

## **Appendix E-5: Air Quality Technical Memorandum**



# Ashland Avenue Bus Rapid Transit Project Environmental Assessment

## Memorandum

*Date: August 8, 2013*

*Subject: Air Quality*

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## Introduction

The Chicago Transit Authority (CTA), in cooperation with the Chicago Department of Transportation (CDOT), Department of Housing and Economic Development (DHED), and the Federal Transit Authority (FTA), is proposing to implement Bus Rapid Transit (BRT) features and service along Ashland Avenue in Chicago, Illinois. The limits for the Ashland Avenue Bus Rapid Transit (BRT) Project are:

- Irving Park Road on the north to 95th Street on the south (approximately 16.1 miles)

CTA currently operates local bus service within the Ashland Avenue BRT Project limits. The proposed improvements are limited in scope and would be implemented within existing roadway rights-of-way:

- Construction of 35 median BRT stations with shelters and pedestrian boarding areas
- Upgrade of traffic signal systems to include transit signal priority
- Implementation of queue jump lanes and turn restrictions at intersections
- Removal of travel lanes to accommodate a designated bus lane in each direction
- Pavement milling and resurfacing
- Streetscape improvements including medians, landscaping, and ADA-accessibility upgrades

## Purpose

This memorandum presents the air quality analysis conducted for the proposed Ashland Avenue BRT Project. The analysis that follows includes a description of the existing conditions of the project site and surrounding area, the regulatory framework that guides the decision-making process, and

potential air quality effects. Emission calculations and air quality modeling results are provided in **Attachment A**.

## **Criteria Air Pollutants**

The United States Environmental Protection Agency (EPA) regulates ambient concentrations of seven common pollutants: carbon monoxide (CO), lead (Pb), nitrogen dioxide (NO<sub>2</sub>), ozone (O<sub>3</sub>), particulate matter (PM<sub>10</sub> and PM<sub>2.5</sub>), and sulfur dioxide (SO<sub>2</sub>). Called criteria pollutants, various human health- and environmentally-based criteria set permissible levels for these pollutants.

### **Carbon Monoxide (CO)**

CO is a colorless, odorless gas that is highly toxic. It is formed by the incomplete combustion of fuels. In Cook County, the majority of CO emissions occur from mobile sources (93 percent), fuel combustion (5 percent), and industrial processes (1 percent) (EPA2013a). Exposure to CO can reduce the body's ability to carry oxygen. CO exposure can cause people with several types of heart disease to experience chest pain (angina) when exercising or under increased stress. Extremely high levels of CO can cause death (EPA 2012a).

### **Lead (Pb)**

Lead is a soft and chemically resistant metal that is naturally found in the environment. It has historically been found in motor vehicles and industrial sources, which led to the EPA's efforts to remove Pb from gasoline in 1980 and beyond. The aviation sector continues to be a major source of Pb emissions from piston aircraft, as are certain industrial sectors like ore and metals processing (EPA 2012b).

In addition to Pb exposure through air, Pb can also accumulate in soils and other sediments, especially in urban environments where it would have accumulated from years of exposure from leaded gasoline. Lead exposure can adversely affect the nervous system, kidney function, immune system, reproductive and development systems, and the cardiovascular system. Lead exposure may also contribute to behavioral problems, learning deficits, and lowered IQ in infants and young children (EPA 2012c).

### **Nitrogen Dioxide (NO<sub>2</sub>)**

NO<sub>2</sub> is a reddish-brown to dark brown reactive gas that is formed during high-temperature combustion processes, such as those occurring in trucks, cars, and power plants. The sum of nitric oxide and NO<sub>2</sub> is commonly called nitrogen oxides (NO<sub>x</sub>), but other oxides like nitrous oxide and nitric acid are also classified as NO<sub>x</sub>.

Exposure to NO<sub>2</sub> can cause adverse respiratory effects including airway inflammation. NO<sub>x</sub> can react with ammonia, moisture, and other compounds to form small particles that can lodge deeply into sensitive parts of the lungs. This action can cause or worsen respiratory disease like emphysema and bronchitis, or can aggravate existing heart disease (EPA 2013b).

### **Ozone (O<sub>3</sub>)**

O<sub>3</sub> is a highly reactive and unstable gas that is formed in the atmosphere through complex reactions with sunlight, NO<sub>x</sub>, and volatile organic compounds (VOCs). Hot, sunny, and calm days promote O<sub>3</sub> formation. The EPA regulates ground-level O<sub>3</sub>, which is not to be confused with stratospheric O<sub>3</sub>. Ground-level O<sub>3</sub> is close to where people live, breathe, and exercise and can cause adverse health effects; stratospheric O<sub>3</sub> is high in the atmosphere and reduces the amount of ultraviolet light entering the earth's atmosphere, which actually helps protect animal and plant life.

Certain people are particularly sensitive to the effects of O<sub>3</sub> including people with lung disease, children, older adults, and active people. Generally, as O<sub>3</sub> concentrations increase, both the number of people affected and the seriousness of the health effects increase. The effects of exposure to ground-level O<sub>3</sub> include cough, chest tightness, and pain upon taking a deep breath; worsening of wheezing and other asthma symptoms; reduced lung function; and increase hospitalizations for respiratory causes.

O<sub>3</sub> also has detrimental effects on the environment. O<sub>3</sub> exposure can damage cells and leaf tissue, reducing plants' ability to photosynthesize and produce food. Plants will grow more leaves in an attempt to produce more food, but this response has the net effect of making plants more susceptible for disease, pests, cold, and drought. O<sub>3</sub> can also damage materials like rubber, plastics, fabrics, paint and metals (EPA 2003; EPA 2009).

### **Particulate Matter (PM<sub>10</sub> and PM<sub>2.5</sub>)**

Particulate matter consists of solid and liquid particles of dust, soot, aerosols, and other matter small enough to remain suspended in the air for a long period of time. Particulate matter is divided into two size classes of particles: particles up to 10 microns<sup>1</sup> (PM<sub>10</sub>) and particles up to 2.5 microns (PM<sub>2.5</sub>). To place the sizes in perspective, a human hair is approximately 60 microns in diameter, which makes it six times larger than the largest coarse particle and over 20 times larger than the largest fine particle.

Primary particles are those that are directly emitted from a source, such as construction sites, unpaved roads, fields, smokestacks, or fires. Burning fuels primarily produces PM<sub>2.5</sub>, while other sources like windblown dust contribute to PM<sub>10</sub> emissions. Secondary formation of PM<sub>2.5</sub> can occur from complex reactions in the atmosphere of pollutants like NO<sub>x</sub>, SO<sub>x</sub>, VOCs, and ammonia. Most of the PM<sub>2.5</sub> pollution in the United States occurs from these secondary reactions as opposed to direct (primary) emissions.

Particles smaller than 10 microns (i.e., PM<sub>10</sub> and PM<sub>2.5</sub>) represent that portion of particulate matter thought to represent the greatest hazard to public health because they can become deeply embedded in someone's lungs. This can lead to adverse health effects including premature death in people with heart or lung disease, nonfatal heart attacks, irregular heartbeat, aggravated asthma,

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<sup>1</sup> A micron is a unit of measurement that is one-millionth of a meter. A meter is slightly larger than 3 feet.

decreased lung function, and increased respiratory symptoms (e.g., irritation of the airways, coughing, or difficulty breathing). Aside from adverse health effects, PM<sub>2.5</sub> is primarily responsible for reduced visibility (haze) in the United States. Particulate matter can also cause aesthetic damage by staining or damaging stone and other materials (EPA 2013c; EPA 2013d).

### Sulfur Dioxide (SO<sub>2</sub>)

SO<sub>2</sub> is formed when locomotives, ships, and nonroad diesel equipment burn sulfur-containing fuel. Certain industrial processes, such as petroleum refining and metal processing, also contribute to SO<sub>2</sub> emissions. Health effects of SO<sub>2</sub> exposure including bronchoconstriction and increased asthma symptoms. SO<sub>x</sub> can also react with other compounds in the atmosphere to form small particles. Exposure to the resulting particles can aggravate existing heart disease, leading to increased hospital admissions and premature death (EPA 2012d).

### Regulatory Setting

Air quality management and protection responsibilities exist in federal, state, and local levels of government. The federal Clean Air Act (CAA) is the primary statute that establishes ambient air quality standards and establishes regulatory authorities to enforce regulations designed to attain those standards.

#### Federal

The EPA is responsible for implementation of the CAA. The CAA was enacted in 1955 and was amended in 1963, 1965, 1967, 1970, 1977, 1990, and 1997. Under authority of the CAA, EPA established National Ambient Air Quality Standards (NAAQS) for CO, Pb, NO<sub>2</sub>, O<sub>3</sub>, PM<sub>10</sub>, PM<sub>2.5</sub>, and SO<sub>2</sub>.

**Table 1** presents the current NAAQS for the criteria pollutants. O<sub>3</sub> is a secondary pollutant, meaning that it is formed in the atmosphere from reactions of precursor compounds under certain conditions. Primary precursor compounds that lead to formation of O<sub>3</sub> include VOCs and NO<sub>x</sub>. PM<sub>2.5</sub> can be emitted directly from sources (e.g., engines) or can form in the atmosphere from precursor compounds. PM<sub>2.5</sub> precursor compounds in the area of analysis include SO<sub>x</sub>, NO<sub>x</sub>, and VOCs.

**Table 1: National Ambient Air Quality Standards**

Pollutant	Averaging Time	NAAQS Primary	NAAQS Secondary	Violation Criteria
CO	1 Hour	35 ppm (40 mg/m <sup>3</sup> )	N/A	Not to be exceeded more than once per year
	8 Hour	9 ppm (10 mg/m <sup>3</sup> )		
NO <sub>2</sub>	1 Hour	100 ppb (188 µg/m <sup>3</sup> )	N/A	98 <sup>th</sup> percentile of 1-hour daily maximum concentrations, averaged over three years
	Annual	53 ppb (100 µg/m <sup>3</sup> )	Same as Primary Standard	Annual mean
O <sub>3</sub>	8 Hour	0.075 ppm (147 µg/m <sup>3</sup> )	Same as Primary Standard	Annual fourth-highest daily maximum 8-hour concentration, averaged over three years

Pollutant	Averaging Time	NAAQS Primary	NAAQS Secondary	Violation Criteria
Pb	Rolling 3-Month Average	0.15 µg/m <sup>3</sup>	Same as Primary Standard	Not to be exceeded
PM <sub>10</sub>	24 Hour	150 µg/m <sup>3</sup>	Same as Primary Standard	Not to be exceeded more than once per year on average over three years
PM <sub>2.5</sub>	24 Hour	35 µg/m <sup>3</sup>	Same as Primary Standard	98 <sup>th</sup> percentile, averaged over three years
	Annual <sup>(1)</sup>	12 µg/m <sup>3</sup>	15 µg/m <sup>3</sup>	Annual mean, averaged over three years
SO <sub>2</sub>	1 Hour	75 ppb (196 µg/m <sup>3</sup> )	N/A	99 <sup>th</sup> percentile of 1-hour daily maximum concentrations, averaged over three years
	3 Hour	N/A	0.5 ppm (1,300 µg/m <sup>3</sup> )	Not to be exceeded more than once per year
	24 Hour	0.14 ppm (366 µg/m <sup>3</sup> ) <sup>(2)</sup>	N/A	Not to be exceeded more than once per year
	Annual	0.030 ppm (79 µg/m <sup>3</sup> ) <sup>(2)</sup>		Annual mean

Source: EPA 2012e; 40 CFR 50.

Notes:

<sup>(1)</sup> On January 15, 2013, the EPA published a final rule to lower the primary annual PM<sub>2.5</sub> NAAQS to 12.0 µg/m<sup>3</sup>. The final rule became effective on March 18, 2013 (78 Federal Register [FR] 3086).

<sup>(2)</sup> On June 22, 2010, the 24-hour and annual primary SO<sub>2</sub> NAAQS were revoked (75 FR 35520). The 1971 SO<sub>2</sub> NAAQS (0.14 parts per million [ppm] and 0.030 ppm for 24-hour and annual averaging periods) remain in effect until one year after an area is designated for the 2010 1-hour primary standard. The EPA is proposing to designate the Lemont Township area of Cook County as a nonattainment area for the 2010 1-hour SO<sub>2</sub> NAAQS, but is deferring action on designating other portions of Cook County (2013e)

Key:

µg/m<sup>3</sup> = micrograms per cubic meter; CO = carbon monoxide; mg/m<sup>3</sup> = milligrams per cubic meter; N/A = not applicable; NAAQS = National Ambient Air Quality Standard; NO<sub>2</sub> = nitrogen dioxide; O<sub>3</sub> = ozone; PM<sub>10</sub> = inhalable particulate matter; PM<sub>2.5</sub> = fine particulate matter; ppb = parts per billion; ppm = parts per million; SO<sub>2</sub> = sulfur dioxide; Pb = lead

The Federal CAA requires states to classify air quality control regions (or portions thereof) as either attainment or nonattainment with respect to criteria air pollutants, based on whether the NAAQS have been achieved. Areas that previously exceeded the NAAQS, but have since attained the standard, are called maintenance areas. States are also required to prepare State Implementation Plans (SIPs) containing emission reduction strategies to maintain the NAAQS for those areas designated as attainment and to attain the NAAQS for those areas designated as nonattainment.

Certain pollutants, namely O<sub>3</sub> and PM<sub>10</sub>, are further subdivided based on how close an area is to achieving the NAAQS. The possible classifications for the O<sub>3</sub> NAAQS are marginal, moderate, serious, severe, or extreme. Areas with worse classifications are given more time to attain the NAAQS than areas with better air quality. For example, an area classified as an extreme nonattainment area has an attainment date of December 31, 2032 (20 years from the date of designation), while an area classified as a marginal nonattainment area has until December 31, 2015 to attain the NAAQS (77 FR 30160). The possible classifications for the PM<sub>10</sub> NAAQS are moderate and serious. Section 188 of the CAA (42 United States Code [USC] 7513) states that all areas designated nonattainment for the PM<sub>10</sub> NAAQS are to be initially classified as moderate; however, an area can be reclassified as

serious if the EPA determines that the area cannot practicably attain the standard by the attainment date. **Table 2** summarizes the attainment status for Cook County.

**Table 2: Attainment Status for Cook County**

Pollutant	Designation
CO	Attainment
NO <sub>2</sub>	Attainment
O <sub>3</sub>	Nonattainment, marginal
Pb	Nonattainment <sup>(1)</sup>
PM <sub>10</sub>	Maintenance <sup>(2)</sup>
PM <sub>2.5</sub>	Nonattainment
SO <sub>2</sub>	Attainment <sup>(3)</sup>

Source: EPA 2012f; 40 CFR 81.

Notes:

<sup>(1)</sup> Nonattainment area for Chicago only, defined as the area bounded by Damen Ave. on the west, Roosevelt Rd. on the north, the Dan Ryan Expressway on the east, and the Stevenson Expressway on the south.

<sup>(2)</sup> Maintenance area for Southeast Chicago only, defined as the area bounded on the north by 79<sup>th</sup> Street, on the west by Interstate 57 between Sibley Boulevard and Interstate 94 between Interstate 57 and 79<sup>th</sup> Street, on the south by Sibley Boulevard, and on the east by the Illinois/Indiana State line.

<sup>(3)</sup> Attainment designation based on 1971 SO<sub>2</sub> NAAQS.

Key:

CO = carbon monoxide; NO<sub>2</sub> = nitrogen dioxide; O<sub>3</sub> = ozone; Pb = lead; PM<sub>10</sub> = inhalable particulate matter; PM<sub>2.5</sub> = fine particulate matter; SO<sub>2</sub> = sulfur dioxide

**Figure 1** illustrates the nonattainment and maintenance areas for Pb and PM<sub>10</sub>. The nonattainment areas for O<sub>3</sub> and PM<sub>2.5</sub> cover all of Cook County and are not shown on the figure.

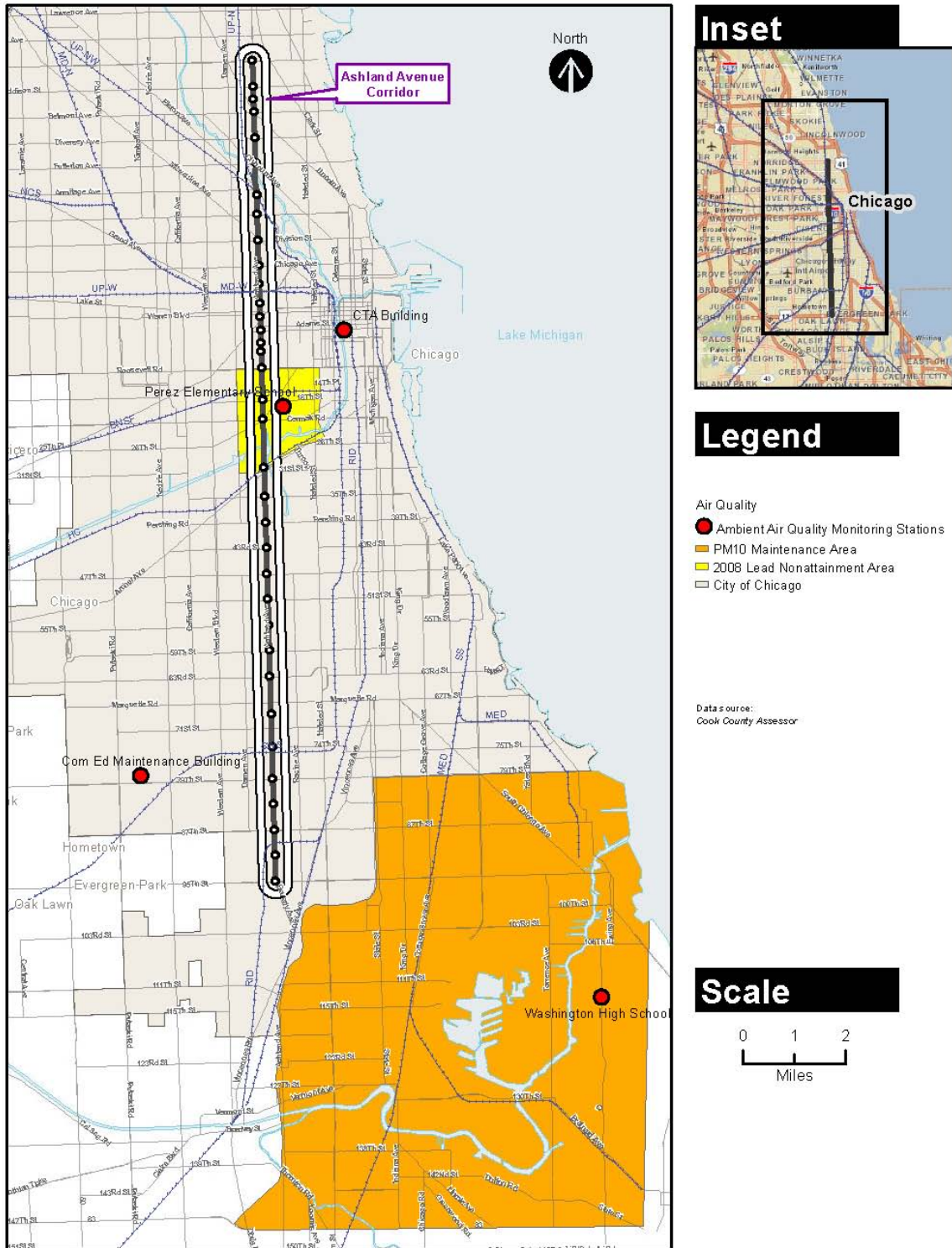
### ***Transportation Conformity***

Approval, funding, or implementation of Federal Highway Administration (FHWA) and FTA projects is subject to the transportation conformity regulations under the CAA (40 CFR 93 Subpart A). Cook County, or portions thereof, is designated as a nonattainment area for O<sub>3</sub>, PM<sub>2.5</sub>, and Pb and as a maintenance area for PM<sub>10</sub>. If a potential project is included in a conforming transportation plan<sup>2</sup> and transportation improvement program (TIP), then the project is already included in the emission budgets developed for the region. Thus, a unique, regional analysis of project emissions would not be required; however, analysis regarding possible localized impacts is still required.

This project is not included in the fiscal year 2010 - 2015 TIP endorsed by the Metropolitan Planning Organization (MPO) Policy Committee of the Chicago Metropolitan Agency for Planning (CMAP) for the region in which the project is located. Projects in the TIP are considered to be consistent with GO TO 2040, the 2040 regional transportation plan endorsed by CMAP. While the

<sup>2</sup> A transportation plan is defined as the “official intermodal metropolitan transportation plan that is developed through the metropolitan planning process for the metropolitan planning area, developed pursuant to 23 CFR part 450” (40 CFR 93.101).

Figure 1: Air Quality Monitoring Stations, PM<sub>10</sub> Maintenance Area, and Lead Nonattainment Areas





project is currently not included in the TIP, Chicago Transit Authority (CTA) is currently working with CMAP to include the project within the TIP in the future.

On October 25, 2010, the FHWA and the FTA determined that the 2040 regional transportation plan conforms to the State Implementation Plan (SIP) and the transportation-related requirements of the 1990 CAA Amendments. On March 20, 2013, the FHWA and the FTA determined that the TIP also conforms with the SIP and the CAA Amendments. These findings were in accordance with 40 CFR Part 93, "Determining Conformity of Federal Actions to State or Federal Implementation Plans."

In order for a FHWA/FTA project to be found to conform, regardless of whether it is in a conforming transportation plan or TIP or not, the following criteria and procedures must be followed:

- §93.110 – The conformity determination must be based upon the most recent planning assumptions in force at the time the conformity analysis begins.
- §93.111 – The conformity determination must be based on the latest emission estimation model available.
- §93.112 – Conformity must be determined according to the consultation procedures in 40 CFR 93 Subpart A.
- §93.114 – There must be a currently conforming Transportation Plan and currently conforming TIP at the time of project approval.
- §93.116 – The project must not cause or contribute to any new localized CO, PM<sub>10</sub>, and/or PM<sub>2.5</sub> violations or increase the frequency of severity of any existing CO, PM<sub>10</sub>, and PM<sub>2.5</sub> violations.
- §93.117 – The project must comply with any PM<sub>10</sub> and PM<sub>2.5</sub> control measures in the applicable SIP.

For the purposes of this analysis, it is assumed that the Ashland Avenue BRT Project will be included in the TIP and would conform with the regional emissions budgets contained in the regional comprehensive transportation plan.

## **State**

The Illinois Environmental Protection Act (Chapter 415 Illinois Compiled Statutes [ILCS] 5) is the state's primary statute for establishing a unified, statewide program for restoring, protecting, and enhancing the quality of the environment. Title II of the Illinois Environmental Protection Act codifies requirements related to air pollution. Title II incorporates by rule requirements of the federal CAA, including standards related to the performance of new stationary sources and the establishment of national emission standards for hazardous air pollutants. The Act also requires the

state to adopt regulations for toxic air contaminants in Illinois, finding that the existing federal programs may not be adequate to protect the public and the environment. The Act also provides specific requirements for the issuance of stationary source permits and for any necessary fees.

Title 35 of the Illinois Administrative Code contains pollution control standards and other rules adopted by the Pollution Control Board and the Illinois Environmental Protection Agency (IEPA). Subtitle B contains specific requirements for air pollution, including rules for permits and general provisions; the alternative reduction program; emission standards and limitations for stationary sources; preemptory rules; toxic air contaminants; open burning; emission standards and limitations for mobile sources; and air quality standards and episodes. The IEPA maintains various rules related to the regulation of stationary sources, including permitting, annual emissions reports, and air quality impact analyses.

Under conformity regulations of the CAA, CMAP is the MPO responsible for coordinating the development of transportation infrastructure in the northeastern Illinois counties of Cook, DuPage, Kane, Kendall, Lake, McHenry, and Will. The CMAP planning area also includes Aux Sable Township in Grundy County. This ensures that air quality objectives are included with transportation goals in regional transportation plans. CMAP's planning responsibilities include housing, economic development, open space, the environment, and other quality-of-life issues.

## Environmental Setting

Criteria air pollutants are monitored at several stations in Cook County. The closest monitoring station is located at the ComEd Maintenance Building (Station No. 17-031-0076), but it does not monitor all pollutants. Washington High School (Station No. 17-031-0022), the CTA Building, and Perez Elementary School (Station No. 17-031-0110) were used to evaluate ambient concentrations for PM<sub>10</sub>, CO, and Pb, respectively. **Table 3** summarizes air quality data from these stations for the most recent three years of available data. **Figure 1** shows the location of each monitoring station in relation to the Ashland Avenue corridor.

**Table 3: Ambient (Background) Air Quality Data**

Pollutant <sup>(1)</sup>	NAAQS	2009	2010	2011	Design Value (2009-2011)
<b>CO</b> <sup>(2)</sup>					
Maximum 1-hour concentration (ppm)	35	3.3	4.3	4.7	n/a
Maximum 8-hour concentration (ppm)	9	1.5	1.4	1.8	n/a
Number of days exceeding 1-hour standard		0	0	0	
Number of days exceeding 8-hour standard		0	0	0	
<b>Pb</b> <sup>(3)</sup>					
Maximum 3-Month Rolling Mean (µg/m <sup>3</sup> )	0.15	0.29	0.24	--	0.29
<b>NO<sub>2</sub></b> <sup>(4)</sup>					
98th percentile 1-hour concentration (ppb)	100	57	56	58	57
Annual design value (ppb)	53	16	17	17	n/a
Number of days exceeding 1-hour standard		0	0	1	

Pollutant <sup>(1)</sup>	NAAQS	2009	2010	2011	Design Value (2009-2011)
<b>O<sub>3</sub></b> <sup>(4)</sup>					
4th high 8-hour concentration (ppm)	0.075	0.073	0.068	0.067	0.069
Number of days exceeding 8-hour standard		3	0	0	
<b>PM<sub>2.5</sub></b> <sup>(4)</sup>					
98th percentile 24-hour concentration (µg/m <sup>3</sup> )	35	27.1	31	26.2	28.1
Annual design value (µg/m <sup>3</sup> )	15	11.3	12.3	11.1	11.5
Number of days exceeding 24-hour standard		0	2	0	
<b>PM<sub>10</sub></b> <sup>(5)</sup>					
Maximum 24-hour concentration (µg/m <sup>3</sup> )	150	83	91	58	n/a
Number of days exceeding 24-hour standard		0	0	0	0
<b>SO<sub>2</sub></b>					
99th Percentile 1-Hour Concentrations (ppb)	75	27	20	24	24
Maximum 3-hour block averages (ppb)	500	22	20	22	n/a
Number of days exceeding 1-hour standard		0	0	0	

Source: Illinois Environmental Protection Agency (IEPA) 2010; IEPA 2011; IEPA 2012.

Notes:

- <sup>(1)</sup> An exceedance is not necessarily a violation. Violations are defined in 40 CFR 50.
- <sup>(2)</sup> Data from CTA Building monitoring station.
- <sup>(3)</sup> Data from Perez Elementary School monitoring station.
- <sup>(4)</sup> Data from ComEd Maintenance Building monitoring station.
- <sup>(5)</sup> Data from Washington High School monitoring station.

Key:

-- = There was insufficient (or no) data available to determine this value; µg/m<sup>3</sup> = micrograms per cubic meter; CO = carbon monoxide; NAAQS = National Ambient Air Quality Standard; NO<sub>2</sub> = nitrogen dioxide; O<sub>3</sub> = ozone; PM<sub>10</sub> = inhalable particulate matter; PM<sub>2.5</sub> = fine particulate matter; ppm = parts per million; SO<sub>2</sub> = sulfur dioxide

## Methodology

### CO Hot Spots

To determine if a CO hot spot (high localized ambient concentration) is created due to activities of the Ashland Avenue BRT Project, an analysis must be conducted to predict ambient CO concentrations from the near-field dispersion of the emissions. The analysis was completed using the EPA's *Guideline for Modeling Carbon Monoxide from Roadway Intersections* (1992). The guidelines provide a ranking and selection procedure to determine the intersections expected to have the highest CO concentration. The procedures require a CO hot spots analysis be completed for the top three intersections based on the worst level-of-service and the top three intersections based on the highest traffic volumes. This process was used for both the AM and PM peak hour for the Ashland Avenue BRT Project and duplicate intersections were removed. As a result, the following five intersections were used in the analysis:

- W Belmont Ave / N Lincoln Ave

- W Cermak Rd
- W Diversey Pkwy
- W Irving Park Rd
- W Roosevelt Rd

The first step in an air dispersion analysis is the selection of an applicable model. The EPA's *Guideline on Air Quality Models* (40 CFR 51, Appendix W) and the EPA's 1992 CO Hot Spot Guidelines recommend the use of CAL3QHC as the screening model for such analyses. CAL3QHC combines CALINE3 with a traffic model to calculate delays and queues that occur at signalized intersections.

CO emission factors were estimated using the EPA's Motor Vehicle Emission Simulator (MOVES), Version 2010b (2013f). Emission factors were developed in accordance with the EPA's *Using MOVES in Project-Level Carbon Monoxide Analyses* (2010) guidance document. The Illinois Environmental Protection Agency (IEPA) provided data for input into MOVES2010b, including fuel supply and formulation, inspection and maintenance information, and vehicle age distribution files. The average January temperature for 2015 from the IEPA's data files was used as the input for meteorology.

### **Regional Operational Emissions**

Regional emissions were calculated from projected vehicle miles traveled (VMT) for each of the project alternatives. Regional daily VMT data was developed for the CMAP planning area for both the No-Build and Build Alternatives. The vehicle fleet mix was determined from the highway performance monitoring system (HPMS) data provided by IEPA with its MOVES2010b input files. The EPA's annual average weekday VMT calculator (2012g) was used to convert the daily VMT data to annual VMT.

This analysis used the current EPA-approved version of MOVES2010b (as revised January 2013) to develop emission factors for different vehicle classes. All vehicle types (motorcycles, passenger cars, passenger trucks, buses, and other trucks) contained in the IEPA's input data files were used to define the vehicle fleet mix (relative ratio of each vehicle type to total population). Because there would be no change to intercity buses and school buses between alternatives, emissions from these vehicles were not estimated. It was assumed that all transit buses would be diesel-fueled.

### **Environmental Impacts**

#### **Transportation Conformity**

A transportation conformity determination is required for approval, funding, or implementation of FWHA/FTA projects. Transportation conformity provisions apply to emissions of O<sub>3</sub>, CO, NO<sub>2</sub>, PM<sub>10</sub>, and PM<sub>2.5</sub> in nonattainment and maintenance areas. Transportation conformity determinations ensure that projects receiving federal funding or approval are consistent with air quality goals. A

conformity determination demonstrates that the total emissions for a project are within emissions budgets established in a SIP.

It was assumed that the current TIP would be modified to include this project. As a result, this analysis is not required to demonstrate compliance with emissions budgets. It is necessary, however, to complete an analysis for localized impacts of CO, PM<sub>10</sub>, and PM<sub>2.5</sub>. As listed in 40 CFR 93 Subpart A, project-level conformity occurs when the following three conditions are met:

- The FHWA/FTA project must not cause or contribute to any new localized CO, PM<sub>10</sub>, and/or PM<sub>2.5</sub> violations (§93.116).
- The project must not increase the frequency or severity of any existing CO, PM<sub>10</sub>, and/or PM<sub>2.5</sub> violations in nonattainment or maintenance areas (§93.116).
- The project must comply with any PM<sub>10</sub> and PM<sub>2.5</sub> control measures in the applicable implementation plan (§93.117).

Although Cook County is not a nonattainment or maintenance area for CO, a CO hot spots analysis was still completed to evaluate possible localized impacts as part of the NEPA analysis. Because of the LOS of the affected intersections (D, E, or F) and the proposed modifications to the traffic lanes it was necessary to evaluate if the Ashland Avenue BRT Project could cause adverse effects to air quality.

The EPA published the *Transportation Conformity Guidance for Quantitative Hot-spot Analyses in PM<sub>2.5</sub> and PM<sub>10</sub> Nonattainment and Maintenance Areas* (2010b) to describe how to complete a PM hot spots analysis. A PM<sub>2.5</sub> hot spots analysis must be completed only for “projects of air quality concern,” as defined in 40 CFR 93.123(b)(1). A project of air quality concern is defined as a project that could result in a significant increase in the number of diesel vehicles. Specifically, as defined in regulation, the following types of projects would require a PM hot-spots analysis:

- New highway projects that have a significant number of diesel vehicles, and expanded highway projects that have a significant increase in the number of diesel vehicles;
- Projects affecting intersections that are at LOS D, E, or F with a significant number of diesel vehicles, or those that will change to LOS D, E, or F because of increased traffic volumes from a significant number of diesel vehicles related to the project;
- New bus and rail terminals and transfer points that have a significant number of diesel vehicles congregating at a single location;
- Expanded bus and rail terminals and transfer points that significantly increase the number of diesel vehicles congregating at a single location; and

- Projects in or affecting locations, areas, or categories of sites which are identified in the PM<sub>10</sub> or PM<sub>2.5</sub> applicable implementation plan or implementation plan submission, as appropriate, as sites of violation or possible violation.

