ROUX

Air Quality Impact Statement (AQIS) Report

7601 S. Cicero Avenue
Chicago, Illinois 60652

Submitted: July 25, 2025

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Signature Page

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Acronym List

Acronym	Definition
AERMOD	American Meteorological Society/Environmental Protection Agency Regulatory Model
AERMAP	AERMOD Terrain Preprocessor
AERMET	AERMOD Meteorological Data Preprocessor
AGL	Above Ground Level
AMS	American Meteorological Society
AMSL	Above Mean Sea Level
AP-42	USEPA Compilation of Air Pollutant Emission Factors
AQIS	Air Quality Impact Statement
Btu	British thermal unit
°C	degrees Celsius
CDPH	Chicago Department of Public Health
cfm	cubic feet per minute
EF	Emission Factor
g	Gram
GUI	Graphical User Interface
hp	horsepower
IEPA	Illinois Environmental Protection Agency
kv	kilovolt
kW	kilowatt
LOS	Levels of Service
MBH	Million Btu-per-hour
M	Molecular weight of the gaseous pollutant
MET	Meteorological
MOVES	Motor Vehicle Emissions Simulator

Acronym	Definition
mph	mile per hour
NAAQS	National Ambient Air Quality Standards
NED	National Elevation Dataset
NEPA	National Environmental Policy Act
NO_2	Nitrogen dioxide
NO_x	Nitrogen oxides (NO and NO_2)
NWS	National Weather Station
ph	phase
PM	Particulate Matter
$PM_{2.5}$	Particulate matter with aerodynamic diameter less than 2.5 microns
PM_{10}	Particulate matter with aerodynamic diameter less than 10 microns
ppb	Parts per billion
Roux	Roux Associates, Inc.
Site	Proposed Development at 7601 S Cicero Avenue, Chicago, IL
USEPA	United States Environmental Protection Agency
USGS	United States Geological Survey
VMT	Vehicle Miles Travelled
$\mu g/m^3$	micrograms per cubic meter

Executive Summary

On behalf of Midwest RE Acquisitions LLC (Bridge Industrial), Roux Associates, Inc. (Roux) has prepared this Air Quality Impact Statement (AQIS) report for the property located at 7601 S Cicero Avenue in the City of Chicago, Cook County, Illinois (Site). The purpose of this AQIS report is to present the results of an air quality impact analysis designed to evaluate the proposed site operation impact on the ambient air quality. This air quality analysis was performed in accordance with the requirements of the Chicago Department of Public Health's Air Quality Impact Evaluation Interim Guidance publication dated September 2021 (CDPH, 2021).

The intent of the ambient air impact analysis is to evaluate whether the Site is protective of the National Ambient Air Quality Standards (NAAQS). NAAQS are maximum concentrations of criteria pollutants in the ambient air that are required by the Clean Air Act to be established by the United States Environmental Protection Agency (USEPA) under the Clean Air Act at levels that are protective of public health.

For purposes of this air quality analysis, it assumed that the proposed on-Site stationary combustion sources consist of sources related to typical building support functions such as steam or heat generation, refrigeration rooftop units, fire suppression, or emergency power generation. Currently, the combustion sources for buildings A, C, and D are assumed to be natural gas-fired space heaters with a total heating value of 26 MMBtu-per-hour, one potential 100-kW diesel emergency backup power generator per building, and one potential 50-hp diesel-fired fire pump as fire suppression support per building. Also, one natural gas-fired refrigeration unit with a total of 1,000-hp for building B was assumed. It was conservatively assumed that the building function supporting units will operate 24 hours per day for 365 days a year, the emergency backup power system and the fire pump operate 500 hours per year.

The on-Site and off-Site portion of the study estimates mobile-source emissions of Nitrogen Dioxide (NO_2), particulate matter less than 10 micrometers aerodynamic diameter (PM_{10}) and particulate matter less than 2.5-micron aerodynamic diameter ($PM_{2.5}$), associated with the proposed building and intersections, which was identified in a completed Traffic Impact Study, prepared by Kenig, Lindgren, O'Hara, Aboona, Inc. (KLOA, Inc.) on June 26, 2025 (KLOA, 2025). Mobile-source emissions estimates were based on EPA's Motor Vehicle Emission Simulator (MOVES) emission modeling system.

Dispersion modeling was conducted using the latest version of the U.S. EPA-approved AERMOD dispersion modeling system (AERMOD Version 23132). American Meteorological Society/Environmental Protection Agency Regulatory Model (AERMOD) is a gaussian mathematical dispersion model that can predict ambient concentrations of pollutants that result from releases to the atmosphere. AERMOD uses hour-by-hour meteorological data to predict the patterns of ambient concentrations of pollutants over time. To evaluate the potential impacts of emissions from the Site on the public, the dispersion modeling evaluation must consider the existing background concentrations of pollutants in the area where impacts are being evaluated. The background concentration of a given pollutant is added to the modeled impact from the Site, and the result is compared to the NAAQS. The NAAQS are allowable concentration limits applied at the public access boundary.

The model predictions indicate the potential impacts from stationary and mobile sources related to the Site's proposed increased activities will be negligible and therefore will not lead to localized exceedances of the NAAQS for NO_2, PM_{10}, and $PM_{2.5}$. The 98^{th} percentile of 1-hour daily maximum NO_2 concentrations reaches as high as 108.0 μg/m^3 with the seasonal hourly background concentration (below the NAAQS of 188 μg/m^3). The highest annual average NO_2 concentration is of the order of 31.9 μg/m^3 (below the allowable NAAQS of 99.6 ppb). The highest 24-hour average PM_{10} concentration of 121.4 μg/m^3 is also below the NAAQS of 150 μg/m^3. The 98th percentile of 24-hour average $PM_{2.5}$ concentration reaches as high as 25.1 μg/m^3 (below the NAAQS of 35 μg/m^3). The highest annual average $PM_{2.5}$ concentration is of the order of 10.6 μg/m^3 (above the allowable NAAQS of 9 μg/m^3).

Since the design value for annual average $PM_{2.5}$ is already exceeding the newly stablished NAAQS value of 9 μg/m3 for annual $PM_{2.5}$, more analysis was conducted on the SIL. The SIL for annual average $PM_{2.5}$ is 0.13 μg/m^3. The highest annual average $PM_{2.5}$ without including the background was 0.6 μg/m^3, which exceeded the recommended SIL. The impact of the stationary and mobile sources was looked at separately to evaluate the main source of annual $PM_{2.5}$ SIL exceedances. The SIL exceedance only occurs for stationary sources and is limited to the Site vicinity and do not overlap with any other businesses in the area. There is no SIL exceedance for mobile sources off-site. The model results show that the predicted concentrations decrease rapidly with distance from the Site boundary. Furthermore, it does not appear that there is any other emission source with significant impacts in the vicinity of the Site in areas that Site-related impacts show potential exceedances of SILs.

The estimates may reflect conservative assumptions regarding vehicle utilization and facility-related activities. Predicted concentrations generally decrease rapidly with distance from the Site boundary, characteristic of the dispersion of emissions from a ground-level (area) source. In addition, the AP42-based value for the space heater is based on the conservative assumption that the heater unit operates 24 hours per day for 365 days a year, the emergency backup power system operates 500 hours per year, and the fire pump system operates 500 hours per year. These may greatly overestimate actual emissions. It is unlikely that the heater will run all the time throughout the entire day or during certain seasons (e.g., summer).

1. Introduction

On behalf of Midwest RE Acquisitions LLC (Bridge Industrial), Roux Associates, Inc. (Roux) has prepared this Air Quality Impact Statement (AQIS) report for the property (Site) located at 7601 S Cicero Avenue in the City of Chicago, Cook County, Illinois (**Figure 1**). The Site is east side of Cicero Avenue between 74th Place and 76th Street in Chicago, IL. The purpose of this AQIS report is to present the results of an air quality impact analysis designed to evaluate the impact of the full Site operation on the ambient air quality after the proposed development.

The intent of the ambient air impact analysis is to evaluate whether the Site is protective of the National Ambient Air Quality Standards (NAAQS). NAAQS are concentrations of specific pollutants in the ambient air that are established by the USEPA under the Clean Air Act at levels that are protective of public health. When the measured concentrations of these specific pollutants in the ambient air are below the NAAQS, it is presumed that public health is protected. Large sources of air emissions that are required to undergo certain types of permitting under the Clean Air Act must conduct an ambient air impact analysis prior to implementation. For these types of sources, the analysis must demonstrate that the NAAQS will not be exceeded as a result of the additional source(s). Although the proposed increased activities are not subject to Clean Air Act permitting requirements, the same tools may be used to evaluate their impact on the ambient air. The City of Chicago has requested that an air quality impact statement be submitted to demonstrate the protection of the NAAQS.

