0	4	0	-	4	0	20	52	1	-	73	0	1	50	0	-	51	152
% Single-Unit Trucks	-	0.0	0.0	2.6	-	2.4	0.0	0.0	1.6	0.0	-	1.3	0.0	2.8	3.0	7.1	-	3.0	-	3.0	3.0	0.0	-	3.0	2.8
Articulated Trucks	0	0	1	8	-	9	0	0	0	0	-	0	0	4	7	0	-	11	0	0	4	0	-	4	24
% Articulated Trucks	-	0.0	2.7	0.9	-	0.9	0.0	0.0	0.0	0.0	-	0.0	0.0	0.6	0.4	0.0	-	0.4	-	0.0	0.2	0.0	-	0.2	0.4
Bicycles on Road	0	0	1	5	-	6	0	0	0	0	-	0	0	0	70	0	-	70	0	1	65	0	-	66	142
% Bicycles on Road	-	0.0	2.7	0.5	-	0.6	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	4.1	0.0	-	2.9	-	3.0	3.9	0.0	-	3.9	2.6
Pedestrians	-	-	-	-	2	-	-	-	-	-	24	-	-	-	-	-	24	-	-	-	-	-	4	-	-



Kenig Lindgren O'Hara Aboona, Inc.
9575 W. Higgins Rd., Suite 400

Rosemont, Illinois, United States 60018
(847)518-9990

Count Name: Armitage Avenue with Elston Avenue
Site Code:
Start Date: 02/23/2016
Page No: 4

Turning Movement Peak Hour Data (7:30 AM)

Start Time	Armitage Avenue Eastbound						Armitage Avenue Westbound						Elston Avenue Northbound						Elston Avenue Southbound						Int. Total
	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	
7:30 AM	0	0	4	73	0	77	0	0	6	0	2	6	0	31	47	0	1	78	0	2	157	0	0	159	320
7:45 AM	0	0	5	70	0	75	0	0	4	1	2	5	0	23	48	2	2	73	0	5	141	0	1	146	299
8:00 AM	0	0	2	71	0	73	0	1	5	2	0	8	0	37	75	0	0	112	0	1	157	0	0	158	351
8:15 AM	0	0	1	77	0	78	0	0	6	4	0	10	0	26	87	1	1	114	0	2	137	0	0	139	341
Total	0	0	12	291	0	303	0	1	21	7	4	29	0	117	257	3	4	377	0	10	592	0	1	602	1311
Approach %	0.0	0.0	4.0	96.0	-	-	0.0	3.4	72.4	24.1	-	-	0.0	31.0	68.2	0.8	-	-	0.0	1.7	98.3	0.0	-	-	-
Total %	0.0	0.0	0.9	22.2	-	23.1	0.0	0.1	1.6	0.5	-	2.2	0.0	8.9	19.6	0.2	-	28.8	0.0	0.8	45.2	0.0	-	45.9	-
PHF	0.000	0.000	0.600	0.945	-	0.971	0.000	0.250	0.875	0.438	-	0.725	0.000	0.791	0.739	0.375	-	0.827	0.000	0.500	0.943	0.000	-	0.947	0.934
Lights	0	0	10	273	-	283	0	1	20	7	-	28	0	107	230	3	-	340	0	10	529	0	-	539	1190
% Lights	-	-	83.3	93.8	-	93.4	-	100.0	95.2	100.0	-	96.6	-	91.5	89.5	100.0	-	90.2	-	100.0	89.4	-	-	89.5	90.8
Buses	0	0	0	1	-	1	0	0	0	0	-	0	0	0	2	0	-	2	0	0	1	0	-	1	4
% Buses	-	-	0.0	0.3	-	0.3	-	0.0	0.0	0.0	-	0.0	-	0.0	0.8	0.0	-	0.5	-	0.0	0.2	-	-	0.2	0.3
Single-Unit Trucks	0	0	0	14	-	14	0	0	1	0	-	1	0	9	23	0	-	32	0	0	17	0	-	17	64
% Single-Unit Trucks	-	-	0.0	4.8	-	4.6	-	0.0	4.8	0.0	-	3.4	-	7.7	8.9	0.0	-	8.5	-	0.0	2.9	-	-	2.8	4.9
Articulated Trucks	0	0	1	1	-	2	0	0	0	0	-	0	0	1	1	0	-	2	0	0	3	0	-	3	7
% Articulated Trucks	-	-	8.3	0.3	-	0.7	-	0.0	0.0	0.0	-	0.0	-	0.9	0.4	0.0	-	0.5	-	0.0	0.5	-	-	0.5	0.5
Bicycles on Road	0	0	1	2	-	3	0	0	0	0	-	0	0	0	1	0	-	1	0	0	42	0	-	42	46
% Bicycles on Road	-	-	8.3	0.7	-	1.0	-	0.0	0.0	0.0	-	0.0	-	0.0	0.4	0.0	-	0.3	-	0.0	7.1	-	-	7.0	3.5
Pedestrians	-	-	-	-	0	-	-	-	-	-	4	-	-	-	-	-	4	-	-	-	-	-	1	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-



Kenig Lindgren O'Hara Aboona, Inc.
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Count Name: Armitage Avenue with Elston Avenue
 Site Code:
 Start Date: 02/23/2016
 Page No: 6

Turning Movement Peak Hour Data (5:00 PM)

Start Time	Armitage Avenue Eastbound						Armitage Avenue Westbound						Elston Avenue Northbound						Elston Avenue Southbound						Int. Total
	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	
5:00 PM	0	1	0	39	0	40	0	1	34	6	1	41	0	58	164	1	9	223	0	1	70	1	0	72	376
5:15 PM	0	2	2	47	0	51	0	3	27	11	3	41	0	48	174	1	0	223	0	2	78	0	1	80	395
5:30 PM	0	3	2	50	0	55	0	0	27	1	4	28	0	59	174	0	0	233	0	3	75	0	0	78	394
5:45 PM	0	1	2	49	1	52	0	0	23	2	1	25	0	62	166	2	3	230	0	2	57	0	0	59	366
Total	0	7	6	185	1	198	0	4	111	20	9	135	0	227	678	4	12	909	0	8	280	1	1	289	1531
Approach %	0.0	3.5	3.0	93.4	-	-	0.0	3.0	82.2	14.8	-	-	0.0	25.0	74.6	0.4	-	-	0.0	2.8	96.9	0.3	-	-	-
Total %	0.0	0.5	0.4	12.1	-	12.9	0.0	0.3	7.3	1.3	-	8.8	0.0	14.8	44.3	0.3	-	59.4	0.0	0.5	18.3	0.1	-	18.9	-
PHF	0.000	0.583	0.750	0.925	-	0.900	0.000	0.333	0.816	0.455	-	0.823	0.000	0.915	0.974	0.500	-	0.975	0.000	0.667	0.897	0.250	-	0.903	0.969
Lights	0	7	6	183	-	196	0	4	109	20	-	133	0	226	612	4	-	842	0	8	273	1	-	282	1453
% Lights	-	100.0	100.0	98.9	-	99.0	-	100.0	98.2	100.0	-	98.5	-	99.6	90.3	100.0	-	92.6	-	100.0	97.5	100.0	-	97.6	94.9
Buses	0	0	0	0	-	0	0	0	0	0	-	0	0	1	0	0	-	1	0	0	0	0	-	0	1
% Buses	-	0.0	0.0	0.0	-	0.0	-	0.0	0.0	0.0	-	0.0	-	0.4	0.0	0.0	-	0.1	-	0.0	0.0	0.0	-	0.0	0.1
Single-Unit Trucks	0	0	0	1	-	1	0	0	2	0	-	2	0	0	8	0	-	8	0	0	4	0	-	4	15
% Single-Unit Trucks	-	0.0	0.0	0.5	-	0.5	-	0.0	1.8	0.0	-	1.5	-	0.0	1.2	0.0	-	0.9	-	0.0	1.4	0.0	-	1.4	1.0
Articulated Trucks	0	0	0	0	-	0	0	0	0	0	-	0	0	0	2	0	-	2	0	0	0	0	-	0	2
% Articulated Trucks	-	0.0	0.0	0.0	-	0.0	-	0.0	0.0	0.0	-	0.0	-	0.0	0.3	0.0	-	0.2	-	0.0	0.0	0.0	-	0.0	0.1
Bicycles on Road	0	0	0	1	-	1	0	0	0	0	-	0	0	0	56	0	-	56	0	0	3	0	-	3	60
% Bicycles on Road	-	0.0	0.0	0.5	-	0.5	-	0.0	0.0	0.0	-	0.0	-	0.0	8.3	0.0	-	6.2	-	0.0	1.1	0.0	-	1.0	3.9
Pedestrians	-	-	-	-	1	-	-	-	-	-	9	-	-	-	-	-	12	-	-	-	-	-	1	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-



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Count Name: Armitage Avenue with I-90 NB Ramps
 Site Code:
 Start Date: 02/23/2016
 Page No: 1

Turning Movement Data

Start Time	Armitage Avenue Eastbound						Armitage Avenue Westbound						I-90 NB Exit Ramp Northbound						I-90 NB Entrance Ramp Southbound						Int. Total
	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	
7:00 AM	0	66	87	0	0	153	0	0	99	46	0	145	0	44	0	88	12	132	0	0	0	0	1	0	430
7:15 AM	0	47	92	0	0	139	0	0	119	63	0	182	0	43	0	101	27	144	0	0	0	0	0	0	465
7:30 AM	0	53	90	0	0	143	0	0	114	38	0	152	0	56	0	95	9	151	0	0	0	0	5	0	446
7:45 AM	0	58	81	0	0	139	0	0	99	53	1	152	0	63	0	101	22	164	0	0	0	0	5	0	455
Hourly Total	0	224	350	0	0	574	0	0	431	200	1	631	0	206	0	385	70	591	0	0	0	0	11	0	1796
8:00 AM	0	47	78	0	0	125	0	0	131	51	0	182	0	76	0	118	2	194	0	0	0	0	2	0	501
8:15 AM	0	53	75	0	0	128	0	0	109	41	0	150	0	74	0	109	9	183	0	0	0	0	2	0	461
8:30 AM	1	57	75	0	0	133	0	0	123	38	0	161	0	54	0	84	22	138	0	0	0	0	2	0	432
8:45 AM	0	60	52	0	0	112	0	0	111	29	0	140	0	78	3	118	12	199	0	0	0	0	1	0	451
Hourly Total	1	217	280	0	0	498	0	0	474	159	0	633	0	282	3	429	45	714	0	0	0	0	7	0	1845
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4:00 PM	0	46	95	0	0	141	0	0	109	100	0	209	0	63	1	94	1	158	0	0	0	0	2	0	508
4:15 PM	0	53	94	0	0	147	0	0	110	110	0	220	0	73	0	99	0	172	0	0	0	0	3	0	539
4:30 PM	0	44	90	0	0	134	0	0	110	110	0	220	0	66	0	87	3	153	0	0	0	0	2	0	507
4:45 PM	0	50	102	0	0	152	0	0	111	105	0	216	0	91	0	116	9	207	0	0	0	0	5	0	575
Hourly Total	0	193	381	0	0	574	0	0	440	425	0	865	0	293	1	396	13	690	0	0	0	0	12	0	2129
5:00 PM	0	51	81	0	0	132	0	0	97	105	0	202	0	91	1	95	4	187	0	0	0	0	0	0	521
5:15 PM	0	58	95	0	0	153	0	0	126	106	0	232	0	90	0	120	27	210	0	0	0	0	1	0	595
5:30 PM	0	58	91	0	0	149	0	0	115	88	1	203	0	115	0	112	12	227	0	0	0	0	4	0	579
5:45 PM	0	56	106	0	0	162	0	0	99	97	0	196	0	90	0	102	9	192	0	0	0	0	1	0	550
Hourly Total	0	223	373	0	0	596	0	0	437	396	1	833	0	386	1	429	52	816	0	0	0	0	6	0	2245
Grand Total	1	857	1384	0	0	2242	0	0	1782	1180	2	2962	0	1167	5	1639	180	2811	0	0	0	0	36	0	8015
Approach %	0.0	38.2	61.7	0.0	-	-	0.0	0.0	60.2	39.8	-	-	0.0	41.5	0.2	58.3	-	-	NaN	NaN	NaN	NaN	-	-	-
Total %	0.0	10.7	17.3	0.0	-	28.0	0.0	0.0	22.2	14.7	-	37.0	0.0	14.6	0.1	20.4	-	35.1	0.0	0.0	0.0	0.0	-	0.0	-
Lights	1	852	1331	0	-	2184	0	0	1692	1152	-	2844	0	1143	5	1578	-	2726	0	0	0	0	-	0	7754
% Lights	100.0	99.4	96.2	-	-	97.4	-	-	94.9	97.6	-	96.0	-	97.9	100.0	96.3	-	97.0	-	-	-	-	-	-	96.7
Buses	0	1	8	0	-	9	0	0	6	5	-	11	0	2	0	0	-	2	0	0	0	0	-	0	22
% Buses	0.0	0.1	0.6	-	-	0.4	-	-	0.3	0.4	-	0.4	-	0.2	0.0	0.0	-	0.1	-	-	-	-	-	-	0.3
Single-Unit Trucks	0	2	27	0	-	29	0	0	52	18	-	70	0	16	0	45	-	61	0	0	0	0	-	0	160
% Single-Unit Trucks	0.0	0.2	2.0	-	-	1.3	-	-	2.9	1.5	-	2.4	-	1.4	0.0	2.7	-	2.2	-	-	-	-	-	-	2.0
Articulated Trucks	0	2	9	0	-	11	0	0	31	5	-	36	0	6	0	16	-	22	0	0	0	0	-	0	69
% Articulated Trucks	0.0	0.2	0.7	-	-	0.5	-	-	1.7	0.4	-	1.2	-	0.5	0.0	1.0	-	0.8	-	-	-	-	-	-	0.9
Bicycles on Road	0	0	9	0	-	9	0	0	1	0	-	1	0	0	0	0	-	0	0	0	0	0	-	0	10
% Bicycles on Road	0.0	0.0	0.7	-	-	0.4	-	-	0.1	0.0	-	0.0	-	0.0	0.0	0.0	-	0.0	-	-	-	-	-	-	0.1
Pedestrians	-	-	-	-	0	-	-	-	-	-	2	-	-	-	-	-	180	-	-	-	-	-	36	-	-



Kenig Lindgren O'Hara Aboona, Inc.
9575 W. Higgins Rd., Suite 400

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Count Name: Armitage Avenue with I-90 NB
Ramps
Site Code:
Start Date: 02/23/2016
Page No: 4

Turning Movement Peak Hour Data (7:30 AM)

Start Time	Armitage Avenue Eastbound						Armitage Avenue Westbound						I-90 NB Exit Ramp Northbound						I-90 NB Entrance Ramp Southbound						Int. Total
	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	
7:30 AM	0	53	90	0	0	143	0	0	114	38	0	152	0	56	0	95	9	151	0	0	0	0	5	0	446
7:45 AM	0	58	81	0	0	139	0	0	99	53	1	152	0	63	0	101	22	164	0	0	0	0	5	0	455
8:00 AM	0	47	78	0	0	125	0	0	131	51	0	182	0	76	0	118	2	194	0	0	0	0	2	0	501
8:15 AM	0	53	75	0	0	128	0	0	109	41	0	150	0	74	0	109	9	183	0	0	0	0	2	0	461
Total	0	211	324	0	0	535	0	0	453	183	1	636	0	269	0	423	42	692	0	0	0	0	14	0	1863
Approach %	0.0	39.4	60.6	0.0	-	-	0.0	0.0	71.2	28.8	-	-	0.0	38.9	0.0	61.1	-	-	NaN	NaN	NaN	NaN	-	-	-
Total %	0.0	11.3	17.4	0.0	-	28.7	0.0	0.0	24.3	9.8	-	34.1	0.0	14.4	0.0	22.7	-	37.1	0.0	0.0	0.0	0.0	-	0.0	-
PHF	0.000	0.909	0.900	0.000	-	0.935	0.000	0.000	0.865	0.863	-	0.874	0.000	0.885	0.000	0.896	-	0.892	0.000	0.000	0.000	0.000	-	0.000	0.930
Lights	0	209	303	0	-	512	0	0	419	176	-	595	0	264	0	395	-	659	0	0	0	0	-	0	1766
% Lights	-	99.1	93.5	-	-	95.7	-	-	92.5	96.2	-	93.6	-	98.1	-	93.4	-	95.2	-	-	-	-	-	-	94.8
Buses	0	0	3	0	-	3	0	0	1	1	-	2	0	0	0	0	-	0	0	0	0	0	-	0	5
% Buses	-	0.0	0.9	-	-	0.6	-	-	0.2	0.5	-	0.3	-	0.0	-	0.0	-	0.0	-	-	-	-	-	-	0.3
Single-Unit Trucks	0	1	13	0	-	14	0	0	18	5	-	23	0	4	0	21	-	25	0	0	0	0	-	0	62
% Single-Unit Trucks	-	0.5	4.0	-	-	2.6	-	-	4.0	2.7	-	3.6	-	1.5	-	5.0	-	3.6	-	-	-	-	-	-	3.3
Articulated Trucks	0	1	4	0	-	5	0	0	15	1	-	16	0	1	0	7	-	8	0	0	0	0	-	0	29
% Articulated Trucks	-	0.5	1.2	-	-	0.9	-	-	3.3	0.5	-	2.5	-	0.4	-	1.7	-	1.2	-	-	-	-	-	-	1.6
Bicycles on Road	0	0	1	0	-	1	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	1
% Bicycles on Road	-	0.0	0.3	-	-	0.2	-	-	0.0	0.0	-	0.0	-	0.0	-	0.0	-	0.0	-	-	-	-	-	-	0.1
Pedestrians	-	-	-	-	0	-	-	-	-	-	1	-	-	-	-	-	42	-	-	-	-	-	14	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-



Kenig Lindgren O'Hara Aboona, Inc.
9575 W. Higgins Rd., Suite 400

Rosemont, Illinois, United States 60018
(847)518-9990

Count Name: Armitage Avenue with I-90 NB
Ramps
Site Code:
Start Date: 02/23/2016
Page No: 6

Turning Movement Peak Hour Data (5:00 PM)

Start Time	Armitage Avenue Eastbound						Armitage Avenue Westbound						I-90 NB Exit Ramp Northbound						I-90 NB Entrance Ramp Southbound						Int. Total	
	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total		
5:00 PM	0	51	81	0	0	132	0	0	97	105	0	202	0	91	1	95	4	187	0	0	0	0	0	0	0	521
5:15 PM	0	58	95	0	0	153	0	0	126	106	0	232	0	90	0	120	27	210	0	0	0	0	1	0	0	595
5:30 PM	0	58	91	0	0	149	0	0	115	88	1	203	0	115	0	112	12	227	0	0	0	0	4	0	0	579
5:45 PM	0	56	106	0	0	162	0	0	99	97	0	196	0	90	0	102	9	192	0	0	0	0	1	0	0	550
Total	0	223	373	0	0	596	0	0	437	396	1	833	0	386	1	429	52	816	0	0	0	0	6	0	0	2245
Approach %	0.0	37.4	62.6	0.0	-	-	0.0	0.0	52.5	47.5	-	-	0.0	47.3	0.1	52.6	-	-	NaN	NaN	NaN	NaN	-	-	-	-
Total %	0.0	9.9	16.6	0.0	-	26.5	0.0	0.0	19.5	17.6	-	37.1	0.0	17.2	0.0	19.1	-	36.3	0.0	0.0	0.0	0.0	-	0.0	-	-
PHF	0.000	0.961	0.880	0.000	-	0.920	0.000	0.000	0.867	0.934	-	0.898	0.000	0.839	0.250	0.894	-	0.899	0.000	0.000	0.000	0.000	-	0.000	-	0.943
Lights	0	223	368	0	-	591	0	0	429	394	-	823	0	383	1	428	-	812	0	0	0	0	-	0	-	2226
% Lights	-	100.0	98.7	-	-	99.2	-	-	98.2	99.5	-	98.8	-	99.2	100.0	99.8	-	99.5	-	-	-	-	-	-	-	99.2
Buses	0	0	2	0	-	2	0	0	1	1	-	2	0	0	0	0	-	0	0	0	0	0	-	0	-	4
% Buses	-	0.0	0.5	-	-	0.3	-	-	0.2	0.3	-	0.2	-	0.0	0.0	0.0	-	0.0	-	-	-	-	-	-	-	0.2
Single-Unit Trucks	0	0	1	0	-	1	0	0	3	1	-	4	0	2	0	1	-	3	0	0	0	0	-	0	-	8
% Single-Unit Trucks	-	0.0	0.3	-	-	0.2	-	-	0.7	0.3	-	0.5	-	0.5	0.0	0.2	-	0.4	-	-	-	-	-	-	-	0.4
Articulated Trucks	0	0	0	0	-	0	0	0	4	0	-	4	0	1	0	0	-	1	0	0	0	0	-	0	-	5
% Articulated Trucks	-	0.0	0.0	-	-	0.0	-	-	0.9	0.0	-	0.5	-	0.3	0.0	0.0	-	0.1	-	-	-	-	-	-	-	0.2
Bicycles on Road	0	0	2	0	-	2	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	-	2
% Bicycles on Road	-	0.0	0.5	-	-	0.3	-	-	0.0	0.0	-	0.0	-	0.0	0.0	0.0	-	0.0	-	-	-	-	-	-	-	0.1
Pedestrians	-	-	-	-	0	-	-	-	-	-	1	-	-	-	-	-	52	-	-	-	-	-	6	-	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-



Kenig Lindgren O'Hara Aboona, Inc.
9575 W. Higgins Rd., Suite 400

Rosemont, Illinois, United States 60018
(847)518-9990

Count Name: Armitage/Racine
Site Code:
Start Date: 04/05/2016
Page No: 1

Turning Movement Data

Start Time	Alley Eastbound						Armitage Avenue Westbound						Racine Avenue Northbound						Racine Avenue Southbound						Int. Total
	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	
7:00 AM	0	0	0	0	1	0	0	43	1	5	3	49	0	0	18	50	1	68	0	8	45	1	3	54	171
7:15 AM	0	0	1	0	2	1	0	54	0	8	6	62	0	0	26	75	6	101	0	13	71	1	5	85	249
7:30 AM	0	0	1	1	6	2	0	47	0	10	5	57	0	0	25	82	5	107	0	13	87	0	3	100	266
7:45 AM	0	0	0	0	8	0	0	54	0	11	1	65	0	0	35	71	9	106	0	24	82	0	10	106	277
Hourly Total	0	0	2	1	17	3	0	198	1	34	15	233	0	0	104	278	21	382	0	58	285	2	21	345	963
8:00 AM	0	0	0	0	3	0	0	64	1	19	4	84	0	0	39	64	2	103	0	25	64	1	8	90	277
8:15 AM	0	0	0	1	5	1	0	45	2	14	2	61	0	0	47	67	6	114	0	19	70	2	20	91	267
8:30 AM	0	0	0	0	7	0	0	44	1	12	0	57	0	0	39	71	2	110	0	19	82	1	18	102	269
8:45 AM	0	0	0	0	2	0	0	39	1	22	3	62	0	1	28	67	6	96	0	20	66	0	7	86	244
Hourly Total	0	0	0	1	17	1	0	192	5	67	9	264	0	1	153	269	16	423	0	83	282	4	53	369	1057
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4:00 PM	0	0	1	0	20	1	0	49	0	15	9	64	0	0	42	53	8	95	0	15	57	0	15	72	232
4:15 PM	0	0	1	0	4	1	0	54	2	14	4	70	0	0	58	60	4	118	0	10	46	0	10	56	245
4:30 PM	0	0	0	0	6	0	0	59	1	21	5	81	0	0	62	59	4	121	0	9	37	0	12	46	248
4:45 PM	0	0	1	1	10	2	0	58	1	15	11	74	0	0	72	64	18	136	0	14	46	0	9	60	272
Hourly Total	0	0	3	1	40	4	0	220	4	65	29	289	0	0	234	236	34	470	0	48	186	0	46	234	997
5:00 PM	0	0	0	0	11	0	0	58	1	23	12	82	0	0	71	50	18	121	0	15	44	0	9	59	262
5:15 PM	0	1	2	0	10	3	0	54	1	30	8	85	0	0	65	60	12	125	0	15	55	2	19	72	285
5:30 PM	0	2	0	1	17	3	0	51	2	21	14	74	0	0	62	72	12	134	0	13	55	1	42	69	280
5:45 PM	0	0	0	0	10	0	0	62	0	23	12	85	0	1	75	55	16	131	0	17	47	1	24	65	281
Hourly Total	0	3	2	1	48	6	0	225	4	97	46	326	0	1	273	237	58	511	0	60	201	4	94	265	1108
Grand Total	0	3	7	4	122	14	0	835	14	263	99	1112	0	2	764	1020	129	1786	0	249	954	10	214	1213	4125
Approach %	0.0	21.4	50.0	28.6	-	-	0.0	75.1	1.3	23.7	-	-	0.0	0.1	42.8	57.1	-	-	0.0	20.5	78.6	0.8	-	-	-
Total %	0.0	0.1	0.2	0.1	-	0.3	0.0	20.2	0.3	6.4	-	27.0	0.0	0.0	18.5	24.7	-	43.3	0.0	6.0	23.1	0.2	-	29.4	-
Lights	0	3	7	3	-	13	0	762	11	256	-	1029	0	1	717	947	-	1665	0	248	889	9	-	1146	3853
% Lights	-	100.0	100.0	75.0	-	92.9	-	91.3	78.6	97.3	-	92.5	-	50.0	93.8	92.8	-	93.2	-	99.6	93.2	90.0	-	94.5	93.4
Buses	0	0	0	0	-	0	0	28	0	0	-	28	0	0	1	28	-	29	0	0	0	0	-	0	57
% Buses	-	0.0	0.0	0.0	-	0.0	-	3.4	0.0	0.0	-	2.5	-	0.0	0.1	2.7	-	1.6	-	0.0	0.0	0.0	-	0.0	1.4
Single-Unit Trucks	0	0	0	1	-	1	0	17	1	5	-	23	0	0	7	14	-	21	0	0	18	1	-	19	64
% Single-Unit Trucks	-	0.0	0.0	25.0	-	7.1	-	2.0	7.1	1.9	-	2.1	-	0.0	0.9	1.4	-	1.2	-	0.0	1.9	10.0	-	1.6	1.6
Articulated Trucks	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Articulated Trucks	-	0.0	0.0	0.0	-	0.0	-	0.0	0.0	0.0	-	0.0	-	0.0	0.0	0.0	-	0.0	-	0.0	0.0	0.0	-	0.0	0.0
Bicycles on Road	0	0	0	0	-	0	0	28	2	2	-	32	0	1	39	31	-	71	0	1	47	0	-	48	151
% Bicycles on Road	-	0.0	0.0	0.0	-	0.0	-	3.4	14.3	0.8	-	2.9	-	50.0	5.1	3.0	-	4.0	-	0.4	4.9	0.0	-	4.0	3.7
Pedestrians	-	-	-	-	122	-	-	-	-	-	99	-	-	-	-	-	129	-	-	-	-	-	214	-	-



Kenig Lindgren O'Hara Aboona, Inc.
9575 W. Higgins Rd., Suite 400

Rosemont, Illinois, United States 60018
(847)518-9990

Count Name: Armitage/Racine
Site Code:
Start Date: 04/05/2016
Page No: 4

Turning Movement Peak Hour Data (7:30 AM)

Start Time	Alley Eastbound						Armitage Avenue Westbound						Racine Avenue Northbound						Racine Avenue Southbound						Int. Total
	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	
7:30 AM	0	0	1	1	6	2	0	47	0	10	5	57	0	0	25	82	5	107	0	13	87	0	3	100	266
7:45 AM	0	0	0	0	8	0	0	54	0	11	1	65	0	0	35	71	9	106	0	24	82	0	10	106	277
8:00 AM	0	0	0	0	3	0	0	64	1	19	4	84	0	0	39	64	2	103	0	25	64	1	8	90	277
8:15 AM	0	0	0	1	5	1	0	45	2	14	2	61	0	0	47	67	6	114	0	19	70	2	20	91	267
Total	0	0	1	2	22	3	0	210	3	54	12	267	0	0	146	284	22	430	0	81	303	3	41	387	1087
Approach %	0.0	0.0	33.3	66.7	-	-	0.0	78.7	1.1	20.2	-	-	0.0	0.0	34.0	66.0	-	-	0.0	20.9	78.3	0.8	-	-	-
Total %	0.0	0.0	0.1	0.2	-	0.3	0.0	19.3	0.3	5.0	-	24.6	0.0	0.0	13.4	26.1	-	39.6	0.0	7.5	27.9	0.3	-	35.6	-
PHF	0.000	0.000	0.250	0.500	-	0.375	0.000	0.820	0.375	0.711	-	0.795	0.000	0.000	0.777	0.866	-	0.943	0.000	0.810	0.871	0.375	-	0.913	0.981
Lights	0	0	1	2	-	3	0	195	3	52	-	250	0	0	141	256	-	397	0	81	281	2	-	364	1014
% Lights	-	-	100.0	100.0	-	100.0	-	92.9	100.0	96.3	-	93.6	-	-	96.6	90.1	-	92.3	-	100.0	92.7	66.7	-	94.1	93.3
Buses	0	0	0	0	-	0	0	9	0	0	-	9	0	0	0	8	-	8	0	0	0	0	-	0	17
% Buses	-	-	0.0	0.0	-	0.0	-	4.3	0.0	0.0	-	3.4	-	-	0.0	2.8	-	1.9	-	0.0	0.0	0.0	-	0.0	1.6
Single-Unit Trucks	0	0	0	0	-	0	0	2	0	1	-	3	0	0	2	7	-	9	0	0	2	1	-	3	15
% Single-Unit Trucks	-	-	0.0	0.0	-	0.0	-	1.0	0.0	1.9	-	1.1	-	-	1.4	2.5	-	2.1	-	0.0	0.7	33.3	-	0.8	1.4
Articulated Trucks	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Articulated Trucks	-	-	0.0	0.0	-	0.0	-	0.0	0.0	0.0	-	0.0	-	-	0.0	0.0	-	0.0	-	0.0	0.0	0.0	-	0.0	0.0
Bicycles on Road	0	0	0	0	-	0	0	4	0	1	-	5	0	0	3	13	-	16	0	0	20	0	-	20	41
% Bicycles on Road	-	-	0.0	0.0	-	0.0	-	1.9	0.0	1.9	-	1.9	-	-	2.1	4.6	-	3.7	-	0.0	6.6	0.0	-	5.2	3.8
Pedestrians	-	-	-	-	22	-	-	-	-	-	12	-	-	-	-	-	22	-	-	-	-	-	41	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-



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Count Name: Armitage/Racine
Site Code:
Start Date: 04/05/2016
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Turning Movement Peak Hour Data (5:00 PM)

Start Time	Alley Eastbound						Armitage Avenue Westbound						Racine Avenue Northbound						Racine Avenue Southbound						Int. Total
	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	
5:00 PM	0	0	0	0	11	0	0	58	1	23	12	82	0	0	71	50	18	121	0	15	44	0	9	59	262
5:15 PM	0	1	2	0	10	3	0	54	1	30	8	85	0	0	65	60	12	125	0	15	55	2	19	72	285
5:30 PM	0	2	0	1	17	3	0	51	2	21	14	74	0	0	62	72	12	134	0	13	55	1	42	69	280
5:45 PM	0	0	0	0	10	0	0	62	0	23	12	85	0	1	75	55	16	131	0	17	47	1	24	65	281
Total	0	3	2	1	48	6	0	225	4	97	46	326	0	1	273	237	58	511	0	60	201	4	94	265	1108
Approach %	0.0	50.0	33.3	16.7	-	-	0.0	69.0	1.2	29.8	-	-	0.0	0.2	53.4	46.4	-	-	0.0	22.6	75.8	1.5	-	-	-
Total %	0.0	0.3	0.2	0.1	-	0.5	0.0	20.3	0.4	8.8	-	29.4	0.0	0.1	24.6	21.4	-	46.1	0.0	5.4	18.1	0.4	-	23.9	-
PHF	0.000	0.375	0.250	0.250	-	0.500	0.000	0.907	0.500	0.808	-	0.959	0.000	0.250	0.910	0.823	-	0.953	0.000	0.882	0.914	0.500	-	0.920	0.972
Lights	0	3	2	1	-	6	0	209	4	96	-	309	0	1	247	225	-	473	0	60	185	4	-	249	1037
% Lights	-	100.0	100.0	100.0	-	100.0	-	92.9	100.0	99.0	-	94.8	-	100.0	90.5	94.9	-	92.6	-	100.0	92.0	100.0	-	94.0	93.6
Buses	0	0	0	0	-	0	0	4	0	0	-	4	0	0	0	5	-	5	0	0	0	0	-	0	9
% Buses	-	0.0	0.0	0.0	-	0.0	-	1.8	0.0	0.0	-	1.2	-	0.0	0.0	2.1	-	1.0	-	0.0	0.0	0.0	-	0.0	0.8
Single-Unit Trucks	0	0	0	0	-	0	0	3	0	0	-	3	0	0	2	1	-	3	0	0	5	0	-	5	11
% Single-Unit Trucks	-	0.0	0.0	0.0	-	0.0	-	1.3	0.0	0.0	-	0.9	-	0.0	0.7	0.4	-	0.6	-	0.0	2.5	0.0	-	1.9	1.0
Articulated Trucks	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Articulated Trucks	-	0.0	0.0	0.0	-	0.0	-	0.0	0.0	0.0	-	0.0	-	0.0	0.0	0.0	-	0.0	-	0.0	0.0	0.0	-	0.0	0.0
Bicycles on Road	0	0	0	0	-	0	0	9	0	1	-	10	0	0	24	6	-	30	0	0	11	0	-	11	51
% Bicycles on Road	-	0.0	0.0	0.0	-	0.0	-	4.0	0.0	1.0	-	3.1	-	0.0	8.8	2.5	-	5.9	-	0.0	5.5	0.0	-	4.2	4.6
Pedestrians	-	-	-	-	48	-	-	-	-	-	46	-	-	-	-	-	58	-	-	-	-	-	94	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-



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9575 W. Higgins Rd., Suite 400

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Count Name: Ashland and North
Site Code:
Start Date: 03/19/2015
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Turning Movement Data

Start Time	Ashland Avenue Southbound						North Avenue Westbound						Ashland Avenue Northbound						North Avenue Eastbound						Int. Total
	Right	Thru	Left	U-Turn	Peds	App. Total	Right	Thru	Left	U-Turn	Peds	App. Total	Right	Thru	Left	U-Turn	Peds	App. Total	Right	Thru	Left	U-Turn	Peds	App. Total	
4:00 PM	30	240	33	0	9	303	15	113	55	0	8	183	58	211	31	0	10	300	13	117	28	0	19	158	944
4:15 PM	19	223	37	0	13	279	17	110	44	0	8	171	61	241	23	0	8	325	16	101	18	0	17	135	910
4:30 PM	19	220	35	0	15	274	14	138	53	0	15	205	53	241	19	0	16	313	13	100	16	0	17	129	921
4:45 PM	20	218	37	1	9	276	19	146	55	0	10	220	55	226	24	0	5	305	15	117	12	0	12	144	945
Hourly Total	88	901	142	1	46	1132	65	507	207	0	41	779	227	919	97	0	39	1243	57	435	74	0	65	566	3720
5:00 PM	22	211	29	1	15	263	21	143	44	0	7	208	49	236	29	1	8	315	10	114	30	0	31	154	940
5:15 PM	37	220	41	0	25	298	20	142	57	0	17	219	49	220	29	0	15	298	13	115	23	0	32	151	966
5:30 PM	29	234	48	0	21	311	24	139	48	0	9	211	76	226	29	0	7	331	11	116	18	0	19	145	998
5:45 PM	25	213	39	0	19	277	29	147	59	0	16	235	46	231	38	0	13	315	12	115	15	0	17	142	969
Hourly Total	113	878	157	1	80	1149	94	571	208	0	49	873	220	913	125	1	43	1259	46	460	86	0	99	592	3873
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12:00 PM	22	195	43	0	17	260	33	144	62	0	6	239	51	172	24	0	9	247	22	109	14	0	17	145	891
12:15 PM	25	182	40	0	10	247	24	144	61	0	9	229	50	207	28	0	18	285	23	106	21	0	18	150	911
12:30 PM	21	189	39	0	20	249	18	140	58	0	8	216	68	191	21	0	17	280	21	105	14	0	24	140	885
12:45 PM	19	188	43	0	15	250	27	146	62	0	15	235	69	193	30	0	23	292	17	116	22	0	15	155	932
Hourly Total	87	754	165	0	62	1006	102	574	243	0	38	919	238	763	103	0	67	1104	83	436	71	0	74	590	3619
1:00 PM	19	224	40	0	14	283	29	135	61	0	10	225	63	202	30	0	9	295	15	122	10	0	22	147	950
1:15 PM	32	228	40	0	19	300	28	138	66	0	14	232	66	193	15	0	24	274	14	103	17	0	29	134	940
1:30 PM	31	255	47	0	35	333	20	128	57	0	12	205	63	231	26	0	19	320	26	117	16	0	15	159	1017
1:45 PM	20	215	54	0	18	289	22	151	57	0	10	230	66	186	23	0	14	275	25	109	19	0	10	153	947
Hourly Total	102	922	181	0	86	1205	99	552	241	0	46	892	258	812	94	0	66	1164	80	451	62	0	76	593	3854
Grand Total	390	3455	645	2	274	4492	360	2204	899	0	174	3463	943	3407	419	1	215	4770	266	1782	293	0	314	2341	15066
Approach %	8.7	76.9	14.4	0.0	-	-	10.4	63.6	26.0	0.0	-	-	19.8	71.4	8.8	0.0	-	-	11.4	76.1	12.5	0.0	-	-	-
Total %	2.6	22.9	4.3	0.0	-	29.8	2.4	14.6	6.0	0.0	-	23.0	6.3	22.6	2.8	0.0	-	31.7	1.8	11.8	1.9	0.0	-	15.5	-
Lights	390	3359	634	2	-	4385	358	2102	880	0	-	3340	931	3327	412	1	-	4671	259	1694	286	0	-	2239	14635
% Lights	100.0	97.2	98.3	100.0	-	97.6	99.4	95.4	97.9	-	-	96.4	98.7	97.7	98.3	100.0	-	97.9	97.4	95.1	97.6	-	-	95.6	97.1
Buses	0	39	0	0	-	39	0	28	0	0	-	28	0	28	0	0	-	28	0	30	0	0	-	30	125
% Buses	0.0	1.1	0.0	0.0	-	0.9	0.0	1.3	0.0	-	-	0.8	0.0	0.8	0.0	0.0	-	0.6	0.0	1.7	0.0	-	-	1.3	0.8
Single-Unit Trucks	0	53	11	0	-	64	2	22	16	0	-	40	11	37	6	0	-	54	7	16	4	0	-	27	185
% Single-Unit Trucks	0.0	1.5	1.7	0.0	-	1.4	0.6	1.0	1.8	-	-	1.2	1.2	1.1	1.4	0.0	-	1.1	2.6	0.9	1.4	-	-	1.2	1.2
Articulated Trucks	0	2	0	0	-	2	0	3	1	0	-	4	0	0	0	0	-	0	0	2	1	0	-	3	9
% Articulated Trucks	0.0	0.1	0.0	0.0	-	0.0	0.0	0.1	0.1	-	-	0.1	0.0	0.0	0.0	0.0	-	0.0	0.0	0.1	0.3	-	-	0.1	0.1
Bicycles on Road	0	2	0	0	-	2	0	49	2	0	-	51	1	15	1	0	-	17	0	40	2	0	-	42	112
% Bicycles on Road	0.0	0.1	0.0	0.0	-	0.0	0.0	2.2	0.2	-	-	1.5	0.1	0.4	0.2	0.0	-	0.4	0.0	2.2	0.7	-	-	1.8	0.7
Pedestrians	-	-	-	-	274	-	-	-	-	-	174	-	-	-	-	-	215	-	-	-	-	-	314	-	-



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Count Name: Ashland and North
Site Code:
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Turning Movement Peak Hour Data (5:00 PM)

Start Time	Ashland Avenue Southbound						North Avenue Westbound						Ashland Avenue Northbound						North Avenue Eastbound						Int. Total
	Right	Thru	Left	U-Turn	Peds	App. Total	Right	Thru	Left	U-Turn	Peds	App. Total	Right	Thru	Left	U-Turn	Peds	App. Total	Right	Thru	Left	U-Turn	Peds	App. Total	
5:00 PM	22	211	29	1	15	263	21	143	44	0	7	208	49	236	29	1	8	315	10	114	30	0	31	154	940
5:15 PM	37	220	41	0	25	298	20	142	57	0	17	219	49	220	29	0	15	298	13	115	23	0	32	151	966
5:30 PM	29	234	48	0	21	311	24	139	48	0	9	211	76	226	29	0	7	331	11	116	18	0	19	145	998
5:45 PM	25	213	39	0	19	277	29	147	59	0	16	235	46	231	38	0	13	315	12	115	15	0	17	142	969
Total	113	878	157	1	80	1149	94	571	208	0	49	873	220	913	125	1	43	1259	46	460	86	0	99	592	3873
Approach %	9.8	76.4	13.7	0.1	-	-	10.8	65.4	23.8	0.0	-	-	17.5	72.5	9.9	0.1	-	-	7.8	77.7	14.5	0.0	-	-	-
Total %	2.9	22.7	4.1	0.0	-	29.7	2.4	14.7	5.4	0.0	-	22.5	5.7	23.6	3.2	0.0	-	32.5	1.2	11.9	2.2	0.0	-	15.3	-
PHF	0.764	0.938	0.818	0.250	-	0.924	0.810	0.971	0.881	0.000	-	0.929	0.724	0.967	0.822	0.250	-	0.951	0.885	0.991	0.717	0.000	-	0.961	0.970
Lights	113	863	155	1	-	1132	94	535	204	0	-	833	219	893	124	1	-	1237	44	445	84	0	-	573	3775
% Lights	100.0	98.3	98.7	100.0	-	98.5	100.0	93.7	98.1	-	-	95.4	99.5	97.8	99.2	100.0	-	98.3	95.7	96.7	97.7	-	-	96.8	97.5
Buses	0	10	0	0	-	10	0	8	0	0	-	8	0	7	0	0	-	7	0	7	0	0	-	7	32
% Buses	0.0	1.1	0.0	0.0	-	0.9	0.0	1.4	0.0	-	-	0.9	0.0	0.8	0.0	0.0	-	0.6	0.0	1.5	0.0	-	-	1.2	0.8
Single-Unit Trucks	0	5	2	0	-	7	0	3	2	0	-	5	1	6	1	0	-	8	2	0	2	0	-	4	24
% Single-Unit Trucks	0.0	0.6	1.3	0.0	-	0.6	0.0	0.5	1.0	-	-	0.6	0.5	0.7	0.8	0.0	-	0.6	4.3	0.0	2.3	-	-	0.7	0.6
Articulated Trucks	0	0	0	0	-	0	0	1	0	0	-	1	0	0	0	0	-	0	0	0	0	0	-	0	1
% Articulated Trucks	0.0	0.0	0.0	0.0	-	0.0	0.0	0.2	0.0	-	-	0.1	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0
Bicycles on Road	0	0	0	0	-	0	0	24	2	0	-	26	0	7	0	0	-	7	0	8	0	0	-	8	41
% Bicycles on Road	0.0	0.0	0.0	0.0	-	0.0	0.0	4.2	1.0	-	-	3.0	0.0	0.8	0.0	0.0	-	0.6	0.0	1.7	0.0	-	-	1.4	1.1
Pedestrians	-	-	-	-	80	-	-	-	-	-	49	-	-	-	-	-	43	-	-	-	-	-	99	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-



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Count Name: Ashland and Webster
Site Code:
Start Date: 03/31/2015
Page No: 1

Turning Movement Data

Start Time	Ashland Ave Southbound						Webster Ave Westbound						Ashland Ave Northbound						Webster Avenue Eastbound						Int. Total
	Right	Thru	Left	U-Turn	Peds	App. Total	Right	Thru	Left	U-Turn	Peds	App. Total	Right	Thru	Left	U-Turn	Peds	App. Total	Right	Thru	Left	U-Turn	Peds	App. Total	
7:00 AM	27	280	1	0	2	308	3	54	46	0	5	103	27	167	3	1	4	198	3	60	18	0	6	81	690
7:15 AM	23	328	4	0	2	355	0	57	49	0	3	106	40	238	2	0	5	280	1	99	28	0	12	128	869
7:30 AM	34	299	1	0	2	334	2	77	48	0	4	127	34	271	0	0	6	305	2	111	31	0	10	144	910
7:45 AM	29	314	1	0	3	344	6	77	44	0	3	127	38	269	5	0	8	312	4	121	37	0	11	162	945
Hourly Total	113	1221	7	0	9	1341	11	265	187	0	15	463	139	945	10	1	23	1095	10	391	114	0	39	515	3414
8:00 AM	42	314	0	0	1	356	4	89	56	0	2	149	37	229	4	0	8	270	4	87	18	0	5	109	884
8:15 AM	25	263	2	0	2	290	0	82	44	0	3	126	34	237	6	0	4	277	3	116	32	0	6	151	844
8:30 AM	42	304	7	1	0	354	8	89	46	0	1	143	27	207	7	0	6	241	2	84	27	0	4	113	851
8:45 AM	39	263	0	0	3	302	4	71	45	0	3	120	32	254	9	0	7	295	5	85	34	0	5	124	841
Hourly Total	148	1144	9	1	6	1302	16	331	191	0	9	538	130	927	26	0	25	1083	14	372	111	0	20	497	3420
9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hourly Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00 PM	30	269	5	0	1	304	13	63	62	0	6	138	48	295	6	0	10	349	12	77	41	0	7	130	921
4:15 PM	23	267	6	0	6	296	14	52	58	0	4	124	35	312	3	1	9	351	15	65	46	0	8	126	897
4:30 PM	33	271	4	0	5	308	8	56	52	0	2	116	45	291	17	1	10	354	15	80	41	0	6	136	914
4:45 PM	31	297	2	0	4	330	10	72	62	0	4	144	44	348	4	0	7	396	14	69	40	0	13	123	993
Hourly Total	117	1104	17	0	16	1238	45	243	234	0	16	522	172	1246	30	2	36	1450	56	291	168	0	34	515	3725
5:00 PM	32	270	6	0	1	308	16	32	53	0	6	101	46	291	6	0	19	343	17	93	64	0	7	174	926
5:15 PM	27	266	4	0	9	297	8	43	44	0	9	95	40	346	6	0	10	392	11	92	38	0	19	141	925
5:30 PM	34	249	3	0	13	286	12	74	47	0	3	133	39	319	2	0	8	360	15	96	53	0	19	164	943
5:45 PM	48	272	2	0	5	322	5	77	37	0	4	119	41	321	6	0	14	368	9	109	53	0	14	171	980
Hourly Total	141	1057	15	0	28	1213	41	226	181	0	22	448	166	1277	20	0	51	1463	52	390	208	0	59	650	3774
6:00 PM	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
Grand Total	519	4526	48	1	59	5094	114	1065	793	0	62	1972	607	4395	86	3	135	5091	132	1444	601	0	152	2177	14334
Approach %	10.2	88.8	0.9	0.0	-	-	5.8	54.0	40.2	0.0	-	-	11.9	86.3	1.7	0.1	-	-	6.1	66.3	27.6	0.0	-	-	-
Total %	3.6	31.6	0.3	0.0	-	35.5	0.8	7.4	5.5	0.0	-	13.8	4.2	30.7	0.6	0.0	-	35.5	0.9	10.1	4.2	0.0	-	15.2	-
Lights	508	4296	47	1	-	4852	113	1041	777	0	-	1931	585	4136	80	3	-	4804	132	1386	597	0	-	2115	13702
% Lights	97.9	94.9	97.9	100.0	-	95.2	99.1	97.7	98.0	-	-	97.9	96.4	94.1	93.0	100.0	-	94.4	100.0	96.0	99.3	-	-	97.2	95.6
Buses	1	45	0	0	-	46	0	2	0	0	-	2	5	44	0	0	-	49	0	5	1	0	-	6	103
% Buses	0.2	1.0	0.0	0.0	-	0.9	0.0	0.2	0.0	-	-	0.1	0.8	1.0	0.0	0.0	-	1.0	0.0	0.3	0.2	-	-	0.3	0.7
Single-Unit Trucks	9	117	0	0	-	126	0	6	12	0	-	18	14	119	3	0	-	136	0	15	2	0	-	17	297
% Single-Unit Trucks	1.7	2.6	0.0	0.0	-	2.5	0.0	0.6	1.5	-	-	0.9	2.3	2.7	3.5	0.0	-	2.7	0.0	1.0	0.3	-	-	0.8	2.1
Articulated Trucks	0	60	1	0	-	61	1	0	1	0	-	2	1	89	3	0	-	93	0	0	1	0	-	1	157
% Articulated Trucks	0.0	1.3	2.1	0.0	-	1.2	0.9	0.0	0.1	-	-	0.1	0.2	2.0	3.5	0.0	-	1.8	0.0	0.0	0.2	-	-	0.0	1.1
Bicycles on Road	1	8	0	0	-	9	0	16	3	0	-	19	2	7	0	0	-	9	0	38	0	0	-	38	75

% Bicycles on Road	0.2	0.2	0.0	0.0	-	0.2	0.0	1.5	0.4	-	-	1.0	0.3	0.2	0.0	0.0	-	0.2	0.0	2.6	0.0	-	-	1.7	0.5
Pedestrians	-	-	-	-	59	-	-	-	-	-	62	-	-	-	-	-	135	-	-	-	-	-	152	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-



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Count Name: Ashland and Webster
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Turning Movement Peak Hour Data (7:30 AM)

Start Time	Ashland Ave Southbound						Webster Ave Westbound						Ashland Ave Northbound						Webster Avenue Eastbound						Int. Total
	Right	Thru	Left	U-Turn	Peds	App. Total	Right	Thru	Left	U-Turn	Peds	App. Total	Right	Thru	Left	U-Turn	Peds	App. Total	Right	Thru	Left	U-Turn	Peds	App. Total	
7:30 AM	34	299	1	0	2	334	2	77	48	0	4	127	34	271	0	0	6	305	2	111	31	0	10	144	910
7:45 AM	29	314	1	0	3	344	6	77	44	0	3	127	38	269	5	0	8	312	4	121	37	0	11	162	945
8:00 AM	42	314	0	0	1	356	4	89	56	0	2	149	37	229	4	0	8	270	4	87	18	0	5	109	884
8:15 AM	25	263	2	0	2	290	0	82	44	0	3	126	34	237	6	0	4	277	3	116	32	0	6	151	844
Total	130	1190	4	0	8	1324	12	325	192	0	12	529	143	1006	15	0	26	1164	13	435	118	0	32	566	3583
Approach %	9.8	89.9	0.3	0.0	-	-	2.3	61.4	36.3	0.0	-	-	12.3	86.4	1.3	0.0	-	-	2.3	76.9	20.8	0.0	-	-	-
Total %	3.6	33.2	0.1	0.0	-	37.0	0.3	9.1	5.4	0.0	-	14.8	4.0	28.1	0.4	0.0	-	32.5	0.4	12.1	3.3	0.0	-	15.8	-
PHF	0.774	0.947	0.500	0.000	-	0.930	0.500	0.913	0.857	0.000	-	0.888	0.941	0.928	0.625	0.000	-	0.933	0.813	0.899	0.797	0.000	-	0.873	0.948
Lights	129	1135	4	0	-	1268	12	316	189	0	-	517	136	899	13	0	-	1048	13	417	118	0	-	548	3381
% Lights	99.2	95.4	100.0	-	-	95.8	100.0	97.2	98.4	-	-	97.7	95.1	89.4	86.7	-	-	90.0	100.0	95.9	100.0	-	-	96.8	94.4
Buses	0	13	0	0	-	13	0	1	0	0	-	1	0	13	0	0	-	13	0	3	0	0	-	3	30
% Buses	0.0	1.1	0.0	-	-	1.0	0.0	0.3	0.0	-	-	0.2	0.0	1.3	0.0	-	-	1.1	0.0	0.7	0.0	-	-	0.5	0.8
Single-Unit Trucks	1	18	0	0	-	19	0	1	2	0	-	3	6	55	1	0	-	62	0	8	0	0	-	8	92
% Single-Unit Trucks	0.8	1.5	0.0	-	-	1.4	0.0	0.3	1.0	-	-	0.6	4.2	5.5	6.7	-	-	5.3	0.0	1.8	0.0	-	-	1.4	2.6
Articulated Trucks	0	22	0	0	-	22	0	0	1	0	-	1	0	38	1	0	-	39	0	0	0	0	-	0	62
% Articulated Trucks	0.0	1.8	0.0	-	-	1.7	0.0	0.0	0.5	-	-	0.2	0.0	3.8	6.7	-	-	3.4	0.0	0.0	0.0	-	-	0.0	1.7
Bicycles on Road	0	2	0	0	-	2	0	7	0	0	-	7	1	1	0	0	-	2	0	7	0	0	-	7	18
% Bicycles on Road	0.0	0.2	0.0	-	-	0.2	0.0	2.2	0.0	-	-	1.3	0.7	0.1	0.0	-	-	0.2	0.0	1.6	0.0	-	-	1.2	0.5
Pedestrians	-	-	-	-	8	-	-	-	-	-	12	-	-	-	-	-	26	-	-	-	-	-	32	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-



Kenig Lindgren O'Hara Aboona, Inc.
9575 W. Higgins Rd., Suite 400

Rosemont, Illinois, United States 60018
(847)518-9990 mscavo@kloainc.com

Count Name: Ashland and Webster
Site Code:
Start Date: 03/31/2015
Page No: 6

Turning Movement Peak Hour Data (5:00 PM)

Start Time	Ashland Ave Southbound						Webster Ave Westbound						Ashland Ave Northbound						Webster Avenue Eastbound						Int. Total
	Right	Thru	Left	U-Turn	Peds	App. Total	Right	Thru	Left	U-Turn	Peds	App. Total	Right	Thru	Left	U-Turn	Peds	App. Total	Right	Thru	Left	U-Turn	Peds	App. Total	
5:00 PM	32	270	6	0	1	308	16	32	53	0	6	101	46	291	6	0	19	343	17	93	64	0	7	174	926
5:15 PM	27	266	4	0	9	297	8	43	44	0	9	95	40	346	6	0	10	392	11	92	38	0	19	141	925
5:30 PM	34	249	3	0	13	286	12	74	47	0	3	133	39	319	2	0	8	360	15	96	53	0	19	164	943
5:45 PM	48	272	2	0	5	322	5	77	37	0	4	119	41	321	6	0	14	368	9	109	53	0	14	171	980
Total	141	1057	15	0	28	1213	41	226	181	0	22	448	166	1277	20	0	51	1463	52	390	208	0	59	650	3774
Approach %	11.6	87.1	1.2	0.0	-	-	9.2	50.4	40.4	0.0	-	-	11.3	87.3	1.4	0.0	-	-	8.0	60.0	32.0	0.0	-	-	-
Total %	3.7	28.0	0.4	0.0	-	32.1	1.1	6.0	4.8	0.0	-	11.9	4.4	33.8	0.5	0.0	-	38.8	1.4	10.3	5.5	0.0	-	17.2	-
PHF	0.734	0.972	0.625	0.000	-	0.942	0.641	0.734	0.854	0.000	-	0.842	0.902	0.923	0.833	0.000	-	0.933	0.765	0.894	0.813	0.000	-	0.934	0.963
Lights	138	1016	15	0	-	1169	41	221	178	0	-	440	165	1262	20	0	-	1447	52	375	208	0	-	635	3691
% Lights	97.9	96.1	100.0	-	-	96.4	100.0	97.8	98.3	-	-	98.2	99.4	98.8	100.0	-	-	98.9	100.0	96.2	100.0	-	-	97.7	97.8
Buses	0	10	0	0	-	10	0	0	0	0	-	0	1	8	0	0	-	9	0	1	0	0	-	1	20
% Buses	0.0	0.9	0.0	-	-	0.8	0.0	0.0	0.0	-	-	0.0	0.6	0.6	0.0	-	-	0.6	0.0	0.3	0.0	-	-	0.2	0.5
Single-Unit Trucks	3	26	0	0	-	29	0	2	2	0	-	4	0	5	0	0	-	5	0	0	0	0	-	0	38
% Single-Unit Trucks	2.1	2.5	0.0	-	-	2.4	0.0	0.9	1.1	-	-	0.9	0.0	0.4	0.0	-	-	0.3	0.0	0.0	0.0	-	-	0.0	1.0
Articulated Trucks	0	2	0	0	-	2	0	0	0	0	-	0	0	1	0	0	-	1	0	0	0	0	-	0	3
% Articulated Trucks	0.0	0.2	0.0	-	-	0.2	0.0	0.0	0.0	-	-	0.0	0.0	0.1	0.0	-	-	0.1	0.0	0.0	0.0	-	-	0.0	0.1
Bicycles on Road	0	3	0	0	-	3	0	3	1	0	-	4	0	1	0	0	-	1	0	14	0	0	-	14	22
% Bicycles on Road	0.0	0.3	0.0	-	-	0.2	0.0	1.3	0.6	-	-	0.9	0.0	0.1	0.0	-	-	0.1	0.0	3.6	0.0	-	-	2.2	0.6
Pedestrians	-	-	-	-	28	-	-	-	-	-	22	-	-	-	-	-	51	-	-	-	-	-	59	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-



Kenig Lindgren O'Hara Aboona, Inc.
9575 W. Higgins Rd., Suite 400
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(847)518-9990

Count Name: Ashland Avenue with Armitage Avenue
Site Code:
Start Date: 02/23/2016
Page No: 1

Turning Movement Data

Start Time	Armitage Avenue Eastbound						Armitage Avenue Westbound						Ashland Avenue Northbound						Ashland Avenue Southbound						Int. Total
	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	
7:00 AM	0	102	76	3	9	181	0	0	27	0	2	27	0	4	133	2	3	139	0	0	219	125	0	344	691
7:15 AM	0	89	79	13	14	181	0	1	43	0	0	44	0	3	139	0	3	142	0	0	270	131	0	401	768
7:30 AM	0	106	77	12	16	195	0	0	38	0	0	38	0	5	193	1	4	199	0	0	254	121	0	375	807
7:45 AM	0	90	71	6	15	167	0	2	26	0	1	28	0	12	196	0	2	208	0	0	269	100	1	369	772
Hourly Total	0	387	303	34	54	724	0	3	134	0	3	137	0	24	661	3	12	688	0	0	1012	477	1	1489	3038
8:00 AM	0	113	76	9	9	198	0	1	40	0	1	41	0	9	154	2	1	165	0	0	208	124	0	332	736
8:15 AM	0	109	73	4	17	186	0	1	26	0	2	27	0	7	190	1	3	198	0	0	262	124	0	386	797
8:30 AM	0	87	49	10	11	146	0	0	39	0	0	39	0	6	165	1	1	172	0	0	229	106	0	335	692
8:45 AM	0	110	59	7	16	176	0	0	26	1	0	27	0	8	167	4	1	179	0	0	235	126	1	361	743
Hourly Total	0	419	257	30	53	706	0	2	131	1	3	134	0	30	676	8	6	714	0	0	934	480	1	1414	2968
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4:00 PM	0	115	43	7	8	165	0	2	78	0	1	80	0	10	196	3	1	209	0	0	213	119	1	332	786
4:15 PM	0	128	46	9	13	183	0	4	96	1	0	101	0	16	215	2	3	233	0	0	210	116	1	326	843
4:30 PM	0	103	44	9	14	156	0	2	82	0	1	84	0	12	219	6	2	237	0	0	248	121	0	369	846
4:45 PM	0	144	72	7	14	223	0	0	100	0	3	100	0	12	196	0	5	208	0	0	213	91	3	304	835
Hourly Total	0	490	205	32	49	727	0	8	356	1	5	365	0	50	826	11	11	887	0	0	884	447	5	1331	3310
5:00 PM	0	119	38	6	12	163	0	3	84	1	1	88	0	6	214	0	5	220	0	0	222	127	1	349	820
5:15 PM	0	143	52	13	32	208	0	0	84	0	0	84	0	8	178	1	1	187	0	0	224	112	1	336	815
5:30 PM	0	141	53	7	31	201	0	1	75	0	1	76	0	12	194	1	11	207	0	0	233	118	1	351	835
5:45 PM	0	138	51	3	25	192	0	0	93	0	0	93	0	6	180	1	5	187	0	0	209	92	2	301	773
Hourly Total	0	541	194	29	100	764	0	4	336	1	2	341	0	32	766	3	22	801	0	0	888	449	5	1337	3243
Grand Total	0	1837	959	125	256	2921	0	17	957	3	13	977	0	136	2929	25	51	3090	0	0	3718	1853	12	5571	12559
Approach %	0.0	62.9	32.8	4.3	-	-	0.0	1.7	98.0	0.3	-	-	0.0	4.4	94.8	0.8	-	-	0.0	0.0	66.7	33.3	-	-	-
Total %	0.0	14.6	7.6	1.0	-	23.3	0.0	0.1	7.6	0.0	-	7.8	0.0	1.1	23.3	0.2	-	24.6	0.0	0.0	29.6	14.8	-	44.4	-
Lights	0	1778	915	122	-	2815	0	16	927	3	-	946	0	131	2799	24	-	2954	0	0	3588	1778	-	5366	12081
% Lights	-	96.8	95.4	97.6	-	96.4	-	94.1	96.9	100.0	-	96.8	-	96.3	95.6	96.0	-	95.6	-	-	96.5	96.0	-	96.3	96.2
Buses	0	3	5	0	-	8	0	0	4	0	-	4	0	0	57	0	-	57	0	0	61	4	-	65	134
% Buses	-	0.2	0.5	0.0	-	0.3	-	0.0	0.4	0.0	-	0.4	-	0.0	1.9	0.0	-	1.8	-	-	1.6	0.2	-	1.2	1.1
Single-Unit Trucks	0	39	26	3	-	68	0	1	19	0	-	20	0	4	48	0	-	52	0	0	58	48	-	106	246
% Single-Unit Trucks	-	2.1	2.7	2.4	-	2.3	-	5.9	2.0	0.0	-	2.0	-	2.9	1.6	0.0	-	1.7	-	-	1.6	2.6	-	1.9	2.0
Articulated Trucks	0	16	8	0	-	24	0	0	6	0	-	6	0	1	10	0	-	11	0	0	6	23	-	29	70
% Articulated Trucks	-	0.9	0.8	0.0	-	0.8	-	0.0	0.6	0.0	-	0.6	-	0.7	0.3	0.0	-	0.4	-	-	0.2	1.2	-	0.5	0.6
Bicycles on Road	0	1	5	0	-	6	0	0	1	0	-	1	0	0	15	1	-	16	0	0	5	0	-	5	28
% Bicycles on Road	-	0.1	0.5	0.0	-	0.2	-	0.0	0.1	0.0	-	0.1	-	0.0	0.5	4.0	-	0.5	-	-	0.1	0.0	-	0.1	0.2
Pedestrians	-	-	-	-	256	-	-	-	-	-	13	-	-	-	-	-	51	-	-	-	-	-	12	-	-



Kenig Lindgren O'Hara Aboona, Inc.
9575 W. Higgins Rd., Suite 400

Rosemont, Illinois, United States 60018
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Count Name: Ashland Avenue with Armitage Avenue
Site Code:
Start Date: 02/23/2016
Page No: 4

Turning Movement Peak Hour Data (7:30 AM)

Start Time	Armitage Avenue Eastbound						Armitage Avenue Westbound						Ashland Avenue Northbound						Ashland Avenue Southbound						Int. Total
	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	
7:30 AM	0	106	77	12	16	195	0	0	38	0	0	38	0	5	193	1	4	199	0	0	254	121	0	375	807
7:45 AM	0	90	71	6	15	167	0	2	26	0	1	28	0	12	196	0	2	208	0	0	269	100	1	369	772
8:00 AM	0	113	76	9	9	198	0	1	40	0	1	41	0	9	154	2	1	165	0	0	208	124	0	332	736
8:15 AM	0	109	73	4	17	186	0	1	26	0	2	27	0	7	190	1	3	198	0	0	262	124	0	386	797
Total	0	418	297	31	57	746	0	4	130	0	4	134	0	33	733	4	10	770	0	0	993	469	1	1462	3112
Approach %	0.0	56.0	39.8	4.2	-	-	0.0	3.0	97.0	0.0	-	-	0.0	4.3	95.2	0.5	-	-	0.0	0.0	67.9	32.1	-	-	-
Total %	0.0	13.4	9.5	1.0	-	24.0	0.0	0.1	4.2	0.0	-	4.3	0.0	1.1	23.6	0.1	-	24.7	0.0	0.0	31.9	15.1	-	47.0	-
PHF	0.000	0.925	0.964	0.646	-	0.942	0.000	0.500	0.813	0.000	-	0.817	0.000	0.688	0.935	0.500	-	0.925	0.000	0.000	0.923	0.946	-	0.947	0.964
Lights	0	391	277	30	-	698	0	3	122	0	-	125	0	30	681	4	-	715	0	0	969	444	-	1413	2951
% Lights	-	93.5	93.3	96.8	-	93.6	-	75.0	93.8	-	-	93.3	-	90.9	92.9	100.0	-	92.9	-	-	97.6	94.7	-	96.6	94.8
Buses	0	1	2	0	-	3	0	0	0	0	-	0	0	0	19	0	-	19	0	0	15	2	-	17	39
% Buses	-	0.2	0.7	0.0	-	0.4	-	0.0	0.0	-	-	0.0	-	0.0	2.6	0.0	-	2.5	-	-	1.5	0.4	-	1.2	1.3
Single-Unit Trucks	0	16	12	1	-	29	0	1	6	0	-	7	0	3	25	0	-	28	0	0	8	13	-	21	85
% Single-Unit Trucks	-	3.8	4.0	3.2	-	3.9	-	25.0	4.6	-	-	5.2	-	9.1	3.4	0.0	-	3.6	-	-	0.8	2.8	-	1.4	2.7
Articulated Trucks	0	10	3	0	-	13	0	0	2	0	-	2	0	0	5	0	-	5	0	0	1	10	-	11	31
% Articulated Trucks	-	2.4	1.0	0.0	-	1.7	-	0.0	1.5	-	-	1.5	-	0.0	0.7	0.0	-	0.6	-	-	0.1	2.1	-	0.8	1.0
Bicycles on Road	0	0	3	0	-	3	0	0	0	0	-	0	0	0	3	0	-	3	0	0	0	0	-	0	6
% Bicycles on Road	-	0.0	1.0	0.0	-	0.4	-	0.0	0.0	-	-	0.0	-	0.0	0.4	0.0	-	0.4	-	-	0.0	0.0	-	0.0	0.2
Pedestrians	-	-	-	-	57	-	-	-	-	-	4	-	-	-	-	-	10	-	-	-	-	-	1	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-



Kenig Lindgren O'Hara Aboona, Inc.
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Count Name: Ashland Avenue with Armitage Avenue
Site Code:
Start Date: 02/23/2016
Page No: 6

Turning Movement Peak Hour Data (5:00 PM)

Start Time	Armitage Avenue Eastbound						Armitage Avenue Westbound						Ashland Avenue Northbound						Ashland Avenue Southbound						Int. Total
	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	
5:00 PM	0	119	38	6	12	163	0	3	84	1	1	88	0	6	214	0	5	220	0	0	222	127	1	349	820
5:15 PM	0	143	52	13	32	208	0	0	84	0	0	84	0	8	178	1	1	187	0	0	224	112	1	336	815
5:30 PM	0	141	53	7	31	201	0	1	75	0	1	76	0	12	194	1	11	207	0	0	233	118	1	351	835
5:45 PM	0	138	51	3	25	192	0	0	93	0	0	93	0	6	180	1	5	187	0	0	209	92	2	301	773
Total	0	541	194	29	100	764	0	4	336	1	2	341	0	32	766	3	22	801	0	0	888	449	5	1337	3243
Approach %	0.0	70.8	25.4	3.8	-	-	0.0	1.2	98.5	0.3	-	-	0.0	4.0	95.6	0.4	-	-	0.0	0.0	66.4	33.6	-	-	-
Total %	0.0	16.7	6.0	0.9	-	23.6	0.0	0.1	10.4	0.0	-	10.5	0.0	1.0	23.6	0.1	-	24.7	0.0	0.0	27.4	13.8	-	41.2	-
PHF	0.000	0.946	0.915	0.558	-	0.918	0.000	0.333	0.903	0.250	-	0.917	0.000	0.667	0.895	0.750	-	0.910	0.000	0.000	0.953	0.884	-	0.952	0.971
Lights	0	539	191	29	-	759	0	4	332	1	-	337	0	32	751	3	-	786	0	0	860	441	-	1301	3183
% Lights	-	99.6	98.5	100.0	-	99.3	-	100.0	98.8	100.0	-	98.8	-	100.0	98.0	100.0	-	98.1	-	-	96.8	98.2	-	97.3	98.1
Buses	0	0	1	0	-	1	0	0	1	0	-	1	0	0	10	0	-	10	0	0	14	0	-	14	26
% Buses	-	0.0	0.5	0.0	-	0.1	-	0.0	0.3	0.0	-	0.3	-	0.0	1.3	0.0	-	1.2	-	-	1.6	0.0	-	1.0	0.8
Single-Unit Trucks	0	1	1	0	-	2	0	0	3	0	-	3	0	0	1	0	-	1	0	0	13	6	-	19	25
% Single-Unit Trucks	-	0.2	0.5	0.0	-	0.3	-	0.0	0.9	0.0	-	0.9	-	0.0	0.1	0.0	-	0.1	-	-	1.5	1.3	-	1.4	0.8
Articulated Trucks	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	2	-	2	2
% Articulated Trucks	-	0.0	0.0	0.0	-	0.0	-	0.0	0.0	0.0	-	0.0	-	0.0	0.0	0.0	-	0.0	-	-	0.0	0.4	-	0.1	0.1
Bicycles on Road	0	1	1	0	-	2	0	0	0	0	-	0	0	0	4	0	-	4	0	0	1	0	-	1	7
% Bicycles on Road	-	0.2	0.5	0.0	-	0.3	-	0.0	0.0	0.0	-	0.0	-	0.0	0.5	0.0	-	0.5	-	-	0.1	0.0	-	0.1	0.2
Pedestrians	-	-	-	-	100	-	-	-	-	-	2	-	-	-	-	-	22	-	-	-	-	-	5	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-



Kenig Lindgren O'Hara Aboona, Inc.
9575 W. Higgins Rd., Suite 400

Rosemont, Illinois, United States 60018
(847)518-9990

Count Name: Ashland Avenue with Courtland Street
Site Code:
Start Date: 02/23/2016
Page No: 1

Turning Movement Data

Start Time	Courtland Street Eastbound						Courtland Street Westbound						Ashland Avenue Northbound						Ashland Avenue Southbound						Int. Total
	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	
7:00 AM	0	1	61	8	42	70	0	12	17	1	5	30	0	0	141	22	23	163	0	0	208	9	23	217	480
7:15 AM	0	1	81	14	36	96	0	14	26	0	10	40	0	0	148	21	15	169	0	0	266	11	16	277	582
7:30 AM	0	0	114	10	30	124	0	10	37	0	12	47	0	0	198	30	16	228	0	0	260	6	21	266	665
7:45 AM	0	2	128	14	38	144	0	16	40	3	6	59	0	0	199	31	14	230	0	0	255	4	13	259	692
Hourly Total	0	4	384	46	146	434	0	52	120	4	33	176	0	0	686	104	68	790	0	0	989	30	73	1019	2419
8:00 AM	0	1	128	13	11	142	0	28	47	3	4	78	0	0	160	35	12	195	0	0	208	13	5	221	636
8:15 AM	0	2	95	16	28	113	0	20	38	0	6	58	0	0	185	37	10	222	0	0	258	14	12	272	665
8:30 AM	0	2	118	19	43	139	0	24	48	0	9	72	0	0	177	28	18	205	0	0	224	24	13	248	664
8:45 AM	0	1	96	13	16	110	0	14	32	0	3	46	0	0	156	30	10	186	0	0	244	11	7	255	597
Hourly Total	0	6	437	61	98	504	0	86	165	3	22	254	0	0	678	130	50	808	0	0	934	62	37	996	2562
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4:00 PM	0	0	47	9	3	56	0	20	84	2	5	106	0	0	223	22	6	245	0	0	201	13	12	214	621
4:15 PM	0	0	52	10	23	62	0	11	85	3	1	99	0	0	220	33	5	253	0	0	219	14	4	233	647
4:30 PM	0	0	47	5	12	52	0	13	78	1	1	92	0	1	226	27	7	254	0	0	236	19	11	255	653
4:45 PM	0	3	61	7	14	71	0	22	75	2	5	99	0	0	221	45	9	266	0	0	215	10	11	225	661
Hourly Total	0	3	207	31	52	241	0	66	322	8	12	396	0	1	890	127	27	1018	0	0	871	56	38	927	2582
5:00 PM	0	1	53	2	9	56	0	25	74	1	7	100	0	0	214	48	9	262	0	1	214	20	16	235	653
5:15 PM	0	2	83	12	41	97	0	26	92	0	11	118	0	0	192	52	13	244	0	0	205	8	22	213	672
5:30 PM	0	0	60	8	20	68	0	18	87	0	5	105	0	0	214	50	14	264	0	0	229	20	17	249	686
5:45 PM	0	0	53	3	10	56	0	19	80	4	6	103	0	0	199	52	6	251	0	0	185	11	15	196	606
Hourly Total	0	3	249	25	80	277	0	88	333	5	29	426	0	0	819	202	42	1021	0	1	833	59	70	893	2617
Grand Total	0	16	1277	163	376	1456	0	292	940	20	96	1252	0	1	3073	563	187	3637	0	1	3627	207	218	3835	10180
Approach %	0.0	1.1	87.7	11.2	-	-	0.0	23.3	75.1	1.6	-	-	0.0	0.0	84.5	15.5	-	-	0.0	0.0	94.6	5.4	-	-	-
Total %	0.0	0.2	12.5	1.6	-	14.3	0.0	2.9	9.2	0.2	-	12.3	0.0	0.0	30.2	5.5	-	35.7	0.0	0.0	35.6	2.0	-	37.7	-
Lights	0	16	1144	158	-	1318	0	281	832	20	-	1133	0	1	2944	544	-	3489	0	1	3512	207	-	3720	9660
% Lights	-	100.0	89.6	96.9	-	90.5	-	96.2	88.5	100.0	-	90.5	-	100.0	95.8	96.6	-	95.9	-	100.0	96.8	100.0	-	97.0	94.9
Buses	0	0	44	2	-	46	0	3	38	0	-	41	0	0	57	3	-	60	0	0	58	0	-	58	205
% Buses	-	0.0	3.4	1.2	-	3.2	-	1.0	4.0	0.0	-	3.3	-	0.0	1.9	0.5	-	1.6	-	0.0	1.6	0.0	-	1.5	2.0
Single-Unit Trucks	0	0	9	3	-	12	0	4	13	0	-	17	0	0	59	13	-	72	0	0	50	0	-	50	151
% Single-Unit Trucks	-	0.0	0.7	1.8	-	0.8	-	1.4	1.4	0.0	-	1.4	-	0.0	1.9	2.3	-	2.0	-	0.0	1.4	0.0	-	1.3	1.5
Articulated Trucks	0	0	1	0	-	1	0	2	0	0	-	2	0	0	9	1	-	10	0	0	2	0	-	2	15
% Articulated Trucks	-	0.0	0.1	0.0	-	0.1	-	0.7	0.0	0.0	-	0.2	-	0.0	0.3	0.2	-	0.3	-	0.0	0.1	0.0	-	0.1	0.1
Bicycles on Road	0	0	79	0	-	79	0	2	57	0	-	59	0	0	4	2	-	6	0	0	5	0	-	5	149
% Bicycles on Road	-	0.0	6.2	0.0	-	5.4	-	0.7	6.1	0.0	-	4.7	-	0.0	0.1	0.4	-	0.2	-	0.0	0.1	0.0	-	0.1	1.5
Pedestrians	-	-	-	-	376	-	-	-	-	-	96	-	-	-	-	-	187	-	-	-	-	-	218	-	-



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Count Name: Ashland Avenue with Courtland Street
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Start Date: 02/23/2016
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Turning Movement Peak Hour Data (7:30 AM)

Start Time	Courtland Street Eastbound						Courtland Street Westbound						Ashland Avenue Northbound						Ashland Avenue Southbound						Int. Total
	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	
7:30 AM	0	0	114	10	30	124	0	10	37	0	12	47	0	0	198	30	16	228	0	0	260	6	21	266	665
7:45 AM	0	2	128	14	38	144	0	16	40	3	6	59	0	0	199	31	14	230	0	0	255	4	13	259	692
8:00 AM	0	1	128	13	11	142	0	28	47	3	4	78	0	0	160	35	12	195	0	0	208	13	5	221	636
8:15 AM	0	2	95	16	28	113	0	20	38	0	6	58	0	0	185	37	10	222	0	0	258	14	12	272	665
Total	0	5	465	53	107	523	0	74	162	6	28	242	0	0	742	133	52	875	0	0	981	37	51	1018	2658
Approach %	0.0	1.0	88.9	10.1	-	-	0.0	30.6	66.9	2.5	-	-	0.0	0.0	84.8	15.2	-	-	0.0	0.0	96.4	3.6	-	-	-
Total %	0.0	0.2	17.5	2.0	-	19.7	0.0	2.8	6.1	0.2	-	9.1	0.0	0.0	27.9	5.0	-	32.9	0.0	0.0	36.9	1.4	-	38.3	-
PHF	0.000	0.625	0.908	0.828	-	0.908	0.000	0.661	0.862	0.500	-	0.776	0.000	0.000	0.932	0.899	-	0.951	0.000	0.000	0.943	0.661	-	0.936	0.960
Lights	0	5	420	50	-	475	0	69	145	6	-	220	0	0	683	126	-	809	0	0	958	37	-	995	2499
% Lights	-	100.0	90.3	94.3	-	90.8	-	93.2	89.5	100.0	-	90.9	-	-	92.0	94.7	-	92.5	-	-	97.7	100.0	-	97.7	94.0
Buses	0	0	14	2	-	16	0	1	10	0	-	11	0	0	21	2	-	23	0	0	12	0	-	12	62
% Buses	-	0.0	3.0	3.8	-	3.1	-	1.4	6.2	0.0	-	4.5	-	-	2.8	1.5	-	2.6	-	-	1.2	0.0	-	1.2	2.3
Single-Unit Trucks	0	0	3	1	-	4	0	2	2	0	-	4	0	0	32	4	-	36	0	0	11	0	-	11	55
% Single-Unit Trucks	-	0.0	0.6	1.9	-	0.8	-	2.7	1.2	0.0	-	1.7	-	-	4.3	3.0	-	4.1	-	-	1.1	0.0	-	1.1	2.1
Articulated Trucks	0	0	1	0	-	1	0	2	0	0	-	2	0	0	4	1	-	5	0	0	0	0	-	0	8
% Articulated Trucks	-	0.0	0.2	0.0	-	0.2	-	2.7	0.0	0.0	-	0.8	-	-	0.5	0.8	-	0.6	-	-	0.0	0.0	-	0.0	0.3
Bicycles on Road	0	0	27	0	-	27	0	0	5	0	-	5	0	0	2	0	-	2	0	0	0	0	-	0	34
% Bicycles on Road	-	0.0	5.8	0.0	-	5.2	-	0.0	3.1	0.0	-	2.1	-	-	0.3	0.0	-	0.2	-	-	0.0	0.0	-	0.0	1.3
Pedestrians	-	-	-	-	107	-	-	-	-	-	28	-	-	-	-	-	52	-	-	-	-	-	51	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-



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Count Name: Ashland Avenue with Courtland Street
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Turning Movement Peak Hour Data (5:00 PM)

Start Time	Courtland Street Eastbound						Courtland Street Westbound						Ashland Avenue Northbound						Ashland Avenue Southbound						Int. Total
	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	
5:00 PM	0	1	53	2	9	56	0	25	74	1	7	100	0	0	214	48	9	262	0	1	214	20	16	235	653
5:15 PM	0	2	83	12	41	97	0	26	92	0	11	118	0	0	192	52	13	244	0	0	205	8	22	213	672
5:30 PM	0	0	60	8	20	68	0	18	87	0	5	105	0	0	214	50	14	264	0	0	229	20	17	249	686
5:45 PM	0	0	53	3	10	56	0	19	80	4	6	103	0	0	199	52	6	251	0	0	185	11	15	196	606
Total	0	3	249	25	80	277	0	88	333	5	29	426	0	0	819	202	42	1021	0	1	833	59	70	893	2617
Approach %	0.0	1.1	89.9	9.0	-	-	0.0	20.7	78.2	1.2	-	-	0.0	0.0	80.2	19.8	-	-	0.0	0.1	93.3	6.6	-	-	-
Total %	0.0	0.1	9.5	1.0	-	10.6	0.0	3.4	12.7	0.2	-	16.3	0.0	0.0	31.3	7.7	-	39.0	0.0	0.0	31.8	2.3	-	34.1	-
PHF	0.000	0.375	0.750	0.521	-	0.714	0.000	0.846	0.905	0.313	-	0.903	0.000	0.000	0.957	0.971	-	0.967	0.000	0.250	0.909	0.738	-	0.897	0.954
Lights	0	3	226	24	-	253	0	87	296	5	-	388	0	0	808	202	-	1010	0	1	812	59	-	872	2523
% Lights	-	100.0	90.8	96.0	-	91.3	-	98.9	88.9	100.0	-	91.1	-	-	98.7	100.0	-	98.9	-	100.0	97.5	100.0	-	97.6	96.4
Buses	0	0	6	0	-	6	0	0	7	0	-	7	0	0	10	0	-	10	0	0	13	0	-	13	36
% Buses	-	0.0	2.4	0.0	-	2.2	-	0.0	2.1	0.0	-	1.6	-	-	1.2	0.0	-	1.0	-	0.0	1.6	0.0	-	1.5	1.4
Single-Unit Trucks	0	0	2	1	-	3	0	0	2	0	-	2	0	0	1	0	-	1	0	0	8	0	-	8	14
% Single-Unit Trucks	-	0.0	0.8	4.0	-	1.1	-	0.0	0.6	0.0	-	0.5	-	-	0.1	0.0	-	0.1	-	0.0	1.0	0.0	-	0.9	0.5
Articulated Trucks	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Articulated Trucks	-	0.0	0.0	0.0	-	0.0	-	0.0	0.0	0.0	-	0.0	-	-	0.0	0.0	-	0.0	-	0.0	0.0	0.0	-	0.0	0.0
Bicycles on Road	0	0	15	0	-	15	0	1	28	0	-	29	0	0	0	0	-	0	0	0	0	0	-	0	44
% Bicycles on Road	-	0.0	6.0	0.0	-	5.4	-	1.1	8.4	0.0	-	6.8	-	-	0.0	0.0	-	0.0	-	0.0	0.0	0.0	-	0.0	1.7
Pedestrians	-	-	-	-	80	-	-	-	-	-	29	-	-	-	-	-	42	-	-	-	-	-	70	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-



Kenig Lindgren O'Hara Aboona, Inc.
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Count Name: Ashland Avenue with Elston
Avenue
Site Code:
Start Date: 02/23/2016
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Turning Movement Data

Start Time	Elston Avenue Eastbound						Elston Avenue Westbound						Ashland Avenue Northbound						Ashland Avenue Southbound						Int. Total
	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	
7:00 AM	0	0	47	11	8	58	0	0	21	19	1	40	0	10	223	0	0	233	0	28	320	2	0	350	681
7:15 AM	0	0	53	20	17	73	0	0	21	22	0	43	0	10	222	0	0	232	0	43	371	1	1	415	763
7:30 AM	0	0	113	33	10	146	0	0	29	24	0	53	0	11	301	0	0	312	0	44	334	1	0	379	890
7:45 AM	0	0	89	23	21	112	0	0	21	28	0	49	0	13	286	0	0	299	0	54	323	2	1	379	839
Hourly Total	0	0	302	87	56	389	0	0	92	93	1	185	0	44	1032	0	0	1076	0	169	1348	6	2	1523	3173
8:00 AM	0	0	115	19	9	134	0	0	32	46	1	78	0	16	236	0	0	252	0	44	313	2	0	359	823
8:15 AM	0	0	100	20	16	120	0	0	33	54	2	87	0	20	279	0	0	299	0	43	360	2	1	405	911
8:30 AM	0	0	96	17	14	113	0	0	22	48	0	70	0	16	228	1	0	245	0	64	316	1	0	381	809
8:45 AM	0	0	85	18	12	103	0	0	28	40	0	68	0	13	244	0	0	257	0	53	316	4	1	373	801
Hourly Total	0	0	396	74	51	470	0	0	115	188	3	303	0	65	987	1	0	1053	0	204	1305	9	2	1518	3344
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4:00 PM	0	0	49	25	4	74	0	0	70	76	0	146	0	22	302	0	0	324	0	30	310	8	3	348	892
4:15 PM	0	0	41	23	13	64	0	0	79	69	0	148	0	25	308	0	0	333	0	33	292	7	0	332	877
4:30 PM	0	0	45	27	12	72	0	0	89	70	0	159	0	27	301	0	1	328	2	39	346	9	3	396	955
4:45 PM	0	0	51	27	10	78	0	0	87	82	0	169	0	27	296	0	0	323	1	40	295	4	1	340	910
Hourly Total	0	0	186	102	39	288	0	0	325	297	0	622	0	101	1207	0	1	1308	3	142	1243	28	7	1416	3634
5:00 PM	0	0	40	21	13	61	0	0	87	88	0	175	0	24	317	0	0	341	0	32	317	5	0	354	931
5:15 PM	0	0	45	27	27	72	0	0	99	106	0	205	0	18	297	0	0	315	0	36	317	14	0	367	959
5:30 PM	0	0	49	27	28	76	0	0	96	84	0	180	0	18	317	0	0	335	0	32	273	10	3	315	906
5:45 PM	0	0	28	18	16	46	0	0	90	90	1	180	0	22	300	0	0	322	0	29	245	8	0	282	830
Hourly Total	0	0	162	93	84	255	0	0	372	368	1	740	0	82	1231	0	0	1313	0	129	1152	37	3	1318	3626
Grand Total	0	0	1046	356	230	1402	0	0	904	946	5	1850	0	292	4457	1	1	4750	3	644	5048	80	14	5775	13777
Approach %	0.0	0.0	74.6	25.4	-	-	0.0	0.0	48.9	51.1	-	-	0.0	6.1	93.8	0.0	-	-	0.1	11.2	87.4	1.4	-	-	-
Total %	0.0	0.0	7.6	2.6	-	10.2	0.0	0.0	6.6	6.9	-	13.4	0.0	2.1	32.4	0.0	-	34.5	0.0	4.7	36.6	0.6	-	41.9	-
Lights	0	0	951	348	-	1299	0	0	821	909	-	1730	0	286	4271	0	-	4557	3	624	4843	78	-	5548	13134
% Lights	-	-	90.9	97.8	-	92.7	-	-	90.8	96.1	-	93.5	-	97.9	95.8	0.0	-	95.9	100.0	96.9	95.9	97.5	-	96.1	95.3
Buses	0	0	2	0	-	2	0	0	0	2	-	2	0	2	56	0	-	58	0	0	58	0	-	58	120
% Buses	-	-	0.2	0.0	-	0.1	-	-	0.0	0.2	-	0.1	-	0.7	1.3	0.0	-	1.2	0.0	0.0	1.1	0.0	-	1.0	0.9
Single-Unit Trucks	0	0	31	8	-	39	0	0	25	24	-	49	0	3	90	0	-	93	0	14	115	1	-	130	311
% Single-Unit Trucks	-	-	3.0	2.2	-	2.8	-	-	2.8	2.5	-	2.6	-	1.0	2.0	0.0	-	2.0	0.0	2.2	2.3	1.3	-	2.3	2.3
Articulated Trucks	0	0	1	0	-	1	0	0	2	6	-	8	0	1	23	1	-	25	0	3	28	0	-	31	65
% Articulated Trucks	-	-	0.1	0.0	-	0.1	-	-	0.2	0.6	-	0.4	-	0.3	0.5	100.0	-	0.5	0.0	0.5	0.6	0.0	-	0.5	0.5
Bicycles on Road	0	0	61	0	-	61	0	0	56	5	-	61	0	0	17	0	-	17	0	3	4	1	-	8	147
% Bicycles on Road	-	-	5.8	0.0	-	4.4	-	-	6.2	0.5	-	3.3	-	0.0	0.4	0.0	-	0.4	0.0	0.5	0.1	1.3	-	0.1	1.1
Pedestrians	-	-	-	-	230	-	-	-	-	-	5	-	-	-	-	-	1	-	-	-	-	-	14	-	-



Kenig Lindgren O'Hara Aboona, Inc.
9575 W. Higgins Rd., Suite 400

Rosemont, Illinois, United States 60018
(847)518-9990

Count Name: Ashland Avenue with Elston
Avenue
Site Code:
Start Date: 02/23/2016
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Turning Movement Peak Hour Data (7:30 AM)

Start Time	Elston Avenue Eastbound						Elston Avenue Westbound						Ashland Avenue Northbound						Ashland Avenue Southbound						Int. Total
	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	
7:30 AM	0	0	113	33	10	146	0	0	29	24	0	53	0	11	301	0	0	312	0	44	334	1	0	379	890
7:45 AM	0	0	89	23	21	112	0	0	21	28	0	49	0	13	286	0	0	299	0	54	323	2	1	379	839
8:00 AM	0	0	115	19	9	134	0	0	32	46	1	78	0	16	236	0	0	252	0	44	313	2	0	359	823
8:15 AM	0	0	100	20	16	120	0	0	33	54	2	87	0	20	279	0	0	299	0	43	360	2	1	405	911
Total	0	0	417	95	56	512	0	0	115	152	3	267	0	60	1102	0	0	1162	0	185	1330	7	2	1522	3463
Approach %	0.0	0.0	81.4	18.6	-	-	0.0	0.0	43.1	56.9	-	-	0.0	5.2	94.8	0.0	-	-	0.0	12.2	87.4	0.5	-	-	-
Total %	0.0	0.0	12.0	2.7	-	14.8	0.0	0.0	3.3	4.4	-	7.7	0.0	1.7	31.8	0.0	-	33.6	0.0	5.3	38.4	0.2	-	44.0	-
PHF	0.000	0.000	0.907	0.720	-	0.877	0.000	0.000	0.871	0.704	-	0.767	0.000	0.750	0.915	0.000	-	0.931	0.000	0.856	0.924	0.875	-	0.940	0.950
Lights	0	0	363	91	-	454	0	0	105	139	-	244	0	57	1025	0	-	1082	0	177	1285	6	-	1468	3248
% Lights	-	-	87.1	95.8	-	88.7	-	-	91.3	91.4	-	91.4	-	95.0	93.0	-	-	93.1	-	95.7	96.6	85.7	-	96.5	93.8
Buses	0	0	0	0	-	0	0	0	0	2	-	2	0	2	19	0	-	21	0	0	16	0	-	16	39
% Buses	-	-	0.0	0.0	-	0.0	-	-	0.0	1.3	-	0.7	-	3.3	1.7	-	-	1.8	-	0.0	1.2	0.0	-	1.1	1.1
Single-Unit Trucks	0	0	13	4	-	17	0	0	8	10	-	18	0	1	43	0	-	44	0	5	18	0	-	23	102
% Single-Unit Trucks	-	-	3.1	4.2	-	3.3	-	-	7.0	6.6	-	6.7	-	1.7	3.9	-	-	3.8	-	2.7	1.4	0.0	-	1.5	2.9
Articulated Trucks	0	0	1	0	-	1	0	0	0	1	-	1	0	0	12	0	-	12	0	2	11	0	-	13	27
% Articulated Trucks	-	-	0.2	0.0	-	0.2	-	-	0.0	0.7	-	0.4	-	0.0	1.1	-	-	1.0	-	1.1	0.8	0.0	-	0.9	0.8
Bicycles on Road	0	0	40	0	-	40	0	0	2	0	-	2	0	0	3	0	-	3	0	1	0	1	-	2	47
% Bicycles on Road	-	-	9.6	0.0	-	7.8	-	-	1.7	0.0	-	0.7	-	0.0	0.3	-	-	0.3	-	0.5	0.0	14.3	-	0.1	1.4
Pedestrians	-	-	-	-	56	-	-	-	-	-	3	-	-	-	-	-	0	-	-	-	-	-	2	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	-	-	-	-	-	-	100.0	-	-



Kenig Lindgren O'Hara Aboona, Inc.
9575 W. Higgins Rd., Suite 400

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(847)518-9990

Count Name: Ashland Avenue with Elston
Avenue
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Start Date: 02/23/2016
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Turning Movement Peak Hour Data (5:00 PM)

Start Time	Elston Avenue Eastbound						Elston Avenue Westbound						Ashland Avenue Northbound						Ashland Avenue Southbound						Int. Total
	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	
5:00 PM	0	0	40	21	13	61	0	0	87	88	0	175	0	24	317	0	0	341	0	32	317	5	0	354	931
5:15 PM	0	0	45	27	27	72	0	0	99	106	0	205	0	18	297	0	0	315	0	36	317	14	0	367	959
5:30 PM	0	0	49	27	28	76	0	0	96	84	0	180	0	18	317	0	0	335	0	32	273	10	3	315	906
5:45 PM	0	0	28	18	16	46	0	0	90	90	1	180	0	22	300	0	0	322	0	29	245	8	0	282	830
Total	0	0	162	93	84	255	0	0	372	368	1	740	0	82	1231	0	0	1313	0	129	1152	37	3	1318	3626
Approach %	0.0	0.0	63.5	36.5	-	-	0.0	0.0	50.3	49.7	-	-	0.0	6.2	93.8	0.0	-	-	0.0	9.8	87.4	2.8	-	-	-
Total %	0.0	0.0	4.5	2.6	-	7.0	0.0	0.0	10.3	10.1	-	20.4	0.0	2.3	33.9	0.0	-	36.2	0.0	3.6	31.8	1.0	-	36.3	-
PHF	0.000	0.000	0.827	0.861	-	0.839	0.000	0.000	0.939	0.868	-	0.902	0.000	0.854	0.971	0.000	-	0.963	0.000	0.896	0.909	0.661	-	0.898	0.945
Lights	0	0	158	92	-	250	0	0	324	360	-	684	0	82	1211	0	-	1293	0	127	1115	37	-	1279	3506
% Lights	-	-	97.5	98.9	-	98.0	-	-	87.1	97.8	-	92.4	-	100.0	98.4	-	-	98.5	-	98.4	96.8	100.0	-	97.0	96.7
Buses	0	0	0	0	-	0	0	0	0	0	-	0	0	0	10	0	-	10	0	0	13	0	-	13	23
% Buses	-	-	0.0	0.0	-	0.0	-	-	0.0	0.0	-	0.0	-	0.0	0.8	-	-	0.8	-	0.0	1.1	0.0	-	1.0	0.6
Single-Unit Trucks	0	0	1	1	-	2	0	0	4	4	-	8	0	0	4	0	-	4	0	2	22	0	-	24	38
% Single-Unit Trucks	-	-	0.6	1.1	-	0.8	-	-	1.1	1.1	-	1.1	-	0.0	0.3	-	-	0.3	-	1.6	1.9	0.0	-	1.8	1.0
Articulated Trucks	0	0	0	0	-	0	0	0	1	1	-	2	0	0	0	0	-	0	0	0	1	0	-	1	3
% Articulated Trucks	-	-	0.0	0.0	-	0.0	-	-	0.3	0.3	-	0.3	-	0.0	0.0	-	-	0.0	-	0.0	0.1	0.0	-	0.1	0.1
Bicycles on Road	0	0	3	0	-	3	0	0	43	3	-	46	0	0	6	0	-	6	0	0	1	0	-	1	56
% Bicycles on Road	-	-	1.9	0.0	-	1.2	-	-	11.6	0.8	-	6.2	-	0.0	0.5	-	-	0.5	-	0.0	0.1	0.0	-	0.1	1.5
Pedestrians	-	-	-	-	84	-	-	-	-	-	1	-	-	-	-	-	0	-	-	-	-	-	3	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	-	-	-	-	-	-	100.0	-	-



Kenig Lindgren O'Hara Aboona, Inc.
9575 W. Higgins Rd., Suite 400

Rosemont, Illinois, United States 60018
(847)518-9990

Count Name: Ashland/Wabansia
Site Code:
Start Date: 04/13/2016
Page No: 1

Turning Movement Data

Start Time	Wabansia Avenue Eastbound						Wabansia Avenue Westbound						Ashland Avenue Northbound						Ashland Avenue Southbound						Int. Total
	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	
7:00 AM	0	7	3	29	11	39	0	3	3	2	4	8	0	3	157	6	3	166	0	0	196	5	2	201	414
7:15 AM	0	6	7	36	8	49	0	3	1	2	12	6	0	2	158	2	2	162	0	1	241	5	3	247	464
7:30 AM	0	13	6	37	5	56	0	4	4	12	2	20	0	5	223	2	1	230	0	1	248	4	0	253	559
7:45 AM	0	25	7	29	8	61	0	3	0	6	7	9	0	12	193	2	0	207	1	5	255	9	4	270	547
Hourly Total	0	51	23	131	32	205	0	13	8	22	25	43	0	22	731	12	6	765	1	7	940	23	9	971	1984
8:00 AM	0	23	7	51	5	81	0	4	1	7	2	12	0	6	211	5	2	222	0	9	257	2	0	268	583
8:15 AM	0	15	7	34	6	56	0	3	0	1	6	4	0	2	212	2	1	216	1	3	258	6	2	268	544
8:30 AM	0	10	4	32	7	46	0	4	3	6	7	13	0	3	218	2	1	223	0	6	261	1	2	268	550
8:45 AM	0	10	3	28	4	41	0	2	1	3	3	6	0	4	192	4	3	200	1	3	215	0	0	219	466
Hourly Total	0	58	21	145	22	224	0	13	5	17	18	35	0	15	833	13	7	861	2	21	991	9	4	1023	2143
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4:00 PM	0	11	8	30	5	49	0	1	0	3	3	4	0	6	237	5	5	248	0	6	232	9	4	247	548
4:15 PM	0	7	2	33	11	42	0	2	4	0	4	6	0	18	238	4	5	260	0	3	234	8	2	245	553
4:30 PM	0	12	1	22	7	35	0	0	6	2	3	8	1	11	245	0	5	257	0	3	235	8	0	246	546
4:45 PM	0	8	5	29	12	42	0	2	6	0	5	8	0	20	234	8	3	262	0	1	212	12	4	225	537
Hourly Total	0	38	16	114	35	168	0	5	16	5	15	26	1	55	954	17	18	1027	0	13	913	37	10	963	2184
5:00 PM	0	9	2	33	7	44	0	6	6	4	7	16	0	20	262	3	14	285	0	0	228	15	3	243	588
5:15 PM	0	19	1	23	11	43	0	3	1	2	1	6	0	25	273	4	0	302	0	2	245	11	2	258	609
5:30 PM	0	16	1	32	25	49	0	5	7	4	10	16	0	22	279	4	1	305	0	0	238	11	4	249	619
5:45 PM	0	18	3	30	5	51	0	4	8	2	7	14	1	21	237	6	6	265	0	3	255	13	6	271	601
Hourly Total	0	62	7	118	48	187	0	18	22	12	25	52	1	88	1051	17	21	1157	0	5	966	50	15	1021	2417
Grand Total	0	209	67	508	137	784	0	49	51	56	83	156	2	180	3569	59	52	3810	3	46	3810	119	38	3978	8728
Approach %	0.0	26.7	8.5	64.8	-	-	0.0	31.4	32.7	35.9	-	-	0.1	4.7	93.7	1.5	-	-	0.1	1.2	95.8	3.0	-	-	-
Total %	0.0	2.4	0.8	5.8	-	9.0	0.0	0.6	0.6	0.6	-	1.8	0.0	2.1	40.9	0.7	-	43.7	0.0	0.5	43.7	1.4	-	45.6	-
Lights	0	206	63	501	-	770	0	38	46	41	-	125	2	179	3389	55	-	3625	3	42	3647	119	-	3811	8331
% Lights	-	98.6	94.0	98.6	-	98.2	-	77.6	90.2	73.2	-	80.1	100.0	99.4	95.0	93.2	-	95.1	100.0	91.3	95.7	100.0	-	95.8	95.5
Buses	0	0	0	0	-	0	0	0	0	0	-	0	0	1	54	0	-	55	0	0	51	0	-	51	106
% Buses	-	0.0	0.0	0.0	-	0.0	-	0.0	0.0	0.0	-	0.0	0.0	0.6	1.5	0.0	-	1.4	0.0	0.0	1.3	0.0	-	1.3	1.2
Single-Unit Trucks	0	2	3	5	-	10	0	9	3	12	-	24	0	0	95	4	-	99	0	4	99	0	-	103	236
% Single-Unit Trucks	-	1.0	4.5	1.0	-	1.3	-	18.4	5.9	21.4	-	15.4	0.0	0.0	2.7	6.8	-	2.6	0.0	8.7	2.6	0.0	-	2.6	2.7
Articulated Trucks	0	0	1	1	-	2	0	0	1	2	-	3	0	0	15	0	-	15	0	0	8	0	-	8	28
% Articulated Trucks	-	0.0	1.5	0.2	-	0.3	-	0.0	2.0	3.6	-	1.9	0.0	0.0	0.4	0.0	-	0.4	0.0	0.0	0.2	0.0	-	0.2	0.3
Bicycles on Road	0	1	0	1	-	2	0	2	1	1	-	4	0	0	16	0	-	16	0	0	5	0	-	5	27
% Bicycles on Road	-	0.5	0.0	0.2	-	0.3	-	4.1	2.0	1.8	-	2.6	0.0	0.0	0.4	0.0	-	0.4	0.0	0.0	0.1	0.0	-	0.1	0.3
Pedestrians	-	-	-	-	137	-	-	-	-	-	83	-	-	-	-	-	52	-	-	-	-	-	38	-	-



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Count Name: Ashland/Wabansia
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Start Date: 04/13/2016
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Turning Movement Peak Hour Data (7:30 AM)

Start Time	Wabansia Avenue Eastbound						Wabansia Avenue Westbound						Ashland Avenue Northbound						Ashland Avenue Southbound						Int. Total
	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	
7:30 AM	0	13	6	37	5	56	0	4	4	12	2	20	0	5	223	2	1	230	0	1	248	4	0	253	559
7:45 AM	0	25	7	29	8	61	0	3	0	6	7	9	0	12	193	2	0	207	1	5	255	9	4	270	547
8:00 AM	0	23	7	51	5	81	0	4	1	7	2	12	0	6	211	5	2	222	0	9	257	2	0	268	583
8:15 AM	0	15	7	34	6	56	0	3	0	1	6	4	0	2	212	2	1	216	1	3	258	6	2	268	544
Total	0	76	27	151	24	254	0	14	5	26	17	45	0	25	839	11	4	875	2	18	1018	21	6	1059	2233
Approach %	0.0	29.9	10.6	59.4	-	-	0.0	31.1	11.1	57.8	-	-	0.0	2.9	95.9	1.3	-	-	0.2	1.7	96.1	2.0	-	-	-
Total %	0.0	3.4	1.2	6.8	-	11.4	0.0	0.6	0.2	1.2	-	2.0	0.0	1.1	37.6	0.5	-	39.2	0.1	0.8	45.6	0.9	-	47.4	-
PHF	0.000	0.760	0.964	0.740	-	0.784	0.000	0.875	0.313	0.542	-	0.563	0.000	0.521	0.941	0.550	-	0.951	0.500	0.500	0.986	0.583	-	0.981	0.958
Lights	0	75	27	147	-	249	0	10	3	15	-	28	0	25	779	9	-	813	2	18	973	21	-	1014	2104
% Lights	-	98.7	100.0	97.4	-	98.0	-	71.4	60.0	57.7	-	62.2	-	100.0	92.8	81.8	-	92.9	100.0	100.0	95.6	100.0	-	95.8	94.2
Buses	0	0	0	0	-	0	0	0	0	0	-	0	0	0	18	0	-	18	0	0	12	0	-	12	30
% Buses	-	0.0	0.0	0.0	-	0.0	-	0.0	0.0	0.0	-	0.0	-	0.0	2.1	0.0	-	2.1	0.0	0.0	1.2	0.0	-	1.1	1.3
Single-Unit Trucks	0	0	0	3	-	3	0	3	2	10	-	15	0	0	34	2	-	36	0	0	27	0	-	27	81
% Single-Unit Trucks	-	0.0	0.0	2.0	-	1.2	-	21.4	40.0	38.5	-	33.3	-	0.0	4.1	18.2	-	4.1	0.0	0.0	2.7	0.0	-	2.5	3.6
Articulated Trucks	0	0	0	1	-	1	0	0	0	1	-	1	0	0	6	0	-	6	0	0	5	0	-	5	13
% Articulated Trucks	-	0.0	0.0	0.7	-	0.4	-	0.0	0.0	3.8	-	2.2	-	0.0	0.7	0.0	-	0.7	0.0	0.0	0.5	0.0	-	0.5	0.6
Bicycles on Road	0	1	0	0	-	1	0	1	0	0	-	1	0	0	2	0	-	2	0	0	1	0	-	1	5
% Bicycles on Road	-	1.3	0.0	0.0	-	0.4	-	7.1	0.0	0.0	-	2.2	-	0.0	0.2	0.0	-	0.2	0.0	0.0	0.1	0.0	-	0.1	0.2
Pedestrians	-	-	-	-	24	-	-	-	-	-	17	-	-	-	-	-	4	-	-	-	-	-	6	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-



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Count Name: Ashland/Wabansia
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Start Date: 04/13/2016
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Turning Movement Peak Hour Data (4:30 PM)

Start Time	Wabansia Avenue Eastbound						Wabansia Avenue Westbound						Ashland Avenue Northbound						Ashland Avenue Southbound						Int. Total
	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	
4:30 PM	0	12	1	22	7	35	0	0	6	2	3	8	1	11	245	0	5	257	0	3	235	8	0	246	546
4:45 PM	0	8	5	29	12	42	0	2	6	0	5	8	0	20	234	8	3	262	0	1	212	12	4	225	537
5:00 PM	0	9	2	33	7	44	0	6	6	4	7	16	0	20	262	3	14	285	0	0	228	15	3	243	588
5:15 PM	0	19	1	23	11	43	0	3	1	2	1	6	0	25	273	4	0	302	0	2	245	11	2	258	609
Total	0	48	9	107	37	164	0	11	19	8	16	38	1	76	1014	15	22	1106	0	6	920	46	9	972	2280
Approach %	0.0	29.3	5.5	65.2	-	-	0.0	28.9	50.0	21.1	-	-	0.1	6.9	91.7	1.4	-	-	0.0	0.6	94.7	4.7	-	-	-
Total %	0.0	2.1	0.4	4.7	-	7.2	0.0	0.5	0.8	0.4	-	1.7	0.0	3.3	44.5	0.7	-	48.5	0.0	0.3	40.4	2.0	-	42.6	-
PHF	0.000	0.632	0.450	0.811	-	0.932	0.000	0.458	0.792	0.500	-	0.594	0.250	0.760	0.929	0.469	-	0.916	0.000	0.500	0.939	0.767	-	0.942	0.936
Lights	0	48	8	107	-	163	0	11	19	8	-	38	1	75	997	15	-	1088	0	6	884	46	-	936	2225
% Lights	-	100.0	88.9	100.0	-	99.4	-	100.0	100.0	100.0	-	100.0	100.0	98.7	98.3	100.0	-	98.4	-	100.0	96.1	100.0	-	96.3	97.6
Buses	0	0	0	0	-	0	0	0	0	0	-	0	0	1	8	0	-	9	0	0	12	0	-	12	21
% Buses	-	0.0	0.0	0.0	-	0.0	-	0.0	0.0	0.0	-	0.0	0.0	1.3	0.8	0.0	-	0.8	-	0.0	1.3	0.0	-	1.2	0.9
Single-Unit Trucks	0	0	1	0	-	1	0	0	0	0	-	0	0	0	1	0	-	1	0	0	22	0	-	22	24
% Single-Unit Trucks	-	0.0	11.1	0.0	-	0.6	-	0.0	0.0	0.0	-	0.0	0.0	0.0	0.1	0.0	-	0.1	-	0.0	2.4	0.0	-	2.3	1.1
Articulated Trucks	0	0	0	0	-	0	0	0	0	0	-	0	0	0	2	0	-	2	0	0	1	0	-	1	3
% Articulated Trucks	-	0.0	0.0	0.0	-	0.0	-	0.0	0.0	0.0	-	0.0	0.0	0.0	0.2	0.0	-	0.2	-	0.0	0.1	0.0	-	0.1	0.1
Bicycles on Road	0	0	0	0	-	0	0	0	0	0	-	0	0	0	6	0	-	6	0	0	1	0	-	1	7
% Bicycles on Road	-	0.0	0.0	0.0	-	0.0	-	0.0	0.0	0.0	-	0.0	0.0	0.0	0.6	0.0	-	0.5	-	0.0	0.1	0.0	-	0.1	0.3
Pedestrians	-	-	-	-	37	-	-	-	-	-	16	-	-	-	-	-	22	-	-	-	-	-	9	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-



Kenig Lindgren O'Hara Aboona, Inc.
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Count Name: Clyborn and Webster
Site Code:
Start Date: 03/31/2015
Page No: 1

Turning Movement Data

Start Time	Clybourn Ave Southbound						Webster Avenue Westbound						Clybourn Ave Northbound						Webster Avenue Eastbound						Int. Total
	Right	Thru	Left	U-Turn	Peds	App. Total	Right	Thru	Left	U-Turn	Peds	App. Total	Right	Thru	Left	U-Turn	Peds	App. Total	Right	Thru	Left	U-Turn	Peds	App. Total	
7:00 AM	3	65	8	0	1	76	10	85	1	0	0	96	0	42	8	0	1	50	11	55	5	0	1	71	293
7:15 AM	4	103	11	0	3	118	18	94	3	0	0	115	1	37	7	0	3	45	26	87	1	0	0	114	392
7:30 AM	2	107	17	0	1	126	18	107	4	0	2	129	0	58	9	0	0	67	20	105	4	0	0	129	451
7:45 AM	7	113	7	0	2	127	18	102	1	0	0	121	0	46	15	0	5	61	23	84	2	0	2	109	418
Hourly Total	16	388	43	0	7	447	64	388	9	0	2	461	1	183	39	0	9	223	80	331	12	0	3	423	1554
8:00 AM	2	120	12	0	1	134	21	121	2	0	1	144	2	59	24	0	1	85	15	94	0	0	2	109	472
8:15 AM	4	119	10	0	5	133	27	110	3	0	1	140	3	69	19	0	7	91	32	102	4	0	2	138	502
8:30 AM	2	105	8	0	1	115	29	104	7	0	0	140	0	69	22	0	2	91	25	72	4	0	0	101	447
8:45 AM	5	111	17	0	5	133	24	84	10	0	0	118	2	56	15	0	6	73	26	79	7	0	0	112	436
Hourly Total	13	455	47	0	12	515	101	419	22	0	2	542	7	253	80	0	16	340	98	347	15	0	4	460	1857
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4:00 PM	11	86	17	0	7	114	30	104	3	0	12	137	1	128	19	0	17	148	37	88	11	0	6	136	535
4:15 PM	10	93	14	0	7	117	23	78	6	0	11	107	4	119	26	0	10	149	23	64	8	0	6	95	468
4:30 PM	11	96	12	0	12	119	18	45	5	0	13	68	3	107	27	0	6	137	29	84	18	0	6	131	455
4:45 PM	8	85	14	0	11	107	31	89	4	0	9	124	2	131	28	0	13	161	15	80	10	0	8	105	497
Hourly Total	40	360	57	0	37	457	102	316	18	0	45	436	10	485	100	0	46	595	104	316	47	0	26	467	1955
5:00 PM	9	104	12	0	9	125	31	81	2	0	10	114	1	148	14	0	7	163	24	96	8	0	11	128	530
5:15 PM	7	84	14	0	9	105	26	42	6	0	16	74	8	131	32	0	11	171	23	85	10	0	10	118	468
5:30 PM	6	63	17	0	2	86	15	49	1	0	11	65	3	143	29	0	9	175	28	85	8	0	2	121	447
5:45 PM	5	84	20	0	4	109	21	91	6	0	8	118	8	131	24	0	11	163	12	99	8	0	5	119	509
Hourly Total	27	335	63	0	24	425	93	263	15	0	45	371	20	553	99	0	38	672	87	365	34	0	28	486	1954
Grand Total	96	1538	210	0	80	1844	360	1386	64	0	94	1810	38	1474	318	0	109	1830	369	1359	108	0	61	1836	7320
Approach %	5.2	83.4	11.4	0.0	-	-	19.9	76.6	3.5	0.0	-	-	2.1	80.5	17.4	0.0	-	-	20.1	74.0	5.9	0.0	-	-	-
Total %	1.3	21.0	2.9	0.0	-	25.2	4.9	18.9	0.9	0.0	-	24.7	0.5	20.1	4.3	0.0	-	25.0	5.0	18.6	1.5	0.0	-	25.1	-
Lights	95	1440	205	0	-	1740	346	1348	59	0	-	1753	38	1398	307	0	-	1743	354	1321	104	0	-	1779	7015
% Lights	99.0	93.6	97.6	-	-	94.4	96.1	97.3	92.2	-	-	96.9	100.0	94.8	96.5	-	-	95.2	95.9	97.2	96.3	-	-	96.9	95.8
Buses	0	5	0	0	-	5	0	1	0	0	-	1	0	4	1	0	-	5	1	9	0	0	-	10	21
% Buses	0.0	0.3	0.0	-	-	0.3	0.0	0.1	0.0	-	-	0.1	0.0	0.3	0.3	-	-	0.3	0.3	0.7	0.0	-	-	0.5	0.3
Single-Unit Trucks	0	23	4	0	-	27	12	12	4	0	-	28	0	19	3	0	-	22	9	11	2	0	-	22	99
% Single-Unit Trucks	0.0	1.5	1.9	-	-	1.5	3.3	0.9	6.3	-	-	1.5	0.0	1.3	0.9	-	-	1.2	2.4	0.8	1.9	-	-	1.2	1.4
Articulated Trucks	0	1	0	0	-	1	1	2	0	0	-	3	0	1	0	0	-	1	0	0	0	0	-	0	5
% Articulated Trucks	0.0	0.1	0.0	-	-	0.1	0.3	0.1	0.0	-	-	0.2	0.0	0.1	0.0	-	-	0.1	0.0	0.0	0.0	-	-	0.0	0.1
Bicycles on Road	1	69	1	0	-	71	1	23	1	0	-	25	0	52	7	0	-	59	5	18	2	0	-	25	180
% Bicycles on Road	1.0	4.5	0.5	-	-	3.9	0.3	1.7	1.6	-	-	1.4	0.0	3.5	2.2	-	-	3.2	1.4	1.3	1.9	-	-	1.4	2.5
Pedestrians	-	-	-	-	80	-	-	-	-	-	94	-	-	-	-	-	109	-	-	-	-	-	61	-	-



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Count Name: Clyborn and Webster
Site Code:
Start Date: 03/31/2015
Page No: 4

Turning Movement Peak Hour Data (7:30 AM)

Start Time	Clybourn Ave Southbound						Webster Avenue Westbound						Clybourn Ave Northbound						Webster Avenue Eastbound						Int. Total
	Right	Thru	Left	U-Turn	Peds	App. Total	Right	Thru	Left	U-Turn	Peds	App. Total	Right	Thru	Left	U-Turn	Peds	App. Total	Right	Thru	Left	U-Turn	Peds	App. Total	
7:30 AM	2	107	17	0	1	126	18	107	4	0	2	129	0	58	9	0	0	67	20	105	4	0	0	129	451
7:45 AM	7	113	7	0	2	127	18	102	1	0	0	121	0	46	15	0	5	61	23	84	2	0	2	109	418
8:00 AM	2	120	12	0	1	134	21	121	2	0	1	144	2	59	24	0	1	85	15	94	0	0	2	109	472
8:15 AM	4	119	10	0	5	133	27	110	3	0	1	140	3	69	19	0	7	91	32	102	4	0	2	138	502
Total	15	459	46	0	9	520	84	440	10	0	4	534	5	232	67	0	13	304	90	385	10	0	6	485	1843
Approach %	2.9	88.3	8.8	0.0	-	-	15.7	82.4	1.9	0.0	-	-	1.6	76.3	22.0	0.0	-	-	18.6	79.4	2.1	0.0	-	-	-
Total %	0.8	24.9	2.5	0.0	-	28.2	4.6	23.9	0.5	0.0	-	29.0	0.3	12.6	3.6	0.0	-	16.5	4.9	20.9	0.5	0.0	-	26.3	-
PHF	0.536	0.956	0.676	0.000	-	0.970	0.778	0.909	0.625	0.000	-	0.927	0.417	0.841	0.698	0.000	-	0.835	0.703	0.917	0.625	0.000	-	0.879	0.918
Lights	15	418	44	0	-	477	80	429	10	0	-	519	5	226	65	0	-	296	82	375	9	0	-	466	1758
% Lights	100.0	91.1	95.7	-	-	91.7	95.2	97.5	100.0	-	-	97.2	100.0	97.4	97.0	-	-	97.4	91.1	97.4	90.0	-	-	96.1	95.4
Buses	0	1	0	0	-	1	0	1	0	0	-	1	0	1	0	0	-	1	1	4	0	0	-	5	8
% Buses	0.0	0.2	0.0	-	-	0.2	0.0	0.2	0.0	-	-	0.2	0.0	0.4	0.0	-	-	0.3	1.1	1.0	0.0	-	-	1.0	0.4
Single-Unit Trucks	0	8	2	0	-	10	3	2	0	0	-	5	0	5	1	0	-	6	6	4	1	0	-	11	32
% Single-Unit Trucks	0.0	1.7	4.3	-	-	1.9	3.6	0.5	0.0	-	-	0.9	0.0	2.2	1.5	-	-	2.0	6.7	1.0	10.0	-	-	2.3	1.7
Articulated Trucks	0	0	0	0	-	0	1	1	0	0	-	2	0	0	0	0	-	0	0	0	0	0	-	0	2
% Articulated Trucks	0.0	0.0	0.0	-	-	0.0	1.2	0.2	0.0	-	-	0.4	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.1
Bicycles on Road	0	32	0	0	-	32	0	7	0	0	-	7	0	0	1	0	-	1	1	2	0	0	-	3	43
% Bicycles on Road	0.0	7.0	0.0	-	-	6.2	0.0	1.6	0.0	-	-	1.3	0.0	0.0	1.5	-	-	0.3	1.1	0.5	0.0	-	-	0.6	2.3
Pedestrians	-	-	-	-	9	-	-	-	-	-	4	-	-	-	-	-	13	-	-	-	-	-	6	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-



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Count Name: Clyborn and Webster
Site Code:
Start Date: 03/31/2015
Page No: 6

Turning Movement Peak Hour Data (5:00 PM)

Start Time	Clybourn Ave Southbound						Webster Avenue Westbound						Clybourn Ave Northbound						Webster Avenue Eastbound						Int. Total
	Right	Thru	Left	U-Turn	Peds	App. Total	Right	Thru	Left	U-Turn	Peds	App. Total	Right	Thru	Left	U-Turn	Peds	App. Total	Right	Thru	Left	U-Turn	Peds	App. Total	
5:00 PM	9	104	12	0	9	125	31	81	2	0	10	114	1	148	14	0	7	163	24	96	8	0	11	128	530
5:15 PM	7	84	14	0	9	105	26	42	6	0	16	74	8	131	32	0	11	171	23	85	10	0	10	118	468
5:30 PM	6	63	17	0	2	86	15	49	1	0	11	65	3	143	29	0	9	175	28	85	8	0	2	121	447
5:45 PM	5	84	20	0	4	109	21	91	6	0	8	118	8	131	24	0	11	163	12	99	8	0	5	119	509
Total	27	335	63	0	24	425	93	263	15	0	45	371	20	553	99	0	38	672	87	365	34	0	28	486	1954
Approach %	6.4	78.8	14.8	0.0	-	-	25.1	70.9	4.0	0.0	-	-	3.0	82.3	14.7	0.0	-	-	17.9	75.1	7.0	0.0	-	-	-
Total %	1.4	17.1	3.2	0.0	-	21.8	4.8	13.5	0.8	0.0	-	19.0	1.0	28.3	5.1	0.0	-	34.4	4.5	18.7	1.7	0.0	-	24.9	-
PHF	0.750	0.805	0.788	0.000	-	0.850	0.750	0.723	0.625	0.000	-	0.786	0.625	0.934	0.773	0.000	-	0.960	0.777	0.922	0.850	0.000	-	0.949	0.922
Lights	27	327	63	0	-	417	92	258	14	0	-	364	20	512	94	0	-	626	85	354	34	0	-	473	1880
% Lights	100.0	97.6	100.0	-	-	98.1	98.9	98.1	93.3	-	-	98.1	100.0	92.6	94.9	-	-	93.2	97.7	97.0	100.0	-	-	97.3	96.2
Buses	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	1	0	0	-	1	1
% Buses	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.3	0.0	-	-	0.2	0.1
Single-Unit Trucks	0	2	0	0	-	2	0	2	1	0	-	3	0	4	1	0	-	5	0	1	0	0	-	1	11
% Single-Unit Trucks	0.0	0.6	0.0	-	-	0.5	0.0	0.8	6.7	-	-	0.8	0.0	0.7	1.0	-	-	0.7	0.0	0.3	0.0	-	-	0.2	0.6
Articulated Trucks	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Articulated Trucks	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0
Bicycles on Road	0	6	0	0	-	6	1	3	0	0	-	4	0	37	4	0	-	41	2	9	0	0	-	11	62
% Bicycles on Road	0.0	1.8	0.0	-	-	1.4	1.1	1.1	0.0	-	-	1.1	0.0	6.7	4.0	-	-	6.1	2.3	2.5	0.0	-	-	2.3	3.2
Pedestrians	-	-	-	-	24	-	-	-	-	-	45	-	-	-	-	-	38	-	-	-	-	-	28	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-



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Count Name: Clybourne Avenue with Courtland
 Street/Racine Avenue
 Site Code:
 Start Date: 02/25/2016
 Page No: 1

Turning Movement Data

Start Time	Cortland Street Eastbound						Racine Avenue Westbound						Clybourne Avenue Northbound						Clybourne Avenue Southbound						Int. Total
	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	
7:00 AM	0	3	34	12	5	49	0	34	40	4	2	78	0	8	42	2	2	52	0	12	99	1	7	112	291
7:15 AM	0	6	43	15	7	64	0	39	44	6	5	89	0	9	40	6	2	55	0	21	109	3	9	133	341
7:30 AM	0	8	58	12	4	78	0	37	45	6	3	88	0	6	59	7	4	72	0	16	146	6	11	168	406
7:45 AM	0	4	67	17	4	88	0	67	51	9	2	127	0	10	50	9	3	69	0	23	154	4	7	181	465
Hourly Total	0	21	202	56	20	279	0	177	180	25	12	382	0	33	191	24	11	248	0	72	508	14	34	594	1503
8:00 AM	0	7	76	23	6	106	0	83	55	4	5	142	0	10	70	13	1	93	0	17	152	4	6	173	514
8:15 AM	0	10	71	21	4	102	0	46	65	12	4	123	0	15	75	23	2	113	0	24	153	9	9	186	524
8:30 AM	0	3	79	37	2	119	0	49	69	10	3	128	0	14	65	15	0	94	0	22	136	9	11	167	508
8:45 AM	0	7	81	24	5	112	0	34	66	12	5	112	0	18	50	11	0	79	0	27	145	8	11	180	483
Hourly Total	0	27	307	105	17	439	0	212	255	38	17	505	0	57	260	62	3	379	0	90	586	30	37	706	2029
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4:00 PM	0	14	69	17	9	100	0	29	63	11	4	103	0	19	115	20	3	154	0	14	107	18	4	139	496
4:15 PM	0	10	66	26	3	102	0	21	61	13	9	95	0	20	128	23	4	171	0	18	109	14	9	141	509
4:30 PM	0	16	91	20	5	127	0	24	63	12	6	99	0	22	148	27	6	197	0	10	99	9	12	118	541
4:45 PM	0	9	77	22	9	108	0	22	54	12	3	88	0	32	118	26	3	176	0	16	97	10	15	123	495
Hourly Total	0	49	303	85	26	437	0	96	241	48	22	385	0	93	509	96	16	698	0	58	412	51	40	521	2041
5:00 PM	0	15	91	17	11	123	0	23	67	12	10	102	0	27	127	30	8	184	0	15	93	16	15	124	533
5:15 PM	0	13	100	20	7	133	0	19	62	10	10	91	0	25	146	23	5	194	0	17	113	13	12	143	561
5:30 PM	0	17	78	22	3	117	0	26	58	16	7	100	0	38	137	24	2	199	0	21	106	9	13	136	552
5:45 PM	0	12	87	19	5	118	0	23	66	11	6	100	0	20	120	29	0	169	0	17	101	5	5	123	510
Hourly Total	0	57	356	78	26	491	0	91	253	49	33	393	0	110	530	106	15	746	0	70	413	43	45	526	2156
Grand Total	0	154	1168	324	89	1646	0	576	929	160	84	1665	0	293	1490	288	45	2071	0	290	1919	138	156	2347	7729
Approach %	0.0	9.4	71.0	19.7	-	-	0.0	34.6	55.8	9.6	-	-	0.0	14.1	71.9	13.9	-	-	0.0	12.4	81.8	5.9	-	-	-
Total %	0.0	2.0	15.1	4.2	-	21.3	0.0	7.5	12.0	2.1	-	21.5	0.0	3.8	19.3	3.7	-	26.8	0.0	3.8	24.8	1.8	-	30.4	-
Lights	0	150	1089	295	-	1534	0	563	853	154	-	1570	0	269	1436	279	-	1984	0	282	1852	137	-	2271	7359
% Lights	-	97.4	93.2	91.0	-	93.2	-	97.7	91.8	96.3	-	94.3	-	91.8	96.4	96.9	-	95.8	-	97.2	96.5	99.3	-	96.8	95.2
Buses	0	0	30	13	-	43	0	1	30	0	-	31	0	9	0	1	-	10	0	1	3	1	-	5	89
% Buses	-	0.0	2.6	4.0	-	2.6	-	0.2	3.2	0.0	-	1.9	-	3.1	0.0	0.3	-	0.5	-	0.3	0.2	0.7	-	0.2	1.2
Single-Unit Trucks	0	2	22	6	-	30	0	8	20	5	-	33	0	8	11	2	-	21	0	6	31	0	-	37	121
% Single-Unit Trucks	-	1.3	1.9	1.9	-	1.8	-	1.4	2.2	3.1	-	2.0	-	2.7	0.7	0.7	-	1.0	-	2.1	1.6	0.0	-	1.6	1.6
Articulated Trucks	0	2	3	1	-	6	0	0	0	0	-	0	0	0	5	0	-	5	0	1	1	0	-	2	13
% Articulated Trucks	-	1.3	0.3	0.3	-	0.4	-	0.0	0.0	0.0	-	0.0	-	0.0	0.3	0.0	-	0.2	-	0.3	0.1	0.0	-	0.1	0.2
Bicycles on Road	0	0	24	9	-	33	0	4	26	1	-	31	0	7	38	6	-	51	0	0	32	0	-	32	147
% Bicycles on Road	-	0.0	2.1	2.8	-	2.0	-	0.7	2.8	0.6	-	1.9	-	2.4	2.6	2.1	-	2.5	-	0.0	1.7	0.0	-	1.4	1.9
Pedestrians	-	-	-	-	89	-	-	-	-	-	84	-	-	-	-	-	45	-	-	-	-	-	156	-	-



Kenig Lindgren O'Hara Aboona, Inc.
9575 W. Higgins Rd., Suite 400

Rosemont, Illinois, United States 60018
(847)518-9990

Count Name: Clybourne Avenue with Courtland
Street/Racine Avenue
Site Code:
Start Date: 02/25/2016
Page No: 4

Turning Movement Peak Hour Data (7:30 AM)

Start Time	Courtland Street Eastbound						Racine Avenue Westbound						Clybourne Avenue Northbound						Clybourne Avenue Southbound						Int. Total
	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	
7:30 AM	0	8	58	12	4	78	0	37	45	6	3	88	0	6	59	7	4	72	0	16	146	6	11	168	406
7:45 AM	0	4	67	17	4	88	0	67	51	9	2	127	0	10	50	9	3	69	0	23	154	4	7	181	465
8:00 AM	0	7	76	23	6	106	0	83	55	4	5	142	0	10	70	13	1	93	0	17	152	4	6	173	514
8:15 AM	0	10	71	21	4	102	0	46	65	12	4	123	0	15	75	23	2	113	0	24	153	9	9	186	524
Total	0	29	272	73	18	374	0	233	216	31	14	480	0	41	254	52	10	347	0	80	605	23	33	708	1909
Approach %	0.0	7.8	72.7	19.5	-	-	0.0	48.5	45.0	6.5	-	-	0.0	11.8	73.2	15.0	-	-	0.0	11.3	85.5	3.2	-	-	-
Total %	0.0	1.5	14.2	3.8	-	19.6	0.0	12.2	11.3	1.6	-	25.1	0.0	2.1	13.3	2.7	-	18.2	0.0	4.2	31.7	1.2	-	37.1	-
PHF	0.000	0.725	0.895	0.793	-	0.882	0.000	0.702	0.831	0.646	-	0.845	0.000	0.683	0.847	0.565	-	0.768	0.000	0.833	0.982	0.639	-	0.952	0.911
Lights	0	27	239	66	-	332	0	231	197	29	-	457	0	38	246	51	-	335	0	75	580	23	-	678	1802
% Lights	-	93.1	87.9	90.4	-	88.8	-	99.1	91.2	93.5	-	95.2	-	92.7	96.9	98.1	-	96.5	-	93.8	95.9	100.0	-	95.8	94.4
Buses	0	0	10	3	-	13	0	0	9	0	-	9	0	2	0	0	-	2	0	0	3	0	-	3	27
% Buses	-	0.0	3.7	4.1	-	3.5	-	0.0	4.2	0.0	-	1.9	-	4.9	0.0	0.0	-	0.6	-	0.0	0.5	0.0	-	0.4	1.4
Single-Unit Trucks	0	1	15	1	-	17	0	2	5	2	-	9	0	0	5	0	-	5	0	4	9	0	-	13	44
% Single-Unit Trucks	-	3.4	5.5	1.4	-	4.5	-	0.9	2.3	6.5	-	1.9	-	0.0	2.0	0.0	-	1.4	-	5.0	1.5	0.0	-	1.8	2.3
Articulated Trucks	0	1	3	0	-	4	0	0	0	0	-	0	0	0	2	0	-	2	0	1	1	0	-	2	8
% Articulated Trucks	-	3.4	1.1	0.0	-	1.1	-	0.0	0.0	0.0	-	0.0	-	0.0	0.8	0.0	-	0.6	-	1.3	0.2	0.0	-	0.3	0.4
Bicycles on Road	0	0	5	3	-	8	0	0	5	0	-	5	0	1	1	1	-	3	0	0	12	0	-	12	28
% Bicycles on Road	-	0.0	1.8	4.1	-	2.1	-	0.0	2.3	0.0	-	1.0	-	2.4	0.4	1.9	-	0.9	-	0.0	2.0	0.0	-	1.7	1.5
Pedestrians	-	-	-	-	18	-	-	-	-	-	14	-	-	-	-	-	10	-	-	-	-	-	33	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-



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Count Name: Clybourne Avenue with Courtland
Street/Racine Avenue
Site Code:
Start Date: 02/25/2016
Page No: 6

Turning Movement Peak Hour Data (5:00 PM)

Start Time	Courtland Street Eastbound						Racine Avenue Westbound						Clybourne Avenue Northbound						Clybourne Avenue Southbound						Int. Total
	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	
5:00 PM	0	15	91	17	11	123	0	23	67	12	10	102	0	27	127	30	8	184	0	15	93	16	15	124	533
5:15 PM	0	13	100	20	7	133	0	19	62	10	10	91	0	25	146	23	5	194	0	17	113	13	12	143	561
5:30 PM	0	17	78	22	3	117	0	26	58	16	7	100	0	38	137	24	2	199	0	21	106	9	13	136	552
5:45 PM	0	12	87	19	5	118	0	23	66	11	6	100	0	20	120	29	0	169	0	17	101	5	5	123	510
Total	0	57	356	78	26	491	0	91	253	49	33	393	0	110	530	106	15	746	0	70	413	43	45	526	2156
Approach %	0.0	11.6	72.5	15.9	-	-	0.0	23.2	64.4	12.5	-	-	0.0	14.7	71.0	14.2	-	-	0.0	13.3	78.5	8.2	-	-	-
Total %	0.0	2.6	16.5	3.6	-	22.8	0.0	4.2	11.7	2.3	-	18.2	0.0	5.1	24.6	4.9	-	34.6	0.0	3.2	19.2	2.0	-	24.4	-
PHF	0.000	0.838	0.890	0.886	-	0.923	0.000	0.875	0.944	0.766	-	0.963	0.000	0.724	0.908	0.883	-	0.937	0.000	0.833	0.914	0.672	-	0.920	0.961
Lights	0	57	345	75	-	477	0	90	232	48	-	370	0	103	507	105	-	715	0	70	411	43	-	524	2086
% Lights	-	100.0	96.9	96.2	-	97.1	-	98.9	91.7	98.0	-	94.1	-	93.6	95.7	99.1	-	95.8	-	100.0	99.5	100.0	-	99.6	96.8
Buses	0	0	5	2	-	7	0	0	5	0	-	5	0	1	0	0	-	1	0	0	0	0	-	0	13
% Buses	-	0.0	1.4	2.6	-	1.4	-	0.0	2.0	0.0	-	1.3	-	0.9	0.0	0.0	-	0.1	-	0.0	0.0	0.0	-	0.0	0.6
Single-Unit Trucks	0	0	0	1	-	1	0	0	3	0	-	3	0	2	0	0	-	2	0	0	0	0	-	0	6
% Single-Unit Trucks	-	0.0	0.0	1.3	-	0.2	-	0.0	1.2	0.0	-	0.8	-	1.8	0.0	0.0	-	0.3	-	0.0	0.0	0.0	-	0.0	0.3
Articulated Trucks	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Articulated Trucks	-	0.0	0.0	0.0	-	0.0	-	0.0	0.0	0.0	-	0.0	-	0.0	0.0	0.0	-	0.0	-	0.0	0.0	0.0	-	0.0	0.0
Bicycles on Road	0	0	6	0	-	6	0	1	13	1	-	15	0	4	23	1	-	28	0	0	2	0	-	2	51
% Bicycles on Road	-	0.0	1.7	0.0	-	1.2	-	1.1	5.1	2.0	-	3.8	-	3.6	4.3	0.9	-	3.8	-	0.0	0.5	0.0	-	0.4	2.4
Pedestrians	-	-	-	-	26	-	-	-	-	-	33	-	-	-	-	-	15	-	-	-	-	-	45	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-



Kenig Lindgren O'Hara Aboona, Inc.
9575 W. Higgins Rd., Suite 400

Rosemont, Illinois, United States 60018
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Count Name: Clybourne Avenue with Magnolia Avenue
Site Code:
Start Date: 02/25/2016
Page No: 1

Turning Movement Data

Start Time	Magnolia Avenue Eastbound						Magnolia Avenue Westbound						Clybourne Avenue Northbound						Clybourne Avenue Southbound						Int. Total
	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	
7:00 AM	0	0	0	1	1	1	0	1	1	0	0	2	0	1	46	1	0	48	0	3	104	4	0	111	162
7:15 AM	0	0	3	1	6	4	0	0	1	0	1	1	0	1	46	2	2	49	0	4	138	1	0	143	197
7:30 AM	0	1	1	1	11	3	0	1	1	2	1	4	0	0	63	5	3	68	0	5	163	0	1	168	243
7:45 AM	0	0	0	0	4	0	0	5	0	0	7	5	0	0	58	1	3	59	0	4	180	0	4	184	248
Hourly Total	0	1	4	3	22	8	0	7	3	2	9	12	0	2	213	9	8	224	0	16	585	5	5	606	850
8:00 AM	6	0	0	0	3	6	0	4	0	1	7	5	0	0	76	6	7	82	0	7	168	0	3	175	268
8:15 AM	8	0	0	0	3	8	0	2	0	3	8	5	1	0	86	10	7	97	0	8	166	0	1	174	284
8:30 AM	8	0	0	0	4	8	0	3	0	1	7	4	1	0	77	4	7	82	0	7	173	0	1	180	274
8:45 AM	5	0	0	0	1	5	0	3	0	0	6	3	0	0	64	4	1	68	0	7	166	0	1	173	249
Hourly Total	27	0	0	0	11	27	0	12	0	5	28	17	2	0	303	24	22	329	0	29	673	0	6	702	1075
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4:00 PM	0	3	3	3	11	9	0	3	1	1	4	5	0	0	137	8	9	145	0	7	131	9	4	147	306
4:15 PM	0	3	1	4	3	8	0	6	0	2	7	8	1	3	122	9	9	135	0	0	112	6	1	118	269
4:30 PM	0	1	1	6	10	8	0	4	4	2	8	10	0	4	169	6	5	179	0	2	113	4	3	119	316
4:45 PM	0	2	9	3	7	14	0	1	3	0	7	4	0	6	134	3	4	143	0	7	110	6	3	123	284
Hourly Total	0	9	14	16	31	39	0	14	8	5	26	27	1	13	562	26	27	602	0	16	466	25	11	507	1175
5:00 PM	0	1	4	1	8	6	0	3	3	1	6	7	1	0	143	6	5	150	0	7	117	4	5	128	291
5:15 PM	0	4	8	4	4	16	0	5	1	3	12	9	0	2	151	9	3	162	0	10	130	7	6	147	334
5:30 PM	0	1	5	5	6	11	0	2	6	0	6	8	0	4	152	9	2	165	0	7	114	3	4	124	308
5:45 PM	0	1	5	2	6	8	0	4	0	4	7	8	0	3	136	6	6	145	0	7	130	6	4	143	304
Hourly Total	0	7	22	12	24	41	0	14	10	8	31	32	1	9	582	30	16	622	0	31	491	20	19	542	1237
Grand Total	27	17	40	31	88	115	0	47	21	20	94	88	4	24	1660	89	73	1777	0	92	2215	50	41	2357	4337
Approach %	23.5	14.8	34.8	27.0	-	-	0.0	53.4	23.9	22.7	-	-	0.2	1.4	93.4	5.0	-	-	0.0	3.9	94.0	2.1	-	-	-
Total %	0.6	0.4	0.9	0.7	-	2.7	0.0	1.1	0.5	0.5	-	2.0	0.1	0.6	38.3	2.1	-	41.0	0.0	2.1	51.1	1.2	-	54.3	-
Lights	19	16	40	31	-	106	0	47	21	19	-	87	4	23	1605	86	-	1718	0	90	2145	49	-	2284	4195
% Lights	70.4	94.1	100.0	100.0	-	92.2	-	100.0	100.0	95.0	-	98.9	100.0	95.8	96.7	96.6	-	96.7	-	97.8	96.8	98.0	-	96.9	96.7
Buses	8	0	0	0	-	8	0	0	0	0	-	0	0	0	0	0	-	0	0	0	5	0	-	5	13
% Buses	29.6	0.0	0.0	0.0	-	7.0	-	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	-	0.0	-	0.0	0.2	0.0	-	0.2	0.3
Single-Unit Trucks	0	0	0	0	-	0	0	0	0	1	-	1	0	1	13	3	-	17	0	2	29	1	-	32	50
% Single-Unit Trucks	0.0	0.0	0.0	0.0	-	0.0	-	0.0	0.0	5.0	-	1.1	0.0	4.2	0.8	3.4	-	1.0	-	2.2	1.3	2.0	-	1.4	1.2
Articulated Trucks	0	0	0	0	-	0	0	0	0	0	-	0	0	0	7	0	-	7	0	0	2	0	-	2	9
% Articulated Trucks	0.0	0.0	0.0	0.0	-	0.0	-	0.0	0.0	0.0	-	0.0	0.0	0.0	0.4	0.0	-	0.4	-	0.0	0.1	0.0	-	0.1	0.2
Bicycles on Road	0	1	0	0	-	1	0	0	0	0	-	0	0	0	35	0	-	35	0	0	34	0	-	34	70
% Bicycles on Road	0.0	5.9	0.0	0.0	-	0.9	-	0.0	0.0	0.0	-	0.0	0.0	0.0	2.1	0.0	-	2.0	-	0.0	1.5	0.0	-	1.4	1.6
Pedestrians	-	-	-	-	88	-	-	-	-	-	94	-	-	-	-	-	73	-	-	-	-	-	41	-	-



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Count Name: Clybourne Avenue with Magnolia Avenue
Site Code:
Start Date: 02/25/2016
Page No: 4

Turning Movement Peak Hour Data (7:30 AM)

Start Time	Magnolia Avenue Eastbound						Magnolia Avenue Westbound						Clybourne Avenue Northbound						Clybourne Avenue Southbound						Int. Total
	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	
7:30 AM	0	1	1	1	11	3	0	1	1	2	1	4	0	0	63	5	3	68	0	5	163	0	1	168	243
7:45 AM	0	0	0	0	4	0	0	5	0	0	7	5	0	0	58	1	3	59	0	4	180	0	4	184	248
8:00 AM	6	0	0	0	3	6	0	4	0	1	7	5	0	0	76	6	7	82	0	7	168	0	3	175	268
8:15 AM	8	0	0	0	3	8	0	2	0	3	8	5	1	0	86	10	7	97	0	8	166	0	1	174	284
Total	14	1	1	1	21	17	0	12	1	6	23	19	1	0	283	22	20	306	0	24	677	0	9	701	1043
Approach %	82.4	5.9	5.9	5.9	-	-	0.0	63.2	5.3	31.6	-	-	0.3	0.0	92.5	7.2	-	-	0.0	3.4	96.6	0.0	-	-	-
Total %	1.3	0.1	0.1	0.1	-	1.6	0.0	1.2	0.1	0.6	-	1.8	0.1	0.0	27.1	2.1	-	29.3	0.0	2.3	64.9	0.0	-	67.2	-
PHF	0.438	0.250	0.250	0.250	-	0.531	0.000	0.600	0.250	0.500	-	0.950	0.250	0.000	0.823	0.550	-	0.789	0.000	0.750	0.940	0.000	-	0.952	0.918
Lights	10	1	1	1	-	13	0	12	1	6	-	19	1	0	274	20	-	295	0	23	651	0	-	674	1001
% Lights	71.4	100.0	100.0	100.0	-	76.5	-	100.0	100.0	100.0	-	100.0	100.0	-	96.8	90.9	-	96.4	-	95.8	96.2	-	-	96.1	96.0
Buses	4	0	0	0	-	4	0	0	0	0	-	0	0	0	0	0	-	0	0	0	3	0	-	3	7
% Buses	28.6	0.0	0.0	0.0	-	23.5	-	0.0	0.0	0.0	-	0.0	0.0	-	0.0	0.0	-	0.0	-	0.0	0.4	-	-	0.4	0.7
Single-Unit Trucks	0	0	0	0	-	0	0	0	0	0	-	0	0	0	6	2	-	8	0	1	9	0	-	10	18
% Single-Unit Trucks	0.0	0.0	0.0	0.0	-	0.0	-	0.0	0.0	0.0	-	0.0	0.0	-	2.1	9.1	-	2.6	-	4.2	1.3	-	-	1.4	1.7
Articulated Trucks	0	0	0	0	-	0	0	0	0	0	-	0	0	0	3	0	-	3	0	0	2	0	-	2	5
% Articulated Trucks	0.0	0.0	0.0	0.0	-	0.0	-	0.0	0.0	0.0	-	0.0	0.0	-	1.1	0.0	-	1.0	-	0.0	0.3	-	-	0.3	0.5
Bicycles on Road	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	12	0	-	12	12
% Bicycles on Road	0.0	0.0	0.0	0.0	-	0.0	-	0.0	0.0	0.0	-	0.0	0.0	-	0.0	0.0	-	0.0	-	0.0	1.8	-	-	1.7	1.2
Pedestrians	-	-	-	-	21	-	-	-	-	-	23	-	-	-	-	-	20	-	-	-	-	-	9	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-



Kenig Lindgren O'Hara Aboona, Inc.
9575 W. Higgins Rd., Suite 400

Rosemont, Illinois, United States 60018
(847)518-9990

Count Name: Clybourne Avenue with Magnolia Avenue
Site Code:
Start Date: 02/25/2016
Page No: 6

Turning Movement Peak Hour Data (5:00 PM)

Start Time	Magnolia Avenue Eastbound						Magnolia Avenue Westbound						Clybourne Avenue Northbound						Clybourne Avenue Southbound						Int. Total
	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	
5:00 PM	0	1	4	1	8	6	0	3	3	1	6	7	1	0	143	6	5	150	0	7	117	4	5	128	291
5:15 PM	0	4	8	4	4	16	0	5	1	3	12	9	0	2	151	9	3	162	0	10	130	7	6	147	334
5:30 PM	0	1	5	5	6	11	0	2	6	0	6	8	0	4	152	9	2	165	0	7	114	3	4	124	308
5:45 PM	0	1	5	2	6	8	0	4	0	4	7	8	0	3	136	6	6	145	0	7	130	6	4	143	304
Total	0	7	22	12	24	41	0	14	10	8	31	32	1	9	582	30	16	622	0	31	491	20	19	542	1237
Approach %	0.0	17.1	53.7	29.3	-	-	0.0	43.8	31.3	25.0	-	-	0.2	1.4	93.6	4.8	-	-	0.0	5.7	90.6	3.7	-	-	-
Total %	0.0	0.6	1.8	1.0	-	3.3	0.0	1.1	0.8	0.6	-	2.6	0.1	0.7	47.0	2.4	-	50.3	0.0	2.5	39.7	1.6	-	43.8	-
PHF	0.000	0.438	0.688	0.600	-	0.641	0.000	0.700	0.417	0.500	-	0.889	0.250	0.563	0.957	0.833	-	0.942	0.000	0.775	0.944	0.714	-	0.922	0.926
Lights	0	6	22	12	-	40	0	14	10	8	-	32	1	9	559	30	-	599	0	31	487	20	-	538	1209
% Lights	-	85.7	100.0	100.0	-	97.6	-	100.0	100.0	100.0	-	100.0	100.0	100.0	96.0	100.0	-	96.3	-	100.0	99.2	100.0	-	99.3	97.7
Buses	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Buses	-	0.0	0.0	0.0	-	0.0	-	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	-	0.0	-	0.0	0.0	0.0	-	0.0	0.0
Single-Unit Trucks	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Single-Unit Trucks	-	0.0	0.0	0.0	-	0.0	-	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	-	0.0	-	0.0	0.0	0.0	-	0.0	0.0
Articulated Trucks	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Articulated Trucks	-	0.0	0.0	0.0	-	0.0	-	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	-	0.0	-	0.0	0.0	0.0	-	0.0	0.0
Bicycles on Road	0	1	0	0	-	1	0	0	0	0	-	0	0	0	23	0	-	23	0	0	4	0	-	4	28
% Bicycles on Road	-	14.3	0.0	0.0	-	2.4	-	0.0	0.0	0.0	-	0.0	0.0	0.0	4.0	0.0	-	3.7	-	0.0	0.8	0.0	-	0.7	2.3
Pedestrians	-	-	-	-	24	-	-	-	-	-	31	-	-	-	-	-	16	-	-	-	-	-	19	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-



Kenig Lindgren O'Hara Aboona, Inc.
9575 W. Higgins Rd., Suite 400

Rosemont, Illinois, United States 60018
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Count Name: Courtland Street with Elston Avenue
Site Code:
Start Date: 02/23/2016
Page No: 1

