LAKESHORE EAST PARCELS IJKL

Traffic Study

Chicago, Illinois

Updated August 2018

Prepared for:

Lendlease

Kimley»Horn

INTRODUCTION

Kimley-Horn and Associates, Inc. (Kimley-Horn) was retained by Lendlease to perform a traffic impact study for Parcels, I, J, K, and L (referred to simply as Parcel IJKL for the purpose of this study) at Lakeshore East in Chicago, Illinois. The proposed site is located in the northeastern corner of the Lakeshore East development, where the parcels are bound by Wacker Drive and Waterside Drive on the north, Harbor Service Drive on the south, Lake Shore Drive on the east, and Harbor Drive on the west. An aerial view of the study location and the surrounding roadway network is presented in **Exhibit 1**.

The subject development plan includes 1,100 condominium units, 600 apartment units, and up to 30,000 square feet of space for retail and restaurant/bar uses in three buildings (Building I, Building J, and Building K/L). Up to 1,250 parking spaces would be constructed in an on-site garage beneath the upper-level street system for use by all three towers. Vehicular access to the parking garage would be provided at the upper level via Harbor Drive and at the sub level via Harbor Service Drive and Sub-Level Wacker Drive. Also at the upper level, each of the three buildings would be served by a porte cochere for pick-up/drop-off.

Pedestrian accommodations through the subject development will serve as an extension of the existing sidewalk network along Harbor Drive, Waterside Drive, and the north side of The Chandler residential tower (located immediately west of Building I). An elevator in Building I will provide vertical access between the upper-level pedestrian plaza and lookout point planned for the northeastern corner of the site, a restaurant at the intermediate level, and a sub-level connection to Wacker Drive and, ultimately, the nearby Riverwalk. At the southern end of the property, a stairway and universally-accessible ramp will link Harbor Drive at the upper level to the Lakefront Trail. An elevator in Building J will also provide an accessible route from the upper level to the base of this planned stairway and ramp.

This report presents and documents Kimley-Horn's data collection, summarizes the evaluation of traffic conditions on the surrounding roadways, identifies recommendations to address operational impacts, details the potential impact of site-generated traffic on the adjacent roadway network, and offers comments regarding site access and circulation.

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EXHIBIT 1

SITE LOCATION MAP

Existing Conditions

Kimley-Horn conducted field visits and referenced recent studies for the area to collect relevant information pertaining to existing land uses in the surrounding area, the adjacent street system, current traffic volumes and multimodal conditions, lane configurations and traffic controls at nearby intersections, on-street parking and other curbside regulations, transit service, and other key roadway characteristics. This section of the report details information on these existing conditions.

Area Land Uses

As shown in Exhibit 1, Parcel IJKL is located in the northeastern corner of the Lakeshore East development. The site is bound by Wacker Drive and Waterside Drive on the north, Harbor Service Drive on the south, Lake Shore Drive on the east, and Harbor Drive on the west. The surrounding Lakeshore East development and other neighboring properties include a variety of land uses and densities throughout several buildings, including high- and low-rise residential, hotel, office, and commercial retail/restaurant uses.

The properties immediately adjacent to Parcel IJKL in Lakeshore East have been fully developed, including The Parkshore and Harbor Point residential towers to the immediate south (each with direct vehicular and pedestrian access to Harbor Drive). Other adjacent residential buildings include The Chandler and The Regatta (each with vehicular and pedestrian access to Waterside Drive) and The Lancaster, which has vehicular access to Westshore Drive and pedestrian access to both Westshore Drive and Harbor Drive.

Roadway Characteristics

The following information regarding the existing roadway network is documented within the Lakeshore East study area. Unless otherwise noted, all study area roadways are under the jurisdiction of the City of Chicago with an assumed 30 MPH speed limit, per City Ordinance.

It should be noted that construction is currently underway for the Wanda Vista Tower, located at the central north end of Lakeshore East where Wacker Drive meets Field Boulevard. As such, several area roadways were closed or under construction (including Upper Wacker Drive, Sub-Level Wacker Drive, and Sub-Level Field Boulevard) at the time of this study. Descriptions of these roadways are based on information outlined in the previous traffic study for the Wanda Vista Tower.

Upper Randolph Street is an east-west roadway that terminates at Harbor Drive. A bike lane is provided in each direction, extending from Field Drive through Upper Columbus Drive. Along the south side of Upper Randolph Street, the majority of curbside space is used for metered parking; a 15-minute standing zone and spaces reserved for ADA parking are also provided. On the north side of Upper Randolph Street, parking is generally prohibited, with the exception of a 15-minute standing zone (located between Field Boulevard and Columbus Drive) and two cab stands (accommodating three taxis just east of Columbus Drive and three taxis just west of Harbor Drive). CTA bus stops are provided on the northeast corners of the Randolph/Columbus and Randolph/Field intersections. At its signalized T-intersection with Upper Columbus Drive, the east leg of Upper Randolph Street provides a through lane, a shared through/right-turn lane, and two receiving lanes; yet based on field

observations and the presence of a westbound right-turn overlap phase at this location, the east leg functionally operates as though two through lanes and a dedicated right-turn lane are present. The west leg of Upper Randolph Street at Columbus Drive provides an exclusive left-turn lane, two through lanes, and two receiving lanes. A 20 MPH speed limit is posted on Upper Randolph Street west of Columbus Drive.

Upper Wacker Drive is a divided east-west major arterial that generally provides three eastbound lanes and two westbound lanes. To the east of Upper Columbus Drive, Upper Wacker Drive provides ramps to Intermediate Wacker Drive in the eastbound direction and from Intermediate Wacker Drive in the westbound direction, thereby providing access to Lake Shore Drive. Upper Wacker Drive then terminates in a loop approximately 800 feet east of Columbus Drive. Parking is prohibited along the majority of the roadway; however, before the current construction activity commenced, approximately six metered parking spots were provided along the eastern portion of the roadway on the north and south sides of the roadway. Additionally, a taxi stand, accommodating approximately four vehicles is provided just east of Columbus Drive. At its signalized intersection with Upper Columbus Drive, the west leg of Upper Wacker Drive provides a shared U-turn/through lane, a dedicated through lane, and a shared through/right-turn lane, as well as two receiving lanes. The west leg of Upper Wacker Drive at Upper Columbus Drive provides a dedicated left-turn lane, two through lanes, and three receiving lanes.

Upper Columbus Drive is a north-south roadway that terminates at Wacker Drive and generally provides two lanes in each direction with a center median. The east and west sides of the roadway accommodate a variety of curbside activity, including metered parking, taxi stands, fire department use, no parking zones, a designated food truck stand, CTA bus stops, and CTA bus layover parking areas. At its signalized T-intersection with Upper Wacker Drive, the south leg of Upper Columbus Drive provides dual left-turn lanes and dual right-turn lanes with two receiving lanes. At its signalized T-intersection with Randolph Street, Columbus Drive provides a single left-turn lane and a single-right turn lane on the north leg, as well as two receiving lanes.

Harbor Drive is a local roadway located on the upper-level Lakeshore East street system that connects Upper Randolph Street and Waterside Drive, providing access to the subject parcel and several residential buildings on the east side of the Lakeshore East development. One lane is provided in each direction, and parking is prohibited along both sides of the roadway. All-way stop-control is provided at the Harbor Drive intersections with Waterside Drive, the access driveway serving The Parkshore, and the access driveway serving Harbor Point.

Field Boulevard is a north-south local street that runs between Upper Randolph Street and Benton Place and between Sub-Level Wacker Drive and South Water Street. The roadway provides one lane in each direction with parking prohibited on both sides. At its all-way stop-controlled intersections with Upper Randolph Street, South Water Street, and Benton Place, Field Boulevard provides a single approach lane and a single receiving lane.

Benton Place, Westshore Drive, South Water Street, and Park Drive comprise the one-way circular roadway network that surrounds the Lake Shore East Park and supports counterclockwise traffic flow within the Lakeshore East development. These roadways are approximately 21 feet wide, providing a single travel lane and room to bypass curbside activity. Parking is prohibited along Benton

Place and Park Drive, as well as portions of South Water Street and Westshore Drive. On the east side of Westshore Drive north of the Harbor Service Drive, a 30-minute standing zone is posted. On the north side of South Water Street, a 15-minute standing zone is provided east of Field Boulevard and two 15-minute standing zones are provided west of Field Boulevard. Mid-block crosswalks are provided at various locations on these roadways to provide access to the Lake Shore East Park.

Intermediate Randolph Street is an east-west roadway that generally provides two lanes in each direction through the study area. Access to/from Lake Shore Drive is provided via Intermediate Randolph Street. This roadway generally provides two travel lanes through the study area. At its signalized intersection with Intermediate Columbus Drive, the west leg of Intermediate Randolph Street provides an exclusive left-turn lane, one through lane, and one shared through/right-turn lane; an exclusive left-turn lane, two through lanes, and a dedicated right-turn lane are provided on the east leg. Intermediate Randolph Street splits from Upper Randolph Street approximately 700 feet west of Columbus Drive. Parking is prohibited on Intermediate Randolph Street.

Intermediate Columbus Drive is a north-south major arterial roadway generally providing two to three lanes in each direction through the study area and a connection over the Chicago River. Parking is prohibited along both sides of the roadway. At its signalized intersection with Intermediate Randolph Street, the north leg of Intermediate Columbus Drive provides a dedicated left-turn lane, two through lanes (with shared right-turn movement), and two receiving lanes. The south leg of this intersection provides a dedicated left-turn lane, two through lanes, dual right-turn lanes, and three receiving lanes. North of Intermediate Randolph Street, Intermediate Columbus Drive provides a ramp to Sub-Level Randolph Street in the southbound direction and a ramp from Sub-Level Randolph Street in the northbound direction. South of Wacker Drive the roadway reduces from three to two southbound lanes.

Sub-Level Randolph Street is an east-west roadway that provides access to area parking garages and loading docks; access to the Lakeshore East development is provided at its eastern terminus at Sub-Level Harbor Drive. West of Sub-Level Columbus Drive, Sub-Level Randolph Street maintains access to loading docks on the north side the street and access to the Lakefront Busway on the south side of the street. West of Columbus Drive, public parking is generally prohibited. East of Columbus Drive, parking is generally prohibited on the north side of the street (with the exception of one ADA space), and metered parking is provided on the south side of the street. At its all-way stop-controlled intersection with Columbus Drive, the east leg of Sub-Level Randolph Street provides a single approach lane and a single receiving lane. The west leg provides a shared left-turn/through lane, a shared through/right-turn lane, two receiving lanes, and a wide median.

Sub-Level Wacker Drive is an east-west local roadway generally providing two lanes in each direction through the study area and terminating approximately a quarter-mile east of Columbus Drive at the entrance to the Central Auto Pound. Prior to the current construction, all-way stop-control was provided at its intersection with Field Boulevard. Metered parking is provided along the north and south sides of the majority of the roadway. An access ramp up to westbound Intermediate Wacker Drive is provided west of Columbus Drive, and access down from eastbound Wacker Drive is provided indirectly via Wacker Place, South Water Street, and Sub-Level Columbus Drive.

Sub-Level Columbus Drive is a north-south roadway with a single travel lane provided in each direction. Sub-Level Columbus Drive provides access to the parking garages and loading docks for multiple hotels, residential towers, and office buildings located in the site vicinity. Access to the Millennium Park Garage is also provided via Sub-Level Columbus Drive; the parking garage entrance/exit is located on the south leg of the Columbus Drive/Randolph Street intersection. At its intersection with Sub-Level Randolph Street, ramps to/from Intermediate Columbus Drive are provided on the north leg of the intersection, parallel to the single approach lane and single receiving lane for Sub-Level Columbus Drive. Parking is prohibited along Sub-Level Columbus Drive through the majority of the study area.

Sub-Level Harbor Drive is a north-south service road providing access to several parking garages for buildings within and near the Lakeshore East development. Parking spaces reserved for vendors visiting The Parkshore are provided on the east side of Sub-Level Harbor Drive immediately south of Harbor Service Drive. At its intersection with Harbor Service Drive, the north leg of Sub-Level Harbor Drive is gated and provides access to a private parking area. Both approaches of Sub-Level Harbor Drive at Harbor Service Drive provide a single approach lane and a single receiving lane. No stop control is posted at the Sub-Level Harbor Drive/Harbor Service Drive intersection, and so two-way stop control was assumed for the north and south legs based on the configuration of this intersection.

Harbor Service Drive is an east-west service road providing access to parking and the loading docks for The Parkshore. Parking is not permitted along Harbor Service Drive. At its intersection with Sub-Level Harbor Drive, Harbor Service Drive provides a single lane in each direction. Harbor Service Drive is a private street with a public easement that dead-ends just west of Lake Shore Drive.

Non-Motorized Transportation System

Facilities and services accommodating numerous transportation mode choices are available within the vicinity of the Lakeshore East development.

Rail

The following rail transportation options are located within an approximately fifteen- to twenty-minute walk to/from the site:

- CTA State/Lake Station: Access to the CTA Brown, Green, Orange, Pink, Red, and Purple Lines
- CTA Wabash/Randolph Station: Access to the CTA Brown, Green, Orange, Pink, and Purple Lines
- CTA Dearborn/Washington Station: Access to the CTA Blue Line
- Millennium Station: Access to the Metra Electric District (ME) and the Northern Indiana Commuter Transportation District (NICTD) South Shore (SS) Line

Bus

Additionally, the surrounding area is served by multiple CTA bus routes with stops located within a five- to ten-minute walk to/from the site:

- Route 4: Cottage Grove
  - Provides daily service between 95th/St. Lawrence and Columbus/South Water
  - Nearest stop located at Upper Randolph/Columbus
- Route 6: Jackson Park Express
  - Provides daily service between 79th/South Shore to Wacker/Columbus
  - Nearest stops located at Upper Wacker/Columbus and Upper Randolph/Columbus
- Route 20: Madison
  - Provides weekday rush period service between Madison/Austin and Randolph/Columbus Drive
  - Nearest stops located at Upper Wacker/Columbus and Upper Randolph/Columbus
- Route 60: Blue Island/26th
  - Provides daily service between Cicero/24th Place and Harbor/Randolph
  - Nearest stop located at Upper Randolph/Harbor Drive
- Route 124: Navy Pier
  - Provides daily service between Union/Ogilvie Station and Navy Pier
  - Nearest stop located at Intermediate Wacker/Columbus Drive
- Route 134: Stockton/LaSalle Express
  - Provides weekday service between Sheridan/Briar and Adams/Wacker
  - Nearest stop located at Upper Wacker/Columbus Drive
- Route 135: Clarendon/LaSalle Express
  - Provides weekday service between Clarendon/Sunnyside and Adams/Wacker
  - Nearest stop located at Upper Wacker/Columbus Drive
- Route 136: Sheridan/LaSalle Express
  - Provides service between Sheridan/Devon and Adams/Wacker
  - Nearest stop located at Upper Wacker/Columbus Drive

DIVVY

Four DIVVY bike share stations are located within reasonable walking distance of the subject site such that people will likely consider making a shared bike trip. These station locations are outlined below:

- South Water Street/Field Boulevard *(Lower level on the north side of Lake Shore East Park)*
- DuSable Harbor *(near the Lakefront Trail)*
- Upper Randolph Street/Columbus Drive *(in front of the Blue Cross Blue Shield building)*
- Stetson Avenue/South Water Street *(west side of intersection)*

Since taxi and walking trips make up nearly 50 percent of the mode split for trips to work in this area, the bike share system offers increased travel options and convenience for residents and visitors. The

nearby stations are an enticing draw for residents for enhanced mobility and are reasonably expected to facilitate some degree of mode shift from walking and taxi to biking for those traveling to/from other destinations in the Loop, along the lakefront, or north of the Chicago River.

Pedestrian/Bike Connections

The following connections to local pedestrian and bicycle facilities are currently provided and/or planned within the vicinity:

- Riverwalk - Access will be provided via Sub-Level Wacker/Field Boulevard following completion of the intersection's reconstruction as part of the Wanda Vista Tower development
- Lakefront Trail - Access is provided via the Riverwalk (Sub-Level Wacker/Field Boulevard) and a walkway linking the east end of Harbor Service Drive under Lake Shore Drive

Existing Traffic Volumes

In order to determine current levels of auto, pedestrian, and bicycle activity within the study area, weekday peak period intersection traffic counts were performed in March 2017 at the following intersections:

- Upper Randolph Street / Upper Columbus Drive
- Upper Randolph Street / Field Boulevard
- Harbor Drive / Harbor Point Access
- Harbor Drive / The Parkshore Access
- Harbor Drive / Waterside Drive
- Intermediate Randolph Street / Intermediate Columbus Drive
- Field Boulevard / Benton Place
- Westshore Drive / Harbor Service Drive
- Sub-Level Randolph Street / Sub-Level Columbus Drive
- Harbor Service Drive / Sub-Level Harbor Drive

The traffic counts were performed during the weekday morning (7:00-9:00 AM) and evening (4:00-6:00 PM) peak periods, coinciding with the peak hours of traffic activity on the adjacent roadways. The resulting traffic counts indicate that the heaviest traveled hours occur from 8:00 to 9:00 AM in the morning and from 4:45 to 5:45 PM in the evening. Existing peak hour vehicle traffic volumes are presented in **Exhibit 2**. Corresponding pedestrian and bicycle counts are illustrated in **Exhibit 3**.

It should be noted that the intersections of Sub-Level Randolph Street/Sub-Level Columbus Drive and Harbor Drive/The Parkshore Access have atypical configurations. At Sub-Level Randolph/Columbus, the north leg of the intersection includes both Sub-Level Columbus Drive and the ramps to/from Intermediate Columbus Drive. Similarly, the east leg of the Harbor Drive/The Parkshore Access intersection includes both a ramp to/from the parking garage and a driveway to the building's main pedestrian entrance. Due to the relatively low volume of traffic using these parallel approaches at each intersection, the volumes on the approaches in question were combined into a single approach for the purposes of analysis.

LEGEND

- **xx** Weekday AM Peak Hour (8:00 - 9:00am)
- **(xx)** Weekday PM Peak Hour (4:45 - 5:45pm)
- Existing Signalized Intersection
- Existing Stop Sign
- \- Less than Five Vehicles
- Upper-Level Roadway
- Intermediate-Level Roadway
- Sub-Level Roadway
- * *Referenced from another study due to existing construction at this location.*

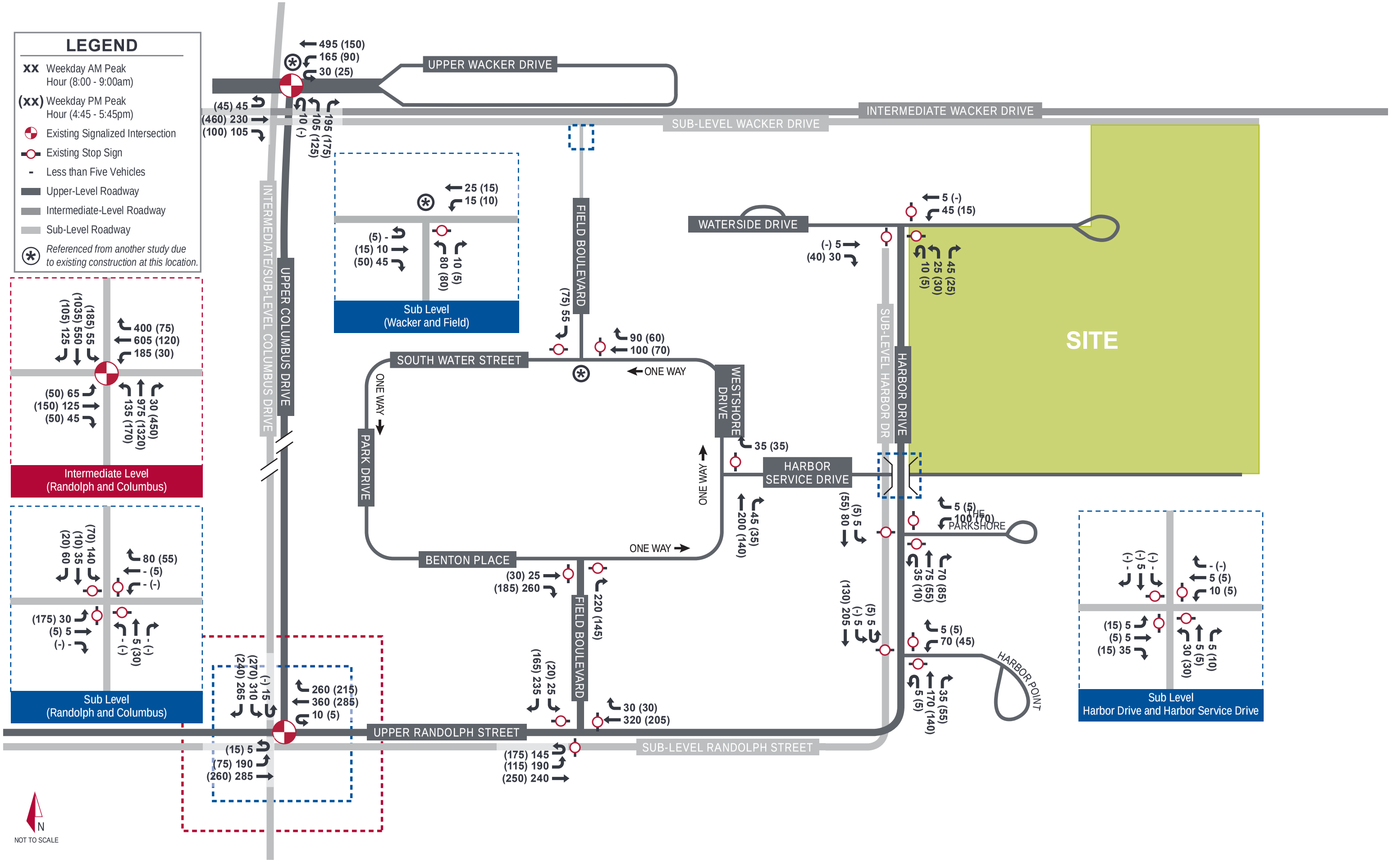

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EXHIBIT 2 - **EXISTING TRAFFIC VOLUMES**

LEGEND

- XX — Weekday AM Peak Hour (8:00 - 9:00am)
- (XX) — Weekday PM Peak Hour (4:45 - 5:45pm)
- Existing Signalized Intersection
- Existing Stop Sign
- \- Less than Five Vehicles
- Upper-Level Roadway
- Intermediate-Level Roadway
- Sub-Level Roadway
- (*) *Referenced from another study due to existing construction at this location.*

UPPER WACKER DRIVE
INTERMEDIATE WACKER DRIVE
SUB-LEVEL WACKER DRIVE
INTERMEDIATE/SUB-LEVEL COLUMBUS DRIVE
UPPER COLUMBUS DRIVE
FIELD BOULEVARD
WATERSIDE DRIVE
SOUTH WATER STREET
PARK DRIVE
WESTSHORE DRIVE
SUB-LEVEL HARBOR DR
HARBOR DRIVE
HARBOR SERVICE DRIVE
BENTON PLACE
THE PARKSHORE
HARBOR POINT
UPPER RANDOLPH STREET
SUB-LEVEL RANDOLPH STREET
SITE

Sub Level (Wacker and Field)

Intermediate Level (Randolph and Columbus)

Sub Level (Randolph and Columbus)

Sub Level Harbor Drive and Harbor Service Drive

N
NOT TO SCALE

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EXHIBIT 3 - **EXISTING PEDESTRIAN AND BICYCLE VOLUMES**

FUTURE CONDITIONS

This section of the report outlines the proposed site plan, summarizes site-specific traffic characteristics, and develops future traffic projections for analysis.

Development Characteristics & Site Access

Exhibit 4 illustrates the proposed site plan with the configuration of the three proposed buildings. The proposed development plan for Parcel IJKL is detailed below.

- Residential
  - Building I — 600 condominium units
  - Building J — 500 condominium units
  - Building K/L — 600 apartment units
- Dining — 10,000 square feet of restaurant/bar space; 10,000 square feet of café space
- Retail — 10,000 square feet of retail

As part of the development, a shared garage with up to 1,250 parking spaces is proposed. Access to the garage would be provided to the site via one upper-level driveway on Harbor Drive south of Waterside Drive, and two additional driveways would be provided at the sub-level on Harbor Service Drive east of Sub-Level Harbor Drive and on Sub-Level Wacker Drive east of Field Boulevard. A dedicated bike room is also planned for each building, with convenient access to the Riverwalk (for Building I) or to Harbor Service Drive (for Buildings J and K/L) in order to connect to the Lakefront Trail.

To support upper-level vehicular circulation within Parcel IJKL, a one-way internal roadway is proposed to extend from Harbor Drive through the site to Waterside Drive. This roadway will provide access to the porte cocheres located at the main pedestrian entrances for Building I and Building J. The porte cochere for Building K/L is planned via Waterside Drive just east of Harbor Drive. **Exhibits 5, 6, and 7** illustrate the multilevel access routes to and from the site access driveways for the upper, intermediate, and sub-level street systems, respectively.

For the purposes of this report, each of the proposed vehicular access driveways were labeled as follows:

- Driveway A — Internal roadway that extends from Harbor Drive to Waterside Drive, providing upper-level access to lobbies of Buildings I and J
- Driveway B — Upper-level parking garage access to via Driveway A on the south side of Building K/L
- Driveway C — Sub-level parking garage access to Harbor Service Drive
- Driveway D — Sub-level parking garage access to Sub-Level Wacker Drive

CHICAGO RIVER

LAKE MICHIGAN

N
NOT TO SCALE

COLUMBUS PLAZA

ILLINOIS CENTER
303 EAST WACKER DRIVE

SWISSOTEL

COAST

FUTURE GEMS UPPER SCHOOL

VISTA +1,140'

THE REGATTA

THE CHANDLER

sub-level

D

BUILDING I

GEMS LOWER SCHOOL

THE TIDES

THE SHOREHAM

FUTURE DEVELOPMENT

AQUA

BUILDING K/L

BUILDING J

THE LANCASTER

B

A

C

sub-level

FAIRMONT HOTEL

SITE O

THE PARKSHORE

NORTH HARBOR TOWER

HARBOR POINT

BLUE CROSS AND BLUE SHIELD

340 ON THE PARK

BUCKINGHAM PLAZA

400 EAST RANDOLPH

LEGEND

- Proposed Building
- Garage Entrance
- (X) Driveway Label

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EXHIBIT 4
SITE PLAN

CHICAGO RIVER

LAKE MICHIGAN

N
NOT TO SCALE

COLUMBUS PLAZA

ILLINOIS CENTER
303 EAST WACKER DRIVE

SWISSOTEL

COAST

FUTURE GEMS UPPER SCHOOL

RAMP DOWN

RAMP UP

THE REGATTA

THE CHANDLER

BUILDING I

GEMS LOWER SCHOOL

THE TIDES

THE SHOREHAM

FUTURE DEVELOPMENT

AQUA

BUILDING K/L

BUILDING J

THE LANCASTER

FAIRMONT HOTEL

SITE O

THE PARKSHORE

NORTH HARBOR TOWER

HARBOR POINT

BLUE CROSS AND BLUE SHIELD

340 ON THE PARK

BUCKINGHAM PLAZA

400 EAST RANDOLPH

LEGEND

- Vehicle Route (Enter)
- Vehicle Route (Exit)
- Garage Entrance

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EXHIBIT 5

UPPER-LEVEL ACCESS AND CIRCULATION PLAN

CHICAGO RIVER

LAKE MICHIGAN

N
NOT TO SCALE

COLUMBUS PLAZA

FAIRMONT HOTEL

ILLINOIS CENTER
303 EAST WACKER DRIVE

SWISSOTEL

AQUA

RAMP DOWN

COAST

FUTURE GEMS UPPER SCHOOL

VISTA +1,140'

GEMS LOWER SCHOOL

THE TIDES

THE SHOREHAM

FUTURE DEVELOPMENT

THE LANCASTER

THE REGATTA

THE CHANDLER

BUILDING I

BUILDING K/L

BUILDING J

RAMP UP

RAMP UP

SITE O

RAMP DOWN

THE PARKSHORE

NORTH HARBOR TOWER

HARBOR POINT

BLUE CROSS AND BLUE SHIELD

340 ON THE PARK

BUCKINGHAM PLAZA

400 EAST RANDOLPH

RAMP DOWN

LEGEND

- Vehicle Route (Enter)
- Vehicle Route (Exit)
- Garage Entrance

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EXHIBIT 6

INTERMEDIATE-LEVEL ACCESS AND CIRCULATION PLAN

CHICAGO RIVER

LAKE MICHIGAN

N
NOT TO SCALE

COLUMBUS PLAZA

ILLINOIS CENTER
303 EAST WACKER DRIVE

SWISSOTEL

COAST

FUTURE GEMS UPPER SCHOOL

VISTA +1,140'

THE REGATTA

THE CHANDLER

BUILDING I

GEMS LOWER SCHOOL

THE TIDES

THE SHOREHAM

FUTURE DEVELOPMENT

AQUA

BUILDING K/L

BUILDING J

THE LANCASTER

FAIRMONT HOTEL

SITE O

THE PARKSHORE

NORTH HARBOR TOWER

HARBOR POINT

RAMP DOWN

RAMP UP

BLUE CROSS AND BLUE SHIELD

340 ON THE PARK

BUCKINGHAM PLAZA

400 EAST RANDOLPH

LEGEND

- Vehicle Route (Enter)
- Vehicle Route (Exit)
- Garage Entrance

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EXHIBIT 7

SUB-LEVEL ACCESS AND CIRCULATION PLAN

A key element of this development plan is its robust amenities for non-auto modes of transportation. A bike room will be provided on the sub-level of each building, providing capacity for 1,079 bicycles. With up to 1,700 residential units proposed for Parcel IJKL, this is equivalent to roughly 0.64 bike spaces per unit.

The pedestrian network for Parcels IJKL is designed to provide continuity with the adjacent properties and connectivity across the multi-level street network present in the area. Pedestrian access and circulation features for this project are illustrated on **Exhibit 8** and include the following key components:

Enhanced Connection from Upper Harbor Drive to Lakefront Trail

To provide an enhanced connection from the subject parcel to the Lakefront Trail, a stairway and accompanying accessible path (with grades no more than five percent for universal accessibility) are planned at the southern end of the property to link Upper Harbor Drive to Harbor Service Drive and the Lakefront Trail. This connection is expected to be used by residents of Parcel IJKL and other neighboring buildings, including The Chandler, The Regatta, The Lancaster, The Parkshore, and Harbor Point.

Currently, residents from the buildings along Harbor Drive access the Lakefront Trail via an existing stairway and elevator on the west side of Harbor Drive or through the use of other internal building exits; from this point, pedestrians and cyclists can travel east along Harbor Service Drive toward the Lakefront Trail. Compared to the existing route, it is anticipated that the new pedestrian connection will provide a more engaging experience with landscaping and walking paths that slope gradually from Building J toward the stairway and accessible ramp. It is envisioned that some pedestrians will reroute to take advantage of these new connections to the Lakefront Trail, but these enhancements were also designed to be mindful that some users will continue to walk along Harbor Service Drive. The pedestrian ramp features an open design that maintains natural light exposure along much of Harbor Service Drive for safety and comfort. Furthermore, the single access driveway for Parcel IJKL to Harbor Service Drive is intended to minimize the potential for conflicts between vehicles, pedestrians, and bicyclists at this level. A dedicated sidewalk and pathway is also planned along the northern side of Harbor Service Drive, maintaining distinct zones for vehicles, pedestrians, and bicyclists.

In addition to the external pedestrian routes discussed above, a publicly accessible elevator will be provided in Building J to provide an accessible connection from the upper level to the sub level. At the base of Building J and the bottom of the planned stairway, a café space is planned to provide an amenity for residents and the public alike. This café will feature terrace seating and potential wayfinding signage along the Lakefront Trail to direct passersby to this amenity.

Continuity of the Upper Level Pedestrian Network

Pedestrian connections throughout the upper level of Parcel IJKL will serve as an extension of the existing pedestrian network within Lakeshore East and beyond. A sidewalk will be provided along Driveway A to convey pedestrians to a sunken garden feature in the center of the site between Buildings I and J. As pedestrians continue through the subject development, they will reach a lookout point at the northeastern corner of the parcel that provides a view of the Chicago River. This

CHICAGO RIVER

LAKE MICHIGAN

N
NOT TO SCALE

THE REGATTA

THE CHANDLER

BUILDING I

WATERSIDE DRIVE

FUTURE DEVELOPMENT

HARBOR DRIVE

THE LANCASTER

BUILDING K/L

BUILDING J

Connection to Chicago Riverwalk

Connection to DuSable Harbor and the Lakefront Trail

THE CHANDLER

BUILDING I

BUILDING K/L

BUILDING J

THE PARKSHORE

NORTH HARBOR TOWER

HARBOR POINT

LEGEND

- Pedestrian Route
- Vertical Circulation
- Security Post

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EXHIBIT 8

PEDESTRIAN ACCESS AND CIRCULATION PLAN

pedestrian plaza will wrap around Building I and connect to the existing pedestrian areas provided on the north side of The Chandler and The Regatta. Following completion of the Wanda Vista project, pedestrians will also be able to walk to Upper Wacker Drive without leaving the upper level.

Pedestrian-Focused Connection to the Riverwalk

Inside Building I near the lookout point planned at the northeast corner of the site, an elevator available to the public is planned to provide an accessible connection between the upper, intermediate, and sub levels at this location. This elevator will meet the sublevel beyond the eastern terminus of Sub-Level Wacker Drive, providing the opportunity for a pedestrian-only path to and from the Riverwalk. At the intermediate level within Building I, a restaurant is planned to provide a conveniently-placed amenity for building residents and for passing pedestrians and cyclists. Wayfinding signage for the restaurant could be placed along the Riverwalk to further tie the restaurant to the Riverwalk experience.

Trip Generation

Typically, traffic impact studies include trip generation estimates based on rates published in the Institute of Transportation Engineers (ITE) manual titled Trip Generation, Ninth Edition. It is worth noting, however, that these rates generally represent, and are derived from, data collected in largely auto-oriented areas that exhibit few, if any, non-auto modes of transportation (such as transit, walking, and biking). Due to the urban context, availability of multiple convenient public transportation options, and nature of the land uses in the site area, it is assumed that more non-auto activity would occur within Lakeshore East than in typical auto-oriented suburban locations. Therefore, for the residential components, mode share adjustments based on census data are applied to the conventional Trip Generation data to incorporate these non-auto factors. For the proposed restaurant uses, this study references local data from the River East Area Traffic and Parking Operation Review, prepared by Barton-Aschman Associates, Inc., for the City of Chicago in 1997, which directly reflects the use of non-auto trips. The trip generation equations/rates for each proposed land use is shown in Table 1.

Table 1. ITE/River East Trip Generation Data by Land Use

ITE Land Use	Weekday	
	AM Peak	PM Peak
Apartment (LUC 220)[1]	T = 0.49X + 3.73 20% in/80% out	T = 0.55X + 17.65 65% in/35% out
Condominium (LUC 230)[1]	ln(T) = 0.80 × ln(X) + 0.26 17% in/83% out	ln(T) = 0.82 × ln(X) + 0.32 67% in/33% out
Restaurant[2]	N/A[3]	Inbound: 0.909 Outbound: 0.807
Hotel[2]	Inbound: 0.152 Outbound: 0.110	Inbound: 0.136 Outbound: 0.142
Specialty Retail[2]	Inbound: 0.046 Outbound: 0.027	Inbound: 0.394 Outbound: 0.394

T - Site-generated trips X - Dwelling units

[1]Based upon ITE Trip Generation.

[2]Based upon River East Area Traffic and Parking Operation Review.

[3]Restaurant trip generation rates in the River East Area Traffic and Parking Operation Review are shown as zero for the morning peak hour.

The mode split characteristics for the census tract that includes Lakeshore East are presented in **Table 2**.

Table 2. Mode Split Characteristics[1]

Mode of Transportation	Population	Percent
Automobile		
Car	1,672	23.3%
Taxicab	178	2.5%
Other Means	2	0.0%
Subtotal	1,852	25.8%
Other Methods		
Public Transportation (excluding taxi)	1,130	15.7%
Bicycle	0	0.0%
Walk	3,332	46.4%
Worked at Home	862	12.0%
Subtotal	5,324	74.2%
Total	7,176	100%

[1]Includes 2011-2015 data referenced from American Community Survey 5-Year Estimates for census tract 3201, which is bound by the Chicago River to the north, Monroe and Madison Street to the south, Dearborn Street to the west, and Lakeshore Drive to the east.

Based upon the census data, it is apparent that walking (46.4 percent) is the primary mode of transportation for those traveling to work from within the Lakeshore East community and residents in the northeastern portion of the Loop. Due to the approximately 26 percent mode share attributed to

auto modes of transportation, a reduction of 74 percent was applied to ITE data for the residential land uses.