The transportation conformity regulation does not define a “significant increase in the number of diesel vehicles,” but the quantitative PM hot-spot guidance document (EPA 2010b) provides several examples of projects of local concern that would require a PM<sub>2.5</sub> hot-spot analysis. Because the Ashland Avenue BRT Project would increase the number of buses operated by CTA, it is possible that it could result in an expanded bus terminal from the additional buses. Appendix B of the EPA’s guidance (2010b) states that an example of a project of local air quality concern would be “an existing bus or intermodal terminal that has a large fleet where the number of diesel buses increases by 50% or more, as measured by bus arrivals.”

Following the implementation of the BRT, local bus service frequency would be based on demand. For the purposes of conducting this air quality analysis, it was assumed that implementation of BRT would reduce local bus trips to a peak of 3 per hour, but would add an additional 12 buses per hour on the BRT; therefore, the total number of buses per hour would be 15. While this would be a 50 percent increase in bus traffic, all buses would operate with clean diesel technology (i.e., diesel particulate filters) result in a decrease in regional PM<sub>2.5</sub> emissions compared with the No-Build Alternative. Therefore, the Build Alternative would not be a project of local concern. CTA has coordinated with CMAP as part of the interagency consultation process to confirm that this project is not a project of air quality concern and that a PM<sub>2.5</sub> analysis is not required.

### **Mobile Source Air Toxics**

The FHWA published an *Interim Guidance Update on Mobile Source Air Toxic Analysis in NEPA* on December 6, 2012. This guidance document establishes the following tiered approach for analyzing mobile source air toxics (MSAT) in NEPA:

- No analysis for projects with no potential for meaningful MSAT effects;
- Qualitative analysis for projects with low potential MSAT effects; or
- Quantitative analysis to differentiate alternatives for projects with higher potential MSAT effects.

The Ashland Avenue BRT Project would have no MSAT effects because VMT for the Ashland Avenue BRT Project would decrease compared to the no-build alternative. The Ashland Avenue BRT Project falls within the first tier of MSAT analysis, so no further action is required.

### **No-Build Alternative**

The No-Build Alternative assumes the Ashland Avenue BRT Project would not be operational. This section provides a summary of the emissions associated with the No-Build Alternative.

**Regional Emissions Inventory**

The No-Build Alternative would not create new emissions or have negative operational air quality impacts. However, the No-Build Alternative would not reduce regional VMT-related emissions like the Ashland Avenue BRT Project.

NEPA requires project emissions to be compared to the future No-Build Alternative. This analysis calculated operational emissions from predicted VMT under the No-Build Alternative. Emissions of CO, NO<sub>2</sub>, and SO<sub>2</sub> represent emissions from vehicle exhaust only. Emissions of PM<sub>10</sub> and PM<sub>2.5</sub> include exhaust, tire wear, and brake wear. VOC emissions include exhaust and evaporative losses. **Table 4** summarizes operational emissions associated with the No-Build Alternative.

**Table 4: Regional Emissions Inventory – No-Build Alternative**

Source	Annual Emissions (tons per year)					
	VOC	NO <sub>2</sub>	CO	SO <sub>2</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>
Regional Traffic	26,791	10,744	381,352	530	4,766	2,902
Buses	1	1	4	<1	1	<1
Total	26,791	10,745	381,356	530	4,767	2,903

Key:

CO = carbon monoxide; NO<sub>2</sub> = nitrogen dioxide; PM<sub>10</sub> = inhalable particulate matter; PM<sub>2.5</sub> = fine particulate matter; SO<sub>2</sub> = sulfur dioxide; VOC = volatile organic compound

**CO Hot Spots**

This analysis completed a CO hot spots evaluation that calculated localized impacts of CO concentrations at several intersections. The CAL3QHC model was used to evaluate whether CO concentrations at these intersections would exceed CAAQS or NAAQS for CO concentrations. The modeled concentrations include a 1-hour CO background concentration of 4.7 parts per million (ppm), which is the maximum monitored concentration from the past three years (2009 to 2011). A persistence factor of 0.7 (EPA 1992) was used to calculate the 8-hour CO concentration from the 1-hour value. **Table 5** shows the results of the analysis.

**Table 5: Maximum CO Concentrations at Roadway Intersections Under No-Build Alternative**

ID	Intersection	1-Hour Concentration (ppm)		8-Hour Concentration (ppm)		Exceeds NAAQS?	
		AM	PM	AM	PM	1-Hour	8-Hour
		1011	W Belmont Ave / N Lincoln Ave	5.6	5.4	3.9	3.8
1109	W Cermak Rd	5.5	5.4	3.9	3.8	No	No
1018	W Diversey Pkwy	5.6	5.5	3.9	3.9	No	No
1001	W Irving Park Rd	5.5	5.4	3.9	3.8	No	No
1094	W Roosevelt Rd	6.1	6.8	4.3	4.8	No	No

Key:

NAAQS = National Ambient Air Quality Standard; ppm = parts per million

### Ashland Avenue BRT Project

The Ashland Avenue BRT Project would include the operation of the BRT on the Ashland Avenue Corridor. The Ashland Avenue BRT Project would include a realignment of Ashland Avenue to allow the BRT to travel in the center of the street in what had previously been left-turn lanes.

#### Regional Emissions Inventory

The Ashland Avenue BRT Project would provide an alternative to automobile transportation in the region; therefore, it was necessary to evaluate regional traffic emissions to assess how the Ashland Avenue BRT Project would increase or decrease operational emissions from passenger vehicles.

**Table 6** summarizes the regional traffic emissions inventory for the Ashland Avenue BRT Project.

**Table 6: Regional Emissions Inventory – Ashland Avenue BRT Project**

Source	Annual Emissions (tons per year)					
	VOC	NO <sub>2</sub>	CO	SO <sub>2</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>
Regional Traffic	26,768	10,734	381,022	530	4,762	2,900
Buses	2	3	9	<1	1	1
Total	26,769	10,737	381,031	530	4,764	2,901
Increment Above No-Build Alternative	-22	-8	-325	<1	-3	-2

Key:

CO = carbon monoxide; NO<sub>2</sub> = nitrogen dioxide; PM<sub>10</sub> = inhalable particulate matter; PM<sub>2.5</sub> = fine particulate matter; SO<sub>2</sub> = sulfur dioxide; VOC = volatile organic compound

As shown in **Table 5**, emissions from regional traffic would decrease compared to the No-Build Alternative, but transit bus emissions would increase. The net effect would be to have a decrease in emissions for all pollutants. The Ashland Avenue BRT Project would have beneficial effects to air quality.

#### CO Hot Spots

This analysis completed a CO hot spots evaluation that calculated localized impacts of CO concentrations at several intersections. The CAL3QHC model was used to evaluate whether CO concentrations at these intersections would exceed CAAQS or NAAQS for CO concentrations. The modeled concentrations include a 1-hour CO background concentration of 4.7 parts per million (ppm), which is the maximum monitored concentration from the past three years (2009 to 2011).

**Table 7** shows the results of the analysis.

**Table 7: Maximum CO Concentrations at Roadway Intersections Under No-Build Alternative**

ID	Intersection	1-Hour Concentration (ppm)	8-Hour Concentration (ppm)	Exceeds NAAQS?
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		AM	PM	AM	PM	1-Hour	8-Hour
1011	W Belmont Ave / N Lincoln Ave	6.5	6.3	4.6	4.4	No	No
1109	W Cermak Rd	6.1	5.9	4.3	4.1	No	No
1018	W Diversey Pkwy	6.4	6.5	4.5	4.6	No	No
1001	W Irving Park Rd	5.5	5.7	3.9	4.0	No	No
1094	W Roosevelt Rd	6.1	7.0	4.3	4.9	No	No

Key:

NAAQS = National Ambient Air Quality Standard; ppm = parts per million

As shown in **Table 7**, the operation of the BRT would increase the 1-hour and 8-hour CO concentrations compared to the No-Build Alternative. While concentrations would increase, the NAAQS would not be exceeded. As a result, there would be no adverse air quality effects associated with the Ashland Avenue BRT Project.

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## **Attachment A**

Emission Calculations and Air Quality Modeling Results

**CTA Ashland Ave BRT  
 CMAP 2015 Regional Traffic Air Emissions**

**No Build**

Source	Annual Emissions (tons per year)													
	VOC	NO2	CO	SO2	PM10	PM2.5	Butadiene	Acetaldehyde	Acrolein	Benzene	Ethanol	Formaldehyde	MTBE	
11	625.7	10.3	4,439.2	2.2	22.9	20.0	1.9	4.4	0.2	11.6	47.7	4.6	0.0	
21	7,819.3	806.9	103,639.6	133.1	815.7	434.9	34.1	83.9	3.5	197.3	457.7	84.0	0.0	
31	11,378.3	2,348.4	185,779.3	237.2	1,573.1	828.6	54.3	136.7	6.6	310.6	555.7	148.2	0.0	
32	4,082.2	1,220.9	66,917.5	76.8	607.8	353.4	19.2	58.3	4.4	107.2	177.6	79.6	0.0	
42	0.6	1.1	3.7	0.0	0.6	0.5	0.0	0.0	0.0	0.0	0.0	0.1	0.0	
51	6.1	14.2	51.4	0.3	6.5	4.4	0.0	0.2	0.0	0.1	0.0	0.5	0.0	
52	444.7	414.8	8,086.2	9.8	147.9	89.1	1.9	10.6	1.4	9.5	10.1	21.7	0.0	
53	33.1	28.3	552.5	0.7	11.0	6.9	0.1	0.8	0.1	0.7	0.8	1.6	0.0	
54	41.0	17.9	830.1	0.5	5.9	3.7	0.2	0.6	0.1	1.0	1.9	1.1	0.0	
61	646.8	1,753.1	3,955.3	35.3	741.6	531.0	1.4	24.3	4.2	5.1	0.0	61.1	0.0	
62	1,713.6	4,128.8	7,101.1	34.3	834.0	630.4	3.2	83.2	13.4	16.6	0.0	231.0	0.0	
<b>Total</b>	<b>26,791.5</b>	<b>10,744.7</b>	<b>381,356.0</b>	<b>530.1</b>	<b>4,766.9</b>	<b>2,902.9</b>	<b>116.3</b>	<b>403.1</b>	<b>33.8</b>	<b>659.5</b>	<b>1,251.6</b>	<b>633.5</b>	<b>0.0</b>	

**Build**

Source	Annual Emissions (tons per year)													
	VOC	NO2	CO	SO2	PM10	PM2.5	Butadiene	Acetaldehyde	Acrolein	Benzene	Ethanol	Formaldehyde	MTBE	
11	625.2	10.3	4,435.3	2.2	22.9	19.9	1.9	4.4	0.2	11.6	47.6	4.6	0.0	
21	7,812.5	806.2	103,549.8	133.0	815.0	434.6	34.0	83.9	3.5	197.1	457.3	83.9	0.0	
31	11,368.4	2,346.4	185,618.4	237.0	1,571.8	827.9	54.3	136.5	6.6	310.4	555.2	148.1	0.0	
32	4,078.7	1,219.8	66,859.5	76.7	607.3	353.1	19.1	58.2	4.4	107.1	177.5	79.5	0.0	
42	1.5	2.7	9.1	0.0	1.4	1.1	0.0	0.1	0.0	0.0	0.0	0.1	0.0	
51	6.1	14.2	51.4	0.3	6.5	4.4	0.0	0.2	0.0	0.1	0.0	0.5	0.0	
52	444.3	414.4	8,079.2	9.8	147.7	89.0	1.9	10.6	1.4	9.5	10.1	21.7	0.0	
53	33.1	28.3	552.0	0.7	11.0	6.9	0.1	0.8	0.1	0.7	0.8	1.6	0.0	
54	41.0	17.9	829.4	0.5	5.9	3.7	0.2	0.6	0.1	1.0	1.9	1.1	0.0	
61	646.2	1,751.6	3,951.9	35.2	741.0	530.5	1.4	24.3	4.2	5.1	0.0	61.1	0.0	
62	1,712.2	4,125.2	7,095.0	34.3	833.3	629.9	3.2	83.1	13.3	16.6	0.0	230.8	0.0	
<b>Total</b>	<b>26,769.2</b>	<b>10,737.0</b>	<b>381,031.0</b>	<b>529.7</b>	<b>4,763.6</b>	<b>2,901.1</b>	<b>116.2</b>	<b>402.8</b>	<b>33.8</b>	<b>659.0</b>	<b>1,250.5</b>	<b>633.0</b>	<b>0.0</b>	

**Change in Emissions due to Project**

Source	Annual Emissions (tons per year)												
	VOC	NO2	CO	SO2	PM10	PM2.5	Butadiene	Acetaldehyde	Acrolein	Benzene	Ethanol	Formaldehyde	MTBE
11	(0.5)	(0.0)	(3.8)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	0.0
21	(6.8)	(0.7)	(89.8)	(0.1)	(0.7)	(0.4)	(0.0)	(0.1)	(0.0)	(0.2)	(0.4)	(0.1)	0.0
31	(9.9)	(2.0)	(160.9)	(0.2)	(1.4)	(0.7)	(0.0)	(0.1)	(0.0)	(0.3)	(0.5)	(0.1)	0.0
32	(3.5)	(1.1)	(58.0)	(0.1)	(0.5)	(0.3)	(0.0)	(0.1)	(0.0)	(0.1)	(0.2)	(0.1)	0.0
42	0.9	1.6	5.4	0.0	0.8	0.7	0.0	0.0	0.0	0.0	0.0	0.1	0.0
51	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	0.0
52	(0.4)	(0.4)	(7.0)	(0.0)	(0.1)	(0.1)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	0.0
53	(0.0)	(0.0)	(0.5)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	0.0
54	(0.0)	(0.0)	(0.7)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	0.0
61	(0.6)	(1.5)	(3.4)	(0.0)	(0.6)	(0.5)	(0.0)	(0.0)	(0.0)	(0.0)	0.0	(0.1)	0.0
62	(1.5)	(3.6)	(6.2)	(0.0)	(0.7)	(0.5)	(0.0)	(0.1)	(0.0)	(0.0)	0.0	(0.2)	0.0
<b>Total</b>	<b>(22.3)</b>	<b>(7.7)</b>	<b>(324.9)</b>	<b>(0.4)</b>	<b>(3.3)</b>	<b>(1.8)</b>	<b>(0.1)</b>	<b>(0.3)</b>	<b>(0.0)</b>	<b>(0.6)</b>	<b>(1.1)</b>	<b>(0.5)</b>	<b>0.0</b>

Conversions:  
 453.592 g/lb  
 2000 lb/ton

Note:  
 Assumed no change in operation of intercity/transit/school bus other than CTA transit bus on Ashland Ave. Therefore, only CTA buses on Ashland Ave were included in the analysis.

CTA Ashland Ave BRT  
2015 Emission Factor by Source Type

Source	Emission Factor (grams per mile)													
	VOC	NO2	CO	SO2	PM10	PM2.5	Butadiene	Acetaldehyde	Acrolein	Benzene	Ethanol	Formaldehyde	MTBE	
11	1.575	0.026	11.176	0.005	0.058	0.050	0.005	0.011	0.000	0.029	0.120	0.012	0	
21	0.317	0.033	4.206	0.005	0.033	0.018	0.001	0.003	0.000	0.008	0.019	0.003	0	
31	0.339	0.070	5.530	0.007	0.047	0.025	0.002	0.004	0.000	0.009	0.017	0.004	0	
32	0.363	0.109	5.948	0.007	0.054	0.031	0.002	0.005	0.000	0.010	0.016	0.007	0	
41	0.337	0.742	1.959	0.013	0.464	0.356	0.001	0.012	0.002	0.003	0	0.029	0	
42	0.300	0.536	1.783	0.009	0.275	0.223	0.001	0.011	0.002	0.002	0	0.027	0	
43	0.392	0.436	4.008	0.007	0.264	0.187	0.001	0.014	0.002	0.005	0.003	0.032	0	
51	0.273	0.632	2.293	0.013	0.290	0.197	0.001	0.009	0.001	0.003	0.002	0.022	0	
52	0.470	0.439	8.552	0.010	0.156	0.094	0.002	0.011	0.001	0.010	0.011	0.023	0	
53	0.496	0.424	8.281	0.010	0.165	0.103	0.002	0.012	0.002	0.010	0.012	0.024	0	
54	0.977	0.428	19.783	0.012	0.140	0.089	0.004	0.015	0.002	0.023	0.046	0.026	0	
61	0.274	0.743	1.677	0.015	0.314	0.225	0.001	0.010	0.002	0.002	0	0.026	0	
62	0.840	2.023	3.479	0.017	0.409	0.309	0.002	0.041	0.007	0.008	0	0.113	0	

**CTA Ashland Ave BRT  
2015 Emission Factor by Source Type**

**Vehicle Miles Traveled by Highway Performance Monitoring System (HPMS) Vehicle Types**

HPMSVtypeID	yearID	HPMSBaseYearVMT	baseYearOffNetVMT
10	2015	330,538,699	0
20	2015	20,506,768,148	0
30	2015	37,315,994,867	0
40	2015	249,051,927	0
50	2015	895,904,574	0
60	2015	3,661,493,982	0

From CNA2015.xls.

HPMSVtypeID	CNA Source Type Fraction	CMAP Source Type Fraction	Daily VMT by Source Type		Annual VMT by Source Type	
			No Build	Build	No Build	Build
10	1	1	1,057,887	1,056,971	360,346,108	360,033,949
20	33	33	65,631,786	65,574,931	22,356,033,053	22,336,666,570
30	59	60	119,429,614	119,326,155	40,681,086,781	40,645,845,754
40	0	N/A	5,127	12,672	1,871,512	4,625,280
50	1	1	2,867,337	2,864,853	976,695,700	975,849,612
60	6	6	11,718,589	11,708,438	3,991,681,180	3,988,223,285
TOTAL	100	100	200,710,340	200,544,019	68,367,714,334	68,311,244,451

Notes:  
 Daily VMT calculated from CMAP total daily VMT using default 2015 Chicago Nonattainment Area HPMS source type fraction provided by Illinois EPA.  
 CMAP total daily VMT does not include vehicle type 40 (bus). Only CTA transit bus on Ashland Ave added to CMAP VMT (assumes all other transit will not change between no build and build).  
 Annual VMT converted from daily VMT using AADVMT Calculator available at: <http://www.epa.gov/otaq/models/moves/tools.htm>



**Vehicle Miles Traveled by Highway Performance Monitoring System (HPMS) Vehicle Types**

MOVESRunID	yearID	sourceTypeID	activityTypeID	total_miles
1	2015	11	1	20,625,778
1	2015	21	1	1,279,633,175
1	2015	31	1	1,744,344,090
1	2015	32	1	584,192,128
1	2015	41	1	6,270,818
1	2015	42	1	2,243,696
1	2015	43	1	7,026,451
1	2015	51	1	1,165,017
1	2015	52	1	49,096,459
1	2015	53	1	3,464,469
1	2015	54	1	2,178,941
1	2015	61	1	122,496,700
1	2015	62	1	105,982,354

From MOVES activity output.

sourceTypeID	CNA Source Type Fraction	HPMSVtypeID	Fraction by HPMSV Type	Annual VMT by Source Type	
				No Build	Build
11	1	10	100	360,346,108	360,033,949
21	33	20	100	22,356,033,053	22,336,666,570
31	44	30	75	30,474,859,163	30,448,459,541
32	15	30	25	10,206,227,618	10,197,386,214
41	0	40	N/A	N/A	N/A
42	0	40	100	1,871,512	4,625,280
43	0	40	N/A	N/A	N/A
51	0	50	2	20,353,631	20,335,999
52	1	50	88	857,747,934	857,004,888
53	0	50	6	60,526,581	60,474,148
54	0	50	4	38,067,554	38,034,577
61	3	60	54	2,140,098,900	2,138,244,985
62	3	60	46	1,851,582,281	1,849,978,300
TOTAL	100	N/A	N/A	68,367,714,334	68,311,244,451

**CTA Ashland Ave BRT  
Chicago Metropolitan Agency for Planning Area Vehicle Miles Traveled**

**No Build**

<b>Scenarios</b>	<b>Records (#links)</b>	<b>TimePeriod</b>	<b>Length</b>	<b>Vols</b>	<b>VMT</b>
CMAP☐NoBuild☐All links	44302	Daily	30,240	312,789,551	200,705,213
CMAP☐NoBuild☐CentroidConnectorsOnly	3888	Daily	222	36,135,316	2,085,640
CMAP☐NoBuild☐NoCentroidConnectros	40414	Daily	30,019	276,654,234	198,619,573

**Build**

<b>Scenarios</b>	<b>Records (#links)</b>	<b>TimePeriod</b>	<b>Length</b>	<b>Vols</b>	<b>VMT</b>
CMAP☐CTRL☐All links	44302	Daily	30,240	312,485,763	200,531,347
CMAP☐CTRL☐CentroidConnectorsOnly	3888	Daily	222	36,113,467	2,084,937
CMAP☐CTRL☐NoCentroidConnectros	40414	Daily	30,019	276,372,295	198,446,410

*From VMT calc.xlsx provided by S. Shukla.*

**CTA Ashland Ave BRT  
Source Type Definitions**

<b>sourceTypeID</b>	<b>sourceTypeName</b>	<b>HPMSVtypeID</b>	<b>HPMSVtypeName</b>
11	Motorcycle	10	Motorcycles
21	Passenger Car	20	Passenger Cars
31	Passenger Truck	30	Other 2 axle-4 tire vehicles
32	Light Commercial Truck	30	Other 2 axle-4 tire vehicles
41	Intercity Bus	40	Buses
42	Transit Bus	40	Buses
43	School Bus	40	Buses
51	Refuse Truck	50	Single Unit Trucks
52	Single Unit Short-haul Truck	50	Single Unit Trucks
53	Single Unit Long-haul Truck	50	Single Unit Trucks
54	Motor Home	50	Single Unit Trucks
61	Combination Short-haul Truck	60	Combination Trucks
62	Combination Long-haul Truck	60	Combination Trucks

## Ashland Avenue BRT Bus Volumes and Miles Traveled

### Summary

		Peak Hour		Daily		Annual	
		Volume	Miles	Volume	Miles	Volume	Miles
<b>Existing</b>	Local	21	364	291	5,127	106,336	1,871,512
<b>Future</b>	BRT	24	422	576	10,138	210,240	3,700,224
	Local	6	106	144	2,534	52,560	925,056
	<b>Total</b>	<b>30</b>	<b>528</b>	<b>720</b>	<b>12,672</b>	<b>262,800</b>	<b>4,625,280</b>

Route Length 17.6 mi

### Without Project

	Headway (min)	Daily Volume	Miles
AM Peak	5.8	41	728
Mid-Day	8.7	41	728
PM Peak	6.8	35	621
Eve	15	16	282
Owl	31	12	204

	Time	Hours	Minutes	Daily Volume	Miles	Peak Hour Volume	Miles
AM Peak	05:00-09:00	4	240	41	728	10	182
Mid-Day	09:00-15:00	6	360	41	728	7	121
PM Peak	15:00-19:00	4	240	35	621	9	155
Eve	19:00-22:00	4	240	16	282	4	70
Owl	22:00-04:00	6	360	12	204	2	34

<b>Total</b>	<b>one-way</b>	24	1,440	146	2,564	10	182
				291	5,127	21	364

### With Project

#### Rapid Bus Service

Headway 5 min

	Minutes	Each way		Both ways	
		Volume	Miles	Volume	Miles
Hour	60	12	211	24	422
Day	1,440	288	5,069	576	10,138
Year	525,600	105,120	1,850,112	210,240	3,700,224

#### Local

Headway 20 min

	Hours	Minutes	Each way		Both ways	
			Volume	Miles	Volume	Miles
Hour	1	60	3	53	6	106
Day	24	1,440	72	1,267	144	2,534
Year	8,760	525,600	26,280	462,528	52,560	925,056

Source: Operational information from "Draft Cost & Revenue Impacts of Ashland Ave. BRT Treatments."

**CTA Ashland Ave BRT  
CO Hotspots Analysis**

**Maximum 1-Hour CO Concentrations (ppm)**

	1001 - Irving		1011 - Belmont		1018 - Diversey		1094 - Roosevelt		1109 - Cermak	
	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
<b>No Build</b>	5.5	5.4	5.6	5.4	5.6	5.5	6.1	6.8	5.5	5.4
<b>Build</b>	5.5	5.7	6.5	6.3	6.4	6.5	6.1	7.0	6.1	5.9
<b>NAAQS</b>	35	35	35	35	35	35	35	35	35	35
<b>Exceed NAAQS?</b>	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO

**Maximum 8-Hour CO Concentrations (ppm)**

	1001 - Irving		1011 - Belmont		1018 - Diversey		1094 - Roosevelt		1109 - Cermak	
	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
<b>No Build</b>	3.9	3.8	3.9	3.8	3.9	3.9	4.3	4.8	3.9	3.8
<b>Build</b>	3.9	4.0	4.6	4.4	4.5	4.6	4.3	4.9	4.3	4.1
<b>NAAQS</b>	9	9	9	9	9	9	9	9	9	9
<b>Exceed NAAQS?</b>	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO

Persistence Factor

0.7 (1992 CO Hotspot Guidance)

**Ashland With Project Intersection LOS and Delay Summary**

ID	Location	AM LOS	AM Avg Delay(s)	AM Entering Vehicles	AM Delay (veh-hrs)	PM LOS	PM Avg Delay(s)	PM Entering Vehicles	PM Delay (veh-hrs)
1001	W Irving Park Rd.	F	106.9	3,946	7,030	F	105.1	3,944	6,909
1003	W Grace St.	C	30.5	1,684	856	C	23.8	1,737	689
1005	W Addison St.	F	103.9	2,734	4,734	F	92	2,789	4,276
1007	W Roscoe St.	D	53.4	1,557	1,386	C	27.8	1,577	731
1009	W School St.	C	29.1	1,678	814	D	36.6	1,809	1,103
1011	W Belmont Ave./ N. Lincoln Ave.	F	190.3	3,258	10,333	F	173.9	3,286	9,524
1012	W Barry Ave.	C	24.6	1,690	693	E	57.3	1,987	1,898
1014	W Wellington Ave.	C	22	1,454	533	C	32.2	1,994	1,070
1018	W Diversey Pkwy.	F	247.8	3,485	14,393	F	320.4	3,895	20,799
1019	W Wrightwood Ave.	D	53.3	2,065	1,834	E	68.9	2,300	2,641
1023	W Fullerton Ave.	D	52.5	2,717	2,377	F	124.3	3,516	7,284
1024	N Clybourn Ave.	E	72.2	2,643	3,180	F	118.1	3,238	6,373
1025	W Webster Ave.	C	28.8	2,162	1,038	E	80	2,746	3,661
1026	N Elston Ave.	E	67.2	2,427	2,718	D	37.1	2,713	1,678
1027	W Armitage Ave.	C	33.7	2,239	1,258	E	63.1	2,511	2,641
1029	W Cortland St.	C	33.7	1,618	909	C	34.7	1,796	1,039
1030	W Wabansia Ave.	B	16.4	1,206	330	B	11.8	1,499	295
1033	W North Ave.	E	79	2,796	3,681	F	104.6	3,162	5,512
1039	W Blackhawk St.	C	20.5	1,491	509	B	17.6	1,657	486
1042	N Milwaukee Ave.	C	29.2	1,859	905	D	36.8	2,275	1,395
1043	W Division St.	C	22.8	2,722	1,034	D	46.4	3,036	2,348
1049	W Augusta Blvd.	C	29.2	2,097	1,021	F	95.1	2,656	4,210
1056	W Chicago Ave.	C	21.8	2,612	949	D	38.6	2,989	1,923
1062	W Erie St.	B	12.8	1,369	292	B	16	1,632	435
1066	W Grand Ave.	D	43.1	2,901	2,084	D	45.9	2,960	2,264
1073	W Fulton St. (West)	A	8.8	1,109	163	B	12.7	1,378	292
1074	W Fulton St. (East)	A	4	1,107	74	A	7.8	1,419	184
1077	W Lake St.	C	28.3	1,711	807	C	30.1	2,028	1,017
1079	W Washington Blvd.	B	10.9	1,529	278	B	10.4	1,627	282
1080	W Warren Blvd.	B	16.2	1,721	465	B	13.2	1,660	365
1082	W Madison St.	B	16.5	1,798	494	C	23.1	3,366	1,296
1083	W Ogden Ave.	C	23.6	2,730	1,074	B	18	2,826	848
1084	W Monroe St.	C	20.3	1,507	510	B	13.4	1,290	288
1085	W Adams St.	C	34.2	1,670	952	B	16.1	1,549	416
1086	W Jackson Blvd.	B	19.7	1,854	609	B	18.3	2,123	648
1088	W Van Buren St.	C	27.1	2,923	1,320	C	21	2,674	936
1089	W Congress Pkwy	C	21.3	2,714	963	C	20.1	2,717	910
1090	W Harrison St.	C	21.3	3,189	1,132	C	20.6	3,209	1,102
1091	W Flounoy St.	A	6.6	2,048	225	B	12.3	2,080	426
1092	W Polk St.	B	18.1	2,127	642	C	22.8	2,187	831
1093	W Taylor St.	B	17.6	1,980	581	B	17.9	2,341	698
1094	W Roosevelt Rd.	F	197.1	5,263	17,289	F	217.7	5,395	19,575
1096	W 13th St.	B	10.4	1,279	222	F	81.4	2,067	2,804
1098	W 14th St.	B	16	1,205	321	C	22.7	1,515	573
1103	W 18th St.	D	41.9	2,158	1,507	D	49.2	2,610	2,140

ID	Location	AM LOS	AM Avg Delay(s)	AM Entering Vehicles	AM Delay (veh-hrs)	PM LOS	PM Avg Delay(s)	PM Entering Vehicles	PM Delay (veh-hrs)
1105	W 19th St.	C	30.7	1,860	952	B	18.9	1,851	583
1107	W 21st St.	C	30.1	1,809	908	C	26.8	1,902	850
1109	W Cermak Rd.	F	203.8	3,143	10,676	F	171.5	2,962	8,466
1110	2451 S Ashland Ave.	A	2.5	1,380	58	A	2.2	1,604	59
1111	W 27th St.	A	1.5	1,433	36	A	0.9	1,581	24
1112	W Marketplace Access Rd.	B	10.3	1,395	239	A	8.3	1,445	200
1113	W 31st Pl.	C	26.2	1,757	767	C	23.1	1,626	626
1114	S Archer Ave.	C	26.3	3,014	1,321	C	27.1	3,490	1,576
1115	W Robinson St.	B	15.4	1,100	282	B	18.4	1,356	416
1118	W 33rd St.	B	12.5	731	152	B	12.4	1,086	224
1121	W 35th St.	C	22.6	1,510	569	C	26.5	2,087	922
1123	W 37th St.	B	11.8	1,221	240	A	7.2	1,153	138
1127	W Pershing Rd.	C	25	2,056	857	C	20.4	2,256	767
1130	W 42nd St. (West)	A	9.6	997	160	A	8	1,117	149
1131	W 42nd Pl.	A	5.2	1,103	96	A	4.8	769	62
1132	W 43rd St.	C	23.3	1,512	587	C	22.1	1,655	610
1133	W 44th St.	A	9.8	1,223	200	A	9	915	137
1134	W 45th St.	B	12.1	972	196	B	13.2	908	200
1135	W 46th St.	B	12.9	999	215	B	14.4	1,033	248
1136	W 47th St./ S. McDowell Ave.	C	24.8	1,608	665	C	20.9	1,812	631
1137	W 48th St.	B	13	1,001	217	D	52.7	1,102	968
1138	W 49th St.	B	13	876	190	A	9.8	944	154
1139	W 50th St.	B	12.9	870	187	B	13.3	846	188
1140	W 51st St.	C	22.4	1,397	522	C	21.4	1,456	519
1142	W 53rd St.	A	6.4	699	75	B	15	776	194
1144	W Garfield Blvd. (WB)	C	27.6	1,597	735	C	33.1	1,790	987
1145	W Garfield Blvd. (EB)	D	49	1,891	1,544	C	25.9	1,781	769
1148	W 57th St.	A	9.4	927	145	B	10.2	867	147
1150	W 59th St.	C	26.4	1,647	725	C	24.8	1,881	777
1152	W 61st St.	B	15.2	1,073	272	B	17.2	1,005	288
1154	W 63rd St.	C	27.2	2,212	1,003	E	71.8	2,316	2,771
1156	W 65th St.	A	8.3	997	138	A	6.9	942	108
1158	W Marquette Rd.	C	29.4	1,715	840	C	34.8	1,936	1,123
1160	W 69th St.	C	25.1	1,603	671	D	42	1,724	1,207
1162	W 71st St.	C	27.5	1,781	816	C	27.3	2,071	942
1168	W 74th St.	B	15.9	1,412	374	C	21.2	1,654	584
1170	W 76th St.	B	17.2	1,504	431	C	24.8	1,725	713
1173	W 79th St.	D	37.6	1,973	1,236	E	69.4	2,101	2,430
1175	W 81st St.	B	16.6	958	265	D	42.1	1,293	907
1177	W 83rd St.	B	18.8	1,684	528	D	42.3	2,221	1,566
1179	W 85th St.	B	15.8	1,151	303	B	16.1	1,251	336
1181	W 87th St.	D	46.8	3,365	2,625	E	77.2	3,574	4,599
1185	W 91st St.	B	16.3	1,255	341	B	16.7	1,236	344
1191	W 95th St.	D	41.3	2,762	1,901	D	35.2	2,969	1,742

**Top 20 Intersections by Volume  
Future Build Conditions**

Sorted by Volume

AM Peak	ID	Location	AM LOS	AM Avg Delay (s)	AM Entering Vehicles
1	1094	W Roosevelt Rd.	F	197.1	5263
2	1001	W Irving Park Rd.	F	106.9	3946
3	1018	W Diversey Pkwy.	F	247.8	3485
4	1181	W 87th St.	D	46.8	3365
5	1011	W Belmont Ave./ N. Lincoln Ave.	F	190.3	3258
6	1090	W Harrison St.	C	21.3	3189
7	1109	W Cermak Rd.	F	203.8	3143
8	1114	S Archer Ave.	C	26.3	3014
9	1088	W Van Buren St.	C	27.1	2923
10	1066	W Grand Ave.	D	43.1	2901
11	1033	W North Ave.	E	79	2796
12	1191	W 95th St.	D	41.3	2762
13	1005	W Addison St.	F	103.9	2734
14	1083	W Ogden Ave.	C	23.6	2730
15	1043	W Division St.	C	22.8	2722
16	1023	W Fullerton Ave.	D	52.5	2717
17	1089	W Congress Pkwy	C	21.3	2714
18	1024	N Clybourn Ave.	E	72.2	2643
19	1056	W Chicago Ave.	C	21.8	2612
20	1026	N Elston Ave.	E	67.2	2427

Sorted by Volume

PM Peak	ID	Location	PM LOS	PM Avg Delay (s)	PM Entering Vehicles
1	1094	W Roosevelt Rd.	F	217.7	5395
2	1001	W Irving Park Rd.	F	105.1	3944
3	1018	W Diversey Pkwy.	F	320.4	3895
4	1181	W 87th St.	E	77.2	3574
5	1023	W Fullerton Ave.	F	124.3	3516
6	1114	S Archer Ave.	C	27.1	3490
7	1082	W Madison St.	C	23.1	3366
8	1011	W Belmont Ave./ N. Lincoln Ave.	F	173.9	3286
9	1024	N Clybourn Ave.	F	118.1	3238
10	1090	W Harrison St.	C	20.6	3209
11	1033	W North Ave.	F	104.6	3162
12	1043	W Division St.	D	46.4	3036
13	1056	W Chicago Ave.	D	38.6	2989
14	1191	W 95th St.	D	35.2	2969
15	1109	W Cermak Rd.	F	171.5	2962
16	1066	W Grand Ave.	D	45.9	2960
17	1083	W Ogden Ave.	B	18	2826
18	1005	W Addison St.	F	92	2789
19	1025	W Webster Ave.	E	80	2746
20	1089	W Congress Pkwy	C	20.1	2717

Intersections Selected for Screening

- W Belmont Ave./ N. Lincoln Ave.
- W Cermak Rd.
- W Diversey Pkwy.
- W Irving Park Rd.
- W Roosevelt Rd.