Turning Movement Data

Start Time	Courtland Street Eastbound						Courtland Street Westbound						Elston Avenue Northbound						Elston Avenue Southbound						Int. Total
	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	
7:00 AM	0	4	60	20	8	84	0	16	25	32	1	73	0	1	34	10	11	45	0	52	81	2	11	135	337
7:15 AM	0	8	58	23	2	89	0	21	33	32	2	86	0	9	40	7	1	56	0	59	112	1	8	172	403
7:30 AM	0	8	110	30	2	148	0	17	40	25	8	82	0	8	46	18	6	72	0	66	150	4	10	220	522
7:45 AM	0	8	111	41	5	160	0	19	44	20	12	83	0	7	51	16	8	74	0	65	152	4	9	221	538
Hourly Total	0	28	339	114	17	481	0	73	142	109	23	324	0	25	171	51	26	247	0	242	495	11	38	748	1800
8:00 AM	0	13	110	43	4	166	0	23	63	33	4	119	0	13	61	14	6	88	0	55	163	2	6	220	593
8:15 AM	0	9	102	36	4	147	0	19	52	30	4	101	0	12	80	14	3	106	0	59	152	1	7	212	566
8:30 AM	0	19	83	30	4	132	0	16	47	23	5	86	0	14	53	14	6	81	0	31	163	5	10	199	498
8:45 AM	0	17	83	28	4	128	0	21	44	28	6	93	0	7	51	21	2	79	0	53	129	4	9	186	486
Hourly Total	0	58	378	137	16	573	0	79	206	114	19	399	0	46	245	63	17	354	0	198	607	12	32	817	2143
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4:00 PM	0	14	48	8	10	70	0	19	84	31	5	134	0	28	155	29	11	212	0	42	80	3	7	125	541
4:15 PM	0	10	69	8	3	87	0	16	81	59	3	156	0	20	128	24	5	172	0	44	82	2	5	128	543
4:30 PM	0	13	51	15	8	79	0	12	53	53	5	118	0	25	144	31	7	200	0	41	89	6	7	136	533
4:45 PM	0	15	85	4	5	104	0	22	74	40	6	136	0	18	124	25	12	167	0	72	75	5	8	152	559
Hourly Total	0	52	253	35	26	340	0	69	292	183	19	544	0	91	551	109	35	751	0	199	326	16	27	541	2176
5:00 PM	0	14	75	13	4	102	0	19	93	46	5	158	0	27	157	41	9	225	0	34	72	4	18	110	595
5:15 PM	0	16	93	18	4	127	0	14	88	46	12	148	0	23	153	41	12	217	0	51	79	7	18	137	629
5:30 PM	0	16	84	14	7	114	0	19	80	57	5	156	0	26	138	36	7	200	0	36	92	1	9	129	599
5:45 PM	0	18	77	11	3	106	0	17	77	47	5	141	0	24	164	39	6	227	0	50	57	4	9	111	585
Hourly Total	0	64	329	56	18	449	0	69	338	196	27	603	0	100	612	157	34	869	0	171	300	16	54	487	2408
Grand Total	0	202	1299	342	77	1843	0	290	978	602	88	1870	0	262	1579	380	112	2221	0	810	1728	55	151	2593	8527
Approach %	0.0	11.0	70.5	18.6	-	-	0.0	15.5	52.3	32.2	-	-	0.0	11.8	71.1	17.1	-	-	0.0	31.2	66.6	2.1	-	-	-
Total %	0.0	2.4	15.2	4.0	-	21.6	0.0	3.4	11.5	7.1	-	21.9	0.0	3.1	18.5	4.5	-	26.0	0.0	9.5	20.3	0.6	-	30.4	-
Lights	0	197	1173	327	-	1697	0	281	866	577	-	1724	0	240	1454	368	-	2062	0	770	1618	52	-	2440	7923
% Lights	-	97.5	90.3	95.6	-	92.1	-	96.9	88.5	95.8	-	92.2	-	91.6	92.1	96.8	-	92.8	-	95.1	93.6	94.5	-	94.1	92.9
Buses	0	1	40	0	-	41	0	2	39	2	-	43	0	0	2	0	-	2	0	6	3	0	-	9	95
% Buses	-	0.5	3.1	0.0	-	2.2	-	0.7	4.0	0.3	-	2.3	-	0.0	0.1	0.0	-	0.1	-	0.7	0.2	0.0	-	0.3	1.1
Single-Unit Trucks	0	3	17	5	-	25	0	5	15	18	-	38	0	4	51	9	-	64	0	26	42	2	-	70	197
% Single-Unit Trucks	-	1.5	1.3	1.5	-	1.4	-	1.7	1.5	3.0	-	2.0	-	1.5	3.2	2.4	-	2.9	-	3.2	2.4	3.6	-	2.7	2.3
Articulated Trucks	0	0	1	0	-	1	0	0	1	3	-	4	0	1	11	0	-	12	0	2	7	1	-	10	27
% Articulated Trucks	-	0.0	0.1	0.0	-	0.1	-	0.0	0.1	0.5	-	0.2	-	0.4	0.7	0.0	-	0.5	-	0.2	0.4	1.8	-	0.4	0.3
Bicycles on Road	0	1	68	10	-	79	0	2	57	2	-	61	0	17	61	3	-	81	0	6	58	0	-	64	285
% Bicycles on Road	-	0.5	5.2	2.9	-	4.3	-	0.7	5.8	0.3	-	3.3	-	6.5	3.9	0.8	-	3.6	-	0.7	3.4	0.0	-	2.5	3.3
Pedestrians	-	-	-	-	77	-	-	-	-	-	88	-	-	-	-	-	112	-	-	-	-	-	151	-	-



Kenig Lindgren O'Hara Aboona, Inc.
9575 W. Higgins Rd., Suite 400

Rosemont, Illinois, United States 60018
(847)518-9990

Count Name: Courtland Street with Elston
Avenue
Site Code:
Start Date: 02/23/2016
Page No: 4

Turning Movement Peak Hour Data (7:30 AM)

Start Time	Courtland Street Eastbound						Courtland Street Westbound						Elston Avenue Northbound						Elston Avenue Southbound						Int. Total
	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	
7:30 AM	0	8	110	30	2	148	0	17	40	25	8	82	0	8	46	18	6	72	0	66	150	4	10	220	522
7:45 AM	0	8	111	41	5	160	0	19	44	20	12	83	0	7	51	16	8	74	0	65	152	4	9	221	538
8:00 AM	0	13	110	43	4	166	0	23	63	33	4	119	0	13	61	14	6	88	0	55	163	2	6	220	593
8:15 AM	0	9	102	36	4	147	0	19	52	30	4	101	0	12	80	14	3	106	0	59	152	1	7	212	566
Total	0	38	433	150	15	621	0	78	199	108	28	385	0	40	238	62	23	340	0	245	617	11	32	873	2219
Approach %	0.0	6.1	69.7	24.2	-	-	0.0	20.3	51.7	28.1	-	-	0.0	11.8	70.0	18.2	-	-	0.0	28.1	70.7	1.3	-	-	-
Total %	0.0	1.7	19.5	6.8	-	28.0	0.0	3.5	9.0	4.9	-	17.4	0.0	1.8	10.7	2.8	-	15.3	0.0	11.0	27.8	0.5	-	39.3	-
PHF	0.000	0.731	0.975	0.872	-	0.935	0.000	0.848	0.790	0.818	-	0.809	0.000	0.769	0.744	0.861	-	0.802	0.000	0.928	0.946	0.688	-	0.988	0.935
Lights	0	35	388	145	-	568	0	76	176	100	-	352	0	39	211	58	-	308	0	228	555	10	-	793	2021
% Lights	-	92.1	89.6	96.7	-	91.5	-	97.4	88.4	92.6	-	91.4	-	97.5	88.7	93.5	-	90.6	-	93.1	90.0	90.9	-	90.8	91.1
Buses	0	1	13	0	-	14	0	1	13	1	-	15	0	0	2	0	-	2	0	3	1	0	-	4	35
% Buses	-	2.6	3.0	0.0	-	2.3	-	1.3	6.5	0.9	-	3.9	-	0.0	0.8	0.0	-	0.6	-	1.2	0.2	0.0	-	0.5	1.6
Single-Unit Trucks	0	2	7	1	-	10	0	1	4	5	-	10	0	0	20	4	-	24	0	10	17	1	-	28	72
% Single-Unit Trucks	-	5.3	1.6	0.7	-	1.6	-	1.3	2.0	4.6	-	2.6	-	0.0	8.4	6.5	-	7.1	-	4.1	2.8	9.1	-	3.2	3.2
Articulated Trucks	0	0	1	0	-	1	0	0	0	2	-	2	0	1	4	0	-	5	0	2	2	0	-	4	12
% Articulated Trucks	-	0.0	0.2	0.0	-	0.2	-	0.0	0.0	1.9	-	0.5	-	2.5	1.7	0.0	-	1.5	-	0.8	0.3	0.0	-	0.5	0.5
Bicycles on Road	0	0	24	4	-	28	0	0	6	0	-	6	0	0	1	0	-	1	0	2	42	0	-	44	79
% Bicycles on Road	-	0.0	5.5	2.7	-	4.5	-	0.0	3.0	0.0	-	1.6	-	0.0	0.4	0.0	-	0.3	-	0.8	6.8	0.0	-	5.0	3.6
Pedestrians	-	-	-	-	15	-	-	-	-	-	28	-	-	-	-	-	23	-	-	-	-	-	32	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-



Kenig Lindgren O'Hara Aboona, Inc.
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Count Name: Courtland Street with Elston
Avenue
Site Code:
Start Date: 02/23/2016
Page No: 6

Turning Movement Peak Hour Data (5:00 PM)

Start Time	Courtland Street Eastbound						Courtland Street Westbound						Elston Avenue Northbound						Elston Avenue Southbound						Int. Total
	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	
5:00 PM	0	14	75	13	4	102	0	19	93	46	5	158	0	27	157	41	9	225	0	34	72	4	18	110	595
5:15 PM	0	16	93	18	4	127	0	14	88	46	12	148	0	23	153	41	12	217	0	51	79	7	18	137	629
5:30 PM	0	16	84	14	7	114	0	19	80	57	5	156	0	26	138	36	7	200	0	36	92	1	9	129	599
5:45 PM	0	18	77	11	3	106	0	17	77	47	5	141	0	24	164	39	6	227	0	50	57	4	9	111	585
Total	0	64	329	56	18	449	0	69	338	196	27	603	0	100	612	157	34	869	0	171	300	16	54	487	2408
Approach %	0.0	14.3	73.3	12.5	-	-	0.0	11.4	56.1	32.5	-	-	0.0	11.5	70.4	18.1	-	-	0.0	35.1	61.6	3.3	-	-	-
Total %	0.0	2.7	13.7	2.3	-	18.6	0.0	2.9	14.0	8.1	-	25.0	0.0	4.2	25.4	6.5	-	36.1	0.0	7.1	12.5	0.7	-	20.2	-
PHF	0.000	0.889	0.884	0.778	-	0.884	0.000	0.908	0.909	0.860	-	0.954	0.000	0.926	0.933	0.957	-	0.957	0.000	0.838	0.815	0.571	-	0.889	0.957
Lights	0	62	306	56	-	424	0	67	307	193	-	567	0	89	556	156	-	801	0	169	295	16	-	480	2272
% Lights	-	96.9	93.0	100.0	-	94.4	-	97.1	90.8	98.5	-	94.0	-	89.0	90.8	99.4	-	92.2	-	98.8	98.3	100.0	-	98.6	94.4
Buses	0	0	7	0	-	7	0	0	7	0	-	7	0	0	0	0	-	0	0	0	0	0	-	0	14
% Buses	-	0.0	2.1	0.0	-	1.6	-	0.0	2.1	0.0	-	1.2	-	0.0	0.0	0.0	-	0.0	-	0.0	0.0	0.0	-	0.0	0.6
Single-Unit Trucks	0	1	0	0	-	1	0	2	0	2	-	4	0	0	5	1	-	6	0	1	2	0	-	3	14
% Single-Unit Trucks	-	1.6	0.0	0.0	-	0.2	-	2.9	0.0	1.0	-	0.7	-	0.0	0.8	0.6	-	0.7	-	0.6	0.7	0.0	-	0.6	0.6
Articulated Trucks	0	0	0	0	-	0	0	0	0	0	-	0	0	0	2	0	-	2	0	0	0	0	-	0	2
% Articulated Trucks	-	0.0	0.0	0.0	-	0.0	-	0.0	0.0	0.0	-	0.0	-	0.0	0.3	0.0	-	0.2	-	0.0	0.0	0.0	-	0.0	0.1
Bicycles on Road	0	1	16	0	-	17	0	0	24	1	-	25	0	11	49	0	-	60	0	1	3	0	-	4	106
% Bicycles on Road	-	1.6	4.9	0.0	-	3.8	-	0.0	7.1	0.5	-	4.1	-	11.0	8.0	0.0	-	6.9	-	0.6	1.0	0.0	-	0.8	4.4
Pedestrians	-	-	-	-	18	-	-	-	-	-	27	-	-	-	-	-	34	-	-	-	-	-	54	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-



Kenig Lindgren O'Hara Aboona, Inc.
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Count Name: Courtland Street with Kingsbury Street
Site Code:
Start Date: 02/25/2016
Page No: 1

Turning Movement Data

Start Time	Courtland Street Eastbound						Courtland Street Westbound						Kingsbury Street Northbound						Kingsbury Street Southbound						Int. Total
	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	
7:00 AM	0	11	80	1	1	92	0	2	60	2	2	64	0	0	0	0	9	0	0	3	0	12	4	15	171
7:15 AM	0	12	107	1	2	120	0	0	51	2	1	53	0	0	0	0	15	0	0	3	1	11	6	15	188
7:30 AM	0	12	118	2	2	132	0	0	65	1	0	66	0	0	0	0	7	0	0	14	0	18	7	32	230
7:45 AM	0	29	157	1	5	187	0	0	68	6	2	74	0	0	0	0	13	0	0	16	0	23	7	39	300
Hourly Total	0	64	462	5	10	531	0	2	244	11	5	257	0	0	0	0	44	0	0	36	1	64	24	101	889
8:00 AM	0	17	147	2	0	166	1	0	66	7	0	74	0	0	0	0	6	0	0	28	0	19	9	47	287
8:15 AM	0	21	153	2	2	176	0	0	86	13	0	99	0	0	0	1	4	1	0	20	0	22	5	42	318
8:30 AM	0	20	177	4	0	201	0	0	93	6	0	99	0	0	0	1	1	1	0	11	0	23	7	34	335
8:45 AM	0	13	164	0	0	177	0	0	94	10	0	104	0	0	0	0	3	0	0	8	0	13	4	21	302
Hourly Total	0	71	641	8	2	720	1	0	339	36	0	376	0	0	0	2	14	2	0	67	0	77	25	144	1242
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4:00 PM	0	19	105	0	1	124	0	0	150	17	0	167	0	1	0	0	3	1	0	7	0	26	7	33	325
4:15 PM	0	26	127	1	1	154	0	0	136	8	1	144	0	1	0	0	5	1	0	8	0	19	6	27	326
4:30 PM	0	22	127	0	1	149	0	0	136	16	0	152	0	1	1	1	10	3	0	4	0	27	3	31	335
4:45 PM	0	20	125	1	0	146	0	0	134	18	1	152	0	4	1	1	8	6	1	4	0	26	7	31	335
Hourly Total	0	87	484	2	3	573	0	0	556	59	2	615	0	7	2	2	26	11	1	23	0	98	23	122	1321
5:00 PM	1	22	130	0	1	153	0	0	161	30	3	191	0	3	0	1	11	4	0	1	0	17	8	18	366
5:15 PM	0	33	128	0	0	161	0	0	152	28	0	180	0	0	0	0	5	0	0	0	0	23	9	23	364
5:30 PM	0	31	120	0	0	151	0	0	142	19	0	161	0	2	1	0	6	3	0	7	0	22	10	29	344
5:45 PM	0	39	115	0	1	154	0	0	131	22	0	153	0	0	0	1	2	1	0	7	0	16	5	23	331
Hourly Total	1	125	493	0	2	619	0	0	586	99	3	685	0	5	1	2	24	8	0	15	0	78	32	93	1405
Grand Total	1	347	2080	15	17	2443	1	2	1725	205	10	1933	0	12	3	6	108	21	1	141	1	317	104	460	4857
Approach %	0.0	14.2	85.1	0.6	-	-	0.1	0.1	89.2	10.6	-	-	0.0	57.1	14.3	28.6	-	-	0.2	30.7	0.2	68.9	-	-	-
Total %	0.0	7.1	42.8	0.3	-	50.3	0.0	0.0	35.5	4.2	-	39.8	0.0	0.2	0.1	0.1	-	0.4	0.0	2.9	0.0	6.5	-	9.5	-
Lights	1	328	1941	14	-	2284	1	2	1592	193	-	1788	0	12	2	6	-	20	1	133	1	304	-	439	4531
% Lights	100.0	94.5	93.3	93.3	-	93.5	100.0	100.0	92.3	94.1	-	92.5	-	100.0	66.7	100.0	-	95.2	100.0	94.3	100.0	95.9	-	95.4	93.3
Buses	0	5	42	0	-	47	0	0	40	2	-	42	0	0	0	0	-	0	0	3	0	3	-	6	95
% Buses	0.0	1.4	2.0	0.0	-	1.9	0.0	0.0	2.3	1.0	-	2.2	-	0.0	0.0	0.0	-	0.0	0.0	2.1	0.0	0.9	-	1.3	2.0
Single-Unit Trucks	0	4	43	1	-	48	0	0	45	10	-	55	0	0	1	0	-	1	0	5	0	7	-	12	116
% Single-Unit Trucks	0.0	1.2	2.1	6.7	-	2.0	0.0	0.0	2.6	4.9	-	2.8	-	0.0	33.3	0.0	-	4.8	0.0	3.5	0.0	2.2	-	2.6	2.4
Articulated Trucks	0	3	5	0	-	8	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	1	-	1	9
% Articulated Trucks	0.0	0.9	0.2	0.0	-	0.3	0.0	0.0	0.0	0.0	-	0.0	-	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	0.3	-	0.2	0.2
Bicycles on Road	0	7	49	0	-	56	0	0	48	0	-	48	0	0	0	0	-	0	0	0	0	2	-	2	106
% Bicycles on Road	0.0	2.0	2.4	0.0	-	2.3	0.0	0.0	2.8	0.0	-	2.5	-	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	0.6	-	0.4	2.2
Pedestrians	-	-	-	-	17	-	-	-	-	-	10	-	-	-	-	-	108	-	-	-	-	-	104	-	-



Kenig Lindgren O'Hara Aboona, Inc.
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Count Name: Courtland Street with Kingsbury Street
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Start Date: 02/25/2016
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Turning Movement Peak Hour Data (7:30 AM)

Start Time	Courtland Street Eastbound						Courtland Street Westbound						Kingsbury Street Northbound						Kingsbury Street Southbound						Int. Total
	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	
7:30 AM	0	12	118	2	2	132	0	0	65	1	0	66	0	0	0	0	7	0	0	14	0	18	7	32	230
7:45 AM	0	29	157	1	5	187	0	0	68	6	2	74	0	0	0	0	13	0	0	16	0	23	7	39	300
8:00 AM	0	17	147	2	0	166	1	0	66	7	0	74	0	0	0	0	6	0	0	28	0	19	9	47	287
8:15 AM	0	21	153	2	2	176	0	0	86	13	0	99	0	0	0	1	4	1	0	20	0	22	5	42	318
Total	0	79	575	7	9	661	1	0	285	27	2	313	0	0	0	1	30	1	0	78	0	82	28	160	1135
Approach %	0.0	12.0	87.0	1.1	-	-	0.3	0.0	91.1	8.6	-	-	0.0	0.0	0.0	100.0	-	-	0.0	48.8	0.0	51.3	-	-	-
Total %	0.0	7.0	50.7	0.6	-	58.2	0.1	0.0	25.1	2.4	-	27.6	0.0	0.0	0.0	0.1	-	0.1	0.0	6.9	0.0	7.2	-	14.1	-
PHF	0.000	0.681	0.916	0.875	-	0.884	0.250	0.000	0.828	0.519	-	0.790	0.000	0.000	0.000	0.250	-	0.250	0.000	0.696	0.000	0.891	-	0.851	0.892
Lights	0	70	522	7	-	599	1	0	261	26	-	288	0	0	0	1	-	1	0	75	0	78	-	153	1041
% Lights	-	88.6	90.8	100.0	-	90.6	100.0	-	91.6	96.3	-	92.0	-	-	-	100.0	-	100.0	-	96.2	-	95.1	-	95.6	91.7
Buses	0	2	13	0	-	15	0	0	11	1	-	12	0	0	0	0	-	0	0	1	0	2	-	3	30
% Buses	-	2.5	2.3	0.0	-	2.3	0.0	-	3.9	3.7	-	3.8	-	-	-	0.0	-	0.0	-	1.3	-	2.4	-	1.9	2.6
Single-Unit Trucks	0	3	23	0	-	26	0	0	7	0	-	7	0	0	0	0	-	0	0	2	0	2	-	4	37
% Single-Unit Trucks	-	3.8	4.0	0.0	-	3.9	0.0	-	2.5	0.0	-	2.2	-	-	-	0.0	-	0.0	-	2.6	-	2.4	-	2.5	3.3
Articulated Trucks	0	3	3	0	-	6	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	6
% Articulated Trucks	-	3.8	0.5	0.0	-	0.9	0.0	-	0.0	0.0	-	0.0	-	-	-	0.0	-	0.0	-	0.0	-	0.0	-	0.0	0.5
Bicycles on Road	0	1	14	0	-	15	0	0	6	0	-	6	0	0	0	0	-	0	0	0	0	0	-	0	21
% Bicycles on Road	-	1.3	2.4	0.0	-	2.3	0.0	-	2.1	0.0	-	1.9	-	-	-	0.0	-	0.0	-	0.0	-	0.0	-	0.0	1.9
Pedestrians	-	-	-	-	9	-	-	-	-	-	2	-	-	-	-	-	30	-	-	-	-	-	28	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-



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Count Name: Courtland Street with Kingsbury Street
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Turning Movement Peak Hour Data (5:00 PM)

Start Time	Courtland Street Eastbound						Courtland Street Westbound						Kingsbury Street Northbound						Kingsbury Street Southbound						Int. Total
	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	
5:00 PM	1	22	130	0	1	153	0	0	161	30	3	191	0	3	0	1	11	4	0	1	0	17	8	18	366
5:15 PM	0	33	128	0	0	161	0	0	152	28	0	180	0	0	0	0	5	0	0	0	0	23	9	23	364
5:30 PM	0	31	120	0	0	151	0	0	142	19	0	161	0	2	1	0	6	3	0	7	0	22	10	29	344
5:45 PM	0	39	115	0	1	154	0	0	131	22	0	153	0	0	0	1	2	1	0	7	0	16	5	23	331
Total	1	125	493	0	2	619	0	0	586	99	3	685	0	5	1	2	24	8	0	15	0	78	32	93	1405
Approach %	0.2	20.2	79.6	0.0	-	-	0.0	0.0	85.5	14.5	-	-	0.0	62.5	12.5	25.0	-	-	0.0	16.1	0.0	83.9	-	-	-
Total %	0.1	8.9	35.1	0.0	-	44.1	0.0	0.0	41.7	7.0	-	48.8	0.0	0.4	0.1	0.1	-	0.6	0.0	1.1	0.0	5.6	-	6.6	-
PHF	0.250	0.801	0.948	0.000	-	0.961	0.000	0.000	0.910	0.825	-	0.897	0.000	0.417	0.250	0.500	-	0.500	0.000	0.536	0.000	0.848	-	0.802	0.960
Lights	1	120	478	0	-	599	0	0	546	93	-	639	0	5	1	2	-	8	0	15	0	77	-	92	1338
% Lights	100.0	96.0	97.0	-	-	96.8	-	-	93.2	93.9	-	93.3	-	100.0	100.0	100.0	-	100.0	-	100.0	-	98.7	-	98.9	95.2
Buses	0	0	7	0	-	7	0	0	6	0	-	6	0	0	0	0	-	0	0	0	0	0	-	0	13
% Buses	0.0	0.0	1.4	-	-	1.1	-	-	1.0	0.0	-	0.9	-	0.0	0.0	0.0	-	0.0	-	0.0	-	0.0	-	0.0	0.9
Single-Unit Trucks	0	0	1	0	-	1	0	0	9	6	-	15	0	0	0	0	-	0	0	0	0	0	-	0	16
% Single-Unit Trucks	0.0	0.0	0.2	-	-	0.2	-	-	1.5	6.1	-	2.2	-	0.0	0.0	0.0	-	0.0	-	0.0	-	0.0	-	0.0	1.1
Articulated Trucks	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Articulated Trucks	0.0	0.0	0.0	-	-	0.0	-	-	0.0	0.0	-	0.0	-	0.0	0.0	0.0	-	0.0	-	0.0	-	0.0	-	0.0	0.0
Bicycles on Road	0	5	7	0	-	12	0	0	25	0	-	25	0	0	0	0	-	0	0	0	0	1	-	1	38
% Bicycles on Road	0.0	4.0	1.4	-	-	1.9	-	-	4.3	0.0	-	3.6	-	0.0	0.0	0.0	-	0.0	-	0.0	-	1.3	-	1.1	2.7
Pedestrians	-	-	-	-	2	-	-	-	-	-	3	-	-	-	-	-	24	-	-	-	-	-	32	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-



Kenig Lindgren O'Hara Aboona, Inc.
 9575 W. Higgins Rd., Suite 400
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Count Name: Courtland Street with Marcey
 Street
 Site Code:
 Start Date: 02/25/2016
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Turning Movement Data

Start Time	Courtland Street Eastbound					Courtland Street Westbound					Marcey Street Northbound					Int. Total
	U-Turn	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Peds	App. Total	U-Turn	Left	Right	Peds	App. Total	
7:00 AM	0	49	29	1	78	2	5	53	4	60	0	11	3	0	14	152
7:15 AM	0	69	46	0	115	0	2	55	6	57	0	3	1	3	4	176
7:30 AM	0	81	53	0	134	0	6	56	4	62	0	6	3	2	9	205
7:45 AM	0	91	76	0	167	0	3	66	4	69	0	8	3	5	11	247
Hourly Total	0	290	204	1	494	2	16	230	18	248	0	28	10	10	38	780
8:00 AM	0	109	70	0	179	0	4	63	4	67	0	10	5	5	15	261
8:15 AM	0	105	68	0	173	0	6	84	6	90	0	14	4	3	18	281
8:30 AM	0	124	67	0	191	0	4	92	3	96	0	9	2	0	11	298
8:45 AM	0	106	68	0	174	0	2	87	2	89	0	17	2	2	19	282
Hourly Total	0	444	273	0	717	0	16	326	15	342	0	50	13	10	63	1122
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4:00 PM	0	85	28	1	113	0	1	98	5	99	0	72	13	1	85	297
4:15 PM	0	100	33	0	133	0	1	93	5	94	0	50	7	3	57	284
4:30 PM	0	109	28	0	137	0	1	90	2	91	0	58	14	2	72	300
4:45 PM	0	91	34	1	125	0	0	101	4	101	0	53	10	7	63	289
Hourly Total	0	385	123	2	508	0	3	382	16	385	0	233	44	13	277	1170
5:00 PM	0	112	19	0	131	0	1	108	3	109	0	80	18	4	98	338
5:15 PM	0	117	15	0	132	0	2	104	4	106	0	77	15	3	92	330
5:30 PM	0	109	28	0	137	0	2	101	3	103	0	58	12	5	70	310
5:45 PM	0	104	24	1	128	0	0	92	1	92	0	51	14	1	65	285
Hourly Total	0	442	86	1	528	0	5	405	11	410	0	266	59	13	325	1263
Grand Total	0	1561	686	4	2247	2	40	1343	60	1385	0	577	126	46	703	4335
Approach %	0.0	69.5	30.5	-	-	0.1	2.9	97.0	-	-	0.0	82.1	17.9	-	-	-
Total %	0.0	36.0	15.8	-	51.8	0.0	0.9	31.0	-	31.9	0.0	13.3	2.9	-	16.2	-
Lights	0	1448	661	-	2109	2	40	1244	-	1286	0	544	123	-	667	4062
% Lights	-	92.8	96.4	-	93.9	100.0	100.0	92.6	-	92.9	-	94.3	97.6	-	94.9	93.7
Buses	0	44	3	-	47	0	0	39	-	39	0	0	0	-	0	86
% Buses	-	2.8	0.4	-	2.1	0.0	0.0	2.9	-	2.8	-	0.0	0.0	-	0.0	2.0
Single-Unit Trucks	0	28	13	-	41	0	0	31	-	31	0	28	1	-	29	101
% Single-Unit Trucks	-	1.8	1.9	-	1.8	0.0	0.0	2.3	-	2.2	-	4.9	0.8	-	4.1	2.3
Articulated Trucks	0	7	0	-	7	0	0	0	-	0	0	0	0	-	0	7
% Articulated Trucks	-	0.4	0.0	-	0.3	0.0	0.0	0.0	-	0.0	-	0.0	0.0	-	0.0	0.2
Bicycles on Road	0	34	9	-	43	0	0	29	-	29	0	5	2	-	7	79
% Bicycles on Road	-	2.2	1.3	-	1.9	0.0	0.0	2.2	-	2.1	-	0.9	1.6	-	1.0	1.8
Pedestrians	-	-	-	4	-	-	-	-	60	-	-	-	-	46	-	-
% Pedestrians	-	-	-	100.0	-	-	-	-	100.0	-	-	-	-	100.0	-	-



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Count Name: Courtland Street with Marcey
 Street
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Turning Movement Peak Hour Data (7:30 AM)

Start Time	Courtland Street Eastbound					Courtland Street Westbound					Marcey Street Northbound					Int. Total
	U-Turn	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Peds	App. Total	U-Turn	Left	Right	Peds	App. Total	
7:30 AM	0	81	53	0	134	0	6	56	4	62	0	6	3	2	9	205
7:45 AM	0	91	76	0	167	0	3	66	4	69	0	8	3	5	11	247
8:00 AM	0	109	70	0	179	0	4	63	4	67	0	10	5	5	15	261
8:15 AM	0	105	68	0	173	0	6	84	6	90	0	14	4	3	18	281
Total	0	386	267	0	653	0	19	269	18	288	0	38	15	15	53	994
Approach %	0.0	59.1	40.9	-	-	0.0	6.6	93.4	-	-	0.0	71.7	28.3	-	-	-
Total %	0.0	38.8	26.9	-	65.7	0.0	1.9	27.1	-	29.0	0.0	3.8	1.5	-	5.3	-
PHF	0.000	0.885	0.878	-	0.912	0.000	0.792	0.801	-	0.800	0.000	0.679	0.750	-	0.736	0.884
Lights	0	341	260	-	601	0	19	247	-	266	0	36	15	-	51	918
% Lights	-	88.3	97.4	-	92.0	-	100.0	91.8	-	92.4	-	94.7	100.0	-	96.2	92.4
Buses	0	13	2	-	15	0	0	12	-	12	0	0	0	-	0	27
% Buses	-	3.4	0.7	-	2.3	-	0.0	4.5	-	4.2	-	0.0	0.0	-	0.0	2.7
Single-Unit Trucks	0	18	3	-	21	0	0	5	-	5	0	2	0	-	2	28
% Single-Unit Trucks	-	4.7	1.1	-	3.2	-	0.0	1.9	-	1.7	-	5.3	0.0	-	3.8	2.8
Articulated Trucks	0	4	0	-	4	0	0	0	-	0	0	0	0	-	0	4
% Articulated Trucks	-	1.0	0.0	-	0.6	-	0.0	0.0	-	0.0	-	0.0	0.0	-	0.0	0.4
Bicycles on Road	0	10	2	-	12	0	0	5	-	5	0	0	0	-	0	17
% Bicycles on Road	-	2.6	0.7	-	1.8	-	0.0	1.9	-	1.7	-	0.0	0.0	-	0.0	1.7
Pedestrians	-	-	-	0	-	-	-	-	18	-	-	-	-	15	-	-
% Pedestrians	-	-	-	-	-	-	-	-	100.0	-	-	-	-	100.0	-	-



Kenig Lindgren O'Hara Aboona, Inc.
 9575 W. Higgins Rd., Suite 400
 Rosemont, Illinois, United States 60018
 (847)518-9990

Count Name: Courtland Street with Marcey Street
 Site Code:
 Start Date: 02/25/2016
 Page No: 5

Turning Movement Peak Hour Data (5:00 PM)

Start Time	Courtland Street Eastbound					Courtland Street Westbound					Marcey Street Northbound					Int. Total
	U-Turn	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Peds	App. Total	U-Turn	Left	Right	Peds	App. Total	
5:00 PM	0	112	19	0	131	0	1	108	3	109	0	80	18	4	98	338
5:15 PM	0	117	15	0	132	0	2	104	4	106	0	77	15	3	92	330
5:30 PM	0	109	28	0	137	0	2	101	3	103	0	58	12	5	70	310
5:45 PM	0	104	24	1	128	0	0	92	1	92	0	51	14	1	65	285
Total	0	442	86	1	528	0	5	405	11	410	0	266	59	13	325	1263
Approach %	0.0	83.7	16.3	-	-	0.0	1.2	98.8	-	-	0.0	81.8	18.2	-	-	-
Total %	0.0	35.0	6.8	-	41.8	0.0	0.4	32.1	-	32.5	0.0	21.1	4.7	-	25.7	-
PHF	0.000	0.944	0.768	-	0.964	0.000	0.625	0.938	-	0.940	0.000	0.831	0.819	-	0.829	0.934
Lights	0	430	85	-	515	0	5	380	-	385	0	254	57	-	311	1211
% Lights	-	97.3	98.8	-	97.5	-	100.0	93.8	-	93.9	-	95.5	96.6	-	95.7	95.9
Buses	0	7	0	-	7	0	0	5	-	5	0	0	0	-	0	12
% Buses	-	1.6	0.0	-	1.3	-	0.0	1.2	-	1.2	-	0.0	0.0	-	0.0	1.0
Single-Unit Trucks	0	0	0	-	0	0	0	7	-	7	0	9	0	-	9	16
% Single-Unit Trucks	-	0.0	0.0	-	0.0	-	0.0	1.7	-	1.7	-	3.4	0.0	-	2.8	1.3
Articulated Trucks	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0
% Articulated Trucks	-	0.0	0.0	-	0.0	-	0.0	0.0	-	0.0	-	0.0	0.0	-	0.0	0.0
Bicycles on Road	0	5	1	-	6	0	0	13	-	13	0	3	2	-	5	24
% Bicycles on Road	-	1.1	1.2	-	1.1	-	0.0	3.2	-	3.2	-	1.1	3.4	-	1.5	1.9
Pedestrians	-	-	-	1	-	-	-	-	11	-	-	-	-	13	-	-
% Pedestrians	-	-	-	100.0	-	-	-	-	100.0	-	-	-	-	100.0	-	-



Kenig Lindgren O'Hara Aboona, Inc.
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Count Name: Dominick and Webster
Site Code:
Start Date: 03/31/2015
Page No: 1

Turning Movement Data

Start Time	Dominick Street Southbound						Webster Avenue Westbound						Dominick Street Northbound						Webster Avenue Eastbound						Int. Total
	Right	Thru	Left	U-Turn	Peds	App. Total	Right	Thru	Left	U-Turn	Peds	App. Total	Right	Thru	Left	U-Turn	Peds	App. Total	Right	Thru	Left	U-Turn	Peds	App. Total	
7:00 AM	5	0	2	0	2	7	5	86	0	0	0	91	0	0	4	0	3	4	12	68	9	0	0	89	191
7:15 AM	3	0	4	0	1	7	4	108	1	0	0	113	0	0	3	0	1	3	12	121	9	0	2	142	265
7:30 AM	14	1	0	0	1	15	10	103	1	0	0	114	1	0	1	0	0	2	14	123	11	0	0	148	279
7:45 AM	20	2	3	0	3	25	5	119	0	0	0	124	0	0	1	0	4	1	23	115	15	0	0	153	303
Hourly Total	42	3	9	0	7	54	24	416	2	0	0	442	1	0	9	0	8	10	61	427	44	0	2	532	1038
8:00 AM	11	2	1	0	2	14	7	133	0	0	0	140	0	0	0	0	4	0	17	102	11	0	0	130	284
8:15 AM	7	1	4	0	1	12	9	115	1	0	0	125	0	0	4	0	5	4	17	135	5	0	0	157	298
8:30 AM	8	1	0	0	0	9	8	133	0	0	0	141	0	1	5	0	4	6	14	103	5	0	2	122	278
8:45 AM	6	0	0	0	5	6	2	90	2	0	0	94	0	0	4	0	2	4	9	107	2	0	0	118	222
Hourly Total	32	4	5	0	8	41	26	471	3	0	0	500	0	1	13	0	15	14	57	447	23	0	2	527	1082
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4:00 PM	7	1	0	0	3	8	3	111	0	0	2	114	6	4	16	0	6	26	7	104	4	0	1	115	263
4:15 PM	4	0	2	0	4	6	1	110	0	0	2	111	4	1	14	0	11	19	5	94	3	0	0	102	238
4:30 PM	7	3	1	0	5	11	1	76	2	0	1	79	4	0	15	0	6	19	6	112	7	0	0	125	234
4:45 PM	9	0	1	0	1	10	0	134	1	0	2	135	2	1	10	0	5	13	7	96	12	0	0	115	273
Hourly Total	27	4	4	0	13	35	5	431	3	0	7	439	16	6	55	0	28	77	25	406	26	0	1	457	1008
5:00 PM	7	1	2	0	7	10	4	85	3	0	5	92	3	1	6	0	13	10	13	117	13	0	0	143	255
5:15 PM	14	0	2	0	7	16	3	70	0	0	0	73	4	3	21	0	12	28	12	103	16	0	1	131	248
5:30 PM	12	1	3	0	4	16	4	94	0	0	2	98	6	1	16	0	10	23	6	117	12	0	0	135	272
5:45 PM	11	0	1	0	5	12	1	112	0	0	5	113	1	1	6	0	16	8	23	108	12	0	0	143	276
Hourly Total	44	2	8	0	23	54	12	361	3	0	12	376	14	6	49	0	51	69	54	445	53	0	1	552	1051
Grand Total	145	13	26	0	51	184	67	1679	11	0	19	1757	31	13	126	0	102	170	197	1725	146	0	6	2068	4179
Approach %	78.8	7.1	14.1	0.0	-	-	3.8	95.6	0.6	0.0	-	-	18.2	7.6	74.1	0.0	-	-	9.5	83.4	7.1	0.0	-	-	-
Total %	3.5	0.3	0.6	0.0	-	4.4	1.6	40.2	0.3	0.0	-	42.0	0.7	0.3	3.0	0.0	-	4.1	4.7	41.3	3.5	0.0	-	49.5	-
Lights	145	13	26	0	-	184	66	1628	11	0	-	1705	31	11	123	0	-	165	187	1656	144	0	-	1987	4041
% Lights	100.0	100.0	100.0	-	-	100.0	98.5	97.0	100.0	-	-	97.0	100.0	84.6	97.6	-	-	97.1	94.9	96.0	98.6	-	-	96.1	96.7
Buses	0	0	0	0	-	0	0	3	0	0	-	3	0	0	0	0	-	0	0	10	1	0	-	11	14
% Buses	0.0	0.0	0.0	-	-	0.0	0.0	0.2	0.0	-	-	0.2	0.0	0.0	0.0	-	-	0.0	0.0	0.6	0.7	-	-	0.5	0.3
Single-Unit Trucks	0	0	0	0	-	0	0	18	0	0	-	18	0	1	1	0	-	2	4	21	0	0	-	25	45
% Single-Unit Trucks	0.0	0.0	0.0	-	-	0.0	0.0	1.1	0.0	-	-	1.0	0.0	7.7	0.8	-	-	1.2	2.0	1.2	0.0	-	-	1.2	1.1
Articulated Trucks	0	0	0	0	-	0	0	1	0	0	-	1	0	0	0	0	-	0	1	0	0	0	-	1	2
% Articulated Trucks	0.0	0.0	0.0	-	-	0.0	0.0	0.1	0.0	-	-	0.1	0.0	0.0	0.0	-	-	0.0	0.5	0.0	0.0	-	-	0.0	0.0
Bicycles on Road	0	0	0	0	-	0	1	29	0	0	-	30	0	1	2	0	-	3	5	38	1	0	-	44	77
% Bicycles on Road	0.0	0.0	0.0	-	-	0.0	1.5	1.7	0.0	-	-	1.7	0.0	7.7	1.6	-	-	1.8	2.5	2.2	0.7	-	-	2.1	1.8
Pedestrians	-	-	-	-	51	-	-	-	-	-	19	-	-	-	-	-	102	-	-	-	-	-	6	-	-



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Count Name: Dominick and Webster
Site Code:
Start Date: 03/31/2015
Page No: 4

Turning Movement Peak Hour Data (7:30 AM)

Start Time	Dominick Street Southbound						Webster Avenue Westbound						Dominick Street Northbound						Webster Avenue Eastbound						Int. Total
	Right	Thru	Left	U-Turn	Peds	App. Total	Right	Thru	Left	U-Turn	Peds	App. Total	Right	Thru	Left	U-Turn	Peds	App. Total	Right	Thru	Left	U-Turn	Peds	App. Total	
7:30 AM	14	1	0	0	1	15	10	103	1	0	0	114	1	0	1	0	0	2	14	123	11	0	0	148	279
7:45 AM	20	2	3	0	3	25	5	119	0	0	0	124	0	0	1	0	4	1	23	115	15	0	0	153	303
8:00 AM	11	2	1	0	2	14	7	133	0	0	0	140	0	0	0	0	4	0	17	102	11	0	0	130	284
8:15 AM	7	1	4	0	1	12	9	115	1	0	0	125	0	0	4	0	5	4	17	135	5	0	0	157	298
Total	52	6	8	0	7	66	31	470	2	0	0	503	1	0	6	0	13	7	71	475	42	0	0	588	1164
Approach %	78.8	9.1	12.1	0.0	-	-	6.2	93.4	0.4	0.0	-	-	14.3	0.0	85.7	0.0	-	-	12.1	80.8	7.1	0.0	-	-	-
Total %	4.5	0.5	0.7	0.0	-	5.7	2.7	40.4	0.2	0.0	-	43.2	0.1	0.0	0.5	0.0	-	0.6	6.1	40.8	3.6	0.0	-	50.5	-
PHF	0.650	0.750	0.500	0.000	-	0.660	0.775	0.883	0.500	0.000	-	0.898	0.250	0.000	0.375	0.000	-	0.438	0.772	0.880	0.700	0.000	-	0.936	0.960
Lights	52	6	8	0	-	66	31	456	2	0	-	489	1	0	5	0	-	6	67	455	42	0	-	564	1125
% Lights	100.0	100.0	100.0	-	-	100.0	100.0	97.0	100.0	-	-	97.2	100.0	-	83.3	-	-	85.7	94.4	95.8	100.0	-	-	95.9	96.6
Buses	0	0	0	0	0	0	0	2	0	0	0	2	0	0	0	0	0	0	0	4	0	0	0	4	6
% Buses	0.0	0.0	0.0	-	-	0.0	0.0	0.4	0.0	-	-	0.4	0.0	-	0.0	-	-	0.0	0.0	0.8	0.0	-	-	0.7	0.5
Single-Unit Trucks	0	0	0	0	-	0	0	4	0	0	-	4	0	0	1	0	-	1	1	8	0	0	-	9	14
% Single-Unit Trucks	0.0	0.0	0.0	-	-	0.0	0.0	0.9	0.0	-	-	0.8	0.0	-	16.7	-	-	14.3	1.4	1.7	0.0	-	-	1.5	1.2
Articulated Trucks	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Articulated Trucks	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	-	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0
Bicycles on Road	0	0	0	0	-	0	0	8	0	0	-	8	0	0	0	0	-	0	3	8	0	0	-	11	19
% Bicycles on Road	0.0	0.0	0.0	-	-	0.0	0.0	1.7	0.0	-	-	1.6	0.0	-	0.0	-	-	0.0	4.2	1.7	0.0	-	-	1.9	1.6
Pedestrians	-	-	-	-	7	-	-	-	-	-	0	-	-	-	-	-	13	-	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	-	-	-	-	-	-	100.0	-	-	-	-	-	-	-	-



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Count Name: Dominick and Webster
Site Code:
Start Date: 03/31/2015
Page No: 6

Turning Movement Peak Hour Data (5:00 PM)

Start Time	Dominick Street Southbound						Webster Avenue Westbound						Dominick Street Northbound						Webster Avenue Eastbound						Int. Total
	Right	Thru	Left	U-Turn	Peds	App. Total	Right	Thru	Left	U-Turn	Peds	App. Total	Right	Thru	Left	U-Turn	Peds	App. Total	Right	Thru	Left	U-Turn	Peds	App. Total	
5:00 PM	7	1	2	0	7	10	4	85	3	0	5	92	3	1	6	0	13	10	13	117	13	0	0	143	255
5:15 PM	14	0	2	0	7	16	3	70	0	0	0	73	4	3	21	0	12	28	12	103	16	0	1	131	248
5:30 PM	12	1	3	0	4	16	4	94	0	0	2	98	6	1	16	0	10	23	6	117	12	0	0	135	272
5:45 PM	11	0	1	0	5	12	1	112	0	0	5	113	1	1	6	0	16	8	23	108	12	0	0	143	276
Total	44	2	8	0	23	54	12	361	3	0	12	376	14	6	49	0	51	69	54	445	53	0	1	552	1051
Approach %	81.5	3.7	14.8	0.0	-	-	3.2	96.0	0.8	0.0	-	-	20.3	8.7	71.0	0.0	-	-	9.8	80.6	9.6	0.0	-	-	-
Total %	4.2	0.2	0.8	0.0	-	5.1	1.1	34.3	0.3	0.0	-	35.8	1.3	0.6	4.7	0.0	-	6.6	5.1	42.3	5.0	0.0	-	52.5	-
PHF	0.786	0.500	0.667	0.000	-	0.844	0.750	0.806	0.250	0.000	-	0.832	0.583	0.500	0.583	0.000	-	0.616	0.587	0.951	0.828	0.000	-	0.965	0.952
Lights	44	2	8	0	-	54	11	348	3	0	-	362	14	6	48	0	-	68	54	431	52	0	-	537	1021
% Lights	100.0	100.0	100.0	-	-	100.0	91.7	96.4	100.0	-	-	96.3	100.0	100.0	98.0	-	-	98.6	100.0	96.9	98.1	-	-	97.3	97.1
Buses	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	1	1	0	-	2	2
% Buses	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.2	1.9	-	-	0.4	0.2
Single-Unit Trucks	0	0	0	0	-	0	0	4	0	0	-	4	0	0	0	0	-	0	0	0	0	0	-	0	4
% Single-Unit Trucks	0.0	0.0	0.0	-	-	0.0	0.0	1.1	0.0	-	-	1.1	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.4
Articulated Trucks	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Articulated Trucks	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0
Bicycles on Road	0	0	0	0	-	0	1	9	0	0	-	10	0	0	1	0	-	1	0	13	0	0	-	13	24
% Bicycles on Road	0.0	0.0	0.0	-	-	0.0	8.3	2.5	0.0	-	-	2.7	0.0	0.0	2.0	-	-	1.4	0.0	2.9	0.0	-	-	2.4	2.3
Pedestrians	-	-	-	-	23	-	-	-	-	-	12	-	-	-	-	-	51	-	-	-	-	-	1	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-



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Count Name: Elston Avenue with Webster Avenue
Site Code:
Start Date: 02/25/2016
Page No: 1

Turning Movement Data

Start Time	Webster Avenue Eastbound						Webster Avenue Westbound						Elston Avenue Northbound						Elston Avenue Southbound						Int. Total
	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	
7:00 AM	0	1	59	8	0	68	0	0	76	12	0	88	0	3	20	0	0	23	0	36	58	3	0	97	276
7:15 AM	0	2	80	15	3	97	0	4	82	15	0	101	0	0	23	2	0	25	0	36	89	4	3	129	352
7:30 AM	0	2	110	9	2	121	0	2	73	13	1	88	0	7	31	2	1	40	0	47	117	4	2	168	417
7:45 AM	0	2	108	11	5	121	0	3	100	19	1	122	0	8	29	2	1	39	0	56	115	6	4	177	459
Hourly Total	0	7	357	43	10	407	0	9	331	59	2	399	0	18	103	6	2	127	0	175	379	17	9	571	1504
8:00 AM	0	5	96	19	3	120	0	1	97	15	0	113	0	5	24	2	0	31	0	60	100	12	2	172	436
8:15 AM	0	6	95	9	8	110	0	1	78	14	0	93	0	11	39	2	2	52	0	59	115	9	9	183	438
8:30 AM	0	3	102	15	3	120	0	3	69	20	1	92	0	5	33	0	1	38	0	59	92	8	6	159	409
8:45 AM	0	2	72	7	4	81	0	4	86	22	5	112	0	7	42	2	1	51	0	51	103	14	2	168	412
Hourly Total	0	16	365	50	18	431	0	9	330	71	6	410	0	28	138	6	4	172	0	229	410	43	19	682	1695
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4:00 PM	0	9	63	12	2	84	0	7	116	28	1	151	0	17	77	9	1	103	0	30	56	10	2	96	434
4:15 PM	0	9	76	9	1	94	0	5	116	42	1	163	0	13	78	8	1	99	0	32	51	8	1	91	447
4:30 PM	0	7	56	7	2	70	0	4	122	34	0	160	0	18	83	6	1	107	0	27	57	9	4	93	430
4:45 PM	0	11	95	7	4	113	0	7	120	30	3	157	0	11	80	1	3	92	0	36	60	8	3	104	466
Hourly Total	0	36	290	35	9	361	0	23	474	134	5	631	0	59	318	24	6	401	0	125	224	35	10	384	1777
5:00 PM	0	5	75	10	10	90	0	10	121	31	4	162	0	11	91	5	5	107	0	37	56	11	2	104	463
5:15 PM	0	6	78	8	5	92	0	5	118	41	1	164	0	18	109	7	2	134	0	38	56	8	3	102	492
5:30 PM	0	9	77	8	8	94	0	5	105	32	2	142	0	15	99	12	3	126	0	35	63	8	7	106	468
5:45 PM	0	7	102	9	3	118	0	4	92	44	2	140	0	11	81	9	3	101	0	29	48	7	5	84	443
Hourly Total	0	27	332	35	26	394	0	24	436	148	9	608	0	55	380	33	13	468	0	139	223	34	17	396	1866
Grand Total	0	86	1344	163	63	1593	0	65	1571	412	22	2048	0	160	939	69	25	1168	0	668	1236	129	55	2033	6842
Approach %	0.0	5.4	84.4	10.2	-	-	0.0	3.2	76.7	20.1	-	-	0.0	13.7	80.4	5.9	-	-	0.0	32.9	60.8	6.3	-	-	-
Total %	0.0	1.3	19.6	2.4	-	23.3	0.0	1.0	23.0	6.0	-	29.9	0.0	2.3	13.7	1.0	-	17.1	0.0	9.8	18.1	1.9	-	29.7	-
Lights	0	86	1320	147	-	1553	0	65	1525	408	-	1998	0	155	886	68	-	1109	0	662	1168	129	-	1959	6619
% Lights	-	100.0	98.2	90.2	-	97.5	-	100.0	97.1	99.0	-	97.6	-	96.9	94.4	98.6	-	94.9	-	99.1	94.5	100.0	-	96.4	96.7
Buses	0	0	5	0	-	5	0	0	6	0	-	6	0	0	1	0	-	1	0	2	2	0	-	4	16
% Buses	-	0.0	0.4	0.0	-	0.3	-	0.0	0.4	0.0	-	0.3	-	0.0	0.1	0.0	-	0.1	-	0.3	0.2	0.0	-	0.2	0.2
Single-Unit Trucks	0	0	5	13	-	18	0	0	26	3	-	29	0	3	22	0	-	25	0	4	37	0	-	41	113
% Single-Unit Trucks	-	0.0	0.4	8.0	-	1.1	-	0.0	1.7	0.7	-	1.4	-	1.9	2.3	0.0	-	2.1	-	0.6	3.0	0.0	-	2.0	1.7
Articulated Trucks	0	0	0	0	-	0	0	0	0	0	-	0	0	0	1	0	-	1	0	0	3	0	-	3	4
% Articulated Trucks	-	0.0	0.0	0.0	-	0.0	-	0.0	0.0	0.0	-	0.0	-	0.0	0.1	0.0	-	0.1	-	0.0	0.2	0.0	-	0.1	0.1
Bicycles on Road	0	0	14	3	-	17	0	0	14	1	-	15	0	2	29	1	-	32	0	0	26	0	-	26	90
% Bicycles on Road	-	0.0	1.0	1.8	-	1.1	-	0.0	0.9	0.2	-	0.7	-	1.3	3.1	1.4	-	2.7	-	0.0	2.1	0.0	-	1.3	1.3
Pedestrians	-	-	-	-	63	-	-	-	-	-	22	-	-	-	-	-	25	-	-	-	-	-	55	-	-



Kenig Lindgren O'Hara Aboona, Inc.
9575 W. Higgins Rd., Suite 400

Rosemont, Illinois, United States 60018
(847)518-9990

Count Name: Elston Avenue with Webster Avenue
Site Code:
Start Date: 02/25/2016
Page No: 4

Turning Movement Peak Hour Data (7:30 AM)

Start Time	Webster Avenue Eastbound						Webster Avenue Westbound						Elston Avenue Northbound						Elston Avenue Southbound						Int. Total
	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	
7:30 AM	0	2	110	9	2	121	0	2	73	13	1	88	0	7	31	2	1	40	0	47	117	4	2	168	417
7:45 AM	0	2	108	11	5	121	0	3	100	19	1	122	0	8	29	2	1	39	0	56	115	6	4	177	459
8:00 AM	0	5	96	19	3	120	0	1	97	15	0	113	0	5	24	2	0	31	0	60	100	12	2	172	436
8:15 AM	0	6	95	9	8	110	0	1	78	14	0	93	0	11	39	2	2	52	0	59	115	9	9	183	438
Total	0	15	409	48	18	472	0	7	348	61	2	416	0	31	123	8	4	162	0	222	447	31	17	700	1750
Approach %	0.0	3.2	86.7	10.2	-	-	0.0	1.7	83.7	14.7	-	-	0.0	19.1	75.9	4.9	-	-	0.0	31.7	63.9	4.4	-	-	-
Total %	0.0	0.9	23.4	2.7	-	27.0	0.0	0.4	19.9	3.5	-	23.8	0.0	1.8	7.0	0.5	-	9.3	0.0	12.7	25.5	1.8	-	40.0	-
PHF	0.000	0.625	0.930	0.632	-	0.975	0.000	0.583	0.870	0.803	-	0.852	0.000	0.705	0.788	1.000	-	0.779	0.000	0.925	0.955	0.646	-	0.956	0.953
Lights	0	15	400	41	-	456	0	7	344	61	-	412	0	30	110	8	-	148	0	219	416	31	-	666	1682
% Lights	-	100.0	97.8	85.4	-	96.6	-	100.0	98.9	100.0	-	99.0	-	96.8	89.4	100.0	-	91.4	-	98.6	93.1	100.0	-	95.1	96.1
Buses	0	0	2	0	-	2	0	0	2	0	-	2	0	0	1	0	-	1	0	1	0	0	-	1	6
% Buses	-	0.0	0.5	0.0	-	0.4	-	0.0	0.6	0.0	-	0.5	-	0.0	0.8	0.0	-	0.6	-	0.5	0.0	0.0	-	0.1	0.3
Single-Unit Trucks	0	0	2	6	-	8	0	0	0	0	-	0	0	1	11	0	-	12	0	2	18	0	-	20	40
% Single-Unit Trucks	-	0.0	0.5	12.5	-	1.7	-	0.0	0.0	0.0	-	0.0	-	3.2	8.9	0.0	-	7.4	-	0.9	4.0	0.0	-	2.9	2.3
Articulated Trucks	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	2	0	-	2	2
% Articulated Trucks	-	0.0	0.0	0.0	-	0.0	-	0.0	0.0	0.0	-	0.0	-	0.0	0.0	0.0	-	0.0	-	0.0	0.4	0.0	-	0.3	0.1
Bicycles on Road	0	0	5	1	-	6	0	0	2	0	-	2	0	0	1	0	-	1	0	0	11	0	-	11	20
% Bicycles on Road	-	0.0	1.2	2.1	-	1.3	-	0.0	0.6	0.0	-	0.5	-	0.0	0.8	0.0	-	0.6	-	0.0	2.5	0.0	-	1.6	1.1
Pedestrians	-	-	-	-	18	-	-	-	-	-	2	-	-	-	-	-	4	-	-	-	-	-	17	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-



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Count Name: Elston Avenue with Webster Avenue
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Start Date: 02/25/2016
Page No: 6

Turning Movement Peak Hour Data (5:00 PM)

Start Time	Webster Avenue Eastbound						Webster Avenue Westbound						Elston Avenue Northbound						Elston Avenue Southbound						Int. Total
	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	
5:00 PM	0	5	75	10	10	90	0	10	121	31	4	162	0	11	91	5	5	107	0	37	56	11	2	104	463
5:15 PM	0	6	78	8	5	92	0	5	118	41	1	164	0	18	109	7	2	134	0	38	56	8	3	102	492
5:30 PM	0	9	77	8	8	94	0	5	105	32	2	142	0	15	99	12	3	126	0	35	63	8	7	106	468
5:45 PM	0	7	102	9	3	118	0	4	92	44	2	140	0	11	81	9	3	101	0	29	48	7	5	84	443
Total	0	27	332	35	26	394	0	24	436	148	9	608	0	55	380	33	13	468	0	139	223	34	17	396	1866
Approach %	0.0	6.9	84.3	8.9	-	-	0.0	3.9	71.7	24.3	-	-	0.0	11.8	81.2	7.1	-	-	0.0	35.1	56.3	8.6	-	-	-
Total %	0.0	1.4	17.8	1.9	-	21.1	0.0	1.3	23.4	7.9	-	32.6	0.0	2.9	20.4	1.8	-	25.1	0.0	7.4	12.0	1.8	-	21.2	-
PHF	0.000	0.750	0.814	0.875	-	0.835	0.000	0.600	0.901	0.841	-	0.927	0.000	0.764	0.872	0.688	-	0.873	0.000	0.914	0.885	0.773	-	0.934	0.948
Lights	0	27	327	34	-	388	0	24	424	146	-	594	0	53	357	32	-	442	0	139	218	34	-	391	1815
% Lights	-	100.0	98.5	97.1	-	98.5	-	100.0	97.2	98.6	-	97.7	-	96.4	93.9	97.0	-	94.4	-	100.0	97.8	100.0	-	98.7	97.3
Buses	0	0	1	0	-	1	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	1
% Buses	-	0.0	0.3	0.0	-	0.3	-	0.0	0.0	0.0	-	0.0	-	0.0	0.0	0.0	-	0.0	-	0.0	0.0	0.0	-	0.0	0.1
Single-Unit Trucks	0	0	0	0	-	0	0	0	7	1	-	8	0	1	2	0	-	3	0	0	2	0	-	2	13
% Single-Unit Trucks	-	0.0	0.0	0.0	-	0.0	-	0.0	1.6	0.7	-	1.3	-	1.8	0.5	0.0	-	0.6	-	0.0	0.9	0.0	-	0.5	0.7
Articulated Trucks	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	1	0	-	1	1
% Articulated Trucks	-	0.0	0.0	0.0	-	0.0	-	0.0	0.0	0.0	-	0.0	-	0.0	0.0	0.0	-	0.0	-	0.0	0.4	0.0	-	0.3	0.1
Bicycles on Road	0	0	4	1	-	5	0	0	5	1	-	6	0	1	21	1	-	23	0	0	2	0	-	2	36
% Bicycles on Road	-	0.0	1.2	2.9	-	1.3	-	0.0	1.1	0.7	-	1.0	-	1.8	5.5	3.0	-	4.9	-	0.0	0.9	0.0	-	0.5	1.9
Pedestrians	-	-	-	-	26	-	-	-	-	-	9	-	-	-	-	-	13	-	-	-	-	-	17	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-



Kenig Lindgren O'Hara Aboona, Inc.
9575 W. Higgins Rd., Suite 400

Rosemont, Illinois, United States 60018
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Count Name: Elston/Best Buy Signal
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Start Date: 04/13/2016
Page No: 1

Turning Movement Data

Start Time	Best Buy Signalized Access					Elston Avenue Northbound					Elston Avenue Southbound					Int. Total
	U-Turn	Left	Right	Peds	App. Total	U-Turn	Left	Thru	Peds	App. Total	U-Turn	Thru	Right	Peds	App. Total	
7:00 AM	0	1	0	1	1	0	0	24	0	24	0	66	3	0	69	94
7:15 AM	0	5	0	3	5	0	0	25	0	25	0	103	1	0	104	134
7:30 AM	0	2	0	4	2	0	1	37	1	38	0	132	3	0	135	175
7:45 AM	0	2	0	1	2	0	0	45	0	45	0	112	2	0	114	161
Hourly Total	0	10	0	9	10	0	1	131	1	132	0	413	9	0	422	564
8:00 AM	0	2	0	0	2	0	1	43	0	44	0	113	1	0	114	160
8:15 AM	0	2	0	4	2	0	0	51	0	51	0	104	1	0	105	158
8:30 AM	0	4	1	3	5	0	0	48	0	48	0	113	1	0	114	167
8:45 AM	0	0	2	0	2	0	2	63	0	65	0	105	0	0	105	172
Hourly Total	0	8	3	7	11	0	3	205	0	208	0	435	3	0	438	657
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4:00 PM	0	9	7	2	16	0	10	121	0	131	0	51	8	0	59	206
4:15 PM	0	16	4	4	20	0	10	99	1	109	0	43	5	0	48	177
4:30 PM	0	14	7	2	21	0	9	125	0	134	0	45	1	0	46	201
4:45 PM	0	12	4	4	16	0	5	115	0	120	0	42	9	0	51	187
Hourly Total	0	51	22	12	73	0	34	460	1	494	0	181	23	0	204	771
5:00 PM	0	16	5	6	21	0	6	108	3	114	0	45	5	0	50	185
5:15 PM	1	18	7	3	26	0	8	115	0	123	0	56	9	0	65	214
5:30 PM	0	11	1	10	12	0	10	115	0	125	0	44	4	0	48	185
5:45 PM	0	14	6	4	20	0	10	125	0	135	0	49	0	0	49	204
Hourly Total	1	59	19	23	79	0	34	463	3	497	0	194	18	0	212	788
Grand Total	1	128	44	51	173	0	72	1259	5	1331	0	1223	53	0	1276	2780
Approach %	0.6	74.0	25.4	-	-	0.0	5.4	94.6	-	-	0.0	95.8	4.2	-	-	-
Total %	0.0	4.6	1.6	-	6.2	0.0	2.6	45.3	-	47.9	0.0	44.0	1.9	-	45.9	-
Lights	1	126	44	-	171	0	72	1161	-	1233	0	1109	53	-	1162	2566
% Lights	100.0	98.4	100.0	-	98.8	-	100.0	92.2	-	92.6	-	90.7	100.0	-	91.1	92.3
Buses	0	0	0	-	0	0	0	2	-	2	0	1	0	-	1	3
% Buses	0.0	0.0	0.0	-	0.0	-	0.0	0.2	-	0.2	-	0.1	0.0	-	0.1	0.1
Single-Unit Trucks	0	0	0	-	0	0	0	24	-	24	0	33	0	-	33	57
% Single-Unit Trucks	0.0	0.0	0.0	-	0.0	-	0.0	1.9	-	1.8	-	2.7	0.0	-	2.6	2.1
Articulated Trucks	0	1	0	-	1	0	0	13	-	13	0	8	0	-	8	22
% Articulated Trucks	0.0	0.8	0.0	-	0.6	-	0.0	1.0	-	1.0	-	0.7	0.0	-	0.6	0.8
Bicycles on Road	0	1	0	-	1	0	0	59	-	59	0	72	0	-	72	132
% Bicycles on Road	0.0	0.8	0.0	-	0.6	-	0.0	4.7	-	4.4	-	5.9	0.0	-	5.6	4.7
Pedestrians	-	-	-	51	-	-	-	-	5	-	-	-	-	0	-	-
% Pedestrians	-	-	-	100.0	-	-	-	-	100.0	-	-	-	-	-	-	-



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Count Name: Elston/Best Buy Signal
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Start Date: 04/13/2016
Page No: 3

Turning Movement Peak Hour Data (7:30 AM)

Start Time	Best Buy Signalized Access Eastbound					Elston Avenue Northbound					Elston Avenue Southbound					Int. Total
	U-Turn	Left	Right	Peds	App. Total	U-Turn	Left	Thru	Peds	App. Total	U-Turn	Thru	Right	Peds	App. Total	
7:30 AM	0	2	0	4	2	0	1	37	1	38	0	132	3	0	135	175
7:45 AM	0	2	0	1	2	0	0	45	0	45	0	112	2	0	114	161
8:00 AM	0	2	0	0	2	0	1	43	0	44	0	113	1	0	114	160
8:15 AM	0	2	0	4	2	0	0	51	0	51	0	104	1	0	105	158
Total	0	8	0	9	8	0	2	176	1	178	0	461	7	0	468	654
Approach %	0.0	100.0	0.0	-	-	0.0	1.1	98.9	-	-	0.0	98.5	1.5	-	-	-
Total %	0.0	1.2	0.0	-	1.2	0.0	0.3	26.9	-	27.2	0.0	70.5	1.1	-	71.6	-
PHF	0.000	1.000	0.000	-	1.000	0.000	0.500	0.863	-	0.873	0.000	0.873	0.583	-	0.867	0.934
Lights	0	7	0	-	7	0	2	161	-	163	0	410	7	-	417	587
% Lights	-	87.5	-	-	87.5	-	100.0	91.5	-	91.6	-	88.9	100.0	-	89.1	89.8
Buses	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0
% Buses	-	0.0	-	-	0.0	-	0.0	0.0	-	0.0	-	0.0	0.0	-	0.0	0.0
Single-Unit Trucks	0	0	0	-	0	0	0	12	-	12	0	21	0	-	21	33
% Single-Unit Trucks	-	0.0	-	-	0.0	-	0.0	6.8	-	6.7	-	4.6	0.0	-	4.5	5.0
Articulated Trucks	0	1	0	-	1	0	0	2	-	2	0	1	0	-	1	4
% Articulated Trucks	-	12.5	-	-	12.5	-	0.0	1.1	-	1.1	-	0.2	0.0	-	0.2	0.6
Bicycles on Road	0	0	0	-	0	0	0	1	-	1	0	29	0	-	29	30
% Bicycles on Road	-	0.0	-	-	0.0	-	0.0	0.6	-	0.6	-	6.3	0.0	-	6.2	4.6
Pedestrians	-	-	-	9	-	-	-	-	1	-	-	-	-	0	-	-
% Pedestrians	-	-	-	100.0	-	-	-	-	100.0	-	-	-	-	-	-	-



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Count Name: Elston/Best Buy Signal
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Start Date: 04/13/2016
Page No: 5

Turning Movement Peak Hour Data (5:00 PM)

Start Time	Best Buy Signalized Access Eastbound					Elston Avenue Northbound					Elston Avenue Southbound					Int. Total
	U-Turn	Left	Right	Peds	App. Total	U-Turn	Left	Thru	Peds	App. Total	U-Turn	Thru	Right	Peds	App. Total	
5:00 PM	0	16	5	6	21	0	6	108	3	114	0	45	5	0	50	185
5:15 PM	1	18	7	3	26	0	8	115	0	123	0	56	9	0	65	214
5:30 PM	0	11	1	10	12	0	10	115	0	125	0	44	4	0	48	185
5:45 PM	0	14	6	4	20	0	10	125	0	135	0	49	0	0	49	204
Total	1	59	19	23	79	0	34	463	3	497	0	194	18	0	212	788
Approach %	1.3	74.7	24.1	-	-	0.0	6.8	93.2	-	-	0.0	91.5	8.5	-	-	-
Total %	0.1	7.5	2.4	-	10.0	0.0	4.3	58.8	-	63.1	0.0	24.6	2.3	-	26.9	-
PHF	0.250	0.819	0.679	-	0.760	0.000	0.850	0.926	-	0.920	0.000	0.866	0.500	-	0.815	0.921
Lights	1	59	19	-	79	0	34	428	-	462	0	190	18	-	208	749
% Lights	100.0	100.0	100.0	-	100.0	-	100.0	92.4	-	93.0	-	97.9	100.0	-	98.1	95.1
Buses	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0
% Buses	0.0	0.0	0.0	-	0.0	-	0.0	0.0	-	0.0	-	0.0	0.0	-	0.0	0.0
Single-Unit Trucks	0	0	0	-	0	0	0	1	-	1	0	0	0	-	0	1
% Single-Unit Trucks	0.0	0.0	0.0	-	0.0	-	0.0	0.2	-	0.2	-	0.0	0.0	-	0.0	0.1
Articulated Trucks	0	0	0	-	0	0	0	2	-	2	0	1	0	-	1	3
% Articulated Trucks	0.0	0.0	0.0	-	0.0	-	0.0	0.4	-	0.4	-	0.5	0.0	-	0.5	0.4
Bicycles on Road	0	0	0	-	0	0	0	32	-	32	0	3	0	-	3	35
% Bicycles on Road	0.0	0.0	0.0	-	0.0	-	0.0	6.9	-	6.4	-	1.5	0.0	-	1.4	4.4
Pedestrians	-	-	-	23	-	-	-	-	3	-	-	-	-	0	-	-
% Pedestrians	-	-	-	100.0	-	-	-	-	100.0	-	-	-	-	-	-	-



Kenig Lindgren O'Hara Aboona, Inc.
9575 W. Higgins Rd., Suite 400

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Count Name: North and Fremont
Site Code:
Start Date: 07/28/2015
Page No: 1

Turning Movement Data

Start Time	North Avenue Westbound						North Avenue Eastbound						Access Southbound						Freemont Street Northbound						Int. Total
	Right	Thru	Left	U-Turn	Peds	App. Total	Right	Thru	Left	U-Turn	Peds	App. Total	Right	Thru	Left	U-Turn	Peds	App. Total	Right	Thru	Left	U-Turn	Peds	App. Total	
7:00 AM	0	157	5	0	1	162	5	218	1	0	0	224	0	0	0	0	6	0	2	0	2	0	16	4	390
7:15 AM	0	138	6	0	3	144	7	204	3	0	2	214	1	0	0	0	6	1	2	0	7	0	26	9	368
7:30 AM	1	171	3	0	2	175	3	181	3	0	0	187	0	0	0	0	6	0	3	1	2	0	26	6	368
7:45 AM	1	164	11	0	1	176	2	203	1	0	0	206	1	0	2	0	9	3	1	0	2	0	41	3	388
Hourly Total	2	630	25	0	7	657	17	806	8	0	2	831	2	0	2	0	27	4	8	1	13	0	109	22	1514
8:00 AM	0	167	7	0	0	174	1	245	0	0	0	246	1	0	1	0	8	2	3	1	5	0	19	9	431
8:15 AM	0	181	7	0	0	188	1	193	2	0	1	196	0	0	0	0	2	0	7	0	2	0	16	9	393
8:30 AM	2	175	6	0	2	183	5	234	2	0	0	241	0	0	1	0	6	1	3	0	5	0	39	8	433
8:45 AM	1	190	14	0	2	205	8	214	1	0	0	223	0	0	2	0	6	2	9	1	5	0	25	15	445
Hourly Total	3	713	34	0	4	750	15	886	5	0	1	906	1	0	4	0	22	5	22	2	17	0	99	41	1702
9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hourly Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00 PM	2	76	12	0	10	90	18	171	7	0	14	196	0	4	7	0	23	11	18	4	11	0	69	33	330
4:15 PM	1	102	6	0	4	109	15	223	6	0	9	244	3	4	5	0	16	12	19	7	5	0	83	31	396
4:30 PM	3	89	4	0	10	96	12	229	7	0	5	248	2	4	3	0	12	9	19	1	10	0	87	30	383
4:45 PM	0	163	7	0	5	170	15	202	7	0	11	224	1	6	7	0	15	14	13	11	7	0	92	31	439
Hourly Total	6	430	29	0	29	465	60	825	27	0	39	912	6	18	22	0	66	46	69	23	33	0	331	125	1548
5:00 PM	2	145	8	0	10	155	10	200	4	0	5	214	0	4	3	0	21	7	26	3	13	0	71	42	418
5:15 PM	4	165	13	0	10	182	14	189	5	0	3	208	0	1	4	0	35	5	22	7	14	0	101	43	438
5:30 PM	2	152	10	0	4	164	4	196	6	0	3	206	0	2	4	0	26	6	21	4	14	0	108	39	415
5:45 PM	1	165	18	0	7	184	10	193	5	0	14	208	1	5	2	0	33	8	12	2	11	0	103	25	425
Hourly Total	9	627	49	0	31	685	38	778	20	0	25	836	1	12	13	0	115	26	81	16	52	0	383	149	1696
6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	1	0	0	3	3
Grand Total	20	2400	137	0	71	2557	130	3295	60	0	67	3485	10	30	41	0	230	81	182	42	116	0	922	340	6463
Approach %	0.8	93.9	5.4	0.0	-	-	3.7	94.5	1.7	0.0	-	-	12.3	37.0	50.6	0.0	-	-	53.5	12.4	34.1	0.0	-	-	-
Total %	0.3	37.1	2.1	0.0	-	39.6	2.0	51.0	0.9	0.0	-	53.9	0.2	0.5	0.6	0.0	-	1.3	2.8	0.6	1.8	0.0	-	5.3	-
Lights	19	2234	135	0	-	2388	125	3019	59	0	-	3203	10	29	41	0	-	80	177	42	112	0	-	331	6002
% Lights	95.0	93.1	98.5	-	-	93.4	96.2	91.6	98.3	-	-	91.9	100.0	96.7	100.0	-	-	98.8	97.3	100.0	96.6	-	-	97.4	92.9
Buses	0	49	0	0	-	49	0	44	0	0	-	44	0	0	0	0	-	0	0	0	0	0	-	0	93
% Buses	0.0	2.0	0.0	-	-	1.9	0.0	1.3	0.0	-	-	1.3	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	1.4
Single-Unit Trucks	0	58	2	0	-	60	4	137	0	0	-	141	0	0	0	0	-	0	2	0	4	0	-	6	207
% Single-Unit Trucks	0.0	2.4	1.5	-	-	2.3	3.1	4.2	0.0	-	-	4.0	0.0	0.0	0.0	-	-	0.0	1.1	0.0	3.4	-	-	1.8	3.2
Articulated Trucks	0	20	0	0	-	20	1	27	0	0	-	28	0	0	0	0	-	0	0	0	0	0	-	0	48
% Articulated Trucks	0.0	0.8	0.0	-	-	0.8	0.8	0.8	0.0	-	-	0.8	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.7
Bicycles on Road	1	39	0	0	-	40	0	68	1	0	-	69	0	1	0	0	-	1	3	0	0	0	-	3	113

% Bicycles on Road	5.0	1.6	0.0	-	-	1.6	0.0	2.1	1.7	-	-	2.0	0.0	3.3	0.0	-	-	1.2	1.6	0.0	0.0	-	-	0.9	1.7
Pedestrians	-	-	-	-	71	-	-	-	-	-	67	-	-	-	-	-	230	-	-	-	-	-	922	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-



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Count Name: North and Fremont
Site Code:
Start Date: 07/28/2015
Page No: 4

Turning Movement Peak Hour Data (7:30 AM)

Start Time	North Avenue Westbound						North Avenue Eastbound						Access Southbound						Fremont Street Northbound						Int. Total
	Right	Thru	Left	U-Turn	Peds	App. Total	Right	Thru	Left	U-Turn	Peds	App. Total	Right	Thru	Left	U-Turn	Peds	App. Total	Right	Thru	Left	U-Turn	Peds	App. Total	
7:30 AM	1	171	3	0	2	175	3	181	3	0	0	187	0	0	0	0	6	0	3	1	2	0	26	6	368
7:45 AM	1	164	11	0	1	176	2	203	1	0	0	206	1	0	2	0	9	3	1	0	2	0	41	3	388
8:00 AM	0	167	7	0	0	174	1	245	0	0	0	246	1	0	1	0	8	2	3	1	5	0	19	9	431
8:15 AM	0	181	7	0	0	188	1	193	2	0	1	196	0	0	0	0	2	0	7	0	2	0	16	9	393
Total	2	683	28	0	3	713	7	822	6	0	1	835	2	0	3	0	25	5	14	2	11	0	102	27	1580
Approach %	0.3	95.8	3.9	0.0	-	-	0.8	98.4	0.7	0.0	-	-	40.0	0.0	60.0	0.0	-	-	51.9	7.4	40.7	0.0	-	-	-
Total %	0.1	43.2	1.8	0.0	-	45.1	0.4	52.0	0.4	0.0	-	52.8	0.1	0.0	0.2	0.0	-	0.3	0.9	0.1	0.7	0.0	-	1.7	-
PHF	0.500	0.943	0.636	0.000	-	0.948	0.583	0.839	0.500	0.000	-	0.849	0.500	0.000	0.375	0.000	-	0.417	0.500	0.500	0.550	0.000	-	0.750	0.916
Lights	2	640	28	0	-	670	7	716	6	0	-	729	2	0	3	0	-	5	14	2	10	0	-	26	1430
% Lights	100.0	93.7	100.0	-	-	94.0	100.0	87.1	100.0	-	-	87.3	100.0	-	100.0	-	-	100.0	100.0	100.0	90.9	-	-	96.3	90.5
Buses	0	15	0	0	-	15	0	11	0	0	-	11	0	0	0	0	-	0	0	0	0	0	-	0	26
% Buses	0.0	2.2	0.0	-	-	2.1	0.0	1.3	0.0	-	-	1.3	0.0	-	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	1.6
Single-Unit Trucks	0	21	0	0	-	21	0	59	0	0	-	59	0	0	0	0	-	0	0	0	1	0	-	1	81
% Single-Unit Trucks	0.0	3.1	0.0	-	-	2.9	0.0	7.2	0.0	-	-	7.1	0.0	-	0.0	-	-	0.0	0.0	0.0	9.1	-	-	3.7	5.1
Articulated Trucks	0	5	0	0	-	5	0	24	0	0	-	24	0	0	0	0	-	0	0	0	0	0	-	0	29
% Articulated Trucks	0.0	0.7	0.0	-	-	0.7	0.0	2.9	0.0	-	-	2.9	0.0	-	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	1.8
Bicycles on Road	0	2	0	0	-	2	0	12	0	0	-	12	0	0	0	0	-	0	0	0	0	0	-	0	14
% Bicycles on Road	0.0	0.3	0.0	-	-	0.3	0.0	1.5	0.0	-	-	1.4	0.0	-	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.9
Pedestrians	-	-	-	-	3	-	-	-	-	-	1	-	-	-	-	-	25	-	-	-	-	-	102	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-



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Count Name: North and Fremont
Site Code:
Start Date: 07/28/2015
Page No: 6

Turning Movement Peak Hour Data (5:00 PM)

Start Time	North Avenue Westbound						North Avenue Eastbound						Access Southbound						Freemont Street Northbound						Int. Total
	Right	Thru	Left	U-Turn	Peds	App. Total	Right	Thru	Left	U-Turn	Peds	App. Total	Right	Thru	Left	U-Turn	Peds	App. Total	Right	Thru	Left	U-Turn	Peds	App. Total	
5:00 PM	2	145	8	0	10	155	10	200	4	0	5	214	0	4	3	0	21	7	26	3	13	0	71	42	418
5:15 PM	4	165	13	0	10	182	14	189	5	0	3	208	0	1	4	0	35	5	22	7	14	0	101	43	438
5:30 PM	2	152	10	0	4	164	4	196	6	0	3	206	0	2	4	0	26	6	21	4	14	0	108	39	415
5:45 PM	1	165	18	0	7	184	10	193	5	0	14	208	1	5	2	0	33	8	12	2	11	0	103	25	425
Total	9	627	49	0	31	685	38	778	20	0	25	836	1	12	13	0	115	26	81	16	52	0	383	149	1696
Approach %	1.3	91.5	7.2	0.0	-	-	4.5	93.1	2.4	0.0	-	-	3.8	46.2	50.0	0.0	-	-	54.4	10.7	34.9	0.0	-	-	-
Total %	0.5	37.0	2.9	0.0	-	40.4	2.2	45.9	1.2	0.0	-	49.3	0.1	0.7	0.8	0.0	-	1.5	4.8	0.9	3.1	0.0	-	8.8	-
PHF	0.563	0.950	0.681	0.000	-	0.931	0.679	0.973	0.833	0.000	-	0.977	0.250	0.600	0.813	0.000	-	0.813	0.779	0.571	0.929	0.000	-	0.866	0.968
Lights	8	584	49	0	-	641	38	738	19	0	-	795	1	12	13	0	-	26	78	16	51	0	-	145	1607
% Lights	88.9	93.1	100.0	-	-	93.6	100.0	94.9	95.0	-	-	95.1	100.0	100.0	100.0	-	-	100.0	96.3	100.0	98.1	-	-	97.3	94.8
Buses	0	10	0	0	-	10	0	8	0	0	-	8	0	0	0	0	-	0	0	0	0	0	-	0	18
% Buses	0.0	1.6	0.0	-	-	1.5	0.0	1.0	0.0	-	-	1.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	1.1
Single-Unit Trucks	0	13	0	0	-	13	0	6	0	0	-	6	0	0	0	0	-	0	0	0	1	0	-	1	20
% Single-Unit Trucks	0.0	2.1	0.0	-	-	1.9	0.0	0.8	0.0	-	-	0.7	0.0	0.0	0.0	-	-	0.0	0.0	0.0	1.9	-	-	0.7	1.2
Articulated Trucks	0	2	0	0	-	2	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	2
% Articulated Trucks	0.0	0.3	0.0	-	-	0.3	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.1
Bicycles on Road	1	18	0	0	-	19	0	26	1	0	-	27	0	0	0	0	-	0	3	0	0	0	-	3	49
% Bicycles on Road	11.1	2.9	0.0	-	-	2.8	0.0	3.3	5.0	-	-	3.2	0.0	0.0	0.0	-	-	0.0	3.7	0.0	0.0	-	-	2.0	2.9
Pedestrians	-	-	-	-	31	-	-	-	-	-	25	-	-	-	-	-	115	-	-	-	-	-	383	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-



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Count Name: North Avenue and Ashland Avenue
Site Code:
Start Date: 09/03/2015
Page No: 1

Turning Movement Data

Start Time	North Avenue Eastbound						North Avenue Westbound						Ashland Avenue Northbound						Ashland Avenue Southbound						Int. Total
	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	
7:00 AM	0	16	144	5	21	165	0	39	100	19	12	158	1	19	176	31	5	227	0	57	186	10	9	253	803
7:15 AM	0	15	120	12	21	147	0	26	100	26	3	152	0	17	186	34	8	237	0	41	185	10	5	236	772
7:30 AM	0	19	122	11	15	152	0	36	83	17	3	136	0	18	195	42	5	255	0	47	222	9	8	278	821
7:45 AM	0	16	123	10	23	149	0	34	90	21	7	145	0	14	169	48	5	231	0	63	239	9	15	311	836
Hourly Total	0	66	509	38	80	613	0	135	373	83	25	591	1	68	726	155	23	950	0	208	832	38	37	1078	3232
8:00 AM	0	17	123	7	18	147	0	29	98	14	11	141	0	16	159	35	8	210	0	49	218	15	18	282	780
8:15 AM	0	19	124	10	17	153	0	51	86	13	5	150	0	18	138	29	8	185	1	54	195	11	3	261	749
8:30 AM	0	10	125	16	13	151	0	39	104	13	5	156	0	15	168	33	10	216	0	44	213	12	5	269	792
8:45 AM	0	17	112	13	12	142	0	47	102	11	5	160	0	11	156	37	4	204	0	43	214	10	6	267	773
Hourly Total	0	63	484	46	60	593	0	166	390	51	26	607	0	60	621	134	30	815	1	190	840	48	32	1079	3094
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4:00 PM	0	19	118	13	22	150	0	45	121	13	13	179	0	29	233	45	16	307	0	17	184	18	9	219	855
4:15 PM	0	17	102	20	24	139	0	52	137	19	4	208	0	21	212	55	8	288	0	28	237	23	12	288	923
4:30 PM	0	12	112	14	21	138	0	50	131	11	12	192	0	18	211	52	9	281	0	32	203	18	16	253	864
4:45 PM	0	18	119	11	23	148	0	48	165	20	4	233	0	25	181	53	12	259	0	30	214	23	18	267	907
Hourly Total	0	66	451	58	90	575	0	195	554	63	33	812	0	93	837	205	45	1135	0	107	838	82	55	1027	3549
5:00 PM	0	19	108	10	24	137	0	58	123	17	8	198	0	19	215	57	28	291	0	37	218	20	22	275	901
5:15 PM	0	18	109	14	20	141	0	48	143	16	7	207	0	24	218	64	17	306	0	33	214	11	13	258	912
5:30 PM	0	16	88	14	19	118	0	42	130	23	8	195	0	37	207	79	12	323	0	34	242	22	16	298	934
5:45 PM	0	25	114	16	20	155	0	54	139	15	23	208	0	43	196	66	14	305	0	41	215	24	19	280	948
Hourly Total	0	78	419	54	83	551	0	202	535	71	46	808	0	123	836	266	71	1225	0	145	889	77	70	1111	3695
Grand Total	0	273	1863	196	313	2332	0	698	1852	268	130	2818	1	344	3020	760	169	4125	1	650	3399	245	194	4295	13570
Approach %	0.0	11.7	79.9	8.4	-	-	0.0	24.8	65.7	9.5	-	-	0.0	8.3	73.2	18.4	-	-	0.0	15.1	79.1	5.7	-	-	-
Total %	0.0	2.0	13.7	1.4	-	17.2	0.0	5.1	13.6	2.0	-	20.8	0.0	2.5	22.3	5.6	-	30.4	0.0	4.8	25.0	1.8	-	31.7	-
Lights	0	259	1760	187	-	2206	0	673	1722	248	-	2643	1	332	2852	724	-	3909	1	640	3240	231	-	4112	12870
% Lights	-	94.9	94.5	95.4	-	94.6	-	96.4	93.0	92.5	-	93.8	100.0	96.5	94.4	95.3	-	94.8	100.0	98.5	95.3	94.3	-	95.7	94.8
Buses	0	0	37	3	-	40	0	3	34	0	-	37	0	1	39	2	-	42	0	0	38	0	-	38	157
% Buses	-	0.0	2.0	1.5	-	1.7	-	0.4	1.8	0.0	-	1.3	0.0	0.3	1.3	0.3	-	1.0	0.0	0.0	1.1	0.0	-	0.9	1.2
Single-Unit Trucks	0	13	33	5	-	51	0	19	56	13	-	88	0	9	96	30	-	135	0	8	94	14	-	116	390
% Single-Unit Trucks	-	4.8	1.8	2.6	-	2.2	-	2.7	3.0	4.9	-	3.1	0.0	2.6	3.2	3.9	-	3.3	0.0	1.2	2.8	5.7	-	2.7	2.9
Articulated Trucks	0	1	11	0	-	12	0	2	9	7	-	18	0	2	10	2	-	14	0	2	10	0	-	12	56
% Articulated Trucks	-	0.4	0.6	0.0	-	0.5	-	0.3	0.5	2.6	-	0.6	0.0	0.6	0.3	0.3	-	0.3	0.0	0.3	0.3	0.0	-	0.3	0.4
Bicycles on Road	0	0	22	1	-	23	0	1	31	0	-	32	0	0	23	2	-	25	0	0	17	0	-	17	97
% Bicycles on Road	-	0.0	1.2	0.5	-	1.0	-	0.1	1.7	0.0	-	1.1	0.0	0.0	0.8	0.3	-	0.6	0.0	0.0	0.5	0.0	-	0.4	0.7
Pedestrians	-	-	-	-	313	-	-	-	-	-	130	-	-	-	-	-	169	-	-	-	-	-	194	-	-



Kenig Lindgren O'Hara Aboona, Inc.
9575 W. Higgins Rd., Suite 400

Rosemont, Illinois, United States 60018
(847)518-9990

Count Name: North Avenue and Ashland Avenue
Site Code:
Start Date: 09/03/2015
Page No: 4

Turning Movement Peak Hour Data (7:30 AM)

Start Time	North Avenue Eastbound						North Avenue Westbound						Ashland Avenue Northbound						Ashland Avenue Southbound						Int. Total
	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	
7:30 AM	0	19	122	11	15	152	0	36	83	17	3	136	0	18	195	42	5	255	0	47	222	9	8	278	821
7:45 AM	0	16	123	10	23	149	0	34	90	21	7	145	0	14	169	48	5	231	0	63	239	9	15	311	836
8:00 AM	0	17	123	7	18	147	0	29	98	14	11	141	0	16	159	35	8	210	0	49	218	15	18	282	780
8:15 AM	0	19	124	10	17	153	0	51	86	13	5	150	0	18	138	29	8	185	1	54	195	11	3	261	749
Total	0	71	492	38	73	601	0	150	357	65	26	572	0	66	661	154	26	881	1	213	874	44	44	1132	3186
Approach %	0.0	11.8	81.9	6.3	-	-	0.0	26.2	62.4	11.4	-	-	0.0	7.5	75.0	17.5	-	-	0.1	18.8	77.2	3.9	-	-	-
Total %	0.0	2.2	15.4	1.2	-	18.9	0.0	4.7	11.2	2.0	-	18.0	0.0	2.1	20.7	4.8	-	27.7	0.0	6.7	27.4	1.4	-	35.5	-
PHF	0.000	0.934	0.992	0.864	-	0.982	0.000	0.735	0.911	0.774	-	0.953	0.000	0.917	0.847	0.802	-	0.864	0.250	0.845	0.914	0.733	-	0.910	0.953
Lights	0	66	452	37	-	555	0	146	326	55	-	527	0	63	588	144	-	795	1	210	829	37	-	1077	2954
% Lights	-	93.0	91.9	97.4	-	92.3	-	97.3	91.3	84.6	-	92.1	-	95.5	89.0	93.5	-	90.2	100.0	98.6	94.9	84.1	-	95.1	92.7
Buses	0	0	11	0	-	11	0	1	10	0	-	11	0	0	8	0	-	8	0	0	10	0	-	10	40
% Buses	-	0.0	2.2	0.0	-	1.8	-	0.7	2.8	0.0	-	1.9	-	0.0	1.2	0.0	-	0.9	0.0	0.0	1.1	0.0	-	0.9	1.3
Single-Unit Trucks	0	4	13	1	-	18	0	3	14	9	-	26	0	2	53	10	-	65	0	2	22	7	-	31	140
% Single-Unit Trucks	-	5.6	2.6	2.6	-	3.0	-	2.0	3.9	13.8	-	4.5	-	3.0	8.0	6.5	-	7.4	0.0	0.9	2.5	15.9	-	2.7	4.4
Articulated Trucks	0	1	6	0	-	7	0	0	4	1	-	5	0	1	4	0	-	5	0	1	6	0	-	7	24
% Articulated Trucks	-	1.4	1.2	0.0	-	1.2	-	0.0	1.1	1.5	-	0.9	-	1.5	0.6	0.0	-	0.6	0.0	0.5	0.7	0.0	-	0.6	0.8
Bicycles on Road	0	0	10	0	-	10	0	0	3	0	-	3	0	0	8	0	-	8	0	0	7	0	-	7	28
% Bicycles on Road	-	0.0	2.0	0.0	-	1.7	-	0.0	0.8	0.0	-	0.5	-	0.0	1.2	0.0	-	0.9	0.0	0.0	0.8	0.0	-	0.6	0.9
Pedestrians	-	-	-	-	73	-	-	-	-	-	26	-	-	-	-	-	26	-	-	-	-	-	44	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-



Kenig Lindgren O'Hara Aboona, Inc.
9575 W. Higgins Rd., Suite 400

Rosemont, Illinois, United States 60018
(847)518-9990

Count Name: North Avenue and Ashland Avenue
Site Code:
Start Date: 09/03/2015
Page No: 6

Turning Movement Peak Hour Data (5:00 PM)

Start Time	North Avenue Eastbound						North Avenue Westbound						Ashland Avenue Northbound						Ashland Avenue Southbound						Int. Total
	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	
5:00 PM	0	19	108	10	24	137	0	58	123	17	8	198	0	19	215	57	28	291	0	37	218	20	22	275	901
5:15 PM	0	18	109	14	20	141	0	48	143	16	7	207	0	24	218	64	17	306	0	33	214	11	13	258	912
5:30 PM	0	16	88	14	19	118	0	42	130	23	8	195	0	37	207	79	12	323	0	34	242	22	16	298	934
5:45 PM	0	25	114	16	20	155	0	54	139	15	23	208	0	43	196	66	14	305	0	41	215	24	19	280	948
Total	0	78	419	54	83	551	0	202	535	71	46	808	0	123	836	266	71	1225	0	145	889	77	70	1111	3695
Approach %	0.0	14.2	76.0	9.8	-	-	0.0	25.0	66.2	8.8	-	-	0.0	10.0	68.2	21.7	-	-	0.0	13.1	80.0	6.9	-	-	-
Total %	0.0	2.1	11.3	1.5	-	14.9	0.0	5.5	14.5	1.9	-	21.9	0.0	3.3	22.6	7.2	-	33.2	0.0	3.9	24.1	2.1	-	30.1	-
PHF	0.000	0.780	0.919	0.844	-	0.889	0.000	0.871	0.935	0.772	-	0.971	0.000	0.715	0.959	0.842	-	0.948	0.000	0.884	0.918	0.802	-	0.932	0.974
Lights	0	76	409	52	-	537	0	196	513	71	-	780	0	120	815	257	-	1192	0	144	855	72	-	1071	3580
% Lights	-	97.4	97.6	96.3	-	97.5	-	97.0	95.9	100.0	-	96.5	-	97.6	97.5	96.6	-	97.3	-	99.3	96.2	93.5	-	96.4	96.9
Buses	0	0	6	1	-	7	0	0	8	0	-	8	0	1	12	2	-	15	0	0	9	0	-	9	39
% Buses	-	0.0	1.4	1.9	-	1.3	-	0.0	1.5	0.0	-	1.0	-	0.8	1.4	0.8	-	1.2	-	0.0	1.0	0.0	-	0.8	1.1
Single-Unit Trucks	0	2	2	0	-	4	0	4	3	0	-	7	0	1	3	6	-	10	0	1	20	5	-	26	47
% Single-Unit Trucks	-	2.6	0.5	0.0	-	0.7	-	2.0	0.6	0.0	-	0.9	-	0.8	0.4	2.3	-	0.8	-	0.7	2.2	6.5	-	2.3	1.3
Articulated Trucks	0	0	0	0	-	0	0	1	0	0	-	1	0	1	0	0	-	1	0	0	0	0	-	0	2
% Articulated Trucks	-	0.0	0.0	0.0	-	0.0	-	0.5	0.0	0.0	-	0.1	-	0.8	0.0	0.0	-	0.1	-	0.0	0.0	0.0	-	0.0	0.1
Bicycles on Road	0	0	2	1	-	3	0	1	11	0	-	12	0	0	6	1	-	7	0	0	5	0	-	5	27
% Bicycles on Road	-	0.0	0.5	1.9	-	0.5	-	0.5	2.1	0.0	-	1.5	-	0.0	0.7	0.4	-	0.6	-	0.0	0.6	0.0	-	0.5	0.7
Pedestrians	-	-	-	-	83	-	-	-	-	-	46	-	-	-	-	-	71	-	-	-	-	-	70	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-



Kenig Lindgren O'Hara Aboona, Inc.
 9575 W. Higgins Rd., Suite 400
 Rosemont, Illinois, United States 60018
 (847)518-9990

Count Name: North Avenue and Sheffield Avenue
 Site Code:
 Start Date: 02/24/2016
 Page No: 1

Turning Movement Data

Start Time	North Avenue Eastbound						North Avenue Westbound						Sheffield Avenue Northbound						Sheffield Avenue Southbound						Int. Total
	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	
7:00 AM	0	15	173	6	8	194	0	8	150	3	7	161	0	9	15	8	14	32	0	7	23	45	5	75	462
7:15 AM	0	33	216	5	6	254	0	12	170	2	9	184	0	13	9	11	18	33	0	7	41	39	2	87	558
7:30 AM	0	37	230	6	6	273	0	9	167	5	11	181	0	7	21	9	22	37	0	12	45	42	7	99	590
7:45 AM	0	18	235	4	6	257	0	21	172	4	5	197	0	7	17	7	24	31	0	18	59	62	1	139	624
Hourly Total	0	103	854	21	26	978	0	50	659	14	32	723	0	36	62	35	78	133	0	44	168	188	15	400	2234
8:00 AM	0	24	212	6	2	242	0	18	154	3	5	175	0	13	32	8	12	53	0	25	81	38	1	144	614
8:15 AM	0	32	205	4	0	241	1	21	187	4	3	213	0	9	46	13	8	68	0	21	89	44	1	154	676
8:30 AM	0	27	241	9	3	277	0	10	186	6	1	202	0	7	29	13	23	49	0	21	71	34	3	126	654
8:45 AM	0	29	241	8	6	278	0	20	168	8	1	196	0	10	32	14	17	56	0	15	72	46	7	133	663
Hourly Total	0	112	899	27	11	1038	1	69	695	21	10	786	0	39	139	48	60	226	0	82	313	162	12	557	2607
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4:00 PM	0	26	161	9	7	196	0	19	203	12	17	234	0	8	29	24	26	61	0	13	34	28	4	75	566
4:15 PM	0	32	170	12	7	214	0	17	199	0	3	216	0	14	32	21	18	67	0	10	35	32	0	77	574
4:30 PM	0	29	150	13	5	192	0	17	186	9	9	212	0	7	49	15	25	71	0	13	39	25	9	77	552
4:45 PM	0	35	154	17	11	206	0	21	174	17	13	212	0	13	65	18	19	96	0	15	31	35	4	81	595
Hourly Total	0	122	635	51	30	808	0	74	762	38	42	874	0	42	175	78	88	295	0	51	139	120	17	310	2287
5:00 PM	0	27	179	11	14	217	0	21	195	7	10	223	0	12	62	19	32	93	0	21	34	29	16	84	617
5:15 PM	0	36	170	11	6	217	0	21	184	11	14	216	0	16	60	26	15	102	0	14	39	36	10	89	624
5:30 PM	0	17	163	12	0	192	0	20	144	15	17	179	0	15	42	23	28	80	0	13	29	50	5	92	543
5:45 PM	0	34	157	13	6	204	0	15	174	17	7	206	0	10	36	22	24	68	0	11	43	26	10	80	558
Hourly Total	0	114	669	47	26	830	0	77	697	50	48	824	0	53	200	90	99	343	0	59	145	141	41	345	2342
Grand Total	0	451	3057	146	93	3654	1	270	2813	123	132	3207	0	170	576	251	325	997	0	236	765	611	85	1612	9470
Approach %	0.0	12.3	83.7	4.0	-	-	0.0	8.4	87.7	3.8	-	-	0.0	17.1	57.8	25.2	-	-	0.0	14.6	47.5	37.9	-	-	-
Total %	0.0	4.8	32.3	1.5	-	38.6	0.0	2.9	29.7	1.3	-	33.9	0.0	1.8	6.1	2.7	-	10.5	0.0	2.5	8.1	6.5	-	17.0	-
Lights	0	439	2947	146	-	3532	1	266	2699	123	-	3089	0	168	565	249	-	982	0	233	755	604	-	1592	9195
% Lights	-	97.3	96.4	100.0	-	96.7	100.0	98.5	95.9	100.0	-	96.3	-	98.8	98.1	99.2	-	98.5	0	98.7	98.7	98.9	-	98.8	97.1
Buses	0	0	46	0	-	46	0	0	56	0	-	56	0	0	0	0	-	0	0	1	0	2	-	3	105
% Buses	-	0.0	1.5	0.0	-	1.3	0.0	0.0	2.0	0.0	-	1.7	-	0.0	0.0	0.0	-	0.0	-	0.4	0.0	0.3	-	0.2	1.1
Single-Unit Trucks	0	12	54	0	-	66	0	4	44	0	-	48	0	1	3	2	-	6	0	1	3	5	-	9	129
% Single-Unit Trucks	-	2.7	1.8	0.0	-	1.8	0.0	1.5	1.6	0.0	-	1.5	-	0.6	0.5	0.8	-	0.6	-	0.4	0.4	0.8	-	0.6	1.4
Articulated Trucks	0	0	9	0	-	9	0	0	11	0	-	11	0	0	0	0	-	0	0	1	0	0	-	1	21
% Articulated Trucks	-	0.0	0.3	0.0	-	0.2	0.0	0.0	0.4	0.0	-	0.3	-	0.0	0.0	0.0	-	0.0	-	0.4	0.0	0.0	-	0.1	0.2
Bicycles on Road	0	0	1	0	-	1	0	0	3	0	-	3	0	1	8	0	-	9	0	0	7	0	-	7	20
% Bicycles on Road	-	0.0	0.0	0.0	-	0.0	0.0	0.0	0.1	0.0	-	0.1	-	0.6	1.4	0.0	-	0.9	-	0.0	0.9	0.0	-	0.4	0.2
Pedestrians	-	-	-	-	93	-	-	-	-	-	132	-	-	-	-	-	325	-	-	-	-	-	85	-	-



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Count Name: North Avenue and Sheffield
Avenue
Site Code:
Start Date: 02/24/2016
Page No: 4

Turning Movement Peak Hour Data (7:30 AM)

Start Time	North Avenue Eastbound						North Avenue Westbound						Sheffield Avenue Northbound						Sheffield Avenue Southbound						Int. Total
	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	
7:30 AM	0	37	230	6	6	273	0	9	167	5	11	181	0	7	21	9	22	37	0	12	45	42	7	99	590
7:45 AM	0	18	235	4	6	257	0	21	172	4	5	197	0	7	17	7	24	31	0	18	59	62	1	139	624
8:00 AM	0	24	212	6	2	242	0	18	154	3	5	175	0	13	32	8	12	53	0	25	81	38	1	144	614
8:15 AM	0	32	205	4	0	241	1	21	187	4	3	213	0	9	46	13	8	68	0	21	89	44	1	154	676
Total	0	111	882	20	14	1013	1	69	680	16	24	766	0	36	116	37	66	189	0	76	274	186	10	536	2504
Approach %	0.0	11.0	87.1	2.0	-	-	0.1	9.0	88.8	2.1	-	-	0.0	19.0	61.4	19.6	-	-	0.0	14.2	51.1	34.7	-	-	-
Total %	0.0	4.4	35.2	0.8	-	40.5	0.0	2.8	27.2	0.6	-	30.6	0.0	1.4	4.6	1.5	-	7.5	0.0	3.0	10.9	7.4	-	21.4	-
PHF	0.000	0.750	0.938	0.833	-	0.928	0.250	0.821	0.909	0.800	-	0.899	0.000	0.692	0.630	0.712	-	0.695	0.000	0.760	0.770	0.750	-	0.870	0.926
Lights	0	103	835	20	-	958	1	69	642	16	-	728	0	35	111	37	-	183	0	73	271	184	-	528	2397
% Lights	-	92.8	94.7	100.0	-	94.6	100.0	100.0	94.4	100.0	-	95.0	-	97.2	95.7	100.0	-	96.8	-	96.1	98.9	98.9	-	98.5	95.7
Buses	0	0	16	0	-	16	0	0	16	0	-	16	0	0	0	0	-	0	0	1	0	1	-	2	34
% Buses	-	0.0	1.8	0.0	-	1.6	0.0	0.0	2.4	0.0	-	2.1	-	0.0	0.0	0.0	-	0.0	-	1.3	0.0	0.5	-	0.4	1.4
Single-Unit Trucks	0	8	26	0	-	34	0	0	19	0	-	19	0	0	2	0	-	2	0	1	1	1	-	3	58
% Single-Unit Trucks	-	7.2	2.9	0.0	-	3.4	0.0	0.0	2.8	0.0	-	2.5	-	0.0	1.7	0.0	-	1.1	-	1.3	0.4	0.5	-	0.6	2.3
Articulated Trucks	0	0	4	0	-	4	0	0	3	0	-	3	0	0	0	0	-	0	0	1	0	0	-	1	8
% Articulated Trucks	-	0.0	0.5	0.0	-	0.4	0.0	0.0	0.4	0.0	-	0.4	-	0.0	0.0	0.0	-	0.0	-	1.3	0.0	0.0	-	0.2	0.3
Bicycles on Road	0	0	1	0	-	1	0	0	0	0	-	0	0	1	3	0	-	4	0	0	2	0	-	2	7
% Bicycles on Road	-	0.0	0.1	0.0	-	0.1	0.0	0.0	0.0	0.0	-	0.0	-	2.8	2.6	0.0	-	2.1	-	0.0	0.7	0.0	-	0.4	0.3
Pedestrians	-	-	-	-	14	-	-	-	-	-	24	-	-	-	-	-	66	-	-	-	-	-	10	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-



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(847)518-9990

Count Name: North Avenue and Sheffield
Avenue
Site Code:
Start Date: 02/24/2016
Page No: 6

Turning Movement Peak Hour Data (5:00 PM)

Start Time	North Avenue Eastbound						North Avenue Westbound						Sheffield Avenue Northbound						Sheffield Avenue Southbound						Int. Total
	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	
5:00 PM	0	27	179	11	14	217	0	21	195	7	10	223	0	12	62	19	32	93	0	21	34	29	16	84	617
5:15 PM	0	36	170	11	6	217	0	21	184	11	14	216	0	16	60	26	15	102	0	14	39	36	10	89	624
5:30 PM	0	17	163	12	0	192	0	20	144	15	17	179	0	15	42	23	28	80	0	13	29	50	5	92	543
5:45 PM	0	34	157	13	6	204	0	15	174	17	7	206	0	10	36	22	24	68	0	11	43	26	10	80	558
Total	0	114	669	47	26	830	0	77	697	50	48	824	0	53	200	90	99	343	0	59	145	141	41	345	2342
Approach %	0.0	13.7	80.6	5.7	-	-	0.0	9.3	84.6	6.1	-	-	0.0	15.5	58.3	26.2	-	-	0.0	17.1	42.0	40.9	-	-	-
Total %	0.0	4.9	28.6	2.0	-	35.4	0.0	3.3	29.8	2.1	-	35.2	0.0	2.3	8.5	3.8	-	14.6	0.0	2.5	6.2	6.0	-	14.7	-
PHF	0.000	0.792	0.934	0.904	-	0.956	0.000	0.917	0.894	0.735	-	0.924	0.000	0.828	0.806	0.865	-	0.841	0.000	0.702	0.843	0.705	-	0.938	0.938
Lights	0	113	660	47	-	820	0	76	682	50	-	808	0	52	197	90	-	339	0	59	143	139	-	341	2308
% Lights	-	99.1	98.7	100.0	-	98.8	-	98.7	97.8	100.0	-	98.1	-	98.1	98.5	100.0	-	98.8	-	100.0	98.6	98.6	-	98.8	98.5
Buses	0	0	8	0	-	8	0	0	9	0	-	9	0	0	0	0	-	0	0	0	0	0	-	0	17
% Buses	-	0.0	1.2	0.0	-	1.0	-	0.0	1.3	0.0	-	1.1	-	0.0	0.0	0.0	-	0.0	-	0.0	0.0	0.0	-	0.0	0.7
Single-Unit Trucks	0	1	1	0	-	2	0	1	4	0	-	5	0	1	0	0	-	1	0	0	1	2	-	3	11
% Single-Unit Trucks	-	0.9	0.1	0.0	-	0.2	-	1.3	0.6	0.0	-	0.6	-	1.9	0.0	0.0	-	0.3	-	0.0	0.7	1.4	-	0.9	0.5
Articulated Trucks	0	0	0	0	-	0	0	0	1	0	-	1	0	0	0	0	-	0	0	0	0	0	-	0	1
% Articulated Trucks	-	0.0	0.0	0.0	-	0.0	-	0.0	0.1	0.0	-	0.1	-	0.0	0.0	0.0	-	0.0	-	0.0	0.0	0.0	-	0.0	0.0
Bicycles on Road	0	0	0	0	-	0	0	0	1	0	-	1	0	0	3	0	-	3	0	0	1	0	-	1	5
% Bicycles on Road	-	0.0	0.0	0.0	-	0.0	-	0.0	0.1	0.0	-	0.1	-	0.0	1.5	0.0	-	0.9	-	0.0	0.7	0.0	-	0.3	0.2
Pedestrians	-	-	-	-	26	-	-	-	-	-	48	-	-	-	-	-	99	-	-	-	-	-	41	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-



Kenig Lindgren O'Hara Aboona, Inc.
9575 W. Higgins Rd., Suite 400

Rosemont, Illinois, United States 60018
(847)518-9990

Count Name: North Avenue with Elston Avenue
Site Code:
Start Date: 02/24/2016
Page No: 1

Turning Movement Data

Start Time	North Avenue Eastbound						North Avenue Westbound						Elston Avenue Northbound						Elston Avenue Southbound						Int. Total
	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	
7:00 AM	0	23	246	29	0	298	0	8	234	4	3	246	0	11	32	6	1	49	0	18	46	11	2	75	668
7:15 AM	0	23	280	23	0	326	0	9	235	8	2	252	0	6	35	6	0	47	0	21	111	7	0	139	764
7:30 AM	0	25	272	24	0	321	0	11	210	5	2	226	0	15	37	12	1	64	0	29	111	5	1	145	756
7:45 AM	0	28	260	36	1	324	0	5	235	12	2	252	0	12	51	9	2	72	0	35	93	9	3	137	785
Hourly Total	0	99	1058	112	1	1269	0	33	914	29	9	976	0	44	155	33	4	232	0	103	361	32	6	496	2973
8:00 AM	0	31	272	24	1	327	0	14	219	6	4	239	0	11	44	5	8	60	0	33	98	2	1	133	759
8:15 AM	0	24	224	26	0	274	0	9	247	8	8	264	1	14	32	14	6	61	0	26	117	3	3	146	745
8:30 AM	0	21	263	27	1	311	0	8	223	9	3	240	0	10	48	12	1	70	0	34	117	11	2	162	783
8:45 AM	0	11	270	23	4	304	0	6	211	13	2	230	1	12	60	11	2	84	0	24	97	7	1	128	746
Hourly Total	0	87	1029	100	6	1216	0	37	900	36	17	973	2	47	184	42	17	275	0	117	429	23	7	569	3033
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4:00 PM	0	18	214	10	3	242	0	5	246	13	0	264	0	24	68	16	1	108	0	14	54	22	1	90	704
4:15 PM	0	27	229	15	2	271	0	9	273	10	0	292	0	16	66	6	2	88	0	18	53	15	1	86	737
4:30 PM	0	24	247	6	1	277	0	14	252	9	4	275	0	13	58	16	4	87	0	24	49	21	3	94	733
4:45 PM	0	33	232	11	1	276	0	5	240	10	1	255	0	11	79	6	1	96	0	16	54	11	1	81	708
Hourly Total	0	102	922	42	7	1066	0	33	1011	42	5	1086	0	64	271	44	8	379	0	72	210	69	6	351	2882
5:00 PM	0	27	237	12	2	276	0	6	245	12	5	263	0	21	82	10	2	113	0	8	61	24	2	93	745
5:15 PM	0	27	211	15	4	253	0	13	264	12	5	289	0	26	88	11	4	125	0	18	43	12	4	73	740
5:30 PM	0	29	210	5	2	244	0	13	217	14	2	244	0	19	75	8	1	102	0	19	45	15	6	79	669
5:45 PM	0	21	230	6	0	257	0	13	239	14	3	266	0	11	58	9	1	78	0	17	48	7	5	72	673
Hourly Total	0	104	888	38	8	1030	0	45	965	52	15	1062	0	77	303	38	8	418	0	62	197	58	17	317	2827
Grand Total	0	392	3897	292	22	4581	0	148	3790	159	46	4097	2	232	913	157	37	1304	0	354	1197	182	36	1733	11715
Approach %	0.0	8.6	85.1	6.4	-	-	0.0	3.6	92.5	3.9	-	-	0.2	17.8	70.0	12.0	-	-	0.0	20.4	69.1	10.5	-	-	-
Total %	0.0	3.3	33.3	2.5	-	39.1	0.0	1.3	32.4	1.4	-	35.0	0.0	2.0	7.8	1.3	-	11.1	0.0	3.0	10.2	1.6	-	14.8	-
Lights	0	383	3785	280	-	4448	0	138	3651	150	-	3939	2	220	855	153	-	1230	0	341	1126	177	-	1644	11261
% Lights	-	97.7	97.1	95.9	-	97.1	-	93.2	96.3	94.3	-	96.1	100.0	94.8	93.6	97.5	-	94.3	-	96.3	94.1	97.3	-	94.9	96.1
Buses	0	0	46	0	-	46	0	1	65	0	-	66	0	0	1	0	-	1	0	1	0	0	-	1	114
% Buses	-	0.0	1.2	0.0	-	1.0	-	0.7	1.7	0.0	-	1.6	0.0	0.0	0.1	0.0	-	0.1	-	0.3	0.0	0.0	-	0.1	1.0
Single-Unit Trucks	0	6	53	9	-	68	0	8	51	4	-	63	0	9	29	4	-	42	0	8	26	2	-	36	209
% Single-Unit Trucks	-	1.5	1.4	3.1	-	1.5	-	5.4	1.3	2.5	-	1.5	0.0	3.9	3.2	2.5	-	3.2	-	2.3	2.2	1.1	-	2.1	1.8
Articulated Trucks	0	3	12	3	-	18	0	1	19	3	-	23	0	1	12	0	-	13	0	4	10	3	-	17	71
% Articulated Trucks	-	0.8	0.3	1.0	-	0.4	-	0.7	0.5	1.9	-	0.6	0.0	0.4	1.3	0.0	-	1.0	-	1.1	0.8	1.6	-	1.0	0.6
Bicycles on Road	0	0	1	0	-	1	0	0	4	2	-	6	0	2	16	0	-	18	0	0	35	0	-	35	60
% Bicycles on Road	-	0.0	0.0	0.0	-	0.0	-	0.0	0.1	1.3	-	0.1	0.0	0.9	1.8	0.0	-	1.4	-	0.0	2.9	0.0	-	2.0	0.5
Pedestrians	-	-	-	-	22	-	-	-	-	-	46	-	-	-	-	-	37	-	-	-	-	-	36	-	-



Kenig Lindgren O'Hara Aboona, Inc.
9575 W. Higgins Rd., Suite 400

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Count Name: North Avenue with Elston Avenue
Site Code:
Start Date: 02/24/2016
Page No: 4

Turning Movement Peak Hour Data (7:30 AM)

Start Time	North Avenue Eastbound						North Avenue Westbound						Elston Avenue Northbound						Elston Avenue Southbound						Int. Total
	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	
7:30 AM	0	25	272	24	0	321	0	11	210	5	2	226	0	15	37	12	1	64	0	29	111	5	1	145	756
7:45 AM	0	28	260	36	1	324	0	5	235	12	2	252	0	12	51	9	2	72	0	35	93	9	3	137	785
8:00 AM	0	31	272	24	1	327	0	14	219	6	4	239	0	11	44	5	8	60	0	33	98	2	1	133	759
8:15 AM	0	24	224	26	0	274	0	9	247	8	8	264	1	14	32	14	6	61	0	26	117	3	3	146	745
Total	0	108	1028	110	2	1246	0	39	911	31	16	981	1	52	164	40	17	257	0	123	419	19	8	561	3045
Approach %	0.0	8.7	82.5	8.8	-	-	0.0	4.0	92.9	3.2	-	-	0.4	20.2	63.8	15.6	-	-	0.0	21.9	74.7	3.4	-	-	-
Total %	0.0	3.5	33.8	3.6	-	40.9	0.0	1.3	29.9	1.0	-	32.2	0.0	1.7	5.4	1.3	-	8.4	0.0	4.0	13.8	0.6	-	18.4	-
PHF	0.000	0.871	0.945	0.764	-	0.953	0.000	0.696	0.922	0.646	-	0.929	0.250	0.867	0.804	0.714	-	0.892	0.000	0.879	0.895	0.528	-	0.961	0.970
Lights	0	106	987	105	-	1198	0	35	866	29	-	930	1	43	149	37	-	230	0	115	391	18	-	524	2882
% Lights	-	98.1	96.0	95.5	-	96.1	-	89.7	95.1	93.5	-	94.8	100.0	82.7	90.9	92.5	-	89.5	-	93.5	93.3	94.7	-	93.4	94.6
Buses	0	0	16	0	-	16	0	0	17	0	-	17	0	0	0	0	-	0	0	0	0	0	-	0	33
% Buses	-	0.0	1.6	0.0	-	1.3	-	0.0	1.9	0.0	-	1.7	0.0	0.0	0.0	0.0	-	0.0	-	0.0	0.0	0.0	-	0.0	1.1
Single-Unit Trucks	0	0	23	3	-	26	0	3	21	1	-	25	0	6	11	3	-	20	0	7	7	1	-	15	86
% Single-Unit Trucks	-	0.0	2.2	2.7	-	2.1	-	7.7	2.3	3.2	-	2.5	0.0	11.5	6.7	7.5	-	7.8	-	5.7	1.7	5.3	-	2.7	2.8
Articulated Trucks	0	2	2	2	-	6	0	1	7	1	-	9	0	1	4	0	-	5	0	1	4	0	-	5	25
% Articulated Trucks	-	1.9	0.2	1.8	-	0.5	-	2.6	0.8	3.2	-	0.9	0.0	1.9	2.4	0.0	-	1.9	-	0.8	1.0	0.0	-	0.9	0.8
Bicycles on Road	0	0	0	0	-	0	0	0	0	0	-	0	0	2	0	0	-	2	0	0	17	0	-	17	19
% Bicycles on Road	-	0.0	0.0	0.0	-	0.0	-	0.0	0.0	0.0	-	0.0	0.0	3.8	0.0	0.0	-	0.8	-	0.0	4.1	0.0	-	3.0	0.6
Pedestrians	-	-	-	-	2	-	-	-	-	-	16	-	-	-	-	-	17	-	-	-	-	-	8	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-



Kenig Lindgren O'Hara Aboona, Inc.
9575 W. Higgins Rd., Suite 400

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Count Name: North Avenue with Elston Avenue
Site Code:
Start Date: 02/24/2016
Page No: 6

Turning Movement Peak Hour Data (5:00 PM)

Start Time	North Avenue Eastbound						North Avenue Westbound						Elston Avenue Northbound						Elston Avenue Southbound						Int. Total
	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	
5:00 PM	0	27	237	12	2	276	0	6	245	12	5	263	0	21	82	10	2	113	0	8	61	24	2	93	745
5:15 PM	0	27	211	15	4	253	0	13	264	12	5	289	0	26	88	11	4	125	0	18	43	12	4	73	740
5:30 PM	0	29	210	5	2	244	0	13	217	14	2	244	0	19	75	8	1	102	0	19	45	15	6	79	669
5:45 PM	0	21	230	6	0	257	0	13	239	14	3	266	0	11	58	9	1	78	0	17	48	7	5	72	673
Total	0	104	888	38	8	1030	0	45	965	52	15	1062	0	77	303	38	8	418	0	62	197	58	17	317	2827
Approach %	0.0	10.1	86.2	3.7	-	-	0.0	4.2	90.9	4.9	-	-	0.0	18.4	72.5	9.1	-	-	0.0	19.6	62.1	18.3	-	-	-
Total %	0.0	3.7	31.4	1.3	-	36.4	0.0	1.6	34.1	1.8	-	37.6	0.0	2.7	10.7	1.3	-	14.8	0.0	2.2	7.0	2.1	-	11.2	-
PHF	0.000	0.897	0.937	0.633	-	0.933	0.000	0.865	0.914	0.929	-	0.919	0.000	0.740	0.861	0.864	-	0.836	0.000	0.816	0.807	0.604	-	0.852	0.949
Lights	0	103	877	38	-	1018	0	43	949	50	-	1042	0	77	289	38	-	404	0	61	191	58	-	310	2774
% Lights	-	99.0	98.8	100.0	-	98.8	-	95.6	98.3	96.2	-	98.1	-	100.0	95.4	100.0	-	96.7	-	98.4	97.0	100.0	-	97.8	98.1
Buses	0	0	7	0	-	7	0	1	9	0	-	10	0	0	0	0	-	0	0	0	0	0	-	0	17
% Buses	-	0.0	0.8	0.0	-	0.7	-	2.2	0.9	0.0	-	0.9	-	0.0	0.0	0.0	-	0.0	-	0.0	0.0	0.0	-	0.0	0.6
Single-Unit Trucks	0	1	4	0	-	5	0	1	4	1	-	6	0	0	1	0	-	1	0	0	3	0	-	3	15
% Single-Unit Trucks	-	1.0	0.5	0.0	-	0.5	-	2.2	0.4	1.9	-	0.6	-	0.0	0.3	0.0	-	0.2	-	0.0	1.5	0.0	-	0.9	0.5
Articulated Trucks	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	1	0	0	-	1	1
% Articulated Trucks	-	0.0	0.0	0.0	-	0.0	-	0.0	0.0	0.0	-	0.0	-	0.0	0.0	0.0	-	0.0	-	1.6	0.0	0.0	-	0.3	0.0
Bicycles on Road	0	0	0	0	-	0	0	0	3	1	-	4	0	0	13	0	-	13	0	0	3	0	-	3	20
% Bicycles on Road	-	0.0	0.0	0.0	-	0.0	-	0.0	0.3	1.9	-	0.4	-	0.0	4.3	0.0	-	3.1	-	0.0	1.5	0.0	-	0.9	0.7
Pedestrians	-	-	-	-	8	-	-	-	-	-	15	-	-	-	-	-	8	-	-	-	-	-	17	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-



Kenig Lindgren O'Hara Aboona, Inc.
9575 W. Higgins Rd., Suite 400

Rosemont, Illinois, United States 60018
(847)518-9990

Count Name: North Avenue with Halsted Street
Site Code:
Start Date: 02/24/2016
Page No: 1

Turning Movement Data

Start Time	North Avenue Eastbound						North Avenue Westbound						Halsted Street Northbound						Halsted Street Southbound						Int. Total
	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	
7:00 AM	0	21	137	7	19	165	0	23	156	7	8	186	0	1	50	15	12	66	0	14	93	21	7	128	545
7:15 AM	0	23	206	2	38	231	0	27	176	7	17	210	0	2	65	25	25	92	0	15	105	24	9	144	677
7:30 AM	0	25	189	3	37	217	0	39	164	6	14	209	0	3	64	22	33	89	0	14	111	20	16	145	660
7:45 AM	0	34	218	3	28	255	0	33	192	4	21	229	0	1	77	27	22	105	0	21	119	17	14	157	746
Hourly Total	0	103	750	15	122	868	0	122	688	24	60	834	0	7	256	89	92	352	0	64	428	82	46	574	2628
8:00 AM	0	17	202	0	42	219	0	41	185	13	18	239	0	2	83	22	29	107	0	8	103	22	12	133	698
8:15 AM	0	24	181	3	51	208	0	34	214	8	6	256	0	3	89	32	18	124	0	13	111	18	9	142	730
8:30 AM	0	24	225	2	57	251	0	24	182	9	12	215	0	6	70	24	38	100	0	10	106	20	12	136	702
8:45 AM	0	18	238	3	33	259	0	35	180	6	9	221	0	3	81	32	18	116	0	23	94	30	13	147	743
Hourly Total	0	83	846	8	183	937	0	134	761	36	45	931	0	14	323	110	103	447	0	54	414	90	46	558	2873
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4:00 PM	0	26	183	6	27	215	0	28	219	6	5	253	0	6	88	28	30	122	0	17	87	21	10	125	715
4:15 PM	0	23	203	8	42	234	0	20	176	8	22	204	0	6	85	39	22	130	0	11	83	33	24	127	695
4:30 PM	0	20	155	4	38	179	0	27	185	19	13	231	0	6	89	34	29	129	0	21	73	21	6	115	654
4:45 PM	0	24	154	11	44	189	0	19	175	16	13	210	0	5	85	26	27	116	0	14	78	25	14	117	632
Hourly Total	0	93	695	29	151	817	0	94	755	49	53	898	0	23	347	127	108	497	0	63	321	100	54	484	2696
5:00 PM	0	19	186	6	35	211	0	12	200	14	15	226	0	4	96	32	31	132	0	7	69	22	6	98	667
5:15 PM	0	23	181	7	78	211	0	23	176	18	16	217	0	6	97	27	35	130	0	20	67	24	13	111	669
5:30 PM	0	34	163	4	60	201	0	27	168	19	19	214	0	7	114	36	45	157	0	22	89	32	20	143	715
5:45 PM	0	25	172	2	48	199	0	23	179	17	11	219	0	8	97	20	24	125	0	21	58	28	13	107	650
Hourly Total	0	101	702	19	221	822	0	85	723	68	61	876	0	25	404	115	135	544	0	70	283	106	52	459	2701
Grand Total	0	380	2993	71	677	3444	0	435	2927	177	219	3539	0	69	1330	441	438	1840	0	251	1446	378	198	2075	10898
Approach %	0.0	11.0	86.9	2.1	-	-	0.0	12.3	82.7	5.0	-	-	0.0	3.8	72.3	24.0	-	-	0.0	12.1	69.7	18.2	-	-	-
Total %	0.0	3.5	27.5	0.7	-	31.6	0.0	4.0	26.9	1.6	-	32.5	0.0	0.6	12.2	4.0	-	16.9	0.0	2.3	13.3	3.5	-	19.0	-
Lights	0	357	2906	71	-	3334	0	424	2843	171	-	3438	0	68	1231	429	-	1728	0	247	1337	362	-	1946	10446
% Lights	-	93.9	97.1	100.0	-	96.8	-	97.5	97.1	96.6	-	97.1	-	98.6	92.6	97.3	-	93.9	-	98.4	92.5	95.8	-	93.8	95.9
Buses	0	2	42	0	-	44	0	2	50	0	-	52	0	1	34	3	-	38	0	1	49	4	-	54	188
% Buses	-	0.5	1.4	0.0	-	1.3	-	0.5	1.7	0.0	-	1.5	-	1.4	2.6	0.7	-	2.1	-	0.4	3.4	1.1	-	2.6	1.7
Single-Unit Trucks	0	20	41	0	-	61	0	8	30	5	-	43	0	0	42	6	-	48	0	3	32	9	-	44	196
% Single-Unit Trucks	-	5.3	1.4	0.0	-	1.8	-	1.8	1.0	2.8	-	1.2	-	0.0	3.2	1.4	-	2.6	-	1.2	2.2	2.4	-	2.1	1.8
Articulated Trucks	0	1	2	0	-	3	0	0	4	1	-	5	0	0	10	1	-	11	0	0	5	3	-	8	27
% Articulated Trucks	-	0.3	0.1	0.0	-	0.1	-	0.0	0.1	0.6	-	0.1	-	0.0	0.8	0.2	-	0.6	-	0.0	0.3	0.8	-	0.4	0.2
Bicycles on Road	0	0	2	0	-	2	0	1	0	0	-	1	0	0	13	2	-	15	0	0	23	0	-	23	41
% Bicycles on Road	-	0.0	0.1	0.0	-	0.1	-	0.2	0.0	0.0	-	0.0	-	0.0	1.0	0.5	-	0.8	-	0.0	1.6	0.0	-	1.1	0.4
Pedestrians	-	-	-	-	677	-	-	-	-	-	219	-	-	-	-	-	438	-	-	-	-	-	198	-	-



Kenig Lindgren O'Hara Aboona, Inc.
9575 W. Higgins Rd., Suite 400

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Count Name: North Avenue with Halsted Street
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Start Date: 02/24/2016
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Turning Movement Peak Hour Data (7:30 AM)

Start Time	North Avenue Eastbound						North Avenue Westbound						Halsted Street Northbound						Halsted Street Southbound						Int. Total
	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	
7:30 AM	0	25	189	3	37	217	0	39	164	6	14	209	0	3	64	22	33	89	0	14	111	20	16	145	660
7:45 AM	0	34	218	3	28	255	0	33	192	4	21	229	0	1	77	27	22	105	0	21	119	17	14	157	746
8:00 AM	0	17	202	0	42	219	0	41	185	13	18	239	0	2	83	22	29	107	0	8	103	22	12	133	698
8:15 AM	0	24	181	3	51	208	0	34	214	8	6	256	0	3	89	32	18	124	0	13	111	18	9	142	730
Total	0	100	790	9	158	899	0	147	755	31	59	933	0	9	313	103	102	425	0	56	444	77	51	577	2834
Approach %	0.0	11.1	87.9	1.0	-	-	0.0	15.8	80.9	3.3	-	-	0.0	2.1	73.6	24.2	-	-	0.0	9.7	76.9	13.3	-	-	-
Total %	0.0	3.5	27.9	0.3	-	31.7	0.0	5.2	26.6	1.1	-	32.9	0.0	0.3	11.0	3.6	-	15.0	0.0	2.0	15.7	2.7	-	20.4	-
PHF	0.000	0.735	0.906	0.750	-	0.881	0.000	0.896	0.882	0.596	-	0.911	0.000	0.750	0.879	0.805	-	0.857	0.000	0.667	0.933	0.875	-	0.919	0.950
Lights	0	89	754	9	-	852	0	142	725	29	-	896	0	8	282	101	-	391	0	56	407	74	-	537	2676
% Lights	-	89.0	95.4	100.0	-	94.8	-	96.6	96.0	93.5	-	96.0	-	88.9	90.1	98.1	-	92.0	-	100.0	91.7	96.1	-	93.1	94.4
Buses	0	0	15	0	-	15	0	1	16	0	-	17	0	1	9	1	-	11	0	0	17	0	-	17	60
% Buses	-	0.0	1.9	0.0	-	1.7	-	0.7	2.1	0.0	-	1.8	-	11.1	2.9	1.0	-	2.6	-	0.0	3.8	0.0	-	2.9	2.1
Single-Unit Trucks	0	10	20	0	-	30	0	4	13	2	-	19	0	0	20	0	-	20	0	0	10	2	-	12	81
% Single-Unit Trucks	-	10.0	2.5	0.0	-	3.3	-	2.7	1.7	6.5	-	2.0	-	0.0	6.4	0.0	-	4.7	-	0.0	2.3	2.6	-	2.1	2.9
Articulated Trucks	0	1	1	0	-	2	0	0	1	0	-	1	0	0	2	1	-	3	0	0	0	1	-	1	7
% Articulated Trucks	-	1.0	0.1	0.0	-	0.2	-	0.0	0.1	0.0	-	0.1	-	0.0	0.6	1.0	-	0.7	-	0.0	0.0	1.3	-	0.2	0.2
Bicycles on Road	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	10	0	-	10	10
% Bicycles on Road	-	0.0	0.0	0.0	-	0.0	-	0.0	0.0	0.0	-	0.0	-	0.0	0.0	0.0	-	0.0	-	0.0	2.3	0.0	-	1.7	0.4
Pedestrians	-	-	-	-	158	-	-	-	-	-	59	-	-	-	-	-	102	-	-	-	-	-	51	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-



Kenig Lindgren O'Hara Aboona, Inc.
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Rosemont, Illinois, United States 60018
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Count Name: North Avenue with Halsted Street
Site Code:
Start Date: 02/24/2016
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Turning Movement Peak Hour Data (5:00 PM)

Start Time	North Avenue Eastbound						North Avenue Westbound						Halsted Street Northbound						Halsted Street Southbound						Int. Total
	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	
5:00 PM	0	19	186	6	35	211	0	12	200	14	15	226	0	4	96	32	31	132	0	7	69	22	6	98	667
5:15 PM	0	23	181	7	78	211	0	23	176	18	16	217	0	6	97	27	35	130	0	20	67	24	13	111	669
5:30 PM	0	34	163	4	60	201	0	27	168	19	19	214	0	7	114	36	45	157	0	22	89	32	20	143	715
5:45 PM	0	25	172	2	48	199	0	23	179	17	11	219	0	8	97	20	24	125	0	21	58	28	13	107	650
Total	0	101	702	19	221	822	0	85	723	68	61	876	0	25	404	115	135	544	0	70	283	106	52	459	2701
Approach %	0.0	12.3	85.4	2.3	-	-	0.0	9.7	82.5	7.8	-	-	0.0	4.6	74.3	21.1	-	-	0.0	15.3	61.7	23.1	-	-	-
Total %	0.0	3.7	26.0	0.7	-	30.4	0.0	3.1	26.8	2.5	-	32.4	0.0	0.9	15.0	4.3	-	20.1	0.0	2.6	10.5	3.9	-	17.0	-
PHF	0.000	0.743	0.944	0.679	-	0.974	0.000	0.787	0.904	0.895	-	0.969	0.000	0.781	0.886	0.799	-	0.866	0.000	0.795	0.795	0.828	-	0.802	0.944
Lights	0	100	696	19	-	815	0	83	712	68	-	863	0	25	380	112	-	517	0	69	273	106	-	448	2643
% Lights	-	99.0	99.1	100.0	-	99.1	-	97.6	98.5	100.0	-	98.5	-	100.0	94.1	97.4	-	95.0	-	98.6	96.5	100.0	-	97.6	97.9
Buses	0	0	6	0	-	6	0	0	8	0	-	8	0	0	11	0	-	11	0	0	7	0	-	7	32
% Buses	-	0.0	0.9	0.0	-	0.7	-	0.0	1.1	0.0	-	0.9	-	0.0	2.7	0.0	-	2.0	-	0.0	2.5	0.0	-	1.5	1.2
Single-Unit Trucks	0	1	0	0	-	1	0	2	3	0	-	5	0	0	1	1	-	2	0	1	3	0	-	4	12
% Single-Unit Trucks	-	1.0	0.0	0.0	-	0.1	-	2.4	0.4	0.0	-	0.6	-	0.0	0.2	0.9	-	0.4	-	1.4	1.1	0.0	-	0.9	0.4
Articulated Trucks	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Articulated Trucks	-	0.0	0.0	0.0	-	0.0	-	0.0	0.0	0.0	-	0.0	-	0.0	0.0	0.0	-	0.0	-	0.0	0.0	0.0	-	0.0	0.0
Bicycles on Road	0	0	0	0	-	0	0	0	0	0	-	0	0	0	12	2	-	14	0	0	0	0	-	0	14
% Bicycles on Road	-	0.0	0.0	0.0	-	0.0	-	0.0	0.0	0.0	-	0.0	-	0.0	3.0	1.7	-	2.6	-	0.0	0.0	0.0	-	0.0	0.5
Pedestrians	-	-	-	-	221	-	-	-	-	-	61	-	-	-	-	-	135	-	-	-	-	-	52	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-



Kenig Lindgren O'Hara Aboona, Inc.
9575 W. Higgins Rd., Suite 400

Rosemont, Illinois, United States 60018
(847)518-9990

Count Name: North Avenue with I-90 NB Ramps
Site Code:
Start Date: 02/24/2016
Page No: 1

Turning Movement Data

Start Time	North Avenue Eastbound						North Avenue Westbound						I-90 Exit Ramp Northbound						I-90 Entrance Ramp Southbound						Int. Total
	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	
7:00 AM	0	46	231	0	0	277	0	0	152	106	0	258	0	50	0	97	0	147	0	0	0	0	1	0	682
7:15 AM	0	30	248	0	0	278	0	0	161	95	0	256	0	52	1	100	1	153	0	0	0	0	4	0	687
7:30 AM	0	43	262	0	0	305	0	0	164	80	0	244	0	58	1	101	1	160	0	0	0	0	1	0	709
7:45 AM	0	41	261	0	0	302	0	0	152	111	0	263	0	51	1	97	2	149	0	0	0	0	4	0	714
Hourly Total	0	160	1002	0	0	1162	0	0	629	392	0	1021	0	211	3	395	4	609	0	0	0	0	10	0	2792
8:00 AM	0	36	251	0	0	287	0	0	152	78	0	230	0	84	0	102	1	186	0	0	0	0	1	0	703
8:15 AM	1	26	225	0	0	252	0	0	158	105	0	263	1	61	1	108	1	171	0	0	0	0	1	0	686
8:30 AM	0	37	270	0	0	307	0	0	159	92	0	251	0	73	1	96	5	170	0	0	0	0	0	0	728
8:45 AM	0	29	267	0	0	296	0	0	132	99	0	231	0	72	0	86	0	158	0	0	0	0	3	0	685
Hourly Total	1	128	1013	0	0	1142	0	0	601	374	0	975	1	290	2	392	7	685	0	0	0	0	5	0	2802
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4:00 PM	0	85	182	0	0	267	0	0	177	115	0	292	0	60	1	85	0	146	0	0	0	0	5	0	705
4:15 PM	0	38	207	0	0	245	0	0	162	153	0	315	0	70	0	89	1	159	0	0	0	0	1	0	719
4:30 PM	0	41	206	0	0	247	0	0	163	136	0	299	0	73	0	85	1	158	0	0	0	0	4	0	704
4:45 PM	0	40	203	0	0	243	0	0	169	106	0	275	0	68	1	88	3	157	0	0	0	0	2	0	675
Hourly Total	0	204	798	0	0	1002	0	0	671	510	0	1181	0	271	2	347	5	620	0	0	0	0	12	0	2803
5:00 PM	0	49	191	0	0	240	0	0	172	123	0	295	0	79	0	97	1	176	0	0	0	0	5	0	711
5:15 PM	0	55	182	0	0	237	0	0	174	138	0	312	0	91	2	99	1	192	0	0	0	0	9	0	741
5:30 PM	0	41	178	0	0	219	0	0	168	90	0	258	0	84	0	90	2	174	0	0	0	0	9	0	651
5:45 PM	0	39	203	0	0	242	0	0	163	116	0	279	0	92	0	95	2	187	0	0	0	0	3	0	708
Hourly Total	0	184	754	0	0	938	0	0	677	467	0	1144	0	346	2	381	6	729	0	0	0	0	26	0	2811
Grand Total	1	676	3567	0	0	4244	0	0	2578	1743	0	4321	1	1118	9	1515	22	2643	0	0	0	0	53	0	11208
Approach %	0.0	15.9	84.0	0.0	-	-	0.0	0.0	59.7	40.3	-	-	0.0	42.3	0.3	57.3	-	-	NaN	NaN	NaN	NaN	-	-	-
Total %	0.0	6.0	31.8	0.0	-	37.9	0.0	0.0	23.0	15.6	-	38.6	0.0	10.0	0.1	13.5	-	23.6	0.0	0.0	0.0	0.0	-	0.0	-
Lights	0	667	3448	0	-	4115	0	0	2455	1718	-	4173	0	1087	8	1479	-	2574	0	0	0	0	-	0	10862
% Lights	0.0	98.7	96.7	-	-	97.0	-	-	95.2	98.6	-	96.6	0.0	97.2	88.9	97.6	-	97.4	-	-	-	-	-	-	96.9
Buses	0	1	45	0	-	46	0	0	51	7	-	58	0	2	0	2	-	4	0	0	0	0	-	0	108
% Buses	0.0	0.1	1.3	-	-	1.1	-	-	2.0	0.4	-	1.3	0.0	0.2	0.0	0.1	-	0.2	-	-	-	-	-	-	1.0
Single-Unit Trucks	0	6	60	0	-	66	0	0	55	13	-	68	0	19	1	22	-	42	0	0	0	0	-	0	176
% Single-Unit Trucks	0.0	0.9	1.7	-	-	1.6	-	-	2.1	0.7	-	1.6	0.0	1.7	11.1	1.5	-	1.6	-	-	-	-	-	-	1.6
Articulated Trucks	1	2	9	0	-	12	0	0	15	5	-	20	1	10	0	12	-	23	0	0	0	0	-	0	55
% Articulated Trucks	100.0	0.3	0.3	-	-	0.3	-	-	0.6	0.3	-	0.5	100.0	0.9	0.0	0.8	-	0.9	-	-	-	-	-	-	0.5
Bicycles on Road	0	0	5	0	-	5	0	0	2	0	-	2	0	0	0	0	-	0	0	0	0	0	-	0	7
% Bicycles on Road	0.0	0.0	0.1	-	-	0.1	-	-	0.1	0.0	-	0.0	0.0	0.0	0.0	0.0	-	0.0	-	-	-	-	-	-	0.1
Pedestrians	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	22	-	-	-	-	-	53	-	-



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Count Name: North Avenue with I-90 NB Ramps
Site Code:
Start Date: 02/24/2016
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Turning Movement Peak Hour Data (7:30 AM)

Start Time	North Avenue Eastbound						North Avenue Westbound						I-90 Exit Ramp Northbound						I-90 Entrance Ramp Southbound						Int. Total
	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	
7:30 AM	0	43	262	0	0	305	0	0	164	80	0	244	0	58	1	101	1	160	0	0	0	0	1	0	709
7:45 AM	0	41	261	0	0	302	0	0	152	111	0	263	0	51	1	97	2	149	0	0	0	0	4	0	714
8:00 AM	0	36	251	0	0	287	0	0	152	78	0	230	0	84	0	102	1	186	0	0	0	0	1	0	703
8:15 AM	1	26	225	0	0	252	0	0	158	105	0	263	1	61	1	108	1	171	0	0	0	0	1	0	686
Total	1	146	999	0	0	1146	0	0	626	374	0	1000	1	254	3	408	5	666	0	0	0	0	7	0	2812
Approach %	0.1	12.7	87.2	0.0	-	-	0.0	0.0	62.6	37.4	-	-	0.2	38.1	0.5	61.3	-	-	NaN	NaN	NaN	NaN	-	-	-
Total %	0.0	5.2	35.5	0.0	-	40.8	0.0	0.0	22.3	13.3	-	35.6	0.0	9.0	0.1	14.5	-	23.7	0.0	0.0	0.0	0.0	-	0.0	-
PHF	0.250	0.849	0.953	0.000	-	0.939	0.000	0.000	0.954	0.842	-	0.951	0.250	0.756	0.750	0.944	-	0.895	0.000	0.000	0.000	0.000	-	0.000	0.985
Lights	0	141	956	0	-	1097	0	0	583	363	-	946	0	239	3	396	-	638	0	0	0	0	-	0	2681
% Lights	0.0	96.6	95.7	-	-	95.7	-	-	93.1	97.1	-	94.6	0.0	94.1	100.0	97.1	-	95.8	-	-	-	-	-	-	95.3
Buses	0	1	14	0	-	15	0	0	13	3	-	16	0	2	0	0	-	2	0	0	0	0	-	0	33
% Buses	0.0	0.7	1.4	-	-	1.3	-	-	2.1	0.8	-	1.6	0.0	0.8	0.0	0.0	-	0.3	-	-	-	-	-	-	1.2
Single-Unit Trucks	0	3	25	0	-	28	0	0	23	7	-	30	0	8	0	8	-	16	0	0	0	0	-	0	74
% Single-Unit Trucks	0.0	2.1	2.5	-	-	2.4	-	-	3.7	1.9	-	3.0	0.0	3.1	0.0	2.0	-	2.4	-	-	-	-	-	-	2.6
Articulated Trucks	1	1	2	0	-	4	0	0	6	1	-	7	1	5	0	4	-	10	0	0	0	0	-	0	21
% Articulated Trucks	100.0	0.7	0.2	-	-	0.3	-	-	1.0	0.3	-	0.7	100.0	2.0	0.0	1.0	-	1.5	-	-	-	-	-	-	0.7
Bicycles on Road	0	0	2	0	-	2	0	0	1	0	-	1	0	0	0	0	-	0	0	0	0	0	-	0	3
% Bicycles on Road	0.0	0.0	0.2	-	-	0.2	-	-	0.2	0.0	-	0.1	0.0	0.0	0.0	0.0	-	0.0	-	-	-	-	-	-	0.1
Pedestrians	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	5	-	-	-	-	-	7	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-



Kenig Lindgren O'Hara Aboona, Inc.
9575 W. Higgins Rd., Suite 400

Rosemont, Illinois, United States 60018
(847)518-9990

Count Name: North Avenue with I-90 NB Ramps
Site Code:
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Turning Movement Peak Hour Data (5:00 PM)

Start Time	North Avenue Eastbound						North Avenue Westbound						I-90 Exit Ramp Northbound						I-90 Entrance Ramp Southbound						Int. Total
	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	
5:00 PM	0	49	191	0	0	240	0	0	172	123	0	295	0	79	0	97	1	176	0	0	0	0	5	0	711
5:15 PM	0	55	182	0	0	237	0	0	174	138	0	312	0	91	2	99	1	192	0	0	0	0	9	0	741
5:30 PM	0	41	178	0	0	219	0	0	168	90	0	258	0	84	0	90	2	174	0	0	0	0	9	0	651
5:45 PM	0	39	203	0	0	242	0	0	163	116	0	279	0	92	0	95	2	187	0	0	0	0	3	0	708
Total	0	184	754	0	0	938	0	0	677	467	0	1144	0	346	2	381	6	729	0	0	0	0	26	0	2811
Approach %	0.0	19.6	80.4	0.0	-	-	0.0	0.0	59.2	40.8	-	-	0.0	47.5	0.3	52.3	-	-	NaN	NaN	NaN	NaN	-	-	-
Total %	0.0	6.5	26.8	0.0	-	33.4	0.0	0.0	24.1	16.6	-	40.7	0.0	12.3	0.1	13.6	-	25.9	0.0	0.0	0.0	0.0	-	0.0	-
PHF	0.000	0.836	0.929	0.000	-	0.969	0.000	0.000	0.973	0.846	-	0.917	0.000	0.940	0.250	0.962	-	0.949	0.000	0.000	0.000	0.000	-	0.000	0.948
Lights	0	184	743	0	-	927	0	0	667	466	-	1133	0	345	2	380	-	727	0	0	0	0	-	0	2787
% Lights	-	100.0	98.5	-	-	98.8	-	-	98.5	99.8	-	99.0	-	99.7	100.0	99.7	-	99.7	-	-	-	-	-	-	99.1
Buses	0	0	8	0	-	8	0	0	6	1	-	7	0	0	0	0	-	0	0	0	0	0	-	0	15
% Buses	-	0.0	1.1	-	-	0.9	-	-	0.9	0.2	-	0.6	-	0.0	0.0	0.0	-	0.0	-	-	-	-	-	-	0.5
Single-Unit Trucks	0	0	3	0	-	3	0	0	3	0	-	3	0	0	0	1	-	1	0	0	0	0	-	0	7
% Single-Unit Trucks	-	0.0	0.4	-	-	0.3	-	-	0.4	0.0	-	0.3	-	0.0	0.0	0.3	-	0.1	-	-	-	-	-	-	0.2
Articulated Trucks	0	0	0	0	-	0	0	0	1	0	-	1	0	1	0	0	-	1	0	0	0	0	-	0	2
% Articulated Trucks	-	0.0	0.0	-	-	0.0	-	-	0.1	0.0	-	0.1	-	0.3	0.0	0.0	-	0.1	-	-	-	-	-	-	0.1
Bicycles on Road	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Bicycles on Road	-	0.0	0.0	-	-	0.0	-	-	0.0	0.0	-	0.0	-	0.0	0.0	0.0	-	0.0	-	-	-	-	-	-	0.0
Pedestrians	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	6	-	-	-	-	-	26	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-



Kenig Lindgren O'Hara Aboona, Inc.
9575 W. Higgins Rd., Suite 400

Rosemont, Illinois, United States 60018
(847)518-9990

Count Name: North Avenue with I-90 SB Ramps
Site Code:
Start Date: 02/24/2016
Page No: 1

Turning Movement Data

Start Time	North Avenue Eastbound						North Avenue Westbound						I-90 Entrance Ramp Northbound						I-90 Exit Ramp Southbound						Int. Total	
	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total		
7:00 AM	0	0	115	94	0	209	0	76	123	0	0	199	0	0	0	0	0	0	0	162	6	27	1	195	603	
7:15 AM	0	0	134	116	0	250	0	71	141	0	0	212	0	0	0	0	0	0	0	145	18	27	4	190	652	
7:30 AM	0	0	148	128	0	276	0	86	136	0	0	222	0	0	0	0	1	0	0	147	35	26	1	208	706	
7:45 AM	0	0	173	118	1	291	0	87	117	0	0	204	0	0	0	0	0	0	0	125	28	24	5	177	672	
Hourly Total	0	0	570	456	1	1026	0	320	517	0	0	837	0	0	0	0	1	0	0	579	87	104	11	770	2633	
8:00 AM	0	0	155	109	0	264	0	83	156	0	0	239	0	0	0	0	0	0	0	136	10	25	1	171	674	
8:15 AM	0	0	151	100	0	251	0	80	145	0	0	225	0	0	0	0	1	0	0	105	30	15	5	150	626	
8:30 AM	0	0	161	99	0	260	0	83	154	0	0	237	0	0	0	0	0	0	0	147	14	22	0	183	680	
8:45 AM	0	0	164	100	0	264	0	71	141	0	0	212	0	0	0	0	0	0	0	156	9	30	5	195	671	
Hourly Total	0	0	631	408	0	1039	0	317	596	0	0	913	0	0	0	0	1	0	0	544	63	92	11	699	2651	
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
4:00 PM	1	0	147	45	1	193	0	68	167	0	0	235	0	0	0	0	0	0	0	91	10	28	5	129	557	
4:15 PM	0	0	135	47	0	182	0	63	171	0	0	234	0	0	0	0	0	0	0	105	16	25	0	146	562	
4:30 PM	0	0	129	50	1	179	0	60	183	0	1	243	0	0	0	0	2	0	0	109	8	23	1	140	562	
4:45 PM	0	0	125	63	0	188	0	60	178	0	1	238	0	0	0	0	1	0	0	106	14	32	2	152	578	
Hourly Total	1	0	536	205	2	742	0	251	699	0	2	950	0	0	0	0	3	0	0	411	48	108	8	567	2259	
5:00 PM	0	0	145	59	0	204	0	73	177	0	0	250	0	0	0	0	0	0	0	95	11	27	6	133	587	
5:15 PM	0	0	138	76	0	214	0	63	202	0	0	265	0	0	0	0	0	0	0	99	7	34	10	140	619	
5:30 PM	0	0	127	71	0	198	0	63	193	0	0	256	0	0	0	1	1	1	0	89	9	20	6	118	573	
5:45 PM	0	0	130	61	0	191	0	61	195	0	0	256	0	0	0	0	2	0	0	112	13	24	6	149	596	
Hourly Total	0	0	540	267	0	807	0	260	767	0	0	1027	0	0	0	1	3	1	0	395	40	105	28	540	2375	
Grand Total	1	0	2277	1336	3	3614	0	1148	2579	0	2	3727	0	0	0	1	8	1	0	1929	238	409	58	2576	9918	
Approach %	0.0	0.0	63.0	37.0	-	-	0.0	30.8	69.2	0.0	-	-	0.0	0.0	0.0	100.0	-	-	0.0	74.9	9.2	15.9	-	-	-	
Total %	0.0	0.0	23.0	13.5	-	36.4	0.0	11.6	26.0	0.0	-	37.6	0.0	0.0	0.0	0.0	-	0.0	0.0	19.4	2.4	4.1	-	26.0	-	
Lights	1	0	2186	1315	-	3502	0	1110	2459	0	-	3569	0	0	0	1	-	1	0	1886	237	403	-	2526	9598	
% Lights	100.0	-	96.0	98.4	-	96.9	-	96.7	95.3	-	-	95.8	-	-	-	100.0	-	100.0	-	97.8	99.6	98.5	-	98.1	96.8	
Buses	0	0	45	2	-	47	0	4	48	0	-	52	0	0	0	0	0	-	0	0	4	0	1	-	5	104
% Buses	0.0	-	2.0	0.1	-	1.3	-	0.3	1.9	-	-	1.4	-	-	-	0.0	-	0.0	-	0.2	0.0	0.2	-	0.2	1.0	
Single-Unit Trucks	0	0	39	14	-	53	0	20	53	0	-	73	0	0	0	0	-	0	0	30	1	3	-	34	160	
% Single-Unit Trucks	0.0	-	1.7	1.0	-	1.5	-	1.7	2.1	-	-	2.0	-	-	-	0.0	-	0.0	-	1.6	0.4	0.7	-	1.3	1.6	
Articulated Trucks	0	0	3	5	-	8	0	14	12	0	-	26	0	0	0	0	-	0	0	9	0	1	-	10	44	
% Articulated Trucks	0.0	-	0.1	0.4	-	0.2	-	1.2	0.5	-	-	0.7	-	-	-	0.0	-	0.0	-	0.5	0.0	0.2	-	0.4	0.4	
Bicycles on Road	0	0	4	0	-	4	0	0	7	0	-	7	0	0	0	0	-	0	0	0	0	1	-	1	12	
% Bicycles on Road	0.0	-	0.2	0.0	-	0.1	-	0.0	0.3	-	-	0.2	-	-	-	0.0	-	0.0	-	0.0	0.0	0.2	-	0.0	0.1	
Pedestrians	-	-	-	-	3	-	-	-	-	-	2	-	-	-	-	-	8	-	-	-	-	-	58	-	-	