Air dispersion models predict the concentrations of pollutants in the ambient air surrounding the Site, based on the Site's maximum emissions, for each hour of the day and year using historical local meteorological data. The pollutant concentrations predicted by the air dispersion modeling are then added to existing background concentrations (using values that have been measured over a year or more) of each pollutant. The summed results are then compared to the NAAQS. Air dispersion models are designed and rigorously tested to take into account realistic scenarios and yield conservative results when predicting ambient air quality impacts.

Air dispersion models are built using mathematical equations and algorithms that represent known atmospheric processes and incorporate empirical data. Modeling of ambient air quality impacts from the Site was conducted using the latest version of the regulatory dispersion model developed by the American Meteorological Society (AMS) and the EPA, the AMS/EPA Regulatory Model, known as AERMOD. The modeling analysis used a continuous five-year record of meteorological data comprised of nearest station's temperature and wind data.

The main pollutants of concern are NO_2, particulate matter less than 10 micrometers aerodynamic diameter (PM_{10}), and particulate matter less than 2.5-micron aerodynamic diameter ($PM_{2.5}$) from Project-generated traffic and from building stationary sources (e.g., heaters and forklifts). The NOx emissions include NO emissions that are converted to NO_2 in the atmosphere, as well as directly emitted NO_2.

1.1 Report Organization

This AQIS report is organized into five sections: **Section 1.0** is an introduction to the report; **Section 2.0** provides a Site description and project background; **Section 3.0** presents an overview of air quality analysis methodology; **Section 4.0** summarizes the results of the air quality analysis; and **Section 5.0** includes a list of references used to prepare this report. A list of acronyms and abbreviations is provided following the Table of Contents.

The current proposed site plan is shown in **Appendix A**. Stationary Source emission calculations are summarized in **Appendix B**. Summary of mobile source link input parameters are shown in **Appendix C**. CDPH-provided Seasonal Hourly NO_2 Background Concentrations Table is presented in **Appendix D**. AERMOD Model Electronic Run Files are included in **Appendix E**.

2. Site Background and Project Overview

2.1 Proposed Development Description

The Ford City Mall (Site) is located at 7601 S Cicero Avenue, Chicago IL, on the east side of Cicero Avenue between 74th Place and 76th Street. As proposed, the Site will be redeveloped with four industrial buildings totaling approximately 913,950 square feet. Employee parking will be accommodated within surface parking lots throughout the Site totaling 858 parking spaces. Access to the Site will be provided via 76th Street and the existing access road that borders the Site to the north.

Ford City Mall is a multi-building shopping mall featuring a central enclosed building. The total gross leasable area is approximately 1,352,000 million square feet, distributed as follows:

- The central mall building, located between 74th Place and 76th Street, is approximately 956,000 square feet. It is anchored by JCPenney and the vacant Carson Pirie Scott store.
- Five buildings along the east side of Cicero Avenue provide about 40,000 square feet of space and contain a variety of retail stores and restaurants.
- A retail center situated on the north side of 74th Place is approximately 190,000 square feet and features nine retailers, including Planet Fitness, Marshalls, and Ross Dress For Less. Approximately 46,516 square feet of this building is currently vacant.
- The vacant Sears building is located in the northeast corner of the site and measures approximately 94,000 square feet.
- An AMC movie theater, with an area of approximately 72,000 square feet, is located on the west side of Kostner Avenue, south of 76th Street.

Only the central mall building is undergoing redevelopment. Access to the site is proposed to be provided as follows:

- 74th Place: This road serves the parking areas between the central mall building and the retail center/Sears, as well as the parking lot to the west of the retail center. It has a traffic signal at its intersection with Cicero Avenue.
- 76th Street: This street provides access to two buildings, the parking areas south of the central mall building, and the AMC movie theater. It has signalized intersections with Cicero Avenue, Kostner Avenue, and Pulaski Avenue.
- Three internal access roads: These roads encircle the central mall building, facilitating entry to the surrounding parking areas.

2.2 Purpose of Air Quality Modeling and Submittal of Report

Both on-Site and off-Site activities of the development at the Site will increase emissions in the area surrounding the Site. Therefore, air quality modeling was performed to identify, to the extent feasible, the impact those emissions would have on ambient air quality. The City of Chicago ("City"), in accordance with the Chicago Air Quality Ordinance requirements, has requested that an air quality impact analysis be submitted to demonstrate that the NAAQS will be protected. The objective of this modeling effort is to provide an assessment of pollutant concentrations in ambient air and the resulting potential impacts on the public.

2.3 Air Quality Regulatory Framework

The Air Quality Ordinance, approved by the City of Chicago Council in March 2021, regulates the construction and expansion of certain facilities that create air pollution. For certain types of operations, the ordinance requires site plan review and approval by various departments including the Chicago Department of Public Health (CDPH). An air quality impact study, which will be reviewed by CDPH, must be included as part of the site plan submittal. The air quality impact study will model potential emissions from the business and its proposed increased operations using air modeling software, such as the U.S. EPA's AERMOD and EPA MOVES, to evaluate emissions from various sources.

This document presents the methodologies that were followed for the MOVES and AERMOD modeling as requested by the City, as well as the results of that modeling. The modeling methodologies presented herein were followed to assess ambient air quality impacts from the Site for its updated/anticipated operations. This report has been developed following recommendations of the USEPA Guideline on Air Quality Models (Guidelines, 40 CFR Part 51, Appendix W, January 2017) and Chicago Department of Public Health (CDPH) Air Quality Impact Evaluation Interim Guidance (CDPH, 2021).

3. Air Quality Analysis Methodology

This section describes the air dispersion modeling methods, procedures, assumptions, and datasets that were used for the air quality analyses. The methodologies that were followed to calculate the pollutant emissions from each source (area and point sources are currently proposed) within the Site as well as mobile-source emissions associated with the facility and intersections are summarized below.

3.1 Stationary Equipment Emissions

Roux compiled information about stationary sources of air emissions at the Site and documented the types and quantities of air contaminants expected to be generated from these sources under assumed worst-case facility operating conditions. This information was used to evaluate NO_2, $PM_{2.5}$ and PM_{10} emissions from each point source within the proposed project at the Site.

3.1.1 Combustion Sources

For purposes of this air quality analysis, it is assumed that the proposed on-Site stationary combustion sources consist of sources related to typical building support functions such as steam or heat generation, fire suppression support, or emergency power generation. This facility consists of four separate buildings: Building A, Building B, Building C, and Building D. At this stage of the project the only potential stationary combustion sources are:

- In Building A, three diesel space heaters with a total heating value of 12,000,000 British thermal unit (Btu)-per-hour in order to provide approximately 40 Btu of heating per square foot in Chicago;
- In Building B, two diesel space heaters with a total heating value of 2,000,000 British thermal unit (Btu)-per-hour in order to provide approximately 40 Btu of heating per square foot in Chicago;
- In Building C, two diesel space heaters with a total heating value of 8,000,000 Btu-per-hour in order to provide approximately 40 Btu of heating per square foot in Chicago;
- In Building D, one diesel space heater with a total heating value of 4,000,000 Btu-per-hour in order to provide approximately 40 Btu of heating per square foot in Chicago;
- One 100-kW diesel emergency backup power generator per building; and
- One 50-hp diesel-fired fire pump as fire suppression support per building.

The emissions from stationary sources were combined and modeled using two point sources (i.e., Stack 1 and Stack 2). It was assumed that all potential on-Site forklifts during operation phase will be electric-based and therefore were excluded from the on-Site emission calculations.

Space Heater

The diesel space heaters have a total heating value of 4,200,000 Btu-per-hours to satisfy the 102,886 square feet area of the proposed Warehouse Building (i.e., approximately 40 Btu of heating per square foot). The space heater for the building is assumed to be roof mounted on the building. It was conservatively assumed that the operating units run 24 hours per day for 365 days a year resulting in a total of 8,760 hours of operation per year for each unit. Emissions were estimated using USEPA Compilation of Air Pollutant Emissions Factors (AP-42) for natural gas combustion from Chapter 1.4. The average gross heating value of natural gas is assumed to be approximately 40 British thermal units per standard cubic foot (Btu/scf). The calculated emissions rates of each pollutant from one space heater are summarized in **Table 1**. Details of source emission calculations are presented in **Appendix B**.