Note: Top 3 intersections from each table sorted and duplicates removed to make final selection.

Sorted by LOS/Delay

AM Peak	ID	Location	AM LOS	AM Avg Delay (s)	AM Entering Vehicles
3	1018	W Diversey Pkwy.	F	247.8	3485
7	1109	W Cermak Rd.	F	203.8	3143
1	1094	W Roosevelt Rd.	F	197.1	5263
5	1011	W Belmont Ave./ N. Lincoln Ave.	F	190.3	3258
2	1001	W Irving Park Rd.	F	106.9	3946
13	1005	W Addison St.	F	103.9	2734
11	1033	W North Ave.	E	79	2796
18	1024	N Clybourn Ave.	E	72.2	2643
20	1026	N Elston Ave.	E	67.2	2427
16	1023	W Fullerton Ave.	D	52.5	2717
4	1181	W 87th St.	D	46.8	3365
10	1066	W Grand Ave.	D	43.1	2901
12	1191	W 95th St.	D	41.3	2762
9	1088	W Van Buren St.	C	27.1	2923
8	1114	S Archer Ave.	C	26.3	3014
14	1083	W Ogden Ave.	C	23.6	2730
15	1043	W Division St.	C	22.8	2722
19	1056	W Chicago Ave.	C	21.8	2612
6	1090	W Harrison St.	C	21.3	3189
17	1089	W Congress Pkwy	C	21.3	2714

Sorted by LOS/Delay

PM Peak	ID	Location	PM LOS	PM Avg Delay (s)	PM Entering Vehicles
3	1018	W Diversey Pkwy.	F	320.4	3895
1	1094	W Roosevelt Rd.	F	217.7	5395
8	1011	W Belmont Ave./ N. Lincoln Ave.	F	173.9	3286
15	1109	W Cermak Rd.	F	171.5	2962
5	1023	W Fullerton Ave.	F	124.3	3516
9	1024	N Clybourn Ave.	F	118.1	3238
2	1001	W Irving Park Rd.	F	105.1	3944
11	1033	W North Ave.	F	104.6	3162
18	1005	W Addison St.	F	92	2789
19	1025	W Webster Ave.	E	80	2746
4	1181	W 87th St.	E	77.2	3574
12	1043	W Division St.	D	46.4	3036
16	1066	W Grand Ave.	D	45.9	2960
13	1056	W Chicago Ave.	D	38.6	2989
14	1191	W 95th St.	D	35.2	2969
6	1114	S Archer Ave.	C	27.1	3490
7	1082	W Madison St.	C	23.1	3366
10	1090	W Harrison St.	C	20.6	3209
20	1089	W Congress Pkwy	C	20.1	2717
17	1083	W Ogden Ave.	B	18	2826



**CTA Ashland Ave BRT**  
**Intersection 1011: W Belmont Ave / N Lincoln Ave**  
**Existing Conditions (No Build Alternative)**



**Volume Calculations**

Synchro ID	linkVolume	linkDescription	Intersection End Point
NBT	1079	N-FA (Ashland)	W Barry Ave
	920	N-TQ (N Ashland)	
	1022	N-FD (Ashland)	W School St
NBL	67	N-LQ (NW Lincoln)	
NBL2	2	N-LQ2 (W Belmont)	
NBR	88	N-RQ (E Belmont)	
NBR2	2	N-RQ2 (SE Lincoln)	
SBT	1120	S-FA (Ashland)	W School St
	1004	S-TQ (S Ashland)	
	1167	S-FD (Ashland)	W Barry Ave
SBL	83	S-LQ (SE Lincoln)	
SBL2	19	S-LQ2 (E Belmont)	
SBR	14	S-RQ (W Belmont)	
WBT	415	W-FA (Belmont)	N Greenview Ave
	238	W-TQ (W Belmont)	
	273	W-FD (Belmont)	N Paulina St
WBR	143	W-RQ (NW Lincoln)	
WBR2	34	W-RQ2 (N Ashland)	
EBT	527	E-FA (Belmont)	N Paulina St
	376	E-TQ (E Belmont)	
	520	E-FD (Belmont)	N Greenview Ave
EBL2	3	E-LQ2 (NW Lincoln)	
EBR	105	E-RQ (SE Lincoln)	
EBR2	43	E-RQ2 (S Ashland)	
SET	491	SE-FA (Lincoln)	W School St
	343	SE-TQ (SE Lincoln)	
	533	SE-FD (Lincoln)	W Barry Ave
SEL	35	SE-LQ (E Belmont)	
SER	111	SE-RQ (S Ashland)	
SER2	2	SE-RQ2 (W Belmont)	
NWT	350	NW-FA (Lincoln)	W Barry Ave
	254	NW-TQ (NW Lincoln)	
	467	NW-FD (Lincoln)	W School St
NWL	17	NW-LQ (W Belmont)	
NWL2	9	NW-LQ2 (S Ashland)	
NWR	68	NW-RQ (N Ashland)	
NWR2	2	NW-RQ2 (E Belmont)	
Total Volume		3962 (excluding buses)	

**Data Sources:**  
 Volumes □ Ashland AM Existing Synchro Lanes Volumes Timing Report 2013-05-02.pdf  
 Ashland Avenue Arterial Speeds □ Ashland AM Arterial LOS 2013-05-02.pdf  
 Crossroad Speeds: Ashland AM Arterial LOS Cross Streets 2013-05-03.pdf

**MOVES Link Importer (AM Peak)**

linkID	countyID	zoneID	roadTypeID	linkLength	linkVolume	linkAvgSpeed	linkDescription	linkAvgGrade	Comments
1	17031	170310	5	0.13	1079	5.9	N-FA (Ashland)	0	
2	17031	170310	5	0.13	920	0	N-TQ (N Ashland)	0	
3	17031	170310	5	0.13	1022	5.9	N-FD (Ashland)	0	
4	17031	170310	5	0.13	69	0	N-LQ (NW Lincoln)	0	Includes NBL, NBL2
5	17031	170310	5	0.13	90	0	N-RQ (E Belmont)	0	Includes NBR, NBR2
6	17031	170310	5	0.13	1120	4.9	S-FA (Ashland)	0	
7	17031	170310	5	0.13	1018	0	S-TQ (S Ashland)	0	Includes SBT, SBR
8	17031	170310	5	0.13	1167	4.9	S-FD (Ashland)	0	
9	17031	170310	5	0.13	102	0	S-LQ (SE Lincoln)	0	Includes SBL, SBL2
10	17031	170310	5	0.12	415	8	W-FA (Belmont)	0	
11	17031	170310	5	0.12	238	0	W-TQ (W Belmont)	0	
12	17031	170310	5	0.13	273	8	W-FD (Belmont)	0	
13	17031	170310	5	0.12	177	0	W-RQ (NW Lincoln)	0	Includes WBR, WBR2
14	17031	170310	5	0.13	527	2.1	E-FA (Belmont)	0	
15	17031	170310	5	0.13	527	0	E-TQ (E Belmont)	0	Includes EBT, EBL2, EBR, EBR2
16	17031	170310	5	0.12	520	2.1	E-FD (Belmont)	0	
17	17031	170310	5	0.15	491	3.1	SE-FA (Lincoln)	0	
18	17031	170310	5	0.15	456	0	SE-TQ (SE Lincoln)	0	Includes SET, SER, SER2
19	17031	170310	5	0.18	533	3.1	SE-FD (Lincoln)	0	
20	17031	170310	5	0.15	35	0	SE-LQ (E Belmont)	0	
21	17031	170310	5	0.18	350	6.7	NW-FA (Lincoln)	0	
22	17031	170310	5	0.18	324	0	NW-TQ (NW Lincoln)	0	Includes NWT, NWR, NWR2
23	17031	170310	5	0.15	467	6.7	NW-FD (Lincoln)	0	
24	17031	170310	5	0.18	26	0	NW-LQ (W Belmont)	0	Includes NWL, NWL2
Total Volume					3962 (excluding buses)				

**Legend**  
 Estimated queue length  
 Contains bus volume  
**Calculated Value**

**Local Buses**  
10

	Volume	Fraction
Cars	3675	0.9252266
Trucks	287	0.0722558
Buses	10	0.0025176
<b>Total</b>	<b>3972</b>	<b>1</b>

ok

Category	Source Type	Fraction	
		Ashland Ave	Cross Streets
Cars	11	0.005258914	0.005271603
Cars	21	0.326265346	0.32705261
Cars	31	0.445276745	0.446351179
Cars	32	0.148425582	0.148783726
Buses	41	0	0
Buses	42	0.002517623	0
Buses	43	0	0
Trucks	51	0.000142322	0.000142884
Trucks	52	0.010816471	0.010859148
Trucks	53	0.000853932	0.000857301
Trucks	54	0.002277152	0.002286136
Trucks	61	0.030827935	0.030949568
Trucks	62	0.02733798	0.027445843
<b>Total</b>		<b>1</b>	<b>1</b>

**CTA Ashland Ave BRT**  
**Intersection 1011: W Belmont Ave / N Lincoln Ave**  
**Existing Conditions (No Build Alternative)**

**Volume Calculations**

Synchro ID	linkVolume	linkDescription	Intersection End Point
NBT	1146	N-FA (Ashland)	W Barry Ave
	954	N-TQ (N Ashland)	W School St
	1119	N-FD (Ashland)	
NBL	78	N-LQ (NW Lincoln)	
NBL2	16	N-LQ2 (W Belmont)	
NBR	97	N-RQ (E Belmont)	
NBR2	1	N-RQ2 (SE Lincoln)	
SBT	1002	S-FA (Ashland)	W School St
	862	S-TQ (S Ashland)	W Barry Ave
	1006	S-FD (Ashland)	
SBL	79	S-LQ (SE Lincoln)	
SBL2	24	S-LQ2 (E Belmont)	
SBR	33	S-RQ (W Belmont)	
SBR2	4	S-RQ2 (NW Lincoln)	
WBT	534	W-FA (Belmont)	N Greenview Ave
	310	W-TQ (W Belmont)	N Paulina St
	401	W-FD (Belmont)	
WBL	5	W-LQ (S Ashland)	
WBR	149	W-RQ (NW Lincoln)	
WBR2	70	W-RQ2 (N Ashland)	
EBT	442	E-FA (Belmont)	
	353	E-TQ (E Belmont)	N Greenview Ave
	526	E-FD (Belmont)	
EBL	1	E-LQ (N Ashland)	
EBL2	1	E-LQ2 (NW Lincoln)	
EBR	58	E-RQ (SE Lincoln)	
EBR2	29	E-RQ2 (S Ashland)	
SET	397	SE-FA (Lincoln)	W School St
	243	SE-TQ (SE Lincoln)	W Barry Ave
	381	SE-FD (Lincoln)	
SEL	45	SE-LQ (E Belmont)	
SEL2	3	SE-LQ2 (N Ashland)	
SER	95	SE-RQ (S Ashland)	
SER2	11	SE-RQ2 (W Belmont)	
NWT	410	NW-FA (Lincoln)	W Barry Ave
	266	NW-TQ (NW Lincoln)	W School St
	498	NW-FD (Lincoln)	
NWL	31	NW-LQ (W Belmont)	
NWL2	15	NW-LQ2 (S Ashland)	
NWR	91	NW-RQ (N Ashland)	
NWR2	7	NW-RQ2 (E Belmont)	
<b>Total Volume</b>	<b>3913</b>	<b>(excluding buses)</b>	

**MOVES Link Importer (PM Peak)**

linkID	countyID	zoneID	roadTypeID	linkLength	linkVolume	linkAvgSpeed	linkDescription	linkAvgGrade	Comments
1	17031	170310	5	0.13	1146		4 N-FA (Ashland)	0	
2	17031	170310	5	0.13	954		0 N-TQ (N Ashland)	0	
3	17031	170310	5	0.13	1119		4 N-FD (Ashland)	0	
4	17031	170310	5	0.13	94		0 N-LQ (NW Lincoln)	0	Includes NBL, NBL2
5	17031	170310	5	0.13	98		0 N-RQ (E Belmont)	0	Includes NBR, NBR2
6	17031	170310	5	0.13	1002	5.8	S-FA (Ashland)	0	
7	17031	170310	5	0.13	899		0 S-TQ (S Ashland)	0	Includes SBT, SBR, SBR2
8	17031	170310	5	0.13	1006	5.8	S-FD (Ashland)	0	
9	17031	170310	5	0.13	103		0 S-LQ (SE Lincoln)	0	Includes SBL, SBL2
10	17031	170310	5	0.12	534	5.9	W-FA (Belmont)	0	
11	17031	170310	5	0.12	315		0 W-TQ (W Belmont)	0	Includes WBT, WBL
12	17031	170310	5	0.13	401	5.9	W-FD (Belmont)	0	
13	17031	170310	5	0.12	219		0 W-RQ (NW Lincoln)	0	Includes WBR2
14	17031	170310	5	0.13	442		4 E-FA (Belmont)	0	
15	17031	170310	5	0.13	442		0 E-TQ (E Belmont)	0	Includes EBL2, EBL, EBT, EBR, EBR2
16	17031	170310	5	0.12	526		4 E-FD (Belmont)	0	
17	17031	170310	5	0.15	397		6 SE-FA (Lincoln)	0	
18	17031	170310	5	0.15	349		0 SE-TQ (SE Lincoln)	0	Includes SET, SER, SER2
19	17031	170310	5	0.18	381		6 SE-FD (Lincoln)	0	
20	17031	170310	5	0.15	48		0 SE-LQ (E Belmont)	0	Includes SEL, SEL2
21	17031	170310	5	0.18	410	5.7	NW-FA (Lincoln)	0	
22	17031	170310	5	0.18	364		0 NW-TQ (NW Lincoln)	0	Includes NWT, NWR, NWR2
23	17031	170310	5	0.15	498	5.7	NW-FD (Lincoln)	0	
24	17031	170310	5	0.18	46		0 NW-LQ (W Belmont)	0	Includes NWL, NWL2
<b>Total Volume</b>					<b>3913</b>	<b>(excluding buses)</b>			

**Legend**

- Estimated queue length
- Link not included in AM peak hour
- Contains bus volume
- Calculated Value

**Local Buses**

	Volume	Fraction
Cars	3629	0.9252932
Trucks	284	0.072412
Buses	9	0.0022947
<b>Total</b>	<b>3922</b>	<b>1</b>

ok

Category	Source Type	Fraction	
		Ashland Ave	Cross Streets
Cars	11	0.005259292	0.005271603
Cars	21	0.326288842	0.32705261
Cars	31	0.445308812	0.446351179
Cars	32	0.148436271	0.148783726
Buses	41	0	0
Buses	42	0.002294748	0
Buses	43	0	0
Trucks	51	0.00014263	0.000142884
Trucks	52	0.01083986	0.010859148
Trucks	53	0.000855778	0.000857301
Trucks	54	0.002282076	0.002286136
Trucks	61	0.030894596	0.030949568
Trucks	62	0.027397095	0.027445843
<b>Total</b>		<b>1</b>	<b>1</b>

**Data Sources:**

- Volumes □ Ashland PM Existing Synchro Lanes Volumes Timing Report 2013-05-02.pdf
- Ashland Avenue Arterial Speeds □ Ashland PM Arterial LOS 2013-05-02.pdf
- Crossroad Speeds: Ashland PM Arterial LOS Cross Streets 2013-05-03.pdf

**Link Volume Definitions:**

- Queue links based on Synchro output reports.
- Approach volumes equal to all queue links for each direction (e.g., N-FA □ N-TQ □ N-LQ □ N-RQ)
- Departure volumes equal to through queue link plus volumes from directions turning into traffic (e.g., N-FD □ N-TQ □ E-LQ □ W-RQ)

**Note:**

Because MOVES is calculating a gram per vehicle emission factor for queue links, the exact length of the queue is not important.

**CTA Ashland Ave BRT**  
**Intersection 1109: W Cermak Rd**  
**Existing Conditions (No Build Alternative)**

**Volume Calculations**

Synchro ID	linkVolume	linkDescription	Intersection Endpoint
NBT	1397	N-FA (Ashland)	S Archer Ave
	1114	N-TQ (N Ashland)	W 21st Pl
	1488	N-FD (Ashland)	
NBL	101	N-LQ (W Cermak)	W 21st Pl
NBL2	29	N-LQ2 (SW Blue Island)	
NBR	153	N-RQ (E Cermak)	
SBT	820	S-FA (Ashland)	S Archer Ave
	611	S-TQ (S Ashland)	S Archer Ave
	788	S-FD (Ashland)	
SBL	42	S-LQ (E Cermak)	S Archer Ave
SBR	135	S-RQ (SW Blue Island)	
SBR2	32	S-RQ2 (W Cermak)	
WBT	586	W-FA (Cermak)	S Laflin St
	298	W-TQ (W Cermak)	S Paulina St
	431	W-FD (Cermak)	
WBL	93	W-LQ (SW Blue Island)	S Paulina St
WBL2	91	W-LQ2 (S Ashland)	
WBR	104	W-RQ (N Ashland)	
EBT	403	E-FA (Cermak)	S Paulina St
	278	E-TQ (E Cermak)	S Laflin St
	665	E-FD (Cermak)	
EBL	74	E-LQ (N Ashland)	S Laflin St
EBR	51	E-RQ (S Ashland)	
NEL	423	NE-FA (Blue Island)	
	196	NE-LQ (N Ashland)	S Paulina St
	192	NE-RQ (E Cermak)	
NER	192	NE-RQ (E Cermak)	S Paulina St
NER2	35	NE-RQ2 (S Ashland)	
	257	SW-FD (Blue Island)	S Paulina St

Total Volume 3609 (excluding buses)

**Data Sources:**

Volumes □ Ashland AM Existing Synchro Lanes Volumes Timing Report 2013-05-02.pdf  
 Ashland Avenue Arterial Speeds □ Ashland AM Arterial LOS 2013-05-02.pdf  
 Crossroad Speeds: Ashland AM Arterial LOS Cross Streets 2013-05-03.pdf

**MOVES Link Importer (AM Peak)**

1109 W Cermak Rd

7:15 AM peak hour

linkID	countyID	zoneID	roadTypeID	linkLength	linkVolume	linkAvgSpeed	linkDescription	linkAvgGrade	Comments
1	17031	170310	5	1.01	1397	12.6	N-FA (Ashland)	0	
2	17031	170310	5	1.01	1114	0	N-TQ (N Ashland)	0	
3	17031	170310	5	0.12	1488	12.6	N-FD (Ashland)	0	
4	17031	170310	5	1.01	130	0	N-LQ (W Cermak)	0	Includes NBL, NBL2
5	17031	170310	5	1.01	153	0	N-RQ (E Cermak)	0	
6	17031	170310	5	0.12	820	9.3	S-FA (Ashland)	0	
7	17031	170310	5	0.12	611	0	S-TQ (S Ashland)	0	
8	17031	170310	5	1.01	788	9.3	S-FD (Ashland)	0	
9	17031	170310	5	0.12	42	0	S-LQ (E Cermak)	0	
10	17031	170310	5	0.12	167	0	S-RQ (SW Blue Island)	0	Includes SBR, SBR2
11	17031	170310	5	0.12	586	8.1	W-FA (Cermak)	0	
12	17031	170310	5	0.12	402	0	W-TQ (W Cermak)	0	Includes WBT, WBR
13	17031	170310	5	0.13	431	8.1	W-FD (Cermak)	0	
14	17031	170310	5	0.12	184	0	W-LQ (SW Blue Island)	0	Includes WBL, WBL2
15	17031	170310	5	0.13	403	5.7	E-FA (Cermak)	0	
16	17031	170310	5	0.13	329	0	E-TQ (E Cermak)	0	Includes EBT, EBR
17	17031	170310	5	0.12	665	5.7	E-FD (Cermak)	0	
18	17031	170310	5	0.13	74	0	E-LQ (N Ashland)	0	
19	17031	170310	5	0.14	423	4.2	NE-FA (Blue Island)	0	
20	17031	170310	5	0.14	196	0	NE-LQ (N Ashland)	0	
21	17031	170310	5	0.14	227	0	NE-RQ (E Cermak)	0	Includes NER, NER2
22	17031	170310	5	0.14	257	4.2	SW-FD (Blue Island)	0	

Total Volume 3609 (excluding buses)

**Legend**

- Estimated queue length
- Contains bus volume
- Calculated Value

**Local Buses**

10

	Volume	Fraction
Cars	3347	0.9248411
Trucks	262	0.0723957
Buses	10	0.0027632
<b>Total</b>	<b>3619</b>	<b>1</b>

ok

Category	Source Type	Fraction	
		Ashland Ave	Cross Streets
Cars	11	0.005256723	0.005271603
Cars	21	0.326129416	0.32705261
Cars	31	0.445091233	0.446351179
Cars	32	0.148363744	0.148783726
Buses	41	0	0
Buses	42	0.002763194	0
Buses	43	0	0
Trucks	51	0.000142598	0.000142884
Trucks	52	0.010837413	0.010859148
Trucks	53	0.000855585	0.000857301
Trucks	54	0.002281561	0.002286136
Trucks	61	0.030887622	0.030949568
Trucks	62	0.02739091	0.027445843
<b>Total</b>		<b>1</b>	<b>1</b>

**CTA Ashland Ave BRT**  
**Intersection 1109: W Cermak Rd**  
**Existing Conditions (No Build Alternative)**

**Volume Calculations**

Synchro ID	linkVolume	linkDescription	Intersection Endpoint
NBT	950	N-FA (Ashland)	S Archer Ave
	765	N-TQ (N Ashland)	W 21st Pl
	987	N-FD (Ashland)	
	61	N-LQ (W Cermak)	
	NBL	33	N-LQ2 (SW Blue Island)
NBL2	91	N-RQ (E Cermak)	
SBT	1393	S-FA (Ashland)	S Archer Ave
	1112	S-TQ (S Ashland)	S Archer Ave
	1327	S-FD (Ashland)	
	67	S-LQ (E Cermak)	
SBL	152	S-RQ (SW Blue Island)	S Paulina St
SBR	62	S-RQ2 (W Cermak)	
SBR2	641	W-FA (Cermak)	
WBT	346	W-TQ (W Cermak)	S Paulina St
	473	W-FD (Cermak)	S Paulina St
	172	W-LQ (SW Blue Island)	
WBL	84	W-LQ2 (S Ashland)	S Paulina St
WBL2	39	W-RQ (N Ashland)	
WBR	405	E-FA (Cermak)	
EBT	242	E-TQ (E Cermak)	S Paulina St
	567	E-FD (Cermak)	S Laflin St
	81	E-LQ (N Ashland)	S Laflin St
EBL	82	E-RQ (S Ashland)	
EBR	322	NE-FA (Blue Island)	S Paulina St
NEL	102	NE-LQ (N Ashland)	
	NEL2	4	
NER	167	NE-RQ (E Cermak)	
NER2	49	NE-RQ2 (S Ashland)	
	357	SW-FD (Blue Island)	
<b>Total Volume</b>	<b>3693 (excluding buses)</b>		

**MOVES Link Importer (PM Peak)**

1109 W Cermak Rd

4:30 PM peak hour

linkID	countyID	zoneID	roadTypeID	linkLength	linkVolume	linkAvgSpeed	linkDescription	linkAvgGrade	Comments
1	17031	170310	5	1.01	950	14.6	N-FA (Ashland)	0	
2	17031	170310	5	1.01	765	0	N-TQ (N Ashland)	0	
3	17031	170310	5	0.12	987	14.6	N-FD (Ashland)	0	
4	17031	170310	5	1.01	94	0	N-LQ (W Cermak)	0	Includes NBL, NBL2
5	17031	170310	5	1.01	91	0	N-RQ (E Cermak)	0	
6	17031	170310	5	0.12	1393	7	S-FA (Ashland)	0	
7	17031	170310	5	0.12	1112	0	S-TQ (S Ashland)	0	
8	17031	170310	5	1.01	1327	7	S-FD (Ashland)	0	
9	17031	170310	5	0.12	67	0	S-LQ (E Cermak)	0	
10	17031	170310	5	0.12	214	0	S-RQ (SW Blue Island)	0	Includes SBR, SBR2
11	17031	170310	5	0.12	641	7.9	W-FA (Cermak)	0	
12	17031	170310	5	0.12	385	0	W-TQ (W Cermak)	0	Includes WBT, WBR
13	17031	170310	5	0.13	473	7.9	W-FD (Cermak)	0	
14	17031	170310	5	0.12	256	0	W-LQ (SW Blue Island)	0	Includes WBL, WBL2
15	17031	170310	5	0.13	405	5.6	E-FA (Cermak)	0	
16	17031	170310	5	0.13	324	0	E-TQ (E Cermak)	0	Includes EBT, EBR
17	17031	170310	5	0.12	567	5.6	E-FD (Cermak)	0	
18	17031	170310	5	0.13	81	0	E-LQ (N Ashland)	0	
19	17031	170310	5	0.14	322	5.7	NE-FA (Blue Island)	0	
20	17031	170310	5	0.14	106	0	NE-LQ (N Ashland)	0	Includes NEL, NEL2
21	17031	170310	5	0.14	216	0	NE-RQ (E Cermak)	0	Includes NER, NER2
22	17031	170310	5	0.14	357	5.7	SW-FD (Blue Island)	0	
<b>Total Volume</b>					<b>3693 (excluding buses)</b>				

**Legend**

- Estimated queue length
- Link not included in AM peak hour
- Contains bus volume
- Calculated Value

**Local Buses**

9

	Volume	Fraction
Cars	3425	0.9251756
Trucks	268	0.0723933
Buses	9	0.0024311
<b>Total</b>	<b>3702</b>	<b>1</b>

ok

Category	Source Type	Fraction	
		Ashland Ave	Cross Streets
Cars	11	0.005258624	0.005271603
Cars	21	0.32624736	0.32705261
Cars	31	0.445252198	0.446351179
Cars	32	0.148417399	0.148783726
Buses	41	0	0
Buses	42	0.002431118	0
Buses	43	0	0
Trucks	51	0.000142593	0.000142884
Trucks	52	0.010837056	0.010859148
Trucks	53	0.000855557	0.000857301
Trucks	54	0.002281485	0.002286136
Trucks	61	0.030886603	0.030949568
Trucks	62	0.027390007	0.027445843
<b>Total</b>		<b>1</b>	<b>1</b>

**Data Sources:**

- Volumes □ Ashland PM Existing Synchro Lanes Volumes Timing Report 2013-05-02.pdf
- Ashland Avenue Arterial Speeds □ Ashland PM Arterial LOS 2013-05-02.pdf
- Crossroad Speeds: Ashland PM Arterial LOS Cross Streets 2013-05-03.pdf

**Link Volume Definitions:**

Queue links based on Synchro output reports.

Approach volumes equal to all queue links for each direction (i.e., N-FA □ N-TQ □ N-LQ □ N-RQ)

Departure volumes equal to through queue link plus volumes from directions turning into traffic (e.g., N-FD □ N-TQ □ E-LQ □ W-RQ)

**Note:**

Because MOVES is calculating a gram per vehicle emission factor for queue links, the exact length of the queue is not important.