Kenig Lindgren O'Hara Aboona, Inc.
9575 W. Higgins Rd., Suite 400

Rosemont, Illinois, United States 60018
(847)518-9990

Count Name: North Avenue with I-90 SB Ramps
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Start Date: 02/24/2016
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Turning Movement Peak Hour Data (7:30 AM)

Start Time	North Avenue Eastbound						North Avenue Westbound						I-90 Entrance Ramp Northbound						I-90 Exit Ramp Southbound						Int. Total
	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	
7:30 AM	0	0	148	128	0	276	0	86	136	0	0	222	0	0	0	0	1	0	0	147	35	26	1	208	706
7:45 AM	0	0	173	118	1	291	0	87	117	0	0	204	0	0	0	0	0	0	0	125	28	24	5	177	672
8:00 AM	0	0	155	109	0	264	0	83	156	0	0	239	0	0	0	0	0	0	0	136	10	25	1	171	674
8:15 AM	0	0	151	100	0	251	0	80	145	0	0	225	0	0	0	0	1	0	0	105	30	15	5	150	626
Total	0	0	627	455	1	1082	0	336	554	0	0	890	0	0	0	0	2	0	0	513	103	90	12	706	2678
Approach %	0.0	0.0	57.9	42.1	-	-	0.0	37.8	62.2	0.0	-	-	NaN	NaN	NaN	NaN	-	-	0.0	72.7	14.6	12.7	-	-	-
Total %	0.0	0.0	23.4	17.0	-	40.4	0.0	12.5	20.7	0.0	-	33.2	0.0	0.0	0.0	0.0	-	0.0	0.0	19.2	3.8	3.4	-	26.4	-
PHF	0.000	0.000	0.906	0.889	-	0.930	0.000	0.966	0.888	0.000	-	0.931	0.000	0.000	0.000	0.000	-	0.000	0.000	0.872	0.736	0.865	-	0.849	0.948
Lights	0	0	595	448	-	1043	0	323	510	0	-	833	0	0	0	0	-	0	0	495	102	86	-	683	2559
% Lights	-	-	94.9	98.5	-	96.4	-	96.1	92.1	-	-	93.6	-	-	-	-	-	-	-	96.5	99.0	95.6	-	96.7	95.6
Buses	0	0	14	0	-	14	0	1	15	0	-	16	0	0	0	0	-	0	0	2	0	0	-	2	32
% Buses	-	-	2.2	0.0	-	1.3	-	0.3	2.7	-	-	1.8	-	-	-	-	-	-	-	0.4	0.0	0.0	-	0.3	1.2
Single-Unit Trucks	0	0	17	5	-	22	0	5	23	0	-	28	0	0	0	0	-	0	0	13	1	3	-	17	67
% Single-Unit Trucks	-	-	2.7	1.1	-	2.0	-	1.5	4.2	-	-	3.1	-	-	-	-	-	-	-	2.5	1.0	3.3	-	2.4	2.5
Articulated Trucks	0	0	1	2	-	3	0	7	6	0	-	13	0	0	0	0	-	0	0	3	0	0	-	3	19
% Articulated Trucks	-	-	0.2	0.4	-	0.3	-	2.1	1.1	-	-	1.5	-	-	-	-	-	-	-	0.6	0.0	0.0	-	0.4	0.7
Bicycles on Road	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	1	-	1	1
% Bicycles on Road	-	-	0.0	0.0	-	0.0	-	0.0	0.0	-	-	0.0	-	-	-	-	-	-	-	0.0	0.0	1.1	-	0.1	0.0
Pedestrians	-	-	-	-	1	-	-	-	-	-	0	-	-	-	-	-	2	-	-	-	-	-	12	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	-	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-



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Count Name: North Avenue with I-90 SB Ramps
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Turning Movement Peak Hour Data (5:00 PM)

Start Time	North Avenue Eastbound						North Avenue Westbound						I-90 Entrance Ramp Northbound						I-90 Exit Ramp Southbound						Int. Total	
	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total		
5:00 PM	0	0	145	59	0	204	0	73	177	0	0	250	0	0	0	0	0	0	0	95	11	27	6	133	587	
5:15 PM	0	0	138	76	0	214	0	63	202	0	0	265	0	0	0	0	0	0	0	99	7	34	10	140	619	
5:30 PM	0	0	127	71	0	198	0	63	193	0	0	256	0	0	0	1	1	1	0	89	9	20	6	118	573	
5:45 PM	0	0	130	61	0	191	0	61	195	0	0	256	0	0	0	0	0	2	0	0	112	13	24	6	149	596
Total	0	0	540	267	0	807	0	260	767	0	0	1027	0	0	0	1	3	1	0	395	40	105	28	540	2375	
Approach %	0.0	0.0	66.9	33.1	-	-	0.0	25.3	74.7	0.0	-	-	0.0	0.0	0.0	100.0	-	-	0.0	73.1	7.4	19.4	-	-	-	
Total %	0.0	0.0	22.7	11.2	-	34.0	0.0	10.9	32.3	0.0	-	43.2	0.0	0.0	0.0	0.0	-	0.0	0.0	16.6	1.7	4.4	-	22.7	-	
PHF	0.000	0.000	0.931	0.878	-	0.943	0.000	0.890	0.949	0.000	-	0.969	0.000	0.000	0.000	0.250	-	0.250	0.000	0.882	0.769	0.772	-	0.906	0.959	
Lights	0	0	529	266	-	795	0	257	756	0	-	1013	0	0	0	1	-	1	0	394	40	105	-	539	2348	
% Lights	-	-	98.0	99.6	-	98.5	-	98.8	98.6	-	-	98.6	-	-	-	100.0	-	100.0	-	99.7	100.0	100.0	-	99.8	98.9	
Buses	0	0	7	1	-	8	0	0	6	0	-	6	0	0	0	0	-	0	0	1	0	0	-	1	15	
% Buses	-	-	1.3	0.4	-	1.0	-	0.0	0.8	-	-	0.6	-	-	-	0.0	-	0.0	-	0.3	0.0	0.0	-	0.2	0.6	
Single-Unit Trucks	0	0	2	0	-	2	0	2	2	0	-	4	0	0	0	0	-	0	0	0	0	0	-	0	6	
% Single-Unit Trucks	-	-	0.4	0.0	-	0.2	-	0.8	0.3	-	-	0.4	-	-	-	0.0	-	0.0	-	0.0	0.0	0.0	-	0.0	0.3	
Articulated Trucks	0	0	1	0	-	1	0	1	1	0	-	2	0	0	0	0	-	0	0	0	0	0	-	0	3	
% Articulated Trucks	-	-	0.2	0.0	-	0.1	-	0.4	0.1	-	-	0.2	-	-	-	0.0	-	0.0	-	0.0	0.0	0.0	-	0.0	0.1	
Bicycles on Road	0	0	1	0	-	1	0	0	2	0	-	2	0	0	0	0	-	0	0	0	0	0	-	0	3	
% Bicycles on Road	-	-	0.2	0.0	-	0.1	-	0.0	0.3	-	-	0.2	-	-	-	0.0	-	0.0	-	0.0	0.0	0.0	-	0.0	0.1	
Pedestrians	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	3	-	-	-	-	-	28	-	-	
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	



Kenig Lindgren O'Hara Aboona, Inc.
9575 W. Higgins Rd., Suite 400

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Count Name: North Avenue with Kingsbury Street
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Turning Movement Data

Start Time	North Avenue Eastbound						North Avenue Westbound						Kingsbury Street Northbound						Kingsbury Street Southbound						Int. Total
	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	
7:00 AM	0	19	207	28	3	254	0	1	205	2	1	208	0	12	1	2	8	15	0	1	1	19	3	21	498
7:15 AM	0	33	260	34	1	327	0	0	234	3	2	237	0	10	1	2	16	13	0	2	3	20	2	25	602
7:30 AM	0	25	276	39	1	340	0	1	213	2	0	216	0	14	1	0	13	15	0	3	4	49	0	56	627
7:45 AM	0	33	271	52	0	356	0	0	238	5	0	243	0	15	3	0	22	18	0	1	27	49	2	77	694
Hourly Total	0	110	1014	153	5	1277	0	2	890	12	3	904	0	51	6	4	59	61	0	7	35	137	7	179	2421
8:00 AM	0	24	248	70	0	342	0	0	207	1	2	208	0	29	5	0	7	34	0	2	50	54	2	106	690
8:15 AM	0	30	255	59	2	344	0	2	229	4	1	235	0	32	9	1	9	42	0	1	25	73	2	99	720
8:30 AM	0	28	280	55	1	363	0	2	232	2	5	236	0	32	6	1	11	39	0	4	12	34	4	50	688
8:45 AM	0	17	272	61	0	350	0	2	220	3	3	225	0	29	6	5	11	40	0	3	17	37	6	57	672
Hourly Total	0	99	1055	245	3	1399	0	6	888	10	11	904	0	122	26	7	38	155	0	10	104	198	14	312	2770
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4:00 PM	0	30	200	48	1	278	0	3	251	1	10	255	0	51	13	3	24	67	0	1	11	39	2	51	651
4:15 PM	0	33	214	50	4	297	0	2	262	5	8	269	0	50	9	2	12	61	0	1	16	26	5	43	670
4:30 PM	0	43	205	42	0	290	0	6	220	3	4	229	0	42	8	4	12	54	0	3	14	27	6	44	617
4:45 PM	0	29	197	46	0	272	1	7	222	3	3	233	0	51	13	7	8	71	0	1	15	31	1	47	623
Hourly Total	0	135	816	186	5	1137	1	18	955	12	25	986	0	194	43	16	56	253	0	6	56	123	14	185	2561
5:00 PM	0	42	218	38	0	298	0	3	227	2	7	232	0	50	15	3	23	68	0	3	4	50	6	57	655
5:15 PM	0	38	209	33	5	280	0	2	219	2	7	223	0	43	8	6	10	57	0	2	9	40	4	51	611
5:30 PM	0	44	198	32	1	274	0	6	211	1	7	218	0	36	12	6	15	54	0	3	4	37	7	44	590
5:45 PM	0	46	203	44	1	293	0	3	194	4	2	201	0	46	15	10	8	71	0	2	6	40	6	48	613
Hourly Total	0	170	828	147	7	1145	0	14	851	9	23	874	0	175	50	25	56	250	0	10	23	167	23	200	2469
Grand Total	0	514	3713	731	20	4958	1	40	3584	43	62	3668	0	542	125	52	209	719	0	33	218	625	58	876	10221
Approach %	0.0	10.4	74.9	14.7	-	-	0.0	1.1	97.7	1.2	-	-	0.0	75.4	17.4	7.2	-	-	0.0	3.8	24.9	71.3	-	-	-
Total %	0.0	5.0	36.3	7.2	-	48.5	0.0	0.4	35.1	0.4	-	35.9	0.0	5.3	1.2	0.5	-	7.0	0.0	0.3	2.1	6.1	-	8.6	-
Lights	0	503	3595	726	-	4824	1	40	3457	37	-	3535	0	536	123	50	-	709	0	30	214	617	-	861	9929
% Lights	-	97.9	96.8	99.3	-	97.3	100.0	100.0	96.5	86.0	-	96.4	-	98.9	98.4	96.2	-	98.6	-	90.9	98.2	98.7	-	98.3	97.1
Buses	0	0	45	2	-	47	0	0	62	0	-	62	0	1	0	0	-	1	0	0	0	0	-	0	110
% Buses	-	0.0	1.2	0.3	-	0.9	0.0	0.0	1.7	0.0	-	1.7	-	0.2	0.0	0.0	-	0.1	-	0.0	0.0	0.0	-	0.0	1.1
Single-Unit Trucks	0	10	66	2	-	78	0	0	49	5	-	54	0	3	2	2	-	7	0	2	3	7	-	12	151
% Single-Unit Trucks	-	1.9	1.8	0.3	-	1.6	0.0	0.0	1.4	11.6	-	1.5	-	0.6	1.6	3.8	-	1.0	-	6.1	1.4	1.1	-	1.4	1.5
Articulated Trucks	0	0	6	0	-	6	0	0	10	1	-	11	0	1	0	0	-	1	0	1	0	1	-	2	20
% Articulated Trucks	-	0.0	0.2	0.0	-	0.1	0.0	0.0	0.3	2.3	-	0.3	-	0.2	0.0	0.0	-	0.1	-	3.0	0.0	0.2	-	0.2	0.2
Bicycles on Road	0	1	1	1	-	3	0	0	6	0	-	6	0	1	0	0	-	1	0	0	1	0	-	1	11
% Bicycles on Road	-	0.2	0.0	0.1	-	0.1	0.0	0.0	0.2	0.0	-	0.2	-	0.2	0.0	0.0	-	0.1	-	0.0	0.5	0.0	-	0.1	0.1
Pedestrians	-	-	-	-	20	-	-	-	-	-	62	-	-	-	-	-	209	-	-	-	-	-	58	-	-



Kenig Lindgren O'Hara Aboona, Inc.
9575 W. Higgins Rd., Suite 400

Rosemont, Illinois, United States 60018
(847)518-9990

Count Name: North Avenue with Kingsbury Street
Site Code:
Start Date: 02/24/2016
Page No: 4

Turning Movement Peak Hour Data (7:30 AM)

Start Time	North Avenue Eastbound						North Avenue Westbound						Kingsbury Street Northbound						Kingsbury Street Southbound						Int. Total
	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	
7:30 AM	0	25	276	39	1	340	0	1	213	2	0	216	0	14	1	0	13	15	0	3	4	49	0	56	627
7:45 AM	0	33	271	52	0	356	0	0	238	5	0	243	0	15	3	0	22	18	0	1	27	49	2	77	694
8:00 AM	0	24	248	70	0	342	0	0	207	1	2	208	0	29	5	0	7	34	0	2	50	54	2	106	690
8:15 AM	0	30	255	59	2	344	0	2	229	4	1	235	0	32	9	1	9	42	0	1	25	73	2	99	720
Total	0	112	1050	220	3	1382	0	3	887	12	3	902	0	90	18	1	51	109	0	7	106	225	6	338	2731
Approach %	0.0	8.1	76.0	15.9	-	-	0.0	0.3	98.3	1.3	-	-	0.0	82.6	16.5	0.9	-	-	0.0	2.1	31.4	66.6	-	-	-
Total %	0.0	4.1	38.4	8.1	-	50.6	0.0	0.1	32.5	0.4	-	33.0	0.0	3.3	0.7	0.0	-	4.0	0.0	0.3	3.9	8.2	-	12.4	-
PHF	0.000	0.848	0.951	0.786	-	0.971	0.000	0.375	0.932	0.600	-	0.928	0.000	0.703	0.500	0.250	-	0.649	0.000	0.583	0.530	0.771	-	0.797	0.948
Lights	0	107	997	219	-	1323	0	3	847	9	-	859	0	88	17	1	-	106	0	6	103	224	-	333	2621
% Lights	-	95.5	95.0	99.5	-	95.7	-	100.0	95.5	75.0	-	95.2	-	97.8	94.4	100.0	-	97.2	-	85.7	97.2	99.6	-	98.5	96.0
Buses	0	0	16	1	-	17	0	0	17	0	-	17	0	0	0	0	-	0	0	0	0	0	-	0	34
% Buses	-	0.0	1.5	0.5	-	1.2	-	0.0	1.9	0.0	-	1.9	-	0.0	0.0	0.0	-	0.0	-	0.0	0.0	0.0	-	0.0	1.2
Single-Unit Trucks	0	4	35	0	-	39	0	0	19	3	-	22	0	1	1	0	-	2	0	0	3	1	-	4	67
% Single-Unit Trucks	-	3.6	3.3	0.0	-	2.8	-	0.0	2.1	25.0	-	2.4	-	1.1	5.6	0.0	-	1.8	-	0.0	2.8	0.4	-	1.2	2.5
Articulated Trucks	0	0	2	0	-	2	0	0	3	0	-	3	0	1	0	0	-	1	0	1	0	0	-	1	7
% Articulated Trucks	-	0.0	0.2	0.0	-	0.1	-	0.0	0.3	0.0	-	0.3	-	1.1	0.0	0.0	-	0.9	-	14.3	0.0	0.0	-	0.3	0.3
Bicycles on Road	0	1	0	0	-	1	0	0	1	0	-	1	0	0	0	0	-	0	0	0	0	0	-	0	2
% Bicycles on Road	-	0.9	0.0	0.0	-	0.1	-	0.0	0.1	0.0	-	0.1	-	0.0	0.0	0.0	-	0.0	-	0.0	0.0	0.0	-	0.0	0.1
Pedestrians	-	-	-	-	3	-	-	-	-	-	3	-	-	-	-	-	51	-	-	-	-	-	6	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-



Kenig Lindgren O'Hara Aboona, Inc.
9575 W. Higgins Rd., Suite 400

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Count Name: North Avenue with Kingsbury Street
Site Code:
Start Date: 02/24/2016
Page No: 6

Turning Movement Peak Hour Data (5:00 PM)

Start Time	North Avenue Eastbound						North Avenue Westbound						Kingsbury Street Northbound						Kingsbury Street Southbound						Int. Total
	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	
5:00 PM	0	42	218	38	0	298	0	3	227	2	7	232	0	50	15	3	23	68	0	3	4	50	6	57	655
5:15 PM	0	38	209	33	5	280	0	2	219	2	7	223	0	43	8	6	10	57	0	2	9	40	4	51	611
5:30 PM	0	44	198	32	1	274	0	6	211	1	7	218	0	36	12	6	15	54	0	3	4	37	7	44	590
5:45 PM	0	46	203	44	1	293	0	3	194	4	2	201	0	46	15	10	8	71	0	2	6	40	6	48	613
Total	0	170	828	147	7	1145	0	14	851	9	23	874	0	175	50	25	56	250	0	10	23	167	23	200	2469
Approach %	0.0	14.8	72.3	12.8	-	-	0.0	1.6	97.4	1.0	-	-	0.0	70.0	20.0	10.0	-	-	0.0	5.0	11.5	83.5	-	-	-
Total %	0.0	6.9	33.5	6.0	-	46.4	0.0	0.6	34.5	0.4	-	35.4	0.0	7.1	2.0	1.0	-	10.1	0.0	0.4	0.9	6.8	-	8.1	-
PHF	0.000	0.924	0.950	0.835	-	0.961	0.000	0.583	0.937	0.563	-	0.942	0.000	0.875	0.833	0.625	-	0.880	0.000	0.833	0.639	0.835	-	0.877	0.942
Lights	0	170	820	147	-	1137	0	14	830	8	-	852	0	174	50	24	-	248	0	10	23	166	-	199	2436
% Lights	-	100.0	99.0	100.0	-	99.3	-	100.0	97.5	88.9	-	97.5	-	99.4	100.0	96.0	-	99.2	-	100.0	100.0	99.4	-	99.5	98.7
Buses	0	0	6	0	-	6	0	0	9	0	-	9	0	1	0	0	-	1	0	0	0	0	-	0	16
% Buses	-	0.0	0.7	0.0	-	0.5	-	0.0	1.1	0.0	-	1.0	-	0.6	0.0	0.0	-	0.4	-	0.0	0.0	0.0	-	0.0	0.6
Single-Unit Trucks	0	0	2	0	-	2	0	0	6	1	-	7	0	0	0	1	-	1	0	0	0	1	-	1	11
% Single-Unit Trucks	-	0.0	0.2	0.0	-	0.2	-	0.0	0.7	11.1	-	0.8	-	0.0	0.0	4.0	-	0.4	-	0.0	0.0	0.6	-	0.5	0.4
Articulated Trucks	0	0	0	0	-	0	0	0	1	0	-	1	0	0	0	0	-	0	0	0	0	0	-	0	1
% Articulated Trucks	-	0.0	0.0	0.0	-	0.0	-	0.0	0.1	0.0	-	0.1	-	0.0	0.0	0.0	-	0.0	-	0.0	0.0	0.0	-	0.0	0.0
Bicycles on Road	0	0	0	0	-	0	0	0	5	0	-	5	0	0	0	0	-	0	0	0	0	0	-	0	5
% Bicycles on Road	-	0.0	0.0	0.0	-	0.0	-	0.0	0.6	0.0	-	0.6	-	0.0	0.0	0.0	-	0.0	-	0.0	0.0	0.0	-	0.0	0.2
Pedestrians	-	-	-	-	7	-	-	-	-	-	23	-	-	-	-	-	56	-	-	-	-	-	23	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-



Kenig Lindgren O'Hara Aboona, Inc.
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Rosemont, Illinois, United States 60018
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Count Name: North/Throop
Site Code:
Start Date: 04/05/2016
Page No: 1

Turning Movement Data

Start Time	North Avenue Eastbound						North Avenue Westbound						Throop Street Northbound						Throop Street Southbound						Int. Total
	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	
7:00 AM	0	2	234	10	0	246	0	24	240	7	4	271	0	19	4	15	2	38	0	0	0	0	6	0	555
7:15 AM	0	0	232	5	1	237	0	40	245	6	0	291	0	13	5	14	4	32	0	0	0	0	5	0	560
7:30 AM	0	2	269	14	1	285	0	24	251	10	0	285	0	27	5	12	1	44	0	0	0	0	1	0	614
7:45 AM	0	2	223	12	1	237	0	35	270	5	1	310	0	38	6	17	4	61	0	0	0	0	5	0	608
Hourly Total	0	6	958	41	3	1005	0	123	1006	28	5	1157	0	97	20	58	11	175	0	0	0	0	17	0	2337
8:00 AM	0	5	242	11	1	258	0	36	300	8	0	344	0	46	7	17	5	70	0	0	0	0	5	0	672
8:15 AM	0	5	247	23	0	275	0	27	249	6	0	282	0	40	3	18	3	61	0	0	0	0	3	0	618
8:30 AM	0	3	231	14	2	248	0	41	259	3	0	303	0	38	3	15	5	56	0	0	0	0	5	0	607
8:45 AM	0	6	196	16	2	218	0	31	299	1	0	331	0	44	12	23	1	79	0	0	0	0	5	0	628
Hourly Total	0	19	916	64	5	999	0	135	1107	18	0	1260	0	168	25	73	14	266	0	0	0	0	18	0	2525
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4:00 PM	0	1	238	26	3	265	0	28	250	2	0	280	0	26	9	23	3	58	0	0	0	0	3	0	603
4:15 PM	0	1	260	26	0	287	0	22	250	5	0	277	0	21	1	20	2	42	0	0	0	0	3	0	606
4:30 PM	0	1	244	34	2	279	1	17	275	1	0	294	0	13	10	23	2	46	0	0	0	0	5	0	619
4:45 PM	0	4	253	27	1	284	0	22	271	5	0	298	0	15	5	24	6	44	0	0	0	0	6	0	626
Hourly Total	0	7	995	113	6	1115	1	89	1046	13	0	1149	0	75	25	90	13	190	0	0	0	0	17	0	2454
5:00 PM	0	1	215	17	1	233	0	21	275	4	3	300	0	20	9	26	2	55	0	0	0	0	13	0	588
5:15 PM	0	2	236	15	3	253	0	28	286	3	0	317	0	18	6	20	7	44	0	0	0	0	7	0	614
5:30 PM	0	5	239	26	2	270	0	18	302	2	1	322	0	13	6	24	7	43	0	0	0	1	9	1	636
5:45 PM	0	3	288	30	1	321	0	18	296	4	1	318	0	18	4	20	12	42	0	0	0	0	5	0	681
Hourly Total	0	11	978	88	7	1077	0	85	1159	13	5	1257	0	69	25	90	28	184	0	0	0	1	34	1	2519
Grand Total	0	43	3847	306	21	4196	1	432	4318	72	10	4823	0	409	95	311	66	815	0	0	0	1	86	1	9835
Approach %	0.0	1.0	91.7	7.3	-	-	0.0	9.0	89.5	1.5	-	-	0.0	50.2	11.7	38.2	-	-	0.0	0.0	0.0	100.0	-	-	-
Total %	0.0	0.4	39.1	3.1	-	42.7	0.0	4.4	43.9	0.7	-	49.0	0.0	4.2	1.0	3.2	-	8.3	0.0	0.0	0.0	0.0	-	0.0	-
Lights	0	42	3707	297	-	4046	1	417	4135	69	-	4622	0	396	86	291	-	773	0	0	0	0	-	0	9441
% Lights	-	97.7	96.4	97.1	-	96.4	100.0	96.5	95.8	95.8	-	95.8	-	96.8	90.5	93.6	-	94.8	-	-	-	0.0	-	0.0	96.0
Buses	0	0	46	0	-	46	0	0	46	0	-	46	0	1	0	0	-	1	0	0	0	0	-	0	93
% Buses	-	0.0	1.2	0.0	-	1.1	0.0	0.0	1.1	0.0	-	1.0	-	0.2	0.0	0.0	-	0.1	-	-	-	0.0	-	0.0	0.9
Single-Unit Trucks	0	1	56	5	-	62	0	12	90	3	-	105	0	9	5	12	-	26	0	0	0	0	-	0	193
% Single-Unit Trucks	-	2.3	1.5	1.6	-	1.5	0.0	2.8	2.1	4.2	-	2.2	-	2.2	5.3	3.9	-	3.2	-	-	-	0.0	-	0.0	2.0
Articulated Trucks	0	0	27	0	-	27	0	3	24	0	-	27	0	1	0	6	-	7	0	0	0	0	-	0	61
% Articulated Trucks	-	0.0	0.7	0.0	-	0.6	0.0	0.7	0.6	0.0	-	0.6	-	0.2	0.0	1.9	-	0.9	-	-	-	0.0	-	0.0	0.6
Bicycles on Road	0	0	11	4	-	15	0	0	23	0	-	23	0	2	4	2	-	8	0	0	0	1	-	1	47
% Bicycles on Road	-	0.0	0.3	1.3	-	0.4	0.0	0.0	0.5	0.0	-	0.5	-	0.5	4.2	0.6	-	1.0	-	-	-	100.0	-	100.0	0.5
Pedestrians	-	-	-	-	21	-	-	-	-	-	10	-	-	-	-	-	66	-	-	-	-	-	86	-	-



Kenig Lindgren O'Hara Aboona, Inc.
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Count Name: North/Throop
Site Code:
Start Date: 04/05/2016
Page No: 4

Turning Movement Peak Hour Data (7:30 AM)

Start Time	North Avenue Eastbound						North Avenue Westbound						Throop Street Northbound						Throop Street Southbound						Int. Total
	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	
7:30 AM	0	2	269	14	1	285	0	24	251	10	0	285	0	27	5	12	1	44	0	0	0	0	1	0	614
7:45 AM	0	2	223	12	1	237	0	35	270	5	1	310	0	38	6	17	4	61	0	0	0	0	5	0	608
8:00 AM	0	5	242	11	1	258	0	36	300	8	0	344	0	46	7	17	5	70	0	0	0	0	5	0	672
8:15 AM	0	5	247	23	0	275	0	27	249	6	0	282	0	40	3	18	3	61	0	0	0	0	3	0	618
Total	0	14	981	60	3	1055	0	122	1070	29	1	1221	0	151	21	64	13	236	0	0	0	0	14	0	2512
Approach %	0.0	1.3	93.0	5.7	-	-	0.0	10.0	87.6	2.4	-	-	0.0	64.0	8.9	27.1	-	-	NaN	NaN	NaN	NaN	-	-	-
Total %	0.0	0.6	39.1	2.4	-	42.0	0.0	4.9	42.6	1.2	-	48.6	0.0	6.0	0.8	2.5	-	9.4	0.0	0.0	0.0	0.0	-	0.0	-
PHF	0.000	0.700	0.912	0.652	-	0.925	0.000	0.847	0.892	0.725	-	0.887	0.000	0.821	0.750	0.889	-	0.843	0.000	0.000	0.000	0.000	-	0.000	0.935
Lights	0	14	940	56	-	1010	0	114	1002	29	-	1145	0	146	16	57	-	219	0	0	0	0	-	0	2374
% Lights	-	100.0	95.8	93.3	-	95.7	-	93.4	93.6	100.0	-	93.8	-	96.7	76.2	89.1	-	92.8	-	-	-	-	-	-	94.5
Buses	0	0	14	0	-	14	0	0	14	0	-	14	0	1	0	0	-	1	0	0	0	0	-	0	29
% Buses	-	0.0	1.4	0.0	-	1.3	-	0.0	1.3	0.0	-	1.1	-	0.7	0.0	0.0	-	0.4	-	-	-	-	-	-	1.2
Single-Unit Trucks	0	0	14	4	-	18	0	6	42	0	-	48	0	4	3	3	-	10	0	0	0	0	-	0	76
% Single-Unit Trucks	-	0.0	1.4	6.7	-	1.7	-	4.9	3.9	0.0	-	3.9	-	2.6	14.3	4.7	-	4.2	-	-	-	-	-	-	3.0
Articulated Trucks	0	0	12	0	-	12	0	2	9	0	-	11	0	0	0	3	-	3	0	0	0	0	-	0	26
% Articulated Trucks	-	0.0	1.2	0.0	-	1.1	-	1.6	0.8	0.0	-	0.9	-	0.0	0.0	4.7	-	1.3	-	-	-	-	-	-	1.0
Bicycles on Road	0	0	1	0	-	1	0	0	3	0	-	3	0	0	2	1	-	3	0	0	0	0	-	0	7
% Bicycles on Road	-	0.0	0.1	0.0	-	0.1	-	0.0	0.3	0.0	-	0.2	-	0.0	9.5	1.6	-	1.3	-	-	-	-	-	-	0.3
Pedestrians	-	-	-	-	3	-	-	-	-	-	1	-	-	-	-	-	13	-	-	-	-	-	14	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-



Kenig Lindgren O'Hara Aboona, Inc.
9575 W. Higgins Rd., Suite 400

Rosemont, Illinois, United States 60018
(847)518-9990

Count Name: North/Throop
Site Code:
Start Date: 04/05/2016
Page No: 6

Turning Movement Peak Hour Data (5:00 PM)

Start Time	North Avenue Eastbound						North Avenue Westbound						Throop Street Northbound						Throop Street Southbound						Int. Total
	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	
5:00 PM	0	1	215	17	1	233	0	21	275	4	3	300	0	20	9	26	2	55	0	0	0	0	13	0	588
5:15 PM	0	2	236	15	3	253	0	28	286	3	0	317	0	18	6	20	7	44	0	0	0	0	7	0	614
5:30 PM	0	5	239	26	2	270	0	18	302	2	1	322	0	13	6	24	7	43	0	0	0	1	9	1	636
5:45 PM	0	3	288	30	1	321	0	18	296	4	1	318	0	18	4	20	12	42	0	0	0	0	5	0	681
Total	0	11	978	88	7	1077	0	85	1159	13	5	1257	0	69	25	90	28	184	0	0	0	1	34	1	2519
Approach %	0.0	1.0	90.8	8.2	-	-	0.0	6.8	92.2	1.0	-	-	0.0	37.5	13.6	48.9	-	-	0.0	0.0	0.0	100.0	-	-	-
Total %	0.0	0.4	38.8	3.5	-	42.8	0.0	3.4	46.0	0.5	-	49.9	0.0	2.7	1.0	3.6	-	7.3	0.0	0.0	0.0	0.0	-	0.0	-
PHF	0.000	0.550	0.849	0.733	-	0.839	0.000	0.759	0.959	0.813	-	0.976	0.000	0.863	0.694	0.865	-	0.836	0.000	0.000	0.000	0.250	-	0.250	0.925
Lights	0	10	949	85	-	1044	0	83	1143	13	-	1239	0	68	23	85	-	176	0	0	0	0	-	0	2459
% Lights	-	90.9	97.0	96.6	-	96.9	-	97.6	98.6	100.0	-	98.6	-	98.6	92.0	94.4	-	95.7	-	-	-	0.0	-	0.0	97.6
Buses	0	0	8	0	-	8	0	0	8	0	-	8	0	0	0	0	-	0	0	0	0	0	-	0	16
% Buses	-	0.0	0.8	0.0	-	0.7	-	0.0	0.7	0.0	-	0.6	-	0.0	0.0	0.0	-	0.0	-	-	-	0.0	-	0.0	0.6
Single-Unit Trucks	0	1	14	0	-	15	0	2	3	0	-	5	0	1	1	2	-	4	0	0	0	0	-	0	24
% Single-Unit Trucks	-	9.1	1.4	0.0	-	1.4	-	2.4	0.3	0.0	-	0.4	-	1.4	4.0	2.2	-	2.2	-	-	-	0.0	-	0.0	1.0
Articulated Trucks	0	0	1	0	-	1	0	0	0	0	-	0	0	0	0	2	-	2	0	0	0	0	-	0	3
% Articulated Trucks	-	0.0	0.1	0.0	-	0.1	-	0.0	0.0	0.0	-	0.0	-	0.0	0.0	2.2	-	1.1	-	-	-	0.0	-	0.0	0.1
Bicycles on Road	0	0	6	3	-	9	0	0	5	0	-	5	0	0	1	1	-	2	0	0	0	1	-	1	17
% Bicycles on Road	-	0.0	0.6	3.4	-	0.8	-	0.0	0.4	0.0	-	0.4	-	0.0	4.0	1.1	-	1.1	-	-	-	100.0	-	100.0	0.7
Pedestrians	-	-	-	-	7	-	-	-	-	-	5	-	-	-	-	-	28	-	-	-	-	-	34	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-



Kenig Lindgren O'Hara Aboona, Inc.
 9575 W. Higgins Rd., Suite 400
 Rosemont, Illinois, United States 60018
 (847)518-9990

Count Name: Webster Avenue with Damen
 Avenue
 Site Code:
 Start Date: 02/25/2016
 Page No: 1

Turning Movement Data

Start Time	Webster Avenue Eastbound						Webster Avenue Westbound						Damen Avenue Northbound						Damen Avenue Southbound						Int. Total
	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	
7:00 AM	0	6	54	5	2	65	0	15	19	1	0	35	0	11	40	70	1	121	0	98	48	11	2	157	378
7:15 AM	0	5	76	4	3	85	0	14	12	1	0	27	0	5	66	62	3	133	0	106	72	13	2	191	436
7:30 AM	0	12	115	1	6	128	0	22	19	2	2	43	0	5	65	94	4	164	0	79	63	18	1	160	495
7:45 AM	0	8	123	10	6	141	0	19	27	0	3	46	0	2	57	100	3	159	0	56	64	29	3	149	495
Hourly Total	0	31	368	20	17	419	0	70	77	4	5	151	0	23	228	326	11	577	0	339	247	71	8	657	1804
8:00 AM	0	8	107	6	3	121	0	30	30	2	1	62	0	10	39	85	1	134	0	59	78	18	0	155	472
8:15 AM	0	4	110	7	9	121	0	17	33	1	2	51	0	9	58	83	6	150	0	68	96	22	6	186	508
8:30 AM	0	3	99	4	3	106	0	28	23	3	3	54	0	8	67	86	1	161	0	83	79	16	1	178	499
8:45 AM	0	4	71	3	4	78	0	37	23	1	1	61	0	11	55	54	3	120	0	95	93	18	0	206	465
Hourly Total	0	19	387	20	19	426	0	112	109	7	7	228	0	38	219	308	11	565	0	305	346	74	7	725	1944
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4:00 PM	0	5	39	5	5	49	0	48	68	3	1	119	0	9	88	45	7	142	0	66	74	22	1	162	472
4:15 PM	0	4	35	3	2	42	0	42	53	4	2	99	0	6	61	55	0	122	0	99	82	18	0	199	462
4:30 PM	0	2	42	3	7	47	0	40	58	3	3	101	0	13	75	59	2	147	0	81	87	13	1	181	476
4:45 PM	0	4	39	2	6	45	0	53	60	5	4	118	0	9	63	53	2	125	0	78	89	29	2	196	484
Hourly Total	0	15	155	13	20	183	0	183	239	15	10	437	0	37	287	212	11	536	0	324	332	82	4	738	1894
5:00 PM	0	6	45	9	9	60	0	32	67	3	4	102	0	10	84	54	4	148	0	85	102	33	1	220	530
5:15 PM	0	1	35	3	3	39	0	37	71	2	1	110	0	7	66	49	0	122	0	104	95	32	1	231	502
5:30 PM	0	4	38	4	3	46	0	45	60	0	6	105	0	4	51	73	2	128	0	89	81	28	6	198	477
5:45 PM	0	4	58	6	7	68	0	29	50	3	4	82	0	11	65	61	1	137	0	99	110	34	5	243	530
Hourly Total	0	15	176	22	22	213	0	143	248	8	15	399	0	32	266	237	7	535	0	377	388	127	13	892	2039
Grand Total	0	80	1086	75	78	1241	0	508	673	34	37	1215	0	130	1000	1083	40	2213	0	1345	1313	354	32	3012	7681
Approach %	0.0	6.4	87.5	6.0	-	-	0.0	41.8	55.4	2.8	-	-	0.0	5.9	45.2	48.9	-	-	0.0	44.7	43.6	11.8	-	-	-
Total %	0.0	1.0	14.1	1.0	-	16.2	0.0	6.6	8.8	0.4	-	15.8	0.0	1.7	13.0	14.1	-	28.8	0.0	17.5	17.1	4.6	-	39.2	-
Lights	0	79	1070	73	-	1222	0	491	662	32	-	1185	0	127	920	1070	-	2117	0	1315	1222	348	-	2885	7409
% Lights	-	98.8	98.5	97.3	-	98.5	-	96.7	98.4	94.1	-	97.5	-	97.7	92.0	98.8	-	95.7	-	97.8	93.1	98.3	-	95.8	96.5
Buses	0	0	2	0	-	2	0	3	3	2	-	8	0	0	32	3	-	35	0	0	23	2	-	25	70
% Buses	-	0.0	0.2	0.0	-	0.2	-	0.6	0.4	5.9	-	0.7	-	0.0	3.2	0.3	-	1.6	-	0.0	1.8	0.6	-	0.8	0.9
Single-Unit Trucks	0	0	3	0	-	3	0	9	1	0	-	10	0	2	24	3	-	29	0	19	26	1	-	46	88
% Single-Unit Trucks	-	0.0	0.3	0.0	-	0.2	-	1.8	0.1	0.0	-	0.8	-	1.5	2.4	0.3	-	1.3	-	1.4	2.0	0.3	-	1.5	1.1
Articulated Trucks	0	0	0	0	-	0	0	0	0	0	-	0	0	0	3	0	-	3	0	11	1	0	-	12	15
% Articulated Trucks	-	0.0	0.0	0.0	-	0.0	-	0.0	0.0	0.0	-	0.0	-	0.0	0.3	0.0	-	0.1	-	0.8	0.1	0.0	-	0.4	0.2
Bicycles on Road	0	1	11	2	-	14	0	5	7	0	-	12	0	1	21	7	-	29	0	0	41	3	-	44	99
% Bicycles on Road	-	1.3	1.0	2.7	-	1.1	-	1.0	1.0	0.0	-	1.0	-	0.8	2.1	0.6	-	1.3	-	0.0	3.1	0.8	-	1.5	1.3
Pedestrians	-	-	-	-	78	-	-	-	-	-	37	-	-	-	-	-	40	-	-	-	-	-	32	-	-



Kenig Lindgren O'Hara Aboona, Inc.
9575 W. Higgins Rd., Suite 400

Rosemont, Illinois, United States 60018
(847)518-9990

Count Name: Webster Avenue with Damen
Avenue
Site Code:
Start Date: 02/25/2016
Page No: 4

Turning Movement Peak Hour Data (7:30 AM)

Start Time	Webster Avenue Eastbound						Webster Avenue Westbound						Damen Avenue Northbound						Damen Avenue Southbound						Int. Total
	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	
7:30 AM	0	12	115	1	6	128	0	22	19	2	2	43	0	5	65	94	4	164	0	79	63	18	1	160	495
7:45 AM	0	8	123	10	6	141	0	19	27	0	3	46	0	2	57	100	3	159	0	56	64	29	3	149	495
8:00 AM	0	8	107	6	3	121	0	30	30	2	1	62	0	10	39	85	1	134	0	59	78	18	0	155	472
8:15 AM	0	4	110	7	9	121	0	17	33	1	2	51	0	9	58	83	6	150	0	68	96	22	6	186	508
Total	0	32	455	24	24	511	0	88	109	5	8	202	0	26	219	362	14	607	0	262	301	87	10	650	1970
Approach %	0.0	6.3	89.0	4.7	-	-	0.0	43.6	54.0	2.5	-	-	0.0	4.3	36.1	59.6	-	-	0.0	40.3	46.3	13.4	-	-	-
Total %	0.0	1.6	23.1	1.2	-	25.9	0.0	4.5	5.5	0.3	-	10.3	0.0	1.3	11.1	18.4	-	30.8	0.0	13.3	15.3	4.4	-	33.0	-
PHF	0.000	0.667	0.925	0.600	-	0.906	0.000	0.733	0.826	0.625	-	0.815	0.000	0.650	0.842	0.905	-	0.925	0.000	0.829	0.784	0.750	-	0.874	0.969
Lights	0	31	449	24	-	504	0	84	108	4	-	196	0	25	197	359	-	581	0	259	280	85	-	624	1905
% Lights	-	96.9	98.7	100.0	-	98.6	-	95.5	99.1	80.0	-	97.0	-	96.2	90.0	99.2	-	95.7	-	98.9	93.0	97.7	-	96.0	96.7
Buses	0	0	1	0	-	1	0	2	0	1	-	3	0	0	10	1	-	11	0	0	6	1	-	7	22
% Buses	-	0.0	0.2	0.0	-	0.2	-	2.3	0.0	20.0	-	1.5	-	0.0	4.6	0.3	-	1.8	-	0.0	2.0	1.1	-	1.1	1.1
Single-Unit Trucks	0	0	1	0	-	1	0	1	0	0	-	1	0	1	9	1	-	11	0	1	5	0	-	6	19
% Single-Unit Trucks	-	0.0	0.2	0.0	-	0.2	-	1.1	0.0	0.0	-	0.5	-	3.8	4.1	0.3	-	1.8	-	0.4	1.7	0.0	-	0.9	1.0
Articulated Trucks	0	0	0	0	-	0	0	0	0	0	-	0	0	0	2	0	-	2	0	2	1	0	-	3	5
% Articulated Trucks	-	0.0	0.0	0.0	-	0.0	-	0.0	0.0	0.0	-	0.0	-	0.0	0.9	0.0	-	0.3	-	0.8	0.3	0.0	-	0.5	0.3
Bicycles on Road	0	1	4	0	-	5	0	1	1	0	-	2	0	0	1	1	-	2	0	0	9	1	-	10	19
% Bicycles on Road	-	3.1	0.9	0.0	-	1.0	-	1.1	0.9	0.0	-	1.0	-	0.0	0.5	0.3	-	0.3	-	0.0	3.0	1.1	-	1.5	1.0
Pedestrians	-	-	-	-	24	-	-	-	-	-	8	-	-	-	-	-	14	-	-	-	-	-	10	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-



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Count Name: Webster Avenue with Damen
Avenue
Site Code:
Start Date: 02/25/2016
Page No: 6

Turning Movement Peak Hour Data (5:00 PM)

Start Time	Webster Avenue Eastbound						Webster Avenue Westbound						Damen Avenue Northbound						Damen Avenue Southbound						Int. Total
	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	
5:00 PM	0	6	45	9	9	60	0	32	67	3	4	102	0	10	84	54	4	148	0	85	102	33	1	220	530
5:15 PM	0	1	35	3	3	39	0	37	71	2	1	110	0	7	66	49	0	122	0	104	95	32	1	231	502
5:30 PM	0	4	38	4	3	46	0	45	60	0	6	105	0	4	51	73	2	128	0	89	81	28	6	198	477
5:45 PM	0	4	58	6	7	68	0	29	50	3	4	82	0	11	65	61	1	137	0	99	110	34	5	243	530
Total	0	15	176	22	22	213	0	143	248	8	15	399	0	32	266	237	7	535	0	377	388	127	13	892	2039
Approach %	0.0	7.0	82.6	10.3	-	-	0.0	35.8	62.2	2.0	-	-	0.0	6.0	49.7	44.3	-	-	0.0	42.3	43.5	14.2	-	-	-
Total %	0.0	0.7	8.6	1.1	-	10.4	0.0	7.0	12.2	0.4	-	19.6	0.0	1.6	13.0	11.6	-	26.2	0.0	18.5	19.0	6.2	-	43.7	-
PHF	0.000	0.625	0.759	0.611	-	0.783	0.000	0.794	0.873	0.667	-	0.907	0.000	0.727	0.792	0.812	-	0.904	0.000	0.906	0.882	0.934	-	0.918	0.962
Lights	0	15	174	21	-	210	0	140	244	8	-	392	0	32	250	232	-	514	0	367	372	125	-	864	1980
% Lights	-	100.0	98.9	95.5	-	98.6	-	97.9	98.4	100.0	-	98.2	-	100.0	94.0	97.9	-	96.1	-	97.3	95.9	98.4	-	96.9	97.1
Buses	0	0	0	0	-	0	0	1	0	0	-	1	0	0	5	0	-	5	0	0	4	1	-	5	11
% Buses	-	0.0	0.0	0.0	-	0.0	-	0.7	0.0	0.0	-	0.3	-	0.0	1.9	0.0	-	0.9	-	0.0	1.0	0.8	-	0.6	0.5
Single-Unit Trucks	0	0	1	0	-	1	0	1	0	0	-	1	0	0	1	1	-	2	0	9	7	0	-	16	20
% Single-Unit Trucks	-	0.0	0.6	0.0	-	0.5	-	0.7	0.0	0.0	-	0.3	-	0.0	0.4	0.4	-	0.4	-	2.4	1.8	0.0	-	1.8	1.0
Articulated Trucks	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	1	0	0	-	1	1
% Articulated Trucks	-	0.0	0.0	0.0	-	0.0	-	0.0	0.0	0.0	-	0.0	-	0.0	0.0	0.0	-	0.0	-	0.3	0.0	0.0	-	0.1	0.0
Bicycles on Road	0	0	1	1	-	2	0	1	4	0	-	5	0	0	10	4	-	14	0	0	5	1	-	6	27
% Bicycles on Road	-	0.0	0.6	4.5	-	0.9	-	0.7	1.6	0.0	-	1.3	-	0.0	3.8	1.7	-	2.6	-	0.0	1.3	0.8	-	0.7	1.3
Pedestrians	-	-	-	-	22	-	-	-	-	-	15	-	-	-	-	-	7	-	-	-	-	-	13	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-



Kenig Lindgren O'Hara Aboona, Inc.
 9575 W. Higgins Rd., Suite 400
 Rosemont, Illinois, United States 60018
 (847)518-9990

Count Name: Webster Avenue with I-90 SB
 Ramp
 Site Code:
 Start Date: 02/25/2016
 Page No: 1

Turning Movement Data

Start Time	Webster Avenue Eastbound					Webster Avenue Westbound					I-90 SB Ramp Northbound					Int. Total
	U-Turn	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Peds	App. Total	U-Turn	Left	Right	Peds	App. Total	
7:00 AM	0	73	144	0	217	0	53	36	0	89	0	0	0	3	0	306
7:15 AM	0	87	156	0	243	0	54	27	0	81	0	0	0	0	0	324
7:30 AM	0	135	150	0	285	0	56	46	0	102	0	0	0	1	0	387
7:45 AM	0	125	158	0	283	0	67	42	0	109	0	0	0	1	0	392
Hourly Total	0	420	608	0	1028	0	230	151	0	381	0	0	0	5	0	1409
8:00 AM	0	119	133	0	252	0	85	62	0	147	0	0	0	0	0	399
8:15 AM	0	115	144	0	259	0	76	52	0	128	0	0	0	2	0	387
8:30 AM	0	110	160	0	270	0	51	52	0	103	0	0	0	1	0	373
8:45 AM	0	94	132	0	226	0	44	62	0	106	0	0	0	1	0	332
Hourly Total	0	438	569	0	1007	0	256	228	0	484	0	0	0	4	0	1491
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4:00 PM	0	81	70	0	151	0	17	121	0	138	0	0	0	1	0	289
4:15 PM	0	102	88	0	190	0	32	99	0	131	0	0	0	1	0	321
4:30 PM	0	100	85	0	185	0	35	102	0	137	0	0	0	2	0	322
4:45 PM	0	91	81	0	172	0	30	117	0	147	0	0	0	3	0	319
Hourly Total	0	374	324	0	698	0	114	439	0	553	0	0	0	7	0	1251
5:00 PM	0	98	85	0	183	0	43	107	0	150	0	0	0	1	0	333
5:15 PM	0	86	104	0	190	0	29	115	0	144	0	0	0	4	0	334
5:30 PM	0	98	100	0	198	0	33	107	0	140	0	0	0	2	0	338
5:45 PM	0	111	107	0	218	0	29	79	0	108	0	0	0	5	0	326
Hourly Total	0	393	396	0	789	0	134	408	0	542	0	0	0	12	0	1331
Grand Total	0	1625	1897	0	3522	0	734	1226	0	1960	0	0	0	28	0	5482
Approach %	0.0	46.1	53.9	-	-	0.0	37.4	62.6	-	-	NaN	NaN	NaN	-	-	-
Total %	0.0	29.6	34.6	-	64.2	0.0	13.4	22.4	-	35.8	0.0	0.0	0.0	-	0.0	-
Lights	0	1597	1870	-	3467	0	719	1192	-	1911	0	0	0	-	0	5378
% Lights	-	98.3	98.6	-	98.4	-	98.0	97.2	-	97.5	-	-	-	-	-	98.1
Buses	0	4	1	-	5	0	0	8	-	8	0	0	0	-	0	13
% Buses	-	0.2	0.1	-	0.1	-	0.0	0.7	-	0.4	-	-	-	-	-	0.2
Single-Unit Trucks	0	5	16	-	21	0	14	9	-	23	0	0	0	-	0	44
% Single-Unit Trucks	-	0.3	0.8	-	0.6	-	1.9	0.7	-	1.2	-	-	-	-	-	0.8
Articulated Trucks	0	1	10	-	11	0	1	0	-	1	0	0	0	-	0	12
% Articulated Trucks	-	0.1	0.5	-	0.3	-	0.1	0.0	-	0.1	-	-	-	-	-	0.2
Bicycles on Road	0	18	0	-	18	0	0	17	-	17	0	0	0	-	0	35
% Bicycles on Road	-	1.1	0.0	-	0.5	-	0.0	1.4	-	0.9	-	-	-	-	-	0.6
Pedestrians	-	-	-	0	-	-	-	-	0	-	-	-	-	28	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	100.0	-	-



Kenig Lindgren O'Hara Aboona, Inc.
 9575 W. Higgins Rd., Suite 400
 Rosemont, Illinois, United States 60018
 (847)518-9990

Count Name: Webster Avenue with I-90 SB
 Ramp
 Site Code:
 Start Date: 02/25/2016
 Page No: 3

Turning Movement Peak Hour Data (7:30 AM)

Start Time	Webster Avenue Eastbound					Webster Avenue Westbound					I-90 SB Ramp Northbound					Int. Total
	U-Turn	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Peds	App. Total	U-Turn	Left	Right	Peds	App. Total	
7:30 AM	0	135	150	0	285	0	56	46	0	102	0	0	0	1	0	387
7:45 AM	0	125	158	0	283	0	67	42	0	109	0	0	0	1	0	392
8:00 AM	0	119	133	0	252	0	85	62	0	147	0	0	0	0	0	399
8:15 AM	0	115	144	0	259	0	76	52	0	128	0	0	0	2	0	387
Total	0	494	585	0	1079	0	284	202	0	486	0	0	0	4	0	1565
Approach %	0.0	45.8	54.2	-	-	0.0	58.4	41.6	-	-	NaN	NaN	NaN	-	-	-
Total %	0.0	31.6	37.4	-	68.9	0.0	18.1	12.9	-	31.1	0.0	0.0	0.0	-	0.0	-
PHF	0.000	0.915	0.926	-	0.946	0.000	0.835	0.815	-	0.827	0.000	0.000	0.000	-	0.000	0.981
Lights	0	484	582	-	1066	0	284	196	-	480	0	0	0	-	0	1546
% Lights	-	98.0	99.5	-	98.8	-	100.0	97.0	-	98.8	-	-	-	-	-	98.8
Buses	0	2	0	-	2	0	0	3	-	3	0	0	0	-	0	5
% Buses	-	0.4	0.0	-	0.2	-	0.0	1.5	-	0.6	-	-	-	-	-	0.3
Single-Unit Trucks	0	2	1	-	3	0	0	1	-	1	0	0	0	-	0	4
% Single-Unit Trucks	-	0.4	0.2	-	0.3	-	0.0	0.5	-	0.2	-	-	-	-	-	0.3
Articulated Trucks	0	0	2	-	2	0	0	0	-	0	0	0	0	-	0	2
% Articulated Trucks	-	0.0	0.3	-	0.2	-	0.0	0.0	-	0.0	-	-	-	-	-	0.1
Bicycles on Road	0	6	0	-	6	0	0	2	-	2	0	0	0	-	0	8
% Bicycles on Road	-	1.2	0.0	-	0.6	-	0.0	1.0	-	0.4	-	-	-	-	-	0.5
Pedestrians	-	-	-	0	-	-	-	-	0	-	-	-	-	4	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	100.0	-	-



Kenig Lindgren O'Hara Aboona, Inc.
 9575 W. Higgins Rd., Suite 400
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 (847)518-9990

Count Name: Webster Avenue with I-90 SB
 Ramp
 Site Code:
 Start Date: 02/25/2016
 Page No: 5

Turning Movement Peak Hour Data (5:00 PM)

Start Time	Webster Avenue Eastbound					Webster Avenue Westbound					I-90 SB Ramp Northbound					Int. Total
	U-Turn	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Peds	App. Total	U-Turn	Left	Right	Peds	App. Total	
5:00 PM	0	98	85	0	183	0	43	107	0	150	0	0	0	1	0	333
5:15 PM	0	86	104	0	190	0	29	115	0	144	0	0	0	4	0	334
5:30 PM	0	98	100	0	198	0	33	107	0	140	0	0	0	2	0	338
5:45 PM	0	111	107	0	218	0	29	79	0	108	0	0	0	5	0	326
Total	0	393	396	0	789	0	134	408	0	542	0	0	0	12	0	1331
Approach %	0.0	49.8	50.2	-	-	0.0	24.7	75.3	-	-	NaN	NaN	NaN	-	-	-
Total %	0.0	29.5	29.8	-	59.3	0.0	10.1	30.7	-	40.7	0.0	0.0	0.0	-	0.0	-
PHF	0.000	0.885	0.925	-	0.905	0.000	0.779	0.887	-	0.903	0.000	0.000	0.000	-	0.000	0.984
Lights	0	387	387	-	774	0	128	398	-	526	0	0	0	-	0	1300
% Lights	-	98.5	97.7	-	98.1	-	95.5	97.5	-	97.0	-	-	-	-	-	97.7
Buses	0	0	0	-	0	0	0	1	-	1	0	0	0	-	0	1
% Buses	-	0.0	0.0	-	0.0	-	0.0	0.2	-	0.2	-	-	-	-	-	0.1
Single-Unit Trucks	0	1	8	-	9	0	5	1	-	6	0	0	0	-	0	15
% Single-Unit Trucks	-	0.3	2.0	-	1.1	-	3.7	0.2	-	1.1	-	-	-	-	-	1.1
Articulated Trucks	0	0	1	-	1	0	1	0	-	1	0	0	0	-	0	2
% Articulated Trucks	-	0.0	0.3	-	0.1	-	0.7	0.0	-	0.2	-	-	-	-	-	0.2
Bicycles on Road	0	5	0	-	5	0	0	8	-	8	0	0	0	-	0	13
% Bicycles on Road	-	1.3	0.0	-	0.6	-	0.0	2.0	-	1.5	-	-	-	-	-	1.0
Pedestrians	-	-	-	0	-	-	-	-	0	-	-	-	-	12	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	100.0	-	-



Kenig Lindgren O'Hara Aboona, Inc.
9575 W. Higgins Rd., Suite 400

Rosemont, Illinois, United States 60018
(847)518-9990

Count Name: Webster Avenue with Southport Avenue
Site Code:
Start Date: 02/24/2016
Page No: 1

Turning Movement Data

Start Time	Webster Avenue Eastbound						Webster Avenue Westbound						Southport Avenue Northbound						Southport Avenue Southbound						Int. Total
	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	
7:00 AM	0	10	38	2	2	50	0	3	63	8	3	74	0	0	17	2	2	19	0	6	24	37	2	67	210
7:15 AM	0	21	60	1	2	82	0	3	55	1	3	59	0	1	7	1	6	9	0	7	46	54	3	107	257
7:30 AM	0	27	76	1	2	104	0	2	49	9	3	60	0	1	15	1	2	17	0	6	63	47	1	116	297
7:45 AM	0	43	77	3	4	123	0	7	82	19	3	108	0	1	32	8	6	41	0	4	50	41	4	95	367
Hourly Total	0	101	251	7	10	359	0	15	249	37	12	301	0	3	71	12	16	86	0	23	183	179	10	385	1131
8:00 AM	0	26	83	13	5	122	0	5	75	9	0	89	0	2	26	6	4	34	0	8	67	41	5	116	361
8:15 AM	0	18	69	5	5	92	0	7	71	10	2	88	0	0	25	6	3	31	0	6	66	47	1	119	330
8:30 AM	0	21	80	5	5	106	0	5	64	6	3	75	0	1	15	6	9	22	0	15	62	52	5	129	332
8:45 AM	0	13	79	2	4	94	0	6	46	4	1	56	0	0	21	2	8	23	0	4	53	35	7	92	265
Hourly Total	0	78	311	25	19	414	0	23	256	29	6	308	0	3	87	20	24	110	0	33	248	175	18	456	1288
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4:00 PM	0	31	50	2	1	83	0	9	81	12	3	102	0	0	22	2	8	24	0	1	30	36	5	67	276
4:15 PM	0	22	46	3	1	71	0	3	82	8	0	93	0	1	34	0	5	35	0	5	35	27	6	67	266
4:30 PM	0	20	52	1	3	73	0	4	71	8	0	83	0	1	43	5	10	49	0	4	22	30	0	56	261
4:45 PM	0	27	58	0	0	85	0	2	66	6	0	74	0	2	36	3	3	41	0	2	25	31	3	58	258
Hourly Total	0	100	206	6	5	312	0	18	300	34	3	352	0	4	135	10	26	149	0	12	112	124	14	248	1061
5:00 PM	0	19	38	1	4	58	0	9	69	5	1	83	0	0	47	5	6	52	0	2	28	33	4	63	256
5:15 PM	0	34	41	2	0	77	0	3	82	11	3	96	0	2	46	5	2	53	0	5	38	23	2	66	292
5:30 PM	0	31	47	4	1	82	0	5	83	6	1	94	0	1	40	4	4	45	0	3	39	36	9	78	299
5:45 PM	0	31	51	2	2	84	0	5	70	14	1	89	0	0	53	4	11	57	0	4	32	29	8	65	295
Hourly Total	0	115	177	9	7	301	0	22	304	36	6	362	0	3	186	18	23	207	0	14	137	121	23	272	1142
Grand Total	0	394	945	47	41	1386	0	78	1109	136	27	1323	0	13	479	60	89	552	0	82	680	599	65	1361	4622
Approach %	0.0	28.4	68.2	3.4	-	-	0.0	5.9	83.8	10.3	-	-	0.0	2.4	86.8	10.9	-	-	0.0	6.0	50.0	44.0	-	-	-
Total %	0.0	8.5	20.4	1.0	-	30.0	0.0	1.7	24.0	2.9	-	28.6	0.0	0.3	10.4	1.3	-	11.9	0.0	1.8	14.7	13.0	-	29.4	-
Lights	0	384	917	43	-	1344	0	77	1084	132	-	1293	0	13	470	57	-	540	0	80	656	592	-	1328	4505
% Lights	-	97.5	97.0	91.5	-	97.0	-	98.7	97.7	97.1	-	97.7	-	100.0	98.1	95.0	-	97.8	-	97.6	96.5	98.8	-	97.6	97.5
Buses	0	1	4	0	-	5	0	0	6	1	-	7	0	0	0	0	-	0	0	0	4	3	-	7	19
% Buses	-	0.3	0.4	0.0	-	0.4	-	0.0	0.5	0.7	-	0.5	-	0.0	0.0	0.0	-	0.0	-	0.0	0.6	0.5	-	0.5	0.4
Single-Unit Trucks	0	4	19	3	-	26	0	1	9	2	-	12	0	0	3	2	-	5	0	2	6	2	-	10	53
% Single-Unit Trucks	-	1.0	2.0	6.4	-	1.9	-	1.3	0.8	1.5	-	0.9	-	0.0	0.6	3.3	-	0.9	-	2.4	0.9	0.3	-	0.7	1.1
Articulated Trucks	0	0	2	0	-	2	0	0	4	0	-	4	0	0	0	0	-	0	0	0	1	2	-	3	9
% Articulated Trucks	-	0.0	0.2	0.0	-	0.1	-	0.0	0.4	0.0	-	0.3	-	0.0	0.0	0.0	-	0.0	-	0.0	0.1	0.3	-	0.2	0.2
Bicycles on Road	0	5	3	1	-	9	0	0	6	1	-	7	0	0	6	1	-	7	0	0	13	0	-	13	36
% Bicycles on Road	-	1.3	0.3	2.1	-	0.6	-	0.0	0.5	0.7	-	0.5	-	0.0	1.3	1.7	-	1.3	-	0.0	1.9	0.0	-	1.0	0.8
Pedestrians	-	-	-	-	41	-	-	-	-	-	27	-	-	-	-	-	89	-	-	-	-	-	65	-	-



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Count Name: Webster Avenue with Southport Avenue
Site Code:
Start Date: 02/24/2016
Page No: 4

Turning Movement Peak Hour Data (7:30 AM)

Start Time	Webster Avenue Eastbound						Webster Avenue Westbound						Southport Avenue Northbound						Southport Avenue Southbound						Int. Total
	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	
7:30 AM	0	27	76	1	2	104	0	2	49	9	3	60	0	1	15	1	2	17	0	6	63	47	1	116	297
7:45 AM	0	43	77	3	4	123	0	7	82	19	3	108	0	1	32	8	6	41	0	4	50	41	4	95	367
8:00 AM	0	26	83	13	5	122	0	5	75	9	0	89	0	2	26	6	4	34	0	8	67	41	5	116	361
8:15 AM	0	18	69	5	5	92	0	7	71	10	2	88	0	0	25	6	3	31	0	6	66	47	1	119	330
Total	0	114	305	22	16	441	0	21	277	47	8	345	0	4	98	21	15	123	0	24	246	176	11	446	1355
Approach %	0.0	25.9	69.2	5.0	-	-	0.0	6.1	80.3	13.6	-	-	0.0	3.3	79.7	17.1	-	-	0.0	5.4	55.2	39.5	-	-	-
Total %	0.0	8.4	22.5	1.6	-	32.5	0.0	1.5	20.4	3.5	-	25.5	0.0	0.3	7.2	1.5	-	9.1	0.0	1.8	18.2	13.0	-	32.9	-
PHF	0.000	0.663	0.919	0.423	-	0.896	0.000	0.750	0.845	0.618	-	0.799	0.000	0.500	0.766	0.656	-	0.750	0.000	0.750	0.918	0.936	-	0.937	0.923
Lights	0	112	293	20	-	425	0	21	269	47	-	337	0	4	94	20	-	118	0	24	240	176	-	440	1320
% Lights	-	98.2	96.1	90.9	-	96.4	-	100.0	97.1	100.0	-	97.7	-	100.0	95.9	95.2	-	95.9	-	100.0	97.6	100.0	-	98.7	97.4
Buses	0	0	1	0	-	1	0	0	1	0	-	1	0	0	0	0	-	0	0	0	1	0	-	1	3
% Buses	-	0.0	0.3	0.0	-	0.2	-	0.0	0.4	0.0	-	0.3	-	0.0	0.0	0.0	-	0.0	-	0.0	0.4	0.0	-	0.2	0.2
Single-Unit Trucks	0	1	8	1	-	10	0	0	3	0	-	3	0	0	2	1	-	3	0	0	2	0	-	2	18
% Single-Unit Trucks	-	0.9	2.6	4.5	-	2.3	-	0.0	1.1	0.0	-	0.9	-	0.0	2.0	4.8	-	2.4	-	0.0	0.8	0.0	-	0.4	1.3
Articulated Trucks	0	0	1	0	-	1	0	0	3	0	-	3	0	0	0	0	-	0	0	0	0	0	-	0	4
% Articulated Trucks	-	0.0	0.3	0.0	-	0.2	-	0.0	1.1	0.0	-	0.9	-	0.0	0.0	0.0	-	0.0	-	0.0	0.0	0.0	-	0.0	0.3
Bicycles on Road	0	1	2	1	-	4	0	0	1	0	-	1	0	0	2	0	-	2	0	0	3	0	-	3	10
% Bicycles on Road	-	0.9	0.7	4.5	-	0.9	-	0.0	0.4	0.0	-	0.3	-	0.0	2.0	0.0	-	1.6	-	0.0	1.2	0.0	-	0.7	0.7
Pedestrians	-	-	-	-	16	-	-	-	-	-	8	-	-	-	-	-	15	-	-	-	-	-	11	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-



Kenig Lindgren O'Hara Aboona, Inc.
9575 W. Higgins Rd., Suite 400

Rosemont, Illinois, United States 60018
(847)518-9990

Count Name: Webster Avenue with Southport Avenue
Site Code:
Start Date: 02/24/2016
Page No: 6

Turning Movement Peak Hour Data (5:00 PM)

Start Time	Webster Avenue Eastbound						Webster Avenue Westbound						Southport Avenue Northbound						Southport Avenue Southbound						Int. Total
	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	
5:00 PM	0	19	38	1	4	58	0	9	69	5	1	83	0	0	47	5	6	52	0	2	28	33	4	63	256
5:15 PM	0	34	41	2	0	77	0	3	82	11	3	96	0	2	46	5	2	53	0	5	38	23	2	66	292
5:30 PM	0	31	47	4	1	82	0	5	83	6	1	94	0	1	40	4	4	45	0	3	39	36	9	78	299
5:45 PM	0	31	51	2	2	84	0	5	70	14	1	89	0	0	53	4	11	57	0	4	32	29	8	65	295
Total	0	115	177	9	7	301	0	22	304	36	6	362	0	3	186	18	23	207	0	14	137	121	23	272	1142
Approach %	0.0	38.2	58.8	3.0	-	-	0.0	6.1	84.0	9.9	-	-	0.0	1.4	89.9	8.7	-	-	0.0	5.1	50.4	44.5	-	-	-
Total %	0.0	10.1	15.5	0.8	-	26.4	0.0	1.9	26.6	3.2	-	31.7	0.0	0.3	16.3	1.6	-	18.1	0.0	1.2	12.0	10.6	-	23.8	-
PHF	0.000	0.846	0.868	0.563	-	0.896	0.000	0.611	0.916	0.643	-	0.943	0.000	0.375	0.877	0.900	-	0.908	0.000	0.700	0.878	0.840	-	0.872	0.955
Lights	0	113	176	9	-	298	0	21	297	34	-	352	0	3	181	18	-	202	0	14	136	119	-	269	1121
% Lights	-	98.3	99.4	100.0	-	99.0	-	95.5	97.7	94.4	-	97.2	-	100.0	97.3	100.0	-	97.6	-	100.0	99.3	98.3	-	98.9	98.2
Buses	0	0	0	0	-	0	0	0	1	0	-	1	0	0	0	0	-	0	0	0	0	0	-	0	1
% Buses	-	0.0	0.0	0.0	-	0.0	-	0.0	0.3	0.0	-	0.3	-	0.0	0.0	0.0	-	0.0	-	0.0	0.0	0.0	-	0.0	0.1
Single-Unit Trucks	0	0	0	0	-	0	0	1	3	2	-	6	0	0	1	0	-	1	0	0	0	0	-	0	7
% Single-Unit Trucks	-	0.0	0.0	0.0	-	0.0	-	4.5	1.0	5.6	-	1.7	-	0.0	0.5	0.0	-	0.5	-	0.0	0.0	0.0	-	0.0	0.6
Articulated Trucks	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	1	2	-	3	3
% Articulated Trucks	-	0.0	0.0	0.0	-	0.0	-	0.0	0.0	0.0	-	0.0	-	0.0	0.0	0.0	-	0.0	-	0.0	0.7	1.7	-	1.1	0.3
Bicycles on Road	0	2	1	0	-	3	0	0	3	0	-	3	0	0	4	0	-	4	0	0	0	0	-	0	10
% Bicycles on Road	-	1.7	0.6	0.0	-	1.0	-	0.0	1.0	0.0	-	0.8	-	0.0	2.2	0.0	-	1.9	-	0.0	0.0	0.0	-	0.0	0.9
Pedestrians	-	-	-	-	7	-	-	-	-	-	6	-	-	-	-	-	23	-	-	-	-	-	23	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-

Chicago, IL Weather: Warm and Dry
 Elston ave and Concord Place
 Wednesday August 8, 2018

08/09/18
 10:00:27

URNS/TEAPAC[Ver 3.61.12] - 15-Minute Counts: All Vehicles - by Mvmt

Intersection # 2 elston/concord													
Begin Time	N-Approach			E-Approach			S-Approach			W-Approach			Int Total
	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	
700	0	0	1	4	0	0	1	0	0	0	0	0	6
715	0	0	1	4	0	2	8	0	0	0	0	0	15
730	0	0	4	6	0	5	4	0	0	0	0	0	19
745	0	0	7	4	0	1	8	0	0	0	0	0	20
800	0	0	10	3	0	2	1	0	0	0	0	0	16
815	0	0	6	10	0	1	4	0	0	0	0	0	21
830	0	0	11	11	0	2	5	0	0	0	0	0	29
845	0	0	5	6	0	1	8	0	0	0	0	0	20
1600	0	0	5	16	0	3	3	0	0	0	0	0	27
1615	0	0	1	25	0	1	2	0	0	0	0	0	29
1630	0	0	3	16	0	7	6	0	0	0	0	0	32
1645	0	0	4	10	0	6	5	0	0	0	0	0	25
1700	0	0	3	19	0	12	3	0	0	0	0	0	37
1715	0	0	4	21	0	6	7	0	0	0	0	0	38
1730	0	0	5	22	0	6	2	0	0	0	0	0	35
1745	0	0	1	13	0	7	4	0	0	0	0	0	25
Total	0	0	71	190	0	62	71	0	0	0	0	0	394

URNS/TEAPAC[Ver 3.61.12] - 15-Minute Counts: All Vehicles - Totals

Intersection # 2 elston/concord									
Begin Time	Approach Totals				Exit Totals				Int Total
	N	E	S	W	N	E	S	W	
700	1	4	1	0	4	2	0	0	6
715	1	6	8	0	4	9	2	0	15
730	4	11	4	0	6	8	5	0	19
745	7	5	8	0	4	15	1	0	20
800	10	5	1	0	3	11	2	0	16
815	6	11	4	0	10	10	1	0	21
830	11	13	5	0	11	16	2	0	29
845	5	7	8	0	6	13	1	0	20
1600	5	19	3	0	16	8	3	0	27
1615	1	26	2	0	25	3	1	0	29
1630	3	23	6	0	16	9	7	0	32
1645	4	16	5	0	10	9	6	0	25
1700	3	31	3	0	19	6	12	0	37
1715	4	27	7	0	21	11	6	0	38
1730	5	28	2	0	22	7	6	0	35
1745	1	20	4	0	13	5	7	0	25
Total	71	252	71	0	190	142	62	0	394

Chicago, IL Weather: Warm and Dry
 Elston ave and Concord Place
 Wednesday August 8, 2018

08/09/18
 10:00:27

URNS/TEAPAC[Ver 3.61.12] - 15-Minute Flow Rates: by Movement

Intersection # 2 elston/concord

Begin Time	N-Approach			E-Approach			S-Approach			W-Approach			Int Total
	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	
700	0	0	4	16	0	0	4	0	0	0	0	0	24
715	0	0	4	16	0	8	32	0	0	0	0	0	60
730	0	0	16	24	0	20	16	0	0	0	0	0	76
745	0	0	28	16	0	4	32	0	0	0	0	0	80
800	0	0	40	12	0	8	4	0	0	0	0	0	64
815	0	0	24	40	0	4	16	0	0	0	0	0	84
830	0	0	44	44	0	8	20	0	0	0	0	0	116
845	0	0	20	24	0	4	32	0	0	0	0	0	80
1600	0	0	20	64	0	12	12	0	0	0	0	0	108
1615	0	0	4	100	0	4	8	0	0	0	0	0	116
1630	0	0	12	64	0	28	24	0	0	0	0	0	128
1645	0	0	16	40	0	24	20	0	0	0	0	0	100
1700	0	0	12	76	0	48	12	0	0	0	0	0	148
1715	0	0	16	84	0	24	28	0	0	0	0	0	152
1730	0	0	20	88	0	24	8	0	0	0	0	0	140
1745	0	0	4	52	0	28	16	0	0	0	0	0	100

URNS/TEAPAC[Ver 3.61.12] - 15-Minute Flow Rates: Appr/Exit Totals

Intersection # 2 elston/concord

Begin Time	Approach Totals				Exit Totals				Int Total
	N	E	S	W	N	E	S	W	
700	4	16	4	0	16	8	0	0	24
715	4	24	32	0	16	36	8	0	60
730	16	44	16	0	24	32	20	0	76
745	28	20	32	0	16	60	4	0	80
800	40	20	4	0	12	44	8	0	64
815	24	44	16	0	40	40	4	0	84
830	44	52	20	0	44	64	8	0	116
845	20	28	32	0	24	52	4	0	80
1600	20	76	12	0	64	32	12	0	108
1615	4	104	8	0	100	12	4	0	116
1630	12	92	24	0	64	36	28	0	128
1645	16	64	20	0	40	36	24	0	100
1700	12	124	12	0	76	24	48	0	148
1715	16	108	28	0	84	44	24	0	152
1730	20	112	8	0	88	28	24	0	140
1745	4	80	16	0	52	20	28	0	100

Chicago, IL Weather: Warm and Dry
 Elston ave and Concord Place
 Wednesday August 8, 2018

08/09/18
 10:00:27

URNS/TEAPAC[Ver 3.61.12] - 60-Minute Volumes: by Movement

Intersection # 2 elston/concord

Begin Time	N-Approach			E-Approach			S-Approach			W-Approach			Int Total
	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	
700	0	0	13	18	0	8	21	0	0	0	0	0	60
715	0	0	22	17	0	10	21	0	0	0	0	0	70
730	0	0	27	23	0	9	17	0	0	0	0	0	76
745	0	0	34	28	0	6	18	0	0	0	0	0	86
800	0	0	32	30	0	6	18	0	0	0	0	0	86
815	0	0	22	27	0	4	17	0	0	0	0	0	70*
830	0	0	16	17	0	3	13	0	0	0	0	0	49*
845	0	0	5	6	0	1	8	0	0	0	0	0	20*
1600	0	0	13	67	0	17	16	0	0	0	0	0	113
1615	0	0	11	70	0	26	16	0	0	0	0	0	123
1630	0	0	14	66	0	31	21	0	0	0	0	0	132
1645	0	0	16	72	0	30	17	0	0	0	0	0	135
1700	0	0	13	75	0	31	16	0	0	0	0	0	135
1715	0	0	10	56	0	19	13	0	0	0	0	0	98*
1730	0	0	6	35	0	13	6	0	0	0	0	0	60*
1745	0	0	1	13	0	7	4	0	0	0	0	0	25*

URNS/TEAPAC[Ver 3.61.12] - 60-Minute Volumes: Appr/Exit Totals

Intersection # 2 elston/concord

Begin Time	Approach Totals				Exit Totals				Int Total
	N	E	S	W	N	E	S	W	
700	13	26	21	0	18	34	8	0	60
715	22	27	21	0	17	43	10	0	70
730	27	32	17	0	23	44	9	0	76
745	34	34	18	0	28	52	6	0	86
800	32	36	18	0	30	50	6	0	86
815	22	31	17	0	27	39	4	0	70*
830	16	20	13	0	17	29	3	0	49*
845	5	7	8	0	6	13	1	0	20*
1600	13	84	16	0	67	29	17	0	113
1615	11	96	16	0	70	27	26	0	123
1630	14	97	21	0	66	35	31	0	132
1645	16	102	17	0	72	33	30	0	135
1700	13	106	16	0	75	29	31	0	135
1715	10	75	13	0	56	23	19	0	98*
1730	6	48	6	0	35	12	13	0	60*
1745	1	20	4	0	13	5	7	0	25*

Chicago, IL Weather: Warm and Dry
 Armitage Ave and Hermitage Ave and I 90 Off Ramp
 Wednesday August 8, 2018

08/09/18
 10:21:52

URNS/TEAPAC[Ver 3.61.12] - 15-Minute Counts: All Vehicles - by Mvmt

Intersection # 1 armitage/hermitage/i90off

Begin Time	N-Approach			E-Approach			S-Approach			W-Approach			Int Total
	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	
700	27	9	56	0	0	3	9	0	7	2	0	0	113
715	30	8	61	0	0	2	14	0	2	1	0	0	118
730	24	13	52	0	0	3	16	0	6	1	0	0	115
745	30	15	78	0	0	8	14	0	4	3	0	0	152
800	18	13	55	0	0	2	13	0	6	3	0	0	110
815	18	5	48	0	0	3	18	0	4	1	0	0	97
830	24	11	44	0	0	7	9	0	7	2	0	0	104
845	36	14	81	0	0	3	15	0	0	1	0	0	150
1600	33	15	45	0	0	4	6	0	3	4	0	0	110
1615	31	9	42	0	0	3	13	0	3	3	0	0	104
1630	60	14	39	0	0	3	9	0	14	5	0	0	144
1645	37	8	51	0	0	0	16	0	8	1	0	0	121
1700	59	12	42	0	0	1	16	0	7	4	0	0	141
1715	38	11	50	0	0	2	13	0	10	1	0	0	125
1730	45	15	59	0	0	2	17	0	8	3	0	0	149
1745	42	11	51	0	0	5	18	0	5	4	0	0	136
Total	552	183	854	0	0	51	216	0	94	39	0	0	1989

URNS/TEAPAC[Ver 3.61.12] - 15-Minute Counts: All Vehicles - Totals

Intersection # 1 armitage/hermitage/i90off

Begin Time	Approach Totals				Exit Totals				Int Total
	N	E	S	W	N	E	S	W	
700	92	3	16	2	0	65	14	34	113
715	99	2	16	1	0	75	11	32	118
730	89	3	22	1	0	68	17	30	115
745	123	8	18	3	0	92	26	34	152
800	86	2	19	3	0	68	18	24	110
815	71	3	22	1	0	66	9	22	97
830	79	7	16	2	0	53	20	31	104
845	131	3	15	1	0	96	18	36	150
1600	93	4	9	4	0	51	23	36	110
1615	82	3	16	3	0	55	15	34	104
1630	113	3	23	5	0	48	22	74	144
1645	96	0	24	1	0	67	9	45	121
1700	113	1	23	4	0	58	17	66	141
1715	99	2	23	1	0	63	14	48	125
1730	119	2	25	3	0	76	20	53	149
1745	104	5	23	4	0	69	20	47	136
Total	1589	51	310	39	0	1070	273	646	1989

Chicago, IL Weather: Warm and Dry
 Armitage Ave and Hermitage Ave and I 90 Off Ramp
 Wednesday August 8, 2018

08/09/18
 10:21:52

URNS/TEAPAC[Ver 3.61.12] - 15-Minute Flow Rates: by Movement

Intersection # 1 armitage/hermitage/i90off

Begin Time	N-Approach			E-Approach			S-Approach			W-Approach			Int Total
	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	
700	108	36	224	0	0	12	36	0	28	8	0	0	452
715	120	32	244	0	0	8	56	0	8	4	0	0	472
730	96	52	208	0	0	12	64	0	24	4	0	0	460
745	120	60	312	0	0	32	56	0	16	12	0	0	608
800	72	52	220	0	0	8	52	0	24	12	0	0	440
815	72	20	192	0	0	12	72	0	16	4	0	0	388
830	96	44	176	0	0	28	36	0	28	8	0	0	416
845	144	56	324	0	0	12	60	0	0	4	0	0	600
1600	132	60	180	0	0	16	24	0	12	16	0	0	440
1615	124	36	168	0	0	12	52	0	12	12	0	0	416
1630	240	56	156	0	0	12	36	0	56	20	0	0	576
1645	148	32	204	0	0	0	64	0	32	4	0	0	484
1700	236	48	168	0	0	4	64	0	28	16	0	0	564
1715	152	44	200	0	0	8	52	0	40	4	0	0	500
1730	180	60	236	0	0	8	68	0	32	12	0	0	596
1745	168	44	204	0	0	20	72	0	20	16	0	0	544

URNS/TEAPAC[Ver 3.61.12] - 15-Minute Flow Rates: Appr/Exit Totals

Intersection # 1 armitage/hermitage/i90off

Begin Time	Approach Totals				Exit Totals				Int Total
	N	E	S	W	N	E	S	W	
700	368	12	64	8	0	260	56	136	452
715	396	8	64	4	0	300	44	128	472
730	356	12	88	4	0	272	68	120	460
745	492	32	72	12	0	368	104	136	608
800	344	8	76	12	0	272	72	96	440
815	284	12	88	4	0	264	36	88	388
830	316	28	64	8	0	212	80	124	416
845	524	12	60	4	0	384	72	144	600
1600	372	16	36	16	0	204	92	144	440
1615	328	12	64	12	0	220	60	136	416
1630	452	12	92	20	0	192	88	296	576
1645	384	0	96	4	0	268	36	180	484
1700	452	4	92	16	0	232	68	264	564
1715	396	8	92	4	0	252	56	192	500
1730	476	8	100	12	0	304	80	212	596
1745	416	20	92	16	0	276	80	188	544

Chicago, IL Weather: Warm and Dry
 Armitage Ave and Hermitage Ave and I 90 Off Ramp
 Wednesday August 8, 2018

08/09/18
 10:21:52

URNS/TEAPAC[Ver 3.61.12] - 60-Minute Volumes: by Movement

Intersection # 1 armitage/hermitage/i90off

Begin Time	N-Approach			E-Approach			S-Approach			W-Approach			Int Total
	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	
700	111	45	247	0	0	16	53	0	19	7	0	0	498
715	102	49	246	0	0	15	57	0	18	8	0	0	495
730	90	46	233	0	0	16	61	0	20	8	0	0	474
745	90	44	225	0	0	20	54	0	21	9	0	0	463
800	96	43	228	0	0	15	55	0	17	7	0	0	461
815	78	30	173	0	0	13	42	0	11	4	0	0	351*
830	60	25	125	0	0	10	24	0	7	3	0	0	254*
845	36	14	81	0	0	3	15	0	0	1	0	0	150*
1600	161	46	177	0	0	10	44	0	28	13	0	0	479
1615	187	43	174	0	0	7	54	0	32	13	0	0	510
1630	194	45	182	0	0	6	54	0	39	11	0	0	531
1645	179	46	202	0	0	5	62	0	33	9	0	0	536
1700	184	49	202	0	0	10	64	0	30	12	0	0	551
1715	125	37	160	0	0	9	48	0	23	8	0	0	410*
1730	87	26	110	0	0	7	35	0	13	7	0	0	285*
1745	42	11	51	0	0	5	18	0	5	4	0	0	136*

URNS/TEAPAC[Ver 3.61.12] - 60-Minute Volumes: Appr/Exit Totals

Intersection # 1 armitage/hermitage/i90off

Begin Time	Approach Totals				Exit Totals				Int Total
	N	E	S	W	N	E	S	W	
700	403	16	72	7	0	300	68	130	498
715	397	15	75	8	0	303	72	120	495
730	369	16	81	8	0	294	70	110	474
745	359	20	75	9	0	279	73	111	463
800	367	15	72	7	0	283	65	113	461
815	281	13	53	4	0	215	47	89	351*
830	210	10	31	3	0	149	38	67	254*
845	131	3	15	1	0	96	18	36	150*
1600	384	10	72	13	0	221	69	189	479
1615	404	7	86	13	0	228	63	219	510
1630	421	6	93	11	0	236	62	233	531
1645	427	5	95	9	0	264	60	212	536
1700	435	10	94	12	0	266	71	214	551
1715	322	9	71	8	0	208	54	148	410*
1730	223	7	48	7	0	145	40	100	285*
1745	104	5	23	4	0	69	20	47	136*

Capacity Analysis Output Sheets

Capacity Analysis Output Sheets
Morning Peak Hour – Existing Conditions

Lanes, Volumes, Timings
 3: Damen Avenue & Webster Avenue

01/07/2019



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	32	455	24	87	108	5	26	219	362	262	301	87
Future Volume (vph)	32	455	24	87	108	5	26	219	362	262	301	87
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	13	12	12	10	11	10	10	10	11	11	11
Storage Length (ft)	25		0	0		0	60		60	280		100
Storage Lanes	1		0	1		1	1		1	1		1
Taper Length (ft)	25			25			90			60		
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	0.99	1.00		0.99		0.96	0.99		0.98	0.99		0.95
Frt		0.992				0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1805	1661	0	1752	1773	1561	1620	1383	1459	1728	1702	1546
Flt Permitted	0.685			0.200			0.200			0.572		
Satd. Flow (perm)	1283	1661	0	366	1773	1503	337	1383	1428	1034	1702	1471
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		4				84			247			90
Link Speed (mph)		30			30			30				30
Link Distance (ft)		701			148			667				422
Travel Time (s)		15.9			3.4			15.2				9.6
Confl. Peds. (#/hr)	10		14	14		10	24		8	8		24
Confl. Bikes (#/hr)			4			1			2			10
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 (%)	0%	0%	0%	3%	0%	0%	4%	9%	0%	1%	4%	1%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	8	0	9	0
Parking (#/hr)		9						10				
Shared Lane Traffic (%)												
Lane Group Flow (vph)	33	494	0	90	111	5	27	226	373	270	310	90
Turn Type	Perm	NA		Perm	NA	Perm	Perm	NA	Perm	custom	NA	Perm
Protected Phases		4			8			2		1	16	
Permitted Phases	4			8		8	2		2	6		16
Minimum Split (s)	25.0	25.0		25.0	25.0	25.0	25.0	25.0	25.0	9.5		
Total Split (s)	25.0	25.0		25.0	25.0	25.0	25.0	25.0	25.0	15.0		
Total Split (%)	38.5%	38.5%		38.5%	38.5%	38.5%	38.5%	38.5%	38.5%	23.1%		
Yellow Time (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0		
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0	0.0		
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0		
Total Lost Time (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0	3.0		
Lead/Lag												
Lead-Lag Optimize?												
Act Effect Green (s)	20.0	20.0		20.0	20.0	20.0	20.0	20.0	20.0	34.0	37.0	37.0
Actuated g/C Ratio	0.31	0.31		0.31	0.31	0.31	0.31	0.31	0.31	0.52	0.57	0.57
v/c Ratio	0.08	0.96		0.80	0.20	0.01	0.26	0.53	0.61	0.40	0.32	0.10
Control Delay	16.8	57.0		72.5	17.9	0.0	24.9	24.1	11.7	13.8	13.4	6.3
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	16.8	57.0		72.5	17.9	0.0	24.9	24.1	11.7	13.8	13.4	6.3
LOS	B	E		E	B	A	C	C	B	B	B	A
Approach Delay		54.5			41.3			16.7			12.6	
Approach LOS		D			D			B			B	

Lanes, Volumes, Timings
 3: Damen Avenue & Webster Avenue

01/07/2019

Lane Group	Ø6
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Confl. Bikes (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Bus Blockages (#/hr)	
Parking (#/hr)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	6
Permitted Phases	
Minimum Split (s)	25.0
Total Split (s)	25.0
Total Split (%)	38%
Yellow Time (s)	3.0
All-Red Time (s)	2.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	

Lanes, Volumes, Timings
 3: Damen Avenue & Webster Avenue

01/07/2019

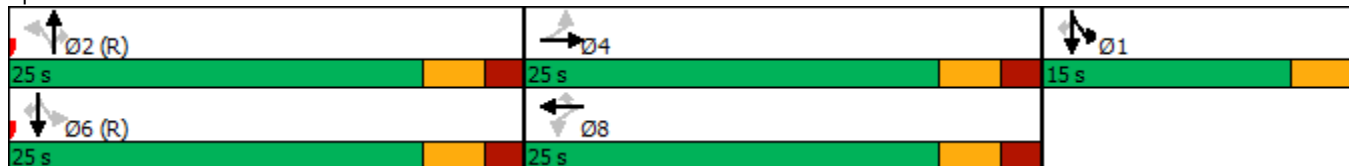


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 50th (ft)	9	189		32	32	0	8	73	37	69	82	1
Queue Length 95th (ft)	27	#370		#109	67	0	29	136	116	130	148	m27
Internal Link Dist (ft)		621			68			587			342	
Turn Bay Length (ft)	25						60		60	280		100
Base Capacity (vph)	394	513		112	545	520	103	425	610	668	968	876
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	0.08	0.96		0.80	0.20	0.01	0.26	0.53	0.61	0.40	0.32	0.10

Intersection Summary

Area Type: Other
 Cycle Length: 65
 Actuated Cycle Length: 65
 Offset: 30 (46%), Referenced to phase 2:NBT and 6:SBT, Start of Green
 Natural Cycle: 60
 Control Type: Pretimed
 Maximum v/c Ratio: 0.96
 Intersection Signal Delay: 27.7 Intersection LOS: C
 Intersection Capacity Utilization 77.3% 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: 3: Damen Avenue & Webster Avenue



Lane Group	Ø6
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	
Intersection Summary	

Lanes, Volumes, Timings
6: Damen Avenue & I-90/94 Off Ramp

01/07/2019



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	73	250	261	0	0	602
Future Volume (vph)	73	250	261	0	0	602
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	9	9	12	12	12	12
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt		0.850				
Flt Protected	0.950					
Satd. Flow (prot)	1577	1358	1759	0	0	1800
Flt Permitted	0.950					
Satd. Flow (perm)	1577	1358	1759	0	0	1800
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		255				
Link Speed (mph)	30		30			30
Link Distance (ft)	211		422			303
Travel Time (s)	4.8		9.6			6.9
Confl. Peds. (#/hr)				9	9	
Confl. Bikes (#/hr)				4		
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	3%	7%	8%	0%	0%	3%
Bus Blockages (#/hr)	0	0	0	0	0	6
Shared Lane Traffic (%)						
Lane Group Flow (vph)	74	255	266	0	0	614
Turn Type	Prot	Prot	NA			NA
Protected Phases	8	8	2			6
Permitted Phases						
Minimum Split (s)	23.0	23.0	41.0			41.0
Total Split (s)	24.0	24.0	41.0			41.0
Total Split (%)	36.9%	36.9%	63.1%			63.1%
Yellow Time (s)	3.0	3.0	3.0			3.0
All-Red Time (s)	2.0	2.0	1.0			1.0
Lost Time Adjust (s)	0.0	0.0	0.0			0.0
Total Lost Time (s)	5.0	5.0	4.0			4.0
Lead/Lag						
Lead-Lag Optimize?						
Act Effct Green (s)	19.0	19.0	37.0			37.0
Actuated g/C Ratio	0.29	0.29	0.57			0.57
v/c Ratio	0.16	0.44	0.27			0.60
Control Delay	18.3	5.5	1.3			12.2
Queue Delay	0.0	0.0	0.0			0.0
Total Delay	18.3	5.5	1.3			12.2
LOS	B	A	A			B
Approach Delay	8.4		1.3			12.2
Approach LOS	A		A			B
Queue Length 50th (ft)	22	0	4			143
Queue Length 95th (ft)	50	47	6			233
Internal Link Dist (ft)	131		342			223
Turn Bay Length (ft)						

Lanes, Volumes, Timings
 6: Damen Avenue & I-90/94 Off Ramp

01/07/2019



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Base Capacity (vph)	460	577	1001			1024
Starvation Cap Reductn	0	0	0			0
Spillback Cap Reductn	0	0	0			0
Storage Cap Reductn	0	0	0			0
Reduced v/c Ratio	0.16	0.44	0.27			0.60

Intersection Summary

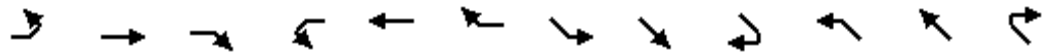
Area Type:	Other
Cycle Length:	65
Actuated Cycle Length:	65
Offset:	35 (54%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle:	65
Control Type:	Pretimed
Maximum v/c Ratio:	0.60
Intersection Signal Delay:	8.8
Intersection LOS:	A
Intersection Capacity Utilization	53.8%
ICU Level of Service	A
Analysis Period (min)	15

Splits and Phases: 6: Damen Avenue & I-90/94 Off Ramp



Lanes, Volumes, Timings
10: Elston Avenue & Webster Avenue

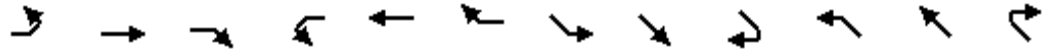
01/07/2019



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations		↕		↕	↕		↕	↕		↕	↕	↕
Traffic Volume (vph)	15	409	48	7	348	61	222	447	31	31	123	8
Future Volume (vph)	15	409	48	7	348	61	222	447	31	31	123	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	11	12	10	12
Storage Length (ft)	0		0	55		55	100		0	90		90
Storage Lanes	0		0	1		0	1		0	1		1
Taper Length (ft)	25			25			92			89		
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		0.99	1.00		1.00	1.00		0.99		0.98
Frt		0.986			0.978			0.990				0.850
Flt Protected		0.998		0.950			0.950			0.950		
Satd. Flow (prot)	0	1577	0	1805	1578	0	1787	1523	0	1752	1612	1615
Flt Permitted		0.981		0.360			0.674			0.322		
Satd. Flow (perm)	0	1550	0	678	1578	0	1266	1523	0	589	1612	1578
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		7			10			5				21
Link Speed (mph)		30			30			30				30
Link Distance (ft)		900			1020			711				793
Travel Time (s)		20.5			23.2			16.2				18.0
Confl. Peds. (#/hr)	4		17	17		4	2		18	18		2
Confl. Bikes (#/hr)			6			2			11			1
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%	1%	12%	0%	1%	0%	1%	5%	0%	3%	10%	0%
Parking (#/hr)		7			8			10				
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	498	0	7	430	0	234	504	0	33	129	8
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		4			8			6				2
Permitted Phases	4			8			6			2		2
Minimum Split (s)	50.0	50.0		50.0	50.0		55.0	55.0		55.0	55.0	55.0
Total Split (s)	50.0	50.0		50.0	50.0		55.0	55.0		55.0	55.0	55.0
Total Split (%)	47.6%	47.6%		47.6%	47.6%		52.4%	52.4%		52.4%	52.4%	52.4%
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
All-Red Time (s)	2.0	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
Total Lost Time (s)		5.0		5.0	5.0		5.0	5.0		5.0	5.0	5.0
Lead/Lag												
Lead-Lag Optimize?												
Act Effect Green (s)		45.0		45.0	45.0		50.0	50.0		50.0	50.0	50.0
Actuated g/C Ratio		0.43		0.43	0.43		0.48	0.48		0.48	0.48	0.48
v/c Ratio		0.75		0.02	0.63		0.39	0.69		0.12	0.17	0.01
Control Delay		33.1		17.9	29.3		20.1	27.5		16.8	16.4	2.1
Queue Delay		0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay		33.1		17.9	29.3		20.1	27.5		16.8	16.4	2.1
LOS		C		B	C		C	C		B	B	A
Approach Delay		33.1			29.1			25.1			15.8	
Approach LOS		C			C			C			B	
Queue Length 50th (ft)		271		4	257		98	253		12	48	0

Lanes, Volumes, Timings
 10: Elston Avenue & Webster Avenue

01/07/2019

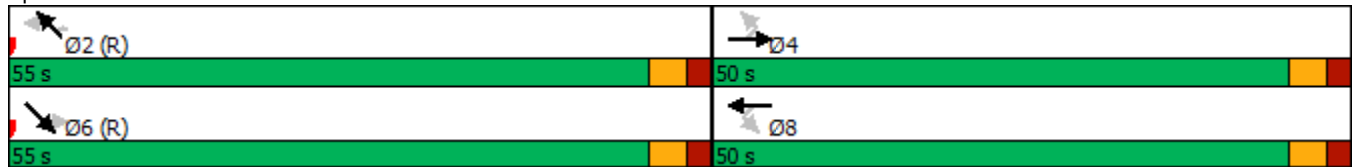


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Queue Length 95th (ft)		406		m6	m345		160	381		31	84	4
Internal Link Dist (ft)		820			940			631			713	
Turn Bay Length (ft)				55			100			90		90
Base Capacity (vph)		668		290	682		602	727		280	767	762
Starvation Cap Reductn		0		0	0		0	0		0	0	0
Spillback Cap Reductn		0		0	0		0	0		0	0	0
Storage Cap Reductn		0		0	0		0	0		0	0	0
Reduced v/c Ratio		0.75		0.02	0.63		0.39	0.69		0.12	0.17	0.01

Intersection Summary

Area Type: Other
 Cycle Length: 105
 Actuated Cycle Length: 105
 Offset: 12 (11%), Referenced to phase 2:NWTL and 6:SETL, Start of Green
 Natural Cycle: 105
 Control Type: Pretimed
 Maximum v/c Ratio: 0.75
 Intersection Signal Delay: 27.4
 Intersection LOS: C
 Intersection Capacity Utilization 120.0%
 ICU Level of Service H
 Analysis Period (min) 15
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 10: Elston Avenue & Webster Avenue



Lanes, Volumes, Timings
14: Ashland Avenue & Webster Avenue

01/07/2019



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	118	428	13	192	318	12	15	1075	142	4	1288	130
Future Volume (vph)	118	428	13	192	318	12	15	1075	142	4	1288	130
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	10	11	12	10	11	12
Storage Length (ft)	60		0	230		0	115		0	65		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	55			65			85			45		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor	1.00	1.00		0.99	1.00		1.00	1.00		1.00	0.99	
Frt		0.995			0.994			0.983			0.986	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1805	1835	0	1770	1869	0	1504	3082	0	1685	3219	0
Flt Permitted	0.303			0.137			0.076			0.109		
Satd. Flow (perm)	573	1835	0	253	1869	0	120	3082	0	193	3219	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		2			2			18			13	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1020			606			676			531	
Travel Time (s)		23.2			13.8			15.4			12.1	
Confl. Peds. (#/hr)	8		26	26		8	32		12	12		32
Confl. Bikes (#/hr)			7			12			2			2
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	0%	3%	0%	2%	1%	0%	12%	10%	2%	0%	5%	1%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	8	0	0	8	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	124	465	0	202	348	0	16	1281	0	4	1493	0
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	7	4		3	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	5.0	9.0		5.0	9.0		5.0	33.0		5.0	33.0	
Minimum Split (s)	8.0	36.0		8.0	36.0		8.0	53.0		8.0	53.0	
Total Split (s)	8.0	36.0		8.0	36.0		8.0	53.0		8.0	53.0	
Total Split (%)	7.6%	34.3%		7.6%	34.3%		7.6%	50.5%		7.6%	50.5%	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	0.0	2.0		0.0	2.0		0.0	2.0		0.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	3.0	5.0		3.0	5.0		3.0	5.0		3.0	5.0	
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	
Act Effect Green (s)	36.2	29.2		36.2	29.2		58.6	54.6		58.6	54.6	
Actuated g/C Ratio	0.34	0.28		0.34	0.28		0.56	0.52		0.56	0.52	
v/c Ratio	0.48	0.91		1.27	0.67		0.12	0.80		0.02	0.89	
Control Delay	19.8	47.4		185.3	44.4		5.5	20.4		10.8	31.8	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	19.8	47.4		185.3	44.4		5.5	20.4		10.8	31.8	

Lanes, Volumes, Timings
 14: Ashland Avenue & Webster Avenue

01/07/2019

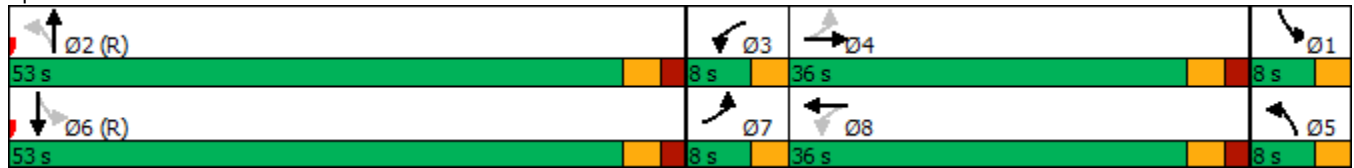


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
LOS	B	D		F	D		A	C		B	C	
Approach Delay		41.6			96.1			20.2			31.8	
Approach LOS		D			F			C			C	
Queue Length 50th (ft)	47	266		~160	239		3	404		1	433	
Queue Length 95th (ft)	m67	#468		m#188	m303		m4	#560		6	#694	
Internal Link Dist (ft)		940			526			596			451	
Turn Bay Length (ft)	60			230			115			65		
Base Capacity (vph)	256	543		159	553		135	1611		181	1679	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.48	0.86		1.27	0.63		0.12	0.80		0.02	0.89	

Intersection Summary

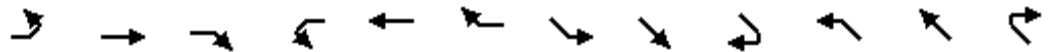
Area Type: Other
 Cycle Length: 105
 Actuated Cycle Length: 105
 Offset: 60 (57%), Referenced to phase 2:NBT and 6:SBT, Start of Green
 Natural Cycle: 105
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 1.27
 Intersection Signal Delay: 38.4
 Intersection LOS: D
 Intersection Capacity Utilization 87.1%
 ICU Level of Service E
 Analysis Period (min) 15
 ~ Volume exceeds capacity, queue is theoretically infinite.
 Queue shown is maximum after two cycles.
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 14: Ashland Avenue & Webster Avenue



Lanes, Volumes, Timings
20: Clybourn Avenue & Webster Avenue

01/07/2019

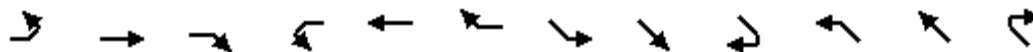


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Traffic Volume (vph)	10	383	89	10	433	84	46	427	15	66	232	5
Future Volume (vph)	10	383	89	10	433	84	46	427	15	66	232	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	75		0	70		0	155		0	125		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	70			25			100			90		
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	0.99		0.99	0.99		1.00	1.00		1.00	1.00	
Frt		0.972			0.976			0.995				0.997
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1641	1579	0	1805	1816	0	1805	1599	0	1770	1625	0
Flt Permitted	0.163			0.215			0.551			0.306		
Satd. Flow (perm)	280	1579	0	406	1816	0	1044	1599	0	568	1625	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		562			328			733			470	
Travel Time (s)		12.8			7.5			16.7			10.7	
Confl. Peds. (#/hr)	9		13	13		9	4		6	6		4
Confl. Bikes (#/hr)			2			7			32			
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 (%)	10%	1%	7%	0%	1%	4%	0%	2%	4%	2%	2%	0%
Parking (#/hr)		4						7				5
Shared Lane Traffic (%)												
Lane Group Flow (vph)	11	513	0	11	562	0	50	480	0	72	257	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		custom	NA	
Protected Phases		4			8			6		5	2.5	
Permitted Phases	4			8			6			2		
Minimum Split (s)	44.0	44.0		44.0	44.0		50.0	50.0		11.0		
Total Split (s)	44.0	44.0		44.0	44.0		50.0	50.0		11.0		
Total Split (%)	41.9%	41.9%		41.9%	41.9%		47.6%	47.6%		10.5%		
Yellow Time (s)	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		0.0		
Lost Time Adjust (s)	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		3.0		
Lead/Lag												
Lead-Lag Optimize?												
Act Effect Green (s)	39.0	39.0		39.0	39.0		45.0	45.0		55.0	56.0	
Actuated g/C Ratio	0.37	0.37		0.37	0.37		0.43	0.43		0.52	0.53	
v/c Ratio	0.11	0.88		0.07	0.83		0.11	0.70		0.19	0.30	
Control Delay	12.9	30.5		23.2	42.7		19.0	31.2		12.2	14.8	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	12.9	30.5		23.2	42.7		19.0	31.2		12.2	14.8	
LOS	B	C		C	D		B	C		B	B	
Approach Delay		30.1			42.3			30.1			14.2	
Approach LOS		C			D			C			B	
Queue Length 50th (ft)	2	341		5	339		20	257		21	91	
Queue Length 95th (ft)	m3	m#468		18	#525		44	382		43	143	

Lane Group	Ø2
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Confl. Bikes (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Parking (#/hr)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	2
Permitted Phases	
Minimum Split (s)	50.0
Total Split (s)	50.0
Total Split (%)	48%
Yellow Time (s)	3.0
All-Red Time (s)	2.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Queue Length 50th (ft)	
Queue Length 95th (ft)	

Lanes, Volumes, Timings
 20: Clybourn Avenue & Webster Avenue

01/07/2019

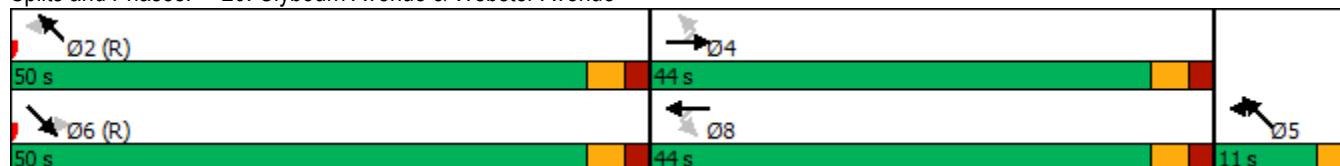


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Internal Link Dist (ft)		482			248			653			390	
Turn Bay Length (ft)	75			70			155			125		
Base Capacity (vph)	104	586		150	674		447	685		389	866	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.11	0.88		0.07	0.83		0.11	0.70		0.19	0.30	

Intersection Summary

Area Type: Other
 Cycle Length: 105
 Actuated Cycle Length: 105
 Offset: 99 (94%), Referenced to phase 2:NWTL and 6:SETL, Start of Green
 Natural Cycle: 105
 Control Type: Pretimed
 Maximum v/c Ratio: 0.88
 Intersection Signal Delay: 31.0 Intersection LOS: C
 Intersection Capacity Utilization 95.7% ICU Level of Service F
 Analysis Period (min) 15
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 20: Clybourn Avenue & Webster Avenue



Lane Group	Ø2
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	
Intersection Summary	

Lanes, Volumes, Timings

24: Southport Avenue & Clybourn Avenue & Shakespeare Avenue

01/07/2019



Lane Group	EBL2	EBL	EBR	EBR2	NBL	NBT	NBR	SBL	SBT	SBR	SBR2	SEL
Lane Configurations												
Traffic Volume (vph)	7	15	36	3	15	61	5	158	116	6	10	12
Future Volume (vph)	7	15	36	3	15	61	5	158	116	6	10	12
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	10
Storage Length (ft)		0	0		0		0	0		0		115
Storage Lanes		1	0		0		0	0		0		1
Taper Length (ft)		25			25			25				90
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.914				0.992			0.992			
Flt Protected		0.982				0.991			0.974			0.950
Satd. Flow (prot)	0	1672	0	0	0	1831	0	0	1800	0	0	1652
Flt Permitted		0.982				0.923			0.795			0.449
Satd. Flow (perm)	0	1672	0	0	0	1706	0	0	1469	0	0	781
Right Turn on Red				Yes			No				No	
Satd. Flow (RTOR)		90										
Link Speed (mph)		30				30			30			
Link Distance (ft)		271				457			332			
Travel Time (s)		6.2				10.4			7.5			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	66	0	0	0	87	0	0	316	0	0	13
Turn Type	Prot	Prot			Perm	NA		Perm	NA			Perm
Protected Phases	4	4				2			6			
Permitted Phases	4				2			6				14
Detector Phase	4	4			2	2		6	6			14
Switch Phase												
Minimum Initial (s)	10.0	10.0			5.0	5.0		5.0	5.0			20.0
Minimum Split (s)	15.0	15.0			27.0	27.0		27.0	27.0			43.0
Total Split (s)	15.0	15.0			27.0	27.0		27.0	27.0			43.0
Total Split (%)	17.6%	17.6%			31.8%	31.8%		31.8%	31.8%			50.6%
Yellow Time (s)	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
Lost Time Adjust (s)		0.0				0.0			0.0			0.0
Total Lost Time (s)		5.0				5.0			5.0			5.0
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	None	None			C-Max	C-Max		C-Max	C-Max			None
Act Effct Green (s)		10.0				31.1			31.1			31.9
Actuated g/C Ratio		0.12				0.37			0.37			0.38
v/c Ratio		0.24				0.14			0.59			0.04
Control Delay		7.0				23.4			31.8			14.7
Queue Delay		0.0				0.0			0.0			0.0
Total Delay		7.0				23.4			31.8			14.7
LOS		A				C			C			B
Approach Delay		7.0				23.4			31.8			
Approach LOS		A				C			C			
Queue Length 50th (ft)		0				33			145			4
Queue Length 95th (ft)		24				74			#298			14

Lanes, Volumes, Timings

24: Southport Avenue & Clybourn Avenue & Shakespeare Avenue

01/07/2019

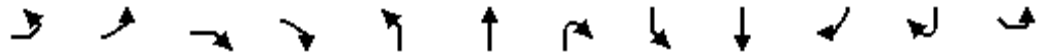


Lane Group	SET	SER	SER2	NWL2	NWL	NWT	NWR
Lane Configurations							
Traffic Volume (vph)	535	11	2	6	5	259	37
Future Volume (vph)	535	11	2	6	5	259	37
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	13	12	12	12	10	13	12
Storage Length (ft)		0			115		0
Storage Lanes		0			1		0
Taper Length (ft)					100		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.996					0.981	
Flt Protected					0.950		
Satd. Flow (prot)	1917	0	0	0	1652	1888	0
Flt Permitted					0.146		
Satd. Flow (perm)	1917	0	0	0	254	1888	0
Right Turn on Red			No				No
Satd. Flow (RTOR)							
Link Speed (mph)	30					30	
Link Distance (ft)	470					1318	
Travel Time (s)	10.7					30.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)							
Lane Group Flow (vph)	596	0	0	0	12	322	0
Turn Type	NA			Perm	Perm	NA	
Protected Phases	14					10	
Permitted Phases				10	10		
Detector Phase	14			10	10	10	
Switch Phase							
Minimum Initial (s)	20.0			20.0	20.0	20.0	
Minimum Split (s)	43.0			43.0	43.0	43.0	
Total Split (s)	43.0			43.0	43.0	43.0	
Total Split (%)	50.6%			50.6%	50.6%	50.6%	
Yellow Time (s)	3.0			3.0	3.0	3.0	
All-Red Time (s)	2.0			2.0	2.0	2.0	
Lost Time Adjust (s)	0.0				0.0	0.0	
Total Lost Time (s)	5.0				5.0	5.0	
Lead/Lag							
Lead-Lag Optimize?							
Recall Mode	None			None	None	None	
Act Effct Green (s)	31.9				31.9	31.9	
Actuated g/C Ratio	0.38				0.38	0.38	
v/c Ratio	0.83				0.13	0.45	
Control Delay	34.1				10.4	11.7	
Queue Delay	1.0				0.0	0.0	
Total Delay	35.1				10.4	11.7	
LOS	D				B	B	
Approach Delay	34.6					11.7	
Approach LOS	C					B	
Queue Length 50th (ft)	277				2	52	
Queue Length 95th (ft)	368				7	69	

Lanes, Volumes, Timings

24: Southport Avenue & Clybourn Avenue & Shakespeare Avenue

01/07/2019

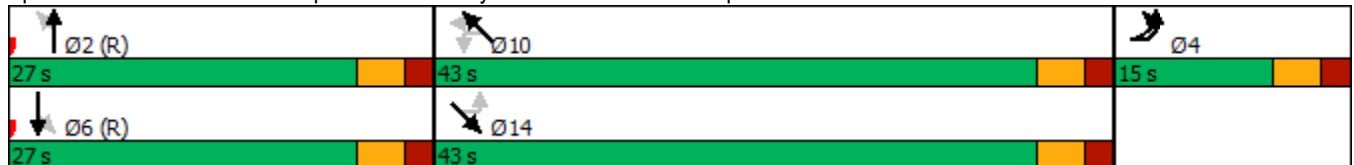


Lane Group	EBL2	EBL	EBR	EBR2	NBL	NBT	NBR	SBL	SBT	SBR	SBR2	SEL
Internal Link Dist (ft)		191				377			252			
Turn Bay Length (ft)												115
Base Capacity (vph)		276				623			537			349
Starvation Cap Reductn		0				0			0			0
Spillback Cap Reductn		0				0			0			0
Storage Cap Reductn		0				0			0			0
Reduced v/c Ratio		0.24				0.14			0.59			0.04

Intersection Summary

Area Type: Other
 Cycle Length: 85
 Actuated Cycle Length: 85
 Offset: 41 (48%), Referenced to phase 2:NBT and 6:SBT, Start of Green
 Natural Cycle: 85
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.83
 Intersection Signal Delay: 26.6
 Intersection LOS: C
 Intersection Capacity Utilization 72.3%
 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: 24: Southport Avenue & Clybourn Avenue & Shakespeare Avenue



Lanes, Volumes, Timings

24: Southport Avenue & Clybourn Avenue & Shakespeare Avenue
























01/07/2019



Lane Group	SET	SER	SER2	NWL2	NWL	NWT	NWR
Internal Link Dist (ft)	390					1238	
Turn Bay Length (ft)					115		
Base Capacity (vph)	857				113	844	
Starvation Cap Reductn	91				0	0	
Spillback Cap Reductn	0				0	0	
Storage Cap Reductn	0				0	0	
Reduced v/c Ratio	0.78				0.11	0.38	
Intersection Summary							

Lanes, Volumes, Timings
27: Ashland Avenue & Elston Avenue

01/07/2019

												
Lane Group	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations		 			  							
Traffic Volume (vph)	60	1102	0	185	1330	7	0	417	95	0	115	152
Future Volume (vph)	60	1102	0	185	1330	7	0	417	95	0	115	152
Ideal Flow (vphpl)	1900	2000	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	10	10	10	11	12	12	15	11	12	10	12
Storage Length (ft)	0		0	100		0	0		54	0		0
Storage Lanes	1		0	1		0	0		1	0		1
Taper Length (ft)	25			90			25			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.91	0.91	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99			1.00	1.00				0.96			0.98
Frt					0.999				0.850			0.850
Flt Protected	0.950			0.950								
Satd. Flow (prot)	1604	3346	0	1620	4810	0	0	2029	1501	0	1657	1509
Flt Permitted	0.121											
Satd. Flow (perm)	203	3346	0	1701	4810	0	0	2029	1436	0	1657	1486
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					1				104			73
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		255			422			290			308	
Travel Time (s)		5.8			9.6			6.6			7.0	
Confl. Peds. (#/hr)	56		3	3		56	2					2
Confl. Bikes (#/hr)			3			1			40			2
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	5%	6%	0%	4%	3%	0%	0%	3%	4%	0%	7%	7%
Bus Blockages (#/hr)	0	0	0	0	8	0	0	0	0	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	63	1160	0	195	1407	0	0	439	100	0	121	160
Turn Type	pm+pt	NA		custom	NA			NA	Perm		NA	pm+ov
Protected Phases	5	2 5		1	1 6			4			8	1
Permitted Phases	2 5			6					4			8
Minimum Split (s)	10.0			9.5				35.0	35.0		35.0	9.5
Total Split (s)	24.0			13.0				35.0	35.0		35.0	13.0
Total Split (%)	22.9%			12.4%				33.3%	33.3%		33.3%	12.4%
Yellow Time (s)	3.0			3.0				3.0	3.0		3.0	3.0
All-Red Time (s)	2.0			0.0				2.0	2.0		2.0	0.0
Lost Time Adjust (s)	0.0			0.0				0.0	0.0		0.0	0.0
Total Lost Time (s)	5.0			3.0				5.0	5.0		5.0	3.0
Lead/Lag	Lag											
Lead-Lag Optimize?	Yes											
Act Effct Green (s)	52.0	52.0		40.0	43.0			30.0	30.0		30.0	42.0
Actuated g/C Ratio	0.50	0.50		0.38	0.41			0.29	0.29		0.29	0.40
v/c Ratio	0.18	0.70		0.30	0.71			0.76	0.21		0.26	0.25
Control Delay	15.5	13.0		11.9	18.4			44.0	6.5		14.4	1.6
Queue Delay	0.0	6.9		0.0	0.0			58.1	0.0		0.0	0.0
Total Delay	15.5	20.0		11.9	18.4			102.1	6.5		14.4	1.6
LOS	B	B		B	B			F	A		B	A
Approach Delay		19.7			17.6			84.4			7.1	
Approach LOS		B			B			F			A	
Queue Length 50th (ft)	10	152		82	324			268	0		18	1

Lanes, Volumes, Timings
 27: Ashland Avenue & Elston Avenue

01/07/2019

Lane Group	Ø2	Ø6
Lane Configurations		
Traffic Volume (vph)		
Future Volume (vph)		
Ideal Flow (vphpl)		
Lane Width (ft)		
Storage Length (ft)		
Storage Lanes		
Taper Length (ft)		
Lane Util. Factor		
Ped Bike Factor		
Frt		
Flt Protected		
Satd. Flow (prot)		
Flt Permitted		
Satd. Flow (perm)		
Right Turn on Red		
Satd. Flow (RTOR)		
Link Speed (mph)		
Link Distance (ft)		
Travel Time (s)		
Confl. Peds. (#/hr)		
Confl. Bikes (#/hr)		
Peak Hour Factor		
Heavy Vehicles (%)		
Bus Blockages (#/hr)		
Shared Lane Traffic (%)		
Lane Group Flow (vph)		
Turn Type		
Protected Phases	2	6
Permitted Phases		
Minimum Split (s)	38.0	33.0
Total Split (s)	57.0	33.0
Total Split (%)	54%	31%
Yellow Time (s)	3.0	3.0
All-Red Time (s)	2.0	2.0
Lost Time Adjust (s)		
Total Lost Time (s)		
Lead/Lag		Lead
Lead-Lag Optimize?		Yes
Act Effct Green (s)		
Actuated g/C Ratio		
v/c Ratio		
Control Delay		
Queue Delay		
Total Delay		
LOS		
Approach Delay		
Approach LOS		
Queue Length 50th (ft)		

Lanes, Volumes, Timings
 27: Ashland Avenue & Elston Avenue

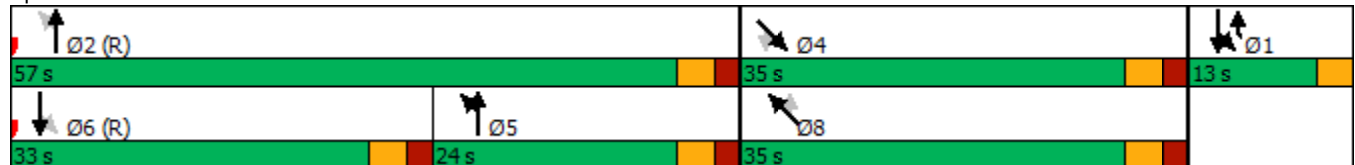
01/07/2019

Lane Group	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SET	SER	NWL	NWT	NWR
Queue Length 95th (ft)	m18	314		m66	m320			387	36		36	10
Internal Link Dist (ft)		175			342			210			228	
Turn Bay Length (ft)				100					54			
Base Capacity (vph)	354	1657		640	1970			579	484		473	640
Starvation Cap Reductn	0	450		0	0			0	0		0	0
Spillback Cap Reductn	0	0		0	0			305	0		0	0
Storage Cap Reductn	0	0		0	0			0	0		0	0
Reduced v/c Ratio	0.18	0.96		0.30	0.71			1.60	0.21		0.26	0.25

Intersection Summary

Area Type: Other
 Cycle Length: 105
 Actuated Cycle Length: 105
 Offset: 13 (12%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
 Natural Cycle: 90
 Control Type: Pretimed
 Maximum v/c Ratio: 0.76
 Intersection Signal Delay: 27.4 Intersection LOS: C
 Intersection Capacity Utilization 75.9% ICU Level of Service D
 Analysis Period (min) 15
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 27: Ashland Avenue & Elston Avenue



Lane Group	Ø2	Ø6
Queue Length 95th (ft)		
Internal Link Dist (ft)		
Turn Bay Length (ft)		
Base Capacity (vph)		
Starvation Cap Reductn		
Spillback Cap Reductn		
Storage Cap Reductn		
Reduced v/c Ratio		
Intersection Summary		

Lanes, Volumes, Timings
29: Ashland Avenue & Armitage Avenue

01/07/2019



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕↕			↕		↕	↕↕			↕↕	↕
Traffic Volume (vph)	418	297	31	4	130	0	33	733	0	0	993	469
Future Volume (vph)	418	297	31	4	130	0	33	733	0	0	993	469
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	10	12	10	10	10	10	9	16	12	11	11
Storage Length (ft)	0		0	0		0	110		0	0		0
Storage Lanes	0		0	0		0	1		0	0		1
Taper Length (ft)	25			25			60			25		
Lane Util. Factor	0.95	0.95	0.95	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Ped Bike Factor		1.00			1.00		0.99					0.91
Frt		0.994										0.850
Flt Protected		0.973			0.999		0.950					
Satd. Flow (prot)	0	3075	0	0	1663	0	1546	2988	0	0	3421	1487
Flt Permitted		0.639			0.974		0.149					
Satd. Flow (perm)	0	2018	0	0	1621	0	239	2988	0	0	3421	1351
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		5										431
Link Speed (mph)		30			30			30				30
Link Distance (ft)		300			135			237				255
Travel Time (s)		6.8			3.1			5.4				5.8
Confl. Peds. (#/hr)	1		10	10		1	57		4	4		57
Confl. Bikes (#/hr)			3						3			
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 (%)	6%	6%	3%	25%	6%	0%	9%	7%	0%	0%	2%	5%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	8	0	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	776	0	0	139	0	34	764	0	0	1034	489
Turn Type	custom	NA		Perm	NA		Perm	NA			NA	pm+ov
Protected Phases	7	7 4			8			2			6 5	7
Permitted Phases	4			8			2					6 5
Minimum Split (s)	10.0			25.0	25.0		45.0	45.0				10.0
Total Split (s)	22.0			25.0	25.0		45.0	45.0				22.0
Total Split (%)	21.0%			23.8%	23.8%		42.9%	42.9%				21.0%
Yellow Time (s)	3.0			3.0	3.0		3.0	3.0				3.0
All-Red Time (s)	0.0			2.0	2.0		1.0	1.0				0.0
Lost Time Adjust (s)					0.0		0.0	0.0				0.0
Total Lost Time (s)					5.0		4.0	4.0				3.0
Lead/Lag	Lead			Lag	Lag							Lead
Lead-Lag Optimize?	Yes			Yes	Yes							Yes
Act Effect Green (s)		44.0			20.0		41.0	41.0			54.0	74.0
Actuated g/C Ratio		0.42			0.19		0.39	0.39			0.51	0.70
v/c Ratio		0.90dl			0.45		0.37	0.66			0.59	0.44
Control Delay		36.7			25.9		25.1	17.5			4.4	3.8
Queue Delay		0.0			0.8		0.0	0.6			0.2	0.1
Total Delay		36.7			26.7		25.1	18.1			4.5	4.0
LOS		D			C		C	B			A	A
Approach Delay		36.7			26.7			18.4			4.4	
Approach LOS		D			C			B			A	
Queue Length 50th (ft)		238			34		7	77			30	42

Lanes, Volumes, Timings
 29: Ashland Avenue & Armitage Avenue

01/07/2019

Lane Group	Ø4	Ø5	Ø6
Lane Configurations			
Traffic Volume (vph)			
Future Volume (vph)			
Ideal Flow (vphpl)			
Lane Width (ft)			
Storage Length (ft)			
Storage Lanes			
Taper Length (ft)			
Lane Util. Factor			
Ped Bike Factor			
Frt			
Flt Protected			
Satd. Flow (prot)			
Flt Permitted			
Satd. Flow (perm)			
Right Turn on Red			
Satd. Flow (RTOR)			
Link Speed (mph)			
Link Distance (ft)			
Travel Time (s)			
Confl. Peds. (#/hr)			
Confl. Bikes (#/hr)			
Peak Hour Factor			
Heavy Vehicles (%)			
Bus Blockages (#/hr)			
Shared Lane Traffic (%)			
Lane Group Flow (vph)			
Turn Type			
Protected Phases	4	5	6
Permitted Phases			
Minimum Split (s)	39.0	9.5	45.0
Total Split (s)	47.0	13.0	45.0
Total Split (%)	45%	12%	43%
Yellow Time (s)	3.0	2.0	3.0
All-Red Time (s)	2.0	0.0	1.0
Lost Time Adjust (s)			
Total Lost Time (s)			
Lead/Lag			
Lead-Lag Optimize?			
Act Effct Green (s)			
Actuated g/C Ratio			
v/c Ratio			
Control Delay			
Queue Delay			
Total Delay			
LOS			
Approach Delay			
Approach LOS			
Queue Length 50th (ft)			

Lanes, Volumes, Timings
 29: Ashland Avenue & Armitage Avenue

01/07/2019

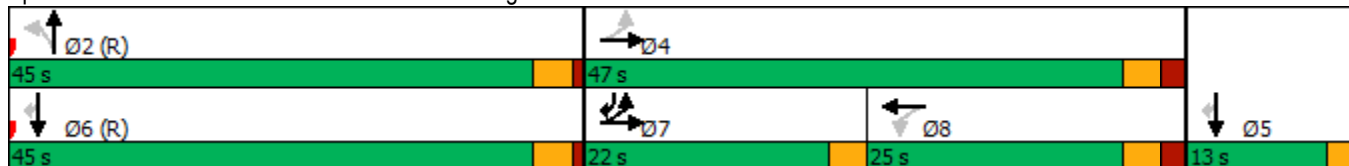


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 95th (ft)		316			58		m14	115			41	99
Internal Link Dist (ft)		220			55			157			175	
Turn Bay Length (ft)							110					
Base Capacity (vph)		1039			308		93	1166			1759	1103
Starvation Cap Reductn		0			43		0	0			164	115
Spillback Cap Reductn		4			0		0	141			0	77
Storage Cap Reductn		0			0		0	0			0	0
Reduced v/c Ratio		0.75			0.52		0.37	0.75			0.65	0.49

Intersection Summary

Area Type: Other
 Cycle Length: 105
 Actuated Cycle Length: 105
 Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Green
 Natural Cycle: 95
 Control Type: Pretimed
 Maximum v/c Ratio: 0.75
 Intersection Signal Delay: 16.6
 Intersection LOS: B
 Intersection Capacity Utilization 84.8%
 ICU Level of Service E
 Analysis Period (min) 15
 m Volume for 95th percentile queue is metered by upstream signal.
 dl Defacto Left Lane. Recode with 1 though lane as a left lane.

Splits and Phases: 29: Ashland Avenue & Armitage Avenue



Lane Group	Ø4	Ø5	Ø6
Queue Length 95th (ft)			
Internal Link Dist (ft)			
Turn Bay Length (ft)			
Base Capacity (vph)			
Starvation Cap Reductn			
Spillback Cap Reductn			
Storage Cap Reductn			
Reduced v/c Ratio			
Intersection Summary			

Lanes, Volumes, Timings
30: Elston Avenue & Armitage Avenue

01/07/2019



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕	↗		↔		↖	↕↔		↖	↕	
Traffic Volume (vph)	0	12	291	1	2	7	117	257	3	10	592	0
Future Volume (vph)	0	12	291	1	2	7	117	257	3	10	592	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	2000	1900	1900	2000	1900
Lane Width (ft)	10	10	10	12	12	12	10	10	9	11	12	12
Storage Length (ft)	0		0	0		0	83		85	75		0
Storage Lanes	0		1	0		0	1		1	1		0
Taper Length (ft)	25			25			90			39		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	1.00	1.00
Ped Bike Factor			0.97		0.99			1.00		1.00		
Frt			0.850		0.902			0.998				
Flt Protected					0.995		0.950			0.950		
Satd. Flow (prot)	0	1642	1436	0	1673	0	1546	3035	0	1745	1942	0
Flt Permitted					0.985		0.108			0.108		
Satd. Flow (perm)	0	1642	1389	0	1654	0	176	3035	0	198	1942	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			99		8			2				
Link Speed (mph)		30			30			30				30
Link Distance (ft)		135			306			644				308
Travel Time (s)		3.1			7.0			14.6				7.0
Confl. Peds. (#/hr)	1		4	4		1			4	4		
Confl. Bikes (#/hr)			3						1			42
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	0%	8%	5%	0%	5%	0%	9%	10%	0%	0%	3%	0%
Parking (#/hr)								3				
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	13	313	0	11	0	126	279	0	11	637	0
Turn Type		NA	pm+ov	Perm	NA		custom	NA		Perm	NA	
Protected Phases		7 4	5		8		5	2 5			6	
Permitted Phases	4		7 4	8			2			6		
Minimum Split (s)	20.0		9.5	20.0	20.0		9.5			41.0	41.0	
Total Split (s)	20.0		19.0	20.0	20.0		19.0			41.0	41.0	
Total Split (%)	19.0%		18.1%	19.0%	19.0%		18.1%			39.0%	39.0%	
Yellow Time (s)	3.0		3.0	3.0	3.0		3.0			3.0	3.0	
All-Red Time (s)	2.0		1.0	2.0	2.0		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		5.0		4.0			4.0	4.0	
Lead/Lag												
Lead-Lag Optimize?												
Act Effct Green (s)		40.0	56.0		15.0		52.0	56.0		37.0	37.0	
Actuated g/C Ratio		0.38	0.53		0.14		0.50	0.53		0.35	0.35	
v/c Ratio		0.02	0.39		0.05		0.45	0.17		0.16	0.93	
Control Delay		26.7	2.7		25.3		23.7	17.4		15.6	37.1	
Queue Delay		1.2	2.6		0.1		0.0	0.0		0.0	47.4	
Total Delay		27.9	5.3		25.4		23.7	17.4		15.6	84.5	
LOS		C	A		C		C	B		B	F	
Approach Delay		6.2			25.4			19.3			83.4	
Approach LOS		A			C			B			F	
Queue Length 50th (ft)		4	1		2		54	63		2	360	

Lanes, Volumes, Timings
 30: Elston Avenue & Armitage Avenue

01/07/2019

Lane Group	Ø2	Ø7
Lane Configurations		
Traffic Volume (vph)		
Future Volume (vph)		
Ideal Flow (vphpl)		
Lane Width (ft)		
Storage Length (ft)		
Storage Lanes		
Taper Length (ft)		
Lane Util. Factor		
Ped Bike Factor		
Frt		
Flt Protected		
Satd. Flow (prot)		
Flt Permitted		
Satd. Flow (perm)		
Right Turn on Red		
Satd. Flow (RTOR)		
Link Speed (mph)		
Link Distance (ft)		
Travel Time (s)		
Confl. Peds. (#/hr)		
Confl. Bikes (#/hr)		
Peak Hour Factor		
Heavy Vehicles (%)		
Parking (#/hr)		
Shared Lane Traffic (%)		
Lane Group Flow (vph)		
Turn Type		
Protected Phases	2	7
Permitted Phases		
Minimum Split (s)	41.0	25.0
Total Split (s)	41.0	25.0
Total Split (%)	39%	24%
Yellow Time (s)	3.0	3.0
All-Red Time (s)	1.0	2.0
Lost Time Adjust (s)		
Total Lost Time (s)		
Lead/Lag		
Lead-Lag Optimize?		
Act Effct Green (s)		
Actuated g/C Ratio		
v/c Ratio		
Control Delay		
Queue Delay		
Total Delay		
LOS		
Approach Delay		
Approach LOS		
Queue Length 50th (ft)		

Lanes, Volumes, Timings
 30: Elston Avenue & Armitage Avenue

01/07/2019

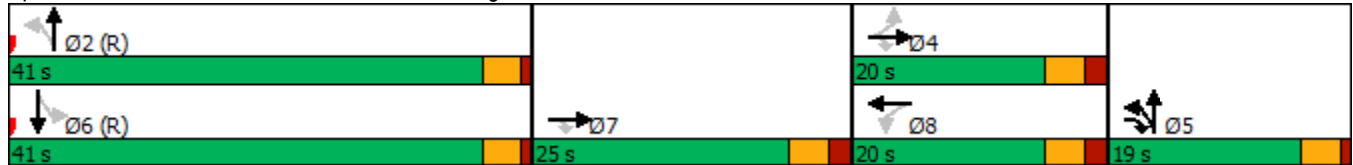


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 95th (ft)		m7	m14		18		m89	m90		m6	#649	
Internal Link Dist (ft)		55			226			564			228	
Turn Bay Length (ft)							83			75		
Base Capacity (vph)		625	793		243		282	1619		69	684	
Starvation Cap Reductn		545	356		0		0	0		0	242	
Spillback Cap Reductn		0	57		79		0	0		0	35	
Storage Cap Reductn		0	0		0		0	0		0	0	
Reduced v/c Ratio		0.16	0.72		0.07		0.45	0.17		0.16	1.44	

Intersection Summary

Area Type: Other
 Cycle Length: 105
 Actuated Cycle Length: 105
 Offset: 88 (84%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
 Natural Cycle: 100
 Control Type: Pretimed
 Maximum v/c Ratio: 0.93
 Intersection Signal Delay: 46.1
 Intersection LOS: D
 Intersection Capacity Utilization 84.2%
 ICU Level of Service E
 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: 30: Elston Avenue & Armitage Avenue



Lane Group	Ø2	Ø7
Queue Length 95th (ft)		
Internal Link Dist (ft)		
Turn Bay Length (ft)		
Base Capacity (vph)		
Starvation Cap Reductn		
Spillback Cap Reductn		
Storage Cap Reductn		
Reduced v/c Ratio		
Intersection Summary		

Lanes, Volumes, Timings
 34: Ashland Avenue & Cortland Street

01/07/2019



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑	↗	↖	↖	↗		↑↔			↑↔	
Traffic Volume (vph)	0	465	53	74	162	6	0	742	133	0	981	37
Future Volume (vph)	0	465	53	74	162	6	0	742	133	0	981	37
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	10	10	12	12	12	12	12	12	12	12	12
Storage Length (ft)	0		0	50		0	0		0	0		0
Storage Lanes	0		1	1		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor			0.92	0.98	1.00			0.99			1.00	
Frt			0.850		0.995			0.977			0.994	
Flt Protected				0.950								
Satd. Flow (prot)	0	1705	1422	1687	1768	0	0	3203	0	0	3512	0
Flt Permitted				0.141								
Satd. Flow (perm)	0	1705	1308	246	1768	0	0	3203	0	0	3512	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		30			30			30				30
Link Distance (ft)		301			414			340				210
Travel Time (s)		6.8			9.4			7.7				4.8
Confl. Peds. (#/hr)	51		52	52		51	107		28	28		107
Confl. Bikes (#/hr)			27			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 (%)	0%	4%	6%	7%	7%	0%	0%	8%	5%	2%	0%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	8	0	0	8	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	484	55	77	175	0	0	912	0	0	1061	0
Turn Type		NA	Perm	custom	NA			NA			NA	
Protected Phases		4		3	3			2				6
Permitted Phases			4	8								
Minimum Split (s)		37.0	37.0	11.0				57.0				57.0
Total Split (s)		37.0	37.0	11.0				57.0				57.0
Total Split (%)		35.2%	35.2%	10.5%				54.3%				54.3%
Yellow Time (s)		3.0	3.0	3.0				3.0				3.0
All-Red Time (s)		2.0	2.0	0.0				2.0				2.0
Lost Time Adjust (s)		0.0	0.0	0.0				0.0				0.0
Total Lost Time (s)		5.0	5.0	3.0				5.0				5.0
Lead/Lag		Lag	Lag	Lead								
Lead-Lag Optimize?		Yes	Yes	Yes								
Act Effect Green (s)		32.0	32.0	45.0	45.0			52.0				52.0
Actuated g/C Ratio		0.30	0.30	0.43	0.43			0.50				0.50
v/c Ratio		0.93	0.14	0.36	0.23			0.58				0.61
Control Delay		62.5	27.8	19.7	9.6			20.5				5.1
Queue Delay		49.3	0.0	0.0	0.0			0.0				0.0
Total Delay		111.8	27.8	19.7	9.6			20.5				5.1
LOS		F	C	B	A			C				A
Approach Delay		103.3			12.7			20.5				5.1
Approach LOS		F			B			C				A
Queue Length 50th (ft)		315	27	14	33			218				24

Lanes, Volumes, Timings
 34: Ashland Avenue & Cortland Street

01/07/2019

Lane Group	Ø8
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Confl. Bikes (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Bus Blockages (#/hr)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	8
Permitted Phases	
Minimum Split (s)	37.0
Total Split (s)	48.0
Total Split (%)	46%
Yellow Time (s)	3.0
All-Red Time (s)	2.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Queue Length 50th (ft)	

Lanes, Volumes, Timings
 34: Ashland Avenue & Cortland Street

01/07/2019

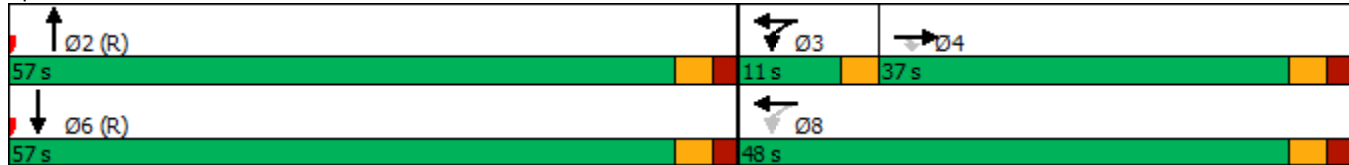


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 95th (ft)		#514	58	m26	m56			281			66	
Internal Link Dist (ft)		221				334		260			130	
Turn Bay Length (ft)				50								
Base Capacity (vph)		519	398	215	757			1586			1739	
Starvation Cap Reductn		0	0	0	0			0			0	
Spillback Cap Reductn		221	0	0	0			0			0	
Storage Cap Reductn		0	0	0	0			0			0	
Reduced v/c Ratio		1.62	0.14	0.36	0.23			0.58			0.61	

Intersection Summary

Area Type: Other
 Cycle Length: 105
 Actuated Cycle Length: 105
 Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green
 Natural Cycle: 105
 Control Type: Pretimed
 Maximum v/c Ratio: 0.93
 Intersection Signal Delay: 30.0 Intersection LOS: C
 Intersection Capacity Utilization 88.3% ICU Level of Service E
 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: 34: Ashland Avenue & Cortland Street



Lane Group	Ø8
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	
Intersection Summary	

Lanes, Volumes, Timings
36: Elston Avenue & Cortland Street

01/07/2019



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	38	443	150	78	199	108	40	238	62	245	617	11
Future Volume (vph)	38	443	150	78	199	108	40	238	62	245	617	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	10	12	12	10	12	11	11	11	11	11	12
Storage Length (ft)	95		0	75		0	60		60	131		70
Storage Lanes	1		0	1		0	1		1	1		0
Taper Length (ft)	25			25			150			100		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.97	0.99		0.99	0.98		1.00		0.95	0.98	1.00	
Frt		0.962			0.947				0.850		0.997	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1671	1424	0	1752	1350	0	1694	1431	1473	1646	1526	0
Flt Permitted	0.376			0.121			0.091			0.534		
Satd. Flow (perm)	644	1424	0	222	1350	0	162	1431	1394	905	1526	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		17			27				52			2
Link Speed (mph)		30			30			30				30
Link Distance (ft)		414			718			296				644
Travel Time (s)		9.4			16.3			6.7				14.6
Confl. Peds. (#/hr)	32		23	32		23	15		28	28		15
Confl. Bikes (#/hr)			28			6			1			42
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 (%)	8%	5%	1%	3%	8%	7%	3%	11%	6%	6%	3%	9%
Parking (#/hr)		4			3			7				8
Shared Lane Traffic (%)												
Lane Group Flow (vph)	40	631	0	83	327	0	43	253	66	261	668	0
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	custom	NA	
Protected Phases		4			8			2		1	16	
Permitted Phases	4			8			2		2	6		
Minimum Split (s)	38.0	38.0		38.0	38.0		49.0	49.0	49.0	18.0		
Total Split (s)	38.0	38.0		38.0	38.0		49.0	49.0	49.0	18.0		
Total Split (%)	36.2%	36.2%		36.2%	36.2%		46.7%	46.7%	46.7%	17.1%		
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0		
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0	2.0	0.0		
Lost Time Adjust (s)	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	3.0		
Lead/Lag												
Lead-Lag Optimize?												
Act Effct Green (s)	33.0	33.0		33.0	33.0		44.0	44.0	44.0	61.0	64.0	
Actuated g/C Ratio	0.31	0.31		0.31	0.31		0.42	0.42	0.42	0.58	0.61	
v/c Ratio	0.20	1.37		1.20	0.74		0.64	0.42	0.11	0.41	0.72	
Control Delay	26.7	201.5		206.8	38.1		69.8	24.3	7.5	10.5	22.6	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	1.0	
Total Delay	26.7	201.5		206.8	38.1		69.8	24.3	7.5	10.5	23.6	
LOS	C	F		F	D		E	C	A	B	C	
Approach Delay		191.1			72.3			26.6			19.9	
Approach LOS		F			E			C			B	
Queue Length 50th (ft)	13	~533		~69	136		22	117	5	52	478	

Lane Group	Ø6
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Confl. Bikes (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Parking (#/hr)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	6
Permitted Phases	
Minimum Split (s)	49.0
Total Split (s)	49.0
Total Split (%)	47%
Yellow Time (s)	3.0
All-Red Time (s)	2.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Queue Length 50th (ft)	

Lanes, Volumes, Timings
 36: Elston Avenue & Cortland Street

01/07/2019

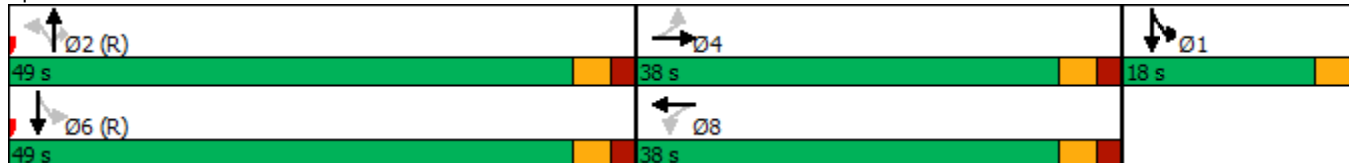


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 95th (ft)	m19	m#643		#171	#311		#86	187	32	m71	m546	
Internal Link Dist (ft)		334			638			216			564	
Turn Bay Length (ft)	95			75			60		60	131		
Base Capacity (vph)	202	459		69	442		67	599	614	631	930	
Starvation Cap Reductn	0	0		0	0		0	0	0	0	89	
Spillback Cap Reductn	0	0		0	0		0	0	0	0	0	
Storage Cap Reductn	0	0		0	0		0	0	0	0	0	
Reduced v/c Ratio	0.20	1.37		1.20	0.74		0.64	0.42	0.11	0.41	0.79	

Intersection Summary

Area Type: Other
 Cycle Length: 105
 Actuated Cycle Length: 105
 Offset: 17 (16%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
 Natural Cycle: 115
 Control Type: Pretimed
 Maximum v/c Ratio: 1.37
 Intersection Signal Delay: 78.4 Intersection LOS: E
 Intersection Capacity Utilization 122.0% 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.
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 36: Elston Avenue & Cortland Street



Lane Group	Ø6
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	
Intersection Summary	

Lanes, Volumes, Timings

39: Clybourn Avenue & Cortland Street & Racine Avenue

01/07/2019



Lane Group	EBL2	EBL	EBR	SBL	SBR	SBR2	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Traffic Volume (vph)	29	272	73	223	216	31	80	605	23	41	254	52
Future Volume (vph)	29	272	73	223	216	31	80	605	23	41	254	52
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	10	12	11	11	12	10	13	12	10	13	12
Storage Length (ft)		0	0	0	0		115		0	115		0
Storage Lanes		1	1	1	2		1		0	1		0
Taper Length (ft)		25		25			60			95		
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		0.96	0.94	0.98			0.90	0.99	1.00	0.99	1.00	
Frt			0.850		0.850	0.850		0.995			0.975	
Flt Protected		0.950		0.950			0.950			0.950		
Satd. Flow (prot)	0	1536	1538	1728	1267	1509	1589	1664	0	1604	1628	0
Flt Permitted		0.950		0.950			0.452			0.121		
Satd. Flow (perm)	0	1481	1451	1687	1267	1352	752	1664	0	203	1628	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		30		30				30			30	
Link Distance (ft)		208		136				578			1880	
Travel Time (s)		4.7		3.1				13.1			42.7	
Confl. Peds. (#/hr)	33		10	10	18	33	14		18	18		14
Confl. Bikes (#/hr)			8		5	5			12			2
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles (%)	7%	10%	5%	1%	6%	7%	6%	2%	0%	5%	3%	0%
Parking (#/hr)					8			6			5	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	331	80	245	237	34	88	690	0	45	336	0
Turn Type	Prot	Prot	Perm	Prot	Prot	Perm	Perm	NA		Perm	NA	
Protected Phases	4	4		8	8			6				2
Permitted Phases	4		4			8	6			2		
Minimum Split (s)	22.0	22.0	22.0	22.0	22.0	22.0	41.0	41.0		41.0	41.0	
Total Split (s)	22.0	22.0	22.0	22.0	22.0	22.0	41.0	41.0		41.0	41.0	
Total Split (%)	25.9%	25.9%	25.9%	25.9%	25.9%	25.9%	48.2%	48.2%		48.2%	48.2%	
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	0.0		0.0	0.0	
Total Lost Time (s)		4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Lead/Lag												
Lead-Lag Optimize?												
Act Effct Green (s)		18.0	18.0	18.0	18.0	18.0	37.0	37.0		37.0	37.0	
Actuated g/C Ratio		0.21	0.21	0.21	0.21	0.21	0.44	0.44		0.44	0.44	
v/c Ratio		1.02	0.26	0.67	0.88	0.12	0.27	0.95		0.51	0.47	
Control Delay		90.6	30.7	41.2	67.0	28.5	7.5	36.2		42.5	19.9	
Queue Delay		30.7	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay		121.3	30.7	41.2	67.0	28.5	7.5	36.2		42.5	19.9	
LOS		F	C	D	E	C	A	D		D	B	
Approach Delay		103.7		52.2				32.9			22.6	
Approach LOS		F		D				C			C	
Queue Length 50th (ft)		~183	36	121	124	15	14	384		17	124	

Lanes, Volumes, Timings

39: Clybourn Avenue & Cortland Street & Racine Avenue

01/07/2019



Lane Group	EBL2	EBL	EBR	SBL	SBR	SBR2	SEL	SET	SER	NWL	NWT	NWR
Queue Length 95th (ft)		#349	75	#205	#257	39	27	#567		#68	198	
Internal Link Dist (ft)		128		56				498			1800	
Turn Bay Length (ft)							115			115		
Base Capacity (vph)		325	307	365	268	286	327	724		88	708	
Starvation Cap Reductn		85	0	0	0	0	0	0		0	0	
Spillback Cap Reductn		0	0	0	0	0	0	0		0	0	
Storage Cap Reductn		0	0	0	0	0	0	0		0	0	
Reduced v/c Ratio		1.38	0.26	0.67	0.88	0.12	0.27	0.95		0.51	0.47	

Intersection Summary

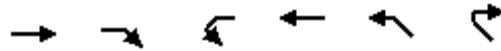
Area Type: Other
 Cycle Length: 85
 Actuated Cycle Length: 85
 Offset: 26 (31%), Referenced to phase 2:NWTL and 6:SETL, Start of Green
 Natural Cycle: 85
 Control Type: Pretimed
 Maximum v/c Ratio: 1.02
 Intersection Signal Delay: 49.7 Intersection LOS: D
 Intersection Capacity Utilization 97.5% ICU Level of Service F
 Analysis Period (min) 15
 ~ Volume exceeds capacity, queue is theoretically infinite.
 Queue shown is maximum after two cycles.
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

Splits and Phases: 39: Clybourn Avenue & Cortland Street & Racine Avenue

Ø2 (R) 41 s	Ø4 22 s	Ø8 22 s
Ø6 (R) 41 s		

Lanes, Volumes, Timings
44: Marcey Street & Cortland Street

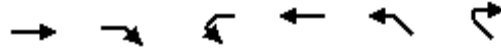
01/07/2019



Lane Group	EBT	EBR	WBL	WBT	NWL	NWR
Lane Configurations	↑↑			↑	↑	
Traffic Volume (vph)	386	267	19	269	38	15
Future Volume (vph)	386	267	19	269	38	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	12	12	11	12	12
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00	1.00
Ped Bike Factor	0.98			1.00	0.99	
Frt	0.939				0.962	
Flt Protected				0.997	0.965	
Satd. Flow (prot)	2907	0	0	1750	1463	0
Flt Permitted				0.967	0.965	
Satd. Flow (perm)	2907	0	0	1696	1463	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	168				17	
Link Speed (mph)	30			30	30	
Link Distance (ft)	275			208	405	
Travel Time (s)	6.3			4.7	9.2	
Confl. Peds. (#/hr)		15	15			18
Confl. Bikes (#/hr)		12				
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Heavy Vehicles (%)	9%	2%	0%	5%	5%	0%
Parking (#/hr)					6	
Shared Lane Traffic (%)						
Lane Group Flow (vph)	742	0	0	328	60	0
Turn Type	NA		pm+pt	NA	Prot	
Protected Phases	4		3	8	2	
Permitted Phases			8			
Detector Phase	4		3	8	2	
Switch Phase						
Minimum Initial (s)	21.0		5.0	19.0	17.0	
Minimum Split (s)	35.0		26.0	38.0	21.0	
Total Split (s)	35.0		33.0	68.0	37.0	
Total Split (%)	33.3%		31.4%	64.8%	35.2%	
Yellow Time (s)	3.0		3.0	3.0	3.0	
All-Red Time (s)	1.0		1.0	1.0	1.0	
Lost Time Adjust (s)	0.0			0.0	0.0	
Total Lost Time (s)	4.0			4.0	4.0	
Lead/Lag	Lead		Lag			
Lead-Lag Optimize?	Yes		Yes			
Recall Mode	C-Max		Max	C-Max	None	
Act Effct Green (s)	51.2			84.2	17.0	
Actuated g/C Ratio	0.49			0.80	0.16	
v/c Ratio	0.49			0.24	0.24	
Control Delay	7.3			3.8	32.0	
Queue Delay	0.0			2.1	0.0	
Total Delay	7.3			6.0	32.0	
LOS	A			A	C	
Approach Delay	7.3			6.0	32.0	
Approach LOS	A			A	C	

Lanes, Volumes, Timings
 44: Marcey Street & Cortland Street

01/07/2019

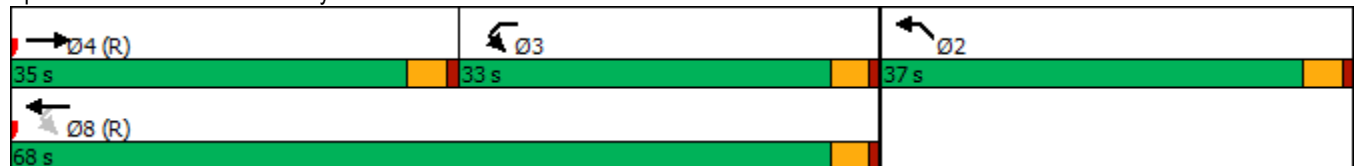


Lane Group	EBT	EBR	WBL	WBT	NWL	NWR
Queue Length 50th (ft)	113			53	25	
Queue Length 95th (ft)	m106			78	63	
Internal Link Dist (ft)	195			128	325	
Turn Bay Length (ft)						
Base Capacity (vph)	1503			1375	471	
Starvation Cap Reductn	0			889	0	
Spillback Cap Reductn	0			0	0	
Storage Cap Reductn	0			0	0	
Reduced v/c Ratio	0.49			0.67	0.13	

Intersection Summary

Area Type:	Other
Cycle Length:	105
Actuated Cycle Length:	105
Offset:	44 (42%), Referenced to phase 4:EBT and 8:WBTL, Start of Green
Natural Cycle:	85
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.49
Intersection Signal Delay:	8.2
Intersection LOS:	A
Intersection Capacity Utilization	50.6%
ICU Level of Service	A
Analysis Period (min)	15
m Volume for 95th percentile queue is metered by upstream signal.	