In the River East study, data indicates that taxis and drop-offs were identified to represent 39 percent of the restaurant auto trips, and 36 percent of retail auto trips. Based on the data shown in Table 2, taxis represent 10 percent of residential auto-trips. These percentages were incorporated into the site trip generation projections in order to estimate how many auto trips are attributable to taxis or drop-offs so that these trips could be counted as both entering and exiting the network. Per these assumptions and the calculations detailed previously, site-generated traffic projections are presented in **Table 3**. As noted previously in Table 1, the River East study shows no trips generated by restaurant uses during the morning peak hour. To allow for the possibility that the café may be open during the morning peak hours, it was assumed that this restaurant would generate traffic during the morning peak hour at the same rate that is anticipated during the evening peak hour.

Table 3. Site-Generated Traffic Projections

Land Use	Unit	AM Peak			PM Peak		
		In	Out	Total	In	Out	Total
Total Trips							
Condominiums							
Building I	600 units	35	180	215	175	85	260
Building J	500 units	30	155	185	150	75	225
Apartments							
Building K/L	600 units	60	240	300	225	125	250
Dining							
Restaurant/Bar	10,000 sq. ft.	–	–	–	10	10	20
Restaurant/Café	10,000 sq. ft.	10	10	20	10	10	20
Specialty Retail	10,000 sq. ft.	–	–	–	5	5	10
Less 74.2% for Non-Auto Modes of Transportation[1]		*-90*	*-430*	*-520*	*-405*	*-215*	*-620*
Total New Auto Trips		45	155	200	170	95	265
Personal Auto Trips							
Condominiums							
Building I	90%	10	40	50	40	20	60
Building J	90%	10	35	45	35	20	55
Apartments							
Building K/L	90%	15	55	70	55	25	80
Dining							
Restaurant/Bar	61%	–	–	–	5	5	10
Restaurant/Café	61%	5	5	10	5	5	10
Specialty Retail	64%	–	–	–	5	5	10
Total New Personal Auto Trips		40	135	175	145	80	225
Taxi Trips							
Condominiums							
Building I	10%	–	5	5	5	–	5
Building J	10%	–	5	5	5	–	5
Apartments							
Building K/L	10%	–	5	5	5	5	10
Dining							
Restaurant/Bar	39%	–	–	–	5	5	10
Restaurant/Café	39%	5	5	10	5	5	10
Specialty Retail	36%	–	–	–	–	–	–
Total New Taxi Trips		5	20	25	25	15	40

[1]Applied to residential uses only

Directional Distribution

The estimated distribution of site-generated traffic for the subject site on the surrounding roadway network as it approaches and departs the site is a function of several variables, such as site access locations, characteristics of the street system, the ease with which motorists can travel over various sections of the system (to/from the upper, intermediate, and sub-level roadways), and prevailing traffic volumes/patterns. As such, the directional distribution shown in **Table 4** identifies the anticipated direction from which vehicles will travel to and from the site.

Table 4. Estimated Trip Distribution

To/From	Portion of Site Traffic	
	Personal Auto	Taxi / Drop-Off
North via Lake Shore Drive	*10%*	*0%*
North via Intermediate Columbus Drive	*10%*	*0%*
South via Lake Shore Drive	*20%*	*0%*
West via Upper Wacker Drive	*5%*	*67%*
West via Intermediate Wacker Drive	*50%*	*0%*
West via Upper Randolph Street	*5%*	*33%*
Total	100%	100%

Site Traffic Assignment

The site traffic assignment, representing traffic volumes associated with the proposed development at the study intersections and the access driveways, is a function of the estimated trip generation (Table 3) and the directional distribution (Table 4). To build on the directional distribution percentages presented in Table 4, the following details about likely routing preferences were considered:

- For trips to/from Lake Shore Drive, it is anticipated that motorists will travel via Intermediate Wacker Drive and connect to/from Upper Wacker Drive with the ramps provided east of Columbus Drive. Inbound trips would be expected to perform a westbound U-turn at Upper Wacker Drive/Upper Columbus Drive in order to travel eastbound via Upper Wacker Drive toward the future connection via Upper Field Boulevard and Waterside Drive. Similarly, outbound trips would make a westbound U-turn at Upper Wacker Drive/Upper Columbus Drive to reach the ramp down to Intermediate Wacker Drive.
- To travel to/from Intermediate Columbus Drive, motorists would be expected to use Sub-Level Harbor Drive, Sub-Level Randolph Street, and the ramp connections between Sub-Level Randolph Street and Intermediate Columbus Street. As noted previously in this report, these ramps are only designed to serve traffic going to/from the north on Intermediate Columbus Street.
- Trips traveling to/from Intermediate Wacker Drive are expected to exhibit three primary routing patterns.
    - Residents may use the parking garage access driveway to Sub-Level Wacker Drive and access Intermediate Wacker Drive via the ramps discussed earlier in this report.

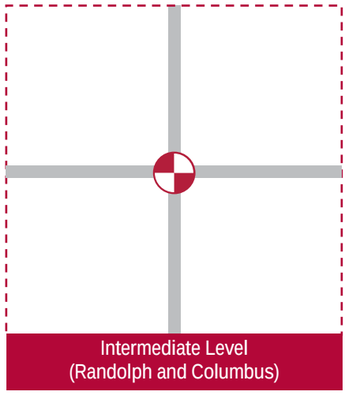
- A second option would be to travel via Harbor Service Drive, through the counterclockwise street system around the Lake Shore East Park, and via Field Boulevard to/from Sub-Level Wacker Drive. Connecting to Intermediate Wacker Drive would then occur as described in the previous bullet.
- Finally, motorists may travel via Sub-Level Harbor Drive, Sub-Level Randolph Street, and Intermediate Columbus Drive, which meets Intermediate Wacker Drive north of the access ramps to/from the sub-level.

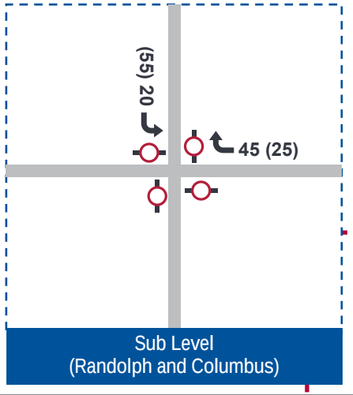
The peak hour site traffic assignment for the auto trips and taxi trips are presented in **Exhibits 9 and 10**, respectively. All auto trips were assumed to park within the garage, while all taxis were assumed to travel to and from the residential porte cochere.

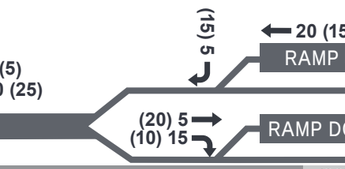
It should be noted that individuals traveling via taxi to/from the site are assumed to generate two separate trips for each arrival and departure. For example, arriving taxis generate one trip as the taxi pulls up to drop off and one trip as the taxi departs the site to pick up another fare. Taxi trips were assumed to originate outside of the study area, drop-off or pick-up their passenger at the appropriate porte cochere, and then continue to their destination. This is a conservative approach to the analysis as many times a taxi picks up a new fare while dropping one off, resulting in fewer trips.

LEGEND

- **xx** Weekday AM Peak Hour (8:00 - 9:00am)
- **(xx)** Weekday PM Peak Hour (4:00 - 5:00pm)
- Existing Signalized Intersection
- Existing/Planned Stop Sign
- Proposed Stop Sign
- \- Less than Five Vehicles
- Upper-Level Roadway
- Intermediate-Level Roadway
- Sub-Level Roadway







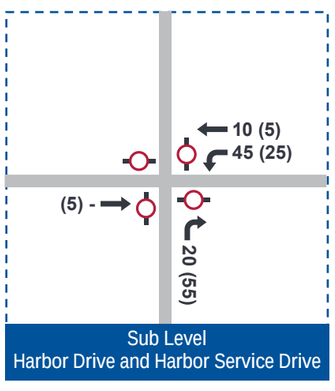


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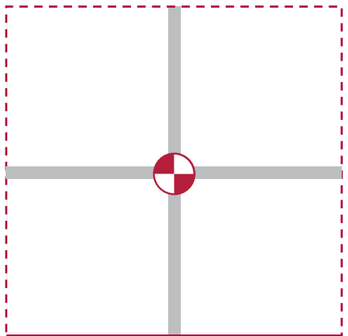
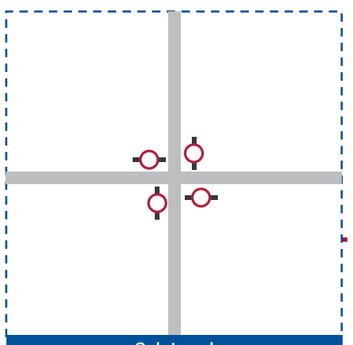
EXHIBIT 9 - **SITE TRIP ASSIGNMENT - AUTO TRIPS**

LEGEND

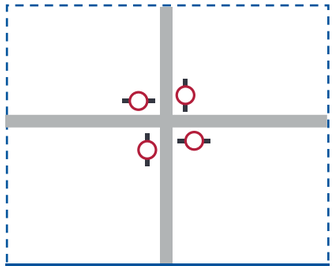
- **XX** Weekday AM Peak Hour (8:00 - 9:00am)
- **(XX)** Weekday PM Peak Hour (4:00 - 5:00pm)
- Existing Signalized Intersection
- Existing/Planned Stop Sign
- Proposed Stop Sign
- \- Less than Five Vehicles
- Upper-Level Roadway
- Intermediate-Level Roadway
- Sub-Level Roadway



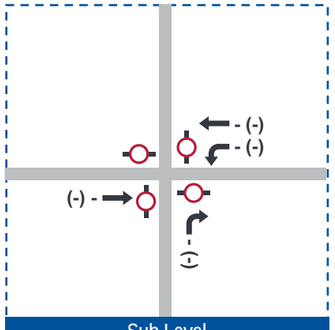
Intermediate Level
(Randolph and Columbus)



Sub Level
(Randolph and Columbus)



Sub Level
(Wacker and Field)



Sub Level
Harbor Drive and Harbor Service Drive

N
NOT TO SCALE

Kimley»Horn

EXHIBIT 10 - **SITE TRIP ASSIGNMENT - TAXI TRIPS**

Background Traffic Volumes

Area background traffic was developed with consideration for three main factors: background traffic growth over time, the redistribution of existing traffic to take advantage of new connections, and the addition of traffic from other known developments in the area. Due to ongoing construction for the Wanda Vista Tower, three study intersections are either closed or significantly impacted. For these locations, previous traffic counts from past traffic studies were referenced and a background growth rate was applied to develop volume projections that reflect current conditions. This includes:

- ***Upper Wacker Drive/Upper Columbus Drive***, which was referenced from existing count data in the 2014 *Transportation Study for Lakeshore East Planned Development Amendment* by KLOA. A 0.5 percent annual growth rate was applied to bring these traffic volumes to Year 2017 conditions.
- ***South Water Street/Field Boulevard*** and ***Sub-Level Wacker Drive/Field Boulevard*** were referenced from existing count data in the 2012 traffic study by KLOA for the proposed GEMS school. Because these counts were obtained before completion of The Coast residential building (located between Wacker Drive and South Water Street on the west side of Field Boulevard), a higher annual growth rate of 1.0 percent was applied to bring these counts to 2017 conditions.
- ***Upper Wacker Drive/Upper Field Boulevard***, which is a future connection that will be made as a part of the Wanda Vista construction. Background volumes for this intersection were referenced from Year 2020 conditions in the 2014 *Transportation Study for Lakeshore East Planned Development Amendment* by KLOA.

With the future connection of Upper Field Boulevard between Upper Wacker Drive and Waterside Drive, it is anticipated that some vehicles traveling to/from destinations along Waterside Drive and northern portions of Harbor Drive may redistribute to take advantage of the new connection. To account for this expectation, 80 percent of vehicles currently turning onto and off of Waterside Drive at Harbor Drive were rerouted to Upper Wacker Drive via Upper Field Boulevard.

After base traffic volumes were determined for the study intersections, trip projections for known area developments were added. A list of these developments and the referenced study for each is below.

- Lakeshore East Parcel C (Wanda Vista), based on a 2015 study by Kimley-Horn
- Lakeshore East Parcel O, based on a 2016 study by Kimley-Horn
- Aon Center Redevelopment, based on a 2017 study by Kimley-Horn
- GEMS World Academy, based on a 2012 study by KLOA

The site trip assignments for each development listed above are excerpted in the study appendix.

Total Traffic Assignment

The total traffic assignment represents future anticipated traffic volumes at the study intersections upon construction and full occupancy of the proposed development. The total traffic assignment consists of the existing traffic, background traffic, plus the site traffic assignment projected for Parcel IJKL. The total traffic volumes for the study area are illustrated in **Exhibit 11**.

LEGEND

- **xx** Weekday AM Peak Hour (8:00 - 9:00am)
- **(xx)** Weekday PM Peak Hour (4:00 - 5:00pm)
- Existing Signalized Intersection
- Existing/Planned Stop Sign
- Proposed Stop Sign
- \- Less than Five Vehicles
- Upper-Level Roadway
- Intermediate-Level Roadway
- Sub-Level Roadway

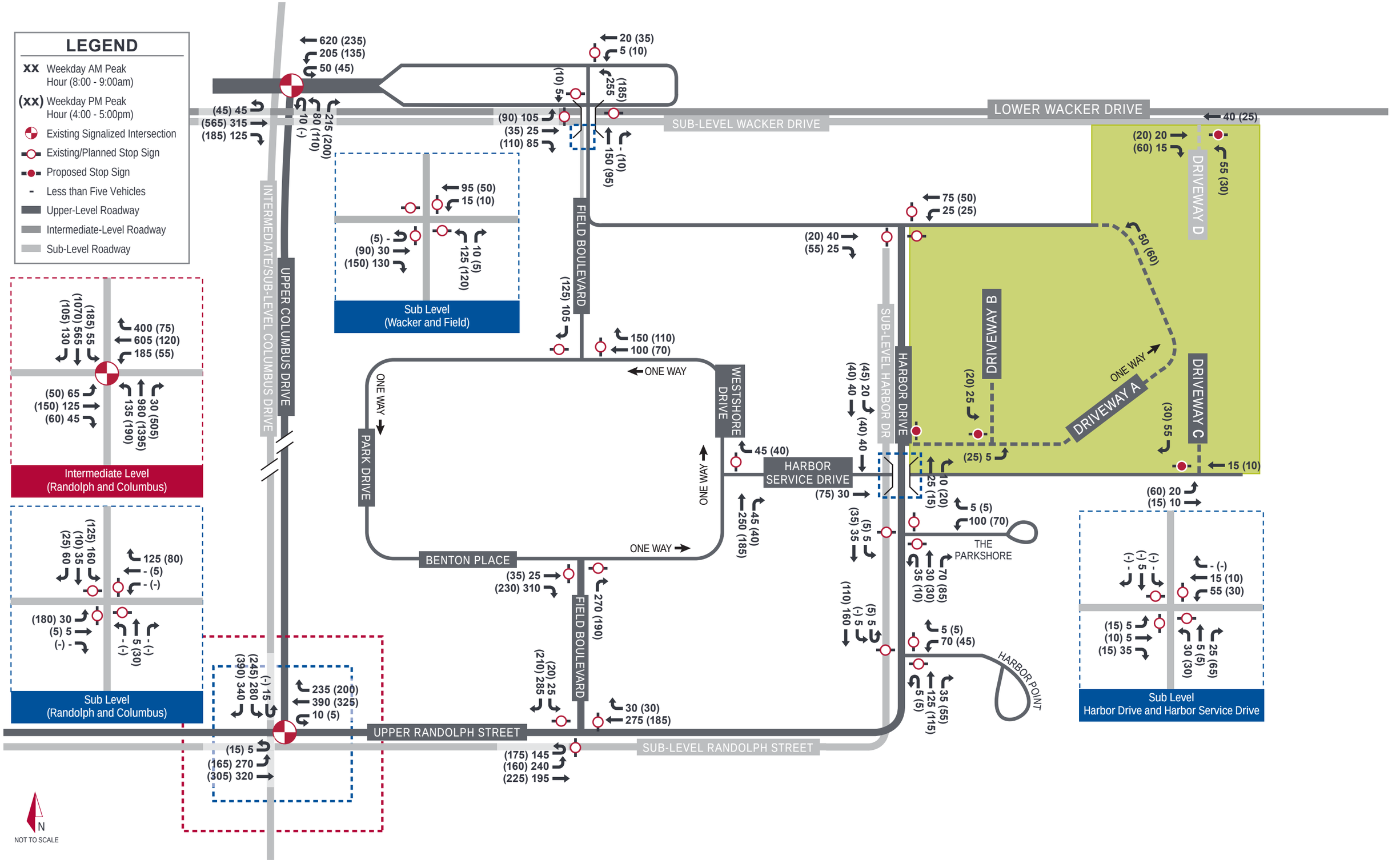


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EXHIBIT 11 - **FUTURE TRAFFIC PROJECTIONS**

ANALYSES

This section of the report evaluates the proposed site access/circulation and summarizes the analysis of the base and future traffic conditions at the study intersections.

Site Access/Circulation Evaluation

The proposed site plan was reviewed with regards to site access and circulation for the proposed development. Key characteristics of the plan and its transportation attributes are detailed on Exhibit 8 and are summarized below.

Vehicular Access and Circulation

Vehicular access to the on-site parking garage is provided via one upper-level driveway and two sub-level driveways. Given the increased presence of pedestrian and bicycle traffic on the upper level roadway network—and because the intermediate and sub-level roadway networks generally exhibit better capacity than the upper level—it is desirable that a majority of site traffic will utilize the sub-level access driveways. Based on a review of the site trip assignment (Exhibits 9 and 10), it is projected that less than 25 percent of personal auto trips will travel via upper-level roadways within the immediate study area.

At the sub-level, the proposed access driveways to Sub-Level Wacker Drive and Harbor Service Drive are expected to meet these roadways near their eastern termini where there would be little conflicting traffic. Along Harbor Service Drive, a single access driveway is intentionally planned in order to minimize opportunities for pedestrian-vehicle conflicts in an area commonly used as a pedestrian connection to the Lakefront Trail.

Pedestrian Connections

The proposed additions to the area pedestrian network as a part of this development will help to provide additional circulation options between Lakeshore East and the external pedestrian/cyclist network at the Lakefront Trail and the Riverwalk. With implementation of the proposed connection from Harbor Drive to Harbor Service Drive at the sub-level, some pedestrians are expected to change from their existing route (presumably via the Harbor Service Drive tunnel under Harbor Drive) to take advantage of the improved experience provided by the new stairway and ramp at the south end of Parcel IJKL.

To facilitate this new route for residents in buildings on the west side of Harbor Drive, it is recommended that an international-style crosswalk be striped on the north leg of the Harbor Drive/The Parkshore Access intersection. ADA ramps should also be provided at this crosswalk location.

Loading Access

Access to the development's loading docks will be provided via Sub-Level Wacker Drive. The loading dock for Building I is planned near the eastern end of the property (west of the planned elevator to provide pedestrian access to the Riverwalk), and loading docks for Building J and Building K/L will be accessed through a north-south corridor near the western end of the parcel. Using AutoTURN software, truck turns into and out of these loading docks were tested using an SU-30 design vehicle.

Based on these schematics (included in the appendix), it is anticipated that SU-30 trucks will be able to adequately access the loading docks on site. Given the proximity of the Building I loading dock to the planned pedestrian access between the Building I elevator and the Riverwalk, it is recommended that this pedestrian space be clearly delineated from the roadway to avoid potential conflicts. Potential options for delineating this space may include landscaping, bollards, or decorative fencing.

Capacity Analysis

Capacity analyses were conducted to assess the base and future operating conditions of the study intersections during the weekday peak hours. The capacity of an intersection quantifies its ability to accommodate traffic volumes and is expressed in terms of level of service (LOS) according to the average delay per vehicle passing through the intersection. Levels of service range from A to F with LOS A as the highest (best traffic flow and least delay), LOS E as saturated or at-capacity conditions, and LOS F as the lowest (oversaturated conditions). Due to the traffic characteristics and physical constraints of urban neighborhoods in Chicago, it is not uncommon for select intersections or approaches to operate at LOS E or LOS F during peak periods.

The LOS grades shown below, which are provided in the Transportation Research Board's Highway Capacity Manual (HCM), quantify and categorize the driver's discomfort, frustration, fuel consumption, and travel times experienced as a result of intersection control and the resulting traffic queuing. A detailed description of each LOS rating can be found in **Table 5**.

Table 5. Level of Service Grading Descriptions[1]

Level of Service	Description
A	Minimal control delay; traffic operates at primarily free-flow conditions; unimpeded movement within traffic stream.
B	Minor control delay at signalized intersections; traffic operates at a fairly unimpeded level with slightly restricted movement within traffic stream.
C	Moderate control delay; movement within traffic stream more restricted than at LOS B; formation of queues contributes to lower average travel speeds.
D	Considerable control delay that may be substantially increased by small increases in flow; average travel speeds continue to decrease.
E	High control delay; average travel speed no more than 33 percent of free flow speed.
F	Extremely high control delay; extensive queuing and high volumes create exceedingly restricted traffic flow.

[1]Highway Capacity Manual 2010

The range of control delay for each rating (as detailed in the HCM) is shown in **Table 6**. Because signalized intersections are expected to carry a larger volume of vehicles and stopping is required during red time, note that higher delays are tolerated for the corresponding LOS ratings.

Table 6. Level of Service Grading Criteria[1]

Level of Service	Average Control Delay (s/veh) at:	
	Unsignalized Intersections	Signalized Intersections
A	0 – 10	0 – 10
B	> 10 – 15	> 10 – 20
C	> 15 – 25	> 20 – 35
D	> 25 – 35	> 35 – 55
E	> 35 – 50	> 55 – 80
F[2]	> 50	> 80

[1]Highway Capacity Manual 2010

[2]All movements with a Volume to Capacity (v/C) ratio greater than 1 receive a rating of LOS F.

Synchro software was utilized to evaluate capacity of the study intersections (reported overall and by approach) for the weekday morning and evening peak hours. **Table 7** summarizes the capacity analysis results for existing and future peak hour traffic conditions. Additional capacity analysis details are included in the attached appendix. Note that for the purpose of this study, it was assumed that all site access driveways would operate under minor-leg stop control. Furthermore, for the purpose of this study, it was assumed that existing roadway construction related to the Wanda Vista project—including the planned connection between Waterside Drive and Upper Wacker Drive via the new Upper Field Boulevard—would be complete under future conditions. Concept layouts for the new intersections at Upper Wacker Drive/Upper Field Boulevard and Sub-Level Wacker Drive/Field Boulevard are included in the appendix.

Table 7. Intersection Capacity Analysis

Intersection	Existing Conditions				Future Conditions			
	AM Peak		PM Peak		AM Peak		PM Peak	
	Delay (s/veh)	LOS	Delay (s/veh)	LOS	Delay (s/veh)	LOS	Delay (s/veh)	LOS
Upper Randolph / Upper Columbus ★								
Eastbound	35-	C	21	C	79	E	27	C
Westbound	28	C	26	C	26	C	26	C
Southbound	27	C	27	C	28	C	37	D
Intersection	*29*	*C*	*25*	*C*	*44*	*D*	*30*	*C*
Upper Wacker / Upper Columbus ★								
Eastbound	13	B	17	B	13	B	17	B
Westbound	12	B	11	B	13	B	12	B
Northbound	11	B	28	C	9	A	21	C
Intersection	*12*	*B*	*19*	*B*	*12*	*B*	*17*	*B*
Upper Wacker (WB) / Upper Field Blvd △								
Westbound	N/A[1]				18	C	16	C
Northbound (Left)	N/A[1]				8	A	8	A
Upper Wacker (EB) / Upper Field Blvd ▲								
Eastbound	N/A[1]				8	A	8	A
Northbound	N/A[1]				9	A	9	A
Southbound	N/A[1]				8	A	8	A
Intersection	*N/A[1]*				*8*	*A*	*8*	*A*
Upper Harbor Drive / Waterside Drive ▲								
Eastbound	7	A	7	A	7	A	7	A
Westbound	8	A	8	A	8	A	8	A
Northbound	7	A	7	A	7	A	7	A
Intersection	*7*	*A*	*7*	*A*	*8*	*A*	*7*	*A*
Upper Harbor Drive / Driveway A △								
Southbound (Left)	N/A[1]				3	A	4	A
Harbor Service Drive / Driveway D △								
Eastbound (Left)	N/A[1]				5	A	6	A
Southbound	N/A[1]				9	A	9	A

★ - Signalized Intersection
▲ - All-Way Stop-Controlled Intersection
△ - Minor-Leg Stop-Controlled Intersection
1 - Intersection under construction or not present in existing condition.

Table 7. Intersection Capacity Analysis (Continued)

Intersection	Existing Conditions				Future Conditions			
	AM Peak		PM Peak		AM Peak		PM Peak	
	Delay (s/veh)	LOS	Delay (s/veh)	LOS	Delay (s/veh)	LOS	Delay (s/veh)	LOS
Sub-Level Wacker / Driveway E △								
Westbound (Left)	N/A[1]				1	A	1	A
Northbound	N/A[1]				9	A	9	A
Harbor Drive / The Parkshore Access ▲								
Westbound	8	A	8	A	8	A	8	A
Northbound	8	A	8	A	7	A	7	A
Southbound	8	A	8	A	8	A	8	A
Intersection	*8*	*A*	*8*	*A*	*8*	*A*	*8*	*A*
Harbor Drive / Harbor Point Access ▲								
Westbound	9	A	8	A	9	A	8	A
Northbound	9	A	9	A	8	A	9	A
Southbound	9	A	9	A	9	A	8	A
Intersection	*9*	*A*	*9*	*A*	*9*	*A*	*9*	*A*
Upper Randolph / Field Boulevard ▲								
Eastbound	12	B	10+	B	12	B	10+	B
Westbound	15-	B	11	B	14	B	11	B
Southbound	12	B	10-	A	13	B	11	B
Intersection	*13*	*B*	*10+*	*B*	*13*	*B*	*11*	*B*
Field Boulevard / Benton Place ▲								
Eastbound	9	A	8	A	11	B	9	A
Northbound	9	A	8	A	10-	A	8	A
Intersection	*9*	*A*	*8*	*A*	*10+*	*B*	*9*	*A*
Westshore Drive / Harbor Service Drive △								
Westbound	10+	B	10+	B	11	B	11	B
South Water Street / Field Boulevard ▲								
Westbound	N/A[1]				8	A	8	A
Southbound	N/A[1]				7	A	7	A
Intersection	*N/A[1]*				*8*	*A*	*8*	*A*

★ - Signalized Intersection
▲ - All-Way Stop-Controlled Intersection
△ - Minor-Leg Stop-Controlled Intersection
1 - Intersection under construction or not present in existing condition.

Table 7. Intersection Capacity Analysis (Continued)

Intersection	Existing Conditions				Future Conditions			
	AM Peak		PM Peak		AM Peak		PM Peak	
	Delay (s/veh)	LOS	Delay (s/veh)	LOS	Delay (s/veh)	LOS	Delay (s/veh)	LOS
Sub-Level Wacker / Field Boulevard ▲								
Eastbound	N/A[1]				7	A	7	A
Westbound	N/A[1]				8	A	8	A
Northbound	N/A[1]				9	A	9	A
Southbound	N/A[1]				1	A	1	A
Intersection	*N/A[1]*				*8*	*A*	*8*	*A*
Sub-Level Harbor / Harbor Service Drive △								
Eastbound (Left)	1	A	3	A	1	A	3	A
Westbound (Left)	5	A	3	A	6	A	6	A
Northbound	10-	A	10-	A	10+	B	10-	A
Southbound	10-	A	9	A	11	B	10+	B
Sub-Level Randolph / Sub-Level Columbus ▲								
Eastbound	8	A	10-	A	8	A	10+	B
Westbound	9	A	8	A	9	A	9	A
Northbound	7	A	7	A	7	A	8	A
Southbound	9	A	8	A	10-	A	9	A
Intersection	*9*	*A*	*9*	*A*	*9*	*A*	*9*	*A*
Intermediate Randolph / Intermediate Columbus ★								
Eastbound	25	C	28	C	25	C	27	C
Westbound	35+	D	24	C	36	D	25	C
Northbound	21	C	28	C	22	C	35	D
Southbound	19	B	48	D	19	B	49	D
Intersection	*26*	*C*	*35-*	*C*	*26*	*C*	*39*	*D*

★ - Signalized Intersection
▲ - All-Way Stop-Controlled Intersection
△ - Minor-Leg Stop-Controlled Intersection
1 - Intersection under construction or not present in existing condition.

Existing Conditions

Based upon the analysis results, many of the study intersections and key approaches operate well at LOS B or C with little delay during the existing analysis period. The eastbound left-turning movement at Upper Randolph Street/Upper Columbus Drive operates at LOS E during the morning peak hour, due largely to a high volume of vehicles making this movement and heavy conflicting vehicular and pedestrian volumes. The eastbound approach at this intersection operates at LOS C overall.

Similarly, the north- and southbound left-turning movements at Intermediate Randolph Street/Intermediate Columbus Drive operate at LOS E and LOS F, respectively, during the evening peak hour. These instances are likely attributable to a heavy volume of conflicting traffic. The overall northbound approach operates at LOS C during the evening peak hour, and the southbound approach is shown at LOS D overall. It should be noted that northbound congestion was noted on Intermediate Columbus Drive during evening peak hour observations within the study area, but the source of this congestion seemed to be located north of Randolph Street. Because this intersection is being analyzed under isolated conditions for this study, spillback from downstream intersections is not captured in the capacity results shown in Table 7.

Future Conditions

Review of future condition capacity analysis (including traffic associated with the proposed development as well as growth in non-site traffic related to other nearby development sites that are planned or under construction), relative to current conditions, indicates little change to intersection and approach delay and levels of service for the majority of the study intersections.

At the intersection of Upper Randolph Street/Upper Columbus Street, increased traffic is anticipated for the eastbound left-turning movement (due to traffic generated by other developments) and for the westbound through movement (due to traffic generated by Parcel IJKL and other developments). As a result, the eastbound left-turning movement is projected at LOS F during the morning peak hour, bringing the eastbound approach to LOS E overall. To mitigate this increase in delay, it is recommended that signal timing modifications be considered at this intersection. **Table 8** presents capacity results for the Upper Randolph Street/Upper Columbus Drive intersection with modified signal timings. Note that these revised timings are based on the assumption that the current Flashing Don't Walk time for the crosswalk on the north leg can be reduced by four seconds due to a planned road diet on Upper Columbus Drive that will shorten the length of the north crosswalk by 15 feet by widening the sidewalk on the west side of the street.

Table 8. Intersection Capacity Analysis – Modified Signal Timings at Upper Randolph/Upper Columbus

Intersection	Future Conditions	
	AM Peak	
	Delay (s/veh)	LOS
Upper Randolph / Upper Columbus *		
Eastbound	34	C
Westbound	41	D
Southbound	29	C
Intersection	*35*	*C*

The existing capacity issues noted for the north- and southbound left-turning movements at Intermediate Randolph Street/Intermediate Columbus Drive during the existing evening peak hour are exacerbated under future conditions due to additional traffic generated by other planned developments. Modifying the signal timings at this intersection, however, would likely require reducing the pedestrian clearance intervals during the east- and westbound phases and/or reducing green time for the congested northbound through movement. Because these changes are presumed to be undesirable for overall intersection operation and safety, no changes are recommended at this location.

RECOMMENDATIONS & CONCLUSIONS

The proposed development for Parcel IJKL would add up to 1,700 total residential units and 30,000 square feet of restaurant/retail space to the Lakeshore East development. Access to the on-site garage would be provided via one upper-level driveway and two sub-level driveways. Additionally, an internal roadway would provide access to the porte cocheres at Buildings I and J, while the porte cochere for Building K/L would receive inbound traffic on Harbor Drive and direct outbound traffic to Waterside Drive. Key aspects of the transportation review and analysis performed in this report are detailed below.

- It is anticipated that approximately 20-25 percent of personal auto trips to and from the site will travel via the upper-level roadway network within the study area. The majority of personal auto trips are expected to use the sub-level access driveways.
- The proposed pedestrian amenities are expected to expand upon and enhance the existing pedestrian network within Lakeshore East and also provide additional and/or improved connections to the nearby Lakefront Trail and Riverwalk. These new pedestrian connections are intended to provide a more engaging route to and from the Lakefront Trail in particular, and this new stairway and ramp connection is expected to draw pedestrians from nearby residential buildings that may currently access the Lakefront Trail via Harbor Service Drive. In order to facilitate access for these pedestrians, it is recommended that an international-style crosswalk and ADA ramps be on Harbor Drive north of the The Parkshore Access intersection.
- Existing and future capacity analyses were performed for the area study intersections. While the majority of study intersections are shown to operate acceptably, a minor operational issue currently exists on the eastbound approach at Upper Randolph Street/Upper Columbus Street. This issue could be exacerbated under future conditions with several proposed development plans in the area, and so potential signal timings were explored in combination with proposed changes to the Upper Columbus Drive cross-section to mitigate the increase in delay on this approach. With the proposed signal timing adjustments and the shortened crosswalk at the north leg of the intersection, the capacity issues can be addressed and the approach levels of service would all be within acceptable conditions. Capacity analysis reports for this intersection with and without improved timings are included in the study appendix.

Recommendations identified in this study are summarized in **Table 9**.

Table 9. Summary of Study Recommendations

Recommendation	Anticipated Benefit(s)
Add an international-style crosswalk and ADA ramps on Harbor Drive north of The Parkshore Access intersection.	• Provide a marked location for pedestrians to cross between residential buildings on the west side of Harbor Drive and the new stairway and ramp toward the Lakefront Trail. • Increase motorist awareness of crossing pedestrians. • Provide an accessible path across Harbor Drive to extend the ADA-compliant pedestrian network that is created with the proposed universally-accessible ramp.
Modify morning peak hour signal timings at Upper Randolph Street/Upper Columbus Drive in combination with the proposed narrowed cross-section for Upper Columbus Drive as part of proposed development plans along the street.	Mitigate an anticipated future capacity issue for the eastbound approach by reallocating green time to high-delay movements.
Post minor-leg stop control at all proposed access driveways.	Provide clear indication of vehicular right of way at the site access driveways.
Provide clear delineation between Sub-Level Wacker Drive and the planned pedestrian connection between the Building I elevator and the Riverwalk.	Minimize the potential for vehicle-pedestrian conflicts, particularly given the proximity of the Building I loading dock to this pedestrian route.
Coordinate with the CTA to consider the feasibility of modifying bus routes to better serve residents in the eastern portion of Lakeshore East.	Take advantage of the continuous upper-level roadway network that will be provided following completion of the Field Boulevard extension between Waterside Drive and Upper Wacker Drive to improve transit service within Lakeshore East.
Coordinate with CDOT to establish a new DIVVY station at the upper level near Parcel IJKL.	Increase the accessibility of non-auto modes for residents of the proposed development and other adjacent properties.