**CTA Ashland Ave BRT  
Intersection 1018: W Diversey Pkwy  
Existing Conditions (No Build Alternative)**

**Volume Calculations**

Synchro ID	linkVolume	linkDescription	Intersection Endpoint
NBT	1106	N-FA (Ashland)	W Wrightwood Ave
	978	N-TQ (N Ashland)	W Wolfram St
	1226	N-FD (Ashland)	
NBL	12	N-LQ (W Diversey)	
NBR	116	N-RQ (E Diversey)	
SBT	2030	S-FA (Ashland)	W Wolfram St
	1848	S-TQ (S Ashland)	W Wrightwood Ave
	2055	S-FD (Ashland)	
SBL	80	S-LQ (E Diversey)	
SBR	102	S-RQ (W Diversey)	
WBT	645	W-FA (Diversey)	N Greenview Ave
	449	W-TQ (W Diversey)	N Paulina St
	563	W-FD (Diversey)	
WBL	132	W-LQ (S Ashland)	
WBR	64	W-RQ (N Ashland)	
EBT	942	E-FA (Diversey)	N Paulina St
	683	E-TQ (E Diversey)	N Greenview Ave
	879	E-FD (Diversey)	
EBL	184	E-LQ (N Ashland)	
EBR	75	E-RQ (S Ashland)	
Total Volume		4703 (excluding buses)	

**MOVES Link Importer (AM Peak)**

1018 W Diversey Pkwy 7:15 AM peak hour

linkID	countyID	zoneID	roadTypeID	linkLength	linkVolume	linkAvgSpeed	linkDescription	linkAvgGrade	Comments
1	17031	170310	5	0.25	1106	19.9	N-FA (Ashland)	0	
2	17031	170310	5	0.25	978	0	N-TQ (N Ashland)	0	
3	17031	170310	5	0.06	1226	19.9	N-FD (Ashland)	0	
4	17031	170310	5	0.25	12	0	N-LQ (W Diversey)	0	
5	17031	170310	5	0.25	116	0	N-RQ (E Diversey)	0	
6	17031	170310	5	0.06	2030	4.2	S-FA (Ashland)	0	
7	17031	170310	5	0.06	1950	0	S-TQ (S Ashland)	0	Includes SBT, SBR
8	17031	170310	5	0.25	2055	4.2	S-FD (Ashland)	0	
9	17031	170310	5	0.06	80	0	S-LQ (E Diversey)	0	
10	17031	170310	5	0.13	645	8	W-FA (Diversey)	0	
11	17031	170310	5	0.13	449	0	W-TQ (W Diversey)	0	
12	17031	170310	5	0.13	563	8	W-FD (Diversey)	0	
13	17031	170310	5	0.13	132	0	W-LQ (S Ashland)	0	
14	17031	170310	5	0.13	64	0	W-RQ (N Ashland)	0	
15	17031	170310	5	0.13	942	2.5	E-FA (Diversey)	0	
16	17031	170310	5	0.13	683	0	E-TQ (E Diversey)	0	
17	17031	170310	5	0.13	879	2.5	E-FD (Diversey)	0	
18	17031	170310	5	0.13	184	0	E-LQ (N Ashland)	0	
19	17031	170310	5	0.13	75	0	E-RQ (S Ashland)	0	
Total Volume					4703 (excluding buses)				

Data Sources:

Volumes □ Ashland AM Existing Synchro Lanes Volumes Timing Report 2013-05-02.pdf  
 Ashland Avenue Arterial Speeds □ Ashland AM Arterial LOS 2013-05-02.pdf  
 Crossroad Speeds: Ashland AM Arterial LOS Cross Streets 2013-05-03.pdf

Legend

Estimated queue length  
 Contains bus volume  
 Calculated Value

Local Buses

	Volume	Fraction
Cars	4362	0.9255251
Trucks	341	0.0723531
Buses	10	0.0021218
<b>Total</b>	<b>4713</b>	<b>1</b>

ok

Category	Source Type	Fraction	
		Ashland Ave	Cross Streets
Cars	11	0.005260611	0.005271603
Cars	21	0.326370627	0.32705261
Cars	31	0.445420429	0.446351179
Cars	32	0.148473476	0.148783726
Buses	41	0	0
Buses	42	0.002121791	0
Buses	43	0	0
Trucks	51	0.000142514	0.000142884
Trucks	52	0.010831033	0.010859148
Trucks	53	0.000855082	0.000857301
Trucks	54	0.002280217	0.002286136
Trucks	61	0.030869437	0.030949568
Trucks	62	0.027374784	0.027445843
Total		1	1

**CTA Ashland Ave BRT**  
**Intersection 1018: W Diversey Pkwy**  
**Existing Conditions (No Build Alternative)**

**Volume Calculations**

Synchro ID	linkVolume	linkDescription	Intersection Endpoint
NBT	1624	N-FA (Ashland)	W Wrightwood Ave
	1477	N-TQ (N Ashland)	W Wolfram St
	1737	N-FD (Ashland)	
	18	N-LQ (W Diversey)	
NBR	129	N-RQ (E Diversey)	
SBT	1818	S-FA (Ashland)	W Wolfram St
	1649	S-TQ (S Ashland)	W Wrightwood Ave
	1837	S-FD (Ashland)	
SBL	70	S-LQ (E Diversey)	
SBR	99	S-RQ (W Diversey)	
WBT	800	W-FA (Diversey)	N Greenview Ave
	561	W-TQ (W Diversey)	N Paulina St
	678	W-FD (Diversey)	
WBL	148	W-LQ (S Ashland)	
WBR	91	W-RQ (N Ashland)	
EBT	697	E-FA (Diversey)	N Paulina St
	488	E-TQ (E Diversey)	N Greenview Ave
687	E-FD (Diversey)		
EBL	169	E-LQ (N Ashland)	
EBR	40	E-RQ (S Ashland)	
Total Volume		4921 (excluding buses)	

**MOVES Link Importer (PM Peak)**

1018 W Diversey Pkwy 5:15 PM peak hour

linkID	countyID	zoneID	roadTypeID	linkLength	linkVolume	linkAvgSpeed	linkDescription	linkAvgGrade	Comments
1	17031	170310	5	0.25	1624	4	N-FA (Ashland)	0	
2	17031	170310	5	0.25	1477	0	N-TQ (N Ashland)	0	
3	17031	170310	5	0.06	1737	4	N-FD (Ashland)	0	
4	17031	170310	5	0.25	18	0	N-LQ (W Diversey)	0	
5	17031	170310	5	0.25	129	0	N-RQ (E Diversey)	0	
6	17031	170310	5	0.06	1818	4.5	S-FA (Ashland)	0	
7	17031	170310	5	0.06	1748	0	S-TQ (S Ashland)	0	Includes SBT, SBR
8	17031	170310	5	0.25	1837	4.5	S-FD (Ashland)	0	
9	17031	170310	5	0.06	70	0	S-LQ (E Diversey)	0	
10	17031	170310	5	0.13	800	5	W-FA (Diversey)	0	
11	17031	170310	5	0.13	561	0	W-TQ (W Diversey)	0	
12	17031	170310	5	0.13	678	5	W-FD (Diversey)	0	
13	17031	170310	5	0.13	148	0	W-LQ (S Ashland)	0	
14	17031	170310	5	0.13	91	0	W-RQ (N Ashland)	0	
15	17031	170310	5	0.13	697	7.1	E-FA (Diversey)	0	
16	17031	170310	5	0.13	488	0	E-TQ (E Diversey)	0	
17	17031	170310	5	0.13	687	7.1	E-FD (Diversey)	0	
18	17031	170310	5	0.13	169	0	E-LQ (N Ashland)	0	
19	17031	170310	5	0.13	40	0	E-RQ (S Ashland)	0	
Total Volume					4921 (excluding buses)				

Data Sources:

Volumes □ Ashland PM Existing Synchro Lanes Volumes Timing Report 2013-05-02.pdf  
 Ashland Avenue Arterial Speeds □ Ashland PM Arterial LOS 2013-05-02.pdf  
 Crossroad Speeds: Ashland PM Arterial LOS Cross Streets 2013-05-03.pdf

Legend

Estimated queue length  
 Contains bus volume  
 Calculated Value

Local Buses

	Volume	Fraction
Cars	4564	0.9257606
Trucks	357	0.0724138
Buses	9	0.0018256
<b>Total</b>	<b>4930</b>	<b>1</b>

ok

Link Volume Definitions:

Queue links based on Synchro output reports.  
 Approach volumes equal to all queue links for each direction (i.e., N-FA □ N-TQ □ N-LQ □ N-RQ)  
 Departure volumes equal to through queue link plus volumes from directions turning into traffic (e.g., N-FD □ N-TQ □ E-LQ □ W-RQ)

Note:

Because MOVES is calculating a gram per vehicle emission factor for queue links, the exact length of the queue is not important.

Category	Source Type	Fraction	
		Ashland Ave	Cross Streets
Cars	11	0.005261949	0.005271603
Cars	21	0.326453674	0.32705261
Cars	31	0.44553377	0.446351179
Cars	32	0.148511257	0.148783726
Buses	41	0	0
Buses	42	0.001825558	0
Buses	43	0	0
Trucks	51	0.000142633	0.000142884
Trucks	52	0.010840123	0.010859148
Trucks	53	0.000855799	0.000857301
Trucks	54	0.002282131	0.002286136
Trucks	61	0.030895346	0.030949568
Trucks	62	0.02739776	0.027445843
Total		1	1

**CTA Ashland Ave BRT**  
**Intersection 1001: W Irving Park Rd**  
**Existing Conditions (No Build Alternative)**

**Volume Calculations**

Synchro ID	linkVolume	linkDescription	Intersection Endpoint
NBT	1006	N-FA (Ashland)	W Byron St
	800	N-TQ (N Ashland)	W Belle Plaine Ave
	1054	N-FD (Ashland)	
	106	N-LQ (W Irving Park)	
NBR	100	N-RQ (E Irving Park)	
SBT	1159	S-FA (Ashland)	W Belle Plaine Ave
	942	S-TQ (S Ashland)	W Byron St
	1202	S-FD (Ashland)	
SBL	78	S-LQ (E Irving Park)	
SBR	139	S-RQ (W Irving Park)	
WBT	992	W-FA (Irving Park)	N Greenview Ave
	826	W-TQ (W Irving Park)	N Ravenswood Ave
1071	W-FD (Irving Park)		
WBL	127	W-LQ (S Ashland)	
WBR	39	W-RQ (N Ashland)	
EBT	1191	E-FA (Irving Park)	N Ravenswood Ave
	843	E-TQ (E Irving Park)	N Greenview Ave
1021	E-FD (Irving Park)		
EBL	215	E-LQ (N Ashland)	
EBR	133	E-RQ (S Ashland)	
Total Volume		4328 (excluding buses)	

**MOVES Link Importer (AM Peak)**

1001 W Irving Park Rd

7:15 AM peak hour

linkID	countyID	zoneID	roadTypeID	linkLength	linkVolume	linkAvgSpeed	linkDescription	linkAvgGrade	Comments
1	17031	170310	5	0.13	1006	16.2	N-FA (Ashland)	0	
2	17031	170310	5	0.13	800	0	N-TQ (N Ashland)	0	
3	17031	170310	5	0.13	1054	16.2	N-FD (Ashland)	0	
4	17031	170310	5	0.13	106	0	N-LQ (W Irving Park)	0	
5	17031	170310	5	0.13	100	0	N-RQ (E Irving Park)	0	
6	17031	170310	5	0.13	1159	7.8	S-FA (Ashland)	0	
7	17031	170310	5	0.13	942	0	S-TQ (S Ashland)	0	
8	17031	170310	5	0.13	1202	7.8	S-FD (Ashland)	0	
9	17031	170310	5	0.13	78	0	S-LQ (E Irving Park)	0	
10	17031	170310	5	0.13	139	0	S-RQ (W Irving Park)	0	
11	17031	170310	5	0.08	992	8.8	W-FA (Irving Park)	0	
12	17031	170310	5	0.08	865	0	W-TQ (W Irving Park)	0	Includes WBT, WBR
13	17031	170310	5	0.25	1071	8.8	W-FD (Irving Park)	0	
14	17031	170310	5	0.08	127	0	W-LQ (S Ashland)	0	
15	17031	170310	5	0.25	1191	9	E-FA (Irving Park)	0	
16	17031	170310	5	0.25	843	0	E-TQ (E Irving Park)	0	
17	17031	170310	5	0.08	1021	9	E-FD (Irving Park)	0	
18	17031	170310	5	0.25	215	0	E-LQ (N Ashland)	0	
19	17031	170310	5	0.25	133	0	E-RQ (S Ashland)	0	
Total Volume					4328 (excluding buses)				

Data Sources:

Volumes □ Ashland AM Existing Synchro Lanes Volumes Timing Report 2013-05-02.pdf  
 Ashland Avenue Arterial Speeds □ Ashland AM Arterial LOS 2013-05-02.pdf  
 Crossroad Speeds: Ashland AM Arterial LOS Cross Streets 2013-05-03.pdf

Legend

Estimated queue length  
 Contains bus volume  
 Calculated Value

Local Buses

10

	Volume	Fraction
Cars	4014	0.9253112
Trucks	314	0.0723836
Buses	10	0.0023052
<b>Total</b>	<b>4338</b>	<b>1</b>

ok

Category	Source Type	Fraction	
		Ashland Ave	Cross Streets
Cars	11	0.005259395	0.005271603
Cars	21	0.326295184	0.32705261
Cars	31	0.445317468	0.446351179
Cars	32	0.148439156	0.148783726
Buses	41	0	0
Buses	42	0.00230521	0
Buses	43	0	0
Trucks	51	0.000142574	0.000142884
Trucks	52	0.010835601	0.010859148
Trucks	53	0.000855442	0.000857301
Trucks	54	0.002281179	0.002286136
Trucks	61	0.030882459	0.030949568
Trucks	62	0.027386331	0.027445843
Total		1	1

**CTA Ashland Ave BRT**  
**Intersection 1001: W Irving Park Rd**  
**Existing Conditions (No Build Alternative)**

**Volume Calculations**

Synchro ID	linkVolume	linkDescription	Intersection Endpoint
NBT	1143	N-FA (Ashland)	W Byron St
	925	N-TQ (N Ashland)	
	1204	N-FD (Ashland)	W Belle Plaine Ave
NBL	106	N-LQ (W Irving Park)	
NBR	112	N-RQ (E Irving Park)	
SBT	1233	S-FA (Ashland)	W Belle Plaine Ave
	988	S-TQ (S Ashland)	
	1301	S-FD (Ashland)	W Byron St
SBL	79	S-LQ (E Irving Park)	
SBR	166	S-RQ (W Irving Park)	
WBT	935	W-FA (Irving Park)	N Greenview Ave
	751	W-TQ (W Irving Park)	
WBL	1023	W-FD (Irving Park)	N Ravenswood Ave
WBR	133	W-LQ (S Ashland)	
	51	W-RQ (N Ashland)	
EBT	1199	E-FA (Irving Park)	N Ravenswood Ave
	791	E-TQ (E Irving Park)	
EBL	982	E-FD (Irving Park)	N Greenview Ave
EBR	228	E-LQ (N Ashland)	
	180	E-RQ (S Ashland)	
Total Volume		4492 (excluding buses)	

**MOVES Link Importer (AM Peak)**

1001 W Irving Park Rd

5:00 PM peak hour

linkID	countyID	zoneID	roadTypeID	linkLength	linkVolume	linkAvgSpeed	linkDescription	linkAvgGrade	Comments
1	17031	170310	5	0.13	1143	14.4	N-FA (Ashland)	0	
2	17031	170310	5	0.13	925	0	N-TQ (N Ashland)	0	
3	17031	170310	5	0.13	1204	14.4	N-FD (Ashland)	0	
4	17031	170310	5	0.13	106	0	N-LQ (W Irving Park)	0	
5	17031	170310	5	0.13	112	0	N-RQ (E Irving Park)	0	
6	17031	170310	5	0.13	1233	6.7	S-FA (Ashland)	0	
7	17031	170310	5	0.13	988	0	S-TQ (S Ashland)	0	
8	17031	170310	5	0.13	1301	6.7	S-FD (Ashland)	0	
9	17031	170310	5	0.13	79	0	S-LQ (E Irving Park)	0	
10	17031	170310	5	0.13	166	0	S-RQ (W Irving Park)	0	
11	17031	170310	5	0.08	935	9.4	W-FA (Irving Park)	0	
12	17031	170310	5	0.08	802	0	W-TQ (W Irving Park)	0	Includes WBT, WBR
13	17031	170310	5	0.25	1023	9.4	W-FD (Irving Park)	0	
14	17031	170310	5	0.08	133	0	W-LQ (S Ashland)	0	
15	17031	170310	5	0.25	1199	9.6	E-FA (Irving Park)	0	
16	17031	170310	5	0.25	791	0	E-TQ (E Irving Park)	0	
17	17031	170310	5	0.08	982	9.6	E-FD (Irving Park)	0	
18	17031	170310	5	0.25	228	0	E-LQ (N Ashland)	0	
19	17031	170310	5	0.25	180	0	E-RQ (S Ashland)	0	
Total Volume					4492 (excluding buses)				

Data Sources:

Volumes □ Ashland PM Existing Synchro Lanes Volumes Timing Report 2013-05-02.pdf  
 Ashland Avenue Arterial Speeds □ Ashland PM Arterial LOS 2013-05-02.pdf  
 Crossroad Speeds: Ashland PM Arterial LOS Cross Streets 2013-05-03.pdf

Link Volume Definitions:

Queue links based on Synchro output reports.  
 Approach volumes equal to all queue links for each direction (i.e., N-FA □ N-TQ □ N-LQ □ N-RQ)  
 Departure volumes equal to through queue link plus volumes from directions turning into traffic (e.g., N-FD □ N-TQ □ E-LQ □ W-RQ)

Note:

Because MOVES is calculating a gram per vehicle emission factor for queue links, the exact length of the queue is not important.

Legend

Estimated queue length  
 Contains bus volume  
 Calculated Value

Local Buses

	Volume	Fraction
Cars	4166	0.9255721
Trucks	326	0.0724283
Buses	9	0.0019996
<b>Total</b>	<b>4501</b>	<b>1</b>

ok



Category	Source Type	Fraction	
		Ashland Ave	Cross Streets
Cars	11	0.005260877	0.005271603
Cars	21	0.326387184	0.32705261
Cars	31	0.445443026	0.446351179
Cars	32	0.148481009	0.148783726
Buses	41	0	0
Buses	42	0.001999556	0
Buses	43	0	0
Trucks	51	0.000142662	0.000142884
Trucks	52	0.010842302	0.010859148
Trucks	53	0.000855971	0.000857301
Trucks	54	0.00228259	0.002286136
Trucks	61	0.030901557	0.030949568
Trucks	62	0.027403267	0.027445843
Total		1	1



**CTA Ashland Ave BRT  
Intersection 1094: W Roosevelt Rd  
Existing Conditions (No Build Alternative)**

MOVES Link Importer (AM Peak)			1094 W Roosevelt Rd				7:45 AM peak hour			
Synchro ID	linkID	countyID	zoneID	roadTypeID	linkLength	linkVolume	linkAvgSpeed	linkDescription	linkAvgGrade	Intersection Endpoint
NBT	1	17031	170310	5	0.12	1323		3.5 N-FA (Ashland)	0	W 13th St
	2	17031	170310	5	0.12	1085		0 N-TQ (N Ashland)	0	
	3	17031	170310	5	0.17	1431		3.5 N-FD (Ashland)	0	W Taylor St
NBL	4	17031	170310	5	0.12	130		0 N-LQ (W Roosevelt)	0	
NBR	5	17031	170310	5	0.12	108		0 N-RQ (E Roosevelt)	0	
SBT	6	17031	170310	5	0.17	1326		6.6 S-FA (Ashland)	0	W Taylor St
	7	17031	170310	5	0.17	1100		0 S-TQ (S Ashland)	0	
	8	17031	170310	5	0.12	1364		6.6 S-FD (Ashland)	0	W 13th St
SBL	9	17031	170310	5	0.17	130		0 S-LQ (E Roosevelt)	0	
SBR	10	17031	170310	5	0.17	96		0 S-RQ (W Roosevelt)	0	
WBT	11	17031	170310	5	0.25	2253		1.7 W-FA (Roosevelt)	0	S Loomis St
	12	17031	170310	5	0.25	1861		0 W-TQ (W Roosevelt)	0	
	13	17031	170310	5	0.13	2087		1.7 W-FD (Roosevelt)	0	S Paulina St
WBL	14	17031	170310	5	0.25	170		0 W-LQ (S Ashland)	0	
WBR	15	17031	170310	5	0.25	222		0 W-RQ (N Ashland)	0	
EBT	16	17031	170310	5	0.13	873		13.2 E-FA (Roosevelt)	0	S Paulina St
	17	17031	170310	5	0.13	655		0 E-TQ (E Roosevelt)	0	
	18	17031	170310	5	0.25	893		13.2 E-FD (Roosevelt)	0	S Loomis St
EBL	19	17031	170310	5	0.13	124		0 E-LQ (N Ashland)	0	
EBR	20	17031	170310	5	0.13	94		0 E-RQ (S Ashland)	0	
Total Volume						5755 (excluding buses)				

Data Sources:  
 Volumes □ Ashland AM Existing Synchro Lanes Volumes Timing Report 2013-05-02.pdf  
 Ashland Avenue Arterial Speeds □ Ashland AM Arterial LOS 2013-05-02.pdf  
 Crossroad Speeds: Ashland AM Arterial LOS Cross Streets 2013-05-03.pdf

Legend  
 Estimated queue length  
 Contains bus volume  
 Calculated Value

Local Buses	Volume	Fraction
10	Cars 5338	0.9259324
	Trucks 417	0.072333
	Buses 10	0.0017346
	<b>Total 5765</b>	<b>1</b>

ok

Category	Source Type	Fraction	
		Ashland Ave	Cross Streets
Cars	11	0.005262925	0.005271603
Cars	21	0.326514221	0.32705261
Cars	31	0.445616403	0.446351179
Cars	32	0.148538801	0.148783726
Buses	41	0	0
Buses	42	0.001734605	0
Buses	43	0	0
Trucks	51	0.000142474	0.000142884
Trucks	52	0.010828035	0.010859148
Trucks	53	0.000854845	0.000857301
Trucks	54	0.002279586	0.002286136
Trucks	61	0.030860895	0.030949568
Trucks	62	0.027367209	0.027445843
Total		1	1

**CTA Ashland Ave BRT**  
**Intersection 1094: W Roosevelt Rd**  
**Existing Conditions (No Build Alternative)**

MOVES Link Importer (PM Peak)		1094 W Roosevelt Rd				4:45 PM peak hour				
Synchro ID	linkID	countyID	zoneID	roadTypeID	linkLength	linkVolume	linkAvgSpeed	linkDescription	linkAvgGrade	Intersection Endpoint
NBT	1	17031	170310	5	0.12	1193		7.7 N-FA (Ashland)	0	W 13th St
	2	17031	170310	5	0.12	871		0 N-TQ (N Ashland)	0	
	3	17031	170310	5	0.17	1098		7.7 N-FD (Ashland)	0	W Taylor St
NBL	4	17031	170310	5	0.12	161		0 N-LQ (W Roosevelt)	0	
NBR	5	17031	170310	5	0.12	161		0 N-RQ (E Roosevelt)	0	
SBT	6	17031	170310	5	0.17	2127		1.5 S-FA (Ashland)	0	W Taylor St
	7	17031	170310	5	0.17	1815		0 S-TQ (S Ashland)	0	
	8	17031	170310	5	0.12	2205		1.5 S-FD (Ashland)	0	W 13th St
SBL	9	17031	170310	5	0.17	212		0 S-LQ (E Roosevelt)	0	
SBR	10	17031	170310	5	0.17	100		0 S-RQ (W Roosevelt)	0	
WBT	11	17031	170310	5	0.25	1476		4 W-FA (Roosevelt)	0	S Loomis St
	12	17031	170310	5	0.25	1150		0 W-TQ (W Roosevelt)	0	
	13	17031	170310	5	0.13	1411		4 W-FD (Roosevelt)	0	S Paulina St
WBL	14	17031	170310	5	0.25	199		0 W-LQ (S Ashland)	0	
WBR	15	17031	170310	5	0.25	127		0 W-RQ (N Ashland)	0	
EBT	16	17031	170310	5	0.13	1239		5.4 E-FA (Roosevelt)	0	S Paulina St
	17	17031	170310	5	0.13	948		0 E-TQ (E Roosevelt)	0	
	18	17031	170310	5	0.25	1321		5.4 E-FD (Roosevelt)	0	S Loomis St
EBL	19	17031	170310	5	0.13	100		0 E-LQ (N Ashland)	0	
EBR	20	17031	170310	5	0.13	191		0 E-RQ (S Ashland)	0	
Total Volume						6017 (excluding buses)				

Data Sources:

Volumes □ Ashland PM Existing Synchro Lanes Volumes Timing Report 2013-05-02.pdf  
 Ashland Avenue Arterial Speeds □ Ashland PM Arterial LOS 2013-05-02.pdf  
 Crossroad Speeds: Ashland PM Arterial LOS Cross Streets 2013-05-03.pdf

Legend

Estimated queue length  
 Contains bus volume

Calculated Value

Local Buses  
 9

	Volume	Fraction
Cars	5581	0.9261533
Trucks	436	0.0723531
Buses	9	0.0014935
<b>Total</b>	<b>6026</b>	<b>1</b>

*ok*

Category	Source Type	Fraction	
		Ashland Ave	Cross Streets
Cars	11	0.005264181	0.005271603
Cars	21	0.326592148	0.32705261
Cars	31	0.445722755	0.446351179
Cars	32	0.148574252	0.148783726
Buses	41	0	0
Buses	42	0.001493528	0
Buses	43	0	0
Trucks	51	0.000142514	0.000142884
Trucks	52	0.010831043	0.010859148
Trucks	53	0.000855082	0.000857301
Trucks	54	0.00228022	0.002286136
Trucks	61	0.030869467	0.030949568
Trucks	62	0.02737481	0.027445843
Total		1	1

Link Volume Definitions:

Queue links based on Synchro output reports.

Approach volumes equal to all queue links for each direction (i.e., N-FA □ N-TQ □ N-LQ □ N-RQ)

Departure volumes equal to through queue link plus volumes from directions turning into traffic (e.g., N-FD □ N-TQ □ E-LQ □ W-RQ)

Note:

Because MOVES is calculating a gram per vehicle emission factor for queue links, the exact length of the queue is not important.

**CTA Ashland Ave BRT**  
**Intersection 1011: W Belmont Ave / N Lincoln Ave**  
**Proposed Action (Build Alternative)**




**Volume Calculations**

Synchro ID	linkVolume	linkDescription	Intersection End Point
NBT	702	N-FA (Ashland)	W Barry Ave
	627	N-TQ (N Ashland)	
	727	N-FD (Ashland)	W School St
	12	N-FA-BUS (Ashland)	W Barry Ave
	12	N-TQ-BUS (Ashland)	
	12	N-FD-BUS (Ashland)	W School St
NBR	74	N-RQ (E Belmont)	
NBR2	1	N-RQ2 (SE Lincoln)	
SBT	597	S-FA (Ashland)	W School St
	544	S-TQ (S Ashland)	
	709	S-FD (Ashland)	W Barry Ave
	12	S-FA-BUS (Ashland)	W School St
	12	S-TQ-BUS (Ashland)	
	12	S-FD-BUS (Ashland)	W Barry Ave
SBR	53	S-RQ (W Belmont)	
WBT	484	W-FA (Belmont)	N Greenview Ave
	307	W-TQ (W Belmont)	
WBR	378	W-FD (Belmont)	N Paulina St
	143	W-RQ (NW Lincoln)	
WBR2	34	W-RQ2 (N Ashland)	
EBT	641	E-FA (Belmont)	N Paulina St
	489	E-TQ (E Belmont)	
EBL2	601	E-FD (Belmont)	N Greenview Ave
	4	E-LQ2 (NW Lincoln)	
EBR	105	E-RQ (SE Lincoln)	
EBR2	43	E-RQ2 (S Ashland)	
SET	501	SE-FA (Lincoln)	W School St
	350	SE-TQ (SE Lincoln)	
SEL	456	SE-FD (Lincoln)	W Barry Ave
	36	SE-LQ (E Belmont)	
SER	113	SE-RQ (S Ashland)	
SER2	2	SE-RQ2 (W Belmont)	
NWT	339	NW-FA (Lincoln)	W Barry Ave
	246	NW-TQ (NW Lincoln)	
NWL	393	NW-FD (Lincoln)	W School St
	16	NW-LQ (W Belmont)	
NWL2	9	NW-LQ2 (S Ashland)	
NWR	66	NW-RQ (N Ashland)	
NWR2	2	NW-RQ2 (E Belmont)	
<b>Total Volume</b>	<b>3258</b>	<b>(excluding buses)</b>	

Data Sources:  
 Volumes □ Ashland AM Existing Synchro Lanes Volumes Timing Report 2013-05-02.pdf  
 Ashland Avenue Arterial Speeds □ Ashland AM Arterial LOS 2013-05-02.pdf  
 Crossroad Speeds: Ashland AM Arterial LOS Cross Streets 2013-05-03.pdf

**MOVES Link Importer (AM Peak)**

1011 W Belmont Ave □ N Lincoln Ave										7:30 AM peak hour
linkID	countyID	zoneID	roadTypeID	linkLength	linkVolume	linkAvgSpeed	linkDescription	linkAvgGrade	Comments	
1	17031	170310	5	0.13	702		1.6 N-FA (Ashland)	0		
2	17031	170310	5	0.13	702		0 N-TQ (N Ashland)	0	Includes NBT, NBR, NBR2	
3	17031	170310	5	0.13	727		1.6 N-FD (Ashland)	0		
4	17031	170310	5	0.13	12		15.9 N-FA-BUS (Ashland)	0		
5	17031	170310	5	0.13	12		0 N-TQ-BUS (Ashland)	0		
6	17031	170310	5	0.13	12		15.9 N-FD-BUS (Ashland)	0		
7	17031	170310	5	0.13	597		5.1 S-FA (Ashland)	0		
8	17031	170310	5	0.13	597		0 S-TQ (S Ashland)	0	Includes SBT, SBR	
9	17031	170310	5	0.13	709		5.1 S-FD (Ashland)	0		
10	17031	170310	5	0.13	12		15.9 S-FA-BUS (Ashland)	0		
11	17031	170310	5	0.13	12		0 S-TQ-BUS (Ashland)	0		
12	17031	170310	5	0.13	12		15.9 S-FD-BUS (Ashland)	0		
13	17031	170310	5	0.12	484		7.2 W-FA (Belmont)	0		
14	17031	170310	5	0.12	307		0 W-TQ (W Belmont)	0		
15	17031	170310	5	0.13	378		7.2 W-FD (Belmont)	0		
16	17031	170310	5	0.12	177		0 W-RQ (NW Lincoln)	0	Includes WBR, WBR2	
17	17031	170310	5	0.13	641		1.7 E-FA (Belmont)	0		
18	17031	170310	5	0.13	641		0 E-TQ (E Belmont)	0	Includes EBT, EBL2, EBR, EBR2	
19	17031	170310	5	0.12	601		1.7 E-FD (Belmont)	0		
20	17031	170310	5	0.15	501		1.4 SE-FA (Lincoln)	0		
21	17031	170310	5	0.15	465		0 SE-TQ (SE Lincoln)	0	Includes SET, SER, SER2	
22	17031	170310	5	0.18	456		1.4 SE-FD (Lincoln)	0		
23	17031	170310	5	0.15	36		0 SE-LQ (E Belmont)	0		
24	17031	170310	5	0.18	339		3.5 NW-FA (Lincoln)	0		
25	17031	170310	5	0.18	314		0 NW-TQ (NW Lincoln)	0	Includes NWT, NWR, NWR2	
26	17031	170310	5	0.15	393		3.5 NW-FD (Lincoln)	0		
27	17031	170310	5	0.18	25		0 NW-LQ (W Belmont)	0	Includes NWL, NWL2	
<b>Total Volume</b>					<b>3258 (excluding buses)</b>					

**Legend**  
 Estimated queue length  
 Contains bus volume  
 New project links  
**Calculated Value**

**Peak Bus Volume**  
 Local 3  
 BRT 12

**Ashland Avenue (non-BRT)**

	Volume	Fraction
Cars	2971	0.91107
Trucks	287	0.08801
Buses	3	0.00092
<b>Total</b>	<b>3261</b>	<b>1</b>

ok

**Cars Trucks Split**

Cars	0.91191
Trucks	0.08809
<b>Total</b>	<b>1</b>

**Notes:**  
 No change to truck volume from No Build Alternative  
 Car volume equal to difference between total non-bus volume and truck volume

Category	Source Type	Fraction			
		Ashland Ave	BRT	Cross Streets	
Cars	11	0.00517845	0	0	0.005183218
Cars	21	0.321273346	0	0	0.321569178
Cars	31	0.438463821	0	0	0.438867563
Cars	32	0.146154607	0	0	0.146289188
Buses	41	0	0	0	0
Buses	42	0.000919963	1	0	0
Buses	43	0	0	0	0
Trucks	51	0.000173353	0	0	0.000173512
Trucks	52	0.0131748	0	0	0.013186931
Trucks	53	0.001040116	0	0	0.001041074
Trucks	54	0.002773642	0	0	0.002776196
Trucks	61	0.037549388	0	0	0.037583964
Trucks	62	0.033298514	0	0	0.033329176
<b>Total</b>		<b>1</b>	<b>1</b>	<b>1</b>	<b>1</b>