Splits and Phases: 44: Marcey Street & Cortland Street



Lanes, Volumes, Timings
46: Magnolia Avenue & Clybourn Avenue

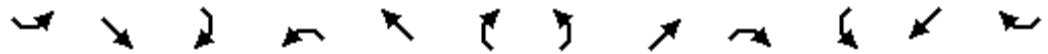
01/07/2019



Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	24	677	0	0	283	22	1	1	1	12	1	6
Future Volume (vph)	24	677	0	0	283	22	1	1	1	12	1	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	13	12	10	13	12	12	15	12	12	15	12
Storage Length (ft)	55		0	125		0	0		0	0		0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (ft)	100			100			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	0.99				1.00			0.98			0.96	
Flt				0.989				0.955			0.955	
Flt Protected	0.950							0.984			0.970	
Satd. Flow (prot)	1620	1624	0	1773	1610	0	0	1926	0	0	1912	0
Flt Permitted	0.560							0.889				
Satd. Flow (perm)	944	1624	0	1773	1610	0	0	1730	0	0	1924	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					9			1			7	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1318			578			185			123	
Travel Time (s)		30.0			13.1			4.2			2.8	
Confl. Peds. (#/hr)	23		21	21		23	9		20	20		9
Confl. Bikes (#/hr)			12									
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 (%)	4%	4%	0%	0%	3%	9%	0%	0%	0%	0%	0%	0%
Parking (#/hr)		8			8							
Shared Lane Traffic (%)												
Lane Group Flow (vph)	26	736	0	0	332	0	0	3	0	0	21	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		6			2			4			8	
Permitted Phases	6			2			4			8		
Detector Phase	6	6		2	2		4	4		8	8	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	59.0	59.0		59.0	59.0		26.0	26.0		26.0	26.0	
Total Split (s)	59.0	59.0		59.0	59.0		26.0	26.0		26.0	26.0	
Total Split (%)	69.4%	69.4%		69.4%	69.4%		30.6%	30.6%		30.6%	30.6%	
Yellow Time (s)	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	
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?												
Recall Mode	C-Max	C-Max		C-Max	C-Max		None	None		None	None	
Act Effct Green (s)	78.8	78.8			78.8			6.3			6.4	
Actuated g/C Ratio	0.93	0.93			0.93			0.07			0.08	
v/c Ratio	0.03	0.49			0.22			0.02			0.14	
Control Delay	1.1	2.9			0.6			32.3			30.4	
Queue Delay	0.0	0.0			0.0			0.0			0.0	
Total Delay	1.1	2.9			0.6			32.3			30.4	

Lanes, Volumes, Timings
 46: Magnolia Avenue & Clybourn Avenue

01/07/2019

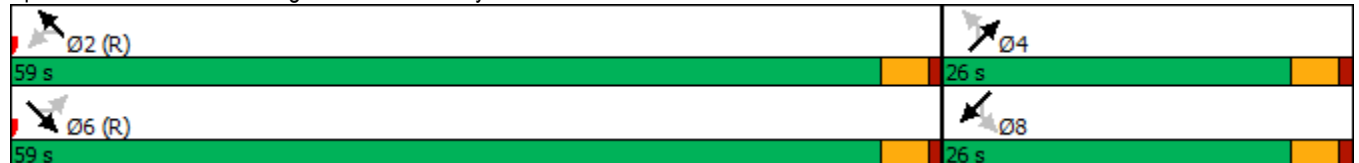


Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
LOS	A	A			A			C			C	
Approach Delay		2.8			0.6			32.3			30.4	
Approach LOS		A			A			C			C	
Queue Length 50th (ft)	0	20			0			1			7	
Queue Length 95th (ft)	m3	112			m8			10			29	
Internal Link Dist (ft)		1238			498			105			43	
Turn Bay Length (ft)	55											
Base Capacity (vph)	875	1506			1494			448			503	
Starvation Cap Reductn	0	0			0			0			0	
Spillback Cap Reductn	0	0			0			0			0	
Storage Cap Reductn	0	0			0			0			0	
Reduced v/c Ratio	0.03	0.49			0.22			0.01			0.04	

Intersection Summary

Area Type: Other
 Cycle Length: 85
 Actuated Cycle Length: 85
 Offset: 18 (21%), Referenced to phase 2:NWTL and 6:SETL, Start of Green
 Natural Cycle: 85
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.49
 Intersection Signal Delay: 2.8
 Intersection LOS: A
 Intersection Capacity Utilization 63.6%
 ICU Level of Service B
 Analysis Period (min) 15
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 46: Magnolia Avenue & Clybourn Avenue



Lanes, Volumes, Timings

75: Armitage Avenue & I-90/94 East Ramps

01/07/2019



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SBL	SBR	NWL	NWR	NWR2
Lane Configurations											
Traffic Volume (vph)	211	324	0	0	453	183	0	0	269	0	423
Future Volume (vph)	211	324	0	0	453	183	0	0	269	0	423
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	12	12	12	16	12	12	12	12	12	12
Lane Util. Factor	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00				0.99						
Frt					0.961						0.850
Flt Protected	0.950								0.950		
Satd. Flow (prot)	1668	3406	0	0	1930	0	0	0	1770	0	1524
Flt Permitted	0.176								0.950		
Satd. Flow (perm)	308	3406	0	0	1930	0	0	0	1770	0	1524
Right Turn on Red			Yes			Yes		Yes			Yes
Satd. Flow (RTOR)					26						444
Link Speed (mph)		30			30		30		30		
Link Distance (ft)		380			210		278		293		
Travel Time (s)		8.6			4.8		6.3		6.7		
Confl. Peds. (#/hr)	14		42	42		14					
Confl. Bikes (#/hr)			1								
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	1%	6%	0%	0%	7%	4%	0%	0%	2%	0%	6%
Shared Lane Traffic (%)											
Lane Group Flow (vph)	227	348	0	0	684	0	0	0	289	0	455
Turn Type	pm+pt	NA			NA				Prot		Prot
Protected Phases	7	4			8				5		5
Permitted Phases	4										5
Minimum Split (s)	17.0	54.0			53.0				35.0		35.0
Total Split (s)	17.0	70.0			53.0				35.0		35.0
Total Split (%)	16.2%	66.7%			50.5%				33.3%		33.3%
Yellow Time (s)	3.0	3.0			3.0				3.0		3.0
All-Red Time (s)	2.0	2.0			2.0				2.0		2.0
Lost Time Adjust (s)	0.0	0.0			0.0				0.0		0.0
Total Lost Time (s)	5.0	5.0			5.0				5.0		5.0
Lead/Lag	Lag				Lead						
Lead-Lag Optimize?	Yes				Yes						
Act Effct Green (s)	65.0	65.0			48.0				30.0		30.0
Actuated g/C Ratio	0.62	0.62			0.46				0.29		0.29
v/c Ratio	0.66	0.17			0.76				0.57		0.61
Control Delay	19.5	3.6			24.3				37.3		7.1
Queue Delay	0.0	0.0			1.5				0.0		0.0
Total Delay	19.5	3.6			25.8				37.3		7.1
LOS	B	A			C				D		A
Approach Delay		9.9			25.8				18.8		
Approach LOS		A			C				B		
Queue Length 50th (ft)	52	31			400				166		5
Queue Length 95th (ft)	76	43			520				254		87
Internal Link Dist (ft)		300			130		198		213		
Turn Bay Length (ft)											
Base Capacity (vph)	346	2108			896				505		752

Lanes, Volumes, Timings

75: Armitage Avenue & I-90/94 East Ramps

01/07/2019

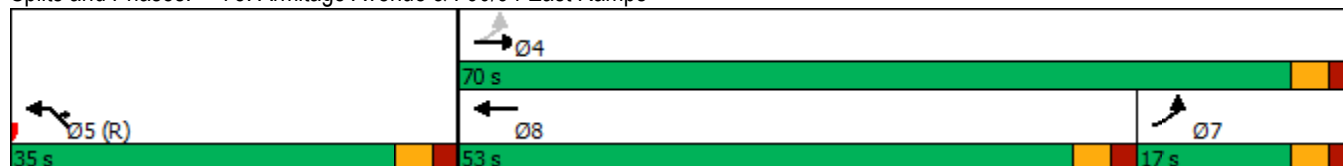


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SBL	SBR	NWL	NWR	NWR2
Starvation Cap Reductn	0	0			84				0		0
Spillback Cap Reductn	0	0			0				0		0
Storage Cap Reductn	0	0			0				0		0
Reduced v/c Ratio	0.66	0.17			0.84				0.57		0.61

Intersection Summary

Area Type:	Other
Cycle Length:	105
Actuated Cycle Length:	105
Offset:	5 (5%), Referenced to phase 5:NWL, Start of Green
Natural Cycle:	105
Control Type:	Pretimed
Maximum v/c Ratio:	0.76
Intersection Signal Delay:	18.6
Intersection LOS:	B
Intersection Capacity Utilization	89.2%
ICU Level of Service	E
Analysis Period (min)	15

Splits and Phases: 75: Armitage Avenue & I-90/94 East Ramps



Lanes, Volumes, Timings
78: Armitage Avenue & I-90/94 West Ramps

01/07/2019



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑			↑↑			↑↓		↑↑	↑	↑
Traffic Volume (vph)	0	712	7	16	310	0	19	0	53	216	45	142
Future Volume (vph)	0	712	7	16	310	0	19	0	53	216	45	142
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	0.97	1.00	1.00
Ped Bike Factor		1.00			1.00			1.00				0.98
Frt		0.998						0.900				0.850
Flt Protected					0.998			0.987		0.950		
Satd. Flow (prot)	0	3439	0	0	3439	0	0	1688	0	3367	1900	1583
Flt Permitted					0.942			0.900		0.950		
Satd. Flow (perm)	0	3439	0	0	3243	0	0	1535	0	3367	1900	1548
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		1						135				153
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		653			126			236			708	
Travel Time (s)		14.8			2.9			5.4			16.1	
Confl. Peds. (#/hr)	16		48	48		16	7					7
Confl. Bikes (#/hr)			5									
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	0%	3%	0%	0%	5%	0%	0%	0%	0%	4%	0%	2%
Bus Blockages (#/hr)	0	8	0	0	0	0	0	0	0	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	774	0	0	350	0	0	77	0	232	48	153
Turn Type		NA		custom	NA		Perm	NA		Split	NA	Perm
Protected Phases		4		8 10	4 8 10			2		6	6	
Permitted Phases				4 8			2					6
Minimum Split (s)		36.0					15.0	15.0		26.0	26.0	26.0
Total Split (s)		36.0					15.0	15.0		26.0	26.0	26.0
Total Split (%)		34.3%					14.3%	14.3%		24.8%	24.8%	24.8%
Yellow Time (s)		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
Lost Time Adjust (s)		0.0						0.0		0.0	0.0	0.0
Total Lost Time (s)		3.0						5.0		5.0	5.0	5.0
Lead/Lag		Lead								Lead	Lead	Lead
Lead-Lag Optimize?		Yes								Yes	Yes	Yes
Act Effct Green (s)		33.0			55.0			10.0		21.0	21.0	21.0
Actuated g/C Ratio		0.31			0.52			0.10		0.20	0.20	0.20
v/c Ratio		0.72			0.20			0.29		0.34	0.13	0.35
Control Delay		36.3			0.4			3.6		37.8	35.6	8.4
Queue Delay		0.0			0.7			0.0		0.0	0.0	0.0
Total Delay		36.3			1.0			3.6		37.8	35.6	8.4
LOS		D			A			A		D	D	A
Approach Delay		36.3			1.0			3.6			27.1	
Approach LOS		D			A			A			C	
Queue Length 50th (ft)		240			0			0		69	27	0
Queue Length 95th (ft)		311			0			7		105	60	53
Internal Link Dist (ft)		573			46			156			628	
Turn Bay Length (ft)												
Base Capacity (vph)		1081			1739			268		673	380	432

Lanes, Volumes, Timings
 78: Armitage Avenue & I-90/94 West Ramps

01/07/2019

Lane Group	Ø8	Ø10
Lane Configurations		
Traffic Volume (vph)		
Future Volume (vph)		
Ideal Flow (vphpl)		
Lane Util. Factor		
Ped Bike Factor		
Frt		
Flt Protected		
Satd. Flow (prot)		
Flt Permitted		
Satd. Flow (perm)		
Right Turn on Red		
Satd. Flow (RTOR)		
Link Speed (mph)		
Link Distance (ft)		
Travel Time (s)		
Confl. Peds. (#/hr)		
Confl. Bikes (#/hr)		
Peak Hour Factor		
Heavy Vehicles (%)		
Bus Blockages (#/hr)		
Shared Lane Traffic (%)		
Lane Group Flow (vph)		
Turn Type		
Protected Phases	8	10
Permitted Phases		
Minimum Split (s)	22.0	6.0
Total Split (s)	22.0	6.0
Total Split (%)	21%	6%
Yellow Time (s)	3.0	3.0
All-Red Time (s)	0.0	2.0
Lost Time Adjust (s)		
Total Lost Time (s)		
Lead/Lag	Lag	Lag
Lead-Lag Optimize?	Yes	Yes
Act Effct Green (s)		
Actuated g/C Ratio		
v/c Ratio		
Control Delay		
Queue Delay		
Total Delay		
LOS		
Approach Delay		
Approach LOS		
Queue Length 50th (ft)		
Queue Length 95th (ft)		
Internal Link Dist (ft)		
Turn Bay Length (ft)		
Base Capacity (vph)		

Lanes, Volumes, Timings

78: Armitage Avenue & I-90/94 West Ramps

01/07/2019

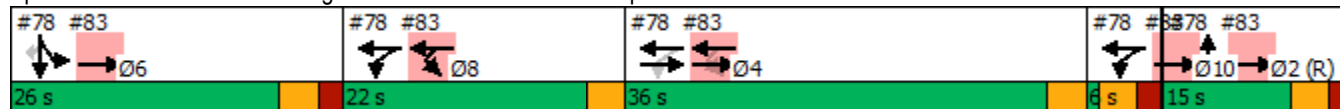


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Starvation Cap Reductn		0			1030			0		0	0	0
Spillback Cap Reductn		0			0			0		0	0	0
Storage Cap Reductn		0			0			0		0	0	0
Reduced v/c Ratio		0.72			0.49			0.29		0.34	0.13	0.35

Intersection Summary

Area Type:	Other
Cycle Length:	105
Actuated Cycle Length:	105
Offset:	0 (0%), Referenced to phase 2:NBTL, Start of Green
Natural Cycle:	105
Control Type:	Pretimed
Maximum v/c Ratio:	0.72
Intersection Signal Delay:	24.8
Intersection LOS:	C
Intersection Capacity Utilization	65.0%
ICU Level of Service	C
Analysis Period (min)	15

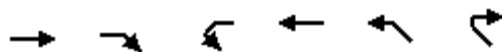
Splits and Phases: 78: Armitage Avenue & I-90/94 West Ramps



Lane Group	Ø8	Ø10
Starvation Cap Reductn		
Spillback Cap Reductn		
Storage Cap Reductn		
Reduced v/c Ratio		
Intersection Summary		

Lanes, Volumes, Timings
83: Armitage Avenue

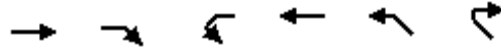
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Lane Group	EBT	EBR	WBL	WBT	NWL	NWR	Ø2	Ø4	Ø6	Ø10
Lane Configurations	↑↑↑			↑↑						
Traffic Volume (vph)	535	447	396	326	0	0				
Future Volume (vph)	535	447	396	326	0	0				
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900				
Lane Util. Factor	0.91	0.91	0.95	0.95	1.00	1.00				
Ped Bike Factor	0.98			0.99						
Frt	0.932									
Flt Protected				0.973						
Satd. Flow (prot)	4633	0	0	3444	0	0				
Flt Permitted				0.551						
Satd. Flow (perm)	4633	0	0	1934	0	0				
Right Turn on Red		Yes				Yes				
Satd. Flow (RTOR)	230									
Link Speed (mph)	30			30	30					
Link Distance (ft)	126			380	301					
Travel Time (s)	2.9			8.6	6.8					
Confl. Peds. (#/hr)		42	42							
Confl. Bikes (#/hr)		1								
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93				
Shared Lane Traffic (%)										
Lane Group Flow (vph)	1056	0	0	777	0	0				
Turn Type	NA		pm+pt	NA						
Protected Phases	2 4 6 10		8	4 8			2	4	6	10
Permitted Phases			4 8							
Minimum Split (s)			22.0				15.0	36.0	26.0	6.0
Total Split (s)			22.0				15.0	36.0	26.0	6.0
Total Split (%)			21.0%				14%	34%	25%	6%
Yellow Time (s)			3.0				3.0	3.0	3.0	3.0
All-Red Time (s)			0.0				2.0	0.0	2.0	2.0
Lost Time Adjust (s)										
Total Lost Time (s)										
Lead/Lag			Lag				Lead	Lead	Lag	
Lead-Lag Optimize?			Yes				Yes	Yes	Yes	
Act Effect Green (s)	78.0			52.0						
Actuated g/C Ratio	0.74			0.50						
v/c Ratio	0.30			0.93dl						
Control Delay	0.2			14.3						
Queue Delay	0.5			0.0						
Total Delay	0.7			14.3						
LOS	A			B						
Approach Delay	0.7			14.3						
Approach LOS	A			B						
Queue Length 50th (ft)	0			151						
Queue Length 95th (ft)	0			187						
Internal Link Dist (ft)	46			300	221					
Turn Bay Length (ft)										
Base Capacity (vph)	3500			1231						
Starvation Cap Reductn	1857			0						
Spillback Cap Reductn	0			0						

Lanes, Volumes, Timings
83: Armitage Avenue

01/07/2019



Lane Group	EBT	EBR	WBL	WBT	NWL	NWR	Ø2	Ø4	Ø6	Ø10
Storage Cap Reductn	0			0						
Reduced v/c Ratio	0.64			0.63						

Intersection Summary

Area Type:	Other
Cycle Length:	105
Actuated Cycle Length:	105
Offset:	0 (0%), Referenced to phase 2:NBTL, Start of Green
Natural Cycle:	105
Control Type:	Pretimed
Maximum v/c Ratio:	0.72
Intersection Signal Delay:	6.5
Intersection LOS:	A
Intersection Capacity Utilization	51.4%
ICU Level of Service	A
Analysis Period (min)	15













dl Defacto Left Lane. Recode with 1 though lane as a left lane.

Splits and Phases: 83: Armitage Avenue

#78 #83	#78 #83	#78 #83	#78 #83 #78 #83
26 s	22 s	36 s	6 s 15 s

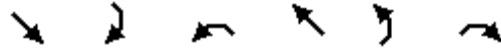
Lanes, Volumes, Timings
112: Elston Avenue

01/07/2019

						
Lane Group	SET	SER	NWL	NWT	NEL	NER
Lane Configurations						
Traffic Volume (vph)	492	7	2	175	8	0
Future Volume (vph)	492	7	2	175	8	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		125	150		0	0
Storage Lanes		1	1		1	1
Taper Length (ft)			50		25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.95	1.00			
Frt		0.850				
Flt Protected			0.950		0.950	
Satd. Flow (prot)	1881	1615	1805	1881	1805	1900
Flt Permitted			0.447		0.950	
Satd. Flow (perm)	1881	1538	846	1881	1805	1900
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		8				
Link Speed (mph)	30			30	30	
Link Distance (ft)	793			488	285	
Travel Time (s)	18.0			11.1	6.5	
Confl. Peds. (#/hr)		9	9			1
Confl. Bikes (#/hr)		29				
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.90
Heavy Vehicles (%)	1%	0%	0%	1%	0%	0%
Shared Lane Traffic (%)						
Lane Group Flow (vph)	529	8	2	188	9	0
Turn Type	NA	pm+ov	pm+pt	NA	Prot	pm+ov
Protected Phases	6	7	9	2	7	9
Permitted Phases		6	2			7
Detector Phase	6	7	9	2	7	9
Switch Phase						
Minimum Initial (s)	16.0	12.0	5.0	16.0	12.0	5.0
Minimum Split (s)	41.0	31.0	8.0	41.0	31.0	8.0
Total Split (s)	41.0	31.0	13.0	41.0	31.0	13.0
Total Split (%)	48.2%	36.5%	15.3%	48.2%	36.5%	15.3%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	1.0	1.0	0.0	1.0	1.0	0.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	3.0	4.0	4.0	3.0
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	C-Max	None	None	C-Max	None	None
Act Effct Green (s)	75.3	77.7	75.0	75.3	12.0	
Actuated g/C Ratio	0.89	0.91	0.88	0.89	0.14	
v/c Ratio	0.32	0.01	0.00	0.11	0.04	
Control Delay	3.4	0.4	2.0	2.6	32.0	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay	3.4	0.4	2.0	2.6	32.0	
LOS	A	A	A	A	C	
Approach Delay	3.4			2.6	32.0	

Lanes, Volumes, Timings
112: Elston Avenue

01/07/2019

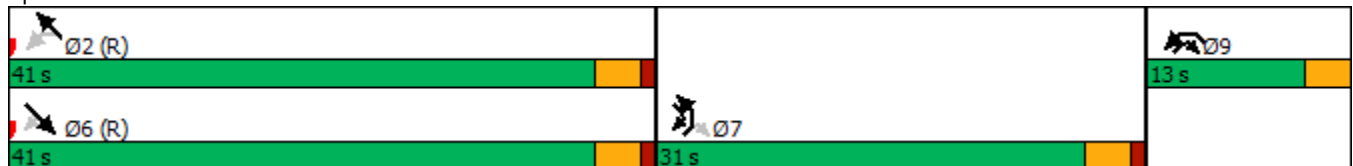


Lane Group	SET	SER	NWL	NWT	NEL	NER
Approach LOS	A			A	C	
Queue Length 50th (ft)	0	0	0	0	4	
Queue Length 95th (ft)	174	1	1	57	18	
Internal Link Dist (ft)	713			408	205	
Turn Bay Length (ft)		125	150			
Base Capacity (vph)	1666	1490	864	1666	573	
Starvation Cap Reductn	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	
Reduced v/c Ratio	0.32	0.01	0.00	0.11	0.02	

Intersection Summary

Area Type:	Other
Cycle Length:	85
Actuated Cycle Length:	85
Offset:	65 (76%), Referenced to phase 2:NWTL and 6:SET, Start of Green
Natural Cycle:	80
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.32
Intersection Signal Delay:	3.5
Intersection LOS:	A
Intersection Capacity Utilization	47.9%
ICU Level of Service	A
Analysis Period (min)	15

Splits and Phases: 112: Elston Avenue



Intersection	
Intersection Delay, s/veh	66.1
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	114	305	22	21	330	47	4	98	21	24	246	176
Future Vol, veh/h	114	305	22	21	330	47	4	98	21	24	246	176
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	3	5	0	2	0	0	2	5	0	1	0
Mvmt Flow	124	332	24	23	359	51	4	107	23	26	267	191
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	81.6	57.9	17.7	71.3
HCM LOS	F	F	C	F

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %		3%	26%	5%
Vol Thru, %		80%	69%	83%
Vol Right, %		17%	5%	12%
Sign Control		Stop	Stop	Stop
Traffic Vol by Lane		123	441	398
LT Vol		4	114	21
Through Vol		98	305	330
RT Vol		21	22	47
Lane Flow Rate		134	479	433
Geometry Grp		1	1	1
Degree of Util (X)		0.346	1.039	0.942
Departure Headway (Hd)		9.653	8.002	8.069
Convergence, Y/N		Yes	Yes	Yes
Cap		374	455	454
Service Time		7.653	6.002	6.069
HCM Lane V/C Ratio		0.358	1.053	0.954
HCM Control Delay		17.7	81.6	57.9
HCM Lane LOS		C	F	F
HCM 95th-tile Q		1.5	14.4	11

Intersection	
Intersection Delay, s/veh	12.7
Intersection LOS	B

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	W		T	T		T
Traffic Vol, veh/h	191	54	135	263	81	274
Future Vol, veh/h	191	54	135	263	81	274
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles, %	7	4	3	10	0	7
Mvmt Flow	195	55	138	268	83	280
Number of Lanes	1	0	1	1	0	1

Approach	WB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	2
Conflicting Approach Left	NB		WB
Conflicting Lanes Left	2	0	1
Conflicting Approach Right	SB	WB	
Conflicting Lanes Right	1	1	0
HCM Control Delay	12.9	10.9	14.5
HCM LOS	B	B	B

Lane	NBLn1	NBLn2	WBLn1	SBLn1
Vol Left, %	0%	0%	78%	23%
Vol Thru, %	100%	0%	0%	77%
Vol Right, %	0%	100%	22%	0%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	135	263	245	355
LT Vol	0	0	191	81
Through Vol	135	0	0	274
RT Vol	0	263	54	0
Lane Flow Rate	138	268	250	362
Geometry Grp	7	7	2	5
Degree of Util (X)	0.221	0.387	0.408	0.539
Departure Headway (Hd)	5.78	5.191	5.879	5.352
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	621	692	613	674
Service Time	3.511	2.922	3.914	3.381
HCM Lane V/C Ratio	0.222	0.387	0.408	0.537
HCM Control Delay	10.2	11.2	12.9	14.5
HCM Lane LOS	B	B	B	B
HCM 95th-tile Q	0.8	1.8	2	3.2

HCM 6th TWSC
17: Dominick Street & Webster Avenue

01/07/2019

Intersection												
Int Delay, s/veh	1.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	42	467	68	2	462	31	6	0	1	8	6	52
Future Vol, veh/h	42	467	68	2	462	31	6	0	1	8	6	52
Conflicting Peds, #/hr	7	0	13	13	0	7	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	96	96	96	96	96	96	96	96	96	96	96	96
Heavy Vehicles, %	0	0	0	0	1	0	16	0	0	0	2	1
Mvmt Flow	44	486	71	2	481	32	6	0	1	8	6	54

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	520	0	0	570	0	0	1154	1147	535	1118	1166	504
Stage 1	-	-	-	-	-	-	623	623	-	508	508	-
Stage 2	-	-	-	-	-	-	531	524	-	610	658	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.26	6.5	6.2	7.1	6.52	6.21
Critical Hdwy Stg 1	-	-	-	-	-	-	6.26	5.5	-	6.1	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.26	5.5	-	6.1	5.52	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.644	4	3.3	3.5	4.018	3.309
Pot Cap-1 Maneuver	1056	-	-	1013	-	-	163	201	549	186	194	570
Stage 1	-	-	-	-	-	-	451	481	-	551	539	-
Stage 2	-	-	-	-	-	-	507	533	-	485	461	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1049	-	-	1000	-	-	135	185	542	175	178	566
Mov Cap-2 Maneuver	-	-	-	-	-	-	135	185	-	175	178	-
Stage 1	-	-	-	-	-	-	418	446	-	514	534	-
Stage 2	-	-	-	-	-	-	452	528	-	455	428	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.6	0	30	16.4
HCM LOS			D	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	151	1049	-	-	1000	-	-	385
HCM Lane V/C Ratio	0.048	0.042	-	-	0.002	-	-	0.179
HCM Control Delay (s)	30	8.6	0	-	8.6	0	-	16.4
HCM Lane LOS	D	A	A	-	A	A	-	C
HCM 95th %tile Q(veh)	0.2	0.1	-	-	0	-	-	0.6

HCM 6th TWSC
40: Cortland Street & Kingsbury Street

01/07/2019

Intersection

Int Delay, s/veh 8.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	79	575	7	0	285	27	78	0	82	0	0	1
Future Vol, veh/h	79	575	7	0	285	27	78	0	82	0	0	1
Conflicting Peds, #/hr	28	0	30	30	0	28	2	0	9	9	0	2
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	89	89	89	89	89	89	89	89	89	89	89	89
Heavy Vehicles, %	10	7	0	0	6	4	4	0	5	0	0	0
Mvmt Flow	89	646	8	0	320	30	88	0	92	0	0	1

Major/Minor	Major1	Major2	Minor2	Minor1
Conflicting Flow All	378	0	0	684
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Critical Hdwy	4.2	-	-	4.1
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-
Follow-up Hdwy	2.29	-	-	2.2
Pot Cap-1 Maneuver	1138	-	-	919
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Platoon blocked, %	-	-	-	-
Mov Cap-1 Maneuver	1108	-	-	893
Mov Cap-2 Maneuver	-	-	-	-
Stage 1	-	-	-	-
Stage 2	-	-	-	-

Approach	EB	WB	SE	NW
HCM Control Delay, s	1	0	56.7	13.2
HCM LOS			F	B

Minor Lane/Major Mvmt	NWLn1	EBL	EBT	EBR	WBL	WBT	WBR	SELn1
Capacity (veh/h)	439	1108	-	-	893	-	-	236
HCM Lane V/C Ratio	0.003	0.08	-	-	-	-	-	0.762
HCM Control Delay (s)	13.2	8.5	0	-	0	-	-	56.7
HCM Lane LOS	B	A	A	-	A	-	-	F
HCM 95th %tile Q(veh)	0	0.3	-	-	0	-	-	5.4

Intersection						
Int Delay, s/veh	0.8					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	6	28	285	18	34	538
Future Vol, veh/h	6	28	285	18	34	538
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	7	30	310	20	37	585

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	979	320	0	0	330
Stage 1	320	-	-	-	-
Stage 2	659	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12
Critical Hdwy Stg 1	5.42	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218
Pot Cap-1 Maneuver	277	721	-	-	1229
Stage 1	736	-	-	-	-
Stage 2	515	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	265	721	-	-	1229
Mov Cap-2 Maneuver	265	-	-	-	-
Stage 1	736	-	-	-	-
Stage 2	492	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	12	0	0.5
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	553	1229
HCM Lane V/C Ratio	-	-	0.067	0.03
HCM Control Delay (s)	-	-	12	8
HCM Lane LOS	-	-	B	A
HCM 95th %tile Q(veh)	-	-	0.2	0.1

HCM 6th TWSC
105: Elston Avenue & Wabansia Avenue

01/07/2019

Intersection												
Int Delay, s/veh	1.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↕	↕		↕	↕	
Traffic Vol, veh/h	10	0	12	10	0	34	10	297	27	72	560	37
Future Vol, veh/h	10	0	12	10	0	34	10	297	27	72	560	37
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	50	-	-	50	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	11	0	13	11	0	37	11	323	29	78	609	40

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	1163	1159	629	1152	1165	338	649	0	0	352	0	0
Stage 1	785	785	-	360	360	-	-	-	-	-	-	-
Stage 2	378	374	-	792	805	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	172	196	482	175	194	704	937	-	-	1207	-	-
Stage 1	386	404	-	658	626	-	-	-	-	-	-	-
Stage 2	644	618	-	382	395	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	154	181	482	160	179	704	937	-	-	1207	-	-
Mov Cap-2 Maneuver	154	181	-	160	179	-	-	-	-	-	-	-
Stage 1	381	378	-	650	618	-	-	-	-	-	-	-
Stage 2	603	611	-	348	369	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	21.3		15.3		0.3		0.9	
HCM LOS	C		C					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	937	-	-	245	397	1207	-	-
HCM Lane V/C Ratio	0.012	-	-	0.098	0.12	0.065	-	-
HCM Control Delay (s)	8.9	-	-	21.3	15.3	8.2	-	-
HCM Lane LOS	A	-	-	C	C	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.3	0.4	0.2	-	-

Intersection						
Int Delay, s/veh	0.9					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	9	32	320	32	58	680
Future Vol, veh/h	9	32	320	32	58	680
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	10	35	348	35	63	739

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	1231	366	0	0	383
Stage 1	366	-	-	-	-
Stage 2	865	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12
Critical Hdwy Stg 1	5.42	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218
Pot Cap-1 Maneuver	196	679	-	-	1175
Stage 1	702	-	-	-	-
Stage 2	412	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	178	679	-	-	1175
Mov Cap-2 Maneuver	178	-	-	-	-
Stage 1	702	-	-	-	-
Stage 2	375	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	14.6	0	0.6
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	420	1175
HCM Lane V/C Ratio	-	-	0.106	0.054
HCM Control Delay (s)	-	-	14.6	8.2
HCM Lane LOS	-	-	B	A
HCM 95th %tile Q(veh)	-	-	0.4	0.2

Capacity Analysis Output Sheets
Evening Peak Hour – Existing Conditions

Lanes, Volumes, Timings
3: Damen Avenue & Webster Avenue

01/07/2019



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	15	175	21	142	244	8	32	261	236	377	383	126
Future Volume (vph)	15	175	21	142	244	8	32	261	236	377	383	126
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	13	12	12	10	11	10	10	10	11	11	11
Storage Length (ft)	25		0	0		0	60		60	280		100
Storage Lanes	1		0	1		1	1		1	1		1
Taper Length (ft)	25			25			90			60		
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	0.99	1.00		0.99		0.95			0.97	0.99		0.96
Frt		0.984				0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1805	1631	0	1770	1773	1561	1685	1478	1459	1694	1719	1546
Flt Permitted	0.530			0.606			0.154			0.548		
Satd. Flow (perm)	993	1631	0	1119	1773	1488	273	1478	1410	968	1719	1478
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		10				84			246			131
Link Speed (mph)		30			30			30				30
Link Distance (ft)		701			148			667				422
Travel Time (s)		15.9			3.4			15.2				9.6
Confl. Peds. (#/hr)	13		7	7		13	22		15	15		22
Confl. Bikes (#/hr)			2			5			14			6
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%	1%	0%	2%	0%	0%	0%	2%	0%	3%	3%	1%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	8	0	9	0
Parking (#/hr)		9						10				
Shared Lane Traffic (%)												
Lane Group Flow (vph)	16	204	0	148	254	8	33	272	246	393	399	131
Turn Type	Perm	NA		Perm	NA	Perm	Perm	NA	Perm	custom	NA	Perm
Protected Phases		4			8			2		1	16	
Permitted Phases	4			8		8	2		2	6		16
Minimum Split (s)	25.0	25.0		25.0	25.0	25.0	25.0	25.0	25.0	9.0		
Total Split (s)	25.0	25.0		25.0	25.0	25.0	31.0	31.0	31.0	9.0		
Total Split (%)	38.5%	38.5%		38.5%	38.5%	38.5%	47.7%	47.7%	47.7%	13.8%		
Yellow Time (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0		
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0	0.0		
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0		
Total Lost Time (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0	3.0		
Lead/Lag												
Lead-Lag Optimize?												
Act Effct Green (s)	20.0	20.0		20.0	20.0	20.0	26.0	26.0	26.0	34.0	37.0	37.0
Actuated g/C Ratio	0.31	0.31		0.31	0.31	0.31	0.40	0.40	0.40	0.52	0.57	0.57
v/c Ratio	0.05	0.40		0.43	0.47	0.02	0.30	0.46	0.35	0.69	0.41	0.15
Control Delay	16.5	19.8		22.7	21.6	0.0	22.5	17.5	3.6	15.8	9.9	3.1
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	16.5	19.8		22.7	21.6	0.0	22.5	17.5	3.6	15.8	9.9	3.1
LOS	B	B		C	C	A	C	B	A	B	A	A
Approach Delay		19.5			21.6			11.6			11.4	
Approach LOS		B			C			B			B	

Lanes, Volumes, Timings
 3: Damen Avenue & Webster Avenue

01/07/2019

Lane Group	Ø6
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Confl. Bikes (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Bus Blockages (#/hr)	
Parking (#/hr)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	6
Permitted Phases	
Minimum Split (s)	25.0
Total Split (s)	31.0
Total Split (%)	48%
Yellow Time (s)	3.0
All-Red Time (s)	2.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	

Lanes, Volumes, Timings
 3: Damen Avenue & Webster Avenue

01/07/2019

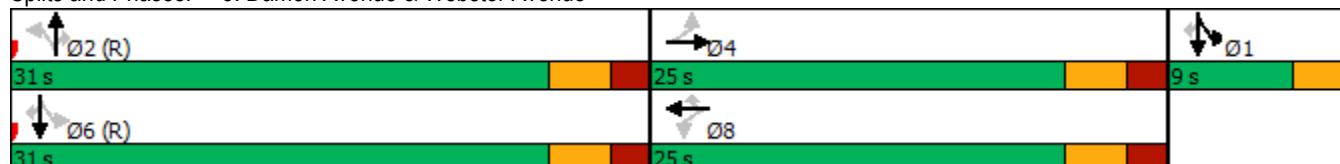


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 50th (ft)	4	60		46	80	0	9	76	0	63	63	0
Queue Length 95th (ft)	17	113		95	142	0	32	138	38	150	152	m20
Internal Link Dist (ft)		621			68			587			342	
Turn Bay Length (ft)	25						60		60	280		100
Base Capacity (vph)	305	508		344	545	516	109	591	711	573	978	897
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	0.05	0.40		0.43	0.47	0.02	0.30	0.46	0.35	0.69	0.41	0.15

Intersection Summary

Area Type: Other
 Cycle Length: 65
 Actuated Cycle Length: 65
 Offset: 30 (46%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
 Natural Cycle: 60
 Control Type: Pretimed
 Maximum v/c Ratio: 0.69
 Intersection Signal Delay: 14.3 Intersection LOS: B
 Intersection Capacity Utilization 77.9% ICU Level of Service D
 Analysis Period (min) 15
 m Volume for 95th percentile queue is metered by upstream signal.











Splits and Phases: 3: Damen Avenue & Webster Avenue



Lane Group	Ø6
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	
Intersection Summary	

Lanes, Volumes, Timings
6: Damen Avenue & I-90/94 Off Ramp

01/07/2019

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	209	373	278	0	0	672
Future Volume (vph)	209	373	278	0	0	672
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	9	9	12	12	12	12
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt		0.850				
Flt Protected	0.950					
Satd. Flow (prot)	1608	1439	1863	0	0	1800
Flt Permitted	0.950					
Satd. Flow (perm)	1608	1439	1863	0	0	1800
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		381				
Link Speed (mph)	30		30			30
Link Distance (ft)	211		422			303
Travel Time (s)	4.8		9.6			6.9
Confl. Peds. (#/hr)				8	8	
Confl. Bikes (#/hr)				10		
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	1%	1%	2%	0%	0%	3%
Bus Blockages (#/hr)	0	0	0	0	0	6
Shared Lane Traffic (%)						
Lane Group Flow (vph)	213	381	284	0	0	686
Turn Type	Prot	Prot	NA			NA
Protected Phases	8	8	2			6
Permitted Phases						
Minimum Split (s)	24.0	24.0	41.0			41.0
Total Split (s)	24.0	24.0	41.0			41.0
Total Split (%)	36.9%	36.9%	63.1%			63.1%
Yellow Time (s)	3.0	3.0	3.0			3.0
All-Red Time (s)	2.0	2.0	1.0			1.0
Lost Time Adjust (s)	0.0	0.0	0.0			0.0
Total Lost Time (s)	5.0	5.0	4.0			4.0
Lead/Lag						
Lead-Lag Optimize?						
Act Effct Green (s)	19.0	19.0	37.0			37.0
Actuated g/C Ratio	0.29	0.29	0.57			0.57
v/c Ratio	0.45	0.55	0.27			0.67
Control Delay	22.5	5.8	1.2			13.9
Queue Delay	0.0	0.0	0.0			0.0
Total Delay	22.5	5.8	1.2			13.9
LOS	C	A	A			B
Approach Delay	11.8		1.2			13.9
Approach LOS	B		A			B
Queue Length 50th (ft)	68	0	3			169
Queue Length 95th (ft)	126	56	8			279
Internal Link Dist (ft)	131		342			223
Turn Bay Length (ft)						

Lanes, Volumes, Timings
 6: Damen Avenue & I-90/94 Off Ramp

01/07/2019



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Base Capacity (vph)	470	690	1060			1024
Starvation Cap Reductn	0	0	0			0
Spillback Cap Reductn	0	0	0			0
Storage Cap Reductn	0	0	0			0
Reduced v/c Ratio	0.45	0.55	0.27			0.67

Intersection Summary

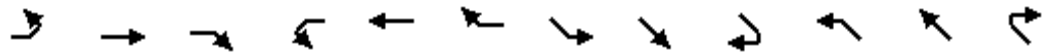
Area Type:	Other
Cycle Length:	65
Actuated Cycle Length:	65
Offset:	35 (54%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle:	65
Control Type:	Pretimed
Maximum v/c Ratio:	0.67
Intersection Signal Delay:	10.8
Intersection LOS:	B
Intersection Capacity Utilization	61.4%
ICU Level of Service	B
Analysis Period (min)	15

Splits and Phases: 6: Damen Avenue & I-90/94 Off Ramp



Lanes, Volumes, Timings
10: Elston Avenue & Webster Avenue

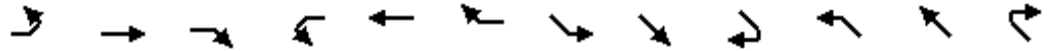
01/07/2019



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Traffic Volume (vph)	27	328	34	24	431	147	139	221	43	54	359	32
Future Volume (vph)	27	328	34	24	431	147	139	221	43	54	359	32
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	11	12	10	12
Storage Length (ft)	25		0	55		55	100		0	90		90
Storage Lanes	1		0	1		0	1		0	1		1
Taper Length (ft)	10			25			92			89		
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	0.99	1.00		0.99	0.99		0.99	0.99		0.98		0.95
Frt		0.986			0.962			0.976				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1805	1600	0	1805	1527	0	1805	1551	0	1770	1756	1615
Flt Permitted	0.186			0.403			0.434			0.529		
Satd. Flow (perm)	351	1600	0	760	1527	0	820	1551	0	968	1756	1539
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		6			20			13				27
Link Speed (mph)		30			30			30				30
Link Distance (ft)		900			1020			711				793
Travel Time (s)		20.5			23.2			16.2				18.0
Confl. Peds. (#/hr)	17		13	13		17	9		26	26		9
Confl. Bikes (#/hr)			5			6			2			23
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%	1%	0%	0%	2%	1%	0%	1%	0%	2%	1%	0%
Parking (#/hr)		7			8			10				
Shared Lane Traffic (%)												
Lane Group Flow (vph)	28	381	0	25	609	0	146	278	0	57	378	34
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		4			8			6				2
Permitted Phases	4			8			6			2		2
Minimum Split (s)	50.0	50.0		50.0	50.0		55.0	55.0		55.0	55.0	55.0
Total Split (s)	50.0	50.0		50.0	50.0		55.0	55.0		55.0	55.0	55.0
Total Split (%)	47.6%	47.6%		47.6%	47.6%		52.4%	52.4%		52.4%	52.4%	52.4%
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
All-Red Time (s)	2.0	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
Total Lost Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	5.0
Lead/Lag												
Lead-Lag Optimize?												
Act Effct Green (s)	45.0	45.0		45.0	45.0		50.0	50.0		50.0	50.0	50.0
Actuated g/C Ratio	0.43	0.43		0.43	0.43		0.48	0.48		0.48	0.48	0.48
v/c Ratio	0.19	0.55		0.08	0.92		0.37	0.37		0.12	0.45	0.05
Control Delay	22.7	25.9		19.0	46.6		21.1	18.4		16.3	20.6	6.9
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	22.7	25.9		19.0	46.6		21.1	18.4		16.3	20.6	6.9
LOS	C	C		B	D		C	B		B	C	A
Approach Delay		25.7			45.5			19.4			19.1	
Approach LOS		C			D			B			B	
Queue Length 50th (ft)	11	184		10	366		61	109		21	164	2

Lanes, Volumes, Timings
 10: Elston Avenue & Webster Avenue

01/07/2019

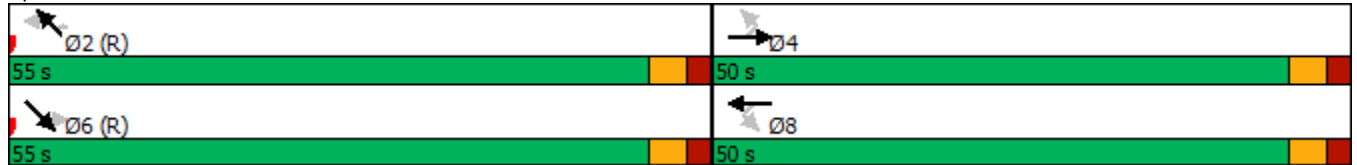


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Queue Length 95th (ft)	33	279		m23	#595		113	174		45	244	19
Internal Link Dist (ft)		820			940			631			713	
Turn Bay Length (ft)	25			55			100			90		90
Base Capacity (vph)	150	689		325	665		390	745		460	836	747
Starvation Cap Reductn	0	0		0	0		0	0		0	0	0
Spillback Cap Reductn	0	0		0	0		0	0		0	0	0
Storage Cap Reductn	0	0		0	0		0	0		0	0	0
Reduced v/c Ratio	0.19	0.55		0.08	0.92		0.37	0.37		0.12	0.45	0.05

Intersection Summary

Area Type: Other
 Cycle Length: 105
 Actuated Cycle Length: 105
 Offset: 12 (11%), Referenced to phase 2:NWTL and 6:SETL, Start of Green
 Natural Cycle: 105
 Control Type: Pretimed
 Maximum v/c Ratio: 0.92
 Intersection Signal Delay: 29.2 Intersection LOS: C
 Intersection Capacity Utilization 120.0% 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.
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 10: Elston Avenue & Webster Avenue



Lanes, Volumes, Timings
 14: Ashland Avenue & Webster Avenue

01/07/2019



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	208	376	52	180	223	41	20	1276	166	15	1054	206
Future Volume (vph)	208	376	52	180	223	41	20	1276	166	15	1054	206
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	10	11	12	10	11	12
Storage Length (ft)	60		0	230		0	115		0	65		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	55			65			85			45		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor	0.98	0.99		0.98	0.99		0.99	0.99		1.00	0.99	
Frt		0.982			0.977			0.983			0.975	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1805	1852	0	1805	1826	0	1668	3329	0	1685	3210	0
Flt Permitted	0.407			0.145			0.104			0.075		
Satd. Flow (perm)	761	1852	0	270	1826	0	181	3329	0	133	3210	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		7			9			18			29	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1020			606			686			531	
Travel Time (s)		23.2			13.8			15.6			12.1	
Confl. Peds. (#/hr)	26		51	51		26	59		22	22		59
Confl. Bikes (#/hr)						4			1			3
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%	0%	0%	0%	1%	1%	1%	1%	0%	0%	3%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	8	0	0	8	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	217	446	0	188	275	0	21	1502	0	16	1313	0
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	7	4		3	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	5.0	9.0		5.0	9.0		5.0	33.0		5.0	33.0	
Minimum Split (s)	8.0	36.0		8.0	36.0		8.0	53.0		8.0	53.0	
Total Split (s)	8.0	36.0		8.0	36.0		8.0	53.0		8.0	53.0	
Total Split (%)	7.6%	34.3%		7.6%	34.3%		7.6%	50.5%		7.6%	50.5%	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	0.0	2.0		0.0	2.0		0.0	2.0		0.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	3.0	5.0		3.0	5.0		3.0	5.0		3.0	5.0	
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	
Act Effect Green (s)	35.4	28.4		35.4	28.4		59.4	55.4		59.4	55.4	
Actuated g/C Ratio	0.34	0.27		0.34	0.27		0.57	0.53		0.57	0.53	
v/c Ratio	0.71	0.88		1.15	0.55		0.12	0.85		0.10	0.77	
Control Delay	34.5	50.0		146.0	41.5		7.4	24.7		12.1	24.6	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	34.5	50.0		146.0	41.5		7.4	24.7		12.1	24.6	

Lanes, Volumes, Timings
 14: Ashland Avenue & Webster Avenue

01/07/2019

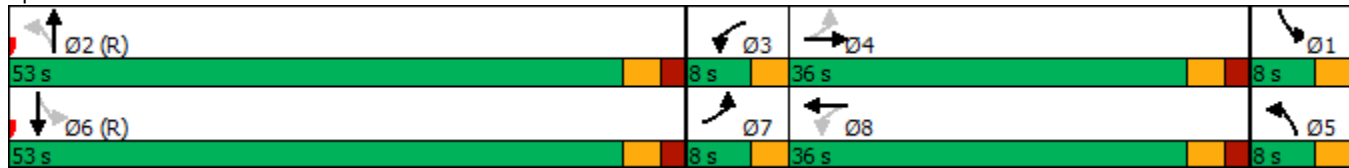


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
LOS	C	D		F	D		A	C		B	C	
Approach Delay		44.9			83.9			24.5			24.5	
Approach LOS		D			F			C			C	
Queue Length 50th (ft)	104	264		~132	177		4	532		5	337	
Queue Length 95th (ft)	173	#432		m#219	263		m6	#688		15	#521	
Internal Link Dist (ft)		940			526			606			451	
Turn Bay Length (ft)	60			230			115			65		
Base Capacity (vph)	306	551		163	545		177	1766		153	1708	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.71	0.81		1.15	0.50		0.12	0.85		0.10	0.77	

Intersection Summary

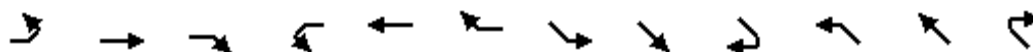
Area Type: Other
 Cycle Length: 105
 Actuated Cycle Length: 105
 Offset: 60 (57%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
 Natural Cycle: 105
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 1.15
 Intersection Signal Delay: 34.8
 Intersection LOS: C
 Intersection Capacity Utilization 87.8%
 ICU Level of Service E
 Analysis Period (min) 15
 ~ Volume exceeds capacity, queue is theoretically infinite.
 Queue shown is maximum after two cycles.
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 14: Ashland Avenue & Webster Avenue



Lanes, Volumes, Timings
20: Clybourn Avenue & Webster Avenue

01/07/2019



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Traffic Volume (vph)	34	356	85	15	318	92	63	329	27	20	516	95
Future Volume (vph)	34	356	85	15	318	92	63	329	27	20	516	95
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	75		0	70		0	155		0	125		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	70			25			100			90		
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	0.99	0.98		0.98	0.99		0.99	1.00		0.98	0.98	
Frt		0.971			0.966			0.989			0.977	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1805	1586	0	1805	1771	0	1805	1604	0	1805	1583	0
Flt Permitted	0.288			0.252			0.180			0.397		
Satd. Flow (perm)	540	1586	0	469	1771	0	337	1604	0	742	1583	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		562			328			733			470	
Travel Time (s)		12.8			7.5			16.7			10.7	
Confl. Peds. (#/hr)	24		38	38		24	45		28	28		45
Confl. Bikes (#/hr)			11			3			6			41
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 (%)	0%	1%	0%	0%	1%	7%	0%	1%	0%	0%	1%	1%
Parking (#/hr)		4						7			5	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	37	479	0	16	446	0	68	387	0	22	664	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		custom	NA	
Protected Phases		4			8			6		5	2.5	
Permitted Phases	4			8			6			2		
Minimum Split (s)	44.0	44.0		44.0	44.0		50.0	50.0		11.0		
Total Split (s)	44.0	44.0		44.0	44.0		50.0	50.0		11.0		
Total Split (%)	41.9%	41.9%		41.9%	41.9%		47.6%	47.6%		10.5%		
Yellow Time (s)	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		0.0		
Lost Time Adjust (s)	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		3.0		
Lead/Lag												
Lead-Lag Optimize?												
Act Effect Green (s)	39.0	39.0		39.0	39.0		45.0	45.0		55.0	56.0	
Actuated g/C Ratio	0.37	0.37		0.37	0.37		0.43	0.43		0.52	0.53	
v/c Ratio	0.18	0.81		0.09	0.68		0.47	0.56		0.05	0.79	
Control Delay	15.7	29.3		23.4	34.0		34.9	26.6		11.0	28.0	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	16.1	
Total Delay	15.7	29.3		23.4	34.0		34.9	26.6		11.0	44.1	
LOS	B	C		C	C		C	C		B	D	
Approach Delay		28.3			33.7			27.8			43.1	
Approach LOS		C			C			C			D	
Queue Length 50th (ft)	8	308		7	249		32	191		6	342	
Queue Length 95th (ft)	m12	m421		23	363		81	287		18	509	

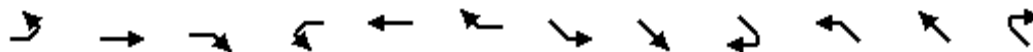
Lanes, Volumes, Timings
 20: Clybourn Avenue & Webster Avenue

01/07/2019

Lane Group	Ø2
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Confl. Bikes (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Parking (#/hr)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	2
Permitted Phases	
Minimum Split (s)	50.0
Total Split (s)	50.0
Total Split (%)	48%
Yellow Time (s)	3.0
All-Red Time (s)	2.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Queue Length 50th (ft)	
Queue Length 95th (ft)	

Lanes, Volumes, Timings
 20: Clybourn Avenue & Webster Avenue

01/07/2019

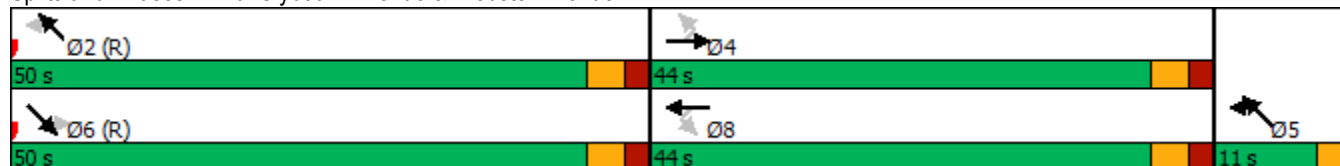


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Internal Link Dist (ft)		482			248			653			390	
Turn Bay Length (ft)	75			70			155			125		
Base Capacity (vph)	200	589		174	657		144	687		469	844	
Starvation Cap Reductn	0	0		0	0		0	0		0	178	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.18	0.81		0.09	0.68		0.47	0.56		0.05	1.00	

Intersection Summary

Area Type: Other
 Cycle Length: 105
 Actuated Cycle Length: 105
 Offset: 99 (94%), Referenced to phase 2:NWTL and 6:SETL, Start of Green
 Natural Cycle: 105
 Control Type: Pretimed
 Maximum v/c Ratio: 0.81
 Intersection Signal Delay: 34.1
 Intersection LOS: C
 Intersection Capacity Utilization 93.2%
 ICU Level of Service F
 Analysis Period (min) 15
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 20: Clybourn Avenue & Webster Avenue



Lane Group	Ø2
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	
Intersection Summary	

Lanes, Volumes, Timings

24: Southport Avenue & Clybourn Avenue & Shakespeare Avenue

01/07/2019

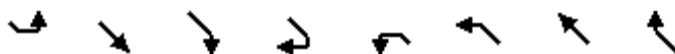


Lane Group	EBL2	EBL	EBR	EBR2	NBL2	NBL	NBT	NBR	SBL	SBT	SBR	SBR2
Lane Configurations												
Traffic Volume (vph)	11	21	27	6	2	61	145	10	87	69	16	29
Future Volume (vph)	11	21	27	6	2	61	145	10	87	69	16	29
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Storage Length (ft)		0	0			0		0	0		0	
Storage Lanes		1	0			0		0	0		0	
Taper Length (ft)		25				25			25			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.82					0.99			0.97		
Frt		0.932					0.994			0.970		
Flt Protected		0.976					0.986			0.979		
Satd. Flow (prot)	0	1427	0	0	0	0	1819	0	0	1737	0	0
Flt Permitted		0.976					0.852			0.730		
Satd. Flow (perm)	0	1383	0	0	0	0	1558	0	0	1278	0	0
Right Turn on Red				Yes				No				No
Satd. Flow (RTOR)		90										
Link Speed (mph)		30					30			30		
Link Distance (ft)		271					457			332		
Travel Time (s)		6.2					10.4			7.5		
Confl. Peds. (#/hr)	11	48	27	43	14	11		27	27		14	11
Confl. Bikes (#/hr)								9			5	5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	71	0	0	0	0	237	0	0	219	0	0
Turn Type	Prot	Prot			Perm	Perm	NA		Perm	NA		
Protected Phases	4	4					2			6		
Permitted Phases	4				2	2			6			
Detector Phase	4	4			2	2	2		6	6		
Switch Phase												
Minimum Initial (s)	10.0	10.0			5.0	5.0	5.0		5.0	5.0		
Minimum Split (s)	15.0	15.0			27.0	27.0	27.0		27.0	27.0		
Total Split (s)	15.0	15.0			27.0	27.0	27.0		27.0	27.0		
Total Split (%)	17.6%	17.6%			31.8%	31.8%	31.8%		31.8%	31.8%		
Yellow Time (s)	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		
Lost Time Adjust (s)		0.0					0.0			0.0		
Total Lost Time (s)		5.0					5.0			5.0		
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	None	None			C-Max	C-Max	C-Max		C-Max	C-Max		
Act Effct Green (s)		10.0					26.2			26.2		
Actuated g/C Ratio		0.12					0.31			0.31		
v/c Ratio		0.29					0.49			0.56		
Control Delay		8.8					30.6			33.7		
Queue Delay		0.0					0.0			0.0		
Total Delay		8.8					30.6			33.7		
LOS		A					C			C		
Approach Delay		8.8					30.6			33.7		

Lanes, Volumes, Timings

24: Southport Avenue & Clybourn Avenue & Shakespeare Avenue

01/07/2019



Lane Group	SEL	SET	SER	SER2	NWL2	NWL	NWT	NWR
Lane Configurations								
Traffic Volume (vph)	27	426	27	8	12	32	607	79
Future Volume (vph)	27	426	27	8	12	32	607	79
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	13	12	12	12	10	13	12
Storage Length (ft)	115		0			115		0
Storage Lanes	1		0			1		0
Taper Length (ft)	90					100		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99	0.99				0.97	0.99	
Frt		0.989					0.983	
Flt Protected	0.950					0.950		
Satd. Flow (prot)	1652	1890	0	0	0	1652	1869	0
Flt Permitted	0.109					0.303		
Satd. Flow (perm)	187	1890	0	0	0	513	1869	0
Right Turn on Red				No				No
Satd. Flow (RTOR)								
Link Speed (mph)		30					30	
Link Distance (ft)		470					1318	
Travel Time (s)		10.7					30.0	
Confl. Peds. (#/hr)	48		43	14	43	14		48
Confl. Bikes (#/hr)			9	9				44
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)								
Lane Group Flow (vph)	29	501	0	0	0	48	746	0
Turn Type	Perm	NA			Perm	Perm	NA	
Protected Phases		14					10	
Permitted Phases	14				10	10		
Detector Phase	14	14			10	10	10	
Switch Phase								
Minimum Initial (s)	20.0	20.0			20.0	20.0	20.0	
Minimum Split (s)	43.0	43.0			43.0	43.0	43.0	
Total Split (s)	43.0	43.0			43.0	43.0	43.0	
Total Split (%)	50.6%	50.6%			50.6%	50.6%	50.6%	
Yellow Time (s)	3.0	3.0			3.0	3.0	3.0	
All-Red Time (s)	2.0	2.0			2.0	2.0	2.0	
Lost Time Adjust (s)	0.0	0.0				0.0	0.0	
Total Lost Time (s)	5.0	5.0				5.0	5.0	
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	None	None			None	None	None	
Act Effct Green (s)	36.8	36.8				36.8	36.8	
Actuated g/C Ratio	0.43	0.43				0.43	0.43	
v/c Ratio	0.36	0.61				0.22	0.92	
Control Delay	30.9	22.2				10.6	32.3	
Queue Delay	0.0	1.0				0.0	0.0	
Total Delay	30.9	23.3				10.6	32.3	
LOS	C	C				B	C	
Approach Delay		23.7					31.0	

Lanes, Volumes, Timings

24: Southport Avenue & Clybourn Avenue & Shakespeare Avenue

01/07/2019

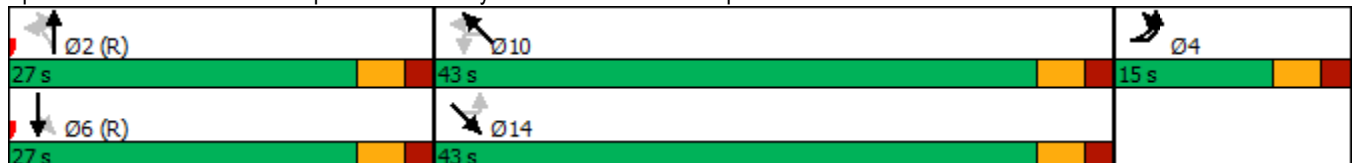


Lane Group	EBL2	EBL	EBR	EBR2	NBL2	NBL	NBT	NBR	SBL	SBT	SBR	SBR2
Approach LOS		A					C			C		
Queue Length 50th (ft)		0					111			105		
Queue Length 95th (ft)		27					187			#189		
Internal Link Dist (ft)		191					377			252		
Turn Bay Length (ft)												
Base Capacity (vph)		247					481			394		
Starvation Cap Reductn		0					0			0		
Spillback Cap Reductn		0					0			0		
Storage Cap Reductn		0					0			0		
Reduced v/c Ratio		0.29					0.49			0.56		

Intersection Summary

Area Type: Other
 Cycle Length: 85
 Actuated Cycle Length: 85
 Offset: 41 (48%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
 Natural Cycle: 85
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.92
 Intersection Signal Delay: 28.3
 Intersection LOS: C
 Intersection Capacity Utilization 76.4%
 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: 24: Southport Avenue & Clybourn Avenue & Shakespeare Avenue



Lanes, Volumes, Timings

24: Southport Avenue & Clybourn Avenue & Shakespeare Avenue






















01/07/2019



Lane Group	SEL	SET	SER	SER2	NWL2	NWL	NWT	NWR
Approach LOS		C					C	
Queue Length 50th (ft)	10	194				8	267	
Queue Length 95th (ft)	38	294				m22	#596	
Internal Link Dist (ft)		390					1238	
Turn Bay Length (ft)	115					115		
Base Capacity (vph)	83	844				229	835	
Starvation Cap Reductn	0	147				0	0	
Spillback Cap Reductn	0	0				0	0	
Storage Cap Reductn	0	0				0	0	
Reduced v/c Ratio	0.35	0.72				0.21	0.89	
Intersection Summary								

Lanes, Volumes, Timings
27: Ashland Avenue & Elston Avenue

01/07/2019

												
Lane Group	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Traffic Volume (vph)	82	1225	0	129	1216	37	0	159	120	0	329	325
Future Volume (vph)	82	1225	0	129	1216	37	0	159	120	0	329	325
Ideal Flow (vphpl)	1900	2000	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	10	10	10	11	12	12	15	11	12	10	12
Storage Length (ft)	0		0	100		0	0		54	0		0
Storage Lanes	1		0	1		0	0		1	0		1
Taper Length (ft)	25			90			25			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.91	0.91	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99			1.00	1.00				0.99			0.96
Frt					0.996				0.850			0.850
Flt Protected	0.950			0.950								
Satd. Flow (prot)	1685	3512	0	1652	4782	0	0	2069	1546	0	1756	1599
Flt Permitted	0.121											
Satd. Flow (perm)	212	3512	0	1738	4782	0	0	2069	1524	0	1756	1530
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					5				114			73
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		255			412			778			308	
Travel Time (s)		5.8			9.4			17.7			7.0	
Confl. Peds. (#/hr)	84		1	1		84	3					3
Confl. Bikes (#/hr)			6			2			3			46
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%	1%	0%	2%	3%	0%	0%	1%	1%	0%	1%	1%
Bus Blockages (#/hr)	0	0	0	0	8	0	0	0	0	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	86	1289	0	136	1319	0	0	167	126	0	346	342
Turn Type	pm+pt	NA		custom	NA			NA	Perm		NA	pm+ov
Protected Phases	5	2 5		1	1 6			4			8	1
Permitted Phases	2 5			6					4			8
Minimum Split (s)	26.0			11.0				35.0	35.0		35.0	11.0
Total Split (s)	26.0			11.0				35.0	35.0		35.0	11.0
Total Split (%)	24.8%			10.5%				33.3%	33.3%		33.3%	10.5%
Yellow Time (s)	3.0			3.0				3.0	3.0		3.0	3.0
All-Red Time (s)	2.0			0.0				2.0	2.0		2.0	0.0
Lost Time Adjust (s)	0.0			0.0				0.0	0.0		0.0	0.0
Total Lost Time (s)	5.0			3.0				5.0	5.0		5.0	3.0
Lead/Lag	Lag											
Lead-Lag Optimize?	Yes											
Act Effct Green (s)	54.0	54.0		38.0	41.0			30.0	30.0		30.0	40.0
Actuated g/C Ratio	0.51	0.51		0.36	0.39			0.29	0.29		0.29	0.38
v/c Ratio	0.21	0.71		0.22	0.71			0.28	0.24		0.69	0.54
Control Delay	15.5	13.1		15.2	23.2			30.8	8.1		24.9	7.1
Queue Delay	0.0	7.2		0.0	0.0			0.1	0.0		1.1	0.2
Total Delay	15.5	20.3		15.2	23.2			30.8	8.1		26.0	7.3
LOS	B	C		B	C			C	A		C	A
Approach Delay		20.0			22.5			21.0			16.7	
Approach LOS		C			C			C			B	
Queue Length 50th (ft)	15	191		67	301			87	6		73	15

Lanes, Volumes, Timings
 27: Ashland Avenue & Elston Avenue

01/07/2019

Lane Group	Ø2	Ø6
Lane Configurations		
Traffic Volume (vph)		
Future Volume (vph)		
Ideal Flow (vphpl)		
Lane Width (ft)		
Storage Length (ft)		
Storage Lanes		
Taper Length (ft)		
Lane Util. Factor		
Ped Bike Factor		
Frt		
Flt Protected		
Satd. Flow (prot)		
Flt Permitted		
Satd. Flow (perm)		
Right Turn on Red		
Satd. Flow (RTOR)		
Link Speed (mph)		
Link Distance (ft)		
Travel Time (s)		
Confl. Peds. (#/hr)		
Confl. Bikes (#/hr)		
Peak Hour Factor		
Heavy Vehicles (%)		
Bus Blockages (#/hr)		
Shared Lane Traffic (%)		
Lane Group Flow (vph)		
Turn Type		
Protected Phases	2	6
Permitted Phases		
Minimum Split (s)	38.0	33.0
Total Split (s)	59.0	33.0
Total Split (%)	56%	31%
Yellow Time (s)	3.0	3.0
All-Red Time (s)	2.0	2.0
Lost Time Adjust (s)		
Total Lost Time (s)		
Lead/Lag		Lead
Lead-Lag Optimize?		Yes
Act Effct Green (s)		
Actuated g/C Ratio		
v/c Ratio		
Control Delay		
Queue Delay		
Total Delay		
LOS		
Approach Delay		
Approach LOS		
Queue Length 50th (ft)		

Lanes, Volumes, Timings
 27: Ashland Avenue & Elston Avenue

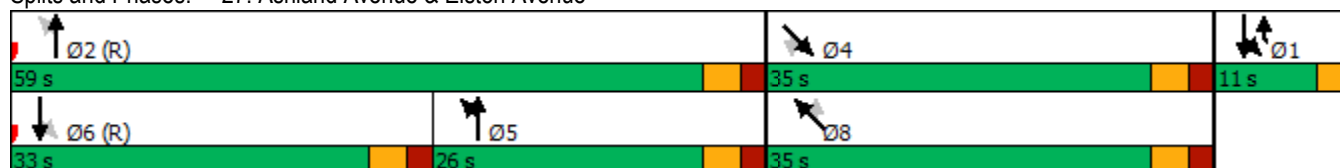
01/07/2019

Lane Group	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SET	SER	NWL	NWT	NWR
Queue Length 95th (ft)	m29	354		m60	m320			144	50		99	23
Internal Link Dist (ft)		175			332			698			228	
Turn Bay Length (ft)				100					54			
Base Capacity (vph)	403	1806		622	1870			591	516		501	633
Starvation Cap Reductn	0	475		0	0			0	0		42	34
Spillback Cap Reductn	0	0		0	0			42	0		0	0
Storage Cap Reductn	0	0		0	0			0	0		0	0
Reduced v/c Ratio	0.21	0.97		0.22	0.71			0.30	0.24		0.75	0.57

Intersection Summary

Area Type: Other
 Cycle Length: 105
 Actuated Cycle Length: 105
 Offset: 13 (12%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
 Natural Cycle: 105
 Control Type: Pretimed
 Maximum v/c Ratio: 0.71
 Intersection Signal Delay: 20.4 Intersection LOS: C
 Intersection Capacity Utilization 78.6% ICU Level of Service D
 Analysis Period (min) 15
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 27: Ashland Avenue & Elston Avenue



Lane Group	Ø2	Ø6
Queue Length 95th (ft)		
Internal Link Dist (ft)		
Turn Bay Length (ft)		
Base Capacity (vph)		
Starvation Cap Reductn		
Spillback Cap Reductn		
Storage Cap Reductn		
Reduced v/c Ratio		
Intersection Summary		

Lanes, Volumes, Timings
29: Ashland Avenue & Armitage Avenue

01/07/2019



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔↔			↔		↔	↔↔			↔↔	↔
Traffic Volume (vph)	545	193	29	4	336	0	27	762	3	0	887	449
Future Volume (vph)	545	193	29	4	336	0	27	762	3	0	887	449
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	10	12	10	10	10	10	9	16	12	11	11
Storage Length (ft)	0		0	0		0	110		0	0		0
Storage Lanes	0		0	0		0	1		0	0		1
Taper Length (ft)	25			25			60			25		
Lane Util. Factor	0.95	0.95	0.95	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	1.00
Ped Bike Factor		1.00			1.00		0.98	1.00				0.90
Frt		0.994						0.999				0.850
Flt Protected		0.966			0.999		0.950					
Satd. Flow (prot)	0	3202	0	0	1754	0	1685	3162	0	0	3388	1531
Flt Permitted		0.585			0.991		0.159					
Satd. Flow (perm)	0	1938	0	0	1740	0	277	3162	0	0	3388	1382
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		5										185
Link Speed (mph)		30			30			30				30
Link Distance (ft)		310			135			237				255
Travel Time (s)		7.0			3.1			5.4				5.8
Confl. Peds. (#/hr)	1		10	10		1	57		4	4		57
Confl. Bikes (#/hr)			3						3			
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%	1%	0%	0%	1%	0%	0%	1%	0%	0%	3%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	8	0	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	791	0	0	350	0	28	789	0	0	914	463
Turn Type	custom	NA		Perm	NA		Perm	NA			NA	pm+ov
Protected Phases	7	7 4			8			2			6 5	7
Permitted Phases	4			8			2					6 5
Minimum Split (s)	24.0			26.0	26.0		42.0	42.0				24.0
Total Split (s)	24.0			32.0	32.0		42.0	42.0				24.0
Total Split (%)	22.9%			30.5%	30.5%		40.0%	40.0%				22.9%
Yellow Time (s)	3.0			3.0	3.0		3.0	3.0				3.0
All-Red Time (s)	0.0			2.0	2.0		1.0	1.0				0.0
Lost Time Adjust (s)					0.0		0.0	0.0				0.0
Total Lost Time (s)					5.0		4.0	4.0				3.0
Lead/Lag	Lead			Lag	Lag							Lead
Lead-Lag Optimize?	Yes			Yes	Yes							Yes
Act Effct Green (s)		53.0			27.0		38.0	38.0			45.0	67.0
Actuated g/C Ratio		0.50			0.26		0.36	0.36			0.43	0.64
v/c Ratio		1.17dl			0.78		0.28	0.69			0.63	0.47
Control Delay		14.8			30.4		28.9	23.8			8.8	3.6
Queue Delay		0.0			12.2		3.6	1.0			0.2	7.3
Total Delay		14.8			42.6		32.5	24.8			9.0	11.0
LOS		B			D		C	C			A	B
Approach Delay		14.8			42.6			25.1			9.7	
Approach LOS		B			D			C			A	
Queue Length 50th (ft)		154			126		7	97			45	30

Lanes, Volumes, Timings
 29: Ashland Avenue & Armitage Avenue

01/07/2019

Lane Group	Ø4	Ø5	Ø6
Lane Configurations			
Traffic Volume (vph)			
Future Volume (vph)			
Ideal Flow (vphpl)			
Lane Width (ft)			
Storage Length (ft)			
Storage Lanes			
Taper Length (ft)			
Lane Util. Factor			
Ped Bike Factor			
Frt			
Flt Protected			
Satd. Flow (prot)			
Flt Permitted			
Satd. Flow (perm)			
Right Turn on Red			
Satd. Flow (RTOR)			
Link Speed (mph)			
Link Distance (ft)			
Travel Time (s)			
Confl. Peds. (#/hr)			
Confl. Bikes (#/hr)			
Peak Hour Factor			
Heavy Vehicles (%)			
Bus Blockages (#/hr)			
Shared Lane Traffic (%)			
Lane Group Flow (vph)			
Turn Type			
Protected Phases	4	5	6
Permitted Phases			
Minimum Split (s)	39.0	7.0	42.0
Total Split (s)	56.0	7.0	42.0
Total Split (%)	53%	7%	40%
Yellow Time (s)	3.0	2.0	3.0
All-Red Time (s)	2.0	0.0	1.0
Lost Time Adjust (s)			
Total Lost Time (s)			
Lead/Lag			
Lead-Lag Optimize?			
Act Effct Green (s)			
Actuated g/C Ratio			
v/c Ratio			
Control Delay			
Queue Delay			
Total Delay			
LOS			
Approach Delay			
Approach LOS			
Queue Length 50th (ft)			

Lanes, Volumes, Timings
 29: Ashland Avenue & Armitage Avenue

01/07/2019

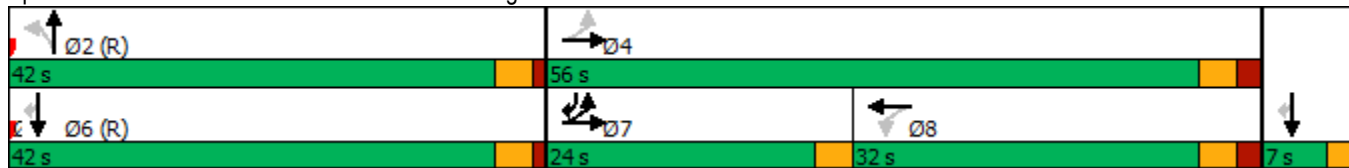


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 95th (ft)		213			#360		m14	164			78	100
Internal Link Dist (ft)		230			55			157			175	
Turn Bay Length (ft)							110					
Base Capacity (vph)		1233			447		100	1144			1452	978
Starvation Cap Reductn		0			79		0	0			87	88
Spillback Cap Reductn		0			0		33	151			0	462
Storage Cap Reductn		0			0		0	0			0	0
Reduced v/c Ratio		0.64			0.95		0.42	0.79			0.67	0.90

Intersection Summary

Area Type: Other
 Cycle Length: 105
 Actuated Cycle Length: 105
 Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Green
 Natural Cycle: 100
 Control Type: Pretimed
 Maximum v/c Ratio: 0.78
 Intersection Signal Delay: 18.1
 Intersection LOS: B
 Intersection Capacity Utilization 90.6%
 ICU Level of Service E
 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.
 dl Defacto Left Lane. Recode with 1 though lane as a left lane.

Splits and Phases: 29: Ashland Avenue & Armitage Avenue



Lane Group	Ø4	Ø5	Ø6
Queue Length 95th (ft)			
Internal Link Dist (ft)			
Turn Bay Length (ft)			
Base Capacity (vph)			
Starvation Cap Reductn			
Spillback Cap Reductn			
Storage Cap Reductn			
Reduced v/c Ratio			
Intersection Summary			

Lanes, Volumes, Timings
30: Elston Avenue & Armitage Avenue

01/07/2019



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕	↗		↕		↗	↕↗		↗	↕	
Traffic Volume (vph)	7	6	184	4	111	20	227	622	4	8	277	0
Future Volume (vph)	7	6	184	4	111	20	227	622	4	8	277	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	2000	1900	1900	2000	1900
Lane Width (ft)	10	10	10	12	12	12	10	10	9	11	12	12
Storage Length (ft)	0		0	0		0	83		85	75		0
Storage Lanes	0		1	0		0	1		1	1		0
Taper Length (ft)	25			25			90			39		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	1.00	1.00
Ped Bike Factor			0.96		1.00		1.00	1.00		1.00		
Frt			0.850		0.980			0.999				
Flt Protected		0.974			0.999		0.950			0.950		
Satd. Flow (prot)	0	1727	1507	0	1826	0	1668	3273	0	1745	1980	0
Flt Permitted		0.842			0.994		0.325			0.160		
Satd. Flow (perm)	0	1493	1441	0	1816	0	570	3273	0	293	1980	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			190		7			1				
Link Speed (mph)		30			30			30				30
Link Distance (ft)		135			306			644				308
Travel Time (s)		3.1			7.0			14.6				7.0
Confl. Peds. (#/hr)	1		12	12		1	1		9	9		1
Confl. Bikes (#/hr)			1						56			3
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 (%)	0%	0%	0%	0%	2%	0%	1%	2%	0%	0%	1%	0%
Parking (#/hr)								3				
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	13	190	0	139	0	234	645	0	8	286	0
Turn Type	custom	NA	pm+ov	Perm	NA		custom	NA		Perm	NA	
Protected Phases		7 4	5		8		5	2 5			6	
Permitted Phases	4		7 4	8			2			6		
Minimum Split (s)	20.0		26.0	20.0	20.0		26.0			29.0	29.0	
Total Split (s)	20.0		26.0	20.0	20.0		26.0			29.0	29.0	
Total Split (%)	19.0%		24.8%	19.0%	19.0%		24.8%			27.6%	27.6%	
Yellow Time (s)	3.0		3.0	3.0	3.0		3.0			3.0	3.0	
All-Red Time (s)	2.0		1.0	2.0	2.0		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		5.0		4.0			4.0	4.0	
Lead/Lag												
Lead-Lag Optimize?												
Act Effct Green (s)		46.0	68.0		15.0		47.0	51.0		25.0	25.0	
Actuated g/C Ratio		0.44	0.65		0.14		0.45	0.49		0.24	0.24	
v/c Ratio		0.02	0.19		0.52		0.48	0.41		0.12	0.61	
Control Delay		17.8	0.3		47.5		15.5	15.5		24.8	26.4	
Queue Delay		1.2	1.1		185.3		0.1	0.0		0.0	4.4	
Total Delay		18.9	1.4		232.8		15.5	15.5		24.8	30.9	
LOS		B	A		F		B	B		C	C	
Approach Delay		2.5			232.8			15.5			30.7	
Approach LOS		A			F			B			C	
Queue Length 50th (ft)		4	0		83		110	166		3	127	

Lanes, Volumes, Timings
 30: Elston Avenue & Armitage Avenue

01/07/2019

Lane Group	Ø2	Ø7
Lane Configurations		
Traffic Volume (vph)		
Future Volume (vph)		
Ideal Flow (vphpl)		
Lane Width (ft)		
Storage Length (ft)		
Storage Lanes		
Taper Length (ft)		
Lane Util. Factor		
Ped Bike Factor		
Frt		
Flt Protected		
Satd. Flow (prot)		
Flt Permitted		
Satd. Flow (perm)		
Right Turn on Red		
Satd. Flow (RTOR)		
Link Speed (mph)		
Link Distance (ft)		
Travel Time (s)		
Confl. Peds. (#/hr)		
Confl. Bikes (#/hr)		
Peak Hour Factor		
Heavy Vehicles (%)		
Parking (#/hr)		
Shared Lane Traffic (%)		
Lane Group Flow (vph)		
Turn Type		
Protected Phases	2	7
Permitted Phases		
Minimum Split (s)	29.0	30.0
Total Split (s)	29.0	30.0
Total Split (%)	28%	29%
Yellow Time (s)	3.0	4.0
All-Red Time (s)	1.0	0.0
Lost Time Adjust (s)		
Total Lost Time (s)		
Lead/Lag		
Lead-Lag Optimize?		
Act Effct Green (s)		
Actuated g/C Ratio		
v/c Ratio		
Control Delay		
Queue Delay		
Total Delay		
LOS		
Approach Delay		
Approach LOS		
Queue Length 50th (ft)		

Lanes, Volumes, Timings
 30: Elston Avenue & Armitage Avenue

01/07/2019

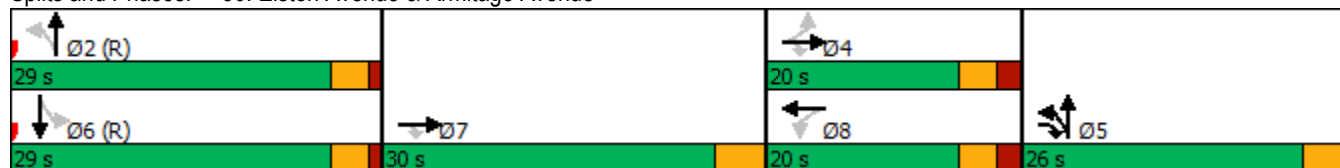


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 95th (ft)		m6	m1		147		m104	m168		m16	226	
Internal Link Dist (ft)		55			226			564			228	
Turn Bay Length (ft)							83			75		
Base Capacity (vph)		654	1014		265		485	1590		69	471	
Starvation Cap Reductn		570	612		0		0	0		0	119	
Spillback Cap Reductn		0	0		255		8	19		0	0	
Storage Cap Reductn		0	0		0		0	0		0	0	
Reduced v/c Ratio		0.15	0.47		13.90		0.49	0.41		0.12	0.81	

Intersection Summary

Area Type: Other
 Cycle Length: 105
 Actuated Cycle Length: 105
 Offset: 96 (91%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
 Natural Cycle: 105
 Control Type: Pretimed
 Maximum v/c Ratio: 0.61
 Intersection Signal Delay: 36.7
 Intersection LOS: D
 Intersection Capacity Utilization 73.3%
 ICU Level of Service D
 Analysis Period (min) 15
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 30: Elston Avenue & Armitage Avenue



Lane Group	Ø2	Ø7
Queue Length 95th (ft)		
Internal Link Dist (ft)		
Turn Bay Length (ft)		
Base Capacity (vph)		
Starvation Cap Reductn		
Spillback Cap Reductn		
Storage Cap Reductn		
Reduced v/c Ratio		
Intersection Summary		

Lanes, Volumes, Timings
 34: Ashland Avenue & Cortland Street

01/07/2019



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑	↗	↖	↖	↗		↑↗			↑↗	
Traffic Volume (vph)	0	234	25	87	305	5	0	819	202	0	883	59
Future Volume (vph)	0	234	25	87	305	5	0	819	202	0	883	59
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	10	10	12	12	12	12	12	12	12	12	12
Storage Length (ft)	0		0	50		0	0		0	0		0
Storage Lanes	0		1	1		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor			0.91	0.96	1.00			0.99			0.99	
Frt			0.850		0.998			0.970			0.991	
Flt Protected				0.950								
Satd. Flow (prot)	0	1722	1449	1805	1840	0	0	3385	0	0	3434	0
Flt Permitted				0.359								
Satd. Flow (perm)	0	1722	1320	658	1840	0	0	3385	0	0	3434	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		30			30			30				30
Link Distance (ft)		309			414			340				210
Travel Time (s)		7.0			9.4			7.7				4.8
Confl. Peds. (#/hr)	42		70	70		42	80		29	29		80
Confl. Bikes (#/hr)			15			29						
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%	4%	0%	3%	0%	0%	1%	0%	0%	2%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	8	0	0	8	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	246	26	92	326	0	0	1075	0	0	991	0
Turn Type		NA	Perm	Perm	NA			NA			NA	
Protected Phases		4			3 8			2			6	
Permitted Phases			4	3 8								
Minimum Split (s)		37.0	37.0					57.0			57.0	
Total Split (s)		37.0	37.0					57.0			57.0	
Total Split (%)		35.2%	35.2%					54.3%			54.3%	
Yellow Time (s)		3.0	3.0					3.0			3.0	
All-Red Time (s)		2.0	2.0					2.0			2.0	
Lost Time Adjust (s)		0.0	0.0					0.0			0.0	
Total Lost Time (s)		5.0	5.0					5.0			5.0	
Lead/Lag		Lag	Lag									
Lead-Lag Optimize?		Yes	Yes									
Act Effect Green (s)		32.0	32.0	45.0	45.0			52.0			52.0	
Actuated g/C Ratio		0.30	0.30	0.43	0.43			0.50			0.50	
v/c Ratio		0.47	0.06	0.33	0.41			0.64			0.58	
Control Delay		33.2	26.6	28.1	28.0			21.8			3.3	
Queue Delay		0.0	0.0	0.0	1.2			0.0			0.0	
Total Delay		33.2	26.6	28.1	29.2			21.8			3.3	
LOS		C	C	C	C			C			A	
Approach Delay		32.6			28.9			21.8			3.3	
Approach LOS		C			C			C			A	
Queue Length 50th (ft)		134	12	40	145			270			20	

Lanes, Volumes, Timings
 34: Ashland Avenue & Cortland Street

01/07/2019

Lane Group	Ø3	Ø8
Lane Configurations		
Traffic Volume (vph)		
Future Volume (vph)		
Ideal Flow (vphpl)		
Lane Width (ft)		
Storage Length (ft)		
Storage Lanes		
Taper Length (ft)		
Lane Util. Factor		
Ped Bike Factor		
Frt		
Flt Protected		
Satd. Flow (prot)		
Flt Permitted		
Satd. Flow (perm)		
Right Turn on Red		
Satd. Flow (RTOR)		
Link Speed (mph)		
Link Distance (ft)		
Travel Time (s)		
Confl. Peds. (#/hr)		
Confl. Bikes (#/hr)		
Peak Hour Factor		
Heavy Vehicles (%)		
Bus Blockages (#/hr)		
Shared Lane Traffic (%)		
Lane Group Flow (vph)		
Turn Type		
Protected Phases	3	8
Permitted Phases		
Minimum Split (s)	11.0	37.0
Total Split (s)	11.0	48.0
Total Split (%)	10%	46%
Yellow Time (s)	3.0	3.0
All-Red Time (s)	0.0	2.0
Lost Time Adjust (s)		
Total Lost Time (s)		
Lead/Lag	Lead	
Lead-Lag Optimize?	Yes	
Act Effct Green (s)		
Actuated g/C Ratio		
v/c Ratio		
Control Delay		
Queue Delay		
Total Delay		
LOS		
Approach Delay		
Approach LOS		
Queue Length 50th (ft)		

Lanes, Volumes, Timings
 34: Ashland Avenue & Cortland Street

01/07/2019

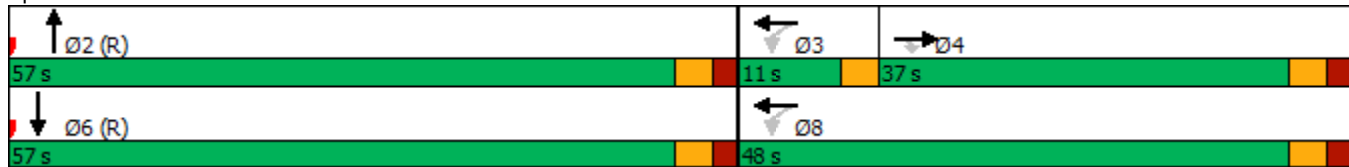


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 95th (ft)		210	33	m35	m124			341			37	
Internal Link Dist (ft)		229			334			260			130	
Turn Bay Length (ft)				50								
Base Capacity (vph)		524	402	282	788			1676			1700	
Starvation Cap Reductn		0	0	0	260			0			0	
Spillback Cap Reductn		0	0	0	0			0			0	
Storage Cap Reductn		0	0	0	0			0			0	
Reduced v/c Ratio		0.47	0.06	0.33	0.62			0.64			0.58	

Intersection Summary

Area Type: Other
 Cycle Length: 105
 Actuated Cycle Length: 105
 Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green
 Natural Cycle: 105
 Control Type: Pretimed
 Maximum v/c Ratio: 0.64
 Intersection Signal Delay: 17.3
 Intersection LOS: B
 Intersection Capacity Utilization 88.3%
 ICU Level of Service E
 Analysis Period (min) 15
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 34: Ashland Avenue & Cortland Street



Lane Group	Ø3	Ø8
Queue Length 95th (ft)		
Internal Link Dist (ft)		
Turn Bay Length (ft)		
Base Capacity (vph)		
Starvation Cap Reductn		
Spillback Cap Reductn		
Storage Cap Reductn		
Reduced v/c Ratio		
Intersection Summary		

Lanes, Volumes, Timings
 36: Elston Avenue & Cortland Street

01/07/2019



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	63	313	56	69	314	195	89	563	157	170	299	16
Future Volume (vph)	63	313	56	69	314	195	89	563	157	170	299	16
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	10	12	12	10	12	11	11	11	11	11	12
Storage Length (ft)	95		0	75		0	60		60	131		70
Storage Lanes	1		0	1		0	1		1	1		0
Taper Length (ft)	25			25			150			100		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.97	0.99		0.99	0.95		0.99		0.91	0.99	1.00	
Frt		0.977			0.943				0.850		0.992	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1487	0	1752	1383	0	1745	1573	1546	1728	1549	0
Flt Permitted	0.121			0.299			0.080			0.252		
Satd. Flow (perm)	220	1487	0	543	1383	0	146	1573	1402	454	1549	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		9			31				62			5
Link Speed (mph)		30			30			30				30
Link Distance (ft)		414			718			296				644
Travel Time (s)		9.4			16.3			6.7				14.6
Confl. Peds. (#/hr)	54		34	34		54	18		27	27		18
Confl. Bikes (#/hr)			17			25			60			4
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 (%)	2%	2%	0%	3%	2%	1%	0%	1%	1%	1%	1%	0%
Parking (#/hr)		4			3			7				8
Shared Lane Traffic (%)												
Lane Group Flow (vph)	66	384	0	72	530	0	93	586	164	177	328	0
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	custom	NA	
Protected Phases		4			8			2		1	16	
Permitted Phases	4			8			2		2	6		
Minimum Split (s)	38.0	38.0		38.0	38.0		55.0	55.0	55.0	12.0		
Total Split (s)	38.0	38.0		38.0	38.0		55.0	55.0	55.0	12.0		
Total Split (%)	36.2%	36.2%		36.2%	36.2%		52.4%	52.4%	52.4%	11.4%		
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0		
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0	2.0	0.0		
Lost Time Adjust (s)	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	3.0		
Lead/Lag												
Lead-Lag Optimize?												
Act Effct Green (s)	33.0	33.0		33.0	33.0		50.0	50.0	50.0	61.0	64.0	
Actuated g/C Ratio	0.31	0.31		0.31	0.31		0.48	0.48	0.48	0.58	0.61	
v/c Ratio	0.96	0.81		0.42	1.16		1.35	0.78	0.23	0.48	0.35	
Control Delay	129.0	45.9		30.4	122.6		255.2	32.0	10.8	11.9	10.3	
Queue Delay	0.0	1.7		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay	129.0	47.6		30.4	122.6		255.2	32.0	10.8	11.9	10.3	
LOS	F	D		C	F		F	C	B	B	B	
Approach Delay		59.5			111.5			52.5			10.9	
Approach LOS		E			F			D			B	
Queue Length 50th (ft)	33	261		34	-416		-82	318	37	46	127	

Lane Group	Ø6
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Confl. Bikes (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Parking (#/hr)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	6
Permitted Phases	
Minimum Split (s)	55.0
Total Split (s)	55.0
Total Split (%)	52%
Yellow Time (s)	3.0
All-Red Time (s)	2.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Queue Length 50th (ft)	

Lanes, Volumes, Timings
 36: Elston Avenue & Cortland Street

01/07/2019

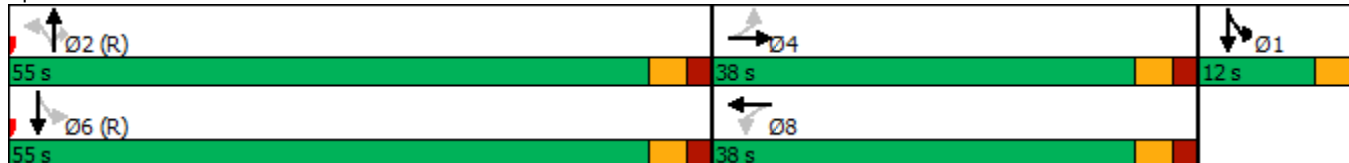


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 95th (ft)	m#96	#203		m64	m#627		#142	472	79	83	254	
Internal Link Dist (ft)		334			638			216			564	
Turn Bay Length (ft)	95			75			60		60	131		
Base Capacity (vph)	69	473		170	455		69	749	700	372	946	
Starvation Cap Reductn	0	23		0	0		0	0	0	0	0	
Spillback Cap Reductn	0	0		0	0		0	0	0	0	0	
Storage Cap Reductn	0	0		0	0		0	0	0	0	0	
Reduced v/c Ratio	0.96	0.85		0.42	1.16		1.35	0.78	0.23	0.48	0.35	

Intersection Summary

Area Type: Other
 Cycle Length: 105
 Actuated Cycle Length: 105
 Offset: 25 (24%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
 Natural Cycle: 105
 Control Type: Pretimed
 Maximum v/c Ratio: 1.35
 Intersection Signal Delay: 59.9 Intersection LOS: E
 Intersection Capacity Utilization 111.1% 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: 36: Elston Avenue & Cortland Street



Lane Group	Ø6
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	
Intersection Summary	

Lanes, Volumes, Timings
 39: Clybourn Avenue & Cortland Street & Racine Avenue

01/07/2019



Lane Group	EBL2	EBL	EBR	SBL	SBR	SBR2	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Traffic Volume (vph)	57	354	78	90	240	47	70	411	43	106	507	105
Future Volume (vph)	57	354	78	90	240	47	70	411	43	106	507	105
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	10	12	11	11	12	10	13	12	10	13	12
Storage Length (ft)		0	0	0	0		116		0	115		0
Storage Lanes		1	1	1	2		1		0	1		0
Taper Length (ft)		25		25			105			95		
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		0.96	0.94	0.96			0.83	0.99	1.00	0.99	0.99	
Frt			0.850		0.850	0.850		0.986			0.974	
Flt Protected		0.950		0.950			0.950			0.950		
Satd. Flow (prot)	0	1656	1538	1728	1303	1615	1685	1676	0	1636	1660	0
Flt Permitted		0.950		0.950			0.193			0.336		
Satd. Flow (perm)	0	1586	1442	1654	1303	1337	340	1676	0	571	1660	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		30		30				30			30	
Link Distance (ft)		208		154				578			1871	
Travel Time (s)		4.7		3.5				13.1			42.5	
Confl. Peds. (#/hr)	45		15	15		45	33		26	26		33
Confl. Bikes (#/hr)			6		15	15			2			28
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%	2%	5%	1%	3%	0%	0%	0%	0%	3%	0%	0%
Parking (#/hr)					8			6			5	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	428	81	94	250	49	73	473	0	110	637	0
Turn Type	Prot	Prot	Perm	Prot	Prot	Perm	Perm	NA		Perm	NA	
Protected Phases	4	4		8	8			6				2
Permitted Phases	4		4			8	6			2		
Minimum Split (s)	23.0	23.0	23.0	19.0	19.0	19.0	43.0	43.0		43.0	43.0	
Total Split (s)	23.0	23.0	23.0	19.0	19.0	19.0	43.0	43.0		43.0	43.0	
Total Split (%)	27.1%	27.1%	27.1%	22.4%	22.4%	22.4%	50.6%	50.6%		50.6%	50.6%	
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	0.0		0.0	0.0	
Total Lost Time (s)		4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Lead/Lag												
Lead-Lag Optimize?												
Act Effct Green (s)		19.0	19.0	15.0	15.0	15.0	39.0	39.0		39.0	39.0	
Actuated g/C Ratio		0.22	0.22	0.18	0.18	0.18	0.46	0.46		0.46	0.46	
v/c Ratio		1.16	0.25	0.31	1.09	0.21	0.47	0.62		0.42	0.84	
Control Delay		129.5	29.7	33.7	122.3	32.6	13.1	7.8		21.7	32.2	
Queue Delay		4.2	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay		133.6	29.7	33.7	122.3	32.6	13.1	7.8		21.7	32.2	
LOS		F	C	C	F	C	B	A		C	C	
Approach Delay		117.1		89.9				8.5			30.7	
Approach LOS		F		F				A			C	
Queue Length 50th (ft)		~274	36	44	~152	23	3	19		38	287	

Lanes, Volumes, Timings

39: Clybourn Avenue & Cortland Street & Racine Avenue

01/07/2019

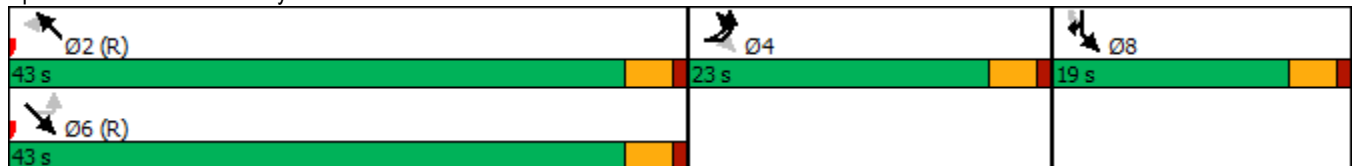


Lane Group	EBL2	EBL	EBR	SBL	SBR	SBR2	SEL	SET	SER	NWL	NWT	NWR
Queue Length 95th (ft)		#449	75	88	#295	54	6	28		85	#490	
Internal Link Dist (ft)		128		74				498			1791	
Turn Bay Length (ft)							116			115		
Base Capacity (vph)		370	322	304	229	235	156	768		261	761	
Starvation Cap Reductn		111	0	0	0	0	0	0		0	0	
Spillback Cap Reductn		0	0	0	0	0	0	0		0	0	
Storage Cap Reductn		0	0	0	0	0	0	0		0	0	
Reduced v/c Ratio		1.65	0.25	0.31	1.09	0.21	0.47	0.62		0.42	0.84	

Intersection Summary

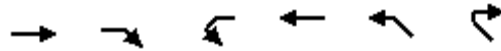
Area Type: Other
 Cycle Length: 85
 Actuated Cycle Length: 85
 Offset: 26 (31%), Referenced to phase 2:NWTL and 6:SETL, Start of Green
 Natural Cycle: 85
 Control Type: Pretimed
 Maximum v/c Ratio: 1.16
 Intersection Signal Delay: 55.8 Intersection LOS: E
 Intersection Capacity Utilization 103.0% ICU Level of Service G
 Analysis Period (min) 15
 ~ Volume exceeds capacity, queue is theoretically infinite.
 Queue shown is maximum after two cycles.
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

Splits and Phases: 39: Clybourn Avenue & Cortland Street & Racine Avenue



Lanes, Volumes, Timings
44: Marcey Street & Cortland Street

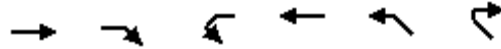
01/07/2019



Lane Group	EBT	EBR	WBL	WBT	NWL	NWR
Lane Configurations	↑↑			↑	↑↑	
Traffic Volume (vph)	432	85	5	384	263	57
Future Volume (vph)	432	85	5	384	263	57
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	12	12	11	12	12
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99			1.00	1.00	
Frt	0.975				0.976	
Flt Protected				0.999	0.960	
Satd. Flow (prot)	3207	0	0	1799	1504	0
Flt Permitted					0.960	
Satd. Flow (perm)	3207	0	0	1801	1504	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	23				10	
Link Speed (mph)	30			30	30	
Link Distance (ft)	275			208	405	
Travel Time (s)	6.3			4.7	9.2	
Confl. Peds. (#/hr)		13	13			11
Confl. Bikes (#/hr)		6				5
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	2%	0%	0%	2%	3%	0%
Parking (#/hr)					6	
Shared Lane Traffic (%)						
Lane Group Flow (vph)	556	0	0	418	344	0
Turn Type	NA		pm+pt	NA	Prot	
Protected Phases	2		1	6	3	
Permitted Phases			6			
Detector Phase	2		1	6	3	
Switch Phase						
Minimum Initial (s)	10.0		21.0	24.0	10.0	
Minimum Split (s)	21.0		25.0	39.0	21.0	
Total Split (s)	38.0		33.0	71.0	34.0	
Total Split (%)	36.2%		31.4%	67.6%	32.4%	
Yellow Time (s)	3.0		3.0	3.0	3.0	
All-Red Time (s)	1.0		1.0	1.0	1.0	
Lost Time Adjust (s)	0.0			0.0	0.0	
Total Lost Time (s)	4.0			4.0	4.0	
Lead/Lag	Lead		Lag			
Lead-Lag Optimize?	Yes		Yes			
Recall Mode	C-Max		Max	C-Max	None	
Act Effct Green (s)	37.1			70.1	26.9	
Actuated g/C Ratio	0.35			0.67	0.26	
v/c Ratio	0.48			0.35	0.88	
Control Delay	20.6			9.1	59.7	
Queue Delay	0.0			7.5	0.0	
Total Delay	20.6			16.5	59.7	
LOS	C			B	E	
Approach Delay	20.6			16.5	59.7	
Approach LOS	C			B	E	

Lanes, Volumes, Timings
 44: Marcey Street & Cortland Street

01/07/2019

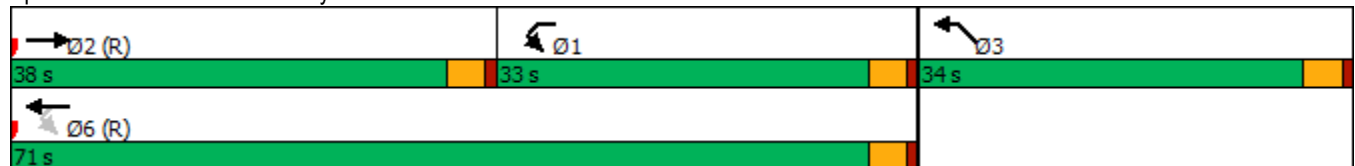


Lane Group	EBT	EBR	WBL	WBT	NWL	NWR
Queue Length 50th (ft)	152			118	209	
Queue Length 95th (ft)	m194			178	#350	
Internal Link Dist (ft)	195			128	325	
Turn Bay Length (ft)						
Base Capacity (vph)	1148			1202	436	
Starvation Cap Reductn	0			730	0	
Spillback Cap Reductn	0			0	0	
Storage Cap Reductn	0			0	0	
Reduced v/c Ratio	0.48			0.89	0.79	

Intersection Summary

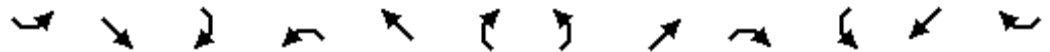
Area Type: Other
 Cycle Length: 105
 Actuated Cycle Length: 105
 Offset: 40 (38%), Referenced to phase 2:EBT and 6:WBT, Start of Green
 Natural Cycle: 70
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.88
 Intersection Signal Delay: 29.5 Intersection LOS: C
 Intersection Capacity Utilization 49.1% ICU Level of Service A
 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: 44: Marcey Street & Cortland Street



Lanes, Volumes, Timings
46: Magnolia Avenue & Clybourn Avenue

01/07/2019



Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	31	487	20	9	559	30	6	22	2	14	10	8
Future Volume (vph)	31	487	20	9	559	30	6	22	2	14	10	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	13	12	10	13	12	12	15	12	12	15	12
Storage Length (ft)	55		0	125		0	0		0	0		0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (ft)	100			100			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	0.99	1.00		0.99	1.00			0.99			0.97	
Frt		0.994			0.992			0.992			0.965	
Flt Protected	0.950			0.950				0.991			0.979	
Satd. Flow (prot)	1685	1676	0	1685	1670	0	0	2048	0	0	1946	0
Flt Permitted	0.392			0.437				0.950			0.876	
Satd. Flow (perm)	689	1676	0	769	1670	0	0	1951	0	0	1719	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		5			6			2			9	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1318			578			185			123	
Travel Time (s)		30.0			13.1			4.2			2.8	
Confl. Peds. (#/hr)	31		24	24		31	19		16	16		19
Confl. Bikes (#/hr)			4			23						
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Parking (#/hr)		8			8							
Shared Lane Traffic (%)												
Lane Group Flow (vph)	33	546	0	10	633	0	0	32	0	0	35	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		6			2			4			8	
Permitted Phases	6			2			4			8		
Detector Phase	6	6		2	2		4	4		8	8	
Switch Phase												
Minimum Initial (s)	49.0	49.0		49.0	49.0		15.0	15.0		15.0	15.0	
Minimum Split (s)	59.0	59.0		59.0	59.0		26.0	26.0		26.0	26.0	
Total Split (s)	59.0	59.0		59.0	59.0		26.0	26.0		26.0	26.0	
Total Split (%)	69.4%	69.4%		69.4%	69.4%		30.6%	30.6%		30.6%	30.6%	
Yellow Time (s)	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	
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?												
Recall Mode	C-Max	C-Max		C-Max	C-Max		None	None		None	None	
Act Effect Green (s)	71.2	71.2		71.2	71.2			15.0			15.0	
Actuated g/C Ratio	0.84	0.84		0.84	0.84			0.18			0.18	
v/c Ratio	0.06	0.39		0.02	0.45			0.09			0.11	
Control Delay	2.5	4.1		2.3	2.4			28.8			24.8	
Queue Delay	0.0	0.0		0.0	0.1			0.0			0.0	
Total Delay	2.5	4.1		2.3	2.5			28.8			24.8	

Lanes, Volumes, Timings
 46: Magnolia Avenue & Clybourn Avenue

01/07/2019

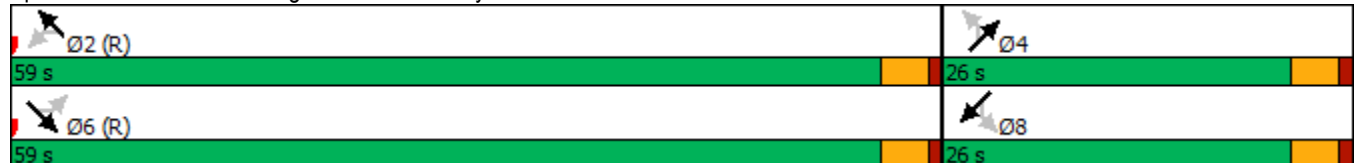


Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
LOS	A	A		A	A			C			C	
Approach Delay		4.0			2.5			28.8			24.8	
Approach LOS		A			A			C			C	
Queue Length 50th (ft)	3	52		1	39			14			12	
Queue Length 95th (ft)	m5	71		m1	m79			38			37	
Internal Link Dist (ft)		1238			498			105			43	
Turn Bay Length (ft)	55			125								
Base Capacity (vph)	577	1404		644	1399			506			451	
Starvation Cap Reductn	0	0		0	76			0			0	
Spillback Cap Reductn	0	0		0	0			0			0	
Storage Cap Reductn	0	0		0	0			0			0	
Reduced v/c Ratio	0.06	0.39		0.02	0.48			0.06			0.08	

Intersection Summary

Area Type: Other
 Cycle Length: 85
 Actuated Cycle Length: 85
 Offset: 18 (21%), Referenced to phase 2:NWTL and 6:SETL, Start of Green
 Natural Cycle: 85
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.45
 Intersection Signal Delay: 4.4
 Intersection LOS: A
 Intersection Capacity Utilization 67.7%
 ICU Level of Service C
 Analysis Period (min) 15
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 46: Magnolia Avenue & Clybourn Avenue



Lanes, Volumes, Timings
75: Armitage Avenue & I-90/94 East Ramps

01/07/2019



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SBL	SBR	NWL	NWR	NWR2
Lane Configurations											
Traffic Volume (vph)	223	371	0	0	437	396	0	0	386	0	429
Future Volume (vph)	223	371	0	0	437	396	0	0	386	0	429
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	12	12	12	9	12	12	12	12	12	12
Lane Util. Factor	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00				0.99						
Frt					0.936						0.850
Flt Protected	0.950								0.950		
Satd. Flow (prot)	1685	3574	0	0	1558	0	0	0	1787	0	1615
Flt Permitted	0.075								0.950		
Satd. Flow (perm)	133	3574	0	0	1558	0	0	0	1787	0	1615
Right Turn on Red			Yes			Yes		Yes			Yes
Satd. Flow (RTOR)					57						385
Link Speed (mph)		30			30		30		30		
Link Distance (ft)		380			200		278		293		
Travel Time (s)		8.6			4.5		6.3		6.7		
Confl. Peds. (#/hr)	5		52	52		5					1
Confl. Bikes (#/hr)			1								
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
Heavy Vehicles (%)	0%	1%	0%	0%	2%	1%	0%	0%	1%	0%	0%
Shared Lane Traffic (%)											
Lane Group Flow (vph)	237	395	0	0	886	0	0	0	411	0	456
Turn Type	pm+pt	NA			NA				Prot		Prot
Protected Phases	7	4			8				5		5
Permitted Phases	4										
Minimum Split (s)	17.0	54.0			53.0				35.0		35.0
Total Split (s)	17.0	70.0			53.0				35.0		35.0
Total Split (%)	16.2%	66.7%			50.5%				33.3%		33.3%
Yellow Time (s)	3.0	3.0			3.0				3.0		3.0
All-Red Time (s)	2.0	2.0			2.0				2.0		2.0
Lost Time Adjust (s)	0.0	0.0			0.0				0.0		0.0
Total Lost Time (s)	5.0	5.0			5.0				5.0		5.0
Lead/Lag	Lag				Lead						
Lead-Lag Optimize?	Yes				Yes						
Act Effct Green (s)	65.0	65.0			48.0				30.0		30.0
Actuated g/C Ratio	0.62	0.62			0.46				0.29		0.29
v/c Ratio	0.92	0.18			1.19				0.81		0.62
Control Delay	69.5	6.0			129.8				48.6		10.0
Queue Delay	0.0	0.0			0.3				0.0		0.0
Total Delay	69.5	6.0			130.1				48.6		10.0
LOS	E	A			F				D		A
Approach Delay		29.8			130.1				28.3		
Approach LOS		C			F				C		
Queue Length 50th (ft)	121	45			~686				256		36
Queue Length 95th (ft)	#268	63			#934				#407		135
Internal Link Dist (ft)		300			120		198		213		
Turn Bay Length (ft)											
Base Capacity (vph)	259	2212			743				510		736

Lanes, Volumes, Timings
 75: Armitage Avenue & I-90/94 East Ramps

01/07/2019

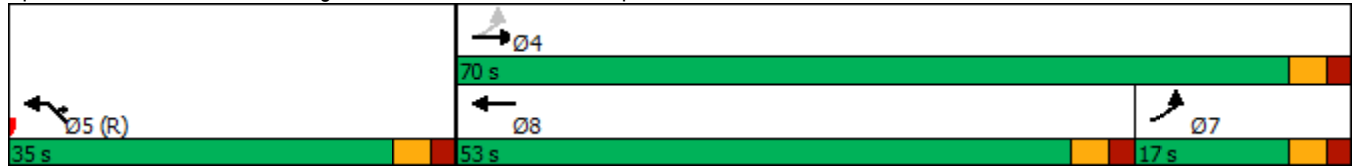


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SBL	SBR	NWL	NWR	NWR2
Starvation Cap Reductn	0	0			40				0		0
Spillback Cap Reductn	0	0			0				0		0
Storage Cap Reductn	0	0			0				0		0
Reduced v/c Ratio	0.92	0.18			1.26				0.81		0.62

Intersection Summary

Area Type: Other
 Cycle Length: 105
 Actuated Cycle Length: 105
 Offset: 103 (98%), Referenced to phase 5:NWL, Start of Green
 Natural Cycle: 125
 Control Type: Pretimed
 Maximum v/c Ratio: 1.19
 Intersection Signal Delay: 66.5
 Intersection LOS: E
 Intersection Capacity Utilization 97.3%
 ICU Level of Service F
 Analysis Period (min) 15
 ~ Volume exceeds capacity, queue is theoretically infinite.
 Queue shown is maximum after two cycles.
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

Splits and Phases: 75: Armitage Avenue & I-90/94 East Ramps



Lanes, Volumes, Timings
78: Armitage Avenue & I-90/94 West Ramps

01/07/2019



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑			↑↑			↑↓		↑↑	↑	↑
Traffic Volume (vph)	0	593	9	10	526	0	30	0	64	248	49	249
Future Volume (vph)	0	593	9	10	526	0	30	0	64	248	49	249
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	0.97	1.00	1.00
Ped Bike Factor		1.00			1.00			0.99				0.96
Frt		0.998						0.909				0.850
Flt Protected					0.999			0.984		0.950		
Satd. Flow (prot)	0	3487	0	0	3431	0	0	1699	0	3367	1892	1583
Flt Permitted					0.954			0.872		0.950		
Satd. Flow (perm)	0	3487	0	0	3274	0	0	1494	0	3367	1892	1523
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		1						135				262
Link Speed (mph)		30			30			30				30
Link Distance (ft)		653			126			236				708
Travel Time (s)		14.8			2.9			5.4				16.1
Confl. Peds. (#/hr)	6		59	59		6	16					16
Confl. Bikes (#/hr)			3									
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%	0%	5%	0%	0%	0%	0%	4%	0%	2%
Bus Blockages (#/hr)	0	1	0	0	1	0	0	0	0	0	1	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	633	0	0	565	0	0	99	0	261	52	262
Turn Type		NA		D,P+P	NA		Perm	NA		Split	NA	Perm
Protected Phases		4		8 10	4 8 10			2		6	6	
Permitted Phases				4			2					6
Minimum Split (s)		36.0					15.0	15.0		24.0	24.0	24.0
Total Split (s)		39.0					15.0	15.0		24.0	24.0	24.0
Total Split (%)		37.1%					14.3%	14.3%		22.9%	22.9%	22.9%
Yellow Time (s)		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
Lost Time Adjust (s)		0.0						0.0		0.0	0.0	0.0
Total Lost Time (s)		3.0						5.0		5.0	5.0	5.0
Lead/Lag		Lead								Lead	Lead	Lead
Lead-Lag Optimize?		Yes								Yes	Yes	Yes
Act Effct Green (s)		36.0			57.0			10.0		19.0	19.0	19.0
Actuated g/C Ratio		0.34			0.54			0.10		0.18	0.18	0.18
v/c Ratio		0.53			0.31			0.38		0.43	0.15	0.53
Control Delay		29.6			0.5			7.5		40.7	37.7	9.2
Queue Delay		0.0			0.7			0.0		0.0	0.0	0.0
Total Delay		29.6			1.2			7.5		40.7	37.7	9.2
LOS		C			A			A		D	D	A
Approach Delay		29.6			1.2			7.5			26.1	
Approach LOS		C			A			A			C	
Queue Length 50th (ft)		177			0			0		80	30	0
Queue Length 95th (ft)		234			0			26		121	64	70
Internal Link Dist (ft)		573			46			156			628	
Turn Bay Length (ft)												
Base Capacity (vph)		1196			1808			264		609	342	490

Lanes, Volumes, Timings
 78: Armitage Avenue & I-90/94 West Ramps

01/07/2019

Lane Group	Ø8	Ø10
Lane Configurations		
Traffic Volume (vph)		
Future Volume (vph)		
Ideal Flow (vphpl)		
Lane Util. Factor		
Ped Bike Factor		
Frt		
Flt Protected		
Satd. Flow (prot)		
Flt Permitted		
Satd. Flow (perm)		
Right Turn on Red		
Satd. Flow (RTOR)		
Link Speed (mph)		
Link Distance (ft)		
Travel Time (s)		
Confl. Peds. (#/hr)		
Confl. Bikes (#/hr)		
Peak Hour Factor		
Heavy Vehicles (%)		
Bus Blockages (#/hr)		
Shared Lane Traffic (%)		
Lane Group Flow (vph)		
Turn Type		
Protected Phases	8	10
Permitted Phases		
Minimum Split (s)	21.0	6.0
Total Split (s)	21.0	6.0
Total Split (%)	20%	6%
Yellow Time (s)	3.0	3.0
All-Red Time (s)	0.0	2.0
Lost Time Adjust (s)		
Total Lost Time (s)		
Lead/Lag	Lag	Lag
Lead-Lag Optimize?	Yes	Yes
Act Effct Green (s)		
Actuated g/C Ratio		
v/c Ratio		
Control Delay		
Queue Delay		
Total Delay		
LOS		
Approach Delay		
Approach LOS		
Queue Length 50th (ft)		
Queue Length 95th (ft)		
Internal Link Dist (ft)		
Turn Bay Length (ft)		
Base Capacity (vph)		

Lanes, Volumes, Timings

78: Armitage Avenue & I-90/94 West Ramps

01/07/2019

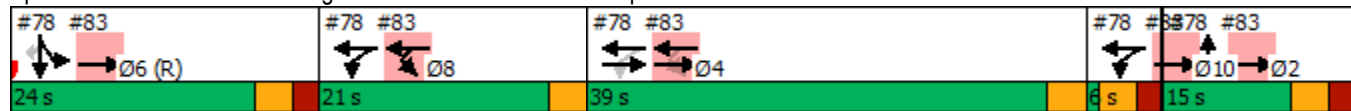


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Starvation Cap Reductn		0			866			0		0	0	0
Spillback Cap Reductn		0			0			0		0	0	0
Storage Cap Reductn		0			0			0		0	0	0
Reduced v/c Ratio		0.53			0.60			0.38		0.43	0.15	0.53

Intersection Summary

Area Type:	Other
Cycle Length:	105
Actuated Cycle Length:	105
Offset:	0 (0%), Referenced to phase 6:SBTL, Start of Green
Natural Cycle:	105
Control Type:	Pretimed
Maximum v/c Ratio:	0.69
Intersection Signal Delay:	18.8
Intersection LOS:	B
Intersection Capacity Utilization	64.5%
ICU Level of Service	C
Analysis Period (min)	15

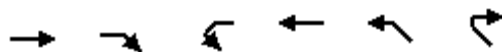
Splits and Phases: 78: Armitage Avenue & I-90/94 West Ramps



Lane Group	Ø8	Ø10
Starvation Cap Reductn		
Spillback Cap Reductn		
Storage Cap Reductn		
Reduced v/c Ratio		
Intersection Summary		

Lanes, Volumes, Timings
83: I-94 SB Ramp & Armitage Avenue

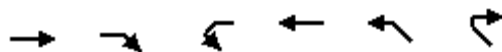
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Lane Group	EBT	EBR	WBL	WBT	NWL	NWR	Ø2	Ø4	Ø6	Ø10
Lane Configurations	↑↑↑			↑↑						
Traffic Volume (vph)	594	311	287	536	0	0				
Future Volume (vph)	594	311	287	536	0	0				
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900				
Lane Util. Factor	0.91	0.91	0.95	0.95	1.00	1.00				
Ped Bike Factor	0.98			0.99						
Frt	0.948									
Flt Protected				0.983						
Satd. Flow (prot)	4766	0	0	3479	0	0				
Flt Permitted				0.553						
Satd. Flow (perm)	4766	0	0	1941	0	0				
Right Turn on Red		Yes				Yes				
Satd. Flow (RTOR)	327									
Link Speed (mph)	30			30	30					
Link Distance (ft)	126			380	301					
Travel Time (s)	2.9			8.6	6.8					
Confl. Peds. (#/hr)		59	59							
Confl. Bikes (#/hr)		3								
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95				
Heavy Vehicles (%)	1%	1%	2%	2%	2%	2%				
Shared Lane Traffic (%)										
Lane Group Flow (vph)	952	0	0	866	0	0				
Turn Type	NA		custom	NA						
Protected Phases	2 4 6 10		8	4 8			2	4	6	10
Permitted Phases			4							
Minimum Split (s)			21.0				15.0	36.0	24.0	6.0
Total Split (s)			21.0				15.0	39.0	24.0	6.0
Total Split (%)			20.0%				14%	37%	23%	6%
Yellow Time (s)			3.0				3.0	3.0	3.0	3.0
All-Red Time (s)			0.0				2.0	0.0	2.0	2.0
Lost Time Adjust (s)										
Total Lost Time (s)										
Lead/Lag			Lag				Lead	Lead	Lag	
Lead-Lag Optimize?			Yes				Yes	Yes	Yes	
Act Effect Green (s)	79.0			54.0						
Actuated g/C Ratio	0.75			0.51						
v/c Ratio	0.26			0.69						
Control Delay	0.2			11.2						
Queue Delay	0.3			0.0						
Total Delay	0.4			11.2						
LOS	A			B						
Approach Delay	0.4			11.2						
Approach LOS	A			B						
Queue Length 50th (ft)	0			186						
Queue Length 95th (ft)	0			m162						
Internal Link Dist (ft)	46			300	221					
Turn Bay Length (ft)										
Base Capacity (vph)	3666			1261						
Starvation Cap Reductn	1852			0						

Lanes, Volumes, Timings
 83: I-94 SB Ramp & Armitage Avenue

01/07/2019



Lane Group	EBT	EBR	WBL	WBT	NWL	NWR	Ø2	Ø4	Ø6	Ø10
Spillback Cap Reductn	0			0						
Storage Cap Reductn	0			0						
Reduced v/c Ratio	0.52			0.69						

Intersection Summary













Area Type:	Other
Cycle Length:	105
Actuated Cycle Length:	105
Offset:	0 (0%), Referenced to phase 6:SBTL, Start of Green
Natural Cycle:	105
Control Type:	Pretimed
Maximum v/c Ratio:	0.69
Intersection Signal Delay:	5.6
Intersection LOS:	A
Intersection Capacity Utilization	50.6%
ICU Level of Service	A
Analysis Period (min)	15
m Volume for 95th percentile queue is metered by upstream signal.	

Splits and Phases: 83: I-94 SB Ramp & Armitage Avenue

#78 #83	#78 #83	#78 #83	#78 #83 #78 #83
24 s	21 s	39 s	6 s 15 s

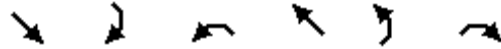
Lanes, Volumes, Timings
114: Elston Avenue

01/07/2019

						
Lane Group	SET	SER	NWL	NWT	NEL	NER
Lane Configurations						
Traffic Volume (vph)	261	18	34	414	59	19
Future Volume (vph)	261	18	34	414	59	19
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		125	150		0	0
Storage Lanes		1	1		1	1
Taper Length (ft)			50		25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.93	0.97			
Frt		0.850				0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	1881	1615	1805	1881	1805	1615
Flt Permitted			0.507		0.950	
Satd. Flow (perm)	1881	1494	933	1881	1805	1615
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		20				21
Link Speed (mph)	30			30	30	
Link Distance (ft)	793			778	263	
Travel Time (s)	18.0			17.7	6.0	
Confl. Peds. (#/hr)		23	23			
Confl. Bikes (#/hr)		3				
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	1%	0%	0%	1%	0%	0%
Shared Lane Traffic (%)						
Lane Group Flow (vph)	284	20	37	450	64	21
Turn Type	NA	pm+ov	pm+pt	NA	Prot	pm+ov
Protected Phases	6	7	9	2	7	9
Permitted Phases		6	2			7
Minimum Split (s)	41.0	31.0	8.0	41.0	31.0	8.0
Total Split (s)	41.0	31.0	13.0	41.0	31.0	13.0
Total Split (%)	48.2%	36.5%	15.3%	48.2%	36.5%	15.3%
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						
Lead-Lag Optimize?						
Act Effect Green (s)	37.0	64.0	46.0	37.0	27.0	40.0
Actuated g/C Ratio	0.44	0.75	0.54	0.44	0.32	0.47
v/c Ratio	0.35	0.02	0.06	0.55	0.11	0.03
Control Delay	17.5	0.8	7.8	21.0	21.3	5.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	17.5	0.8	7.8	21.0	21.3	5.4
LOS	B	A	A	C	C	A
Approach Delay	16.4			20.0	17.4	
Approach LOS	B			B	B	
Queue Length 50th (ft)	98	0	8	172	24	0
Queue Length 95th (ft)	157	3	20	263	53	12
Internal Link Dist (ft)	713			698	183	

Lanes, Volumes, Timings
114: Elston Avenue

01/07/2019

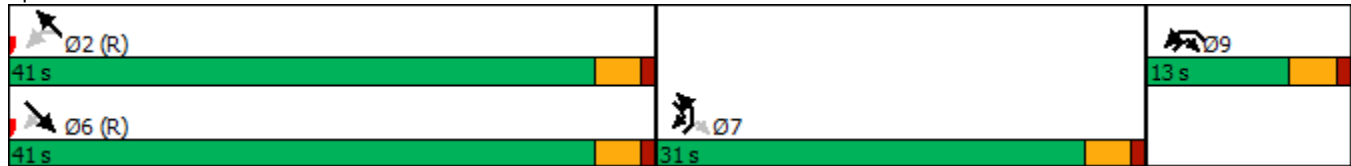


Lane Group	SET	SER	NWL	NWT	NEL	NER
Turn Bay Length (ft)		125	150			
Base Capacity (vph)	818	1168	597	818	573	771
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.35	0.02	0.06	0.55	0.11	0.03

Intersection Summary

Area Type:	Other
Cycle Length:	85
Actuated Cycle Length:	85
Offset:	65 (76%), Referenced to phase 2:NWTL and 6:SET, Start of Green
Natural Cycle:	80
Control Type:	Pretimed
Maximum v/c Ratio:	0.55
Intersection Signal Delay:	18.5
Intersection LOS:	B
Intersection Capacity Utilization	38.5%
ICU Level of Service	A
Analysis Period (min)	15

Splits and Phases: 114: Elston Avenue



Intersection	
Intersection Delay, s/veh	42.3
Intersection LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	113	376	9	22	301	36	3	182	18	14	137	121
Future Vol, veh/h	113	376	9	22	301	36	3	182	18	14	137	121
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	0	0	5	1	6	0	1	0	0	1	2
Mvmt Flow	118	392	9	23	314	38	3	190	19	15	143	126
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	71.4	31.1	18.6	21.7
HCM LOS	F	D	C	C

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	1%	23%	6%	5%
Vol Thru, %	90%	76%	84%	50%
Vol Right, %	9%	2%	10%	44%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	203	498	359	272
LT Vol	3	113	22	14
Through Vol	182	376	301	137
RT Vol	18	9	36	121
Lane Flow Rate	211	519	374	283
Geometry Grp	1	1	1	1
Degree of Util (X)	0.479	1.019	0.768	0.602
Departure Headway (Hd)	8.147	7.069	7.397	7.65
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	440	519	486	470
Service Time	6.232	5.069	5.469	5.727
HCM Lane V/C Ratio	0.48	1	0.77	0.602
HCM Control Delay	18.6	71.4	31.1	21.7
HCM Lane LOS	C	F	D	C
HCM 95th-tile Q	2.5	14.6	6.7	3.9

Intersection	
Intersection Delay, s/veh	13
Intersection LOS	B

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	W		T	T		T
Traffic Vol, veh/h	200	97	278	247	60	178
Future Vol, veh/h	200	97	278	247	60	178
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles, %	7	1	9	5	0	8
Mvmt Flow	206	100	287	255	62	184
Number of Lanes	1	0	1	1	0	1

Approach	WB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	2
Conflicting Approach Left	NB		WB
Conflicting Lanes Left	2	0	1
Conflicting Approach Right	SB	WB	
Conflicting Lanes Right	1	1	0
HCM Control Delay	14.4	12.5	12.3
HCM LOS	B	B	B

Lane	NBLn1	NBLn2	WBLn1	SBLn1
Vol Left, %	0%	0%	67%	25%
Vol Thru, %	100%	0%	0%	75%
Vol Right, %	0%	100%	33%	0%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	278	247	297	238
LT Vol	0	0	200	60
Through Vol	278	0	0	178
RT Vol	0	247	97	0
Lane Flow Rate	287	255	306	245
Geometry Grp	7	7	2	5
Degree of Util (X)	0.473	0.366	0.493	0.388
Departure Headway (Hd)	5.947	5.169	5.793	5.687
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	608	695	622	633
Service Time	3.681	2.903	3.828	3.725
HCM Lane V/C Ratio	0.472	0.367	0.492	0.387
HCM Control Delay	13.9	10.9	14.4	12.3
HCM Lane LOS	B	B	B	B
HCM 95th-tile Q	2.5	1.7	2.7	1.8

HCM 6th TWSC
17: Dominick Street & Webster Avenue

01/07/2019

Intersection												
Int Delay, s/veh	3.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	53	450	54	3	352	11	48	6	14	8	2	44
Future Vol, veh/h	53	450	54	3	352	11	48	6	14	8	2	44
Conflicting Peds, #/hr	25	0	51	51	0	25	1	0	12	12	0	1
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	0	0	2	0	1	0	0	0	0	0	0	0
Mvmt Flow	56	474	57	3	371	12	51	6	15	8	2	46

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	408	0	0	582	0	0	1074	1080	566	1045	1102	403
Stage 1	-	-	-	-	-	-	666	666	-	408	408	-
Stage 2	-	-	-	-	-	-	408	414	-	637	694	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1162	-	-	1002	-	-	199	220	528	209	213	652
Stage 1	-	-	-	-	-	-	452	460	-	624	600	-
Stage 2	-	-	-	-	-	-	624	597	-	469	447	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1134	-	-	953	-	-	164	189	497	180	183	636
Mov Cap-2 Maneuver	-	-	-	-	-	-	164	189	-	180	183	-
Stage 1	-	-	-	-	-	-	400	406	-	566	583	-
Stage 2	-	-	-	-	-	-	574	580	-	411	395	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.8			0.1			34.3			14.5		
HCM LOS							D			B		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	193	1134	-	-	953	-	-	434
HCM Lane V/C Ratio	0.371	0.049	-	-	0.003	-	-	0.131
HCM Control Delay (s)	34.3	8.3	0	-	8.8	0	-	14.5
HCM Lane LOS	D	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	1.6	0.2	-	-	0	-	-	0.4

HCM 6th TWSC
40: Cortland Street & Kingsbury Street

01/07/2019

Intersection												
Int Delay, s/veh	2.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	120	500	0	0	548	99	15	0	77	5	1	2
Future Vol, veh/h	120	500	0	0	548	99	15	0	77	5	1	2
Conflicting Peds, #/hr	32	0	24	24	0	32	3	0	2	2	0	3
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	96	96	96	96	96	96	96	96	96	96	96	96
Heavy Vehicles, %	0	2	0	0	2	6	0	0	0	0	0	0
Mvmt Flow	125	521	0	0	571	103	16	0	80	5	1	2

Major/Minor	Major1		Major2		Minor2			Minor1				
Conflicting Flow All	706	0	0	545	0	0	1431	1450	657	1460	1501	548
Stage 1	-	-	-	-	-	-	655	655	-	795	795	-
Stage 2	-	-	-	-	-	-	776	795	-	665	706	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	902	-	-	1034	-	-	113	132	468	108	123	540
Stage 1	-	-	-	-	-	-	458	466	-	384	402	-
Stage 2	-	-	-	-	-	-	393	402	-	453	442	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	875	-	-	1010	-	-	91	100	453	73	93	526
Mov Cap-2 Maneuver	-	-	-	-	-	-	91	100	-	73	93	-
Stage 1	-	-	-	-	-	-	355	452	-	300	314	-
Stage 2	-	-	-	-	-	-	311	314	-	372	429	-

Approach	EB	WB	SE	NW
HCM Control Delay, s	1.9	0	24.9	46
HCM LOS			C	E

Minor Lane/Major Mvmt	NWLn1	EBL	EBT	EBR	WBL	WBT	WBR	SELn1
Capacity (veh/h)	96	875	-	-	1010	-	-	275
HCM Lane V/C Ratio	0.087	0.143	-	-	-	-	-	0.348
HCM Control Delay (s)	46	9.8	0	-	0	-	-	24.9
HCM Lane LOS	E	A	A	-	A	-	-	C
HCM 95th %tile Q(veh)	0.3	0.5	-	-	0	-	-	1.5

Intersection												
Int Delay, s/veh	1.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↕	↕		↕	↕	
Traffic Vol, veh/h	3	0	4	20	0	77	3	433	16	17	292	11
Future Vol, veh/h	3	0	4	20	0	77	3	433	16	17	292	11
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	50	-	-	60	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	3	0	4	22	0	84	3	471	17	18	317	12

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	887	853	323	847	851	480	329	0	0	488	0	0
Stage 1	359	359	-	486	486	-	-	-	-	-	-	-
Stage 2	528	494	-	361	365	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	265	296	718	282	297	586	1231	-	-	1075	-	-
Stage 1	659	627	-	563	551	-	-	-	-	-	-	-
Stage 2	534	546	-	657	623	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	224	290	718	276	291	586	1231	-	-	1075	-	-
Mov Cap-2 Maneuver	224	290	-	276	291	-	-	-	-	-	-	-
Stage 1	658	616	-	562	550	-	-	-	-	-	-	-
Stage 2	457	545	-	642	612	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	15	14.7	0.1	0.4
HCM LOS	C	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1231	-	-	369	476	1075	-
HCM Lane V/C Ratio	0.003	-	-	0.021	0.222	0.017	-
HCM Control Delay (s)	7.9	-	-	15	14.7	8.4	-
HCM Lane LOS	A	-	-	C	B	A	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0.8	0.1	-

Intersection						
Int Delay, s/veh	1.4					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	26	40	513	20	26	314
Future Vol, veh/h	26	40	513	20	26	314
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	28	43	558	22	28	341

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	966	569	0	0	580
Stage 1	569	-	-	-	-
Stage 2	397	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12
Critical Hdwy Stg 1	5.42	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218
Pot Cap-1 Maneuver	282	522	-	-	994
Stage 1	566	-	-	-	-
Stage 2	679	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	272	522	-	-	994
Mov Cap-2 Maneuver	272	-	-	-	-
Stage 1	566	-	-	-	-
Stage 2	655	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	16.6	0	0.7
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	383	994
HCM Lane V/C Ratio	-	-	0.187	0.028
HCM Control Delay (s)	-	-	16.6	8.7
HCM Lane LOS	-	-	C	A
HCM 95th %tile Q(veh)	-	-	0.7	0.1

Intersection						
Int Delay, s/veh	2					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	31	75	357	16	13	283
Future Vol, veh/h	31	75	357	16	13	283
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	34	82	388	17	14	308

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	733	397	0	0	405
Stage 1	397	-	-	-	-
Stage 2	336	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12
Critical Hdwy Stg 1	5.42	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218
Pot Cap-1 Maneuver	388	652	-	-	1154
Stage 1	679	-	-	-	-
Stage 2	724	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	382	652	-	-	1154
Mov Cap-2 Maneuver	382	-	-	-	-
Stage 1	679	-	-	-	-
Stage 2	713	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	13.5	0	0.4
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	540	1154
HCM Lane V/C Ratio	-	-	0.213	0.012
HCM Control Delay (s)	-	-	13.5	8.2
HCM Lane LOS	-	-	B	A
HCM 95th %tile Q(veh)	-	-	0.8	0

Capacity Analysis Output Sheets
Morning Peak Hour – Phase 1 Conditions

Lanes, Volumes, Timings
3: Damen Avenue & Webster Avenue

01/07/2019



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	31	454	24	93	115	12	26	218	363	306	292	86
Future Volume (vph)	31	454	24	93	115	12	26	218	363	306	292	86
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	13	12	12	10	11	10	10	10	11	11	11
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	25		0	0		0	60		60	280		100
Storage Lanes	1		0	1		1	1		1	1		1
Taper Length (ft)	25			25			90			60		
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	0.98	1.00		0.99		0.96			0.98	0.99		0.95
Frt		0.992				0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1805	1661	0	1752	1773	1561	1620	1383	1459	1728	1702	1546
Flt Permitted	0.681			0.175			0.190			0.538		
Satd. Flow (perm)	1273	1661	0	320	1773	1500	324	1383	1426	972	1702	1461
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		4				73			296			89
Link Speed (mph)		30			30			30				30
Link Distance (ft)		701			148			667				422
Travel Time (s)		15.9			3.4			15.2				9.6
Confl. Peds. (#/hr)	10		14	14		10	24		8	8		24
Confl. Bikes (#/hr)			4			1			2			10
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
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	0%	0%	3%	0%	0%	4%	9%	0%	1%	4%	1%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	8	0	9	0
Parking (#/hr)		9						10				
Mid-Block Traffic (%)		0%			0%			0%				0%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	32	493	0	96	119	12	27	225	374	315	301	89
Turn Type	Perm	NA		pm+pt	NA	Perm	Perm	NA	Perm	custom	NA	Perm
Protected Phases		4		3	8			2		1	16	
Permitted Phases	4			8		8	2		2	6		16
Detector Phase	4	4		3	8	8	2	2	2	1	16	16
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0	5.0	12.0	12.0	12.0	6.0		
Minimum Split (s)	25.0	25.0		8.0	25.0	25.0	25.0	25.0	25.0	9.5		
Total Split (s)	29.0	29.0		8.0	37.0	37.0	26.0	26.0	26.0	12.0		
Total Split (%)	38.7%	38.7%		10.7%	49.3%	49.3%	34.7%	34.7%	34.7%	16.0%		
Yellow Time (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0		
All-Red Time (s)	2.0	2.0		0.0	2.0	2.0	2.0	2.0	2.0	0.0		
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0		
Total Lost Time (s)	5.0	5.0		3.0	5.0	5.0	5.0	5.0	5.0	3.0		
Lead/Lag	Lag	Lag		Lead								
Lead-Lag Optimize?	Yes	Yes		Yes								
Recall Mode	Max	Max		Max	Max	Max	Max	Max	Max	Max		
Act Effct Green (s)	24.0	24.0		34.0	32.0	32.0	21.0	21.0	21.0	32.0	35.0	35.0
Actuated g/C Ratio	0.32	0.32		0.45	0.43	0.43	0.28	0.28	0.28	0.43	0.47	0.47

Lanes, Volumes, Timings
 3: Damen Avenue & Webster Avenue

01/07/2019

Lane Group	Ø6
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Grade (%)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Confl. Bikes (#/hr)	
Peak Hour Factor	
Growth Factor	
Heavy Vehicles (%)	
Bus Blockages (#/hr)	
Parking (#/hr)	
Mid-Block Traffic (%)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	6
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	12.0
Minimum Split (s)	25.0
Total Split (s)	26.0
Total Split (%)	35%
Yellow Time (s)	3.0
All-Red Time (s)	2.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Recall Mode	Max
Act Effct Green (s)	
Actuated g/C Ratio	

Lanes, Volumes, Timings
 3: Damen Avenue & Webster Avenue

01/07/2019

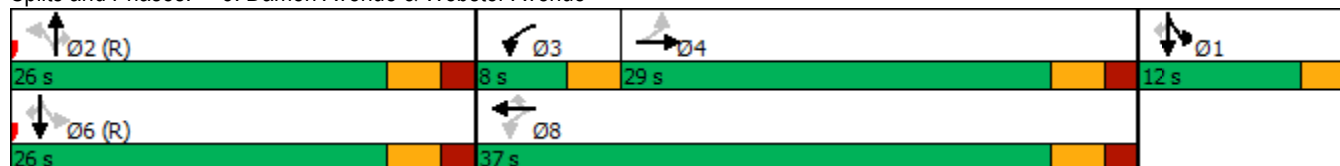


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.08	0.92		0.40	0.16	0.02	0.30	0.58	0.61	0.62	0.38	0.12
Control Delay	18.6	50.8		17.0	14.0	0.1	31.8	30.3	10.6	20.1	14.7	3.3
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	18.6	50.8		17.0	14.0	0.1	31.8	30.3	10.6	20.1	14.7	3.3
LOS	B	D		B	B	A	C	C	B	C	B	A
Approach Delay		48.9			14.5			18.6			15.7	
Approach LOS		D			B			B			B	
Queue Length 50th (ft)	10	217		25	33	0	10	90	28	91	86	0
Queue Length 95th (ft)	29	#401		51	64	0	34	160	108	150	144	22
Internal Link Dist (ft)		621			68			587			342	
Turn Bay Length (ft)	25						60		60	280		100
Base Capacity (vph)	407	534		240	756	681	90	387	612	505	794	729
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	0.08	0.92		0.40	0.16	0.02	0.30	0.58	0.61	0.62	0.38	0.12

Intersection Summary

Area Type: Other
 Cycle Length: 75
 Actuated Cycle Length: 75
 Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
 Natural Cycle: 70
 Control Type: Pretimed
 Maximum v/c Ratio: 0.92
 Intersection Signal Delay: 24.8
 Intersection LOS: C
 Intersection Capacity Utilization 79.2%
 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.