Emergency Backup Power System

The backup power system is assumed to be a 100-kW diesel generator. Emission calculations utilize emission factors for criteria air pollutants provided in EPA's AP-42 Compilation of Air Pollutant Emission Factors (AP-42) Section 3.3, Gasoline and Diesel Industrial Engines (EPA, 1996). Emissions calculated using AP-42 emission factors (lb/hp-hr) for a typical generator engine with less than 600 hp multiplied by the engine's power rating (hp) (based on a conversion factor of 1.34 hp/kW), by a load factor (0.21), and by the total annual operating hours (assumed to be 500 hours per year for the maximum allowable hours of operation for an emergency generator). The load factor is fraction of available power from the maximum power level. According to USEPA (2010):

> *"Rated power is the maximum power level that an engine is designed to produce at its rated speed. Engines typically operate at a variety of speeds and loads, and operation at rated power for extended periods is rare. To take into account the effect of operation at idle and partial load conditions, as well as transient operation, a load factor is developed to indicate the average proportion of rated power used. For example, at a 0.3 (or 30 percent) load factor, an engine rated at 100 hp would be producing an average of 30 hp over the course of normal operation."*

The calculated emissions rates of each pollutant from the emergency backup power system are summarized in **Table 1**. Details of source emission calculations are presented in **Appendix B**.

Fire Pump (Fire Suppression Support)

The fire pump is assumed to be a 50-hp diesel-fueled fire pump. Emission calculations utilize emission factors for criteria air pollutants provided in EPA's AP-42 Compilation of Air Pollutant Emission Factors (AP-42) Section 3.3, Gasoline and Diesel Industrial Engines (EPA, 1996). Emissions calculated using AP-42 emission factors (lb/hp-hr) for a typical generator engine with less than 600 hp multiplied by the engine's power rating (hp), by a load factor (0.21), and by the total annual operating hours (assumed to be 500 hours per year for the maximum allowable hours of operation for a fire pump). The calculated emissions rates of each pollutant from the fire suppression support system are summarized in **Table 1**. Details of source emission calculations are presented in **Appendix B**.

Table 1: Calculated Emissions Rates from Stationary Sources

Pollutant	Emission Rate						Unit
	Space Heaters[1]				Emergency Backup Power[2]	Fire Pump[2]	
	Building A	Building B	Building C	Building D			
NO_2	3.11E-02	5.19E-03	2.08E-02	1.04E-02	6.27E-03	2.34E-03	gr/sec
PM_{10}	2.37E-03	3.94E-04	1.58E-03	7.89E-04	4.45E-04	1.66E-04	gr/sec
$PM_{2.5}$	2.37E-03	3.94E-04	1.58E-03	7.89E-04	4.45E-04	1.66E-04	gr/sec

Notes:
[1] Emission factors from AP-42, Chapter 1.4
[2] Emission factors from AP-42, Chapter 3.3

3.1.2 Cooling Sources

In addition to the stationary combustion sources assumed to be on-site in the previous section, the Site has been designed to have one building, Building B, dedicated to cold storage which will require the use of cooling power to lower the building to a cooling storage temperature. At this stage of the project the only potential cooling source is one AC refrigeration unit in Building B with a power of 5.16 MMBTU or 2,026 hp. It is estimated that one ton of cooling power is required per 500 square feet and it is assumed that 80% of the building area will be utilized as cold storage area. Multiplying the Power of refrigeration unit by the load factor consistent with stationary combustion sources from the previous section by the emission factors will give a representative quantity for cooling power required for the course of a year.

Pollutant	Refrigeration Unit	Total	Unit
NO_2	0.973	**0.973**	gr/hp-hr
PM_{10}	0.058	**0.058**	gr/hp-hr
$PM_{2.5}$	0.058	**0.058**	gr/hp-hr

Note: Emission factors from CDPH lookup table for A/C Refrigeration

3.1.3 Fugitive Dust

Atmospheric dust arises from the mechanical disturbance of granular material exposed to the air. Dust generated from these open sources is termed "fugitive" because it is not discharged to the atmosphere in a confined flow stream. Common sources of fugitive dust include unpaved and paved roads, agricultural tilling operations, aggregate storage piles, and heavy construction operations. The potential fugitive dust emission expected at this Site is from trucks and on-Site equipment traveling on paved roads.

Particulate emissions (i.e., $PM_{2.5}$ and PM_{10}) occur whenever vehicles or equipment travel over a paved surface such as a road or parking lot. Particulate emissions from paved surfaces are due to direct emissions from vehicles in the form of exhaust, brake wear and tire wear emissions, and resuspension of loose material on the road surface. Emission calculations utilize emission factors for criteria air pollutants provided in EPA's AP-42 Fifth Edition, Volume I Chapter 13 Section 13.2.1 Paved Roads (USEPA, 2011). The calculated particulate emission rates from on-Site fugitive dust sources are summarized in **Table 2**. The on-Site fugitive source emission rates were added to the calculated emissions rates from stationary sources for on-site area link.

Table 2: Calculated Fugitive Dust Emissions from Paved Roads

Parameter	$PM_{2.5}$	PM_{10}	Reference
Average Passenger Car Weight	2 tons		Assumed
Average Truck Weight	20 tons		Assumed
Road Surface Silt Loading (sL)	1.18 g/m^2		Calculated[1]

Parameter	$PM_{2.5}$	PM_{10}	Reference
Mean number of days with 0.01 inch or more of precipitation in Chicago	120 days		Figure 13.2.1-2
Particle Size Multiplier (k)	0.25 g/VMT	1.00 g/VMT	Table 13.2.1-1

Notes:
- [1] Calculated from AP-42, Chapter 13.2.1 Table 13.2.1-2 for 240 days of Ubiquitous Baseline and 120 days of Ubiquitous Winter Baseline Multiplier during months with frozen precipitation for low volume roads (< 500 ADT)
- Emission factors for each model link were calculated from AP-42, Chapter 13.2.1 equation (2)

To calculate the particulate emission rates from off-Site fugitive dust sources (i.e., passenger cars and trucks driving on paved roads), the actual number of passenger cars and trucks in each off-Site model link were used to calculate the particulate emission rates. Off-Site fugitive particulate emission rates are summarized in **Appendix C**.

3.2 Mobile Sources Emissions

The on-Site and off-Site portion of the study estimated mobile-source emissions of $PM_{2.5}$, PM_{10} and NO_2, associated with the facility building and intersections, which was identified in a completed Traffic Impact Study, prepared by Kenig, Lindgren, O'Hara, Aboona, Inc. (KLOA, Inc.) dated June 26, 2025 (KLOA, 2025). Mobile-source emission rates were modeled using EPA's Motor Vehicle Emission Simulator (MOVES) emission modeling system. Emission factor lookup tables provided by CDPH were used to prepare emissions inventories for mobile equipment. The tables were created from USEPA's most recent version of MOVES. Emission factors are based on default inputs available in MOVES as obtained directly from the USEPA as well as inputs prepared by Chicago Metropolitan Agency for Planning (CMAP).

3.2.1 Traffic Data Preparation

Traffic data was obtained from the Traffic Impact Study (KLOA, 2025) for the calendar years 2025 (actual observations) and 2031 (projections). The Traffic Impact Study evaluated the potential traffic impacts of the Site. **Table 3** shows the weekday morning and evening peak hour traffic estimated to be generated by the Site.

Table 3: **Trip Generation Estimates from Traffic Impact Study**

Land Use	Vehicle Type	Weekday Morning Peak Hour		Weekday Afternoon Peak Hour	
		In	Out	In	Out
Warehouse (913,950 sq ft)	Trucks	10	8	14	13
	Passenger Vehicles	93	22	24	85

Based on the traffic counts that were performed in the traffic study, during the weekday morning (6:00 to 9:00 A.M.) and evening (3:00 to 6:00 P.M.) peak periods, the weekday morning peak hour generally occurs from 7:30 to 8:30 A.M. and the weekday evening peak hour generally occurs from 3:00 to 4:00 P.M. The idling emissions are calculated based on the estimated future Levels of Service (LOS) delay in seconds per vehicle at each modeled intersection based on traffic analysis reported in the Traffic Study (KLOA, 2025). The overall intersection delays for projected conditions in Year 2031 are summarized in **Table 4**.