**CTA Ashland Ave BRT**  
**Intersection 1011: W Belmont Ave / N Lincoln Ave**  
**Proposed Action (Build Alternative)**

**Volume Calculations**

Synchro ID	linkVolume	linkDescription	Intersection End Point
NBT	689	N-FA (Ashland)	W Barry Ave
	599	N-TQ (N Ashland)	
	771	N-FD (Ashland)	W School St
	12	N-FA-BUS (Ashland)	W Barry Ave
	12	N-TQ-BUS (Ashland)	
NBR NBR2	12	N-FD-BUS (Ashland)	W School St
	89	N-RQ (E Belmont)	
	1	N-RQ2 (SE Lincoln)	
SBT	544	S-FA (Ashland)	W School St
	474	S-TQ (S Ashland)	
	631	S-FD (Ashland)	W Barry Ave
	12	S-FA-BUS (Ashland)	W School St
	12	S-TQ-BUS (Ashland)	
SBR SBR2	12	S-FD-BUS (Ashland)	W Barry Ave
	68	S-RQ (W Belmont)	
	2	S-RQ2 (NW Lincoln)	
WBT WBL WBR WBR2	650	W-FA (Belmont)	N Greenview Ave
	401	W-TQ (W Belmont)	
	512	W-FD (Belmont)	N Paulina St
	4	W-LQ (S Ashland)	
EBT	167	W-RQ (NW Lincoln)	
	78	W-RQ2 (N Ashland)	
	570	E-FA (Belmont)	N Paulina St
EBR EBR2	466	E-TQ (E Belmont)	N Greenview Ave
	611	E-FD (Belmont)	
	69	E-RQ (SE Lincoln)	
SET SEL SER SER2	35	E-RQ2 (S Ashland)	
	429	SE-FA (Lincoln)	W School St
	262	SE-TQ (SE Lincoln)	
	332	SE-FD (Lincoln)	W Barry Ave
	49	SE-LQ (E Belmont)	
NWT NWL NWL2 NWR NWR2	3	SE-LQ2 (N Ashland)	
	103	SE-RQ (S Ashland)	
	12	SE-RQ2 (W Belmont)	
NWL NWL2 NWR NWR2	410	NW-FA (Lincoln)	W Barry Ave
	266	NW-TQ (NW Lincoln)	
	435	NW-FD (Lincoln)	W School St
	31	NW-LQ (W Belmont)	
	15	NW-LQ2 (S Ashland)	
Total Volume	91	NW-RQ (N Ashland)	
	7	NW-RQ2 (E Belmont)	
Total Volume		3286 (excluding buses)	

**MOVES Link Importer (PM Peak)**

linkID	countyID	zoneID	roadTypeID	linkLength	linkVolume	linkAvgSpeed	linkDescription	linkAvgGrade	Comments
1	17031	170310	5	0.13	689	1.8	N-FA (Ashland)	0	
2	17031	170310	5	0.13	689	0	N-TQ (N Ashland)	0	Includes NBT, NBR, NBR2
3	17031	170310	5	0.13	771	1.8	N-FD (Ashland)	0	
4	17031	170310	5	0.13	12	15.9	N-FA-BUS (Ashland)	0	
5	17031	170310	5	0.13	12	0	N-TQ-BUS (Ashland)	0	
6	17031	170310	5	0.13	12	15.9	N-FD-BUS (Ashland)	0	
7	17031	170310	5	0.13	544	8	S-FA (Ashland)	0	
8	17031	170310	5	0.13	544	0	S-TQ (S Ashland)	0	Includes SBT, SBR, SBR2
9	17031	170310	5	0.13	631	8	S-FD (Ashland)	0	
10	17031	170310	5	0.13	12	15.9	S-FA-BUS (Ashland)	0	
11	17031	170310	5	0.13	12	0	S-TQ-BUS (Ashland)	0	
12	17031	170310	5	0.13	12	15.9	S-FD-BUS (Ashland)	0	
13	17031	170310	5	0.12	650	1.7	W-FA (Belmont)	0	
14	17031	170310	5	0.12	405	0	W-TQ (W Belmont)	0	Includes WBT, WBL
15	17031	170310	5	0.13	512	1.7	W-FD (Belmont)	0	
16	17031	170310	5	0.12	245	0	W-RQ (NW Lincoln)	0	Includes WBR, WBR2
17	17031	170310	5	0.13	570	2.5	E-FA (Belmont)	0	
18	17031	170310	5	0.13	570	0	E-TQ (E Belmont)	0	Includes EBT, EBR, EBR2
19	17031	170310	5	0.12	611	2.5	E-FD (Belmont)	0	
20	17031	170310	5	0.15	429	1.7	SE-FA (Lincoln)	0	
21	17031	170310	5	0.15	377	0	SE-TQ (SE Lincoln)	0	Includes SET, SER, SER2
22	17031	170310	5	0.18	332	1.7	SE-FD (Lincoln)	0	
23	17031	170310	5	0.15	52	0	SE-LQ (E Belmont)	0	Includes SEL, SEL2
24	17031	170310	5	0.18	410	1.9	NW-FA (Lincoln)	0	
25	17031	170310	5	0.18	364	0	NW-TQ (NW Lincoln)	0	
26	17031	170310	5	0.15	435	1.9	NW-FD (Lincoln)	0	
27	17031	170310	5	0.18	46	0	NW-LQ (W Belmont)	0	Includes NWL, NWL2
Total Volume					3286 (excluding buses)				

**Legend**

- Estimated queue length
- Contains bus volume
- New project links
- Change in links from AM peak hour
- Calculated Value

**Peak Bus Volume**

Local	3
BRT	12

**Ashland Avenue (non-BRT)**

	Volume	Fraction
Cars	3002	0.912739
Trucks	284	0.086348
Buses	3	0.000912
<b>Total</b>	<b>3289</b>	<b>1</b>

**Cars Trucks Split**

Cars	0.913573
Trucks	0.086427
<b>Total</b>	<b>1</b>

Category	Source Type	Fraction		
		Ashland Ave	BRT	Cross Streets
Cars	11	0.005187938	0	0.005192674
Cars	21	0.321861965	0	0.322155813
Cars	31	0.439267149	0	0.439668184
Cars	32	0.146422383	0	0.146556061
Buses	41	0	0	0
Buses	42	0.000912131	1	0
Buses	43	0	0	0
Trucks	51	0.00017008	0	0.000170235
Trucks	52	0.012926096	0	0.012937897
Trucks	53	0.001020481	0	0.001021413
Trucks	54	0.002721283	0	0.002723768
Trucks	61	0.036840561	0	0.036874195
Trucks	62	0.032669932	0	0.032699758
<b>Total</b>		<b>1</b>	<b>1</b>	<b>1</b>

**Data Sources:**  
 Volumes □ Ashland PM Existing Synchro Lanes Volumes Timing Report 2013-05-02.pdf  
 Ashland Avenue Arterial Speeds □ Ashland PM Arterial LOS 2013-05-02.pdf  
 Crossroad Speeds: Ashland PM Arterial LOS Cross Streets 2013-05-03.pdf

**Link Volume Definitions:**  
 Queue links based on Synchro output reports.  
 Approach volumes equal to all queue links for each direction (e.g., N-FA □ N-TQ □ N-LQ □ N-RQ)  
 Departure volumes equal to through queue link plus volumes from directions turning into traffic (e.g., N-FD □ N-TQ □ E-LQ □ W-RQ)

**Note:**  
 Because MOVES is calculating a gram per vehicle emission factor for queue links, the exact length of the queue is not important.

**Notes:**  
 No change to truck volume from No Build Alternative  
 Car volume equal to difference between total non-bus volume and truck volume

**CTA Ashland Ave BRT  
Intersection 1109: W Cermak Rd  
Proposed Action (Build Alternative)**

**Volume Calculations**

Synchro ID	linkVolume	linkDescription	Intersection Endpoint
NBT	778	N-FA (Ashland)	S Archer Ave
	696	N-TQ (N Ashland)	
	1154	N-FD (Ashland)	W 21st Pl
	12	N-FA-BUS (Ashland)	S Archer Ave
	12	N-TQ-BUS (Ashland)	
	12	N-FD-BUS (Ashland)	W 21st Pl
NBR	82	N-RQ (E Cermak)	
SBT	613	S-FA (Ashland)	W 21st Pl
	479	S-TQ (S Ashland)	
	660	S-FD (Ashland)	S Archer Ave
	12	S-FA-BUS (Ashland)	W 21st Pl
	12	S-TQ-BUS (Ashland)	
	12	S-FD-BUS (Ashland)	S Archer Ave
SBR	108	S-RQ (SW Blue Island)	
SBR2	26	S-RQ2 (W Cermak)	
WBT	852	W-FA (Cermak)	S Laffin St
	495	W-TQ (W Cermak)	
WBL	521	W-FD (Cermak)	S Paulina St
	92	W-LQ (SW Blue Island)	
WBL2	92	W-LQ2 (S Ashland)	
WBR	173	W-RQ (N Ashland)	
EBT	457	E-FA (Cermak)	S Paulina St
	328	E-TQ (E Cermak)	
EBL	614	E-FD (Cermak)	S Laffin St
	77	E-LQ (N Ashland)	
EBR	52	E-RQ (S Ashland)	
NEL	449	NE-FA (Blue Island)	S Paulina St
	208	NE-LQ (N Ashland)	
NER	204	NE-RQ (E Cermak)	
NER2	37	NE-RQ2 (S Ashland)	
	200	SW-FD (Blue Island)	S Paulina St
Total Volume		3143 (excluding buses)	

Data Sources:  
 Volumes □ Ashland AM Existing Synchro Lanes Volumes Timing Report 2013-05-02.pdf  
 Ashland Avenue Arterial Speeds □ Ashland AM Arterial LOS 2013-05-02.pdf  
 Crossroad Speeds: Ashland AM Arterial LOS Cross Streets 2013-05-03.pdf

**MOVES Link Importer (AM Peak)**

1109 W Cermak Rd 7:15 AM peak hour

linkID	countyID	zoneID	roadTypeID	linkLength	linkVolume	linkAvgSpeed	linkDescription	linkAvgGrade	Comments
1	17031	170310	5	1.01	778	1.8	N-FA (Ashland)	0	
2	17031	170310	5	1.01	778	0	N-TQ (N Ashland)	0	Includes NBT, NBR
3	17031	170310	5	0.12	1154	1.8	N-FD (Ashland)	0	
4	17031	170310	5	1.01	12	15.9	N-FA-BUS (Ashland)	0	
5	17031	170310	5	1.01	12	0	N-TQ-BUS (Ashland)	0	
6	17031	170310	5	1.01	12	15.9	N-FD-BUS (Ashland)	0	
7	17031	170310	5	0.12	613	8.6	S-FA (Ashland)	0	
8	17031	170310	5	0.12	613	0	S-TQ (S Ashland)	0	Includes SBT, SBR, SBR2
9	17031	170310	5	1.01	660	8.6	S-FD (Ashland)	0	
10	17031	170310	5	0.12	12	15.9	S-FA-BUS (Ashland)	0	
11	17031	170310	5	0.12	12	0	S-TQ-BUS (Ashland)	0	
12	17031	170310	5	0.12	12	15.9	S-FD-BUS (Ashland)	0	
13	17031	170310	5	0.12	852	4.4	W-FA (Cermak)	0	
14	17031	170310	5	0.12	668	0	W-TQ (W Cermak)	0	Includes WBT, WBR
15	17031	170310	5	0.13	521	4.4	W-FD (Cermak)	0	
16	17031	170310	5	0.12	184	0	W-LQ (SW Blue Island)	0	Includes WBL, WBL2
17	17031	170310	5	0.13	457	6.4	E-FA (Cermak)	0	
18	17031	170310	5	0.13	380	0	E-TQ (E Cermak)	0	Includes EBT, EBR
19	17031	170310	5	0.12	614	6.4	E-FD (Cermak)	0	
20	17031	170310	5	0.13	77	0	E-LQ (N Ashland)	0	
21	17031	170310	5	0.14	449	1.5	NE-FA (Blue Island)	0	
22	17031	170310	5	0.14	208	0	NE-LQ (N Ashland)	0	
23	17031	170310	5	0.14	241	0	NE-RQ (E Cermak)	0	Includes NER, NER2
24	17031	170310	5	0.14	200	1.5	SW-FD (Blue Island)	0	
Total Volume					3143 (excluding buses)				

**Legend**

- Estimated queue length
- Contains bus volume
- New project links
- Calculated Value

**Peak Bus Volume**

Local	3
BRT	12

**Ashland Avenue (non-BRT)**

	Volume	Fraction
Cars	2881	0.915766052
Trucks	262	0.083280356
Buses	3	0.000953592
<b>Total</b>	<b>3146</b>	<b>1</b>

ok

**Cars/Trucks Split**

Cars	0.91664
Trucks	0.08336
<b>Total</b>	<b>1</b>

**Notes:**

No change to truck volume from No Build Alternative

Car volume equal to difference between total non-bus volume and truck volume

Category	Source Type	Fraction		
		Ashland Ave	BRT	Cross Streets
Cars	11	0.005205141	0	0.005210109
Cars	21	0.32292925	0	0.323237487
Cars	31	0.440723746	0	0.441144418
Cars	32	0.146907915	0	0.147048139
Buses	41	0	0	0
Buses	42	0.000953592	1	0
Buses	43	0	0	0
Trucks	51	0.000164037	0	0.000164194
Trucks	52	0.012466814	0	0.012478714
Trucks	53	0.000984222	0	0.000985162
Trucks	54	0.002624593	0	0.002627098
Trucks	61	0.035531566	0	0.035565481
Trucks	62	0.031509124	0	0.0315392
<b>Total</b>		<b>1</b>	<b>1</b>	<b>1</b>

**CTA Ashland Ave BRT  
Intersection 1109: W Cermak Rd  
Proposed Action (Build Alternative)**

**Volume Calculations**

Synchro ID	linkVolume	linkDescription	Intersection Endpoint
NBT	760	N-FA (Ashland)	S Archer Ave
	686	N-TQ (N Ashland)	
	909	N-FD (Ashland)	W 21st Pl
	12	N-FA-BUS (Ashland)	S Archer Ave
	12	N-TQ-BUS (Ashland)	
	12	N-FD-BUS (Ashland)	W 21st Pl
	74	N-RQ (E Cermak)	
NBR	659	S-FA (Ashland)	W 21st Pl
	552	S-TQ (S Ashland)	
	770	S-FD (Ashland)	S Archer Ave
	12	S-FA-BUS (Ashland)	W 21st Pl
	12	S-TQ-BUS (Ashland)	
	12	S-FD-BUS (Ashland)	S Archer Ave
	76	S-RQ (SW Blue Island)	
SBR	31	S-RQ2 (W Cermak)	
SBR2	756	W-FA (Cermak)	S Laffin St
	455	W-TQ (W Cermak)	
	490	W-FD (Cermak)	S Paulina St
	172	W-LQ (SW Blue Island)	
WBL	84	W-LQ2 (S Ashland)	
	45	W-RQ (N Ashland)	
	486	E-FA (Cermak)	S Paulina St
EBT	318	E-TQ (E Cermak)	
	551	E-FD (Cermak)	S Laffin St
	81	E-LQ (N Ashland)	
EBL	87	E-RQ (S Ashland)	
	307	NE-FA (Blue Island)	S Paulina St
NEL	97	NE-LQ (N Ashland)	
	4	NE-LQ2 (W Cermak)	
NEL2	159	NE-RQ (E Cermak)	
NER	47	NE-RQ2 (S Ashland)	
NER2	248	SW-FD (Blue Island)	S Paulina St
Total Volume		2962 (excluding buses)	

**Data Sources:**

Volumes □ Ashland PM Existing Synchro Lanes Volumes Timing Report 2013-05-02.pdf  
 Ashland Avenue Arterial Speeds □ Ashland PM Arterial LOS 2013-05-02.pdf  
 Crossroad Speeds: Ashland PM Arterial LOS Cross Streets 2013-05-03.pdf

**Link Volume Definitions:**

Queue links based on Synchro output reports.

Approach volumes equal to all queue links for each direction (i.e., N-FA □ N-TQ □ N-LQ □ N-RQ)

Departure volumes equal to through queue link plus volumes from directions turning into traffic (e.g., N-FD □ N-TQ □ E-LQ □ W-RQ)

**Note:**

Because MOVES is calculating a gram per vehicle emission factor for queue links, the exact length of the queue is not important.

**MOVES Link Importer (PM Peak)**

1109 W Cermak Rd 4:30 PM peak hour

linkID	countyID	zoneID	roadTypeID	linkLength	linkVolume	linkAvgSpeed	linkDescription	linkAvgGrade	Comments
1	17031	170310	5	1.01	760		2 N-FA (Ashland)	0	
2	17031	170310	5	1.01	760		0 N-TQ (N Ashland)	0	Includes NBT, NBR
3	17031	170310	5	0.12	909		2 N-FD (Ashland)	0	
4	17031	170310	5	1.01	12	15.9	15.9 N-FA-BUS (Ashland)	0	
5	17031	170310	5	1.01	12		0 N-TQ-BUS (Ashland)	0	
6	17031	170310	5	1.01	12	15.9	15.9 N-FD-BUS (Ashland)	0	
7	17031	170310	5	0.12	659		8.9 S-FA (Ashland)	0	
8	17031	170310	5	0.12	659		0 S-TQ (S Ashland)	0	Includes SBT, SBR, SBR2
9	17031	170310	5	1.01	770		8.9 S-FD (Ashland)	0	
10	17031	170310	5	0.12	12	15.9	15.9 S-FA-BUS (Ashland)	0	
11	17031	170310	5	0.12	12		0 S-TQ-BUS (Ashland)	0	
12	17031	170310	5	0.12	12	15.9	15.9 S-FD-BUS (Ashland)	0	
13	17031	170310	5	0.12	756		8 W-FA (Cermak)	0	
14	17031	170310	5	0.12	500		0 W-TQ (W Cermak)	0	Includes WBT, WBR
15	17031	170310	5	0.13	490		8 W-FD (Cermak)	0	
16	17031	170310	5	0.12	256		0 W-LQ (SW Blue Island)	0	Includes WBL, WBL2
17	17031	170310	5	0.13	486		6.5 E-FA (Cermak)	0	
18	17031	170310	5	0.13	405		0 E-TQ (E Cermak)	0	Includes EBT, EBR
19	17031	170310	5	0.12	551		6.5 E-FD (Cermak)	0	
20	17031	170310	5	0.13	81		0 E-LQ (N Ashland)	0	
21	17031	170310	5	0.14	307		5.2 NE-FA (Blue Island)	0	
22	17031	170310	5	0.14	101		0 NE-LQ (N Ashland)	0	Includes NEL, NEL2
23	17031	170310	5	0.14	206		0 NE-RQ (E Cermak)	0	Includes NER, NER2
24	17031	170310	5	0.14	248		5.2 SW-FD (Blue Island)	0	
Total Volume					2962 (excluding buses)				

**Legend**

- Estimated queue length
- Link not included in AM peak hour
- Contains bus volume
- New project links
- Calculated Value

**Peak Bus Volume**

Local 3  
BRT 12

**Ashland Avenue (non-BRT)**

	Volume	Fraction
Cars	2694	0.908600337
Trucks	268	0.090387858
Buses	3	0.001011804
<b>Total</b>	<b>2965</b>	<b>1</b>

ok

**Cars/Trucks Split**

Cars 0.909521  
Trucks 0.090479  
**Total 1**

**Notes:**

No change to truck volume from No Build Alternative  
Car volume equal to difference between total non-bus volume and truck volume

Category	Source Type	Fraction		
		Ashland Ave	BRT	Cross Streets
Cars	11	0.005164411	0	0.005169642
Cars	21	0.320402383	0	0.320726896
Cars	31	0.437275157	0	0.437718042
Cars	32	0.145758386	0	0.145906014
Buses	41	0	0	0
Buses	42	0.001011804	1	0
Buses	43	0	0	0
Trucks	51	0.000178037	0	0.000178217
Trucks	52	0.013530786	0	0.01354449
Trucks	53	0.00106822	0	0.001069302
Trucks	54	0.002848586	0	0.002851472
Trucks	61	0.038563982	0	0.03860304
Trucks	62	0.034198248	0	0.034232885
<b>Total</b>		<b>1</b>	<b>1</b>	<b>1</b>

**CTA Ashland Ave BRT  
Intersection 1018: W Diversey Pkwy  
Proposed Action (Build Alternative)**

**Volume Calculations**

Synchro ID	linkVolume	linkDescription	Intersection Endpoint
NBT	691	N-FA (Ashland)	W Wrightwood Ave
	607	N-TQ (N Ashland)	
	859	N-FD (Ashland)	W Wolfram St
	12	N-FA-BUS (Ashland)	W Wrightwood Ave
	12	N-TQ-BUS (Ashland)	
	12	N-FD-BUS (Ashland)	W Wolfram St
NBR	84	N-RQ (E Diversey)	
SBT	1065	S-FA (Ashland)	W Wolfram St
	997	S-TQ (S Ashland)	
	1208	S-FD (Ashland)	W Wrightwood Ave
	12	S-FA-BUS (Ashland)	W Wolfram St
	12	S-TQ-BUS (Ashland)	
	12	S-FD-BUS (Ashland)	W Wrightwood Ave
SBR	68	S-RQ (W Diversey)	
WBT	696	W-FA (Diversey)	N Greenview Ave
	492	W-TQ (W Diversey)	
WBL	560	W-FD (Diversey)	N Paulina St
WBR	136	W-LQ (S Ashland)	
EBT	68	W-RQ (N Ashland)	
	1039	E-FA (Diversey)	N Paulina St
	780	E-TQ (E Diversey)	
EBL	864	E-FD (Diversey)	N Greenview Ave
EBR	184	E-LQ (N Ashland)	
	75	E-RQ (S Ashland)	
Total Volume		3,485 (excluding buses)	

Data Sources:

Volumes □ Ashland AM Existing Synchro Lanes Volumes Timing Report 2013-05-02.pdf  
 Ashland Avenue Arterial Speeds □ Ashland AM Arterial LOS 2013-05-02.pdf  
 Crossroad Speeds: Ashland AM Arterial LOS Cross Streets 2013-05-03.pdf

Legend

- Estimated queue length
- Contains bus volume
- New project links

**Calculated Value**

Peak Bus Volume

Local	3
BRT	12

**MOVES Link Importer (AM Peak)**

1018 W Diversey Pkwy

7:15 AM peak hour

linkID	countyID	zoneID	roadTypeID	linkLength	linkVolume	linkAvgSpeed	linkDescription	linkAvgGrade	Comments	
1	17031	170310	5	0.25	691	2.1	N-FA (Ashland)	0	Includes NBT, NBR	
2	17031	170310	5	0.25	691	0	N-TQ (N Ashland)	0		
3	17031	170310	5	0.06	859	2.1	N-FD (Ashland)	0		
4	17031	170310	5	0.25	12	15.9	N-FA-BUS (Ashland)	0		
5	17031	170310	5	0.25	12	0	N-TQ-BUS (Ashland)	0		
6	17031	170310	5	0.06	12	15.9	N-FD-BUS (Ashland)	0		
7	17031	170310	5	0.06	1065	3.7	S-FA (Ashland)	0	Includes SBT, SBR	
8	17031	170310	5	0.06	1065	0	S-TQ (S Ashland)	0		
9	17031	170310	5	0.25	1208	3.7	S-FD (Ashland)	0		
10	17031	170310	5	0.06	12	15.9	S-FA-BUS (Ashland)	0		
11	17031	170310	5	0.06	12	0	S-TQ-BUS (Ashland)	0		
12	17031	170310	5	0.25	12	15.9	S-FD-BUS (Ashland)	0		
13	17031	170310	5	0.13	696	3.6	W-FA (Diversey)	0		
14	17031	170310	5	0.13	492	0	W-TQ (W Diversey)	0		
15	17031	170310	5	0.13	560	3.6	W-FD (Diversey)	0		
16	17031	170310	5	0.13	136	0	W-LQ (S Ashland)	0		
17	17031	170310	5	0.13	68	0	W-RQ (N Ashland)	0		
18	17031	170310	5	0.13	1039	1.4	E-FA (Diversey)	0		
19	17031	170310	5	0.13	780	0	E-TQ (E Diversey)	0		
20	17031	170310	5	0.13	864	1.4	E-FD (Diversey)	0		
21	17031	170310	5	0.13	184	0	E-LQ (N Ashland)	0		
22	17031	170310	5	0.13	75	0	E-RQ (S Ashland)	0		
Total Volume					3,485 (excluding buses)					

Ashland Avenue (non-BRT)

	Volume	Fraction
Cars	3,144	0.9013761
Trucks	341	0.0977638
Buses	3	0.0008601
<b>Total</b>	<b>3488</b>	<b>1</b>

ok

Cars/Trucks Split

Cars	0.902152
Trucks	0.097848
<b>Total</b>	<b>1</b>

Category	Source Type	Fraction		
		Ashland Ave	BRT	Cross Streets
Cars	11	0.00512335	0	0.00512776
Cars	21	0.317854896	0	0.318128516
Cars	31	0.433798426	0	0.434171854
Cars	32	0.144599475	0	0.144723951
Buses	41	0	0	0
Buses	42	0.000860092	1	0
Buses	43	0	0	0
Trucks	51	0.000192565	0	0.000192731
Trucks	52	0.014634936	0	0.014647534
Trucks	53	0.00115539	0	0.001156384
Trucks	54	0.003081039	0	0.003083691
Trucks	61	0.041710911	0	0.041746817
Trucks	62	0.036988921	0	0.037020762
Total		1	1	1

**CTA Ashland Ave BRT**  
**Intersection 1018: W Diversey Pkwy**  
**Proposed Action (Build Alternative)**

**Volume Calculations**

Synchro ID	linkVolume	linkDescription	Intersection Endpoint
NBT	862	N-FA (Ashland)	W Wrightwood Ave
	774	N-TQ (N Ashland)	
	1035	N-FD (Ashland)	W Wolfram St
	12	N-FA-BUS (Ashland)	W Wrightwood Ave
	12	N-TQ-BUS (Ashland)	
	12	N-FD-BUS (Ashland)	W Wolfram St
NBR	88	N-RQ (E Diversey)	
SBT	1303	S-FA (Ashland)	W Wolfram St
	1218	S-TQ (S Ashland)	
	1410	S-FD (Ashland)	W Wrightwood Ave
	12	S-FA-BUS (Ashland)	W Wolfram St
	12	S-TQ-BUS (Ashland)	
	12	S-FD-BUS (Ashland)	W Wrightwood Ave
SBR	85	S-RQ (W Diversey)	
WBT	945	W-FA (Diversey)	N Greenview Ave
	701	W-TQ (W Diversey)	
WBL	786	W-FD (Diversey)	N Paulina St
	152	W-LQ (S Ashland)	
WBR	92	W-RQ (N Ashland)	
EBT	791	E-FA (Diversey)	N Paulina St
	582	E-TQ (E Diversey)	
EBL	670	E-FD (Diversey)	N Greenview Ave
	169	E-LQ (N Ashland)	
EBR	40	E-RQ (S Ashland)	
Total Volume		3895 (excluding buses)	

**MOVES Link Importer (PM Peak)**

1018 W Diversey Pkwy

5:15 PM peak hour

linkID	countyID	zoneID	roadTypeID	linkLength	linkVolume	linkAvgSpeed	linkDescription	linkAvgGrade	Comments
1	17031	170310	5	0.2485491	862	1.7	N-FA (Ashland)	0	
2	17031	170310	5	0.2485491	862	0	N-TQ (N Ashland)	0	Includes NBT, NBR
3	17031	170310	5	0.06082	1035	1.7	N-FD (Ashland)	0	
4	17031	170310	5	0.2485491	12	15.9	N-FA-BUS (Ashland)	0	
5	17031	170310	5	0.2485491	12	0	N-TQ-BUS (Ashland)	0	
6	17031	170310	5	0.06082	12	15.9	N-FD-BUS (Ashland)	0	
7	17031	170310	5	0.06082	1303	2.4	S-FA (Ashland)	0	
8	17031	170310	5	0.06082	1303	0	S-TQ (S Ashland)	0	Includes SBT, SBR
9	17031	170310	5	0.2485491	1410	2.4	S-FD (Ashland)	0	
10	17031	170310	5	0.06082	12	15.9	S-FA-BUS (Ashland)	0	
11	17031	170310	5	0.06082	12	0	S-TQ-BUS (Ashland)	0	
12	17031	170310	5	0.2485491	12	15.9	S-FD-BUS (Ashland)	0	
13	17031	170310	5	0.1252066	945	1.6	W-FA (Diversey)	0	
14	17031	170310	5	0.1252066	701	0	W-TQ (W Diversey)	0	
15	17031	170310	5	0.1252066	786	1.6	W-FD (Diversey)	0	
16	17031	170310	5	0.1252066	152	0	W-LQ (S Ashland)	0	
17	17031	170310	5	0.1252066	92	0	W-RQ (N Ashland)	0	
18	17031	170310	5	0.1252066	791	2.5	E-FA (Diversey)	0	
19	17031	170310	5	0.1252066	582	0	E-TQ (E Diversey)	0	
20	17031	170310	5	0.1252066	670	2.5	E-FD (Diversey)	0	
21	17031	170310	5	0.1252066	169	0	E-LQ (N Ashland)	0	
22	17031	170310	5	0.1252066	40	0	E-RQ (S Ashland)	0	
Total Volume					3895 (excluding buses)				

**Data Sources:**

Volumes □ Ashland PM Existing Synchro Lanes Volumes Timing Report 2013-05-02.pdf  
 Ashland Avenue Arterial Speeds □ Ashland PM Arterial LOS 2013-05-02.pdf  
 Crossroad Speeds: Ashland PM Arterial LOS Cross Streets 2013-05-03.pdf

Legend Estimated queue length

Estimated queue length

Contains bus volume

New project links

Calculated Value

**Peak Bus Volume**

Local	3
BRT	12

**Link Volume Definitions:**

Queue links based on Synchro output reports.

Approach volumes equal to all queue links for each direction (i.e., N-FA □ N-TQ □ N-LQ □ N-RQ)

Departure volumes equal to through queue link plus volumes from directions turning into traffic (e.g., N-FD □ N-TQ □ E-LQ □ W-RQ)

**Note:**

Because MOVES is calculating a gram per vehicle emission factor for queue links, the exact length of the queue is not important.