Splits and Phases: 3: Damen Avenue & Webster Avenue



Lane Group	Ø6
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	
Intersection Summary	

Lanes, Volumes, Timings
6: Damen Avenue & I-90/94 Off Ramp

01/07/2019

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	115	250	257	0	0	596
Future Volume (vph)	115	250	257	0	0	596
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	9	9	12	12	12	12
Grade (%)	0%		0%			0%
Storage Length (ft)	0	0		0	0	
Storage Lanes	1	1		0	0	
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt		0.850				
Flt Protected	0.950					
Satd. Flow (prot)	1577	1358	1759	0	0	1800
Flt Permitted	0.950					
Satd. Flow (perm)	1577	1358	1759	0	0	1800
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		255				
Link Speed (mph)	30		30			30
Link Distance (ft)	211		422			303
Travel Time (s)	4.8		9.6			6.9
Confl. Peds. (#/hr)				9	9	
Confl. Bikes (#/hr)				4		
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	3%	7%	8%	0%	0%	3%
Bus Blockages (#/hr)	0	0	0	0	0	6
Parking (#/hr)						
Mid-Block Traffic (%)	0%		0%			0%
Shared Lane Traffic (%)						
Lane Group Flow (vph)	117	255	262	0	0	608
Turn Type	Prot	Prot	NA			NA
Protected Phases	8	8	2			6
Permitted Phases						
Detector Phase	8	8	2			6
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0			5.0
Minimum Split (s)	23.0	23.0	41.0			41.0
Total Split (s)	24.0	24.0	41.0			41.0
Total Split (%)	36.9%	36.9%	63.1%			63.1%
Yellow Time (s)	3.0	3.0	3.0			3.0
All-Red Time (s)	2.0	2.0	1.0			1.0
Lost Time Adjust (s)	0.0	0.0	0.0			0.0
Total Lost Time (s)	5.0	5.0	4.0			4.0
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	Max	Max	Max			Max
Act Effct Green (s)	19.0	19.0	37.0			37.0
Actuated g/C Ratio	0.29	0.29	0.57			0.57

Lanes, Volumes, Timings
 6: Damen Avenue & I-90/94 Off Ramp

01/07/2019



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
v/c Ratio	0.25	0.44	0.26			0.59
Control Delay	19.4	5.5	7.9			12.1
Queue Delay	0.0	0.0	0.0			0.0
Total Delay	19.4	5.5	7.9			12.1
LOS	B	A	A			B
Approach Delay	9.9		7.9			12.1
Approach LOS	A		A			B
Queue Length 50th (ft)	35	0	47			140
Queue Length 95th (ft)	73	47	83			230
Internal Link Dist (ft)	131		342			223
Turn Bay Length (ft)						
Base Capacity (vph)	460	577	1001			1024
Starvation Cap Reductn	0	0	0			0
Spillback Cap Reductn	0	0	0			0
Storage Cap Reductn	0	0	0			0
Reduced v/c Ratio	0.25	0.44	0.26			0.59

Intersection Summary

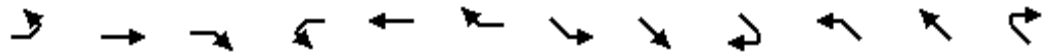
Area Type: Other
 Cycle Length: 65
 Actuated Cycle Length: 65
 Offset: 35 (54%), Referenced to phase 2:NBT and 6:SBT, Start of Green
 Natural Cycle: 65
 Control Type: Pretimed
 Maximum v/c Ratio: 0.59
 Intersection Signal Delay: 10.6
 Intersection Capacity Utilization 53.8%
 Analysis Period (min) 15
 Intersection LOS: B
 ICU Level of Service A

Splits and Phases: 6: Damen Avenue & I-90/94 Off Ramp



Lanes, Volumes, Timings
10: Elston Avenue & Webster Avenue

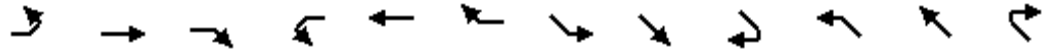
01/07/2019



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Traffic Volume (vph)	15	444	56	17	357	77	300	441	31	54	133	23
Future Volume (vph)	15	444	56	17	357	77	300	441	31	54	133	23
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	11	12	10	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	25		0	55		55	100		0	90		90
Storage Lanes	1		0	1		0	1		0	1		1
Taper Length (ft)	25			25			92			89		
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	0.99		0.99	1.00		1.00	1.00		0.99		0.98
Frt		0.983			0.973			0.990				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1805	1572	0	1805	1569	0	1787	1523	0	1752	1612	1615
Flt Permitted	0.295			0.224			0.668			0.298		
Satd. Flow (perm)	559	1572	0	422	1569	0	1254	1523	0	545	1612	1578
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		7			12			4				52
Link Speed (mph)		30			30			30				30
Link Distance (ft)		900			1020			711				793
Travel Time (s)		20.5			23.2			16.2				18.0
Confl. Peds. (#/hr)	4		17	17		4	2		18	18		2
Confl. Bikes (#/hr)			6			2			11			1
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
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	1%	12%	0%	1%	0%	1%	5%	0%	3%	10%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)		7			8			10				
Mid-Block Traffic (%)		0%			0%			0%				0%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	16	526	0	18	457	0	316	497	0	57	140	24
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	Perm
Protected Phases		4			8		1	6		5	2	
Permitted Phases	4			8			6			2		2
Detector Phase	4	4		8	8		1	6		5	2	2
Switch Phase												
Minimum Initial (s)	25.0	25.0		25.0	25.0		5.0	34.0		5.0	34.0	34.0
Minimum Split (s)	46.0	46.0		46.0	46.0		8.0	51.0		8.0	51.0	51.0
Total Split (s)	46.0	46.0		46.0	46.0		8.0	51.0		8.0	51.0	51.0
Total Split (%)	43.8%	43.8%		43.8%	43.8%		7.6%	48.6%		7.6%	48.6%	48.6%
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
All-Red Time (s)	2.0	2.0		2.0	2.0		0.0	2.0		0.0	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
Total Lost Time (s)	5.0	5.0		5.0	5.0		3.0	5.0		3.0	5.0	5.0
Lead/Lag							Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	Yes
Recall Mode	Max	Max		Max	Max		Max	Max		Max	Max	Max
Act Effct Green (s)	41.0	41.0		41.0	41.0		53.0	46.0		53.0	46.0	46.0
Actuated g/C Ratio	0.39	0.39		0.39	0.39		0.50	0.44		0.50	0.44	0.44

Lanes, Volumes, Timings
 10: Elston Avenue & Webster Avenue

01/07/2019

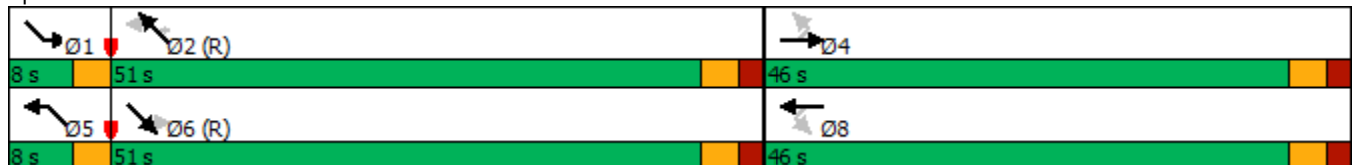


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
v/c Ratio	0.07	0.85		0.11	0.74		0.48	0.74		0.17	0.20	0.03
Control Delay	21.4	43.8		15.8	28.7		18.4	32.6		13.2	19.1	1.2
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	21.4	43.8		15.8	28.7		18.4	32.6		13.2	19.1	1.2
LOS	C	D		B	C		B	C		B	B	A
Approach Delay		43.1			28.2			27.1			15.6	
Approach LOS		D			C			C			B	
Queue Length 50th (ft)	7	314		7	302		115	269		18	56	0
Queue Length 95th (ft)	22	#508		m9	m374		174	405		38	98	4
Internal Link Dist (ft)		820			940			631			713	
Turn Bay Length (ft)	25			55			100			90		90
Base Capacity (vph)	218	618		164	619		658	669		332	706	720
Starvation Cap Reductn	0	0		0	0		0	0		0	0	0
Spillback Cap Reductn	0	0		0	0		0	0		0	0	0
Storage Cap Reductn	0	0		0	0		0	0		0	0	0
Reduced v/c Ratio	0.07	0.85		0.11	0.74		0.48	0.74		0.17	0.20	0.03

Intersection Summary

Area Type: Other
 Cycle Length: 105
 Actuated Cycle Length: 105
 Offset: 0 (0%), Referenced to phase 2:NWTL and 6:SETL, Start of Green
 Natural Cycle: 105
 Control Type: Pretimed
 Maximum v/c Ratio: 0.85
 Intersection Signal Delay: 30.4 Intersection LOS: C
 Intersection Capacity Utilization 100.8% ICU Level of Service G
 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: 10: Elston Avenue & Webster Avenue



Lanes, Volumes, Timings
 14: Ashland Avenue & Webster Avenue

01/07/2019



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	128	555	21	219	347	18	16	1005	269	35	1288	135
Future Volume (vph)	128	555	21	219	347	18	16	1005	269	35	1288	135
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	10	11	12	10	11	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	60		0	230		0	115		0	65		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	55			65			85			45		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor	1.00	1.00			1.00		1.00	0.99		1.00	0.99	
Frt		0.995			0.993			0.968			0.986	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1805	1835	0	1770	1866	0	1504	3046	0	1685	3218	0
Flt Permitted	0.291			0.124			0.087			0.087		
Satd. Flow (perm)	551	1835	0	231	1866	0	137	3046	0	154	3218	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		2			3			39				13
Link Speed (mph)		30			30			30				30
Link Distance (ft)		1020			606			676				531
Travel Time (s)		23.2			13.8			15.4				12.1
Confl. Peds. (#/hr)	8		26	26		8	32		12	12		32
Confl. Bikes (#/hr)			7			12			2			2
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	3%	0%	2%	1%	0%	12%	10%	2%	0%	5%	1%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	8	0	0	8	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%				0%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	135	606	0	231	384	0	17	1341	0	37	1498	0
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	7	4		3	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	5.0	9.0		5.0	9.0		5.0	33.0		5.0	33.0	
Minimum Split (s)	8.0	36.0		8.0	36.0		8.0	49.0		8.0	49.0	
Total Split (s)	11.0	37.0		11.0	37.0		8.0	49.0		8.0	49.0	
Total Split (%)	10.5%	35.2%		10.5%	35.2%		7.6%	46.7%		7.6%	46.7%	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	0.0	2.0		0.0	2.0		0.0	2.0		0.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	3.0	5.0		3.0	5.0		3.0	5.0		3.0	5.0	
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	
Act Effct Green (s)	41.8	32.0		42.2	32.2		52.2	47.2		52.2	47.2	
Actuated g/C Ratio	0.40	0.30		0.40	0.31		0.50	0.45		0.50	0.45	

Lanes, Volumes, Timings
 14: Ashland Avenue & Webster Avenue

01/07/2019

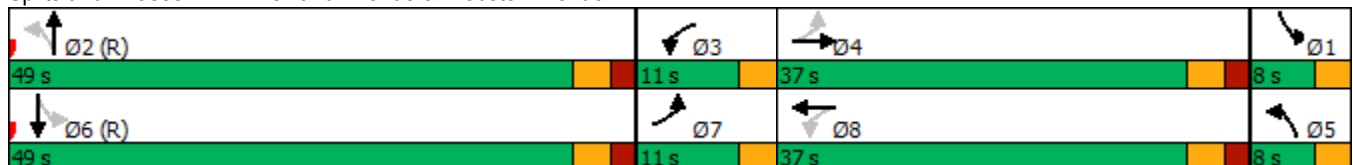


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.43	1.08		1.11	0.67		0.13	0.96		0.25	1.03	
Control Delay	19.4	91.3		117.3	39.3		6.1	35.0		16.9	61.6	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	19.4	91.3		117.3	39.3		6.1	35.0		16.9	61.6	
LOS	B	F		F	D		A	D		B	E	
Approach Delay		78.2			68.6			34.7			60.5	
Approach LOS		E			E			C			E	
Queue Length 50th (ft)	63	~468		~129	255		3	~507		12	~604	
Queue Length 95th (ft)	m81	m#647		#286	349		m4	#653		28	#744	
Internal Link Dist (ft)		940			526			596			451	
Turn Bay Length (ft)	60			230			115			65		
Base Capacity (vph)	315	560		209	573		133	1391		149	1454	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.43	1.08		1.11	0.67		0.13	0.96		0.25	1.03	

Intersection Summary

Area Type: Other
 Cycle Length: 105
 Actuated Cycle Length: 105
 Offset: 60 (57%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
 Natural Cycle: 125
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 1.11
 Intersection Signal Delay: 56.5
 Intersection LOS: E
 Intersection Capacity Utilization 94.5%
 ICU Level of Service F
 Analysis Period (min) 15
 ~ Volume exceeds capacity, queue is theoretically infinite.
 Queue shown is maximum after two cycles.
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 14: Ashland Avenue & Webster Avenue



Lanes, Volumes, Timings
17: Dominick Street & Webster Avenue

01/07/2019



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↗	↘			↕	
Traffic Volume (vph)	42	447	374	2	448	31	84	0	1	8	6	52
Future Volume (vph)	42	447	374	2	448	31	84	0	1	8	6	52
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	150		0	0		0
Storage Lanes	0		0	0		0	1		0	0		0
Taper Length (ft)	25			25			100			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		0.97			1.00							
Frt		0.941			0.991			0.850			0.893	
Flt Protected		0.998					0.950				0.994	
Satd. Flow (prot)	0	1493	0	0	1600	0	1556	1421	0	0	1453	0
Flt Permitted		0.959			0.998		0.718				0.979	
Satd. Flow (perm)	0	1434	0	0	1597	0	1176	1421	0	0	1431	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		102			9			465			54	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		606			562			750			140	
Travel Time (s)		13.8			12.8			17.0			3.2	
Confl. Peds. (#/hr)	7		13	13		7						
Confl. Bikes (#/hr)			11			8						
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
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	0%	0%	0%	1%	0%	16%	0%	0%	0%	2%	1%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)		8			8			4			6	
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	900	0	0	501	0	88	1	0	0	68	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Detector Phase	2	2		6	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	22.5	22.5		22.5	22.5		22.5	22.5		22.5	22.5	
Total Split (s)	82.0	82.0		82.0	82.0		23.0	23.0		23.0	23.0	
Total Split (%)	78.1%	78.1%		78.1%	78.1%		21.9%	21.9%		21.9%	21.9%	
Yellow Time (s)	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	
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 Optimize?												
Recall Mode	Max	Max		Max	Max		Max	Max		Max	Max	
Act Effct Green (s)		78.0			78.0		19.0	19.0			19.0	
Actuated g/C Ratio		0.74			0.74		0.18	0.18			0.18	

Lanes, Volumes, Timings
 17: Dominick Street & Webster Avenue

01/07/2019



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio		0.82			0.42		0.42	0.00				0.22
Control Delay		8.3			2.0		47.2	0.0				15.7
Queue Delay		11.5			0.1		0.0	0.0				0.0
Total Delay		19.7			2.1		47.2	0.0				15.7
LOS		B			A		D	A				B
Approach Delay		19.7			2.1			46.6				15.7
Approach LOS		B			A			D				B
Queue Length 50th (ft)		128			23		53	0				8
Queue Length 95th (ft)		m99			m28		102	m0				46
Internal Link Dist (ft)		526			482			670				60
Turn Bay Length (ft)							150					
Base Capacity (vph)		1091			1188		212	637				303
Starvation Cap Reductn		180			131		0	0				0
Spillback Cap Reductn		0			0		0	0				0
Storage Cap Reductn		0			0		0	0				0
Reduced v/c Ratio		0.99			0.47		0.42	0.00				0.22

Intersection Summary

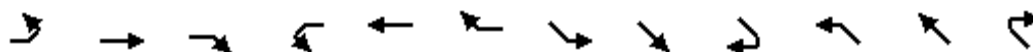
Area Type: Other
 Cycle Length: 105
 Actuated Cycle Length: 105
 Offset: 23 (22%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
 Natural Cycle: 80
 Control Type: Pretimed
 Maximum v/c Ratio: 0.82
 Intersection Signal Delay: 15.4
 Intersection LOS: B
 Intersection Capacity Utilization 96.2%
 ICU Level of Service F
 Analysis Period (min) 15
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 17: Dominick Street & Webster Avenue



Lanes, Volumes, Timings
20: Clybourn Avenue & Webster Avenue

01/07/2019



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Traffic Volume (vph)	10	393	59	10	439	84	46	458	16	46	238	5
Future Volume (vph)	10	393	59	10	439	84	46	458	16	46	238	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	75		0	70		0	155		0	125		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	70			25			100			90		
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	0.99		0.99	0.99		1.00	1.00		1.00	1.00	
Frt		0.980			0.976			0.995			0.997	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1641	1602	0	1805	1816	0	1805	1599	0	1770	1625	0
Flt Permitted	0.157			0.239			0.544			0.273		
Satd. Flow (perm)	270	1602	0	451	1816	0	1030	1599	0	507	1625	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		562			328			733			470	
Travel Time (s)		12.8			7.5			16.7			10.7	
Confl. Peds. (#/hr)	9		13	13		9	4		6	6		4
Confl. Bikes (#/hr)			2			7			32			
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
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	10%	1%	7%	0%	1%	4%	0%	2%	4%	2%	2%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)		4						7			5	
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	11	491	0	11	568	0	50	515	0	50	264	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		custom	NA	
Protected Phases		4			8			6		5	2.5	
Permitted Phases	4			8			6			2		
Detector Phase	4	4		8	8		6	6		5	2.5	
Switch Phase												
Minimum Initial (s)	18.0	18.0		18.0	18.0		28.0	28.0		8.0		
Minimum Split (s)	44.0	44.0		44.0	44.0		50.0	50.0		11.0		
Total Split (s)	44.0	44.0		44.0	44.0		50.0	50.0		11.0		
Total Split (%)	41.9%	41.9%		41.9%	41.9%		47.6%	47.6%		10.5%		
Yellow Time (s)	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		0.0		
Lost Time Adjust (s)	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		3.0		
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	Max	Max		Max	Max		Max	Max		Max		
Act Effct Green (s)	39.0	39.0		39.0	39.0		45.0	45.0		55.0	56.0	
Actuated g/C Ratio	0.37	0.37		0.37	0.37		0.43	0.43		0.52	0.53	

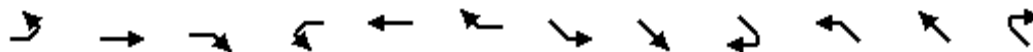
Lanes, Volumes, Timings
 20: Clybourn Avenue & Webster Avenue

01/07/2019

Lane Group	Ø2
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Grade (%)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Confl. Bikes (#/hr)	
Peak Hour Factor	
Growth Factor	
Heavy Vehicles (%)	
Bus Blockages (#/hr)	
Parking (#/hr)	
Mid-Block Traffic (%)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	2
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	28.0
Minimum Split (s)	50.0
Total Split (s)	50.0
Total Split (%)	48%
Yellow Time (s)	3.0
All-Red Time (s)	2.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Recall Mode	Max
Act Effct Green (s)	
Actuated g/C Ratio	

Lanes, Volumes, Timings
 20: Clybourn Avenue & Webster Avenue

01/07/2019

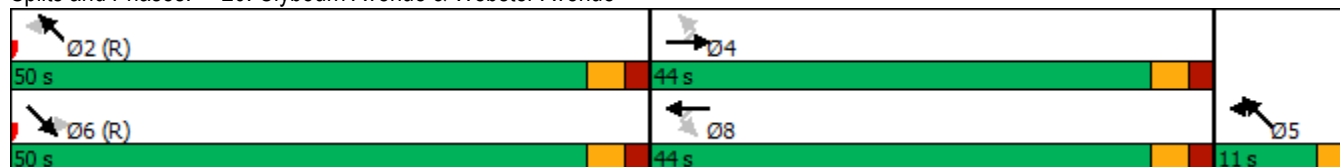


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
v/c Ratio	0.11	0.83		0.07	0.84		0.11	0.75		0.14	0.30	
Control Delay	22.3	32.3		20.2	35.0		19.0	33.7		11.8	14.9	
Queue Delay	0.0	16.2		0.0	35.8		0.0	0.0		0.0	0.0	
Total Delay	22.3	48.5		20.2	70.8		19.0	33.7		11.8	14.9	
LOS	C	D		C	E		B	C		B	B	
Approach Delay		48.0			69.8			32.4			14.4	
Approach LOS		D			E			C			B	
Queue Length 50th (ft)	3	229		4	233		20	285		15	94	
Queue Length 95th (ft)	m5	m#382		m8	#526		44	423		32	148	
Internal Link Dist (ft)		482			248			653			390	
Turn Bay Length (ft)	75			70			155			125		
Base Capacity (vph)	100	595		167	674		441	685		361	866	
Starvation Cap Reductn	0	0		0	139		0	0		0	0	
Spillback Cap Reductn	0	100		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.11	0.99		0.07	1.06		0.11	0.75		0.14	0.30	

Intersection Summary

Area Type: Other
 Cycle Length: 105
 Actuated Cycle Length: 105
 Offset: 99 (94%), Referenced to phase 2:NWTL and 6:SETL, Start of Green
 Natural Cycle: 105
 Control Type: Pretimed
 Maximum v/c Ratio: 0.84
 Intersection Signal Delay: 44.5
 Intersection LOS: D
 Intersection Capacity Utilization 79.1%
 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: 20: Clybourn Avenue & Webster Avenue



Lane Group	Ø2
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	
Intersection Summary	

Lanes, Volumes, Timings
23: Southport Avenue & Webster Avenue

01/07/2019



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (vph)	113	313	21	52	282	47	4	99	25	24	258	176
Future Volume (vph)	113	313	21	52	282	47	4	99	25	24	258	176
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.99			0.99			0.99			0.97	
Frt		0.994			0.983			0.974			0.948	
Flt Protected		0.988			0.993			0.999			0.997	
Satd. Flow (prot)	0	1605	0	0	1595	0	0	1555	0	0	1496	0
Flt Permitted		0.766			0.891			0.990			0.982	
Satd. Flow (perm)	0	1240	0	0	1429	0	0	1541	0	0	1472	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		3			9			15			38	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		328			3065			332			507	
Travel Time (s)		7.5			69.7			7.5			11.5	
Confl. Peds. (#/hr)	11		15	15		11	16		8	8		16
Confl. Bikes (#/hr)			3			1			2			3
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	1%	3%	5%	0%	2%	0%	0%	2%	5%	0%	1%	0%
Bus Blockages (#/hr)	0	0	0	0	6	0	0	0	0	0	0	0
Parking (#/hr)		3			0			6			8	
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	486	0	0	415	0	0	139	0	0	497	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	22.5	22.5		22.5	22.5		22.5	22.5		22.5	22.5	
Total Split (s)	55.0	55.0		55.0	55.0		50.0	50.0		50.0	50.0	
Total Split (%)	52.4%	52.4%		52.4%	52.4%		47.6%	47.6%		47.6%	47.6%	
Yellow Time (s)	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	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		4.0			4.0			4.0			4.0	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	Max	Max		Max	Max		Max	Max		Max	Max	
Act Effct Green (s)		51.0			51.0			46.0			46.0	
Actuated g/C Ratio		0.49			0.49			0.44			0.44	

Lanes, Volumes, Timings
 23: Southport Avenue & Webster Avenue

01/07/2019

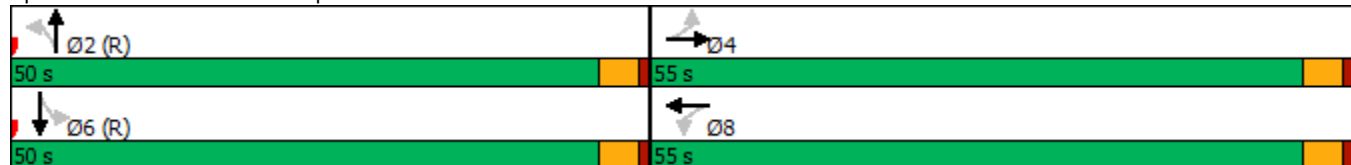


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio		0.81			0.59			0.20				0.75
Control Delay		16.8			23.4			17.1				31.0
Queue Delay		22.1			0.4			0.0				13.5
Total Delay		38.9			23.9			17.1				44.5
LOS		D			C			B				D
Approach Delay		38.9			23.9			17.1				44.5
Approach LOS		D			C			B				D
Queue Length 50th (ft)		297			190			50				253
Queue Length 95th (ft)		m431			293			91				391
Internal Link Dist (ft)		248			2985			252				427
Turn Bay Length (ft)												
Base Capacity (vph)		603			698			683				666
Starvation Cap Reductn		123			0			0				0
Spillback Cap Reductn		0			59			0				154
Storage Cap Reductn		0			0			0				0
Reduced v/c Ratio		1.01			0.65			0.20				0.97

Intersection Summary

Area Type: Other
 Cycle Length: 105
 Actuated Cycle Length: 105
 Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
 Natural Cycle: 50
 Control Type: Pretimed
 Maximum v/c Ratio: 0.81
 Intersection Signal Delay: 34.7
 Intersection LOS: C
 Intersection Capacity Utilization 83.8%
 ICU Level of Service E
 Analysis Period (min) 15
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 23: Southport Avenue & Webster Avenue



Lanes, Volumes, Timings

24: Southport Avenue & Clybourn Avenue & Shakespeare Avenue

01/07/2019



Lane Group	EBL2	EBL	EBR	EBR2	NBL	NBT	NBR	SBL	SBT	SBR	SBR2	SEL
Lane Configurations												
Traffic Volume (vph)	7	15	36	3	21	69	5	158	163	6	10	12
Future Volume (vph)	7	15	36	3	21	69	5	158	163	6	10	12
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	10
Grade (%)		0%				0%			0%			
Storage Length (ft)		0	0		0		0	0		0		115
Storage Lanes		1	0		0		0	0		0		1
Taper Length (ft)		25			25			25				90
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												
Frt		0.914				0.993			0.993			
Flt Protected		0.982				0.989			0.977			0.950
Satd. Flow (prot)	0	1672	0	0	0	1829	0	0	1807	0	0	1652
Flt Permitted		0.982				0.887			0.816			0.477
Satd. Flow (perm)	0	1672	0	0	0	1641	0	0	1509	0	0	829
Right Turn on Red				Yes			No				No	
Satd. Flow (RTOR)		90										
Link Speed (mph)		30				30			30			
Link Distance (ft)		271				320			332			
Travel Time (s)		6.2				7.3			7.5			
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
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
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%				0%			0%			
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	66	0	0	0	103	0	0	367	0	0	13
Turn Type	Prot	Prot			Perm	NA		Perm	NA			Perm
Protected Phases	4	4				2			6			
Permitted Phases	4				2			6				14
Detector Phase	4	4			2	2		6	6			14
Switch Phase												
Minimum Initial (s)	10.0	10.0			5.0	5.0		5.0	5.0			20.0
Minimum Split (s)	15.0	15.0			27.0	27.0		27.0	27.0			43.0
Total Split (s)	15.0	15.0			27.0	27.0		27.0	27.0			43.0
Total Split (%)	17.6%	17.6%			31.8%	31.8%		31.8%	31.8%			50.6%
Yellow Time (s)	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
Lost Time Adjust (s)		0.0				0.0			0.0			0.0
Total Lost Time (s)		5.0				5.0			5.0			5.0
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	None	None			C-Max	C-Max		C-Max	C-Max			None
Act Effct Green (s)		10.0				30.9			30.9			32.1
Actuated g/C Ratio		0.12				0.36			0.36			0.38

Lanes, Volumes, Timings

24: Southport Avenue & Clybourn Avenue & Shakespeare Avenue

01/07/2019



Lane Group	SET	SER	SER2	NWL2	NWL	NWT	NWR	
Lane Configurations								
Traffic Volume (vph)	505	42	2	6	5	239	37	
Future Volume (vph)	505	42	2	6	5	239	37	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	13	12	12	12	10	13	12	
Grade (%)	0%						0%	
Storage Length (ft)	0				115	0		
Storage Lanes	0				1	0		
Taper Length (ft)					100			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Ped Bike Factor								
Frt	0.988			0.980				
Flt Protected					0.950			
Satd. Flow (prot)	1902	0	0	0	1652	1886	0	
Flt Permitted					0.148			
Satd. Flow (perm)	1902	0	0	0	257	1886	0	
Right Turn on Red	No						No	
Satd. Flow (RTOR)								
Link Speed (mph)	30					30		
Link Distance (ft)	470					1318		
Travel Time (s)	10.7					30.0		
Confl. Peds. (#/hr)								
Confl. Bikes (#/hr)								
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Growth Factor	100%	100%	100%	100%	100%	100%	100%	
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	
Bus Blockages (#/hr)	0	0	0	0	0	0	0	
Parking (#/hr)								
Mid-Block Traffic (%)	0%					0%		
Shared Lane Traffic (%)								
Lane Group Flow (vph)	597	0	0	0	12	300	0	
Turn Type	NA			Perm	Perm	NA		
Protected Phases	14					10		
Permitted Phases					10	10		
Detector Phase	14			10	10	10		
Switch Phase								
Minimum Initial (s)	20.0			20.0	20.0	20.0		
Minimum Split (s)	43.0			43.0	43.0	43.0		
Total Split (s)	43.0			43.0	43.0	43.0		
Total Split (%)	50.6%			50.6%	50.6%	50.6%		
Yellow Time (s)	3.0			3.0	3.0	3.0		
All-Red Time (s)	2.0			2.0	2.0	2.0		
Lost Time Adjust (s)	0.0				0.0	0.0		
Total Lost Time (s)	5.0				5.0	5.0		
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	None			None	None	None		
Act Effect Green (s)	32.1				32.1	32.1		
Actuated g/C Ratio	0.38				0.38	0.38		

Lanes, Volumes, Timings

24: Southport Avenue & Clybourn Avenue & Shakespeare Avenue

01/07/2019



Lane Group	EBL2	EBL	EBR	EBR2	NBL	NBT	NBR	SBL	SBT	SBR	SBR2	SEL
v/c Ratio		0.24				0.17			0.67			0.04
Control Delay		7.0				23.7			34.8			14.5
Queue Delay		0.0				0.0			0.4			0.0
Total Delay		7.0				23.7			35.3			14.5
LOS		A				C			D			B
Approach Delay		7.0				23.7			35.3			
Approach LOS		A				C			D			
Queue Length 50th (ft)		0				40			176			4
Queue Length 95th (ft)		24				86			#360			14
Internal Link Dist (ft)		191				240			252			
Turn Bay Length (ft)												115
Base Capacity (vph)		276				595			548			370
Starvation Cap Reductn		0				0			26			0
Spillback Cap Reductn		0				0			0			0
Storage Cap Reductn		0				0			0			0
Reduced v/c Ratio		0.24				0.17			0.70			0.04

Intersection Summary

Area Type: Other
 Cycle Length: 85
 Actuated Cycle Length: 85
 Offset: 41 (48%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
 Natural Cycle: 85
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.83
 Intersection Signal Delay: 29.9 Intersection LOS: C
 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.

Splits and Phases: 24: Southport Avenue & Clybourn Avenue & Shakespeare Avenue



Lanes, Volumes, Timings

24: Southport Avenue & Clybourn Avenue & Shakespeare Avenue





















01/07/2019



Lane Group	SET	SER	SER2	NWL2	NWL	NWT	NWR
v/c Ratio	0.83				0.12	0.42	
Control Delay	34.3				18.9	20.9	
Queue Delay	1.1				0.0	0.0	
Total Delay	35.3				18.9	20.9	
LOS	D				B	C	
Approach Delay	34.9					20.8	
Approach LOS	C					C	
Queue Length 50th (ft)	277				4	114	
Queue Length 95th (ft)	371				17	176	
Internal Link Dist (ft)	390					1238	
Turn Bay Length (ft)					115		
Base Capacity (vph)	850				114	843	
Starvation Cap Reductn	90				0	0	
Spillback Cap Reductn	0				0	0	
Storage Cap Reductn	0				0	0	
Reduced v/c Ratio	0.79				0.11	0.36	
Intersection Summary							

Lanes, Volumes, Timings
27: Ashland Avenue & Elston Avenue

01/07/2019

												
Lane Group	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Traffic Volume (vph)	77	1226	0	184	1357	6	0	388	126	0	118	152
Future Volume (vph)	77	1226	0	184	1357	6	0	388	126	0	118	152
Ideal Flow (vphpl)	1900	2000	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	10	10	10	11	12	12	15	11	12	10	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	100		0	0		54	0		0
Storage Lanes	1		0	1		0	0		1	0		1
Taper Length (ft)	25			90			25			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.91	0.91	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99			1.00	1.00				0.96			0.98
Fr _t					0.999				0.850			0.850
Fl _t Protected	0.950			0.950								
Satd. Flow (prot)	1604	3346	0	1620	4810	0	0	2029	1501	0	1657	1509
Fl _t Permitted	0.121											
Satd. Flow (perm)	203	3346	0	1701	4810	0	0	2029	1436	0	1657	1486
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					1				104			73
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		255			422			290			308	
Travel Time (s)		5.8			9.6			6.6			7.0	
Confl. Peds. (#/hr)	56		3	3		56	2					2
Confl. Bikes (#/hr)			3			1			40			2
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	5%	6%	0%	4%	3%	0%	0%	3%	4%	0%	7%	7%
Bus Blockages (#/hr)	0	0	0	0	8	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	81	1291	0	194	1434	0	0	408	133	0	124	160
Turn Type	pm+pt	NA		custom	NA			NA	Perm		NA	pm+ov
Protected Phases	5	2.5		1	1.6			4			8	1
Permitted Phases	2.5			6					4			8
Detector Phase	5	2.5		1	1.6			4	4		8	1
Switch Phase												
Minimum Initial (s)	5.0			5.0				5.0	5.0		5.0	5.0
Minimum Split (s)	10.0			9.5				35.0	35.0		35.0	9.5
Total Split (s)	24.0			13.0				35.0	35.0		35.0	13.0
Total Split (%)	22.9%			12.4%				33.3%	33.3%		33.3%	12.4%
Yellow Time (s)	3.0			3.0				3.0	3.0		3.0	3.0
All-Red Time (s)	2.0			0.0				2.0	2.0		2.0	0.0
Lost Time Adjust (s)	0.0			0.0				0.0	0.0		0.0	0.0
Total Lost Time (s)	5.0			3.0				5.0	5.0		5.0	3.0
Lead/Lag	Lag											
Lead-Lag Optimize?	Yes											
Recall Mode	Max			Max				Max	Max		Max	Max
Act Effct Green (s)	52.0	52.0		40.0	43.0			30.0	30.0		30.0	42.0
Actuated g/C Ratio	0.50	0.50		0.38	0.41			0.29	0.29		0.29	0.40

Lanes, Volumes, Timings
 27: Ashland Avenue & Elston Avenue

01/07/2019

Lane Group	Ø2	Ø6
Lane Configurations		
Traffic Volume (vph)		
Future Volume (vph)		
Ideal Flow (vphpl)		
Lane Width (ft)		
Grade (%)		
Storage Length (ft)		
Storage Lanes		
Taper Length (ft)		
Lane Util. Factor		
Ped Bike Factor		
Frt		
Flt Protected		
Satd. Flow (prot)		
Flt Permitted		
Satd. Flow (perm)		
Right Turn on Red		
Satd. Flow (RTOR)		
Link Speed (mph)		
Link Distance (ft)		
Travel Time (s)		
Confl. Peds. (#/hr)		
Confl. Bikes (#/hr)		
Peak Hour Factor		
Growth Factor		
Heavy Vehicles (%)		
Bus Blockages (#/hr)		
Parking (#/hr)		
Mid-Block Traffic (%)		
Shared Lane Traffic (%)		
Lane Group Flow (vph)		
Turn Type		
Protected Phases	2	6
Permitted Phases		
Detector Phase		
Switch Phase		
Minimum Initial (s)	5.0	5.0
Minimum Split (s)	38.0	33.0
Total Split (s)	57.0	33.0
Total Split (%)	54%	31%
Yellow Time (s)	3.0	3.0
All-Red Time (s)	2.0	2.0
Lost Time Adjust (s)		
Total Lost Time (s)		
Lead/Lag		Lead
Lead-Lag Optimize?		Yes
Recall Mode	Max	Max
Act Effct Green (s)		
Actuated g/C Ratio		

Lanes, Volumes, Timings
 27: Ashland Avenue & Elston Avenue

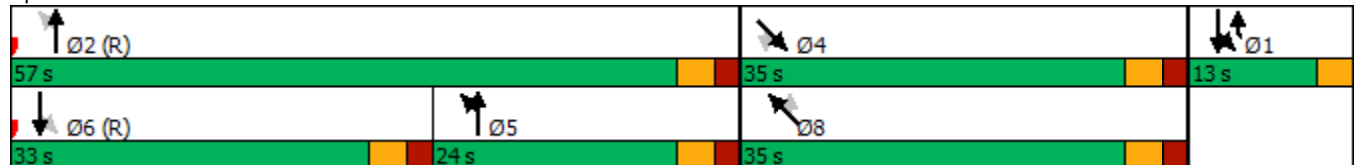
01/07/2019

	↖	↑	↗	↘	↓	↙	↘	↙	↘	↙	↘	↙
Lane Group	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SET	SER	NWL	NWT	NWR
v/c Ratio	0.23	0.78		0.30	0.73			0.70	0.27		0.26	0.25
Control Delay	20.2	18.4		10.2	16.5			41.2	10.4		12.5	4.7
Queue Delay	0.0	38.8		0.0	0.0			59.3	0.0		0.0	0.0
Total Delay	20.2	57.3		10.2	16.5			100.5	10.4		12.5	4.7
LOS	C	E		B	B			F	B		B	A
Approach Delay		55.1			15.7			78.4			8.1	
Approach LOS		E			B			E			A	
Queue Length 50th (ft)	19	285		61	311			245	14		23	2
Queue Length 95th (ft)	m24	m351		m58	m286			355	60		29	16
Internal Link Dist (ft)		175			342			210			228	
Turn Bay Length (ft)				100					54			
Base Capacity (vph)	354	1657		640	1970			579	484		473	640
Starvation Cap Reductn	0	458		0	0			0	0		0	0
Spillback Cap Reductn	0	0		0	0			315	0		0	0
Storage Cap Reductn	0	0		0	0			0	0		0	0
Reduced v/c Ratio	0.23	1.08		0.30	0.73			1.55	0.27		0.26	0.25

Intersection Summary

Area Type: Other
 Cycle Length: 105
 Actuated Cycle Length: 105
 Offset: 13 (12%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
 Natural Cycle: 90
 Control Type: Pretimed
 Maximum v/c Ratio: 0.78
 Intersection Signal Delay: 38.1 Intersection LOS: D
 Intersection Capacity Utilization 79.1% ICU Level of Service D
 Analysis Period (min) 15
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 27: Ashland Avenue & Elston Avenue



Lane Group	Ø2	Ø6
v/c Ratio		
Control Delay		
Queue Delay		
Total Delay		
LOS		
Approach Delay		
Approach LOS		
Queue Length 50th (ft)		
Queue Length 95th (ft)		
Internal Link Dist (ft)		
Turn Bay Length (ft)		
Base Capacity (vph)		
Starvation Cap Reductn		
Spillback Cap Reductn		
Storage Cap Reductn		
Reduced v/c Ratio		
Intersection Summary		

Lanes, Volumes, Timings
29: Ashland Avenue & Armitage Avenue

01/07/2019



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔↔			↕		↕	↕↕			↕↕	↕
Traffic Volume (vph)	562	421	31	4	158	0	33	733	0	0	993	527
Future Volume (vph)	562	421	31	4	158	0	33	733	0	0	993	527
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	10	12	10	10	10	10	9	16	12	11	11
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	110		0	0		0
Storage Lanes	0		0	0		0	1		0	0		1
Taper Length (ft)	25			25			60			25		
Lane Util. Factor	0.95	0.95	0.95	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Ped Bike Factor		1.00			1.00		0.99					0.91
Frt		0.995										0.850
Flt Protected		0.973			0.999		0.950					
Satd. Flow (prot)	0	3078	0	0	1664	0	1546	2988	0	0	3421	1487
Flt Permitted		0.607			0.969		0.149					
Satd. Flow (perm)	0	1919	0	0	1614	0	239	2988	0	0	3421	1351
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		4										351
Link Speed (mph)		30			30			30				30
Link Distance (ft)		300			135			237				255
Travel Time (s)		6.8			3.1			5.4				5.8
Confl. Peds. (#/hr)	1		10	10		1	57		4	4		57
Confl. Bikes (#/hr)			3						3			
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
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	6%	6%	3%	25%	6%	0%	9%	7%	0%	0%	2%	5%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	8	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%				0%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1056	0	0	169	0	34	764	0	0	1034	549
Turn Type	pm+pt	NA		Perm	NA		Perm	NA			NA	pm+ov
Protected Phases	7	7 4			8			2			6 5	7
Permitted Phases	7 4			8			2					6 5
Detector Phase	7	7 4		8	8		2	2			6 5	7
Switch Phase												
Minimum Initial (s)	5.0			5.0	5.0		26.0	26.0				5.0
Minimum Split (s)	10.0			25.0	25.0		45.0	45.0				10.0
Total Split (s)	22.0			25.0	25.0		45.0	45.0				22.0
Total Split (%)	21.0%			23.8%	23.8%		42.9%	42.9%				21.0%
Yellow Time (s)	3.0			3.0	3.0		3.0	3.0				3.0
All-Red Time (s)	0.0			2.0	2.0		1.0	1.0				0.0
Lost Time Adjust (s)					0.0		0.0	0.0				0.0
Total Lost Time (s)					5.0		4.0	4.0				3.0
Lead/Lag	Lead			Lag	Lag							Lead
Lead-Lag Optimize?	Yes			Yes	Yes							Yes
Recall Mode	Max			Max	Max		Max	Max				Max
Act Effct Green (s)		44.0			20.0		41.0	41.0			54.0	74.0
Actuated g/C Ratio		0.42			0.19		0.39	0.39			0.51	0.70

Lanes, Volumes, Timings
 29: Ashland Avenue & Armitage Avenue

01/07/2019

Lane Group	Ø4	Ø5	Ø6
Lane Configurations			
Traffic Volume (vph)			
Future Volume (vph)			
Ideal Flow (vphpl)			
Lane Width (ft)			
Grade (%)			
Storage Length (ft)			
Storage Lanes			
Taper Length (ft)			
Lane Util. Factor			
Ped Bike Factor			
Frt			
Flt Protected			
Satd. Flow (prot)			
Flt Permitted			
Satd. Flow (perm)			
Right Turn on Red			
Satd. Flow (RTOR)			
Link Speed (mph)			
Link Distance (ft)			
Travel Time (s)			
Confl. Peds. (#/hr)			
Confl. Bikes (#/hr)			
Peak Hour Factor			
Growth Factor			
Heavy Vehicles (%)			
Bus Blockages (#/hr)			
Parking (#/hr)			
Mid-Block Traffic (%)			
Shared Lane Traffic (%)			
Lane Group Flow (vph)			
Turn Type			
Protected Phases	4	5	6
Permitted Phases			
Detector Phase			
Switch Phase			
Minimum Initial (s)	5.0	5.0	26.0
Minimum Split (s)	39.0	9.5	45.0
Total Split (s)	47.0	13.0	45.0
Total Split (%)	45%	12%	43%
Yellow Time (s)	3.0	2.0	3.0
All-Red Time (s)	2.0	0.0	1.0
Lost Time Adjust (s)			
Total Lost Time (s)			
Lead/Lag			
Lead-Lag Optimize?			
Recall Mode	Max	Max	Max
Act Effct Green (s)			
Actuated g/C Ratio			

Lanes, Volumes, Timings
 29: Ashland Avenue & Armitage Avenue

01/07/2019

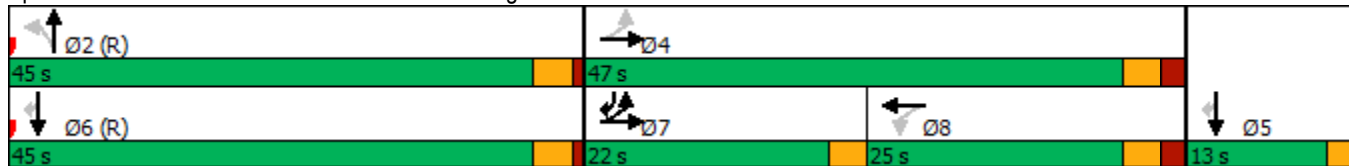


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio		1.28dl			0.55		0.37	0.66			0.59	0.51
Control Delay		72.8			16.2		25.6	18.0			3.9	5.5
Queue Delay		13.5			0.9		0.2	5.4			0.2	0.7
Total Delay		86.3			17.1		25.8	23.3			4.2	6.2
LOS		F			B		C	C			A	A
Approach Delay		86.3			17.1			23.5			4.9	
Approach LOS		F			B			C			A	
Queue Length 50th (ft)		~387			28		7	78			30	70
Queue Length 95th (ft)		#537			45		m15	124			54	129
Internal Link Dist (ft)		220			55			157			175	
Turn Bay Length (ft)							110					
Base Capacity (vph)		1016			307		93	1166			1759	1080
Starvation Cap Reductn		0			32		0	0			202	80
Spillback Cap Reductn		34			0		2	334			0	247
Storage Cap Reductn		0			0		0	0			0	0
Reduced v/c Ratio		1.08			0.61		0.37	0.92			0.66	0.66

Intersection Summary

Area Type: Other
 Cycle Length: 105
 Actuated Cycle Length: 105
 Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Green
 Natural Cycle: 95
 Control Type: Pretimed
 Maximum v/c Ratio: 1.04
 Intersection Signal Delay: 33.4
 Intersection LOS: C
 Intersection Capacity Utilization 92.8%
 ICU Level of Service F
 Analysis Period (min) 15
 ~ Volume exceeds capacity, queue is theoretically infinite.
 Queue shown is maximum after two cycles.
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.
 m Volume for 95th percentile queue is metered by upstream signal.
 dl Defacto Left Lane. Recode with 1 though lane as a left lane.





















Splits and Phases: 29: Ashland Avenue & Armitage Avenue



Lane Group	Ø4	Ø5	Ø6
v/c Ratio			
Control Delay			
Queue Delay			
Total Delay			
LOS			
Approach Delay			
Approach LOS			
Queue Length 50th (ft)			
Queue Length 95th (ft)			
Internal Link Dist (ft)			
Turn Bay Length (ft)			
Base Capacity (vph)			
Starvation Cap Reductn			
Spillback Cap Reductn			
Storage Cap Reductn			
Reduced v/c Ratio			
Intersection Summary			

Lanes, Volumes, Timings
30: Elston Avenue & Armitage Avenue

01/07/2019

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	11	416	1	21	7	145	261	3	10	561	0
Future Volume (vph)	0	11	416	1	21	7	145	261	3	10	561	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	2000	1900	1900	2000	1900
Lane Width (ft)	10	10	10	12	12	12	10	10	9	11	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	83		85	75		0
Storage Lanes	0		1	0		0	1		1	1		0
Taper Length (ft)	25			25			90			39		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	1.00	1.00
Ped Bike Factor			0.97		1.00			1.00		1.00		
Frt			0.850		0.966			0.998				
Flt Protected					0.998		0.950			0.950		
Satd. Flow (prot)	0	1642	1436	0	1762	0	1546	3035	0	1745	1942	0
Flt Permitted					0.995		0.108			0.108		
Satd. Flow (perm)	0	1642	1389	0	1756	0	176	3035	0	198	1942	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			113		8			2				
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		135			306			644			308	
Travel Time (s)		3.1			7.0			14.6			7.0	
Confl. Peds. (#/hr)	1		4	4		1			4	4		
Confl. Bikes (#/hr)			3						1			42
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	8%	5%	0%	5%	0%	9%	10%	0%	0%	3%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)								3				
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	12	447	0	32	0	156	284	0	11	603	0
Turn Type		NA	pm+ov	Perm	NA		custom	NA		Perm	NA	
Protected Phases		7 4	5		8		5	2 5			6	
Permitted Phases	4		7 4	8			2			6		
Detector Phase	4	7 4	5	8	8		5	2 5		6	6	
Switch Phase												
Minimum Initial (s)	15.0		5.0	15.0	15.0		5.0			31.0	31.0	
Minimum Split (s)	20.0		9.5	20.0	20.0		9.5			41.0	41.0	
Total Split (s)	20.0		19.0	20.0	20.0		19.0			41.0	41.0	
Total Split (%)	19.0%		18.1%	19.0%	19.0%		18.1%			39.0%	39.0%	
Yellow Time (s)	3.0		3.0	3.0	3.0		3.0			3.0	3.0	
All-Red Time (s)	2.0		1.0	2.0	2.0		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		5.0		4.0			4.0	4.0	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	Max		Max	Max	Max		Max			Max	Max	
Act Effct Green (s)		40.0	56.0		15.0		52.0	56.0		37.0	37.0	
Actuated g/C Ratio		0.38	0.53		0.14		0.50	0.53		0.35	0.35	

Lanes, Volumes, Timings
 30: Elston Avenue & Armitage Avenue

01/07/2019

Lane Group	Ø2	Ø7
Lane Configurations		
Traffic Volume (vph)		
Future Volume (vph)		
Ideal Flow (vphpl)		
Lane Width (ft)		
Grade (%)		
Storage Length (ft)		
Storage Lanes		
Taper Length (ft)		
Lane Util. Factor		
Ped Bike Factor		
Frt		
Flt Protected		
Satd. Flow (prot)		
Flt Permitted		
Satd. Flow (perm)		
Right Turn on Red		
Satd. Flow (RTOR)		
Link Speed (mph)		
Link Distance (ft)		
Travel Time (s)		
Confl. Peds. (#/hr)		
Confl. Bikes (#/hr)		
Peak Hour Factor		
Growth Factor		
Heavy Vehicles (%)		
Bus Blockages (#/hr)		
Parking (#/hr)		
Mid-Block Traffic (%)		
Shared Lane Traffic (%)		
Lane Group Flow (vph)		
Turn Type		
Protected Phases	2	7
Permitted Phases		
Detector Phase		
Switch Phase		
Minimum Initial (s)	31.0	5.0
Minimum Split (s)	41.0	25.0
Total Split (s)	41.0	25.0
Total Split (%)	39%	24%
Yellow Time (s)	3.0	3.0
All-Red Time (s)	1.0	2.0
Lost Time Adjust (s)		
Total Lost Time (s)		
Lead/Lag		
Lead-Lag Optimize?		
Recall Mode	Max	Max
Act Effct Green (s)		
Actuated g/C Ratio		

Lanes, Volumes, Timings
 30: Elston Avenue & Armitage Avenue

01/07/2019

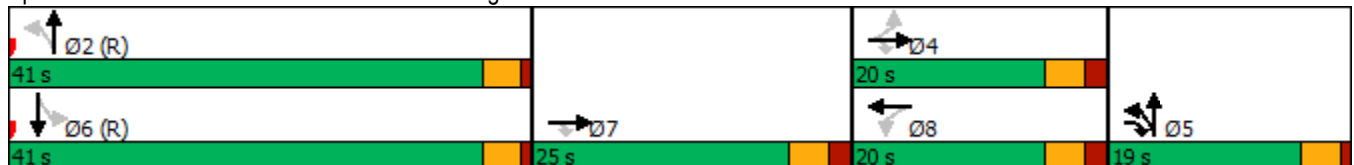


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio		0.02	0.56		0.12		0.55	0.18		0.16	0.88	
Control Delay		28.6	7.0		33.2		36.6	21.4		16.6	31.9	
Queue Delay		1.3	20.3		0.0		0.0	0.0		0.0	50.5	
Total Delay		29.9	27.4		33.2		36.6	21.4		16.6	82.4	
LOS		C	C		C		D	C		B	F	
Approach Delay		27.5			33.2			26.8			81.2	
Approach LOS		C			C			C			F	
Queue Length 50th (ft)		5	21		14		96	75		3	351	
Queue Length 95th (ft)		m5	m20		42		158	116		m6	#597	
Internal Link Dist (ft)		55			226			564			228	
Turn Bay Length (ft)							83			75		
Base Capacity (vph)		625	800		257		282	1619		69	684	
Starvation Cap Reductn		548	349		0		0	0		0	243	
Spillback Cap Reductn		0	12		0		0	0		0	17	
Storage Cap Reductn		0	0		0		0	0		0	0	
Reduced v/c Ratio		0.16	0.99		0.12		0.55	0.18		0.16	1.37	

Intersection Summary

Area Type: Other
 Cycle Length: 105
 Actuated Cycle Length: 105
 Offset: 88 (84%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
 Natural Cycle: 100
 Control Type: Pretimed
 Maximum v/c Ratio: 0.88
 Intersection Signal Delay: 48.8 Intersection LOS: D
 Intersection Capacity Utilization 84.2% ICU Level of Service E
 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: 30: Elston Avenue & Armitage Avenue



Lane Group	Ø2	Ø7
v/c Ratio		
Control Delay		
Queue Delay		
Total Delay		
LOS		
Approach Delay		
Approach LOS		
Queue Length 50th (ft)		
Queue Length 95th (ft)		
Internal Link Dist (ft)		
Turn Bay Length (ft)		
Base Capacity (vph)		
Starvation Cap Reductn		
Spillback Cap Reductn		
Storage Cap Reductn		
Reduced v/c Ratio		
Intersection Summary		

Lanes, Volumes, Timings
34: Ashland Avenue & Cortland Street

01/07/2019



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑	↗	↖	↖			↑↑			↑↑	
Traffic Volume (vph)	0	457	53	81	157	6	0	730	172	0	981	37
Future Volume (vph)	0	457	53	81	157	6	0	730	172	0	981	37
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	10	10	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	50		0	0		0	0		0
Storage Lanes	0		1	1		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor			0.92	0.98	1.00			0.99			1.00	
Frt			0.850		0.995			0.971			0.994	
Flt Protected				0.950								
Satd. Flow (prot)	0	1705	1422	1687	1768	0	0	3181	0	0	3512	0
Flt Permitted				0.151								
Satd. Flow (perm)	0	1705	1308	264	1768	0	0	3181	0	0	3512	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		30			30			30				30
Link Distance (ft)		301			414			598				210
Travel Time (s)		6.8			9.4			13.6				4.8
Confl. Peds. (#/hr)	51		52	52		51	107		28	28		107
Confl. Bikes (#/hr)			27			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
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	4%	6%	7%	7%	0%	0%	8%	5%	2%	0%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	8	0	0	8	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%				0%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	476	55	84	170	0	0	939	0	0	1061	0
Turn Type		NA	Perm	custom	NA			NA			NA	
Protected Phases		4		3	3			2			6	
Permitted Phases			4	8								
Detector Phase		4	4	3	3			2			6	
Switch Phase												
Minimum Initial (s)		12.0	12.0	8.0				40.0			40.0	
Minimum Split (s)		37.0	37.0	11.0				57.0			57.0	
Total Split (s)		37.0	37.0	11.0				57.0			57.0	
Total Split (%)		35.2%	35.2%	10.5%				54.3%			54.3%	
Yellow Time (s)		3.0	3.0	3.0				3.0			3.0	
All-Red Time (s)		2.0	2.0	0.0				2.0			2.0	
Lost Time Adjust (s)		0.0	0.0	0.0				0.0			0.0	
Total Lost Time (s)		5.0	5.0	3.0				5.0			5.0	
Lead/Lag		Lag	Lag	Lead								
Lead-Lag Optimize?		Yes	Yes	Yes								
Recall Mode		Max	Max	Max				Max			Max	
Act Effect Green (s)		32.0	32.0	45.0	45.0			52.0			52.0	
Actuated g/C Ratio		0.30	0.30	0.43	0.43			0.50			0.50	

Lanes, Volumes, Timings
 34: Ashland Avenue & Cortland Street

01/07/2019

Lane Group	Ø8
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Grade (%)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Confl. Bikes (#/hr)	
Peak Hour Factor	
Growth Factor	
Heavy Vehicles (%)	
Bus Blockages (#/hr)	
Parking (#/hr)	
Mid-Block Traffic (%)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	8
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	12.0
Minimum Split (s)	37.0
Total Split (s)	48.0
Total Split (%)	46%
Yellow Time (s)	3.0
All-Red Time (s)	2.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Recall Mode	Max
Act Effct Green (s)	
Actuated g/C Ratio	

Lanes, Volumes, Timings
 34: Ashland Avenue & Cortland Street

01/07/2019

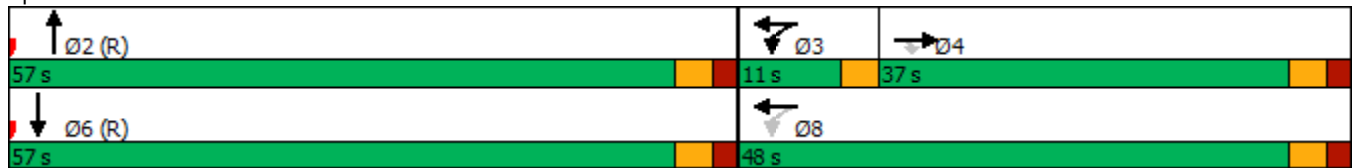


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio		0.92	0.14	0.38	0.22			0.60				0.61
Control Delay		59.9	27.8	12.6	9.3			21.0				5.7
Queue Delay		47.9	0.0	0.0	0.0			0.6				0.0
Total Delay		107.9	27.8	12.6	9.3			21.5				5.7
LOS		F	C	B	A			C				A
Approach Delay		99.6				10.4		21.5				5.7
Approach LOS		F			B			C				A
Queue Length 50th (ft)		307	27	13	26			228				31
Queue Length 95th (ft)		#501	58	m23	m54			293				m64
Internal Link Dist (ft)		221				334		518				130
Turn Bay Length (ft)				50								
Base Capacity (vph)		519	398	221	757			1575				1739
Starvation Cap Reductn		0	0	0	0			0				0
Spillback Cap Reductn		134	0	0	0			280				0
Storage Cap Reductn		0	0	0	0			0				0
Reduced v/c Ratio		1.24	0.14	0.38	0.22			0.73				0.61

Intersection Summary

Area Type: Other
 Cycle Length: 105
 Actuated Cycle Length: 105
 Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green
 Natural Cycle: 105
 Control Type: Pretimed
 Maximum v/c Ratio: 0.92
 Intersection Signal Delay: 29.3
 Intersection LOS: C
 Intersection Capacity Utilization 88.3%
 ICU Level of Service E
 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: 34: Ashland Avenue & Cortland Street



Lane Group	Ø8
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	
Intersection Summary	

Lanes, Volumes, Timings
36: Elston Avenue & Cortland Street

01/07/2019

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	38	477	146	102	200	136	40	237	179	370	575	11
Future Volume (vph)	38	477	146	102	200	136	40	237	179	370	575	11
Ideal Flow (vphpl)	1900	1900	1900	1900	2000	1900	1900	2000	1900	1900	1900	1900
Lane Width (ft)	12	10	12	12	10	12	11	11	11	11	11	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	95		0	75		50	60		60	131		70
Storage Lanes	1		0	1		1	1		1	1		0
Taper Length (ft)	25			25			150			100		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.96	0.99				0.94	1.00		0.94	0.98	1.00	
Frt		0.965				0.850			0.850		0.997	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1671	1430	0	1752	1530	1509	1694	1507	1473	1646	1525	0
Flt Permitted	0.625			0.103			0.103			0.514		
Satd. Flow (perm)	1058	1430	0	190	1530	1419	183	1507	1388	869	1525	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		16				145			138		1	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		414			718			453			644	
Travel Time (s)		9.4			16.3			10.3			14.6	
Confl. Peds. (#/hr)	32		23	32		23	15		28	28		15
Confl. Bikes (#/hr)			28			6			1			42
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
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	8%	5%	1%	3%	8%	7%	3%	11%	6%	6%	3%	9%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)		4			3			7			8	
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	40	662	0	109	213	145	43	252	190	394	624	0
Turn Type	Perm	NA		pm+pt	NA	pm+ov	Perm	NA	pm+ov	custom	NA	
Protected Phases		4		3	8	1		2	3	1	16	
Permitted Phases	4			8		8	2		2	6		
Detector Phase	4	4		3	8	1	2	2	3	1	16	
Switch Phase												
Minimum Initial (s)	17.0	17.0		4.5	17.0	8.0	31.0	31.0	4.5	8.0		
Minimum Split (s)	38.0	38.0		9.0	38.0	11.0	44.0	44.0	9.0	11.0		
Total Split (s)	41.0	41.0		9.0	50.0	11.0	44.0	44.0	9.0	11.0		
Total Split (%)	39.0%	39.0%		8.6%	47.6%	10.5%	41.9%	41.9%	8.6%	10.5%		
Yellow Time (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0		
All-Red Time (s)	2.0	2.0		0.0	2.0	0.0	2.0	2.0	0.0	0.0		
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0		
Total Lost Time (s)	5.0	5.0		3.0	5.0	3.0	5.0	5.0	3.0	3.0		
Lead/Lag	Lag	Lag		Lead						Lead		
Lead-Lag Optimize?	Yes	Yes		Yes						Yes		
Recall Mode	Max	Max		Max	Max	Max	Max	Max	Max	Max		
Act Effct Green (s)	36.0	36.0		47.0	45.0	55.0	39.0	39.0	47.0	49.0	52.0	
Actuated g/C Ratio	0.34	0.34		0.45	0.43	0.52	0.37	0.37	0.45	0.47	0.50	

Lane Group	Ø6
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Grade (%)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Confl. Bikes (#/hr)	
Peak Hour Factor	
Growth Factor	
Heavy Vehicles (%)	
Bus Blockages (#/hr)	
Parking (#/hr)	
Mid-Block Traffic (%)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	6
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	31.0
Minimum Split (s)	44.0
Total Split (s)	44.0
Total Split (%)	42%
Yellow Time (s)	3.0
All-Red Time (s)	2.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Recall Mode	Max
Act Effct Green (s)	
Actuated g/C Ratio	

Lanes, Volumes, Timings
 36: Elston Avenue & Cortland Street

01/07/2019

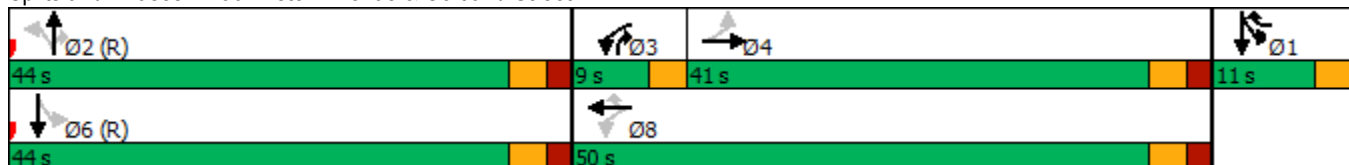


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.11	1.32		0.63	0.33	0.18	0.64	0.45	0.27	0.85	0.83	
Control Delay	34.9	188.4		30.4	17.5	7.2	72.2	28.1	6.2	24.2	19.3	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	34.9	188.4		30.4	17.5	7.2	72.2	28.1	6.2	24.2	19.3	
LOS	C	F		C	B	A	E	C	A	C	B	
Approach Delay		179.7			17.3			23.4			21.2	
Approach LOS		F			B			C			C	
Queue Length 50th (ft)	20	~547		55	118	35	23	126	18	99	206	
Queue Length 95th (ft)	m28	m#681		#92	167	81	#86	201	58	m#142	m428	
Internal Link Dist (ft)		334			638			373			564	
Turn Bay Length (ft)	95			75		50	60		60	131		
Base Capacity (vph)	362	500		174	655	819	67	559	702	464	755	
Starvation Cap Reductn	0	0		0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0		0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0		0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.11	1.32		0.63	0.33	0.18	0.64	0.45	0.27	0.85	0.83	

Intersection Summary

Area Type: Other
 Cycle Length: 105
 Actuated Cycle Length: 105
 Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
 Natural Cycle: 145
 Control Type: Pretimed
 Maximum v/c Ratio: 1.32
 Intersection Signal Delay: 62.6 Intersection LOS: E
 Intersection Capacity Utilization 114.3% 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: 36: Elston Avenue & Cortland Street



Lane Group	Ø6
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	
Intersection Summary	

Lanes, Volumes, Timings
 39: Clybourn Avenue & Cortland Street & Racine Avenue

01/07/2019

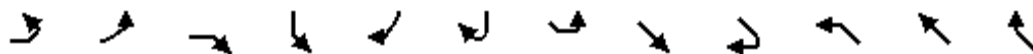


Lane Group	EBL2	EBL	EBR	SBL	SBR	SBR2	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Traffic Volume (vph)	29	271	112	223	234	31	80	563	23	110	233	51
Future Volume (vph)	29	271	112	223	234	31	80	563	23	110	233	51
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	10	12	11	11	12	10	13	12	10	13	12
Grade (%)		0%		0%				0%			0%	
Storage Length (ft)		0	0	0	0		115		0	115		0
Storage Lanes		1	1	1	2		1		0	1		0
Taper Length (ft)		25		25			60			95		
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	0.94	0.97	0.92	0.89	0.99	1.00		0.99	1.00	
Frt			0.850		0.850	0.850		0.994			0.973	
Flt Protected		0.950		0.950			0.950			0.950		
Satd. Flow (prot)	0	1536	1538	1728	1267	1509	1589	1662	0	1604	1625	0
Flt Permitted		0.950		0.950			0.571			0.121		
Satd. Flow (perm)	0	1483	1444	1682	1170	1336	949	1662	0	203	1625	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		30		30				30			30	
Link Distance (ft)		208		134				578			1507	
Travel Time (s)		4.7		3.0				13.1			34.3	
Confl. Peds. (#/hr)	33		10	10	18	33	14		18	18		14
Confl. Bikes (#/hr)			8		5	5			12			2
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	7%	10%	5%	1%	6%	7%	6%	2%	0%	5%	3%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)					8			6			5	
Mid-Block Traffic (%)		0%		0%				0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	330	123	245	257	34	88	644	0	121	312	0
Turn Type	Prot	Prot	Perm	Prot	Perm	Perm	Perm	NA		pm+pt	NA	
Protected Phases	4	4		8				6		5	2	
Permitted Phases	4		4		8	8	6			2		
Detector Phase	4	4	4	8	8	8	6	6		5	2	
Switch Phase												
Minimum Initial (s)	9.0	9.0	9.0	9.0	9.0	9.0	23.0	23.0		4.0	23.0	
Minimum Split (s)	21.0	21.0	21.0	21.0	21.0	21.0	41.0	41.0		7.0	41.0	
Total Split (s)	21.0	21.0	21.0	21.0	21.0	21.0	41.0	41.0		7.0	48.0	
Total Split (%)	23.3%	23.3%	23.3%	23.3%	23.3%	23.3%	45.6%	45.6%		7.8%	53.3%	
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		0.0	1.0	
Lost Time Adjust (s)		0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)		4.0	4.0	4.0	4.0	4.0	4.0	4.0		3.0	4.0	
Lead/Lag							Lag	Lag		Lead		
Lead-Lag Optimize?							Yes	Yes		Yes		
Recall Mode	None	None	None	None	None	None	C-Max	C-Max		None	C-Max	
Act Effct Green (s)		17.0	17.0	17.0	17.0	17.0	37.0	37.0		45.0	44.0	
Actuated g/C Ratio		0.19	0.19	0.19	0.19	0.19	0.41	0.41		0.50	0.49	

Lanes, Volumes, Timings

39: Clybourn Avenue & Cortland Street & Racine Avenue

01/07/2019

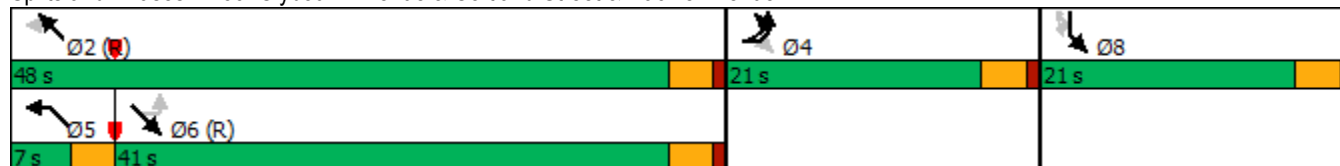


Lane Group	EBL2	EBL	EBR	SBL	SBR	SBR2	SEL	SET	SER	NWL	NWT	NWR
v/c Ratio		1.14	0.45	0.75	1.16	0.13	0.23	0.94		0.74	0.39	
Control Delay		131.2	38.5	50.6	147.1	32.1	19.2	50.2		42.9	16.4	
Queue Delay		3.6	2.1	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay		134.7	40.6	50.6	147.1	32.1	19.2	50.2		42.9	16.4	
LOS		F	D	D	F	C	B	D		D	B	
Approach Delay		109.2		95.7				46.5			23.8	
Approach LOS		F		F				D			C	
Queue Length 50th (ft)		~221	63	133	~175	16	32	343		35	107	
Queue Length 95th (ft)		#385	117	#244	#325	43	66	#568		#96	171	
Internal Link Dist (ft)		128		54				498			1427	
Turn Bay Length (ft)							115			115		
Base Capacity (vph)		290	272	326	221	252	390	683		163	794	
Starvation Cap Reductn		68	64	0	0	0	0	0		0	0	
Spillback Cap Reductn		0	0	0	0	0	0	0		0	0	
Storage Cap Reductn		0	0	0	0	0	0	0		0	0	
Reduced v/c Ratio		1.49	0.59	0.75	1.16	0.13	0.23	0.94		0.74	0.39	

Intersection Summary

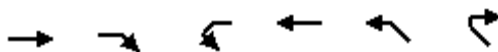
Area Type: Other
 Cycle Length: 90
 Actuated Cycle Length: 90
 Offset: 22 (24%), Referenced to phase 2:NWTL and 6:SETL, Start of Green
 Natural Cycle: 90
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 1.16
 Intersection Signal Delay: 67.4
 Intersection LOS: E
 Intersection Capacity Utilization 93.5%
 ICU Level of Service F
 Analysis Period (min) 15
 ~ Volume exceeds capacity, queue is theoretically infinite.
 Queue shown is maximum after two cycles.
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

Splits and Phases: 39: Clybourn Avenue & Cortland Street & Racine Avenue



Lanes, Volumes, Timings
44: Marcey Street & Cortland Street

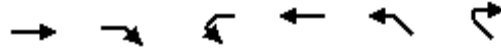
01/07/2019



Lane Group	EBT	EBR	WBL	WBT	NWL	NWR
Lane Configurations	↑↑			↑	↑	
Traffic Volume (vph)	423	275	19	358	88	15
Future Volume (vph)	423	275	19	358	88	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	12	12	11	12	12
Grade (%)	0%			0%	0%	
Storage Length (ft)		0	0		0	0
Storage Lanes		0	0		1	0
Taper Length (ft)			25		25	
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00	1.00
Ped Bike Factor	0.98			1.00	0.99	
Frt	0.941				0.980	
Flt Protected				0.997	0.959	
Satd. Flow (prot)	2913	0	0	1748	1480	0
Flt Permitted				0.974	0.959	
Satd. Flow (perm)	2913	0	0	1707	1480	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	145				8	
Link Speed (mph)	30			30	30	
Link Distance (ft)	275			208	405	
Travel Time (s)	6.3			4.7	9.2	
Confl. Peds. (#/hr)		15	15			18
Confl. Bikes (#/hr)		12				
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	9%	2%	0%	5%	5%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)					6	
Mid-Block Traffic (%)	0%			0%	0%	
Shared Lane Traffic (%)						
Lane Group Flow (vph)	794	0	0	429	117	0
Turn Type	NA		pm+pt	NA	Prot	
Protected Phases	4		3	8	2	
Permitted Phases			8			
Detector Phase	4		3	8	2	
Switch Phase						
Minimum Initial (s)	21.0		5.0	19.0	17.0	
Minimum Split (s)	35.0		26.0	38.0	21.0	
Total Split (s)	35.0		33.0	68.0	37.0	
Total Split (%)	33.3%		31.4%	64.8%	35.2%	
Yellow Time (s)	3.0		3.0	3.0	3.0	
All-Red Time (s)	1.0		1.0	1.0	1.0	
Lost Time Adjust (s)	0.0			0.0	0.0	
Total Lost Time (s)	4.0			4.0	4.0	
Lead/Lag	Lead		Lag			
Lead-Lag Optimize?	Yes		Yes			
Recall Mode	C-Max		Max	C-Max	None	
Act Effct Green (s)	46.6			79.6	17.4	
Actuated g/C Ratio	0.44			0.76	0.17	

Lanes, Volumes, Timings
 44: Marcey Street & Cortland Street

01/07/2019



Lane Group	EBT	EBR	WBL	WBT	NWL	NWR
v/c Ratio	0.58			0.33	0.47	
Control Delay	16.4			4.9	43.4	
Queue Delay	0.0			6.9	0.0	
Total Delay	16.4			11.9	43.4	
LOS	B			B	D	
Approach Delay	16.4			11.9	43.4	
Approach LOS	B			B	D	
Queue Length 50th (ft)	165			75	67	
Queue Length 95th (ft)	235			118	119	
Internal Link Dist (ft)	195			128	325	
Turn Bay Length (ft)						
Base Capacity (vph)	1374			1305	470	
Starvation Cap Reductn	0			817	0	
Spillback Cap Reductn	0			0	0	
Storage Cap Reductn	0			0	0	
Reduced v/c Ratio	0.58			0.88	0.25	

Intersection Summary

Area Type: Other
 Cycle Length: 105
 Actuated Cycle Length: 105
 Offset: 44 (42%), Referenced to phase 4:EBT and 8:WBTL, Start of Green
 Natural Cycle: 85
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.58
 Intersection Signal Delay: 17.3
 Intersection Capacity Utilization 55.2%
 Analysis Period (min) 15
 Intersection LOS: B
 ICU Level of Service B

Splits and Phases: 44: Marcey Street & Cortland Street



Lanes, Volumes, Timings
46: Magnolia Avenue & Clybourn Avenue

01/07/2019



Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	24	635	0	0	263	22	1	1	1	12	1	6
Future Volume (vph)	24	635	0	0	263	22	1	1	1	12	1	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	13	12	10	13	12	12	15	12	12	15	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	55		0	125		0	0		0	0		0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (ft)	100			100			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	0.99				1.00			0.98			0.96	
Fr _t					0.988			0.955			0.955	
Fl _t Protected	0.950							0.984			0.970	
Satd. Flow (prot)	1620	1624	0	1773	1608	0	0	1926	0	0	1912	0
Fl _t Permitted	0.572							0.889				
Satd. Flow (perm)	964	1624	0	1773	1608	0	0	1730	0	0	1924	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					10			1			7	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1318			578			185			123	
Travel Time (s)		30.0			13.1			4.2			2.8	
Confl. Peds. (#/hr)	23		21	21		23	9		20	20		9
Confl. Bikes (#/hr)			12									
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
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	4%	4%	0%	0%	3%	9%	0%	0%	0%	0%	0%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)		8			8							
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	26	690	0	0	310	0	0	3	0	0	21	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		6			2			4			8	
Permitted Phases	6			2			4			8		
Detector Phase	6	6		2	2		4	4		8	8	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	59.0	59.0		59.0	59.0		26.0	26.0		26.0	26.0	
Total Split (s)	59.0	59.0		59.0	59.0		26.0	26.0		26.0	26.0	
Total Split (%)	69.4%	69.4%		69.4%	69.4%		30.6%	30.6%		30.6%	30.6%	
Yellow Time (s)	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	
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?												
Recall Mode	C-Max	C-Max		C-Max	C-Max		None	None		None	None	
Act Effct Green (s)	78.8	78.8			78.8			6.3			6.4	
Actuated g/C Ratio	0.93	0.93			0.93			0.07			0.08	

Lanes, Volumes, Timings
 46: Magnolia Avenue & Clybourn Avenue

01/07/2019



Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
v/c Ratio	0.03	0.46			0.21			0.02				0.14
Control Delay	1.1	2.0			1.3			32.3				30.4
Queue Delay	0.0	0.0			0.0			0.0				0.0
Total Delay	1.1	2.0			1.3			32.3				30.4
LOS	A	A			A			C				C
Approach Delay		1.9			1.3			32.3				30.4
Approach LOS		A			A			C				C
Queue Length 50th (ft)	0	0			0			1				7
Queue Length 95th (ft)	m3	108			42			10				29
Internal Link Dist (ft)		1238			498			105				43
Turn Bay Length (ft)	55											
Base Capacity (vph)	894	1506			1492			448				503
Starvation Cap Reductn	0	0			0			0				0
Spillback Cap Reductn	0	0			0			0				0
Storage Cap Reductn	0	0			0			0				0
Reduced v/c Ratio	0.03	0.46			0.21			0.01				0.04

Intersection Summary

Area Type: Other
 Cycle Length: 85
 Actuated Cycle Length: 85
 Offset: 18 (21%), Referenced to phase 2:NWTL and 6:SETL, Start of Green
 Natural Cycle: 85
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.46
 Intersection Signal Delay: 2.4
 Intersection Capacity Utilization 63.6%
 Analysis Period (min) 15
 Intersection LOS: A
 ICU Level of Service B
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 46: Magnolia Avenue & Clybourn Avenue



Lanes, Volumes, Timings
75: Armitage Avenue & I-90/94 East Ramps

01/07/2019



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SBL	SBR	NWL	NWR	NWR2
Lane Configurations											
Traffic Volume (vph)	211	510	0	0	505	218	0	0	269	0	507
Future Volume (vph)	211	510	0	0	505	218	0	0	269	0	507
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	12	12	12	16	12	12	12	12	12	12
Grade (%)		0%			0%		0%		0%		
Storage Length (ft)	0		0	0		0	0	0	0	0	
Storage Lanes	1		0	0		0	0	0	1	1	
Taper Length (ft)	25			25			25		25		
Lane Util. Factor	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00				0.99						
Fr _t					0.959						0.850
Fl _t Protected	0.950								0.950		
Satd. Flow (prot)	1668	3406	0	0	1926	0	0	0	1770	0	1524
Fl _t Permitted	0.103								0.950		
Satd. Flow (perm)	180	3406	0	0	1926	0	0	0	1770	0	1524
Right Turn on Red			Yes			Yes		Yes			Yes
Satd. Flow (RTOR)					27						289
Link Speed (mph)		30			30		30		30		
Link Distance (ft)		380			210		278		293		
Travel Time (s)		8.6			4.8		6.3		6.7		
Confl. Peds. (#/hr)	14		42	42		14					
Confl. Bikes (#/hr)			1								
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	1%	6%	0%	0%	7%	4%	0%	0%	2%	0%	6%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)											
Mid-Block Traffic (%)		0%			0%		0%		0%		
Shared Lane Traffic (%)											
Lane Group Flow (vph)	227	548	0	0	777	0	0	0	289	0	545
Turn Type	pm+pt	NA			NA				Prot		Prot
Protected Phases	7	4			8				5		5
Permitted Phases	4										5
Detector Phase	7	4			8				5		5
Switch Phase											
Minimum Initial (s)	5.0	29.0			29.0				30.0		30.0
Minimum Split (s)	17.0	54.0			53.0				35.0		35.0
Total Split (s)	17.0	70.0			53.0				35.0		35.0
Total Split (%)	16.2%	66.7%			50.5%				33.3%		33.3%
Yellow Time (s)	3.0	3.0			3.0				3.0		3.0
All-Red Time (s)	2.0	2.0			2.0				2.0		2.0
Lost Time Adjust (s)	0.0	0.0			0.0				0.0		0.0
Total Lost Time (s)	5.0	5.0			5.0				5.0		5.0
Lead/Lag	Lag				Lead						
Lead-Lag Optimize?	Yes				Yes						
Recall Mode	Max	Max			Max				Max		Max
Act Effct Green (s)	65.0	65.0			48.0				30.0		30.0
Actuated g/C Ratio	0.62	0.62			0.46				0.29		0.29

Lanes, Volumes, Timings
75: Armitage Avenue & I-90/94 East Ramps

01/07/2019

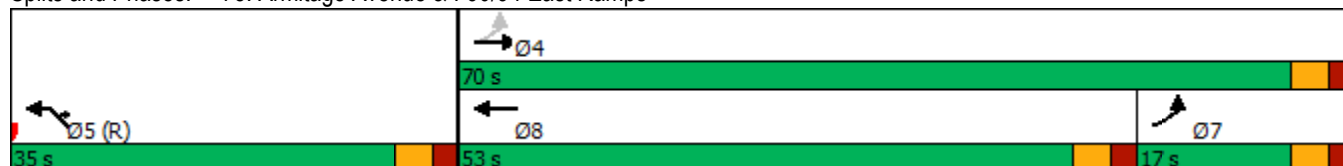


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SBL	SBR	NWL	NWR	NWR2
v/c Ratio	0.81	0.26			0.87				0.57		0.85
Control Delay	39.8	4.5			33.1				37.3		30.4
Queue Delay	0.0	0.0			4.1				0.0		0.0
Total Delay	39.8	4.5			37.2				37.3		30.4
LOS	D	A			D				D		C
Approach Delay		14.8			37.2				32.8		
Approach LOS		B			D				C		
Queue Length 50th (ft)	71	63			476				166		173
Queue Length 95th (ft)	#196	85			#678				254		#373
Internal Link Dist (ft)		300			130		198		213		
Turn Bay Length (ft)											
Base Capacity (vph)	281	2108			895				505		641
Starvation Cap Reductn	0	0			68				0		0
Spillback Cap Reductn	0	0			0				0		0
Storage Cap Reductn	0	0			0				0		0
Reduced v/c Ratio	0.81	0.26			0.94				0.57		0.85

Intersection Summary

Area Type: Other
 Cycle Length: 105
 Actuated Cycle Length: 105
 Offset: 5 (5%), Referenced to phase 5:NWL, Start of Green
 Natural Cycle: 105
 Control Type: Pretimed
 Maximum v/c Ratio: 0.87
 Intersection Signal Delay: 28.4
 Intersection LOS: C
 Intersection Capacity Utilization 89.5%
 ICU Level of Service E
 Analysis Period (min) 15
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

Splits and Phases: 75: Armitage Avenue & I-90/94 East Ramps



Lanes, Volumes, Timings
78: Armitage Avenue & I-90/94 West Ramps

01/07/2019



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑			↑↑			↑		↑↑	↑	↑
Traffic Volume (vph)	0	775	7	26	336	0	19	0	53	339	45	142
Future Volume (vph)	0	775	7	26	336	0	19	0	53	339	45	142
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	0		0	0		0	0		0	2		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	0.97	1.00	1.00
Ped Bike Factor		1.00			1.00			1.00				0.98
Frt		0.999						0.900				0.850
Flt Protected					0.996			0.987		0.950		
Satd. Flow (prot)	0	3443	0	0	3436	0	0	1688	0	3367	1900	1583
Flt Permitted					0.905			0.900		0.950		
Satd. Flow (perm)	0	3443	0	0	3118	0	0	1535	0	3367	1900	1548
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		1						135				153
Link Speed (mph)		30			30			30				30
Link Distance (ft)		653			126			236				708
Travel Time (s)		14.8			2.9			5.4				16.1
Confl. Peds. (#/hr)	16		48	48		16	7					7
Confl. Bikes (#/hr)			5									
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	3%	0%	0%	5%	0%	0%	0%	0%	4%	0%	2%
Bus Blockages (#/hr)	0	8	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%				0%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	841	0	0	389	0	0	77	0	365	48	153
Turn Type		NA		pm+pt	NA		Perm	NA		Split	NA	Perm
Protected Phases		4		8	4 8 10			2		6	6	
Permitted Phases				4 8 10			2					6
Detector Phase		4		8	4 8 10		2	2		6	6	6
Switch Phase												
Minimum Initial (s)		21.0		19.0			10.0	10.0		6.0	6.0	6.0
Minimum Split (s)		36.0		22.0			15.0	15.0		26.0	26.0	26.0
Total Split (s)		36.0		22.0			15.0	15.0		26.0	26.0	26.0
Total Split (%)		34.3%		21.0%			14.3%	14.3%		24.8%	24.8%	24.8%
Yellow Time (s)		3.0		3.0			3.0	3.0		3.0	3.0	3.0
All-Red Time (s)		0.0		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
Total Lost Time (s)		3.0						5.0		5.0	5.0	5.0
Lead/Lag		Lead		Lag						Lead	Lead	Lead
Lead-Lag Optimize?		Yes		Yes						Yes	Yes	Yes
Recall Mode		Max		Max			Max	Max		Max	Max	Max
Act Effct Green (s)		33.0			58.0			10.0		21.0	21.0	21.0
Actuated g/C Ratio		0.31			0.55			0.10		0.20	0.20	0.20

Lanes, Volumes, Timings
 78: Armitage Avenue & I-90/94 West Ramps

01/07/2019

Lane Group	Ø10
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Grade (%)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Confl. Bikes (#/hr)	
Peak Hour Factor	
Growth Factor	
Heavy Vehicles (%)	
Bus Blockages (#/hr)	
Parking (#/hr)	
Mid-Block Traffic (%)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	10
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	1.0
Minimum Split (s)	6.0
Total Split (s)	6.0
Total Split (%)	6%
Yellow Time (s)	3.0
All-Red Time (s)	2.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	Lag
Lead-Lag Optimize?	Yes
Recall Mode	Max
Act Effct Green (s)	
Actuated g/C Ratio	

Lanes, Volumes, Timings
 78: Armitage Avenue & I-90/94 West Ramps

01/07/2019

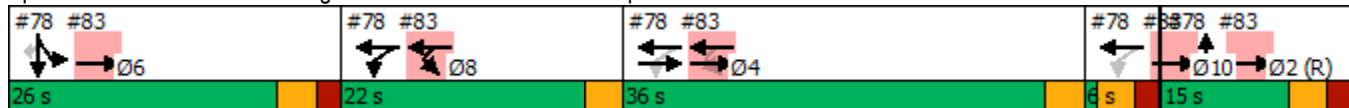


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio		0.78			0.22			0.29		0.54	0.13	0.35
Control Delay		38.5			0.3			3.6		41.2	35.6	8.4
Queue Delay		0.0			0.9			0.0		0.0	0.0	0.0
Total Delay		38.5			1.2			3.6		41.2	35.6	8.4
LOS		D			A			A		D	D	A
Approach Delay		38.5			1.2			3.6			31.8	
Approach LOS		D			A			A			C	
Queue Length 50th (ft)		268			0			0		114	27	0
Queue Length 95th (ft)		343			0			7		161	60	53
Internal Link Dist (ft)		573			46			156			628	
Turn Bay Length (ft)												
Base Capacity (vph)		1082			1779			268		673	380	432
Starvation Cap Reductn		0			1090			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		0.78			0.56			0.29		0.54	0.13	0.35

Intersection Summary

Area Type:	Other
Cycle Length:	105
Actuated Cycle Length:	105
Offset:	0 (0%), Referenced to phase 2:NBTL, Start of Green
Natural Cycle:	105
Control Type:	Pretimed
Maximum v/c Ratio:	0.78
Intersection Signal Delay:	27.3
Intersection LOS:	C
Intersection Capacity Utilization:	65.0%
ICU Level of Service:	C
Analysis Period (min):	15

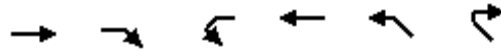
Splits and Phases: 78: Armitage Avenue & I-90/94 West Ramps



Lane Group	Ø10
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	
Intersection Summary	

Lanes, Volumes, Timings
 83: I-90/94 EB On Ramp & Armitage Avenue

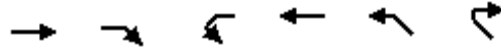
01/07/2019



Lane Group	EBT	EBR	WBL	WBT	NWL	NWR	Ø2	Ø4	Ø6	Ø10	
Lane Configurations	↑↑↑			↑↑							
Traffic Volume (vph)	720	447	412	362	0	0					
Future Volume (vph)	720	447	412	362	0	0					
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900					
Lane Width (ft)	12	12	12	12	12	12					
Grade (%)	0%			0%		0%					
Storage Length (ft)		0	0		0	0					
Storage Lanes		0	0		0	0					
Taper Length (ft)			25		25						
Lane Util. Factor	0.91	0.91	0.95	0.95	1.00	1.00					
Ped Bike Factor	0.98			0.99							
Frt	0.943										
Flt Protected				0.974							
Satd. Flow (prot)	4705	0	0	3447	0	0					
Flt Permitted				0.558							
Satd. Flow (perm)	4705	0	0	1964	0	0					
Right Turn on Red		Yes				Yes					
Satd. Flow (RTOR)	219										
Link Speed (mph)	30			30	30						
Link Distance (ft)	126			380	301						
Travel Time (s)	2.9			8.6	6.8						
Confl. Peds. (#/hr)		42	42								
Confl. Bikes (#/hr)		1									
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93					
Growth Factor	100%	100%	100%	100%	100%	100%					
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%					
Bus Blockages (#/hr)	0	0	0	0	0	0					
Parking (#/hr)											
Mid-Block Traffic (%)	0%			0%	0%						
Shared Lane Traffic (%)											
Lane Group Flow (vph)	1255	0	0	832	0	0					
Turn Type	NA		pm+pt	NA							
Protected Phases	2 4 6 10		8	4 8			2	4	6	10	
Permitted Phases			4 8								
Detector Phase	2 4 6 10		8	4 8							
Switch Phase											
Minimum Initial (s)			19.0				10.0	21.0	6.0	1.0	
Minimum Split (s)			22.0				15.0	36.0	26.0	6.0	
Total Split (s)			22.0				15.0	36.0	26.0	6.0	
Total Split (%)			21.0%				14%	34%	25%	6%	
Yellow Time (s)			3.0				3.0	3.0	3.0	3.0	
All-Red Time (s)			0.0				2.0	0.0	2.0	2.0	
Lost Time Adjust (s)											
Total Lost Time (s)											
Lead/Lag			Lag				Lead	Lead	Lag		
Lead-Lag Optimize?			Yes				Yes	Yes	Yes		
Recall Mode			Max				Max	Max	Max	Max	
Act Effct Green (s)	78.0			52.0							
Actuated g/C Ratio	0.74			0.50							

Lanes, Volumes, Timings
 83: I-90/94 EB On Ramp & Armitage Avenue

01/07/2019

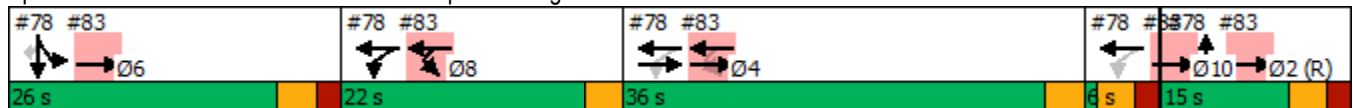


Lane Group	EBT	EBR	WBL	WBT	NWL	NWR	Ø2	Ø4	Ø6	Ø10
v/c Ratio	0.35			1.05dl						
Control Delay	0.2			13.8						
Queue Delay	0.6			0.0						
Total Delay	0.8			13.8						
LOS	A			B						
Approach Delay	0.8			13.8						
Approach LOS	A			B						
Queue Length 50th (ft)	0			151						
Queue Length 95th (ft)	0			m179						
Internal Link Dist (ft)	46			300	221					
Turn Bay Length (ft)										
Base Capacity (vph)	3551			1241						
Starvation Cap Reductn	1729			0						
Spillback Cap Reductn	0			0						
Storage Cap Reductn	0			0						
Reduced v/c Ratio	0.69			0.67						

Intersection Summary

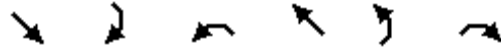
Area Type: Other
 Cycle Length: 105
 Actuated Cycle Length: 105
 Offset: 0 (0%), Referenced to phase 2:NBTL, Start of Green
 Natural Cycle: 105
 Control Type: Pretimed
 Maximum v/c Ratio: 0.78
 Intersection Signal Delay: 6.0 Intersection LOS: A
 Intersection Capacity Utilization 55.6% ICU Level of Service B
 Analysis Period (min) 15
 m Volume for 95th percentile queue is metered by upstream signal.
 dl Defacto Left Lane. Recode with 1 though lane as a left lane.

Splits and Phases: 83: I-90/94 EB On Ramp & Armitage Avenue



Lanes, Volumes, Timings
112: Best Buy Access & Elston Avenue

01/07/2019



Lane Group	SET	SER	NWL	NWT	NEL	NER	Ø2
Lane Configurations	↑	↗	↖	↑	↘	↗	
Traffic Volume (vph)	534	7	2	197	8	0	
Future Volume (vph)	534	7	2	197	8	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	12	12	12	12	12	12	
Grade (%)	0%			0%	0%		
Storage Length (ft)		125	150		0	0	
Storage Lanes		1	1		1	1	
Taper Length (ft)			50		25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	
Ped Bike Factor		0.95	1.00				
Frt		0.850					
Flt Protected			0.950		0.950		
Satd. Flow (prot)	1881	1615	1805	1881	1805	1900	
Flt Permitted			0.399		0.950		
Satd. Flow (perm)	1881	1538	755	1881	1805	1900	
Right Turn on Red		Yes				Yes	
Satd. Flow (RTOR)		8					
Link Speed (mph)	30			30	30		
Link Distance (ft)	793			488	285		
Travel Time (s)	18.0			11.1	6.5		
Confl. Peds. (#/hr)		9	9			1	
Confl. Bikes (#/hr)		29					
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.90	
Growth Factor	100%	100%	100%	100%	100%	100%	
Heavy Vehicles (%)	1%	0%	0%	1%	0%	0%	
Bus Blockages (#/hr)	0	0	0	0	0	0	
Parking (#/hr)							
Mid-Block Traffic (%)	0%			0%	0%		
Shared Lane Traffic (%)							
Lane Group Flow (vph)	574	8	2	212	9	0	
Turn Type	NA	pm+ov	custom	NA	Prot	pm+ov	
Protected Phases	6	7	9	2 9	7	9	2
Permitted Phases		6	2			7	
Detector Phase	6	7	9	2 9	7	9	
Switch Phase							
Minimum Initial (s)	16.0	12.0	5.0		12.0	5.0	16.0
Minimum Split (s)	41.0	31.0	8.0		31.0	8.0	41.0
Total Split (s)	41.0	31.0	13.0		31.0	13.0	41.0
Total Split (%)	48.2%	36.5%	15.3%		36.5%	15.3%	48%
Yellow Time (s)	3.0	3.0	3.0		3.0	3.0	3.0
All-Red Time (s)	1.0	1.0	0.0		1.0	0.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.0	4.0	3.0		4.0	3.0	
Lead/Lag							
Lead-Lag Optimize?							
Recall Mode	C-Max	None	None		None	None	C-Max
Act Effct Green (s)	64.4	74.5	72.6	77.0	12.0		
Actuated g/C Ratio	0.76	0.88	0.85	0.91	0.14		

Lanes, Volumes, Timings
 112: Best Buy Access & Elston Avenue

01/07/2019

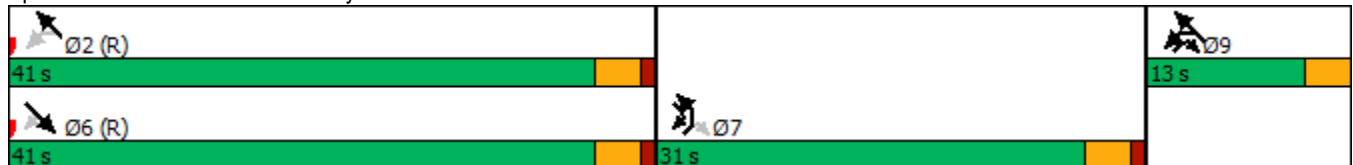


Lane Group	SET	SER	NWL	NWT	NEL	NER	Ø2
v/c Ratio	0.40	0.01	0.00	0.12	0.04		
Control Delay	6.5	1.0	2.0	1.7	32.0		
Queue Delay	0.0	0.0	0.0	0.0	0.0		
Total Delay	6.5	1.0	2.0	1.7	32.0		
LOS	A	A	A	A	C		
Approach Delay	6.4			1.7	32.0		
Approach LOS	A			A	C		
Queue Length 50th (ft)	41	0	0	0	4		
Queue Length 95th (ft)	231	2	1	39	18		
Internal Link Dist (ft)	713			408	205		
Turn Bay Length (ft)		125	150				
Base Capacity (vph)	1425	1481	786	1675	573		
Starvation Cap Reductn	0	0	0	0	0		
Spillback Cap Reductn	0	0	0	0	0		
Storage Cap Reductn	0	0	0	0	0		
Reduced v/c Ratio	0.40	0.01	0.00	0.13	0.02		

Intersection Summary

Area Type: Other
 Cycle Length: 85
 Actuated Cycle Length: 85
 Offset: 65 (76%), Referenced to phase 2:NWTL and 6:SET, Start of Green
 Natural Cycle: 80
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.40
 Intersection Signal Delay: 5.4
 Intersection Capacity Utilization 47.9%
 Analysis Period (min) 15
 Intersection LOS: A
 ICU Level of Service A

Splits and Phases: 112: Best Buy Access & Elston Avenue



Lanes, Volumes, Timings
116: Cortland Street & Dominick Street

01/07/2019



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	Ø2
Lane Configurations							
Traffic Volume (vph)	303	646	320	20	30	102	
Future Volume (vph)	303	646	320	20	30	102	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	11	11	11	11	11	11	
Grade (%)		0%	0%		0%		
Storage Length (ft)	100			0	100	0	
Storage Lanes	1			0	1	1	
Taper Length (ft)	100				100		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	
Ped Bike Factor							
Frt			0.992			0.850	
Flt Protected	0.950				0.950		
Satd. Flow (prot)	1745	1801	1788	0	1745	1561	
Flt Permitted	0.430				0.950		
Satd. Flow (perm)	790	1801	1788	0	1745	1561	
Right Turn on Red				Yes		Yes	
Satd. Flow (RTOR)			4			107	
Link Speed (mph)		30	30		30		
Link Distance (ft)		238	841		831		
Travel Time (s)		5.4	19.1		18.9		
Confl. Peds. (#/hr)							
Confl. Bikes (#/hr)							
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	
Growth Factor	100%	100%	100%	100%	100%	100%	
Heavy Vehicles (%)	0%	2%	2%	0%	0%	0%	
Bus Blockages (#/hr)	0	0	0	0	0	0	
Parking (#/hr)							
Mid-Block Traffic (%)		0%	0%		0%		
Shared Lane Traffic (%)							
Lane Group Flow (vph)	319	680	358	0	32	107	
Turn Type	pm+pt	NA	NA		Prot	Perm	
Protected Phases	5	2 5	6		4		2
Permitted Phases	2 5					4	
Detector Phase	5	2 5	6		4	4	
Switch Phase							
Minimum Initial (s)	5.0		5.0		5.0	5.0	5.0
Minimum Split (s)	9.5		22.5		22.5	22.5	22.5
Total Split (s)	29.0		52.0		24.0	24.0	52.0
Total Split (%)	27.6%		49.5%		22.9%	22.9%	50%
Yellow Time (s)	3.0		3.0		3.0	3.0	3.5
All-Red Time (s)	0.0		1.0		1.0	1.0	1.0
Lost Time Adjust (s)	0.0		0.0		0.0	0.0	
Total Lost Time (s)	3.0		4.0		4.0	4.0	
Lead/Lag							
Lead-Lag Optimize?							
Recall Mode	Max		Max		Max	Max	Max
Act Effct Green (s)	75.0	76.5	48.0		20.0	20.0	
Actuated g/C Ratio	0.71	0.73	0.46		0.19	0.19	

Lanes, Volumes, Timings
 116: Cortland Street & Dominick Street

01/07/2019

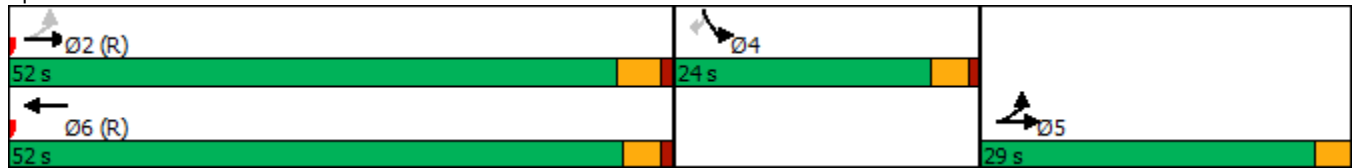


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	Ø2
v/c Ratio	0.40	0.52	0.44		0.10	0.28	
Control Delay	2.7	3.6	25.2		39.3	11.5	
Queue Delay	0.0	0.0	0.0		0.0	0.0	
Total Delay	2.7	3.6	25.2		39.3	11.5	
LOS	A	A	C		D	B	
Approach Delay		3.3	25.2		17.9		
Approach LOS		A	C		B		
Queue Length 50th (ft)	19	48	168		19	4	
Queue Length 95th (ft)	m31	m85	247		m40	m42	
Internal Link Dist (ft)		158	761		751		
Turn Bay Length (ft)	100				100		
Base Capacity (vph)	800	1312	819		332	383	
Starvation Cap Reductn	0	0	0		0	0	
Spillback Cap Reductn	0	0	0		0	0	
Storage Cap Reductn	0	0	0		0	0	
Reduced v/c Ratio	0.40	0.52	0.44		0.10	0.28	

Intersection Summary

Area Type: Other
 Cycle Length: 105
 Actuated Cycle Length: 105
 Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBT, Start of Green
 Natural Cycle: 60
 Control Type: Pretimed
 Maximum v/c Ratio: 0.52
 Intersection Signal Delay: 9.9
 Intersection Capacity Utilization 49.0%
 Analysis Period (min) 15
 Intersection LOS: A
 ICU Level of Service A
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 116: Cortland Street & Dominick Street



Intersection	
Intersection Delay, s/veh	13.8
Intersection LOS	B

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	W		T	T		T
Traffic Vol, veh/h	229	53	143	275	81	283
Future Vol, veh/h	229	53	143	275	81	283
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles, %	7	4	3	10	0	7
Mvmt Flow	234	54	146	281	83	289
Number of Lanes	1	0	1	1	0	1

Approach	WB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	2
Conflicting Approach Left	NB		WB
Conflicting Lanes Left	2	0	1
Conflicting Approach Right	SB	WB	
Conflicting Lanes Right	1	1	0
HCM Control Delay	14.5	11.5	15.8
HCM LOS	B	B	C

Lane	NBLn1	NBLn2	WBLn1	SBLn1
Vol Left, %	0%	0%	81%	22%
Vol Thru, %	100%	0%	0%	78%
Vol Right, %	0%	100%	19%	0%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	143	275	282	364
LT Vol	0	0	229	81
Through Vol	143	0	0	283
RT Vol	0	275	53	0
Lane Flow Rate	146	281	288	371
Geometry Grp	7	7	2	5
Degree of Util (X)	0.242	0.419	0.48	0.572
Departure Headway (Hd)	5.97	5.38	6.009	5.54
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	601	668	599	650
Service Time	3.712	3.122	4.051	3.579
HCM Lane V/C Ratio	0.243	0.421	0.481	0.571
HCM Control Delay	10.6	12	14.5	15.8
HCM Lane LOS	B	B	B	C
HCM 95th-tile Q	0.9	2.1	2.6	3.6

HCM 6th TWSC
18: Access Drive & Dickens Avenue

01/07/2019

Intersection						
Int Delay, s/veh	7.7					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	0	534	249	0	109	51
Future Vol, veh/h	0	534	249	0	109	51
Conflicting Peds, #/hr	0	0	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	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	580	271	0	118	55

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	580	0	832 290
Stage 1	-	-	-	-	290 -
Stage 2	-	-	-	-	542 -
Critical Hdwy	-	-	4.12	-	6.42 6.22
Critical Hdwy Stg 1	-	-	-	-	5.42 -
Critical Hdwy Stg 2	-	-	-	-	5.42 -
Follow-up Hdwy	-	-	2.218	-	3.518 3.318
Pot Cap-1 Maneuver	-	-	994	-	339 749
Stage 1	-	-	-	-	759 -
Stage 2	-	-	-	-	583 -
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	994	-	246 749
Mov Cap-2 Maneuver	-	-	-	-	246 -
Stage 1	-	-	-	-	759 -
Stage 2	-	-	-	-	424 -

Approach	EB	WB	NB
HCM Control Delay, s	0	10	30
HCM LOS			D

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	313	-	-	994	-
HCM Lane V/C Ratio	0.556	-	-	0.272	-
HCM Control Delay (s)	30	-	-	10	0
HCM Lane LOS	D	-	-	A	A
HCM 95th %tile Q(veh)	3.2	-	-	1.1	-

Intersection

Int Delay, s/veh 1.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	45	0	0	231	147	50
Future Vol, veh/h	45	0	0	231	147	50
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	0	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	49	0	0	251	160	54

Major/Minor

	Minor2	Major1	Major2			
Conflicting Flow All	411	160	214	0	-	0
Stage 1	160	-	-	-	-	-
Stage 2	251	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	597	885	1356	-	-	-
Stage 1	869	-	-	-	-	-
Stage 2	791	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	597	885	1356	-	-	-
Mov Cap-2 Maneuver	597	-	-	-	-	-
Stage 1	869	-	-	-	-	-
Stage 2	791	-	-	-	-	-

Approach

	EB	NB	SB
HCM Control Delay, s	11.6	0	0
HCM LOS	B		

Minor Lane/Major Mvmt

	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1356	-	597	-	-	-
HCM Lane V/C Ratio	-	-	0.082	-	-	-
HCM Control Delay (s)	0	-	11.6	0	-	-
HCM Lane LOS	A	-	B	A	-	-
HCM 95th %tile Q(veh)	0	-	0.3	-	-	-

HCM 6th TWSC
40: Cortland Street & Kingsbury Street

01/07/2019

Intersection

Int Delay, s/veh 18.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	78	591	7	0	299	152	105	0	41	0	0	1
Future Vol, veh/h	78	591	7	0	299	152	105	0	41	0	0	1
Conflicting Peds, #/hr	28	0	30	30	0	28	2	0	9	9	0	2
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	89	89	89	89	89	89	89	89	89	89	89	89
Heavy Vehicles, %	10	7	0	0	6	4	4	0	5	0	0	0
Mvmt Flow	88	664	8	0	336	171	118	0	46	0	0	1

Major/Minor	Major1	Major2	Minor2	Minor1
Conflicting Flow All	535	0	0	702
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Critical Hdwy	4.2	-	-	4.1
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-
Follow-up Hdwy	2.29	-	-	2.2
Pot Cap-1 Maneuver	994	-	-	905
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Platoon blocked, %	-	-	-	-
Mov Cap-1 Maneuver	967	-	-	879
Mov Cap-2 Maneuver	-	-	-	-
Stage 1	-	-	-	-
Stage 2	-	-	-	-

Approach	EB	WB	SE	NW
HCM Control Delay, s	1	0	155.2	13.4
HCM LOS			F	B

Minor Lane/Major Mvmt	NWLn1	EBL	EBT	EBR	WBL	WBT	WBR	SELn1
Capacity (veh/h)	430	967	-	-	879	-	-	152
HCM Lane V/C Ratio	0.003	0.091	-	-	-	-	-	1.079
HCM Control Delay (s)	13.4	9.1	0	-	0	-	-	155.2
HCM Lane LOS	B	A	A	-	A	-	-	F
HCM 95th %tile Q(veh)	0	0.3	-	-	0	-	-	8.6

Intersection						
Int Delay, s/veh	5.9					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	51	58	20	258	276	30
Future Vol, veh/h	51	58	20	258	276	30
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	0	-	-	100	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	55	63	22	280	300	33

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	795	162	0	0	302
Stage 1	162	-	-	-	-
Stage 2	633	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12
Critical Hdwy Stg 1	5.42	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218
Pot Cap-1 Maneuver	357	883	-	-	1259
Stage 1	867	-	-	-	-
Stage 2	529	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	272	883	-	-	1259
Mov Cap-2 Maneuver	272	-	-	-	-
Stage 1	867	-	-	-	-
Stage 2	403	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	15.1	0	7.9
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	272	883	1259	-
HCM Lane V/C Ratio	-	-	0.204	0.071	0.238	-
HCM Control Delay (s)	-	-	21.6	9.4	8.8	-
HCM Lane LOS	-	-	C	A	A	-
HCM 95th %tile Q(veh)	-	-	0.7	0.2	0.9	-

Intersection						
Int Delay, s/veh	3.5					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	14	37	171	105	160	78
Future Vol, veh/h	14	37	171	105	160	78
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	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	15	40	186	114	174	85

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	703	217	259	0	-	0
Stage 1	217	-	-	-	-	-
Stage 2	486	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	404	823	1306	-	-	-
Stage 1	819	-	-	-	-	-
Stage 2	618	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	343	823	1306	-	-	-
Mov Cap-2 Maneuver	343	-	-	-	-	-
Stage 1	695	-	-	-	-	-
Stage 2	618	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	11.4	5.1	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1306	-	343	823	-	-
HCM Lane V/C Ratio	0.142	-	0.044	0.049	-	-
HCM Control Delay (s)	8.2	0	16	9.6	-	-
HCM Lane LOS	A	A	C	A	-	-
HCM 95th %tile Q(veh)	0.5	-	0.1	0.2	-	-

Intersection						
Int Delay, s/veh	1.3					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	50	0	278	45	0	81
Future Vol, veh/h	50	0	278	45	0	81
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	0	-	-	100	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	54	0	302	49	0	88

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	415	327	0	0	351
Stage 1	327	-	-	-	-
Stage 2	88	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12
Critical Hdwy Stg 1	5.42	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218
Pot Cap-1 Maneuver	594	714	-	-	1208
Stage 1	731	-	-	-	-
Stage 2	935	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	594	714	-	-	1208
Mov Cap-2 Maneuver	594	-	-	-	-
Stage 1	731	-	-	-	-
Stage 2	935	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	11.7	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	594	-	1208
HCM Lane V/C Ratio	-	-	0.091	-	-
HCM Control Delay (s)	-	-	11.7	0	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.3	-	0

Capacity Analysis Output Sheets
Evening Peak Hour – Phase 1 Conditions

Lanes, Volumes, Timings
3: Damen Avenue & Webster Avenue

01/07/2019



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	15	184	21	148	251	15	32	261	245	410	383	126
Future Volume (vph)	15	184	21	148	251	15	32	261	245	410	383	126
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	13	12	12	10	11	10	10	10	11	11	11
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	25		0	0		0	60		60	280		100
Storage Lanes	1		0	1		1	1		1	1		1
Taper Length (ft)	25			25			90			60		
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	0.98	1.00		0.99		0.95			0.96	0.99		0.95
Frt		0.985				0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1805	1633	0	1770	1773	1561	1685	1478	1459	1694	1719	1546
Flt Permitted	0.598			0.467			0.154			0.507		
Satd. Flow (perm)	1117	1633	0	862	1773	1485	273	1478	1405	895	1719	1475
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		7				73			234			131
Link Speed (mph)		30			30			30				30
Link Distance (ft)		701			148			667				422
Travel Time (s)		15.9			3.4			15.2				9.6
Confl. Peds. (#/hr)	13		7	7		13	22		15	15		22
Confl. Bikes (#/hr)			2			5			14			6
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
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	1%	0%	2%	0%	0%	0%	2%	0%	3%	3%	1%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	8	0	9	0
Parking (#/hr)		9						10				
Mid-Block Traffic (%)		0%			0%			0%				0%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	16	214	0	154	261	16	33	272	255	427	399	131
Turn Type	Perm	NA		pm+pt	NA	Perm	Perm	NA	Perm	custom	NA	Perm
Protected Phases		4		3	8			2		1	16	
Permitted Phases	4			8		8	2		2	6		16
Detector Phase	4	4		3	8	8	2	2	2	1	16	16
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0	5.0	12.0	12.0	12.0	6.0		
Minimum Split (s)	24.0	24.0		8.0	25.0	25.0	25.0	25.0	25.0	9.0		
Total Split (s)	24.0	24.0		8.0	32.0	32.0	31.0	31.0	31.0	12.0		
Total Split (%)	32.0%	32.0%		10.7%	42.7%	42.7%	41.3%	41.3%	41.3%	16.0%		
Yellow Time (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0		
All-Red Time (s)	2.0	2.0		0.0	2.0	2.0	2.0	2.0	2.0	0.0		
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0		
Total Lost Time (s)	5.0	5.0		3.0	5.0	5.0	5.0	5.0	5.0	3.0		
Lead/Lag	Lag	Lag		Lead								
Lead-Lag Optimize?	Yes	Yes		Yes								
Recall Mode	Max	Max		Max	Max	Max	Max	Max	Max	Max		
Act Effect Green (s)	19.0	19.0		29.0	27.0	27.0	26.0	26.0	26.0	37.0	40.0	40.0
Actuated g/C Ratio	0.25	0.25		0.39	0.36	0.36	0.35	0.35	0.35	0.49	0.53	0.53

Lanes, Volumes, Timings
 3: Damen Avenue & Webster Avenue

01/07/2019

Lane Group	Ø6
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Grade (%)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Confl. Bikes (#/hr)	
Peak Hour Factor	
Growth Factor	
Heavy Vehicles (%)	
Bus Blockages (#/hr)	
Parking (#/hr)	
Mid-Block Traffic (%)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	6
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	12.0
Minimum Split (s)	25.0
Total Split (s)	31.0
Total Split (%)	41%
Yellow Time (s)	3.0
All-Red Time (s)	2.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Recall Mode	Max
Act Effct Green (s)	
Actuated g/C Ratio	

Lanes, Volumes, Timings
 3: Damen Avenue & Webster Avenue

01/07/2019

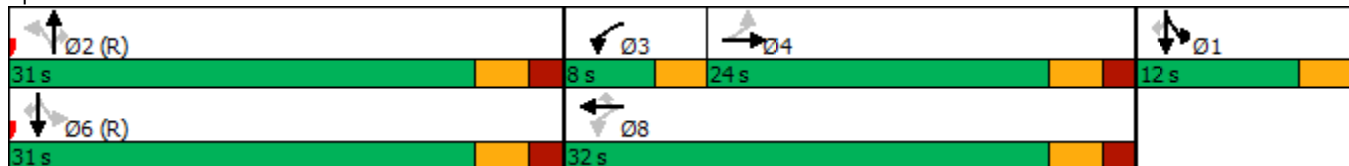


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.06	0.51		0.39	0.41	0.03	0.35	0.53	0.40	0.80	0.44	0.15
Control Delay	22.1	28.3		18.9	20.4	0.1	30.9	24.3	5.6	26.0	12.5	2.3
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.0
Total Delay	22.1	28.3		18.9	20.4	0.1	30.9	24.3	5.6	26.0	13.1	2.3
LOS	C	C		B	C	A	C	C	A	C	B	A
Approach Delay		27.9			19.2			16.1			17.4	
Approach LOS		C			B			B			B	
Queue Length 50th (ft)	6	82		47	89	0	11	100	6	115	105	0
Queue Length 95th (ft)	21	147		87	151	0	39	172	54	#226	169	23
Internal Link Dist (ft)		621			68			587			342	
Turn Bay Length (ft)	25						60		60	280		100
Base Capacity (vph)	282	418		393	638	581	94	512	639	537	916	847
Starvation Cap Reductn	0	0		0	0	0	0	0	0	0	215	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	0.06	0.51		0.39	0.41	0.03	0.35	0.53	0.40	0.80	0.57	0.15

Intersection Summary

Area Type: Other
 Cycle Length: 75
 Actuated Cycle Length: 75
 Offset: 30 (40%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
 Natural Cycle: 70
 Control Type: Pretimed
 Maximum v/c Ratio: 0.80
 Intersection Signal Delay: 18.5
 Intersection LOS: B
 Intersection Capacity Utilization 78.4%
 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.











Splits and Phases: 3: Damen Avenue & Webster Avenue



Lane Group	Ø6
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	
Intersection Summary	

Lanes, Volumes, Timings
6: Damen Avenue & I-90/94 Off Ramp

01/07/2019

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	233	373	278	0	0	681
Future Volume (vph)	233	373	278	0	0	681
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	9	9	12	12	12	12
Grade (%)	0%		0%			0%
Storage Length (ft)	0	0		0	0	
Storage Lanes	1	1		0	0	
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt		0.850				
Flt Protected	0.950					
Satd. Flow (prot)	1608	1439	1863	0	0	1800
Flt Permitted	0.950					
Satd. Flow (perm)	1608	1439	1863	0	0	1800
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		381				
Link Speed (mph)	30		30			30
Link Distance (ft)	211		422			303
Travel Time (s)	4.8		9.6			6.9
Confl. Peds. (#/hr)				8	8	
Confl. Bikes (#/hr)				10		
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	1%	1%	2%	0%	0%	3%
Bus Blockages (#/hr)	0	0	0	0	0	6
Parking (#/hr)						
Mid-Block Traffic (%)	0%		0%			0%
Shared Lane Traffic (%)						
Lane Group Flow (vph)	238	381	284	0	0	695
Turn Type	Prot	Prot	NA			NA
Protected Phases	8	8	2			6
Permitted Phases						
Detector Phase	8	8	2			6
Switch Phase						
Minimum Initial (s)	19.0	19.0	27.0			27.0
Minimum Split (s)	24.0	24.0	41.0			41.0
Total Split (s)	24.0	24.0	41.0			41.0
Total Split (%)	36.9%	36.9%	63.1%			63.1%
Yellow Time (s)	3.0	3.0	3.0			3.0
All-Red Time (s)	2.0	2.0	1.0			1.0
Lost Time Adjust (s)	0.0	0.0	0.0			0.0
Total Lost Time (s)	5.0	5.0	4.0			4.0
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	Max	Max	Max			Max
Act Effct Green (s)	19.0	19.0	37.0			37.0
Actuated g/C Ratio	0.29	0.29	0.57			0.57

Lanes, Volumes, Timings
 6: Damen Avenue & I-90/94 Off Ramp

01/07/2019



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
v/c Ratio	0.51	0.55	0.27			0.68
Control Delay	23.6	5.8	7.9			14.1
Queue Delay	0.0	0.0	0.0			0.0
Total Delay	23.6	5.8	7.9			14.1
LOS	C	A	A			B
Approach Delay	12.7		7.9			14.1
Approach LOS	B		A			B
Queue Length 50th (ft)	78	0	51			174
Queue Length 95th (ft)	140	56	88			286
Internal Link Dist (ft)	131		342			223
Turn Bay Length (ft)						
Base Capacity (vph)	470	690	1060			1024
Starvation Cap Reductn	0	0	0			0
Spillback Cap Reductn	0	0	0			0
Storage Cap Reductn	0	0	0			0
Reduced v/c Ratio	0.51	0.55	0.27			0.68

Intersection Summary

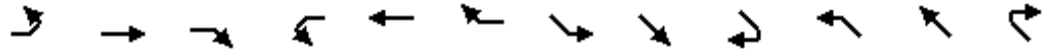
Area Type:	Other
Cycle Length:	65
Actuated Cycle Length:	65
Offset:	35 (54%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle:	65
Control Type:	Pretimed
Maximum v/c Ratio:	0.68
Intersection Signal Delay:	12.4
Intersection LOS:	B
Intersection Capacity Utilization:	61.4%
ICU Level of Service:	B
Analysis Period (min):	15

Splits and Phases: 6: Damen Avenue & I-90/94 Off Ramp



Lanes, Volumes, Timings
10: Elston Avenue & Webster Avenue

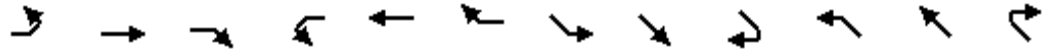
01/07/2019



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Traffic Volume (vph)	31	342	67	50	475	235	169	224	43	79	371	50
Future Volume (vph)	31	342	67	50	475	235	169	224	43	79	371	50
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	11	12	10	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	25		0	55		55	100		0	90		90
Storage Lanes	1		0	1		0	1		0	1		1
Taper Length (ft)	10			25			92			89		
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	0.99		0.99	0.99		0.99	0.99		0.98		0.94
Frt		0.975			0.950			0.976				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1805	1579	0	1805	1505	0	1805	1548	0	1770	1756	1615
Flt Permitted	0.122			0.386			0.312			0.454		
Satd. Flow (perm)	231	1579	0	728	1505	0	589	1548	0	826	1756	1521
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		13			32			10				52
Link Speed (mph)		30			30			30				30
Link Distance (ft)		900			1020			711				793
Travel Time (s)		20.5			23.2			16.2				18.0
Confl. Peds. (#/hr)	17		13	13		17	9		26	26		9
Confl. Bikes (#/hr)			5			6			2			23
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
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	1%	0%	0%	2%	1%	0%	1%	0%	2%	1%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)		7			8			10				
Mid-Block Traffic (%)		0%			0%			0%				0%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	33	431	0	53	747	0	178	281	0	83	391	53
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	Perm
Protected Phases		4			8		1	6		5	2	
Permitted Phases	4			8			6			2		2
Detector Phase	4	4		8	8		1	6		5	2	2
Switch Phase												
Minimum Initial (s)	25.0	25.0		25.0	25.0		5.0	34.0		5.0	34.0	34.0
Minimum Split (s)	50.0	50.0		50.0	50.0		9.5	40.0		9.5	40.0	40.0
Total Split (s)	55.0	55.0		55.0	55.0		10.0	40.0		10.0	40.0	40.0
Total Split (%)	52.4%	52.4%		52.4%	52.4%		9.5%	38.1%		9.5%	38.1%	38.1%
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
All-Red Time (s)	2.0	2.0		2.0	2.0		0.0	2.0		0.0	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
Total Lost Time (s)	5.0	5.0		5.0	5.0		3.0	5.0		3.0	5.0	5.0
Lead/Lag							Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	Yes
Recall Mode	Max	Max		Max	Max		Max	Max		Max	Max	Max
Act Effct Green (s)	50.0	50.0		50.0	50.0		44.0	35.0		44.0	35.0	35.0
Actuated g/C Ratio	0.48	0.48		0.48	0.48		0.42	0.33		0.42	0.33	0.33

Lanes, Volumes, Timings
 10: Elston Avenue & Webster Avenue

01/07/2019

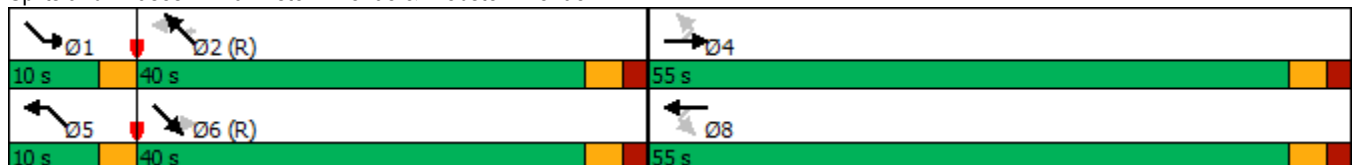


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
v/c Ratio	0.30	0.57		0.15	1.02		0.54	0.54		0.20	0.67	0.10
Control Delay	26.0	22.8		12.7	58.7		25.4	32.0		18.2	36.7	7.6
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	26.0	22.8		12.7	58.7		25.4	32.0		18.2	36.7	7.6
LOS	C	C		B	E		C	C		B	D	A
Approach Delay		23.0			55.6			29.4			30.9	
Approach LOS		C			E			C			C	
Queue Length 50th (ft)	13	195		13	~529		71	147		32	224	0
Queue Length 95th (ft)	41	294		m19	m#724		118	232		61	331	27
Internal Link Dist (ft)		820			940			631			713	
Turn Bay Length (ft)	25			55			100			90		90
Base Capacity (vph)	110	758		346	733		327	522		409	585	541
Starvation Cap Reductn	0	0		0	0		0	0		0	0	0
Spillback Cap Reductn	0	0		0	0		0	0		0	0	0
Storage Cap Reductn	0	0		0	0		0	0		0	0	0
Reduced v/c Ratio	0.30	0.57		0.15	1.02		0.54	0.54		0.20	0.67	0.10

Intersection Summary

Area Type: Other
 Cycle Length: 105
 Actuated Cycle Length: 105
 Offset: 0 (0%), Referenced to phase 2:NWTL and 6:SETL, Start of Green
 Natural Cycle: 100
 Control Type: Pretimed
 Maximum v/c Ratio: 1.02
 Intersection Signal Delay: 37.7 Intersection LOS: D
 Intersection Capacity Utilization 91.7% ICU Level of Service F
 Analysis Period (min) 15
 ~ Volume exceeds capacity, queue is theoretically infinite.
 Queue shown is maximum after two cycles.
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 10: Elston Avenue & Webster Avenue



Lanes, Volumes, Timings
 14: Ashland Avenue & Webster Avenue

01/07/2019



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	221	431	54	332	368	76	23	1276	212	26	1054	156
Future Volume (vph)	221	431	54	332	368	76	23	1276	212	26	1054	156
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	10	11	12	10	11	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	60		0	230		0	115		0	65		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	55			65			85			45		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor	0.99	0.99			0.99		0.99	0.99		1.00	0.99	
Frt		0.983			0.974			0.979			0.981	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1805	1853	0	1805	1820	0	1668	3311	0	1685	3235	0
Flt Permitted	0.192			0.133			0.089			0.089		
Satd. Flow (perm)	361	1853	0	253	1820	0	155	3311	0	158	3235	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		6			10			22			19	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1020			606			686			531	
Travel Time (s)		23.2			13.8			15.6			12.1	
Confl. Peds. (#/hr)	26		51	51		26	59		22	22		59
Confl. Bikes (#/hr)						4			1			3
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
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	0%	0%	0%	1%	1%	1%	1%	0%	0%	3%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	8	0	0	8	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	230	505	0	346	462	0	24	1550	0	27	1261	0
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	7	4		3	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	5.0	9.0		5.0	9.0		5.0	33.0		5.0	33.0	
Minimum Split (s)	8.0	32.0		8.0	36.0		8.0	48.0		8.0	48.0	
Total Split (s)	13.0	32.0		17.0	36.0		8.0	48.0		8.0	48.0	
Total Split (%)	12.4%	30.5%		16.2%	34.3%		7.6%	45.7%		7.6%	45.7%	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	0.0	2.0		0.0	2.0		0.0	2.0		0.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	3.0	5.0		3.0	5.0		3.0	5.0		3.0	5.0	
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	
Act Effct Green (s)	39.0	27.0		46.0	31.0		51.2	46.2		51.2	46.2	
Actuated g/C Ratio	0.37	0.26		0.44	0.30		0.49	0.44		0.49	0.44	

Lanes, Volumes, Timings
 14: Ashland Avenue & Webster Avenue

01/07/2019

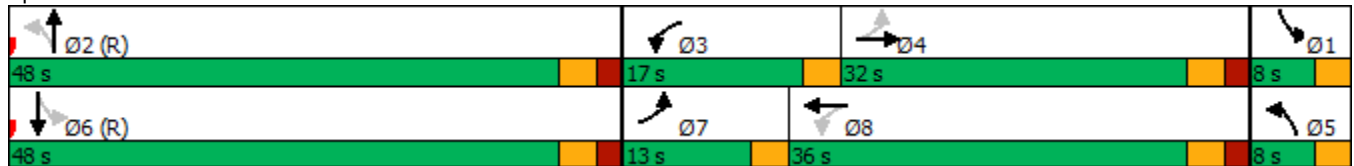


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.85	1.05		1.09	0.85		0.16	1.06		0.18	0.88	
Control Delay	51.9	95.8		96.5	42.2		10.5	64.4		16.0	35.9	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	51.9	95.8		96.5	42.2		10.5	64.4		16.0	35.9	
LOS	D	F		F	D		B	E		B	D	
Approach Delay		82.0			65.5			63.6			35.4	
Approach LOS		F			E			E			D	
Queue Length 50th (ft)	110	~376		~203	326		6	~654		9	416	
Queue Length 95th (ft)	#221	#584		m#334	m#422		m8	#798		23	#569	
Internal Link Dist (ft)		940			526			606			451	
Turn Bay Length (ft)	60			230			115			65		
Base Capacity (vph)	271	480		317	544		147	1468		149	1434	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.85	1.05		1.09	0.85		0.16	1.06		0.18	0.88	

Intersection Summary

Area Type: Other
 Cycle Length: 105
 Actuated Cycle Length: 105
 Offset: 60 (57%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
 Natural Cycle: 130
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 1.09
 Intersection Signal Delay: 58.8 Intersection LOS: E
 Intersection Capacity Utilization 98.8% ICU Level of Service F
 Analysis Period (min) 15
 ~ Volume exceeds capacity, queue is theoretically infinite.
 Queue shown is maximum after two cycles.
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 14: Ashland Avenue & Webster Avenue



Lanes, Volumes, Timings
17: Dominick Street & Webster Avenue

01/07/2019



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↗	↘			↕	
Traffic Volume (vph)	53	438	178	3	342	11	389	6	14	8	0	44
Future Volume (vph)	53	438	178	3	342	11	389	6	14	8	0	44
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	150		0	0		0
Storage Lanes	0		0	0		0	1		0	0		0
Taper Length (ft)	25			25			100			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		0.95			1.00		1.00	0.96			0.98	
Frt		0.964			0.996			0.893			0.885	
Flt Protected		0.996					0.950				0.993	
Satd. Flow (prot)	0	1489	0	0	1607	0	1805	1434	0	0	1424	0
Flt Permitted		0.943			0.997		0.764				0.977	
Satd. Flow (perm)	0	1406	0	0	1602	0	1448	1434	0	0	1394	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		31			3			15			46	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		606			562			753			140	
Travel Time (s)		13.8			12.8			17.1			3.2	
Confl. Peds. (#/hr)	25		51	51		25	1		12	12		1
Confl. Bikes (#/hr)			13			9			1			
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
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	0%	2%	0%	1%	0%	0%	0%	0%	0%	0%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)		8			8			4			6	
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	704	0	0	375	0	409	21	0	0	54	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Detector Phase	2	2		6	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	22.5	22.5		22.5	22.5		22.5	22.5		22.5	22.5	
Total Split (s)	67.0	67.0		67.0	67.0		38.0	38.0		38.0	38.0	
Total Split (%)	63.8%	63.8%		63.8%	63.8%		36.2%	36.2%		36.2%	36.2%	
Yellow Time (s)	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	
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 Optimize?												
Recall Mode	Max	Max		Max	Max		Max	Max		Max	Max	
Act Effct Green (s)		63.0			63.0		34.0	34.0			34.0	
Actuated g/C Ratio		0.60			0.60		0.32	0.32			0.32	

Lanes, Volumes, Timings
 17: Dominick Street & Webster Avenue

01/07/2019



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio		0.82			0.39		0.87	0.04				0.11
Control Delay		17.7			25.0		54.3	14.3				9.8
Queue Delay		0.8			0.0		0.0	0.0				0.0
Total Delay		18.5			25.0		54.3	14.3				9.8
LOS		B			C		D	B				A
Approach Delay		18.5			25.0			52.4				9.8
Approach LOS		B			C			D				A
Queue Length 50th (ft)		218			186		252	3				4
Queue Length 95th (ft)		m199			273		#436	m20				32
Internal Link Dist (ft)		526			482			673				60
Turn Bay Length (ft)							150					
Base Capacity (vph)		856			962		468	474				482
Starvation Cap Reductn		30			0		0	0				0
Spillback Cap Reductn		0			0		0	0				0
Storage Cap Reductn		0			0		0	0				0
Reduced v/c Ratio		0.85			0.39		0.87	0.04				0.11

Intersection Summary

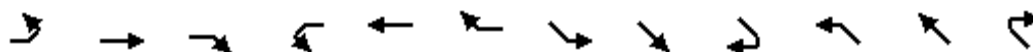
Area Type: Other
 Cycle Length: 105
 Actuated Cycle Length: 105
 Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
 Natural Cycle: 70
 Control Type: Pretimed
 Maximum v/c Ratio: 0.87
 Intersection Signal Delay: 29.1
 Intersection LOS: C
 Intersection Capacity Utilization 95.0%
 ICU Level of Service F
 Analysis Period (min) 15
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 17: Dominick Street & Webster Avenue



Lanes, Volumes, Timings
20: Clybourn Avenue & Webster Avenue

01/07/2019



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Traffic Volume (vph)	34	344	85	15	333	92	63	340	27	70	550	20
Future Volume (vph)	34	344	85	15	333	92	63	340	27	70	550	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	75		0	70		0	155		0	125		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	70			25			100			90		
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	0.99	0.98		0.98	0.99		0.98	1.00		0.98	1.00	
Frt		0.970			0.968			0.989			0.995	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1805	1583	0	1805	1777	0	1805	1604	0	1805	1632	0
Flt Permitted	0.270			0.266			0.217			0.385		
Satd. Flow (perm)	506	1583	0	495	1777	0	405	1604	0	720	1632	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		562			328			733			470	
Travel Time (s)		12.8			7.5			16.7			10.7	
Confl. Peds. (#/hr)	24		38	38		24	45		28	28		45
Confl. Bikes (#/hr)			11			3			6			41
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
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	1%	0%	0%	1%	7%	0%	1%	0%	0%	1%	1%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)		4						7			5	
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	37	466	0	16	462	0	68	399	0	76	620	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		custom	NA	
Protected Phases		4			8			6		5	2.5	
Permitted Phases	4			8			6			2		
Detector Phase	4	4		8	8		6	6		5	2.5	
Switch Phase												
Minimum Initial (s)	18.0	18.0		18.0	18.0		28.0	28.0		8.0		
Minimum Split (s)	44.0	44.0		44.0	44.0		50.0	50.0		11.0		
Total Split (s)	44.0	44.0		44.0	44.0		50.0	50.0		11.0		
Total Split (%)	41.9%	41.9%		41.9%	41.9%		47.6%	47.6%		10.5%		
Yellow Time (s)	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		0.0		
Lost Time Adjust (s)	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		3.0		
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	Max	Max		Max	Max		Max	Max		Max		
Act Effect Green (s)	39.0	39.0		39.0	39.0		45.0	45.0		55.0	56.0	
Actuated g/C Ratio	0.37	0.37		0.37	0.37		0.43	0.43		0.52	0.53	

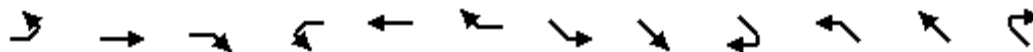
Lanes, Volumes, Timings
 20: Clybourn Avenue & Webster Avenue

01/07/2019

Lane Group	Ø2
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Grade (%)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Confl. Bikes (#/hr)	
Peak Hour Factor	
Growth Factor	
Heavy Vehicles (%)	
Bus Blockages (#/hr)	
Parking (#/hr)	
Mid-Block Traffic (%)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	2
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	28.0
Minimum Split (s)	50.0
Total Split (s)	50.0
Total Split (%)	48%
Yellow Time (s)	3.0
All-Red Time (s)	2.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Recall Mode	Max
Act Effct Green (s)	
Actuated g/C Ratio	

Lanes, Volumes, Timings
 20: Clybourn Avenue & Webster Avenue

01/07/2019

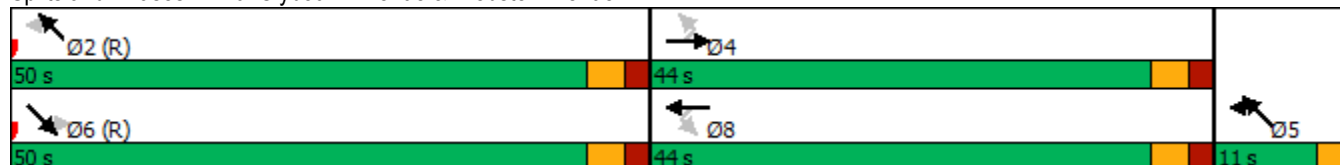


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
v/c Ratio	0.20	0.79		0.09	0.70		0.39	0.58		0.17	0.71	
Control Delay	13.0	24.4		18.2	25.2		29.2	27.0		12.0	24.2	
Queue Delay	0.0	0.0		0.0	2.7		0.0	0.0		0.0	7.3	
Total Delay	13.0	24.4		18.2	28.0		29.2	27.0		12.0	31.5	
LOS	B	C		B	C		C	C		B	C	
Approach Delay		23.6			27.6			27.4			29.4	
Approach LOS		C			C			C			C	
Queue Length 50th (ft)	12	235		5	153		31	199		23	299	
Queue Length 95th (ft)	m17	m391		m10	211		74	298		45	440	
Internal Link Dist (ft)		482			248			653			390	
Turn Bay Length (ft)	75			70			155			125		
Base Capacity (vph)	187	587		183	660		173	687		459	870	
Starvation Cap Reductn	0	0		0	106		0	0		0	206	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.20	0.79		0.09	0.83		0.39	0.58		0.17	0.93	

Intersection Summary

Area Type: Other
 Cycle Length: 105
 Actuated Cycle Length: 105
 Offset: 99 (94%), Referenced to phase 2:NWTL and 6:SETL, Start of Green
 Natural Cycle: 105
 Control Type: Pretimed
 Maximum v/c Ratio: 0.79
 Intersection Signal Delay: 27.2 Intersection LOS: C
 Intersection Capacity Utilization 99.0% ICU Level of Service F
 Analysis Period (min) 15
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 20: Clybourn Avenue & Webster Avenue



Lane Group	Ø2
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	
Intersection Summary	

Lanes, Volumes, Timings
 23: Southport Avenue & Webster Avenue

01/07/2019



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (vph)	113	189	9	33	316	36	3	199	44	14	142	121
Future Volume (vph)	113	189	9	33	316	36	3	199	44	14	142	121
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.99			0.99			0.99			0.97	
Frt		0.996			0.987			0.976			0.941	
Flt Protected		0.982			0.996			0.999			0.997	
Satd. Flow (prot)	0	1641	0	0	1598	0	0	1578	0	0	1469	0
Flt Permitted		0.718			0.953			0.997			0.980	
Satd. Flow (perm)	0	1188	0	0	1525	0	0	1575	0	0	1442	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		2			7			13			46	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		328			3065			332			507	
Travel Time (s)		7.5			69.7			7.5			11.5	
Confl. Peds. (#/hr)	23		23	23		23	16		17	17		16
Confl. Bikes (#/hr)			3			3			4			
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
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	0%	0%	5%	1%	6%	0%	1%	0%	0%	1%	2%
Bus Blockages (#/hr)	0	0	0	0	6	0	0	0	0	0	0	0
Parking (#/hr)		3			0			6			8	
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	324	0	0	401	0	0	256	0	0	289	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	22.5	22.5		22.5	22.5		22.5	22.5		22.5	22.5	
Total Split (s)	57.0	57.0		57.0	57.0		48.0	48.0		48.0	48.0	
Total Split (%)	54.3%	54.3%		54.3%	54.3%		45.7%	45.7%		45.7%	45.7%	
Yellow Time (s)	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	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		4.0			4.0			4.0			4.0	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	Max	Max		Max	Max		Max	Max		Max	Max	
Act Effct Green (s)		53.0			53.0			44.0			44.0	
Actuated g/C Ratio		0.50			0.50			0.42			0.42	

Lanes, Volumes, Timings
 23: Southport Avenue & Webster Avenue

01/07/2019

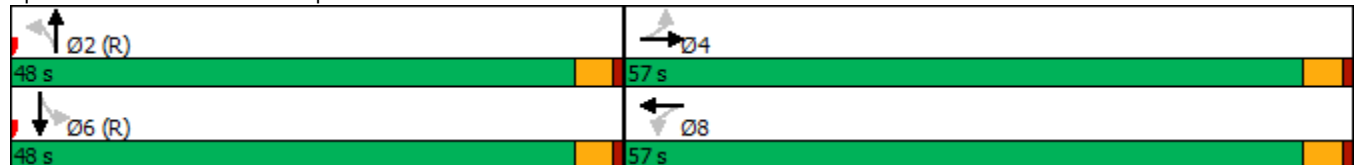


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio		0.54			0.52			0.38				0.46
Control Delay		9.4			20.1			22.1				21.0
Queue Delay		2.2			0.1			1.7				0.0
Total Delay		11.6			20.2			23.7				21.0
LOS		B			C			C				C
Approach Delay		11.6			20.2			23.7				21.0
Approach LOS		B			C			C				C
Queue Length 50th (ft)		44			171			110				114
Queue Length 95th (ft)		m57			260			177				190
Internal Link Dist (ft)		248			2985			252				427
Turn Bay Length (ft)												
Base Capacity (vph)		600			773			667				630
Starvation Cap Reductn		157			0			257				0
Spillback Cap Reductn		0			28			0				0
Storage Cap Reductn		0			0			0				0
Reduced v/c Ratio		0.73			0.54			0.62				0.46

Intersection Summary

Area Type: Other
 Cycle Length: 105
 Actuated Cycle Length: 105
 Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
 Natural Cycle: 45
 Control Type: Pretimed
 Maximum v/c Ratio: 0.54
 Intersection Signal Delay: 18.9
 Intersection Capacity Utilization 72.2%
 Analysis Period (min) 15
 Intersection LOS: B
 ICU Level of Service C
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 23: Southport Avenue & Webster Avenue



Lanes, Volumes, Timings

24: Southport Avenue & Clybourn Avenue & Shakespeare Avenue

01/07/2019



Lane Group	EBL2	EBL	EBR	EBR2	NBL2	NBL	NBT	NBR	SBL	SBT	SBR	SBR2
Lane Configurations												
Traffic Volume (vph)	11	21	27	6	2	95	188	10	87	87	16	29
Future Volume (vph)	11	21	27	6	2	95	188	10	87	87	16	29
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%					0%			0%		
Storage Length (ft)		0	0				0	0	0		0	
Storage Lanes		1	0				0	0	0		0	
Taper Length (ft)		25					25		25			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.82					0.99			0.97		
Frt		0.932					0.995			0.972		
Flt Protected		0.976					0.984			0.981		
Satd. Flow (prot)	0	1427	0	0	0	0	1819	0	0	1747	0	0
Flt Permitted		0.976					0.788			0.701		
Satd. Flow (perm)	0	1383	0	0	0	0	1443	0	0	1236	0	0
Right Turn on Red				Yes				No				No
Satd. Flow (RTOR)		90										
Link Speed (mph)		30					30			30		
Link Distance (ft)		271					320			332		
Travel Time (s)		6.2					7.3			7.5		
Confl. Peds. (#/hr)	11	48	27	43	14	11		27	27		14	11
Confl. Bikes (#/hr)								9			5	5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%					0%			0%		
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	71	0	0	0	0	320	0	0	239	0	0
Turn Type	Prot	Prot			Perm	Perm	NA		Perm	NA		
Protected Phases	4	4					2			6		
Permitted Phases	4				2	2			6			
Detector Phase	4	4			2	2	2		6	6		
Switch Phase												
Minimum Initial (s)	10.0	10.0			5.0	5.0	5.0		5.0	5.0		
Minimum Split (s)	15.0	15.0			27.0	27.0	27.0		27.0	27.0		
Total Split (s)	15.0	15.0			27.0	27.0	27.0		27.0	27.0		
Total Split (%)	17.6%	17.6%			31.8%	31.8%	31.8%		31.8%	31.8%		
Yellow Time (s)	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		
Lost Time Adjust (s)		0.0					0.0			0.0		
Total Lost Time (s)		5.0					5.0			5.0		
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	None	None			C-Max	C-Max	C-Max		C-Max	C-Max		
Act Effct Green (s)		10.0					26.9			26.9		
Actuated g/C Ratio		0.12					0.32			0.32		

Lanes, Volumes, Timings

24: Southport Avenue & Clybourn Avenue & Shakespeare Avenue

01/07/2019



Lane Group	SEL	SET	SER	SER2	NWL2	NWL	NWT	NWR
Lane Configurations								
Traffic Volume (vph)	27	401	38	8	12	32	582	79
Future Volume (vph)	27	401	38	8	12	32	582	79
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	13	12	12	12	10	13	12
Grade (%)		0%					0%	
Storage Length (ft)	115		0			115		0
Storage Lanes	1		0			1		0
Taper Length (ft)	90					100		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99	0.99				0.97	0.99	
Frt		0.985					0.982	
Flt Protected	0.950					0.950		
Satd. Flow (prot)	1652	1877	0	0	0	1652	1866	0
Flt Permitted	0.111					0.310		
Satd. Flow (perm)	190	1877	0	0	0	524	1866	0
Right Turn on Red				No				No
Satd. Flow (RTOR)								
Link Speed (mph)		30					30	
Link Distance (ft)		470					1318	
Travel Time (s)		10.7					30.0	
Confl. Peds. (#/hr)	48		43	14	43	14		48
Confl. Bikes (#/hr)			9	9				44
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0
Parking (#/hr)								
Mid-Block Traffic (%)		0%					0%	
Shared Lane Traffic (%)								
Lane Group Flow (vph)	29	486	0	0	0	48	719	0
Turn Type	Perm	NA			Perm	Perm	NA	
Protected Phases		14					10	
Permitted Phases	14				10	10		
Detector Phase	14	14			10	10	10	
Switch Phase								
Minimum Initial (s)	20.0	20.0			20.0	20.0	20.0	
Minimum Split (s)	43.0	43.0			43.0	43.0	43.0	
Total Split (s)	43.0	43.0			43.0	43.0	43.0	
Total Split (%)	50.6%	50.6%			50.6%	50.6%	50.6%	
Yellow Time (s)	3.0	3.0			3.0	3.0	3.0	
All-Red Time (s)	2.0	2.0			2.0	2.0	2.0	
Lost Time Adjust (s)	0.0	0.0				0.0	0.0	
Total Lost Time (s)	5.0	5.0				5.0	5.0	
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	None	None			None	None	None	
Act Effct Green (s)	36.1	36.1				36.1	36.1	
Actuated g/C Ratio	0.42	0.42				0.42	0.42	

Lanes, Volumes, Timings

24: Southport Avenue & Clybourn Avenue & Shakespeare Avenue

01/07/2019

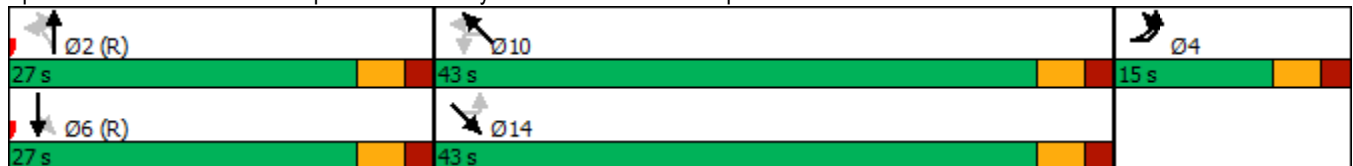


Lane Group	EBL2	EBL	EBR	EBR2	NBL2	NBL	NBT	NBR	SBL	SBT	SBR	SBR2
v/c Ratio		0.29					0.70			0.61		
Control Delay		8.8					38.8			36.1		
Queue Delay		0.0					0.0			0.0		
Total Delay		8.8					38.8			36.1		
LOS		A					D			D		
Approach Delay		8.8					38.8			36.1		
Approach LOS		A					D			D		
Queue Length 50th (ft)		0					163			117		
Queue Length 95th (ft)		27					#309			#231		
Internal Link Dist (ft)		191					240			252		
Turn Bay Length (ft)												
Base Capacity (vph)		247					456			390		
Starvation Cap Reductn		0					0			0		
Spillback Cap Reductn		0					0			0		
Storage Cap Reductn		0					0			0		
Reduced v/c Ratio		0.29					0.70			0.61		

Intersection Summary

Area Type: Other
 Cycle Length: 85
 Actuated Cycle Length: 85
 Offset: 41 (48%), Referenced to phase 2:NBT and 6:SBT, Start of Green
 Natural Cycle: 85
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.91
 Intersection Signal Delay: 32.5
 Intersection LOS: C
 Intersection Capacity Utilization 76.8%
 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.

Splits and Phases: 24: Southport Avenue & Clybourn Avenue & Shakespeare Avenue



Lanes, Volumes, Timings

24: Southport Avenue & Clybourn Avenue & Shakespeare Avenue

01/07/2019


























Lane Group	SEL	SET	SER	SER2	NWL2	NWL	NWT	NWR
v/c Ratio	0.36	0.61				0.22	0.91	
Control Delay	30.9	22.4				15.6	38.3	
Queue Delay	0.0	0.9				0.0	0.0	
Total Delay	30.9	23.3				15.6	38.3	
LOS	C	C				B	D	
Approach Delay		23.8					36.9	
Approach LOS		C					D	
Queue Length 50th (ft)	10	187				16	352	
Queue Length 95th (ft)	38	283				42	#566	
Internal Link Dist (ft)		390					1238	
Turn Bay Length (ft)	115					115		
Base Capacity (vph)	84	839				234	834	
Starvation Cap Reductn	0	144				0	0	
Spillback Cap Reductn	0	0				0	0	
Storage Cap Reductn	0	0				0	0	
Reduced v/c Ratio	0.35	0.70				0.21	0.86	

Intersection Summary

Lanes, Volumes, Timings
27: Ashland Avenue & Elston Avenue

01/07/2019

												
Lane Group	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations		 			  							
Traffic Volume (vph)	130	1270	0	129	1302	37	0	172	158	0	345	325
Future Volume (vph)	130	1270	0	129	1302	37	0	172	158	0	345	325
Ideal Flow (vphpl)	1900	2000	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	10	10	10	11	12	12	15	11	12	10	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	100		0	0		54	0		0
Storage Lanes	1		0	1		0	0		1	0		1
Taper Length (ft)	25			90			25			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.91	0.91	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99			1.00	1.00				0.99			0.96
Fr _t					0.996				0.850			0.850
Fl _t Protected	0.950			0.950								
Satd. Flow (prot)	1685	3512	0	1652	4783	0	0	2069	1546	0	1756	1599
Fl _t Permitted	0.121											
Satd. Flow (perm)	213	3512	0	1738	4783	0	0	2069	1524	0	1756	1530
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					5				139			73
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		255			412			778			308	
Travel Time (s)		5.8			9.4			17.7			7.0	
Confl. Peds. (#/hr)	84		1	1		84	3					3
Confl. Bikes (#/hr)			6			2			3			46
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
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	1%	0%	2%	3%	0%	0%	1%	1%	0%	1%	1%
Bus Blockages (#/hr)	0	0	0	0	8	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	137	1337	0	136	1410	0	0	181	166	0	363	342
Turn Type	pm+pt	NA		custom	NA			NA	Perm		NA	pm+ov
Protected Phases	5	2.5		1	1.6			4			8	1
Permitted Phases	2.5			6					4			8
Detector Phase	5	2.5		1	1.6			4	4		8	1
Switch Phase												
Minimum Initial (s)	21.0			8.0				5.0	5.0		5.0	8.0
Minimum Split (s)	26.0			11.0				35.0	35.0		35.0	11.0
Total Split (s)	26.0			11.0				35.0	35.0		35.0	11.0
Total Split (%)	24.8%			10.5%				33.3%	33.3%		33.3%	10.5%
Yellow Time (s)	3.0			3.0				3.0	3.0		3.0	3.0
All-Red Time (s)	2.0			0.0				2.0	2.0		2.0	0.0
Lost Time Adjust (s)	0.0			0.0				0.0	0.0		0.0	0.0
Total Lost Time (s)	5.0			3.0				5.0	5.0		5.0	3.0
Lead/Lag	Lag											
Lead-Lag Optimize?	Yes											
Recall Mode	Max			Max				Max	Max		Max	Max
Act Effct Green (s)	54.0	54.0		38.0	41.0			30.0	30.0		30.0	40.0
Actuated g/C Ratio	0.51	0.51		0.36	0.39			0.29	0.29		0.29	0.38













Lanes, Volumes, Timings
 27: Ashland Avenue & Elston Avenue

01/07/2019

Lane Group	Ø2	Ø6
Lane Configurations		
Traffic Volume (vph)		
Future Volume (vph)		
Ideal Flow (vphpl)		
Lane Width (ft)		
Grade (%)		
Storage Length (ft)		
Storage Lanes		
Taper Length (ft)		
Lane Util. Factor		
Ped Bike Factor		
Frt		
Flt Protected		
Satd. Flow (prot)		
Flt Permitted		
Satd. Flow (perm)		
Right Turn on Red		
Satd. Flow (RTOR)		
Link Speed (mph)		
Link Distance (ft)		
Travel Time (s)		
Confl. Peds. (#/hr)		
Confl. Bikes (#/hr)		
Peak Hour Factor		
Growth Factor		
Heavy Vehicles (%)		
Bus Blockages (#/hr)		
Parking (#/hr)		
Mid-Block Traffic (%)		
Shared Lane Traffic (%)		
Lane Group Flow (vph)		
Turn Type		
Protected Phases	2	6
Permitted Phases		
Detector Phase		
Switch Phase		
Minimum Initial (s)	30.0	5.0
Minimum Split (s)	38.0	33.0
Total Split (s)	59.0	33.0
Total Split (%)	56%	31%
Yellow Time (s)	3.0	3.0
All-Red Time (s)	2.0	2.0
Lost Time Adjust (s)		
Total Lost Time (s)		
Lead/Lag		Lead
Lead-Lag Optimize?		Yes
Recall Mode	Max	Max
Act Effct Green (s)		
Actuated g/C Ratio		

Lanes, Volumes, Timings
 27: Ashland Avenue & Elston Avenue

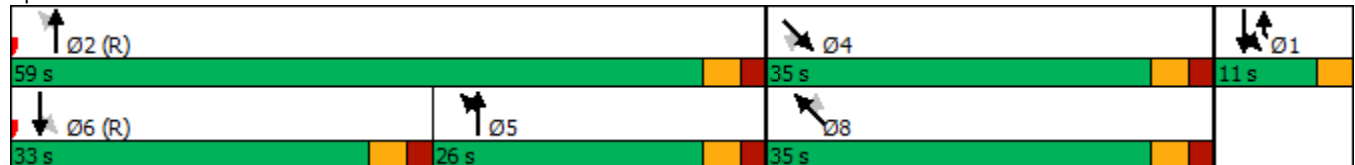
01/07/2019

												
Lane Group	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SET	SER	NWL	NWT	NWR
v/c Ratio	0.34	0.74		0.22	0.75			0.31	0.31		0.72	0.54
Control Delay	20.5	14.2		12.3	19.8			31.1	9.1		18.5	4.8
Queue Delay	76.8	19.8		0.0	0.3			0.2	0.0		1.1	0.2
Total Delay	97.3	34.0		12.3	20.1			31.3	9.1		19.6	5.0
LOS	F	C		B	C			C	A		B	A
Approach Delay		39.9			19.4			20.7			12.6	
Approach LOS		D			B			C			B	
Queue Length 50th (ft)	28	188		45	303			95	13		50	8
Queue Length 95th (ft)	m62	417		m48	m332			155	64		65	22
Internal Link Dist (ft)		175			332			698			228	
Turn Bay Length (ft)				100					54			
Base Capacity (vph)	403	1806		622	1870			591	534		501	633
Starvation Cap Reductn	297	502		0	0			0	0		34	35
Spillback Cap Reductn	0	0		0	89			84	4		0	0
Storage Cap Reductn	0	0		0	0			0	0		0	0
Reduced v/c Ratio	1.29	1.03		0.22	0.79			0.36	0.31		0.78	0.57

Intersection Summary

Area Type: Other
 Cycle Length: 105
 Actuated Cycle Length: 105
 Offset: 13 (12%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
 Natural Cycle: 105
 Control Type: Pretimed
 Maximum v/c Ratio: 0.75
 Intersection Signal Delay: 25.8 Intersection LOS: C
 Intersection Capacity Utilization 80.3% ICU Level of Service D
 Analysis Period (min) 15
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 27: Ashland Avenue & Elston Avenue



Lane Group	Ø2	Ø6
v/c Ratio		
Control Delay		
Queue Delay		
Total Delay		
LOS		
Approach Delay		
Approach LOS		
Queue Length 50th (ft)		
Queue Length 95th (ft)		
Internal Link Dist (ft)		
Turn Bay Length (ft)		
Base Capacity (vph)		
Starvation Cap Reductn		
Spillback Cap Reductn		
Storage Cap Reductn		
Reduced v/c Ratio		
Intersection Summary		

Lanes, Volumes, Timings
29: Ashland Avenue & Armitage Avenue

01/07/2019



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔↔			↕		↕	↕↔			↕↕	↕
Traffic Volume (vph)	633	238	29	4	492	0	32	762	3	0	887	638
Future Volume (vph)	633	238	29	4	492	0	32	762	3	0	887	638
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	10	12	10	10	10	10	9	16	12	11	11
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	110		0	0		0
Storage Lanes	0		0	0		0	1		0	0		1
Taper Length (ft)	25			25			60			25		
Lane Util. Factor	0.95	0.95	0.95	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	1.00
Ped Bike Factor		1.00			1.00		0.98	1.00				0.90
Frt		0.995						0.999				0.850
Flt Protected		0.966					0.950					
Satd. Flow (prot)	0	3205	0	0	1756	0	1685	3162	0	0	3388	1531
Flt Permitted		0.632			0.992		0.159					
Satd. Flow (perm)	0	2097	0	0	1742	0	277	3162	0	0	3388	1382
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		5										78
Link Speed (mph)		30			30			30				30
Link Distance (ft)		310			135			237				255
Travel Time (s)		7.0			3.1			5.4				5.8
Confl. Peds. (#/hr)	1		10	10		1	57		4	4		57
Confl. Bikes (#/hr)			3						3			
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
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	1%	1%	0%	0%	1%	0%	0%	1%	0%	0%	3%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	8	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%				0%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	928	0	0	511	0	33	789	0	0	914	658
Turn Type	pm+pt	NA		Perm	NA		Perm	NA			NA	pm+ov
Protected Phases	7	7 4			8			2			6 5	7
Permitted Phases	7 4			8			2					6 5
Detector Phase	7	7 4		8	8		2	2			6 5	7
Switch Phase												
Minimum Initial (s)	21.0			21.0	21.0		26.0	26.0				21.0
Minimum Split (s)	24.0			26.0	26.0		42.0	42.0				24.0
Total Split (s)	24.0			32.0	32.0		42.0	42.0				24.0
Total Split (%)	22.9%			30.5%	30.5%		40.0%	40.0%				22.9%
Yellow Time (s)	3.0			3.0	3.0		3.0	3.0				3.0
All-Red Time (s)	0.0			2.0	2.0		1.0	1.0				0.0
Lost Time Adjust (s)					0.0		0.0	0.0				0.0
Total Lost Time (s)					5.0		4.0	4.0				3.0
Lead/Lag	Lead			Lag	Lag							Lead
Lead-Lag Optimize?	Yes			Yes	Yes							Yes
Recall Mode	Max			Max	Max		Max	Max				Max
Act Effct Green (s)		53.0			27.0		38.0	38.0			45.0	67.0
Actuated g/C Ratio		0.50			0.26		0.36	0.36			0.43	0.64

Lanes, Volumes, Timings
 29: Ashland Avenue & Armitage Avenue

01/07/2019

Lane Group	Ø4	Ø5	Ø6
Lane Configurations			
Traffic Volume (vph)			
Future Volume (vph)			
Ideal Flow (vphpl)			
Lane Width (ft)			
Grade (%)			
Storage Length (ft)			
Storage Lanes			
Taper Length (ft)			
Lane Util. Factor			
Ped Bike Factor			
Frt			
Flt Protected			
Satd. Flow (prot)			
Flt Permitted			
Satd. Flow (perm)			
Right Turn on Red			
Satd. Flow (RTOR)			
Link Speed (mph)			
Link Distance (ft)			
Travel Time (s)			
Confl. Peds. (#/hr)			
Confl. Bikes (#/hr)			
Peak Hour Factor			
Growth Factor			
Heavy Vehicles (%)			
Bus Blockages (#/hr)			
Parking (#/hr)			
Mid-Block Traffic (%)			
Shared Lane Traffic (%)			
Lane Group Flow (vph)			
Turn Type			
Protected Phases	4	5	6
Permitted Phases			
Detector Phase			
Switch Phase			
Minimum Initial (s)	21.0	5.0	26.0
Minimum Split (s)	39.0	7.0	42.0
Total Split (s)	56.0	7.0	42.0
Total Split (%)	53%	7%	40%
Yellow Time (s)	3.0	2.0	3.0
All-Red Time (s)	2.0	0.0	1.0
Lost Time Adjust (s)			
Total Lost Time (s)			
Lead/Lag			
Lead-Lag Optimize?			
Recall Mode	Max	Max	Max
Act Effct Green (s)			
Actuated g/C Ratio			

Lanes, Volumes, Timings
29: Ashland Avenue & Armitage Avenue

01/07/2019

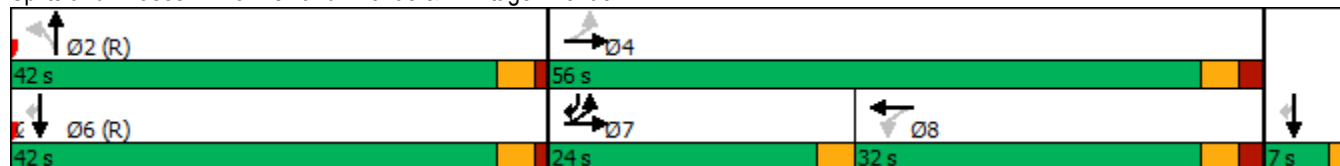


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio		1.61dl			1.14		0.33	0.69			0.63	0.70
Control Delay		18.2			102.4		30.8	24.1			10.8	11.0
Queue Delay		0.3			1.5		26.6	1.6			0.4	52.6
Total Delay		18.5			103.9		57.4	25.7			11.2	63.6
LOS		B			F		E	C			B	E
Approach Delay		18.5			103.9			27.0			33.1	
Approach LOS		B			F			C			C	
Queue Length 50th (ft)		210			~375		8	101			66	164
Queue Length 95th (ft)		270			m#538		m17	167			106	239
Internal Link Dist (ft)		230			55			157			175	
Turn Bay Length (ft)							110					
Base Capacity (vph)		1282			447		100	1144			1452	939
Starvation Cap Reductn		62			65		0	0			166	67
Spillback Cap Reductn		0			0		56	191			0	383
Storage Cap Reductn		0			0		0	0			0	0
Reduced v/c Ratio		0.76			1.34		0.75	0.83			0.71	1.18

Intersection Summary

Area Type: Other
 Cycle Length: 105
 Actuated Cycle Length: 105
 Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Green
 Natural Cycle: 100
 Control Type: Pretimed
 Maximum v/c Ratio: 1.14
 Intersection Signal Delay: 37.7 Intersection LOS: D
 Intersection Capacity Utilization 103.7% ICU Level of Service G
 Analysis Period (min) 15
 ~ Volume exceeds capacity, queue is theoretically infinite.
 Queue shown is maximum after two cycles.
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.
 m Volume for 95th percentile queue is metered by upstream signal.
 dl Defacto Left Lane. Recode with 1 though lane as a left lane.