APPENDIX

Excerpts from Referenced Traffic Studies for Other Developments

Existing Capacity Reports

Future Capacity Reports

Truck Turn Schematics

EXCERPTS REFERENCED FROM OTHER TRAFFIC STUDIES

Trip Assignment for Aon Center

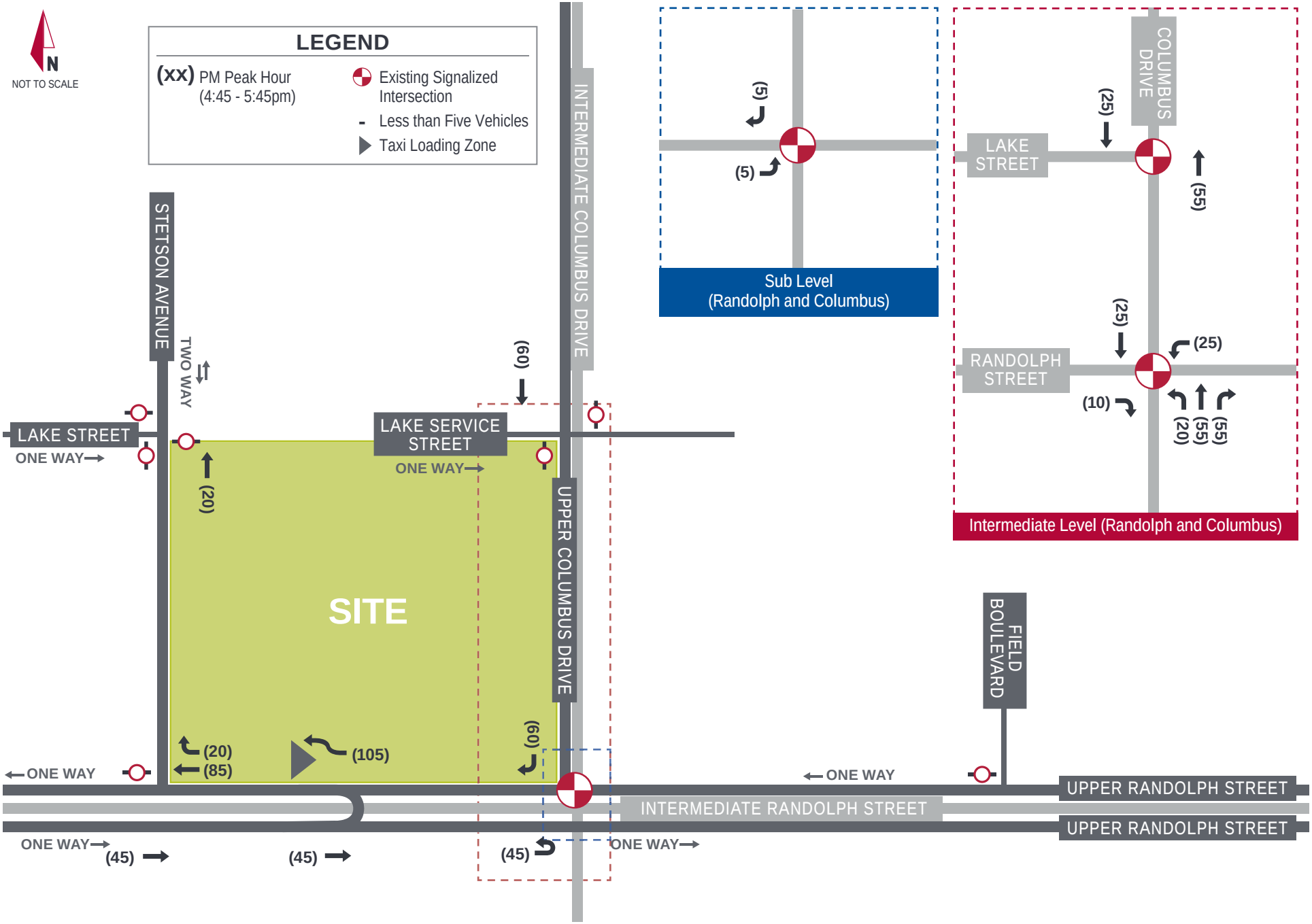
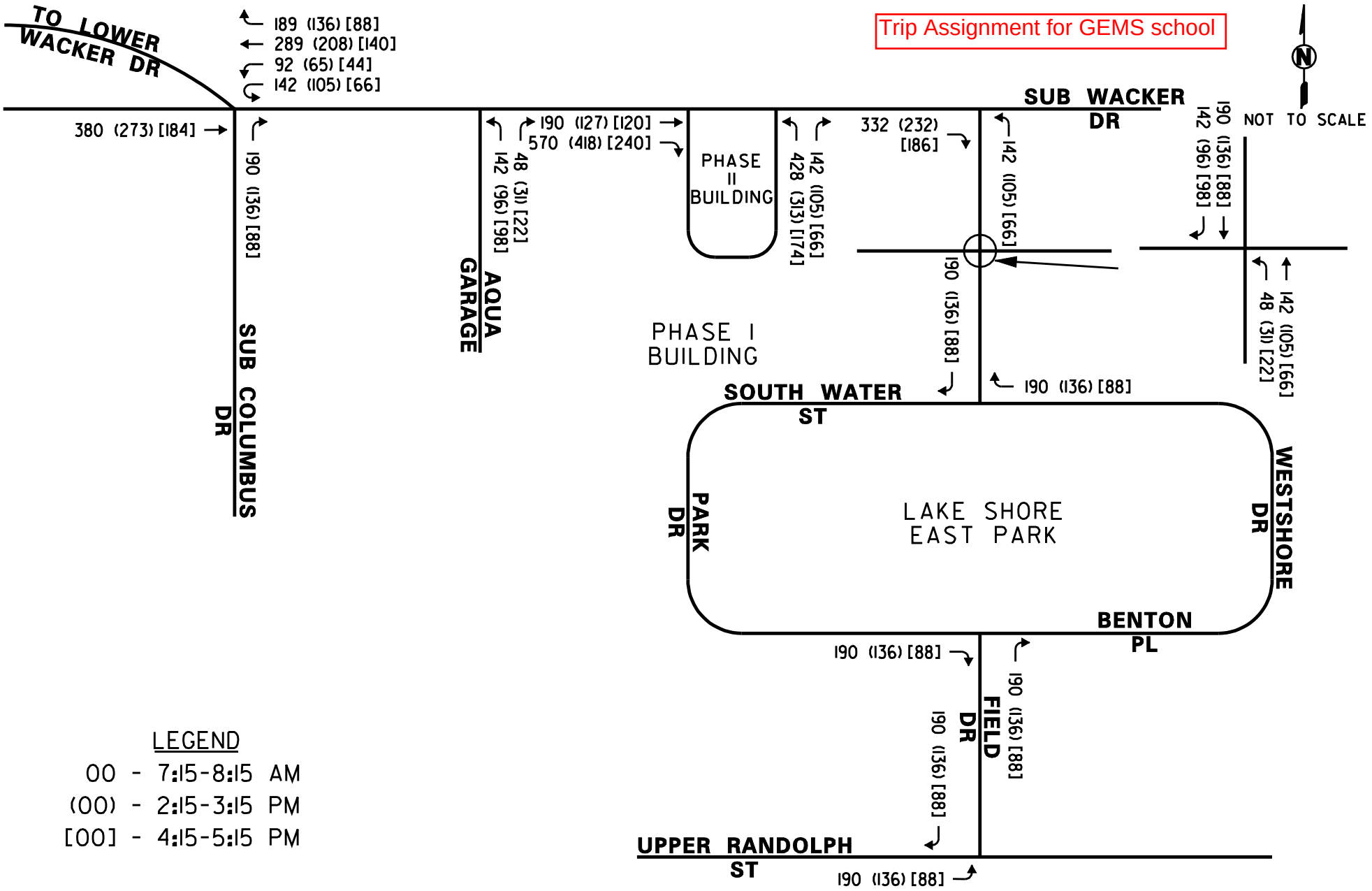


EXHIBIT 7A

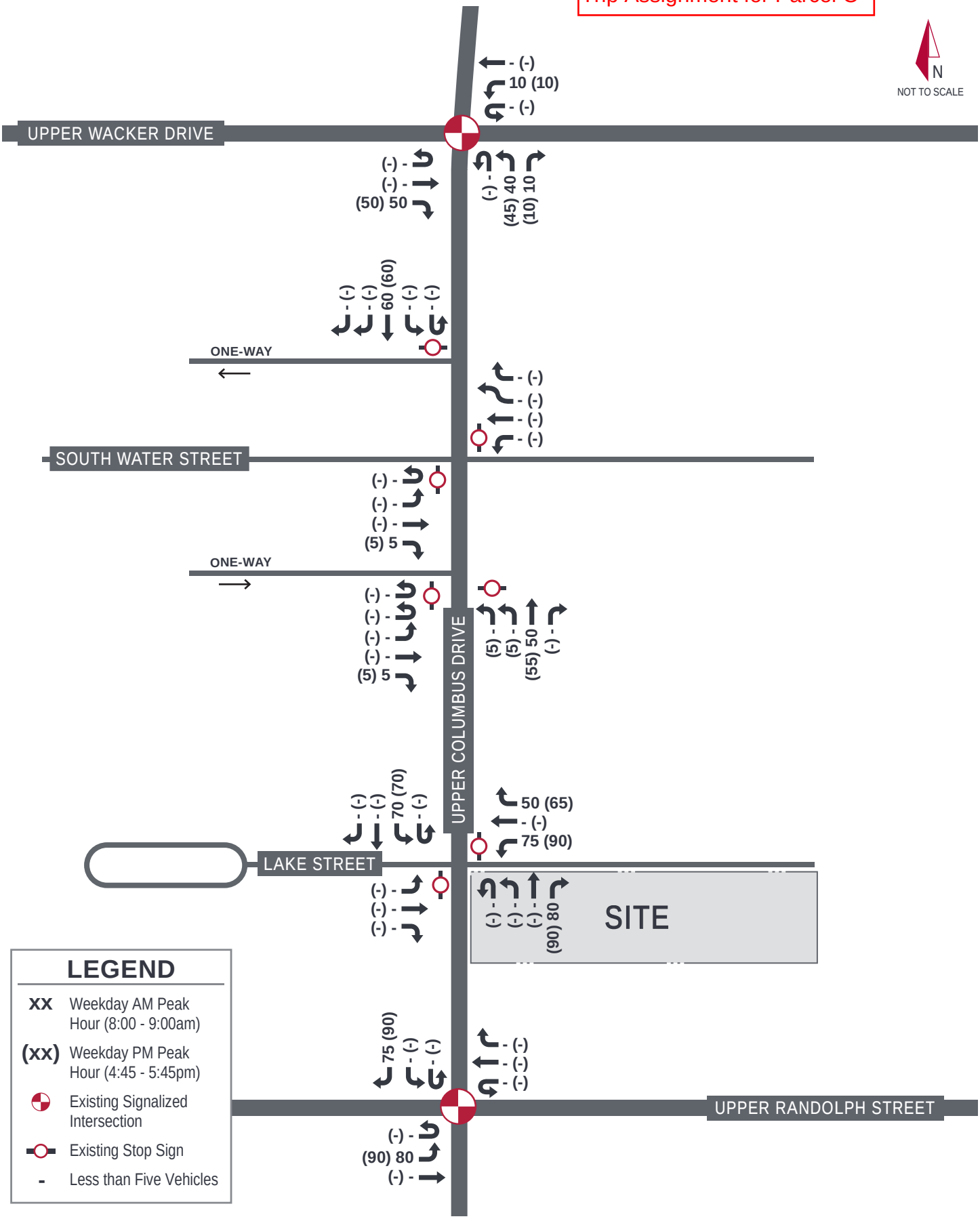
SITE TRIP ASSIGNMENT - TOTAL (WEEKDAY)

Kimley»Horn



PROJECT:	TITLE:	PROJECT NO: 12-020
GEMS SCHOOL CHICAGO, ILLINOIS	SCHOOL GENERATED TRAFFIC	KLOA FIGURE NO: 6

Trip Assignment for Parcel O

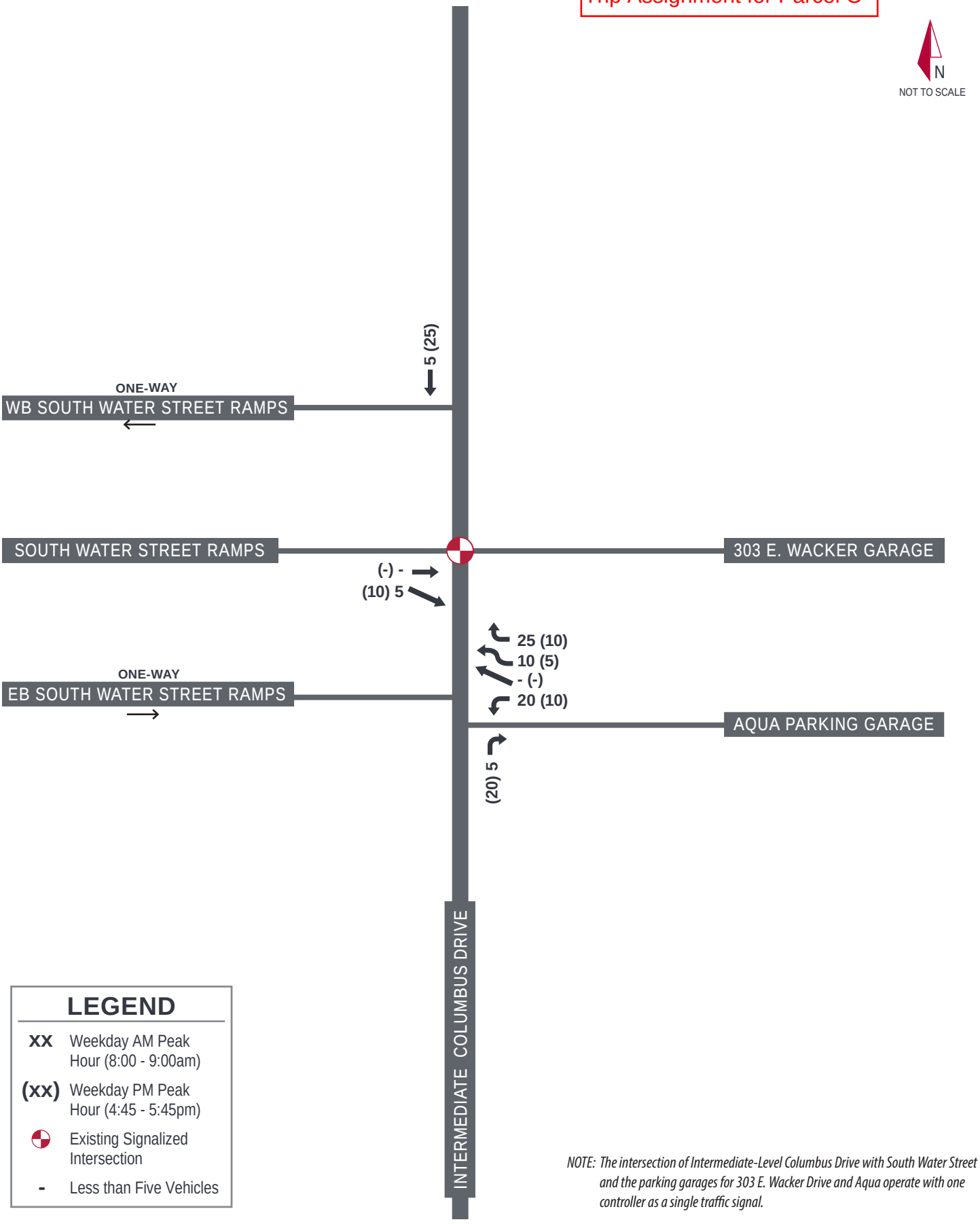


Kimley»Horn

EXHIBIT 5A

SITE TRAFFIC ASSIGNMENT (UPPER)

Trip Assignment for Parcel O



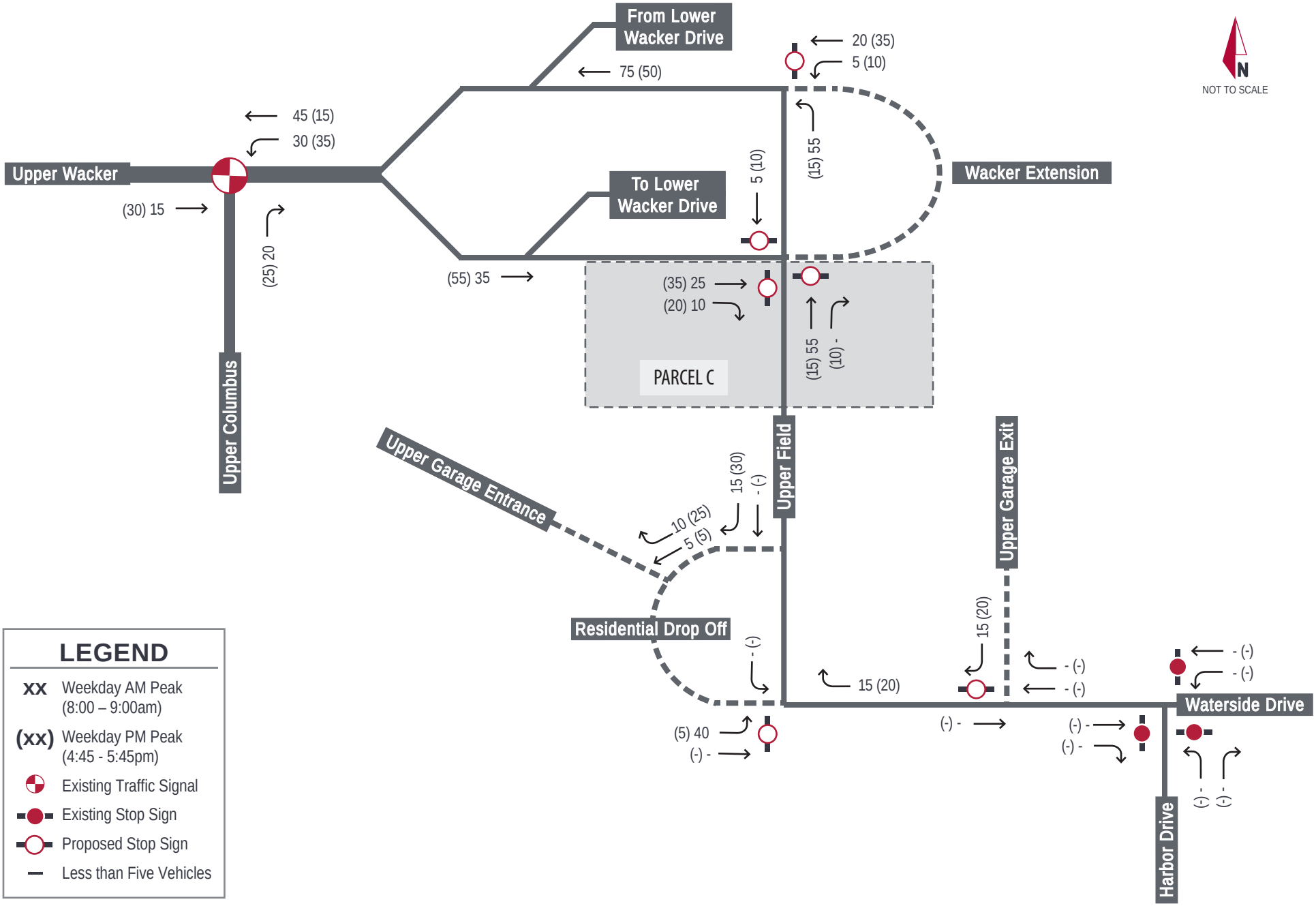
NOTE: The intersection of Intermediate-Level Columbus Drive with South Water Street and the parking garages for 303 E. Wacker Drive and Aqua operate with one controller as a single traffic signal.

Kimley»Horn

EXHIBIT 5B

SITE TRAFFIC ASSIGNMENT (INTERMEDIATE)

Trip Assignment for Wanda Vista



LEGEND

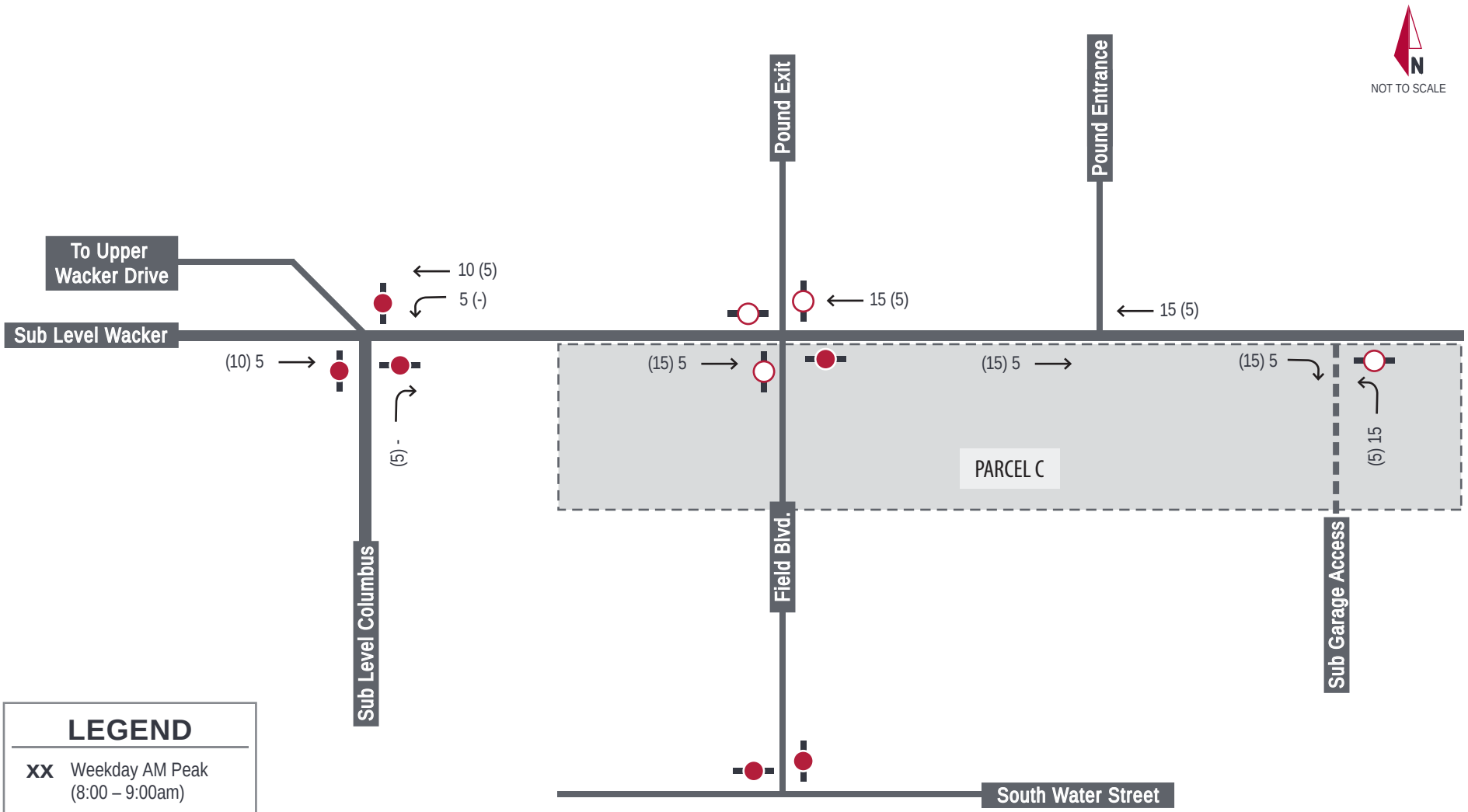
xx	Weekday AM Peak (8:00 – 9:00am)
(xx)	Weekday PM Peak (4:45 - 5:45pm)
	Existing Traffic Signal
	Existing Stop Sign
	Proposed Stop Sign
—	Less than Five Vehicles

Kimley»Horn

EXHIBIT 5A

SITE TRAFFIC VOLUMES (UPPER)

Trip Assignment for Wanda Vista



LEGEND

- **xx** Weekday AM Peak (8:00 – 9:00am)
- **(xx)** Weekday PM Peak (4:45 – 5:45pm)
- Existing Traffic Signal
- Existing Stop Sign
- Proposed Stop Sign
- — Less than Five Vehicles

Kimley»Horn

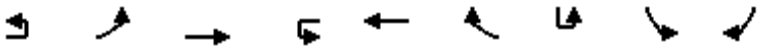
EXHIBIT 5C

SITE TRAFFIC VOLUMES (SUB)

EXISTING CAPACITY REPORTS

Weekday Morning Peak Hour

Weekday Evening Peak Hour



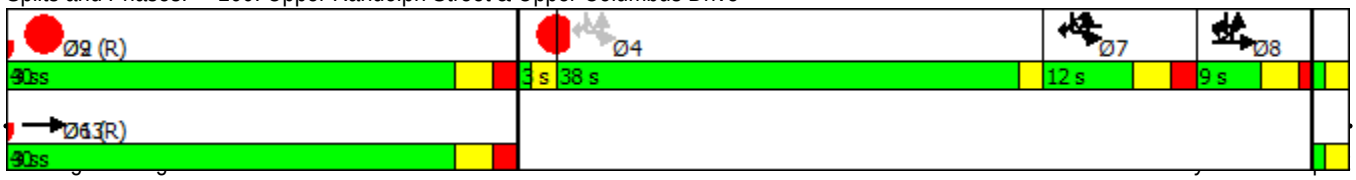
Lane Group	EBU	EBL	EBT	WBU	WBT	WBR	SBU	SBL	SBR	Ø2	Ø3	Ø4
Lane Configurations												
Traffic Volume (vph)	5	190	285	10	360	260	15	310	265			
Future Volume (vph)	5	190	285	10	360	260	15	310	265			
Ideal Flow (vphpl)	1900	1900	2000	1900	2000	1900	1900	1900	1900			
Lane Width (ft)	12	10	12	12	12	12	12	12	12			
Storage Length (ft)		90		0		80		0	0			
Storage Lanes		1		0		1		1	1			
Taper Length (ft)		45		25				50				
Lane Util. Factor	0.95	1.00	0.95	0.95	0.95	1.00	1.00	1.00	1.00			
Ped Bike Factor		0.84				0.70		0.85	0.80			
Frt						0.850			0.850			
Flt Protected		0.950			0.999			0.950				
Satd. Flow (prot)	0	1300	3257	0	3287	1425	0	1593	1298			
Flt Permitted		0.462			0.943			0.950				
Satd. Flow (perm)	0	531	3257	0	3103	999	0	1361	1032			
Right Turn on Red						No			No			
Satd. Flow (RTOR)												
Link Speed (mph)			20		20			30				
Link Distance (ft)			798		891			565				
Travel Time (s)			27.2		30.4			12.8				
Confl. Peds. (#/hr)		325				325		74	100			
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95			
Heavy Vehicles (%)	2%	17%	5%	2%	4%	2%	2%	2%	12%			
Adj. Flow (vph)	5	200	300	11	379	274	16	326	279			
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	205	300	0	390	274	0	342	279			
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No			
Lane Alignment	R NA	Left	Left	R NA	Left	Right	R NA	Left	Right			
Median Width(ft)			40		40			16				
Link Offset(ft)			0		0			0				
Crosswalk Width(ft)			16		16			16				
Two way Left Turn Lane												
Headway Factor	1.14	1.25	1.07	1.14	1.07	1.14	1.14	1.14	1.14			
Turning Speed (mph)	9	15		9		9	9	15	9			
Number of Detectors	1	1	2	1	2	1	1	1	1			
Detector Template	Left	Left	Thru	Left	Thru	Right	Left	Left	Right			
Leading Detector (ft)	20	20	100	20	100	20	20	20	20			
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0			
Detector 1 Position(ft)	0	0	0	0	0	0	0	0	0			
Detector 1 Size(ft)	20	20	6	20	6	20	20	20	20			
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex			
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
Detector 2 Position(ft)			94		94							
Detector 2 Size(ft)			6		6							
Detector 2 Type			Cl+Ex		Cl+Ex							
Detector 2 Channel												

Lane Group	Ø9	Ø13
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)		
Peak Hour Factor		
Heavy Vehicles (%)		
Adj. Flow (vph)		
Shared Lane Traffic (%)		
Lane Group Flow (vph)		
Enter Blocked Intersection		
Lane Alignment		
Median Width(ft)		
Link Offset(ft)		
Crosswalk Width(ft)		
Two way Left Turn Lane		
Headway Factor		
Turning Speed (mph)		
Number of Detectors		
Detector Template		
Leading Detector (ft)		
Trailing Detector (ft)		
Detector 1 Position(ft)		
Detector 1 Size(ft)		
Detector 1 Type		
Detector 1 Channel		
Detector 1 Extend (s)		
Detector 1 Queue (s)		
Detector 1 Delay (s)		
Detector 2 Position(ft)		
Detector 2 Size(ft)		
Detector 2 Type		
Detector 2 Channel		

Lane Group	EBU	EBL	EBT	WBU	WBT	WBR	SBU	SBL	SBR	Ø2	Ø3	Ø4
Detector 2 Extend (s)			0.0		0.0							
Turn Type	custom	custom	NA	Perm	NA	pm+ov	custom	custom	pt+ov			
Protected Phases	8!	8	2 8 13		6	7!	7!	7	7 8!	2	3	4
Permitted Phases	2	2		6		6	4	4	4			
Detector Phase	8	8	2 8 13	6	6	7	7	7	7 8			
Switch Phase												
Minimum Initial (s)	4.0	4.0		35.0	35.0	5.0	5.0	5.0		35.0	1.0	33.0
Minimum Split (s)	9.0	9.0		40.0	40.0	12.0	12.0	12.0		40.0	3.0	38.0
Total Split (s)	9.0	9.0		40.0	40.0	12.0	12.0	12.0		40.0	3.0	38.0
Total Split (%)	8.6%	8.6%		38.1%	38.1%	11.4%	11.4%	11.4%		38%	3%	36%
Maximum Green (s)	5.0	5.0		35.0	35.0	7.0	7.0	7.0		35.0	1.0	36.0
Yellow Time (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	2.0	2.0
All-Red Time (s)	1.0	1.0		2.0	2.0	2.0	2.0	2.0		2.0	0.0	0.0
Lost Time Adjust (s)		0.0			0.0	0.0		0.0				
Total Lost Time (s)		4.0			5.0	5.0		5.0				
Lead/Lag	Lag	Lag				Lead	Lead	Lead			Lead	Lag
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Recall Mode	None	None		C-Max	C-Max	Max	Max	Max		C-Max	Max	Max
Walk Time (s)				11.0	11.0					11.0		5.0
Flash Dont Walk (s)				24.0	24.0					24.0		11.0
Pedestrian Calls (#/hr)				0	0					0		0
Act Effct Green (s)		41.0	39.0		35.0	42.0		40.0	49.0			
Actuated g/C Ratio		0.39	0.37		0.33	0.40		0.38	0.47			
v/c Ratio		0.84	0.25		0.38	0.64		0.64	0.53			
Control Delay		55.5	20.4		28.0	26.9		31.5	21.0			
Queue Delay		0.0	0.0		0.0	0.0		0.0	0.0			
Total Delay		55.5	20.4		28.0	26.9		31.5	21.0			
LOS		E	C		C	C		C	C			
Approach Delay			34.6		27.6			26.8				
Approach LOS			C		C			C				

Intersection Summary			
Area Type:	CBD		
Cycle Length: 105			
Actuated Cycle Length: 105			
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTU, Start of Green			
Natural Cycle: 105			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.84			
Intersection Signal Delay: 29.3		Intersection LOS: C	
Intersection Capacity Utilization 95.0%		ICU Level of Service F	
Analysis Period (min) 15			
! Phase conflict between lane groups.			

Splits and Phases: 100: Upper Randolph Street & Upper Columbus Drive



Lane Group	Ø9	Ø13
Detector 2 Extend (s)		
Turn Type		
Protected Phases	9	13
Permitted Phases		
Detector Phase		
Switch Phase		
Minimum Initial (s)	1.0	1.0
Minimum Split (s)	3.0	3.0
Total Split (s)	3.0	3.0
Total Split (%)	3%	3%
Maximum Green (s)	1.0	1.0
Yellow Time (s)	2.0	2.0
All-Red Time (s)	0.0	0.0
Lost Time Adjust (s)		
Total Lost Time (s)		
Lead/Lag		
Lead-Lag Optimize?		
Vehicle Extension (s)	3.0	3.0
Recall Mode	Max	Max
Walk Time (s)		
Flash Dont Walk (s)		
Pedestrian Calls (#/hr)		
Act Effct Green (s)		
Actuated g/C Ratio		
v/c Ratio		
Control Delay		
Queue Delay		
Total Delay		
LOS		
Approach Delay		
Approach LOS		

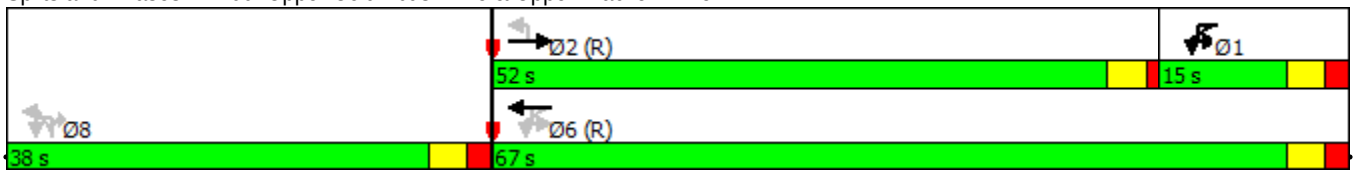
Intersection Summary

Lane Group	EBU	EBT	EBR	WBU	WBL	WBT	NBU	NBL	NBR
Lane Configurations									
Traffic Volume (vph)	45	230	105	30	165	495	10	105	195
Future Volume (vph)	45	230	105	30	165	495	10	105	195
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	2000	1900	1900	1900
Storage Length (ft)	0		0		435			100	100
Storage Lanes	0		0		1			1	1
Taper Length (ft)	25				25			25	
Lane Util. Factor	0.91	0.91	0.91	0.95	1.00	0.95	0.95	0.97	0.88
Ped Bike Factor		0.98			0.96			0.53	0.64
Frt		0.958							0.850
Flt Protected		0.994			0.950			0.950	
Satd. Flow (prot)	0	4219	0	0	1554	3353	0	2725	2186
Flt Permitted		0.839			0.497			0.950	
Satd. Flow (perm)	0	3561	0	0	778	3353	0	1446	1398
Right Turn on Red			Yes						Yes
Satd. Flow (RTOR)		111							205
Link Speed (mph)		30				30		30	
Link Distance (ft)		961				509		702	
Travel Time (s)		21.8				11.6		16.0	
Confl. Peds. (#/hr)			115		115			295	216
Confl. Bikes (#/hr)			2						5
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	2%	2%	5%	2%	5%	2%	2%	17%	17%
Adj. Flow (vph)	47	242	111	32	174	521	11	111	205
Shared Lane Traffic (%)									
Lane Group Flow (vph)	0	400	0	0	206	521	0	122	205
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No
Lane Alignment	R NA	Left	Right	R NA	Left	Left	R NA	Left	Right
Median Width(ft)		27				27		30	
Link Offset(ft)		0				0		0	
Crosswalk Width(ft)		16				16		16	
Two way Left Turn Lane									
Headway Factor	1.14	1.14	1.14	1.14	1.14	1.07	1.14	1.14	1.14
Turning Speed (mph)	9		9	9	15		9	15	9
Number of Detectors	1	2		1	1	2	1	1	1
Detector Template	Left	Thru		Left	Left	Thru	Left	Left	Right
Leading Detector (ft)	20	100		20	20	100	20	20	20
Trailing Detector (ft)	0	0		0	0	0	0	0	0
Detector 1 Position(ft)	0	0		0	0	0	0	0	0
Detector 1 Size(ft)	20	6		20	20	6	20	20	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel									
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94				94			
Detector 2 Size(ft)		6				6			
Detector 2 Type		Cl+Ex				Cl+Ex			
Detector 2 Channel									

Lane Group	EBU	EBT	EBR	WBU	WBL	WBT	NBU	NBL	NBR
Detector 2 Extend (s)		0.0				0.0			
Turn Type	Perm	NA		pm+pt	pm+pt	NA	Perm	Perm	Perm
Protected Phases		2		1	1	6			
Permitted Phases	2			6	6		8	8	8
Detector Phase	2	2		1	1	6	8	8	8
Switch Phase									
Minimum Initial (s)	48.0	48.0		10.0	10.0	62.0	33.0	33.0	33.0
Minimum Split (s)	52.0	52.0		15.0	15.0	67.0	38.0	38.0	38.0
Total Split (s)	52.0	52.0		15.0	15.0	67.0	38.0	38.0	38.0
Total Split (%)	49.5%	49.5%		14.3%	14.3%	63.8%	36.2%	36.2%	36.2%
Maximum Green (s)	48.0	48.0		10.0	10.0	62.0	33.0	33.0	33.0
Yellow Time (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	1.0	1.0		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
Total Lost Time (s)		4.0			5.0	5.0		5.0	5.0
Lead/Lag	Lead	Lead		Lag	Lag				
Lead-Lag Optimize?									
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	C-Max	C-Max		None	None	C-Max	Max	Max	Max
Walk Time (s)	21.0	21.0				21.0	7.0	7.0	7.0
Flash Dont Walk (s)	27.0	27.0				27.0	26.0	26.0	26.0
Pedestrian Calls (#/hr)	0	0				0	0	0	0
Act Effct Green (s)		48.0			62.0	62.0		33.0	33.0
Actuated g/C Ratio		0.46			0.59	0.59		0.31	0.31
v/c Ratio		0.24			0.39	0.26		0.27	0.35
Control Delay		12.7			14.8	10.9		21.0	4.9
Queue Delay		0.0			0.0	0.0		0.0	0.0
Total Delay		12.7			14.8	10.9		21.0	4.9
LOS		B			B	B		C	A
Approach Delay		12.7				12.0		10.9	
Approach LOS		B				B		B	

Intersection Summary			
Area Type:	CBD		
Cycle Length: 105			
Actuated Cycle Length: 105			
Offset: 51 (49%), Referenced to phase 2:EBTU and 6:WBTL, Start of Green			
Natural Cycle: 105			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.39			
Intersection Signal Delay: 11.9		Intersection LOS: B	
Intersection Capacity Utilization 130.8%		ICU Level of Service H	
Analysis Period (min) 15			