Table 4: Overall Intersection Delays - Projected Conditions in Year 2031

Intersection	AM Overall Delay (sec)	PM Overall Delay (sec)	Average Overall Delay (sec)
Stop Light @ Cicero Avenue with 76th Street	19.6	42.4	**31.0**
Stop Light @ Cicero Avenue with 74th Place	19.4	46.5	**33.0**
Stop Light @ Cicero Avenue with State Street	18.6	28.2	**23.4**
Stop Light @ Cicero Avenue with 73rd Street	34.0	49.4	**41.7**
Stop Light @ Cicero Avenue with 72nd Street	25.5	49.9	**37.7**
Stop Sign @ Kostner Avenue with 74th Place (N Access Road)	8.3	8.8	**8.6**
Stop Sign @ Kostner Avenue with S Access Road	9.6	12.7	**11.2**
Stop Light @ Kostner Avenue with 76th Street	12.3	15.2	**13.8**

Notes:
AM – Morning Peak Hour, PM – Evening Peak Hour
AM and PM overall delays were calculated by averaging delays from all bounds reaching the intersection
Reference: KLOA, 2025 Tables 4 through 11 Projected Conditions (2031) Levels of Service

3.2.2 Mobile Sources Emissions

The Microsoft Excel lookup table "*CookCountyIL_MOVES_LookupTable_2021-2030_On-Road_CDB.xlsx*" was downloaded from CDPH website (*https://www.chicago.gov/content/dam/city/sites/air-quality-zoning/air-quality-impact-study/movesTables_3-1-2022.zip*) includes default PM_{10}, $PM_{2.5}$ and NO_x emission factors for multiple vehicle types, road types, and vehicle speeds. These specific mobile source emission factors are for Cook County using the most current USEPA MOVES modeling system (MOVES3). All major roads were assumed to have a 30-mph speed limit. Vehicles will travel on Site Access roads at approximately 5 miles per hour (mph) in links entering and exiting the Site. **Figure 2** shows the links locations with proposed development traffic impact.

Traffic emissions are calculated based on the maximum vehicle miles travelled (VMT) on each road segment. The total VMT was calculated using the traffic counts on each segment multiplied by the length of each segment to obtain an emission rate in grams/hour. These traffic emissions are then divided by 3,600 seconds/hour to obtain a modeled grams/second emission rate for input into the modeling. Finally, the emission rates were divided by each segments area (link length multiplied by the link width) to get the emission rates per unit area ($g/s/m^2$), which was used as an input information into AERMOD.

Idling emissions are applied at multiple intersections surrounding the Site and at vehicle idling spots on-Site at the following locations:

- Stop Light @ Cicero Avenue with 76th Street (Link 33-Idle)
- Stop Light @ Cicero Avenue with 74th Place (Link 34-Idle)
- Stop Light @ Cicero Avenue with State Street (Link 35-Idle)

- Stop Light @ Cicero Avenue with 73rd Street (Link 36-Idle)
- Stop Light @ Cicero Avenue with 72nd Street (Link 37-Idle)
- Stop Sign @ Kostner Avenue with 74th Place (N Access Road) (Link 38-Idle)
- Stop Sign @ Kostner Avenue with S Access Road (Link 39-Idle)
- Stop Light @ Kostner Avenue with 76th Street (Link 40-Idle)
- Passenger Cars idling - Bldg A (Link Pass-Idle 1)
- Passenger Cars idling - Bldg B&C (Link Pass-Idle 2)
- Passenger Cars idling - Bldg D (Link Pass-Idle 3)
- Trucks idling on site at the drive-in doors - Bldg A (Link DockIdle 1)
- Trucks idling on site at the drive-in doors - Bldg B (Link DockIdle 2)
- Trucks idling on site at the drive-in doors - Bldg C (Link DockIdle 3)
- Trucks idling on site at the drive-in doors - Bldg D (Link DockIdle 4)
- Trucks idling at Stalls (Link TruckStallIdle)

To calculate the idling and traffic emissions per road segment, the total number of vehicles for each hour was multiplied by the anticipate delay at each intersection (average of overall AM and PM delays) to arrive at a total amount of vehicle delay (minutes). This is multiplied by the grams/hour emission factor divided by 60 minutes/hour to obtain grams/hour for each hour. These emissions are divided by 3,600 seconds/hour to obtain the modeled grams/second emission rate. Finally, the emission rates were divided by each segments area (link length multiplied by the link width) to get the emission rates per unit area ($g/s/m^2$), which was used as an input information into AERMOD.

Overall, two types of mobile source links were evaluated including:

- 37 on-network travel links (Links 1 through 32, PassPark1 through 3, and TruckPark 1 and 2) that were used to describe driving activities of passenger cars and trucks on the roads surrounding the Site and passenger cars traveling on-Site parking areas that will be impacted by the proposed development; and
- 16 off-network idle links (Links 33 through 40, Pass-Idle1 through 3, DockIdle 1 through 4, and TruckStallIdle) that were used to describe areas of idling activities (i.e., idling of vehicle at intersections and exit stops as well as passenger cars idling at parking spots and trucks idling at the dock on-Site).

Details of source emission calculations are presented in **Appendix B**. Summary of mobile source link input parameters are shown in **Appendix C**. Emission rates were then used for AERMOD dispersion modeling, which is further described in following Section.

3.3 Dispersion Modeling

Dispersion modeling was conducted using the latest version of the USEPA-approved AERMOD dispersion modeling system (AERMOD Version 23132). AERMOD is a computer-based mathematical dispersion model that can predict ambient concentrations of pollutants that result from releases to the atmosphere. AERMOD uses hour-by-hour meteorological data to predict the patterns of ambient concentrations of pollutants over time.

AERMOD's three models and required model inputs, are described as follows:

- AERMET: calculates boundary layer parameters for input to AERMOD
  - Model inputs: wind speed; wind direction; cloud cover; ambient temperature; morning sounding; albedo; surface roughness; Bowen ratio; and
  - Model outputs for AERMOD: wind speed; wind direction; ambient temperature; lateral turbulence; vertical turbulence; sensible heat flux; friction velocity; Monin-Obukhov Length.
- AERMAP: calculates terrain heights and receptor grids for input to AERMOD
  - Model inputs: DEM data [x,y,z]; design of receptor grid (pol., cart., disc.); and
  - Model outputs for AERMOD: [x,y,z] and hill height scale for each receptor.
- AERMOD: calculates temporally averaged air pollution concentrations at receptor locations for comparison to the NAAQS
  - Model inputs: source parameters, boundary layer meteorology (from AERMET), and receptor data (from AERMAP); and
  - Model outputs: temporally averaged air pollutant concentrations

3.3.1 Regional and Local Topography

The landforms of Cook County are mostly the result of depositional glacial processes. The significant topographic features include broad almost level plains that were once lake beds; concentric, subparallel ridges formed as moraines marking the outer margins of continental glaciers, and gentle, elongate sandy spits, bars and beach ridges formed along the shore of glacial Lake Chicago and other ancestors of present-day Lake Michigan.

The highest point in Cook County is at the northwest corner and is almost 1,000 feet above sea level. For most of the county the topography slopes gradually toward Lake Michigan to the east and is dissected by north-south trending stream-cut valleys. Most of the central and southeastern portion of Cook County is composed of a low flat plain. **Figure 3** shows the local topography of the area surrounding the Site.

The A 1/3 arc-sec (approximately 10-meter) resolution United States Geological Survey (USGS) National Elevation Dataset (NED) file "*USGS_NED_13_n42w088.tif*" that covered the Site in southeast Chicago Area was downloaded from CDPH website (https://www.chicago.gov/content/dam/city/sites/air-quality-zoning/resources-for-applicants/AERMAPData.zip). The 18081 version of the AERMOD terrain preprocessor, AERMAP, was used to develop the hill heights.

3.3.2 Meteorological Data and Land Use

AERMOD requires an input of hourly meteorological data to estimate pollutant concentrations in ambient air resulting from modeled source emissions. The USEPA's Guideline on Air Quality Models states that "*5 years of NWS meteorological data or at least 1 year of site-specific data is required*" for an air quality modeling analysis (40 CFR 51, Appendix W, 8.3.1.2 b.). The use of 5 years of meteorological data allows for an assessment of conditions that occur at both the Site location as well as at the surface meteorological data collection location, even if they occur at differing times. AERMOD requires upper air and surface characteristic data.

In accordance with the Chicago Air Quality Ordinance, upper air sounding data were obtained from the upper air monitoring station most geographically proximate to the surface station site. The nearest upper air data collection site, relative to the Project Area, which is located Within 4 miles of the lakeshore and north of East and West 63rd Street, is Chicago Midway Airport with a base elevation of 188 meters (617 feet) above mean sea level (AMSL). This station is the nearest and most representative surface station to the Site. The 5 years (i.e., 2016 through 2020) of AERMOD-ready data processed using data for Chicago Midway was obtained from CDPH website.

The meteorological data is summarized in the wind rose shown in **Figure 4**. Winds most commonly originate from the southwest and westerly directions in general, though winds originate from all directions for at least some percentage of time. The average wind speed of hourly measurements from 1/1/2016 through 12/31/2020 timeframe was 10.5 mph.