Splits and Phases: 29: Ashland Avenue & Armitage Avenue



Lane Group	Ø4	Ø5	Ø6
v/c Ratio			
Control Delay			
Queue Delay			
Total Delay			
LOS			
Approach Delay			
Approach LOS			
Queue Length 50th (ft)			
Queue Length 95th (ft)			
Internal Link Dist (ft)			
Turn Bay Length (ft)			
Base Capacity (vph)			
Starvation Cap Reductn			
Spillback Cap Reductn			
Storage Cap Reductn			
Reduced v/c Ratio			
Intersection Summary			

Lanes, Volumes, Timings
30: Elston Avenue & Armitage Avenue

01/07/2019



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕	↗		↕		↗	↕↗		↗	↕	
Traffic Volume (vph)	7	6	229	4	111	20	383	638	4	8	290	0
Future Volume (vph)	7	6	229	4	111	20	383	638	4	8	290	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	2000	1900	1900	2000	1900
Lane Width (ft)	10	10	10	12	12	12	10	10	9	11	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	83		85	75		0
Storage Lanes	0		1	0		0	1		1	1		0
Taper Length (ft)	25			25			90			39		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	1.00	1.00
Ped Bike Factor			0.96		1.00		1.00	1.00		1.00		
Frt			0.850		0.980			0.999				
Flt Protected		0.974			0.999		0.950			0.950		
Satd. Flow (prot)	0	1727	1507	0	1826	0	1668	3273	0	1745	1980	0
Flt Permitted		0.842			0.994		0.302			0.160		
Satd. Flow (perm)	0	1493	1441	0	1816	0	530	3273	0	293	1980	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			209		7			1				
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		135			306			644			308	
Travel Time (s)		3.1			7.0			14.6			7.0	
Confl. Peds. (#/hr)	1		12	12		1	1		9	9		1
Confl. Bikes (#/hr)			1						56			3
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
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	0%	0%	0%	2%	0%	1%	2%	0%	0%	1%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)								3				
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	13	236	0	139	0	395	662	0	8	299	0
Turn Type	Perm	NA	pm+ov	Perm	NA		custom	NA		Perm	NA	
Protected Phases		7 4	5		8		5	2 5			6	
Permitted Phases	7 4		7 4	8			2			6		
Detector Phase	7 4	7 4	5	8	8		5	2 5		6	6	
Switch Phase												
Minimum Initial (s)			22.0	15.0	15.0		22.0			25.0	25.0	
Minimum Split (s)			26.0	20.0	20.0		26.0			29.0	29.0	
Total Split (s)			26.0	20.0	20.0		26.0			29.0	29.0	
Total Split (%)			24.8%	19.0%	19.0%		24.8%			27.6%	27.6%	
Yellow Time (s)			3.0	3.0	3.0		3.0			3.0	3.0	
All-Red Time (s)			1.0	2.0	2.0		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		5.0		4.0			4.0	4.0	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode			Max	Max	Max		Max			Max	Max	
Act Effct Green (s)		46.0	68.0		15.0		47.0	51.0		25.0	25.0	
Actuated g/C Ratio		0.44	0.65		0.14		0.45	0.49		0.24	0.24	

Lanes, Volumes, Timings
 30: Elston Avenue & Armitage Avenue

01/07/2019

Lane Group	Ø2	Ø4	Ø7
Lane Configurations			
Traffic Volume (vph)			
Future Volume (vph)			
Ideal Flow (vphpl)			
Lane Width (ft)			
Grade (%)			
Storage Length (ft)			
Storage Lanes			
Taper Length (ft)			
Lane Util. Factor			
Ped Bike Factor			
Frt			
Flt Protected			
Satd. Flow (prot)			
Flt Permitted			
Satd. Flow (perm)			
Right Turn on Red			
Satd. Flow (RTOR)			
Link Speed (mph)			
Link Distance (ft)			
Travel Time (s)			
Confl. Peds. (#/hr)			
Confl. Bikes (#/hr)			
Peak Hour Factor			
Growth Factor			
Heavy Vehicles (%)			
Bus Blockages (#/hr)			
Parking (#/hr)			
Mid-Block Traffic (%)			
Shared Lane Traffic (%)			
Lane Group Flow (vph)			
Turn Type			
Protected Phases	2	4	7
Permitted Phases			
Detector Phase			
Switch Phase			
Minimum Initial (s)	25.0	15.0	26.0
Minimum Split (s)	29.0	20.0	30.0
Total Split (s)	29.0	20.0	30.0
Total Split (%)	28%	19%	29%
Yellow Time (s)	3.0	3.0	4.0
All-Red Time (s)	1.0	2.0	0.0
Lost Time Adjust (s)			
Total Lost Time (s)			
Lead/Lag			
Lead-Lag Optimize?			
Recall Mode	Max	Max	Max
Act Effct Green (s)			
Actuated g/C Ratio			

Lanes, Volumes, Timings
 30: Elston Avenue & Armitage Avenue

01/07/2019

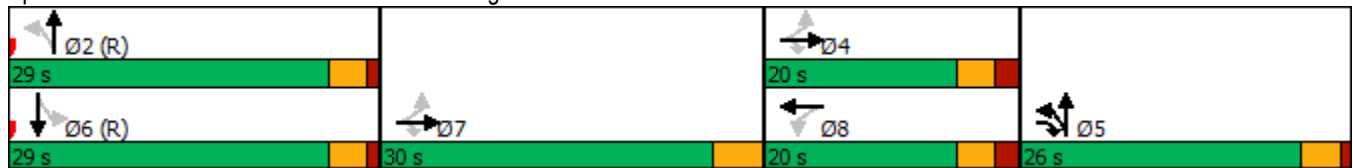


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio		0.02	0.23		0.52		0.83	0.42		0.12	0.63	
Control Delay		19.3	0.4		47.5		42.7	27.6		24.1	27.7	
Queue Delay		1.2	1.4		319.6		7.4	0.0		0.0	5.8	
Total Delay		20.5	1.8		367.1		50.1	27.6		24.1	33.5	
LOS		C	A		F		D	C		C	C	
Approach Delay		2.8			367.1			36.0			33.3	
Approach LOS		A			F			D			C	
Queue Length 50th (ft)		3	0		83		226	190		4	151	
Queue Length 95th (ft)		m6	m0		147		m#322	250		m15	239	
Internal Link Dist (ft)		55			226			564			228	
Turn Bay Length (ft)							83			75		
Base Capacity (vph)		654	1020		265		475	1590		69	471	
Starvation Cap Reductn		572	597		0		0	0		0	119	
Spillback Cap Reductn		0	0		262		52	5		0	0	
Storage Cap Reductn		0	0		0		0	0		0	0	
Reduced v/c Ratio		0.16	0.56		46.33		0.93	0.42		0.12	0.85	

Intersection Summary

Area Type: Other
 Cycle Length: 105
 Actuated Cycle Length: 105
 Offset: 96 (91%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
 Natural Cycle: 105
 Control Type: Pretimed
 Maximum v/c Ratio: 0.83
 Intersection Signal Delay: 57.1
 Intersection LOS: E
 Intersection Capacity Utilization 73.7%
 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: 30: Elston Avenue & Armitage Avenue



Lane Group	Ø2	Ø4	Ø7
v/c Ratio			
Control Delay			
Queue Delay			
Total Delay			
LOS			
Approach Delay			
Approach LOS			
Queue Length 50th (ft)			
Queue Length 95th (ft)			
Internal Link Dist (ft)			
Turn Bay Length (ft)			
Base Capacity (vph)			
Starvation Cap Reductn			
Spillback Cap Reductn			
Storage Cap Reductn			
Reduced v/c Ratio			
Intersection Summary			

Lanes, Volumes, Timings
 34: Ashland Avenue & Cortland Street

01/07/2019



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑	↗	↖	↖			↑↑			↑↑	
Traffic Volume (vph)	0	241	25	130	305	5	0	819	216	0	833	59
Future Volume (vph)	0	241	25	130	305	5	0	819	216	0	833	59
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	10	10	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	50		0	0		0	0		0
Storage Lanes	0		1	1		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor			0.91	0.97	1.00			0.99			0.99	
Frt			0.850		0.998			0.969			0.990	
Flt Protected				0.950								
Satd. Flow (prot)	0	1722	1449	1805	1840	0	0	3380	0	0	3430	0
Flt Permitted				0.350								
Satd. Flow (perm)	0	1722	1320	642	1840	0	0	3380	0	0	3430	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		30			30			30				30
Link Distance (ft)		309			414			596				210
Travel Time (s)		7.0			9.4			13.5				4.8
Confl. Peds. (#/hr)	42		70	70		42	80		29	29		80
Confl. Bikes (#/hr)			15			29						
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
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	3%	4%	0%	3%	0%	0%	1%	0%	0%	2%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	8	0	0	8	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%				0%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	254	26	137	326	0	0	1089	0	0	939	0
Turn Type		NA	Perm	Perm	NA			NA			NA	
Protected Phases		4			3 8			2			6	
Permitted Phases			4	3 8								
Detector Phase		4	4	3 8	3 8			2			6	
Switch Phase												
Minimum Initial (s)		12.0	12.0					40.0			40.0	
Minimum Split (s)		37.0	37.0					57.0			57.0	
Total Split (s)		37.0	37.0					57.0			57.0	
Total Split (%)		35.2%	35.2%					54.3%			54.3%	
Yellow Time (s)		3.0	3.0					3.0			3.0	
All-Red Time (s)		2.0	2.0					2.0			2.0	
Lost Time Adjust (s)		0.0	0.0					0.0			0.0	
Total Lost Time (s)		5.0	5.0					5.0			5.0	
Lead/Lag		Lag	Lag									
Lead-Lag Optimize?		Yes	Yes									
Recall Mode		Max	Max					Max			Max	
Act Effect Green (s)		32.0	32.0	45.0	45.0			52.0			52.0	
Actuated g/C Ratio		0.30	0.30	0.43	0.43			0.50			0.50	

Lanes, Volumes, Timings
 34: Ashland Avenue & Cortland Street

01/07/2019

Lane Group	Ø3	Ø8
Lane Configurations		
Traffic Volume (vph)		
Future Volume (vph)		
Ideal Flow (vphpl)		
Lane Width (ft)		
Grade (%)		
Storage Length (ft)		
Storage Lanes		
Taper Length (ft)		
Lane Util. Factor		
Ped Bike Factor		
Frt		
Flt Protected		
Satd. Flow (prot)		
Flt Permitted		
Satd. Flow (perm)		
Right Turn on Red		
Satd. Flow (RTOR)		
Link Speed (mph)		
Link Distance (ft)		
Travel Time (s)		
Confl. Peds. (#/hr)		
Confl. Bikes (#/hr)		
Peak Hour Factor		
Growth Factor		
Heavy Vehicles (%)		
Bus Blockages (#/hr)		
Parking (#/hr)		
Mid-Block Traffic (%)		
Shared Lane Traffic (%)		
Lane Group Flow (vph)		
Turn Type		
Protected Phases	3	8
Permitted Phases		
Detector Phase		
Switch Phase		
Minimum Initial (s)	8.0	12.0
Minimum Split (s)	11.0	37.0
Total Split (s)	11.0	48.0
Total Split (%)	10%	46%
Yellow Time (s)	3.0	3.0
All-Red Time (s)	0.0	2.0
Lost Time Adjust (s)		
Total Lost Time (s)		
Lead/Lag	Lead	
Lead-Lag Optimize?	Yes	
Recall Mode	Max	Max
Act Effct Green (s)		
Actuated g/C Ratio		

Lanes, Volumes, Timings
 34: Ashland Avenue & Cortland Street

01/07/2019

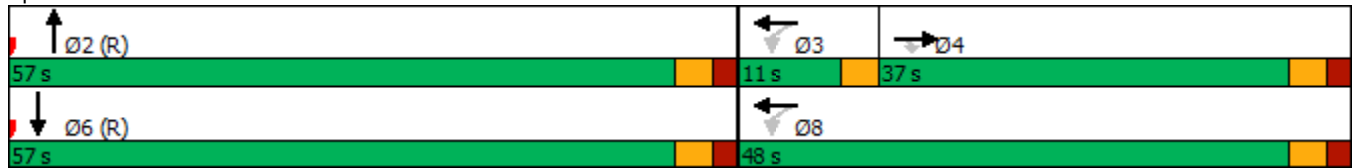


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio		0.48	0.06	0.50	0.41			0.65				0.55
Control Delay		33.6	26.6	11.6	8.0			22.0				3.1
Queue Delay		0.4	0.0	0.0	0.5			0.0				0.0
Total Delay		34.0	26.6	11.6	8.5			22.0				3.1
LOS		C	C	B	A			C				A
Approach Delay		33.3			9.4			22.0				3.1
Approach LOS		C			A			C				A
Queue Length 50th (ft)		139	12	23	54			276				17
Queue Length 95th (ft)		217	33	m33	m69			348				27
Internal Link Dist (ft)		229			334			516				130
Turn Bay Length (ft)				50								
Base Capacity (vph)		524	402	275	788			1673				1698
Starvation Cap Reductn		0	0	0	165			0				0
Spillback Cap Reductn		55	0	0	0			0				0
Storage Cap Reductn		0	0	0	0			0				0
Reduced v/c Ratio		0.54	0.06	0.50	0.52			0.65				0.55

Intersection Summary

Area Type: Other
 Cycle Length: 105
 Actuated Cycle Length: 105
 Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green
 Natural Cycle: 105
 Control Type: Pretimed
 Maximum v/c Ratio: 0.65
 Intersection Signal Delay: 14.7
 Intersection LOS: B
 Intersection Capacity Utilization 88.9%
 ICU Level of Service E
 Analysis Period (min) 15
 m Volume for 95th percentile queue is metered by upstream signal.
























Splits and Phases: 34: Ashland Avenue & Cortland Street



Lane Group	Ø3	Ø8
v/c Ratio		
Control Delay		
Queue Delay		
Total Delay		
LOS		
Approach Delay		
Approach LOS		
Queue Length 50th (ft)		
Queue Length 95th (ft)		
Internal Link Dist (ft)		
Turn Bay Length (ft)		
Base Capacity (vph)		
Starvation Cap Reductn		
Spillback Cap Reductn		
Storage Cap Reductn		
Reduced v/c Ratio		
Intersection Summary		

Lanes, Volumes, Timings
36: Elston Avenue & Cortland Street

01/07/2019

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	63	334	56	202	357	351	89	563	199	215	299	16
Future Volume (vph)	63	334	56	202	357	351	89	563	199	215	299	16
Ideal Flow (vphpl)	1900	1900	1900	1900	2000	1900	1900	2000	1900	1900	1900	1900
Lane Width (ft)	12	10	12	12	10	10	11	11	11	11	11	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	95		0	75		50	60		60	131		70
Storage Lanes	1		0	1		1	1		1	1		0
Taper Length (ft)	25			25			150			100		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.95	0.99		0.99		0.88	0.99		0.91	0.99	1.00	
Frt		0.979				0.850			0.850		0.992	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1489	0	1752	1620	1492	1745	1656	1546	1728	1549	0
Flt Permitted	0.476			0.194			0.085			0.226		
Satd. Flow (perm)	844	1489	0	353	1620	1307	155	1656	1403	407	1549	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		8				167			86			4
Link Speed (mph)		30			30			30				30
Link Distance (ft)		414			718			643				644
Travel Time (s)		9.4			16.3			14.6				14.6
Confl. Peds. (#/hr)	54		34	34		54	18		27	27		18
Confl. Bikes (#/hr)			17			25			60			4
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
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	0%	3%	2%	1%	0%	1%	1%	1%	1%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)		4			3			7				8
Mid-Block Traffic (%)		0%			0%			0%				0%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	66	406	0	210	372	366	93	586	207	224	328	0
Turn Type	Perm	NA		pm+pt	NA	pm+ov	Perm	NA	pm+ov	custom	NA	
Protected Phases		4		3	8	1		2	3	1	16	
Permitted Phases	4			8		8	2		2	6		
Detector Phase	4	4		3	8	1	2	2	3	1	16	
Switch Phase												
Minimum Initial (s)	17.0	17.0		5.0	17.0	7.0	37.0	37.0	5.0	7.0		
Minimum Split (s)	34.0	34.0		9.0	38.0	10.0	52.0	52.0	9.0	10.0		
Total Split (s)	34.0	34.0		9.0	43.0	10.0	52.0	52.0	9.0	10.0		
Total Split (%)	32.4%	32.4%		8.6%	41.0%	9.5%	49.5%	49.5%	8.6%	9.5%		
Yellow Time (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0		
All-Red Time (s)	2.0	2.0		0.0	2.0	0.0	2.0	2.0	0.0	0.0		
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0		
Total Lost Time (s)	5.0	5.0		3.0	5.0	3.0	5.0	5.0	3.0	3.0		
Lead/Lag	Lag	Lag		Lead					Lead			
Lead-Lag Optimize?	Yes	Yes		Yes					Yes			
Recall Mode	Max	Max		Max	Max	Max	Max	Max	Max	Max		
Act Effct Green (s)	29.0	29.0		40.0	38.0	47.0	47.0	47.0	55.0	56.0	59.0	
Actuated g/C Ratio	0.28	0.28		0.38	0.36	0.45	0.45	0.45	0.52	0.53	0.56	

Lane Group	Ø6
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Grade (%)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Confl. Bikes (#/hr)	
Peak Hour Factor	
Growth Factor	
Heavy Vehicles (%)	
Bus Blockages (#/hr)	
Parking (#/hr)	
Mid-Block Traffic (%)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	6
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	37.0
Minimum Split (s)	52.0
Total Split (s)	52.0
Total Split (%)	50%
Yellow Time (s)	3.0
All-Red Time (s)	2.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Recall Mode	Max
Act Effct Green (s)	
Actuated g/C Ratio	

Lanes, Volumes, Timings
 36: Elston Avenue & Cortland Street

01/07/2019

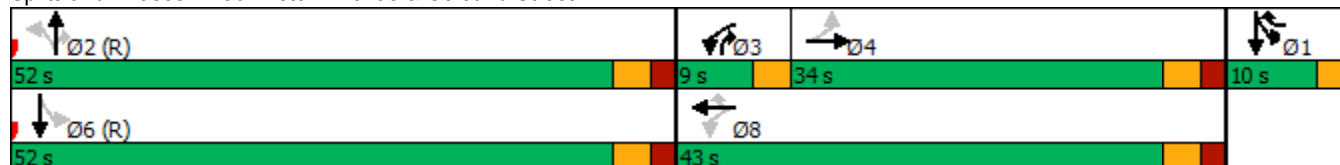


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.28	0.97		0.98	0.63	0.53	1.35	0.79	0.26	0.73	0.38	
Control Delay	31.7	66.7		76.1	28.1	7.0	255.9	34.2	7.9	27.9	10.5	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	31.7	66.7		76.1	28.1	7.0	255.9	34.2	7.9	27.9	10.5	
LOS	C	E		E	C	A	F	C	A	C	B	
Approach Delay		61.8			30.6			51.3			17.6	
Approach LOS		E			C			D			B	
Queue Length 50th (ft)	27	164		71	150	10	-82	327	37	61	91	
Queue Length 95th (ft)	m60	#444		#214	261	77	#142	480	76	#110	130	
Internal Link Dist (ft)		334			638			563			564	
Turn Bay Length (ft)	95			75		50	60		60	131		
Base Capacity (vph)	233	417		214	586	689	69	741	784	305	872	
Starvation Cap Reductn	0	0		0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0		0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0		0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.28	0.97		0.98	0.63	0.53	1.35	0.79	0.26	0.73	0.38	

Intersection Summary

Area Type: Other
 Cycle Length: 105
 Actuated Cycle Length: 105
 Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
 Natural Cycle: 105
 Control Type: Pretimed
 Maximum v/c Ratio: 1.35
 Intersection Signal Delay: 39.7 Intersection LOS: D
 Intersection Capacity Utilization 108.6% ICU Level of Service G
 Analysis Period (min) 15
 ~ Volume exceeds capacity, queue is theoretically infinite.
 Queue shown is maximum after two cycles.
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 36: Elston Avenue & Cortland Street

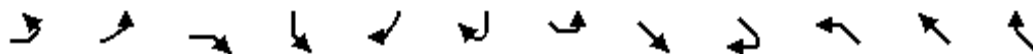


Lane Group	Ø6
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	
Intersection Summary	

Lanes, Volumes, Timings

39: Clybourn Avenue & Cortland Street & Racine Avenue

01/07/2019



Lane Group	EBL2	EBL	EBR	SBL	SBR	SBR2	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Traffic Volume (vph)	57	375	170	90	248	48	70	386	43	149	482	105
Future Volume (vph)	57	375	170	90	248	48	70	386	43	149	482	105
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	10	12	11	11	12	10	13	12	10	13	12
Grade (%)		0%		0%				0%			0%	
Storage Length (ft)		0	0	0	0		116		0	115		0
Storage Lanes		1	1	1	2		1		0	1		0
Taper Length (ft)		25		25			105			95		
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		0.96	0.94	0.95			0.81	0.99	0.99		0.99	0.99
Frt			0.850		0.850	0.850		0.985				0.973
Flt Protected		0.950		0.950			0.950			0.950		
Satd. Flow (prot)	0	1656	1538	1728	1303	1615	1685	1674	0	1636	1658	0
Flt Permitted		0.950		0.950			0.295			0.305		
Satd. Flow (perm)	0	1587	1438	1644	1303	1304	519	1674	0	518	1658	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		30		30				30			30	
Link Distance (ft)		208		134				578			1676	
Travel Time (s)		4.7		3.0				13.1			38.1	
Confl. Peds. (#/hr)	45		15	15		45	33		26	26		33
Confl. Bikes (#/hr)			6		15	15			2			28
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
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	2%	5%	1%	3%	0%	0%	0%	0%	3%	0%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)					8			6			5	
Mid-Block Traffic (%)		0%		0%				0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	450	177	94	258	50	73	447	0	155	611	0
Turn Type	Prot	Prot	Perm	Prot	Prot	Perm	Perm	NA		pm+pt	NA	
Protected Phases	4	4		8	8			6		5	2	
Permitted Phases	4		4			8	6			2		
Detector Phase	4	4	4	8	8	8	6	6		5	2	
Switch Phase												
Minimum Initial (s)	10.0	10.0	10.0	6.0	6.0	6.0	25.0	25.0		4.0	25.0	
Minimum Split (s)	23.0	23.0	23.0	18.0	18.0	18.0	42.0	42.0		7.0	43.0	
Total Split (s)	23.0	23.0	23.0	18.0	18.0	18.0	42.0	42.0		7.0	49.0	
Total Split (%)	25.6%	25.6%	25.6%	20.0%	20.0%	20.0%	46.7%	46.7%		7.8%	54.4%	
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		0.0	1.0	
Lost Time Adjust (s)		0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)		4.0	4.0	4.0	4.0	4.0	4.0	4.0		3.0	4.0	
Lead/Lag							Lag	Lag		Lead		
Lead-Lag Optimize?							Yes	Yes		Yes		
Recall Mode	None	None	None	None	None	None	C-Max	C-Max		None	C-Max	
Act Effct Green (s)		19.0	19.0	14.0	14.0	14.0	38.0	38.0		46.0	45.0	
Actuated g/C Ratio		0.21	0.21	0.16	0.16	0.16	0.42	0.42		0.51	0.50	

Lanes, Volumes, Timings

39: Clybourn Avenue & Cortland Street & Racine Avenue

01/07/2019

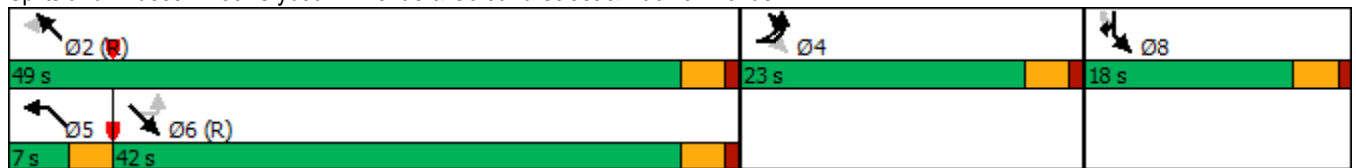


Lane Group	EBL2	EBL	EBR	SBL	SBR	SBR2	SEL	SET	SER	NWL	NWT	NWR
v/c Ratio		1.29	0.58	0.35	1.28	0.25	0.33	0.63		0.49	0.74	
Control Delay		182.4	40.8	38.2	191.6	37.0	22.9	25.5		18.5	24.5	
Queue Delay		4.3	7.9	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay		186.7	48.7	38.2	191.6	37.0	22.9	25.5		18.5	24.5	
LOS		F	D	D	F	D	C	C		B	C	
Approach Delay		147.7		136.5				25.1			23.2	
Approach LOS		F		F				C			C	
Queue Length 50th (ft)		~329	91	48	~187	25	27	195		45	262	
Queue Length 95th (ft)		#513	160	95	#337	60	65	299		81	400	
Internal Link Dist (ft)		128		54				498			1596	
Turn Bay Length (ft)							116			115		
Base Capacity (vph)		349	303	268	202	202	219	706		314	829	
Starvation Cap Reductn		104	88	0	0	0	0	0		0	0	
Spillback Cap Reductn		0	0	0	0	0	0	0		0	0	
Storage Cap Reductn		0	0	0	0	0	0	0		0	0	
Reduced v/c Ratio		1.84	0.82	0.35	1.28	0.25	0.33	0.63		0.49	0.74	

Intersection Summary

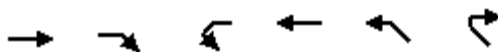
Area Type: Other
 Cycle Length: 90
 Actuated Cycle Length: 90
 Offset: 0 (0%), Referenced to phase 2:NWTL and 6:SETL, Start of Green
 Natural Cycle: 100
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 1.29
 Intersection Signal Delay: 77.0
 Intersection LOS: E
 Intersection Capacity Utilization 100.8%
 ICU Level of Service G
 Analysis Period (min) 15
 ~ Volume exceeds capacity, queue is theoretically infinite.
 Queue shown is maximum after two cycles.
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

Splits and Phases: 39: Clybourn Avenue & Cortland Street & Racine Avenue



Lanes, Volumes, Timings
44: Marcey Street & Cortland Street

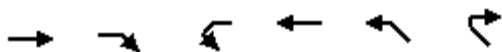
01/07/2019



Lane Group	EBT	EBR	WBL	WBT	NWL	NWR
Lane Configurations	↑↑			↑	↑	
Traffic Volume (vph)	554	141	5	443	281	57
Future Volume (vph)	554	141	5	443	281	57
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	12	12	11	12	12
Grade (%)	0%			0%	0%	
Storage Length (ft)		0	0		0	0
Storage Lanes		0	0		1	0
Taper Length (ft)			25		25	
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99			1.00	1.00	
Frt	0.970				0.977	
Flt Protected				0.999	0.960	
Satd. Flow (prot)	3187	0	0	1799	1506	0
Flt Permitted					0.960	
Satd. Flow (perm)	3187	0	0	1801	1506	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	32				10	
Link Speed (mph)	30			30	30	
Link Distance (ft)	275			208	405	
Travel Time (s)	6.3			4.7	9.2	
Confl. Peds. (#/hr)		13	13			11
Confl. Bikes (#/hr)		6				5
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	0%	0%	2%	3%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)					6	
Mid-Block Traffic (%)	0%			0%	0%	
Shared Lane Traffic (%)						
Lane Group Flow (vph)	748	0	0	481	363	0
Turn Type	NA		pm+pt	NA	Prot	
Protected Phases	2		1	6	3	
Permitted Phases			6			
Detector Phase	2		1	6	3	
Switch Phase						
Minimum Initial (s)	10.0		21.0	24.0	10.0	
Minimum Split (s)	21.0		25.0	39.0	21.0	
Total Split (s)	38.0		33.0	71.0	34.0	
Total Split (%)	36.2%		31.4%	67.6%	32.4%	
Yellow Time (s)	3.0		3.0	3.0	3.0	
All-Red Time (s)	1.0		1.0	1.0	1.0	
Lost Time Adjust (s)	0.0			0.0	0.0	
Total Lost Time (s)	4.0			4.0	4.0	
Lead/Lag	Lead		Lag			
Lead-Lag Optimize?	Yes		Yes			
Recall Mode	C-Max		Max	C-Max	None	
Act Effct Green (s)	36.3			69.3	27.7	
Actuated g/C Ratio	0.35			0.66	0.26	

Lanes, Volumes, Timings
 44: Marcey Street & Cortland Street

01/07/2019



Lane Group	EBT	EBR	WBL	WBT	NWL	NWR
v/c Ratio	0.67			0.40	0.90	
Control Delay	31.8			10.0	62.1	
Queue Delay	0.0			13.5	0.0	
Total Delay	31.8			23.5	62.1	
LOS	C			C	E	
Approach Delay	31.8			23.5	62.1	
Approach LOS	C			C	E	
Queue Length 50th (ft)	180			146	222	
Queue Length 95th (ft)	249			212	#380	
Internal Link Dist (ft)	195			128	325	
Turn Bay Length (ft)						
Base Capacity (vph)	1123			1189	437	
Starvation Cap Reductn	0			686	0	
Spillback Cap Reductn	0			0	0	
Storage Cap Reductn	0			0	0	
Reduced v/c Ratio	0.67			0.96	0.83	

Intersection Summary

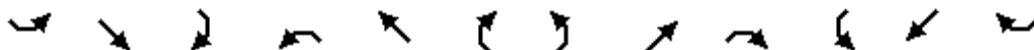
Area Type: Other
 Cycle Length: 105
 Actuated Cycle Length: 105
 Offset: 40 (38%), Referenced to phase 2:EBT and 6:WBTL, Start of Green
 Natural Cycle: 70
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.90
 Intersection Signal Delay: 36.2
 Intersection LOS: D
 Intersection Capacity Utilization 53.2%
 ICU Level of Service A
 Analysis Period (min) 15
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

Splits and Phases: 44: Marcey Street & Cortland Street



Lanes, Volumes, Timings
46: Magnolia Avenue & Clybourn Avenue

01/07/2019



Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	31	462	20	9	534	30	6	22	2	14	10	8
Future Volume (vph)	31	462	20	9	534	30	6	22	2	14	10	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	13	12	10	13	12	12	15	12	12	15	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	55		0	125		0	0		0	0		0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (ft)	100			100			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	0.99	1.00		0.99	1.00			0.99			0.97	
Flt		0.994			0.992			0.992			0.965	
Flt Protected	0.950			0.950				0.991			0.979	
Satd. Flow (prot)	1685	1675	0	1685	1670	0	0	2048	0	0	1946	0
Flt Permitted	0.406			0.452				0.950			0.876	
Satd. Flow (perm)	713	1675	0	795	1670	0	0	1951	0	0	1719	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		5			7			2			9	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1318			578			185			123	
Travel Time (s)		30.0			13.1			4.2			2.8	
Confl. Peds. (#/hr)	31		24	24		31	19		16	16		19
Confl. Bikes (#/hr)			4			23						
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)		8			8							
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	33	519	0	10	606	0	0	32	0	0	35	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		6			2			4			8	
Permitted Phases	6			2			4			8		
Detector Phase	6	6		2	2		4	4		8	8	
Switch Phase												
Minimum Initial (s)	49.0	49.0		49.0	49.0		15.0	15.0		15.0	15.0	
Minimum Split (s)	59.0	59.0		59.0	59.0		26.0	26.0		26.0	26.0	
Total Split (s)	59.0	59.0		59.0	59.0		26.0	26.0		26.0	26.0	
Total Split (%)	69.4%	69.4%		69.4%	69.4%		30.6%	30.6%		30.6%	30.6%	
Yellow Time (s)	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	
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?												
Recall Mode	C-Max	C-Max		C-Max	C-Max		None	None		None	None	
Act Effect Green (s)	71.2	71.2		71.2	71.2			15.0			15.0	
Actuated g/C Ratio	0.84	0.84		0.84	0.84			0.18			0.18	

Lanes, Volumes, Timings
 46: Magnolia Avenue & Clybourn Avenue

01/07/2019

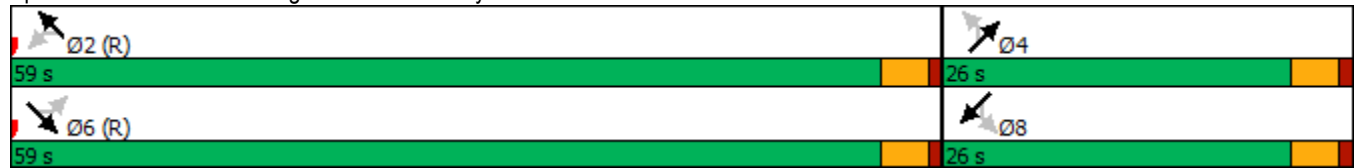


Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
v/c Ratio	0.06	0.37		0.02	0.43			0.09				0.11
Control Delay	2.5	3.9		3.2	4.7			28.8				24.8
Queue Delay	0.0	0.0		0.0	0.2			0.0				0.0
Total Delay	2.5	3.9		3.2	4.9			28.8				24.8
LOS	A	A		A	A			C				C
Approach Delay		3.8			4.9			28.8				24.8
Approach LOS		A			A			C				C
Queue Length 50th (ft)	3	53		1	111			14				12
Queue Length 95th (ft)	m5	71		5	172			38				37
Internal Link Dist (ft)		1238			498			105				43
Turn Bay Length (ft)	55			125								
Base Capacity (vph)	597	1404		665	1400			506				451
Starvation Cap Reductn	0	0		0	246			0				0
Spillback Cap Reductn	0	0		0	0			0				0
Storage Cap Reductn	0	0		0	0			0				0
Reduced v/c Ratio	0.06	0.37		0.02	0.53			0.06				0.08

Intersection Summary

Area Type: Other
 Cycle Length: 85
 Actuated Cycle Length: 85
 Offset: 18 (21%), Referenced to phase 2:NWTL and 6:SETL, Start of Green
 Natural Cycle: 85
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.43
 Intersection Signal Delay: 5.6
 Intersection Capacity Utilization 67.7%
 Analysis Period (min) 15
 Intersection LOS: A
 ICU Level of Service C
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 46: Magnolia Avenue & Clybourn Avenue



Lanes, Volumes, Timings

75: Armitage Avenue & I-90/94 East Ramps

01/07/2019



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SBL	SBR	NWL	NWR	NWR2
Lane Configurations											
Traffic Volume (vph)	223	466	0	0	638	541	0	0	386	0	473
Future Volume (vph)	223	466	0	0	638	541	0	0	386	0	473
Ideal Flow (vphpl)	1900	2000	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	12	12	12	16	12	12	12	12	12	12
Grade (%)		0%			0%		0%		0%		
Storage Length (ft)	0		0	0		0	0	0	0	0	
Storage Lanes	1		0	0		0	0	0	1	1	
Taper Length (ft)	25			25			25		25		
Lane Util. Factor	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor					0.99						
Frt					0.938						0.850
Flt Protected	0.950								0.950		
Satd. Flow (prot)	1685	3762	0	0	1966	0	0	0	1787	0	1615
Flt Permitted	0.065								0.950		
Satd. Flow (perm)	115	3762	0	0	1966	0	0	0	1787	0	1615
Right Turn on Red			Yes			Yes		Yes			Yes
Satd. Flow (RTOR)					64						340
Link Speed (mph)		30			30		30		30		
Link Distance (ft)		380			200		278		293		
Travel Time (s)		8.6			4.5		6.3		6.7		
Confl. Peds. (#/hr)	5		52	52		5					1
Confl. Bikes (#/hr)			1								
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
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	1%	0%	0%	2%	1%	0%	0%	1%	0%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)											
Mid-Block Traffic (%)		0%			0%		0%		0%		
Shared Lane Traffic (%)											
Lane Group Flow (vph)	237	496	0	0	1255	0	0	0	411	0	503
Turn Type	pm+pt	NA			NA				Prot		Prot
Protected Phases	7	4			8				5		5
Permitted Phases	4										
Detector Phase	7	4			8				5		5
Switch Phase											
Minimum Initial (s)	5.0	29.0			29.0				25.0		25.0
Minimum Split (s)	13.0	54.0			53.0				30.0		30.0
Total Split (s)	13.0	75.0			62.0				30.0		30.0
Total Split (%)	12.4%	71.4%			59.0%				28.6%		28.6%
Yellow Time (s)	3.0	3.0			3.0				3.0		3.0
All-Red Time (s)	2.0	2.0			2.0				2.0		2.0
Lost Time Adjust (s)	0.0	0.0			0.0				0.0		0.0
Total Lost Time (s)	5.0	5.0			5.0				5.0		5.0
Lead/Lag	Lag				Lead						
Lead-Lag Optimize?	Yes				Yes						
Recall Mode	Max	Max			Max				Max		Max
Act Effct Green (s)	70.0	70.0			57.0				25.0		25.0
Actuated g/C Ratio	0.67	0.67			0.54				0.24		0.24

Lanes, Volumes, Timings
75: Armitage Avenue & I-90/94 East Ramps

01/07/2019



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SBL	SBR	NWL	NWR	NWR2
v/c Ratio	1.21	0.20			1.15				0.97		0.78
Control Delay	163.6	5.4			97.8				76.9		21.6
Queue Delay	0.0	0.0			0.6				0.0		0.0
Total Delay	163.6	5.4			98.3				76.9		21.6
LOS	F	A			F				E		C
Approach Delay		56.6			98.3				46.5		
Approach LOS		E			F				D		
Queue Length 50th (ft)	~152	64			~954				274		101
Queue Length 95th (ft)	#312	87			m#1018				#466		#244
Internal Link Dist (ft)		300			120		198		213		
Turn Bay Length (ft)											
Base Capacity (vph)	196	2508			1096				425		643
Starvation Cap Reductn	0	0			122				0		0
Spillback Cap Reductn	0	0			21				0		0
Storage Cap Reductn	0	0			0				0		0
Reduced v/c Ratio	1.21	0.20			1.29				0.97		0.78

Intersection Summary

Area Type: Other
 Cycle Length: 105
 Actuated Cycle Length: 105
 Offset: 103 (98%), Referenced to phase 5:NWL, Start of Green
 Natural Cycle: 140
 Control Type: Pretimed
 Maximum v/c Ratio: 1.21
 Intersection Signal Delay: 71.4 Intersection LOS: E
 Intersection Capacity Utilization 113.1% 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: 75: Armitage Avenue & I-90/94 East Ramps



Lanes, Volumes, Timings
78: Armitage Avenue & I-90/94 West Ramps

01/07/2019



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑			↑↑			↑↓		↑↑	↑	↑
Traffic Volume (vph)	0	550	9	10	614	0	30	0	64	306	49	249
Future Volume (vph)	0	550	9	10	614	0	30	0	64	306	49	249
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	0		0	0		0	0		0	2		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	0.97	1.00	1.00
Ped Bike Factor		1.00			1.00			0.99				0.96
Frt		0.998						0.909				0.850
Flt Protected					0.999			0.984		0.950		
Satd. Flow (prot)	0	3486	0	0	3431	0	0	1699	0	3367	1892	1583
Flt Permitted					0.954			0.872		0.950		
Satd. Flow (perm)	0	3486	0	0	3274	0	0	1494	0	3367	1892	1523
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		2						135				262
Link Speed (mph)		30			30			30				30
Link Distance (ft)		653			126			236				708
Travel Time (s)		14.8			2.9			5.4				16.1
Confl. Peds. (#/hr)	6		59	59		6	16					16
Confl. Bikes (#/hr)			3									
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
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	3%	0%	0%	5%	0%	0%	0%	0%	4%	0%	2%
Bus Blockages (#/hr)	0	1	0	0	1	0	0	0	0	0	1	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%				0%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	588	0	0	657	0	0	99	0	322	52	262
Turn Type		NA		D,P+P	NA		Perm	NA		Split	NA	Perm
Protected Phases		4		8 10	4 8 10			2		6	6	
Permitted Phases				4			2					6
Detector Phase		4		8 10	4 8 10		2	2		6	6	6
Switch Phase												
Minimum Initial (s)		21.0					10.0	10.0		6.0	6.0	6.0
Minimum Split (s)		36.0					15.0	15.0		24.0	24.0	24.0
Total Split (s)		39.0					15.0	15.0		24.0	24.0	24.0
Total Split (%)		37.1%					14.3%	14.3%		22.9%	22.9%	22.9%
Yellow Time (s)		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
Lost Time Adjust (s)		0.0						0.0		0.0	0.0	0.0
Total Lost Time (s)		3.0						5.0		5.0	5.0	5.0
Lead/Lag		Lead								Lead	Lead	Lead
Lead-Lag Optimize?		Yes								Yes	Yes	Yes
Recall Mode		Max					Max	Max		Max	Max	Max
Act Effct Green (s)		36.0			57.0			10.0		19.0	19.0	19.0
Actuated g/C Ratio		0.34			0.54			0.10		0.18	0.18	0.18

Lanes, Volumes, Timings
 78: Armitage Avenue & I-90/94 West Ramps

01/07/2019

Lane Group	Ø8	Ø10
Lane Configurations		
Traffic Volume (vph)		
Future Volume (vph)		
Ideal Flow (vphpl)		
Lane Width (ft)		
Grade (%)		
Storage Length (ft)		
Storage Lanes		
Taper Length (ft)		
Lane Util. Factor		
Ped Bike Factor		
Frt		
Flt Protected		
Satd. Flow (prot)		
Flt Permitted		
Satd. Flow (perm)		
Right Turn on Red		
Satd. Flow (RTOR)		
Link Speed (mph)		
Link Distance (ft)		
Travel Time (s)		
Confl. Peds. (#/hr)		
Confl. Bikes (#/hr)		
Peak Hour Factor		
Growth Factor		
Heavy Vehicles (%)		
Bus Blockages (#/hr)		
Parking (#/hr)		
Mid-Block Traffic (%)		
Shared Lane Traffic (%)		
Lane Group Flow (vph)		
Turn Type		
Protected Phases	8	10
Permitted Phases		
Detector Phase		
Switch Phase		
Minimum Initial (s)	18.0	1.0
Minimum Split (s)	21.0	6.0
Total Split (s)	21.0	6.0
Total Split (%)	20%	6%
Yellow Time (s)	3.0	3.0
All-Red Time (s)	0.0	2.0
Lost Time Adjust (s)		
Total Lost Time (s)		
Lead/Lag	Lag	Lag
Lead-Lag Optimize?	Yes	Yes
Recall Mode	Max	Max
Act Effct Green (s)		
Actuated g/C Ratio		

Lanes, Volumes, Timings
78: Armitage Avenue & I-90/94 West Ramps

01/07/2019

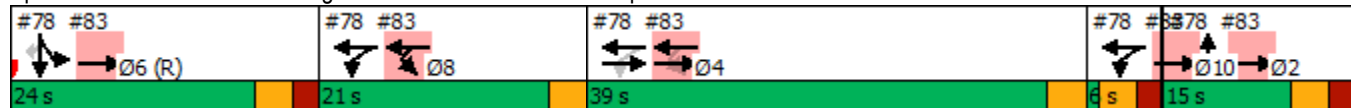


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio		0.49			0.36			0.38		0.53	0.15	0.53
Control Delay		28.9			0.5			7.5		42.6	37.7	9.2
Queue Delay		0.0			1.5			0.0		0.0	0.0	0.0
Total Delay		28.9			2.0			7.5		42.6	37.7	9.2
LOS		C			A			A		D	D	A
Approach Delay		28.9			2.0			7.5			28.4	
Approach LOS		C			A			A			C	
Queue Length 50th (ft)		162			0			0		102	30	0
Queue Length 95th (ft)		215			m0			26		147	64	70
Internal Link Dist (ft)		573			46			156			628	
Turn Bay Length (ft)												
Base Capacity (vph)		1196			1808			264		609	342	490
Starvation Cap Reductn		0			920			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		0.49			0.74			0.38		0.53	0.15	0.53

Intersection Summary

Area Type: Other
 Cycle Length: 105
 Actuated Cycle Length: 105
 Offset: 0 (0%), Referenced to phase 6:SBTL, Start of Green
 Natural Cycle: 105
 Control Type: Pretimed
 Maximum v/c Ratio: 0.86
 Intersection Signal Delay: 18.8
 Intersection LOS: B
 Intersection Capacity Utilization 64.5%
 ICU Level of Service C
 Analysis Period (min) 15
 m Volume for 95th percentile queue is metered by upstream signal.

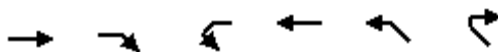
Splits and Phases: 78: Armitage Avenue & I-90/94 West Ramps



Lane Group	Ø8	Ø10
v/c Ratio		
Control Delay		
Queue Delay		
Total Delay		
LOS		
Approach Delay		
Approach LOS		
Queue Length 50th (ft)		
Queue Length 95th (ft)		
Internal Link Dist (ft)		
Turn Bay Length (ft)		
Base Capacity (vph)		
Starvation Cap Reductn		
Spillback Cap Reductn		
Storage Cap Reductn		
Reduced v/c Ratio		
Intersection Summary		

Lanes, Volumes, Timings
83: I-90/94 EB On Ramp & Armitage Avenue

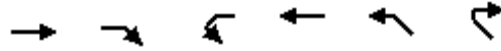
01/07/2019



Lane Group	EBT	EBR	WBL	WBT	NWL	NWR	Ø2	Ø4	Ø6	Ø10
Lane Configurations	↑↑↑			↑↑						
Traffic Volume (vph)	608	311	387	637	0	0				
Future Volume (vph)	608	311	387	637	0	0				
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900				
Lane Width (ft)	12	12	12	12	12	12				
Grade (%)	0%			0%	0%					
Storage Length (ft)		0	0		0	0				
Storage Lanes		0	0		0	0				
Taper Length (ft)			25		25					
Lane Util. Factor	0.91	0.91	0.95	0.95	1.00	1.00				
Ped Bike Factor	0.98			0.99						
Frt	0.949									
Flt Protected				0.981						
Satd. Flow (prot)	4773	0	0	3472	0	0				
Flt Permitted				0.544						
Satd. Flow (perm)	4773	0	0	1908	0	0				
Right Turn on Red		Yes				Yes				
Satd. Flow (RTOR)	250									
Link Speed (mph)	30			30	30					
Link Distance (ft)	126			380	301					
Travel Time (s)	2.9			8.6	6.8					
Confl. Peds. (#/hr)		59	59							
Confl. Bikes (#/hr)		3								
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95				
Growth Factor	100%	100%	100%	100%	100%	100%				
Heavy Vehicles (%)	1%	1%	2%	2%	2%	2%				
Bus Blockages (#/hr)	0	0	0	0	0	0				
Parking (#/hr)										
Mid-Block Traffic (%)	0%			0%	0%					
Shared Lane Traffic (%)										
Lane Group Flow (vph)	967	0	0	1078	0	0				
Turn Type	NA		pm+pt	NA						
Protected Phases	2 4 6 10		8	4 8			2	4	6	10
Permitted Phases			4 8							
Detector Phase	2 4 6 10		8	4 8						
Switch Phase										
Minimum Initial (s)			18.0				10.0	21.0	6.0	1.0
Minimum Split (s)			21.0				15.0	36.0	24.0	6.0
Total Split (s)			21.0				15.0	39.0	24.0	6.0
Total Split (%)			20.0%				14%	37%	23%	6%
Yellow Time (s)			3.0				3.0	3.0	3.0	3.0
All-Red Time (s)			0.0				2.0	0.0	2.0	2.0
Lost Time Adjust (s)										
Total Lost Time (s)										
Lead/Lag			Lag				Lead	Lead	Lag	
Lead-Lag Optimize?			Yes				Yes	Yes	Yes	
Recall Mode			Max				Max	Max	Max	Max
Act Effct Green (s)	79.0			54.0						
Actuated g/C Ratio	0.75			0.51						

Lanes, Volumes, Timings
 83: I-90/94 EB On Ramp & Armitage Avenue

01/07/2019

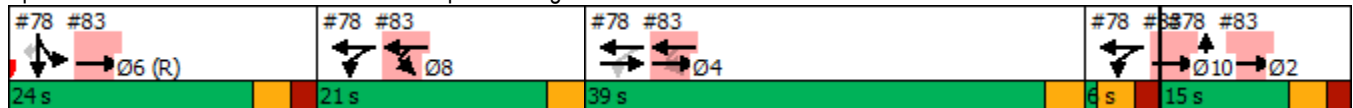


Lane Group	EBT	EBR	WBL	WBT	NWL	NWR	Ø2	Ø4	Ø6	Ø10
v/c Ratio	0.26			0.86						
Control Delay	0.2			15.0						
Queue Delay	0.3			0.0						
Total Delay	0.4			15.0						
LOS	A			B						
Approach Delay	0.4			15.0						
Approach LOS	A			B						
Queue Length 50th (ft)	1			218						
Queue Length 95th (ft)	0			m204						
Internal Link Dist (ft)	46			300	221					
Turn Bay Length (ft)										
Base Capacity (vph)	3653			1249						
Starvation Cap Reductn	1792			0						
Spillback Cap Reductn	0			0						
Storage Cap Reductn	0			0						
Reduced v/c Ratio	0.52			0.86						

Intersection Summary

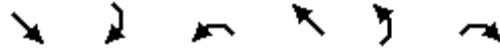
Area Type: Other
 Cycle Length: 105
 Actuated Cycle Length: 105
 Offset: 0 (0%), Referenced to phase 6:SBTL, Start of Green
 Natural Cycle: 105
 Control Type: Pretimed
 Maximum v/c Ratio: 0.86
 Intersection Signal Delay: 8.1 Intersection LOS: A
 Intersection Capacity Utilization 56.6% ICU Level of Service B
 Analysis Period (min) 15
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 83: I-90/94 EB On Ramp & Armitage Avenue



Lanes, Volumes, Timings
 114: Best Buy Access Drive & Elston Avenue

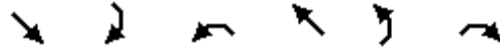
01/07/2019



Lane Group	SET	SER	NWL	NWT	NEL	NER	Ø2
Lane Configurations	↑	↑	↑	↑	↑	↑	
Traffic Volume (vph)	312	18	34	478	59	19	
Future Volume (vph)	312	18	34	478	59	19	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	12	12	12	12	12	12	
Grade (%)	0%			0%	0%		
Storage Length (ft)		125	150		0	0	
Storage Lanes		1	1		1	1	
Taper Length (ft)			50		25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	
Ped Bike Factor		0.93	0.97				
Frt		0.850				0.850	
Flt Protected			0.950		0.950		
Satd. Flow (prot)	1881	1615	1805	1881	1805	1615	
Flt Permitted			0.449		0.950		
Satd. Flow (perm)	1881	1494	830	1881	1805	1615	
Right Turn on Red		Yes				Yes	
Satd. Flow (RTOR)		20				21	
Link Speed (mph)	30			30	30		
Link Distance (ft)	793			778	263		
Travel Time (s)	18.0			17.7	6.0		
Confl. Peds. (#/hr)		23	23				
Confl. Bikes (#/hr)		3					
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	
Growth Factor	100%	100%	100%	100%	100%	100%	
Heavy Vehicles (%)	1%	0%	0%	1%	0%	0%	
Bus Blockages (#/hr)	0	0	0	0	0	0	
Parking (#/hr)							
Mid-Block Traffic (%)	0%			0%	0%		
Shared Lane Traffic (%)							
Lane Group Flow (vph)	339	20	37	520	64	21	
Turn Type	NA	pm+ov	custom	NA	Prot	pm+ov	
Protected Phases	6	7	9	2 9	7	9	2
Permitted Phases		6	2			7	
Detector Phase	6	7	9	2 9	7	9	
Switch Phase							
Minimum Initial (s)	16.0	12.0	4.0		12.0	4.0	16.0
Minimum Split (s)	41.0	31.0	8.0		31.0	8.0	41.0
Total Split (s)	41.0	31.0	13.0		31.0	13.0	41.0
Total Split (%)	48.2%	36.5%	15.3%		36.5%	15.3%	48%
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	
Total Lost Time (s)	4.0	4.0	4.0		4.0	4.0	
Lead/Lag							
Lead-Lag Optimize?							
Recall Mode	Max	Max	Max		Max	Max	Max
Act Effct Green (s)	37.0	64.0	46.0	50.0	27.0	40.0	
Actuated g/C Ratio	0.44	0.75	0.54	0.59	0.32	0.47	

Lanes, Volumes, Timings
 114: Best Buy Access Drive & Elston Avenue

01/07/2019

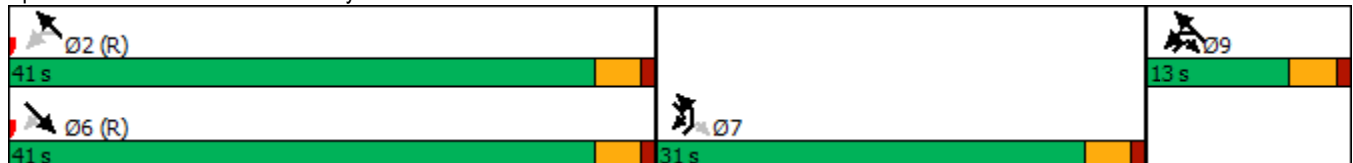


Lane Group	SET	SER	NWL	NWT	NEL	NER	Ø2
v/c Ratio	0.41	0.02	0.07	0.47	0.11	0.03	
Control Delay	18.5	0.8	7.8	11.7	21.3	5.4	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	18.5	0.8	7.8	11.7	21.3	5.4	
LOS	B	A	A	B	C	A	
Approach Delay	17.5			11.5	17.4		
Approach LOS	B			B	B		
Queue Length 50th (ft)	121	0	8	145	24	0	
Queue Length 95th (ft)	189	3	20	219	53	12	
Internal Link Dist (ft)	713			698	183		
Turn Bay Length (ft)		125	150				
Base Capacity (vph)	818	1168	552	1106	573	771	
Starvation Cap Reductn	0	0	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	0.41	0.02	0.07	0.47	0.11	0.03	

Intersection Summary

Area Type: Other
 Cycle Length: 85
 Actuated Cycle Length: 85
 Offset: 65 (76%), Referenced to phase 2:NWTL and 6:SET, Start of Green
 Natural Cycle: 80
 Control Type: Pretimed
 Maximum v/c Ratio: 0.47
 Intersection Signal Delay: 14.1
 Intersection Capacity Utilization 41.8%
 Analysis Period (min) 15
 Intersection LOS: B
 ICU Level of Service A

Splits and Phases: 114: Best Buy Access Drive & Elston Avenue



Lanes, Volumes, Timings
118: Cortland Street & Dominick Street

01/07/2019



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	169	548	638	25	25	333
Future Volume (vph)	169	548	638	25	25	333
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)		0%	0%		0%	
Storage Length (ft)	100			0	100	0
Storage Lanes	1			0	1	1
Taper Length (ft)	100				100	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt			0.995			0.850
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1770	1863	1853	0	1770	1583
Flt Permitted	0.261				0.950	
Satd. Flow (perm)	486	1863	1853	0	1770	1583
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)			4			259
Link Speed (mph)		30	30		30	
Link Distance (ft)		238	841		800	
Travel Time (s)		5.4	19.1		18.2	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)		0%	0%		0%	
Shared Lane Traffic (%)						
Lane Group Flow (vph)	184	596	720	0	27	362
Turn Type	Perm	NA	NA		Prot	Perm
Protected Phases		4	8		6	
Permitted Phases	4					6
Detector Phase	4	4	8		6	6
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0		5.0	5.0
Minimum Split (s)	22.5	22.5	22.5		22.5	22.5
Total Split (s)	70.0	70.0	70.0		35.0	35.0
Total Split (%)	66.7%	66.7%	66.7%		33.3%	33.3%
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 Optimize?						
Recall Mode	Max	Max	Max		Max	Max
Act Effct Green (s)	66.0	66.0	66.0		31.0	31.0
Actuated g/C Ratio	0.63	0.63	0.63		0.30	0.30

Lanes, Volumes, Timings
 118: Cortland Street & Dominick Street

01/07/2019

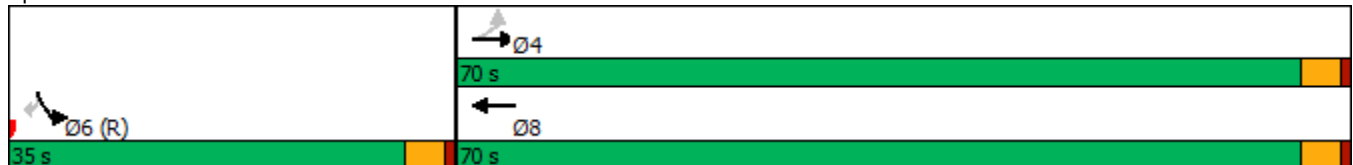


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
v/c Ratio	0.60	0.51	0.62		0.05	0.56
Control Delay	22.9	15.8	10.5		27.8	13.0
Queue Delay	0.0	0.0	0.0		0.0	0.0
Total Delay	22.9	15.8	10.5		27.8	13.0
LOS	C	B	B		C	B
Approach Delay		17.4	10.5		14.0	
Approach LOS		B	B		B	
Queue Length 50th (ft)	80	242	223		13	56
Queue Length 95th (ft)	m104	m281	m292		m33	m148
Internal Link Dist (ft)		158	761		720	
Turn Bay Length (ft)	100				100	
Base Capacity (vph)	305	1171	1166		522	649
Starvation Cap Reductn	0	0	0		0	0
Spillback Cap Reductn	0	0	0		0	0
Storage Cap Reductn	0	0	0		0	0
Reduced v/c Ratio	0.60	0.51	0.62		0.05	0.56

Intersection Summary

Area Type: Other
 Cycle Length: 105
 Actuated Cycle Length: 105
 Offset: 0 (0%), Referenced to phase 2: and 6:SBL, Start of Green
 Natural Cycle: 60
 Control Type: Pretimed
 Maximum v/c Ratio: 0.62
 Intersection Signal Delay: 14.1
 Intersection LOS: B
 Intersection Capacity Utilization 62.4%
 ICU Level of Service B
 Analysis Period (min) 15
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 118: Cortland Street & Dominick Street



Intersection	
Intersection Delay, s/veh	13.3
Intersection LOS	B

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	W		T	T		T
Traffic Vol, veh/h	224	96	248	256	60	190
Future Vol, veh/h	224	96	248	256	60	190
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles, %	7	1	9	5	0	8
Mvmt Flow	231	99	256	264	62	196
Number of Lanes	1	0	1	1	0	1

Approach	WB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	2
Conflicting Approach Left	NB		WB
Conflicting Lanes Left	2	0	1
Conflicting Approach Right	SB	WB	
Conflicting Lanes Right	1	1	0
HCM Control Delay	15.4	12.3	12.8
HCM LOS	C	B	B

Lane	NBLn1	NBLn2	WBLn1	SBLn1
Vol Left, %	0%	0%	70%	24%
Vol Thru, %	100%	0%	0%	76%
Vol Right, %	0%	100%	30%	0%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	248	256	320	250
LT Vol	0	0	224	60
Through Vol	248	0	0	190
RT Vol	0	256	96	0
Lane Flow Rate	256	264	330	258
Geometry Grp	7	7	2	5
Degree of Util (X)	0.43	0.387	0.534	0.412
Departure Headway (Hd)	6.057	5.277	5.822	5.757
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	593	681	620	624
Service Time	3.797	3.017	3.86	3.8
HCM Lane V/C Ratio	0.432	0.388	0.532	0.413
HCM Control Delay	13.3	11.3	15.4	12.8
HCM Lane LOS	B	B	C	B
HCM 95th-tile Q	2.2	1.8	3.2	2

Intersection

Int Delay, s/veh 1.7

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	76	0	0	205	242	52
Future Vol, veh/h	76	0	0	205	242	52
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	0	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	83	0	0	223	263	57

Major/Minor

	Minor2	Major1	Major2			
Conflicting Flow All	486	263	320	0	-	0
Stage 1	263	-	-	-	-	-
Stage 2	223	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	540	776	1240	-	-	-
Stage 1	781	-	-	-	-	-
Stage 2	814	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	540	776	1240	-	-	-
Mov Cap-2 Maneuver	540	-	-	-	-	-
Stage 1	781	-	-	-	-	-
Stage 2	814	-	-	-	-	-

Approach

	EB	NB	SB
HCM Control Delay, s	12.9	0	0
HCM LOS	B		

Minor Lane/Major Mvmt

	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1240	-	540	-	-	-
HCM Lane V/C Ratio	-	-	0.153	-	-	-
HCM Control Delay (s)	0	-	12.9	0	-	-
HCM Lane LOS	A	-	B	A	-	-
HCM 95th %tile Q(veh)	0	-	0.5	-	-	-

HCM 6th TWSC
40: Cortland Street & Kingsbury Street

01/07/2019

Intersection												
Int Delay, s/veh	68.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	60	513	0	0	586	144	164	0	77	5	1	2
Future Vol, veh/h	60	513	0	0	586	144	164	0	77	5	1	2
Conflicting Peds, #/hr	32	0	24	24	0	32	3	0	2	2	0	3
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	96	96	96	96	96	96	96	96	96	96	96	96
Heavy Vehicles, %	0	2	0	0	2	6	0	0	0	0	0	0
Mvmt Flow	63	534	0	0	610	150	171	0	80	5	1	2

Major/Minor	Major1			Major2			Minor2			Minor1		
Conflicting Flow All	792	0	0	558	0	0	1382	1401	719	1411	1476	561
Stage 1	-	-	-	-	-	-	717	717	-	684	684	-
Stage 2	-	-	-	-	-	-	665	684	-	727	792	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	838	-	-	1023	-	-	~ 122	141	432	117	127	531
Stage 1	-	-	-	-	-	-	424	437	-	442	452	-
Stage 2	-	-	-	-	-	-	453	452	-	419	404	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	812	-	-	1000	-	-	~ 107	119	418	84	107	518
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ 107	119	-	84	107	-
Stage 1	-	-	-	-	-	-	366	424	-	385	393	-
Stage 2	-	-	-	-	-	-	400	393	-	338	392	-

Approach	EB	WB	SE	NW
HCM Control Delay, s	1	0	\$ 438.5	40.4
HCM LOS			F	E

Minor Lane/Major Mvmt	NWLn1	EBL	EBT	EBR	WBL	WBT	WBR	SELn1
Capacity (veh/h)	110	812	-	-	1000	-	-	140
HCM Lane V/C Ratio	0.076	0.077	-	-	-	-	-	1.793
HCM Control Delay (s)	40.4	9.8	0	-	0	-	-	\$ 438.5
HCM Lane LOS	E	A	A	-	A	-	-	F
HCM 95th %tile Q(veh)	0.2	0.2	-	-	0	-	-	18.9

Notes
 ~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection						
Int Delay, s/veh	5.1					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	78	202	61	220	92	28
Future Vol, veh/h	78	202	61	220	92	28
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	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	85	220	66	239	100	30

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	486	115	130	0	-	0
Stage 1	115	-	-	-	-	-
Stage 2	371	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	540	937	1455	-	-	-
Stage 1	910	-	-	-	-	-
Stage 2	698	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	512	937	1455	-	-	-
Mov Cap-2 Maneuver	512	-	-	-	-	-
Stage 1	863	-	-	-	-	-
Stage 2	698	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	10.9	1.6	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1455	-	512	937	-	-
HCM Lane V/C Ratio	0.046	-	0.166	0.234	-	-
HCM Control Delay (s)	7.6	0	13.4	10	-	-
HCM Lane LOS	A	A	B	B	-	-
HCM 95th %tile Q(veh)	0.1	-	0.6	0.9	-	-

Intersection

Int Delay, s/veh 134.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	0	192	89	0	597	280
Future Vol, veh/h	0	192	89	0	597	280
Conflicting Peds, #/hr	0	0	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	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	209	97	0	649	304

Major/Minor	Major1	Major2	Minor1	Minor2	Minor3
Conflicting Flow All	0	0	209	0	299
Stage 1	-	-	-	-	105
Stage 2	-	-	-	-	194
Critical Hdwy	-	-	4.12	-	6.42
Critical Hdwy Stg 1	-	-	-	-	5.42
Critical Hdwy Stg 2	-	-	-	-	5.42
Follow-up Hdwy	-	-	2.218	-	3.518
Pot Cap-1 Maneuver	-	-	1362	-	692
Stage 1	-	-	-	-	919
Stage 2	-	-	-	-	839
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1362	-	~ 643
Mov Cap-2 Maneuver	-	-	-	-	~ 643
Stage 1	-	-	-	-	919
Stage 2	-	-	-	-	779

Approach	EB	WB	NB
HCM Control Delay, s	0	7.8	176.4
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	717	-	-	1362	-
HCM Lane V/C Ratio	1.33	-	-	0.071	-
HCM Control Delay (s)	176.4	-	-	7.8	0
HCM Lane LOS	F	-	-	A	A
HCM 95th %tile Q(veh)	38.8	-	-	0.2	-

Notes

~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection						
Int Delay, s/veh	10.3					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	280	316	25	92	99	25
Future Vol, veh/h	280	316	25	92	99	25
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	0	-	-	100	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	304	343	27	100	108	27

Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	320	77	0	0	127	0
Stage 1	77	-	-	-	-	-
Stage 2	243	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	673	984	-	-	1459	-
Stage 1	946	-	-	-	-	-
Stage 2	797	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	623	984	-	-	1459	-
Mov Cap-2 Maneuver	623	-	-	-	-	-
Stage 1	946	-	-	-	-	-
Stage 2	738	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	13.2	0	6.1
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	623	984	1459	-
HCM Lane V/C Ratio	-	-	0.489	0.349	0.074	-
HCM Control Delay (s)	-	-	16.2	10.6	7.7	-
HCM Lane LOS	-	-	C	B	A	-
HCM 95th %tile Q(veh)	-	-	2.7	1.6	0.2	-

Intersection						
Int Delay, s/veh	1.2					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	52	0	117	76	0	305
Future Vol, veh/h	52	0	117	76	0	305
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	0	-	-	100	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	57	0	127	83	0	332

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	501	169	0	0	210
Stage 1	169	-	-	-	-
Stage 2	332	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12
Critical Hdwy Stg 1	5.42	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218
Pot Cap-1 Maneuver	530	875	-	-	1361
Stage 1	861	-	-	-	-
Stage 2	727	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	530	875	-	-	1361
Mov Cap-2 Maneuver	530	-	-	-	-
Stage 1	861	-	-	-	-
Stage 2	727	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	12.6	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	530	-	1361
HCM Lane V/C Ratio	-	-	0.107	-	-
HCM Control Delay (s)	-	-	12.6	0	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.4	-	0

Capacity Analysis Output Sheets
Morning Peak Hour – Projected Conditions

Lanes, Volumes, Timings
 1: Damen Avenue & I-90/94 Off Ramp

01/10/2019

	↙	↖	↑	↗	↘	↓
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↙	↖	↑			↑
Traffic Volume (vph)	126	263	270	0	0	626
Future Volume (vph)	126	263	270	0	0	626
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	9	9	12	12	12	12
Grade (%)	0%		0%			0%
Storage Length (ft)	0	0		0	0	
Storage Lanes	1	1		0	0	
Taper Length (ft)	0				0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt		0.850				
Flt Protected	0.950					
Satd. Flow (prot)	1577	1358	1759	0	0	1800
Flt Permitted	0.950					
Satd. Flow (perm)	1577	1358	1759	0	0	1800
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		268				
Link Speed (mph)	30		30			30
Link Distance (ft)	211		414			303
Travel Time (s)	4.8		9.4			6.9
Confl. Peds. (#/hr)				18	18	
Confl. Bikes (#/hr)				4		
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	3%	7%	8%	0%	0%	3%
Bus Blockages (#/hr)	0	0	0	0	0	6
Parking (#/hr)						
Mid-Block Traffic (%)	0%		0%			0%
Shared Lane Traffic (%)						
Lane Group Flow (vph)	129	268	276	0	0	639
Turn Type	Prot	Prot	NA			NA
Protected Phases	8	8	2			6
Permitted Phases						
Detector Phase	8	8	2			6
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0			5.0
Minimum Split (s)	23.0	23.0	41.0			41.0
Total Split (s)	24.0	24.0	41.0			41.0
Total Split (%)	36.9%	36.9%	63.1%			63.1%
Yellow Time (s)	3.0	3.0	3.0			3.0
All-Red Time (s)	2.0	2.0	1.0			1.0
Lost Time Adjust (s)	-1.0	-1.0	0.0			0.0
Total Lost Time (s)	4.0	4.0	4.0			4.0
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	Max	Max	Max			Max
Act Effct Green (s)	20.0	20.0	37.0			37.0
Actuated g/C Ratio	0.31	0.31	0.57			0.57

Lanes, Volumes, Timings
 1: Damen Avenue & I-90/94 Off Ramp

01/10/2019



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
v/c Ratio	0.27	0.44	0.28			0.62
Control Delay	18.8	5.3	8.1			12.8
Queue Delay	0.0	0.0	0.0			0.0
Total Delay	18.8	5.3	8.1			12.8
LOS	B	A	A			B
Approach Delay	9.7		8.1			12.8
Approach LOS	A		A			B
Queue Length 50th (ft)	38	0	50			152
Queue Length 95th (ft)	77	47	87			249
Internal Link Dist (ft)	131		334			223
Turn Bay Length (ft)						
Base Capacity (vph)	485	603	1001			1024
Starvation Cap Reductn	0	0	0			0
Spillback Cap Reductn	0	0	0			0
Storage Cap Reductn	0	0	0			0
Reduced v/c Ratio	0.27	0.44	0.28			0.62

Intersection Summary

Area Type: Other
 Cycle Length: 65
 Actuated Cycle Length: 65
 Offset: 35 (54%), Referenced to phase 2:NBT and 6:SBT, Start of Green
 Natural Cycle: 65
 Control Type: Pretimed
 Maximum v/c Ratio: 0.62
 Intersection Signal Delay: 10.8
 Intersection Capacity Utilization 53.8%
 Analysis Period (min) 15
 Intersection LOS: B
 ICU Level of Service A

Splits and Phases: 1: Damen Avenue & I-90/94 Off Ramp



Lanes, Volumes, Timings
2: Damen Avenue & Webster Avenue

01/10/2019



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	33	477	25	97	120	12	27	229	381	327	307	90
Future Volume (vph)	33	477	25	97	120	12	27	229	381	327	307	90
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	13	12	12	10	11	10	10	10	11	11	11
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	25		0	0		0	60		60	280		100
Storage Lanes	1		0	1		1	1		1	1		1
Taper Length (ft)	25			0			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	0.97	1.00		0.99		0.94			0.97	0.99		0.92
Frt		0.992				0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1805	1659	0	1752	1773	1561	1620	1383	1459	1728	1702	1546
Flt Permitted	0.677			0.154			0.182			0.490		
Satd. Flow (perm)	1246	1659	0	280	1773	1471	310	1383	1414	881	1702	1417
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		4				73			267			93
Link Speed (mph)		30			30			30				30
Link Distance (ft)		701			162			667				414
Travel Time (s)		15.9			3.7			15.2				9.4
Confl. Peds. (#/hr)	20		28	28		20	48		16	16		48
Confl. Bikes (#/hr)			4			1			2			10
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
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	0%	0%	3%	0%	0%	4%	9%	0%	1%	4%	1%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	8	0	9	0
Parking (#/hr)		9						10				
Mid-Block Traffic (%)		0%			0%			0%				0%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	34	518	0	100	124	12	28	236	393	337	316	93
Turn Type	Perm	NA		pm+pt	NA	Perm	Perm	NA	Perm	custom	NA	Perm
Protected Phases		4		3	8			2		1	16	
Permitted Phases	4			8		8	2		2	6		16
Detector Phase	4	4		3	8	8	2	2	2	1	16	16
Switch Phase												
Minimum Initial (s)	5.0	5.0		4.5	5.0	5.0	12.0	12.0	12.0	6.0		
Minimum Split (s)	25.0	25.0		8.0	25.0	25.0	25.0	25.0	25.0	9.5		
Total Split (s)	29.0	29.0		8.0	37.0	37.0	26.0	26.0	26.0	12.0		
Total Split (%)	38.7%	38.7%		10.7%	49.3%	49.3%	34.7%	34.7%	34.7%	16.0%		
Yellow Time (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0		
All-Red Time (s)	2.0	2.0		0.0	2.0	2.0	2.0	2.0	2.0	0.0		
Lost Time Adjust (s)	-1.0	-1.0		-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	1.0		
Total Lost Time (s)	4.0	4.0		2.0	4.0	4.0	4.0	4.0	4.0	4.0		
Lead/Lag	Lag	Lag		Lead								
Lead-Lag Optimize?	Yes	Yes		Yes								
Recall Mode	Max	Max		Max	Max	Max	Max	Max	Max	Max		
Act Effect Green (s)	25.0	25.0		35.0	33.0	33.0	22.0	22.0	22.0	30.0	34.0	34.0
Actuated g/C Ratio	0.33	0.33		0.47	0.44	0.44	0.29	0.29	0.29	0.40	0.45	0.45

Lanes, Volumes, Timings
 2: Damen Avenue & Webster Avenue

01/10/2019

Lane Group	Ø6
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Grade (%)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Confl. Bikes (#/hr)	
Peak Hour Factor	
Growth Factor	
Heavy Vehicles (%)	
Bus Blockages (#/hr)	
Parking (#/hr)	
Mid-Block Traffic (%)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	6
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	12.0
Minimum Split (s)	25.0
Total Split (s)	26.0
Total Split (%)	35%
Yellow Time (s)	3.0
All-Red Time (s)	2.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Recall Mode	Max
Act Effct Green (s)	
Actuated g/C Ratio	

Lanes, Volumes, Timings
 2: Damen Avenue & Webster Avenue

01/10/2019

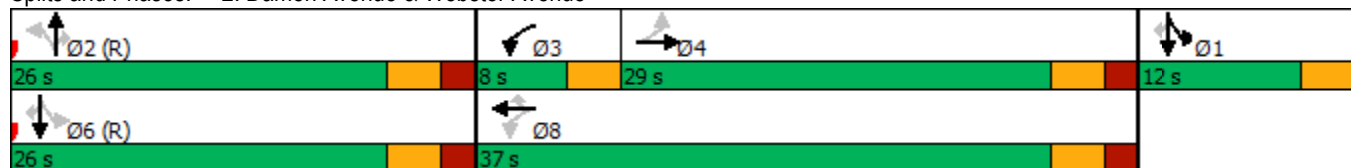


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.08	0.93		0.40	0.16	0.02	0.31	0.58	0.65	0.76	0.41	0.13
Control Delay	17.9	51.4		16.4	13.4	0.1	31.7	29.5	13.5	29.2	15.8	3.5
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	17.9	51.4		16.4	13.4	0.1	31.7	29.5	13.5	29.2	15.8	3.5
LOS	B	D		B	B	A	C	C	B	C	B	A
Approach Delay		49.3			14.0			20.0			20.3	
Approach LOS		D			B			B			C	
Queue Length 50th (ft)	11	228		25	33	0	10	93	45	102	94	0
Queue Length 95th (ft)	30	#418		51	65	0	35	165	138	#197	156	23
Internal Link Dist (ft)		621			82			587			334	
Turn Bay Length (ft)	25						60		60	280		100
Base Capacity (vph)	415	555		248	780	688	90	405	603	442	771	693
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	0.08	0.93		0.40	0.16	0.02	0.31	0.58	0.65	0.76	0.41	0.13

Intersection Summary

Area Type: Other
 Cycle Length: 75
 Actuated Cycle Length: 75
 Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
 Natural Cycle: 75
 Control Type: Pretimed
 Maximum v/c Ratio: 0.93
 Intersection Signal Delay: 26.8
 Intersection LOS: C
 Intersection Capacity Utilization 80.2%
 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.

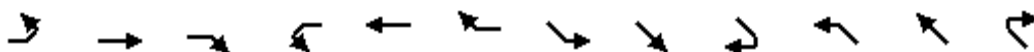
Splits and Phases: 2: Damen Avenue & Webster Avenue



Lane Group	Ø6
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	
Intersection Summary	

Lanes, Volumes, Timings
4: Elston Avenue & Webster Avenue

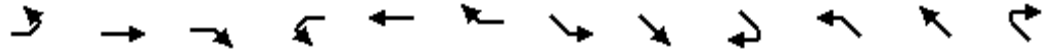
01/10/2019



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Traffic Volume (vph)	16	472	58	17	384	108	348	549	33	56	168	23
Future Volume (vph)	16	472	58	17	384	108	348	549	33	56	168	23
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	2000	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	11	12	10	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	25		0	55		55	100		0	115		125
Storage Lanes	1		0	1		0	1		0	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00	0.99		0.99	0.99		1.00	1.00		0.99		0.97
Frt		0.984			0.967			0.991				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1805	1571	0	1805	1557	0	1787	1522	0	1752	1697	1615
Flt Permitted	0.231			0.192			0.612			0.183		
Satd. Flow (perm)	437	1571	0	360	1557	0	1147	1522	0	333	1697	1574
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		7			16			4				52
Link Speed (mph)		30			30			30				30
Link Distance (ft)		829			1006			711				758
Travel Time (s)		18.8			22.9			16.2				17.2
Confl. Peds. (#/hr)	8		34	34		8	4		36	36		4
Confl. Bikes (#/hr)			6			2			11			1
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
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	1%	12%	0%	1%	0%	1%	5%	0%	3%	10%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)		7			8			10				
Mid-Block Traffic (%)		0%			0%			0%				0%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	17	558	0	18	518	0	366	613	0	59	177	24
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	Perm
Protected Phases		4			8		1	6		5	2	
Permitted Phases	4			8			6			2		2
Detector Phase	4	4		8	8		1	6		5	2	2
Switch Phase												
Minimum Initial (s)	25.0	25.0		25.0	25.0		5.0	34.0		5.0	34.0	34.0
Minimum Split (s)	46.0	46.0		46.0	46.0		8.0	51.0		8.0	51.0	51.0
Total Split (s)	46.0	46.0		46.0	46.0		8.0	51.0		8.0	51.0	51.0
Total Split (%)	43.8%	43.8%		43.8%	43.8%		7.6%	48.6%		7.6%	48.6%	48.6%
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
All-Red Time (s)	2.0	2.0		2.0	2.0		0.0	2.0		0.0	2.0	2.0
Lost Time Adjust (s)	-1.0	-1.0		-1.0	-1.0		1.0	-1.0		1.0	-1.0	0.0
Total Lost Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	5.0
Lead/Lag							Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	Yes
Recall Mode	Max	Max		Max	Max		Max	Max		Max	Max	Max
Act Effct Green (s)	42.0	42.0		42.0	42.0		51.0	47.0		51.0	47.0	46.0
Actuated g/C Ratio	0.40	0.40		0.40	0.40		0.49	0.45		0.49	0.45	0.44

Lanes, Volumes, Timings
 4: Elston Avenue & Webster Avenue

01/10/2019

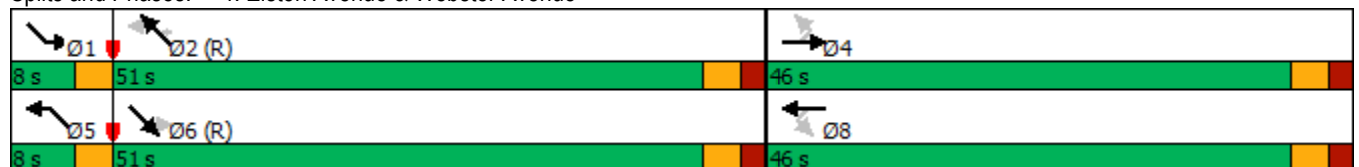


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
v/c Ratio	0.10	0.88		0.12	0.82		0.63	0.90		0.27	0.23	0.03
Control Delay	21.7	46.4		13.8	28.8		24.3	44.8		15.8	18.9	1.2
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	21.7	46.4		13.8	28.8		24.3	44.8		15.8	18.9	1.2
LOS	C	D		B	C		C	D		B	B	A
Approach Delay		45.7			28.3			37.1			16.6	
Approach LOS		D			C			D			B	
Queue Length 50th (ft)	7	338		6	349		141	368		19	71	0
Queue Length 95th (ft)	23	#547		m6	m394		209	#596		39	119	4
Internal Link Dist (ft)		749			926			631			678	
Turn Bay Length (ft)	25			55			100			115		125
Base Capacity (vph)	174	632		144	632		581	683		215	759	718
Starvation Cap Reductn	0	0		0	0		0	0		0	0	0
Spillback Cap Reductn	0	0		0	0		0	0		0	0	0
Storage Cap Reductn	0	0		0	0		0	0		0	0	0
Reduced v/c Ratio	0.10	0.88		0.13	0.82		0.63	0.90		0.27	0.23	0.03

Intersection Summary

Area Type: Other
 Cycle Length: 105
 Actuated Cycle Length: 105
 Offset: 0 (0%), Referenced to phase 2:NWTL and 6:SETL, Start of Green
 Natural Cycle: 105
 Control Type: Pretimed
 Maximum v/c Ratio: 0.90
 Intersection Signal Delay: 34.9 Intersection LOS: C
 Intersection Capacity Utilization 102.6% ICU Level of Service G
 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: 4: Elston Avenue & Webster Avenue



Lanes, Volumes, Timings
5: Best Buy/Kohl's Access & Elston Avenue

01/10/2019



Lane Group	SET	SER	NWL	NWT	NEL	NER	Ø2
Lane Configurations	↑	↑	↑	↑	↑	↑	
Traffic Volume (vph)	645	7	2	234	8	0	
Future Volume (vph)	645	7	2	234	8	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	12	12	12	12	12	12	
Grade (%)	0%			0%	0%		
Storage Length (ft)		125	150		0	0	
Storage Lanes		1	1		1	1	
Taper Length (ft)			25		0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	
Ped Bike Factor		0.95	1.00				
Frt		0.850					
Flt Protected			0.950		0.950		
Satd. Flow (prot)	1881	1615	1805	1881	1805	1900	
Flt Permitted			0.331		0.950		
Satd. Flow (perm)	1881	1538	627	1881	1805	1900	
Right Turn on Red		Yes				Yes	
Satd. Flow (RTOR)		8					
Link Speed (mph)	30			30	30		
Link Distance (ft)	758			566	285		
Travel Time (s)	17.2			12.9	6.5		
Confl. Peds. (#/hr)		9	9			1	
Confl. Bikes (#/hr)		29					
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.90	
Growth Factor	100%	100%	100%	100%	100%	100%	
Heavy Vehicles (%)	1%	0%	0%	1%	0%	0%	
Bus Blockages (#/hr)	0	0	0	0	0	0	
Parking (#/hr)							
Mid-Block Traffic (%)	0%			0%	0%		
Shared Lane Traffic (%)							
Lane Group Flow (vph)	694	8	2	252	9	0	
Turn Type	NA	pm+ov	custom	NA	Prot	pm+ov	
Protected Phases	6	7	9	2 9	7	9	2
Permitted Phases		6	2			7	
Detector Phase	6	7	9	2 9	7	9	
Switch Phase							
Minimum Initial (s)	16.0	12.0	5.0		12.0	5.0	16.0
Minimum Split (s)	41.0	31.0	8.0		31.0	8.0	41.0
Total Split (s)	41.0	31.0	13.0		31.0	13.0	41.0
Total Split (%)	48.2%	36.5%	15.3%		36.5%	15.3%	48%
Yellow Time (s)	3.0	3.0	3.0		3.0	3.0	3.0
All-Red Time (s)	1.0	1.0	0.0		1.0	0.0	1.0
Lost Time Adjust (s)	0.0	0.0	1.0		0.0	1.0	
Total Lost Time (s)	4.0	4.0	4.0		4.0	4.0	
Lead/Lag							
Lead-Lag Optimize?							
Recall Mode	C-Max	None	None		None	None	C-Max
Act Effct Green (s)	64.1	74.2	70.6	77.0	12.0		
Actuated g/C Ratio	0.75	0.87	0.83	0.91	0.14		

Lanes, Volumes, Timings
 5: Best Buy/Kohl's Access & Elston Avenue

01/10/2019

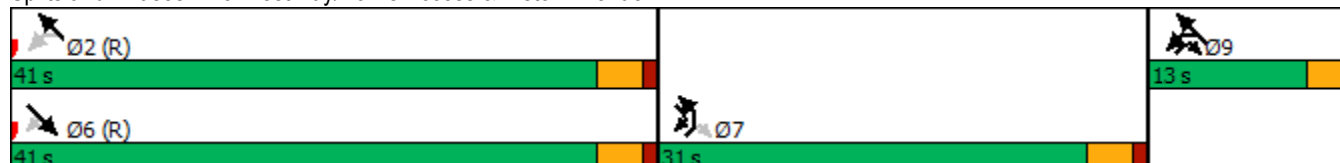


Lane Group	SET	SER	NWL	NWT	NEL	NER	Ø2
v/c Ratio	0.49	0.01	0.00	0.15	0.04		
Control Delay	7.7	1.1	2.0	1.8	32.0		
Queue Delay	0.0	0.0	0.0	0.0	0.0		
Total Delay	7.7	1.1	2.0	1.8	32.0		
LOS	A	A	A	A	C		
Approach Delay	7.7			1.8	32.0		
Approach LOS	A			A	C		
Queue Length 50th (ft)	55	0	0	0	4		
Queue Length 95th (ft)	316	2	2	46	18		
Internal Link Dist (ft)	678			486	205		
Turn Bay Length (ft)		125	150				
Base Capacity (vph)	1418	1476	665	1689	573		
Starvation Cap Reductn	0	0	0	0	0		
Spillback Cap Reductn	0	0	0	0	0		
Storage Cap Reductn	0	0	0	0	0		
Reduced v/c Ratio	0.49	0.01	0.00	0.15	0.02		

Intersection Summary

Area Type:	Other
Cycle Length:	85
Actuated Cycle Length:	85
Offset:	65 (76%), Referenced to phase 2:NWTL and 6:SET, Start of Green
Natural Cycle:	80
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.49
Intersection Signal Delay:	6.3
Intersection LOS:	A
Intersection Capacity Utilization:	51.0%
ICU Level of Service:	A
Analysis Period (min):	15

Splits and Phases: 5: Best Buy/Kohl's Access & Elston Avenue



Lanes, Volumes, Timings
6: Ashland Avenue & Webster Avenue

01/10/2019



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	134	621	22	202	400	48	17	1083	149	94	1439	142
Future Volume (vph)	134	621	22	202	400	48	17	1083	149	94	1439	142
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	10	11	12	10	11	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	60		0	230		0	115		0	65		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor	0.99	1.00			1.00			0.99		1.00	0.99	
Frt		0.995			0.984			0.982			0.987	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1805	1833	0	1770	1846	0	1504	3075	0	1685	3213	0
Flt Permitted	0.155			0.125			0.082			0.082		
Satd. Flow (perm)	293	1833	0	233	1846	0	130	3075	0	145	3213	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		2			6			19			13	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1006			588			352			531	
Travel Time (s)		22.9			13.4			8.0			12.1	
Confl. Peds. (#/hr)	16		52	52		16	64		24	24		62
Confl. Bikes (#/hr)			7			12			2			2
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	3%	0%	2%	1%	0%	12%	10%	2%	0%	5%	1%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	8	0	0	8	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	141	677	0	213	472	0	18	1297	0	99	1664	0
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	7	4		3	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	5.0	9.0		5.0	9.0		5.0	33.0		5.0	33.0	
Minimum Split (s)	8.0	36.0		8.0	36.0		8.0	53.0		8.0	53.0	
Total Split (s)	8.0	36.0		8.0	36.0		8.0	53.0		8.0	53.0	
Total Split (%)	7.6%	34.3%		7.6%	34.3%		7.6%	50.5%		7.6%	50.5%	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	0.0	2.0		0.0	2.0		0.0	2.0		0.0	2.0	
Lost Time Adjust (s)	-1.0	-1.0		-1.0	-1.0		-1.0	-1.0		-1.0	-1.0	
Total Lost Time (s)	2.0	4.0		2.0	4.0		2.0	4.0		2.0	4.0	
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	
Act Effct Green (s)	40.0	32.0		40.0	32.0		57.0	49.0		57.0	49.0	
Actuated g/C Ratio	0.38	0.30		0.38	0.30		0.54	0.47		0.54	0.47	

Lanes, Volumes, Timings
6: Ashland Avenue & Webster Avenue

01/10/2019

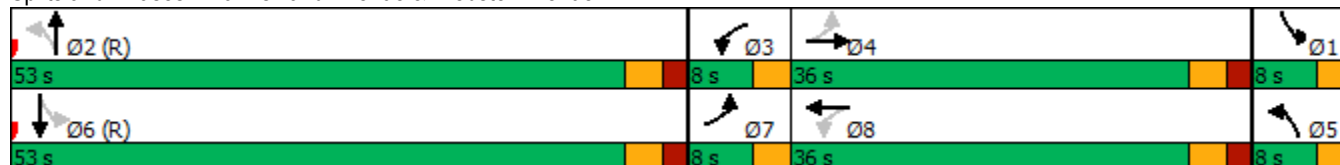


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.71	1.21		1.21	0.83		0.12	0.90		0.60	1.10	
Control Delay	34.5	136.9		160.4	48.1		10.2	39.3		28.8	85.6	
Queue Delay	0.0	1.2		3.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	34.5	138.1		163.4	48.1		10.2	39.3		28.8	85.6	
LOS	C	F		F	D		B	D		C	F	
Approach Delay		120.2			83.9			38.9			82.4	
Approach LOS		F			F			D			F	
Queue Length 50th (ft)	65	~571		~123	312		6	482		29	~672	
Queue Length 95th (ft)	m92	m#735		#279	#476		m8	#570		#79	#813	
Internal Link Dist (ft)		926			508			272			451	
Turn Bay Length (ft)	60			230			115			65		
Base Capacity (vph)	198	560		176	566		149	1445		166	1506	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	76		27	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.71	1.40		1.43	0.83		0.12	0.90		0.60	1.10	

Intersection Summary

Area Type: Other
 Cycle Length: 105
 Actuated Cycle Length: 105
 Offset: 60 (57%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
 Natural Cycle: 125
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 1.21
 Intersection Signal Delay: 76.9 Intersection LOS: E
 Intersection Capacity Utilization 107.6% ICU Level of Service G
 Analysis Period (min) 15
 ~ Volume exceeds capacity, queue is theoretically infinite.
 Queue shown is maximum after two cycles.
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 6: Ashland Avenue & Webster Avenue



Lanes, Volumes, Timings
7: Dominick Street & Webster Avenue

01/10/2019



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↗	↘			↕	
Traffic Volume (vph)	44	505	317	2	491	33	102	0	1	8	6	55
Future Volume (vph)	44	505	317	2	491	33	102	0	1	8	6	55
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	100		0	0		0
Storage Lanes	0		0	0		0	1		0	0		0
Taper Length (ft)	0			0			25			0		
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		0.96			1.00		0.88	0.84			0.85	
Frt		0.951			0.992			0.850			0.892	
Flt Protected		0.997					0.950				0.994	
Satd. Flow (prot)	0	1493	0	0	1600	0	1556	1190	0	0	1262	0
Flt Permitted		0.953			0.998		0.711				0.980	
Satd. Flow (perm)	0	1426	0	0	1596	0	1023	1190	0	0	1223	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		74			9			394			57	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		588			533			362			140	
Travel Time (s)		13.4			12.1			8.2			3.2	
Confl. Peds. (#/hr)	14		26	26		14	50		50	50		50
Confl. Bikes (#/hr)			11			8						
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
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	0%	0%	0%	1%	0%	16%	0%	0%	0%	2%	1%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)		8			8			4			6	
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	902	0	0	547	0	106	1	0	0	71	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	22.5	22.5		22.5	22.5		22.5	22.5		22.5	22.5	
Total Split (s)	81.0	81.0		81.0	81.0		24.0	24.0		24.0	24.0	
Total Split (%)	77.1%	77.1%		77.1%	77.1%		22.9%	22.9%		22.9%	22.9%	
Yellow Time (s)	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	
Lost Time Adjust (s)		0.0			0.0		0.5	0.0			0.0	
Total Lost Time (s)		4.0			4.0		4.5	4.0			4.0	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	Max	Max		Max	Max		Max	Max		Max	Max	
Act Effct Green (s)		77.0			77.0		19.5	20.0			20.0	
Actuated g/C Ratio		0.73			0.73		0.19	0.19			0.19	

Lanes, Volumes, Timings
 7: Dominick Street & Webster Avenue

01/10/2019



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio		0.85			0.47		0.56	0.00				0.25
Control Delay		10.4			2.5		46.1	0.0				15.6
Queue Delay		43.3			0.1		0.0	0.0				0.0
Total Delay		53.6			2.7		46.1	0.0				15.6
LOS		D			A		D	A				B
Approach Delay		53.6			2.7			45.7				15.6
Approach LOS		D			A			D				B
Queue Length 50th (ft)		200			29		62	0				8
Queue Length 95th (ft)		m148			m40		115	m0				47
Internal Link Dist (ft)		508			453			282				60
Turn Bay Length (ft)							100					
Base Capacity (vph)		1065			1172		189	545				279
Starvation Cap Reductn		235			113		0	0				0
Spillback Cap Reductn		56			0		0	0				2
Storage Cap Reductn		0			0		0	0				0
Reduced v/c Ratio		1.09			0.52		0.56	0.00				0.26

Intersection Summary

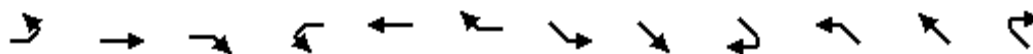
Area Type: Other
 Cycle Length: 105
 Actuated Cycle Length: 105
 Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
 Natural Cycle: 80
 Control Type: Pretimed
 Maximum v/c Ratio: 0.85
 Intersection Signal Delay: 34.3
 Intersection Capacity Utilization 102.3%
 Analysis Period (min) 15
 Intersection LOS: C
 ICU Level of Service G
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 7: Dominick Street & Webster Avenue



Lanes, Volumes, Timings
8: Clybourn Avenue & Webster Avenue

01/10/2019



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Traffic Volume (vph)	11	412	98	11	461	88	48	486	17	69	257	5
Future Volume (vph)	11	412	98	11	461	88	48	486	17	69	257	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	75		0	70		0	155		0	115		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99	0.99		0.99	0.99		0.99	1.00		0.99	1.00	
Frt		0.971			0.976			0.995			0.997	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1641	1572	0	1805	1812	0	1805	1599	0	1770	1625	0
Flt Permitted	0.148			0.190			0.525			0.248		
Satd. Flow (perm)	254	1572	0	357	1812	0	992	1599	0	460	1625	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		533			328			733			463	
Travel Time (s)		12.1			7.5			16.7			10.5	
Confl. Peds. (#/hr)	18		26	26		18	8		12	12		8
Confl. Bikes (#/hr)			2			7			32			
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
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	10%	1%	7%	0%	1%	4%	0%	2%	4%	2%	2%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)		4						7			5	
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	12	537	0	12	578	0	51	530	0	73	276	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		custom	NA	
Protected Phases		4			8			6		5	2.5	
Permitted Phases	4			8			6			2		
Detector Phase	4	4		8	8		6	6		5	2.5	
Switch Phase												
Minimum Initial (s)	18.0	18.0		18.0	18.0		28.0	28.0		8.0		
Minimum Split (s)	44.0	44.0		44.0	44.0		50.0	50.0		11.0		
Total Split (s)	44.0	44.0		44.0	44.0		50.0	50.0		11.0		
Total Split (%)	41.9%	41.9%		41.9%	41.9%		47.6%	47.6%		10.5%		
Yellow Time (s)	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		0.0		
Lost Time Adjust (s)	-1.0	-1.0		-1.0	-1.0		-1.0	-1.0		1.0		
Total Lost Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0		
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	Max	Max		Max	Max		Max	Max		Max		
Act Effect Green (s)	40.0	40.0		40.0	40.0		46.0	46.0		53.0	57.0	
Actuated g/C Ratio	0.38	0.38		0.38	0.38		0.44	0.44		0.50	0.54	

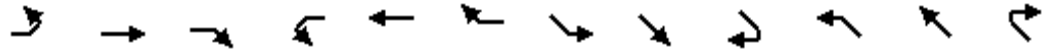
Lanes, Volumes, Timings
 8: Clybourn Avenue & Webster Avenue

01/10/2019

Lane Group	Ø2
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Grade (%)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Confl. Bikes (#/hr)	
Peak Hour Factor	
Growth Factor	
Heavy Vehicles (%)	
Bus Blockages (#/hr)	
Parking (#/hr)	
Mid-Block Traffic (%)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	2
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	28.0
Minimum Split (s)	50.0
Total Split (s)	50.0
Total Split (%)	48%
Yellow Time (s)	3.0
All-Red Time (s)	2.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Recall Mode	Max
Act Effct Green (s)	
Actuated g/C Ratio	

Lanes, Volumes, Timings
 8: Clybourn Avenue & Webster Avenue

01/10/2019

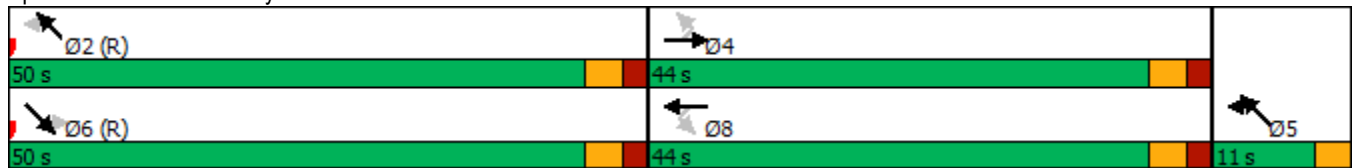


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
v/c Ratio	0.12	0.90		0.09	0.84		0.12	0.76		0.23	0.31	
Control Delay	22.0	36.0		23.3	35.5		18.5	33.2		13.4	14.5	
Queue Delay	0.0	29.7		0.0	50.9		0.0	0.0		0.0	0.0	
Total Delay	22.0	65.6		23.3	86.4		18.5	33.2		13.4	14.5	
LOS	C	E		C	F		B	C		B	B	
Approach Delay		64.7			85.1			31.9			14.2	
Approach LOS		E			F			C			B	
Queue Length 50th (ft)	3	267		5	261		20	292		22	97	
Queue Length 95th (ft)	m5	m#468		m8	m#520		45	432		44	151	
Internal Link Dist (ft)		453			248			653			383	
Turn Bay Length (ft)	75			70			155			115		
Base Capacity (vph)	96	598		136	690		434	700		319	882	
Starvation Cap Reductn	0	0		0	188		0	0		0	0	
Spillback Cap Reductn	0	87		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.13	1.05		0.09	1.15		0.12	0.76		0.23	0.31	

Intersection Summary

Area Type: Other
 Cycle Length: 105
 Actuated Cycle Length: 105
 Offset: 99 (94%), Referenced to phase 2:NWTL and 6:SETL, Start of Green
 Natural Cycle: 105
 Control Type: Pretimed
 Maximum v/c Ratio: 0.90
 Intersection Signal Delay: 52.8 Intersection LOS: D
 Intersection Capacity Utilization 96.5% ICU Level of Service F
 Analysis Period (min) 15
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 8: Clybourn Avenue & Webster Avenue



Lane Group	Ø2
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	
Intersection Summary	

Lanes, Volumes, Timings
9: Southport Avenue & Webster Avenue

01/10/2019



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (vph)	119	328	22	98	296	49	4	120	46	25	308	185
Future Volume (vph)	119	328	22	98	296	49	4	120	46	25	308	185
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (ft)	0			0			0			0		
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		0.99			0.98			0.98			0.96	
Frt		0.994			0.985			0.964			0.952	
Flt Protected		0.987			0.989			0.999			0.998	
Satd. Flow (prot)	0	1600	0	0	1589	0	0	1521	0	0	1480	0
Flt Permitted		0.751			0.787			0.991			0.982	
Satd. Flow (perm)	0	1211	0	0	1258	0	0	1509	0	0	1455	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		3			8			23			34	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		328			3065			330			507	
Travel Time (s)		7.5			69.7			7.5			11.5	
Confl. Peds. (#/hr)	22		30	30		22	32		16	16		32
Confl. Bikes (#/hr)			3			1			2			3
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
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	1%	3%	5%	0%	2%	0%	0%	2%	5%	0%	1%	0%
Bus Blockages (#/hr)	0	0	0	0	6	0	0	0	0	0	0	0
Parking (#/hr)		3			0			6			8	
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	493	0	0	467	0	0	178	0	0	545	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	22.5	22.5		22.5	22.5		22.5	22.5		22.5	22.5	
Total Split (s)	55.0	55.0		55.0	55.0		50.0	50.0		50.0	50.0	
Total Split (%)	52.4%	52.4%		52.4%	52.4%		47.6%	47.6%		47.6%	47.6%	
Yellow Time (s)	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	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		4.0			4.0			4.0			4.0	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	Max	Max		Max	Max		Max	Max		Max	Max	
Act Effct Green (s)		51.0			51.0			46.0			46.0	
Actuated g/C Ratio		0.49			0.49			0.44			0.44	

Lanes, Volumes, Timings
 9: Southport Avenue & Webster Avenue

01/10/2019

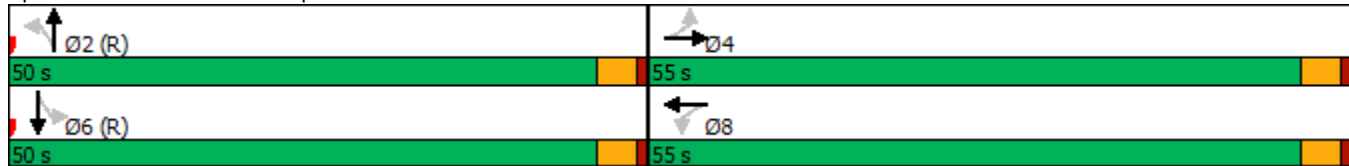


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio		0.84			0.76			0.26				0.83
Control Delay		17.3			31.3			17.5				37.2
Queue Delay		24.6			1.8			0.0				53.3
Total Delay		41.9			33.2			17.5				90.5
LOS		D			C			B				F
Approach Delay		41.9			33.2			17.5				90.5
Approach LOS		D			C			B				F
Queue Length 50th (ft)		40			243			64				299
Queue Length 95th (ft)		m406			387			113				#499
Internal Link Dist (ft)		248			2985			250				427
Turn Bay Length (ft)												
Base Capacity (vph)		589			615			674				656
Starvation Cap Reductn		108			0			0				0
Spillback Cap Reductn		0			54			0				272
Storage Cap Reductn		0			0			0				0
Reduced v/c Ratio		1.02			0.83			0.26				1.42

Intersection Summary

Area Type: Other
 Cycle Length: 105
 Actuated Cycle Length: 105
 Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
 Natural Cycle: 60
 Control Type: Pretimed
 Maximum v/c Ratio: 0.84
 Intersection Signal Delay: 52.6
 Intersection LOS: D
 Intersection Capacity Utilization 83.5%
 ICU Level of Service E
 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.

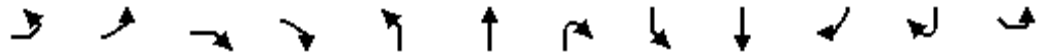
Splits and Phases: 9: Southport Avenue & Webster Avenue



Lanes, Volumes, Timings

10: Southport Avenue & Clybourn Avenue & Shakespeare Avenue

01/10/2019



Lane Group	EBL2	EBL	EBR	EBR2	NBL	NBT	NBR	SBL	SBT	SBR	SBR2	SEL
Lane Configurations												
Traffic Volume (vph)	7	16	38	3	29	104	5	190	227	6	11	13
Future Volume (vph)	7	16	38	3	29	104	5	190	227	6	11	13
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	10
Grade (%)		0%				0%			0%			
Storage Length (ft)		0	0		0		0	0		0		115
Storage Lanes		1	0		0		0	0		0		1
Taper Length (ft)		0			0			0				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												
Frt		0.914				0.995			0.995			
Flt Protected		0.982				0.989			0.979			0.950
Satd. Flow (prot)	0	1672	0	0	0	1833	0	0	1815	0	0	1652
Flt Permitted		0.982				0.869			0.777			0.436
Satd. Flow (perm)	0	1672	0	0	0	1611	0	0	1440	0	0	758
Right Turn on Red				Yes			No				No	
Satd. Flow (RTOR)		90										
Link Speed (mph)		30				30			30			
Link Distance (ft)		662				313			330			
Travel Time (s)		15.0				7.1			7.5			
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
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
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%				0%			0%			
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	69	0	0	0	150	0	0	473	0	0	14
Turn Type	Prot	Prot			Perm	NA		Perm	NA			Perm
Protected Phases	4	4				2			6			
Permitted Phases	4				2			6				14
Detector Phase	4	4			2	2		6	6			14
Switch Phase												
Minimum Initial (s)	10.0	10.0			5.0	5.0		5.0	5.0			20.0
Minimum Split (s)	15.0	15.0			27.0	27.0		27.0	27.0			43.0
Total Split (s)	15.0	15.0			27.0	27.0		27.0	27.0			43.0
Total Split (%)	17.6%	17.6%			31.8%	31.8%		31.8%	31.8%			50.6%
Yellow Time (s)	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
Lost Time Adjust (s)		-1.0				-1.0			-1.0			-1.0
Total Lost Time (s)		4.0				4.0			4.0			4.0
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	None	None			C-Max	C-Max		C-Max	C-Max			None
Act Effct Green (s)		11.0				29.6			29.6			35.4
Actuated g/C Ratio		0.13				0.35			0.35			0.42

Lanes, Volumes, Timings

10: Southport Avenue & Clybourn Avenue & Shakespeare Avenue

01/10/2019

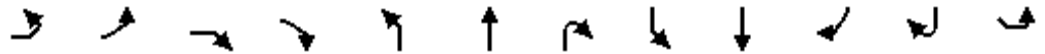


Lane Group	SET	SER	SER2	NWL2	NWL	NWT	NWR	
Lane Configurations								
Traffic Volume (vph)	562	54	2	6	5	272	42	
Future Volume (vph)	562	54	2	6	5	272	42	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	13	12	12	12	10	13	12	
Grade (%)	0%						0%	
Storage Length (ft)	0				115	0		
Storage Lanes	0				1	0		
Taper Length (ft)					25			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Ped Bike Factor								
Frt	0.986			0.980				
Flt Protected					0.950			
Satd. Flow (prot)	1898	0	0	0	1652	1886	0	
Flt Permitted					0.114			
Satd. Flow (perm)	1898	0	0	0	198	1886	0	
Right Turn on Red							No	
Satd. Flow (RTOR)							No	
Link Speed (mph)	30			30				
Link Distance (ft)	463			1323				
Travel Time (s)	10.5			30.1				
Confl. Peds. (#/hr)								
Confl. Bikes (#/hr)								
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Growth Factor	100%	100%	100%	100%	100%	100%	100%	
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	
Bus Blockages (#/hr)	0	0	0	0	0	0	0	
Parking (#/hr)								
Mid-Block Traffic (%)	0%			0%				
Shared Lane Traffic (%)								
Lane Group Flow (vph)	672	0	0	0	12	342	0	
Turn Type	NA			Perm	Perm	NA		
Protected Phases	14			10				
Permitted Phases				10	10			
Detector Phase	14			10	10	10		
Switch Phase								
Minimum Initial (s)	20.0			20.0	20.0	20.0		
Minimum Split (s)	43.0			43.0	43.0	43.0		
Total Split (s)	43.0			43.0	43.0	43.0		
Total Split (%)	50.6%			50.6%	50.6%	50.6%		
Yellow Time (s)	3.0			3.0	3.0	3.0		
All-Red Time (s)	2.0			2.0	2.0	2.0		
Lost Time Adjust (s)	-1.0			-1.0		-1.0		
Total Lost Time (s)	4.0			4.0		4.0		
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	None			None	None	None		
Act Effct Green (s)	35.4			35.4		35.4		
Actuated g/C Ratio	0.42			0.42		0.42		

Lanes, Volumes, Timings

10: Southport Avenue & Clybourn Avenue & Shakespeare Avenue

01/10/2019



Lane Group	EBL2	EBL	EBR	EBR2	NBL	NBT	NBR	SBL	SBT	SBR	SBR2	SEL
v/c Ratio		0.23				0.27			0.94			0.04
Control Delay		7.1				24.9			61.8			13.5
Queue Delay		0.0				0.0			0.0			0.0
Total Delay		7.1				24.9			61.8			13.5
LOS		A				C			E			B
Approach Delay		7.1				24.9			61.8			
Approach LOS		A				C			E			
Queue Length 50th (ft)		0				63			~300			4
Queue Length 95th (ft)		25				117			#496			15
Internal Link Dist (ft)		582				233			250			
Turn Bay Length (ft)												115
Base Capacity (vph)		294				560			501			347
Starvation Cap Reductn		0				0			0			0
Spillback Cap Reductn		0				0			0			0
Storage Cap Reductn		0				0			0			0
Reduced v/c Ratio		0.23				0.27			0.94			0.04

Intersection Summary

Area Type: Other
 Cycle Length: 85
 Actuated Cycle Length: 85
 Offset: 41 (48%), Referenced to phase 2:NBT and 6:SBTL, Start of Green
 Natural Cycle: 85
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.94
 Intersection Signal Delay: 38.1 Intersection LOS: D
 Intersection Capacity Utilization 81.5% 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: 10: Southport Avenue & Clybourn Avenue & Shakespeare Avenue



Lanes, Volumes, Timings

10: Southport Avenue & Clybourn Avenue & Shakespeare Avenue

01/10/2019



Lane Group	SET	SER	SER2	NWL2	NWL	NWT	NWR
v/c Ratio	0.85				0.15	0.44	
Control Delay	33.5				20.0	19.8	
Queue Delay	4.1				0.0	0.0	
Total Delay	37.6				20.0	19.8	
LOS	D				B	B	
Approach Delay	37.1					19.8	
Approach LOS	D					B	
Queue Length 50th (ft)	299				4	121	
Queue Length 95th (ft)	433				0	200	
Internal Link Dist (ft)	383					1243	
Turn Bay Length (ft)					115		
Base Capacity (vph)	870				90	865	
Starvation Cap Reductn	129				0	0	
Spillback Cap Reductn	0				0	0	
Storage Cap Reductn	0				0	0	
Reduced v/c Ratio	0.91				0.13	0.40	
Intersection Summary							

Lanes, Volumes, Timings
 11: Armitage Avenue & I-90/94 West Ramps

01/10/2019



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑			↑↑			↑↑		↑↑	↑	↑
Traffic Volume (vph)	0	900	7	27	398	0	20	0	56	568	47	149
Future Volume (vph)	0	900	7	27	398	0	20	0	56	568	47	149
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	0		0	0		0	0		0	2		1
Taper Length (ft)	0			0			0			0		
Lane Util. Factor	1.00	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	0.97	1.00	1.00
Ped Bike Factor		1.00			1.00			0.99				0.97
Frt		0.999						0.900				0.850
Flt Protected					0.997			0.987		0.950		
Satd. Flow (prot)	0	3442	0	0	3438	0	0	1688	0	3367	1900	1583
Flt Permitted					0.867			0.907		0.950		
Satd. Flow (perm)	0	3442	0	0	2985	0	0	1543	0	3367	1900	1532
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		1						135				157
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		653			126			236			708	
Travel Time (s)		14.8			2.9			5.4			16.1	
Confl. Peds. (#/hr)	16		96	96		32	14					14
Confl. Bikes (#/hr)			5									
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
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	3%	0%	0%	5%	0%	0%	0%	0%	4%	0%	2%
Bus Blockages (#/hr)	0	8	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	954	0	0	447	0	0	80	0	598	49	157
Turn Type		NA		custom	NA		Perm	NA		Split	NA	Perm
Protected Phases		4		8 10	4 8 10			2		6	6	
Permitted Phases				4 8			2					6
Detector Phase		4		8 10	4 8 10		2	2		6	6	6
Switch Phase												
Minimum Initial (s)		21.0					10.0	10.0		6.0	6.0	6.0
Minimum Split (s)		36.0					15.0	15.0		26.0	26.0	26.0
Total Split (s)		36.0					15.0	15.0		26.0	26.0	26.0
Total Split (%)		34.3%					14.3%	14.3%		24.8%	24.8%	24.8%
Yellow Time (s)		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
Lost Time Adjust (s)		1.0						-1.0		-1.0	-1.0	-1.0
Total Lost Time (s)		4.0						4.0		4.0	4.0	4.0
Lead/Lag		Lead								Lead	Lead	Lead
Lead-Lag Optimize?		Yes								Yes	Yes	Yes
Recall Mode		Max					Max	Max		Max	Max	Max
Act Effct Green (s)		32.0			52.0			11.0		22.0	22.0	22.0
Actuated g/C Ratio		0.30			0.50			0.10		0.21	0.21	0.21

Lanes, Volumes, Timings
 11: Armitage Avenue & I-90/94 West Ramps

01/10/2019

Lane Group	Ø8	Ø10
Lane Configurations		
Traffic Volume (vph)		
Future Volume (vph)		
Ideal Flow (vphpl)		
Lane Width (ft)		
Grade (%)		
Storage Length (ft)		
Storage Lanes		
Taper Length (ft)		
Lane Util. Factor		
Ped Bike Factor		
Frt		
Flt Protected		
Satd. Flow (prot)		
Flt Permitted		
Satd. Flow (perm)		
Right Turn on Red		
Satd. Flow (RTOR)		
Link Speed (mph)		
Link Distance (ft)		
Travel Time (s)		
Confl. Peds. (#/hr)		
Confl. Bikes (#/hr)		
Peak Hour Factor		
Growth Factor		
Heavy Vehicles (%)		
Bus Blockages (#/hr)		
Parking (#/hr)		
Mid-Block Traffic (%)		
Shared Lane Traffic (%)		
Lane Group Flow (vph)		
Turn Type		
Protected Phases	8	10
Permitted Phases		
Detector Phase		
Switch Phase		
Minimum Initial (s)	19.0	1.0
Minimum Split (s)	22.0	6.0
Total Split (s)	22.0	6.0
Total Split (%)	21%	6%
Yellow Time (s)	3.0	3.0
All-Red Time (s)	0.0	2.0
Lost Time Adjust (s)		
Total Lost Time (s)		
Lead/Lag	Lag	Lag
Lead-Lag Optimize?	Yes	Yes
Recall Mode	Max	Max
Act Effct Green (s)		
Actuated g/C Ratio		

Lanes, Volumes, Timings
 11: Armitage Avenue & I-90/94 West Ramps

01/10/2019

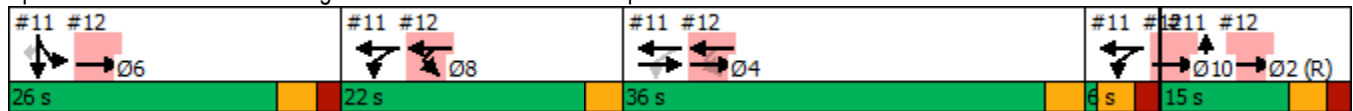


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio		0.91			0.29			0.28		0.85	0.12	0.35
Control Delay		48.7			0.7			3.8		52.6	34.8	8.1
Queue Delay		0.0			1.0			0.0		0.0	0.0	0.0
Total Delay		48.7			1.7			3.8		52.6	34.8	8.1
LOS		D			A			A		D	C	A
Approach Delay		48.7			1.7			3.8			42.8	
Approach LOS		D			A			A			D	
Queue Length 50th (ft)		322			0			0		200	27	0
Queue Length 95th (ft)		#445			m0			9		#288	59	53
Internal Link Dist (ft)		573			46			156			628	
Turn Bay Length (ft)												
Base Capacity (vph)		1049			1564			282		705	398	445
Starvation Cap Reductn		0			838			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		0.91			0.62			0.28		0.85	0.12	0.35

Intersection Summary

Area Type: Other
 Cycle Length: 105
 Actuated Cycle Length: 105
 Offset: 0 (0%), Referenced to phase 2:NBTL, Start of Green
 Natural Cycle: 105
 Control Type: Pretimed
 Maximum v/c Ratio: 0.91
 Intersection Signal Delay: 35.9 Intersection LOS: D
 Intersection Capacity Utilization 63.3% ICU Level of Service B
 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.

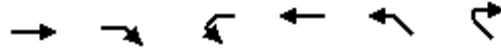
Splits and Phases: 11: Armitage Avenue & I-90/94 West Ramps



Lane Group	Ø8	Ø10
v/c Ratio		
Control Delay		
Queue Delay		
Total Delay		
LOS		
Approach Delay		
Approach LOS		
Queue Length 50th (ft)		
Queue Length 95th (ft)		
Internal Link Dist (ft)		
Turn Bay Length (ft)		
Base Capacity (vph)		
Starvation Cap Reductn		
Spillback Cap Reductn		
Storage Cap Reductn		
Reduced v/c Ratio		
Intersection Summary		

Lanes, Volumes, Timings
 12: I-90/94 EB On Ramp & Armitage Avenue

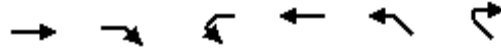
01/10/2019



Lane Group	EBT	EBR	WBL	WBT	NWL	NWR	Ø2	Ø4	Ø6	Ø10
Lane Configurations	↑↑↑			↑↑						
Traffic Volume (vph)	1053	469	455	424	0	0				
Future Volume (vph)	1053	469	455	424	0	0				
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900				
Lane Width (ft)	12	12	12	12	12	12				
Grade (%)	0%			0%		0%				
Storage Length (ft)		0	0		0	0				
Storage Lanes		0	0		0	0				
Taper Length (ft)			0		0					
Lane Util. Factor	0.91	0.91	0.95	0.95	1.00	1.00				
Ped Bike Factor	0.98			0.99						
Frt	0.954									
Flt Protected				0.975						
Satd. Flow (prot)	4737	0	0	3451	0	0				
Flt Permitted				0.575						
Satd. Flow (perm)	4737	0	0	2022	0	0				
Right Turn on Red		Yes				Yes				
Satd. Flow (RTOR)	181									
Link Speed (mph)	30			30	30					
Link Distance (ft)	126			380	301					
Travel Time (s)	2.9			8.6	6.8					
Confl. Peds. (#/hr)		84	84							
Confl. Bikes (#/hr)		1								
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95				
Growth Factor	100%	100%	100%	100%	100%	100%				
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%				
Bus Blockages (#/hr)	0	0	0	0	0	0				
Parking (#/hr)										
Mid-Block Traffic (%)	0%			0%	0%					
Shared Lane Traffic (%)										
Lane Group Flow (vph)	1602	0	0	925	0	0				
Turn Type	NA		pm+pt		NA					
Protected Phases	2 4 6 10		8		4 8		2	4	6	10
Permitted Phases			4 8							
Detector Phase	2 4 6 10		8		4 8					
Switch Phase										
Minimum Initial (s)			19.0				10.0	21.0	6.0	1.0
Minimum Split (s)			22.0				15.0	36.0	26.0	6.0
Total Split (s)			22.0				15.0	36.0	26.0	6.0
Total Split (%)			21.0%				14%	34%	25%	6%
Yellow Time (s)			3.0				3.0	3.0	3.0	3.0
All-Red Time (s)			0.0				2.0	0.0	2.0	2.0
Lost Time Adjust (s)										
Total Lost Time (s)										
Lead/Lag			Lag				Lead	Lead	Lag	
Lead-Lag Optimize?			Yes				Yes	Yes	Yes	
Recall Mode			Max				Max	Max	Max	Max
Act Effct Green (s)	79.0			50.0						
Actuated g/C Ratio	0.75			0.48						

Lanes, Volumes, Timings
 12: I-90/94 EB On Ramp & Armitage Avenue

01/10/2019



Lane Group	EBT	EBR	WBL	WBT	NWL	NWR	Ø2	Ø4	Ø6	Ø10
v/c Ratio	0.44			1.28dl						
Control Delay	0.6			20.2						
Queue Delay	1.9			0.0						
Total Delay	2.5			20.2						
LOS	A			C						
Approach Delay	2.5			20.2						
Approach LOS	A			C						
Queue Length 50th (ft)	0			186						
Queue Length 95th (ft)	m0			233						
Internal Link Dist (ft)	46			300	221					
Turn Bay Length (ft)										
Base Capacity (vph)	3608			1207						
Starvation Cap Reductn	1780			0						
Spillback Cap Reductn	0			0						
Storage Cap Reductn	0			0						
Reduced v/c Ratio	0.88			0.77						

Intersection Summary

Area Type: Other
 Cycle Length: 105
 Actuated Cycle Length: 105
 Offset: 0 (0%), Referenced to phase 2:NBTL, Start of Green
 Natural Cycle: 105
 Control Type: Pretimed
 Maximum v/c Ratio: 0.91
 Intersection Signal Delay: 9.0 Intersection LOS: A
 Intersection Capacity Utilization 64.4% ICU Level of Service C
 Analysis Period (min) 15
 m Volume for 95th percentile queue is metered by upstream signal.
 dl Defacto Left Lane. Recode with 1 though lane as a left lane.

Splits and Phases: 12: I-90/94 EB On Ramp & Armitage Avenue

#11 #12	#11 #12	#11 #12	#11 #12
26 s	22 s	36 s	6 s 15 s

Lanes, Volumes, Timings
 13: Armitage Avenue & I-90/94 East Ramps

01/10/2019



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SBL	SBR	NWL	NWR	NWR2
Lane Configurations	↗	↗↗			↗↗				↗		↗
Traffic Volume (vph)	222	833	0	0	597	319	0	0	282	0	565
Future Volume (vph)	222	833	0	0	597	319	0	0	282	0	565
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	12	12	12	11	12	12	12	12	12	12
Grade (%)		0%			0%		0%		0%		
Storage Length (ft)	0		0	0		0	0	0	0	0	
Storage Lanes	1		0	0		0	0	0	1	1	
Taper Length (ft)	0			0			0		0		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99				0.98						0.99
Fr _t					0.948						0.850
Fl _t Protected	0.950								0.950		
Satd. Flow (prot)	1668	3406	0	0	3068	0	0	0	1770	0	1524
Fl _t Permitted	0.196								0.950		
Satd. Flow (perm)	342	3406	0	0	3068	0	0	0	1770	0	1504
Right Turn on Red			Yes			Yes		Yes			Yes
Satd. Flow (RTOR)					126						120
Link Speed (mph)		30			30		30		30		
Link Distance (ft)		380			510		199		293		
Travel Time (s)		8.6			11.6		4.5		6.7		
Confl. Peds. (#/hr)	28		84	84		28					1
Confl. Bikes (#/hr)			1								
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
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	1%	6%	0%	0%	7%	4%	0%	0%	2%	0%	6%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)											
Mid-Block Traffic (%)		0%			0%		0%		0%		
Shared Lane Traffic (%)											
Lane Group Flow (vph)	234	877	0	0	964	0	0	0	297	0	595
Turn Type	pm+pt	NA			NA				Prot		Perm
Protected Phases	7	4			8				5		
Permitted Phases	4										5
Detector Phase	7	4			8				5		5
Switch Phase											
Minimum Initial (s)	5.0	29.0			29.0				30.0		30.0
Minimum Split (s)	17.0	54.0			53.0				35.0		35.0
Total Split (s)	17.0	70.0			53.0				35.0		35.0
Total Split (%)	16.2%	66.7%			50.5%				33.3%		33.3%
Yellow Time (s)	3.0	3.0			3.0				3.0		3.0
All-Red Time (s)	2.0	2.0			2.0				2.0		2.0
Lost Time Adjust (s)	-1.0	-1.0			-1.0				-1.0		-1.0
Total Lost Time (s)	4.0	4.0			4.0				4.0		4.0
Lead/Lag	Lag				Lead						
Lead-Lag Optimize?	Yes				Yes						
Recall Mode	Max	Max			Max				Max		Max
Act Effct Green (s)	66.0	66.0			49.0				31.0		31.0
Actuated g/C Ratio	0.63	0.63			0.47				0.30		0.30

Lanes, Volumes, Timings
 13: Armitage Avenue & I-90/94 East Ramps

01/10/2019

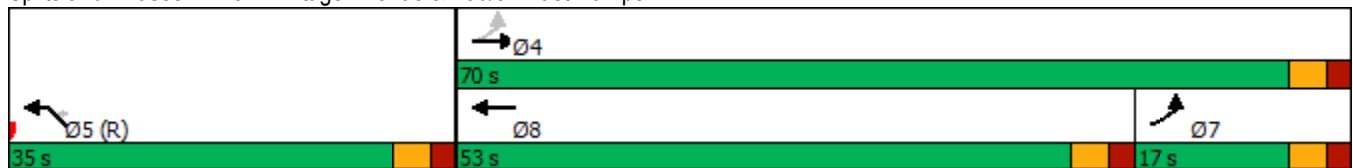


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SBL	SBR	NWL	NWR	NWR2
v/c Ratio	0.62	0.41			0.64				0.57		1.13
Control Delay	16.7	4.6			23.9				36.4		107.9
Queue Delay	0.0	0.5			0.2				0.0		0.4
Total Delay	16.7	5.1			24.2				36.4		108.4
LOS	B	A			C				D		F
Approach Delay		7.5			24.2				84.4		
Approach LOS		A			C				F		
Queue Length 50th (ft)	52	123			256				169		~404
Queue Length 95th (ft)	75	137			334				258		#622
Internal Link Dist (ft)		300			430		119		213		
Turn Bay Length (ft)											
Base Capacity (vph)	379	2140			1498				522		528
Starvation Cap Reductn	0	544			114				0		0
Spillback Cap Reductn	0	740			11				0		26
Storage Cap Reductn	0	0			0				0		0
Reduced v/c Ratio	0.62	0.63			0.70				0.57		1.19

Intersection Summary






















Area Type: Other
 Cycle Length: 105
 Actuated Cycle Length: 105
 Offset: 5 (5%), Referenced to phase 5:NWL, Start of Green
 Natural Cycle: 105
 Control Type: Pretimed
 Maximum v/c Ratio: 1.13
 Intersection Signal Delay: 36.0
 Intersection LOS: D
 Intersection Capacity Utilization 87.3%
 ICU Level of Service E
 Analysis Period (min) 15
 ~ Volume exceeds capacity, queue is theoretically infinite.
 Queue shown is maximum after two cycles.
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

Splits and Phases: 13: Armitage Avenue & I-90/94 East Ramps



Lanes, Volumes, Timings
14: Ashland Avenue & Elston Avenue

01/10/2019

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	494	131	0	152	188	80	1154	0	280	1397	6
Future Volume (vph)	0	494	131	0	152	188	80	1154	0	280	1397	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	2000	1900	1900	1900	1900
Lane Width (ft)	12	15	11	12	10	12	10	10	10	10	11	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		100	0		0	150		0	150		0
Storage Lanes	0		1	0		1	1		0	1		0
Taper Length (ft)	0			0			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	0.95
Ped Bike Factor			0.96			0.98				1.00	1.00	
Frt			0.850			0.850					0.999	
Flt Protected							0.950			0.950		
Satd. Flow (prot)	0	2029	1501	0	1657	1509	1604	3346	0	1620	3329	0
Flt Permitted							0.114			0.129		
Satd. Flow (perm)	0	2029	1438	0	1657	1484	193	3346	0	220	3329	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			104			73						1
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		566			786			636			340	
Travel Time (s)		12.9			17.9			14.5			7.7	
Confl. Peds. (#/hr)	4					4	113		6	6		112
Confl. Bikes (#/hr)			40			2			3			1
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
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	3%	4%	0%	7%	7%	5%	6%	0%	4%	3%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	8	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	520	138	0	160	198	84	1215	0	295	1477	0
Turn Type		NA	Perm		NA	pm+ov	pm+pt	NA		custom	NA	
Protected Phases		4			8	1	5	2 5		1	1 6	
Permitted Phases			4			8	2 5			6		
Detector Phase		4	4		8	1	5	2 5		1	1 6	
Switch Phase												
Minimum Initial (s)		5.0	5.0		5.0	5.0	5.0			5.0		
Minimum Split (s)		35.0	35.0		35.0	9.5	10.0			9.5		
Total Split (s)		35.0	35.0		35.0	20.0	15.0			20.0		
Total Split (%)		33.3%	33.3%		33.3%	19.0%	14.3%			19.0%		
Yellow Time (s)		3.0	3.0		3.0	3.0	3.0			3.0		
All-Red Time (s)		2.0	2.0		2.0	0.0	2.0			0.0		
Lost Time Adjust (s)		-1.0	-1.0		-1.0	-1.0	-1.0			-1.0		
Total Lost Time (s)		4.0	4.0		4.0	2.0	4.0			2.0		
Lead/Lag							Lag					
Lead-Lag Optimize?							Yes					
Recall Mode		None	None		None	None	None			None		
Act Effct Green (s)		29.9	29.9		29.9	51.0	46.0	46.0		52.1	54.1	
Actuated g/C Ratio		0.28	0.28		0.28	0.49	0.44	0.44		0.50	0.52	

Lanes, Volumes, Timings
 14: Ashland Avenue & Elston Avenue

01/10/2019

Lane Group	Ø2	Ø6
Lane Configurations		
Traffic Volume (vph)		
Future Volume (vph)		
Ideal Flow (vphpl)		
Lane Width (ft)		
Grade (%)		
Storage Length (ft)		
Storage Lanes		
Taper Length (ft)		
Lane Util. Factor		
Ped Bike Factor		
Frt		
Flt Protected		
Satd. Flow (prot)		
Flt Permitted		
Satd. Flow (perm)		
Right Turn on Red		
Satd. Flow (RTOR)		
Link Speed (mph)		
Link Distance (ft)		
Travel Time (s)		
Confl. Peds. (#/hr)		
Confl. Bikes (#/hr)		
Peak Hour Factor		
Growth Factor		
Heavy Vehicles (%)		
Bus Blockages (#/hr)		
Parking (#/hr)		
Mid-Block Traffic (%)		
Shared Lane Traffic (%)		
Lane Group Flow (vph)		
Turn Type		
Protected Phases	2	6
Permitted Phases		
Detector Phase		
Switch Phase		
Minimum Initial (s)	5.0	5.0
Minimum Split (s)	38.0	33.0
Total Split (s)	50.0	35.0
Total Split (%)	48%	33%
Yellow Time (s)	3.0	3.0
All-Red Time (s)	2.0	2.0
Lost Time Adjust (s)		
Total Lost Time (s)		
Lead/Lag		Lead
Lead-Lag Optimize?		Yes
Recall Mode	C-Max	C-Max
Act Effct Green (s)		
Actuated g/C Ratio		

Lanes, Volumes, Timings
 14: Ashland Avenue & Elston Avenue

01/10/2019

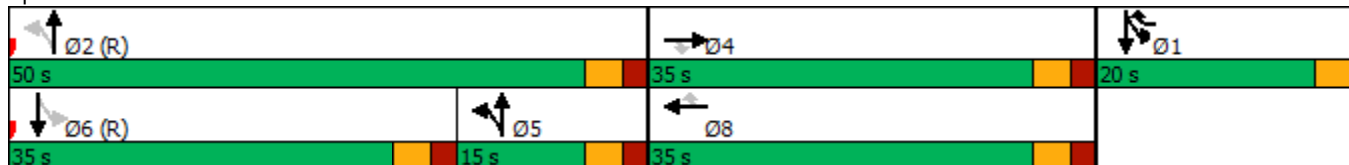


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio		0.90	0.29		0.34	0.26	0.36	0.83		0.81	0.86	
Control Delay		56.1	10.7		45.3	3.9	28.9	24.9		17.3	19.9	
Queue Delay		0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.3	
Total Delay		56.1	10.7		45.3	3.9	28.9	24.9		17.3	20.2	
LOS		E	B		D	A	C	C		B	C	
Approach Delay		46.5			22.4			25.2			19.7	
Approach LOS		D			C			C			B	
Queue Length 50th (ft)		331	17		92	6	25	264		113	551	
Queue Length 95th (ft)		#514	63		156	24	m41	m365		m90	m468	
Internal Link Dist (ft)		486			706			556			260	
Turn Bay Length (ft)			100				150			150		
Base Capacity (vph)		599	497		489	762	232	1465		362	1714	
Starvation Cap Reductn		0	0		0	0	0	0		0	32	
Spillback Cap Reductn		0	0		0	0	0	0		0	0	
Storage Cap Reductn		0	0		0	0	0	0		0	0	
Reduced v/c Ratio		0.87	0.28		0.33	0.26	0.36	0.83		0.81	0.88	

Intersection Summary

Area Type: Other
 Cycle Length: 105
 Actuated Cycle Length: 105
 Offset: 13 (12%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
 Natural Cycle: 90
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.90
 Intersection Signal Delay: 26.0
 Intersection LOS: C
 Intersection Capacity Utilization 81.8%
 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: 14: Ashland Avenue & Elston Avenue



Lane Group	Ø2	Ø6
v/c Ratio		
Control Delay		
Queue Delay		
Total Delay		
LOS		
Approach Delay		
Approach LOS		
Queue Length 50th (ft)		
Queue Length 95th (ft)		
Internal Link Dist (ft)		
Turn Bay Length (ft)		
Base Capacity (vph)		
Starvation Cap Reductn		
Spillback Cap Reductn		
Storage Cap Reductn		
Reduced v/c Ratio		
Intersection Summary		

Lanes, Volumes, Timings
15: Ashland Avenue & Armitage Avenue

01/10/2019



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕↕			↕↕		↕	↕↕			↕↕	↕
Traffic Volume (vph)	456	906	33	14	304	0	85	770	48	0	1043	523
Future Volume (vph)	456	906	33	14	304	0	85	770	48	0	1043	523
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	12	11	11	10	10	9	16	12	11	11
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	75		0	110		0	0		0
Storage Lanes	0		0	0		0	1		0	0		1
Taper Length (ft)	0			25			25			0		
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	1.00	1.00	0.95	0.95	1.00	0.95	1.00
Ped Bike Factor		1.00			1.00		0.99	1.00				0.90
Frt		0.996						0.991				0.850
Flt Protected		0.984			0.998		0.950					
Satd. Flow (prot)	0	3227	0	0	3259	0	1546	2969	0	0	3421	1487
Flt Permitted		0.631			0.828		0.100					
Satd. Flow (perm)	0	2069	0	0	2704	0	161	2969	0	0	3421	1335
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		3						8				164
Link Speed (mph)		30			30			30				30
Link Distance (ft)		510			433			675				636
Travel Time (s)		11.6			9.8			15.3				14.5
Confl. Peds. (#/hr)	1		20	20		1	114		8	8		114
Confl. Bikes (#/hr)			3						3			
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
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	6%	6%	3%	25%	6%	0%	9%	7%	0%	0%	2%	5%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	8	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%				0%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1453	0	0	332	0	89	852	0	0	1086	545
Turn Type	custom	NA		Perm	NA		custom	NA			NA	pm+ov
Protected Phases	7	7 4			8		1	1 2			6	7
Permitted Phases	4			8			2					6
Detector Phase	7	7 4		8	8		1	1 2			6	7
Switch Phase												
Minimum Initial (s)	5.0			5.0	5.0		5.0				26.0	5.0
Minimum Split (s)	10.0			23.0	23.0		8.0				43.0	10.0
Total Split (s)	30.0			24.0	24.0		8.0				43.0	30.0
Total Split (%)	28.6%			22.9%	22.9%		7.6%				41.0%	28.6%
Yellow Time (s)	3.0			3.0	3.0		3.0				3.0	3.0
All-Red Time (s)	0.0			2.0	2.0		0.0				1.0	0.0
Lost Time Adjust (s)					-1.0		-1.0				-1.0	-1.0
Total Lost Time (s)					4.0		2.0				3.0	2.0
Lead/Lag	Lead			Lag	Lag							Lead
Lead-Lag Optimize?	Yes			Yes	Yes							Yes
Recall Mode	None			None	None		None				C-Max	None
Act Effct Green (s)		52.0			20.0		47.0	49.0			40.0	69.0
Actuated g/C Ratio		0.50			0.19		0.45	0.47			0.38	0.66

Lanes, Volumes, Timings
 15: Ashland Avenue & Armitage Avenue

01/10/2019

Lane Group	Ø2	Ø4
Lane Configurations		
Traffic Volume (vph)		
Future Volume (vph)		
Ideal Flow (vphpl)		
Lane Width (ft)		
Grade (%)		
Storage Length (ft)		
Storage Lanes		
Taper Length (ft)		
Lane Util. Factor		
Ped Bike Factor		
Frt		
Flt Protected		
Satd. Flow (prot)		
Flt Permitted		
Satd. Flow (perm)		
Right Turn on Red		
Satd. Flow (RTOR)		
Link Speed (mph)		
Link Distance (ft)		
Travel Time (s)		
Confl. Peds. (#/hr)		
Confl. Bikes (#/hr)		
Peak Hour Factor		
Growth Factor		
Heavy Vehicles (%)		
Bus Blockages (#/hr)		
Parking (#/hr)		
Mid-Block Traffic (%)		
Shared Lane Traffic (%)		
Lane Group Flow (vph)		
Turn Type		
Protected Phases	2	4
Permitted Phases		
Detector Phase		
Switch Phase		
Minimum Initial (s)	26.0	5.0
Minimum Split (s)	43.0	39.0
Total Split (s)	43.0	54.0
Total Split (%)	41%	51%
Yellow Time (s)	3.0	3.0
All-Red Time (s)	1.0	2.0
Lost Time Adjust (s)		
Total Lost Time (s)		
Lead/Lag		
Lead-Lag Optimize?		
Recall Mode	C-Max	None
Act Effct Green (s)		
Actuated g/C Ratio		

Lanes, Volumes, Timings
 15: Ashland Avenue & Armitage Avenue

01/10/2019

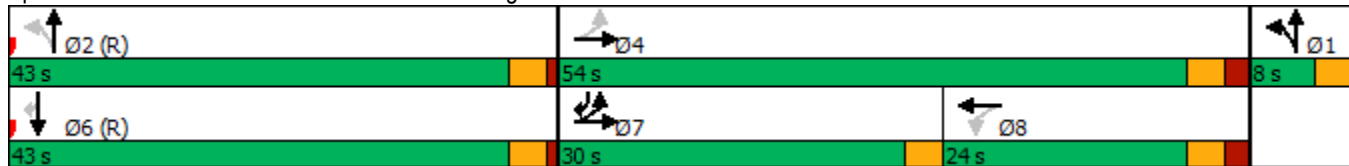


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio		1.09			0.64		0.59	0.61			0.83	0.56
Control Delay		78.2			30.9		45.2	16.4			24.1	1.6
Queue Delay		4.6			0.0		0.0	0.0			0.0	0.0
Total Delay		82.7			30.9		45.2	16.4			24.1	1.6
LOS		F			C		D	B			C	A
Approach Delay		82.7			30.9			19.2			16.6	
Approach LOS		F			C			B			B	
Queue Length 50th (ft)		~535			87		33	91			144	0
Queue Length 95th (ft)		m#575			146		m69	163			m291	m2
Internal Link Dist (ft)		430			353			595			556	
Turn Bay Length (ft)							110					
Base Capacity (vph)		1334			515		151	1389			1303	974
Starvation Cap Reductn		0			0		0	0			0	0
Spillback Cap Reductn		29			0		0	0			0	0
Storage Cap Reductn		0			0		0	0			0	0
Reduced v/c Ratio		1.11			0.64		0.59	0.61			0.83	0.56

Intersection Summary

Area Type: Other
 Cycle Length: 105
 Actuated Cycle Length: 105
 Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Green
 Natural Cycle: 90
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 1.09
 Intersection Signal Delay: 40.3 Intersection LOS: D
 Intersection Capacity Utilization 98.9% ICU Level of Service F
 Analysis Period (min) 15
 ~ Volume exceeds capacity, queue is theoretically infinite.
 Queue shown is maximum after two cycles.
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.
 m Volume for 95th percentile queue is metered by upstream signal.





