Splits and Phases: 200: Upper Columbus Drive & Upper Wacker Drive



Lane Group	EBT	EBR	WBL	WBT	NBU	NBL	NBR
Lane Configurations							
Traffic Volume (vph)	5	30	45	5	10	25	45
Future Volume (vph)	5	30	45	5	10	25	45
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor							
Frt	0.883					0.925	
Flt Protected				0.957		0.978	
Satd. Flow (prot)	1645	0	0	1783	0	1685	0
Flt Permitted				0.957		0.978	
Satd. Flow (perm)	1645	0	0	1783	0	1685	0
Link Speed (mph)	30			30		20	
Link Distance (ft)	452			76		117	
Travel Time (s)	10.3			1.7		4.0	
Confl. Peds. (#/hr)		3	3			22	14
Peak Hour Factor	0.79	0.79	0.79	0.79	0.79	0.79	0.79
Adj. Flow (vph)	6	38	57	6	13	32	57
Shared Lane Traffic (%)							
Lane Group Flow (vph)	44	0	0	63	0	102	0
Enter Blocked Intersection	No	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	R NA	Left	Right
Median Width(ft)	0			0		12	
Link Offset(ft)	0			0		0	
Crosswalk Width(ft)	16			16		16	
Two way Left Turn Lane							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		9	15	9
Sign Control	Stop			Stop		Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 24.5%		ICU Level of Service A	
Analysis Period (min) 15			

Movement	EBT	EBR	WBL	WBT	NBU	NBL	NBR
Lane Configurations							
Sign Control	Stop			Stop		Stop	
Traffic Volume (vph)	5	30	45	5	10	25	45
Future Volume (vph)	5	30	45	5	10	25	45
Peak Hour Factor	0.79	0.79	0.79	0.79	0.79	0.79	0.79
Hourly flow rate (vph)	6	38	57	6	0	32	57

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total (vph)	44	63	89
Volume Left (vph)	0	57	32
Volume Right (vph)	38	0	57
Hadj (s)	-0.48	0.21	-0.28
Departure Headway (s)	3.7	4.3	3.8
Degree Utilization, x	0.04	0.08	0.10
Capacity (veh/h)	950	808	902
Control Delay (s)	6.8	7.7	7.3
Approach Delay (s)	6.8	7.7	7.3
Approach LOS	A	A	A

Intersection Summary			
Delay	7.3		
Level of Service	A		
Intersection Capacity Utilization	24.5%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	WBL	WBR	NBU	NBT	NBR	SBL	SBT
Lane Configurations							
Traffic Volume (vph)	100	5	35	75	70	5	80
Future Volume (vph)	100	5	35	75	70	5	80
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor							
Frt	0.994			0.948			
Flt Protected	0.954			0.990			0.997
Satd. Flow (prot)	1766	0	0	1748	0	0	1857
Flt Permitted	0.954			0.990			0.997
Satd. Flow (perm)	1766	0	0	1748	0	0	1857
Link Speed (mph)	20			20			20
Link Distance (ft)	377			210			131
Travel Time (s)	12.9			7.2			4.5
Confl. Peds. (#/hr)	13	34			51	51	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	109	5	38	82	76	5	87
Shared Lane Traffic (%)							
Lane Group Flow (vph)	114	0	0	196	0	0	92
Enter Blocked Intersection	No	No	No	No	No	No	No
Lane Alignment	Left	Right	R NA	Left	Right	Left	Left
Median Width(ft)	12			14			0
Link Offset(ft)	0			0			0
Crosswalk Width(ft)	16			16			16
Two way Left Turn Lane							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	9		9	15	
Sign Control	Stop			Stop			Stop

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 36.0%		ICU Level of Service A	
Analysis Period (min) 15			

Movement	WBL	WBR	NBU	NBT	NBR	SBL	SBT
Lane Configurations							
Sign Control	Stop			Stop			Stop
Traffic Volume (vph)	100	5	35	75	70	5	80
Future Volume (vph)	100	5	35	75	70	5	80
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	109	5	0	82	76	5	87

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total (vph)	114	158	92
Volume Left (vph)	109	0	5
Volume Right (vph)	5	76	0
Hadj (s)	0.20	-0.25	0.04
Departure Headway (s)	4.6	4.0	4.4
Degree Utilization, x	0.15	0.18	0.11
Capacity (veh/h)	728	861	783
Control Delay (s)	8.4	7.9	7.9
Approach Delay (s)	8.4	7.9	7.9
Approach LOS	A	A	A

Intersection Summary			
Delay	8.1		
Level of Service	A		
Intersection Capacity Utilization	36.0%	ICU Level of Service	A
Analysis Period (min)	15		

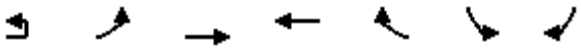
Lane Group	WBL	WBR	NBU	NBT	NBR	SBU	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	70	5	5	170	35	5	5	205
Future Volume (vph)	70	5	5	170	35	5	5	205
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor								
Frt	0.992			0.977				
Flt Protected	0.955			0.999				0.998
Satd. Flow (prot)	1603	0	0	1745	0	0	0	1859
Flt Permitted	0.955			0.999				0.998
Satd. Flow (perm)	1603	0	0	1745	0	0	0	1859
Link Speed (mph)	20			20				20
Link Distance (ft)	257			203				210
Travel Time (s)	8.8			6.9				7.2
Confl. Peds. (#/hr)	21	42			78		78	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	13%	2%	20%	2%	25%	2%	2%	2%
Adj. Flow (vph)	75	5	5	183	38	5	5	220
Shared Lane Traffic (%)								
Lane Group Flow (vph)	80	0	0	226	0	0	0	230
Enter Blocked Intersection	No	No	No	No	No	No	No	No
Lane Alignment	Left	Right	R NA	Left	Right	R NA	Left	Left
Median Width(ft)	12			14				14
Link Offset(ft)	0			0				0
Crosswalk Width(ft)	16			16				16
Two way Left Turn Lane								
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	9		9	9	15	
Sign Control	Stop			Stop				Stop

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 33.4%		ICU Level of Service A	
Analysis Period (min) 15			

Movement	WBL	WBR	NBU	NBT	NBR	SBU	SBL	SBT
Lane Configurations								
Sign Control	Stop			Stop				Stop
Traffic Volume (vph)	70	5	5	170	35	5	5	205
Future Volume (vph)	70	5	5	170	35	5	5	205
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	75	5	0	183	38	0	5	220

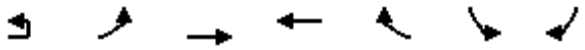
Direction, Lane #	WB 1	NB 1	SB 1
Volume Total (vph)	80	221	225
Volume Left (vph)	75	0	5
Volume Right (vph)	5	38	0
Hadj (s)	0.36	0.00	0.04
Departure Headway (s)	5.3	4.4	4.4
Degree Utilization, x	0.12	0.27	0.28
Capacity (veh/h)	629	799	790
Control Delay (s)	8.9	9.0	9.1
Approach Delay (s)	8.9	9.0	9.1
Approach LOS	A	A	A

Intersection Summary			
Delay	9.0		
Level of Service	A		
Intersection Capacity Utilization	33.4%	ICU Level of Service	A
Analysis Period (min)	15		



Lane Group	EBU	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations							
Traffic Volume (vph)	145	190	240	320	30	25	235
Future Volume (vph)	145	190	240	320	30	25	235
Ideal Flow (vphpl)	1900	1900	2000	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor							
Frt				0.989		0.878	
Flt Protected		0.950				0.995	
Satd. Flow (prot)	0	1770	1869	1802	0	1627	0
Flt Permitted		0.950				0.995	
Satd. Flow (perm)	0	1770	1869	1802	0	1627	0
Link Speed (mph)			20	20		30	
Link Distance (ft)			891	452		390	
Travel Time (s)			30.4	15.4		8.9	
Confl. Peds. (#/hr)		136			136	23	7
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	2%	2%	7%	4%	7%	2%	2%
Adj. Flow (vph)	151	198	250	333	31	26	245
Shared Lane Traffic (%)							
Lane Group Flow (vph)	0	349	250	364	0	271	0
Enter Blocked Intersection	No	No	No	No	No	No	No
Lane Alignment	R NA	Left	Left	Left	Right	Left	Right
Median Width(ft)			20	0		12	
Link Offset(ft)			0	38		0	
Crosswalk Width(ft)			16	16		16	
Two way Left Turn Lane							
Headway Factor	1.00	1.00	0.94	1.00	1.00	1.00	1.00
Turning Speed (mph)	9	15			9	15	9
Sign Control			Stop	Stop		Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 64.4%		ICU Level of Service C	
Analysis Period (min) 15			



Movement	EBU	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations							
Sign Control			Stop	Stop		Stop	
Traffic Volume (vph)	145	190	240	320	30	25	235
Future Volume (vph)	145	190	240	320	30	25	235
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Hourly flow rate (vph)	0	198	250	333	31	26	245

Direction, Lane #	EB 1	EB 2	WB 1	SB 1
Volume Total (vph)	198	250	364	271
Volume Left (vph)	198	0	0	26
Volume Right (vph)	0	0	31	245
Hadj (s)	0.53	0.12	0.02	-0.49
Departure Headway (s)	6.3	5.9	5.4	5.4
Degree Utilization, x	0.35	0.41	0.55	0.41
Capacity (veh/h)	550	593	640	614
Control Delay (s)	11.4	11.7	14.8	12.0
Approach Delay (s)	11.5		14.8	12.0
Approach LOS	B		B	B

Intersection Summary			
Delay	12.8		
Level of Service	B		
Intersection Capacity Utilization	64.4%	ICU Level of Service	C
Analysis Period (min)	15		

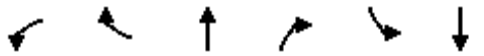
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	25	260	0	0	0	220
Future Volume (vph)	25	260	0	0	0	220
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.877					0.865
Flt Protected						
Satd. Flow (prot)	1634	0	0	0	0	1611
Flt Permitted						
Satd. Flow (perm)	1634	0	0	0	0	1611
Link Speed (mph)	30			30	30	
Link Distance (ft)	454			309	390	
Travel Time (s)	10.3			7.0	8.9	
Confl. Peds. (#/hr)		11	11		15	17
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82
Adj. Flow (vph)	30	317	0	0	0	268
Shared Lane Traffic (%)						
Lane Group Flow (vph)	347	0	0	0	0	268
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Stop			Stop	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	40.4%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Sign Control	Stop			Stop	Stop	
Traffic Volume (vph)	25	260	0	0	0	220
Future Volume (vph)	25	260	0	0	0	220
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82
Hourly flow rate (vph)	30	317	0	0	0	268

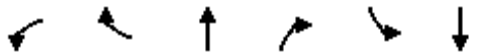
Direction, Lane #	EB 1	NB 1
Volume Total (vph)	347	268
Volume Left (vph)	0	0
Volume Right (vph)	317	268
Hadj (s)	-0.51	-0.57
Departure Headway (s)	4.0	4.1
Degree Utilization, x	0.38	0.30
Capacity (veh/h)	861	829
Control Delay (s)	9.4	8.8
Approach Delay (s)	9.4	8.8
Approach LOS	A	A

Intersection Summary			
Delay	9.2		
Level of Service	A		
Intersection Capacity Utilization	40.4%	ICU Level of Service	A
Analysis Period (min)	15		



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	0	35	200	45	0	0
Future Volume (vph)	0	35	200	45	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt		0.865	0.975			
Flt Protected						
Satd. Flow (prot)	0	1611	1802	0	0	0
Flt Permitted						
Satd. Flow (perm)	0	1611	1802	0	0	0
Link Speed (mph)	30		30			30
Link Distance (ft)	180		133			240
Travel Time (s)	4.1		3.0			5.5
Confl. Peds. (#/hr)		76		12		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	2%	3%	2%	2%	2%
Adj. Flow (vph)	0	38	217	49	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	38	266	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	0		0			0
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free

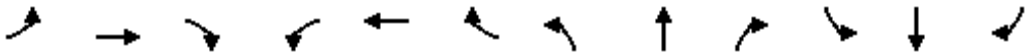
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	33.0%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	35	200	45	0	0
Future Volume (Veh/h)	0	35	200	45	0	0
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	38	217	49	0	0
Pedestrians	12					76
Lane Width (ft)	12.0					0.0
Walking Speed (ft/s)	3.5					3.5
Percent Blockage	1					0
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	254	330			278	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	254	330			278	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	95			100	
cM capacity (veh/h)	727	704			1270	

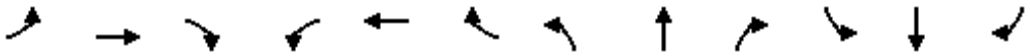
Direction, Lane #	WB 1	NB 1
Volume Total	38	266
Volume Left	0	0
Volume Right	38	49
cSH	704	1700
Volume to Capacity	0.05	0.16
Queue Length 95th (ft)	4	0
Control Delay (s)	10.4	0.0
Lane LOS	B	
Approach Delay (s)	10.4	0.0
Approach LOS	B	

Intersection Summary				
Average Delay	1.3			
Intersection Capacity Utilization	33.0%	ICU Level of Service		A
Analysis Period (min)	15			



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	5	5	35	10	5	1	30	5	5	1	5	1
Future Volume (vph)	5	5	35	10	5	1	30	5	5	1	5	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	10	12	12	11	12	12	11	12	12	11	12
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		0.896			0.994			0.982			0.985	
Flt Protected		0.994			0.970			0.965			0.994	
Satd. Flow (prot)	0	1548	0	0	1736	0	0	1706	0	0	1763	0
Flt Permitted		0.994			0.970			0.965			0.994	
Satd. Flow (perm)	0	1548	0	0	1736	0	0	1706	0	0	1763	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		180			106			606			163	
Travel Time (s)		4.1			2.4			13.8			3.7	
Confl. Peds. (#/hr)	27		1	1		27	24					24
Confl. Bikes (#/hr)						1						
Peak Hour Factor	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76
Adj. Flow (vph)	7	7	46	13	7	1	39	7	7	1	7	1
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	60	0	0	21	0	0	53	0	0	9	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.09	1.00	1.00	1.04	1.00	1.00	1.04	1.00	1.00	1.04	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Free			Free			Stop			Stop	

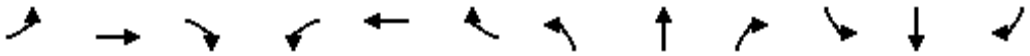
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 24.8%		ICU Level of Service A	
Analysis Period (min) 15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	5	35	10	5	1	30	5	5	1	5	1
Future Volume (Veh/h)	5	5	35	10	5	1	30	5	5	1	5	1
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76
Hourly flow rate (vph)	7	7	46	13	7	1	39	7	7	1	7	1
Pedestrians		24						1			27	
Lane Width (ft)		10.0						11.0			11.0	
Walking Speed (ft/s)		3.5						3.5			3.5	
Percent Blockage		2						0			2	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	35			54			107	106	31	115	128	58
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	35			54			107	106	31	115	128	58
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			99			95	99	99	100	99	100
cM capacity (veh/h)	1539			1550			824	755	1042	807	734	965

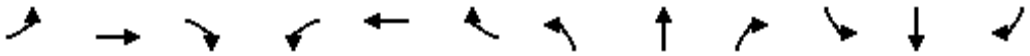
Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	60	21	53	9
Volume Left	7	13	39	1
Volume Right	46	1	7	1
cSH	1539	1550	837	762
Volume to Capacity	0.00	0.01	0.06	0.01
Queue Length 95th (ft)	0	1	5	1
Control Delay (s)	0.9	4.6	9.6	9.8
Lane LOS	A	A	A	A
Approach Delay (s)	0.9	4.6	9.6	9.8
Approach LOS			A	A

Intersection Summary				
Average Delay	5.2			
Intersection Capacity Utilization	24.8%	ICU Level of Service	A	
Analysis Period (min)	15			



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	30	5	1	1	2	80	1	5	1	140	35	60
Future Volume (vph)	30	5	1	1	2	80	1	5	1	140	35	60
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	11	12	12	12	12
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	0.95	0.95	0.95
Ped Bike Factor												
Frt		0.979			0.869			0.981			0.962	
Flt Protected	0.950							0.994			0.971	
Satd. Flow (prot)	1626	1824	0	0	1428	0	0	3336	0	0	3008	0
Flt Permitted	0.950							0.994			0.971	
Satd. Flow (perm)	1626	1824	0	0	1428	0	0	3336	0	0	3008	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		508			1374			603			254	
Travel Time (s)		11.5			31.2			13.7			5.8	
Confl. Peds. (#/hr)	437		113	113		437	20		101	101		20
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82
Heavy Vehicles (%)	11%	2%	2%	2%	2%	16%	2%	2%	2%	16%	2%	9%
Adj. Flow (vph)	37	6	1	1	2	98	1	6	1	171	43	73
Shared Lane Traffic (%)												
Lane Group Flow (vph)	37	7	0	0	101	0	0	8	0	0	287	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.04	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Stop			Stop	

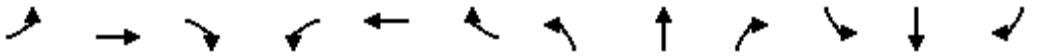
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 36.3%		ICU Level of Service A	
Analysis Period (min) 15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	30	5	1	1	2	80	1	5	1	140	35	60
Future Volume (vph)	30	5	1	1	2	80	1	5	1	140	35	60
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82
Hourly flow rate (vph)	37	6	1	1	2	98	1	6	1	171	43	73

Direction, Lane #	EB 1	EB 2	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total (vph)	37	7	101	4	4	193	95
Volume Left (vph)	37	0	1	1	0	171	0
Volume Right (vph)	0	1	98	0	1	0	73
Hadj (s)	0.69	-0.07	-0.32	0.16	-0.14	0.69	-0.41
Departure Headway (s)	6.0	5.3	5.0	5.3	5.0	5.6	4.5
Degree Utilization, x	0.06	0.01	0.14	0.01	0.01	0.30	0.12
Capacity (veh/h)	563	642	685	644	681	625	777
Control Delay (s)	8.2	7.1	8.8	7.2	6.9	9.8	6.9
Approach Delay (s)	8.1		8.8	7.0		8.8	
Approach LOS	A		A	A		A	

Intersection Summary				
Delay	8.7			
Level of Service	A			
Intersection Capacity Utilization	36.3%	ICU Level of Service	A	
Analysis Period (min)	15			

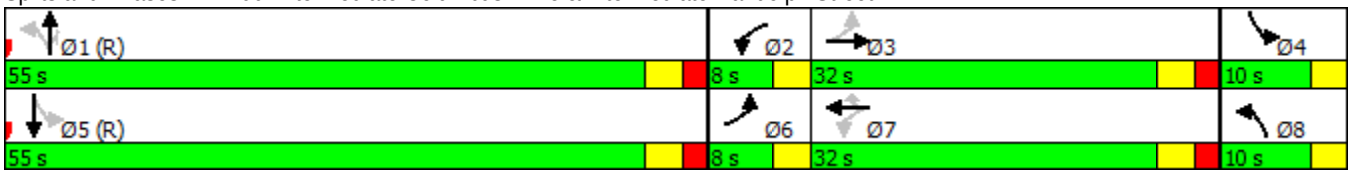


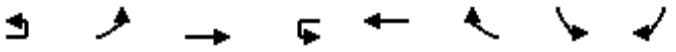
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	65	125	45	185	605	400	135	975	30	55	550	125
Future Volume (vph)	65	125	45	185	605	400	135	975	30	55	550	125
Ideal Flow (vphpl)	1900	1900	1900	1900	2000	1900	1900	2000	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	10	11	12	10	11	12
Storage Length (ft)	85		0	85		85	95		95	200		0
Storage Lanes	1		0	1		1	1		1	1		0
Taper Length (ft)	45			25			90			50		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	0.95	0.88	1.00	0.95	0.95
Ped Bike Factor	1.00	1.00		1.00		0.98	1.00				1.00	
Frt		0.960				0.850			0.850		0.972	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1577	3047	0	1593	3353	1425	1486	3241	2508	1486	2888	0
Flt Permitted	0.230			0.642			0.320			0.187		
Satd. Flow (perm)	381	3047	0	1075	3353	1396	500	3241	2508	293	2888	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		46				219			83		36	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		937			752			538			655	
Travel Time (s)		21.3			17.1			12.2			14.9	
Confl. Peds. (#/hr)	7		1	1		7	2					2
Confl. Bikes (#/hr)												1
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	3%	2%	2%	2%	2%	2%	2%	2%	2%	2%	6%	3%
Adj. Flow (vph)	66	128	46	189	617	408	138	995	31	56	561	128
Shared Lane Traffic (%)												
Lane Group Flow (vph)	66	174	0	189	617	408	138	995	31	56	689	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			10			10	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.14	1.14	1.14	1.14	1.07	1.14	1.25	1.12	1.14	1.25	1.19	1.14
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	
Protected Phases	6	3		2	7		8	1		4	5	
Permitted Phases	3			7		7	1		1	5		
Minimum Split (s)	8.0	32.0		8.0	32.0	32.0	10.0	55.0	55.0	10.0	55.0	
Total Split (s)	8.0	32.0		8.0	32.0	32.0	10.0	55.0	55.0	10.0	55.0	
Total Split (%)	7.6%	30.5%		7.6%	30.5%	30.5%	9.5%	52.4%	52.4%	9.5%	52.4%	
Maximum Green (s)	5.0	27.0		5.0	27.0	27.0	7.0	50.0	50.0	7.0	50.0	
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	2.0		0.0	2.0	2.0	0.0	2.0	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	0.0	0.0	
Total Lost Time (s)	3.0	5.0		3.0	5.0	5.0	3.0	5.0	5.0	3.0	5.0	
Lead/Lag	Lead	Lag		Lead	Lag	Lag						
Lead-Lag Optimize?												
Walk Time (s)		11.0			11.0	11.0		23.0	23.0		31.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Flash Dont Walk (s)		16.0			16.0	16.0		27.0	27.0		19.0	
Pedestrian Calls (#/hr)		0			0	0		0	0		0	
Act Effct Green (s)	34.0	27.0		34.0	27.0	27.0	59.0	50.0	50.0	59.0	50.0	
Actuated g/C Ratio	0.32	0.26		0.32	0.26	0.26	0.56	0.48	0.48	0.56	0.48	
v/c Ratio	0.37	0.21		0.51	0.72	0.78	0.40	0.64	0.03	0.23	0.49	
Control Delay	29.4	23.1		32.4	41.0	28.4	13.5	23.2	0.0	11.6	19.2	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	29.4	23.1		32.4	41.0	28.4	13.5	23.2	0.0	11.6	19.2	
LOS	C	C		C	D	C	B	C	A	B	B	
Approach Delay		24.9			35.4			21.4			18.7	
Approach LOS		C			D			C			B	

Intersection Summary			
Area Type:	CBD		
Cycle Length: 105			
Actuated Cycle Length: 105			
Offset: 35 (33%), Referenced to phase 1:NBTL and 5:SBTL, Start of Green			
Natural Cycle: 105			
Control Type: Pretimed			
Maximum v/c Ratio: 0.78			
Intersection Signal Delay: 26.1		Intersection LOS: C	
Intersection Capacity Utilization 98.9%		ICU Level of Service F	
Analysis Period (min) 15			

Splits and Phases: 1400: Intermediate Columbus Drive & Intermediate Randolph Street





Lane Group	EBU	EBL	EBT	WBU	WBT	WBR	SBL	SBR	Ø2	Ø3	Ø4	Ø9
Lane Configurations												
Traffic Volume (vph)	15	75	260	5	285	215	270	240				
Future Volume (vph)	15	75	260	5	285	215	270	240				
Ideal Flow (vphpl)	1900	1900	2000	1900	2000	1900	1900	1900				
Lane Width (ft)	12	10	12	12	12	12	12	12				
Storage Length (ft)		90		0		80	0	0				
Storage Lanes		1		0		1	1	1				
Taper Length (ft)		45		25			50					
Lane Util. Factor	0.95	1.00	0.95	0.95	0.95	1.00	1.00	1.00				
Ped Bike Factor		0.75				0.61	0.72	0.68				
Frt						0.850		0.850				
Flt Protected		0.950			0.999		0.950					
Satd. Flow (prot)	0	1344	3196	0	3166	1425	1593	1333				
Flt Permitted		0.536			0.950		0.950					
Satd. Flow (perm)	0	572	3196	0	3011	868	1144	913				
Right Turn on Red						No		No				
Satd. Flow (RTOR)												
Link Speed (mph)			20		20		30					
Link Distance (ft)			798		891		565					
Travel Time (s)			27.2		30.4		12.8					
Confl. Peds. (#/hr)		810				810	143	177				
Confl. Bikes (#/hr)						3						
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95				
Heavy Vehicles (%)	2%	15%	7%	2%	8%	2%	2%	9%				
Adj. Flow (vph)	16	79	274	5	300	226	284	253				
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	95	274	0	305	226	284	253				
Enter Blocked Intersection	No	No	No	No	No	No	No	No				
Lane Alignment	R NA	Left	Left	R NA	Left	Right	Left	Right				
Median Width(ft)			40		40		16					
Link Offset(ft)			0		0		0					
Crosswalk Width(ft)			16		16		16					
Two way Left Turn Lane												
Headway Factor	1.14	1.25	1.07	1.14	1.07	1.14	1.14	1.14				
Turning Speed (mph)	9	15		9		9	15	9				
Number of Detectors	1	1	2	1	2	1	1	1				
Detector Template	Left	Left	Thru	Left	Thru	Right	Left	Right				
Leading Detector (ft)	20	20	100	20	100	20	20	20				
Trailing Detector (ft)	0	0	0	0	0	0	0	0				
Detector 1 Position(ft)	0	0	0	0	0	0	0	0				
Detector 1 Size(ft)	20	20	6	20	6	20	20	20				
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex				
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0				
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0				
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0				
Detector 2 Position(ft)			94		94							
Detector 2 Size(ft)			6		6							
Detector 2 Type			Cl+Ex		Cl+Ex							

Lane Group	Ø13
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 (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	

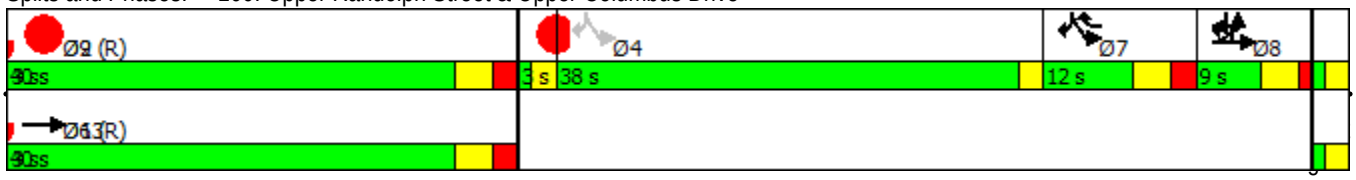
Lanes, Volumes, Timings
100: Upper Randolph Street & Upper Columbus Drive 05/03/2017

Lane Group	EBU	EBL	EBT	WBU	WBT	WBR	SBL	SBR	Ø2	Ø3	Ø4	Ø9
Detector 2 Channel												
Detector 2 Extend (s)			0.0		0.0							
Turn Type	custom	custom	NA	Perm	NA	pm+ov	custom	pt+ov				
Protected Phases	8!	8	2 8 13		6	7	7	7 8!	2	3	4	9
Permitted Phases	2	2		6		6	4	4				
Detector Phase	8	8	2 8 13	6	6	7	7	7 8				
Switch Phase												
Minimum Initial (s)	4.0	4.0		35.0	35.0	5.0	5.0		35.0	1.0	33.0	1.0
Minimum Split (s)	9.0	9.0		40.0	40.0	12.0	12.0		40.0	3.0	38.0	3.0
Total Split (s)	9.0	9.0		40.0	40.0	12.0	12.0		40.0	3.0	38.0	3.0
Total Split (%)	8.6%	8.6%		38.1%	38.1%	11.4%	11.4%		38%	3%	36%	3%
Maximum Green (s)	5.0	5.0		35.0	35.0	7.0	7.0		35.0	1.0	36.0	1.0
Yellow Time (s)	3.0	3.0		3.0	3.0	3.0	3.0		3.0	2.0	2.0	2.0
All-Red Time (s)	1.0	1.0		2.0	2.0	2.0	2.0		2.0	0.0	0.0	0.0
Lost Time Adjust (s)		0.0			0.0	0.0	0.0					
Total Lost Time (s)		4.0			5.0	5.0	5.0					
Lead/Lag	Lag	Lag				Lead	Lead			Lead	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0
Recall Mode	None	None		C-Max	C-Max	Max	Max		C-Max	Max	Max	Max
Walk Time (s)				11.0	11.0				11.0		5.0	
Flash Dont Walk (s)				24.0	24.0				24.0		11.0	
Pedestrian Calls (#/hr)				0	0				0		0	
Act Effct Green (s)		41.0	39.0		35.0	42.0	40.0	49.0				
Actuated g/C Ratio		0.39	0.37		0.33	0.40	0.38	0.47				
v/c Ratio		0.37	0.23		0.30	0.59	0.61	0.52				
Control Delay		22.4	20.0		27.0	24.3	28.9	23.8				
Queue Delay		0.0	0.0		0.0	0.0	0.0	0.0				
Total Delay		22.4	20.0		27.0	24.3	28.9	23.8				
LOS		C	C		C	C	C	C				
Approach Delay			20.6		25.8		26.5					
Approach LOS			C		C		C					

Intersection Summary	
Area Type:	CBD
Cycle Length: 105	
Actuated Cycle Length: 105	
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTU, Start of Green	
Natural Cycle: 105	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.61	
Intersection Signal Delay: 24.7	Intersection LOS: C
Intersection Capacity Utilization 94.8%	ICU Level of Service F
Analysis Period (min) 15	

! Phase conflict between lane groups.

Splits and Phases: 100: Upper Randolph Street & Upper Columbus Drive



Lane Group	Ø13
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	
Protected Phases	13
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	1.0
Minimum Split (s)	3.0
Total Split (s)	3.0
Total Split (%)	3%
Maximum Green (s)	1.0
Yellow Time (s)	2.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	Max
Walk Time (s)	
Flash Dont Walk (s)	
Pedestrian Calls (#/hr)	
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	

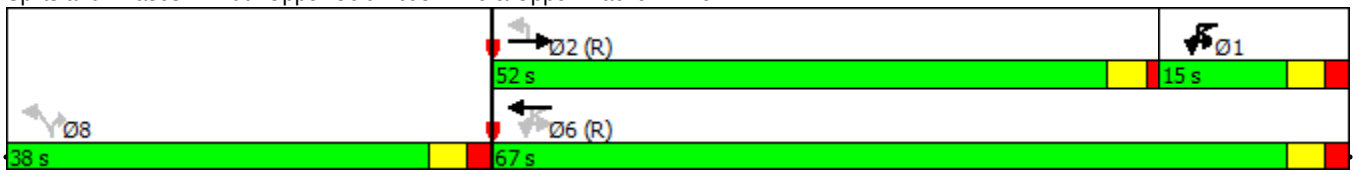
Intersection Summary

Lane Group	EBU	EBT	EBR	WBU	WBL	WBT	NBL	NBR
Lane Configurations								
Traffic Volume (vph)	45	460	100	25	90	150	125	175
Future Volume (vph)	45	460	100	25	90	150	125	175
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	2000	1900	1900
Storage Length (ft)	0		0		435		100	100
Storage Lanes	0		0		1		1	1
Taper Length (ft)	25				25		25	
Lane Util. Factor	0.91	0.91	0.91	0.95	1.00	0.95	0.97	0.88
Ped Bike Factor		0.98			0.95		0.84	0.61
Frt		0.975						0.850
Flt Protected		0.996			0.950		0.950	
Satd. Flow (prot)	0	4323	0	0	1569	3353	2740	2224
Flt Permitted		0.904			0.365		0.950	
Satd. Flow (perm)	0	3923	0	0	570	3353	2291	1355
Right Turn on Red			Yes					Yes
Satd. Flow (RTOR)		52						110
Link Speed (mph)		30				30	30	
Link Distance (ft)		961				509	702	
Travel Time (s)		21.8				11.6	16.0	
Confl. Peds. (#/hr)			210		210		103	237
Confl. Bikes (#/hr)								2
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	2%	2%	4%	2%	4%	2%	15%	15%
Adj. Flow (vph)	47	484	105	26	95	158	132	184
Shared Lane Traffic (%)								
Lane Group Flow (vph)	0	636	0	0	121	158	132	184
Enter Blocked Intersection	No	No	No	No	No	No	No	No
Lane Alignment	R NA	Left	Right	R NA	Left	Left	Left	Right
Median Width(ft)		27				27	30	
Link Offset(ft)		0				0	0	
Crosswalk Width(ft)		16				16	16	
Two way Left Turn Lane								
Headway Factor	1.14	1.14	1.14	1.14	1.14	1.07	1.14	1.14
Turning Speed (mph)	9		9	9	15		15	9
Number of Detectors	1	2		1	1	2	1	1
Detector Template	Left	Thru		Left	Left	Thru	Left	Right
Leading Detector (ft)	20	100		20	20	100	20	20
Trailing Detector (ft)	0	0		0	0	0	0	0
Detector 1 Position(ft)	0	0		0	0	0	0	0
Detector 1 Size(ft)	20	6		20	20	6	20	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel								
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94				94		
Detector 2 Size(ft)		6				6		
Detector 2 Type		Cl+Ex				Cl+Ex		
Detector 2 Channel								

Lane Group	EBU	EBT	EBR	WBU	WBL	WBT	NBL	NBR
Detector 2 Extend (s)		0.0				0.0		
Turn Type	Perm	NA		pm+pt	pm+pt	NA	Perm	Perm
Protected Phases		2		1	1	6		
Permitted Phases	2			6	6		8	8
Detector Phase	2	2		1	1	6	8	8
Switch Phase								
Minimum Initial (s)	48.0	48.0		10.0	10.0	62.0	33.0	33.0
Minimum Split (s)	52.0	52.0		15.0	15.0	67.0	38.0	38.0
Total Split (s)	52.0	52.0		15.0	15.0	67.0	38.0	38.0
Total Split (%)	49.5%	49.5%		14.3%	14.3%	63.8%	36.2%	36.2%
Maximum Green (s)	48.0	48.0		10.0	10.0	62.0	33.0	33.0
Yellow Time (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	1.0	1.0		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)		4.0			5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lead		Lag	Lag			
Lead-Lag Optimize?								
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0
Recall Mode	C-Max	C-Max		None	None	C-Max	Max	Max
Walk Time (s)	21.0	21.0				21.0	7.0	7.0
Flash Dont Walk (s)	27.0	27.0				27.0	26.0	26.0
Pedestrian Calls (#/hr)	0	0				0	0	0
Act Effct Green (s)		48.0			62.0	62.0	33.0	33.0
Actuated g/C Ratio		0.46			0.59	0.59	0.31	0.31
v/c Ratio		0.35			0.28	0.08	0.18	0.37
Control Delay		17.4			13.7	9.4	31.3	25.4
Queue Delay		0.0			0.0	0.0	0.0	0.0
Total Delay		17.4			13.7	9.4	31.3	25.4
LOS		B			B	A	C	C
Approach Delay		17.4				11.2	27.9	
Approach LOS		B				B	C	

Intersection Summary			
Area Type:	CBD		
Cycle Length: 105			
Actuated Cycle Length: 105			
Offset: 95 (90%), Referenced to phase 2:EBTU and 6:WBTL, Start of Green			
Natural Cycle: 105			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.37			
Intersection Signal Delay: 18.7		Intersection LOS: B	
Intersection Capacity Utilization 130.8%		ICU Level of Service H	
Analysis Period (min) 15			

Splits and Phases: 200: Upper Columbus Drive & Upper Wacker Drive



Lane Group	EBT	EBR	WBL	WBT	NBU	NBL	NBR
Lane Configurations							
Traffic Volume (vph)	1	40	15	1	5	30	25
Future Volume (vph)	1	40	15	1	5	30	25
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor							
Frt	0.867					0.943	
Flt Protected				0.954		0.972	
Satd. Flow (prot)	1615	0	0	1777	0	1657	0
Flt Permitted				0.954		0.972	
Satd. Flow (perm)	1615	0	0	1777	0	1657	0
Link Speed (mph)	30			30		20	
Link Distance (ft)	452			76		117	
Travel Time (s)	10.3			1.7		4.0	
Confl. Peds. (#/hr)		7	7			18	26
Peak Hour Factor	0.69	0.69	0.69	0.69	0.69	0.69	0.69
Heavy Vehicles (%)	2%	2%	2%	2%	40%	2%	2%
Adj. Flow (vph)	1	58	22	1	7	43	36
Shared Lane Traffic (%)							
Lane Group Flow (vph)	59	0	0	23	0	86	0
Enter Blocked Intersection	No	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	R NA	Left	Right
Median Width(ft)	0			0		12	
Link Offset(ft)	0			0		0	
Crosswalk Width(ft)	16			16		16	
Two way Left Turn Lane							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		9	15	9
Sign Control	Stop			Stop		Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 23.8%		ICU Level of Service A	
Analysis Period (min) 15			