The 18081 version of the AERMOD terrain preprocessor, AERMAP, was used to develop the receptor elevations and hill heights. A 1/3 arc-sec (10-m) resolution United States Geological Survey (USGS) National Elevation Dataset (NED) file was used for this processing.

3.3.3 Pollutants and Averaging Periods

Modeling was conducted for emissions of NO_2, PM_{10} and $PM_{2.5}$ from on-Site stationary and mobile sources as well as off-Site on-road vehicle activities. The air quality analysis includes dispersion modeling for the pollutants and averaging periods presented below and were used for compliance demonstration (i.e., comparison with NAAQS).

- NO_2 – Annual and 1-hour averaging period
- PM_{10} – 24-hour averaging period
- $PM_{2.5}$ – Annual and 24-hour averaging period.

Particulate matter deposition using particle size data was not considered for any modeling runs, resulting in no removal of mass from the plume, and hence likely more conservative predictions of impacts to ambient air. USEPA recommended default value of ambient equilibrium NO_2/NO_x ratio (i.e., the maximum allowed ratio) was set to 0.9.

3.3.4 Emission Sources and Rates

AERMOD has the capability of modeling various types of stationary and mobile sources that include point sources, area sources, volume sources, and line sources as line volume sources. Both volume sources and area sources could be used to represent roads according to CDPH Air Quality Impact Evaluation Interim Guidance (CDPH, 2021). In BREEZE AERMOD, a point source was used for modeling of the emissions from on-Site stationary source (e.g., space heaters). The on-network and off-network mobile sources and other Site equipment were modeled using area sources. The following release heights above ground level (AGL) for each source type were assumed:

- Stationary Sources: The space heaters, Rooftop refrigeration units, emergency backup power system, and Fire Pump (Fire Suppression Support) were modeled as a point sources located on building roofs with a stack release height equal to 45 feet above ground level (using a 40-foot building height), based on the assumption that the average diffuse release will be spread uniformly over the entire area of the building footprints.

- On-Network Mobile Sources: A weighted average release height of 2.1 meters AGL was assumed for all on-network links where passenger cars (i.e., release height of 1.3 m) and trucks (i.e., release height of 3.4 m) contribute to the emissions.
- Off-Network Idle Mobile Sources: The dock loading/unloading areas and stalls were modeled as area sources. The passenger car parking areas were modeled as area sources.

Following CDPH Air Quality Impact Evaluation Interim Guidance, roads were modeled as area sources where ambient receptors are located within source dimensions or where other mechanical sources are emitting in the general vicinity of the road. For each link, an area source was located at the centerline of the road in each direction. The following input parameters were calculated and summarized in **Table 5:**

- *Top of Plume Height = 1.7 × (vehicle height)*
- *Release Height = 0.5 × (top of plume height)*
- *Initial vertical dimension = (top of plume height) / 2.15*

Table 5: **Vehicle Release Parameters**

Parameter	Passenger	Truck	Weighted Value
Daily Passenger Car/Truck Percentage	63%	37%	
Vehicle Height (m) - assumed	1.5	4.0	**2.4**
Top of Plume Height (m)	2.6	6.8	**4.1**
Release Height (m)	1.3	3.4	**2.1**
Initial Vertical Dimension (m)	1.2	3.2	**1.9**

Notes:
Overall Daily Passenger Cars and Truck percentages were used to calculate the weighted values

Point emission sources were used to represent the buildings' stationary source emissions (i.e., space heaters, Refrigeration rooftop units, emergency backup power system, and fire suppression support). The stack heights are assumed to be 35 feet from ground. **Table 6** provides the modeling design parameters of each source of emissions.

An approximate 3 km x 3 km (9,843 ft x 9,843 ft) AERMOD modeling area was selected as the AERMOD modeling domain. AERMOD Modeling Domain and Source Layout is shown in **Figure 5** and **Figure 6**. The building stationary source emissions were input to AERMOD with the calculated emission rates in gram/(second.m^2) multiplied by the emission factors. It was conservatively assumed that the space heaters and refrigeration units operate 24 hours per day for 365 days a year, emergency backup power generators and fire pump each operate 500 hours per year for the maximum allowable hours of operation. For mobile sources, the estimated 24-hour site generated traffic from **Table 2** of the traffic study (KLOA, 2025) was used to estimate the variable daily emission rates. AERMOD model input information is presented in **Appendix E**.

Table 6: AERMOD Modeling Design Parameters

Modeling Parameters	Stationary Source(s)	Mobile Source(s)
AERMOD Executable	EPA Version 23132	
Regulatory Templates	Concentration only, with no depletion options	
Receptor Heights (AGL)	Flagpole receptors at 1.8 m (5.9 ft) (assumed average breathing height)	
Meteorology Options	Merged 5-year (1/1/2016 through 12/31/2020) surface and upper air data	
Output Options	Receptor, day, and maximum tables, Contour plots, Summary reports and Post files	
Source Type	Point – Stack	Area

Notes:
[1] See section 3.2.2 and Appendix C for mobile source emission rates

3.3.5 Receptors

A series of non-uniform receptor points centered on the on-Site stationary and off-Site mobile sources were used for this analysis to estimate ambient pollutant concentrations resulting from the potential emissions. According to USEPA's guidance on Transportation Conformity Guidance for Quantitative Hot-spot Analyses in $PM_{2.5}$ and PM_{10} Nonattainment and Maintenance Areas (USEPA, 2015):

> "*Receptor spacing in the vicinity of the source should be of sufficient resolution to capture the concentration gradients around the locations of maximum modeled concentrations. The majority of emissions from a highway or transit project will occur within several meters of the ground, and concentrations are likely to be greatest in proximity of near-ground sources. As such, receptors should be placed with finer spacing (e.g., 25 meters) closer to a near-ground source, and with wider spacing (e.g., 100 meters) farther from such a source. While prevailing wind directions may influence where maximum impacts are likely to occur, receptors should also be placed in all directions surrounding a project.*"

The AERMOD receptor network is presented in **Figure 6**. The grid consists of discrete and fence receptors each assumed to be at breathing-level (1.8 meters (5.9 ft) high). The following receptor spacing and extents around the facility and roads, in accordance with the Chicago Department of Public Health's guidance, were used for this analysis:

- Fenceline receptors were also included in the model and located every 25 meters (82 feet) along the virtual property boundary.
- 50-meter (164 ft) spacing out to approximately 500 meters (1,640 ft) from the building center;
- 100-meter (3,280 ft) spacing between 0.5 and 1.0 km from the building center; and
- 250-meter (820 ft) spacing between 1.0 and 1.5 km from the building center.

3.3.6 Building Downwash

Buildings and other structures near a relatively short stack can have a substantial effect on plume transport and dispersion, and on the resulting ground-level concentrations. Building downwash for the point source that is within the area of influence of a building was considered when running AERMOD. A building is considered sufficiently close to a stack to cause wake effects when the distance between the stack and the nearest part of the building is less than or equal to five times the lesser of the building height or the projected building width (i.e., *D* <= *5L*), where *D* is the shortest distance from the exhaust stack to the building, *L* is the lesser of the building height and projected building width (PBW), and *PBW* is the maximum cross-sectional length of the building. For rectangular buildings, $PBW = \text{sqrt}(length^2 + width^2)$. The *PBW* is the maximum length of a building that could affect air flow around and over the structure.

AERMOD requires the user to input the UTM coordinates for all building corners and the height of each building. For buildings with more than one height or roofline, the UTM coordinates and height are required for each building tier. U.S. EPA Building Profile Input Program (BPIP) building pre-processor program was used using the information form the point source and warehouse building and were specified for the point source. No other building on- or off-Site was within the *5L* distance of the stack.

3.3.7 Design Values and Applicable Standards

To evaluate the potential impacts of emissions from the Site on the public, the dispersion modeling evaluation must consider the existing background concentrations of pollutants in the area where impacts are being evaluated. The background concentration of a given pollutant is added to the modeled impact from the Site development, and the result is compared to the NAAQS. The NAAQS are allowable concentration limits applied at the public access boundary. The criteria air pollutants which are particulate matter less than or equal in diameter to ten microns (PM_{10}), particulate matter less than or equal in diameter to 2.5 microns ($PM_{2.5}$), and nitrogen dioxide (NO_2). Only criteria air pollutant impacts were assessed as part of the modeling analysis.