Splits and Phases: 15: Ashland Avenue & Armitage Avenue



Lane Group	Ø2	Ø4
v/c Ratio		
Control Delay		
Queue Delay		
Total Delay		
LOS		
Approach Delay		
Approach LOS		
Queue Length 50th (ft)		
Queue Length 95th (ft)		
Internal Link Dist (ft)		
Turn Bay Length (ft)		
Base Capacity (vph)		
Starvation Cap Reductn		
Spillback Cap Reductn		
Storage Cap Reductn		
Reduced v/c Ratio		
Intersection Summary		

Lanes, Volumes, Timings
16: Elston Avenue & Armitage Avenue

01/10/2019

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	485	472	38	198	22	124	316	27	108	664	0
Future Volume (vph)	0	485	472	38	198	22	124	316	27	108	664	0
Ideal Flow (vphpl)	1900	2000	1900	1900	1900	1900	1900	2000	1900	1900	2000	1900
Lane Width (ft)	10	11	11	12	12	12	10	10	9	11	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	100		0	175		85	75		0
Storage Lanes	0		1	1		0	1		0	1		0
Taper Length (ft)	0			50			75			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			0.90	0.98	1.00			0.99				
Frt			0.850		0.985			0.988				
Flt Protected				0.950			0.950			0.950		
Satd. Flow (prot)	0	1790	1487	1805	1788	0	1546	1486	0	1745	1942	0
Flt Permitted				0.133			0.169			0.076		
Satd. Flow (perm)	0	1790	1344	246	1788	0	275	1486	0	140	1942	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			171		6			7				
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		433			636			590			786	
Travel Time (s)		9.8			14.5			13.4			17.9	
Confl. Peds. (#/hr)	2		50	50		2			50	50		
Confl. Bikes (#/hr)			3						1			42
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
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	8%	5%	0%	5%	0%	9%	10%	0%	0%	3%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)								3				
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	511	497	40	231	0	131	361	0	114	699	0
Turn Type		NA	pm+ov	Perm	NA		custom	NA		Perm	NA	
Protected Phases		4	5		8		5	2 5			6	
Permitted Phases			4	8			2			6		
Detector Phase		4	5	8	8		5	2 5		6	6	
Switch Phase												
Minimum Initial (s)		15.0	5.0	15.0	15.0		5.0			31.0	31.0	
Minimum Split (s)		40.0	9.5	40.0	40.0		9.5			52.0	52.0	
Total Split (s)		40.0	10.0	40.0	40.0		10.0			55.0	55.0	
Total Split (%)		38.1%	9.5%	38.1%	38.1%		9.5%			52.4%	52.4%	
Yellow Time (s)		3.0	3.0	3.0	3.0		3.0			3.0	3.0	
All-Red Time (s)		2.0	1.0	2.0	2.0		1.0			1.0	1.0	
Lost Time Adjust (s)		-1.0	-1.0	-1.0	-1.0		-1.0			-1.0	-1.0	
Total Lost Time (s)		4.0	3.0	4.0	4.0		3.0			3.0	3.0	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode		None	None	None	None		None			C-Max	C-Max	
Act Effct Green (s)		33.7	43.5	33.7	33.7		61.3	64.3		52.5	52.5	
Actuated g/C Ratio		0.32	0.41	0.32	0.32		0.58	0.61		0.50	0.50	

Lanes, Volumes, Timings
 16: Elston Avenue & Armitage Avenue

01/10/2019

Lane Group	Ø2
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Grade (%)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Confl. Bikes (#/hr)	
Peak Hour Factor	
Growth Factor	
Heavy Vehicles (%)	
Bus Blockages (#/hr)	
Parking (#/hr)	
Mid-Block Traffic (%)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	2
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	31.0
Minimum Split (s)	52.0
Total Split (s)	55.0
Total Split (%)	52%
Yellow Time (s)	3.0
All-Red Time (s)	1.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Recall Mode	C-Max
Act Effct Green (s)	
Actuated g/C Ratio	

Lanes, Volumes, Timings
 16: Elston Avenue & Armitage Avenue

01/10/2019

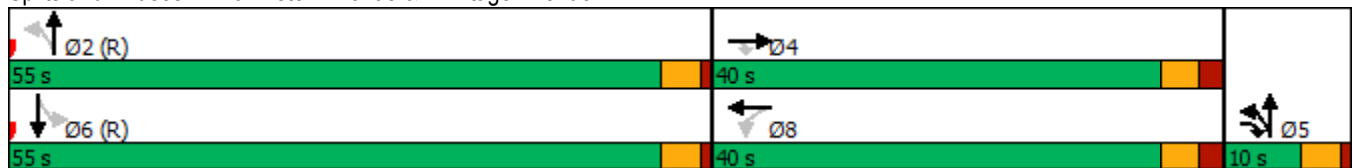


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio		0.89	0.74	0.51	0.40		0.49	0.40		1.63	0.72	
Control Delay		46.7	18.0	49.5	26.4		31.0	25.8		336.6	7.2	
Queue Delay		3.7	5.2	4.5	0.0		0.0	0.0		0.0	31.2	
Total Delay		50.5	23.2	54.0	26.4		31.0	25.8		336.6	38.4	
LOS		D	C	D	C		C	C		F	D	
Approach Delay		37.0			30.5			27.2			80.2	
Approach LOS		D			C			C			F	
Queue Length 50th (ft)		255	117	19	104		67	206		~89	46	
Queue Length 95th (ft)		m240	m105	#70	166		120	299		m#111	m52	
Internal Link Dist (ft)		353			556			510			706	
Turn Bay Length (ft)				100			175			75		
Base Capacity (vph)		613	669	84	616		267	913		70	970	
Starvation Cap Reductn		50	23	0	0		0	0		0	0	
Spillback Cap Reductn		0	116	15	0		0	0		0	302	
Storage Cap Reductn		0	0	0	0		0	0		0	0	
Reduced v/c Ratio		0.91	0.90	0.58	0.38		0.49	0.40		1.63	1.05	

Intersection Summary

Area Type: Other
 Cycle Length: 105
 Actuated Cycle Length: 105
 Offset: 81 (77%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
 Natural Cycle: 105
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 1.63
 Intersection Signal Delay: 48.1 Intersection LOS: D
 Intersection Capacity Utilization 107.4% ICU Level of Service G
 Analysis Period (min) 15
 ~ Volume exceeds capacity, queue is theoretically infinite.
 Queue shown is maximum after two cycles.
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 16: Elston Avenue & Armitage Avenue



Lane Group	Ø2
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	
Intersection Summary	

Lanes, Volumes, Timings
 17: Dominick Street & Armitage Avenue

01/10/2019



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	236	126	232	39	95	33	44	181	23	5	96	63
Future Volume (vph)	236	126	232	39	95	33	44	181	23	5	96	63
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	100		0	100		0	100		0	100		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	50			50			50			50		
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	0.88	0.89		0.93	0.96		0.89	0.98		0.91	0.94	
Frt		0.903			0.961			0.983			0.941	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1505	0	1770	1714	0	1770	1798	0	1770	1640	0
Flt Permitted	0.631			0.282			0.650			0.610		
Satd. Flow (perm)	1033	1505	0	490	1714	0	1083	1798	0	1032	1640	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		150			29			7			34	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		636			346			757			412	
Travel Time (s)		14.5			7.9			17.2			9.4	
Confl. Peds. (#/hr)	50		50	50		50	50		50	50		50
Confl. Bikes (#/hr)												
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
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	248	377	0	41	135	0	46	215	0	5	167	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	22.5	22.5		22.5	22.5		22.5	22.5		22.5	22.5	
Total Split (s)	65.0	65.0		65.0	65.0		40.0	40.0		40.0	40.0	
Total Split (%)	61.9%	61.9%		61.9%	61.9%		38.1%	38.1%		38.1%	38.1%	
Yellow Time (s)	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	
Lost Time Adjust (s)	0.0	0.0		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		4.0	4.0	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	None	None		None	None		C-Max	C-Max		C-Max	C-Max	
Act Effct Green (s)	32.2	32.2		32.2	32.2		64.8	64.8		64.8	64.8	
Actuated g/C Ratio	0.31	0.31		0.31	0.31		0.62	0.62		0.62	0.62	

Lanes, Volumes, Timings
 17: Dominick Street & Armitage Avenue

01/10/2019

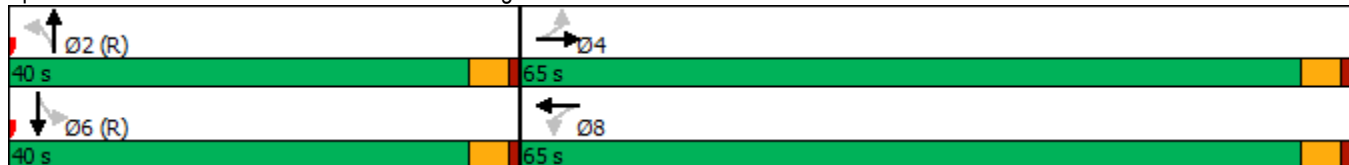


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.78	0.67		0.27	0.25		0.07	0.19		0.01	0.16	
Control Delay	21.8	6.5		27.8	19.4		3.5	3.2		11.2	8.2	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	21.8	6.5		27.8	19.4		3.5	3.2		11.2	8.2	
LOS	C	A		C	B		A	A		B	A	
Approach Delay		12.6			21.4			3.3			8.3	
Approach LOS		B			C			A			A	
Queue Length 50th (ft)	69	20		20	52		4	17		1	34	
Queue Length 95th (ft)	m41	m7		m39	76		m8	22		m6	m77	
Internal Link Dist (ft)		556			266			677			332	
Turn Bay Length (ft)	100			100			100			100		
Base Capacity (vph)	600	937		284	1007		668	1111		636	1024	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.41	0.40		0.14	0.13		0.07	0.19		0.01	0.16	

Intersection Summary

Area Type: Other
 Cycle Length: 105
 Actuated Cycle Length: 105
 Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
 Natural Cycle: 45
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.78
 Intersection Signal Delay: 11.3 Intersection LOS: B
 Intersection Capacity Utilization 60.1% ICU Level of Service B
 Analysis Period (min) 15
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 17: Dominick Street & Armitage Avenue



Lanes, Volumes, Timings
 19: Ashland Avenue & Cortland Street

01/10/2019



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑	↗	↖	↗			↑↗			↑↗	
Traffic Volume (vph)	5	514	56	86	179	56	0	811	183	0	1036	43
Future Volume (vph)	5	514	56	86	179	56	0	811	183	0	1036	43
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	10	10	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	50		0	0		0	0		0
Storage Lanes	0		1	1		0	0		0	0		0
Taper Length (ft)	0			25			0			0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor		1.00	0.87	0.97	0.98			0.99			0.99	
Frt			0.850		0.964			0.972			0.994	
Flt Protected				0.950								
Satd. Flow (prot)	0	1706	1422	1687	1702	0	0	3168	0	0	3495	0
Flt Permitted		0.997		0.114								
Satd. Flow (perm)	0	1699	1240	197	1702	0	0	3168	0	0	3495	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		301			498			340			675	
Travel Time (s)		6.8			11.3			7.7			15.3	
Confl. Peds. (#/hr)	102		104	104		102	214		56	56		214
Confl. Bikes (#/hr)			27			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
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	4%	6%	7%	7%	0%	0%	8%	5%	2%	0%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	8	0	0	8	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	540	58	90	244	0	0	1036	0	0	1124	0
Turn Type	Perm	NA	Perm	custom	NA			NA			NA	
Protected Phases		4		3	3 8			2			6	
Permitted Phases	4		4	8								
Detector Phase	4	4	4	3	3 8			2			6	
Switch Phase												
Minimum Initial (s)	12.0	12.0	12.0	8.0				40.0			40.0	
Minimum Split (s)	37.0	37.0	37.0	11.0				57.0			57.0	
Total Split (s)	37.0	37.0	37.0	11.0				57.0			57.0	
Total Split (%)	35.2%	35.2%	35.2%	10.5%				54.3%			54.3%	
Yellow Time (s)	3.0	3.0	3.0	3.0				3.0			3.0	
All-Red Time (s)	2.0	2.0	2.0	0.0				2.0			2.0	
Lost Time Adjust (s)		-1.0	-1.0	1.0				-1.0			-1.0	
Total Lost Time (s)		4.0	4.0	4.0				4.0			4.0	
Lead/Lag	Lag	Lag	Lag	Lead								
Lead-Lag Optimize?	Yes	Yes	Yes	Yes								
Recall Mode	Max	Max	Max	Max				Max			Max	
Act Effect Green (s)		33.0	33.0	44.0	44.0			53.0			53.0	
Actuated g/C Ratio		0.31	0.31	0.42	0.42			0.50			0.50	

Lanes, Volumes, Timings
 19: Ashland Avenue & Cortland Street

01/10/2019

Lane Group	Ø8
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Grade (%)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Confl. Bikes (#/hr)	
Peak Hour Factor	
Growth Factor	
Heavy Vehicles (%)	
Bus Blockages (#/hr)	
Parking (#/hr)	
Mid-Block Traffic (%)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	8
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	12.0
Minimum Split (s)	37.0
Total Split (s)	48.0
Total Split (%)	46%
Yellow Time (s)	3.0
All-Red Time (s)	2.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Recall Mode	Max
Act Effct Green (s)	
Actuated g/C Ratio	

Lanes, Volumes, Timings
 19: Ashland Avenue & Cortland Street

01/10/2019

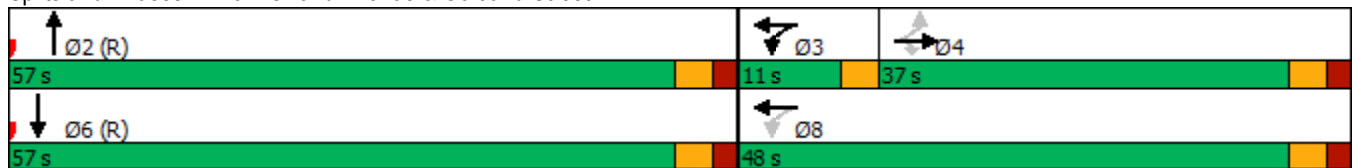


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio		1.01	0.15	0.50	0.34			0.65				0.64
Control Delay		79.2	27.3	42.1	10.7			21.5				4.2
Queue Delay		0.0	0.0	0.0	0.0			0.0				0.0
Total Delay		79.2	27.3	42.1	10.7			21.5				4.2
LOS		E	C	D	B			C				A
Approach Delay		74.2			19.1			21.5				4.2
Approach LOS		E			B			C				A
Queue Length 50th (ft)		~369	28	33	34			258				35
Queue Length 95th (ft)		#591	60	m78	m84			329				m45
Internal Link Dist (ft)		221				418		260				595
Turn Bay Length (ft)				50								
Base Capacity (vph)		533	389	181	713			1599				1764
Starvation Cap Reductn		0	0	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		1.01	0.15	0.50	0.34			0.65				0.64

Intersection Summary

Area Type: Other
 Cycle Length: 105
 Actuated Cycle Length: 105
 Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green
 Natural Cycle: 105
 Control Type: Pretimed
 Maximum v/c Ratio: 1.01
 Intersection Signal Delay: 25.1
 Intersection LOS: C
 Intersection Capacity Utilization 94.9%
 ICU Level of Service F
 Analysis Period (min) 15
 ~ Volume exceeds capacity, queue is theoretically infinite.
 Queue shown is maximum after two cycles.
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 19: Ashland Avenue & Cortland Street



Lane Group	Ø8
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	
Intersection Summary	

Lanes, Volumes, Timings
20: Elston Avenue & Cortland Street

01/10/2019

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	40	492	198	91	261	89	57	340	89	305	834	12
Future Volume (vph)	40	492	198	91	261	89	57	340	89	305	834	12
Ideal Flow (vphpl)	1900	2000	1900	1900	2000	1900	1900	2000	1900	1900	1900	1900
Lane Width (ft)	12	10	12	12	10	12	11	11	11	11	11	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	95		100	75		0	60		60	150		70
Storage Lanes	1		1	1		1	1		1	1		0
Taper Length (ft)	50			50			25			75		
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		0.94	0.99		0.93			0.94	0.98	1.00	
Frt			0.850			0.850			0.850		0.998	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1671	1564	1599	1752	1530	1509	1694	1507	1473	1646	1528	0
Flt Permitted	0.446			0.122			0.089			0.392		
Satd. Flow (perm)	758	1564	1506	223	1530	1407	159	1507	1388	666	1528	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			114			95			83			1
Link Speed (mph)		30			30			30				30
Link Distance (ft)		498			338			319				590
Travel Time (s)		11.3			7.7			7.3				13.4
Confl. Peds. (#/hr)	32		23	32		23	15		28	28		15
Confl. Bikes (#/hr)			28			6			1			42
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
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	8%	5%	1%	3%	8%	7%	3%	11%	6%	6%	3%	9%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)		4			3			7				8
Mid-Block Traffic (%)		0%			0%			0%				0%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	43	523	211	97	278	95	61	362	95	324	900	0
Turn Type	pm+pt	NA	Perm	pm+pt	NA	pm+ov	pm+pt	NA	pm+ov	pm+pt	NA	
Protected Phases	7	4		3	8	1	5	2	3	1	6	
Permitted Phases	4		4	8		8	2		2	6		
Detector Phase	7	4	4	3	8	1	5	2	3	1	6	
Switch Phase												
Minimum Initial (s)	4.0	17.0	17.0	4.0	17.0	5.0	5.0	31.0	4.0	5.0	31.0	
Minimum Split (s)	7.0	34.0	34.0	7.0	34.0	8.0	8.0	44.0	7.0	8.0	44.0	
Total Split (s)	7.0	34.0	34.0	7.0	34.0	14.0	8.0	50.0	7.0	14.0	56.0	
Total Split (%)	6.7%	32.4%	32.4%	6.7%	32.4%	13.3%	7.6%	47.6%	6.7%	13.3%	53.3%	
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	0.0	2.0	2.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	
Lost Time Adjust (s)	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	
Total Lost Time (s)	2.0	4.0	4.0	2.0	4.0	2.0	2.0	4.0	2.0	2.0	4.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Recall Mode	None	None	None	None	None	None	None	C-Max	None	None	C-Max	
Act Effct Green (s)	37.0	30.0	30.0	37.8	32.8	46.8	54.0	46.0	53.0	62.0	53.6	
Actuated g/C Ratio	0.35	0.29	0.29	0.36	0.31	0.45	0.51	0.44	0.50	0.59	0.51	

Lanes, Volumes, Timings
 20: Elston Avenue & Cortland Street

01/10/2019



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.14	1.17	0.41	0.63	0.58	0.14	0.36	0.55	0.13	0.64	1.15	
Control Delay	25.6	123.5	18.7	39.6	33.9	10.0	16.0	25.7	4.0	13.0	104.8	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	
Total Delay	25.6	123.5	18.7	39.6	33.9	10.0	16.0	25.7	4.0	13.0	104.9	
LOS	C	F	B	D	C	B	B	C	A	B	F	
Approach Delay		89.6			30.2			20.6			80.6	
Approach LOS		F			C			C			F	
Queue Length 50th (ft)	17	~405	43	46	184	18	16	175	4	88	~741	
Queue Length 95th (ft)	m20	m#463	m55	m#103	279	m54	34	268	28	m136	#982	
Internal Link Dist (ft)		418			258			239			510	
Turn Bay Length (ft)	95		100	75			60		60	150		
Base Capacity (vph)	310	446	511	153	478	691	169	660	745	505	780	
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	19	
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	0.14	1.17	0.41	0.63	0.58	0.14	0.36	0.55	0.13	0.64	1.18	

Intersection Summary

Area Type: Other
 Cycle Length: 105
 Actuated Cycle Length: 105
 Offset: 10 (10%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
 Natural Cycle: 145
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 1.17
 Intersection Signal Delay: 64.6
 Intersection LOS: E
 Intersection Capacity Utilization 92.4%
 ICU Level of Service F
 Analysis Period (min) 15
 ~ Volume exceeds capacity, queue is theoretically infinite.
 Queue shown is maximum after two cycles.
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 20: Elston Avenue & Cortland Street



Lanes, Volumes, Timings
21: Dominick Street & Cortland Street

01/10/2019



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	50	675	43	21	403	25	33	199	17	100	255	11
Future Volume (vph)	50	675	43	21	403	25	33	199	17	100	255	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	75		0	75		0	75		0	75		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	50			50			50			50		
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	0.95	0.99			0.99		0.93	0.99		0.92	0.99	
Frt		0.991			0.991			0.988			0.994	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1828	0	1770	1829	0	1770	1817	0	1770	1839	0
Flt Permitted	0.389			0.097			0.351			0.387		
Satd. Flow (perm)	686	1828	0	181	1829	0	606	1817	0	664	1839	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		4			4			4			2	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		249			805			175			757	
Travel Time (s)		5.7			18.3			4.0			17.2	
Confl. Peds. (#/hr)	50		50	50		50	50		50	50		50
Confl. Bikes (#/hr)												
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
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	53	756	0	22	450	0	35	227	0	105	280	0
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	7	4		3	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	9.5	22.5		9.5	22.5		9.5	22.5		9.5	22.5	
Total Split (s)	9.6	54.0		12.0	56.4		9.6	28.0		11.0	29.4	
Total Split (%)	9.1%	51.4%		11.4%	53.7%		9.1%	26.7%		10.5%	28.0%	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	0.0	1.0		0.0	1.0		0.0	1.0		0.0	1.0	
Lost Time Adjust (s)	1.0	0.0		1.0	0.0		1.0	0.0		1.0	0.0	
Total Lost Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Recall Mode	Max	Max		Max	Max		Max	Max		Max	Max	
Act Effct Green (s)	55.6	50.0		60.4	52.4		29.6	24.0		32.4	25.4	
Actuated g/C Ratio	0.53	0.48		0.58	0.50		0.28	0.23		0.31	0.24	

Lanes, Volumes, Timings
 21: Dominick Street & Cortland Street

01/10/2019

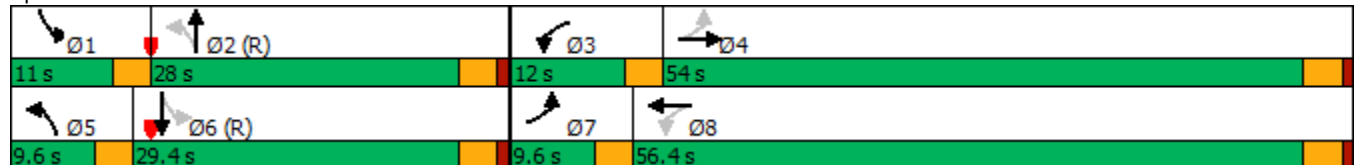


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.13	0.87		0.10	0.49		0.15	0.54		0.38	0.63	
Control Delay	5.8	30.6		8.8	16.1		25.6	40.7		21.1	32.4	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	5.8	30.6		8.8	16.1		25.6	40.7		21.1	32.4	
LOS	A	C		A	B		C	D		C	C	
Approach Delay		29.0			15.8			38.6			29.3	
Approach LOS		C			B			D			C	
Queue Length 50th (ft)	9	510		5	141		16	133		25	147	
Queue Length 95th (ft)	m12	m512		m11	212		39	211		60	230	
Internal Link Dist (ft)		169			725			95			677	
Turn Bay Length (ft)	75			75			75			75		
Base Capacity (vph)	421	872		225	914		232	418		278	446	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.13	0.87		0.10	0.49		0.15	0.54		0.38	0.63	

Intersection Summary

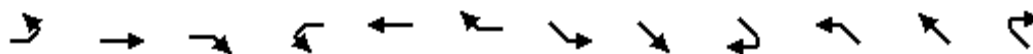
Area Type: Other
 Cycle Length: 105
 Actuated Cycle Length: 105
 Offset: 72 (69%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
 Natural Cycle: 80
 Control Type: Pretimed
 Maximum v/c Ratio: 0.87
 Intersection Signal Delay: 27.1
 Intersection LOS: C
 Intersection Capacity Utilization 72.1%
 ICU Level of Service C
 Analysis Period (min) 15
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 21: Dominick Street & Cortland Street



Lanes, Volumes, Timings
22: Kingsbury Street & Cortland Street

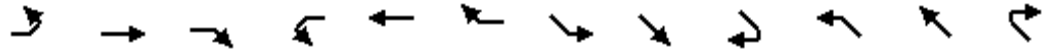
01/10/2019



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Traffic Volume (vph)	100	478	146	0	343	101	118	25	95	72	59	1
Future Volume (vph)	100	478	146	0	343	101	118	25	95	72	59	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	11	12	12	10	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%				0%
Storage Length (ft)	100		0	75		0	100		0	100		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	50			25			50			50		
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	0.95	0.95			0.96		0.92	0.87		0.89	1.00	
Frt		0.965			0.966			0.881			0.998	
Flt Protected	0.950						0.950			0.950		
Satd. Flow (prot)	1641	1552	0	1900	1506	0	1736	1402	0	1805	1893	0
Flt Permitted	0.377						0.716			0.591		
Satd. Flow (perm)	616	1552	0	1900	1506	0	1203	1402	0	995	1893	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		23			22			100				1
Link Speed (mph)		30			30			30				30
Link Distance (ft)		805			248			240				225
Travel Time (s)		18.3			5.6			5.5				5.1
Confl. Peds. (#/hr)	56		60	60		56	50		50	50		50
Confl. Bikes (#/hr)			14			6						
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
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	10%	7%	0%	0%	6%	4%	4%	0%	5%	0%	0%	0%
Bus Blockages (#/hr)	0	8	0	0	8	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%				0%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	105	657	0	0	467	0	124	126	0	76	63	0
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	7	4		3	8		1	6		5	2	
Permitted Phases	4			8			6			2		
Detector Phase	7	4		3	8		1	6		5	2	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	9.5	22.5		9.5	22.5		9.5	22.5		9.5	22.5	
Total Split (s)	10.4	61.0		10.0	60.6		10.0	24.0		10.0	24.0	
Total Split (%)	9.9%	58.1%		9.5%	57.7%		9.5%	22.9%		9.5%	22.9%	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	0.0	1.0		0.0	1.0		0.0	1.0		0.0	1.0	
Lost Time Adjust (s)	1.0	0.0		1.0	0.0		1.0	0.0		1.0	0.0	
Total Lost Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Recall Mode	Max	Max		Max	Max		Max	Max		Max	Max	
Act Effct Green (s)	63.4	57.0			56.6		26.0	20.0		26.0	20.0	
Actuated g/C Ratio	0.60	0.54			0.54		0.25	0.19		0.25	0.19	

Lanes, Volumes, Timings
 22: Kingsbury Street & Cortland Street

01/10/2019

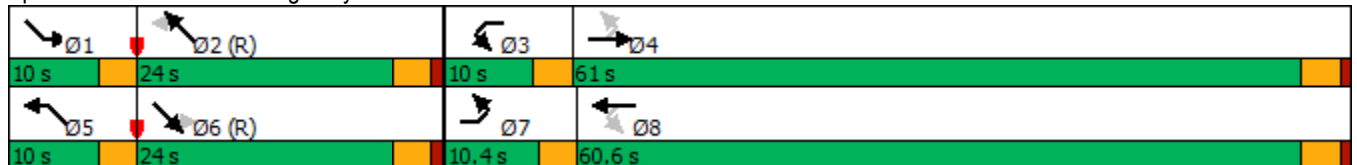


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
v/c Ratio	0.24	0.77			0.57		0.38	0.36		0.26	0.17	
Control Delay	7.1	13.0			18.6		33.5	14.4		30.7	36.6	
Queue Delay	0.0	0.0			1.6		0.0	0.0		0.0	0.0	
Total Delay	7.1	13.0			20.2		33.5	14.4		30.7	36.6	
LOS	A	B			C		C	B		C	D	
Approach Delay		12.2			20.2			23.9			33.4	
Approach LOS		B			C			C			C	
Queue Length 50th (ft)	14	98			189		64	15		38	35	
Queue Length 95th (ft)	m27	m174			288		113	67		75	73	
Internal Link Dist (ft)		725			168			160			145	
Turn Bay Length (ft)	100						100			100		
Base Capacity (vph)	434	853			821		328	348		292	361	
Starvation Cap Reductn	0	0			194		0	0		0	0	
Spillback Cap Reductn	0	0			0		0	0		0	0	
Storage Cap Reductn	0	0			0		0	0		0	0	
Reduced v/c Ratio	0.24	0.77			0.74		0.38	0.36		0.26	0.17	

Intersection Summary

Area Type: Other
 Cycle Length: 105
 Actuated Cycle Length: 105
 Offset: 79 (75%), Referenced to phase 2:NWTL and 6:SETL, Start of Green
 Natural Cycle: 80
 Control Type: Pretimed
 Maximum v/c Ratio: 0.77
 Intersection Signal Delay: 18.1
 Intersection LOS: B
 Intersection Capacity Utilization 64.3%
 ICU Level of Service C
 Analysis Period (min) 15
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 22: Kingsbury Street & Cortland Street



Lanes, Volumes, Timings
 24: Clybourn Avenue & Cortland Street & Racine Avenue

01/10/2019

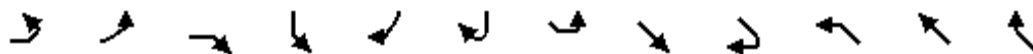


Lane Group	EBL2	EBL	EBR	SBL	SBR	SBR2	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Traffic Volume (vph)	30	304	110	252	284	33	84	647	24	121	269	59
Future Volume (vph)	30	304	110	252	284	33	84	647	24	121	269	59
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	10	12	11	11	12	10	13	12	10	13	12
Grade (%)		0%		0%				0%			0%	
Storage Length (ft)		0	0	0	0		115		0	115		0
Storage Lanes		1	1	1	2		1		0	1		0
Taper Length (ft)		0		0			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		0.93	0.91	0.95		0.80	0.99	1.00		0.99	0.99	
Frt			0.850		0.850	0.850		0.995			0.973	
Flt Protected		0.950		0.950			0.950			0.950		
Satd. Flow (prot)	0	1535	1538	1728	1267	1509	1589	1663	0	1604	1622	0
Flt Permitted		0.950		0.950			0.554			0.100		
Satd. Flow (perm)	0	1432	1405	1636	1267	1209	915	1663	0	167	1622	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		30		30				30			30	
Link Distance (ft)		208		140				544			1125	
Travel Time (s)		4.7		3.2				12.4			25.6	
Confl. Peds. (#/hr)	66		20	20	36	66	28		36	36		28
Confl. Bikes (#/hr)			8		5	5			12			2
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	7%	10%	5%	1%	6%	7%	6%	2%	0%	5%	3%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)					8			6			5	
Mid-Block Traffic (%)		0%		0%				0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	352	116	265	299	35	88	706	0	127	345	0
Turn Type	Prot	Prot	Perm	Prot	Prot	Perm	Perm	NA		pm+pt	NA	
Protected Phases	4	4		8	8			6		5	2	
Permitted Phases	4		4			8	6			2		
Detector Phase	4	4	4	8	8	8	6	6		5	2	
Switch Phase												
Minimum Initial (s)	9.0	9.0	9.0	9.0	9.0	9.0	23.0	23.0		4.0	23.0	
Minimum Split (s)	21.0	21.0	21.0	21.0	21.0	21.0	41.0	41.0		7.0	41.0	
Total Split (s)	21.0	21.0	21.0	21.0	21.0	21.0	41.0	41.0		7.0	48.0	
Total Split (%)	23.3%	23.3%	23.3%	23.3%	23.3%	23.3%	45.6%	45.6%		7.8%	53.3%	
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		0.0	1.0	
Lost Time Adjust (s)		0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)		4.0	4.0	4.0	4.0	4.0	4.0	4.0		3.0	4.0	
Lead/Lag							Lag	Lag		Lead		
Lead-Lag Optimize?							Yes	Yes		Yes		
Recall Mode	None	None	None	None	None	None	C-Max	C-Max		None	C-Max	
Act Effct Green (s)		17.0	17.0	17.0	17.0	17.0	37.0	37.0		45.0	44.0	
Actuated g/C Ratio		0.19	0.19	0.19	0.19	0.19	0.41	0.41		0.50	0.49	

Lanes, Volumes, Timings

24: Clybourn Avenue & Cortland Street & Racine Avenue

01/10/2019



Lane Group	EBL2	EBL	EBR	SBL	SBR	SBR2	SEL	SET	SER	NWL	NWT	NWR
v/c Ratio		1.22	0.44	0.81	1.25	0.15	0.23	1.03		0.86	0.44	
Control Delay		159.5	38.3	56.0	176.4	32.6	19.4	71.6		64.2	17.1	
Queue Delay		0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay		159.5	38.3	56.0	176.4	32.6	19.4	71.6		64.2	17.1	
LOS		F	D	E	F	C	B	E		E	B	
Approach Delay		129.4		114.7				65.8			29.8	
Approach LOS		F		F				E			C	
Queue Length 50th (ft)		~247	59	146	~214	17	32	~435		37	122	
Queue Length 95th (ft)		#415	112	#272	#372	44	67	#648		#115	192	
Internal Link Dist (ft)		128		60				464			1045	
Turn Bay Length (ft)							115			115		
Base Capacity (vph)		289	265	326	239	228	376	683		147	792	
Starvation Cap Reductn		0	0	0	0	0	0	0		0	0	
Spillback Cap Reductn		0	0	0	0	0	0	0		0	0	
Storage Cap Reductn		0	0	0	0	0	0	0		0	0	
Reduced v/c Ratio		1.22	0.44	0.81	1.25	0.15	0.23	1.03		0.86	0.44	

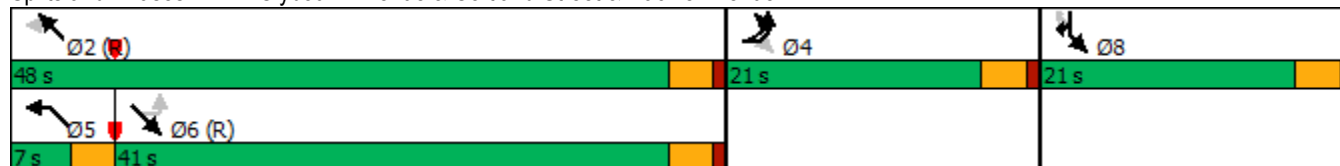
Intersection Summary

Area Type: Other
 Cycle Length: 90
 Actuated Cycle Length: 90
 Offset: 22 (24%), Referenced to phase 2:NWTL and 6:SETL, Start of Green
 Natural Cycle: 110
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 1.25
 Intersection Signal Delay: 83.8
 Intersection Capacity Utilization 96.0%
 Analysis Period (min) 15
 Intersection LOS: F
 ICU Level of Service F

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

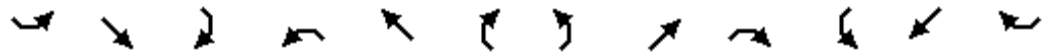
95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

Splits and Phases: 24: Clybourn Avenue & Cortland Street & Racine Avenue



Lanes, Volumes, Timings
25: Magnolia Avenue & Clybourn Avenue

01/10/2019



Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	25	723	0	0	301	23	1	1	1	13	1	6
Future Volume (vph)	25	723	0	0	301	23	1	1	1	13	1	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	13	12	10	13	12	12	15	12	12	15	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	55		0	125		0	0		0	0		0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (ft)	25			25			0			0		
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	0.99				1.00			0.98			0.96	
Fr _t					0.989			0.955			0.957	
Fl _t Protected	0.950							0.984			0.969	
Satd. Flow (prot)	1620	1624	0	1773	1610	0	0	1926	0	0	1915	0
Fl _t Permitted	0.550							0.889				
Satd. Flow (perm)	928	1624	0	1773	1610	0	0	1730	0	0	1928	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					9			1			7	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1323			544			344			123	
Travel Time (s)		30.1			12.4			7.8			2.8	
Confl. Peds. (#/hr)	23		21	21		23	9		20	20		9
Confl. Bikes (#/hr)			12									
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
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	4%	4%	0%	0%	3%	9%	0%	0%	0%	0%	0%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)		8			8							
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	27	786	0	0	352	0	0	3	0	0	22	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		6			2			4			8	
Permitted Phases	6			2			4			8		
Detector Phase	6	6		2	2		4	4		8	8	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	59.0	59.0		59.0	59.0		26.0	26.0		26.0	26.0	
Total Split (s)	59.0	59.0		59.0	59.0		26.0	26.0		26.0	26.0	
Total Split (%)	69.4%	69.4%		69.4%	69.4%		30.6%	30.6%		30.6%	30.6%	
Yellow Time (s)	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	
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?												
Recall Mode	C-Max	C-Max		C-Max	C-Max		None	None		None	None	
Act Effct Green (s)	78.8	78.8			78.8			6.3			6.4	
Actuated g/C Ratio	0.93	0.93			0.93			0.07			0.08	

Lanes, Volumes, Timings
 25: Magnolia Avenue & Clybourn Avenue

01/10/2019

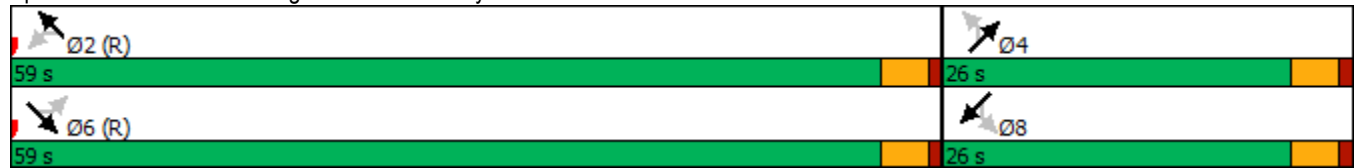


Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
v/c Ratio	0.03	0.52			0.24			0.02				0.14
Control Delay	1.1	2.6			1.4			32.3				30.5
Queue Delay	0.0	0.0			0.0			0.0				0.0
Total Delay	1.1	2.6			1.4			32.3				30.5
LOS	A	A			A			C				C
Approach Delay		2.6			1.4			32.3				30.5
Approach LOS		A			A			C				C
Queue Length 50th (ft)	0	0			0			1				8
Queue Length 95th (ft)	m2	m128			49			10				29
Internal Link Dist (ft)		1243			464			264				43
Turn Bay Length (ft)	55											
Base Capacity (vph)	860	1506			1493			448				504
Starvation Cap Reductn	0	0			0			0				0
Spillback Cap Reductn	0	0			0			0				0
Storage Cap Reductn	0	0			0			0				0
Reduced v/c Ratio	0.03	0.52			0.24			0.01				0.04

Intersection Summary

Area Type: Other
 Cycle Length: 85
 Actuated Cycle Length: 85
 Offset: 18 (21%), Referenced to phase 2:NWTL and 6:SETL, Start of Green
 Natural Cycle: 85
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.52
 Intersection Signal Delay: 2.8
 Intersection Capacity Utilization 63.6%
 Analysis Period (min) 15
 Intersection LOS: A
 ICU Level of Service B
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 25: Magnolia Avenue & Clybourn Avenue



Lanes, Volumes, Timings
29: Elston Avenue & Wabansia Avenue

01/10/2019



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕		↖		↖	↖	↖	↖	↖	↖	↖
Traffic Volume (vph)	11	0	13	45	0	71	11	489	139	156	732	39
Future Volume (vph)	11	0	13	45	0	71	11	489	139	156	732	39
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	50		0	100		0
Storage Lanes	0		0	1		1	1		0	1		0
Taper Length (ft)	0			0			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												
Frt		0.927				0.850		0.967			0.992	
Flt Protected		0.977		0.950			0.950			0.950		
Satd. Flow (prot)	0	1687	0	1770	0	1583	1770	1801	0	1770	1848	0
Flt Permitted		0.977		0.740			0.259			0.337		
Satd. Flow (perm)	0	1687	0	1378	0	1583	482	1801	0	628	1848	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		14				77		35			7	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		235			372			501			304	
Travel Time (s)		5.3			8.5			11.4			6.9	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
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
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	26	0	49	0	77	12	683	0	170	838	0
Turn Type	Perm	NA		Perm		Perm	Perm	NA		Perm	NA	
Protected Phases		4						2			6	
Permitted Phases	4			8		8	2			6		
Detector Phase	4	4		8		8	2	2		6	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0		5.0	5.0	5.0		5.0	5.0	
Minimum Split (s)	22.5	22.5		22.5		22.5	22.5	22.5		22.5	22.5	
Total Split (s)	25.0	25.0		25.0		25.0	85.0	85.0		85.0	85.0	
Total Split (%)	22.7%	22.7%		22.7%		22.7%	77.3%	77.3%		77.3%	77.3%	
Yellow Time (s)	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	
Lost Time Adjust (s)		0.0		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	4.0	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	Max	Max		Max		Max	Max	Max		Max	Max	
Act Effect Green (s)		21.0		21.0		21.0	81.0	81.0		81.0	81.0	
Actuated g/C Ratio		0.19		0.19		0.19	0.74	0.74		0.74	0.74	

Lanes, Volumes, Timings
 29: Elston Avenue & Wabansia Avenue

01/10/2019

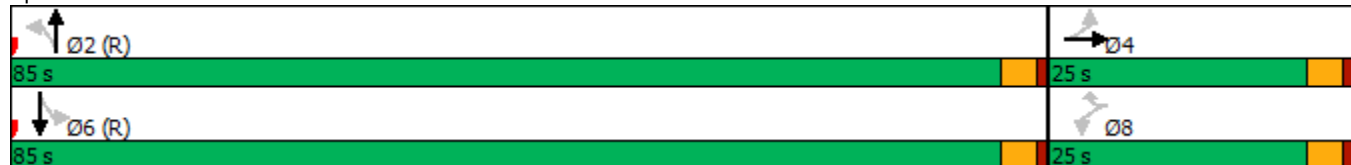


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio		0.08		0.19		0.21	0.03	0.51		0.37	0.62	
Control Delay		23.4		39.6		10.0	2.9	3.6		7.9	9.3	
Queue Delay		0.0		0.0		0.0	0.0	0.3		0.0	0.0	
Total Delay		23.4		39.6		10.0	2.9	3.9		7.9	9.3	
LOS		C		D		B	A	A		A	A	
Approach Delay		23.4			21.5			3.9				9.1
Approach LOS		C			C			A				A
Queue Length 50th (ft)		7		29		0	1	26		37	243	
Queue Length 95th (ft)		32		65		40	m3	98		73	345	
Internal Link Dist (ft)		155			292			421			224	
Turn Bay Length (ft)							50			100		
Base Capacity (vph)		333		263		364	354	1335		462	1362	
Starvation Cap Reductn		0		0		0	0	211		0	0	
Spillback Cap Reductn		0		0		0	0	0		0	0	
Storage Cap Reductn		0		0		0	0	0		0	0	
Reduced v/c Ratio		0.08		0.19		0.21	0.03	0.61		0.37	0.62	

Intersection Summary

Area Type: Other
 Cycle Length: 110
 Actuated Cycle Length: 110
 Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
 Natural Cycle: 60
 Control Type: Pretimed
 Maximum v/c Ratio: 0.62
 Intersection Signal Delay: 8.2
 Intersection Capacity Utilization 63.1%
 Analysis Period (min) 15
 Intersection LOS: A
 ICU Level of Service B
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 29: Elston Avenue & Wabansia Avenue



Lanes, Volumes, Timings
31: Elston Avenue & Concord Place

01/10/2019



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	79	42	569	224	75	694
Future Volume (vph)	79	42	569	224	75	694
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%		0%			0%
Storage Length (ft)	0	0		0	100	
Storage Lanes	1	1		0	1	
Taper Length (ft)	0				25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt		0.850	0.962			
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1770	1583	1792	0	1770	1863
Flt Permitted	0.950				0.299	
Satd. Flow (perm)	1770	1583	1792	0	557	1863
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		46	46			
Link Speed (mph)	30		30			30
Link Distance (ft)	332		412			501
Travel Time (s)	7.5		9.4			11.4
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%		0%			0%
Shared Lane Traffic (%)						
Lane Group Flow (vph)	86	46	861	0	82	754
Turn Type	Prot	Perm	NA		Perm	NA
Protected Phases	8		2			6
Permitted Phases		8			6	
Detector Phase	8	8	2		6	6
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0		5.0	5.0
Minimum Split (s)	22.5	22.5	22.5		22.5	22.5
Total Split (s)	27.0	27.0	83.0		83.0	83.0
Total Split (%)	24.5%	24.5%	75.5%		75.5%	75.5%
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 Optimize?						
Recall Mode	None	None	C-Max		C-Max	C-Max
Act Effct Green (s)	10.7	10.7	94.2		94.2	94.2
Actuated g/C Ratio	0.10	0.10	0.86		0.86	0.86

Lanes, Volumes, Timings
 31: Elston Avenue & Concord Place

01/10/2019



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
v/c Ratio	0.50	0.24	0.56		0.17	0.47
Control Delay	56.5	15.7	1.7		2.5	2.8
Queue Delay	0.4	0.0	0.6		0.0	0.1
Total Delay	56.8	15.7	2.3		2.5	2.9
LOS	E	B	A		A	A
Approach Delay	42.5		2.3			2.9
Approach LOS	D		A			A
Queue Length 50th (ft)	59	0	32		7	87
Queue Length 95th (ft)	106	34	m44		m16	123
Internal Link Dist (ft)	252		332			421
Turn Bay Length (ft)					100	
Base Capacity (vph)	370	367	1541		477	1595
Starvation Cap Reductn	0	0	316		0	169
Spillback Cap Reductn	83	0	0		0	182
Storage Cap Reductn	0	0	0		0	0
Reduced v/c Ratio	0.30	0.13	0.70		0.17	0.53

Intersection Summary

Area Type: Other
 Cycle Length: 110
 Actuated Cycle Length: 110
 Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBTL, Start of Green
 Natural Cycle: 60
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.56
 Intersection Signal Delay: 5.4 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: 31: Elston Avenue & Concord Place



Lanes, Volumes, Timings
 35: I-90/94 West Ramps & North Avenue

01/10/2019



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑		↖	↑↑					↖	↑↓	
Traffic Volume (vph)	0	824	487	438	707	0	0	0	0	669	108	95
Future Volume (vph)	0	824	487	438	707	0	0	0	0	669	108	95
Ideal Flow (vphpl)	1900	1900	1900	1900	2000	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	9	10	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	100		0	0		0	0		0
Storage Lanes	0		0	1		0	0		0	1		0
Taper Length (ft)	0			25			0			0		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	*1.00	0.95	1.00
Ped Bike Factor		0.99									1.00	
Frt		0.944									0.965	
Flt Protected				0.950						0.950	0.975	
Satd. Flow (prot)	0	3263	0	1562	3378	0	0	0	0	1752	1652	0
Flt Permitted				0.091						0.950	0.975	
Satd. Flow (perm)	0	3263	0	150	3378	0	0	0	0	1752	1652	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		124										14
Link Speed (mph)		30			30			30				30
Link Distance (ft)		515			344			294				396
Travel Time (s)		11.7			7.8			6.7				9.0
Confl. Peds. (#/hr)			2	2								1
Confl. Bikes (#/hr)												
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
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	5%	2%	4%	5%	0%	0%	0%	0%	3%	1%	3%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%				0%
Shared Lane Traffic (%)										31%		
Lane Group Flow (vph)	0	1380	0	461	744	0	0	0	0	486	432	0
Turn Type		NA		pm+pt	NA					custom	NA	
Protected Phases		4		3	8					6	6	
Permitted Phases				8						6		
Detector Phase		4		3	8					6	6	
Switch Phase												
Minimum Initial (s)		16.0		20.0	16.0					24.0	24.0	
Minimum Split (s)		38.0		23.0	38.0					29.0	29.0	
Total Split (s)		44.0		30.0	74.0					36.0	36.0	
Total Split (%)		40.0%		27.3%	67.3%					32.7%	32.7%	
Yellow Time (s)		3.0		3.0	3.0					3.0	3.0	
All-Red Time (s)		2.0		0.0	2.0					2.0	2.0	
Lost Time Adjust (s)		-1.0		1.0	-1.0					-1.0	-1.0	
Total Lost Time (s)		4.0		4.0	4.0					4.0	4.0	
Lead/Lag		Lead		Lag								
Lead-Lag Optimize?		Yes		Yes								
Recall Mode		Max		Max	Max					Max	Max	
Act Effect Green (s)		40.0		70.0	70.0					32.0	32.0	
Actuated g/C Ratio		0.36		0.64	0.64					0.29	0.29	

Lanes, Volumes, Timings
 35: I-90/94 West Ramps & North Avenue

01/10/2019

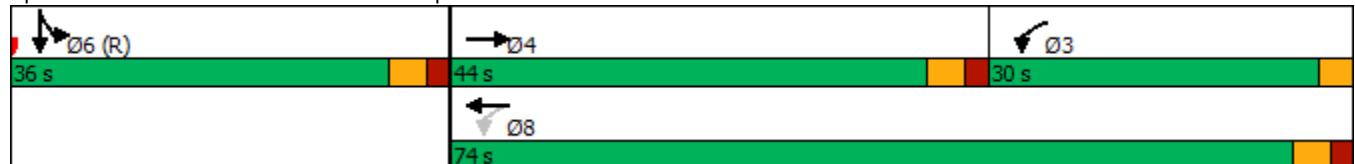


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio		1.09		1.07	0.35					0.95	0.88	
Control Delay		66.6		101.9	8.3					69.4	56.9	
Queue Delay		4.1		20.1	1.1					1.8	1.3	
Total Delay		70.7		122.1	9.4					71.2	58.2	
LOS		E		F	A					E	E	
Approach Delay		70.7			52.5							65.1
Approach LOS		E			D							E
Queue Length 50th (ft)		~536		~334	148					336	296	
Queue Length 95th (ft)		m#624		#564	206					#544	#489	
Internal Link Dist (ft)		435			264			214				316
Turn Bay Length (ft)				100								
Base Capacity (vph)		1265		429	2149					509	490	
Starvation Cap Reductn		9		245	1090					0	0	
Spillback Cap Reductn		88		0	0					6	10	
Storage Cap Reductn		0		0	0					0	0	
Reduced v/c Ratio		1.17		2.51	0.70					0.97	0.90	

Intersection Summary

Area Type: Other
 Cycle Length: 110
 Actuated Cycle Length: 110
 Offset: 63 (57%), Referenced to phase 6:SBTL, Start of Green
 Natural Cycle: 90
 Control Type: Pretimed
 Maximum v/c Ratio: 1.09
 Intersection Signal Delay: 63.0
 Intersection Capacity Utilization 139.3%
 Analysis Period (min) 15
 * User Entered Value
 ~ 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: 35: I-90/94 West Ramps & North Avenue



Lanes, Volumes, Timings
 36: I-90/94 East Ramps & North Avenue

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↘	↑↑			↑↑	↗	↘		↗			
Traffic Volume (vph)	154	1342	0	0	812	465	321	0	680	0	0	0
Future Volume (vph)	154	1342	0	0	812	465	321	0	680	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	2000	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	12	10	10	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	100		0	0		200	0		0	0		0
Storage Lanes	1		0	0		1	1		1	0		0
Taper Length (ft)	25			0			0			0		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00					0.97	1.00					
Frt						0.850			0.850			
Flt Protected	0.950						0.950					
Satd. Flow (prot)	1678	3388	0	0	3315	1463	1703	0	1568	0	0	0
Flt Permitted	0.167						0.950					
Satd. Flow (perm)	294	3388	0	0	3315	1418	1700	0	1568	0	0	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						470			40			
Link Speed (mph)		30			30			30				30
Link Distance (ft)		344			625			477				383
Travel Time (s)		7.8			14.2			10.8				8.7
Confl. Peds. (#/hr)	8		17	17		8	2		16			
Confl. Bikes (#/hr)			2									
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	4%	3%	0%	0%	7%	3%	6%	0%	3%	0%	0%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	156	1356	0	0	820	470	324	0	687	0	0	0
Turn Type	pm+pt	NA			NA	Perm	Prot		Prot			
Protected Phases	7	4			8		5		5			
Permitted Phases	4					8						
Detector Phase	7	4			8	8	5		5			
Switch Phase												
Minimum Initial (s)	17.0	27.0			27.0	27.0	22.0		22.0			
Minimum Split (s)	20.0	43.0			43.0	43.0	27.0		27.0			
Total Split (s)	20.0	64.0			44.0	44.0	46.0		46.0			
Total Split (%)	18.2%	58.2%			40.0%	40.0%	41.8%		41.8%			
Yellow Time (s)	3.0	3.0			3.0	3.0	3.0		3.0			
All-Red Time (s)	0.0	1.0			1.0	1.0	2.0		2.0			
Lost Time Adjust (s)	1.0	0.0			0.0	0.0	-1.0		-1.0			
Total Lost Time (s)	4.0	4.0			4.0	4.0	4.0		4.0			
Lead/Lag	Lead				Lag	Lag						
Lead-Lag Optimize?	Yes				Yes	Yes						
Recall Mode	Max	Max			Max	Max	Max		Max			
Act Effct Green (s)	60.0	60.0			40.0	40.0	42.0		42.0			
Actuated g/C Ratio	0.55	0.55			0.36	0.36	0.38		0.38			

Lanes, Volumes, Timings
 36: I-90/94 East Ramps & North Avenue

01/10/2019

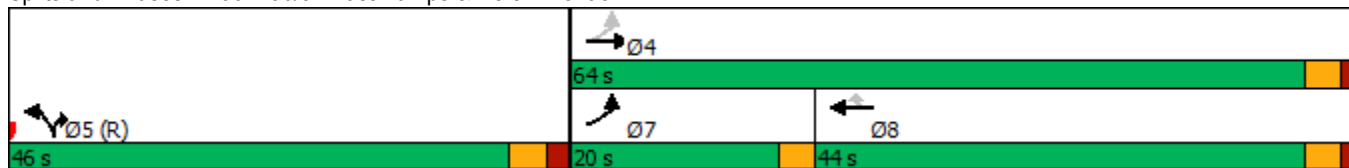


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.43	0.73			0.68	0.58	0.50		1.10			
Control Delay	19.4	21.1			6.2	1.6	29.2		99.1			
Queue Delay	0.0	14.3			0.1	0.0	0.8		0.1			
Total Delay	19.4	35.4			6.4	1.6	30.1		99.2			
LOS	B	D			A	A	C		F			
Approach Delay		33.7			4.6			77.0				
Approach LOS		C			A			E				
Queue Length 50th (ft)	58	268			46	0	172		~536			
Queue Length 95th (ft)	m58	m265			m44	m1	259		#767			
Internal Link Dist (ft)		264			545			397			303	
Turn Bay Length (ft)	100					200						
Base Capacity (vph)	361	1848			1205	814	650		623			
Starvation Cap Reductn	0	501			0	0	0		0			
Spillback Cap Reductn	0	446			41	0	125		5			
Storage Cap Reductn	0	0			0	0	0		0			
Reduced v/c Ratio	0.43	1.01			0.70	0.58	0.62		1.11			

Intersection Summary

Area Type: Other
 Cycle Length: 110
 Actuated Cycle Length: 110
 Offset: 4 (4%), Referenced to phase 5:NBL, Start of Green
 Natural Cycle: 110
 Control Type: Pretimed
 Maximum v/c Ratio: 1.10
 Intersection Signal Delay: 35.4
 Intersection LOS: D
 Intersection Capacity Utilization 139.3%
 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: 36: I-90/94 East Ramps & North Avenue



Lanes, Volumes, Timings
37: Elston Avenue & North Avenue

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	395	1345	116	94	1054	40	54	382	169	129	503	151
Future Volume (vph)	395	1345	116	94	1054	40	54	382	169	129	503	151
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	2000	1900	1900	2000	1900
Lane Width (ft)	10	10	10	10	10	10	10	10	10	10	10	11
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	300		0	125		0	65		50	78		150
Storage Lanes	1		0	1		0	1		1	1		1
Taper Length (ft)	25			55			85			135		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.99		1.00	1.00				0.94	0.98		0.99
Frt		0.988			0.995				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1652	3131	0	1560	3135	0	1478	1507	1396	1589	1595	1487
Flt Permitted	0.108			0.114			0.136			0.281		
Satd. Flow (perm)	188	3131	0	187	3135	0	212	1507	1317	463	1595	1465
Right Turn on Red			Yes			Yes			No			Yes
Satd. Flow (RTOR)		10			4							93
Link Speed (mph)		30			30			30				30
Link Distance (ft)		625			486			585				412
Travel Time (s)		14.2			11.0			13.3				9.4
Confl. Peds. (#/hr)	16		34	34		16	2		32	32		2
Confl. Bikes (#/hr)									2			
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	4%	5%	8%	5%	6%	14%	9%	8%	6%	3%	5%
Bus Blockages (#/hr)	0	8	0	0	8	0	0	0	0	0	0	0
Parking (#/hr)								4				4
Mid-Block Traffic (%)		0%			0%			0%				0%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	416	1538	0	99	1151	0	57	402	178	136	529	159
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA	pm+ov	pm+pt	NA	pm+ov
Protected Phases	7	4		3	8		5	2	3	1	6	7
Permitted Phases	4			8			2		2	6		6
Detector Phase	7	4		3	8		5	2	3	1	6	7
Switch Phase												
Minimum Initial (s)	6.0	27.0		6.0	27.0		6.0	12.0	6.0	6.0	12.0	6.0
Minimum Split (s)	9.0	44.0		9.0	36.0		9.0	28.0	9.0	9.0	28.0	9.0
Total Split (s)	22.0	51.0		9.0	38.0		9.0	41.0	9.0	9.0	41.0	22.0
Total Split (%)	20.0%	46.4%		8.2%	34.5%		8.2%	37.3%	8.2%	8.2%	37.3%	20.0%
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)	0.0	1.0		0.0	1.0		0.0	1.0	0.0	0.0	1.0	0.0
Lost Time Adjust (s)	-1.0	-1.0		-1.0	-1.0		-1.0	-1.0	-1.0	-1.0	-1.0	-1.0
Total Lost Time (s)	2.0	3.0		2.0	3.0		2.0	3.0	2.0	2.0	3.0	2.0
Lead/Lag	Lead	Lag		Lead	Lag				Lead			Lead
Lead-Lag Optimize?	Yes	Yes		Yes	Yes				Yes			Yes
Recall Mode	None	None		None	None		None	C-Max	None	None	C-Max	None
Act Effct Green (s)	58.0	48.0		43.0	35.0		46.0	38.0	46.0	46.0	38.0	59.0
Actuated g/C Ratio	0.53	0.44		0.39	0.32		0.42	0.35	0.42	0.42	0.35	0.54

Lanes, Volumes, Timings
 37: Elston Avenue & North Avenue

01/10/2019

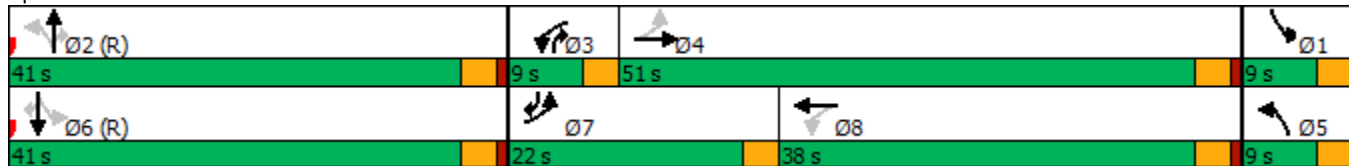


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	1.14	1.12		0.62	1.15		0.34	0.77	0.32	0.51	0.96	0.19
Control Delay	115.2	85.4		38.9	99.4		23.8	43.9	22.2	28.1	64.4	3.8
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.2	0.8	14.3	0.0
Total Delay	115.2	85.4		38.9	99.4		23.8	43.9	22.5	28.9	78.7	3.8
LOS	F	F		D	F		C	D	C	C	E	A
Approach Delay		91.7			94.6			36.1			56.0	
Approach LOS		F			F			D			E	
Queue Length 50th (ft)	~298	~657		29	~506		23	251	79	58	302	7
Queue Length 95th (ft)	m#409	m#707		m65	#620		49	#400	133	104	#579	20
Internal Link Dist (ft)		545			406			505			332	
Turn Bay Length (ft)	300			125			65		50	78		150
Base Capacity (vph)	365	1371		160	1000		169	520	555	265	551	832
Starvation Cap Reductn	0	0		0	0		0	0	0	0	34	0
Spillback Cap Reductn	0	0		0	0		0	0	84	26	0	0
Storage Cap Reductn	0	0		0	0		0	0	0	0	0	0
Reduced v/c Ratio	1.14	1.12		0.62	1.15		0.34	0.77	0.38	0.57	1.02	0.19

Intersection Summary

Area Type: Other
 Cycle Length: 110
 Actuated Cycle Length: 110
 Offset: 108 (98%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
 Natural Cycle: 130
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 1.15
 Intersection Signal Delay: 78.6 Intersection LOS: E
 Intersection Capacity Utilization 95.8% ICU Level of Service F
 Analysis Period (min) 15
 ~ Volume exceeds capacity, queue is theoretically infinite.
 Queue shown is maximum after two cycles.
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 37: Elston Avenue & North Avenue



Lanes, Volumes, Timings
38: Throop Street & North Avenue

01/10/2019



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	521	1120	30	15	1044	186	0	0	0	207	20	210
Future Volume (vph)	521	1120	30	15	1044	186	0	0	0	207	20	210
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	9	10	12	9	10	8	12	12	12	10	10	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	140		0	70		435	0		0	100		0
Storage Lanes	1		0	1		1	0		0	1		0
Taper Length (ft)	25			25			0			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.996				0.850						0.863
Flt Protected	0.950			0.950						0.950		
Satd. Flow (prot)	1593	3290	0	1593	3303	1372	0	0	0	1652	1500	0
Flt Permitted	0.138			0.179						0.950		
Satd. Flow (perm)	231	3290	0	300	3303	1372	0	0	0	1652	1500	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		8				196						221
Link Speed (mph)		30			30			30				30
Link Distance (ft)		486			1695			350				684
Travel Time (s)		11.0			38.5			8.0				15.5
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
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
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%				0%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	548	1211	0	16	1099	196	0	0	0	218	242	0
Turn Type	custom	NA		Perm	NA	Perm				Perm	NA	
Protected Phases	5	2 5			6							4
Permitted Phases	2			6		6				4		
Detector Phase	5	2 5		6	6	6				4	4	
Switch Phase												
Minimum Initial (s)	6.0			40.0	40.0	40.0				10.0	10.0	
Minimum Split (s)	9.0			54.0	54.0	54.0				22.0	22.0	
Total Split (s)	33.0			55.0	55.0	55.0				22.0	22.0	
Total Split (%)	30.0%			50.0%	50.0%	50.0%				20.0%	20.0%	
Yellow Time (s)	3.0			3.0	3.0	3.0				3.0	3.0	
All-Red Time (s)	0.0			1.0	1.0	1.0				2.0	2.0	
Lost Time Adjust (s)	-1.0			-1.0	-1.0	-1.0				-1.0	-1.0	
Total Lost Time (s)	2.0			3.0	3.0	3.0				4.0	4.0	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	Max			Max	Max	Max				Max	Max	
Act Effect Green (s)	84.0	85.0		52.0	52.0	52.0				18.0	18.0	
Actuated g/C Ratio	0.76	0.77		0.47	0.47	0.47				0.16	0.16	

Lanes, Volumes, Timings
 38: Throop Street & North Avenue

01/10/2019

Lane Group	Ø2
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Grade (%)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Confl. Bikes (#/hr)	
Peak Hour Factor	
Growth Factor	
Heavy Vehicles (%)	
Bus Blockages (#/hr)	
Parking (#/hr)	
Mid-Block Traffic (%)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	2
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	40.0
Minimum Split (s)	54.0
Total Split (s)	55.0
Total Split (%)	50%
Yellow Time (s)	3.0
All-Red Time (s)	1.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Recall Mode	Max
Act Effct Green (s)	
Actuated g/C Ratio	

Lanes, Volumes, Timings
 38: Throop Street & North Avenue

01/10/2019

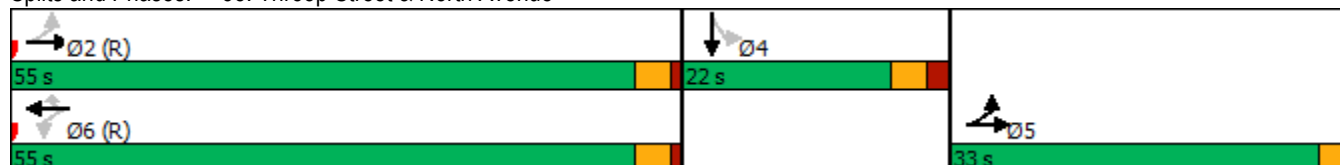


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.98	0.48		0.11	0.70	0.26				0.81	0.56	
Control Delay	57.2	3.1		18.9	26.0	3.3				67.6	13.0	
Queue Delay	0.0	0.3		0.0	2.2	0.0				0.0	0.3	
Total Delay	57.2	3.4		18.9	28.2	3.3				67.6	13.3	
LOS	E	A		B	C	A				E	B	
Approach Delay		20.2			24.4							39.0
Approach LOS		C			C							D
Queue Length 50th (ft)	336	85		6	313	0				150	13	
Queue Length 95th (ft)	m321	m66		21	392	39				#274	88	
Internal Link Dist (ft)		406			1615			270				604
Turn Bay Length (ft)	140			70		435				100		
Base Capacity (vph)	560	2544		141	1561	751				270	430	
Starvation Cap Reductn	0	652		0	0	0				0	0	
Spillback Cap Reductn	0	0		0	314	0				0	20	
Storage Cap Reductn	0	0		0	0	0				0	0	
Reduced v/c Ratio	0.98	0.64		0.11	0.88	0.26				0.81	0.59	

Intersection Summary

Area Type: Other
 Cycle Length: 110
 Actuated Cycle Length: 110
 Offset: 52 (47%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
 Natural Cycle: 105
 Control Type: Pretimed
 Maximum v/c Ratio: 0.98
 Intersection Signal Delay: 24.2
 Intersection LOS: C
 Intersection Capacity Utilization 90.7%
 ICU Level of Service E
 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: 38: Throop Street & North Avenue



Lane Group	Ø2
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	
Intersection Summary	

Lanes, Volumes, Timings
39: North Avenue & Kingsbury Street

01/10/2019



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	117	1150	231	3	1061	123	95	19	1	48	111	243
Future Volume (vph)	117	1150	231	3	1061	123	95	19	1	48	111	243
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	9	10	12	9	10	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	178		0	55		0	50		0	0		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	25			25			25			0		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00	0.98		0.99	1.00		1.00	1.00		0.99	0.99	
Frt		0.975			0.984			0.993			0.897	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1562	3035	0	1624	3062	0	1770	1533	0	1583	1667	0
Flt Permitted	0.127			0.133			0.194			0.744		
Satd. Flow (perm)	208	3035	0	225	3062	0	360	1533	0	1232	1667	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		36			19			1			118	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1695			264			369			284	
Travel Time (s)		38.5			6.0			8.4			6.5	
Confl. Peds. (#/hr)	12		102	102		12	6		6	6		6
Confl. Bikes (#/hr)			1			1						
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
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	4%	5%	1%	0%	4%	25%	2%	6%	0%	14%	3%	0%
Bus Blockages (#/hr)	0	8	0	0	8	0	0	0	0	0	0	0
Parking (#/hr)								8				
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	123	1454	0	3	1246	0	100	21	0	51	373	0
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases	7	4		3	8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	7	4		3	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	5.0	28.0		5.0	28.0		7.0	7.0		7.0	7.0	
Minimum Split (s)	9.5	48.0		9.5	48.0		27.0	27.0		27.0	27.0	
Total Split (s)	15.0	48.0		15.0	48.0		27.0	27.0		27.0	27.0	
Total Split (%)	16.7%	53.3%		16.7%	53.3%		30.0%	30.0%		30.0%	30.0%	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	0.0	1.0		0.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	1.0	0.0		1.0	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		4.0	4.0	
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Recall Mode	None	Max		None	Max		C-Max	C-Max		C-Max	C-Max	
Act Effct Green (s)	59.0	57.2		52.1	47.6		23.0	23.0		23.0	23.0	
Actuated g/C Ratio	0.66	0.64		0.58	0.53		0.26	0.26		0.26	0.26	

Lanes, Volumes, Timings
 39: North Avenue & Kingsbury Street

01/10/2019



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.50	0.75		0.01	0.77		1.09	0.05		0.16	0.73	
Control Delay	13.1	15.0		4.0	9.2		156.3	25.1		27.8	30.1	
Queue Delay	0.0	4.1		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	13.1	19.1		4.0	9.2		156.3	25.1		27.8	30.1	
LOS	B	B		A	A		F	C		C	C	
Approach Delay		18.6			9.2			133.5			29.8	
Approach LOS		B			A			F			C	
Queue Length 50th (ft)	23	247		0	106		-65	9		23	133	
Queue Length 95th (ft)	46	445		m0	m127		#165	27		53	#241	
Internal Link Dist (ft)		1615			184			289			204	
Turn Bay Length (ft)	178			55			50					
Base Capacity (vph)	301	1943		316	1627		92	392		314	513	
Starvation Cap Reductn	0	0		0	5		0	0		0	0	
Spillback Cap Reductn	0	402		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.41	0.94		0.01	0.77		1.09	0.05		0.16	0.73	

Intersection Summary

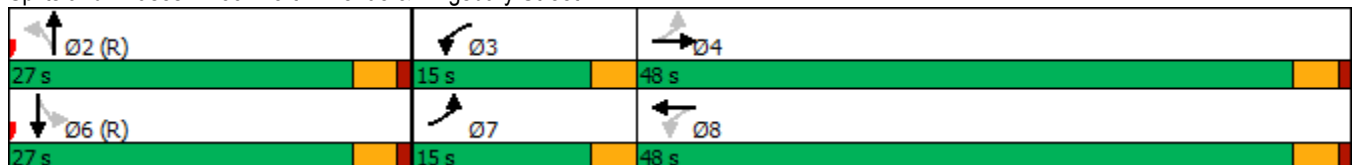
Area Type: Other
 Cycle Length: 90
 Actuated Cycle Length: 90
 Offset: 17 (19%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
 Natural Cycle: 85
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 1.09
 Intersection Signal Delay: 20.7
 Intersection Capacity Utilization 84.7%
 Analysis Period (min) 15
 Intersection LOS: C
 ICU Level of Service E

~ 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: 39: North Avenue & Kingsbury Street



Lanes, Volumes, Timings
40: North Avenue & Sheffield Avenue

01/10/2019



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	117	1014	21	74	955	17	37	119	39	80	286	195
Future Volume (vph)	117	1014	21	74	955	17	37	119	39	80	286	195
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	9	10	12	9	10	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	55		0	105		0	105		0	50		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00	1.00		0.98	1.00		0.99	0.99		0.97	0.98	
Frt		0.997			0.997			0.963			0.939	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1518	3141	0	1624	3119	0	1752	1523	0	1736	1513	0
Flt Permitted	0.124			0.114			0.171			0.608		
Satd. Flow (perm)	197	3141	0	190	3119	0	313	1523	0	1073	1513	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		3			2			19			40	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		264			521			317			1033	
Travel Time (s)		6.0			11.8			7.2			23.5	
Confl. Peds. (#/hr)	20		122	122		20	28		48	48		28
Confl. Bikes (#/hr)			1						4			2
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	7%	5%	0%	0%	6%	0%	3%	4%	0%	4%	1%	1%
Bus Blockages (#/hr)	0	8	0	0	8	0	0	0	0	0	0	0
Parking (#/hr)								6			6	
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	123	1089	0	78	1023	0	39	166	0	84	506	0
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	7	4		3	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	5.0	30.0		5.0	30.0		5.0	19.0		5.0	19.0	
Minimum Split (s)	8.0	41.0		8.0	41.0		8.0	33.0		8.0	33.0	
Total Split (s)	8.0	41.0		8.0	41.0		8.0	33.0		8.0	33.0	
Total Split (%)	8.9%	45.6%		8.9%	45.6%		8.9%	36.7%		8.9%	36.7%	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	0.0	1.0		0.0	1.0		0.0	1.0		0.0	1.0	
Lost Time Adjust (s)	1.0	0.0		1.0	0.0		1.0	0.0		1.0	0.0	
Total Lost Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	
Act Effct Green (s)	40.2	37.0		39.4	35.4		35.4	32.0		35.4	32.0	
Actuated g/C Ratio	0.45	0.41		0.44	0.39		0.39	0.36		0.39	0.36	

Lanes, Volumes, Timings
40: North Avenue & Sheffield Avenue

01/10/2019

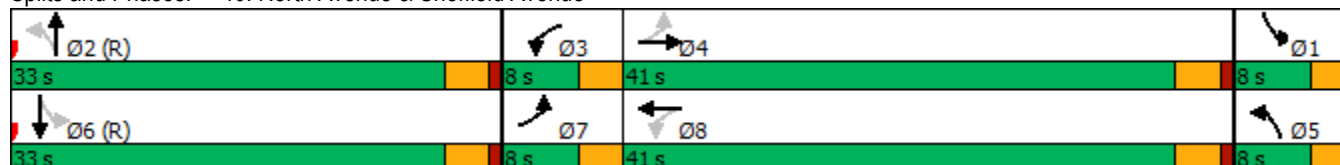


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.84	0.84		0.53	0.83		0.20	0.30		0.19	0.90	
Control Delay	51.4	20.3		30.3	36.6		18.6	21.8		13.0	41.2	
Queue Delay	0.0	14.7		0.0	0.1		0.0	0.0		0.0	0.0	
Total Delay	51.4	35.0		30.3	36.7		18.6	21.8		13.0	41.2	
LOS	D	D		C	D		B	C		B	D	
Approach Delay		36.7			36.2			21.2			37.2	
Approach LOS		D			D			C			D	
Queue Length 50th (ft)	12	290		21	258		13	62		19	275	
Queue Length 95th (ft)	m#63	262		#39	347		33	116		m27	m#412	
Internal Link Dist (ft)		184			441			237			953	
Turn Bay Length (ft)	55			105			105			50		
Base Capacity (vph)	146	1300		147	1283		191	553		453	563	
Starvation Cap Reductn	0	219		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	10		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.84	1.01		0.53	0.80		0.20	0.30		0.19	0.90	

Intersection Summary

Area Type: Other
 Cycle Length: 90
 Actuated Cycle Length: 90
 Offset: 23 (26%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
 Natural Cycle: 90
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.90
 Intersection Signal Delay: 35.6 Intersection LOS: D
 Intersection Capacity Utilization 80.8% 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: 40: North Avenue & Sheffield Avenue



Lanes, Volumes, Timings
41: Fremont Street & North Avenue

01/10/2019



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗			↕		↖	↗	
Traffic Volume (vph)	8	1097	7	29	1019	2	12	2	15	3	0	2
Future Volume (vph)	8	1097	7	29	1019	2	12	2	15	3	0	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	9	10	12	9	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	90		0	75		0	0		0	0		0
Storage Lanes	1		0	1		0	0		0	1		0
Taper Length (ft)	25			25			0			0		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99	1.00		0.97	1.00			0.99		1.00	0.99	
Frt		0.999						0.930			0.850	
Flt Protected	0.950			0.950				0.979		0.950		
Satd. Flow (prot)	1624	3009	0	1624	3351	0	0	1433	0	1805	1593	0
Flt Permitted	0.247			0.223				0.863		0.851		
Satd. Flow (perm)	419	3009	0	370	3351	0	0	1262	0	1611	1593	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		1						16				167
Link Speed (mph)		30			30			30				30
Link Distance (ft)		521			415			331				103
Travel Time (s)		11.8			9.4			7.5				2.3
Confl. Peds. (#/hr)	50		200	200		50	1		3	3		1
Confl. Bikes (#/hr)			12			2						
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	10%	0%	0%	6%	0%	10%	0%	0%	0%	0%	0%
Bus Blockages (#/hr)	0	8	0	0	8	0	0	0	0	0	0	0
Parking (#/hr)								6				
Mid-Block Traffic (%)		0%			0%			0%				0%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	8	1162	0	31	1075	0	0	31	0	3	2	0
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			8				4
Permitted Phases	2			6			8			4		
Detector Phase	5	2		1	6		8	8		4		4
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0		5.0
Minimum Split (s)	8.0	58.0		8.0	58.0		24.0	24.0		24.0		24.0
Total Split (s)	8.0	58.0		8.0	58.0		24.0	24.0		24.0		24.0
Total Split (%)	8.9%	64.4%		8.9%	64.4%		26.7%	26.7%		26.7%		26.7%
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0		3.0
All-Red Time (s)	0.0	1.0		0.0	1.0		1.0	1.0		1.0		1.0
Lost Time Adjust (s)	1.0	0.0		1.0	0.0			0.0		0.0		0.0
Total Lost Time (s)	4.0	4.0		4.0	4.0			4.0		4.0		4.0
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	None	C-Max		None	C-Max		None	None		None		None
Act Effct Green (s)	76.4	75.1		76.5	75.1			6.9		6.9		6.9
Actuated g/C Ratio	0.85	0.83		0.85	0.83			0.08		0.08		0.08

Lanes, Volumes, Timings
41: Fremont Street & North Avenue

01/10/2019



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.02	0.46		0.08	0.38			0.28		0.02	0.01	
Control Delay	1.9	3.1		2.0	2.8			30.7		37.7	0.0	
Queue Delay	0.0	0.0		0.0	0.1			0.0		0.0	0.0	
Total Delay	1.9	3.1		2.0	2.8			30.7		37.7	0.0	
LOS	A	A		A	A			C		D	A	
Approach Delay		3.1			2.8			30.7			22.6	
Approach LOS		A			A			C			C	
Queue Length 50th (ft)	0	47		1	33			8		2	0	
Queue Length 95th (ft)	m1	102		m6	m93			35		10	0	
Internal Link Dist (ft)		441			335			251			23	
Turn Bay Length (ft)	90			75								
Base Capacity (vph)	418	2512		381	2797			292		358	483	
Starvation Cap Reductn	0	3		0	413			0		0	0	
Spillback Cap Reductn	0	20		0	0			0		0	0	
Storage Cap Reductn	0	0		0	0			0		0	0	
Reduced v/c Ratio	0.02	0.47		0.08	0.45			0.11		0.01	0.00	

Intersection Summary

Area Type: Other
 Cycle Length: 90
 Actuated Cycle Length: 90
 Offset: 53 (59%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
 Natural Cycle: 90
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.46
 Intersection Signal Delay: 3.4 Intersection LOS: A
 Intersection Capacity Utilization 61.0% ICU Level of Service B
 Analysis Period (min) 15
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 41: Fremont Street & North Avenue



Lanes, Volumes, Timings

42: Dayton Street & Clybourn Avenue & North Avenue

01/10/2019



Lane Group	EBL	EBT	EBR	EBR2	WBL2	WBL	WBT	WBR	SEL	SET	SER	SER2
Lane Configurations												
Traffic Volume (vph)	14	823	263	20	7	29	798	158	166	546	26	4
Future Volume (vph)	14	823	263	20	7	29	798	158	166	546	26	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	10	12	12	12	9	10	12	10	10	10	10
Grade (%)		0%					0%			0%		
Storage Length (ft)	70		0				100	0	135		0	
Storage Lanes	1		0				1	0	1		0	
Taper Length (ft)	25						25		25			
Lane Util. Factor	1.00	0.95	0.95	0.95	0.95	1.00	0.95	0.95	1.00	0.95	0.95	0.95
Ped Bike Factor	0.94	0.91					0.98		0.98	0.98		
Frt		0.962					0.975			0.992		
Flt Protected	0.950					0.950			0.950			
Satd. Flow (prot)	1685	2755	0	0	0	1532	3104	0	1574	2860	0	0
Flt Permitted	0.251					0.111			0.501			
Satd. Flow (perm)	416	2755	0	0	0	179	3104	0	816	2860	0	0
Right Turn on Red				No				No				No
Satd. Flow (RTOR)												
Link Speed (mph)		30					30			30		
Link Distance (ft)		415					348			281		
Travel Time (s)		9.4					7.9			6.4		
Confl. Peds. (#/hr)	203		34	101	34	101		203	19		101	172
Confl. Bikes (#/hr)											26	26
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
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	5%	7%	0%	14%	0%	4%	2%	7%	7%	8%	0%
Bus Blockages (#/hr)	0	8	0	0	0	8	0	0	0	0	0	0
Parking (#/hr)										7		
Mid-Block Traffic (%)		0%					0%			0%		
Shared Lane Traffic (%)												
Lane Group Flow (vph)	15	1152	0	0	0	37	996	0	173	600	0	0
Turn Type	Perm	NA			custom	custom	NA		pm+pt	NA		
Protected Phases		4			3	3	3 8		1	6		
Permitted Phases	4				8	8			6			
Detector Phase	4	4			3	3	3 8		1	6		
Switch Phase												
Minimum Initial (s)	5.0	5.0			5.0	5.0			5.0	5.0		
Minimum Split (s)	25.0	25.0			8.0	8.0			9.5	22.5		
Total Split (s)	48.0	48.0			8.0	8.0			10.0	24.0		
Total Split (%)	53.3%	53.3%			8.9%	8.9%			11.1%	26.7%		
Yellow Time (s)	3.0	3.0			3.0	3.0			3.0	2.0		
All-Red Time (s)	4.0	4.0			0.0	0.0			1.0	0.0		
Lost Time Adjust (s)	-3.0	-3.0					1.0		0.0	2.0		
Total Lost Time (s)	4.0	4.0					4.0		4.0	4.0		
Lead/Lag	Lag	Lag			Lead	Lead			Lag	Lead		
Lead-Lag Optimize?	Yes	Yes			Yes	Yes			Yes	Yes		
Recall Mode	None	None			None	None			None	C-Max		
Act Effct Green (s)	43.2	43.2					51.2	51.2	26.8	20.8		
Actuated g/C Ratio	0.48	0.48					0.57	0.57	0.30	0.23		

Lanes, Volumes, Timings
 42: Dayton Street & Clybourn Avenue & North Avenue

01/10/2019



Lane Group	NWL	NWT	NWR	Ø8
Lane Configurations				
Traffic Volume (vph)	257	284	5	
Future Volume (vph)	257	284	5	
Ideal Flow (vphpl)	1900	1900	1900	
Lane Width (ft)	10	10	10	
Grade (%)		0%		
Storage Length (ft)	200		0	
Storage Lanes	1		0	
Taper Length (ft)	25			
Lane Util. Factor	1.00	0.95	0.95	
Ped Bike Factor	0.92	1.00		
Frt		0.998		
Flt Protected	0.950			
Satd. Flow (prot)	1532	3053	0	
Flt Permitted	0.225			
Satd. Flow (perm)	334	3053	0	
Right Turn on Red			No	
Satd. Flow (RTOR)				
Link Speed (mph)		30		
Link Distance (ft)		796		
Travel Time (s)		18.1		
Confl. Peds. (#/hr)	172		19	
Confl. Bikes (#/hr)			9	
Peak Hour Factor	0.96	0.96	0.96	
Growth Factor	100%	100%	100%	
Heavy Vehicles (%)	10%	4%	20%	
Bus Blockages (#/hr)	0	0	0	
Parking (#/hr)		1		
Mid-Block Traffic (%)		0%		
Shared Lane Traffic (%)				
Lane Group Flow (vph)	268	301	0	
Turn Type	pm+pt	NA		
Protected Phases	5	2		8
Permitted Phases	2			
Detector Phase	5	2		
Switch Phase				
Minimum Initial (s)	5.0	5.0		5.0
Minimum Split (s)	9.5	22.5		25.0
Total Split (s)	10.0	24.0		56.0
Total Split (%)	11.1%	26.7%		62%
Yellow Time (s)	3.0	2.0		3.0
All-Red Time (s)	1.0	0.0		4.0
Lost Time Adjust (s)	0.0	2.0		
Total Lost Time (s)	4.0	4.0		
Lead/Lag	Lag	Lead		
Lead-Lag Optimize?	Yes	Yes		
Recall Mode	None	C-Max		None
Act Effct Green (s)	26.8	20.8		
Actuated g/C Ratio	0.30	0.23		

Lanes, Volumes, Timings

42: Dayton Street & Clybourn Avenue & North Avenue

01/10/2019

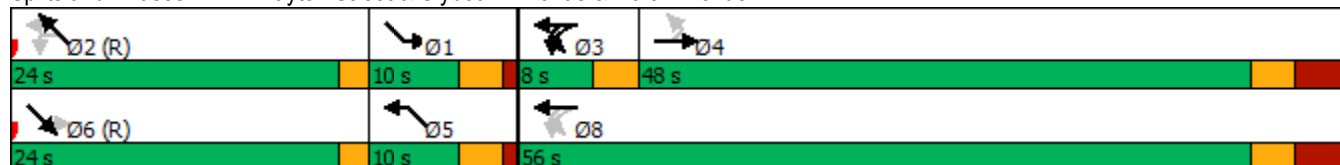


Lane Group	EBL	EBT	EBR	EBR2	WBL2	WBL	WBT	WBR	SEL	SET	SER	SER2
v/c Ratio	0.08	0.87				0.23	0.56		0.59	0.91		
Control Delay	6.7	16.3				4.6	2.7		36.4	52.8		
Queue Delay	0.0	0.2				0.0	0.2		0.0	0.0		
Total Delay	6.7	16.5				4.6	2.9		36.4	52.8		
LOS	A	B				A	A		D	D		
Approach Delay		16.4					2.9			49.1		
Approach LOS		B					A			D		
Queue Length 50th (ft)	2	85				2	26		79	195		
Queue Length 95th (ft)	m7	#154				m2	m32		m72	m172		
Internal Link Dist (ft)		335					268			201		
Turn Bay Length (ft)	70					100			135			
Base Capacity (vph)	203	1346				161	1793		293	660		
Starvation Cap Reductn	0	0				0	191		0	0		
Spillback Cap Reductn	0	15				0	0		0	0		
Storage Cap Reductn	0	0				0	0		0	0		
Reduced v/c Ratio	0.07	0.87				0.23	0.62		0.59	0.91		

Intersection Summary

Area Type: Other
 Cycle Length: 90
 Actuated Cycle Length: 90
 Offset: 28 (31%), Referenced to phase 2:NWTL and 6:SETL, Start of Green
 Natural Cycle: 80
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 1.50
 Intersection Signal Delay: 40.9 Intersection LOS: D
 Intersection Capacity Utilization 74.0% 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.
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 42: Dayton Street & Clybourn Avenue & North Avenue



Lanes, Volumes, Timings
 42: Dayton Street & Clybourn Avenue & North Avenue

01/10/2019



Lane Group	NWL	NWT	NWR	Ø8
v/c Ratio	1.50	0.43		
Control Delay	279.9	32.1		
Queue Delay	0.0	0.0		
Total Delay	279.9	32.1		
LOS	F	C		
Approach Delay		148.8		
Approach LOS		F		
Queue Length 50th (ft)	~184	77		
Queue Length 95th (ft)	#325	118		
Internal Link Dist (ft)		716		
Turn Bay Length (ft)	200			
Base Capacity (vph)	179	705		
Starvation Cap Reductn	0	0		
Spillback Cap Reductn	0	0		
Storage Cap Reductn	0	0		
Reduced v/c Ratio	1.50	0.43		

Intersection Summary

Lanes, Volumes, Timings
43: Halsted Street & North Avenue

01/10/2019



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗		↖	↗		↖	↗	
Traffic Volume (vph)	105	871	9	154	903	33	9	329	108	59	456	81
Future Volume (vph)	105	871	9	154	903	33	9	329	108	59	456	81
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	9	10	12	9	10	12	9	10	12	9	10	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	70		0	75		0	75		0	85		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.98	1.00		0.95	0.99		0.95	0.97		0.96	0.97	
Frt		0.999			0.995			0.963			0.977	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1464	3178	0	1577	3154	0	1464	1530	0	1624	1358	0
Flt Permitted	0.130			0.155			0.148			0.160		
Satd. Flow (perm)	195	3178	0	243	3154	0	217	1530	0	262	1358	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		1			5			19			12	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		348			1345			205			413	
Travel Time (s)		7.9			30.6			4.7			9.4	
Confl. Peds. (#/hr)	102		204	204		102	210		120	120		210
Confl. Bikes (#/hr)												10
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
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	11%	4%	0%	3%	4%	6%	11%	10%	2%	0%	8%	4%
Bus Blockages (#/hr)	0	8	0	0	8	0	0	0	0	0	0	0
Parking (#/hr)												7
Mid-Block Traffic (%)		0%			0%			0%				0%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	111	926	0	162	986	0	9	460	0	62	565	0
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		custom	NA	
Protected Phases	7	4		3	8			2		1	16	
Permitted Phases	4			8			2			6		
Detector Phase	7	4		3	8		2	2		1	16	
Switch Phase												
Minimum Initial (s)	5.0	24.0		5.0	24.0		15.0	15.0		5.0		
Minimum Split (s)	9.0	42.0		8.0	42.0		31.0	31.0		8.0		
Total Split (s)	9.0	42.0		9.0	42.0		31.0	31.0		8.0		
Total Split (%)	10.0%	46.7%		10.0%	46.7%		34.4%	34.4%		8.9%		
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0		
All-Red Time (s)	0.0	2.0		0.0	2.0		1.0	1.0		0.0		
Lost Time Adjust (s)	1.0	-1.0		1.0	-1.0		0.0	0.0		1.0		
Total Lost Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0		
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Recall Mode	None	None		None	None		C-Max	C-Max		None		
Act Effct Green (s)	40.0	35.0		40.0	35.0		27.0	27.0		34.0	38.0	
Actuated g/C Ratio	0.44	0.39		0.44	0.39		0.30	0.30		0.38	0.42	

Lanes, Volumes, Timings
 43: Halsted Street & North Avenue

01/10/2019

Lane Group	Ø6
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Grade (%)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Confl. Bikes (#/hr)	
Peak Hour Factor	
Growth Factor	
Heavy Vehicles (%)	
Bus Blockages (#/hr)	
Parking (#/hr)	
Mid-Block Traffic (%)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	6
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	15.0
Minimum Split (s)	31.0
Total Split (s)	31.0
Total Split (%)	34%
Yellow Time (s)	3.0
All-Red Time (s)	1.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Recall Mode	C-Max
Act Effct Green (s)	
Actuated g/C Ratio	

Lanes, Volumes, Timings
43: Halsted Street & North Avenue

01/10/2019

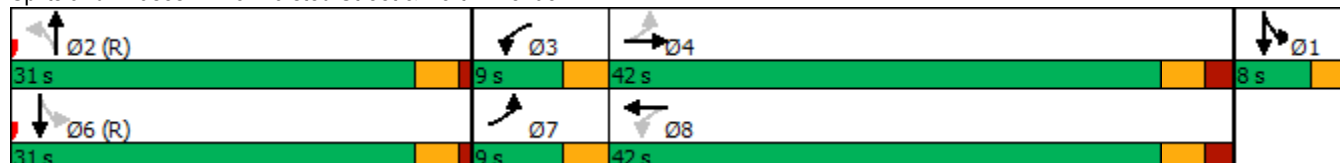


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.71	0.75		0.89	0.80		0.14	0.97		0.30	0.97	
Control Delay	38.4	29.4		62.1	29.7		29.3	67.5		21.6	60.0	
Queue Delay	0.0	1.2		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	38.4	30.6		62.1	29.7		29.3	67.5		21.6	60.0	
LOS	D	C		E	C		C	E		C	E	
Approach Delay		31.5			34.3			66.8			56.2	
Approach LOS		C			C			E			E	
Queue Length 50th (ft)	42	188		48	247		4	249		21	~322	
Queue Length 95th (ft)	m47	m188		#130	316		17	#448		48	#555	
Internal Link Dist (ft)		268			1265			125			333	
Turn Bay Length (ft)	70			75			75			85		
Base Capacity (vph)	157	1342		182	1334		65	472		204	580	
Starvation Cap Reductn	0	211		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.71	0.82		0.89	0.74		0.14	0.97		0.30	0.97	

Intersection Summary

Area Type: Other
 Cycle Length: 90
 Actuated Cycle Length: 90
 Offset: 25 (28%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
 Natural Cycle: 90
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.97
 Intersection Signal Delay: 42.2 Intersection LOS: D
 Intersection Capacity Utilization 95.3% ICU Level of Service F
 Analysis Period (min) 15
 ~ Volume exceeds capacity, queue is theoretically infinite.
 Queue shown is maximum after two cycles.
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.
 m Volume for 95th percentile queue is metered by upstream signal.

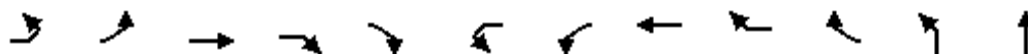
Splits and Phases: 43: Halsted Street & North Avenue



Lane Group	Ø6
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	
Intersection Summary	

Lanes, Volumes, Timings
44: Sheffield Ave & Clybourn Avenue & Willow Ave

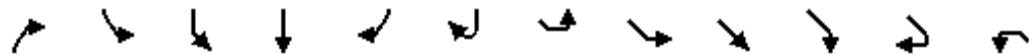
01/10/2019



Lane Group	EBL2	EBL	EBT	EBR	EBR2	WBL2	WBL	WBT	WBR	WBR2	NBL	NBT
Lane Configurations												
Traffic Volume (vph)	6	17	71	9	2	6	45	93	40	7	36	117
Future Volume (vph)	6	17	71	9	2	6	45	93	40	7	36	117
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)			0%					0%				0%
Storage Length (ft)		30		0			25		0		25	
Storage Lanes		1		0			1		0		1	
Taper Length (ft)		25					25				25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.92	0.98				0.91	0.96			0.98	0.97
Frt			0.981					0.950				0.965
Flt Protected		0.950					0.950				0.950	
Satd. Flow (prot)	0	1770	1565	0	0	0	1770	1458	0	0	1770	1547
Flt Permitted		0.575					0.701				0.348	
Satd. Flow (perm)	0	983	1565	0	0	0	1186	1458	0	0	635	1547
Right Turn on Red					No					No		
Satd. Flow (RTOR)												
Link Speed (mph)			30					30				30
Link Distance (ft)			428					856				1033
Travel Time (s)			9.7					19.5				23.5
Confl. Peds. (#/hr)	20	21		30	9	30	9		20	21	20	
Confl. Bikes (#/hr)												
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
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)			6					8				3
Mid-Block Traffic (%)			0%					0%				0%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	24	86	0	0	0	53	147	0	0	38	161
Turn Type	Perm	Perm	NA			Perm	Perm	NA			Perm	NA
Protected Phases			4					4				8
Permitted Phases	4	4				4	4				8	
Detector Phase	4	4	4			4	4	4			8	8
Switch Phase												
Minimum Initial (s)	10.0	10.0	10.0			10.0	10.0	10.0			5.0	5.0
Minimum Split (s)	22.0	22.0	22.0			22.0	22.0	22.0			28.0	28.0
Total Split (s)	22.0	22.0	22.0			22.0	22.0	22.0			28.0	28.0
Total Split (%)	24.4%	24.4%	24.4%			24.4%	24.4%	24.4%			31.1%	31.1%
Yellow Time (s)	3.0	3.0	3.0			3.0	3.0	3.0			3.0	3.0
All-Red Time (s)	2.0	2.0	2.0			2.0	2.0	2.0			2.0	2.0
Lost Time Adjust (s)		-1.0	-1.0				-1.0	-1.0			-1.0	-1.0
Total Lost Time (s)		4.0	4.0				4.0	4.0			4.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	Max	Max	Max			Max	Max	Max			Max	Max
Act Effct Green (s)		18.0	18.0				18.0	18.0			24.0	24.0
Actuated g/C Ratio		0.20	0.20				0.20	0.20			0.27	0.27

Lanes, Volumes, Timings
44: Sheffield Ave & Clybourn Avenue & Willow Ave

01/10/2019



Lane Group	NBR	SBL2	SBL	SBT	SBR	SBR2	SEL2	SEL	SET	SER	SER2	NWL2
Lane Configurations												
Traffic Volume (vph)	36	15	124	260	24	6	7	55	581	123	20	2
Future Volume (vph)	36	15	124	260	24	6	7	55	581	123	20	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)				0%					0%			
Storage Length (ft)	0		25		0			95		0		
Storage Lanes	0		1		0			1		0		
Taper Length (ft)			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			0.88	0.99				0.96	0.96			
Frt				0.985					0.970			
Flt Protected			0.950					0.950				
Satd. Flow (prot)	0	0	1770	1543	0	0	0	1770	1549	0	0	0
Flt Permitted			0.587					0.197				
Satd. Flow (perm)	0	0	967	1543	0	0	0	354	1549	0	0	0
Right Turn on Red							No				No	
Satd. Flow (RTOR)												
Link Speed (mph)				30					30			
Link Distance (ft)				537					710			
Travel Time (s)				12.2					16.1			
Confl. Peds. (#/hr)	48	48	30		16	20	21	48		9	16	9
Confl. Bikes (#/hr)	3				6	6				74	74	
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
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)				10					2			
Mid-Block Traffic (%)				0%					0%			
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	147	305	0	0	0	65	762	0	0	0
Turn Type		Perm	Perm	NA			pm+pt	pm+pt	NA			Perm
Protected Phases				8			10	10	6 10			
Permitted Phases		8	8				6 10	6 10				2
Detector Phase		8	8	8			10	10	6 10			2
Switch Phase												
Minimum Initial (s)		5.0	5.0	5.0			1.0	1.0				14.0
Minimum Split (s)		28.0	28.0	28.0			4.0	4.0				34.0
Total Split (s)		28.0	28.0	28.0			6.0	6.0				34.0
Total Split (%)		31.1%	31.1%	31.1%			6.7%	6.7%				37.8%
Yellow Time (s)		3.0	3.0	3.0			2.0	2.0				2.0
All-Red Time (s)		2.0	2.0	2.0			1.0	1.0				1.0
Lost Time Adjust (s)			-1.0	-1.0				1.0				
Total Lost Time (s)			4.0	4.0				4.0				
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode		Max	Max	Max			Max	Max				Max
Act Effect Green (s)			24.0	24.0				32.0	36.0			
Actuated g/C Ratio			0.27	0.27				0.36	0.40			

Lanes, Volumes, Timings
 44: Sheffield Ave & Clybourn Avenue & Willow Ave

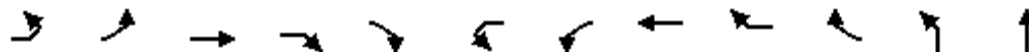
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Lane Group	NWL	NWT	NWR	NWR2	Ø6
Lane Configurations					
Traffic Volume (vph)	6	413	35	9	
Future Volume (vph)	6	413	35	9	
Ideal Flow (vphpl)	1900	1900	1900	1900	
Lane Width (ft)	12	12	12	12	
Grade (%)		0%			
Storage Length (ft)	125		0		
Storage Lanes	1		0		
Taper Length (ft)	25				
Lane Util. Factor	1.00	1.00	1.00	1.00	
Ped Bike Factor	0.99	0.99			
Frt		0.986			
Flt Protected	0.950				
Satd. Flow (prot)	1770	1544	0	0	
Flt Permitted	0.133				
Satd. Flow (perm)	246	1544	0	0	
Right Turn on Red				No	
Satd. Flow (RTOR)					
Link Speed (mph)		30			
Link Distance (ft)		1131			
Travel Time (s)		25.7			
Confl. Peds. (#/hr)	16		21	48	
Confl. Bikes (#/hr)					
Peak Hour Factor	0.95	0.95	0.95	0.95	
Growth Factor	100%	100%	100%	100%	
Heavy Vehicles (%)	2%	2%	2%	2%	
Bus Blockages (#/hr)	0	0	0	0	
Parking (#/hr)		10			
Mid-Block Traffic (%)		0%			
Shared Lane Traffic (%)					
Lane Group Flow (vph)	8	481	0	0	
Turn Type	Perm	NA			
Protected Phases		2			6
Permitted Phases	2				
Detector Phase	2	2			
Switch Phase					
Minimum Initial (s)	14.0	14.0			14.0
Minimum Split (s)	34.0	34.0			34.0
Total Split (s)	34.0	34.0			34.0
Total Split (%)	37.8%	37.8%			38%
Yellow Time (s)	2.0	2.0			2.0
All-Red Time (s)	1.0	1.0			1.0
Lost Time Adjust (s)	1.0	1.0			
Total Lost Time (s)	4.0	4.0			
Lead/Lag					
Lead-Lag Optimize?					
Recall Mode	Max	Max			Max
Act Effct Green (s)	30.0	30.0			
Actuated g/C Ratio	0.33	0.33			

Lanes, Volumes, Timings
 44: Sheffield Ave & Clybourn Avenue & Willow Ave

01/10/2019

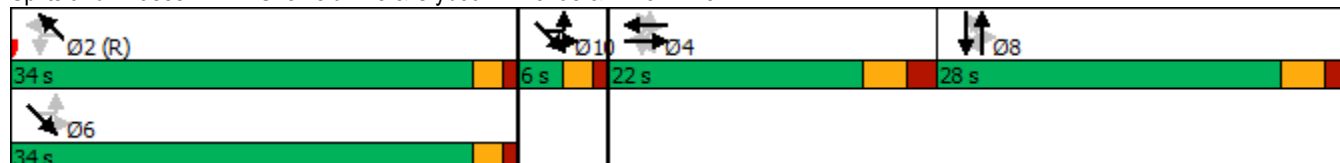


Lane Group	EBL2	EBL	EBT	EBR	EBR2	WBL2	WBL	WBT	WBR	WBR2	NBL	NBT
v/c Ratio		0.12	0.27				0.22	0.51			0.22	0.39
Control Delay		31.5	33.3				33.1	39.0			27.3	27.5
Queue Delay		0.0	0.0				0.0	0.0			0.0	0.0
Total Delay		31.5	33.3				33.1	39.0			27.3	27.5
LOS		C	C				C	D			C	C
Approach Delay			32.9					37.4				27.5
Approach LOS			C					D				C
Queue Length 50th (ft)		11	42				25	75			16	67
Queue Length 95th (ft)		34	84				59	136			m27	m122
Internal Link Dist (ft)			348					776				953
Turn Bay Length (ft)		30					25				25	
Base Capacity (vph)		196	313				237	291			169	412
Starvation Cap Reductn		0	0				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		0.12	0.27				0.22	0.51			0.22	0.39

Intersection Summary

Area Type: Other
 Cycle Length: 90
 Actuated Cycle Length: 90
 Offset: 17 (19%), Referenced to phase 2:NWTL, Start of Green
 Natural Cycle: 100
 Control Type: Pretimed
 Maximum v/c Ratio: 1.23
 Intersection Signal Delay: 78.5
 Intersection LOS: E
 Intersection Capacity Utilization 110.8%
 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.
 m Volume for 95th percentile queue is metered by upstream signal.

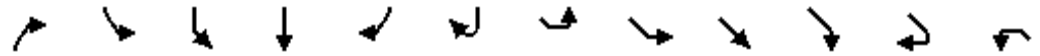
Splits and Phases: 44: Sheffield Ave & Clybourn Avenue & Willow Ave



Lanes, Volumes, Timings

44: Sheffield Ave & Clybourn Avenue & Willow Ave

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Lane Group	NBR	SBL2	SBL	SBT	SBR	SBR2	SEL2	SEL	SET	SER	SER2	NWL2
v/c Ratio			0.57	0.74				0.41	1.23			
Control Delay			38.7	42.9				30.5	144.9			
Queue Delay			0.0	0.0				0.0	0.0			
Total Delay			38.7	42.9				30.5	144.9			
LOS			D	D				C	F			
Approach Delay				41.5					135.9			
Approach LOS				D					F			
Queue Length 50th (ft)			72	158				23	~540			
Queue Length 95th (ft)			138	#278				48	#758			
Internal Link Dist (ft)				457					630			
Turn Bay Length (ft)			25					95				
Base Capacity (vph)			257	411				157	619			
Starvation Cap Reductn			0	0				0	0			
Spillback Cap Reductn			0	0				0	0			
Storage Cap Reductn			0	0				0	0			
Reduced v/c Ratio			0.57	0.74				0.41	1.23			

Intersection Summary

Lanes, Volumes, Timings
 44: Sheffield Ave & Clybourn Avenue & Willow Ave

01/10/2019

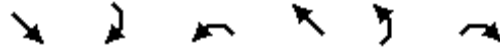


Lane Group	NWL	NWT	NWR	NWR2	Ø6
v/c Ratio	0.10	0.94			
Control Delay	32.6	63.9			
Queue Delay	0.0	0.0			
Total Delay	32.6	63.9			
LOS	C	E			
Approach Delay		63.4			
Approach LOS		E			
Queue Length 50th (ft)	3	285			
Queue Length 95th (ft)	m8	#461			
Internal Link Dist (ft)		1051			
Turn Bay Length (ft)	125				
Base Capacity (vph)	82	514			
Starvation Cap Reductn	0	0			
Spillback Cap Reductn	0	0			
Storage Cap Reductn	0	0			
Reduced v/c Ratio	0.10	0.94			

Intersection Summary

Lanes, Volumes, Timings
 145: Wisconsin Street & Clybourn Avenue

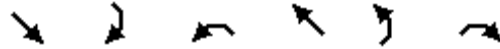
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Lane Group	SET	SER	NWL	NWT	NEL	NER
Lane Configurations						
Traffic Volume (vph)	654	224	69	468	22	20
Future Volume (vph)	654	224	69	468	22	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%			0%	0%	
Storage Length (ft)		0	90		0	0
Storage Lanes		0	1		1	0
Taper Length (ft)			75		0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.966				0.935	
Flt Protected			0.950		0.975	
Satd. Flow (prot)	1619	0	1593	1676	1698	0
Flt Permitted			0.171		0.975	
Satd. Flow (perm)	1619	0	287	1676	1698	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	46				22	
Link Speed (mph)	30			30	30	
Link Distance (ft)	1125			710	300	
Travel Time (s)	25.6			16.1	6.8	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)	0	0	0	0		
Mid-Block Traffic (%)	0%			0%	0%	
Shared Lane Traffic (%)						
Lane Group Flow (vph)	954	0	75	509	46	0
Turn Type	NA		Perm	NA	Prot	
Protected Phases	6			2	4	
Permitted Phases			2			
Detector Phase	6		2	2	4	
Switch Phase						
Minimum Initial (s)	5.0		5.0	5.0	5.0	
Minimum Split (s)	22.5		22.5	22.5	22.5	
Total Split (s)	62.0		62.0	62.0	23.0	
Total Split (%)	72.9%		72.9%	72.9%	27.1%	
Yellow Time (s)	3.0		3.0	3.0	3.0	
All-Red Time (s)	1.0		1.0	1.0	1.0	
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	
Total Lost Time (s)	4.0		4.0	4.0	4.0	
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	Max		Max	Max	Max	
Act Effct Green (s)	58.0		58.0	58.0	19.0	
Actuated g/C Ratio	0.68		0.68	0.68	0.22	

Lanes, Volumes, Timings
 145: Wisconsin Street & Clybourn Avenue

01/10/2019



Lane Group	SET	SER	NWL	NWT	NEL	NER
v/c Ratio	0.85		0.38	0.45	0.12	
Control Delay	19.4		12.8	7.7	17.5	
Queue Delay	0.0		0.0	0.0	0.0	
Total Delay	19.4		12.8	7.7	17.5	
LOS	B		B	A	B	
Approach Delay	19.4			8.3	17.5	
Approach LOS	B			A	B	
Queue Length 50th (ft)	318		15	107	10	
Queue Length 95th (ft)	#665		47	166	37	
Internal Link Dist (ft)	1045			630	220	
Turn Bay Length (ft)			90			
Base Capacity (vph)	1119		195	1143	396	
Starvation Cap Reductn	0		0	0	0	
Spillback Cap Reductn	0		0	0	0	
Storage Cap Reductn	0		0	0	0	
Reduced v/c Ratio	0.85		0.38	0.45	0.12	

Intersection Summary

Area Type: Other
 Cycle Length: 85
 Actuated Cycle Length: 85
 Offset: 0 (0%), Referenced to phase 2:NWTL and 6:SET, Start of Green
 Natural Cycle: 80
 Control Type: Pretimed
 Maximum v/c Ratio: 0.85
 Intersection Signal Delay: 15.3
 Intersection LOS: B
 Intersection Capacity Utilization 66.4%
 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: 145: Wisconsin Street & Clybourn Avenue



Intersection	
Intersection Delay, s/veh	17
Intersection LOS	C

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	W		T	T		T
Traffic Vol, veh/h	296	56	151	313	85	298
Future Vol, veh/h	296	56	151	313	85	298
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles, %	7	4	3	10	0	7
Mvmt Flow	302	57	154	319	87	304
Number of Lanes	1	0	1	1	0	1

Approach	WB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	2
Conflicting Approach Left	NB		WB
Conflicting Lanes Left	2	0	1
Conflicting Approach Right	SB	WB	
Conflicting Lanes Right	1	1	0
HCM Control Delay	19.2	13.5	19.1
HCM LOS	C	B	C

Lane	NBLn1	NBLn2	WBLn1	SBLn1
Vol Left, %	0%	0%	84%	22%
Vol Thru, %	100%	0%	0%	78%
Vol Right, %	0%	100%	16%	0%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	151	313	352	383
LT Vol	0	0	296	85
Through Vol	151	0	0	298
RT Vol	0	313	56	0
Lane Flow Rate	154	319	359	391
Geometry Grp	7	7	2	5
Degree of Util (X)	0.272	0.511	0.624	0.643
Departure Headway (Hd)	6.355	5.763	6.254	5.926
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	562	623	575	606
Service Time	4.128	3.536	4.315	3.994
HCM Lane V/C Ratio	0.274	0.512	0.624	0.645
HCM Control Delay	11.5	14.5	19.2	19.1
HCM Lane LOS	B	B	C	C
HCM 95th-tile Q	1.1	2.9	4.3	4.6

HCM 6th TWSC
 18: Kingsbury Street/Southport Avenue & Armitage Avenue

12/21/2018

Intersection						
Int Delay, s/veh	5.4					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↖	↗	↖	↗	↗	↖
Traffic Vol, veh/h	140	15	110	218	169	57
Future Vol, veh/h	140	15	110	218	169	57
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	100	0	0	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	152	16	120	237	184	62

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	661	184	246	0	-	0
Stage 1	184	-	-	-	-	-
Stage 2	477	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	427	858	1320	-	-	-
Stage 1	848	-	-	-	-	-
Stage 2	624	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	388	858	1320	-	-	-
Mov Cap-2 Maneuver	388	-	-	-	-	-
Stage 1	771	-	-	-	-	-
Stage 2	624	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	19.1	2.7	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1320	-	388	858	-	-
HCM Lane V/C Ratio	0.091	-	0.392	0.019	-	-
HCM Control Delay (s)	8	-	20.1	9.3	-	-
HCM Lane LOS	A	-	C	A	-	-
HCM 95th %tile Q(veh)	0.3	-	1.8	0.1	-	-

HCM 6th TWSC
 23: Marcey Street & Cortland Street

12/21/2018

Intersection						
Int Delay, s/veh	0.9					
Movement	EBT	EBR	WBL	WBT	NWL	NWR
Lane Configurations	↑↑			↑	↑	
Traffic Vol, veh/h	455	143	20	419	21	16
Future Vol, veh/h	455	143	20	419	21	16
Conflicting Peds, #/hr	0	15	15	0	0	18
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	88	88	88	88	88	88
Heavy Vehicles, %	9	2	0	5	5	0
Mvmt Flow	517	163	23	476	24	18

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	695	0	1136
Stage 1	-	-	-	-	614
Stage 2	-	-	-	-	522
Critical Hdwy	-	-	4.1	-	6.675
Critical Hdwy Stg 1	-	-	-	-	5.875
Critical Hdwy Stg 2	-	-	-	-	5.475
Follow-up Hdwy	-	-	2.2	-3.5475	3.3
Pot Cap-1 Maneuver	-	-	910	-	205
Stage 1	-	-	-	-	497
Stage 2	-	-	-	-	587
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	897	-	195
Mov Cap-2 Maneuver	-	-	-	-	195
Stage 1	-	-	-	-	473
Stage 2	-	-	-	-	587

Approach	EB	WB	NW
HCM Control Delay, s	0	0.4	20.4
HCM LOS			C

Minor Lane/Major Mvmt	NWLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	276	-	-	897	-
HCM Lane V/C Ratio	0.152	-	-	0.025	-
HCM Control Delay (s)	20.4	-	-	9.1	0
HCM Lane LOS	C	-	-	A	A
HCM 95th %tile Q(veh)	0.5	-	-	0.1	-

Intersection						
Int Delay, s/veh	2.9					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↔		↔		↔	↔
Traffic Vol, veh/h	40	34	529	52	61	908
Future Vol, veh/h	40	34	529	52	61	908
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	-	-	-	50	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	43	37	575	57	66	987

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	1723	604	0	0	632
Stage 1	604	-	-	-	-
Stage 2	1119	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12
Critical Hdwy Stg 1	5.42	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218
Pot Cap-1 Maneuver	98	498	-	-	951
Stage 1	546	-	-	-	-
Stage 2	312	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	91	498	-	-	951
Mov Cap-2 Maneuver	91	-	-	-	-
Stage 1	508	-	-	-	-
Stage 2	312	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	56.4	0	0.6
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	146	951
HCM Lane V/C Ratio	-	-	0.551	0.07
HCM Control Delay (s)	-	-	56.4	9.1
HCM Lane LOS	-	-	F	A
HCM 95th %tile Q(veh)	-	-	2.8	0.2

Intersection

Int Delay, s/veh 4.4

Movement WBL WBR NBT NBR SBL SBT

Lane Configurations	↙	↗	↖		↙	↗
Traffic Vol, veh/h	85	31	64	386	168	78
Future Vol, veh/h	85	31	64	386	168	78
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	0	-	-	100	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	92	34	70	420	183	85

Major/Minor Minor1 Major1 Major2

Conflicting Flow All	731	280	0	0	490	0
Stage 1	280	-	-	-	-	-
Stage 2	451	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	389	759	-	-	1073	-
Stage 1	767	-	-	-	-	-
Stage 2	642	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	322	759	-	-	1073	-
Mov Cap-2 Maneuver	322	-	-	-	-	-
Stage 1	636	-	-	-	-	-
Stage 2	642	-	-	-	-	-

Approach WB NB SB

HCM Control Delay, s	17.8	0	6.2
HCM LOS	C		

Minor Lane/Major Mvmt NBT NBRWBLn1WBLn2 SBL SBT

Capacity (veh/h)	-	-	322	759	1073	-
HCM Lane V/C Ratio	-	-	0.287	0.044	0.17	-
HCM Control Delay (s)	-	-	20.6	10	9	-
HCM Lane LOS	-	-	C	B	A	-
HCM 95th %tile Q(veh)	-	-	1.2	0.1	0.6	-

HCM 6th TWSC
 51: Southport Avenue & Dickens Avenue

12/21/2018

Intersection						
Int Delay, s/veh	4					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	16	31	240	118	195	88
Future Vol, veh/h	16	31	240	118	195	88
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	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	17	34	261	128	212	96

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	910	260	308	0	-	0
Stage 1	260	-	-	-	-	-
Stage 2	650	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	305	779	1253	-	-	-
Stage 1	783	-	-	-	-	-
Stage 2	520	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	237	779	1253	-	-	-
Mov Cap-2 Maneuver	237	-	-	-	-	-
Stage 1	608	-	-	-	-	-
Stage 2	520	-	-	-	-	-











Approach	EB	NB	SB
HCM Control Delay, s	13.7	5.8	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1253	-	237	779	-	-
HCM Lane V/C Ratio	0.208	-	0.073	0.043	-	-
HCM Control Delay (s)	8.6	0	21.4	9.8	-	-
HCM Lane LOS	A	A	C	A	-	-
HCM 95th %tile Q(veh)	0.8	-	0.2	0.1	-	-

Capacity Analysis Output Sheets
Evening Peak Hour – Projected Conditions

Lanes, Volumes, Timings
 1: Damen Avenue & I-90/94 Off Ramp

01/10/2019

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	252	392	292	0	0	715
Future Volume (vph)	252	392	292	0	0	715
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	9	9	12	12	12	12
Grade (%)	0%		0%			0%
Storage Length (ft)	0	0		0	0	
Storage Lanes	1	1		0	0	
Taper Length (ft)	0				0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt		0.850				
Flt Protected	0.950					
Satd. Flow (prot)	1608	1439	1863	0	0	1800
Flt Permitted	0.950					
Satd. Flow (perm)	1608	1439	1863	0	0	1800
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		400				
Link Speed (mph)	30		30			30
Link Distance (ft)	211		419			303
Travel Time (s)	4.8		9.5			6.9
Confl. Peds. (#/hr)				16	16	
Confl. Bikes (#/hr)				10		
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	1%	1%	2%	0%	0%	3%
Bus Blockages (#/hr)	0	0	0	0	0	6
Parking (#/hr)						
Mid-Block Traffic (%)	0%		0%			0%
Shared Lane Traffic (%)						
Lane Group Flow (vph)	257	400	298	0	0	730
Turn Type	Prot	Prot	NA			NA
Protected Phases	8	8	2			6
Permitted Phases						
Detector Phase	8	8	2			6
Switch Phase						
Minimum Initial (s)	19.0	19.0	27.0			27.0
Minimum Split (s)	24.0	24.0	41.0			41.0
Total Split (s)	24.0	24.0	41.0			41.0
Total Split (%)	36.9%	36.9%	63.1%			63.1%
Yellow Time (s)	3.0	3.0	3.0			3.0
All-Red Time (s)	2.0	2.0	1.0			1.0
Lost Time Adjust (s)	-1.0	-1.0	0.0			0.0
Total Lost Time (s)	4.0	4.0	4.0			4.0
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	Max	Max	Max			Max
Act Effct Green (s)	20.0	20.0	37.0			37.0
Actuated g/C Ratio	0.31	0.31	0.57			0.57

Lanes, Volumes, Timings
 1: Damen Avenue & I-90/94 Off Ramp

01/10/2019



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
v/c Ratio	0.52	0.56	0.28			0.71
Control Delay	23.1	5.6	8.1			15.1
Queue Delay	0.0	0.0	0.0			0.0
Total Delay	23.1	5.6	8.1			15.1
LOS	C	A	A			B
Approach Delay	12.4		8.1			15.1
Approach LOS	B		A			B
Queue Length 50th (ft)	83	0	54			188
Queue Length 95th (ft)	148	56	93			311
Internal Link Dist (ft)	131		339			223
Turn Bay Length (ft)						
Base Capacity (vph)	494	719	1060			1024
Starvation Cap Reductn	0	0	0			0
Spillback Cap Reductn	0	0	0			0
Storage Cap Reductn	0	0	0			0
Reduced v/c Ratio	0.52	0.56	0.28			0.71

Intersection Summary

Area Type: Other
 Cycle Length: 65
 Actuated Cycle Length: 65
 Offset: 35 (54%), Referenced to phase 2:NBT and 6:SBT, Start of Green
 Natural Cycle: 65
 Control Type: Pretimed
 Maximum v/c Ratio: 0.71
 Intersection Signal Delay: 12.8
 Intersection Capacity Utilization 61.8%
 Analysis Period (min) 15
 Intersection LOS: B
 ICU Level of Service B

Splits and Phases: 1: Damen Avenue & I-90/94 Off Ramp



Lanes, Volumes, Timings
2: Damen Avenue & Webster Avenue

01/10/2019



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	16	193	22	155	263	15	34	274	257	437	402	132
Future Volume (vph)	16	193	22	155	263	15	34	274	257	437	402	132
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	13	12	12	10	11	10	10	10	11	11	11
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	25		0	0		0	60		60	280		100
Storage Lanes	1		0	1		1	1		1	1		1
Taper Length (ft)	25			0			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	0.97	0.99		0.98		0.93			0.95	0.98		0.93
Frt		0.985				0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1805	1630	0	1770	1773	1561	1685	1478	1459	1694	1719	1546
Flt Permitted	0.591			0.455			0.148			0.467		
Satd. Flow (perm)	1085	1630	0	833	1773	1448	262	1478	1381	816	1719	1441
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		7				73			240			138
Link Speed (mph)		30			30			30				30
Link Distance (ft)		701			159			667				419
Travel Time (s)		15.9			3.6			15.2				9.5
Confl. Peds. (#/hr)	26		14	14		26	44		30	30		44
Confl. Bikes (#/hr)			2			5			14			6
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
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	1%	0%	2%	0%	0%	0%	2%	0%	3%	3%	1%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	8	0	9	0
Parking (#/hr)		9						10				
Mid-Block Traffic (%)		0%			0%			0%				0%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	17	224	0	161	274	16	35	285	268	455	419	138
Turn Type	Perm	NA		pm+pt	NA	Perm	Perm	NA	Perm	custom	NA	Perm
Protected Phases		4		3	8			2		1	16	
Permitted Phases	4			8		8	2		2	6		16
Detector Phase	4	4		3	8	8	2	2	2	1	16	16
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0	5.0	12.0	12.0	12.0	6.0		
Minimum Split (s)	24.0	24.0		8.0	25.0	25.0	25.0	25.0	25.0	9.0		
Total Split (s)	24.0	24.0		8.0	32.0	32.0	31.0	31.0	31.0	12.0		
Total Split (%)	32.0%	32.0%		10.7%	42.7%	42.7%	41.3%	41.3%	41.3%	16.0%		
Yellow Time (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0		
All-Red Time (s)	2.0	2.0		0.0	2.0	2.0	2.0	2.0	2.0	0.0		
Lost Time Adjust (s)	-1.0	-1.0		-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	1.0		
Total Lost Time (s)	4.0	4.0		2.0	4.0	4.0	4.0	4.0	4.0	4.0		
Lead/Lag	Lag	Lag		Lead								
Lead-Lag Optimize?	Yes	Yes		Yes								
Recall Mode	Max	Max		Max	Max	Max	Max	Max	Max	Max		
Act Effct Green (s)	20.0	20.0		30.0	28.0	28.0	27.0	27.0	27.0	35.0	39.0	39.0
Actuated g/C Ratio	0.27	0.27		0.40	0.37	0.37	0.36	0.36	0.36	0.47	0.52	0.52

Lanes, Volumes, Timings
 2: Damen Avenue & Webster Avenue

01/10/2019

Lane Group	Ø6
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Grade (%)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Confl. Bikes (#/hr)	
Peak Hour Factor	
Growth Factor	
Heavy Vehicles (%)	
Bus Blockages (#/hr)	
Parking (#/hr)	
Mid-Block Traffic (%)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	6
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	12.0
Minimum Split (s)	25.0
Total Split (s)	31.0
Total Split (%)	41%
Yellow Time (s)	3.0
All-Red Time (s)	2.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Recall Mode	Max
Act Effct Green (s)	
Actuated g/C Ratio	

Lanes, Volumes, Timings
 2: Damen Avenue & Webster Avenue

01/10/2019

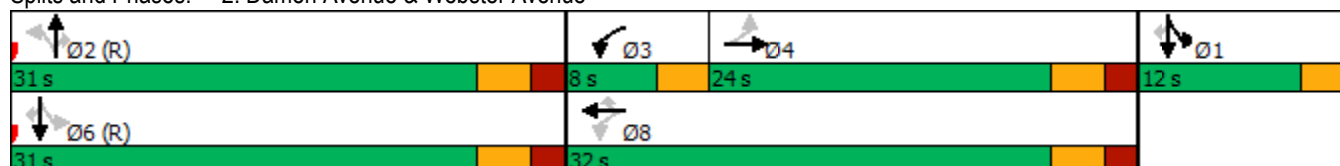


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.06	0.51		0.39	0.41	0.03	0.37	0.54	0.41	0.96	0.47	0.17
Control Delay	21.3	27.4		18.2	19.8	0.1	31.6	23.6	5.7	51.4	13.6	2.4
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.0
Total Delay	21.3	27.4		18.2	19.8	0.1	31.6	23.6	5.7	51.4	14.2	2.4
LOS	C	C		B	B	A	C	C	A	D	B	A
Approach Delay		27.0			18.5			15.9			29.3	
Approach LOS		C			B			B			C	
Queue Length 50th (ft)	6	85		48	92	0	12	103	8	130	116	0
Queue Length 95th (ft)	21	151		88	155	0	41	177	57	#314	186	24
Internal Link Dist (ft)		621			79			587			339	
Turn Bay Length (ft)	25						60		60	280		100
Base Capacity (vph)	289	439		408	661	586	94	532	650	474	893	815
Starvation Cap Reductn	0	0		0	0	0	0	0	0	0	195	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	0.06	0.51		0.39	0.41	0.03	0.37	0.54	0.41	0.96	0.60	0.17

Intersection Summary

Area Type: Other
 Cycle Length: 75
 Actuated Cycle Length: 75
 Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
 Natural Cycle: 75
 Control Type: Pretimed
 Maximum v/c Ratio: 0.96
 Intersection Signal Delay: 23.5 Intersection LOS: C
 Intersection Capacity Utilization 78.6% 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.

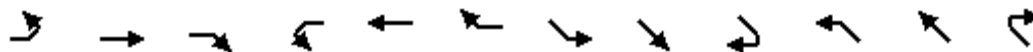
Splits and Phases: 2: Damen Avenue & Webster Avenue



Lane Group	Ø6
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	
Intersection Summary	

Lanes, Volumes, Timings
4: Elston Avenue & Webster Avenue

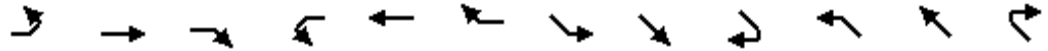
01/10/2019



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Traffic Volume (vph)	28	371	69	51	507	290	207	279	45	82	483	52
Future Volume (vph)	28	371	69	51	507	290	207	279	45	82	483	52
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	2000	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	11	12	10	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	25		0	55		50	100		0	115		125
Storage Lanes	1		0	1		0	1		0	1		1
Taper Length (ft)	25			50			95			95		
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	0.99	0.99		0.99	0.98		0.99	0.99		0.96		0.93
Frt		0.976			0.945			0.979				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1805	1577	0	1805	1484	0	1805	1546	0	1770	1848	1615
Flt Permitted	0.080			0.350			0.170			0.369		
Satd. Flow (perm)	151	1577	0	656	1484	0	320	1546	0	660	1848	1501
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		12			38			8				52
Link Speed (mph)		30			30			30				30
Link Distance (ft)		966			974			711				697
Travel Time (s)		22.0			22.1			16.2				15.8
Confl. Peds. (#/hr)	34		26	26		34	18		52	52		18
Confl. Bikes (#/hr)			5			6			2			23
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
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	1%	0%	0%	2%	1%	0%	1%	0%	2%	1%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)		7			8			10				
Mid-Block Traffic (%)		0%			0%			0%				0%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	29	464	0	54	839	0	218	341	0	86	508	55
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	Perm
Protected Phases		4			8		1	6		5	2	
Permitted Phases	4			8			6			2		2
Detector Phase	4	4		8	8		1	6		5	2	2
Switch Phase												
Minimum Initial (s)	25.0	25.0		25.0	25.0		5.0	34.0		5.0	34.0	34.0
Minimum Split (s)	50.0	50.0		50.0	50.0		9.5	40.0		9.5	40.0	40.0
Total Split (s)	55.0	55.0		55.0	55.0		10.0	40.0		10.0	40.0	40.0
Total Split (%)	52.4%	52.4%		52.4%	52.4%		9.5%	38.1%		9.5%	38.1%	38.1%
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
All-Red Time (s)	2.0	2.0		2.0	2.0		0.0	2.0		0.0	2.0	2.0
Lost Time Adjust (s)	0.0	-1.0		0.0	-1.0		-1.0	-1.0		-1.0	-1.0	-1.0
Total Lost Time (s)	5.0	4.0		5.0	4.0		2.0	4.0		2.0	4.0	4.0
Lead/Lag							Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	Yes
Recall Mode	Max	Max		Max	Max		Max	Max		Max	Max	Max
Act Effct Green (s)	50.0	51.0		50.0	51.0		46.0	36.0		46.0	36.0	36.0
Actuated g/C Ratio	0.48	0.49		0.48	0.49		0.44	0.34		0.44	0.34	0.34

Lanes, Volumes, Timings
 4: Elston Avenue & Webster Avenue

01/10/2019

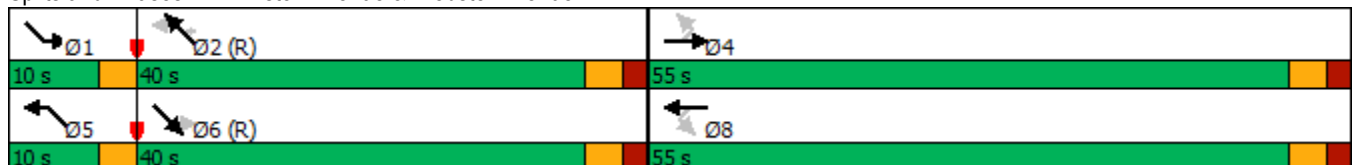


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
v/c Ratio	0.41	0.60		0.17	1.13		0.86	0.64		0.23	0.80	0.10
Control Delay	38.8	23.1		12.0	94.4		51.8	34.8		18.0	42.6	7.8
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	38.8	23.1		12.0	94.4		51.8	34.8		18.0	42.6	7.8
LOS	D	C		B	F		D	C		B	D	A
Approach Delay		24.0			89.4			41.4			36.4	
Approach LOS		C			F			D			D	
Queue Length 50th (ft)	12	213		12	~654		88	186		32	307	1
Queue Length 95th (ft)	#50	319		m16	m#699		#195	287		61	#472	28
Internal Link Dist (ft)		886			894			631			617	
Turn Bay Length (ft)	25			55			100			115		125
Base Capacity (vph)	71	772		312	740		253	535		373	633	548
Starvation Cap Reductn	0	0		0	0		0	0		0	0	0
Spillback Cap Reductn	0	0		0	0		0	0		0	0	0
Storage Cap Reductn	0	0		0	0		0	0		0	0	0
Reduced v/c Ratio	0.41	0.60		0.17	1.13		0.86	0.64		0.23	0.80	0.10

Intersection Summary

Area Type: Other
 Cycle Length: 105
 Actuated Cycle Length: 105
 Offset: 0 (0%), Referenced to phase 2:NWTL and 6:SETL, Start of Green
 Natural Cycle: 110
 Control Type: Pretimed
 Maximum v/c Ratio: 1.13
 Intersection Signal Delay: 53.4 Intersection LOS: D
 Intersection Capacity Utilization 96.1% ICU Level of Service F
 Analysis Period (min) 15
 ~ Volume exceeds capacity, queue is theoretically infinite.
 Queue shown is maximum after two cycles.
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 4: Elston Avenue & Webster Avenue



Lanes, Volumes, Timings
5: Best Buy/Kohl's Access & Elston Avenue

01/10/2019



Lane Group	SET	SER	NWL	NWT	NEL	NER	Ø2
Lane Configurations	↑	↗	↖	↑	↗	↖	
Traffic Volume (vph)	369	19	36	593	62	20	
Future Volume (vph)	369	19	36	593	62	20	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	12	12	12	12	12	12	
Grade (%)	0%			0%	0%		
Storage Length (ft)		125	150		0	0	
Storage Lanes		1	1		1	1	
Taper Length (ft)			25		0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	
Ped Bike Factor		0.93	0.98				
Frt		0.850				0.850	
Flt Protected			0.950		0.950		
Satd. Flow (prot)	1881	1615	1805	1881	1805	1615	
Flt Permitted			0.387		0.950		
Satd. Flow (perm)	1881	1494	719	1881	1805	1615	
Right Turn on Red		Yes				Yes	
Satd. Flow (RTOR)		21				22	
Link Speed (mph)	30			30	30		
Link Distance (ft)	697			556	263		
Travel Time (s)	15.8			12.6	6.0		
Confl. Peds. (#/hr)		23	23				
Confl. Bikes (#/hr)		3					
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	
Growth Factor	100%	100%	100%	100%	100%	100%	
Heavy Vehicles (%)	1%	0%	0%	1%	0%	0%	
Bus Blockages (#/hr)	0	0	0	0	0	0	
Parking (#/hr)							
Mid-Block Traffic (%)	0%			0%	0%		
Shared Lane Traffic (%)							
Lane Group Flow (vph)	401	21	39	645	67	22	
Turn Type	NA	pm+ov	custom	NA	Prot	pm+ov	
Protected Phases	6	7	9	2 9	7	9	2
Permitted Phases		6	2			7	
Detector Phase	6	7	9	2 9	7	9	
Switch Phase							
Minimum Initial (s)	16.0	12.0	4.0		12.0	4.0	16.0
Minimum Split (s)	41.0	31.0	8.0		31.0	8.0	41.0
Total Split (s)	41.0	31.0	13.0		31.0	13.0	41.0
Total Split (%)	48.2%	36.5%	15.3%		36.5%	15.3%	48%
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	
Total Lost Time (s)	4.0	4.0	4.0		4.0	4.0	
Lead/Lag							
Lead-Lag Optimize?							
Recall Mode	Max	Max	Max		Max	Max	Max
Act Effct Green (s)	37.0	64.0	46.0	50.0	27.0	40.0	
Actuated g/C Ratio	0.44	0.75	0.54	0.59	0.32	0.47	

Lanes, Volumes, Timings
 5: Best Buy/Kohl's Access & Elston Avenue

01/10/2019

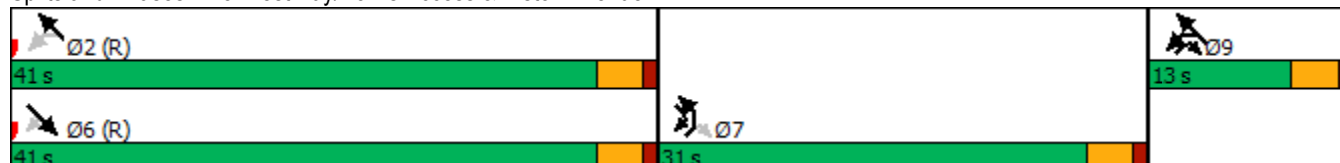


Lane Group	SET	SER	NWL	NWT	NEL	NER	Ø2
v/c Ratio	0.49	0.02	0.08	0.58	0.12	0.03	
Control Delay	19.8	0.8	7.9	13.7	21.3	5.3	
Queue Delay	0.0	0.0	0.0	0.7	0.0	0.0	
Total Delay	19.8	0.8	7.9	14.3	21.3	5.3	
LOS	B	A	A	B	C	A	
Approach Delay	18.9			14.0	17.4		
Approach LOS	B			B	B		
Queue Length 50th (ft)	149	0	8	198	25	0	
Queue Length 95th (ft)	229	3	20	297	55	12	
Internal Link Dist (ft)	617			476	183		
Turn Bay Length (ft)		125	150				
Base Capacity (vph)	818	1168	504	1106	573	771	
Starvation Cap Reductn	0	0	0	185	0	0	
Spillback Cap Reductn	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	
Reduced v/c Ratio	0.49	0.02	0.08	0.70	0.12	0.03	

Intersection Summary

Area Type:	Other
Cycle Length:	85
Actuated Cycle Length:	85
Offset:	65 (76%), Referenced to phase 2:NWTL and 6:SET, Start of Green
Natural Cycle:	80
Control Type:	Pretimed
Maximum v/c Ratio:	0.58
Intersection Signal Delay:	15.9
Intersection LOS:	B
Intersection Capacity Utilization:	47.9%
ICU Level of Service:	A
Analysis Period (min):	15

Splits and Phases: 5: Best Buy/Kohl's Access & Elston Avenue



Lanes, Volumes, Timings
6: Ashland Avenue & Webster Avenue

01/10/2019



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	231	489	57	189	436	153	24	1429	174	67	1153	163
Future Volume (vph)	231	489	57	189	436	153	24	1429	174	67	1153	163
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	10	11	12	10	11	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	60		0	230		0	115		0	65		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	55			40			80			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor		0.99		0.98	0.98		0.99	0.99			0.98	
Frt		0.984			0.961			0.984			0.981	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1805	1848	0	1805	1777	0	1668	3324	0	1685	3214	0
Flt Permitted	0.125			0.125			0.080			0.080		
Satd. Flow (perm)	238	1848	0	232	1777	0	139	3324	0	142	3214	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		6			17			17			20	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		974			563			310			531	
Travel Time (s)		22.1			12.8			7.0			12.1	
Confl. Peds. (#/hr)	52		102	102		52	118		44	44		118
Confl. Bikes (#/hr)						4			1			3
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
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	0%	0%	0%	1%	1%	1%	1%	0%	0%	3%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	8	0	0	8	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	241	568	0	197	613	0	25	1670	0	70	1371	0
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	7	4		3	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	5.0	9.0		5.0	9.0		5.0	33.0		5.0	33.0	
Minimum Split (s)	8.0	36.0		8.0	36.0		8.0	53.0		8.0	53.0	
Total Split (s)	8.0	36.0		8.0	36.0		8.0	53.0		8.0	53.0	
Total Split (%)	7.6%	34.3%		7.6%	34.3%		7.6%	50.5%		7.6%	50.5%	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	0.0	2.0		0.0	2.0		0.0	2.0		0.0	2.0	
Lost Time Adjust (s)	-1.0	-1.0		-1.0	-1.0		-1.0	-1.0		-1.0	-1.0	
Total Lost Time (s)	2.0	4.0		2.0	4.0		2.0	4.0		2.0	4.0	
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	
Act Effct Green (s)	40.0	32.0		40.0	32.0		57.4	50.6		57.4	50.6	
Actuated g/C Ratio	0.38	0.30		0.38	0.30		0.55	0.48		0.55	0.48	

Lanes, Volumes, Timings
6: Ashland Avenue & Webster Avenue

01/10/2019

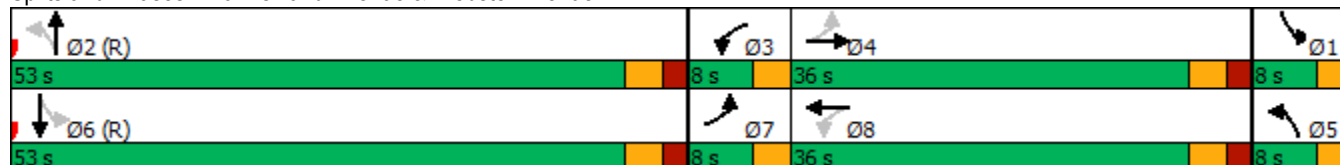


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	1.34	1.00		1.11	1.11		0.15	1.04		0.42	0.88	
Control Delay	209.0	76.7		117.0	98.7		10.1	58.7		18.6	32.7	
Queue Delay	0.0	33.7		0.0	0.0		0.0	5.9		0.0	0.0	
Total Delay	209.0	110.4		117.0	98.7		10.1	64.6		18.6	32.7	
LOS	F	F		F	F		B	E		B	C	
Approach Delay		139.8			103.1			63.8			32.0	
Approach LOS		F			F			E			C	
Queue Length 50th (ft)	~156	~399		~99	~481		8	~670		20	430	
Queue Length 95th (ft)	m#287	m#598		m#225	#677		m10	#807		41	#587	
Internal Link Dist (ft)		894			483			230			451	
Turn Bay Length (ft)	60			230			115			65		
Base Capacity (vph)	180	567		178	553		163	1610		165	1559	
Starvation Cap Reductn	0	0		0	0		0	24		0	0	
Spillback Cap Reductn	0	70		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	1.34	1.14		1.11	1.11		0.15	1.05		0.42	0.88	

Intersection Summary

Area Type: Other
 Cycle Length: 105
 Actuated Cycle Length: 105
 Offset: 60 (57%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
 Natural Cycle: 135
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 1.34
 Intersection Signal Delay: 73.8 Intersection LOS: E
 Intersection Capacity Utilization 109.1% 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: 6: Ashland Avenue & Webster Avenue



Lanes, Volumes, Timings
7: Dominick Street & Webster Avenue

01/10/2019



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↗	↘			↕	
Traffic Volume (vph)	56	499	176	3	385	12	347	6	15	8	2	46
Future Volume (vph)	56	499	176	3	385	12	347	6	15	8	2	46
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	100		0	0		0
Storage Lanes	0		0	0		0	1		0	0		0
Taper Length (ft)	0			0			50			0		
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		0.92			0.99		0.99	0.93			0.97	
Frt		0.968			0.996			0.891			0.888	
Flt Protected		0.996					0.950				0.993	
Satd. Flow (prot)	0	1448	0	0	1604	0	1805	1393	0	0	1427	0
Flt Permitted		0.939			0.997		0.758				0.979	
Satd. Flow (perm)	0	1359	0	0	1598	0	1433	1393	0	0	1393	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		25			3			16			48	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		563			509			349			140	
Travel Time (s)		12.8			11.6			7.9			3.2	
Confl. Peds. (#/hr)	50		102	102		50	2		24	24		2
Confl. Bikes (#/hr)			13			9			1			
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
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	0%	2%	0%	1%	0%	0%	0%	0%	0%	0%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)		8			8			4			6	
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	769	0	0	421	0	365	22	0	0	58	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	22.5	22.5		22.5	22.5		22.5	22.5		22.5	22.5	
Total Split (s)	64.0	64.0		64.0	64.0		41.0	41.0		41.0	41.0	
Total Split (%)	61.0%	61.0%		61.0%	61.0%		39.0%	39.0%		39.0%	39.0%	
Yellow Time (s)	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	
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 Optimize?												
Recall Mode	Max	Max		Max	Max		Max	Max		Max	Max	
Act Effct Green (s)		60.0			60.0		37.0	37.0			37.0	
Actuated g/C Ratio		0.57			0.57		0.35	0.35			0.35	

Lanes, Volumes, Timings
 7: Dominick Street & Webster Avenue

01/10/2019

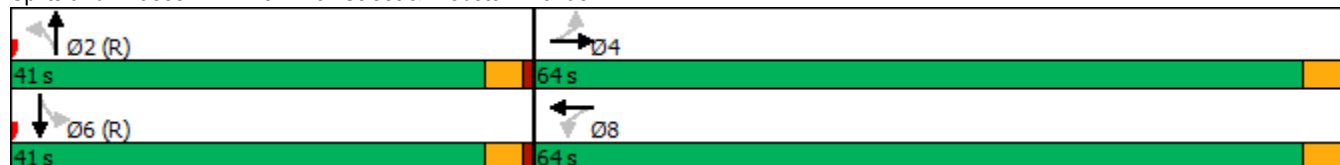


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio		0.98			0.46		0.72	0.04				0.11
Control Delay		28.3			21.6		38.2	12.0				9.1
Queue Delay		21.3			0.4		0.0	0.0				0.0
Total Delay		49.6			22.1		38.2	12.0				9.1
LOS		D			C		D	B				A
Approach Delay		49.6			22.1			36.7				9.1
Approach LOS		D			C			D				A
Queue Length 50th (ft)		173			169		198	2				4
Queue Length 95th (ft)		m180			237		306	21				32
Internal Link Dist (ft)		483			429			269				60
Turn Bay Length (ft)							100					
Base Capacity (vph)		787			914		504	501				521
Starvation Cap Reductn		57			167		0	0				0
Spillback Cap Reductn		40			0		0	0				1
Storage Cap Reductn		0			0		0	0				0
Reduced v/c Ratio		1.05			0.56		0.72	0.04				0.11

Intersection Summary

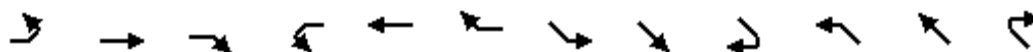
Area Type: Other
 Cycle Length: 105
 Actuated Cycle Length: 105
 Offset: 73 (70%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
 Natural Cycle: 80
 Control Type: Pretimed
 Maximum v/c Ratio: 0.98
 Intersection Signal Delay: 38.0
 Intersection Capacity Utilization 98.7%
 Analysis Period (min) 15
 Intersection LOS: D
 ICU Level of Service F
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 7: Dominick Street & Webster Avenue



Lanes, Volumes, Timings
8: Clybourn Avenue & Webster Avenue

01/10/2019



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Traffic Volume (vph)	36	387	102	16	349	97	66	363	28	100	584	21
Future Volume (vph)	36	387	102	16	349	97	66	363	28	100	584	21
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	75		0	70		0	155		0	125		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	50			50			100			75		
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	0.97		0.97	0.98		0.97	0.99		0.97	0.99	
Frt		0.969			0.967			0.989			0.995	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1805	1566	0	1805	1762	0	1805	1600	0	1805	1629	0
Flt Permitted	0.261			0.214			0.208			0.362		
Satd. Flow (perm)	483	1566	0	393	1762	0	383	1600	0	666	1629	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		509			339			733			471	
Travel Time (s)		11.6			7.7			16.7			10.7	
Confl. Peds. (#/hr)	48		72	72		48	90		56	56		90
Confl. Bikes (#/hr)			11			3			6			41
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
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	1%	0%	0%	1%	7%	0%	1%	0%	0%	1%	1%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)		4						7			5	
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	38	514	0	17	469	0	69	411	0	105	637	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		custom	NA	
Protected Phases		4			8			6		5	2.5	
Permitted Phases	4			8			6			2		
Detector Phase	4	4		8	8		6	6		5	2.5	
Switch Phase												
Minimum Initial (s)	18.0	18.0		18.0	18.0		28.0	28.0		8.0		
Minimum Split (s)	44.0	44.0		44.0	44.0		50.0	50.0		11.0		
Total Split (s)	44.0	44.0		44.0	44.0		50.0	50.0		11.0		
Total Split (%)	41.9%	41.9%		41.9%	41.9%		47.6%	47.6%		10.5%		
Yellow Time (s)	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		0.0		
Lost Time Adjust (s)	-1.0	-1.0		-1.0	-1.0		-1.0	-1.0		1.0		
Total Lost Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0		
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	Max	Max		Max	Max		Max	Max		Max		
Act Effect Green (s)	40.0	40.0		40.0	40.0		46.0	46.0		53.0	57.0	
Actuated g/C Ratio	0.38	0.38		0.38	0.38		0.44	0.44		0.50	0.54	

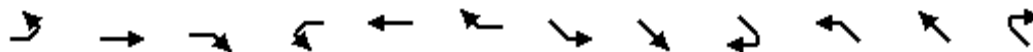
Lanes, Volumes, Timings
 8: Clybourn Avenue & Webster Avenue

01/10/2019

Lane Group	Ø2
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Grade (%)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Confl. Bikes (#/hr)	
Peak Hour Factor	
Growth Factor	
Heavy Vehicles (%)	
Bus Blockages (#/hr)	
Parking (#/hr)	
Mid-Block Traffic (%)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	2
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	28.0
Minimum Split (s)	50.0
Total Split (s)	50.0
Total Split (%)	48%
Yellow Time (s)	3.0
All-Red Time (s)	2.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Recall Mode	Max
Act Effct Green (s)	
Actuated g/C Ratio	

Lanes, Volumes, Timings
 8: Clybourn Avenue & Webster Avenue

01/10/2019

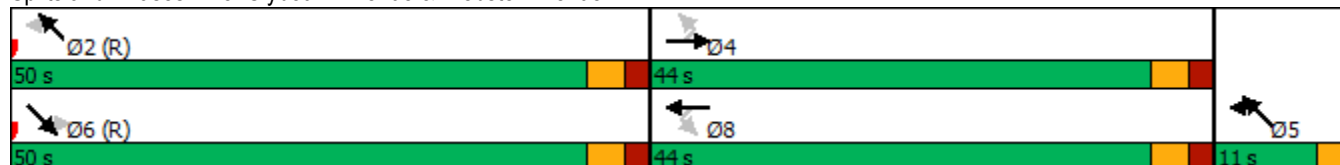


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
v/c Ratio	0.21	0.86		0.11	0.70		0.41	0.59		0.25	0.72	
Control Delay	9.1	21.1		20.6	25.4		29.7	26.5		13.4	23.9	
Queue Delay	0.0	0.9		0.0	3.8		0.0	0.0		0.0	8.5	
Total Delay	9.1	22.1		20.6	29.2		29.7	26.5		13.4	32.3	
LOS	A	C		C	C		C	C		B	C	
Approach Delay		21.2			28.9			27.0			29.7	
Approach LOS		C			C			C			C	
Queue Length 50th (ft)	10	260		5	152		31	203		33	305	
Queue Length 95th (ft)	m0	m290		m11	274		76	304		60	450	
Internal Link Dist (ft)		429			259			653			391	
Turn Bay Length (ft)	75			70			155			125		
Base Capacity (vph)	184	596		149	671		167	700		412	884	
Starvation Cap Reductn	0	13		0	126		0	0		0	211	
Spillback Cap Reductn	0	7		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.21	0.88		0.11	0.86		0.41	0.59		0.25	0.95	

Intersection Summary

Area Type: Other
 Cycle Length: 105
 Actuated Cycle Length: 105
 Offset: 99 (94%), Referenced to phase 2:NWTL and 6:SETL, Start of Green
 Natural Cycle: 105
 Control Type: Pretimed
 Maximum v/c Ratio: 0.86
 Intersection Signal Delay: 26.9
 Intersection LOS: C
 Intersection Capacity Utilization 103.3%
 ICU Level of Service G
 Analysis Period (min) 15
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 8: Clybourn Avenue & Webster Avenue



Lane Group	Ø2
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	
Intersection Summary	

Lanes, Volumes, Timings
9: Southport Avenue & Webster Avenue

01/10/2019



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (vph)	119	198	9	61	331	38	3	253	104	15	173	128
Future Volume (vph)	119	198	9	61	331	38	3	253	104	15	173	128
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (ft)	0			0			0			0		
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		0.98			0.98			0.97			0.95	
Frt		0.996			0.988			0.961			0.945	
Flt Protected		0.982			0.993						0.998	
Satd. Flow (prot)	0	1638	0	0	1583	0	0	1523	0	0	1452	0
Flt Permitted		0.689			0.904			0.998			0.976	
Satd. Flow (perm)	0	1130	0	0	1429	0	0	1519	0	0	1417	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		2			7			24			40	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		339			3065			320			507	
Travel Time (s)		7.7			69.7			7.3			11.5	
Confl. Peds. (#/hr)	46		46	46		46	32		34	34		32
Confl. Bikes (#/hr)			3			3			4			
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
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	0%	0%	5%	1%	6%	0%	1%	0%	0%	1%	2%
Bus Blockages (#/hr)	0	0	0	0	6	0	0	0	0	0	0	0
Parking (#/hr)		3			0			6			8	
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	339	0	0	449	0	0	375	0	0	329	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	22.5	22.5		22.5	22.5		22.5	22.5		22.5	22.5	
Total Split (s)	57.0	57.0		57.0	57.0		48.0	48.0		48.0	48.0	
Total Split (%)	54.3%	54.3%		54.3%	54.3%		45.7%	45.7%		45.7%	45.7%	
Yellow Time (s)	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	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		4.0			4.0			4.0			4.0	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	Max	Max		Max	Max		Max	Max		Max	Max	
Act Effct Green (s)		53.0			53.0			44.0			44.0	
Actuated g/C Ratio		0.50			0.50			0.42			0.42	

Lanes, Volumes, Timings
 9: Southport Avenue & Webster Avenue

01/10/2019

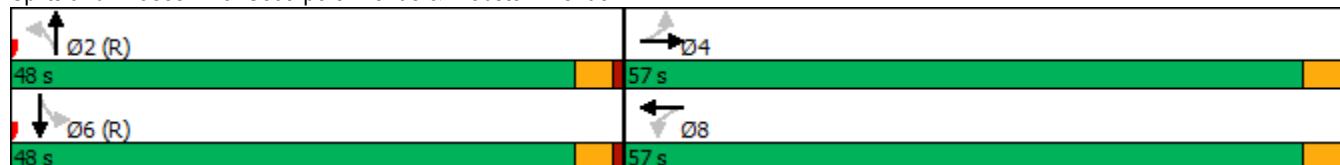


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio		0.59			0.62			0.58			0.53	
Control Delay		9.4			23.1			26.1			23.7	
Queue Delay		2.5			0.3			9.0			0.0	
Total Delay		11.9			23.4			35.1			23.7	
LOS		B			C			D			C	
Approach Delay		11.9			23.4			35.1			23.7	
Approach LOS		B			C			D			C	
Queue Length 50th (ft)		43			206			177			142	
Queue Length 95th (ft)		m53			315			275			230	
Internal Link Dist (ft)		259			2985			240			427	
Turn Bay Length (ft)												
Base Capacity (vph)		571			724			650			617	
Starvation Cap Reductn		129			0			236			0	
Spillback Cap Reductn		0			38			0			1	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.77			0.65			0.91			0.53	

Intersection Summary

Area Type: Other
 Cycle Length: 105
 Actuated Cycle Length: 105
 Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
 Natural Cycle: 45
 Control Type: Pretimed
 Maximum v/c Ratio: 0.62
 Intersection Signal Delay: 23.8
 Intersection LOS: C
 Intersection Capacity Utilization 72.2%
 ICU Level of Service C
 Analysis Period (min) 15
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 9: Southport Avenue & Webster Avenue



Lanes, Volumes, Timings

10: Southport Avenue & Clybourn Avenue & Shakespeare Avenue

01/10/2019

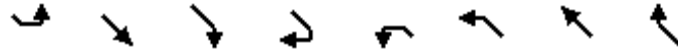


Lane Group	EBL2	EBL	EBR	EBR2	NBL2	NBL	NBT	NBR	SBL	SBT	SBR	SBR2
Lane Configurations												
Traffic Volume (vph)	12	22	28	6	2	106	286	11	105	126	17	30
Future Volume (vph)	12	22	28	6	2	106	286	11	105	126	17	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%					0%			0%		
Storage Length (ft)		0	0				0	0	0		0	
Storage Lanes		1	0				0	0	0		0	
Taper Length (ft)		0					0		0			
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		0.70					0.99			0.97		
Frt		0.932					0.996			0.977		
Flt Protected		0.976					0.987			0.981		
Satd. Flow (prot)	0	1256	0	0	0	0	1825	0	0	1747	0	0
Flt Permitted		0.976					0.782			0.604		
Satd. Flow (perm)	0	1178	0	0	0	0	1433	0	0	1062	0	0
Right Turn on Red				Yes				No				No
Satd. Flow (RTOR)		90										
Link Speed (mph)		30					30			30		
Link Distance (ft)		672					286			320		
Travel Time (s)		15.3					6.5			7.3		
Confl. Peds. (#/hr)	22	96	54	86	14	22		54	54		28	22
Confl. Bikes (#/hr)								9			5	5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%					0%			0%		
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	74	0	0	0	0	440	0	0	302	0	0
Turn Type	Prot	Prot			Perm	Perm	NA		Perm	NA		
Protected Phases	4	4					2			6		
Permitted Phases	4				2	2			6			
Detector Phase	4	4			2	2	2		6	6		
Switch Phase												
Minimum Initial (s)	10.0	10.0			5.0	5.0	5.0		5.0	5.0		
Minimum Split (s)	15.0	15.0			27.0	27.0	27.0		27.0	27.0		
Total Split (s)	15.0	15.0			27.0	27.0	27.0		27.0	27.0		
Total Split (%)	17.6%	17.6%			31.8%	31.8%	31.8%		31.8%	31.8%		
Yellow Time (s)	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		
Lost Time Adjust (s)		-1.0					-1.0			-1.0		
Total Lost Time (s)		4.0					4.0			4.0		
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	None	None			C-Max	C-Max	C-Max		C-Max	C-Max		
Act Effct Green (s)		11.0					26.5			26.5		
Actuated g/C Ratio		0.13					0.31			0.31		

Lanes, Volumes, Timings

10: Southport Avenue & Clybourn Avenue & Shakespeare Avenue

01/10/2019



Lane Group	SEL	SET	SER	SER2	NWL2	NWL	NWT	NWR
Lane Configurations								
Traffic Volume (vph)	28	447	59	8	13	34	637	96
Future Volume (vph)	28	447	59	8	13	34	637	96
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	13	12	12	12	10	13	12
Grade (%)		0%					0%	
Storage Length (ft)	115		0			115		0
Storage Lanes	1		0			1		0
Taper Length (ft)	75					90		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.98	0.98				0.95	0.98	
Frt		0.980					0.980	
Flt Protected	0.950					0.950		
Satd. Flow (prot)	1652	1848	0	0	0	1652	1848	0
Flt Permitted	0.104					0.255		
Satd. Flow (perm)	177	1848	0	0	0	421	1848	0
Right Turn on Red				No				No
Satd. Flow (RTOR)								
Link Speed (mph)		30					30	
Link Distance (ft)		471					1262	
Travel Time (s)		10.7					28.7	
Confl. Peds. (#/hr)	96		86	28	96	28		96
Confl. Bikes (#/hr)			9	9				44
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0
Parking (#/hr)								
Mid-Block Traffic (%)		0%					0%	
Shared Lane Traffic (%)								
Lane Group Flow (vph)	30	559	0	0	0	51	796	0
Turn Type	Perm	NA			Perm	Perm	NA	
Protected Phases		14					10	
Permitted Phases	14				10	10		
Detector Phase	14	14			10	10	10	
Switch Phase								
Minimum Initial (s)	20.0	20.0			20.0	20.0	20.0	
Minimum Split (s)	43.0	43.0			43.0	43.0	43.0	
Total Split (s)	43.0	43.0			43.0	43.0	43.0	
Total Split (%)	50.6%	50.6%			50.6%	50.6%	50.6%	
Yellow Time (s)	3.0	3.0			3.0	3.0	3.0	
All-Red Time (s)	2.0	2.0			2.0	2.0	2.0	
Lost Time Adjust (s)	-1.0	-1.0				-1.0	-1.0	
Total Lost Time (s)	4.0	4.0				4.0	4.0	
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	None	None			None	None	None	
Act Effct Green (s)	38.5	38.5				38.5	38.5	
Actuated g/C Ratio	0.45	0.45				0.45	0.45	

Lanes, Volumes, Timings

10: Southport Avenue & Clybourn Avenue & Shakespeare Avenue

01/10/2019



Lane Group	EBL2	EBL	EBR	EBR2	NBL2	NBL	NBT	NBR	SBL	SBT	SBR	SBR2
v/c Ratio		0.31					0.99			0.92		
Control Delay		9.6					74.0			65.6		
Queue Delay		0.0					0.0			0.0		
Total Delay		9.6					74.0			65.6		
LOS		A					E			E		
Approach Delay		9.6					74.0			65.6		
Approach LOS		A					E			E		
Queue Length 50th (ft)		0					~277			~178		
Queue Length 95th (ft)		29					#456			#332		
Internal Link Dist (ft)		592					206			240		
Turn Bay Length (ft)												
Base Capacity (vph)		240					445			330		
Starvation Cap Reductn		0					0			0		
Spillback Cap Reductn		0					0			0		
Storage Cap Reductn		0					0			0		
Reduced v/c Ratio		0.31					0.99			0.92		

Intersection Summary

Area Type: Other
 Cycle Length: 85
 Actuated Cycle Length: 85
 Offset: 41 (48%), Referenced to phase 2:NBT and 6:SBT, Start of Green
 Natural Cycle: 85
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.99
 Intersection Signal Delay: 46.0
 Intersection LOS: D
 Intersection Capacity Utilization 84.0%
 ICU Level of Service E
 Analysis Period (min) 15
 ~ Volume exceeds capacity, queue is theoretically infinite.
 Queue shown is maximum after two cycles.
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 10: Southport Avenue & Clybourn Avenue & Shakespeare Avenue



Lanes, Volumes, Timings

10: Southport Avenue & Clybourn Avenue & Shakespeare Avenue

01/10/2019



Lane Group	SEL	SET	SER	SER2	NWL2	NWL	NWT	NWR
v/c Ratio	0.38	0.67				0.27	0.95	
Control Delay	31.6	22.9				17.3	44.0	
Queue Delay	0.0	1.6				0.0	0.0	
Total Delay	31.6	24.5				17.3	44.0	
LOS	C	C				B	D	
Approach Delay		24.9					42.4	
Approach LOS		C					D	
Queue Length 50th (ft)	10	223				18	423	
Queue Length 95th (ft)	41	336				m44	#657	
Internal Link Dist (ft)		391					1182	
Turn Bay Length (ft)	115					115		
Base Capacity (vph)	81	847				193	847	
Starvation Cap Reductn	0	141				0	0	
Spillback Cap Reductn	0	0				0	0	
Storage Cap Reductn	0	0				0	0	
Reduced v/c Ratio	0.37	0.79				0.26	0.94	

Intersection Summary

Lanes, Volumes, Timings
 11: Armitage Avenue & I-90/94 West Ramps

01/10/2019



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑			↑↑			↑↓		↑↑	↑	↑
Traffic Volume (vph)	0	629	9	11	737	0	32	0	67	451	51	261
Future Volume (vph)	0	629	9	11	737	0	32	0	67	451	51	261
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	0		0	0		0	0		0	2		1
Taper Length (ft)	0			0			0			0		
Lane Util. Factor	1.00	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	0.97	1.00	1.00
Ped Bike Factor		1.00			1.00			0.98				0.94
Frt		0.998						0.909				0.850
Flt Protected					0.999			0.984		0.950		
Satd. Flow (prot)	0	3483	0	0	3430	0	0	1699	0	3367	1892	1583
Flt Permitted					0.953			0.874		0.950		
Satd. Flow (perm)	0	3483	0	0	3269	0	0	1485	0	3367	1892	1482
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		1						135				231
Link Speed (mph)		30			30			30				30
Link Distance (ft)		653			126			236				708
Travel Time (s)		14.8			2.9			5.4				16.1
Confl. Peds. (#/hr)	12		118	118		12	32					32
Confl. Bikes (#/hr)			3									
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
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	3%	0%	0%	5%	0%	0%	0%	0%	4%	0%	2%
Bus Blockages (#/hr)	0	1	0	0	1	0	0	0	0	0	1	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%				0%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	671	0	0	788	0	0	105	0	475	54	275
Turn Type		NA		custom	NA		Perm	NA		Split	NA	Perm
Protected Phases		4		8 10	4 8 10			2		6	6	
Permitted Phases				4 8			2					6
Detector Phase		4		8 10	4 8 10		2	2		6	6	6
Switch Phase												
Minimum Initial (s)		21.0					10.0	10.0		6.0	6.0	6.0
Minimum Split (s)		36.0					15.0	15.0		24.0	24.0	24.0
Total Split (s)		39.0					15.0	15.0		24.0	24.0	24.0
Total Split (%)		37.1%					14.3%	14.3%		22.9%	22.9%	22.9%
Yellow Time (s)		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
Lost Time Adjust (s)		1.0						-1.0		-1.0	-1.0	-1.0
Total Lost Time (s)		4.0						4.0		4.0	4.0	4.0
Lead/Lag		Lead								Lead	Lead	Lead
Lead-Lag Optimize?		Yes								Yes	Yes	Yes
Recall Mode		Max					Max	Max		Max	Max	Max
Act Effct Green (s)		35.0			54.0			11.0		20.0	20.0	20.0
Actuated g/C Ratio		0.33			0.51			0.10		0.19	0.19	0.19

Lanes, Volumes, Timings

11: Armitage Avenue & I-90/94 West Ramps

01/10/2019

Lane Group	Ø8	Ø10
Lane Configurations		
Traffic Volume (vph)		
Future Volume (vph)		
Ideal Flow (vphpl)		
Lane Width (ft)		
Grade (%)		
Storage Length (ft)		
Storage Lanes		
Taper Length (ft)		
Lane Util. Factor		
Ped Bike Factor		
Frt		
Flt Protected		
Satd. Flow (prot)		
Flt Permitted		
Satd. Flow (perm)		
Right Turn on Red		
Satd. Flow (RTOR)		
Link Speed (mph)		
Link Distance (ft)		
Travel Time (s)		
Confl. Peds. (#/hr)		
Confl. Bikes (#/hr)		
Peak Hour Factor		
Growth Factor		
Heavy Vehicles (%)		
Bus Blockages (#/hr)		
Parking (#/hr)		
Mid-Block Traffic (%)		
Shared Lane Traffic (%)		
Lane Group Flow (vph)		
Turn Type		
Protected Phases	8	10
Permitted Phases		
Detector Phase		
Switch Phase		
Minimum Initial (s)	18.0	1.0
Minimum Split (s)	21.0	6.0
Total Split (s)	21.0	6.0
Total Split (%)	20%	6%
Yellow Time (s)	3.0	3.0
All-Red Time (s)	0.0	2.0
Lost Time Adjust (s)		
Total Lost Time (s)		
Lead/Lag	Lag	Lag
Lead-Lag Optimize?	Yes	Yes
Recall Mode	Max	Max
Act Effct Green (s)		
Actuated g/C Ratio		

Lanes, Volumes, Timings
 11: Armitage Avenue & I-90/94 West Ramps

01/10/2019

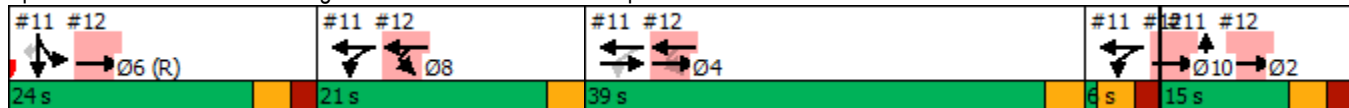


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio		0.58			0.46			0.38		0.74	0.15	0.59
Control Delay		31.3			0.5			7.9		48.0	36.8	13.9
Queue Delay		0.0			6.0			0.0		0.0	0.0	0.0
Total Delay		31.3			6.5			7.9		48.0	36.8	13.9
LOS		C			A			A		D	D	B
Approach Delay		31.3			6.5			7.9			35.6	
Approach LOS		C			A			A			D	
Queue Length 50th (ft)		194			0			0		156	30	25
Queue Length 95th (ft)		254			m0			31		213	66	107
Internal Link Dist (ft)		573			46			156			628	
Turn Bay Length (ft)												
Base Capacity (vph)		1161			1710			276		641	360	469
Starvation Cap Reductn		0			854			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		0.58			0.92			0.38		0.74	0.15	0.59

Intersection Summary

Area Type: Other
 Cycle Length: 105
 Actuated Cycle Length: 105
 Offset: 0 (0%), Referenced to phase 6:SBTL, Start of Green
 Natural Cycle: 115
 Control Type: Pretimed
 Maximum v/c Ratio: 1.07
 Intersection Signal Delay: 23.4
 Intersection LOS: C
 Intersection Capacity Utilization 64.8%
 ICU Level of Service C
 Analysis Period (min) 15
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 11: Armitage Avenue & I-90/94 West Ramps



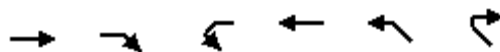
Lanes, Volumes, Timings
11: Armitage Avenue & I-90/94 West Ramps

01/10/2019

Lane Group	Ø8	Ø10
v/c Ratio		
Control Delay		
Queue Delay		
Total Delay		
LOS		
Approach Delay		
Approach LOS		
Queue Length 50th (ft)		
Queue Length 95th (ft)		
Internal Link Dist (ft)		
Turn Bay Length (ft)		
Base Capacity (vph)		
Starvation Cap Reductn		
Spillback Cap Reductn		
Storage Cap Reductn		
Reduced v/c Ratio		
Intersection Summary		

Lanes, Volumes, Timings
 12: I-90/94 EB On Ramp & Armitage Avenue

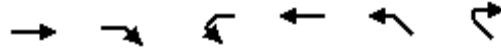
01/10/2019



Lane Group	EBT	EBR	WBL	WBT	NWL	NWR	Ø2	Ø4	Ø6	Ø10
Lane Configurations	↑↑↑			↑↑						
Traffic Volume (vph)	820	327	442	760	0	0				
Future Volume (vph)	820	327	442	760	0	0				
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900				
Lane Width (ft)	12	12	12	12	12	12				
Grade (%)	0%			0%	0%					
Storage Length (ft)		0	0		0	0				
Storage Lanes		0	0		0	0				
Taper Length (ft)			0		0					
Lane Util. Factor	0.91	0.91	0.95	0.95	1.00	1.00				
Ped Bike Factor	0.97			0.99						
Frt	0.957									
Flt Protected				0.982						
Satd. Flow (prot)	4776	0	0	3476	0	0				
Flt Permitted				0.530						
Satd. Flow (perm)	4776	0	0	1853	0	0				
Right Turn on Red		Yes				Yes				
Satd. Flow (RTOR)	181									
Link Speed (mph)	30			30	30					
Link Distance (ft)	126			380	579					
Travel Time (s)	2.9			8.6	13.2					
Confl. Peds. (#/hr)		118	118							
Confl. Bikes (#/hr)		3								
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95				
Growth Factor	100%	100%	100%	100%	100%	100%				
Heavy Vehicles (%)	1%	1%	2%	2%	2%	2%				
Bus Blockages (#/hr)	0	0	0	0	0	0				
Parking (#/hr)										
Mid-Block Traffic (%)	0%			0%	0%					
Shared Lane Traffic (%)										
Lane Group Flow (vph)	1207	0	0	1265	0	0				
Turn Type	NA		pm+pt	NA						
Protected Phases	2 4 6 10		8	4 8			2	4	6	10
Permitted Phases			4 8							
Detector Phase	2 4 6 10		8	4 8						
Switch Phase										
Minimum Initial (s)			18.0				10.0	21.0	6.0	1.0
Minimum Split (s)			21.0				15.0	36.0	24.0	6.0
Total Split (s)			21.0				15.0	39.0	24.0	6.0
Total Split (%)			20.0%				14%	37%	23%	6%
Yellow Time (s)			3.0				3.0	3.0	3.0	3.0
All-Red Time (s)			0.0				2.0	0.0	2.0	2.0
Lost Time Adjust (s)										
Total Lost Time (s)										
Lead/Lag			Lag				Lead	Lead	Lag	
Lead-Lag Optimize?			Yes				Yes	Yes	Yes	
Recall Mode			Max				Max	Max	Max	Max
Act Effct Green (s)	80.0			52.0						
Actuated g/C Ratio	0.76			0.50						

Lanes, Volumes, Timings
 12: I-90/94 EB On Ramp & Armitage Avenue

01/10/2019

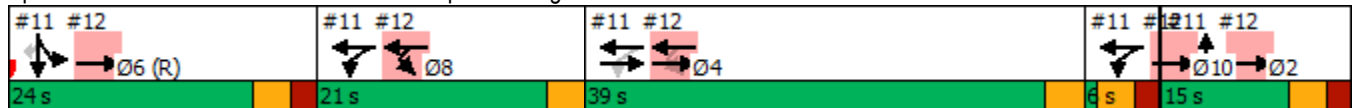


Lane Group	EBT	EBR	WBL	WBT	NWL	NWR	Ø2	Ø4	Ø6	Ø10
v/c Ratio	0.33			1.15dl						
Control Delay	0.5			56.3						
Queue Delay	0.4			1.8						
Total Delay	0.9			58.2						
LOS	A			E						
Approach Delay	0.9			58.2						
Approach LOS	A			E						
Queue Length 50th (ft)	0			~293						
Queue Length 95th (ft)	0			m#355						
Internal Link Dist (ft)	46			300	499					
Turn Bay Length (ft)										
Base Capacity (vph)	3681			1180						
Starvation Cap Reductn	1793			0						
Spillback Cap Reductn	0			5						
Storage Cap Reductn	0			0						
Reduced v/c Ratio	0.64			1.08						

Intersection Summary

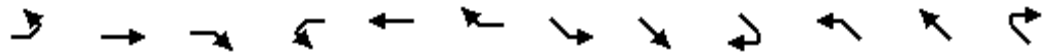
Area Type: Other
 Cycle Length: 105
 Actuated Cycle Length: 105
 Offset: 0 (0%), Referenced to phase 6:SBTL, Start of Green
 Natural Cycle: 115
 Control Type: Pretimed
 Maximum v/c Ratio: 1.07
 Intersection Signal Delay: 30.2
 Intersection LOS: C
 Intersection Capacity Utilization 65.5%
 ICU Level of Service C
 Analysis Period (min) 15
 ~ Volume exceeds capacity, queue is theoretically infinite.
 Queue shown is maximum after two cycles.
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.
 m Volume for 95th percentile queue is metered by upstream signal.
 dl Defacto Left Lane. Recode with 1 though lane as a left lane.