Movement	EBT	EBR	WBL	WBT	NBU	NBL	NBR
Lane Configurations							
Sign Control	Stop			Stop		Stop	
Traffic Volume (vph)	1	40	15	1	5	30	25
Future Volume (vph)	1	40	15	1	5	30	25
Peak Hour Factor	0.69	0.69	0.69	0.69	0.69	0.69	0.69
Hourly flow rate (vph)	1	58	22	1	0	43	36

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total (vph)	59	23	79
Volume Left (vph)	0	22	43
Volume Right (vph)	58	0	36
Hadj (s)	-0.56	0.23	-0.13
Departure Headway (s)	3.5	4.3	3.9
Degree Utilization, x	0.06	0.03	0.09
Capacity (veh/h)	990	808	887
Control Delay (s)	6.8	7.5	7.3
Approach Delay (s)	6.8	7.5	7.3
Approach LOS	A	A	A

Intersection Summary			
Delay	7.1		
Level of Service	A		
Intersection Capacity Utilization	23.8%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	WBL	WBR	NBU	NBT	NBR	SBL	SBT
Lane Configurations							
Traffic Volume (vph)	70	5	10	55	85	5	55
Future Volume (vph)	70	5	10	55	85	5	55
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor							
Frt	0.991			0.923			
Flt Protected	0.955			0.997			0.996
Satd. Flow (prot)	1763	0	0	1683	0	0	1791
Flt Permitted	0.955			0.997			0.996
Satd. Flow (perm)	1763	0	0	1683	0	0	1791
Link Speed (mph)	20			20			20
Link Distance (ft)	377			210			131
Travel Time (s)	12.9			7.2			4.5
Confl. Peds. (#/hr)	7	87			125	125	
Confl. Bikes (#/hr)					1		
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81	0.81
Heavy Vehicles (%)	2%	2%	20%	4%	2%	2%	6%
Adj. Flow (vph)	86	6	12	68	105	6	68
Shared Lane Traffic (%)							
Lane Group Flow (vph)	92	0	0	185	0	0	74
Enter Blocked Intersection	No	No	No	No	No	No	No
Lane Alignment	Left	Right	R NA	Left	Right	Left	Left
Median Width(ft)	12			14			0
Link Offset(ft)	0			0			0
Crosswalk Width(ft)	16			16			16
Two way Left Turn Lane							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	9		9	15	
Sign Control	Stop			Stop			Stop

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 34.0%		ICU Level of Service A	
Analysis Period (min) 15			

Movement	WBL	WBR	NBU	NBT	NBR	SBL	SBT
Lane Configurations							
Sign Control	Stop			Stop			Stop
Traffic Volume (vph)	70	5	10	55	85	5	55
Future Volume (vph)	70	5	10	55	85	5	55
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81	0.81
Hourly flow rate (vph)	86	6	0	68	105	6	68

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total (vph)	92	173	74
Volume Left (vph)	86	0	6
Volume Right (vph)	6	105	0
Hadj (s)	0.18	-0.32	0.11
Departure Headway (s)	4.6	3.9	4.4
Degree Utilization, x	0.12	0.19	0.09
Capacity (veh/h)	733	896	792
Control Delay (s)	8.2	7.8	7.8
Approach Delay (s)	8.2	7.8	7.8
Approach LOS	A	A	A

Intersection Summary			
Delay	7.9		
Level of Service	A		
Intersection Capacity Utilization	34.0%	ICU Level of Service	A
Analysis Period (min)	15		

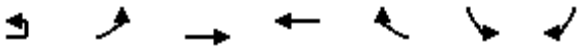
Lane Group	WBL	WBR	NBU	NBT	NBR	SBU	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	45	5	5	140	55	5	1	130
Future Volume (vph)	45	5	5	140	55	5	1	130
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor								
Frt	0.986			0.963				
Flt Protected	0.957			0.999				0.998
Satd. Flow (prot)	1758	0	0	1478	0	0	0	1591
Flt Permitted	0.957			0.999				0.998
Satd. Flow (perm)	1758	0	0	1478	0	0	0	1591
Link Speed (mph)	20			20				20
Link Distance (ft)	257			203				210
Travel Time (s)	8.8			6.9				7.2
Confl. Peds. (#/hr)	18	38			123		123	
Confl. Bikes (#/hr)					1			
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	2%	2%	2%	33%	2%	2%	2%	20%
Adj. Flow (vph)	50	6	6	156	61	6	1	144
Shared Lane Traffic (%)								
Lane Group Flow (vph)	56	0	0	223	0	0	0	151
Enter Blocked Intersection	No	No	No	No	No	No	No	No
Lane Alignment	Left	Right	R NA	Left	Right	R NA	Left	Left
Median Width(ft)	12			14				14
Link Offset(ft)	0			0				0
Crosswalk Width(ft)	16			16				16
Two way Left Turn Lane								
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	9		9	9	15	
Sign Control	Stop			Stop				Stop

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 31.5%		ICU Level of Service A	
Analysis Period (min) 15			

Movement	WBL	WBR	NBU	NBT	NBR	SBU	SBL	SBT
Lane Configurations								
Sign Control	Stop			Stop				Stop
Traffic Volume (vph)	45	5	5	140	55	5	1	130
Future Volume (vph)	45	5	5	140	55	5	1	130
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	50	6	0	156	61	0	1	144

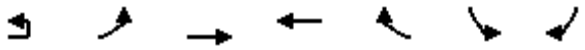
Direction, Lane #	WB 1	NB 1	SB 1
Volume Total (vph)	56	217	145
Volume Left (vph)	50	0	1
Volume Right (vph)	6	61	0
Hadj (s)	0.15	0.24	0.34
Departure Headway (s)	4.9	4.5	4.6
Degree Utilization, x	0.08	0.27	0.19
Capacity (veh/h)	678	790	754
Control Delay (s)	8.3	9.1	8.7
Approach Delay (s)	8.3	9.1	8.7
Approach LOS	A	A	A

Intersection Summary			
Delay	8.8		
Level of Service	A		
Intersection Capacity Utilization	31.5%	ICU Level of Service	A
Analysis Period (min)	15		



Lane Group	EBU	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations							
Traffic Volume (vph)	175	115	250	205	30	20	165
Future Volume (vph)	175	115	250	205	30	20	165
Ideal Flow (vphpl)	1900	1900	2000	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor							
Frt				0.983		0.880	
Flt Protected		0.950				0.995	
Satd. Flow (prot)	0	1729	1905	1738	0	1631	0
Flt Permitted		0.950				0.995	
Satd. Flow (perm)	0	1729	1905	1738	0	1631	0
Link Speed (mph)			20	20		30	
Link Distance (ft)			891	452		390	
Travel Time (s)			30.4	15.4		8.9	
Confl. Peds. (#/hr)		208			208	41	27
Confl. Bikes (#/hr)					1		
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	6%	2%	5%	8%	4%	2%	2%
Adj. Flow (vph)	188	124	269	220	32	22	177
Shared Lane Traffic (%)							
Lane Group Flow (vph)	0	312	269	252	0	199	0
Enter Blocked Intersection	No	No	No	No	No	No	No
Lane Alignment	R NA	Left	Left	Left	Right	Left	Right
Median Width(ft)			20	0		12	
Link Offset(ft)			0	38		0	
Crosswalk Width(ft)			16	16		16	
Two way Left Turn Lane							
Headway Factor	1.00	1.00	0.94	1.00	1.00	1.00	1.00
Turning Speed (mph)	9	15			9	15	9
Sign Control			Stop	Stop		Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 53.2%		ICU Level of Service A	
Analysis Period (min) 15			



Movement	EBU	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations							
Sign Control			Stop	Stop		Stop	
Traffic Volume (vph)	175	115	250	205	30	20	165
Future Volume (vph)	175	115	250	205	30	20	165
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	0	124	269	220	32	22	177

Direction, Lane #	EB 1	EB 2	WB 1	SB 1
Volume Total (vph)	124	269	252	199
Volume Left (vph)	124	0	0	22
Volume Right (vph)	0	0	32	177
Hadj (s)	0.53	0.08	0.05	-0.48
Departure Headway (s)	5.8	5.4	5.1	4.9
Degree Utilization, x	0.20	0.40	0.35	0.27
Capacity (veh/h)	592	648	679	660
Control Delay (s)	9.1	10.7	10.8	9.8
Approach Delay (s)	10.2		10.8	9.8
Approach LOS	B		B	A

Intersection Summary			
Delay	10.3		
Level of Service	B		
Intersection Capacity Utilization	53.2%	ICU Level of Service	A
Analysis Period (min)	15		

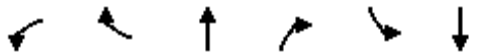
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	30	185	0	0	0	145
Future Volume (vph)	30	185	0	0	0	145
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.884					0.865
Flt Protected						
Satd. Flow (prot)	1647	0	0	0	0	1611
Flt Permitted						
Satd. Flow (perm)	1647	0	0	0	0	1611
Link Speed (mph)	30			30	30	
Link Distance (ft)	454			309	390	
Travel Time (s)	10.3			7.0	8.9	
Confl. Peds. (#/hr)		22	22		40	6
Confl. Bikes (#/hr)						3
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	34	210	0	0	0	165
Shared Lane Traffic (%)						
Lane Group Flow (vph)	244	0	0	0	0	165
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Stop			Stop	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 31.8%		ICU Level of Service A	
Analysis Period (min) 15			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Sign Control	Stop			Stop	Stop	
Traffic Volume (vph)	30	185	0	0	0	145
Future Volume (vph)	30	185	0	0	0	145
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Hourly flow rate (vph)	34	210	0	0	0	165

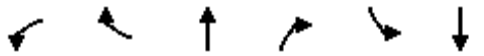
Direction, Lane #	EB 1	NB 1
Volume Total (vph)	244	165
Volume Left (vph)	0	0
Volume Right (vph)	210	165
Hadj (s)	-0.48	-0.57
Departure Headway (s)	3.8	3.8
Degree Utilization, x	0.25	0.18
Capacity (veh/h)	924	887
Control Delay (s)	8.0	7.6
Approach Delay (s)	8.0	7.6
Approach LOS	A	A

Intersection Summary			
Delay	7.9		
Level of Service	A		
Intersection Capacity Utilization	31.8%	ICU Level of Service	A
Analysis Period (min)	15		



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	0	35	140	35	0	0
Future Volume (vph)	0	35	140	35	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt		0.865	0.973			
Flt Protected						
Satd. Flow (prot)	0	1611	1812	0	0	0
Flt Permitted						
Satd. Flow (perm)	0	1611	1812	0	0	0
Link Speed (mph)	30		30			30
Link Distance (ft)	180		133			240
Travel Time (s)	4.1		3.0			5.5
Confl. Peds. (#/hr)		126		20	20	
Confl. Bikes (#/hr)				3		
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87
Adj. Flow (vph)	0	40	161	40	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	40	201	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	0		0			0
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free

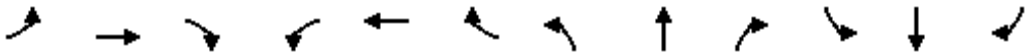
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 31.5%		ICU Level of Service A	
Analysis Period (min) 15			



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	35	140	35	0	0
Future Volume (Veh/h)	0	35	140	35	0	0
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87
Hourly flow rate (vph)	0	40	161	40	0	0
Pedestrians	20					126
Lane Width (ft)	12.0					0.0
Walking Speed (ft/s)	3.5					3.5
Percent Blockage	2					0
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	201	327			221	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	201	327			221	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	94			100	
cM capacity (veh/h)	773	701			1322	

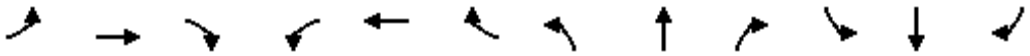
Direction, Lane #	WB 1	NB 1
Volume Total	40	201
Volume Left	0	0
Volume Right	40	40
cSH	701	1700
Volume to Capacity	0.06	0.12
Queue Length 95th (ft)	5	0
Control Delay (s)	10.4	0.0
Lane LOS	B	
Approach Delay (s)	10.4	0.0
Approach LOS	B	

Intersection Summary			
Average Delay	1.7		
Intersection Capacity Utilization	31.5%	ICU Level of Service	A
Analysis Period (min)	15		



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	15	5	15	5	5	1	30	5	10	1	1	1
Future Volume (vph)	15	5	15	5	5	1	30	5	10	1	1	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	10	12	12	11	12	12	11	12	12	11	12
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		0.942			0.990			0.971			0.955	
Flt Protected		0.979			0.977			0.967			0.984	
Satd. Flow (prot)	0	1603	0	0	1742	0	0	1691	0	0	1692	0
Flt Permitted		0.979			0.977			0.967			0.984	
Satd. Flow (perm)	0	1603	0	0	1742	0	0	1691	0	0	1692	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		180			106			606			163	
Travel Time (s)		4.1			2.4			13.8			3.7	
Confl. Peds. (#/hr)	31		7	7		31	19		8	8		19
Confl. Bikes (#/hr)			2									
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82
Adj. Flow (vph)	18	6	18	6	6	1	37	6	12	1	1	1
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	42	0	0	13	0	0	55	0	0	3	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.09	1.00	1.00	1.04	1.00	1.00	1.04	1.00	1.00	1.04	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Free			Free			Stop			Stop	

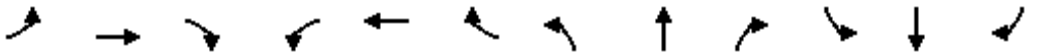
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 24.5%		ICU Level of Service A	
Analysis Period (min) 15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	15	5	15	5	5	1	30	5	10	1	1	1
Future Volume (Veh/h)	15	5	15	5	5	1	30	5	10	1	1	1
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82
Hourly flow rate (vph)	18	6	18	6	6	1	37	6	12	1	1	1
Pedestrians		19			8			7			31	
Lane Width (ft)		10.0			11.0			11.0			11.0	
Walking Speed (ft/s)		3.5			3.5			3.5			3.5	
Percent Blockage		2			1			1			3	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	38			31			97	108	30	124	116	56
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	38			31			97	108	30	124	116	56
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			100			96	99	99	100	100	100
cM capacity (veh/h)	1530			1572			833	745	1031	778	737	968

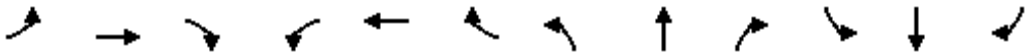
Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	42	13	55	3
Volume Left	18	6	37	1
Volume Right	18	1	12	1
cSH	1530	1572	858	816
Volume to Capacity	0.01	0.00	0.06	0.00
Queue Length 95th (ft)	1	0	5	0
Control Delay (s)	3.2	3.4	9.5	9.4
Lane LOS	A	A	A	A
Approach Delay (s)	3.2	3.4	9.5	9.4
Approach LOS			A	A

Intersection Summary				
Average Delay	6.4			
Intersection Capacity Utilization	24.5%	ICU Level of Service	A	
Analysis Period (min)	15			



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	175	5	1	1	5	55	2	29	1	70	10	20
Future Volume (vph)	175	5	1	1	5	55	2	29	1	70	10	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	11	12	12	12	12
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	0.95	0.95	0.95
Ped Bike Factor												
Frt		0.979			0.878			0.996			0.970	
Flt Protected	0.950				0.999			0.997			0.966	
Satd. Flow (prot)	1770	1824	0	0	1578	0	0	3397	0	0	3161	0
Flt Permitted	0.950				0.999			0.997			0.966	
Satd. Flow (perm)	1770	1824	0	0	1578	0	0	3397	0	0	3161	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		508			1374			603			254	
Travel Time (s)		11.5			31.2			13.7			5.8	
Confl. Peds. (#/hr)	142		88	88		142	61		87	87		61
Confl. Bikes (#/hr)												1
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Heavy Vehicles (%)	2%	2%	2%	2%	2%	6%	2%	2%	2%	8%	2%	6%
Adj. Flow (vph)	199	6	1	1	6	63	2	33	1	80	11	23
Shared Lane Traffic (%)												
Lane Group Flow (vph)	199	7	0	0	70	0	0	36	0	0	114	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.04	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Stop			Stop	

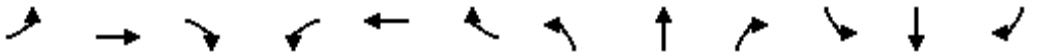
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 36.0%		ICU Level of Service A	
Analysis Period (min) 15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	175	5	1	1	5	55	2	29	1	70	10	20
Future Volume (vph)	175	5	1	1	5	55	2	29	1	70	10	20
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Hourly flow rate (vph)	199	6	1	1	6	63	2	33	1	80	11	23

Direction, Lane #	EB 1	EB 2	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total (vph)	199	7	70	19	18	86	29
Volume Left (vph)	199	0	1	2	0	80	0
Volume Right (vph)	0	1	63	0	1	0	23
Hadj (s)	0.53	-0.07	-0.44	0.09	-0.01	0.60	-0.48
Departure Headway (s)	5.5	4.9	4.7	5.5	5.4	5.9	4.8
Degree Utilization, x	0.30	0.01	0.09	0.03	0.03	0.14	0.04
Capacity (veh/h)	630	707	724	619	628	579	705
Control Delay (s)	9.7	6.8	8.2	7.4	7.3	8.6	6.8
Approach Delay (s)	9.6		8.2	7.4		8.2	
Approach LOS	A		A	A		A	

Intersection Summary				
Delay	8.8			
Level of Service	A			
Intersection Capacity Utilization	36.0%	ICU Level of Service	A	
Analysis Period (min)	15			

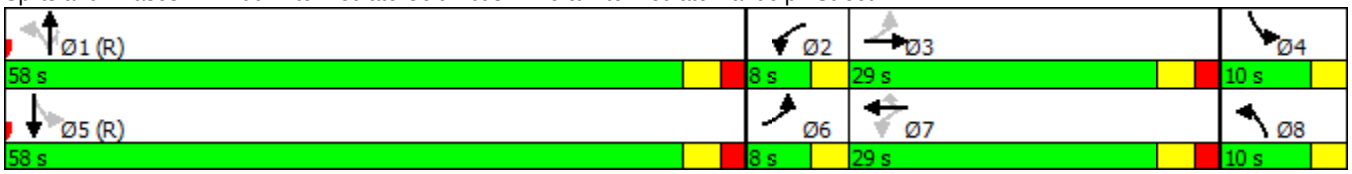


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	50	150	50	30	120	75	170	1320	450	185	1035	105
Future Volume (vph)	50	150	50	30	120	75	170	1320	450	185	1035	105
Ideal Flow (vphpl)	1900	1900	1900	1900	2000	1900	1900	2000	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	10	11	12	10	11	12
Storage Length (ft)	85		0	85		85	95		95	200		0
Storage Lanes	1		0	1		1	1		1	1		0
Taper Length (ft)	45			25			90			50		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	0.95	0.88	1.00	0.95	0.95
Ped Bike Factor	1.00					0.98	1.00				1.00	
Frt		0.963				0.850			0.850		0.986	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1593	3067	0	1562	2874	1425	1486	3210	2508	1486	3032	0
Flt Permitted	0.670			0.604			0.121			0.075		
Satd. Flow (perm)	1120	3067	0	993	2874	1402	189	3210	2508	117	3032	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		40				83			489		15	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		937			752			538			655	
Travel Time (s)		21.3			17.1			12.2			14.9	
Confl. Peds. (#/hr)	3					3	3					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
Heavy Vehicles (%)	2%	2%	2%	4%	19%	2%	2%	3%	2%	2%	2%	2%
Adj. Flow (vph)	54	163	54	33	130	82	185	1435	489	201	1125	114
Shared Lane Traffic (%)												
Lane Group Flow (vph)	54	217	0	33	130	82	185	1435	489	201	1239	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			10			10	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.14	1.14	1.14	1.14	1.07	1.14	1.25	1.12	1.14	1.25	1.19	1.14
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	
Protected Phases	6	3		2	7		8	1		4	5	
Permitted Phases	3			7		7	1		1	5		
Minimum Split (s)	8.0	29.0		8.0	29.0	29.0	10.0	58.0	58.0	10.0	58.0	
Total Split (s)	8.0	29.0		8.0	29.0	29.0	10.0	58.0	58.0	10.0	58.0	
Total Split (%)	7.6%	27.6%		7.6%	27.6%	27.6%	9.5%	55.2%	55.2%	9.5%	55.2%	
Maximum Green (s)	5.0	24.0		5.0	24.0	24.0	7.0	53.0	53.0	7.0	53.0	
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	2.0		0.0	2.0	2.0	0.0	2.0	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	0.0	0.0	
Total Lost Time (s)	3.0	5.0		3.0	5.0	5.0	3.0	5.0	5.0	3.0	5.0	
Lead/Lag	Lead	Lag		Lead	Lag	Lag						
Lead-Lag Optimize?												
Walk Time (s)		8.0			8.0	8.0		26.0	26.0		34.0	
Flash Dont Walk (s)		16.0			16.0	16.0		27.0	27.0		19.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Pedestrian Calls (#/hr)		0			0	0		0	0		0	
Act Effct Green (s)	31.0	24.0		31.0	24.0	24.0	62.0	53.0	53.0	62.0	53.0	
Actuated g/C Ratio	0.30	0.23		0.30	0.23	0.23	0.59	0.50	0.50	0.59	0.50	
v/c Ratio	0.15	0.30		0.10	0.20	0.21	0.93	0.89	0.32	1.26	0.81	
Control Delay	26.3	28.4		25.6	33.7	8.7	66.4	31.5	1.9	180.6	26.6	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	26.3	28.4		25.6	33.7	8.7	66.4	31.5	1.9	180.6	26.6	
LOS	C	C		C	C	A	E	C	A	F	C	
Approach Delay		28.0			24.3			27.7			48.1	
Approach LOS		C			C			C			D	

Intersection Summary			
Area Type:	CBD		
Cycle Length: 105			
Actuated Cycle Length: 105			
Offset: 24 (23%), Referenced to phase 1:NBTL and 5:SBTL, Start of Green			
Natural Cycle: 105			
Control Type: Pretimed			
Maximum v/c Ratio: 1.26			
Intersection Signal Delay: 34.7		Intersection LOS: C	
Intersection Capacity Utilization 93.8%		ICU Level of Service F	
Analysis Period (min) 15			

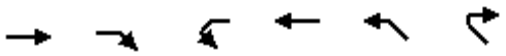
Splits and Phases: 1400: Intermediate Columbus Drive & Intermediate Randolph Street



FUTURE CAPACITY REPORTS

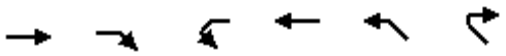
Weekday Morning Peak Hour

Weekday Evening Peak Hour



Lane Group	EBT	EBR	WBL	WBT	NWL	NWR
Lane Configurations						
Traffic Volume (vph)	0	0	0	0	0	0
Future Volume (vph)	0	0	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	1.00
Frt						
Flt Protected						
Satd. Flow (prot)	3539	0	0	3539	0	0
Flt Permitted						
Satd. Flow (perm)	3539	0	0	3539	0	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	509			216	366	
Travel Time (s)	11.6			4.9	8.3	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	0	0	0	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	0	0	0
Sign Control	Free			Free	Stop	

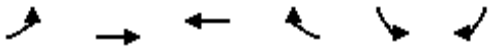
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 0.0%		ICU Level of Service A	
Analysis Period (min) 15			



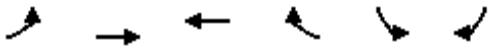
Movement	EBT	EBR	WBL	WBT	NWL	NWR
Lane Configurations						
Traffic Volume (veh/h)	0	0	0	0	0	0
Future Volume (Veh/h)	0	0	0	0	0	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	0	0	0	0	0	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	Raised			Raised		
Median storage veh)	1			1		
Upstream signal (ft)	509					
pX, platoon unblocked						
vC, conflicting volume			0		0	0
vC1, stage 1 conf vol					0	
vC2, stage 2 conf vol					0	
vCu, unblocked vol			0		0	0
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)					5.8	
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	100
cM capacity (veh/h)			1622		1023	1084

Direction, Lane #	EB 1	EB 2	WB 1	WB 2
Volume Total	0	0	0	0
Volume Left	0	0	0	0
Volume Right	0	0	0	0
cSH	1700	1700	1700	1700
Volume to Capacity	0.00	0.00	0.00	0.00
Queue Length 95th (ft)	0	0	0	0
Control Delay (s)	0.0	0.0	0.0	0.0
Lane LOS				
Approach Delay (s)	0.0		0.0	
Approach LOS				

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	0.0%	ICU Level of Service	A
Analysis Period (min)	15		



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	Ø2	Ø3	Ø4	Ø9	Ø13
Lane Configurations											
Traffic Volume (vph)	270	320	390	235	280	340					
Future Volume (vph)	270	320	390	235	280	340					
Ideal Flow (vphpl)	1900	2000	2000	1900	1900	1900					
Lane Width (ft)	10	12	12	12	12	12					
Storage Length (ft)	90			80	0	0					
Storage Lanes	1			1	1	1					
Taper Length (ft)	45				50						
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00					
Ped Bike Factor	0.86			0.70	0.85	0.80					
Frt				0.850		0.850					
Flt Protected	0.950				0.950						
Satd. Flow (prot)	1296	3257	3288	1425	1593	1298					
Flt Permitted	0.444				0.950						
Satd. Flow (perm)	518	3257	3288	999	1361	1032					
Right Turn on Red				No		No					
Satd. Flow (RTOR)											
Link Speed (mph)		20	20		30						
Link Distance (ft)		798	891		565						
Travel Time (s)		27.2	30.4		12.8						
Confl. Peds. (#/hr)	325			325	74	100					
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95					
Heavy Vehicles (%)	17%	5%	4%	2%	2%	12%					
Adj. Flow (vph)	284	337	411	247	295	358					
Shared Lane Traffic (%)											
Lane Group Flow (vph)	284	337	411	247	295	358					
Turn Type	custom	NA	NA	pm+ov	custom	pt+ov					
Protected Phases	8	2 8 13	6	7	7	7 8	2	3	4	9	13
Permitted Phases	2			6	4	4					
Detector Phase	8	2 8 13	6	7	7	7 8					
Switch Phase											
Minimum Initial (s)	4.0		35.0	5.0	5.0		35.0	1.0	33.0	1.0	1.0
Minimum Split (s)	9.0		40.0	12.0	12.0		40.0	3.0	38.0	3.0	3.0
Total Split (s)	9.0		40.0	12.0	12.0		40.0	3.0	38.0	3.0	3.0
Total Split (%)	8.6%		38.1%	11.4%	11.4%		38%	3%	36%	3%	3%
Maximum Green (s)	5.0		35.0	7.0	7.0		35.0	1.0	36.0	1.0	1.0
Yellow Time (s)	3.0		3.0	3.0	3.0		3.0	2.0	2.0	2.0	2.0
All-Red Time (s)	1.0		2.0	2.0	2.0		2.0	0.0	0.0	0.0	0.0
Lost Time Adjust (s)	0.0		0.0	0.0	0.0						
Total Lost Time (s)	4.0		5.0	5.0	5.0						
Lead/Lag	Lag			Lead	Lead			Lead	Lag		
Lead-Lag Optimize?											
Vehicle Extension (s)	3.0		3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0
Recall Mode	None		C-Max	Max	Max		C-Max	Max	Max	Max	Max
Walk Time (s)			11.0				11.0		5.0		
Flash Dont Walk (s)			24.0				24.0		11.0		
Pedestrian Calls (#/hr)			0				0		0		
Act Effct Green (s)	41.0	39.0	35.0	42.0	40.0	49.0					
Actuated g/C Ratio	0.39	0.37	0.33	0.40	0.38	0.47					



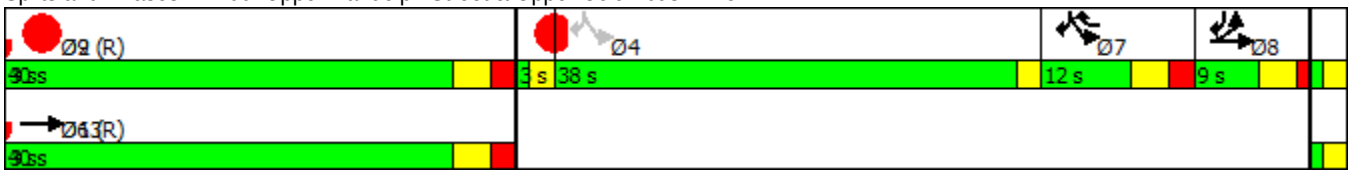
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	Ø2	Ø3	Ø4	Ø9	Ø13
v/c Ratio	1.19	0.28	0.38	0.58	0.55	0.69					
Control Delay	147.0	21.0	27.9	23.9	30.2	26.6					
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0					
Total Delay	147.0	21.0	27.9	23.9	30.2	26.6					
LOS	F	C	C	C	C	C					
Approach Delay		78.6	26.4		28.2						
Approach LOS		E	C		C						
90th %ile Green (s)	5.0		35.0	7.0	7.0		35.0	1.0	36.0	1.0	1.0
90th %ile Term Code	Max		Coord	MaxR	MaxR		Coord	MaxR	MaxR	MaxR	MaxR
70th %ile Green (s)	5.0		35.0	7.0	7.0		35.0	1.0	36.0	1.0	1.0
70th %ile Term Code	Max		Coord	MaxR	MaxR		Coord	MaxR	MaxR	MaxR	MaxR
50th %ile Green (s)	5.0		35.0	7.0	7.0		35.0	1.0	36.0	1.0	1.0
50th %ile Term Code	Max		Coord	MaxR	MaxR		Coord	MaxR	MaxR	MaxR	MaxR
30th %ile Green (s)	5.0		35.0	7.0	7.0		35.0	1.0	36.0	1.0	1.0
30th %ile Term Code	Max		Coord	MaxR	MaxR		Coord	MaxR	MaxR	MaxR	MaxR
10th %ile Green (s)	5.0		35.0	7.0	7.0		35.0	1.0	36.0	1.0	1.0
10th %ile Term Code	Max		Coord	MaxR	MaxR		Coord	MaxR	MaxR	MaxR	MaxR
Queue Length 50th (ft)	~166	71	110	83	136	128					
Queue Length 95th (ft)	#359	102	153	133	207	209					
Internal Link Dist (ft)		718	811		485						
Turn Bay Length (ft)	90			80							
Base Capacity (vph)	239	1209	1096	428	533	522					
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	1.19	0.28	0.38	0.58	0.55	0.69					

Intersection Summary			
Area Type:	CBD		
Cycle Length: 105			
Actuated Cycle Length: 105			
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBT, Start of Green			
Natural Cycle: 105			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.19			
Intersection Signal Delay: 43.8		Intersection LOS: D	
Intersection Capacity Utilization 74.7%		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: 100: Upper Randolph Street & Upper Columbus Drive



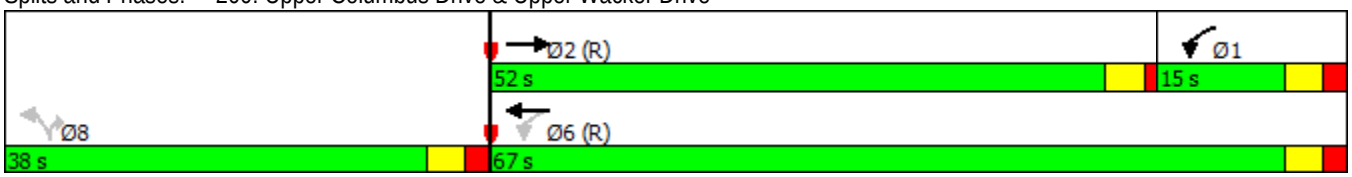
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	315	125	205	620	80	215
Future Volume (vph)	315	125	205	620	80	215
Ideal Flow (vphpl)	1900	1900	1900	2000	1900	1900
Storage Length (ft)		0	435		100	100
Storage Lanes		0	1		1	1
Taper Length (ft)			25		25	
Lane Util. Factor	0.91	0.91	1.00	0.95	0.97	0.88
Ped Bike Factor	0.98		0.96		0.53	0.64
Frt	0.957					0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	4236	0	1547	3353	2694	2186
Flt Permitted			0.458		0.950	
Satd. Flow (perm)	4236	0	717	3353	1429	1398
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	126					226
Link Speed (mph)	30			30	30	
Link Distance (ft)	961			509	702	
Travel Time (s)	21.8			11.6	16.0	
Confl. Peds. (#/hr)		115	115		295	216
Confl. Bikes (#/hr)		2				5
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	2%	5%	5%	2%	17%	17%
Adj. Flow (vph)	332	132	216	653	84	226
Shared Lane Traffic (%)						
Lane Group Flow (vph)	464	0	216	653	84	226
Turn Type	NA		pm+pt	NA	Perm	Perm
Protected Phases	2		1	6		
Permitted Phases			6		8	8
Detector Phase	2		1	6	8	8
Switch Phase						
Minimum Initial (s)	48.0		10.0	62.0	33.0	33.0
Minimum Split (s)	52.0		15.0	67.0	38.0	38.0
Total Split (s)	52.0		15.0	67.0	38.0	38.0
Total Split (%)	49.5%		14.3%	63.8%	36.2%	36.2%
Maximum Green (s)	48.0		10.0	62.0	33.0	33.0
Yellow Time (s)	3.0		3.0	3.0	3.0	3.0
All-Red Time (s)	1.0		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)	4.0		5.0	5.0	5.0	5.0
Lead/Lag	Lead		Lag			
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Recall Mode	C-Max		None	C-Max	Max	Max
Walk Time (s)	21.0			21.0	7.0	7.0
Flash Dont Walk (s)	27.0			27.0	26.0	26.0
Pedestrian Calls (#/hr)	0			0	0	0
Act Effct Green (s)	48.0		62.0	62.0	33.0	33.0
Actuated g/C Ratio	0.46		0.59	0.59	0.31	0.31

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
v/c Ratio	0.23		0.43	0.33	0.19	0.38
Control Delay	12.7		16.3	11.5	21.0	4.3
Queue Delay	0.0		0.0	0.0	0.0	0.0
Total Delay	12.7		16.3	11.5	21.0	4.3
LOS	B		B	B	C	A
Approach Delay	12.7			12.7	8.8	
Approach LOS	B			B	A	
90th %ile Green (s)	48.0		10.0	62.0	33.0	33.0
90th %ile Term Code	Coord		Max	Coord	MaxR	MaxR
70th %ile Green (s)	48.0		10.0	62.0	33.0	33.0
70th %ile Term Code	Coord		Max	Coord	MaxR	MaxR
50th %ile Green (s)	48.0		10.0	62.0	33.0	33.0
50th %ile Term Code	Coord		Max	Coord	MaxR	MaxR
30th %ile Green (s)	48.0		10.0	62.0	33.0	33.0
30th %ile Term Code	Coord		Max	Coord	MaxR	MaxR
10th %ile Green (s)	48.0		10.0	62.0	33.0	33.0
10th %ile Term Code	Coord		Max	Coord	MaxR	MaxR
Queue Length 50th (ft)	47		64	109	12	7
Queue Length 95th (ft)	70		105	144	m17	m18
Internal Link Dist (ft)	881			429	622	
Turn Bay Length (ft)			435		100	100
Base Capacity (vph)	2004		502	1979	449	594
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	0.23		0.43	0.33	0.19	0.38

Intersection Summary			
Area Type:	CBD		
Cycle Length: 105			
Actuated Cycle Length: 105			
Offset: 51 (49%), Referenced to phase 2:EBT and 6:WBTL, Start of Green			
Natural Cycle: 105			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.43			
Intersection Signal Delay: 12.0		Intersection LOS: B	
Intersection Capacity Utilization 91.8%		ICU Level of Service F	
Analysis Period (min) 15			