**Ashland Avenue (non-BRT)**

	Volume	Fraction
Cars	3,538	0.9076449
Trucks	357	0.0915854
Buses	3	0.0007696
<b>Total</b>	<b>3898</b>	<b>1</b>

ok

**Cars Trucks Split**

Cars	0.908344
Trucks	0.091656
<b>Total</b>	<b>1</b>

**Notes:**

No change to truck volume from No Build Alternative

Car volume equal to difference between total non-bus volume and truck volume

Category	Source Type	Fraction		
		Ashland Ave	BRT	Cross Streets
Cars	11	0.005158981	0	0.005162955
Cars	21	0.320065481	0	0.320312001
Cars	31	0.436815363	0	0.437151806
Cars	32	0.145605121	0	0.145717269
Buses	41	0	0	0
Buses	42	0.000769625	1	0
Buses	43	0	0	0
Trucks	51	0.000180396	0	0.000180534
Trucks	52	0.013710058	0	0.013720618
Trucks	53	0.001082373	0	0.001083207
Trucks	54	0.002886328	0	0.002888551
Trucks	61	0.039074925	0	0.039105021
Trucks	62	0.034651349	0	0.034678038
Total		1	1	1



**CTA Ashland Ave BRT**  
**Intersection 1001: W Irving Park Rd**  
**Proposed Action (Build Alternative)**

**Volume Calculations**

Synchro ID	linkVolume	linkDescription	Intersection Endpoint
NBT	644	N-FA (Ashland)	W Byron St
	572	N-TQ (N Ashland)	
	827	N-FD (Ashland)	W Belle Plaine Ave
	12	N-FA-BUS (Ashland)	W Byron St
	12	N-TQ-BUS (Ashland)	
	12	N-FD-BUS (Ashland)	W Belle Plaine Ave
NBR	72	N-RQ (E Irving Park)	
SBT	922	S-FA (Ashland)	W Belle Plaine Ave
	811	S-TQ (S Ashland)	
	1077	S-FD (Ashland)	W Byron St
	12	S-FA-BUS (Ashland)	W Belle Plaine Ave
	12	S-TQ-BUS (Ashland)	
	12	S-FD-BUS (Ashland)	W Byron St
SBR	111	S-RQ (W Irving Park)	
WBT	1110	W-FA (Irving Park)	N Greenview Ave
	943	W-TQ (W Irving Park)	
WBL	1054	W-FD (Irving Park)	N Ravenswood Ave
WBR	128	W-LQ (S Ashland)	
	39	W-RQ (N Ashland)	
EBT	1276	E-FA (Irving Park)	N Ravenswood Ave
	922	E-TQ (E Irving Park)	
EBL	994	E-FD (Irving Park)	N Greenview Ave
	216	E-LQ (N Ashland)	
EBR	138	E-RQ (S Ashland)	
Total Volume		3946 (excluding buses)	

Data Sources:

Volumes □ Ashland AM Existing Synchro Lanes Volumes Timing Report 2013-05-02.pdf  
 Ashland Avenue Arterial Speeds □ Ashland AM Arterial LOS 2013-05-02.pdf  
 Crossroad Speeds: Ashland AM Arterial LOS Cross Streets 2013-05-03.pdf

Legend

- Estimated queue length
- Contains bus volume
- New project links

**Calculated Value**

Peak Bus Volume

Local 3  
 BRT 12

**MOVES Link Importer (AM Peak)**

1001 W Irving Park Rd

7:15 AM peak hour

linkID	countyID	zoneID	roadTypeID	linkLength	linkVolume	linkAvgSpeed	linkDescription	linkAvgGrade	Comments
1	17031	170310	5	0.13	644	11.6	N-FA (Ashland)	0	
2	17031	170310	5	0.13	644	0	N-TQ (N Ashland)	0	Includes NBT, NBR
3	17031	170310	5	0.13	827	11.6	N-FD (Ashland)	0	
4	17031	170310	5	0.13	12	15.9	N-FA-BUS (Ashland)	0	
5	17031	170310	5	0.13	12	0	N-TQ-BUS (Ashland)	0	
6	17031	170310	5	0.13	12	15.9	N-FD-BUS (Ashland)	0	
7	17031	170310	5	0.13	922	3	S-FA (Ashland)	0	
8	17031	170310	5	0.13	922	0	S-TQ (S Ashland)	0	Includes SBT, SBR
9	17031	170310	5	0.13	1077	3	S-FD (Ashland)	0	
10	17031	170310	5	0.13	12	15.9	S-FA-BUS (Ashland)	0	
11	17031	170310	5	0.13	12	0	S-TQ-BUS (Ashland)	0	
12	17031	170310	5	0.13	12	15.9	S-FD-BUS (Ashland)	0	
13	17031	170310	5	0.08	1110	3.2	W-FA (Irving Park)	0	
14	17031	170310	5	0.08	982	0	W-TQ (W Irving Park)	0	Includes WBT, WBR
15	17031	170310	5	0.25	1054	3.2	W-FD (Irving Park)	0	
16	17031	170310	5	0.08	128	0	W-LQ (S Ashland)	0	
17	17031	170310	5	0.25	1276	4.4	E-FA (Irving Park)	0	
18	17031	170310	5	0.25	922	0	E-TQ (E Irving Park)	0	
19	17031	170310	5	0.08	994	4.4	E-FD (Irving Park)	0	
20	17031	170310	5	0.25	216	0	E-LQ (N Ashland)	0	
21	17031	170310	5	0.25	138	0	E-RQ (S Ashland)	0	

Total Volume 3946 (excluding buses)

Ashland Avenue (non-BRT)

	Volume	Fraction
Cars	3,632	0.9197265
Trucks	314	0.0795138
Buses	3	0.0007597
<b>Total</b>	<b>3949</b>	<b>1</b>

ok

Cars/Trucks Split

Cars	0.920426
Trucks	0.079574
<b>Total</b>	<b>1</b>

Category	Source Type	Fraction		
		Ashland Ave	BRT	Cross Streets
Cars	11	0.005227652	0	0.005231626
Cars	21	0.324325839	0	0.324572412
Cars	31	0.442629767	0	0.442966282
Cars	32	0.147543256	0	0.147655427
Buses	41	0	0	0
Buses	42	0.000759686	1	0
Buses	43	0	0	0
Trucks	51	0.000156618	0	0.000156737
Trucks	52	0.011902973	0	0.011912022
Trucks	53	0.000939708	0	0.000940423
Trucks	54	0.002505889	0	0.002507794
Trucks	61	0.033924565	0	0.033950356
Trucks	62	0.030084048	0	0.03010692
<b>Total</b>		<b>1</b>	<b>1</b>	<b>1</b>

**CTA Ashland Ave BRT**  
**Intersection 1001: W Irving Park Rd**  
**Proposed Action (Build Alternative)**

**Volume Calculations**

Synchro ID	linkVolume	linkDescription	Intersection Endpoint
NBT	630	N-FA (Ashland)	W Byron St
	562	N-TQ (N Ashland)	
	842	N-FD (Ashland)	W Belle Plaine Ave
	12	N-FA-BUS (Ashland)	W Byron St
	12	N-TQ-BUS (Ashland)	
	12	N-FD-BUS (Ashland)	W Belle Plaine Ave
NBR	68	N-RQ (E Irving Park)	
SBT	982	S-FA (Ashland)	W Belle Plaine Ave
	849	S-TQ (S Ashland)	
	1161	S-FD (Ashland)	W Byron St
	12	S-FA-BUS (Ashland)	W Belle Plaine Ave
	12	S-TQ-BUS (Ashland)	
	12	S-FD-BUS (Ashland)	W Byron St
SBR	133	S-RQ (W Irving Park)	
WBT	1059	W-FA (Irving Park)	N Greenview Ave
	875	W-TQ (W Irving Park)	
WBL	1008	W-FD (Irving Park)	N Ravenswood Ave
WBR	132	W-LQ (S Ashland)	
	52	W-RQ (N Ashland)	
EBT	1279	E-FA (Irving Park)	N Ravenswood Ave
	871	E-TQ (E Irving Park)	
EBL	939	E-FD (Irving Park)	N Greenview Ave
	228	E-LQ (N Ashland)	
EBR	180	E-RQ (S Ashland)	
<b>Total Volume</b>		<b>3944 (excluding buses)</b>	

Data Sources:

Volumes □ Ashland PM Existing Synchro Lanes Volumes Timing Report 2013-05-02.pdf  
 Ashland Avenue Arterial Speeds □ Ashland PM Arterial LOS 2013-05-02.pdf  
 Crossroad Speeds: Ashland PM Arterial LOS Cross Streets 2013-05-03.pdf

Legend

- Estimated queue length
- Contains bus volume
- New project links

**Calculated Value**

Peak Bus Volume

Local 3  
 BRT 12

Link Volume Definitions:

Queue links based on Synchro output reports.  
 Approach volumes equal to all queue links for each direction (i.e., N-FA □ N-TQ □ N-LQ □ N-RQ)  
 Departure volumes equal to through queue link plus volumes from directions turning into traffic (e.g., N-FD □ N-TQ □ E-LQ □ W-RQ)

Note:

Because MOVES is calculating a gram per vehicle emission factor for queue links, the exact length of the queue is not important.

**MOVES Link Importer (PM Peak)**

1001 W Irving Park Rd

5:00 PM peak hour

linkID	countyID	zoneID	roadTypeID	linkLength	linkVolume	linkAvgSpeed	linkDescription	linkAvgGrade	Comments
1	17031	170310	5	0.12589	630	13.8	N-FA (Ashland)	0	
2	17031	170310	5	0.12589	630	0	N-TQ (N Ashland)	0	Includes NBT, NBR
3	17031	170310	5	0.125443	842	13.8	N-FD (Ashland)	0	
4	17031	170310	5	0.12589	12	15.9	N-FA-BUS (Ashland)	0	
5	17031	170310	5	0.12589	12	0	N-TQ-BUS (Ashland)	0	
6	17031	170310	5	0.12589	12	15.9	N-FD-BUS (Ashland)	0	
7	17031	170310	5	0.125443	982	2.5	S-FA (Ashland)	0	
8	17031	170310	5	0.125443	982	0	S-TQ (S Ashland)	0	Includes SBT, SBR
9	17031	170310	5	0.12589	1161	2.5	S-FD (Ashland)	0	
10	17031	170310	5	0.125443	12	15.9	S-FA-BUS (Ashland)	0	
11	17031	170310	5	0.125443	12	0	S-TQ-BUS (Ashland)	0	
12	17031	170310	5	0.125443	12	15.9	S-FD-BUS (Ashland)	0	
13	17031	170310	5	0.07938	1059	3.2	W-FA (Irving Park)	0	
14	17031	170310	5	0.07938	927	0	W-TQ (W Irving Park)	0	Includes WBT, WBR
15	17031	170310	5	0.245796	1008	3.2	W-FD (Irving Park)	0	
16	17031	170310	5	0.07938	132	0	W-LQ (S Ashland)	0	
17	17031	170310	5	0.245796	1279	4.5	E-FA (Irving Park)	0	
18	17031	170310	5	0.245796	871	0	E-TQ (E Irving Park)	0	
19	17031	170310	5	0.07938	939	4.5	E-FD (Irving Park)	0	
20	17031	170310	5	0.245796	228	0	E-LQ (N Ashland)	0	
21	17031	170310	5	0.245796	180	0	E-RQ (S Ashland)	0	
<b>Total Volume</b>					<b>3944 (excluding buses)</b>				

Ashland Avenue (non-BRT)

	Volume	Fraction
Cars	3,618	0.9166456
Trucks	326	0.0825944
Buses	3	0.0007601
<b>Total</b>	<b>3947</b>	<b>1</b>

ok

Cars/Trucks Split

Cars	0.917343
Trucks	0.082657
<b>Total</b>	<b>1</b>

Notes:

No change to truck volume from No Build Alternative  
 Car volume equal to difference between total non-bus volume and truck volume

Category	Source Type	Fraction		
		Ashland Ave	BRT	Cross Streets
Cars	11	0.00521014	0	0.005214103
Cars	21	0.323239391	0	0.323485263
Cars	31	0.441147017	0	0.441482575
Cars	32	0.147049006	0	0.147160858
Buses	41	0	0	0
Buses	42	0.000760071	1	0
Buses	43	0	0	0
Trucks	51	0.000162686	0	0.00016281
Trucks	52	0.012364125	0	0.01237353
Trucks	53	0.000976115	0	0.000976858
Trucks	54	0.002602974	0	0.002604954
Trucks	61	0.035238892	0	0.035265696
Trucks	62	0.031249583	0	0.031273353
<b>Total</b>		<b>1</b>	<b>1</b>	<b>1</b>

**CTA Ashland Ave BRT**  
**Intersection 1094: W Roosevelt Rd**  
**Proposed Action (Build Alternative)**

**Volume Calculations**

Synchro ID	linkVolume	linkDescription	Intersection Endpoint
NBT	753	N-FA (Ashland)	W 13th St
	631	N-TQ (N Ashland)	
	1012	N-FD (Ashland)	W Taylor St
	12	N-FA-BUS (Ashland)	W 13th St
	12	N-TQ-BUS (Ashland)	
	12	N-FD-BUS (Ashland)	W Taylor St
NBR	122	N-RQ (E Roosevelt)	
SBT	887	S-FA (Ashland)	W Taylor St
	797	S-TQ (S Ashland)	
	1090	S-FD (Ashland)	W 13th St
	12	S-FA-BUS (Ashland)	W Taylor St
	12	S-TQ-BUS (Ashland)	
	12	S-FD-BUS (Ashland)	W 13th St
SBR	90	S-RQ (W Roosevelt)	
WBT	2525	W-FA (Roosevelt)	S Loomis St
	2103	W-TQ (W Roosevelt)	
WBL	2193	W-FD (Roosevelt)	S Paulina St
	171	W-LQ (S Ashland)	
WBR	251	W-RQ (N Ashland)	
EBT	1104	E-FA (Roosevelt)	S Paulina St
	852	E-TQ (E Roosevelt)	
EBL	974	E-FD (Roosevelt)	S Loomis St
	130	E-LQ (N Ashland)	
EBR	122	E-RQ (S Ashland)	
<b>Total Volume</b>		<b>5263 (excluding buses)</b>	

**MOVES Link Importer (AM Peak)**

1094 W Roosevelt Rd

7:45 AM peak hour

linkID	countyID	zoneID	roadTypeID	linkLength	linkVolume	linkAvgSpeed	linkDescription	linkAvgGrade	Comments
1	17031	170310	5	0.12	753	1.7	N-FA (Ashland)	0	Includes NBT, NBR
2	17031	170310	5	0.12	753	0	N-TQ (N Ashland)	0	
3	17031	170310	5	0.17	1012	1.7	N-FD (Ashland)	0	
4	17031	170310	5	0.12	12	15.9	N-FA-BUS (Ashland)	0	
5	17031	170310	5	0.12	12	0	N-TQ-BUS (Ashland)	0	
6	17031	170310	5	0.12	12	15.9	N-FD-BUS (Ashland)	0	
7	17031	170310	5	0.17	887	3.2	S-FA (Ashland)	0	
8	17031	170310	5	0.17	797	0	S-TQ (S Ashland)	0	
9	17031	170310	5	0.12	1090	3.2	S-FD (Ashland)	0	
10	17031	170310	5	0.12	12	15.9	S-FA-BUS (Ashland)	0	
11	17031	170310	5	0.12	12	0	S-TQ-BUS (Ashland)	0	
12	17031	170310	5	0.12	12	15.9	S-FD-BUS (Ashland)	0	
13	17031	170310	5	0.17	90	0	S-RQ (W Roosevelt)	0	
14	17031	170310	5	0.25	2525	2.7	W-FA (Roosevelt)	0	
15	17031	170310	5	0.25	2103	0	W-TQ (W Roosevelt)	0	
16	17031	170310	5	0.13	2193	2.7	W-FD (Roosevelt)	0	
17	17031	170310	5	0.25	171	0	W-LQ (S Ashland)	0	
18	17031	170310	5	0.25	251	0	W-RQ (N Ashland)	0	
19	17031	170310	5	0.13	1104	12.8	E-FA (Roosevelt)	0	
20	17031	170310	5	0.13	852	0	E-TQ (E Roosevelt)	0	
21	17031	170310	5	0.25	974	12.8	E-FD (Roosevelt)	0	
22	17031	170310	5	0.13	130	0	E-LQ (N Ashland)	0	
23	17031	170310	5	0.13	122	0	E-RQ (S Ashland)	0	
<b>Total Volume</b>					<b>5263 (excluding buses)</b>				

Data Sources:

Volumes □ Ashland AM Existing Synchro Lanes Volumes Timing Report 2013-05-02.pdf  
 Ashland Avenue Arterial Speeds □ Ashland AM Arterial LOS 2013-05-02.pdf  
 Crossroad Speeds: Ashland AM Arterial LOS Cross Streets 2013-05-03.pdf

Legend

Estimated queue length  
 Contains bus volume  
 New project links

Calculated Value

Peak Bus Volume

Local 3  
 BRT 12

Ashland Avenue (non-BRT)

	Volume	Fraction
Cars	4,846	0.9202431
Trucks	417	0.0791872
Buses	3	0.0005697
<b>Total</b>	<b>5266</b>	<b>1</b>

ok

Cars/Trucks Split

Cars	0.920768
Trucks	0.079232
<b>Total</b>	<b>1</b>

Category	Source Type	Fraction		
		Ashland Ave	BRT	Cross Streets
Cars	11	0.005230588	0	0.005233569
Cars	21	0.324507993	0	0.324692969
Cars	31	0.442878366	0	0.443130814
Cars	32	0.147626122	0	0.147710271
Buses	41	0	0	0
Buses	42	0.000569692	1	0
Buses	43	0	0	0
Trucks	51	0.000155975	0	0.000156064
Trucks	52	0.011854087	0	0.011860844
Trucks	53	0.000935849	0	0.000936382
Trucks	54	0.002495597	0	0.00249702
Trucks	61	0.033785237	0	0.033804495
Trucks	62	0.029960493	0	0.029977571
<b>Total</b>		<b>1</b>	<b>1</b>	<b>1</b>

**CTA Ashland Ave BRT**  
**Intersection 1094: W Roosevelt Rd**  
**Proposed Action (Build Alternative)**

**Volume Calculations**

Synchro ID	linkVolume	linkDescription	Intersection Endpoint
NBT	601	N-FA (Ashland)	W 13th St
	487	N-TQ (N Ashland)	
	730	N-FD (Ashland)	W Taylor St
	12	N-FA-BUS (Ashland)	W 13th St
	12	N-TQ-BUS (Ashland)	
	12	N-FD-BUS (Ashland)	W Taylor St
NBR	114	N-RQ (E Roosevelt)	
SBT	1431	S-FA (Ashland)	W Taylor St
	1317	S-TQ (S Ashland)	
	1787	S-FD (Ashland)	W 13th St
	12	S-FA-BUS (Ashland)	W Taylor St
	12	S-TQ-BUS (Ashland)	
	12	S-FD-BUS (Ashland)	W 13th St
SBR	114	S-RQ (W Roosevelt)	
WBT	1647	W-FA (Roosevelt)	S Loomis St
	1319	W-TQ (W Roosevelt)	
WBL	1433	W-FD (Roosevelt)	S Paulina St
	201	W-LQ (S Ashland)	
WBR	127	W-RQ (N Ashland)	
EBT	1722	E-FA (Roosevelt)	S Paulina St
	1337	E-TQ (E Roosevelt)	
EBL	1451	E-FD (Roosevelt)	S Loomis St
	116	E-LQ (N Ashland)	
EBR	269	E-RQ (S Ashland)	
<b>Total Volume</b>		5395 (excluding buses)	

**MOVES Link Importer (PM Peak)**

1094 W Roosevelt Rd

4:45 PM peak hour

linkID	countyID	zoneID	roadTypeID	linkLength	linkVolume	linkAvgSpeed	linkDescription	linkAvgGrade	Comments
1	17031	170310	5	0.120478	601	10.5	N-FA (Ashland)	0	Includes NBT, NBR
2	17031	170310	5	0.120478	601	0	N-TQ (N Ashland)	0	
3	17031	170310	5	0.165851	730	10.5	N-FD (Ashland)	0	
4	17031	170310	5	0.120478	12	15.9	N-FA-BUS (Ashland)	0	
5	17031	170310	5	0.120478	12	0	N-TQ-BUS (Ashland)	0	
6	17031	170310	5	0.120478	12	15.9	N-FD-BUS (Ashland)	0	
7	17031	170310	5	0.165851	1431	1.6	S-FA (Ashland)	0	
8	17031	170310	5	0.165851	1317	0	S-TQ (S Ashland)	0	
9	17031	170310	5	0.120478	1787	1.6	S-FD (Ashland)	0	
10	17031	170310	5	0.120478	12	15.9	S-FA-BUS (Ashland)	0	
11	17031	170310	5	0.120478	12	0	S-TQ-BUS (Ashland)	0	
12	17031	170310	5	0.120478	12	15.9	S-FD-BUS (Ashland)	0	
13	17031	170310	5	0.165851	114	0	S-RQ (W Roosevelt)	0	
14	17031	170310	5	0.251755	1647	1.8	W-FA (Roosevelt)	0	
15	17031	170310	5	0.251755	1319	0	W-TQ (W Roosevelt)	0	
16	17031	170310	5	0.131731	1433	1.8	W-FD (Roosevelt)	0	
17	17031	170310	5	0.251755	201	0	W-LQ (S Ashland)	0	
18	17031	170310	5	0.251755	127	0	W-RQ (N Ashland)	0	
19	17031	170310	5	0.131731	1722	1.8	E-FA (Roosevelt)	0	
20	17031	170310	5	0.131731	1337	0	E-TQ (E Roosevelt)	0	
21	17031	170310	5	0.251755	1451	1.8	E-FD (Roosevelt)	0	
22	17031	170310	5	0.131731	116	0	E-LQ (N Ashland)	0	
23	17031	170310	5	0.131731	269	0	E-RQ (S Ashland)	0	
<b>Total Volume</b>					5395 (excluding buses)				

Data Sources:

Volumes □ Ashland PM Existing Synchro Lanes Volumes Timing Report 2013-05-02.pdf  
 Ashland Avenue Arterial Speeds □ Ashland PM Arterial LOS 2013-05-02.pdf  
 Crossroad Speeds: Ashland PM Arterial LOS Cross Streets 2013-05-03.pdf

Legend

Estimated queue length  
 Contains bus volume  
 New project links

**Calculated Value**

Peak Bus Volume

Local 3  
 BRT 12

Link Volume Definitions:

Queue links based on Synchro output reports.  
 Approach volumes equal to all queue links for each direction (i.e., N-FA □ N-TQ □ N-LQ □ N-RQ)  
 Departure volumes equal to through queue link plus volumes from directions turning into traffic (e.g., N-FD □ N-TQ □ E-LQ □ W-RQ)

Note:

Because MOVES is calculating a gram per vehicle emission factor for queue links, the exact length of the queue is not important.

Ashland Avenue (non-BRT)

	Volume	Fraction
Cars	4,959	0.9186736
Trucks	436	0.0807707
Buses	3	0.0005558
<b>Total</b>	<b>5398</b>	<b>1</b>

ok

Cars/Trucks Split

Cars	0.9191844
Trucks	0.0808156
<b>Total</b>	<b>1</b>

Notes:

No change to truck volume from No Build Alternative  
 Car volume equal to difference between total non-bus volume and truck volume

Category	Source Type	Fraction		
		Ashland Ave	BRT	Cross Streets
Cars	11	0.005221667	0	0.005224571
Cars	21	0.323954541	0	0.324134683
Cars	31	0.442123031	0	0.442368883
Cars	32	0.147374344	0	0.147456294
Buses	41	0	0	0
Buses	42	0.000555761	1	0
Buses	43	0	0	0
Trucks	51	0.000159094	0	0.000159182
Trucks	52	0.01209112	0	0.012097844
Trucks	53	0.000954562	0	0.000955093
Trucks	54	0.002545499	0	0.002546914
Trucks	61	0.034460802	0	0.034479965
Trucks	62	0.030559579	0	0.030576572
<b>Total</b>		<b>1</b>	<b>1</b>	<b>1</b>

CTA Ashland Ave BRT

No Build - Intersection 1094 Ashland Ave. & W Roosevelt Rd. - AM Peak

Link ID	Direction	ID	Description	Synchro Link	Total Volume	Volume per Lane	Speed mph	Link Height m	Mixing Zone Width m	Freeflow Emission Factor g/v-mi	Queue Traffic Data					# Lanes	Green time length s	Yellow time length s	
											Average signal cycle length s	Average red time length s	Clearance lost time s	Idle Emission Factor g/v-hr	Total Sat. Flow v/hr				Saturation Flow Rate v/hr/lane
1	N	N-FA	Northbound Ashland Ave Approach		1,323	662	3.5	0	12	10.154									
2	N	N-TQ	Northbound Ashland Ave Queue	NBT	1,085	543	0.0	0	6		100	62	2	20.050	2,757	1,379	2	35	3
3	N	N-FD	Northbound Ashland Ave Departure		1,431	716	3.5	0	12	10.154							2		
4	N	N-LQ	Left Turn to WB Roosevelt Rd	NBL	130	65	0.0	0	6		100	90	2	20.050	2,949	1,475	2	7	3
5	N	N-RQ	Right Turn to EB Roosevelt Rd	NBR	108	108	0.0	0	3		100	62	2	20.050	1,101	1,101	1	35	3
6	S	S-FA	Southbound Ashland Ave Approach		1,326	663	6.6	0	12	6.923							2		
7	S	S-TQ	Southbound Ashland Ave Queue	SBT	1,100	550	0.0	0	6		100	62	2	20.050	3,040	1,520	2	35	3
8	S	S-FD	Southbound Ashland Ave Departure		1,364	682	6.6	0	12	6.923							2		
9	S	S-LQ	Left Turn to EB Roosevelt Rd	SBL	130	65	0.0	0	6		100	90	2	20.050	3,006	1,503	2	7	3
10	S	S-RQ	Right Turn to WB Roosevelt Rd	SBR	96	96	0.0	0	3		100	62	2	20.050	1,208	1,208	1	35	3
11	W	W-FA	Westbound Roosevelt Rd Approach		2,253	1,127	1.7	0	12	19.022							2		
12	W	W-TQ	Westbound Roosevelt Rd Queue	WBT	1,861	931	0.0	0	6		100	67	2	20.052	3,129	1,565	2	30	3
13	W	W-FD	Westbound Roosevelt Rd Departure		2,087	1,044	1.7	0	12	19.022							2		
14	W	W-LQ	Left Turn to SB Ashland Ave	WBL	170	170	0.0	0	3		100	85	2	20.052	1,565	1,565	1	12	3
15	W	W-RQ	Right Turn to NB Ashland Ave	WBR	222	222	0.0	0	3		100	67	2	20.052	1,386	1,386	1	30	3
16	E	E-FA	Eastbound Roosevelt Rd Approach		873	437	13.2	0	12	5.161							2		
17	E	E-TQ	Eastbound Roosevelt Rd Queue	EBT	655	328	0.0	0	6		100	67	2	20.052	2,983	1,492	2	30	3
18	E	E-FD	Eastbound Roosevelt Rd Departure		893	447	13.2	0	12	5.161							2		
19	E	E-LQ	Left Turn to NB Ashland Ave	EBL	124	124	0.0	0	3		100	85	2	20.052	1,506	1,506	1	12	3
20	E	E-RQ	Right Turn to SB Ashland Ave	EBR	94	94	0.0	0	3		100	67	2	20.052	1,310	1,310	1	30	3

Data in black obtained from traffic reports

Data in blue are calculated values

Mixing zone width for freeflow traffic  road width  6 meters  
 Mixing zone width for queue traffic  road width

Lane width 3 m  
 Signal Type Actuated  
 Arrival Type Average

Direction Legend  
 N  Northbound  
 S  Southbound  
 W  Westbound  
 E  Eastbound

CTA Ashland Ave BRT

No Build - Intersection 1094 Ashland Ave. & W Roosevelt Rd. - PM Peak

Link ID	Direction	ID	Description	Synchro Link	Total Volume	Volume per Lane	Speed mph	Link Height m	Mixing Zone Width m	Freeflow Emission Factor g/v-mi	Queue Traffic Data					# Lanes	Green time length s	Yellow time length s	
											Average signal cycle length s	Average red time length s	Clearance lost time s	Idle Emission Factor g/v-hr	Total Sat. Flow v/hr				Saturation Flow Rate v/hr/lane
1	N	N-FA	Northbound Ashland Ave Approach		1,193	597	7.7	0	12	6.416									
2	N	N-TQ	Northbound Ashland Ave Queue	NBT	871	436	0.0	0	6		100	64	2	20.050	2,973	1,487	2	33	3
3	N	N-FD	Northbound Ashland Ave Departure		1,098	549	7.7	0	12	6.416							2	8	3
4	N	N-LQ	Left Turn to WB Roosevelt Rd	NBL	161	81	0.0	0	6		100	89	2	20.050	2,977	1,489	2	8	3
5	N	N-RQ	Right Turn to EB Roosevelt Rd	NBR	161	161	0.0	0	3		100	64	2	20.050	1,220	1,220	1	33	3
6	S	S-FA	Southbound Ashland Ave Approach		2,127	1,064	1.5	0	12	21.557							2		
7	S	S-TQ	Southbound Ashland Ave Queue	SBT	1,815	908	0.0	0	6		100	64	2	20.050	3,129	1,565	2	33	3
8	S	S-FD	Southbound Ashland Ave Departure		2,205	1,103	1.5	0	12	21.557							2		
9	S	S-LQ	Left Turn to EB Roosevelt Rd	SBL	212	106	0.0	0	6		100	89	2	20.050	3,096	1,548	2	8	3
10	S	S-RQ	Right Turn to WB Roosevelt Rd	SBR	100	100	0.0	0	3		100	64	2	20.050	1,208	1,208	1	33	3
11	W	W-FA	Westbound Roosevelt Rd Approach		1,476	738	4.0	0	12	9.287							2		
12	W	W-TQ	Westbound Roosevelt Rd Queue	WBT	1,150	575	0.0	0	6		100	66	2	20.052	3,129	1,565	2	31	3
13	W	W-FD	Westbound Roosevelt Rd Departure		1,411	706	4.0	0	12	9.287							2		
14	W	W-LQ	Left Turn to SB Ashland Ave	WBL	199	199	0.0	0	3		100	85	2	20.052	1,580	1,580	1	12	3
15	W	W-RQ	Right Turn to NB Ashland Ave	WBR	127	127	0.0	0	3		100	66	2	20.052	1,414	1,414	1	31	3
16	E	E-FA	Eastbound Roosevelt Rd Approach		1,239	620	5.4	0	12	7.722							2		
17	E	E-TQ	Eastbound Roosevelt Rd Queue	EBT	948	474	0.0	0	6		100	66	2	20.052	3,160	1,580	2	31	3
18	E	E-FD	Eastbound Roosevelt Rd Departure		1,321	661	5.4	0	12	7.722							2		
19	E	E-LQ	Left Turn to NB Ashland Ave	EBL	100	100	0.0	0	3		100	85	2	20.052	1,596	1,596	1	12	3
20	E	E-RQ	Right Turn to SB Ashland Ave	EBR	191	191	0.0	0	3		100	66	2	20.052	1,400	1,400	1	31	3

Data in black obtained from traffic reports

Data in blue are calculated values

Mixing zone width for freeflow traffic  road width  6 meters  
 Mixing zone width for queue traffic  road width

Lane width 3 m  
 Signal Type Actuated  
 Arrival Type Average

Direction Legend  
 N  Northbound  
 S  Southbound  
 W  Westbound  
 E  Eastbound

CTA Ashland Ave BRT

Build - Intersection 1094 Ashland Ave. & W Roosevelt Rd. - AM Peak

Link ID	Direction	ID	Description	Synchro Link	Total Volume	Volume per Lane	Speed mph	Link Height m	Mixing Zone Width m	Freeflow Emission Factor g/v-mi	Queue Traffic Data					# Lanes	Green time length s	Yellow time length s							
											Average signal cycle length s	Average red time length s	Clearance lost time s	Idle Emission Factor g/v-hr	Total Sat. Flow v/hr				Saturation Flow Rate v/hr/lane						
1	N	N-FA	Northbound Ashland Ave Approach		753	753	1.7	0	9	19.124	130	74	2	20.032	1,326	1,326	1								
2	N	N-TQ	Northbound Ashland Ave Queue		753	753	0.0	0	3																
3	N	N-FD	Northbound Ashland Ave Departure		1,012	1,012	1.7	0	9	19.124															
4	N	N-FA-BUS	Northbound Ashland Bus Approach		12	12	15.9	0	9	2.116	130	74	2	18.569	1,326	1,326	1								
5	N	N-TQ-BUS	Northbound Ashland Bus Queue		12	12	0.0	0	3																
6	N	N-FD-BUS	Northbound Ashland Bus Departure		12	12	15.9	0	9	2.116															
7	S	S-FA	Southbound Ashland Ave Approach		887	887	3.2	0	9	10.856	130	74	2	20.032	1,600	1,600	1								
8	S	S-TQ	Southbound Ashland Ave Queue		797	797	0.0	0	3																
9	S	S-FD	Southbound Ashland Ave Departure		1,090	1,090	3.2	0	9	10.856															
10	S	S-FA-BUS	Southbound Ashland Bus Approach		12	12	15.9	0	9	2.116	130	74	2	18.569	1,600	1,600	1								
11	S	S-TQ-BUS	Southbound Ashland Bus Queue		12	12	0.0	0	3																
12	S	S-FD-BUS	Southbound Ashland Bus Departure		12	12	15.9	0	9	2.116															
13	S	S-RQ	Right Turn to WB Roosevelt Rd	90	90	0.0	0	3			130	74	2	20.033	1,221	1,221	1	53	3						
14	W	W-FA	Westbound Roosevelt Rd Approach		2,525	1,263	2.7	0	12	12.277	130	70	2	20.033	3,129	1,565	2								
15	W	W-TQ	Westbound Roosevelt Rd Queue		2,103	1051.5	0.0	0	6																
16	W	W-FD	Westbound Roosevelt Rd Departure		2,193	1,097	2.7	0	12	12.277															
17	W	W-LQ	Left Turn to SB Ashland Ave		171	171	0.0	0	3			130	113	2	20.033	1,565	1,565	1	14	3					
18	W	W-RQ	Right Turn to NB Ashland Ave		251	251	0.0	0	3			130	70	2	20.033	1,386	1,386	1	57	3					
19	E	E-FA	Eastbound Roosevelt Rd Approach			1,104	552	12.8	0	12	5.220	130	77	2	20.033	3,011	1,506	2							
20	E	E-TQ	Eastbound Roosevelt Rd Queue	852		426	0.0	0	6																
21	E	E-FD	Eastbound Roosevelt Rd Departure	974		487	12.8	0	12	5.220															
22	E	E-LQ	Left Turn to NB Ashland Ave	130		130	0.0	0	3			130	120	2	20.033	1,506	1,506	1	7	3					
23	E	E-RQ	Right Turn to SB Ashland Ave	122		122	0.0	0	3			130	77	2	20.033	1,310	1,310	1	50	3					