Splits and Phases: 12: I-90/94 EB On Ramp & Armitage Avenue



Lanes, Volumes, Timings
 13: Armitage Avenue & I-90/94 East Ramps

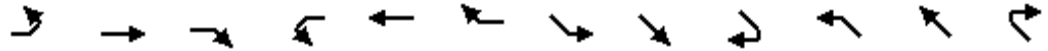
01/10/2019



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations	↖	↗			↖	↗				↖		↗
Traffic Volume (vph)	234	670	0	0	797	796	0	0	0	405	0	519
Future Volume (vph)	234	670	0	0	797	796	0	0	0	405	0	519
Ideal Flow (vphpl)	1900	2000	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	12	12	12	11	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	1		0	0		0	0		0	1		1
Taper Length (ft)	0			0			0			0		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor					0.98							
Frt					0.925							0.850
Flt Protected	0.950									0.950		
Satd. Flow (prot)	1685	3762	0	0	3131	0	0	0	0	1787	0	1615
Flt Permitted	0.074									0.950		
Satd. Flow (perm)	131	3762	0	0	3131	0	0	0	0	1787	0	1615
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					328							166
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		380			510			318			293	
Travel Time (s)		8.6			11.6			7.2			6.7	
Confl. Peds. (#/hr)	10		104	104		10	1					1
Confl. Bikes (#/hr)			1									
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
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	1%	0%	0%	2%	1%	0%	0%	0%	1%	0%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	246	705	0	0	1677	0	0	0	0	426	0	546
Turn Type	pm+pt	NA			NA					Prot		Prot
Protected Phases	7	4			8					5		5
Permitted Phases	4											
Detector Phase	7	4			8					5		5
Switch Phase												
Minimum Initial (s)	5.0	29.0			29.0					27.0		27.0
Minimum Split (s)	17.0	54.0			53.0					32.0		32.0
Total Split (s)	17.0	71.0			54.0					34.0		34.0
Total Split (%)	16.2%	67.6%			51.4%					32.4%		32.4%
Yellow Time (s)	3.0	3.0			3.0					3.0		3.0
All-Red Time (s)	2.0	2.0			2.0					2.0		2.0
Lost Time Adjust (s)	-1.0	-1.0			-1.0					-1.0		-1.0
Total Lost Time (s)	4.0	4.0			4.0					4.0		4.0
Lead/Lag	Lag				Lead							
Lead-Lag Optimize?	Yes				Yes							
Recall Mode	Max	Max			Max					Max		Max
Act Effct Green (s)	67.0	67.0			50.0					30.0		30.0
Actuated g/C Ratio	0.64	0.64			0.48					0.29		0.29

Lanes, Volumes, Timings
 13: Armitage Avenue & I-90/94 East Ramps

01/10/2019

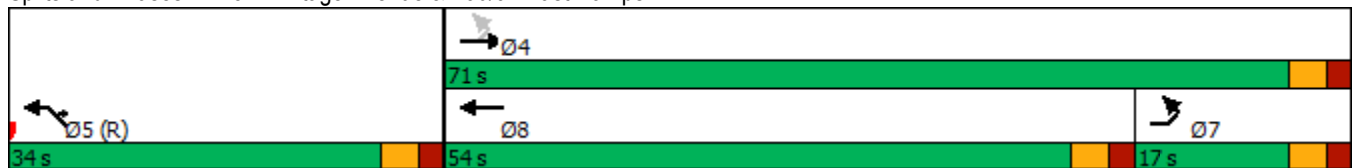


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
v/c Ratio	0.89	0.29			1.01					0.84		0.94
Control Delay	68.4	7.5			38.0					51.1		51.9
Queue Delay	0.0	0.2			17.2					0.0		0.0
Total Delay	68.4	7.7			55.2					51.1		51.9
LOS	E	A			E					D		D
Approach Delay		23.4			55.2						51.6	
Approach LOS		C			E						D	
Queue Length 50th (ft)	128	110			~393					268		265
Queue Length 95th (ft)	#269	124			m#404					#432		#484
Internal Link Dist (ft)		300			430			238			213	
Turn Bay Length (ft)												
Base Capacity (vph)	275	2400			1662					510		580
Starvation Cap Reductn	0	838			78					0		0
Spillback Cap Reductn	0	0			78					0		0
Storage Cap Reductn	0	0			0					0		0
Reduced v/c Ratio	0.89	0.45			1.06					0.84		0.94

Intersection Summary






















Area Type: Other
 Cycle Length: 105
 Actuated Cycle Length: 105
 Offset: 103 (98%), Referenced to phase 5:NWL, Start of Green
 Natural Cycle: 105
 Control Type: Pretimed
 Maximum v/c Ratio: 1.01
 Intersection Signal Delay: 45.8
 Intersection LOS: D
 Intersection Capacity Utilization 93.5%
 ICU Level of Service F
 Analysis Period (min) 15
 ~ Volume exceeds capacity, queue is theoretically infinite.
 Queue shown is maximum after two cycles.
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 13: Armitage Avenue & I-90/94 East Ramps



Lanes, Volumes, Timings
 14: Ashland Avenue & Elston Avenue

01/10/2019

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	224	164	0	455	431	134	1286	0	181	1209	39
Future Volume (vph)	0	224	164	0	455	431	134	1286	0	181	1209	39
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	2000	1900	1900	1900	1900
Lane Width (ft)	12	15	11	12	10	12	10	10	10	10	11	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		100	0		0	0		0	150		0
Storage Lanes	0		1	0		1	1		0	1		0
Taper Length (ft)	0			0			0			95		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	0.95
Ped Bike Factor			0.99			0.96	0.98			1.00	0.99	
Frt			0.850			0.850					0.995	
Flt Protected							0.950			0.950		
Satd. Flow (prot)	0	2069	1546	0	1756	1599	1685	3512	0	1652	3296	0
Flt Permitted							0.121			0.138		
Satd. Flow (perm)	0	2069	1524	0	1756	1527	210	3512	0	240	3296	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			173			73						4
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		556			757			630			324	
Travel Time (s)		12.6			17.2			14.3			7.4	
Confl. Peds. (#/hr)	6					6	168		2	2		168
Confl. Bikes (#/hr)			3			46			6			2
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	1%	1%	0%	1%	1%	0%	1%	0%	2%	3%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	8	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	236	173	0	479	454	141	1354	0	191	1314	0
Turn Type		NA	Perm		NA	pm+ov	pm+pt	NA		custom	NA	
Protected Phases		4			8	1	5	2 5		1	1 6	
Permitted Phases			4			8	2 5			6		
Detector Phase		4	4		8	1	5	2 5		1	1 6	
Switch Phase												
Minimum Initial (s)		5.0	5.0		5.0	8.0	21.0			8.0		
Minimum Split (s)		35.0	35.0		35.0	11.0	26.0			11.0		
Total Split (s)		35.0	35.0		35.0	11.0	26.0			11.0		
Total Split (%)		33.3%	33.3%		33.3%	10.5%	24.8%			10.5%		
Yellow Time (s)		3.0	3.0		3.0	3.0	3.0			3.0		
All-Red Time (s)		2.0	2.0		2.0	0.0	2.0			0.0		
Lost Time Adjust (s)		-1.0	-1.0		-1.0	-1.0	-1.0			-1.0		
Total Lost Time (s)		4.0	4.0		4.0	2.0	4.0			2.0		
Lead/Lag							Lag					
Lead-Lag Optimize?							Yes					
Recall Mode		None	None		None	None	None			None		
Act Effct Green (s)		30.5	30.5		30.5	42.0	55.0	55.0		40.5	42.5	
Actuated g/C Ratio		0.29	0.29		0.29	0.40	0.52	0.52		0.39	0.40	

Lanes, Volumes, Timings
 14: Ashland Avenue & Elston Avenue

01/10/2019

Lane Group	Ø2	Ø6
Lane Configurations		
Traffic Volume (vph)		
Future Volume (vph)		
Ideal Flow (vphpl)		
Lane Width (ft)		
Grade (%)		
Storage Length (ft)		
Storage Lanes		
Taper Length (ft)		
Lane Util. Factor		
Ped Bike Factor		
Frt		
Flt Protected		
Satd. Flow (prot)		
Flt Permitted		
Satd. Flow (perm)		
Right Turn on Red		
Satd. Flow (RTOR)		
Link Speed (mph)		
Link Distance (ft)		
Travel Time (s)		
Confl. Peds. (#/hr)		
Confl. Bikes (#/hr)		
Peak Hour Factor		
Growth Factor		
Heavy Vehicles (%)		
Bus Blockages (#/hr)		
Parking (#/hr)		
Mid-Block Traffic (%)		
Shared Lane Traffic (%)		
Lane Group Flow (vph)		
Turn Type		
Protected Phases	2	6
Permitted Phases		
Detector Phase		
Switch Phase		
Minimum Initial (s)	30.0	5.0
Minimum Split (s)	38.0	33.0
Total Split (s)	59.0	33.0
Total Split (%)	56%	31%
Yellow Time (s)	3.0	3.0
All-Red Time (s)	2.0	2.0
Lost Time Adjust (s)		
Total Lost Time (s)		
Lead/Lag		Lead
Lead-Lag Optimize?		Yes
Recall Mode	C-Max	C-Max
Act Effct Green (s)		
Actuated g/C Ratio		

Lanes, Volumes, Timings
 14: Ashland Avenue & Elston Avenue

01/10/2019

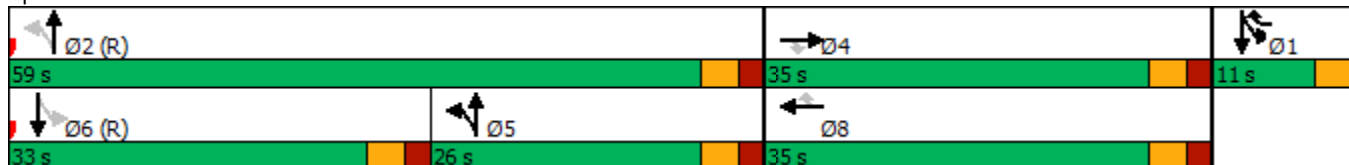


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio		0.39	0.31		0.94	0.69	0.34	0.74		0.87	0.98	
Control Delay		32.0	5.9		40.6	8.2	23.5	16.8		40.5	42.7	
Queue Delay		0.0	0.0		0.0	54.8	0.0	0.7		0.0	0.0	
Total Delay		32.0	5.9		40.6	63.0	23.5	17.6		40.5	42.7	
LOS		C	A		D	E	C	B		D	D	
Approach Delay		21.0			51.5			18.1			42.4	
Approach LOS		C			D			B			D	
Queue Length 50th (ft)		126	0		262	64	46	296		99	491	
Queue Length 95th (ft)		196	49		m294	m95	m65	m412		m101	m#596	
Internal Link Dist (ft)		476			677			550			244	
Turn Bay Length (ft)			100							150		
Base Capacity (vph)		610	571		518	660	419	1839		220	1337	
Starvation Cap Reductn		0	0		0	0	0	199		0	0	
Spillback Cap Reductn		0	0		0	254	0	138		0	0	
Storage Cap Reductn		0	0		0	0	0	0		0	0	
Reduced v/c Ratio		0.39	0.30		0.92	1.12	0.34	0.83		0.87	0.98	

Intersection Summary

Area Type: Other
 Cycle Length: 105
 Actuated Cycle Length: 105
 Offset: 13 (12%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
 Natural Cycle: 105
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.98
 Intersection Signal Delay: 34.0
 Intersection LOS: C
 Intersection Capacity Utilization 86.5%
 ICU Level of Service E
 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: 14: Ashland Avenue & Elston Avenue



Lanes, Volumes, Timings
14: Ashland Avenue & Elston Avenue

01/10/2019

Lane Group	Ø2	Ø6
v/c Ratio		
Control Delay		
Queue Delay		
Total Delay		
LOS		
Approach Delay		
Approach LOS		
Queue Length 50th (ft)		
Queue Length 95th (ft)		
Internal Link Dist (ft)		
Turn Bay Length (ft)		
Base Capacity (vph)		
Starvation Cap Reductn		
Spillback Cap Reductn		
Storage Cap Reductn		
Reduced v/c Ratio		
Intersection Summary		

Lanes, Volumes, Timings
 15: Ashland Avenue & Armitage Avenue

01/10/2019



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔↔			↔↔		↔	↔↔			↔↔	↔
Traffic Volume (vph)	615	504	30	61	963	1	104	800	19	0	931	509
Future Volume (vph)	615	504	30	61	963	1	104	800	19	0	931	509
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	2000	1900
Lane Width (ft)	11	11	12	11	11	11	10	10	16	12	11	11
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	75		0	110		0	0		0
Storage Lanes	0		0	0		0	1		0	0		1
Taper Length (ft)	0			25			25			0		
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	0.95	0.95	1.00	0.95	1.00
Ped Bike Factor		1.00			1.00		0.98	1.00				0.88
Frt		0.996						0.996				0.850
Flt Protected		0.974			0.997		0.950					
Satd. Flow (prot)	0	3351	0	0	3447	0	1685	3269	0	0	3566	1531
Flt Permitted		0.560			0.747		0.118					
Satd. Flow (perm)	0	1926	0	0	2582	0	205	3269	0	0	3566	1349
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		4						3				68
Link Speed (mph)		30			30			30				30
Link Distance (ft)		510			410			237				630
Travel Time (s)		11.6			9.3			5.4				14.3
Confl. Peds. (#/hr)	1		20	20		1	114		8	8		114
Confl. Bikes (#/hr)			3						3			
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
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	1%	1%	0%	0%	1%	0%	0%	1%	0%	0%	3%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	8	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%				0%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1185	0	0	1057	0	107	845	0	0	960	525
Turn Type	custom	NA		Perm	NA		custom	NA			NA	pm+ov
Protected Phases	7	7 4			8		1	1 2			6	7
Permitted Phases	4			8			2					6
Detector Phase	7	7 4		8	8		1	1 2			6	7
Switch Phase												
Minimum Initial (s)	12.0			21.0	21.0		4.5				26.0	12.0
Minimum Split (s)	15.0			26.0	26.0		9.0				37.0	15.0
Total Split (s)	15.0			44.0	44.0		9.0				37.0	15.0
Total Split (%)	14.3%			41.9%	41.9%		8.6%				35.2%	14.3%
Yellow Time (s)	3.0			3.0	3.0		3.5				3.0	3.0
All-Red Time (s)	0.0			2.0	2.0		1.0				1.0	0.0
Lost Time Adjust (s)					-1.0		-1.0				-1.0	-1.0
Total Lost Time (s)					4.0		3.5				3.0	2.0
Lead/Lag	Lead			Lag	Lag							Lead
Lead-Lag Optimize?	Yes			Yes	Yes							Yes
Recall Mode	None			None	None		None				C-Max	None
Act Effct Green (s)		57.0			40.0		39.0	42.5			34.0	48.0
Actuated g/C Ratio		0.54			0.38		0.37	0.40			0.32	0.46

Lanes, Volumes, Timings
 15: Ashland Avenue & Armitage Avenue

01/10/2019

Lane Group	Ø2	Ø4
Lane Configurations		
Traffic Volume (vph)		
Future Volume (vph)		
Ideal Flow (vphpl)		
Lane Width (ft)		
Grade (%)		
Storage Length (ft)		
Storage Lanes		
Taper Length (ft)		
Lane Util. Factor		
Ped Bike Factor		
Frt		
Flt Protected		
Satd. Flow (prot)		
Flt Permitted		
Satd. Flow (perm)		
Right Turn on Red		
Satd. Flow (RTOR)		
Link Speed (mph)		
Link Distance (ft)		
Travel Time (s)		
Confl. Peds. (#/hr)		
Confl. Bikes (#/hr)		
Peak Hour Factor		
Growth Factor		
Heavy Vehicles (%)		
Bus Blockages (#/hr)		
Parking (#/hr)		
Mid-Block Traffic (%)		
Shared Lane Traffic (%)		
Lane Group Flow (vph)		
Turn Type		
Protected Phases	2	4
Permitted Phases		
Detector Phase		
Switch Phase		
Minimum Initial (s)	26.0	21.0
Minimum Split (s)	37.0	59.0
Total Split (s)	37.0	59.0
Total Split (%)	35%	56%
Yellow Time (s)	3.0	3.0
All-Red Time (s)	1.0	2.0
Lost Time Adjust (s)		
Total Lost Time (s)		
Lead/Lag		
Lead-Lag Optimize?		
Recall Mode	C-Max	None
Act Effct Green (s)		
Actuated g/C Ratio		

Lanes, Volumes, Timings
 15: Ashland Avenue & Armitage Avenue

01/10/2019

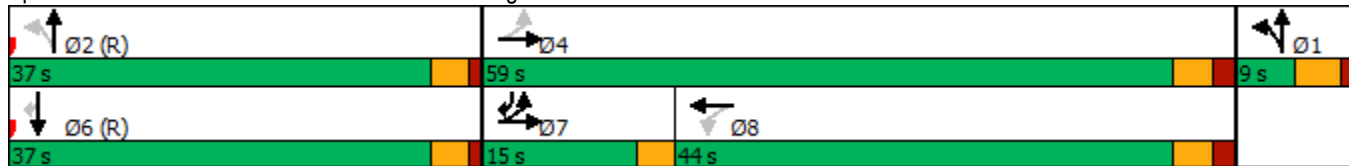


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio		2.20dl			1.08		0.70	0.64			0.83	0.78
Control Delay		33.6			74.8		54.3	27.9			39.7	14.5
Queue Delay		0.0			10.5		0.0	0.0			0.0	0.8
Total Delay		33.6			85.4		54.3	27.9			39.7	15.3
LOS		C			F		D	C			D	B
Approach Delay		33.6			85.4			30.9			31.0	
Approach LOS		C			F			C			C	
Queue Length 50th (ft)		301			~432		48	161			223	66
Queue Length 95th (ft)		m#370			m#451		m#87	232			m236	m80
Internal Link Dist (ft)		430			330			157			550	
Turn Bay Length (ft)							110					
Base Capacity (vph)		1223			983		153	1324			1154	676
Starvation Cap Reductn		0			74		0	0			0	0
Spillback Cap Reductn		0			102		0	0			0	31
Storage Cap Reductn		0			0		0	0			0	0
Reduced v/c Ratio		0.97			1.20		0.70	0.64			0.83	0.81

Intersection Summary

Area Type: Other
 Cycle Length: 105
 Actuated Cycle Length: 105
 Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Green
 Natural Cycle: 105
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 1.08
 Intersection Signal Delay: 43.9 Intersection LOS: D
 Intersection Capacity Utilization 109.1% 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.
 dl Defacto Left Lane. Recode with 1 though lane as a left lane.

Splits and Phases: 15: Ashland Avenue & Armitage Avenue



Lane Group	Ø2	Ø4
v/c Ratio		
Control Delay		
Queue Delay		
Total Delay		
LOS		
Approach Delay		
Approach LOS		
Queue Length 50th (ft)		
Queue Length 95th (ft)		
Internal Link Dist (ft)		
Turn Bay Length (ft)		
Base Capacity (vph)		
Starvation Cap Reductn		
Spillback Cap Reductn		
Storage Cap Reductn		
Reduced v/c Ratio		
Intersection Summary		

Lanes, Volumes, Timings
 16: Elston Avenue & Armitage Avenue

01/10/2019



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	7	245	272	64	638	68	384	805	16	89	313	1
Future Volume (vph)	7	245	272	64	638	68	384	805	16	89	313	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	11	11	12	12	12	11	11	9	11	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	100		0	175		85	75		0
Storage Lanes	0		1	1		0	1		0	1		0
Taper Length (ft)	0			50			75			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			0.48	0.73	1.00		1.00	0.99			1.00	
Frt			0.850		0.986			0.997				
Flt Protected		0.999		0.950			0.950			0.950		
Satd. Flow (prot)	0	1835	1561	1805	1837	0	1728	1579	0	1745	1881	0
Flt Permitted		0.607		0.489			0.253			0.154		
Satd. Flow (perm)	0	1115	757	680	1837	0	460	1579	0	283	1881	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			195		6			2				
Link Speed (mph)		30			30			30				30
Link Distance (ft)		410			632			596				757
Travel Time (s)		9.3			14.4			13.5				17.2
Confl. Peds. (#/hr)	2		150	150		2	2		150	150		1
Confl. Bikes (#/hr)			1						56			3
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
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	0%	0%	0%	2%	0%	1%	2%	0%	0%	1%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)								3				
Mid-Block Traffic (%)		0%			0%			0%				0%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	260	280	66	728	0	396	846	0	92	324	0
Turn Type	Perm	NA	pm+ov	Perm	NA		pm+pt	NA		Perm	NA	
Protected Phases		4	5		8		5	2 5			6	
Permitted Phases	4		4	8			2 5			6		
Detector Phase	4	4	5	8	8		5	2 5		6	6	
Switch Phase												
Minimum Initial (s)	15.0	15.0	20.0	15.0	15.0		20.0			25.0	25.0	
Minimum Split (s)	20.0	20.0	24.0	20.0	20.0		24.0			29.0	29.0	
Total Split (s)	43.0	43.0	33.0	43.0	43.0		33.0			29.0	29.0	
Total Split (%)	41.0%	41.0%	31.4%	41.0%	41.0%		31.4%			27.6%	27.6%	
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0		3.0			3.0	3.0	
All-Red Time (s)	2.0	2.0	1.0	2.0	2.0		1.0			1.0	1.0	
Lost Time Adjust (s)		-1.0	-1.0	-1.0	-1.0		-1.0			-1.0	-1.0	
Total Lost Time (s)		4.0	3.0	4.0	4.0		3.0			3.0	3.0	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	None	None	None	None	None		None			C-Max	C-Max	
Act Effct Green (s)		39.0	70.0	39.0	39.0		56.0	59.0		26.0	26.0	
Actuated g/C Ratio		0.37	0.67	0.37	0.37		0.53	0.56		0.25	0.25	

Lanes, Volumes, Timings
 16: Elston Avenue & Armitage Avenue

01/10/2019

Lane Group	Ø2
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Grade (%)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Confl. Bikes (#/hr)	
Peak Hour Factor	
Growth Factor	
Heavy Vehicles (%)	
Bus Blockages (#/hr)	
Parking (#/hr)	
Mid-Block Traffic (%)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	2
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	25.0
Minimum Split (s)	29.0
Total Split (s)	29.0
Total Split (%)	28%
Yellow Time (s)	3.0
All-Red Time (s)	1.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Recall Mode	C-Max
Act Effct Green (s)	
Actuated g/C Ratio	

Lanes, Volumes, Timings
 16: Elston Avenue & Armitage Avenue

01/10/2019



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio		0.63	0.35	0.26	1.06		0.65	0.95		1.31	0.70	
Control Delay		49.8	5.5	26.0	80.3		12.1	32.3		234.4	38.4	
Queue Delay		0.0	0.0	0.0	0.6		61.7	25.9		0.0	0.0	
Total Delay		49.8	5.5	26.0	80.9		73.8	58.2		234.4	38.4	
LOS		D	A	C	F		E	E		F	D	
Approach Delay		26.8			76.3			63.2			81.8	
Approach LOS		C			E			E			F	
Queue Length 50th (ft)		187	41	28	~525		136	543		~82	128	
Queue Length 95th (ft)		m196	m48	67	#756		m154	m557		m#141	m173	
Internal Link Dist (ft)		330			552			516			677	
Turn Bay Length (ft)				100			175			75		
Base Capacity (vph)		414	799	252	686		607	888		70	465	
Starvation Cap Reductn		0	0	0	0		0	87		0	0	
Spillback Cap Reductn		0	0	0	1		377	0		0	0	
Storage Cap Reductn		0	0	0	0		0	0		0	0	
Reduced v/c Ratio		0.63	0.35	0.26	1.06		1.72	1.06		1.31	0.70	

Intersection Summary

Area Type: Other
 Cycle Length: 105
 Actuated Cycle Length: 105
 Offset: 77 (73%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
 Natural Cycle: 90
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 1.31
 Intersection Signal Delay: 62.7
 Intersection LOS: E
 Intersection Capacity Utilization 127.5%
 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: 16: Elston Avenue & Armitage Avenue



Lane Group	Ø2
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	
Intersection Summary	

Lanes, Volumes, Timings
 17: Dominick Street & Armitage Avenue

01/10/2019



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	83	68	180	24	184	16	174	148	72	13	178	271
Future Volume (vph)	83	68	180	24	184	16	174	148	72	13	178	271
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%				0%
Storage Length (ft)	100		0	100		0	100		0	100		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	50			50			50			50		
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	0.91	0.88		0.92	0.99		0.95	0.95		0.90	0.90	
Frt		0.891			0.988			0.951			0.909	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1464	0	1770	1816	0	1770	1677	0	1770	1527	0
Flt Permitted	0.536			0.470			0.399			0.589		
Satd. Flow (perm)	905	1464	0	806	1816	0	705	1677	0	989	1527	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		137			5			40			125	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		632			344			774			388	
Travel Time (s)		14.4			7.8			17.6			8.8	
Confl. Peds. (#/hr)	50		50	50		50	50		50	50		50
Confl. Bikes (#/hr)												
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
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	87	261	0	25	211	0	183	232	0	14	472	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	22.5	22.5		22.5	22.5		22.5	22.5		22.5	22.5	
Total Split (s)	40.0	40.0		40.0	40.0		65.0	65.0		65.0	65.0	
Total Split (%)	38.1%	38.1%		38.1%	38.1%		61.9%	61.9%		61.9%	61.9%	
Yellow Time (s)	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	
Lost Time Adjust (s)	0.0	0.0		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		4.0	4.0	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	Max	Max		Max	Max		Max	Max		Max	Max	
Act Effct Green (s)	36.0	36.0		36.0	36.0		61.0	61.0		61.0	61.0	
Actuated g/C Ratio	0.34	0.34		0.34	0.34		0.58	0.58		0.58	0.58	

Lanes, Volumes, Timings
 17: Dominick Street & Armitage Avenue

01/10/2019

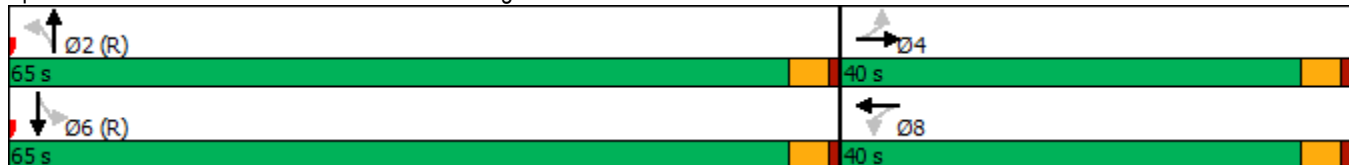


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.28	0.44		0.09	0.34		0.45	0.23		0.02	0.50	
Control Delay	41.1	28.6		25.3	27.1		5.4	0.9		10.2	11.5	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	41.1	28.6		25.3	27.1		5.4	0.9		10.2	11.5	
LOS	D	C		C	C		A	A		B	B	
Approach Delay		31.8			26.9			2.9			11.4	
Approach LOS		C			C			A			B	
Queue Length 50th (ft)	50	113		11	101		9	2		4	120	
Queue Length 95th (ft)	m68	m140		m31	m163		m11	m4		m11	m183	
Internal Link Dist (ft)		552			264			694			308	
Turn Bay Length (ft)	100			100			100			100		
Base Capacity (vph)	310	591		276	625		409	991		574	939	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.28	0.44		0.09	0.34		0.45	0.23		0.02	0.50	

Intersection Summary

Area Type: Other
 Cycle Length: 105
 Actuated Cycle Length: 105
 Offset: 10 (10%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
 Natural Cycle: 55
 Control Type: Pretimed
 Maximum v/c Ratio: 0.50
 Intersection Signal Delay: 16.3
 Intersection LOS: B
 Intersection Capacity Utilization 73.0%
 ICU Level of Service D
 Analysis Period (min) 15
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 17: Dominick Street & Armitage Avenue



Lanes, Volumes, Timings
 19: Ashland Avenue & Cortland Street

01/10/2019



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑	↗	↖	↖			↑↑			↑↑	
Traffic Volume (vph)	3	273	26	123	365	75	0	876	228	1	908	86
Future Volume (vph)	3	273	26	123	365	75	0	876	228	1	908	86
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	10	10	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	50		0	0		0	0		0
Storage Lanes	0		1	1		0	0		0	0		0
Taper Length (ft)	0			25			0			0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	0.95	0.95
Ped Bike Factor		1.00	0.84	0.93	0.98			0.98			0.98	
Frt			0.850		0.974			0.969			0.987	
Flt Protected		0.999		0.950								
Satd. Flow (prot)	0	1720	1449	1805	1779	0	0	3360	0	0	3390	0
Flt Permitted		0.996		0.352							0.954	
Satd. Flow (perm)	0	1715	1224	621	1779	0	0	3360	0	0	3234	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		387			493			364			414	
Travel Time (s)		8.8			11.2			8.3			9.4	
Confl. Peds. (#/hr)	84		140	140		84	160		58	58		160
Confl. Bikes (#/hr)			15			29						
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
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	3%	4%	0%	3%	0%	0%	1%	0%	0%	2%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	8	0	0	8	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	290	27	129	463	0	0	1162	0	0	1048	0
Turn Type	Perm	NA	Perm	pm+pt	NA			NA		Perm	NA	
Protected Phases		4		3	3 8			2			6	
Permitted Phases	4		4	3 8						6		
Detector Phase	4	4	4	3	3 8			2		6	6	
Switch Phase												
Minimum Initial (s)	12.0	12.0	12.0	8.0				40.0		40.0	40.0	
Minimum Split (s)	37.0	37.0	37.0	11.0				57.0		57.0	57.0	
Total Split (s)	37.0	37.0	37.0	11.0				57.0		57.0	57.0	
Total Split (%)	35.2%	35.2%	35.2%	10.5%				54.3%		54.3%	54.3%	
Yellow Time (s)	3.0	3.0	3.0	3.0				3.0		3.0	3.0	
All-Red Time (s)	2.0	2.0	2.0	0.0				2.0		2.0	2.0	
Lost Time Adjust (s)		-1.0	-1.0	1.0				-1.0			-1.0	
Total Lost Time (s)		4.0	4.0	4.0				4.0			4.0	
Lead/Lag	Lag	Lag	Lag	Lead								
Lead-Lag Optimize?	Yes	Yes	Yes	Yes								
Recall Mode	Max	Max	Max	Max				Max		Max	Max	
Act Effect Green (s)		33.0	33.0	44.0	44.0			53.0			53.0	
Actuated g/C Ratio		0.31	0.31	0.42	0.42			0.50			0.50	

Lanes, Volumes, Timings
 19: Ashland Avenue & Cortland Street

01/10/2019

Lane Group	Ø8
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Grade (%)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Confl. Bikes (#/hr)	
Peak Hour Factor	
Growth Factor	
Heavy Vehicles (%)	
Bus Blockages (#/hr)	
Parking (#/hr)	
Mid-Block Traffic (%)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	8
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	12.0
Minimum Split (s)	37.0
Total Split (s)	48.0
Total Split (%)	46%
Yellow Time (s)	3.0
All-Red Time (s)	2.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Recall Mode	Max
Act Effct Green (s)	
Actuated g/C Ratio	

Lanes, Volumes, Timings
 19: Ashland Avenue & Cortland Street

01/10/2019

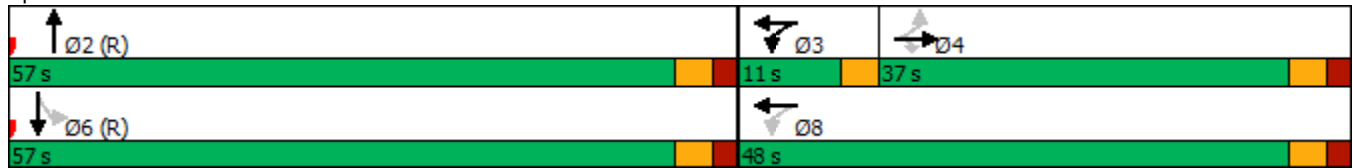


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio		0.54	0.07	0.38	0.62			0.69				0.64
Control Delay		34.2	26.0	22.8	24.5			22.3				4.0
Queue Delay		0.0	0.0	0.0	0.4			0.0				0.0
Total Delay		34.2	26.0	22.8	24.9			22.3				4.0
LOS		C	C	C	C			C				A
Approach Delay		33.5			24.4			22.3				4.0
Approach LOS		C			C			C				A
Queue Length 50th (ft)		160	13	44	164			298				31
Queue Length 95th (ft)		246	34	m56	m196			375				m36
Internal Link Dist (ft)		307			413			284				334
Turn Bay Length (ft)				50								
Base Capacity (vph)		539	384	339	745			1696				1632
Starvation Cap Reductn		0	0	0	56			0				0
Spillback Cap Reductn		0	0	0	0			0				0
Storage Cap Reductn		0	0	0	0			0				0
Reduced v/c Ratio		0.54	0.07	0.38	0.67			0.69				0.64

Intersection Summary

Area Type: Other
 Cycle Length: 105
 Actuated Cycle Length: 105
 Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBTL, Start of Green
 Natural Cycle: 105
 Control Type: Pretimed
 Maximum v/c Ratio: 0.69
 Intersection Signal Delay: 17.7
 Intersection LOS: B
 Intersection Capacity Utilization 104.7%
 ICU Level of Service G
 Analysis Period (min) 15
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 19: Ashland Avenue & Cortland Street



Lane Group	Ø8
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	
Intersection Summary	

Lanes, Volumes, Timings
20: Elston Avenue & Cortland Street

01/10/2019



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	66	352	78	77	422	235	147	871	177	177	476	17
Future Volume (vph)	66	352	78	77	422	235	147	871	177	177	476	17
Ideal Flow (vphpl)	1900	2000	1900	1900	2000	1900	1900	2000	1900	1900	1900	1900
Lane Width (ft)	11	11	11	11	11	11	11	11	11	11	11	12
Grade (%)		0%			0%			0%				0%
Storage Length (ft)	95		75	75		0	60		60	150		70
Storage Lanes	1		1	1		1	1		1	1		0
Taper Length (ft)	50			50			50			75		
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	0.93		0.90	0.97		0.76	0.98		0.88	0.99	1.00	
Frt			0.850			0.850			0.850		0.995	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1711	1668	1561	1694	1677	1546	1745	1656	1546	1728	1553	0
Flt Permitted	0.150			0.233			0.325			0.076		
Satd. Flow (perm)	251	1668	1407	402	1677	1174	588	1656	1367	137	1553	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			83			98			55			2
Link Speed (mph)		30			30			30				30
Link Distance (ft)		493			218			326				596
Travel Time (s)		11.2			5.0			7.4				13.5
Confl. Peds. (#/hr)	108		68	68		108	36		54	54		36
Confl. Bikes (#/hr)			17			25			60			4
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
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	0%	3%	2%	1%	0%	1%	1%	1%	1%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)		4			3			7				8
Mid-Block Traffic (%)		0%			0%			0%				0%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	69	367	81	80	440	245	153	907	184	184	514	0
Turn Type	pm+pt	NA	Perm	pm+pt	NA	pm+ov	pm+pt	NA	pm+ov	pm+pt	NA	
Protected Phases	7	4		3	8	1	5	2	3	1	6	
Permitted Phases	4		4	8		8	2		2	6		
Detector Phase	7	4	4	3	8	1	5	2	3	1	6	
Switch Phase												
Minimum Initial (s)	3.5	17.0	17.0	3.5	17.0	5.0	6.0	37.0	3.5	5.0	37.0	
Minimum Split (s)	7.0	33.0	33.0	7.0	33.0	8.0	9.0	53.0	7.0	8.0	53.0	
Total Split (s)	7.0	33.0	33.0	7.0	33.0	8.0	9.0	57.0	7.0	8.0	56.0	
Total Split (%)	6.7%	31.4%	31.4%	6.7%	31.4%	7.6%	8.6%	54.3%	6.7%	7.6%	53.3%	
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	0.0	2.0	2.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	
Lost Time Adjust (s)	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	
Total Lost Time (s)	2.0	4.0	4.0	2.0	4.0	2.0	2.0	4.0	2.0	2.0	4.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Recall Mode	None	None	None	None	None	None	None	C-Max	None	None	C-Max	
Act Effct Green (s)	34.5	27.5	27.5	34.9	28.9	38.4	62.1	53.0	60.0	62.1	53.4	
Actuated g/C Ratio	0.33	0.26	0.26	0.33	0.28	0.37	0.59	0.50	0.57	0.59	0.51	

Lanes, Volumes, Timings
 20: Elston Avenue & Cortland Street

01/10/2019

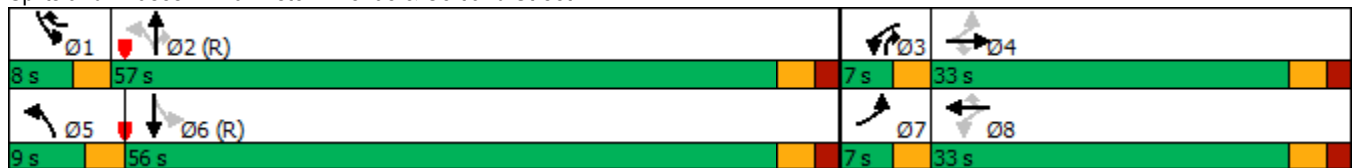


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.46	0.84	0.19	0.41	0.95	0.47	0.36	1.09	0.23	0.95	0.65	
Control Delay	28.7	43.2	5.7	15.1	51.0	5.2	11.5	84.1	7.7	73.3	33.7	
Queue Delay	91.0	0.0	0.0	0.0	0.0	0.5	0.0	6.1	0.0	0.0	0.5	
Total Delay	119.7	43.2	5.7	15.1	51.0	5.8	11.5	90.2	7.7	73.3	34.2	
LOS	F	D	A	B	D	A	B	F	A	E	C	
Approach Delay		47.5			32.8			68.3			44.5	
Approach LOS		D			C			E			D	
Queue Length 50th (ft)	25	139	4	13	295	34	42	~686	36	~82	362	
Queue Length 95th (ft)	m44	#359	m16	m20	m#433	m38	71	#925	70	m#210	469	
Internal Link Dist (ft)		413			138			246			516	
Turn Bay Length (ft)	95		75	75			60		60	150		
Base Capacity (vph)	151	460	448	195	463	518	426	835	813	194	790	
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	59	
Spillback Cap Reductn	93	0	0	0	0	71	0	75	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Reduced v/c Ratio	1.19	0.80	0.18	0.41	0.95	0.55	0.36	1.19	0.23	0.95	0.70	

Intersection Summary

Area Type: Other
 Cycle Length: 105
 Actuated Cycle Length: 105
 Offset: 8 (8%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
 Natural Cycle: 135
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 1.09
 Intersection Signal Delay: 51.4 Intersection LOS: D
 Intersection Capacity Utilization 93.7% ICU Level of Service F
 Analysis Period (min) 15
 ~ Volume exceeds capacity, queue is theoretically infinite.
 Queue shown is maximum after two cycles.
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 20: Elston Avenue & Cortland Street



Lanes, Volumes, Timings
21: Dominick Street & Cortland Street

01/10/2019



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	38	702	55	15	643	25	28	331	45	100	278	4
Future Volume (vph)	38	702	55	15	643	25	28	331	45	100	278	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	75		0	75		0	75		0	75		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	50			50			50			50		
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		0.99			0.99		0.93	0.98		0.96	1.00	
Frt		0.989			0.994			0.982			0.998	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1820	0	1770	1840	0	1770	1794	0	1770	1855	0
Flt Permitted	0.134			0.083			0.351			0.201		
Satd. Flow (perm)	250	1820	0	155	1840	0	610	1794	0	358	1855	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		5			2			6			1	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		249			712			246			774	
Travel Time (s)		5.7			16.2			5.6			17.6	
Confl. Peds. (#/hr)	50		50	50		50	50		50	50		50
Confl. Bikes (#/hr)												
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
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	40	797	0	16	703	0	29	395	0	105	297	0
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	7	4		3	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	9.0	22.5		9.0	22.5		9.5	22.5		9.5	22.5	
Total Split (s)	9.0	53.0		9.0	53.0		10.0	33.0		10.0	33.0	
Total Split (%)	8.6%	50.5%		8.6%	50.5%		9.5%	31.4%		9.5%	31.4%	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	0.0	1.0		0.0	1.0		0.0	1.0		0.0	1.0	
Lost Time Adjust (s)	1.0	0.0		1.0	0.0		1.0	0.0		1.0	0.0	
Total Lost Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Recall Mode	Max	Max		Max	Max		Max	Max		Max	Max	
Act Effct Green (s)	54.0	49.0		54.0	49.0		35.0	29.0		35.0	29.0	
Actuated g/C Ratio	0.51	0.47		0.51	0.47		0.33	0.28		0.33	0.28	

Lanes, Volumes, Timings
 21: Dominick Street & Cortland Street

01/10/2019

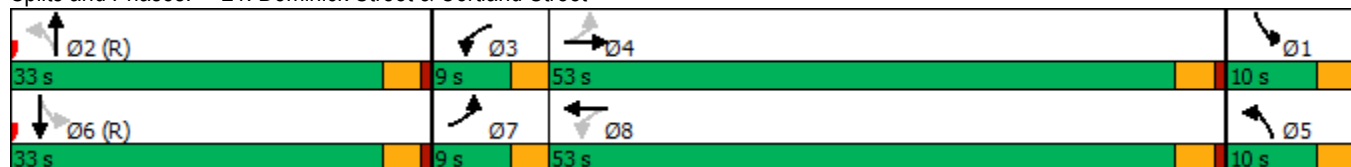


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.20	0.94		0.10	0.82		0.11	0.79		0.53	0.58	
Control Delay	17.8	56.1		16.6	41.9		22.2	47.7		32.4	39.0	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	17.8	56.1		16.6	41.9		22.2	47.7		32.4	39.0	
LOS	B	E		B	D		C	D		C	D	
Approach Delay		54.3			41.4			46.0			37.3	
Approach LOS		D			D			D			D	
Queue Length 50th (ft)	17	547		6	459		12	242		43	187	
Queue Length 95th (ft)	m28	m#735		m10	#586		32	#386		72	277	
Internal Link Dist (ft)		169			632			166			694	
Turn Bay Length (ft)	75			75			75			75		
Base Capacity (vph)	200	852		156	859		269	499		200	513	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.20	0.94		0.10	0.82		0.11	0.79		0.53	0.58	

Intersection Summary

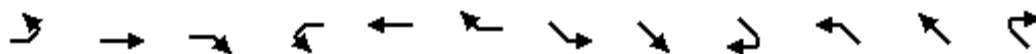
Area Type: Other
 Cycle Length: 105
 Actuated Cycle Length: 105
 Offset: 100 (95%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
 Natural Cycle: 90
 Control Type: Pretimed
 Maximum v/c Ratio: 0.94
 Intersection Signal Delay: 46.0
 Intersection LOS: D
 Intersection Capacity Utilization 76.7%
 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: 21: Dominick Street & Cortland Street



Lanes, Volumes, Timings
22: Kingsbury Street & Cortland Street

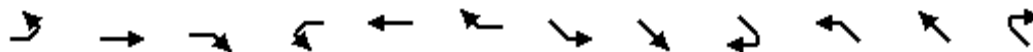
01/10/2019



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Traffic Volume (vph)	176	549	53	0	450	118	127	47	85	181	53	2
Future Volume (vph)	176	549	53	0	450	118	127	47	85	181	53	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	11	12	12	10	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%				0%
Storage Length (ft)	100		0	75		0	100		0	100		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	50			25			50			50		
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		0.99			0.95		0.92	0.89		0.90	1.00	
Frt		0.987			0.969			0.903			0.995	
Flt Protected	0.950						0.950			0.950		
Satd. Flow (prot)	1805	1699	0	1900	1544	0	1805	1534	0	1805	1884	0
Flt Permitted	0.245						0.720			0.502		
Satd. Flow (perm)	466	1699	0	1900	1544	0	1257	1534	0	858	1884	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		7			18			78				2
Link Speed (mph)		30			30			30				30
Link Distance (ft)		712			246			227				225
Travel Time (s)		16.2			5.6			5.2				5.1
Confl. Peds. (#/hr)	64		50	50		64	50		50	50		50
Confl. Bikes (#/hr)			2			25			1			1
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
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	2%	0%	0%	2%	6%	0%	0%	0%	0%	0%	0%
Bus Blockages (#/hr)	0	8	0	0	8	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%				0%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	183	627	0	0	592	0	132	138	0	189	57	0
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	7	4		3	8		1	6		5	2	
Permitted Phases	4			8			6			2		
Detector Phase	7	4		3	8		1	6		5	2	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	9.5	22.5		9.0	22.5		9.0	22.5		9.5	22.5	
Total Split (s)	11.0	58.0		9.0	56.0		9.0	25.0		13.0	29.0	
Total Split (%)	10.5%	55.2%		8.6%	53.3%		8.6%	23.8%		12.4%	27.6%	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	0.0	1.0		0.0	1.0		0.0	1.0		0.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	3.0	4.0		3.0	4.0		3.0	4.0		3.0	4.0	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Recall Mode	Max	Max		Max	Max		Max	Max		Max	Max	
Act Effct Green (s)	63.0	54.0			52.0		28.0	21.0		35.0	25.0	
Actuated g/C Ratio	0.60	0.51			0.50		0.27	0.20		0.33	0.24	

Lanes, Volumes, Timings
 22: Kingsbury Street & Cortland Street

01/10/2019

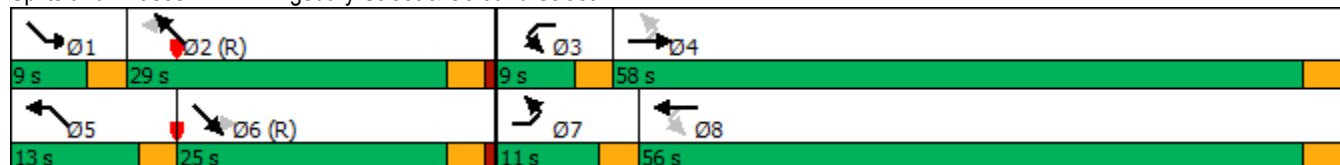


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
v/c Ratio	0.48	0.71			0.77		0.36	0.37		0.50	0.13	
Control Delay	5.2	11.5			28.9		29.6	20.1		31.4	31.5	
Queue Delay	0.0	0.0			12.2		0.0	0.0		0.0	0.0	
Total Delay	5.2	11.5			41.1		29.6	20.1		31.4	31.5	
LOS	A	B			D		C	C		C	C	
Approach Delay		10.1			41.1			24.8			31.4	
Approach LOS		B			D			C			C	
Queue Length 50th (ft)	11	202			303		63	34		94	29	
Queue Length 95th (ft)	m16	m268			455		111	90		153	63	
Internal Link Dist (ft)		632			166			147			145	
Turn Bay Length (ft)	100						100			100		
Base Capacity (vph)	381	877			773		366	369		376	450	
Starvation Cap Reductn	0	0			164		0	0		0	0	
Spillback Cap Reductn	0	0			19		0	0		0	0	
Storage Cap Reductn	0	0			0		0	0		0	0	
Reduced v/c Ratio	0.48	0.71			0.97		0.36	0.37		0.50	0.13	

Intersection Summary

Area Type: Other
 Cycle Length: 105
 Actuated Cycle Length: 105
 Offset: 28 (27%), Referenced to phase 2:NWTL and 6:SETL, Start of Green
 Natural Cycle: 80
 Control Type: Pretimed
 Maximum v/c Ratio: 0.77
 Intersection Signal Delay: 24.5
 Intersection LOS: C
 Intersection Capacity Utilization 79.9%
 ICU Level of Service D
 Analysis Period (min) 15
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 22: Kingsbury Street & Cortland Street



Lanes, Volumes, Timings
 24: Clybourn Avenue & Cortland Street & Racine Avenue

01/10/2019



Lane Group	EBL2	EBL	EBR	SBL	SBR	SBR2	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Traffic Volume (vph)	60	437	200	104	287	50	74	445	45	151	546	131
Future Volume (vph)	60	437	200	104	287	50	74	445	45	151	546	131
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	10	12	11	11	12	10	13	12	10	13	12
Grade (%)		0%		0%				0%			0%	
Storage Length (ft)		0	0	0	0		115		0	115		0
Storage Lanes		1	1	1	2		1		0	1		0
Taper Length (ft)		0		0			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		0.92	0.90	0.90			0.67	0.99	0.99		0.98	0.99
Frt			0.850		0.850	0.850		0.986				0.971
Flt Protected		0.950		0.950			0.950			0.950		
Satd. Flow (prot)	0	1656	1538	1728	1303	1615	1685	1671	0	1636	1646	0
Flt Permitted		0.950		0.950			0.197			0.238		
Satd. Flow (perm)	0	1517	1386	1561	1303	1084	345	1671	0	400	1646	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		30		30				30			30	
Link Distance (ft)		207		137				533			1136	
Travel Time (s)		4.7		3.1				12.1			25.8	
Confl. Peds. (#/hr)	90		30	30		90	66		52	52		66
Confl. Bikes (#/hr)			6		15	15			2			28
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
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	2%	5%	1%	3%	0%	0%	0%	0%	3%	0%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)					8			6			5	
Mid-Block Traffic (%)		0%		0%				0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	518	208	108	299	52	77	511	0	157	705	0
Turn Type	Prot	Prot	Perm	Prot	Prot	Perm	Perm	NA		pm+pt	NA	
Protected Phases	4	4		8	8			6		5	2	
Permitted Phases	4		4			8	6			2		
Detector Phase	4	4	4	8	8	8	6	6		5	2	
Switch Phase												
Minimum Initial (s)	10.0	10.0	10.0	6.0	6.0	6.0	25.0	25.0		4.0	25.0	
Minimum Split (s)	23.0	23.0	23.0	18.0	18.0	18.0	41.0	41.0		7.0	43.0	
Total Split (s)	24.0	24.0	24.0	18.0	18.0	18.0	41.0	41.0		7.0	48.0	
Total Split (%)	26.7%	26.7%	26.7%	20.0%	20.0%	20.0%	45.6%	45.6%		7.8%	53.3%	
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		0.0	1.0	
Lost Time Adjust (s)		0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)		4.0	4.0	4.0	4.0	4.0	4.0	4.0		3.0	4.0	
Lead/Lag							Lag	Lag		Lead		
Lead-Lag Optimize?							Yes	Yes		Yes		
Recall Mode	None	None	None	None	None	None	C-Max	C-Max		None	C-Max	
Act Effct Green (s)		20.0	20.0	14.0	14.0	14.0	37.0	37.0		45.0	44.0	
Actuated g/C Ratio		0.22	0.22	0.16	0.16	0.16	0.41	0.41		0.50	0.49	

Lanes, Volumes, Timings
 24: Clybourn Avenue & Cortland Street & Racine Avenue

01/10/2019

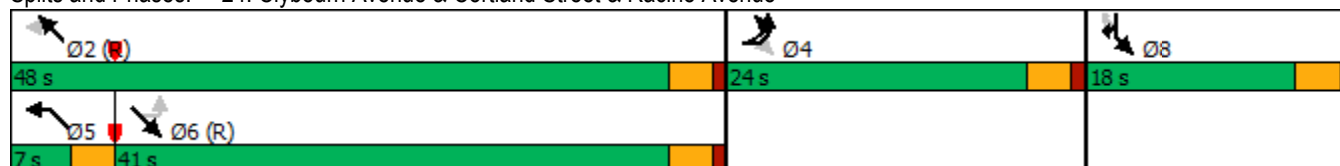


Lane Group	EBL2	EBL	EBR	SBL	SBR	SBR2	SEL	SET	SER	NWL	NWT	NWR
v/c Ratio		1.41	0.68	0.40	1.48	0.31	0.55	0.74		0.62	0.88	
Control Delay		229.2	44.5	39.4	271.5	39.4	37.8	30.6		25.7	35.0	
Queue Delay		0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay		229.2	44.5	39.4	271.5	39.4	37.8	30.6		25.7	35.0	
LOS		F	D	D	F	D	D	C		C	C	
Approach Delay		176.3		190.6				31.5			33.3	
Approach LOS		F		F				C			C	
Queue Length 50th (ft)		~399	109	56	~236	27	32	240		47	343	
Queue Length 95th (ft)		#593	#201	106	#394	62	#96	366		#85	#574	
Internal Link Dist (ft)		127		57				453			1056	
Turn Bay Length (ft)							115			115		
Base Capacity (vph)		368	308	268	202	168	141	686		254	804	
Starvation Cap Reductn		0	0	0	0	0	0	0		0	0	
Spillback Cap Reductn		0	0	0	0	0	0	0		0	0	
Storage Cap Reductn		0	0	0	0	0	0	0		0	0	
Reduced v/c Ratio		1.41	0.68	0.40	1.48	0.31	0.55	0.74		0.62	0.88	

Intersection Summary

Area Type: Other
 Cycle Length: 90
 Actuated Cycle Length: 90
 Offset: 0 (0%), Referenced to phase 2:NWTL and 6:SETL, Start of Green
 Natural Cycle: 140
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 1.48
 Intersection Signal Delay: 99.7 Intersection LOS: F
 Intersection Capacity Utilization 110.7% 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: 24: Clybourn Avenue & Cortland Street & Racine Avenue



Lanes, Volumes, Timings
25: Magnolia Avenue & Clybourn Avenue

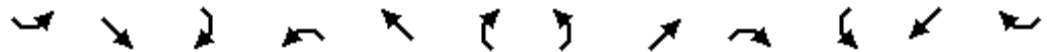
01/10/2019



Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	33	525	21	4	600	32	6	23	13	15	11	8
Future Volume (vph)	33	525	21	4	600	32	6	23	13	15	11	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	13	12	10	13	12	12	15	12	12	15	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	55		0	125		0	0		0	0		0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (ft)	90			90			0			0		
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	0.98	1.00		0.99	1.00			0.97			0.95	
Fr _t		0.994			0.992			0.958			0.967	
Fl _t Protected	0.950			0.950				0.993			0.979	
Satd. Flow (prot)	1685	1674	0	1685	1668	0	0	1938	0	0	1934	0
Fl _t Permitted	0.369			0.415				0.964			0.869	
Satd. Flow (perm)	644	1674	0	725	1668	0	0	1864	0	0	1674	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		5			6			14			9	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1262			533			312			123	
Travel Time (s)		28.7			12.1			7.1			2.8	
Confl. Peds. (#/hr)	62		48	48		62	38		32	32		38
Confl. Bikes (#/hr)			4			23						
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)		8			8							
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	35	588	0	4	679	0	0	45	0	0	37	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		6			2			4			8	
Permitted Phases	6			2			4			8		
Detector Phase	6	6		2	2		4	4		8	8	
Switch Phase												
Minimum Initial (s)	49.0	49.0		49.0	49.0		15.0	15.0		15.0	15.0	
Minimum Split (s)	59.0	59.0		59.0	59.0		26.0	26.0		26.0	26.0	
Total Split (s)	59.0	59.0		59.0	59.0		26.0	26.0		26.0	26.0	
Total Split (%)	69.4%	69.4%		69.4%	69.4%		30.6%	30.6%		30.6%	30.6%	
Yellow Time (s)	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	
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?												
Recall Mode	C-Max	C-Max		C-Max	C-Max		None	None		None	None	
Act Effct Green (s)	71.2	71.2		71.2	71.2			15.0			15.0	
Actuated g/C Ratio	0.84	0.84		0.84	0.84			0.18			0.18	

Lanes, Volumes, Timings
 25: Magnolia Avenue & Clybourn Avenue

01/10/2019



Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
v/c Ratio	0.06	0.42		0.01	0.49			0.13			0.12	
Control Delay	2.5	4.6		3.2	5.3			23.6			25.3	
Queue Delay	0.0	0.0		0.0	0.3			0.0			0.0	
Total Delay	2.5	4.6		3.2	5.6			23.6			25.3	
LOS	A	A		A	A			C			C	
Approach Delay		4.5			5.6			23.6			25.3	
Approach LOS		A			A			C			C	
Queue Length 50th (ft)	3	62		0	134			14			13	
Queue Length 95th (ft)	m5	m76		3	209			43			39	
Internal Link Dist (ft)		1182			453			232			43	
Turn Bay Length (ft)	55			125								
Base Capacity (vph)	539	1403		607	1398			492			439	
Starvation Cap Reductn	0	0		0	250			0			0	
Spillback Cap Reductn	0	0		0	0			0			0	
Storage Cap Reductn	0	0		0	0			0			0	
Reduced v/c Ratio	0.06	0.42		0.01	0.59			0.09			0.08	

Intersection Summary

Area Type: Other
 Cycle Length: 85
 Actuated Cycle Length: 85
 Offset: 18 (21%), Referenced to phase 2:NWTL and 6:SETL, Start of Green
 Natural Cycle: 85
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.49
 Intersection Signal Delay: 6.2
 Intersection Capacity Utilization 69.2%
 Analysis Period (min) 15
 Intersection LOS: A
 ICU Level of Service C
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 25: Magnolia Avenue & Clybourn Avenue



Lanes, Volumes, Timings
29: Elston Avenue & Wabansia Avenue

01/10/2019



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	3	0	4	152	0	212	3	615	77	62	536	12
Future Volume (vph)	3	0	4	152	0	212	3	615	77	62	536	12
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	50		0	100		0
Storage Lanes	0		0	1		1	1		0	1		0
Taper Length (ft)	0			0			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		0.84		0.85		0.83	0.96	0.98			1.00	
Frt		0.923				0.850		0.983			0.997	
Flt Protected		0.979		0.950			0.950			0.950		
Satd. Flow (prot)	0	1520	0	1770	0	1583	1770	1797	0	1770	1850	0
Flt Permitted		0.979		0.753			0.397			0.317		
Satd. Flow (perm)	0	1420	0	1190	0	1315	709	1797	0	590	1850	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		10				223		12			2	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		205			368			511			286	
Travel Time (s)		4.7			8.4			11.6			6.5	
Confl. Peds. (#/hr)	50		50	50		50	50		50	50		50
Confl. Bikes (#/hr)												
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
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	7	0	160	0	223	3	728	0	65	577	0
Turn Type	Perm	NA		Perm		Perm	Perm	NA		Perm	NA	
Protected Phases		4						2			6	
Permitted Phases	4			8		8	2			6		
Detector Phase	4	4		8		8	2	2		6	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0		5.0	5.0	5.0		5.0	5.0	
Minimum Split (s)	22.5	22.5		22.5		22.5	22.5	22.5		22.5	22.5	
Total Split (s)	35.0	35.0		35.0		35.0	75.0	75.0		75.0	75.0	
Total Split (%)	31.8%	31.8%		31.8%		31.8%	68.2%	68.2%		68.2%	68.2%	
Yellow Time (s)	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	
Lost Time Adjust (s)		0.0		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	4.0	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	None	None		None		None	C-Max	C-Max		C-Max	C-Max	
Act Effct Green (s)		20.0		20.0		20.0	82.0	82.0		82.0	82.0	
Actuated g/C Ratio		0.18		0.18		0.18	0.75	0.75		0.75	0.75	

Lanes, Volumes, Timings
 29: Elston Avenue & Wabansia Avenue

01/10/2019



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio		0.03		0.74		0.53	0.01	0.54		0.15	0.42	
Control Delay		14.0		61.5		9.4	4.7	6.4		6.3	7.1	
Queue Delay		0.0		0.0		0.0	0.0	0.6		0.0	0.0	
Total Delay		14.0		61.5		9.4	4.7	7.0		6.3	7.1	
LOS		B		E		A	A	A		A	A	
Approach Delay		14.0			31.2			6.9			7.1	
Approach LOS		B			C			A			A	
Queue Length 50th (ft)		0		108		0	0	120		11	128	
Queue Length 95th (ft)		10		167		61	m1	180		34	250	
Internal Link Dist (ft)		125			288			431			206	
Turn Bay Length (ft)							50			100		
Base Capacity (vph)		407		335		530	528	1342		439	1378	
Starvation Cap Reductn		0		0		0	0	275		0	0	
Spillback Cap Reductn		0		0		0	0	0		0	0	
Storage Cap Reductn		0		0		0	0	0		0	0	
Reduced v/c Ratio		0.02		0.48		0.42	0.01	0.68		0.15	0.42	

Intersection Summary

Area Type: Other
 Cycle Length: 110
 Actuated Cycle Length: 110
 Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
 Natural Cycle: 60
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.74
 Intersection Signal Delay: 12.3
 Intersection LOS: B
 Intersection Capacity Utilization 77.5%
 ICU Level of Service D
 Analysis Period (min) 15
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 29: Elston Avenue & Wabansia Avenue



Lanes, Volumes, Timings
31: Elston Avenue & Concord Place

01/10/2019



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	305	127	531	139	35	539
Future Volume (vph)	305	127	531	139	35	539
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%		0%			0%
Storage Length (ft)	0	0		0	100	
Storage Lanes	1	1		0	1	
Taper Length (ft)	0				50	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.85	0.83	0.96		0.97	
Frt		0.850	0.972			
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1805	1615	1754	0	1805	1863
Flt Permitted	0.950				0.319	
Satd. Flow (perm)	1529	1341	1754	0	587	1863
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		134	29			
Link Speed (mph)	30		30			30
Link Distance (ft)	350		428			511
Travel Time (s)	8.0		9.7			11.6
Confl. Peds. (#/hr)	50	50		50	50	
Confl. Bikes (#/hr)						
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	0%	2%	0%	0%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%		0%			0%
Shared Lane Traffic (%)						
Lane Group Flow (vph)	321	134	705	0	37	567
Turn Type	Prot	Perm	NA		Perm	NA
Protected Phases	8		2			6
Permitted Phases		8			6	
Detector Phase	8	8	2		6	6
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0		5.0	5.0
Minimum Split (s)	22.5	22.5	22.5		22.5	22.5
Total Split (s)	28.0	28.0	82.0		82.0	82.0
Total Split (%)	25.5%	25.5%	74.5%		74.5%	74.5%
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 Optimize?						
Recall Mode	None	None	C-Max		C-Max	C-Max
Act Effct Green (s)	22.4	22.4	79.6		79.6	79.6
Actuated g/C Ratio	0.20	0.20	0.72		0.72	0.72

Lanes, Volumes, Timings
 31: Elston Avenue & Concord Place

01/10/2019



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
v/c Ratio	0.87	0.35	0.55		0.09	0.42
Control Delay	66.9	9.0	4.4		4.3	5.4
Queue Delay	11.0	0.0	0.8		0.0	0.4
Total Delay	77.9	9.0	5.2		4.3	5.8
LOS	E	A	A		A	A
Approach Delay	57.6		5.2			5.7
Approach LOS	E		A			A
Queue Length 50th (ft)	217	0	62		6	105
Queue Length 95th (ft)	#360	51	m115		m13	143
Internal Link Dist (ft)	270		348			431
Turn Bay Length (ft)					100	
Base Capacity (vph)	393	397	1277		424	1348
Starvation Cap Reductn	54	0	276		0	336
Spillback Cap Reductn	0	1	15		0	220
Storage Cap Reductn	0	0	0		0	0
Reduced v/c Ratio	0.95	0.34	0.70		0.09	0.56

Intersection Summary

Area Type: Other
 Cycle Length: 110
 Actuated Cycle Length: 110
 Offset: 68 (62%), Referenced to phase 2:NBT and 6:SBTL, Start of Green
 Natural Cycle: 60
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.87
 Intersection Signal Delay: 18.9 Intersection LOS: B
 Intersection Capacity Utilization 60.8% ICU Level of Service B
 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: 31: Elston Avenue & Concord Place



Lanes, Volumes, Timings
 35: I-90/94 West Ramps & North Avenue

01/10/2019



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑		↖	↑↑					↖	↕	
Traffic Volume (vph)	0	668	322	517	1033	0	0	0	0	499	42	110
Future Volume (vph)	0	668	322	517	1033	0	0	0	0	499	42	110
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	9	10	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	100		0	0		0	0		0
Storage Lanes	0		0	1		0	0		0	1		0
Taper Length (ft)	0			50			0			0		
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										
Frt		0.951										0.929
Flt Protected				0.950						0.950	0.983	
Satd. Flow (prot)	0	3365	0	1608	3336	0	0	0	0	1715	1648	0
Flt Permitted				0.121						0.950	0.983	
Satd. Flow (perm)	0	3365	0	205	3336	0	0	0	0	1715	1648	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		73										41
Link Speed (mph)		30			30			30				30
Link Distance (ft)		489			346			215				396
Travel Time (s)		11.1			7.9			4.9				9.0
Confl. Peds. (#/hr)	56		6	6		56						
Confl. Bikes (#/hr)			1			21						
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
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	2%	0%	1%	1%	0%	0%	0%	0%	0%	0%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%				0%
Shared Lane Traffic (%)										16%		
Lane Group Flow (vph)	0	1031	0	539	1076	0	0	0	0	437	242	0
Turn Type		NA		pm+pt	NA					custom	NA	
Protected Phases		4		3	8					6	6	
Permitted Phases				8						6		
Detector Phase		4		3	8					6	6	
Switch Phase												
Minimum Initial (s)		15.0		17.0	16.0					24.0	24.0	
Minimum Split (s)		32.0		20.0	38.0					29.0	29.0	
Total Split (s)		35.0		41.0	76.0					34.0	34.0	
Total Split (%)		31.8%		37.3%	69.1%					30.9%	30.9%	
Yellow Time (s)		3.0		3.0	3.0					3.0	3.0	
All-Red Time (s)		2.0		0.0	2.0					2.0	2.0	
Lost Time Adjust (s)		-1.0		-1.0	-1.0					-1.0	-1.0	
Total Lost Time (s)		4.0		2.0	4.0					4.0	4.0	
Lead/Lag		Lag		Lead								
Lead-Lag Optimize?		Yes		Yes								
Recall Mode		Max		Max	Max					Max	Max	
Act Effect Green (s)		31.0		74.0	72.0					30.0	30.0	
Actuated g/C Ratio		0.28		0.67	0.65					0.27	0.27	

Lanes, Volumes, Timings
 35: I-90/94 West Ramps & North Avenue

01/10/2019



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio		1.03		0.85	0.49					0.94	0.51	
Control Delay		55.0		11.0	2.8					68.4	32.1	
Queue Delay		11.1		4.1	0.9					54.3	63.4	
Total Delay		66.0		15.1	3.6					122.7	95.4	
LOS		E		B	A					F	F	
Approach Delay		66.0			7.4						113.0	
Approach LOS		E			A						F	
Queue Length 50th (ft)		~395		7	22					317	125	
Queue Length 95th (ft)		m#438		m43	m54					#523	209	
Internal Link Dist (ft)		409			266			135			316	
Turn Bay Length (ft)				100								
Base Capacity (vph)		1000		635	2183					467	479	
Starvation Cap Reductn		11		49	744					0	0	
Spillback Cap Reductn		29		0	121					277	267	
Storage Cap Reductn		0		0	0					0	0	
Reduced v/c Ratio		1.06		0.92	0.75					2.30	1.14	

Intersection Summary

Area Type: Other
 Cycle Length: 110
 Actuated Cycle Length: 110
 Offset: 21 (19%), Referenced to phase 6:SBTL, Start of Green
 Natural Cycle: 85
 Control Type: Pretimed
 Maximum v/c Ratio: 1.03
 Intersection Signal Delay: 47.2
 Intersection Capacity Utilization 132.2%
 Analysis Period (min) 15
 Intersection LOS: D
 ICU Level of Service H

~ 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: 35: I-90/94 West Ramps & North Avenue



Lanes, Volumes, Timings
 36: I-90/94 East Ramps & North Avenue

01/10/2019



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	193	978	0	0	1165	723	383	0	552	0	0	0
Future Volume (vph)	193	978	0	0	1165	723	383	0	552	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	2000	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	12	10	10	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	100		0	0		200	0		0	0		0
Storage Lanes	1		0	0		1	1		1	0		0
Taper Length (ft)	50			0			0			0		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99					0.91						
Frt						0.850			0.850			
Flt Protected	0.950						0.950					
Satd. Flow (prot)	1745	3421	0	0	3477	1507	1805	0	1615	0	0	0
Flt Permitted	0.087						0.950					
Satd. Flow (perm)	159	3421	0	0	3477	1369	1805	0	1615	0	0	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						579			99			
Link Speed (mph)		30			30			30				30
Link Distance (ft)		346			606			477				397
Travel Time (s)		7.9			13.8			10.8				9.0
Confl. Peds. (#/hr)	52		12	12		52						
Confl. Bikes (#/hr)												
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
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	2%	0%	0%	2%	0%	0%	0%	0%	0%	0%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	203	1029	0	0	1226	761	403	0	581	0	0	0
Turn Type	pm+pt	NA			NA	Perm	Prot		Prot			
Protected Phases	7	4			8		5		5			
Permitted Phases	4					8						
Detector Phase	7	4			8	8	5		5			
Switch Phase												
Minimum Initial (s)	17.0	27.0			27.0	27.0	22.0		22.0			
Minimum Split (s)	20.0	43.0			43.0	43.0	27.0		27.0			
Total Split (s)	20.0	67.0			47.0	47.0	43.0		43.0			
Total Split (%)	18.2%	60.9%			42.7%	42.7%	39.1%		39.1%			
Yellow Time (s)	3.0	3.0			3.0	3.0	3.0		3.0			
All-Red Time (s)	0.0	1.0			1.0	1.0	2.0		2.0			
Lost Time Adjust (s)	-1.0	-1.0			-1.0	-1.0	-1.0		-1.0			
Total Lost Time (s)	2.0	3.0			3.0	3.0	4.0		4.0			
Lead/Lag	Lead				Lag	Lag						
Lead-Lag Optimize?	Yes				Yes	Yes						
Recall Mode	Max	Max			Max	Max	Max		Max			
Act Effct Green (s)	65.0	64.0			44.0	44.0	39.0		39.0			
Actuated g/C Ratio	0.59	0.58			0.40	0.40	0.35		0.35			

Lanes, Volumes, Timings
 36: I-90/94 East Ramps & North Avenue

01/10/2019

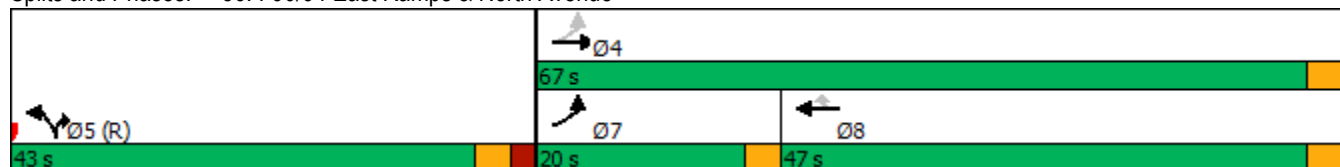


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.58	0.52			0.88	0.85	0.63		0.91			
Control Delay	17.3	22.3			25.9	9.1	34.8		48.8			
Queue Delay	1.3	51.0			0.3	0.5	0.0		0.2			
Total Delay	18.6	73.4			26.3	9.7	34.8		49.0			
LOS	B	E			C	A	C		D			
Approach Delay		64.3			19.9			43.2				
Approach LOS		E			B			D				
Queue Length 50th (ft)	89	387			287	12	234		334			
Queue Length 95th (ft)	m94	m390			m370	m9	341		#556			
Internal Link Dist (ft)		266			526			397			317	
Turn Bay Length (ft)	100					200						
Base Capacity (vph)	353	1990			1390	895	639		636			
Starvation Cap Reductn	46	1164			6	18	0		0			
Spillback Cap Reductn	0	100			18	0	0		2			
Storage Cap Reductn	0	0			0	0	0		0			
Reduced v/c Ratio	0.66	1.25			0.89	0.87	0.63		0.92			

Intersection Summary

Area Type: Other
 Cycle Length: 110
 Actuated Cycle Length: 110
 Offset: 96 (87%), Referenced to phase 5:NBL, Start of Green
 Natural Cycle: 90
 Control Type: Pretimed
 Maximum v/c Ratio: 0.91
 Intersection Signal Delay: 38.4
 Intersection LOS: D
 Intersection Capacity Utilization 132.2%
 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.
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 36: I-90/94 East Ramps & North Avenue



Lanes, Volumes, Timings
37: Elston Avenue & North Avenue

01/10/2019



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	209	1187	55	306	1207	43	81	435	111	65	402	474
Future Volume (vph)	209	1187	55	306	1207	43	81	435	111	65	402	474
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	2000	1900	1900	2000	1900
Lane Width (ft)	10	10	10	10	10	10	10	10	10	10	10	11
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	300		0	125		0	65		50	78		150
Storage Lanes	1		0	1		0	1		1	1		1
Taper Length (ft)	25			55			85			135		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00			1.00		0.99		0.94	0.99		0.96
Frt		0.993			0.995				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1668	3255	0	1620	3257	0	1685	1626	1507	1652	1610	1561
Flt Permitted	0.089			0.085			0.181			0.134		
Satd. Flow (perm)	156	3255	0	145	3257	0	319	1626	1414	230	1610	1506
Right Turn on Red			Yes			Yes			No			Yes
Satd. Flow (RTOR)		5			4							63
Link Speed (mph)		30			25			30				30
Link Distance (ft)		606			465			585				428
Travel Time (s)		13.8			12.7			13.3				9.7
Confl. Peds. (#/hr)	34		16	16		34	16		30	30		16
Confl. Bikes (#/hr)						4			13			3
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
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	1%	1%	0%	4%	1%	2%	0%	1%	0%	2%	2%	0%
Bus Blockages (#/hr)	0	8	0	0	8	0	0	0	0	0	0	0
Parking (#/hr)								4				4
Mid-Block Traffic (%)		0%			0%			0%				0%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	220	1307	0	322	1316	0	85	458	117	68	423	499
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	pm+ov
Protected Phases	7	4		3	8		5	2		1	6	7
Permitted Phases	4			8			2		2	6		6
Detector Phase	7	4		3	8		5	2	2	1	6	7
Switch Phase												
Minimum Initial (s)	6.0	27.0		6.0	27.0		6.0	12.0	12.0	6.0	12.0	6.0
Minimum Split (s)	9.0	41.0		9.0	41.0		9.0	28.0	28.0	9.0	28.0	9.0
Total Split (s)	19.0	48.0		19.0	48.0		9.0	34.0	34.0	9.0	34.0	19.0
Total Split (%)	17.3%	43.6%		17.3%	43.6%		8.2%	30.9%	30.9%	8.2%	30.9%	17.3%
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)	0.0	1.0		0.0	1.0		0.0	1.0	1.0	0.0	1.0	0.0
Lost Time Adjust (s)	-1.0	-1.0		-1.0	-1.0		-1.0	-1.0	-1.0	-1.0	-1.0	-1.0
Total Lost Time (s)	2.0	3.0		2.0	3.0		2.0	3.0	3.0	2.0	3.0	2.0
Lead/Lag	Lead	Lag		Lead	Lag							Lead
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							Yes
Recall Mode	None	Max		None	Max		None	C-Max	C-Max	None	C-Max	None
Act Effct Green (s)	60.9	45.0		63.8	47.1		39.4	32.8	32.8	39.4	32.8	48.7
Actuated g/C Ratio	0.55	0.41		0.58	0.43		0.36	0.30	0.30	0.36	0.30	0.44

Lanes, Volumes, Timings
37: Elston Avenue & North Avenue

01/10/2019

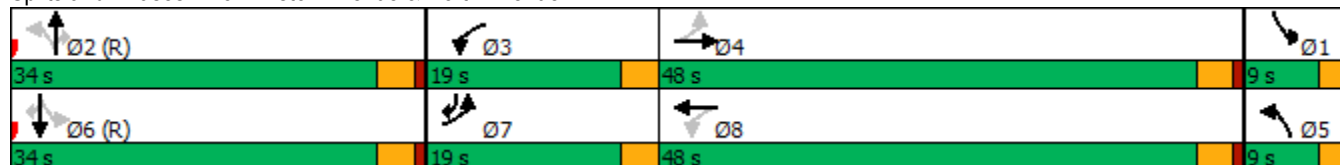


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.76	0.98		1.03	0.94		0.42	0.94	0.28	0.39	0.88	0.70
Control Delay	46.8	34.1		75.6	38.6		29.6	68.8	32.8	30.6	58.8	29.3
Queue Delay	0.0	0.0		0.0	3.1		0.0	0.0	0.0	0.0	2.0	0.0
Total Delay	46.8	34.1		75.6	41.7		29.6	68.8	32.8	30.6	60.9	29.3
LOS	D	C		E	D		C	E	C	C	E	C
Approach Delay		36.0			48.4			57.3			42.9	
Approach LOS		D			D			E			D	
Queue Length 50th (ft)	103	521		~170	490		39	323	65	34	297	187
Queue Length 95th (ft)	m158	m#602		m#270	m497		75	#536	116	m66	m#481	m361
Internal Link Dist (ft)		526			385			505			348	
Turn Bay Length (ft)	300			125			65		50	78		150
Base Capacity (vph)	323	1334		312	1397		201	485	421	173	479	738
Starvation Cap Reductn	0	0		0	42		0	0	0	0	14	5
Spillback Cap Reductn	0	0		0	43		0	0	0	0	0	0
Storage Cap Reductn	0	0		0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.68	0.98		1.03	0.97		0.42	0.94	0.28	0.39	0.91	0.68

Intersection Summary

Area Type: Other
 Cycle Length: 110
 Actuated Cycle Length: 110
 Offset: 95 (86%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
 Natural Cycle: 90
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 1.03
 Intersection Signal Delay: 44.5 Intersection LOS: D
 Intersection Capacity Utilization 91.7% ICU Level of Service F
 Analysis Period (min) 15
 ~ Volume exceeds capacity, queue is theoretically infinite.
 Queue shown is maximum after two cycles.
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 37: Elston Avenue & North Avenue



Lanes, Volumes, Timings
38: Throop Street & North Avenue

01/10/2019

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	338	1212	14	12	1027	172	0	0	0	201	25	562
Future Volume (vph)	338	1212	14	12	1027	172	0	0	0	201	25	562
Ideal Flow (vphpl)	1900	1900	1900	1900	2000	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	9	10	10	9	10	8	10	10	10	10	10	10
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	140		0	70		435	0		0	100		0
Storage Lanes	1		0	1		1	0		0	1		0
Taper Length (ft)	55			75			0			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00	1.00		1.00		0.96				0.90	0.91	
Frt		0.998				0.850					0.856	
Flt Protected	0.950			0.950						0.950		
Satd. Flow (prot)	1593	3296	0	1490	3443	1359	0	0	0	1652	1326	0
Flt Permitted	0.192			0.156						0.950		
Satd. Flow (perm)	321	3296	0	244	3443	1309	0	0	0	1483	1326	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		3				181						225
Link Speed (mph)		30			25			30				30
Link Distance (ft)		465			1620			342				486
Travel Time (s)		10.6			44.2			7.8				11.0
Confl. Peds. (#/hr)	14		10	10		14				68		56
Confl. Bikes (#/hr)												
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
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	0%	9%	3%	3%	2%	2%	2%	2%	7%	4%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%				0%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	356	1291	0	13	1081	181	0	0	0	212	618	0
Turn Type	pm+pt	NA		Perm	NA	Perm				Perm	NA	
Protected Phases	5	2 5			6							4
Permitted Phases	2 5			6		6				4		
Detector Phase	5	2 5		6	6	6				4	4	
Switch Phase												
Minimum Initial (s)	5.0			36.0	36.0	36.0				10.0	10.0	
Minimum Split (s)	8.0			50.0	50.0	50.0				27.0	27.0	
Total Split (s)	13.0			68.0	68.0	68.0				29.0	29.0	
Total Split (%)	11.8%			61.8%	61.8%	61.8%				26.4%	26.4%	
Yellow Time (s)	3.0			3.0	3.0	3.0				3.0	3.0	
All-Red Time (s)	0.0			1.0	1.0	1.0				1.0	1.0	
Lost Time Adjust (s)	-1.0			-1.0	-1.0	-1.0				-1.0	-1.0	
Total Lost Time (s)	2.0			3.0	3.0	3.0				3.0	3.0	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	None			C-Max	C-Max	C-Max				None	None	
Act Effct Green (s)	77.0	78.0		65.0	65.0	65.0				26.0	26.0	
Actuated g/C Ratio	0.70	0.71		0.59	0.59	0.59				0.24	0.24	

Lanes, Volumes, Timings
 38: Throop Street & North Avenue

01/10/2019

Lane Group	Ø2
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Grade (%)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Confl. Bikes (#/hr)	
Peak Hour Factor	
Growth Factor	
Heavy Vehicles (%)	
Bus Blockages (#/hr)	
Parking (#/hr)	
Mid-Block Traffic (%)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	2
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	36.0
Minimum Split (s)	50.0
Total Split (s)	68.0
Total Split (%)	62%
Yellow Time (s)	3.0
All-Red Time (s)	1.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Recall Mode	C-Max
Act Effct Green (s)	
Actuated g/C Ratio	

Lanes, Volumes, Timings
38: Throop Street & North Avenue

01/10/2019



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	1.01	0.55		0.09	0.53	0.21				0.61	1.27	
Control Delay	71.6	14.3		11.8	14.6	2.1				45.9	162.8	
Queue Delay	0.0	1.3		0.0	2.5	0.0				0.0	1.0	
Total Delay	71.6	15.6		11.8	17.1	2.1				45.9	163.8	
LOS	E	B		B	B	A				D	F	
Approach Delay		27.7			14.9							133.7
Approach LOS		C			B							F
Queue Length 50th (ft)	~204	273		4	224	0				134	~425	
Queue Length 95th (ft)	m#261	m294		14	280	28				216	#649	
Internal Link Dist (ft)		385			1540			262				406
Turn Bay Length (ft)	140			70		435				100		
Base Capacity (vph)	351	2338		144	2034	847				350	485	
Starvation Cap Reductn	0	777		0	0	0				0	0	
Spillback Cap Reductn	0	0		0	791	0				0	51	
Storage Cap Reductn	0	0		0	0	0				0	0	
Reduced v/c Ratio	1.01	0.83		0.09	0.87	0.21				0.61	1.42	

Intersection Summary

Area Type: Other
 Cycle Length: 110
 Actuated Cycle Length: 110
 Offset: 6 (5%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
 Natural Cycle: 95
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 1.27
 Intersection Signal Delay: 46.8
 Intersection LOS: D
 Intersection Capacity Utilization 118.5%
 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: 38: Throop Street & North Avenue



Lane Group	Ø2
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	
Intersection Summary	

Lanes, Volumes, Timings
39: North Avenue & Kingsbury Street

01/10/2019



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	179	998	154	15	973	59	184	53	26	139	24	179
Future Volume (vph)	179	998	154	15	973	59	184	53	26	139	24	179
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	9	10	12	9	10	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	178		0	55		0	50		0	0		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	55			65			25			0		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99	0.98		0.98	1.00		0.99	0.98		0.95	0.98	
Frt		0.980			0.991			0.951			0.868	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1624	3164	0	1624	3192	0	1787	1502	0	1805	1594	0
Flt Permitted	0.166			0.203			0.464			0.703		
Satd. Flow (perm)	281	3164	0	342	3192	0	863	1502	0	1271	1594	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		27			10			26			188	
Link Speed (mph)		25			30			30			30	
Link Distance (ft)		1620			257			369			176	
Travel Time (s)		44.2			5.8			8.4			4.0	
Confl. Peds. (#/hr)	46		112	112		46	14		46	46		14
Confl. Bikes (#/hr)						5						
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
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	1%	0%	0%	2%	11%	1%	0%	4%	0%	0%	1%
Bus Blockages (#/hr)	0	8	0	0	8	0	0	0	0	0	0	0
Parking (#/hr)								8				
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	188	1213	0	16	1086	0	194	83	0	146	213	0
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases	7	4		3	8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	7	4		3	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	5.0	28.0		5.0	28.0		7.0	7.0		7.0	7.0	
Minimum Split (s)	9.5	48.0		9.5	48.0		27.0	27.0		27.0	27.0	
Total Split (s)	15.0	48.0		15.0	48.0		27.0	27.0		27.0	27.0	
Total Split (%)	16.7%	53.3%		16.7%	53.3%		30.0%	30.0%		30.0%	30.0%	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	0.0	1.0		0.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	1.0	0.0		1.0	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		4.0	4.0	
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Recall Mode	None	Max		None	Max		C-Max	C-Max		C-Max	C-Max	
Act Effct Green (s)	59.0	57.1		51.3	46.5		23.0	23.0		23.0	23.0	
Actuated g/C Ratio	0.66	0.63		0.57	0.52		0.26	0.26		0.26	0.26	

Lanes, Volumes, Timings
 39: North Avenue & Kingsbury Street

01/10/2019

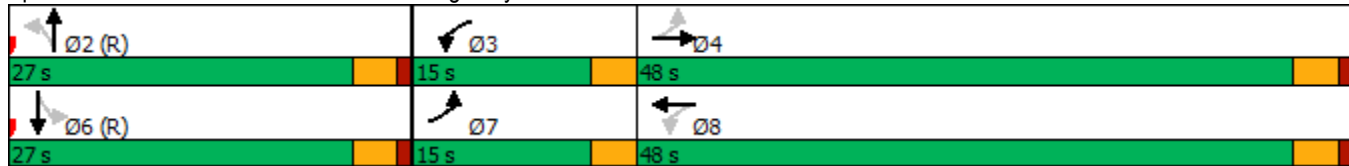


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.60	0.60		0.06	0.66		0.88	0.21		0.45	0.39	
Control Delay	15.3	11.6		2.9	6.5		71.4	20.5		33.5	8.2	
Queue Delay	0.0	1.5		0.0	0.2		0.0	0.0		0.0	0.0	
Total Delay	15.3	13.1		2.9	6.7		71.4	20.6		33.5	8.2	
LOS	B	B		A	A		E	C		C	A	
Approach Delay		13.4			6.6			56.2			18.5	
Approach LOS		B			A			E			B	
Queue Length 50th (ft)	37	174		1	68		106	25		70	11	
Queue Length 95th (ft)	70	316		m2	84		#233	62		129	66	
Internal Link Dist (ft)		1540			177			289			96	
Turn Bay Length (ft)	178			55			50					
Base Capacity (vph)	348	2017		374	1653		220	403		324	547	
Starvation Cap Reductn	0	0		0	89		0	0		0	0	
Spillback Cap Reductn	0	571		0	0		0	4		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.54	0.84		0.04	0.69		0.88	0.21		0.45	0.39	

Intersection Summary

Area Type: Other
 Cycle Length: 90
 Actuated Cycle Length: 90
 Offset: 18 (20%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
 Natural Cycle: 85
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.88
 Intersection Signal Delay: 15.4 Intersection LOS: B
 Intersection Capacity Utilization 89.3% ICU Level of Service E
 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: 39: North Avenue & Kingsbury Street



Lanes, Volumes, Timings
40: North Avenue & Sheffield Avenue

01/10/2019



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	120	959	49	81	866	53	56	207	95	62	151	148
Future Volume (vph)	120	959	49	81	866	53	56	207	95	62	151	148
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	9	10	12	9	10	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	55		0	105		0	105		0	50		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	65			85			25			90		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.98	0.99		0.96	0.99		0.97	0.97		0.95	0.97	
Frt		0.993			0.991			0.953			0.926	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1608	3217	0	1608	3201	0	1770	1525	0	1805	1470	0
Flt Permitted	0.120			0.125			0.408			0.404		
Satd. Flow (perm)	199	3217	0	203	3201	0	740	1525	0	730	1470	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		7			8			27			58	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		257			534			317			402	
Travel Time (s)		5.8			12.1			7.2			9.1	
Confl. Peds. (#/hr)	82		198	198		82	52		96	96		52
Confl. Bikes (#/hr)						1			3			1
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
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	1%	1%	0%	1%	2%	0%	2%	0%	0%	0%	1%	1%
Bus Blockages (#/hr)	0	8	0	0	8	0	0	0	0	0	0	0
Parking (#/hr)								6			6	
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	126	1061	0	85	968	0	59	318	0	65	315	0
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	7	4		3	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	5.0	27.0		5.0	27.0		5.0	19.0		5.0	19.0	
Minimum Split (s)	8.0	38.0		8.0	38.0		8.0	33.0		8.0	33.0	
Total Split (s)	11.0	38.0		11.0	38.0		8.0	33.0		8.0	33.0	
Total Split (%)	12.2%	42.2%		12.2%	42.2%		8.9%	36.7%		8.9%	36.7%	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	0.0	1.0		0.0	1.0		0.0	1.0		0.0	1.0	
Lost Time Adjust (s)	1.0	0.0		1.0	0.0		1.0	0.0		1.0	0.0	
Total Lost Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	
Act Effct Green (s)	40.3	34.7		38.9	32.5		35.5	32.2		35.5	32.2	
Actuated g/C Ratio	0.45	0.39		0.43	0.36		0.39	0.36		0.39	0.36	

Lanes, Volumes, Timings
 40: North Avenue & Sheffield Avenue

01/10/2019

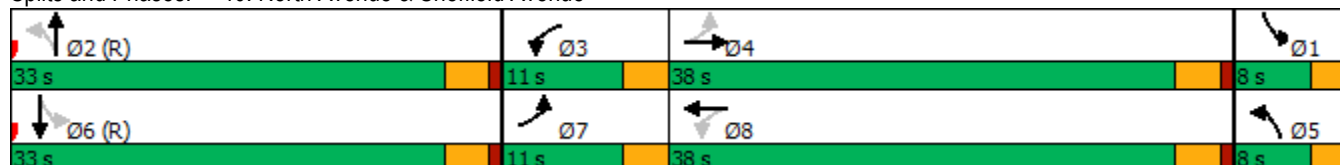


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.65	0.85		0.46	0.83		0.17	0.57		0.19	0.56	
Control Delay	33.0	26.8		27.6	35.1		17.6	27.4		14.9	21.6	
Queue Delay	0.0	9.5		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	33.0	36.3		27.6	35.1		17.6	27.4		14.9	21.6	
LOS	C	D		C	D		B	C		B	C	
Approach Delay		35.9			34.5			25.9			20.5	
Approach LOS		D			C			C			C	
Queue Length 50th (ft)	19	298		24	270		20	139		14	134	
Queue Length 95th (ft)	m#90	#408		54	337		44	231		m26	m194	
Internal Link Dist (ft)		177			454			237			322	
Turn Bay Length (ft)	55			105			105			50		
Base Capacity (vph)	198	1245		198	1214		339	562		337	562	
Starvation Cap Reductn	0	168		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.64	0.99		0.43	0.80		0.17	0.57		0.19	0.56	

Intersection Summary

Area Type: Other
 Cycle Length: 90
 Actuated Cycle Length: 90
 Offset: 21 (23%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
 Natural Cycle: 90
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.85
 Intersection Signal Delay: 32.2 Intersection LOS: C
 Intersection Capacity Utilization 76.5% 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: 40: North Avenue & Sheffield Avenue



Lanes, Volumes, Timings
41: Fremont Street & North Avenue

01/10/2019



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	20	1045	40	51	954	8	55	17	82	14	13	1
Future Volume (vph)	20	1045	40	51	954	8	55	17	82	14	13	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	9	10	12	9	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	90		0	75		0	0		0	0		0
Storage Lanes	1		0	1		0	0		0	1		0
Taper Length (ft)	100			95			0			0		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.96	0.99		0.94	1.00			0.93		0.94	0.99	
Fr _t		0.994			0.999			0.928			0.990	
Fl _t Protected	0.950			0.950				0.982		0.950		
Satd. Flow (prot)	1624	3192	0	1624	3407	0	0	1419	0	1805	1871	0
Fl _t Permitted	0.243			0.204				0.881		0.524		
Satd. Flow (perm)	398	3192	0	329	3407	0	0	1243	0	941	1871	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		8			2			58			1	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		534			427			331			103	
Travel Time (s)		12.1			9.7			7.5			2.3	
Confl. Peds. (#/hr)	230		383	383		230	50		62	62		50
Confl. Bikes (#/hr)			27			19			3			
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
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	2%	0%	0%	4%	0%	2%	0%	0%	0%	0%	0%
Bus Blockages (#/hr)	0	8	0	0	8	0	0	0	0	0	0	0
Parking (#/hr)								6				
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	21	1142	0	54	1012	0	0	162	0	15	15	0
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			8			4	
Permitted Phases	2			6			8			4		
Detector Phase	5	2		1	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	5.0	43.0		5.0	43.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	8.0	58.0		8.0	58.0		24.0	24.0		24.0	24.0	
Total Split (s)	8.0	58.0		8.0	58.0		24.0	24.0		24.0	24.0	
Total Split (%)	8.9%	64.4%		8.9%	64.4%		26.7%	26.7%		26.7%	26.7%	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	0.0	1.0		0.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	1.0	0.0		1.0	0.0			0.0		0.0	0.0	
Total Lost Time (s)	4.0	4.0		4.0	4.0			4.0		4.0	4.0	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	None	C-Max		None	C-Max		None	None		None	None	
Act Effct Green (s)	64.8	61.0		65.0	61.0			13.8		13.8	13.8	
Actuated g/C Ratio	0.72	0.68		0.72	0.68			0.15		0.15	0.15	

Lanes, Volumes, Timings
 41: Fremont Street & North Avenue

01/10/2019



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.06	0.53		0.18	0.44			0.68		0.10	0.05	
Control Delay	3.4	4.7		3.8	5.0			36.5		31.8	28.8	
Queue Delay	0.0	0.0		0.0	0.1			0.0		0.0	0.0	
Total Delay	3.4	4.7		3.8	5.1			36.5		31.8	28.8	
LOS	A	A		A	A			D		C	C	
Approach Delay		4.7			5.0			36.5			30.3	
Approach LOS		A			A			D			C	
Queue Length 50th (ft)	1	53		3	59			56		8	7	
Queue Length 95th (ft)	m3	m109		m11	m110			114		24	22	
Internal Link Dist (ft)		454			347			251			23	
Turn Bay Length (ft)	90			75								
Base Capacity (vph)	350	2167		307	2311			321		209	416	
Starvation Cap Reductn	0	40		0	403			0		0	0	
Spillback Cap Reductn	0	14		0	0			0		0	0	
Storage Cap Reductn	0	0		0	0			0		0	0	
Reduced v/c Ratio	0.06	0.54		0.18	0.53			0.50		0.07	0.04	

Intersection Summary

Area Type: Other
 Cycle Length: 90
 Actuated Cycle Length: 90
 Offset: 52 (58%), 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: 7.3
 Intersection Capacity Utilization 69.7%
 Analysis Period (min) 15
 Intersection LOS: A
 ICU Level of Service C

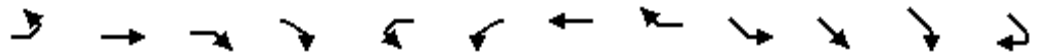
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 41: Fremont Street & North Avenue



Lanes, Volumes, Timings
42: Dayton Street & Clybourn Avenue & North Avenue

01/10/2019



Lane Group	EBL	EBT	EBR	EBR2	WBL2	WBL	WBT	WBR	SEL	SET	SER	SER2
Lane Configurations												
Traffic Volume (vph)	27	789	300	19	16	5	775	159	185	397	24	28
Future Volume (vph)	27	789	300	19	16	5	775	159	185	397	24	28
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	10	12	12	12	9	10	12	10	10	10	10
Grade (%)		0%					0%			0%		
Storage Length (ft)	70		0				100	0	135		0	
Storage Lanes	1		0				1	0	2		0	
Taper Length (ft)	60						60		85			
Lane Util. Factor	1.00	0.95	0.95	0.95	0.95	0.91	0.91	0.95	1.00	0.95	0.95	0.95
Ped Bike Factor	0.93	0.90					0.97		0.98	0.95		
Frt		0.957					0.975			0.983		
Flt Protected	0.950					0.950			0.950			
Satd. Flow (prot)	1685	2832	0	0	0	1431	2983	0	1685	2896	0	0
Flt Permitted	0.237					0.106	0.955		0.280			
Satd. Flow (perm)	390	2832	0	0	0	160	2849	0	487	2896	0	0
Right Turn on Red				No				No				No
Satd. Flow (RTOR)												
Link Speed (mph)		30					30			30		
Link Distance (ft)		427					312			352		
Travel Time (s)		9.7					7.1			8.0		
Confl. Peds. (#/hr)	349		69	255	69	255		349	35		255	192
Confl. Bikes (#/hr)											26	26
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
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	1%	1%	0%	0%	0%	2%	1%	0%	2%	0%	0%
Bus Blockages (#/hr)	0	8	0	0	0	8	0	0	0	0	0	0
Parking (#/hr)										7		
Mid-Block Traffic (%)		0%								0%		
Shared Lane Traffic (%)						10%						
Lane Group Flow (vph)	28	1167	0	0	0	21	984	0	195	472	0	0
Turn Type	Perm	NA			custom	custom	NA		pm+pt	NA		
Protected Phases		4			3	3	3 8		1	6		
Permitted Phases	4				8	8			6			
Detector Phase	4	4			3	3	3 8		1	6		
Switch Phase												
Minimum Initial (s)	5.0	5.0			5.0	5.0			5.0	5.0		
Minimum Split (s)	25.0	25.0			8.0	8.0			9.5	22.5		
Total Split (s)	48.0	48.0			8.0	8.0			10.0	24.0		
Total Split (%)	53.3%	53.3%			8.9%	8.9%			11.1%	26.7%		
Yellow Time (s)	3.0	3.0			3.0	3.0			3.0	2.0		
All-Red Time (s)	4.0	4.0			0.0	0.0			1.0	0.0		
Lost Time Adjust (s)	-3.0	-3.0					1.0		0.0	2.0		
Total Lost Time (s)	4.0	4.0					4.0		4.0	4.0		
Lead/Lag	Lag	Lag			Lead	Lead			Lag	Lead		
Lead-Lag Optimize?	Yes	Yes			Yes	Yes			Yes	Yes		
Recall Mode	None	None			None	None			None	C-Max		
Act Effct Green (s)	43.1	43.1					51.1	51.1	26.9	20.9		
Actuated g/C Ratio	0.48	0.48					0.57	0.57	0.30	0.23		

Lanes, Volumes, Timings

42: Dayton Street & Clybourn Avenue & North Avenue

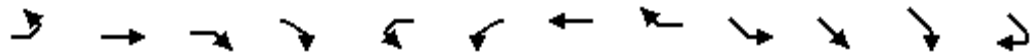
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Lane Group	NWL2	NWL	NWT	NWR	Ø8
Lane Configurations					
Traffic Volume (vph)	5	223	491	15	
Future Volume (vph)	5	223	491	15	
Ideal Flow (vphpl)	1900	1900	1900	1900	
Lane Width (ft)	10	10	10	10	
Grade (%)			0%		
Storage Length (ft)		200		0	
Storage Lanes		1		0	
Taper Length (ft)		85			
Lane Util. Factor	0.95	1.00	0.95	0.95	
Ped Bike Factor		0.84	1.00		
Frt			0.995		
Flt Protected		0.950			
Satd. Flow (prot)	0	1652	3139	0	
Flt Permitted		0.333			
Satd. Flow (perm)	0	489	3139	0	
Right Turn on Red				No	
Satd. Flow (RTOR)					
Link Speed (mph)			30		
Link Distance (ft)			796		
Travel Time (s)			18.1		
Confl. Peds. (#/hr)	255	192		35	
Confl. Bikes (#/hr)				9	
Peak Hour Factor	0.95	0.95	0.95	0.95	
Growth Factor	100%	100%	100%	100%	
Heavy Vehicles (%)	0%	2%	1%	0%	
Bus Blockages (#/hr)	0	0	0	0	
Parking (#/hr)			1		
Mid-Block Traffic (%)			0%		
Shared Lane Traffic (%)					
Lane Group Flow (vph)	0	240	533	0	
Turn Type	Perm	pm+pt	NA		
Protected Phases		5	2	8	
Permitted Phases	2	2			
Detector Phase	2	5	2		
Switch Phase					
Minimum Initial (s)	5.0	5.0	5.0	5.0	
Minimum Split (s)	22.5	9.5	22.5	25.0	
Total Split (s)	24.0	10.0	24.0	56.0	
Total Split (%)	26.7%	11.1%	26.7%	62%	
Yellow Time (s)	2.0	3.0	2.0	3.0	
All-Red Time (s)	0.0	1.0	0.0	4.0	
Lost Time Adjust (s)		0.0	2.0		
Total Lost Time (s)		4.0	4.0		
Lead/Lag	Lead	Lag	Lead		
Lead-Lag Optimize?	Yes	Yes	Yes		
Recall Mode	C-Max	None	C-Max	None	
Act Effct Green (s)		26.9	20.9		
Actuated g/C Ratio		0.30	0.23		

Lanes, Volumes, Timings
 42: Dayton Street & Clybourn Avenue & North Avenue

01/10/2019

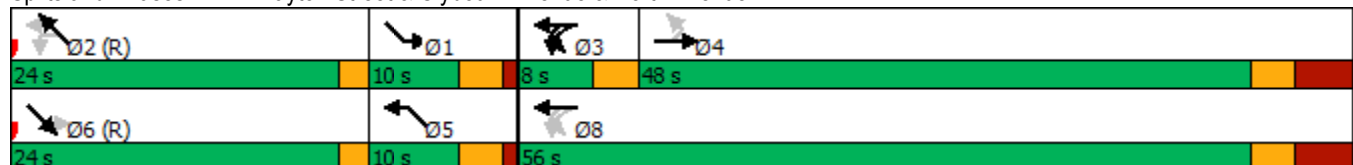


Lane Group	EBL	EBT	EBR	EBR2	WBL2	WBL	WBT	WBR	SEL	SET	SER	SER2
v/c Ratio	0.15	0.86				0.14	0.61		0.87	0.70		
Control Delay	14.1	21.6				3.9	4.0		56.7	46.6		
Queue Delay	0.0	0.0				0.0	0.0		0.0	0.0		
Total Delay	14.1	21.6				3.9	4.0		56.7	46.6		
LOS	B	C				A	A		E	D		
Approach Delay		21.4					4.0			49.5		
Approach LOS		C					A			D		
Queue Length 50th (ft)	7	183				2	46		109	148		
Queue Length 95th (ft)	m10	251				m2	52		m107	m143		
Internal Link Dist (ft)		347					232			272		
Turn Bay Length (ft)	70					100			135			
Base Capacity (vph)	190	1384				147	1652		225	671		
Starvation Cap Reductn	0	0				0	2		0	0		
Spillback Cap Reductn	0	0				0	0		0	0		
Storage Cap Reductn	0	0				0	0		0	0		
Reduced v/c Ratio	0.15	0.84				0.14	0.60		0.87	0.70		

Intersection Summary

Area Type: Other
 Cycle Length: 90
 Actuated Cycle Length: 90
 Offset: 20 (22%), Referenced to phase 2:NWTL and 6:SETL, Start of Green
 Natural Cycle: 90
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 1.08
 Intersection Signal Delay: 30.7
 Intersection LOS: C
 Intersection Capacity Utilization 72.0%
 ICU Level of Service C
 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: 42: Dayton Street & Clybourn Avenue & North Avenue



Lanes, Volumes, Timings
 42: Dayton Street & Clybourn Avenue & North Avenue

01/10/2019



Lane Group	NWL2	NWL	NWT	NWR	Ø8
v/c Ratio		1.08	0.73		
Control Delay		117.2	39.3		
Queue Delay		0.0	0.0		
Total Delay		117.2	39.3		
LOS		F	D		
Approach Delay			63.5		
Approach LOS			E		
Queue Length 50th (ft)		~119	150		
Queue Length 95th (ft)		#276	209		
Internal Link Dist (ft)			716		
Turn Bay Length (ft)		200			
Base Capacity (vph)		223	728		
Starvation Cap Reductn		0	0		
Spillback Cap Reductn		0	0		
Storage Cap Reductn		0	0		
Reduced v/c Ratio		1.08	0.73		
Intersection Summary					

Lanes, Volumes, Timings
43: Halsted Street & North Avenue

01/10/2019



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	106	860	20	89	821	71	26	412	119	74	297	111
Future Volume (vph)	106	860	20	89	821	71	26	412	119	74	297	111
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	9	10	12	9	10	12	9	10	12	9	10	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	70		0	75		0	75		0	85		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	60			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.97	0.99		0.94	0.99		0.92	0.97		0.97	0.93	
Frt		0.997			0.988			0.966			0.959	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1608	3252	0	1593	3177	0	1624	1623	0	1608	1359	0
Flt Permitted	0.130			0.137			0.140			0.145		
Satd. Flow (perm)	214	3252	0	217	3177	0	219	1623	0	238	1359	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		3			12			16			25	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		312			1345			205			413	
Travel Time (s)		7.1			30.6			4.7			9.4	
Confl. Peds. (#/hr)	102		204	204		102	316		118	118		316
Confl. Bikes (#/hr)												10
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
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	1%	1%	0%	2%	2%	0%	0%	3%	1%	1%	1%	0%
Bus Blockages (#/hr)	0	8	0	0	8	0	0	0	0	0	0	0
Parking (#/hr)												7
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	112	926	0	94	939	0	27	559	0	78	430	0
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		custom	NA	
Protected Phases	7	4		3	8			2		1	16	
Permitted Phases	4			8			2			6		
Detector Phase	7	4		3	8		2	2		1	16	
Switch Phase												
Minimum Initial (s)	5.0	24.0		5.0	24.0		15.0	15.0		5.0		
Minimum Split (s)	9.0	39.0		8.0	39.0		31.0	31.0		8.0		
Total Split (s)	11.0	39.0		11.0	39.0		31.0	31.0		9.0		
Total Split (%)	12.2%	43.3%		12.2%	43.3%		34.4%	34.4%		10.0%		
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0		
All-Red Time (s)	0.0	2.0		0.0	2.0		1.0	1.0		0.0		
Lost Time Adjust (s)	1.0	-1.0		1.0	-1.0		0.0	0.0		1.0		
Total Lost Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0		
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Recall Mode	None	None		None	None		C-Max	C-Max		None		
Act Effct Green (s)	38.4	32.9		38.2	32.8		29.2	29.2		36.5	40.5	
Actuated g/C Ratio	0.43	0.37		0.42	0.36		0.32	0.32		0.41	0.45	

Lanes, Volumes, Timings
 43: Halsted Street & North Avenue

01/10/2019

Lane Group	Ø6
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Grade (%)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Confl. Bikes (#/hr)	
Peak Hour Factor	
Growth Factor	
Heavy Vehicles (%)	
Bus Blockages (#/hr)	
Parking (#/hr)	
Mid-Block Traffic (%)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	6
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	15.0
Minimum Split (s)	31.0
Total Split (s)	31.0
Total Split (%)	34%
Yellow Time (s)	3.0
All-Red Time (s)	1.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Recall Mode	C-Max
Act Effct Green (s)	
Actuated g/C Ratio	

Lanes, Volumes, Timings
43: Halsted Street & North Avenue

01/10/2019

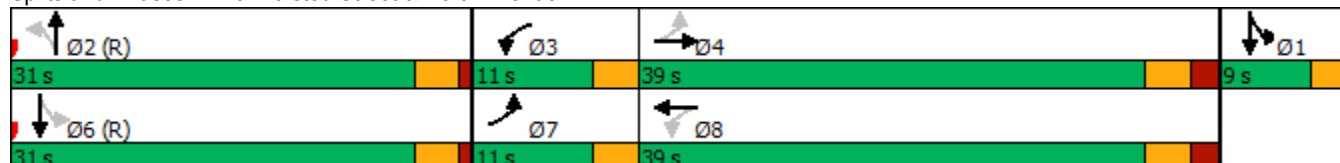


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.58	0.78		0.49	0.81		0.39	1.04		0.38	0.69	
Control Delay	25.9	28.9		21.3	31.4		44.4	82.3		22.7	27.7	
Queue Delay	0.0	3.3		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	25.9	32.2		21.3	31.4		44.4	82.3		22.7	27.7	
LOS	C	C		C	C		D	F		C	C	
Approach Delay		31.5			30.5			80.5			26.9	
Approach LOS		C			C			F			C	
Queue Length 50th (ft)	30	138		27	236		12	~365		27	195	
Queue Length 95th (ft)	m30	m141		52	311		#48	#568		56	#352	
Internal Link Dist (ft)		232			1265			125			333	
Turn Bay Length (ft)	70			75			75			85		
Base Capacity (vph)	199	1266		199	1242		70	537		207	624	
Starvation Cap Reductn	0	240		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.56	0.90		0.47	0.76		0.39	1.04		0.38	0.69	

Intersection Summary

Area Type: Other
 Cycle Length: 90
 Actuated Cycle Length: 90
 Offset: 22 (24%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
 Natural Cycle: 90
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 1.04
 Intersection Signal Delay: 39.5
 Intersection LOS: D
 Intersection Capacity Utilization 84.7%
 ICU Level of Service E
 Analysis Period (min) 15
 ~ Volume exceeds capacity, queue is theoretically infinite.
 Queue shown is maximum after two cycles.
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 43: Halsted Street & North Avenue



Lane Group	Ø6
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	
Intersection Summary	

Lanes, Volumes, Timings
44: Sheffield Ave & Clybourn Avenue & Willow Ave

01/10/2019



Lane Group	EBL2	EBL	EBT	EBR	EBR2	WBL2	WBL	WBT	WBR	WBR2	NBL2	NBL
Lane Configurations												
Traffic Volume (vph)	43	46	143	29	3	4	13	88	104	13	5	117
Future Volume (vph)	43	46	143	29	3	4	13	88	104	13	5	117
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	10	12	12	12	12	10	12	12	12	10	10
Grade (%)			0%					0%				
Storage Length (ft)		30		0			25		0			25
Storage Lanes		1		0			1		0			1
Taper Length (ft)		25					25					25
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.77	0.96				0.89	0.78				0.84
Frt			0.972					0.915				
Flt Protected		0.950					0.950					0.950
Satd. Flow (prot)	0	1652	1732	0	0	0	1652	1333	0	0	0	1652
Flt Permitted		0.422					0.490					0.512
Satd. Flow (perm)	0	567	1732	0	0	0	760	1333	0	0	0	746
Right Turn on Red					Yes					No		
Satd. Flow (RTOR)			1									
Link Speed (mph)			30					30				
Link Distance (ft)			420					627				
Travel Time (s)			9.5					14.3				
Confl. Peds. (#/hr)	61	79		83			60		61	79	61	61
Confl. Bikes (#/hr)												
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
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)			0%					0%				
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	93	185	0	0	0	18	216	0	0	0	128
Turn Type	Perm	Perm	NA			Perm	Perm	NA			Perm	Perm
Protected Phases			4					4				
Permitted Phases	4	4				4	4				8	8
Detector Phase	4	4	4			4	4	4			8	8
Switch Phase												
Minimum Initial (s)	10.0	10.0	10.0			10.0	10.0	10.0			5.0	5.0
Minimum Split (s)	22.0	22.0	22.0			22.0	22.0	22.0			28.0	28.0
Total Split (s)	22.0	22.0	22.0			22.0	22.0	22.0			28.0	28.0
Total Split (%)	24.4%	24.4%	24.4%			24.4%	24.4%	24.4%			31.1%	31.1%
Yellow Time (s)	3.0	3.0	3.0			3.0	3.0	3.0			3.0	3.0
All-Red Time (s)	2.0	2.0	2.0			2.0	2.0	2.0			2.0	2.0
Lost Time Adjust (s)		-1.0	-1.0				-1.0	-1.0				-1.0
Total Lost Time (s)		4.0	4.0				4.0	4.0				4.0
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	Max	Max	Max			Max	Max	Max			Max	Max
Act Effct Green (s)		18.0	18.0				18.0	18.0				24.0
Actuated g/C Ratio		0.20	0.20				0.20	0.20				0.27

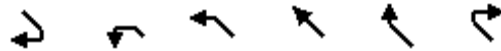
Lanes, Volumes, Timings
44: Sheffield Ave & Clybourn Avenue & Willow Ave

01/10/2019

	↑	↗	↖	↘	↙	↓	↙	↘	↗	↘	↙	↘
Lane Group	NBT	NBR	NBR2	SBL2	SBL	SBT	SBR	SBR2	SEL2	SEL	SET	SER
Lane Configurations	↑				↖	↑				↘	↑	
Traffic Volume (vph)	342	54	2	25	55	160	21	14	17	59	543	106
Future Volume (vph)	342	54	2	25	55	160	21	14	17	59	543	106
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	10	10	12	12	12	11	11	12	12
Grade (%)	0%					0%						0%
Storage Length (ft)		0			25		0			95		0
Storage Lanes		0			1		0			1		0
Taper Length (ft)					25					80		
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	0.94				0.88	0.95				0.95	0.96	
Frt	0.979					0.973					0.969	
Flt Protected					0.950					0.950		
Satd. Flow (prot)	1721	0	0	0	1652	1728	0	0	0	1711	1728	0
Flt Permitted					0.172					0.133		
Satd. Flow (perm)	1721	0	0	0	263	1728	0	0	0	227	1728	0
Right Turn on Red			No					No				
Satd. Flow (RTOR)												
Link Speed (mph)	30					30					30	
Link Distance (ft)	592					588					626	
Travel Time (s)	13.5					13.4					14.2	
Confl. Peds. (#/hr)		106	83	106	63		61	61	79	106		60
Confl. Bikes (#/hr)		10	10				2	2				10
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
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)	0%					0%						0%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	419	0	0	0	84	205	0	0	0	80	721	0
Turn Type	NA			Perm	Perm	NA			pm+pt	pm+pt	NA	
Protected Phases	8					8			10	10	6 10	
Permitted Phases				8	8				6 10	6 10		
Detector Phase	8			8	8	8			10	10	6 10	
Switch Phase												
Minimum Initial (s)	5.0			5.0	5.0	5.0			1.0	1.0		
Minimum Split (s)	28.0			28.0	28.0	28.0			4.0	4.0		
Total Split (s)	28.0			28.0	28.0	28.0			6.0	6.0		
Total Split (%)	31.1%			31.1%	31.1%	31.1%			6.7%	6.7%		
Yellow Time (s)	3.0			3.0	3.0	3.0			2.0	2.0		
All-Red Time (s)	2.0			2.0	2.0	2.0			1.0	1.0		
Lost Time Adjust (s)	-1.0				-1.0	-1.0				1.0		
Total Lost Time (s)	4.0				4.0	4.0				4.0		
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	Max			Max	Max	Max			Max	Max		
Act Effect Green (s)	24.0				24.0	24.0				32.0	36.0	
Actuated g/C Ratio	0.27				0.27	0.27				0.36	0.40	

Lanes, Volumes, Timings
 44: Sheffield Ave & Clybourn Avenue & Willow Ave

01/10/2019



Lane Group	SER2	NWL2	NWL	NWT	NWR	NWR2	Ø6
Lane Configurations							
Traffic Volume (vph)	35	13	17	558	83	6	
Future Volume (vph)	35	13	17	558	83	6	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	12	11	11	12	12	12	
Grade (%)				0%			
Storage Length (ft)			125		0		
Storage Lanes			1		0		
Taper Length (ft)			90				
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	
Ped Bike Factor			0.97	0.94			
Frt				0.979			
Flt Protected			0.950				
Satd. Flow (prot)	0	0	1711	1719	0	0	
Flt Permitted			0.133				
Satd. Flow (perm)	0	0	232	1719	0	0	
Right Turn on Red	No					No	
Satd. Flow (RTOR)							
Link Speed (mph)				30			
Link Distance (ft)				1054			
Travel Time (s)				24.0			
Confl. Peds. (#/hr)	61	60	61		79	106	
Confl. Bikes (#/hr)	10				83	83	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	
Growth Factor	100%	100%	100%	100%	100%	100%	
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	
Bus Blockages (#/hr)	0	0	0	0	0	0	
Parking (#/hr)							
Mid-Block Traffic (%)				0%			
Shared Lane Traffic (%)							
Lane Group Flow (vph)	0	0	32	680	0	0	
Turn Type		Perm	Perm	NA			
Protected Phases				2		6	
Permitted Phases		2	2				
Detector Phase		2	2	2			
Switch Phase							
Minimum Initial (s)		14.0	14.0	14.0		14.0	
Minimum Split (s)		34.0	34.0	34.0		34.0	
Total Split (s)		34.0	34.0	34.0		34.0	
Total Split (%)		37.8%	37.8%	37.8%		38%	
Yellow Time (s)		2.0	2.0	2.0		2.0	
All-Red Time (s)		1.0	1.0	1.0		1.0	
Lost Time Adjust (s)			1.0	1.0			
Total Lost Time (s)			4.0	4.0			
Lead/Lag							
Lead-Lag Optimize?							
Recall Mode		Max	Max	Max		Max	
Act Effect Green (s)			30.0	30.0			
Actuated g/C Ratio			0.33	0.33			

Lanes, Volumes, Timings
 44: Sheffield Ave & Clybourn Avenue & Willow Ave

01/10/2019

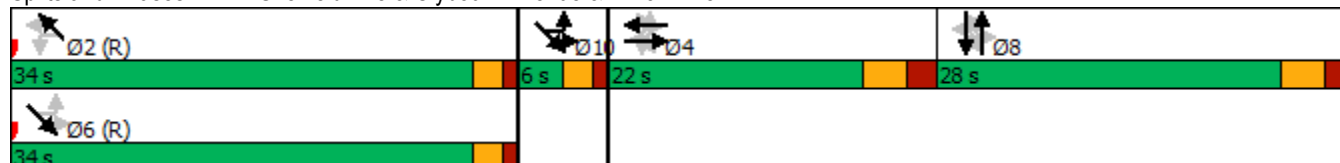


Lane Group	EBL2	EBL	EBT	EBR	EBR2	WBL2	WBL	WBT	WBR	WBR2	NBL2	NBL
v/c Ratio		0.82	0.53				0.12	0.81				0.65
Control Delay		85.3	38.5				31.9	59.2				43.8
Queue Delay		0.0	0.0				0.0	0.0				0.0
Total Delay		85.3	38.5				31.9	59.2				43.8
LOS		F	D				C	E				D
Approach Delay			54.2					57.1				
Approach LOS			D					E				
Queue Length 50th (ft)		51	94				9	118				65
Queue Length 95th (ft)		#140	162				28	#238				m#133
Internal Link Dist (ft)			340					547				
Turn Bay Length (ft)		30					25					25
Base Capacity (vph)		113	347				152	266				198
Starvation Cap Reductn		0	0				0	0				0
Spillback Cap Reductn		0	0				0	0				0
Storage Cap Reductn		0	0				0	0				0
Reduced v/c Ratio		0.82	0.53				0.12	0.81				0.65

Intersection Summary













Area Type: Other
 Cycle Length: 90
 Actuated Cycle Length: 90
 Offset: 17 (19%), Referenced to phase 2:NWTL and 6:SETL, Start of Green
 Natural Cycle: 100
 Control Type: Pretimed
 Maximum v/c Ratio: 1.20
 Intersection Signal Delay: 82.6
 Intersection LOS: F
 Intersection Capacity Utilization 119.6%
 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: 44: Sheffield Ave & Clybourn Avenue & Willow Ave



Lanes, Volumes, Timings
 44: Sheffield Ave & Clybourn Avenue & Willow Ave

01/10/2019

												
Lane Group	NBT	NBR	NBR2	SBL2	SBL	SBT	SBR	SBR2	SEL2	SEL	SET	SER
v/c Ratio	0.91				1.20	0.45				0.71	1.04	
Control Delay	56.1				206.0	31.2				62.1	74.6	
Queue Delay	0.0				0.0	0.0				0.0	0.0	
Total Delay	56.1				206.0	31.2				62.1	74.6	
LOS	E				F	C				E	E	
Approach Delay	53.3					82.0					73.4	
Approach LOS	D					F					E	
Queue Length 50th (ft)	231				~59	97				28	~449	
Queue Length 95th (ft)	m#408				#151	163				#66	#663	
Internal Link Dist (ft)	512					508						546
Turn Bay Length (ft)					25					95		
Base Capacity (vph)	458				70	460				113	691	
Starvation Cap Reductn	0				0	0				0	0	
Spillback Cap Reductn	0				0	0				0	0	
Storage Cap Reductn	0				0	0				0	0	
Reduced v/c Ratio	0.91				1.20	0.45				0.71	1.04	
Intersection Summary												

Lanes, Volumes, Timings
 44: Sheffield Ave & Clybourn Avenue & Willow Ave

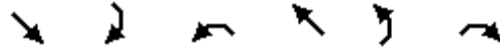
01/10/2019



Lane Group	SER2	NWL2	NWL	NWT	NWR	NWR2	Ø6
v/c Ratio			0.42	1.19			
Control Delay			55.2	139.2			
Queue Delay			0.0	0.0			
Total Delay			55.2	139.2			
LOS			E	F			
Approach Delay				135.4			
Approach LOS				F			
Queue Length 50th (ft)			17	~487			
Queue Length 95th (ft)			m26	#703			
Internal Link Dist (ft)				974			
Turn Bay Length (ft)			125				
Base Capacity (vph)			77	573			
Starvation Cap Reductn			0	0			
Spillback Cap Reductn			0	0			
Storage Cap Reductn			0	0			
Reduced v/c Ratio			0.42	1.19			
Intersection Summary							

Lanes, Volumes, Timings
145: Wisconsin Street & Clybourn Avenue

01/10/2019



Lane Group	SET	SER	NWL	NWT	NEL	NER
Lane Configurations						
Traffic Volume (vph)	682	105	88	654	82	98
Future Volume (vph)	682	105	88	654	82	98
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%			0%	0%	
Storage Length (ft)		0	90		0	0
Storage Lanes		0	1		1	0
Taper Length (ft)			75		0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.982				0.926	
Flt Protected			0.950		0.978	
Satd. Flow (prot)	1646	0	1593	1676	1518	0
Flt Permitted			0.224		0.978	
Satd. Flow (perm)	1646	0	376	1676	1518	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	21				66	
Link Speed (mph)	30			30	30	
Link Distance (ft)	1136			626	245	
Travel Time (s)	25.8			14.2	5.6	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)	0	0	0	0	0	0
Mid-Block Traffic (%)	0%			0%	0%	
Shared Lane Traffic (%)						
Lane Group Flow (vph)	855	0	96	711	196	0
Turn Type	NA		Perm	NA	Prot	
Protected Phases	6			2	4	
Permitted Phases			2			
Detector Phase	6		2	2	4	
Switch Phase						
Minimum Initial (s)	5.0		5.0	5.0	5.0	
Minimum Split (s)	22.5		22.5	22.5	22.5	
Total Split (s)	62.0		62.0	62.0	23.0	
Total Split (%)	72.9%		72.9%	72.9%	27.1%	
Yellow Time (s)	3.0		3.0	3.0	3.0	
All-Red Time (s)	1.0		1.0	1.0	1.0	
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	
Total Lost Time (s)	4.0		4.0	4.0	4.0	
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	Max		Max	Max	Max	
Act Effct Green (s)	58.0		58.0	58.0	19.0	
Actuated g/C Ratio	0.68		0.68	0.68	0.22	

Lanes, Volumes, Timings
 145: Wisconsin Street & Clybourn Avenue

01/10/2019



Lane Group	SET	SER	NWL	NWT	NEL	NER
v/c Ratio	0.76		0.38	0.62	0.50	
Control Delay	14.2		10.9	10.4	24.0	
Queue Delay	0.0		0.0	0.5	0.0	
Total Delay	14.2		10.9	10.9	24.0	
LOS	B		B	B	C	
Approach Delay	14.2			10.9	24.0	
Approach LOS	B			B	C	
Queue Length 50th (ft)	252		19	181	59	
Queue Length 95th (ft)	415		51	282	125	
Internal Link Dist (ft)	1056			546	165	
Turn Bay Length (ft)			90			
Base Capacity (vph)	1129		256	1143	390	
Starvation Cap Reductn	0		0	135	0	
Spillback Cap Reductn	0		0	0	0	
Storage Cap Reductn	0		0	0	0	
Reduced v/c Ratio	0.76		0.38	0.71	0.50	

Intersection Summary

Area Type: Other
 Cycle Length: 85
 Actuated Cycle Length: 85
 Offset: 0 (0%), Referenced to phase 2:NWTL and 6:SET, Start of Green
 Natural Cycle: 65
 Control Type: Pretimed
 Maximum v/c Ratio: 0.76
 Intersection Signal Delay: 13.8
 Intersection Capacity Utilization 67.7%
 Analysis Period (min) 15
 Intersection LOS: B
 ICU Level of Service C

Splits and Phases: 145: Wisconsin Street & Clybourn Avenue

Ø2 (R) 62 s	Ø4 23 s
Ø6 (R) 62 s	

Intersection	
Intersection Delay, s/veh	16
Intersection LOS	C

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↘		↑	↗		↖
Traffic Vol, veh/h	270	101	261	332	63	201
Future Vol, veh/h	270	101	261	332	63	201
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles, %	7	1	9	5	0	8
Mvmt Flow	278	104	269	342	65	207
Number of Lanes	1	0	1	1	0	1

Approach	WB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	2
Conflicting Approach Left	NB		WB
Conflicting Lanes Left	2	0	1
Conflicting Approach Right	SB	WB	
Conflicting Lanes Right	1	1	0
HCM Control Delay	19.6	14.6	14.3
HCM LOS	C	B	B

Lane	NBLn1	NBLn2	WBLn1	SBLn1
Vol Left, %	0%	0%	73%	24%
Vol Thru, %	100%	0%	0%	76%
Vol Right, %	0%	100%	27%	0%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	261	332	371	264
LT Vol	0	0	270	63
Through Vol	261	0	0	201
RT Vol	0	332	101	0
Lane Flow Rate	269	342	382	272
Geometry Grp	7	7	2	5
Degree of Util (X)	0.474	0.529	0.645	0.461
Departure Headway (Hd)	6.343	5.562	6.073	6.104
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	568	647	593	588
Service Time	4.1	3.318	4.123	4.165
HCM Lane V/C Ratio	0.474	0.529	0.644	0.463
HCM Control Delay	14.7	14.5	19.6	14.3
HCM Lane LOS	B	B	C	B
HCM 95th-tile Q	2.5	3.1	4.6	2.4

Intersection						
Int Delay, s/veh	3.9					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↖	↗	↖	↗	↗	↖
Traffic Vol, veh/h	113	40	53	268	280	172
Future Vol, veh/h	113	40	53	268	280	172
Conflicting Peds, #/hr	50	50	50	0	0	50
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	100	0	100	-	-	100
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	119	42	56	282	295	181

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	789	395	526	0	-	0
Stage 1	345	-	-	-	-	-
Stage 2	444	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	359	654	1041	-	-	-
Stage 1	717	-	-	-	-	-
Stage 2	646	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	307	593	991	-	-	-
Mov Cap-2 Maneuver	307	-	-	-	-	-
Stage 1	644	-	-	-	-	-
Stage 2	615	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	20.7	1.5	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	991	-	307	593	-	-
HCM Lane V/C Ratio	0.056	-	0.387	0.071	-	-
HCM Control Delay (s)	8.8	-	24	11.5	-	-
HCM Lane LOS	A	-	C	B	-	-
HCM 95th %tile Q(veh)	0.2	-	1.8	0.2	-	-

HCM 6th TWSC
 23: Marcey Street & Cortland Street

12/21/2018

Intersection						
Int Delay, s/veh	4.4					
Movement	EBT	EBR	WBL	WBT	NWL	NWR
Lane Configurations	↑↑			↑	↑	
Traffic Vol, veh/h	647	49	5	486	76	60
Future Vol, veh/h	647	49	5	486	76	60
Conflicting Peds, #/hr	0	26	26	0	0	22
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	93	93	93	93	93	93
Heavy Vehicles, %	2	0	0	2	3	0
Mvmt Flow	696	53	5	523	82	65

Major/Minor	Major1	Major2	Minor1	Minor2	Minor3
Conflicting Flow All	0	0	775	0	1282
Stage 1	-	-	-	-	749
Stage 2	-	-	-	-	533
Critical Hdwy	-	-	4.1	-	6.645
Critical Hdwy Stg 1	-	-	-	-	5.845
Critical Hdwy Stg 2	-	-	-	-	5.445
Follow-up Hdwy	-	-	2.2	-	3.5285
Pot Cap-1 Maneuver	-	-	850	-	168
Stage 1	-	-	-	-	427
Stage 2	-	-	-	-	585
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	829	-	162
Mov Cap-2 Maneuver	-	-	-	-	162
Stage 1	-	-	-	-	413
Stage 2	-	-	-	-	585

Approach	EB	WB	NW
HCM Control Delay, s	0	0.1	42.3
HCM LOS			E

Minor Lane/Major Mvmt	NWLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	236	-	-	829	-
HCM Lane V/C Ratio	0.62	-	-	0.006	-
HCM Control Delay (s)	42.3	-	-	9.4	0
HCM Lane LOS	E	-	-	A	A
HCM 95th %tile Q(veh)	3.7	-	-	0	-

HCM 6th TWSC
27: Elston Avenue & Willow Street

12/21/2018

Intersection						
Int Delay, s/veh	6					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	Y		T		T	T
Traffic Vol, veh/h	58	42	792	59	27	572
Future Vol, veh/h	58	42	792	59	27	572
Conflicting Peds, #/hr	50	50	0	50	50	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	50	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	0	0	2	0	0	2
Mvmt Flow	61	44	834	62	28	602

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	1623	965	0	0	946
Stage 1	915	-	-	-	-
Stage 2	708	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1
Critical Hdwy Stg 1	5.4	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2
Pot Cap-1 Maneuver	114	312	-	-	734
Stage 1	394	-	-	-	-
Stage 2	492	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	99	283	-	-	699
Mov Cap-2 Maneuver	99	-	-	-	-
Stage 1	360	-	-	-	-
Stage 2	468	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	89.3	0	0.5
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	136	699
HCM Lane V/C Ratio	-	-	0.774	0.041
HCM Control Delay (s)	-	-	89.3	10.4
HCM Lane LOS	-	-	F	B
HCM 95th %tile Q(veh)	-	-	4.6	0.1

HCM 6th TWSC
50: Dominick Street & Dickens Avenue

12/21/2018

Intersection						
Int Delay, s/veh	16.3					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↙	↗	↖		↙	↗
Traffic Vol, veh/h	402	186	111	136	59	60
Future Vol, veh/h	402	186	111	136	59	60
Conflicting Peds, #/hr	50	50	0	50	50	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	-	-	100	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	423	196	117	143	62	63

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	476	289	0	0	310
Stage 1	239	-	-	-	-
Stage 2	237	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12
Critical Hdwy Stg 1	5.42	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218
Pot Cap-1 Maneuver	548	750	-	-	1250
Stage 1	801	-	-	-	-
Stage 2	802	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	471	680	-	-	1190
Mov Cap-2 Maneuver	540	-	-	-	-
Stage 1	723	-	-	-	-
Stage 2	764	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	25.6	0	4.1
HCM LOS	D		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	540	680	1190
HCM Lane V/C Ratio	-	-	0.784	0.288	0.052
HCM Control Delay (s)	-	-	31.7	12.4	8.2
HCM Lane LOS	-	-	D	B	A
HCM 95th %tile Q(veh)	-	-	7.3	1.2	0.2

HCM 6th TWSC
 51: Southport Avenue & Dickens Avenue

12/21/2018

Intersection

Int Delay, s/veh 7.3

Movement EBL EBR NBL NBT SBT SBR

Lane Configurations						
Traffic Vol, veh/h	97	284	85	297	167	31
Future Vol, veh/h	97	284	85	297	167	31
Conflicting Peds, #/hr	50	50	50	0	0	50
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	102	299	89	313	176	33

Major/Minor Minor2 Major1 Major2

Conflicting Flow All	784	293	259	0	-	0
Stage 1	243	-	-	-	-	-
Stage 2	541	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	362	746	1306	-	-	-
Stage 1	797	-	-	-	-	-
Stage 2	583	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	299	677	1244	-	-	-
Mov Cap-2 Maneuver	299	-	-	-	-	-
Stage 1	693	-	-	-	-	-
Stage 2	555	-	-	-	-	-

Approach EB NB SB

HCM Control Delay, s	16.7	1.8	0
HCM LOS	C		

Minor Lane/Major Mvmt NBL NBT EBLn1 EBLn2 SBT SBR

Capacity (veh/h)	1244	-	299	677	-	-
HCM Lane V/C Ratio	0.072	-	0.341	0.442	-	-
HCM Control Delay (s)	8.1	0	23.2	14.5	-	-
HCM Lane LOS	A	A	C	B	-	-
HCM 95th %tile Q(veh)	0.2	-	1.5	2.3	-	-