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

Splits and Phases: 200: Upper Columbus Drive & Upper Wacker Drive



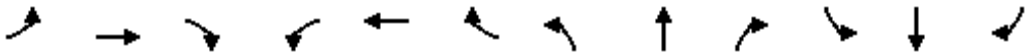
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	0	0	5	20	255	0
Future Volume (vph)	0	0	5	20	255	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt						
Flt Protected				0.990	0.950	
Satd. Flow (prot)	0	0	0	1844	1770	0
Flt Permitted				0.990	0.950	
Satd. Flow (perm)	0	0	0	1844	1770	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	152			150	61	
Travel Time (s)	3.5			3.4	1.4	
Peak Hour Factor	0.79	0.79	0.79	0.79	0.79	0.79
Adj. Flow (vph)	0	0	6	25	323	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	31	323	0
Sign Control	Stop			Stop	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 33.2%		ICU Level of Service A	
Analysis Period (min) 15			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	0	0	5	20	255	0
Future Volume (Veh/h)	0	0	5	20	255	0
Sign Control	Stop			Stop	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.79	0.79	0.79	0.79	0.79	0.79
Hourly flow rate (vph)	0	0	6	25	323	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	646	0	646	646	0	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	646	0	646	646	0	
tC, single (s)	6.5	6.2	7.1	6.5	4.1	
tC, 2 stage (s)						
tF (s)	4.0	3.3	3.5	4.0	2.2	
p0 queue free %	100	100	98	92	80	
cM capacity (veh/h)	313	1085	326	313	1623	

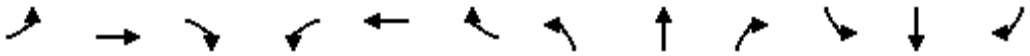
Direction, Lane #	WB 1	NB 1
Volume Total	31	323
Volume Left	6	323
Volume Right	0	0
cSH	315	1623
Volume to Capacity	0.10	0.20
Queue Length 95th (ft)	8	19
Control Delay (s)	17.7	7.8
Lane LOS	C	A
Approach Delay (s)	17.7	7.8
Approach LOS	C	

Intersection Summary				
Average Delay	8.6			
Intersection Capacity Utilization	33.2%	ICU Level of Service		A
Analysis Period (min)	15			



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	105	25	85	0	0	0	0	150	0	0	5	0
Future Volume (vph)	105	25	85	0	0	0	0	150	0	0	5	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.884										
Flt Protected	0.950											
Satd. Flow (prot)	1770	1647	0	0	0	0	0	1863	0	0	1863	0
Flt Permitted	0.950											
Satd. Flow (perm)	1770	1647	0	0	0	0	0	1863	0	0	1863	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		366			148			226			61	
Travel Time (s)		8.3			3.4			5.1			1.4	
Confl. Peds. (#/hr)			35	35								
Peak Hour Factor	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79
Adj. Flow (vph)	133	32	108	0	0	0	0	190	0	0	6	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	133	140	0	0	0	0	0	190	0	0	6	0
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 30.9%		ICU Level of Service A	
Analysis Period (min) 15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	105	25	85	0	0	0	0	150	0	0	5	0
Future Volume (vph)	105	25	85	0	0	0	0	150	0	0	5	0
Peak Hour Factor	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79
Hourly flow rate (vph)	133	32	108	0	0	0	0	190	0	0	6	0

Direction, Lane #	EB 1	EB 2	NB 1	SB 1
Volume Total (vph)	133	140	190	6
Volume Left (vph)	133	0	0	0
Volume Right (vph)	0	108	0	0
Hadj (s)	0.53	-0.51	0.03	0.03
Departure Headway (s)	5.5	4.5	4.6	4.8
Degree Utilization, x	0.20	0.17	0.24	0.01
Capacity (veh/h)	626	774	751	695
Control Delay (s)	8.7	7.2	9.1	7.9
Approach Delay (s)	7.9		9.1	7.9
Approach LOS	A		A	A

Intersection Summary				
Delay	8.4			
Level of Service	A			
Intersection Capacity Utilization	30.9%	ICU Level of Service	A	
Analysis Period (min)	15			

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	40	25	25	75	5	10
Future Volume (vph)	40	25	25	75	5	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.948				0.908	
Flt Protected				0.988	0.984	
Satd. Flow (prot)	1766	0	0	1840	1664	0
Flt Permitted				0.988	0.984	
Satd. Flow (perm)	1766	0	0	1840	1664	0
Link Speed (mph)	30			30	20	
Link Distance (ft)	452			221	330	
Travel Time (s)	10.3			5.0	11.3	
Confl. Peds. (#/hr)		3	3		22	14
Peak Hour Factor	0.79	0.79	0.79	0.79	0.79	0.79
Adj. Flow (vph)	51	32	32	95	6	13
Shared Lane Traffic (%)						
Lane Group Flow (vph)	83	0	0	127	19	0
Sign Control	Stop			Stop	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 25.7%		ICU Level of Service A	
Analysis Period (min) 15			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Sign Control	Stop			Stop	Stop	
Traffic Volume (vph)	40	25	25	75	5	10
Future Volume (vph)	40	25	25	75	5	10
Peak Hour Factor	0.79	0.79	0.79	0.79	0.79	0.79
Hourly flow rate (vph)	51	32	32	95	6	13

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total (vph)	83	127	19
Volume Left (vph)	0	32	6
Volume Right (vph)	32	0	13
Hadj (s)	-0.20	0.08	-0.31
Departure Headway (s)	3.9	4.1	4.0
Degree Utilization, x	0.09	0.14	0.02
Capacity (veh/h)	916	867	842
Control Delay (s)	7.2	7.8	7.1
Approach Delay (s)	7.2	7.8	7.1
Approach LOS	A	A	A

Intersection Summary			
Delay	7.5		
Level of Service	A		
Intersection Capacity Utilization	25.7%	ICU Level of Service	A
Analysis Period (min)	15		

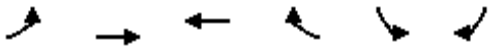
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	0	0	25	10	20	40
Future Volume (vph)	0	0	25	10	20	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt			0.961			
Flt Protected						0.984
Satd. Flow (prot)	0	0	1790	0	0	1833
Flt Permitted						0.984
Satd. Flow (perm)	0	0	1790	0	0	1833
Link Speed (mph)	20		20			20
Link Distance (ft)	282		131			330
Travel Time (s)	9.6		4.5			11.3
Confl. Peds. (#/hr)				51	51	
Peak Hour Factor	0.79	0.79	0.79	0.79	0.79	0.79
Adj. Flow (vph)	0	0	32	13	25	51
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	45	0	0	76
Sign Control	Stop		Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 14.8%		ICU Level of Service A	
Analysis Period (min) 15			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	0	25	10	20	40
Future Volume (Veh/h)	0	0	25	10	20	40
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.79	0.79	0.79	0.79	0.79	0.79
Hourly flow rate (vph)	0	0	32	13	25	51
Pedestrians	51					
Lane Width (ft)	0.0					
Walking Speed (ft/s)	3.5					
Percent Blockage	0					
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	190	90			96	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	190	90			96	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	100			98	
cM capacity (veh/h)	785	968			1498	

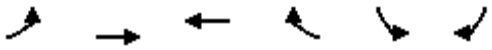
Direction, Lane #	NB 1	SB 1
Volume Total	45	76
Volume Left	0	25
Volume Right	13	0
cSH	1700	1498
Volume to Capacity	0.03	0.02
Queue Length 95th (ft)	0	1
Control Delay (s)	0.0	2.5
Lane LOS		A
Approach Delay (s)	0.0	2.5
Approach LOS		

Intersection Summary				
Average Delay	1.6			
Intersection Capacity Utilization	14.8%	ICU Level of Service		A
Analysis Period (min)	15			



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	20	10	15	0	0	55
Future Volume (vph)	20	10	15	0	0	55
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt					0.865	
Flt Protected		0.968				
Satd. Flow (prot)	0	1803	1863	0	1611	0
Flt Permitted		0.968				
Satd. Flow (perm)	0	1803	1863	0	1611	0
Link Speed (mph)		30	30		20	
Link Distance (ft)		106	188		144	
Travel Time (s)		2.4	4.3		4.9	
Confl. Peds. (#/hr)	27			27		
Confl. Bikes (#/hr)				1		
Peak Hour Factor	0.76	0.76	0.76	0.76	0.76	0.76
Adj. Flow (vph)	26	13	20	0	0	72
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	39	20	0	72	0
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 19.3%		ICU Level of Service A	
Analysis Period (min) 15			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	20	10	15	0	0	55
Future Volume (Veh/h)	20	10	15	0	0	55
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.76	0.76	0.76	0.76	0.76	0.76
Hourly flow rate (vph)	26	13	20	0	0	72
Pedestrians					27	
Lane Width (ft)					12.0	
Walking Speed (ft/s)					3.5	
Percent Blockage					3	
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	47				112	47
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	47				112	47
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	98				100	93
cM capacity (veh/h)	1520				847	996

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	39	20	72
Volume Left	26	0	0
Volume Right	0	0	72
cSH	1520	1700	996
Volume to Capacity	0.02	0.01	0.07
Queue Length 95th (ft)	1	0	6
Control Delay (s)	5.0	0.0	8.9
Lane LOS	A		A
Approach Delay (s)	5.0	0.0	8.9
Approach LOS			A

Intersection Summary			
Average Delay	6.4		
Intersection Capacity Utilization	19.3%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	20	15	0	40	55	0
Future Volume (vph)	20	15	0	40	55	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.942					
Flt Protected					0.950	
Satd. Flow (prot)	1755	0	0	1863	1770	0
Flt Permitted					0.950	
Satd. Flow (perm)	1755	0	0	1863	1770	0
Link Speed (mph)	30			30	20	
Link Distance (ft)	854			156	202	
Travel Time (s)	19.4			3.5	6.9	
Confl. Peds. (#/hr)		7	7			
Confl. Bikes (#/hr)		2				
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	21	16	0	42	58	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	37	0	0	42	58	0
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 15.4%		ICU Level of Service A	
Analysis Period (min) 15			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	20	15	0	40	55	0
Future Volume (Veh/h)	20	15	0	40	55	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	21	16	0	42	58	0
Pedestrians					7	
Lane Width (ft)					12.0	
Walking Speed (ft/s)					3.5	
Percent Blockage					1	
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			44		78	36
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			44		78	36
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		94	100
cM capacity (veh/h)			1554		919	1030

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	37	42	58
Volume Left	0	0	58
Volume Right	16	0	0
cSH	1700	1554	919
Volume to Capacity	0.02	0.00	0.06
Queue Length 95th (ft)	0	0	5
Control Delay (s)	0.0	0.0	9.2
Lane LOS			A
Approach Delay (s)	0.0	0.0	9.2
Approach LOS			A

Intersection Summary			
Average Delay	3.9		
Intersection Capacity Utilization	15.4%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	100	5	30	70	5	35
Future Volume (vph)	100	5	30	70	5	35
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.994		0.906			
Flt Protected	0.954					0.994
Satd. Flow (prot)	1766	0	1688	0	0	1852
Flt Permitted	0.954					0.994
Satd. Flow (perm)	1766	0	1688	0	0	1852
Link Speed (mph)	20		20			20
Link Distance (ft)	377		210			131
Travel Time (s)	12.9		7.2			4.5
Confl. Peds. (#/hr)	13	34		51	51	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	109	5	33	76	5	38
Shared Lane Traffic (%)						
Lane Group Flow (vph)	114	0	109	0	0	43
Sign Control	Stop		Stop			Stop

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 30.1%		ICU Level of Service A	
Analysis Period (min) 15			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Sign Control	Stop		Stop			Stop
Traffic Volume (vph)	100	5	30	70	5	35
Future Volume (vph)	100	5	30	70	5	35
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	109	5	33	76	5	38

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total (vph)	114	109	43
Volume Left (vph)	109	0	5
Volume Right (vph)	5	76	0
Hadj (s)	0.20	-0.38	0.06
Departure Headway (s)	4.4	3.8	4.3
Degree Utilization, x	0.14	0.12	0.05
Capacity (veh/h)	788	904	803
Control Delay (s)	8.1	7.3	7.6
Approach Delay (s)	8.1	7.3	7.6
Approach LOS	A	A	A

Intersection Summary			
Delay	7.7		
Level of Service	A		
Intersection Capacity Utilization	30.1%	ICU Level of Service	A
Analysis Period (min)	15		

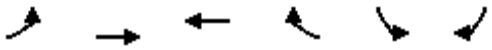
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	70	5	125	35	5	160
Future Volume (vph)	70	5	125	35	5	160
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.992		0.970			
Flt Protected	0.955					0.999
Satd. Flow (prot)	1603	0	1721	0	0	1861
Flt Permitted	0.955					0.999
Satd. Flow (perm)	1603	0	1721	0	0	1861
Link Speed (mph)	20		20			20
Link Distance (ft)	257		203			210
Travel Time (s)	8.8		6.9			7.2
Confl. Peds. (#/hr)	21	42		78	78	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	13%	2%	2%	25%	2%	2%
Adj. Flow (vph)	75	5	134	38	5	172
Shared Lane Traffic (%)						
Lane Group Flow (vph)	80	0	172	0	0	177
Sign Control	Stop		Stop			Stop

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 30.9%		ICU Level of Service A	
Analysis Period (min) 15			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Sign Control	Stop		Stop			Stop
Traffic Volume (vph)	70	5	125	35	5	160
Future Volume (vph)	70	5	125	35	5	160
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	75	5	134	38	5	172

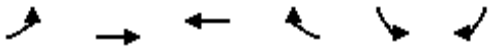
Direction, Lane #	WB 1	NB 1	SB 1
Volume Total (vph)	80	172	177
Volume Left (vph)	75	0	5
Volume Right (vph)	5	38	0
Hadj (s)	0.36	-0.01	0.04
Departure Headway (s)	5.0	4.3	4.3
Degree Utilization, x	0.11	0.21	0.21
Capacity (veh/h)	663	813	800
Control Delay (s)	8.7	8.4	8.5
Approach Delay (s)	8.7	8.4	8.5
Approach LOS	A	A	A

Intersection Summary			
Delay	8.5		
Level of Service	A		
Intersection Capacity Utilization	30.9%	ICU Level of Service	A
Analysis Period (min)	15		



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	240	195	275	30	25	285
Future Volume (vph)	240	195	275	30	25	285
Ideal Flow (vphpl)	1900	2000	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt			0.987		0.876	
Flt Protected	0.950				0.996	
Satd. Flow (prot)	1770	1869	1798	0	1625	0
Flt Permitted	0.950				0.996	
Satd. Flow (perm)	1770	1869	1798	0	1625	0
Link Speed (mph)		20	20		30	
Link Distance (ft)		891	452		390	
Travel Time (s)		30.4	15.4		8.9	
Confl. Peds. (#/hr)	136			136	23	7
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	2%	7%	4%	7%	2%	2%
Adj. Flow (vph)	250	203	286	31	26	297
Shared Lane Traffic (%)						
Lane Group Flow (vph)	250	203	317	0	323	0
Sign Control		Stop	Stop		Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 59.9%		ICU Level of Service B	
Analysis Period (min) 15			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Stop	Stop		Stop	
Traffic Volume (vph)	240	195	275	30	25	285
Future Volume (vph)	240	195	275	30	25	285
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Hourly flow rate (vph)	250	203	286	31	26	297

Direction, Lane #	EB 1	EB 2	WB 1	SB 1
Volume Total (vph)	250	203	317	323
Volume Left (vph)	250	0	0	26
Volume Right (vph)	0	0	31	297
Hadj (s)	0.53	0.12	0.01	-0.50
Departure Headway (s)	6.4	6.0	5.6	5.3
Degree Utilization, x	0.45	0.34	0.49	0.48
Capacity (veh/h)	541	580	616	629
Control Delay (s)	13.3	10.8	13.9	13.1
Approach Delay (s)	12.2		13.9	13.1
Approach LOS	B		B	B

Intersection Summary			
Delay	13.0		
Level of Service	B		
Intersection Capacity Utilization	59.9%	ICU Level of Service	B
Analysis Period (min)	15		

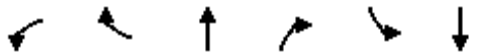
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	25	310	0	0	0	270
Future Volume (vph)	25	310	0	0	0	270
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.875					0.865
Flt Protected						
Satd. Flow (prot)	1630	0	0	0	0	1611
Flt Permitted						
Satd. Flow (perm)	1630	0	0	0	0	1611
Link Speed (mph)	30			30	30	
Link Distance (ft)	454			309	390	
Travel Time (s)	10.3			7.0	8.9	
Confl. Peds. (#/hr)		11	11		15	17
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82
Adj. Flow (vph)	30	378	0	0	0	329
Shared Lane Traffic (%)						
Lane Group Flow (vph)	408	0	0	0	0	329
Sign Control	Stop			Stop	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 46.6%		ICU Level of Service A	
Analysis Period (min) 15			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Sign Control	Stop			Stop	Stop	
Traffic Volume (vph)	25	310	0	0	0	270
Future Volume (vph)	25	310	0	0	0	270
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82
Hourly flow rate (vph)	30	378	0	0	0	329

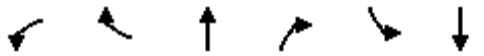
Direction, Lane #	EB 1	NB 1
Volume Total (vph)	408	329
Volume Left (vph)	0	0
Volume Right (vph)	378	329
Hadj (s)	-0.52	-0.57
Departure Headway (s)	4.1	4.2
Degree Utilization, x	0.47	0.39
Capacity (veh/h)	828	799
Control Delay (s)	10.7	9.9
Approach Delay (s)	10.7	9.9
Approach LOS	B	A

Intersection Summary			
Delay	10.3		
Level of Service	B		
Intersection Capacity Utilization	46.6%	ICU Level of Service	A
Analysis Period (min)	15		



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	0	45	250	45	0	0
Future Volume (vph)	0	45	250	45	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt		0.865	0.979			
Flt Protected						
Satd. Flow (prot)	0	1611	1809	0	0	0
Flt Permitted						
Satd. Flow (perm)	0	1611	1809	0	0	0
Link Speed (mph)	30		30			30
Link Distance (ft)	180		133			240
Travel Time (s)	4.1		3.0			5.5
Confl. Peds. (#/hr)		76		12		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	2%	3%	2%	2%	2%
Adj. Flow (vph)	0	49	272	49	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	49	321	0	0	0
Sign Control	Stop		Free			Free

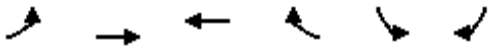
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 35.6%		ICU Level of Service A	
Analysis Period (min) 15			



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	45	250	45	0	0
Future Volume (Veh/h)	0	45	250	45	0	0
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	49	272	49	0	0
Pedestrians	12					76
Lane Width (ft)	12.0					0.0
Walking Speed (ft/s)	3.5					3.5
Percent Blockage	1					0
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	308	384			333	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	308	384			333	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	93			100	
cM capacity (veh/h)	676	656			1212	

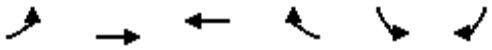
Direction, Lane #	WB 1	NB 1
Volume Total	49	321
Volume Left	0	0
Volume Right	49	49
cSH	656	1700
Volume to Capacity	0.07	0.19
Queue Length 95th (ft)	6	0
Control Delay (s)	10.9	0.0
Lane LOS	B	
Approach Delay (s)	10.9	0.0
Approach LOS	B	

Intersection Summary			
Average Delay	1.4		
Intersection Capacity Utilization	35.6%	ICU Level of Service	A
Analysis Period (min)	15		



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	0	0	100	150	0	105
Future Volume (vph)	0	0	100	150	0	105
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt			0.919			0.865
Flt Protected						
Satd. Flow (prot)	0	0	1712	0	0	1611
Flt Permitted						
Satd. Flow (perm)	0	0	1712	0	0	1611
Link Speed (mph)		30	30		30	
Link Distance (ft)		361	407		107	
Travel Time (s)		8.2	9.3		2.4	
Confl. Peds. (#/hr)				91		30
Confl. Bikes (#/hr)				3		1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	0	105	158	0	111
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	263	0	0	111
Sign Control		Stop	Stop		Stop	

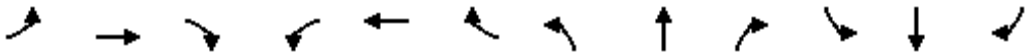
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 36.4%		ICU Level of Service A	
Analysis Period (min) 15			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Stop	Stop		Stop	
Traffic Volume (vph)	0	0	100	150	0	105
Future Volume (vph)	0	0	100	150	0	105
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	0	0	105	158	0	111

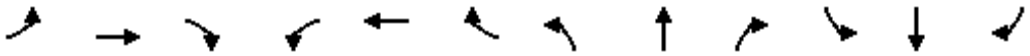
Direction, Lane #	WB 1	SB 1
Volume Total (vph)	263	111
Volume Left (vph)	0	0
Volume Right (vph)	158	111
Hadj (s)	-0.33	-0.57
Departure Headway (s)	3.8	3.9
Degree Utilization, x	0.28	0.12
Capacity (veh/h)	922	870
Control Delay (s)	8.3	7.4
Approach Delay (s)	8.3	7.4
Approach LOS	A	A

Intersection Summary			
Delay	8.0		
Level of Service	A		
Intersection Capacity Utilization	36.4%	ICU Level of Service	A
Analysis Period (min)	15		



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	30	130	15	95	0	125	0	10	0	0	0
Future Volume (vph)	0	30	130	15	95	0	125	0	10	0	0	0
Ideal Flow (vphpl)	1900	2000	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt			0.850					0.990				
Flt Protected					0.993			0.956				
Satd. Flow (prot)	0	1961	1583	0	1850	0	0	1763	0	0	1863	0
Flt Permitted					0.993			0.956				
Satd. Flow (perm)	0	1961	1583	0	1850	0	0	1763	0	0	1863	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		339			854			143			79	
Travel Time (s)		7.7			19.4			3.3			1.8	
Confl. Peds. (#/hr)			7	7			22		27	27		22
Confl. Bikes (#/hr)			2			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
Adj. Flow (vph)	0	32	137	16	100	0	132	0	11	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	32	137	0	116	0	0	143	0	0	0	0
Sign Control		Stop			Stop			Stop			Stop	

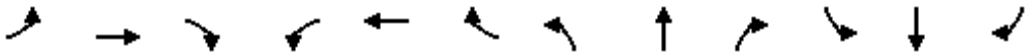
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 32.3%		ICU Level of Service A	
Analysis Period (min) 15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	0	30	130	15	95	0	125	0	10	0	0	0
Future Volume (vph)	0	30	130	15	95	0	125	0	10	0	0	0
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
Hourly flow rate (vph)	0	32	137	16	100	0	132	0	11	0	0	0

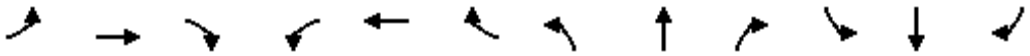
Direction, Lane #	EB 1	EB 2	WB 1	NB 1	SB 1
Volume Total (vph)	32	137	116	143	0
Volume Left (vph)	0	0	16	132	0
Volume Right (vph)	0	137	0	11	0
Hadj (s)	0.03	-0.67	0.06	0.17	0.00
Departure Headway (s)	5.0	4.3	4.6	4.7	4.7
Degree Utilization, x	0.04	0.16	0.15	0.19	0.00
Capacity (veh/h)	696	803	744	724	712
Control Delay (s)	7.0	6.9	8.4	8.8	7.7
Approach Delay (s)	7.0		8.4	8.8	0.0
Approach LOS	A		A	A	A

Intersection Summary				
Delay	8.0			
Level of Service	A			
Intersection Capacity Utilization	32.3%	ICU Level of Service	A	
Analysis Period (min)	15			



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	5	5	35	55	15	1	30	5	25	1	5	1
Future Volume (vph)	5	5	35	55	15	1	30	5	25	1	5	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	10	12	12	11	12	12	11	12	12	11	12
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		0.896			0.999			0.944			0.985	
Flt Protected		0.994			0.963			0.976			0.994	
Satd. Flow (prot)	0	1548	0	0	1732	0	0	1659	0	0	1763	0
Flt Permitted		0.994			0.963			0.976			0.994	
Satd. Flow (perm)	0	1548	0	0	1732	0	0	1659	0	0	1763	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		180			106			606			163	
Travel Time (s)		4.1			2.4			13.8			3.7	
Confl. Peds. (#/hr)	27		1	1		27	24					24
Confl. Bikes (#/hr)						1						
Peak Hour Factor	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76
Adj. Flow (vph)	7	7	46	72	20	1	39	7	33	1	7	1
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	60	0	0	93	0	0	79	0	0	9	0
Sign Control		Free			Free			Stop			Stop	

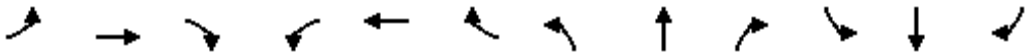
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 28.0%		ICU Level of Service A	
Analysis Period (min) 15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	5	35	55	15	1	30	5	25	1	5	1
Future Volume (Veh/h)	5	5	35	55	15	1	30	5	25	1	5	1
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76
Hourly flow rate (vph)	7	7	46	72	20	1	39	7	33	1	7	1
Pedestrians		24						1			27	
Lane Width (ft)		10.0						11.0			11.0	
Walking Speed (ft/s)		3.5						3.5			3.5	
Percent Blockage		2						0			2	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	48			54			238	237	31	272	260	72
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	48			54			238	237	31	272	260	72
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			95			94	99	97	100	99	100
cM capacity (veh/h)	1522			1550			656	615	1042	602	597	949

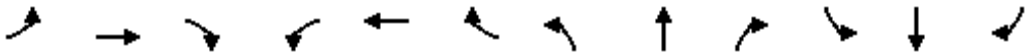
Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	60	93	79	9
Volume Left	7	72	39	1
Volume Right	46	1	33	1
cSH	1522	1550	771	623
Volume to Capacity	0.00	0.05	0.10	0.01
Queue Length 95th (ft)	0	4	9	1
Control Delay (s)	0.9	5.8	10.2	10.9
Lane LOS	A	A	B	B
Approach Delay (s)	0.9	5.8	10.2	10.9
Approach LOS			B	B

Intersection Summary				
Average Delay	6.2			
Intersection Capacity Utilization	28.0%	ICU Level of Service	A	
Analysis Period (min)	15			



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	30	5	1	1	2	125	1	5	1	160	35	60
Future Volume (vph)	30	5	1	1	2	125	1	5	1	160	35	60
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	11	12	12	12	12
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	0.95	0.95	0.95
Ped Bike Factor												
Frt		0.979			0.868			0.981			0.965	
Flt Protected	0.950							0.994			0.970	
Satd. Flow (prot)	1626	1824	0	0	1425	0	0	3336	0	0	3006	0
Flt Permitted	0.950							0.994			0.970	
Satd. Flow (perm)	1626	1824	0	0	1425	0	0	3336	0	0	3006	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		508			1374			603			254	
Travel Time (s)		11.5			31.2			13.7			5.8	
Confl. Peds. (#/hr)	437		113	113		437	20		101	101		20
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82
Heavy Vehicles (%)	11%	2%	2%	2%	2%	16%	2%	2%	2%	16%	2%	9%
Adj. Flow (vph)	37	6	1	1	2	152	1	6	1	195	43	73
Shared Lane Traffic (%)												
Lane Group Flow (vph)	37	7	0	0	155	0	0	8	0	0	311	0
Sign Control		Stop			Stop			Stop			Stop	

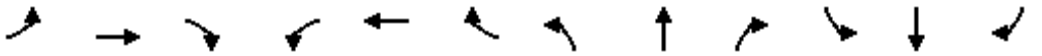
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 44.5%		ICU Level of Service A	
Analysis Period (min) 15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	30	5	1	1	2	125	1	5	1	160	35	60
Future Volume (vph)	30	5	1	1	2	125	1	5	1	160	35	60
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82
Hourly flow rate (vph)	37	6	1	1	2	152	1	6	1	195	43	73

Direction, Lane #	EB 1	EB 2	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total (vph)	37	7	155	4	4	217	95
Volume Left (vph)	37	0	1	1	0	195	0
Volume Right (vph)	0	1	152	0	1	0	73
Hadj (s)	0.69	-0.07	-0.32	0.16	-0.14	0.70	-0.41
Departure Headway (s)	6.2	5.4	5.0	5.5	5.2	5.8	4.6
Degree Utilization, x	0.06	0.01	0.22	0.01	0.01	0.35	0.12
Capacity (veh/h)	547	622	676	615	648	606	749
Control Delay (s)	8.4	7.3	9.4	7.4	7.1	10.6	7.1
Approach Delay (s)	8.2		9.4	7.2		9.5	
Approach LOS	A		A	A		A	

Intersection Summary				
Delay	9.3			
Level of Service	A			
Intersection Capacity Utilization	44.5%	ICU Level of Service	A	
Analysis Period (min)	15			

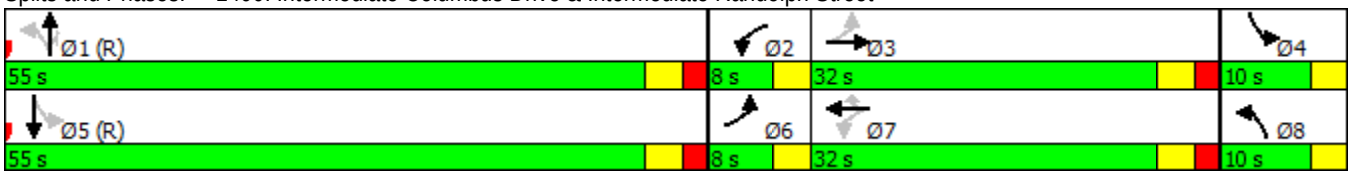


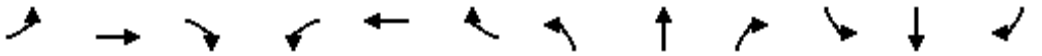
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	65	125	45	185	605	400	135	980	30	55	565	130
Future Volume (vph)	65	125	45	185	605	400	135	980	30	55	565	130
Ideal Flow (vphpl)	1900	1900	1900	1900	2000	1900	1900	2000	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	10	11	12	10	11	12
Storage Length (ft)	85		0	85		85	95		95	200		0
Storage Lanes	1		0	1		1	1		1	1		0
Taper Length (ft)	45			25			90			50		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	0.95	0.88	1.00	0.95	0.95
Ped Bike Factor	1.00	1.00		1.00		0.98	1.00				1.00	
Frt		0.960				0.850			0.850		0.972	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1577	3047	0	1593	3353	1425	1486	3241	2508	1486	2888	0
Flt Permitted	0.230			0.642			0.310			0.185		
Satd. Flow (perm)	381	3047	0	1075	3353	1396	485	3241	2508	289	2888	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		46				218			83		36	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		937			752			538			655	
Travel Time (s)		21.3			17.1			12.2			14.9	
Confl. Peds. (#/hr)	7		1	1		7	2					2
Confl. Bikes (#/hr)												1
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	3%	2%	2%	2%	2%	2%	2%	2%	2%	2%	6%	3%
Adj. Flow (vph)	66	128	46	189	617	408	138	1000	31	56	577	133
Shared Lane Traffic (%)												
Lane Group Flow (vph)	66	174	0	189	617	408	138	1000	31	56	710	0
Turn Type	pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	
Protected Phases	6	3		2	7		8	1		4	5	
Permitted Phases	3			7		7	1		1	5		
Minimum Split (s)	8.0	32.0		8.0	32.0	32.0	10.0	55.0	55.0	10.0	55.0	
Total Split (s)	8.0	32.0		8.0	32.0	32.0	10.0	55.0	55.0	10.0	55.0	
Total Split (%)	7.6%	30.5%		7.6%	30.5%	30.5%	9.5%	52.4%	52.4%	9.5%	52.4%	
Maximum Green (s)	5.0	27.0		5.0	27.0	27.0	7.0	50.0	50.0	7.0	50.0	
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	2.0		0.0	2.0	2.0	0.0	2.0	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	0.0	0.0	
Total Lost Time (s)	3.0	5.0		3.0	5.0	5.0	3.0	5.0	5.0	3.0	5.0	
Lead/Lag	Lead	Lag		Lead	Lag	Lag						
Lead-Lag Optimize?												
Walk Time (s)		11.0			11.0	11.0		23.0	23.0		31.0	
Flash Dont Walk (s)		16.0			16.0	16.0		27.0	27.0		19.0	
Pedestrian Calls (#/hr)		0			0	0		0	0		0	
Act Effct Green (s)	34.0	27.0		34.0	27.0	27.0	59.0	50.0	50.0	59.0	50.0	
Actuated g/C Ratio	0.32	0.26		0.32	0.26	0.26	0.56	0.48	0.48	0.56	0.48	
v/c Ratio	0.37	0.21		0.51	0.72	0.78	0.41	0.65	0.03	0.23	0.51	
Control Delay	29.4	23.1		32.4	41.0	28.6	13.7	23.3	0.0	11.6	19.5	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	29.4	23.1		32.4	41.0	28.6	13.7	23.3	0.0	11.6	19.5	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
LOS	C	C		C	D	C	B	C	A	B	B	
Approach Delay		24.9			35.5			21.5			19.0	
Approach LOS		C			D			C			B	
Queue Length 50th (ft)	30	35		92	198	122	39	258	0	15	159	
Queue Length 95th (ft)	61	64		152	263	#279	69	330	0	32	212	
Internal Link Dist (ft)		857			672			458			575	
Turn Bay Length (ft)	85			85		85	95		95	200		
Base Capacity (vph)	180	817		372	862	520	339	1543	1237	242	1394	
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	0.37	0.21		0.51	0.72	0.78	0.41	0.65	0.03	0.23	0.51	

Intersection Summary			
Area Type:	CBD		
Cycle Length: 105			
Actuated Cycle Length: 105			
Offset: 35 (33%), Referenced to phase 1:NBTL and 5:SBTL, Start of Green			
Natural Cycle: 105			
Control Type: Pretimed			
Maximum v/c Ratio: 0.78			
Intersection Signal Delay: 26.2		Intersection LOS: C	
Intersection Capacity Utilization 98.9%		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.			