The Illinois Environmental Protection Agency (IEPA) operates a network of ambient air monitoring stations throughout Cook County, Illinois (see **Figure 7**). The purpose of the monitoring stations is to measure ambient concentrations of pollutants, including criteria pollutants, to determine whether or not the NAAQS are met or exceeded. Ambient air background concentrations (i.e., design values) were obtained from the table provided by CDPH for the project located in Northeast Chicago (i.e., within 4 miles of the lakeshore and north of East and West 63rd Street). The 3-year ambient design values for each criteria pollutant and averaging period are presented in **Table 7**. Additionally, CDPH has recently provided a Table of Seasonal Hourly Ambient NO_2 Concentrations for use with Northeast Chicago 1-Hour NO_2 Modeling (see **Appendix D**).

Significant impact levels, or SILs, are defined concentrations of criteria pollutants in the ambient air that are considered inconsequential in comparison to the NAAQS. It should be noted that impacts from nearby and other background sources, including background concentrations, are not considered in the significant impact analysis (SIA) and recommended SILs for each criteria pollutant and averaging period are summarized in **Table 7**.

Table 7: Summary of Design Values, NAAQSs, and SILs used for the Modeling Analysis

Pollutant	Averaging Period	Design Values	NAAQS	SIL	Unit
NO_2	1-Hour	CDPH Table*	100	4.0	ppb
	Annual	15.4	53	0.5	ppb
PM_{10}	24-Hour	102	150	5	µg/m^3
$PM_{2.5}$	24-Hour	23	35	1.2	µg/m^3
	Annual	10	9	0.13	µg/m^3

Notes:
* CDPH-provided Table of Seasonal Hourly Ambient NO_2 Concentrations for use with Northeastern Chicago 1-Hour NO_2 Modeling
- NO_2 annual data from Monitor ID 17-031-0076 Com Ed Maintenance Bldg (2018-2020)
- PM_{10} data from Monitor ID 17-031-1016 Village Hall (2018-2020)
- $PM_{2.5}$ data from Monitor ID 17-031-1016 Village Hall (2018-2020)

3.3.8 Post-Development Impact

Post-Development Impacts were calculated by adding modeled receptor values to the design values. The resulting Post-Development Impact concentration was then compared to the NAAQS. The Post-Development Impact concentrations for each pollutant and averaging period are summarized in **Table 8** compared with NAAQS.

- **1-hour NO_2**. The 1-hour NO_2 Post-Development Impact was calculated by first identifying the receptor with the 98th percentile (8th highest) of 1-hour daily maximum NO_2 concentrations at each receptor across 5 years of meteorological data (as done by AERMOD). The AERMOD model was created for 1-hour NO_2 with CDPH-provided seasonal hourly background concentrations. For this model run seasonal hourly background concentrations were entered into the AERMOD model, and the modeled values include the background concentrations (i.e., design values) and therefore should directly be compared with NAAQS.
- **Annual NO_2**. The annual NO_2 Post-Development Impact was calculated directly by AERMOD by the model averaging the 5 years of annual averages for each receptor and reporting the highest receptor. The receptor with the highest modeled 5-year average concentration was identified, and this value was then added to the design value and compared to the NAAQS.
- **24-hour PM_{10}**. The 24-hour PM_{10} Post-Development Impact was calculated by first identifying the receptor with the highest 5-year 24-hour average concentration at each receptor across 5 years of meteorological data (as done by AERMOD). The receptor with the highest modeled concentration for a 24-hour period was then added to the design value and compared to the NAAQS.
- **24-hour $PM_{2.5}$**. The 24-hour $PM_{2.5}$ Post-Development Impact was calculated by identifying the receptor with the 98th percentile (8th highest) of 24-hour average concentration (as done by AERMOD). The receptor with the highest modeled concentration for a 24-hour period was then added to the design value and compared to the NAAQS.
- **Annual $PM_{2.5}$**. The annual $PM_{2.5}$ Post-Development Impact was calculated directly by AERMOD by the model averaging the 5 years of annual averages for each receptor and reporting the highest

receptor. The receptor with the highest modeled 5-year average concentration was identified, and this value was then added to the design value and compared to the NAAQS.

AERMOD output concentrations were reported in $\mu g/m^3$ units for all pollutants. However, NO_2 concentrations must be converted to the units of parts per billion (ppb) in order to be added to design values and compared with NAAQS values. The general conversion equation is

$$\mu g/m^3 = (ppb) * (12.187) * (M) / (273.15 + °C)$$

where *M* is the molecular weight of the gaseous pollutant (i.e., 46 grams/mol for NO_2). Assuming an ambient pressure of 1 atmosphere and a temperature of 25 degrees Celsius, the conversion factor for NO_2 concentrations is C(ppb) = C($\mu g/m^3$) / 1.88

3.4 Assumptions

3.4.1 Facility and Equipment Operating Hours

The operating hours of the facility were assumed conservatively to be 24 hours a day and 7 days a week. Therefore, on-site combustion emissions from natural gas sources could occur at any time during a 24-hour day. The trips projected to be generated by the development throughout the day were used to create the mobile source emissions over the entire 24-hour during each day.

3.4.2 On-site Emissions

- Heater emissions during all hours of the 24-hour day will occur up to the full MMBtu/hr rating assumed for emissions (i.e., 26 MMBtu/hr). This assumption is very conservative because space heaters will not be operating at full rating all of the time.
- For the worst-case scenario modeled here it is assumed that the emissions from space heater, refrigeration units, emergency backup power generators, and fire pumps are running at the same time which is very unlikely.
- It was assumed that building B will be used as Cold Storage. It was also assumed that 80% of the building space will be dedicated to refrigeration and 20% will be used as regular temperature (office) space.
- Since Table 3.3.1 in AP-42 Section 3.3 only provides PM_{10} emission factors for fire pump and emergency backup power system, it was assumed that $PM_{2.5}$ and PM_{10} emission factors were equal.
- For particulate matter emissions from fugitive dust it was assumed that the passenger car weight is 2 tons and average truck weight is 20 tons. A road surface silt loading of 1.18 grams/m2 was calculated as a worse case for a low average daily traffic (ADT) volume (i.e., ADT<500). It was also assumed that each passenger car or truck travels approximately half of the parking lot length on average to reach to its parking spot.

3.4.3 Mobile-Source Emissions

- Based on the Trip Generation estimates in the Traffic Impact Study and the conservative assumptions made on the number of truck operations, an average 63% passenger – 37% truck configuration was used.
- MOVES source types “Passenger Car” and “Single Unit Long-haul Truck” accurately represent Project passenger car and truck sources, respectively.

- Trucks were assumed to be diesel-powered Single Unit Long-haul Trucks traveling on unrestricted urban roads.
- It was assumed that docks are filled based on the truck volumes enter and exit the Site from the traffic study and trucks will idle at the docks for a maximum of 1 minute per vehicle per hour.
- It was conservatively assumed that the peak hour inbound and outbound vehicles from the Traffic Study exist on-site during the peak hour and therefore, the sum of inbound and outbound vehicles was used to generate the peak-hour vehicle traffic volumes.
- The estimated weekday 24-Hour site-generated traffic projections (i.e., Table 2 of Traffic Impact Study) was used estime the variable daily emissions.
- The traffic study initially projected conditions for Year 2031. However, due to the availability of CDPH lookup tables only up to 2030, the 2030 data was utilized for the analysis.

3.4.4 AERMOD

- Roadway link lengths were based on distances in Site Plan and Google Earth. It was also assumed that roadway links going outside the Site Plan are extended for 0.5 mile.
- For NO_2 modeling, the ARM2 option was chosen with a default NO_2/NOX in-stack ratio (ISR) of minimum 0.5 and maximum 0.9 following USEPA guidance (USEPA 2017).
- For mobile sources, the estimated 24-hour site generated traffic from the traffic study (KLOA, 2025) was used to generate daily variable emission rates. It was conservatively assumed that the site activities occurred 7 days a week.
- Mobile vehicle emissions while traveling and while idling were modeled as area sources in AERMOD.
- Urban dispersion coefficient with a population of 2,700,000 was chosen (US Census 2019).

4. Results and Discussion

AERMOD was setup to allow the evaluation of stationary sources on-Site and vehicle activity-related emissions for the 98th percentile of 1-hour daily maximum NO_2 concentrations and the maximum annual-average NO_2 concentrations, the 24-hour average PM_{10} concentrations, and 98th percentile of 24-hour average and maximum annual-average $PM_{2.5}$ concentrations. The modeling results are presented in the following sections.

4.1 Modeling Results

The air dispersion modeling results and corresponding figures that graphically summarize the modeling results are described below. **Table 8** summarizes the modeled value and Post-Development Impact concentrations for each pollutant and averaging period compared with NAAQS. As Shown in **Table 8**, predicted concentrations as a result of Site operation are relatively small compared to the background concentrations.