Data in black obtained from traffic reports  
 Data in blue are calculated values

Mixing zone width for freeflow traffic  road width  6 meters  
 Mixing zone width for queue traffic  road width

Lane width 3 m  
 Signal Type Actuated  
 Arrival Type Average

Direction Legend  
 N  Northbound  
 S  Southbound  
 W  Westbound  
 E  Eastbound

CTA Ashland Ave BRT

Build - Intersection 1094 Ashland Ave. & W Roosevelt Rd. - PM Peak

Link ID	Direction	ID	Description	Synchro Link	Total Volume	Volume per Lane	Speed mph	Link Height m	Mixing Zone Width m	Freeflow Emission Factor g/v-mi	Queue Traffic Data					# Lanes	Green time length s	Yellow time length s
											Average signal cycle length s	Average red time length s	Clearance lost time s	Idle Emission Factor g/v-hr	Total Sat. Flow v/hr			
1	N	N-FA	Northbound Ashland Ave Approach		601	601	11	0	9	5.614								
2	N	N-TQ	Northbound Ashland Ave Queue		601	601	0	0	3		110	51	2	20.028	1,408	1,408		
3	N	N-FD	Northbound Ashland Ave Departure		730	730	11	0	9	5.614								
4	N	N-FA-BUS	Northbound Ashland Bus Approach		12	12	16	0	9	2.116								
5	N	N-TQ-BUS	Northbound Ashland Bus Queue		12	12	0	0	3		110	51	2	18.569	1,408	1,408		
6	N	N-FD-BUS	Northbound Ashland Bus Departure		12	12	16	0	9	2.116								
7	S	S-FA	Southbound Ashland Ave Approach		1,431	1,431	2	0	9	20.345								
8	S	S-TQ	Southbound Ashland Ave Queue		1,317	1,317	0	0	3		110	51	2	20.028	1,562	1,562		
9	S	S-FD	Southbound Ashland Ave Departure		1,787	1,787	2	0	9	20.345								
10	S	S-FA-BUS	Southbound Ashland Bus Approach		12	12	15.9	0	9	2.116								
11	S	S-TQ-BUS	Southbound Ashland Bus Queue		12	12	0	0	3		110	51	2	18.569	1,562	1,562		
12	S	S-FD-BUS	Southbound Ashland Bus Departure		12	12	16	0	9	2.116								
13	S	S-RQ	Right Turn to WB Roosevelt Rd		114	114	0	0	3		110	51	2	20.029	1,183	1,183		
14	W	W-FA	Westbound Roosevelt Rd Approach		1,647	824	2	0	12	18.084								
15	W	W-TQ	Westbound Roosevelt Rd Queue		1319	659.5	0	0	6		110	73	2	20.029	3,129	1,565		
16	W	W-FD	Westbound Roosevelt Rd Departure		1,433	717	2	0	12	18.084								
17	W	W-LQ	Left Turn to SB Ashland Ave		201	201	0	0	3		110	100	2	20.029	1,580	1,580		
18	W	W-RQ	Right Turn to NB Ashland Ave		127	127	0	0	3		110	73	2	20.029	1,414	1,414		
19	E	E-FA	Eastbound Roosevelt Rd Approach		1,722	861	2	0	12	18.084								
20	E	E-TQ	Eastbound Roosevelt Rd Queue		1,337	669	0	0	6		110	73	2	20.029	3,160	1,580		
21	E	E-FD	Eastbound Roosevelt Rd Departure		1,451	726	2	0	12	18.084								
22	E	E-LQ	Left Turn to NB Ashland Ave		116	116	0	0	3		110	100	2	20.029	1,596	1,596		
23	E	E-RQ	Right Turn to SB Ashland Ave		269	269	0	0	3		110	73	2	20.029	1,580	1,580		

Data in black obtained from traffic reports  
 Data in blue are calculated values

Mixing zone width for freeflow traffic  road width  6 meters  
 Mixing zone width for queue traffic  road width

Lane width 3 m  
 Signal Type Actuated  
 Arrival Type Average

Direction Legend  
 N  Northbound  
 S  Southbound  
 W  Westbound  
 E  Eastbound



CTA Ashland Ave BRT

No Build - Intersection 1018 Ashland Ave. & W Diversey Pkwy. - AM Peak

Link ID	Direction	ID	Description	Synchro Link	Total Volume	Volume per Lane	Speed mph	Link Height m	Mixing Zone Width m	Freeflow Emission Factor g/v-mi	Queue Traffic Data					# Lanes	Green time length s	Yellow time length s	
											Average signal cycle length s	Average red time length s	Clearance lost time s	Idle Emission Factor g/v-hr	Total Sat. Flow v/hr				Saturation Flow Rate v/hr/lane
1	N	N-FA	Northbound Ashland Ave Approach		1,106	553	19.9	0	12	4.425									
2	N	N-TQ	Northbound Ashland Ave Queue	NBT	978	489	0.0	0	6		85	43	2	20.049	3,090	1,545	2	39	3
3	N	N-FD	Northbound Ashland Ave Departure		1,226	613	19.9	0	12	4.425							2		
4	N	N-LQ	Left Turn to EB Diversey Pkwy	NBL	12	12	0.0	0	3		85	43	2	20.049	1,653	1,653	1	39	3
5	N	N-RQ	Right Turn to EB Diversey Pkwy	NBR	116	116	0.0	0	3		85	43	2	20.049	1,241	1,241	1	39	3
6	S	S-FA	Southbound Ashland Ave Approach		2,030	1,015	4.2	0	12	8.995							2		
7	S	S-TQ	Southbound Ashland Ave Queue	SBT	1,950	975	0.0	0	6		85	43	2	20.049	3,203	1,602	2	39	3
8	S	S-FD	Southbound Ashland Ave Departure		2,055	1,028	4.2	0	12	8.995							2		
9	S	S-LQ	Left Turn to EB Diversey Pkwy	SBL	80	80	0.0	0	3		85	43	2	20.049	1,574	1,574	1	39	3
10	W	W-FA	Westbound Diversey Pkwy Approach		645	645	8.0	0	9	6.305							1		
11	W	W-TQ	Westbound Diversey Pkwy Queue	WBT	449	449	0.0	0	3		85	53	2	20.052	1,647	1,647	1	29	3
12	W	W-FD	Westbound Diversey Pkwy Departure		563	563	8.0	0	9	6.305							1		
13	W	W-LQ	Left Turn to SB Ashland Ave	WBL	132	132	0.0	0	3		85	76	2	20.052	1,565	1,565	1	6	3
14	W	W-RQ	Right Turn to NB Ashland Ave	WBR	64	64	0.0	0	3		85	53	2	20.052	1,337	1,337	1	29	3
15	E	E-FA	Eastbound Diversey Pkwy Approach		942	942	2.5	0	9	12.935							1		
16	E	E-TQ	Eastbound Diversey Pkwy Queue	EBT	683	683	0.0	0	3		85	53	2	20.052	1,615	1,615	1	29	3
17	E	E-FD	Eastbound Diversey Pkwy Departure		879	879	2.5	0	9	12.935							1		
18	E	E-LQ	Left Turn to NB Ashland Ave	EBL	184	184	0.0	0	3		85	76	2	20.052	1,535	1,535	1	6	3
19	E	E-RQ	Right Turn to SB Ashland Ave	EBR	75	75	0.0	0	3		85	53	2	20.052	1,337	1,337	1	29	3

Data in black obtained from traffic reports  
 Data in blue are calculated values

Mixing zone width for freeflow traffic  road width  6 meters  
 Mixing zone width for queue traffic  road width

Lane width 3 m  
 Signal Type Pretimed  
 Arrival Type Average

Direction Legend  
 N  Northbound  
 S  Southbound  
 W  Westbound  
 E  Eastbound

CTA Ashland Ave BRT

No Build - Intersection 1018 Ashland Ave. & W Diversey Pkwy. - PM Peak

Link ID	Direction	ID	Description	Synchro Link	Total Volume	Volume per Lane	Speed mph	Link Height m	Mixing Zone Width m	Freeflow Emission Factor g/v-mi	Queue Traffic Data					# Lanes	Green time length s	Yellow time length s	
											Average signal cycle length s	Average red time length s	Clearance lost time s	Idle Emission Factor g/v-hr	Total Sat. Flow v/hr				Saturation Flow Rate v/hr/lane
1	N	N-FA	Northbound Ashland Ave Approach		1,624	812	4.0	0	12	9.285									
2	N	N-TQ	Northbound Ashland Ave Queue	NBT	1,477	739	0.0	0	6		85	43	2	20.049	2,380	1,190	2	39	3
3	N	N-FD	Northbound Ashland Ave Departure		1,737	869	4.0	0	12	9.285							2		
4	N	N-LQ	Left Turn to EB Diversey Pkwy	NBL	18	18	0.0	0	3		85	43	2	20.049	1,653	1,653	1	39	3
5	N	N-RQ	Right Turn to EB Diversey Pkwy	NBR	129	129	0.0	0	3		85	43	2	20.049	581	581	1	39	3
6	S	S-FA	Southbound Ashland Ave Approach		1,818	909	4.5	0	12	8.609							2		
7	S	S-TQ	Southbound Ashland Ave Queue	SBT	1,748	874	0.0	0	6		85	43	2	20.049	2,927	1,464	2	39	3
8	S	S-FD	Southbound Ashland Ave Departure		1,837	919	4.5	0	12	8.609							2		
9	S	S-LQ	Left Turn to EB Diversey Pkwy	SBL	70	70	0.0	0	3		85	43	2	20.049	1,653	1,653	1	39	3
10	W	W-FA	Westbound Diversey Pkwy Approach		800	800	5.0	0	9	8.077							1		
11	W	W-TQ	Westbound Diversey Pkwy Queue	WBT	561	561	0.0	0	3		85	53	2	20.052	1,647	1,647	1	29	3
12	W	W-FD	Westbound Diversey Pkwy Departure		678	678	5.0	0	9	8.077							1		
13	W	W-LQ	Left Turn to SB Ashland Ave	WBL	148	148	0.0	0	3		85	76	2	20.052	1,580	1,580	1	6	3
14	W	W-RQ	Right Turn to NB Ashland Ave	WBR	91	91	0.0	0	3		85	53	2	20.052	1,377	1,377	1	29	3
15	E	E-FA	Eastbound Diversey Pkwy Approach		697	697	7.1	0	9	6.676							1		
16	E	E-TQ	Eastbound Diversey Pkwy Queue	EBT	488	488	0.0	0	3		85	53	2	20.052	1,647	1,647	1	29	3
17	E	E-FD	Eastbound Diversey Pkwy Departure		687	687	7.1	0	9	6.676							1		
18	E	E-LQ	Left Turn to NB Ashland Ave	EBL	169	169	0.0	0	3		85	76	2	20.052	1,596	1,596	1	6	3
19	E	E-RQ	Right Turn to SB Ashland Ave	EBR	40	40	0.0	0	3		85	53	2	20.052	1,311	1,311	1	29	3

Data in black obtained from traffic reports  
 Data in blue are calculated values

Mixing zone width for freeflow traffic  road width  6 meters  
 Mixing zone width for queue traffic  road width

Lane width 3 m  
 Signal Type Pretimed  
 Arrival Type Average

Direction Legend  
 N  Northbound  
 S  Southbound  
 W  Westbound  
 E  Eastbound

CTA Ashland Ave BRT

Build - Intersection 1018 Ashland Ave. & W Diversey Pkwy. - AM Peak

Link ID	Direction	ID	Description	Synchro Link	Total Volume	Volume per Lane	Speed mph	Link Height m	Mixing Zone Width m	Freeflow Emission Factor g/v-mi	Queue Traffic Data					# Lanes	Green time length s	Yellow time length s	
											Average signal cycle length s	Average red time length s	Clearance lost time s	Idle Emission Factor g/v-hr	Total Sat. Flow v/hr				Saturation Flow Rate v/hr/lane
1	N	N-FA	Northbound Ashland Ave Approach		691	691	2	0	9	15.711									
2	N	N-TQ	Northbound Ashland Ave Queue	NBT	691	691	0	0	3		130	54	2	19.979	692	692	1	73	3
3	N	N-FD	Northbound Ashland Ave Departure		859	859	2	0	9	15.711							1		
4	N	N-FA-BUS	Northbound Ashland Bus Approach		12	12	16	0	9	2.116							1		
5	N	N-TQ-BUS	Northbound Ashland Bus Queue		12	12	0	0	3		130	54	2	18.569	692	692	1	73	3
6	N	N-FD-BUS	Northbound Ashland Bus Departure		12	12	16	0	9	2.116							1		
7	S	S-FA	Southbound Ashland Ave Approach		1,065	1,065	4	0	9	9.928							1		
8	S	S-TQ	Southbound Ashland Ave Queue	SBT	1,065	1,065	0	0	3		130	54	2	19.979	1,368	1,368	1	73	3
9	S	S-FD	Southbound Ashland Ave Departure		1,208	1,208	4	0	9	9.928							1		
10	S	S-FA-BUS	Southbound Ashland Bus Approach		12	12	16	0	9	2.116							1		
11	S	S-TQ-BUS	Southbound Ashland Bus Queue		12	12	0	0	3		130	54	2	18.569	1,368	1,368	1	73	3
12	S	S-FD-BUS	Southbound Ashland Bus Departure		12	12	16	0	9	2.116							1		
13	W	W-FA	Westbound Diversey Pkwy Approach		696	696	4	0	9	10.118							1		
14	W	W-TQ	Westbound Diversey Pkwy Queue	WBT	492	492	0	0	3		130	86	2	19.980	1,647	1,647	1	41	3
15	W	W-FD	Westbound Diversey Pkwy Departure		560	560	4	0	9	10.118							1		
16	W	W-LQ	Left Turn to SB Ashland Ave	WBL	136	136	0	0	3		130	119	2	19.980	1,580	1,580	1	8	3
17	W	W-RQ	Right Turn to NB Ashland Ave	WBR	68	68	0	0	3		130	86	2	19.980	1,337	1,337	1	41	3
18	E	E-FA	Eastbound Diversey Pkwy Approach		1,039	1,039	1	0	9	23.566							1		
19	E	E-TQ	Eastbound Diversey Pkwy Queue	EBT	780	780	0	0	3		130	82	2	19.980	1,615	1,615	1	45	3
20	E	E-FD	Eastbound Diversey Pkwy Departure		864	864	1	0	9	23.566							1		
21	E	E-LQ	Left Turn to NB Ashland Ave	EBL	184	184	0	0	3		130	115	2	19.980	1,535	1,535	1	12	3
22	E	E-RQ	Right Turn to SB Ashland Ave	EBR	75	75	0	0	3		130	82	2	19.980	1,337	1,337	1	45	3

Data in black obtained from traffic reports

Data in blue are calculated values

Mixing zone width for freeflow traffic  road width  6 meters

Mixing zone width for queue traffic  road width

Lane width 3 m

Signal Type Pretimed

Arrival Type Average

Direction Legend

N  Northbound

S  Southbound

W  Westbound

E  Eastbound

CTA Ashland Ave BRT

Build - Intersection 1018 Ashland Ave. & W Diversey Pkwy. - PM Peak

Link ID	Direction	ID	Description	Synchro Link	Total Volume	Volume per Lane	Speed mph	Link Height m	Mixing Zone Width m	Freeflow Emission Factor g/v-mi	Queue Traffic Data					# Lanes	Green time length s	Yellow time length s	
											Average signal cycle length s	Average red time length s	Clearance lost time s	Idle Emission Factor g/v-hr	Total Sat. Flow v/hr				Saturation Flow Rate v/hr/lane
1	N	N-FA	Northbound Ashland Ave Approach		862	862	2	0	9	19.313									
2	N	N-TQ	Northbound Ashland Ave Queue	NBT	862	862	0	0	3		110	45	2	19.997	744	744	1	62	3
3	N	N-FD	Northbound Ashland Ave Departure		1,035	1,035	2	0	9	19.313							1		
4	N	N-FA-BUS	Northbound Ashland Bus Approach		12	12	16	0	9	2.116							1		
5	N	N-TQ-BUS	Northbound Ashland Bus Queue		12	12	0	0	3		110	45	2	18.569	744	744	1	62	3
6	N	N-FD-BUS	Northbound Ashland Bus Departure		12	12	16	0	9	2.116							1		
7	S	S-FA	Southbound Ashland Ave Approach		1,303	1,303	2	0	9	13.680							1		
8	S	S-TQ	Southbound Ashland Ave Queue	SBT	1,303	1,303	0	0	3		110	45	2	19.997	1,383	1,383	1	62	3
9	S	S-FD	Southbound Ashland Ave Departure		1,410	1,410	2	0	9	13.680							1		
10	S	S-FA-BUS	Southbound Ashland Bus Approach		12	12	16	0	9	2.116							1		
11	S	S-TQ-BUS	Southbound Ashland Bus Queue		12	12	0	0	3		110	45	2	18.569	1,383	1,383	1	62	3
12	S	S-FD-BUS	Southbound Ashland Bus Departure		12	12	16	0	9	2.116							1		
13	W	W-FA	Westbound Diversey Pkwy Approach		945	945	2	0	9	20.520							1		
14	W	W-TQ	Westbound Diversey Pkwy Queue	WBT	701	701	0	0	3		110	75	2	19.998	1,647	1,647	1	32	3
15	W	W-FD	Westbound Diversey Pkwy Departure		786	786	2	0	9	20.520							1		
16	W	W-LQ	Left Turn to SB Ashland Ave	WBL	152	152	0	0	3		110	102	2	19.998	1,580	1,580	1	5	3
17	W	W-RQ	Right Turn to NB Ashland Ave	WBR	92	92	0	0	3		110	75	2	19.998	1,377	1,377	1	32	3
18	E	E-FA	Eastbound Diversey Pkwy Approach		791	791	3	0	9	13.133							1		
19	E	E-TQ	Eastbound Diversey Pkwy Queue	EBT	582	582	0	0	3		110	75	2	19.998	1,647	1,647	1	32	3
20	E	E-FD	Eastbound Diversey Pkwy Departure		670	670	3	0	9	13.133							1		
21	E	E-LQ	Left Turn to NB Ashland Ave	EBL	169	169	0	0	3		110	102	2	19.998	1,596	1,596	1	5	3
22	E	E-RQ	Right Turn to SB Ashland Ave	EBR	40	40	0	0	3		110	75	2	19.998	1,311	1,311	1	32	3

Data in black obtained from traffic reports

Data in blue are calculated values

Mixing zone width for freeflow traffic  road width  6 meters

Mixing zone width for queue traffic  road width

Lane width 3 m

Signal Type Pretimed

Arrival Type Average

Direction Legend

N  Northbound

S  Southbound

W  Westbound

E  Eastbound

CTA Ashland Ave BRT

No Build - Intersection 1011 Ashland Ave. & N. Lincoln Ave. & W Belmont Ave. - AM Peak

Link ID	Direction	ID	Description	Synchro Link	Total Volume	Volume per Lane	Speed mph	Link Height m	Mixing Zone Width m	Freeflow Emission Factor g/v-mi	Queue Traffic Data					# Lanes	Green time length s	Yellow time length s	
											Average signal cycle length s	Average red time length s	Clearance lost time s	Idle Emission Factor g/v-hr	Total Sat. Flow v/hr				Saturation Flow Rate v/hr/lane
1	N	N-FA	Northbound Ashland Ave Approach		1,079	540	5.9	0	12	7.343									
2	N	N-TQ	Northbound Ashland Ave Queue	NBT	920	460	0.0	0	6		100	65	2	20.049	3,040	1,520	2	31	4
3	N	N-FD	Northbound Ashland Ave Departure		1,022	511	5.9	0	12	7.343							2		
4	N	N-LQ	Left Turn to EB Belmont NB Lincoln Ave	NBL	69	69	0.0	0	3		100	65	2	20.049	1,462	1,462	1	31	4
5	N	N-RQ	Right Turn to SB Lincoln EB Belmont Ave	NBR	90	90	0.0	0	3		100	65	2	20.049	1,373	1,373	1	31	4
6	S	S-FA	Southbound Ashland Ave Approach		1,120	560	4.9	0	12	8.171							2		
7	S	S-TQ	Southbound Ashland Ave Queue	SBT	1,018	509	0.0	0	6		100	65	2	20.049	3,198	1,599	2	31	4
8	S	S-FD	Southbound Ashland Ave Departure		1,167	584	4.9	0	12	8.171							2		
9	S	S-LQ	Left Turn to EB Belmont SB Lincoln Ave	SBL	102	102	0.0	0	3		100	65	2	20.049	1,710	1,710	1	31	4
10	W	W-FA	Westbound Belmont Ave Approach		415	415	8.0	0	9	6.305							1		
11	W	W-TQ	Westbound Belmont Ave Queue	WBT	238	238	0.0	0	3		100	70	2	20.052	1,279	1,279	1	27	3
12	W	W-FD	Westbound Belmont Ave Departure		273	273	8.0	0	9	6.305							1		
13	W	W-RQ	Right Turn to NB Ashland NB Lincoln Av	WBL	177	177	0.0	0	3		100	70	2	20.052	1,706	1,706	1	27	3
14	E	E-FA	Eastbound Belmont Ave Approach		527	527	2.1	0	9	15.399							1		
15	E	E-TQ	Eastbound Belmont Ave Queue	EBT	527	527	0.0	0	3		100	70	2	20.052	1,490	1,490	1	27	3
16	E	E-FD	Eastbound Belmont Ave Departure		520	520	2.1	0	9	15.399							1		
17	SE	SE-FA	Southbound Lincoln Ave Approach		491	491	3.1	0	9	11.052							1		
18	SE	SE-TQ	Southbound Lincoln Ave Queue	SET	456	456	0.0	0	3		100	71	2	20.052	1,616	1,616	1	25	4
19	SE	SE-FD	Southbound Lincoln Ave Departure		533	533	3.1	0	9	11.052							1		
20	SE	SE-LQ	Left Turn to NB Lincoln EB Belmont Ave	SEL	35	35	0.0	0	3		100	71	2	20.052	1,386	1,386	1	25	4
21	NW	NW-FA	Northbound Lincoln Ave Approach		350	350	6.7	0	9	6.873							1		
22	NW	NW-TQ	Northbound Lincoln Ave Queue	NWT	324	324	0.0	0	3		100	71	2	20.052	1,674	1,674	1	25	4
23	NW	NW-FD	Northbound Lincoln Ave Departure		467	467	6.7	0	9	6.873							1		
24	NW	NW-LQ	Left Turn to SB Ashland WB Belmont Av	NWL	26	26	0.0	0	3		100	71	2	20.052	1,539	1,539	1	25	4

Data in black obtained from traffic reports  
Data in blue are calculated values

Mixing zone width for freeflow traffic  road width  6 meters  
Mixing zone width for queue traffic  road width

Lane width 3 m  
Signal Type Pretimed  
Arrival Type Average

Direction Legend  
N  Northbound  
S  Southbound  
W  Westbound  
E  Eastbound

CTA Ashland Ave BRT

No Build - Intersection 1011 Ashland Ave. & N. Lincoln Ave. & W Belmont Ave. - PM Peak

Link ID	Direction	ID	Description	Synchro Link	Total Volume	Volume per Lane	Speed mph	Link Height m	Mixing Zone Width m	Freeflow Emission Factor g/v-mi	Queue Traffic Data					# Lanes	Green time length s	Yellow time length s	
											Average signal cycle length s	Average red time length s	Clearance lost time s	Idle Emission Factor g/v-hr	Total Sat. Flow v/hr				Saturation Flow Rate v/hr/lane
1	N	N-FA	Northbound Ashland Ave Approach		1,146	573	4.0	0	12	9.285									
2	N	N-TQ	Northbound Ashland Ave Queue	NBT	954	477	0.0	0	6		100	65	2	20.049	2,813	1,407	2	31	4
3	N	N-FD	Northbound Ashland Ave Departure		1,119	560	4.0	0	12	9.285							2		
4	N	N-LQ	Left Turn to EB Belmont NB Lincoln Ave	NBL	94	94	0.0	0	3		100	65	2	20.049	1,653	1,653	1	31	4
5	N	N-RQ	Right Turn to SB Lincoln EB Belmont Ave	NBR	98	98	0.0	0	3		100	65	2	20.049	1,078	1,078	1	31	4
6	S	S-FA	Southbound Ashland Ave Approach		1,002	501	5.8	0	12	7.412							2		
7	S	S-TQ	Southbound Ashland Ave Queue	SBT	899	450	0.0	0	6		100	65	2	20.049	3,004	1,502	2	31	4
8	S	S-FD	Southbound Ashland Ave Departure		1,006	503	5.8	0	12	7.412							2		
9	S	S-LQ	Left Turn to EB Belmont SB Lincoln Ave	SBL	103	103	0.0	0	3		100	65	2	20.049	1,710	1,710	1	31	4
10	W	W-FA	Westbound Belmont Ave Approach		534	534	5.9	0	9	7.348							1		
11	W	W-TQ	Westbound Belmont Ave Queue	WBT	315	315	0.0	0	3		100	70	2	20.052	1,345	1,345	1	27	3
12	W	W-FD	Westbound Belmont Ave Departure		401	401	5.9	0	9	7.348							1		
13	W	W-RQ	Right Turn to NB Ashland NB Lincoln Av	WBL	219	219	0.0	0	3		100	70	2	20.052	1,721	1,721	1	27	3
14	E	E-FA	Eastbound Belmont Ave Approach		442	442	4.0	0	9	9.287							1		
15	E	E-TQ	Eastbound Belmont Ave Queue	EBT	442	442	0.0	0	3		100	70	2	20.052	1,594	1,594	1	27	3
16	E	E-FD	Eastbound Belmont Ave Departure		526	526	4.0	0	9	9.287							1		
17	SE	SE-FA	Southbound Lincoln Ave Approach		397	397	6.0	0	9	7.281							1		
18	SE	SE-TQ	Southbound Lincoln Ave Queue	SET	349	349	0.0	0	3		100	71	2	20.052	1,640	1,640	1	25	4
19	SE	SE-FD	Southbound Lincoln Ave Departure		381	381	6.0	0	9	7.281							1		
20	SE	SE-LQ	Left Turn to NB Lincoln EB Belmont Ave	SEL	48	48	0.0	0	3		100	71	2	20.052	1,539	1,539	1	25	4
21	NW	NW-FA	Northbound Lincoln Ave Approach		410	410	5.7	0	9	7.489							1		
22	NW	NW-TQ	Northbound Lincoln Ave Queue	NWT	364	364	0.0	0	3		100	71	2	20.052	1,661	1,661	1	25	4
23	NW	NW-FD	Northbound Lincoln Ave Departure		498	498	5.7	0	9	7.489							1		
24	NW	NW-LQ	Left Turn to SB Ashland WB Belmont Av	NWL	46	46	0.0	0	3		100	71	2	20.052	1,508	1,508	1	25	4

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Mixing zone width for freeflow traffic  road width  6 meters  
Mixing zone width for queue traffic  road width

Lane width 3 m  
Signal Type Pretimed  
Arrival Type Average

Direction Legend  
N  Northbound  
S  Southbound  
W  Westbound  
E  Eastbound

CTA Ashland Ave BRT

Build - Intersection 1011 Ashland Ave. & N. Lincoln Ave. & W Belmont Ave. - AM Peak

Link ID	Direction	ID	Description	Synchro Link	Total Volume	Volume per Lane	Speed mph	Link Height m	Mixing Zone Width m	Freeflow Emission Factor g/v-mi	Queue Traffic Data					# Lanes	Green time length s	Yellow time length s	
											Average signal cycle length s	Average red time length s	Clearance lost time s	Idle Emission Factor g/v-hr	Total Sat. Flow v/hr				Saturation Flow Rate v/hr/lane
1	N	N-FA	Northbound Ashland Ave Approach		702	702	2	0	9	20.462									
2	N	N-TQ	Northbound Ashland Ave Queue	NBT	702	702	0	0	3		130	76	2	20.007	1,207	1,207	1	50	4
3	N	N-FD	Northbound Ashland Ave Departure		727	727	2	0	9	20.462									
4	N	N-FA-BUS	Northbound Ashland Bus Approach		12	12	16	0	9	2.116									
5	N	N-TQ-BUS	Northbound Ashland Bus Queue		12	12	0	0	3		130	76	2	18.569	1,207	1,207	1	50	4
6	N	N-FD-BUS	Northbound Ashland Bus Departure		12	12	16	0	9	2.116									
7	S	S-FA	Southbound Ashland Ave Approach		597	597	5	0	9	8.035									
8	S	S-TQ	Southbound Ashland Ave Queue	SBT	597	597	0	0	3		130	76	2	20.007	1,498	1,498	1	50	4
9	S	S-FD	Southbound Ashland Ave Departure		709	709	5	0	9	8.035									
10	S	S-FA-BUS	Southbound Ashland Bus Approach		12	12	16	0	9	2.116									
11	S	S-TQ-BUS	Southbound Ashland Bus Queue		12	12	0	0	3		130	76	2	18.569	1,498	1,498	1	50	4
12	S	S-FD-BUS	Southbound Ashland Bus Departure		12	12	16	0	9	2.116									
13	W	W-FA	Westbound Belmont Ave Approach		484	484	7	0	9	6.661									
14	W	W-TQ	Westbound Belmont Ave Queue	WBT	307	307	0	0	3		130	88	2	20.008	1,673	1,673	1	39	3
15	W	W-FD	Westbound Belmont Ave Departure		378	378	7	0	9	6.661									
16	W	W-RQ	Right Turn to NB Ashland/NB Lincoln Av	WBL	177	177	0	0	3		130	88	2	20.008	1,279	1,279	1	39	3
17	E	E-FA	Eastbound Belmont Ave Approach		641	641	2	0	9	19.259									
18	E	E-TQ	Eastbound Belmont Ave Queue	EBT	641	641	0	0	3		130	88	2	20.008	1,519	1,519	1	39	3
19	E	E-FD	Eastbound Belmont Ave Departure		601	601	2	0	9	19.259									
20	SE	SE-FA	Southbound Lincoln Ave Approach		501	501	1	0	9	23.386									
21	SE	SE-TQ	Southbound Lincoln Ave Queue	SET	465	465	0	0	3		130	102	2	20.008	1,616	1,616	1	24	4
22	SE	SE-FD	Southbound Lincoln Ave Departure		456	456	1	0	9	23.386									
23	SE	SE-LQ	Left Turn to NB Lincoln/EB Belmont Ave	SEL	36	36	0	0	3		130	102	2	20.008	1,386	1,386	1	24	4
24	NW	NW-FA	Northbound Lincoln Ave Approach		339	339	4	0	9	10.255									
25	NW	NW-TQ	Northbound Lincoln Ave Queue	NWT	314	314	0	0	3		130	102	2	20.008	1,674	1,674	1	24	4
26	NW	NW-FD	Northbound Lincoln Ave Departure		393	393	4	0	9	10.255									
27	NW	NW-LQ	Left Turn to SB Ashland/WB Belmont Av	NWL	25	25	0	0	3		130	102	2	20.008	1,539	1,539	1	24	4

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Mixing zone width for freeflow traffic  road width  6 meters  
 Mixing zone width for queue traffic  road width

Lane width 3 m  
 Signal Type Pretimed  
 Arrival Type Average

Direction Legend  
 N  Northbound  
 S  Southbound  
 W  Westbound  
 E  Eastbound

CTA Ashland Ave BRT

Build - Intersection 1011 Ashland Ave. & N. Lincoln Ave. & W Belmont Ave. - PM Peak