Splits and Phases: 1400: Intermediate Columbus Drive & Intermediate Randolph Street



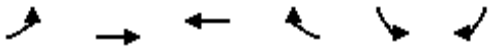


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	720	0	390	0	275	225	0	0	0	0	240	870
Future Volume (vph)	720	0	390	0	275	225	0	0	0	0	240	870
Ideal Flow (vphpl)	1900	1900	1900	1900	2000	1900	1900	1900	1900	1900	2000	1900
Storage Length (ft)	0		0	75		0	0		0	0		0
Storage Lanes	2		1	1		1	0		0	0		2
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.97	1.00	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	0.95	0.88
Frt			0.850			0.850						0.850
Flt Protected	0.950											
Satd. Flow (prot)	3335	0	1583	0	3725	1583	0	0	0	0	3585	2682
Flt Permitted	0.950											
Satd. Flow (perm)	3335	0	1583	0	3725	1583	0	0	0	0	3585	2682
Right Turn on Red			Yes	No		Yes			Yes			Yes
Satd. Flow (RTOR)			227			19						926
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		275			735			891			601	
Travel Time (s)		6.3			16.7			20.3			13.7	
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 (%)	5%	2%	2%	2%	2%	2%	2%	2%	2%	2%	6%	6%
Adj. Flow (vph)	766	0	415	0	293	239	0	0	0	0	255	926
Shared Lane Traffic (%)												
Lane Group Flow (vph)	766	0	415	0	293	239	0	0	0	0	255	926
Turn Type	Prot		custom		NA	custom					NA	Free
Protected Phases	7		7 8		8	6 8					6	
Permitted Phases						8						Free
Minimum Split (s)	26.0				37.0						22.0	
Total Split (s)	26.0				37.0						22.0	
Total Split (%)	30.6%				43.5%						25.9%	
Maximum Green (s)	22.0				33.0						18.0	
Yellow Time (s)	3.0				3.0						3.0	
All-Red Time (s)	1.0				1.0						1.0	
Lost Time Adjust (s)	0.0				0.0						0.0	
Total Lost Time (s)	4.0				4.0						4.0	
Lead/Lag	Lead				Lag							
Lead-Lag Optimize?												
Act Effct Green (s)	22.0		59.0		33.0	55.0					18.0	85.0
Actuated g/C Ratio	0.26		0.69		0.39	0.65					0.21	1.00
v/c Ratio	0.89		0.36		0.20	0.23					0.34	0.35
Control Delay	44.4		3.1		17.7	6.4					29.9	0.4
Queue Delay	0.0		0.0		0.0	0.0					0.0	0.0
Total Delay	44.4		3.1		17.7	6.4					29.9	0.4
LOS	D		A		B	A					C	A
Approach Delay		29.9			12.6						6.7	
Approach LOS		C			B						A	
Queue Length 50th (ft)	202		30		53	43					61	0
Queue Length 95th (ft)	#304		61		81	74					95	0
Internal Link Dist (ft)		195			655			811			521	
Turn Bay Length (ft)												

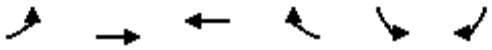
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Base Capacity (vph)	863		1168		1446	1031					759	2682
Starvation Cap Reductn	0		0		0	0					0	0
Spillback Cap Reductn	0		0		0	0					0	0
Storage Cap Reductn	0		0		0	0					0	0
Reduced v/c Ratio	0.89		0.36		0.20	0.23					0.34	0.35

Intersection Summary			
Area Type:	Other		
Cycle Length: 85			
Actuated Cycle Length: 85			
Offset: 26 (31%), Referenced to phase 6:SBT, Start of Green			
Natural Cycle: 85			
Control Type: Pretimed			
Maximum v/c Ratio: 0.89			
Intersection Signal Delay: 17.3		Intersection LOS: B	
Intersection Capacity Utilization 73.0%		ICU Level of Service D	
Analysis Period (min) 15			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			

Splits and Phases: 1500: Lower Lake Shore Drive & Intermediate Wacker Drive/NB Lake Shore Drive Exit Ramp



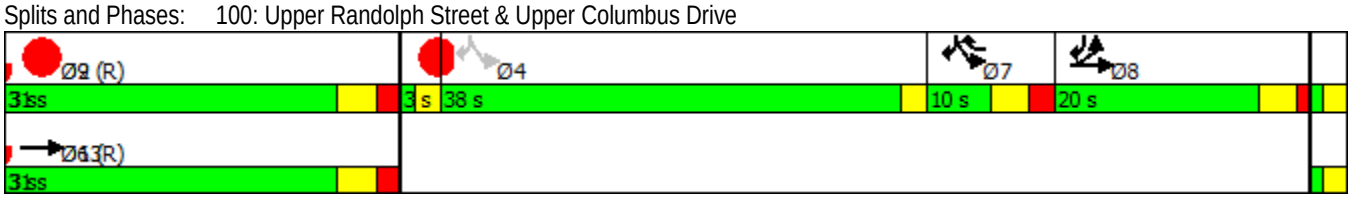
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	Ø2	Ø3	Ø4	Ø9	Ø13
Lane Configurations											
Traffic Volume (vph)	270	320	390	235	280	340					
Future Volume (vph)	270	320	390	235	280	340					
Ideal Flow (vphpl)	1900	2000	2000	1900	1900	1900					
Lane Width (ft)	10	12	12	12	12	12					
Storage Length (ft)	90			80	0	0					
Storage Lanes	1			1	1	1					
Taper Length (ft)	45				50						
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00					
Ped Bike Factor	0.85			0.68	0.85	0.80					
Frt				0.850		0.850					
Flt Protected	0.950				0.950						
Satd. Flow (prot)	1296	3257	3288	1425	1593	1298					
Flt Permitted	0.397				0.950						
Satd. Flow (perm)	461	3257	3288	963	1361	1032					
Right Turn on Red				No		No					
Satd. Flow (RTOR)											
Link Speed (mph)		20	20		30						
Link Distance (ft)		798	891		565						
Travel Time (s)		27.2	30.4		12.8						
Confl. Peds. (#/hr)	325			325	74	100					
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95					
Heavy Vehicles (%)	17%	5%	4%	2%	2%	12%					
Adj. Flow (vph)	284	337	411	247	295	358					
Shared Lane Traffic (%)											
Lane Group Flow (vph)	284	337	411	247	295	358					
Turn Type	custom	NA	NA	pm+ov	custom	pt+ov					
Protected Phases	8	2 8 13	6	7	7	7 8	2	3	4	9	13
Permitted Phases	2			6	4	4					
Detector Phase	8	2 8 13	6	7	7	7 8					
Switch Phase											
Minimum Initial (s)	4.0		26.0	5.0	5.0		26.0	1.0	33.0	1.0	1.0
Minimum Split (s)	20.0		31.0	10.0	10.0		31.0	3.0	38.0	3.0	3.0
Total Split (s)	20.0		31.0	10.0	10.0		31.0	3.0	38.0	3.0	3.0
Total Split (%)	19.0%		29.5%	9.5%	9.5%		30%	3%	36%	3%	3%
Maximum Green (s)	16.0		26.0	5.0	5.0		26.0	1.0	36.0	1.0	1.0
Yellow Time (s)	3.0		3.0	3.0	3.0		3.0	2.0	2.0	2.0	2.0
All-Red Time (s)	1.0		2.0	2.0	2.0		2.0	0.0	0.0	0.0	0.0
Lost Time Adjust (s)	0.0		0.0	0.0	0.0						
Total Lost Time (s)	4.0		5.0	5.0	5.0						
Lead/Lag	Lag			Lead	Lead			Lead	Lag		
Lead-Lag Optimize?											
Vehicle Extension (s)	3.0		3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0
Recall Mode	None		C-Max	Max	Max		C-Max	Max	Max	Max	Max
Walk Time (s)			6.0				6.0		5.0		
Flash Dont Walk (s)			20.0				20.0		11.0		
Pedestrian Calls (#/hr)			0				0		0		
Act Effct Green (s)	43.0	41.0	26.0	31.0	38.0	58.0					
Actuated g/C Ratio	0.41	0.39	0.25	0.30	0.36	0.55					

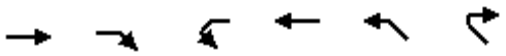


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	Ø2	Ø3	Ø4	Ø9	Ø13
v/c Ratio	0.90	0.27	0.50	0.81	0.59	0.57					
Control Delay	53.2	17.7	36.5	47.4	42.3	17.7					
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0					
Total Delay	53.2	17.7	36.5	47.4	42.3	17.7					
LOS	D	B	D	D	D	B					
Approach Delay		33.9	40.6		28.8						
Approach LOS		C	D		C						
90th %ile Green (s)	16.0		26.0	5.0	5.0		26.0	1.0	36.0	1.0	1.0
90th %ile Term Code	Max		Coord	MaxR	MaxR		Coord	MaxR	MaxR	MaxR	MaxR
70th %ile Green (s)	16.0		26.0	5.0	5.0		26.0	1.0	36.0	1.0	1.0
70th %ile Term Code	Max		Coord	MaxR	MaxR		Coord	MaxR	MaxR	MaxR	MaxR
50th %ile Green (s)	16.0		26.0	5.0	5.0		26.0	1.0	36.0	1.0	1.0
50th %ile Term Code	Max		Coord	MaxR	MaxR		Coord	MaxR	MaxR	MaxR	MaxR
30th %ile Green (s)	16.0		26.0	5.0	5.0		26.0	1.0	36.0	1.0	1.0
30th %ile Term Code	Max		Coord	MaxR	MaxR		Coord	MaxR	MaxR	MaxR	MaxR
10th %ile Green (s)	16.0		26.0	5.0	5.0		26.0	1.0	36.0	1.0	1.0
10th %ile Term Code	Max		Coord	MaxR	MaxR		Coord	MaxR	MaxR	MaxR	MaxR
Queue Length 50th (ft)	124	68	125	83	181	114					
Queue Length 95th (ft)	#253	98	174	#194	265	190					
Internal Link Dist (ft)		718	811		485						
Turn Bay Length (ft)	90			80							
Base Capacity (vph)	316	1271	814	306	503	633					
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	0.90	0.27	0.50	0.81	0.59	0.57					

Intersection Summary			
Area Type:	CBD		
Cycle Length: 105			
Actuated Cycle Length: 105			
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBT, Start of Green			
Natural Cycle: 105			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.90			
Intersection Signal Delay: 34.5		Intersection LOS: C	
Intersection Capacity Utilization 67.2%		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.			

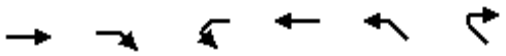
Splits and Phases: 100: Upper Randolph Street & Upper Columbus Drive





Lane Group	EBT	EBR	WBL	WBT	NWL	NWR
Lane Configurations						
Traffic Volume (vph)	0	0	0	0	0	0
Future Volume (vph)	0	0	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	1.00
Frt						
Flt Protected						
Satd. Flow (prot)	3539	0	0	3539	0	0
Flt Permitted						
Satd. Flow (perm)	3539	0	0	3539	0	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	509			216	366	
Travel Time (s)	11.6			4.9	8.3	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	0	0	0	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	0	0	0
Sign Control	Free			Free	Stop	

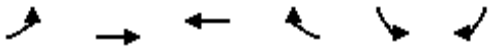
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 0.0%		ICU Level of Service A	
Analysis Period (min) 15			



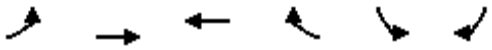
Movement	EBT	EBR	WBL	WBT	NWL	NWR
Lane Configurations						
Traffic Volume (veh/h)	0	0	0	0	0	0
Future Volume (Veh/h)	0	0	0	0	0	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	0	0	0	0	0	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	Raised			Raised		
Median storage veh)	1			1		
Upstream signal (ft)	509					
pX, platoon unblocked						
vC, conflicting volume			0		0	0
vC1, stage 1 conf vol					0	
vC2, stage 2 conf vol					0	
vCu, unblocked vol			0		0	0
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)					5.8	
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	100
cM capacity (veh/h)			1622		1023	1084

Direction, Lane #	EB 1	EB 2	WB 1	WB 2
Volume Total	0	0	0	0
Volume Left	0	0	0	0
Volume Right	0	0	0	0
cSH	1700	1700	1700	1700
Volume to Capacity	0.00	0.00	0.00	0.00
Queue Length 95th (ft)	0	0	0	0
Control Delay (s)	0.0	0.0	0.0	0.0
Lane LOS				
Approach Delay (s)	0.0		0.0	
Approach LOS				

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	0.0%	ICU Level of Service	A
Analysis Period (min)	15		



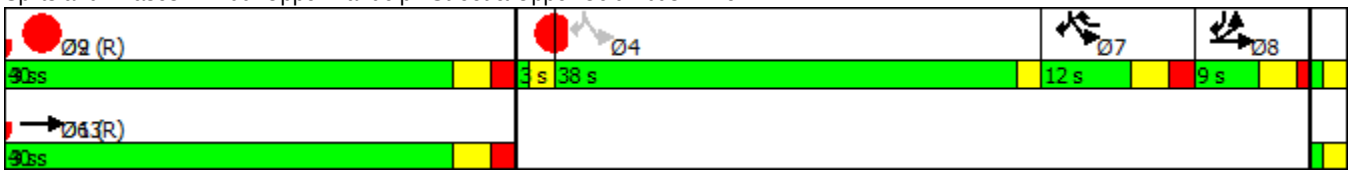
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	Ø2	Ø3	Ø4	Ø9	Ø13
Lane Configurations											
Traffic Volume (vph)	165	305	325	200	245	390					
Future Volume (vph)	165	305	325	200	245	390					
Ideal Flow (vphpl)	1900	2000	2000	1900	1900	1900					
Lane Width (ft)	10	12	12	12	12	12					
Storage Length (ft)	90			80	0	0					
Storage Lanes	1			1	1	1					
Taper Length (ft)	45				50						
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00					
Ped Bike Factor	0.78			0.61	0.72	0.68					
Frt				0.850		0.850					
Flt Protected	0.950				0.950						
Satd. Flow (prot)	1318	3196	3167	1425	1593	1333					
Flt Permitted	0.503				0.950						
Satd. Flow (perm)	546	3196	3167	868	1144	913					
Right Turn on Red				No		No					
Satd. Flow (RTOR)											
Link Speed (mph)		20	20		30						
Link Distance (ft)		798	891		565						
Travel Time (s)		27.2	30.4		12.8						
Confl. Peds. (#/hr)	810			810	143	177					
Confl. Bikes (#/hr)				3							
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95					
Heavy Vehicles (%)	15%	7%	8%	2%	2%	9%					
Adj. Flow (vph)	174	321	342	211	258	411					
Shared Lane Traffic (%)											
Lane Group Flow (vph)	174	321	342	211	258	411					
Turn Type	custom	NA	NA	pm+ov	custom	pt+ov					
Protected Phases	8	2 8 13	6	7	7	7 8	2	3	4	9	13
Permitted Phases	2			6	4	4					
Detector Phase	8	2 8 13	6	7	7	7 8					
Switch Phase											
Minimum Initial (s)	4.0		35.0	5.0	5.0		35.0	1.0	33.0	1.0	1.0
Minimum Split (s)	9.0		40.0	12.0	12.0		40.0	3.0	38.0	3.0	3.0
Total Split (s)	9.0		40.0	12.0	12.0		40.0	3.0	38.0	3.0	3.0
Total Split (%)	8.6%		38.1%	11.4%	11.4%		38%	3%	36%	3%	3%
Maximum Green (s)	5.0		35.0	7.0	7.0		35.0	1.0	36.0	1.0	1.0
Yellow Time (s)	3.0		3.0	3.0	3.0		3.0	2.0	2.0	2.0	2.0
All-Red Time (s)	1.0		2.0	2.0	2.0		2.0	0.0	0.0	0.0	0.0
Lost Time Adjust (s)	0.0		0.0	0.0	0.0						
Total Lost Time (s)	4.0		5.0	5.0	5.0						
Lead/Lag	Lag			Lead	Lead			Lead	Lag		
Lead-Lag Optimize?											
Vehicle Extension (s)	3.0		3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0
Recall Mode	None		C-Max	Max	Max		C-Max	Max	Max	Max	Max
Walk Time (s)			11.0				11.0		5.0		
Flash Dont Walk (s)			24.0				24.0		11.0		
Pedestrian Calls (#/hr)			0				0		0		
Act Effct Green (s)	41.0	39.0	35.0	42.0	40.0	49.0					



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	Ø2	Ø3	Ø4	Ø9	Ø13
Actuated g/C Ratio	0.39	0.37	0.33	0.40	0.38	0.47					
v/c Ratio	0.70	0.27	0.32	0.55	0.55	0.84					
Control Delay	39.2	20.9	27.2	22.6	26.0	43.5					
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0					
Total Delay	39.2	20.9	27.2	22.6	26.0	43.5					
LOS	D	C	C	C	C	D					
Approach Delay		27.3	25.5		36.8						
Approach LOS		C	C		D						
90th %ile Green (s)	5.0		35.0	7.0	7.0		35.0	1.0	36.0	1.0	1.0
90th %ile Term Code	Max		Coord	MaxR	MaxR		Coord	MaxR	MaxR	MaxR	MaxR
70th %ile Green (s)	5.0		35.0	7.0	7.0		35.0	1.0	36.0	1.0	1.0
70th %ile Term Code	Max		Coord	MaxR	MaxR		Coord	MaxR	MaxR	MaxR	MaxR
50th %ile Green (s)	5.0		35.0	7.0	7.0		35.0	1.0	36.0	1.0	1.0
50th %ile Term Code	Max		Coord	MaxR	MaxR		Coord	MaxR	MaxR	MaxR	MaxR
30th %ile Green (s)	5.0		35.0	7.0	7.0		35.0	1.0	36.0	1.0	1.0
30th %ile Term Code	Max		Coord	MaxR	MaxR		Coord	MaxR	MaxR	MaxR	MaxR
10th %ile Green (s)	5.0		35.0	7.0	7.0		35.0	1.0	36.0	1.0	1.0
10th %ile Term Code	Max		Coord	MaxR	MaxR		Coord	MaxR	MaxR	MaxR	MaxR
Queue Length 50th (ft)	71	67	89	69	130	232					
Queue Length 95th (ft)	#138	98	128	113	202	#405					
Internal Link Dist (ft)		718	811		485						
Turn Bay Length (ft)	90			80							
Base Capacity (vph)	249	1187	1055	384	465	490					
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	0.70	0.27	0.32	0.55	0.55	0.84					

Intersection Summary			
Area Type:	CBD		
Cycle Length: 105			
Actuated Cycle Length: 105			
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBT, Start of Green			
Natural Cycle: 105			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.84			
Intersection Signal Delay: 30.4		Intersection LOS: C	
Intersection Capacity Utilization 71.8%		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: 100: Upper Randolph Street & Upper Columbus Drive



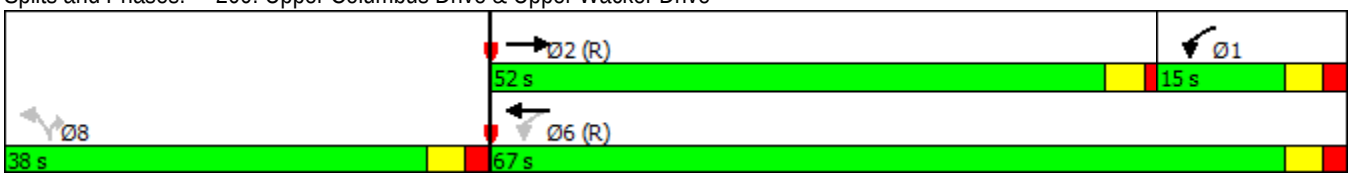
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	565	185	135	235	110	200
Future Volume (vph)	565	185	135	235	110	200
Ideal Flow (vphpl)	1900	1900	1900	2000	1900	1900
Storage Length (ft)		0	435		100	100
Storage Lanes		0	1		1	1
Taper Length (ft)			25		25	
Lane Util. Factor	0.91	0.91	1.00	0.95	0.97	0.88
Ped Bike Factor	0.96		0.96		0.84	0.61
Frt	0.963					0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	4227	0	1562	3353	2740	2224
Flt Permitted			0.296		0.950	
Satd. Flow (perm)	4227	0	466	3353	2291	1355
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	103					211
Link Speed (mph)	30			30	30	
Link Distance (ft)	961			509	702	
Travel Time (s)	21.8			11.6	16.0	
Confl. Peds. (#/hr)		210	210		103	237
Confl. Bikes (#/hr)						2
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	2%	4%	4%	2%	15%	15%
Adj. Flow (vph)	595	195	142	247	116	211
Shared Lane Traffic (%)						
Lane Group Flow (vph)	790	0	142	247	116	211
Turn Type	NA		pm+pt	NA	Perm	Perm
Protected Phases	2		1	6		
Permitted Phases			6		8	8
Detector Phase	2		1	6	8	8
Switch Phase						
Minimum Initial (s)	48.0		10.0	62.0	33.0	33.0
Minimum Split (s)	52.0		15.0	67.0	38.0	38.0
Total Split (s)	52.0		15.0	67.0	38.0	38.0
Total Split (%)	49.5%		14.3%	63.8%	36.2%	36.2%
Maximum Green (s)	48.0		10.0	62.0	33.0	33.0
Yellow Time (s)	3.0		3.0	3.0	3.0	3.0
All-Red Time (s)	1.0		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)	4.0		5.0	5.0	5.0	5.0
Lead/Lag	Lead		Lag			
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Recall Mode	C-Max		None	C-Max	Max	Max
Walk Time (s)	21.0			21.0	7.0	7.0
Flash Dont Walk (s)	27.0			27.0	26.0	26.0
Pedestrian Calls (#/hr)	0			0	0	0
Act Effct Green (s)	48.0		62.0	62.0	33.0	33.0
Actuated g/C Ratio	0.46		0.59	0.59	0.31	0.31

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
v/c Ratio	0.40		0.37	0.12	0.16	0.37
Control Delay	16.9		17.1	9.7	28.8	17.2
Queue Delay	0.0		0.0	0.0	0.0	0.0
Total Delay	16.9		17.1	9.7	28.8	17.2
LOS	B		B	A	C	B
Approach Delay	16.9			12.4	21.3	
Approach LOS	B			B	C	
90th %ile Green (s)	48.0		10.0	62.0	33.0	33.0
90th %ile Term Code	Coord		Max	Coord	MaxR	MaxR
70th %ile Green (s)	48.0		10.0	62.0	33.0	33.0
70th %ile Term Code	Coord		Max	Coord	MaxR	MaxR
50th %ile Green (s)	48.0		10.0	62.0	33.0	33.0
50th %ile Term Code	Coord		Max	Coord	MaxR	MaxR
30th %ile Green (s)	48.0		10.0	62.0	33.0	33.0
30th %ile Term Code	Coord		Max	Coord	MaxR	MaxR
10th %ile Green (s)	48.0		10.0	62.0	33.0	33.0
10th %ile Term Code	Coord		Max	Coord	MaxR	MaxR
Queue Length 50th (ft)	107		40	36	40	39
Queue Length 95th (ft)	141		70	54	m63	m85
Internal Link Dist (ft)	881			429	622	
Turn Bay Length (ft)			435		100	100
Base Capacity (vph)	1988		379	1979	720	570
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		0.37	0.12	0.16	0.37

Intersection Summary			
Area Type:	CBD		
Cycle Length: 105			
Actuated Cycle Length: 105			
Offset: 95 (90%), Referenced to phase 2:EBT and 6:WBTL, Start of Green			
Natural Cycle: 105			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.40			
Intersection Signal Delay: 16.7		Intersection LOS: B	
Intersection Capacity Utilization 87.5%		ICU Level of Service E	
Analysis Period (min) 15			

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

Splits and Phases: 200: Upper Columbus Drive & Upper Wacker Drive



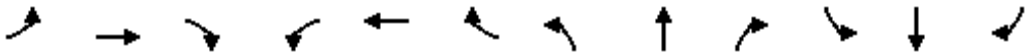
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	0	0	10	35	185	0
Future Volume (vph)	0	0	10	35	185	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt						
Flt Protected				0.989	0.950	
Satd. Flow (prot)	0	0	0	1842	1770	0
Flt Permitted				0.989	0.950	
Satd. Flow (perm)	0	0	0	1842	1770	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	152			150	61	
Travel Time (s)	3.5			3.4	1.4	
Peak Hour Factor	0.69	0.69	0.69	0.69	0.69	0.69
Adj. Flow (vph)	0	0	14	51	268	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	65	268	0
Sign Control	Stop			Stop	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 31.2%		ICU Level of Service A	
Analysis Period (min) 15			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	0	0	10	35	185	0
Future Volume (Veh/h)	0	0	10	35	185	0
Sign Control	Stop			Stop	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.69	0.69	0.69	0.69	0.69	0.69
Hourly flow rate (vph)	0	0	14	51	268	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	536	0	536	536	0	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	536	0	536	536	0	
tC, single (s)	6.5	6.2	7.1	6.5	4.1	
tC, 2 stage (s)						
tF (s)	4.0	3.3	3.5	4.0	2.2	
p0 queue free %	100	100	96	86	83	
cM capacity (veh/h)	377	1085	398	377	1623	

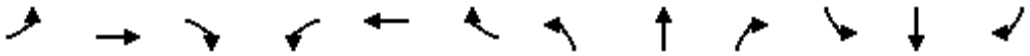
Direction, Lane #	WB 1	NB 1
Volume Total	65	268
Volume Left	14	268
Volume Right	0	0
cSH	381	1623
Volume to Capacity	0.17	0.17
Queue Length 95th (ft)	15	15
Control Delay (s)	16.4	7.7
Lane LOS	C	A
Approach Delay (s)	16.4	7.7
Approach LOS	C	

Intersection Summary				
Average Delay	9.4			
Intersection Capacity Utilization	31.2%	ICU Level of Service	A	
Analysis Period (min)	15			



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	90	35	110	0	0	0	0	95	10	0	10	0
Future Volume (vph)	90	35	110	0	0	0	0	95	10	0	10	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.886						0.988				
Flt Protected	0.950											
Satd. Flow (prot)	1770	1650	0	0	0	0	0	1840	0	0	1863	0
Flt Permitted	0.950											
Satd. Flow (perm)	1770	1650	0	0	0	0	0	1840	0	0	1863	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		366			148			226			61	
Travel Time (s)		8.3			3.4			5.1			1.4	
Confl. Peds. (#/hr)			29	29								
Peak Hour Factor	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69
Adj. Flow (vph)	130	51	159	0	0	0	0	138	14	0	14	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	130	210	0	0	0	0	0	152	0	0	14	0
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 28.9%		ICU Level of Service A	
Analysis Period (min) 15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	90	35	110	0	0	0	0	95	10	0	10	0
Future Volume (vph)	90	35	110	0	0	0	0	95	10	0	10	0
Peak Hour Factor	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69
Hourly flow rate (vph)	130	51	159	0	0	0	0	138	14	0	14	0

Direction, Lane #	EB 1	EB 2	NB 1	SB 1
Volume Total (vph)	130	210	152	14
Volume Left (vph)	130	0	0	0
Volume Right (vph)	0	159	14	0
Hadj (s)	0.53	-0.50	-0.02	0.03
Departure Headway (s)	5.4	4.4	4.7	4.9
Degree Utilization, x	0.20	0.26	0.20	0.02
Capacity (veh/h)	646	790	733	681
Control Delay (s)	8.6	7.7	8.8	8.0
Approach Delay (s)	8.1		8.8	8.0
Approach LOS	A		A	A

Intersection Summary				
Delay	8.3			
Level of Service	A			
Intersection Capacity Utilization	28.9%	ICU Level of Service	A	
Analysis Period (min)	15			

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	20	55	25	50	5	5
Future Volume (vph)	20	55	25	50	5	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.901				0.932	
Flt Protected				0.984	0.976	
Satd. Flow (prot)	1678	0	0	1833	1694	0
Flt Permitted				0.984	0.976	
Satd. Flow (perm)	1678	0	0	1833	1694	0
Link Speed (mph)	30			30	20	
Link Distance (ft)	452			221	330	
Travel Time (s)	10.3			5.0	11.3	
Confl. Peds. (#/hr)		7	7		18	26
Peak Hour Factor	0.69	0.69	0.69	0.69	0.69	0.69
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Adj. Flow (vph)	29	80	36	72	7	7
Shared Lane Traffic (%)						
Lane Group Flow (vph)	109	0	0	108	14	0
Sign Control	Stop			Stop	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 26.5%		ICU Level of Service A	
Analysis Period (min) 15			

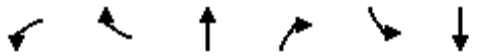
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Sign Control	Stop			Stop	Stop	
Traffic Volume (vph)	20	55	25	50	5	5
Future Volume (vph)	20	55	25	50	5	5
Peak Hour Factor	0.69	0.69	0.69	0.69	0.69	0.69
Hourly flow rate (vph)	29	80	36	72	7	7

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total (vph)	109	108	14
Volume Left (vph)	0	36	7
Volume Right (vph)	80	0	7
Hadj (s)	-0.41	0.10	-0.17
Departure Headway (s)	3.6	4.1	4.2
Degree Utilization, x	0.11	0.12	0.02
Capacity (veh/h)	977	862	812
Control Delay (s)	7.1	7.7	7.2
Approach Delay (s)	7.1	7.7	7.2
Approach LOS	A	A	A

Intersection Summary			
Delay	7.4		
Level of Service	A		
Intersection Capacity Utilization	26.5%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	0	0	15	20	45	40
Future Volume (vph)	0	0	15	20	45	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt			0.923			
Flt Protected						0.974
Satd. Flow (prot)	0	0	1719	0	0	1814
Flt Permitted						0.974
Satd. Flow (perm)	0	0	1719	0	0	1814
Link Speed (mph)	20		20			20
Link Distance (ft)	282		131			330
Travel Time (s)	9.6		4.5			11.3
Confl. Peds. (#/hr)				125	125	
Peak Hour Factor	0.69	0.69	0.69	0.69	0.69	0.69
Adj. Flow (vph)	0	0	22	29	65	58
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	51	0	0	123
Sign Control	Stop		Free			Free

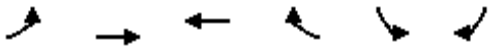
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 16.5%		ICU Level of Service A	
Analysis Period (min) 15			



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	0	15	20	45	40
Future Volume (Veh/h)	0	0	15	20	45	40
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.69	0.69	0.69	0.69	0.69	0.69
Hourly flow rate (vph)	0	0	22	29	65	58
Pedestrians	125					
Lane Width (ft)	0.0					
Walking Speed (ft/s)	3.5					
Percent Blockage	0					
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	350	162			176	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	350	162			176	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	100			95	
cM capacity (veh/h)	618	883			1400	

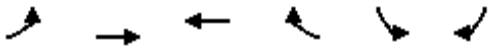
Direction, Lane #	NB 1	SB 1
Volume Total	51	123
Volume Left	0	65
Volume Right	29	0
cSH	1700	1400
Volume to Capacity	0.03	0.05
Queue Length 95th (ft)	0	4
Control Delay (s)	0.0	4.2
Lane LOS		A
Approach Delay (s)	0.0	4.2
Approach LOS		

Intersection Summary				
Average Delay	3.0			
Intersection Capacity Utilization	16.5%	ICU Level of Service		A
Analysis Period (min)	15			



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	60	15	10	0	0	30
Future Volume (vph)	60	15	10	0	0	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt					0.865	
Flt Protected		0.961				
Satd. Flow (prot)	0	1790	1863	0	1611	0
Flt Permitted		0.961				
Satd. Flow (perm)	0	1790	1863	0	1611	0
Link Speed (mph)		30	30		20	
Link Distance (ft)		106	188		144	
Travel Time (s)		2.4	4.3		4.9	
Confl. Peds. (#/hr)	31			31		
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82
Adj. Flow (vph)	73	18	12	0	0	37
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	91	12	0	37	0
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 20.8%		ICU Level of Service A	
Analysis Period (min) 15			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	60	15	10	0	0	30
Future Volume (Veh/h)	60	15	10	0	0	30
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82
Hourly flow rate (vph)	73	18	12	0	0	37
Pedestrians					31	
Lane Width (ft)					12.0	
Walking Speed (ft/s)					3.5	
Percent Blockage					3	
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	43				207	43
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	43				207	43
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	95				100	96
cM capacity (veh/h)	1519				722	997

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	91	12	37
Volume Left	73	0	0
Volume Right	0	0	37
cSH	1519	1700	997
Volume to Capacity	0.05	0.01	0.04
Queue Length 95th (ft)	4	0	3
Control Delay (s)	6.1	0.0	8.7
Lane LOS	A		A
Approach Delay (s)	6.1	0.0	8.7
Approach LOS			A

Intersection Summary			
Average Delay	6.3		
Intersection Capacity Utilization	20.8%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	20	60	0	25	30	0
Future Volume (vph)	20	60	0	25	30	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.899					
Flt Protected					0.950	
Satd. Flow (prot)	1675	0	0	1863	1770	0
Flt Permitted					0.950	
Satd. Flow (perm)	1675	0	0	1863	1770	0
Link Speed (mph)	30			30	20	
Link Distance (ft)	854			156	202	
Travel Time (s)	19.4			3.5	6.9	
Confl. Peds. (#/hr)		11	11			
Confl. Bikes (#/hr)		1				
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	21	63	0	26	32	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	84	0	0	26	32	0
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 18.0%		ICU Level of Service A	
Analysis Period (min) 15			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	20	60	0	25	30	0
Future Volume (Veh/h)	20	60	0	25	30	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	21	63	0	26	32	0
Pedestrians					11	
Lane Width (ft)					12.0	
Walking Speed (ft/s)					3.5	
Percent Blockage					1	
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			95		90	64
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			95		90	64
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		96	100
cM capacity (veh/h)			1483		902	990

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	84	26	32
Volume Left	0	0	32
Volume Right	63	0	0
cSH	1700	1483	902
Volume to Capacity	0.05	0.00	0.04
Queue Length 95th (ft)	0	0	3
Control Delay (s)	0.0	0.0	9.1
Lane LOS			A
Approach Delay (s)	0.0	0.0	9.1
Approach LOS			A

Intersection Summary			
Average Delay	2.1		
Intersection Capacity Utilization	18.0%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	70	5	30	85	5	35
Future Volume (vph)	70	5	30	85	5	35
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.991		0.900			
Flt Protected	0.955					0.994
Satd. Flow (prot)	1763	0	1668	0	0	1790
Flt Permitted	0.955					0.994
Satd. Flow (perm)	1763	0	1668	0	0	1790
Link Speed (mph)	20		20			20
Link Distance (ft)	377		210			131
Travel Time (s)	12.9		7.2			4.5
Confl. Peds. (#/hr)	7	87		125	125	
Confl. Bikes (#/hr)				1		
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81
Heavy Vehicles (%)	2%	2%	4%	2%	2%	6%
Adj. Flow (vph)	86	6	37	105	6	43
Shared Lane Traffic (%)						
Lane Group Flow (vph)	92	0	142	0	0	49
Sign Control	Stop		Stop			Stop

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 32.8%		ICU Level of Service A	
Analysis Period (min) 15			

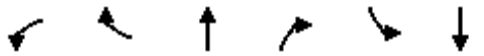
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Sign Control	Stop		Stop			Stop
Traffic Volume (vph)	70	5	30	85	5	35
Future Volume (vph)	70	5	30	85	5	35
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81
Hourly flow rate (vph)	86	6	37	105	6	43

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total (vph)	92	142	49
Volume Left (vph)	86	0	6
Volume Right (vph)	6	105	0
Hadj (s)	0.18	-0.40	0.12
Departure Headway (s)	4.5	3.8	4.4
Degree Utilization, x	0.11	0.15	0.06
Capacity (veh/h)	771	923	798
Control Delay (s)	8.0	7.4	7.6
Approach Delay (s)	8.0	7.4	7.6
Approach LOS	A	A	A

Intersection Summary			
Delay	7.7		
Level of Service	A		
Intersection Capacity Utilization	32.8%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	45	5	115	55	1	110
Future Volume (vph)	45	5	115	55	1	110
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.986		0.956			
Flt Protected	0.957					
Satd. Flow (prot)	1758	0	1477	0	0	1585
Flt Permitted	0.957					
Satd. Flow (perm)	1758	0	1477	0	0	1585
Link Speed (mph)	20		20			20
Link Distance (ft)	257		203			210
Travel Time (s)	8.8		6.9			7.2
Confl. Peds. (#/hr)	18	38		123	123	
Confl. Bikes (#/hr)				1		
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	2%	2%	33%	2%	2%	20%
Adj. Flow (vph)	50	6	128	61	1	122
Shared Lane Traffic (%)						
Lane Group Flow (vph)	56	0	189	0	0	123
Sign Control	Stop		Stop			Stop

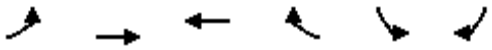
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 30.5%		ICU Level of Service A	
Analysis Period (min) 15			



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Sign Control	Stop		Stop			Stop
Traffic Volume (vph)	45	5	115	55	1	110
Future Volume (vph)	45	5	115	55	1	110
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	50	6	128	61	1	122

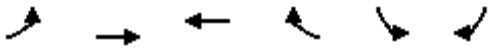
Direction, Lane #	WB 1	NB 1	SB 1
Volume Total (vph)	56	189	123
Volume Left (vph)	50	0	1
Volume Right (vph)	6	61	0
Hadj (s)	0.15	0.20	0.34
Departure Headway (s)	4.8	4.4	4.6
Degree Utilization, x	0.07	0.23	0.16
Capacity (veh/h)	700	803	759
Control Delay (s)	8.1	8.7	8.4
Approach Delay (s)	8.1	8.7	8.4
Approach LOS	A	A	A

Intersection Summary			
Delay	8.5		
Level of Service	A		
Intersection Capacity Utilization	30.5%	ICU Level of Service	A
Analysis Period (min)	15		



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	160	225	185	30	20	210
Future Volume (vph)	160	225	185	30	20	210
Ideal Flow (vphpl)	1900	2000	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt			0.981		0.877	
Flt Protected	0.950				0.996	
Satd. Flow (prot)	1770	1905	1735	0	1627	0
Flt Permitted	0.950				0.996	
Satd. Flow (perm)	1770	1905	1735	0	1627	0
Link Speed (mph)		20	20		30	
Link Distance (ft)		891	452		390	
Travel Time (s)		30.4	15.4		8.9	
Confl. Peds. (#/hr)	208			208	41	27
Confl. Bikes (#/hr)				1		
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	2%	5%	8%	4%	2%	2%
Adj. Flow (vph)	172	242	199	32	22	226
Shared Lane Traffic (%)						
Lane Group Flow (vph)	172	242	231	0	248	0
Sign Control		Stop	Stop		Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 48.6%		ICU Level of Service A	
Analysis Period (min) 15			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Stop	Stop		Stop	
Traffic Volume (vph)	160	225	185	30	20	210
Future Volume (vph)	160	225	185	30	20	210
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	172	242	199	32	22	226

Direction, Lane #	EB 1	EB 2	WB 1	SB 1
Volume Total (vph)	172	242	231	248
Volume Left (vph)	172	0	0	22
Volume Right (vph)	0	0	32	226
Hadj (s)	0.53	0.08	0.04	-0.50
Departure Headway (s)	6.0	5.5	5.2	4.9
Degree Utilization, x	0.28	0.37	0.34	0.34
Capacity (veh/h)	578	630	653	679
Control Delay (s)	10.1	10.5	10.9	10.5
Approach Delay (s)	10.3		10.9	10.5
Approach LOS	B		B	B

Intersection Summary			
Delay	10.5		
Level of Service	B		
Intersection Capacity Utilization	48.6%	ICU Level of Service	A
Analysis Period (min)	15		