Figure 8 through **Figure 13** show the contour maps of predicted highest pollutant concentrations for each averaging period. The location and value of the highest predicted concentration is shown in each figure. In terms of the location of the highest predicted concentration increase, as expected, the highest increase in the pollutant concentrations would occur along the perimeter of the Site. However, these higher predicted impacts rapidly drop off within a few meters further away from the Site perimeter. AERMOD Model Electronic Run Files are included in **Appendix G**.

Table 8: Post-Development Impact for each Pollutant and Averaging Period compared with NAAQS

Pollutant	Averaging Period	Modeled Value	Design Values	Post-Development Impact		NAAQS	Unit
NO_2	1-Hour	108.0	CDPH Table	**108.0**	<	**188**	μg/m³
	Annual	2.9	29	**31.9**	<	**99.6**	μg/m³
PM_{10}	24-Hour	19.4	102	**121.4**	<	**150**	μg/m³
$PM_{2.5}$	24-Hour	2.1	23	**25.1**	<	**35**	μg/m³
	Annual	0.6	10	**10.6**	>	**9**	μg/m³

Notes:
- Modeled values were derived from AERMOD and are reported to one decimal place beyond the NAAQS value.
- Background concentrations are reported to one decimal place beyond the NAAQS value.
- Design values and Post-Development Impact values are rounded to nearest 0.1 μg/m³ for PM_{10} and $PM_{2.5}$ or ppb for NO_2 (USEPA, 2015)

* Modeled value includes background concentrations (Design Values) and should be directly compared with NAAQS.

The Post-Development concentration predictions for each criteria pollutant and averaging period that included the design values (i.e., background ambient concentration) was compared with NAAQS to determine if there will be any NAAQS exceedances.

1-hour NO_2

Figure 8 shows the 98th percentile of 1-hour daily maximum NO_2 concentration predictions resulted from the Site (i.e., modeled receptor value) with seasonal background. With the CDPH-provided seasonal hourly background concentrations entered in the model, the modeled values include the background concentrations (i.e., design values) and therefore the 1-hour NO_2 Post-Development Impact was equal to the modeled receptor value. The resulting 1-hour NO_2 Post-Development Impact concentration was then rounded to the nearest 0.1 μg/m^3 (USEPA, 2015). 1-hour NO_2 Post-Development Impact of 108.0 μg/m^3 is less than the 1-hour NO_2 NAAQS (188 μg/m^3). This demonstrates that the Site would not contribute to any new local violations, increase the frequency or severity of any existing violation, or delay timely attainment of the NO_2 NAAQS. Therefore, the Site will not cause an exceedance of the 1-hour NO_2 NAAQS.

Annual NO_2

Figure 9 shows the highest annual average NO_2 Post-Development concentration predictions resulted from the Site operation (i.e., modeled receptor value plus the design value) and rounded to the nearest 0.1 μg/m^3 (USEPA, 2015). The annual NO_2 Post-Development Impact of 31.9 μg/m^3 is less than the annual NO_2 NAAQS (99.6 μg/m^3). This demonstrates that the Site would not contribute to any new local violations, increase the frequency or severity of any existing violation, or delay timely attainment of the NO_2 NAAQS. Therefore, the Site will not cause an exceedance of the NO_2 NAAQS.

24-hour PM_{10}

Figure 10 shows the highest 24-hour average PM_{10} Post-Development concentration predictions resulted from the Site operation (i.e., modeled receptor value plus the design value) and rounded to the nearest 0.1 micrograms per cubic meter (μg/m^3) (USEPA, 2015). The 24-hour PM_{10} Post-Development Impact of 121.4 μg/m^3 is less than the 24-hour PM_{10} NAAQS (150 μg/m^3). This demonstrates that the Site would not contribute to any new local violations, increase the frequency or severity of any existing violation, or delay timely attainment of the PM_{10} NAAQS. Therefore, the Site will not cause an exceedance of the PM_{10} NAAQS.

24-hour $PM_{2.5}$

Figure 11 shows the 98th percentile of 24-hour average $PM_{2.5}$ Post-Development concentration predictions resulted from the Site operation (i.e., modeled receptor value plus the design value) and rounded to the nearest 0.1 μg/m^3 (USEPA, 2015). The 24-hour $PM_{2.5}$ Post-Development Impact of 25.1 μg/m^3 is less than the 24-hour $PM_{2.5}$ NAAQS (35 μg/m^3). This demonstrates that the Site would not contribute to any new local violations, increase the frequency or severity of any existing violation, or delay timely attainment of the 24-hour $PM_{2.5}$ NAAQS. Therefore, the Site will not cause an exceedance of the 24-hour $PM_{2.5}$ NAAQS.

Annual $PM_{2.5}$

Figure 12 shows the highest annual average $PM_{2.5}$ concentration predictions resulting from the Site operation (i.e., modeled receptor value). The annual $PM_{2.5}$ Post-Development Impact was calculated by adding the modeled receptor value to the design value (USEPA, 2015). The resulting annual $PM_{2.5}$ Post-Development Impact concentration was then rounded to the nearest 0.1 μg/m^3 (USEPA, 2015). The annual $PM_{2.5}$ Post-Development Impact of 10.6 μg/m^3 exceeds the annual $PM_{2.5}$ NAAQS (9 μg/m^3). It should be noted that the design value annual average $PM_{2.5}$ is already exceeding the newly stablished NAAQS value of 9 μg/m^3 for annual $PM_{2.5}$. Therefore, any minimal activity at the site would have resulted in exceeding NAAQS. In order to evaluate the Site impact better, based on communication with CDPH, additional analysis was conducted on the SIL which is described in more detail below.

Since the design value for annual average $PM_{2.5}$ is already exceeding the newly stablished NAAQS value of 9 µg/m3 for annual $PM_{2.5}$, more analysis was conducted on the SIL in two steps:

1) The modeling results without including the background (I.e., project impact only) for annual PM2.5 was compared with SIL to determine if the emission sources will have a "significant impact" regarding air pollutant concentrations. The SIL for annual average $PM_{2.5}$ is 0.13 µg/m^3. **Figure 12** shows that the highest annual average $PM_{2.5}$ without including the background was 0.6 µg/m^3, which exceeded the recommended SIL.

2) The impact of the stationary and mobile sources was looked at separately to evaluate the main source of annual $PM_{2.5}$ SIL exceedances. The SIL exceedance only occurs for stationary sources and is limited to the Site vicinity and do not overlap with any other businesses in the area. There is no SIL exceedance for mobile sources off-site.

The area outside the Site fence boundary with concentrations higher than the SILs are shown in **Figure 12**. As shown in the figure, all the significant impact areas are limited to the Site and its immediate vicinity. The model results show that the predicted concentrations decrease rapidly with distance from the Site boundary and the significant impact areas do not appear to overlap with any other businesses in the vicinity of the Site.

4.2 Interpretation of Model Predictions

The model predictions indicate the potential impacts from stationary and mobile sources related to the Site activities will be negligible and therefore will not lead to localized exceedances of the NAAQS for NO_2, PM_{10} and $PM_{2.5}$. The estimates may reflect conservative assumptions regarding vehicle utilization and facility-related activities.

Chicago, like many urban areas, has many emission sources of air pollutants that contribute to significant background concentrations of NO_2, PM_{10} and $PM_{2.5}$. Data from the 2020 Illinois Air Quality Report (IEPA, 2020) indicates background concentrations are close to the levels of the National Ambient Air Quality Standards (NAAQS).

Predicted concentrations generally decrease rapidly with distance from the Site boundary, a characteristic of the dispersion of emissions from a ground-level source. The AP42-based value for the space heater is based on assumption that the heater units run 24 hours per day for 365 days a year and may greatly overestimate actual emissions. The heater may not run all the time throughout the entire day or certain seasons (e.g., summer).

Predicted concentrations during Site operation for each criteria pollutant were compared with the SILs. Although the predicted concentrations exceeded the recommended SILs, the areas with significant impacts are limited to the Site and its immediate vicinity. The model results show that the predicted concentrations decrease rapidly with distance from the Site boundary. Furthermore, it does not appear that there is any other emission source with significant impacts in the vicinity of the Site in areas that Site-related impacts show potential exceedances of SILs.