Link ID	Direction	ID	Description	Synchro Link	Total Volume	Volume per Lane	Speed mph	Link Height m	Mixing Zone Width m	Freeflow Emission Factor g/v-mi	Queue Traffic Data					# Lanes	Green time length s	Yellow time length s	
											Average signal cycle length s	Average red time length s	Clearance lost time s	Idle Emission Factor g/v-hr	Total Sat. Flow v/hr				Saturation Flow Rate v/hr/lane
1	N	N-FA	Northbound Ashland Ave Approach		689	689	2	0	9	18.165									
2	N	N-TQ	Northbound Ashland Ave Queue	NBT	689	689	0	0	3		110	63	2	20.011	1,216	1,216	1	43	4
3	N	N-FD	Northbound Ashland Ave Departure		771	771	2	0	9	18.165							1		
4	N	N-FA-BUS	Northbound Ashland Bus Approach		12	12	16	0	9	2.116							1		
5	N	N-TQ-BUS	Northbound Ashland Bus Queue		12	12	0	0	3		110	63	2	18.569	1,216	1,216	1	43	4
6	N	N-FD-BUS	Northbound Ashland Bus Departure		12	12	16	0	9	2.116							1		
7	S	S-FA	Southbound Ashland Ave Approach		544	544	8	0	9	6.326							1		
8	S	S-TQ	Southbound Ashland Ave Queue	SBT	544	544	0	0	3		110	63	2	20.011	1,450	1,450	1	43	4
9	S	S-FD	Southbound Ashland Ave Departure		631	631	8	0	9	6.326							1		
10	S	S-FA-BUS	Southbound Ashland Bus Approach		12	12	16	0	9	2.116							1		
11	S	S-TQ-BUS	Southbound Ashland Bus Queue		12	12	0	0	3		110	63	2	18.569	1,450	1,450	1	43	4
12	S	S-FD-BUS	Southbound Ashland Bus Departure		12	12	16	0	9	2.116							1		
13	W	W-FA	Westbound Belmont Ave Approach		650	650	2	0	9	19.233							1		
14	W	W-TQ	Westbound Belmont Ave Queue	WBT	405	405	0	0	3		110	75	2	20.013	1,723	1,723	1	32	3
15	W	W-FD	Westbound Belmont Ave Departure		512	512	2	0	9	19.234							1		
16	W	W-RQ	Right Turn to NB Ashland/NB Lincoln Av	WBL	245	245	0	0	3		110	75	2	20.013	1,346	1,346	1	32	3
17	E	E-FA	Eastbound Belmont Ave Approach		570	570	3	0	9	13.079							1		
18	E	E-TQ	Eastbound Belmont Ave Queue	EBT	570	570	0	0	3		110	75	2	20.013	1,609	1,609	1	32	3
19	E	E-FD	Eastbound Belmont Ave Departure		611	611	3	0	9	13.079							1		
20	SE	SE-FA	Southbound Lincoln Ave Approach		429	429	2	0	9	19.233							1		
21	SE	SE-TQ	Southbound Lincoln Ave Queue	SET	377	377	0	0	3		110	88	2	20.013	1,640	1,640	1	18	4
22	SE	SE-FD	Southbound Lincoln Ave Departure		332	332	2	0	9	19.233							1		
23	SE	SE-LQ	Left Turn to NB Lincoln/EB Belmont Ave	SEL	52	52	0	0	3		110	88	2	20.013	1,539	1,539	1	18	4
24	NW	NW-FA	Northbound Lincoln Ave Approach		410	410	2	0	9	17.209							1		
25	NW	NW-TQ	Northbound Lincoln Ave Queue	NWT	364	364	0	0	3		110	88	2	20.013	1,661	1,661	1	18	4
26	NW	NW-FD	Northbound Lincoln Ave Departure		435	435	2	0	9	17.209							1		
27	NW	NW-LQ	Left Turn to SB Ashland/WB Belmont Av	NWL	46	46	0	0	3		110	88	2	20.013	1,508	1,508	1	18	4

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Data in blue are calculated values

Mixing zone width for freeflow traffic  road width  6 meters

Mixing zone width for queue traffic  road width

Lane width 3 m

Signal Type Pretimed

Arrival Type Average

Direction Legend

N  Northbound

S  Southbound

W  Westbound

E  Eastbound



CTA Ashland Ave BRT

No Build - Intersection 1001 Ashland Ave. & W Irving Park Rd. - AM Peak

Link ID	Direction	ID	Description	Synchro Link	Total Volume	Volume per Lane	Speed mph	Link Height m	Mixing Zone Width m	Freeflow Emission Factor g/v-mi	Queue Traffic Data					# Lanes	Green time length s	Yellow time length s	
											Average signal cycle length s	Average red time length s	Clearance lost time s	Idle Emission Factor g/v-hr	Total Sat. Flow v/hr				Saturation Flow Rate v/hr/lane
1	N	N-FA	Northbound Ashland Ave Approach		1,006	503	16.2	0	12	4.833									
2	N	N-TQ	Northbound Ashland Ave Queue	NBT	800	400	0.0	0	6		90	56	2	20.049	3,129	1,565	2	31	3
3	N	N-FD	Northbound Ashland Ave Departure		1,054	527	16.2	0	12	4.833									
4	N	N-LQ	Left Turn to WB Irving Park Rd	NBL	106	106	0.0	0	3		90	81	2	20.049	1,676	1,676	1	6	3
5	N	N-RQ	Right Turn to EB Irving Park Rd	NBR	100	100	0.0	0	3		90	56	2	20.049	1,299	1,299	1	31	3
6	S	S-FA	Southbound Ashland Ave Approach		1,159	580	7.8	0	12	6.375									
7	S	S-TQ	Southbound Ashland Ave Queue	SBT	942	471	0.0	0	6		90	56	2	20.049	3,160	1,580	2	31	3
8	S	S-FD	Southbound Ashland Ave Departure		1,202	601	7.8	0	12	6.375									
9	S	S-LQ	Left Turn to EB Irving Park Rd	SBL	78	78	0.0	0	3		90	81	2	20.049	1,750	1,750	1	6	3
10	S	S-RQ	Right Turn to WB Irving Park Rd	SBR	139	139	0.0	0	3		90	56	2	20.049	1,350	1,350	1	31	3
11	W	W-FA	Westbound Irving Park Rd Approach		992	496	8.8	0	12	6.039									
12	W	W-TQ	Westbound Irving Park Rd Queue	WBT	865	433	0.0	0	6		90	56	2	20.052	3,101	1,551	2	31	3
13	W	W-FD	Westbound Irving Park Rd Departure		1,071	536	8.8	0	12	6.039									
14	W	W-LQ	Left Turn to SB Ashland Ave	WBL	127	127	0.0	0	3		90	81	2	20.052	1,550	1,550	1	6	3
15	E	E-FA	Eastbound Irving Park Rd Approach		1,191	596	9.0	0	12	5.980									
16	E	E-TQ	Eastbound Irving Park Rd Queue	EBT	843	422	0.0	0	6		90	56	2	20.052	3,040	1,520	2	31	3
17	E	E-FD	Eastbound Ashland Ave Departure		1,021	511	9.0	0	12	5.980									
18	E	E-LQ	Left Turn to NB Ashland Ave	EBL	215	215	0.0	0	3		90	81	2	20.052	1,565	1,565	1	6	3
19	E	E-RQ	Right Turn to SB Ashland Ave	EBR	133	133	0.0	0	3		90	56	2	20.052	1,360	1,360	1	31	3

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Mixing zone width for freeflow traffic  road width  6 meters  
 Mixing zone width for queue traffic  road width

Lane width 3 m  
 Signal Type Actuated  
 Arrival Type Average

Direction Legend  
 N  Northbound  
 S  Southbound  
 W  Westbound  
 E  Eastbound

CTA Ashland Ave BRT

No Build - Intersection 1001 Ashland Ave. & W Irving Park Rd. - PM Peak

Link ID	Direction	ID	Description	Synchro Link	Total Volume	Volume per Lane	Speed mph	Link Height m	Mixing Zone Width m	Freeflow Emission Factor g/v-mi	Queue Traffic Data					# Lanes	Green time length s	Yellow time length s	
											Average signal cycle length s	Average red time length s	Clearance lost time s	Idle Emission Factor g/v-hr	Total Sat. Flow v/hr				Saturation Flow Rate v/hr/lane
1	N	N-FA	Northbound Ashland Ave Approach		1,143	572	14.4	0	12	5.011									
2	N	N-TQ	Northbound Ashland Ave Queue	NBT	925	463	0.0	0	6		90	56	2	20.049	2,745	1,373	2	31	3
3	N	N-FD	Northbound Ashland Ave Departure		1,204	602	14.4	0	12	5.011							2		
4	N	N-LQ	Left Turn to WB Irving Park Rd	NBL	106	106	0.0	0	3		90	81	2	20.049	1,660	1,660	1	6	3
5	N	N-RQ	Right Turn to EB Irving Park Rd	NBR	112	112	0.0	0	3		90	56	2	20.049	941	941	1	31	3
6	S	S-FA	Southbound Ashland Ave Approach		1,233	617	6.7	0	12	6.869							2		
7	S	S-TQ	Southbound Ashland Ave Queue	SBT	988	494	0.0	0	6		90	56	2	20.049	2,973	1,487	2	31	3
8	S	S-FD	Southbound Ashland Ave Departure		1,301	651	6.7	0	12	6.869							2		
9	S	S-LQ	Left Turn to EB Irving Park Rd	SBL	79	79	0.0	0	3		90	81	2	20.049	1,716	1,716	1	6	3
10	S	S-RQ	Right Turn to WB Irving Park Rd	SBR	166	166	0.0	0	3		90	56	2	20.049	1,188	1,188	1	31	3
11	W	W-FA	Westbound Irving Park Rd Approach		935	468	9.4	0	12	5.869							2		
12	W	W-TQ	Westbound Irving Park Rd Queue	WBT	802	401	0.0	0	6		90	56	2	20.052	3,139	1,570	2	31	3
13	W	W-FD	Westbound Irving Park Rd Departure		1,023	512	9.4	0	12	5.869							2		
14	W	W-LQ	Left Turn to SB Ashland Ave	WBL	133	133	0.0	0	3		90	81	2	20.052	1,565	1,565	1	6	3
15	E	E-FA	Eastbound Irving Park Rd Approach		1,199	600	9.6	0	12	5.817							2		
16	E	E-TQ	Eastbound Irving Park Rd Queue	EBT	791	396	0.0	0	6		90	56	2	20.052	3,160	1,580	2	31	3
17	E	E-FD	Eastbound Ashland Ave Departure		982	491	9.6	0	12	5.817							2		
18	E	E-LQ	Left Turn to NB Ashland Ave	EBL	228	228	0.0	0	3		90	81	2	20.052	1,596	1,596	1	6	3
19	E	E-RQ	Right Turn to SB Ashland Ave	EBR	180	180	0.0	0	3		90	56	2	20.052	1,414	1,414	1	31	3

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Mixing zone width for freeflow traffic  road width  6 meters  
 Mixing zone width for queue traffic  road width

Lane width 3 m  
 Signal Type Actuated  
 Arrival Type Average

Direction Legend  
 N  Northbound  
 S  Southbound  
 W  Westbound  
 E  Eastbound

CTA Ashland Ave BRT

Build - Intersection 1001 Ashland Ave. & W Irving Park Rd. - AM Peak

Link ID	Direction	ID	Description	Synchro Link	Total Volume	Volume per Lane	Speed mph	Link Height m	Mixing Zone Width m	Freeflow Emission Factor g/v-mi	Queue Traffic Data						# Lanes	Green time length s	Yellow time length s
											Average signal cycle length s	Average red time length s	Clearance lost time s	Idle Emission Factor g/v-hr	Total Sat. Flow v/hr	Saturation Flow Rate v/hr/lane			
1	N	N-FA	Northbound Ashland Ave Approach		644	644	11.6	0	9	5.403									
2	N	N-TQ	Northbound Ashland Ave Queue	NBT	644	644	0.0	0	3		130	54	2	20.031	1,114	1,114			
3	N	N-FD	Northbound Ashland Ave Departure		827	827	11.6	0	9	5.403									
4	N	N-FA-BUS	Northbound Ashland Bus Approach		12	12	15.9	0	9	2.116									
5	N	N-TQ-BUS	Northbound Ashland Bus Queue		12	12	0.0	0	3		130	54	2	18.569	1,114	1,114			
6	N	N-FD-BUS	Northbound Ashland Bus Departure		12	12	15.9	0	9	2.116									
7	S	S-FA	Southbound Ashland Ave Approach		922	922	3.0	0	9	11.370									
8	S	S-TQ	Southbound Ashland Ave Queue	SBT	922	922	0.0	0	3		130	54	2	20.031	1,434	1,434			
9	S	S-FD	Southbound Ashland Ave Departure		1,077	1,077	3.0	0	9	11.370									
10	S	S-FA-BUS	Southbound Ashland Bus Approach		12	12	15.9	0	9	2.116									
11	S	S-TQ-BUS	Southbound Ashland Bus Queue		12	12	0.0	0	3		130	54	2	18.569	1,434	1,434			
12	S	S-FD-BUS	Southbound Ashland Bus Departure		12	12	15.9	0	9	2.116									
13	W	W-FA	Westbound Irving Park Rd Approach		1,110	555	3.2	0	12	10.859									
14	W	W-TQ	Westbound Irving Park Rd Queue	WBT	982	491	0.0	0	6		130	91	2	20.032	3,073	1,537			
15	W	W-FD	Westbound Irving Park Rd Departure		1,054	527	3.2	0	12	10.859									
16	W	W-LQ	Left Turn to SB Ashland Ave	WBL	128	128	0.0	0	3		130	121	2	20.032	1,550	1,550			
17	E	E-FA	Eastbound Irving Park Rd Approach		1,276	638	4.4	0	12	8.765									
18	E	E-TQ	Eastbound Irving Park Rd Queue	EBT	922	461	0.0	0	6		130	89	2	20.032	3,040	1,520			
19	E	E-FD	Eastbound Ashland Ave Departure		994	497	4.4	0	12	8.765									
20	E	E-LQ	Left Turn to NB Ashland Ave	EBL	216	216	0.0	0	3		130	119	2	20.032	1,565	1,565			
21	E	E-RQ	Right Turn to SB Ashland Ave	EBR	138	138	0.0	0	3		130	89	2	20.032	1,360	1,360			

Data in black obtained from traffic reports

Data in blue are calculated values

Mixing zone width for freeflow traffic  road width  6 meters

Mixing zone width for queue traffic  road width

Lane width 3 m

Signal Type Actuated

Arrival Type Average

Direction Legend

N  Northbound

S  Southbound

W  Westbound

E  Eastbound

CTA Ashland Ave BRT

Build - Intersection 1001 Ashland Ave. & W Irving Park Rd. - PM Peak

Link ID	Direction	ID	Description	Synchro Link	Total Volume	Volume per Lane	Speed mph	Link Height m	Mixing Zone Width m	Freeflow Emission Factor g/v-mi	Queue Traffic Data					# Lanes	Green time length s	Yellow time length s
											Average signal cycle length s	Average red time length s	Clearance lost time s	Idle Emission Factor g/v-hr	Total Sat. Flow v/hr			
1	N	N-FA	Northbound Ashland Ave Approach		630	630	14	0	9	5.090								
2	N	N-TQ	Northbound Ashland Ave Queue	NBT	630	630	0	0	3		110	45	2	20.022	1,180	1,180		
3	N	N-FD	Northbound Ashland Ave Departure		842	842	14	0	9	5.090								
4	N	N-FA-BUS	Northbound Ashland Bus Approach		12	12	16	0	9	2.116								
5	N	N-TQ-BUS	Northbound Ashland Bus Queue		12	12	0	0	3		110	45	2	18.569	1,180	1,180		
6	N	N-FD-BUS	Northbound Ashland Bus Departure		12	12	16	0	9	2.116								
7	S	S-FA	Southbound Ashland Ave Approach		982	982	3	0	9	13.040								
8	S	S-TQ	Southbound Ashland Ave Queue	SBT	982	982	0	0	3		110	45	2	20.022	1,442	1,442		
9	S	S-FD	Southbound Ashland Ave Departure		1,161	1,161	3	0	9	13.040								
10	S	S-FA-BUS	Southbound Ashland Bus Approach		12	12	16	0	9	2.116								
11	S	S-TQ-BUS	Southbound Ashland Bus Queue		12	12	0	0	3		110	45	2	18.569	1,442	1,442		
12	S	S-FD-BUS	Southbound Ashland Bus Departure		12	12	16	0	9	2.116								
13	W	W-FA	Westbound Irving Park Rd Approach		1,059	530	3	0	12	10.881								
14	W	W-TQ	Westbound Irving Park Rd Queue	WBT	927	464	0	0	6		110	79	2	20.023	3,133	1,567		
15	W	W-FD	Westbound Irving Park Rd Departure		1,008	504	3	0	12	10.881								
16	W	W-LQ	Left Turn to SB Ashland Ave	WBL	132	132	0	0	3		110	101	2	20.023	1,565	1,565		
17	E	E-FA	Eastbound Irving Park Rd Approach		1,279	640	5	0	12	8.654								
18	E	E-TQ	Eastbound Irving Park Rd Queue	EBT	871	436	0	0	6		110	78	2	20.023	3,160	1,580		
19	E	E-FD	Eastbound Ashland Ave Departure		939	470	5	0	12	8.654								
20	E	E-LQ	Left Turn to NB Ashland Ave	EBL	228	228	0	0	3		110	100	2	20.023	1,596	1,596		
21	E	E-RQ	Right Turn to SB Ashland Ave	EBR	180	180	0	0	3		110	78	2	20.023	1,414	1,414		

Data in black obtained from traffic reports

Data in blue are calculated values

Mixing zone width for freeflow traffic  road width  6 meters

Mixing zone width for queue traffic  road width

Lane width 3 m

Signal Type Actuated

Arrival Type Average

Direction Legend

N  Northbound

S  Southbound

W  Westbound

E  Eastbound

CTA Ashland Ave BRT

No Build - Intersection 1109 Ashland Ave. & W Cermak Rd. - AM Peak

Link ID	Direction	ID	Description	Synchro Link	Total Volume	Volume per Lane	Speed mph	Link Height m	Mixing Zone Width m	Freeflow Emission Factor g/v-mi	Queue Traffic Data					# Lanes	Green time length s	Yellow time length s	
											Average signal cycle length s	Average red time length s	Clearance lost time s	Idle Emission Factor g/v-hr	Total Sat. Flow v/hr				Saturation Flow Rate v/hr/lane
1	N	N-FA	Northbound Ashland Ave Approach		1,397	699	12.6	0	12	5.236									
2	N	N-TQ	Northbound Ashland Ave Queue	NBT	1,114	557	0.0	0	6		130	69	2	20.048	3,119	1,560	2	58	3
3	N	N-FD	Northbound Ashland Ave Departure		1,488	744	12.6	0	12	5.236							2		
4	N	N-LQ	Left Turn to SB Blue Is Ave WB Cermak	NBL	130	130	0.0	0	3		130	122	2	20.048	1,449	1,449	1	5	3
5	N	N-RQ	Right Turn to W Cermak Rd	NBR	153	153	0.0	0	3		130	69	2	20.048	1,382	1,382	1	58	3
6	S	S-FA	Southbound Ashland Ave Approach		820	410	9.3	0	12	5.889							2		
7	S	S-TQ	Southbound Ashland Ave Queue	SBT	611	306	0.0	0	6		130	77	2	20.048	3,061	1,531	2	50	3
8	S	S-FD	Southbound Ashland Ave Departure		788	394	9.3	0	12	5.889							2		
9	S	S-LQ	Left Turn to EB Cermak Rd	SBL	42	42	0.0	0	3		130	77	2	20.048	1,215	1,215	1	50	3
10	S	S-RQ	Right Turn to WB Cermak Rd/SB Blue Is Ave	SBR	167	167	0.0	0	3		130	77	2	20.048	1,232	1,232	1	50	3
11	W	W-FA	Westbound Cermak Rd Approach		586	293	8.1	0	12	6.269							2		
12	W	W-TQ	Westbound Cermak Rd Queue	WBT	402	201	0.0	0	6		130	88	2	20.052	2,716	1,358	2	39	3
13	W	W-FD	Westbound Cermak Rd Departure		431	216	8.1	0	12	6.269							2		
14	W	W-LQ	Left Turn to SB Ashland/SB Blue Is Ave	WBL	184	184	0.0	0	3		130	114	2	20.052	1,341	1,341	1	13	3
15	E	E-FA	Eastbound Cermak Rd Approach		403	202	5.7	0	12	7.489							2		
16	E	E-TQ	Eastbound Cermak Rd Queue	EBT	329	165	0.0	0	6		130	104	2	20.052	3,081	1,541	2	23	3
17	E	E-FD	Eastbound Cermak Rd Departure		665	333	5.7	0	12	7.489							2		
18	E	E-LQ	Left Turn to NB Ashland Ave	EBL	74	74	0.0	0	3		130	104	2	20.052	1,425	1,425	1	23	3
19	N	NE-FA	Northbound Blue Island Ave Approach		423	423	4.2	0	9	8.998							1		
20	N	NE-LQ	Left Turn to WB Cermak Rd/NB Ashland Ave	NEL	196	196	0.0	0	3		130	106	2	20.052	1,401	1,401	1	21	3
21	N	NE-RQ	Right Turn to SB Ashland Ave/EB Cermak Rd	NER	227	227	0.0	0	3		130	106	2	20.052	1,327	1,327	1	21	3
22	N	SW-FD	Southbound Blue Island Ave Departure		257	257	4.2	0	9	8.998							1		

Data in black obtained from traffic reports  
 Data in blue are calculated values

Mixing zone width for freeflow traffic  road width  6 meters  
 Mixing zone width for queue traffic  road width

Lane width 3 m  
 Signal Type Actuated  
 Arrival Type Average

Direction Legend  
 N  Northbound  
 S  Southbound  
 W  Westbound  
 E  Eastbound

CTA Ashland Ave BRT

No Build - Intersection 1109 Ashland Ave. & W Cermak Rd. - PM Peak

Link ID	Direction	ID	Description	Synchro Link	Total Volume	Volume per Lane	Speed mph	Link Height m	Mixing Zone Width m	Freeflow Emission Factor g/v-mi	Queue Traffic Data					# Lanes	Green time length s	Yellow time length s	
											Average signal cycle length s	Average red time length s	Clearance lost time s	Idle Emission Factor g/v-hr	Total Sat. Flow v/hr				Saturation Flow Rate v/hr/lane
1	N	N-FA	Northbound Ashland Ave Approach		950	475	14.6	0	12	4.988									
2	N	N-TQ	Northbound Ashland Ave Queue	NBT	765	383	0.0	0	6		130	65	2	20.048	2,455	1,228	2	62	3
3	N	N-FD	Northbound Ashland Ave Departure		987	494	14.6	0	12	4.988									
4	N	N-LQ	Left Turn to SB Blue Is Ave WB Cermak	NBL	94	94	0.0	0	3		130	122	2	20.048	1,528	1,528	1	5	3
5	N	N-RQ	Right Turn to W Cermak Rd	NBR	91	91	0.0	0	3		130	65	2	20.048	684	684	1	62	3
6	S	S-FA	Southbound Ashland Ave Approach		1,393	697	7.0	0	12	6.718									
7	S	S-TQ	Southbound Ashland Ave Queue	SBT	1,112	556	0.0	0	6		130	73	2	20.048	2,944	1,472	2	54	3
8	S	S-FD	Southbound Ashland Ave Departure		1,327	664	7.0	0	12	6.718									
9	S	S-LQ	Left Turn to EB Cermak Rd	SBL	67	67	0.0	0	3		130	73	2	20.048	1,463	1,463	1	54	3
10	S	S-RQ	Right Turn to WB Cermak Rd/SB Blue Is Ave	SBR	214	214	0.0	0	3		130	73	2	20.048	1,211	1,211	1	54	3
11	W	W-FA	Westbound Cermak Rd Approach		641	321	7.9	0	12	6.342									
12	W	W-TQ	Westbound Cermak Rd Queue	WBT	385	193	0.0	0	6		130	88	2	20.052	3,051	1,526	2	39	3
13	W	W-FD	Westbound Cermak Rd Departure		473	237	7.9	0	12	6.342									
14	W	W-LQ	Left Turn to SB Ashland/SB Blue Is Ave	WBL	256	256	0.0	0	3		130	114	2	20.052	1,442	1,442	1	13	3
15	E	E-FA	Eastbound Cermak Rd Approach		405	203	5.6	0	12	7.564									
16	E	E-TQ	Eastbound Cermak Rd Queue	EBT	324	162	0.0	0	6		130	104	2	20.052	3,062	1,531	2	23	3
17	E	E-FD	Eastbound Cermak Rd Departure		567	284	5.6	0	12	7.564									
18	E	E-LQ	Left Turn to NB Ashland Ave	EBL	81	81	0.0	0	3		130	104	2	20.052	1,596	1,596	1	23	3
19	N	NE-FA	Northbound Blue Island Ave Approach		322	322	5.7	0	9	7.489									
20	N	NE-LQ	Left Turn to WB Cermak Rd/NB Ashland Ave	NEL	106	106	0.0	0	3		130	106	2	20.052	1,637	1,637	1	21	3
21	N	NE-RQ	Right Turn to SB Ashland Ave/EB Cermak Rd	NER	216	216	0.0	0	3		130	106	2	20.052	1,425	1,425	1	21	3
22	N	SW-FD	Southbound Blue Island Ave Departure		357	357	5.7	0	9	7.489									

Data in black obtained from traffic reports  
 Data in blue are calculated values

Mixing zone width for freeflow traffic  road width  6 meters  
 Mixing zone width for queue traffic  road width

Lane width 3 m  
 Signal Type Actuated  
 Arrival Type Average

Direction Legend  
 N  Northbound  
 S  Southbound  
 W  Westbound  
 E  Eastbound

CTA Ashland Ave BRT

Build - Intersection 1109 Ashland Ave. & W Cermak Rd. - AM Peak

Link ID	Direction	ID	Description	Synchro Link	Total Volume	Volume per Lane	Speed mph	Link Height m	Mixing Zone Width m	Freeflow Emission Factor g/v-mi	Queue Traffic Data					# Lanes	Green time length s	Yellow time length s	
											Average signal cycle length s	Average red time length s	Clearance lost time s	Idle Emission Factor g/v-hr	Total Sat. Flow v/hr				Saturation Flow Rate v/hr/lane
1	N	N-FA	Northbound Ashland Ave Approach		778	778	2	0	9	18.121									
2	N	N-TQ	Northbound Ashland Ave Queue	NBT	778	778	0	0	3		130	58	2	20.020	849	849	1	69	3
3	N	N-FD	Northbound Ashland Ave Departure		1,154	1,154	2	0	9	18.121									
4	N	N-FA-BUS	Northbound Ashland Bus Approach		12	12	16	0	9	2.116									
5	N	N-TQ-BUS	Northbound Ashland Bus Queue		12	12	0	0	3		130	58	2	18.569	849	849	1	69	3
6	N	N-FD-BUS	Northbound Ashland Bus Departure		12	12	16	0	9	2.116									
7	S	S-FA	Southbound Ashland Ave Approach		613	613	9	0	9	6.114									
8	S	S-TQ	Southbound Ashland Ave Queue	SBT	613	613	0	0	3		130	57	2	20.020	1,291	1,291	1	70	3
9	S	S-FD	Southbound Ashland Ave Departure		660	660	9	0	9	6.114									
10	S	S-FA-BUS	Southbound Ashland Bus Approach		12	12	16	0	9	2.116									
11	S	S-TQ-BUS	Southbound Ashland Bus Queue		12	12	0	0	3		130	57	2	18.569	1,291	1,291	1	70	3
12	S	S-FD-BUS	Southbound Ashland Bus Departure		12	12	16	0	9	2.116									
13	W	W-FA	Westbound Cermak Rd Approach		852	426	4	0	12	8.782									
14	W	W-TQ	Westbound Cermak Rd Queue	WBT	668	334	0	0	6		130	92	2	20.021	2,561	1,281	2	35	3
15	W	W-FD	Westbound Cermak Rd Departure		521	261	4	0	12	8.782									
16	W	W-LQ	Left Turn to SB Ashland/SB Blue Is Ave	WBL	184	184	0	0	3		130	122	2	20.021	1,347	1,347	1	5	3
17	E	E-FA	Eastbound Cermak Rd Approach		457	229	6	0	12	7.063									
18	E	E-TQ	Eastbound Cermak Rd Queue	EBT	380	190	0	0	6		130	100	2	20.021	2,965	1,483	2	27	3
19	E	E-FD	Eastbound Cermak Rd Departure		614	307	6	0	12	7.063									
20	E	E-LQ	Left Turn to NB Ashland Ave	EBL	77	77	0	0	3		130	100	2	20.021	1,451	1,451	1	27	3
21	NE	NE-FA	Northbound Blue Island Ave Approach		449	449	2	0	9	21.745									
22	NE	NE-LQ	Left Turn to WB Cermak Rd/NB Ashland	NEL	208	208	0	0	3		130	113	2	20.021	1,401	1,401	1	14	3
23	NE	NE-RQ	Right Turn to SB Ashland Ave/EB Cermak	NER	241	241	0	0	3		130	113	2	20.021	1,329	1,329	1	14	3
24	SW	SW-FD	Southbound Blue Island Ave Departure		200	200	2	0	9	21.745									

Data in black obtained from traffic reports

Data in blue are calculated values

Mixing zone width for freeflow traffic  road width  6 meters

Mixing zone width for queue traffic  road width

Lane width 3 m

Signal Type Actuated

Arrival Type Average

Direction Legend

N  Northbound

S  Southbound

W  Westbound

E  Eastbound

CTA Ashland Ave BRT

Build - Intersection 1109 Ashland Ave. & W Cermak Rd. - PM Peak

Link ID	Direction	ID	Description	Synchro Link	Total Volume	Volume per Lane	Speed mph	Link Height m	Mixing Zone Width m	Freeflow Emission Factor g/v-mi	Queue Traffic Data					# Lanes	Green time length s	Yellow time length s	
											Average signal cycle length s	Average red time length s	Clearance lost time s	Idle Emission Factor g/v-hr	Total Sat. Flow v/hr				Saturation Flow Rate v/hr/lane
1	N	N-FA	Northbound Ashland Ave Approach		760	760	2	0	9	16.401									
2	N	N-TQ	Northbound Ashland Ave Queue	NBT	760	760	0	0	3		110	49	2	20.000	875	875	1	58	3
3	N	N-FD	Northbound Ashland Ave Departure		909	909	2	0	9	16.401							1		
4	N	N-FA-BUS	Northbound Ashland Bus Approach		12	12	16	0	9	2.116							1		
5	N	N-TQ-BUS	Northbound Ashland Bus Queue		12	12	0	0	3		110	49	2	18.569	875	875	1	58	3
6	N	N-FD-BUS	Northbound Ashland Bus Departure		12	12	16	0	9	2.116							1		
7	S	S-FA	Southbound Ashland Ave Approach		659	659	9	0	9	6.031							1		
8	S	S-TQ	Southbound Ashland Ave Queue	SBT	659	659	0	0	3		110	48	2	20.000	1,394	1,394	1	59	3
9	S	S-FD	Southbound Ashland Ave Departure		770	770	9	0	9	6.031							1		
10	S	S-FA-BUS	Southbound Ashland Bus Approach		12	12	16	0	9	2.116							1		
11	S	S-TQ-BUS	Southbound Ashland Bus Queue		12	12	0	0	3		110	48	2	18.569	1,394	1,394	1	59	3
12	S	S-FD-BUS	Southbound Ashland Bus Departure		12	12	16	0	9	2.116							1		
13	W	W-FA	Westbound Cermak Rd Approach		756	378	8	0	12	6.335							2		
14	W	W-TQ	Westbound Cermak Rd Queue	WBT	500	250	0	0	6		110	75	2	20.001	3,041	1,521	2	32	3
15	W	W-FD	Westbound Cermak Rd Departure		490	245	8	0	12	6.335							2		
16	W	W-LQ	Left Turn to SB Ashland/SB Blue Is Ave	WBL	256	256	0	0	3		110	101	2	20.001	1,451	1,451	1	6	3
17	E	E-FA	Eastbound Cermak Rd Approach		486	243	7	0	12	7.022							2		
18	E	E-TQ	Eastbound Cermak Rd Queue	EBT	405	203	0	0	6		110	84	2	20.001	3,006	1,503	2	23	3
19	E	E-FD	Eastbound Cermak Rd Departure		551	276	7	0	12	7.022							2		
20	E	E-LQ	Left Turn to NB Ashland Ave	EBL	81	81	0	0	3		110	84	2	20.001	1,596	1,596	1	23	3
21	NE	NE-FA	Northbound Blue Island Ave Approach		307	307	5	0	9	7.952							1		
22	NE	NE-LQ	Left Turn to WB Cermak Rd/NB Ashland	NEL	101	101	0	0	3		110	99	2	20.001	1,637	1,637	1	8	3
23	NE	NE-RQ	Right Turn to SB Ashland Ave/EB Cermak	NER	206	206	0	0	3		110	99	2	20.001	1,424	1,424	1	8	3
24	SW	SW-FD	Southbound Blue Island Ave Departure		248	248	5	0	9	7.952							1		

Data in black obtained from traffic reports

Data in blue are calculated values

Mixing zone width for freeflow traffic  road width  6 meters

Mixing zone width for queue traffic  road width

Lane width 3 m

Signal Type Actuated

Arrival Type Average

Direction Legend

N  Northbound

S  Southbound

W  Westbound

E  Eastbound