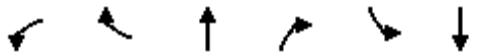
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	35	230	0	0	0	190
Future Volume (vph)	35	230	0	0	0	190
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.883					0.865
Flt Protected						
Satd. Flow (prot)	1645	0	0	0	0	1611
Flt Permitted						
Satd. Flow (perm)	1645	0	0	0	0	1611
Link Speed (mph)	30			30	30	
Link Distance (ft)	454			309	390	
Travel Time (s)	10.3			7.0	8.9	
Confl. Peds. (#/hr)		22	22		40	6
Confl. Bikes (#/hr)						3
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	40	261	0	0	0	216
Shared Lane Traffic (%)						
Lane Group Flow (vph)	301	0	0	0	0	216
Sign Control	Stop			Stop	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 37.1%		ICU Level of Service A	
Analysis Period (min) 15			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Sign Control	Stop			Stop	Stop	
Traffic Volume (vph)	35	230	0	0	0	190
Future Volume (vph)	35	230	0	0	0	190
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Hourly flow rate (vph)	40	261	0	0	0	216

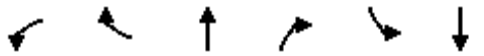
Direction, Lane #	EB 1	NB 1
Volume Total (vph)	301	216
Volume Left (vph)	0	0
Volume Right (vph)	261	216
Hadj (s)	-0.49	-0.57
Departure Headway (s)	3.9	3.9
Degree Utilization, x	0.32	0.24
Capacity (veh/h)	894	854
Control Delay (s)	8.7	8.2
Approach Delay (s)	8.7	8.2
Approach LOS	A	A

Intersection Summary			
Delay	8.5		
Level of Service	A		
Intersection Capacity Utilization	37.1%	ICU Level of Service	A
Analysis Period (min)	15		



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	0	40	185	40	0	0
Future Volume (vph)	0	40	185	40	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt		0.865	0.976			
Flt Protected						
Satd. Flow (prot)	0	1611	1818	0	0	0
Flt Permitted						
Satd. Flow (perm)	0	1611	1818	0	0	0
Link Speed (mph)	30		30			30
Link Distance (ft)	180		133			240
Travel Time (s)	4.1		3.0			5.5
Confl. Peds. (#/hr)		126		20	20	
Confl. Bikes (#/hr)		3				
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87
Adj. Flow (vph)	0	46	213	46	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	46	259	0	0	0
Sign Control	Stop		Free			Free

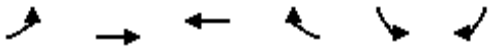
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 32.8%		ICU Level of Service A	
Analysis Period (min) 15			



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	40	185	40	0	0
Future Volume (Veh/h)	0	40	185	40	0	0
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87
Hourly flow rate (vph)	0	46	213	46	0	0
Pedestrians	20					126
Lane Width (ft)	12.0					0.0
Walking Speed (ft/s)	3.5					3.5
Percent Blockage	2					0
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	256	382			279	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	256	382			279	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	93			100	
cM capacity (veh/h)	719	653			1259	

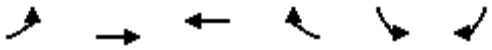
Direction, Lane #	WB 1	NB 1
Volume Total	46	259
Volume Left	0	0
Volume Right	46	46
cSH	653	1700
Volume to Capacity	0.07	0.15
Queue Length 95th (ft)	6	0
Control Delay (s)	10.9	0.0
Lane LOS	B	
Approach Delay (s)	10.9	0.0
Approach LOS	B	

Intersection Summary			
Average Delay	1.6		
Intersection Capacity Utilization	32.8%	ICU Level of Service	A
Analysis Period (min)	15		



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	0	0	70	110	0	125
Future Volume (vph)	0	0	70	110	0	125
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt			0.918			0.865
Flt Protected						
Satd. Flow (prot)	0	0	1710	0	0	1611
Flt Permitted						
Satd. Flow (perm)	0	0	1710	0	0	1611
Link Speed (mph)		30	30		30	
Link Distance (ft)		361	407		107	
Travel Time (s)		8.2	9.3		2.4	
Confl. Peds. (#/hr)				105		59
Confl. Bikes (#/hr)				2		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	0	74	116	0	132
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	190	0	0	132
Sign Control		Stop	Stop		Stop	

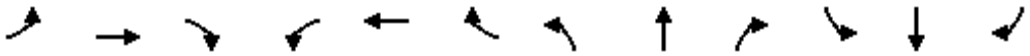
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 34.0%		ICU Level of Service A	
Analysis Period (min) 15			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Stop	Stop		Stop	
Traffic Volume (vph)	0	0	70	110	0	125
Future Volume (vph)	0	0	70	110	0	125
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	0	0	74	116	0	132

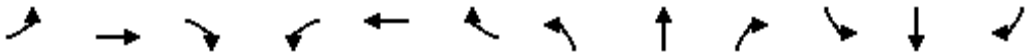
Direction, Lane #	WB 1	SB 1
Volume Total (vph)	190	132
Volume Left (vph)	0	0
Volume Right (vph)	116	132
Hadj (s)	-0.33	-0.57
Departure Headway (s)	3.8	3.7
Degree Utilization, x	0.20	0.14
Capacity (veh/h)	910	919
Control Delay (s)	7.8	7.3
Approach Delay (s)	7.8	7.3
Approach LOS	A	A

Intersection Summary			
Delay	7.6		
Level of Service	A		
Intersection Capacity Utilization	34.0%	ICU Level of Service	A
Analysis Period (min)	15		



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	90	150	10	50	0	120	0	5	0	0	0
Future Volume (vph)	0	90	150	10	50	0	120	0	5	0	0	0
Ideal Flow (vphpl)	1900	2000	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt			0.850					0.995				
Flt Protected					0.991			0.954				
Satd. Flow (prot)	0	1961	1583	0	1846	0	0	1768	0	0	1863	0
Flt Permitted					0.991			0.954				
Satd. Flow (perm)	0	1961	1583	0	1846	0	0	1768	0	0	1863	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		339			854			143			79	
Travel Time (s)		7.7			19.4			3.3			1.8	
Confl. Peds. (#/hr)			11	11			36		18	18		36
Confl. Bikes (#/hr)			1			1			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
Adj. Flow (vph)	0	95	158	11	53	0	126	0	5	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	95	158	0	64	0	0	131	0	0	0	0
Sign Control		Stop			Stop			Stop			Stop	

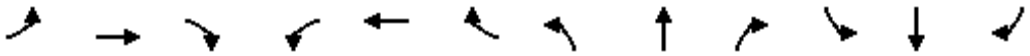
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 29.1%		ICU Level of Service A	
Analysis Period (min) 15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	0	90	150	10	50	0	120	0	5	0	0	0
Future Volume (vph)	0	90	150	10	50	0	120	0	5	0	0	0
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
Hourly flow rate (vph)	0	95	158	11	53	0	126	0	5	0	0	0

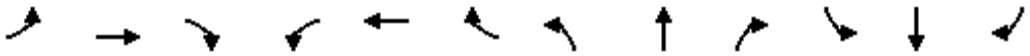
Direction, Lane #	EB 1	EB 2	WB 1	NB 1	SB 1
Volume Total (vph)	95	158	64	131	0
Volume Left (vph)	0	0	11	126	0
Volume Right (vph)	0	158	0	5	0
Hadj (s)	0.03	-0.67	0.07	0.20	0.00
Departure Headway (s)	4.9	4.2	4.7	4.8	4.8
Degree Utilization, x	0.13	0.19	0.08	0.17	0.00
Capacity (veh/h)	712	822	733	712	708
Control Delay (s)	7.5	7.0	8.1	8.8	7.8
Approach Delay (s)	7.2		8.1	8.8	0.0
Approach LOS	A		A	A	A

Intersection Summary				
Delay	7.8			
Level of Service	A			
Intersection Capacity Utilization	29.1%	ICU Level of Service	A	
Analysis Period (min)	15			



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	15	10	15	30	10	1	30	5	65	1	1	1
Future Volume (vph)	15	10	15	30	10	1	30	5	65	1	1	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	10	12	12	11	12	12	11	12	12	11	12
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		0.949			0.997			0.913			0.955	
Flt Protected		0.982			0.964			0.985			0.984	
Satd. Flow (prot)	0	1620	0	0	1731	0	0	1619	0	0	1692	0
Flt Permitted		0.982			0.964			0.985			0.984	
Satd. Flow (perm)	0	1620	0	0	1731	0	0	1619	0	0	1692	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		180			106			606			163	
Travel Time (s)		4.1			2.4			13.8			3.7	
Confl. Peds. (#/hr)	31		7	7		31	19		8	8		19
Confl. Bikes (#/hr)			2									
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82
Adj. Flow (vph)	18	12	18	37	12	1	37	6	79	1	1	1
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	48	0	0	50	0	0	122	0	0	3	0
Sign Control		Free			Free			Stop			Stop	

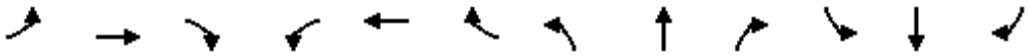
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 26.0%		ICU Level of Service A	
Analysis Period (min) 15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	15	10	15	30	10	1	30	5	65	1	1	1
Future Volume (Veh/h)	15	10	15	30	10	1	30	5	65	1	1	1
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82
Hourly flow rate (vph)	18	12	18	37	12	1	37	6	79	1	1	1
Pedestrians		19			8			7			31	
Lane Width (ft)		10.0			11.0			11.0			11.0	
Walking Speed (ft/s)		3.5			3.5			3.5			3.5	
Percent Blockage		2			1			1			3	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	44			37			171	182	36	264	190	62
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	44			37			171	182	36	264	190	62
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			98			95	99	92	100	100	100
cM capacity (veh/h)	1522			1564			734	664	1023	578	657	960

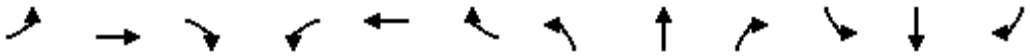
Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	48	50	122	3
Volume Left	18	37	37	1
Volume Right	18	1	79	1
cSH	1522	1564	893	699
Volume to Capacity	0.01	0.02	0.14	0.00
Queue Length 95th (ft)	1	2	12	0
Control Delay (s)	2.8	5.5	9.7	10.2
Lane LOS	A	A	A	B
Approach Delay (s)	2.8	5.5	9.7	10.2
Approach LOS			A	B

Intersection Summary			
Average Delay	7.3		
Intersection Capacity Utilization	26.0%	ICU Level of Service	A
Analysis Period (min)	15		



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	180	5	1	1	5	80	2	30	1	125	10	25
Future Volume (vph)	180	5	1	1	5	80	2	30	1	125	10	25
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	11	12	12	12	12
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	0.95	0.95	0.95
Ped Bike Factor												
Frt		0.979			0.875			0.996			0.977	
Flt Protected	0.950				0.999			0.997			0.962	
Satd. Flow (prot)	1770	1824	0	0	1571	0	0	3397	0	0	3161	0
Flt Permitted	0.950				0.999			0.997			0.962	
Satd. Flow (perm)	1770	1824	0	0	1571	0	0	3397	0	0	3161	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		508			1374			603			254	
Travel Time (s)		11.5			31.2			13.7			5.8	
Confl. Peds. (#/hr)	142		88	88		142	61		87	87		61
Confl. Bikes (#/hr)												1
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Heavy Vehicles (%)	2%	2%	2%	2%	2%	6%	2%	2%	2%	8%	2%	6%
Adj. Flow (vph)	205	6	1	1	6	91	2	34	1	142	11	28
Shared Lane Traffic (%)												
Lane Group Flow (vph)	205	7	0	0	98	0	0	37	0	0	181	0
Sign Control		Stop			Stop			Stop			Stop	

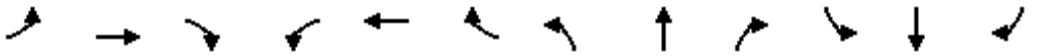
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 36.9%		ICU Level of Service A	
Analysis Period (min) 15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	180	5	1	1	5	80	2	30	1	125	10	25
Future Volume (vph)	180	5	1	1	5	80	2	30	1	125	10	25
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Hourly flow rate (vph)	205	6	1	1	6	91	2	34	1	142	11	28

Direction, Lane #	EB 1	EB 2	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total (vph)	205	7	98	19	18	148	34
Volume Left (vph)	205	0	1	2	0	142	0
Volume Right (vph)	0	1	91	0	1	0	28
Hadj (s)	0.53	-0.07	-0.46	0.09	0.00	0.61	-0.49
Departure Headway (s)	5.7	5.1	5.0	5.7	5.6	6.0	4.9
Degree Utilization, x	0.33	0.01	0.13	0.03	0.03	0.25	0.05
Capacity (veh/h)	601	667	687	591	599	568	690
Control Delay (s)	10.3	7.0	8.7	7.7	7.6	9.8	6.9
Approach Delay (s)	10.2		8.7	7.6		9.3	
Approach LOS	B		A	A		A	

Intersection Summary				
Delay	9.4			
Level of Service	A			
Intersection Capacity Utilization	36.9%	ICU Level of Service		A
Analysis Period (min)	15			

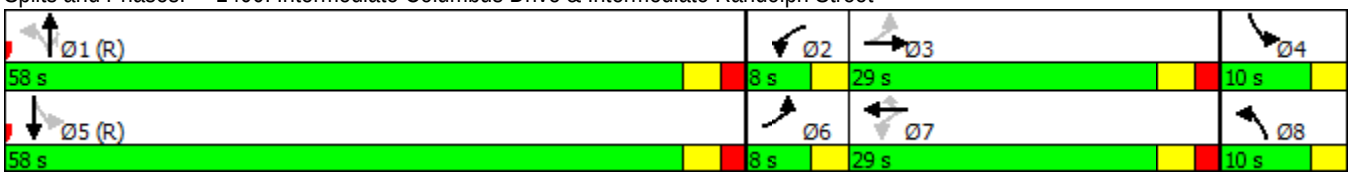


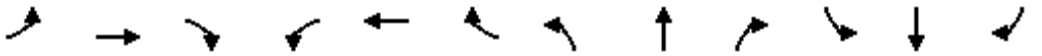
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	50	150	60	55	120	75	190	1395	505	185	1070	105
Future Volume (vph)	50	150	60	55	120	75	190	1395	505	185	1070	105
Ideal Flow (vphpl)	1900	1900	1900	1900	2000	1900	1900	2000	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	10	11	12	10	11	12
Storage Length (ft)	85		0	85		85	95		95	200		0
Storage Lanes	1		0	1		1	1		1	1		0
Taper Length (ft)	45			25			90			50		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	0.95	0.88	1.00	0.95	0.95
Ped Bike Factor	1.00					0.98	1.00				1.00	
Frt		0.957				0.850			0.850		0.987	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1593	3048	0	1562	2874	1425	1486	3210	2508	1486	3035	0
Flt Permitted	0.670			0.590			0.111			0.075		
Satd. Flow (perm)	1120	3048	0	970	2874	1402	174	3210	2508	117	3035	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		53				83			524		14	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		937			752			538			655	
Travel Time (s)		21.3			17.1			12.2			14.9	
Confl. Peds. (#/hr)	3					3	3					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
Heavy Vehicles (%)	2%	2%	2%	4%	19%	2%	2%	3%	2%	2%	2%	2%
Adj. Flow (vph)	54	163	65	60	130	82	207	1516	549	201	1163	114
Shared Lane Traffic (%)												
Lane Group Flow (vph)	54	228	0	60	130	82	207	1516	549	201	1277	0
Turn Type	pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	
Protected Phases	6	3		2	7		8	1		4	5	
Permitted Phases	3			7		7	1		1	5		
Minimum Split (s)	8.0	29.0		8.0	29.0	29.0	10.0	58.0	58.0	10.0	58.0	
Total Split (s)	8.0	29.0		8.0	29.0	29.0	10.0	58.0	58.0	10.0	58.0	
Total Split (%)	7.6%	27.6%		7.6%	27.6%	27.6%	9.5%	55.2%	55.2%	9.5%	55.2%	
Maximum Green (s)	5.0	24.0		5.0	24.0	24.0	7.0	53.0	53.0	7.0	53.0	
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	2.0		0.0	2.0	2.0	0.0	2.0	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	0.0	0.0	
Total Lost Time (s)	3.0	5.0		3.0	5.0	5.0	3.0	5.0	5.0	3.0	5.0	
Lead/Lag	Lead	Lag		Lead	Lag	Lag						
Lead-Lag Optimize?												
Walk Time (s)		8.0			8.0	8.0		26.0	26.0		34.0	
Flash Dont Walk (s)		16.0			16.0	16.0		27.0	27.0		19.0	
Pedestrian Calls (#/hr)		0			0	0		0	0		0	
Act Effct Green (s)	31.0	24.0		31.0	24.0	24.0	62.0	53.0	53.0	62.0	53.0	
Actuated g/C Ratio	0.30	0.23		0.30	0.23	0.23	0.59	0.50	0.50	0.59	0.50	
v/c Ratio	0.15	0.31		0.19	0.20	0.21	1.09	0.94	0.36	1.26	0.83	
Control Delay	26.3	26.9		26.9	33.7	8.7	111.6	36.7	2.3	180.6	27.8	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	26.3	26.9		26.9	33.7	8.7	111.6	36.7	2.3	180.6	27.8	
LOS	C	C		C	C	A	F	D	A	F	C	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach Delay		26.8			24.7			35.2			48.6	
Approach LOS		C			C			D			D	
Queue Length 50th (ft)	25	51		28	37	0	~91	483	4	~126	366	
Queue Length 95th (ft)	55	85		60	64	38	#240	#658	34	#273	467	
Internal Link Dist (ft)		857			672			458			575	
Turn Bay Length (ft)	85			85		85	95		95	200		
Base Capacity (vph)	353	737		314	656	384	190	1620	1525	160	1538	
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	0.15	0.31		0.19	0.20	0.21	1.09	0.94	0.36	1.26	0.83	

Intersection Summary			
Area Type:	CBD		
Cycle Length: 105			
Actuated Cycle Length: 105			
Offset: 24 (23%), Referenced to phase 1:NBTL and 5:SBTL, Start of Green			
Natural Cycle: 105			
Control Type: Pretimed			
Maximum v/c Ratio: 1.26			
Intersection Signal Delay: 38.6		Intersection LOS: D	
Intersection Capacity Utilization 95.0%		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: 1400: Intermediate Columbus Drive & Intermediate Randolph Street



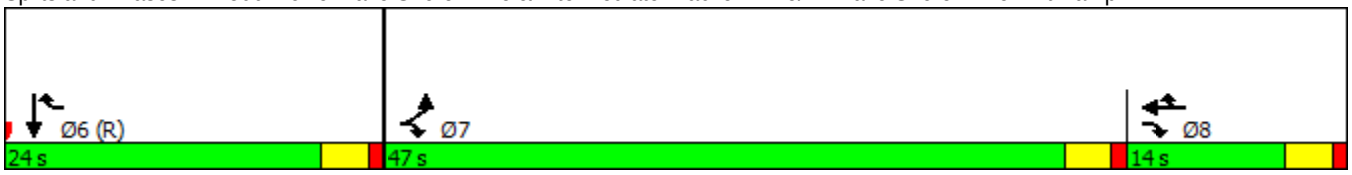


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1065	0	455	0	200	345	0	0	0	0	355	375
Future Volume (vph)	1065	0	455	0	200	345	0	0	0	0	355	375
Ideal Flow (vphpl)	1900	1900	1900	1900	2000	1900	1900	1900	1900	1900	2000	1900
Storage Length (ft)	0		0	75		0	0		0	0		0
Storage Lanes	2		1	1		1	0		0	0		2
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.97	1.00	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	0.95	0.88
Frt			0.850			0.850						0.850
Flt Protected	0.950											
Satd. Flow (prot)	3433	0	1583	0	3725	1583	0	0	0	0	3725	2733
Flt Permitted	0.950											
Satd. Flow (perm)	3433	0	1583	0	3725	1583	0	0	0	0	3725	2733
Right Turn on Red			Yes	No		Yes			Yes			Yes
Satd. Flow (RTOR)			131			54						399
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		275			735			891			601	
Travel Time (s)		6.3			16.7			20.3			13.7	
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 (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	4%
Adj. Flow (vph)	1133	0	484	0	213	367	0	0	0	0	378	399
Shared Lane Traffic (%)												
Lane Group Flow (vph)	1133	0	484	0	213	367	0	0	0	0	378	399
Turn Type	Prot		custom		NA	custom					NA	Free
Protected Phases	7		7 8		8	6 8					6	
Permitted Phases						8						Free
Minimum Split (s)	47.0				14.0						24.0	
Total Split (s)	47.0				14.0						24.0	
Total Split (%)	55.3%				16.5%						28.2%	
Maximum Green (s)	43.0				10.0						20.0	
Yellow Time (s)	3.0				3.0						3.0	
All-Red Time (s)	1.0				1.0						1.0	
Lost Time Adjust (s)	0.0				0.0						0.0	
Total Lost Time (s)	4.0				4.0						4.0	
Lead/Lag	Lead				Lag							
Lead-Lag Optimize?												
Act Effct Green (s)	43.0		57.0		10.0	34.0					20.0	85.0
Actuated g/C Ratio	0.51		0.67		0.12	0.40					0.24	1.00
v/c Ratio	0.65		0.44		0.49	0.55					0.43	0.15
Control Delay	17.7		5.9		39.2	20.3					29.5	0.1
Queue Delay	0.0		0.0		0.0	0.0					0.0	0.0
Total Delay	17.7		5.9		39.2	20.3					29.5	0.1
LOS	B		A		D	C					C	A
Approach Delay		14.2			27.3						14.4	
Approach LOS		B			C						B	
Queue Length 50th (ft)	218		70		56	125					90	0
Queue Length 95th (ft)	285		125		92	210					132	0
Internal Link Dist (ft)		195			655			811			521	
Turn Bay Length (ft)												

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Base Capacity (vph)	1736		1104		438	665					876	2733
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	0.65		0.44		0.49	0.55					0.43	0.15

Intersection Summary			
Area Type:	Other		
Cycle Length: 85			
Actuated Cycle Length: 85			
Offset: 10 (12%), Referenced to phase 6:SBT, Start of Green			
Natural Cycle: 85			
Control Type: Pretimed			
Maximum v/c Ratio: 0.65			
Intersection Signal Delay: 16.8		Intersection LOS: B	
Intersection Capacity Utilization 63.7%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 1500: Lower Lake Shore Drive & Intermediate Wacker Drive/NB Lake Shore Drive Exit Ramp



TRUCK TURN SCHEMATICS

N

SUB LOWER WACKER DRIVE

LOADING ENTRANCE
FROM SUB LOWER
WACKER DRIVE

LOADING ENTRANCE
FROM SUB LOWER
WACKER DRIVE

CAR ENTRANCE
FROM SUB LOWER
WACKER DRIVE

SU-30
AASHTO 2017 (US)

BIKE

TR MTR COMED

GEN

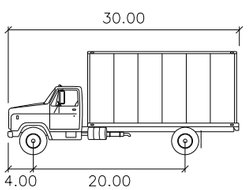
PUMP

SG

ATS

THE CHANDLER
ABOVE

PHASE 3 PARKING



SU-30 feet

Width	: 8.00
Track	: 8.00
Lock to Lock Time	: 6.0
Steering Angle	: 31.8

0 30 60

SCALE IN FEET

TS SHT NO.

FILE NAME = Sheets 1-4.dgn	USER NAME = cody.wittenkeller	DESIGNED - CW	REVISED -
		DRAWN - CW	REVISED -
	PLOT SCALE = 30.0000 ' / in.	CHECKED - GL	REVISED -
	PLOT DATE = 6/16/2017	DATE - 05/24/2017	REVISED -

Kimley»Horn
1001 WARRENVILLE RD, SUITE 350
LISLE, IL 60532
(630) 487-5550
KHA PROJ. NO: 168414000

SCALE: SHEET OF SHEETS STA. TO STA.

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
112		WILL	T22	
		CONTRACT NO.		
	ILLINOIS	FED. AID PROJECT		

N

SUB LOWER WACKER DRIVE

SU-30
AASHTO 2011 (US)

LOADING ENTRANCE
FROM SUB LOWER
WACKER DRIVE

LOADING ENTRANCE
FROM SUB LOWER
WACKER DRIVE

CAR ENTRANCE
FROM SUB LOWER
WACKER DRIVE

BIKE

TR MTR

COMED

GEN

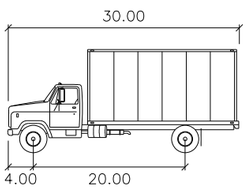
PUMP

SG

ATS

THE CHANDLER
ABOVE

PHASE 3 PARKING



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Track	: 8.00
Lock to Lock Time	: 6.0
Steering Angle	: 31.8

0 30 60

SCALE IN FEET

TS SHT NO.

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		DRAWN - CW	REVISED -		KHA PROJ. NO: 168414000						CONTRACT NO.
	PLOT SCALE = 30.0000 ' / in.	CHECKED - GL	REVISED -								ILLINOIS FED. AID PROJECT
	PLOT DATE = 6/16/2017	DATE - 05/24/2017	REVISED -								

N

SUB LOWER WACKER DRIVE

SU-30
AASHTO 2011 (05)

LOADING ENTRANCE
FROM SUB LOWER
WACKER DRIVE

LOADING ENT
FROM SUB L
WACKER D

CAR ENTRANCE
FROM SUB LOWER
WACKER DRIVE

BIKE

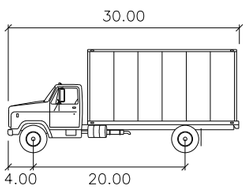
MTR

TR

ATS

SG

THE CHANDLER
ABOVE



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Track	: 8.00
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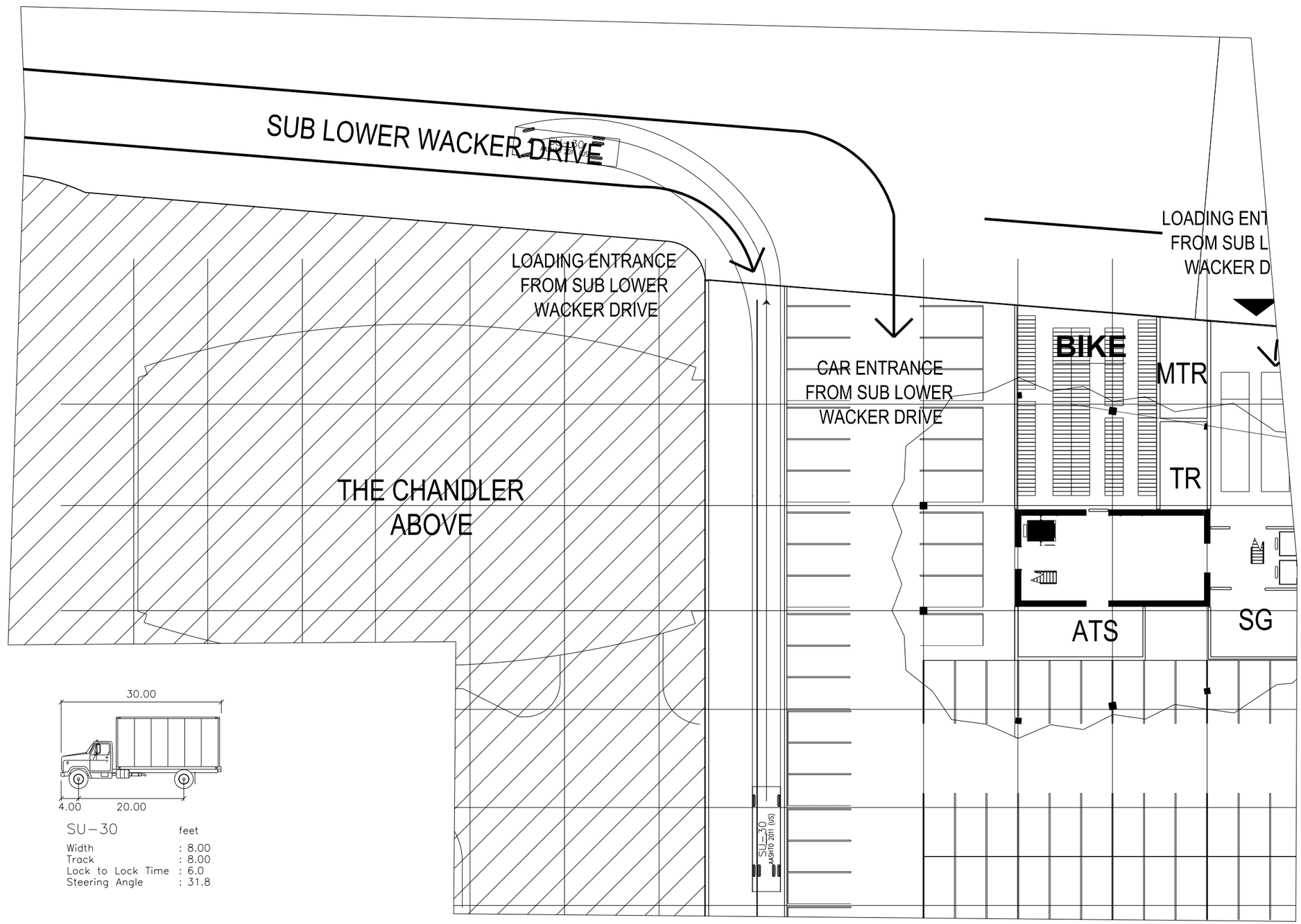

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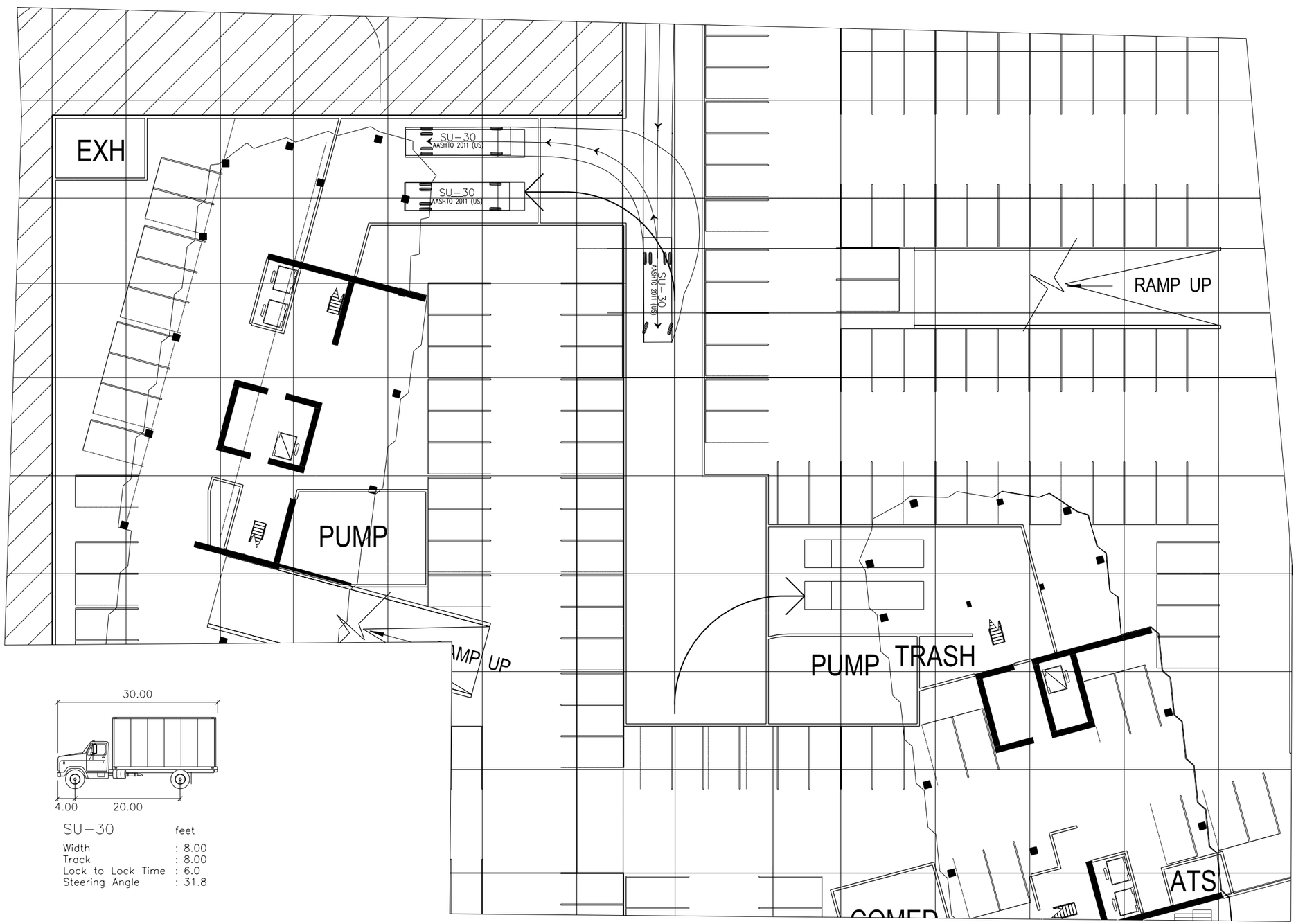

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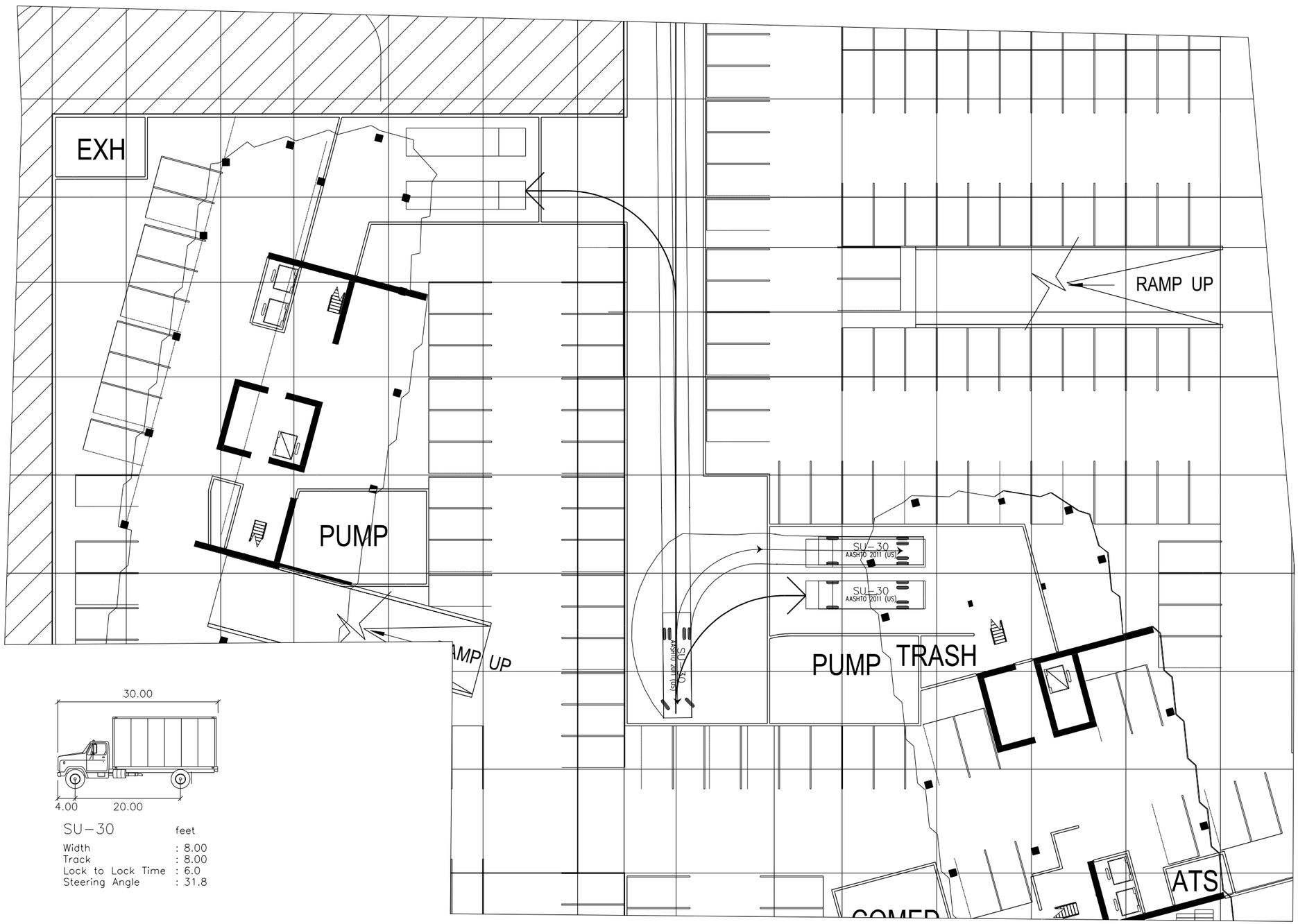

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