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FIGURES

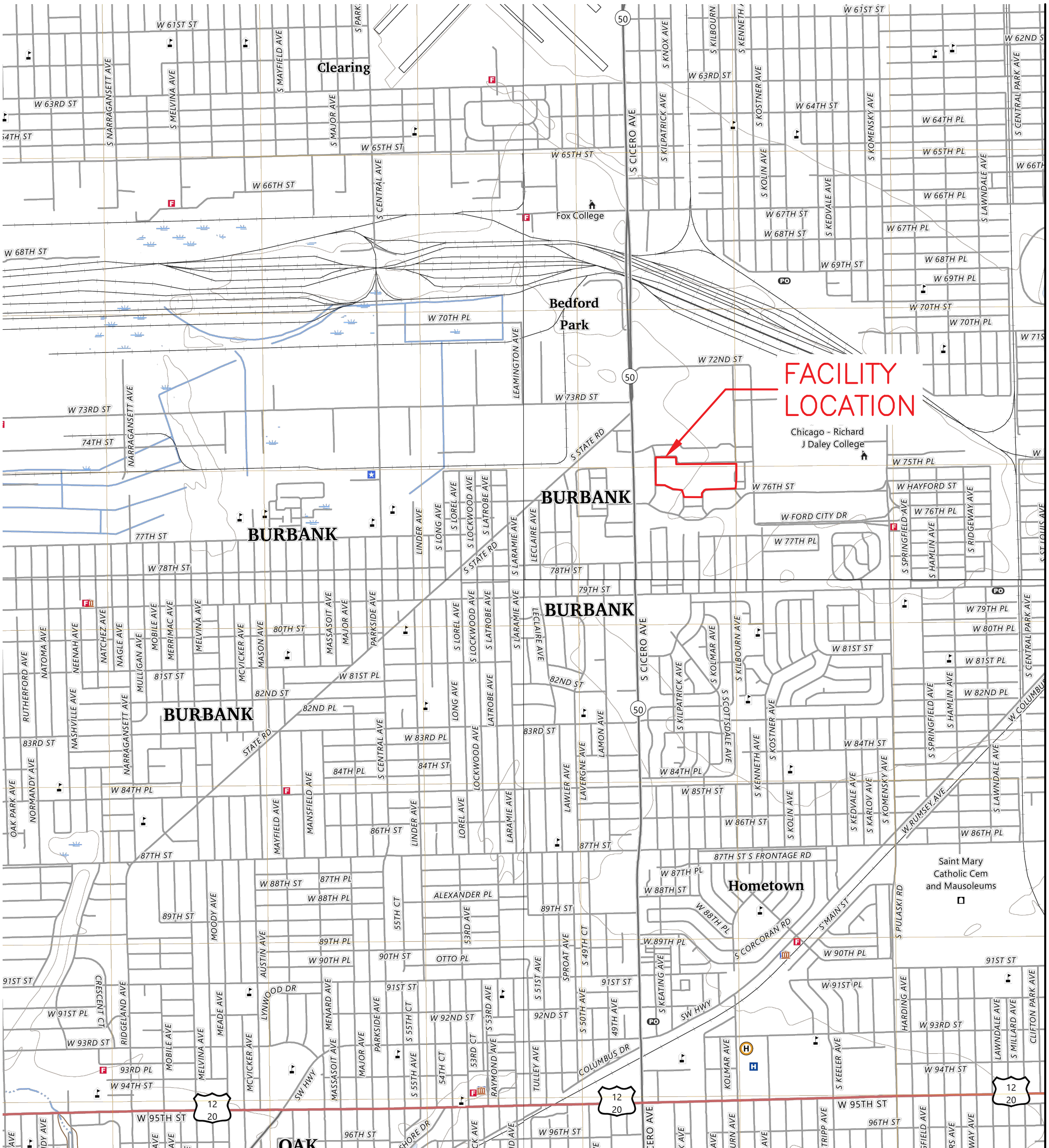

IMAGE SOURCE:
USGS US TOPO 7.5-MINUTE MAP FOR ENGLEWOOD, IL, 2024: USGS - NGTOC.
USGS US TOPO 7.5-MINUTE MAP FOR BERWYN, IL, 2024: USGS - NGTOC.
USGS US TOPO 7.5-MINUTE MAP FOR BLUE ISLAND, IL, 2024: USGS - NGTOC.
USGS US TOPO 7.5-MINUTE MAP FOR PALOS PARK, IL, 2024: USGS - NGTOC.

N

3000' 0 3000'

Title:

Site Location Map

7601 S CICERO AVE, CHICAGO, IL 60652

Prepared for:

BRIDGE INDUSTRIAL

ROUX

Compiled by: MO	Date: 05/30/2025	FIGURE
Prepared by: MO	Scale: AS SHOWN	1
Project Mgr: MS	Project: 3165.0049I000	
File: FORDCITYMALL_FIGURES.DWG		

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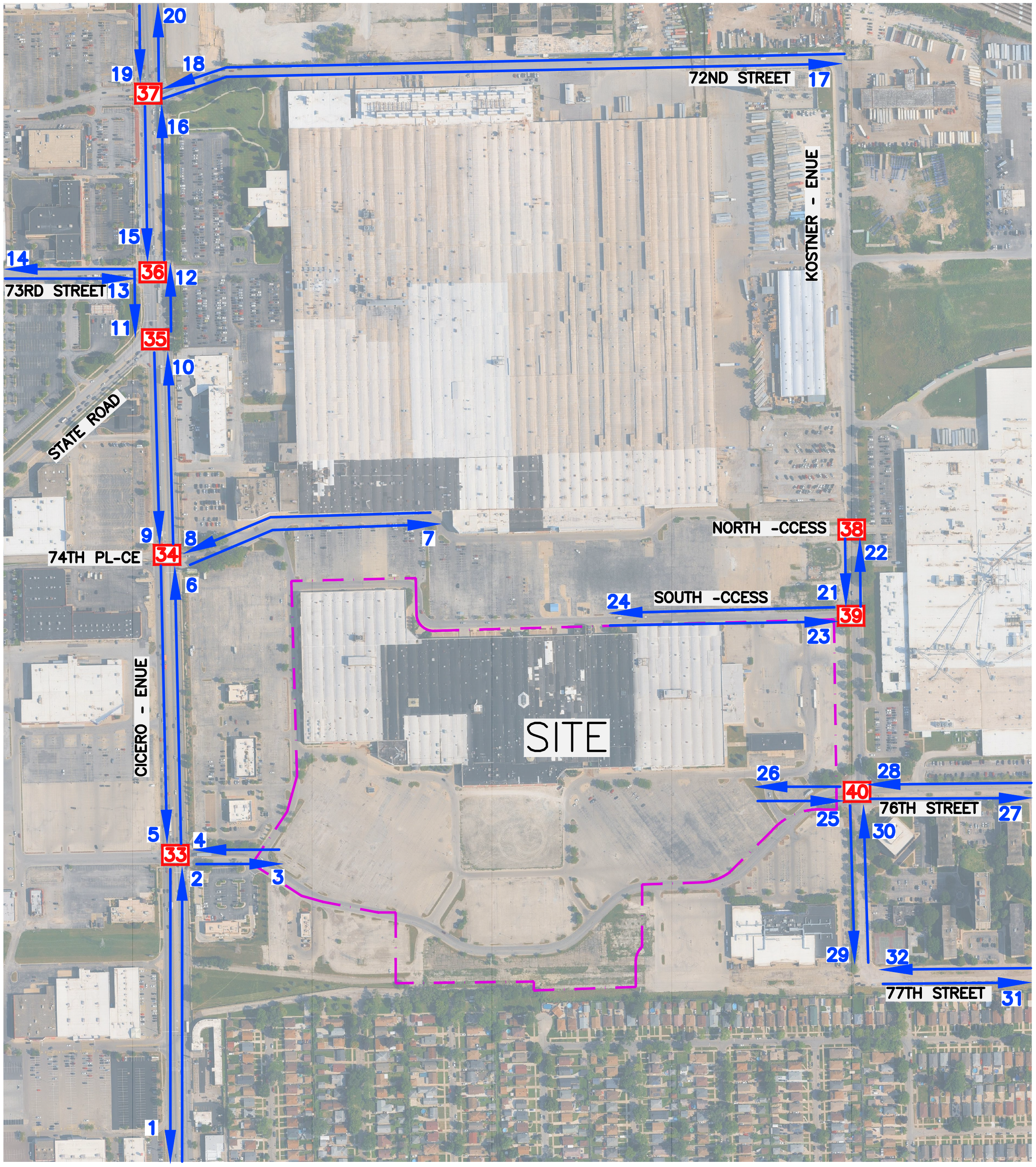

LEGEND:

Site Boundaries

On–Network Link

OR Off–Network Idle Link

N

Title:

Location of MOVES/AERMOD links

7601 S CICERO AVE, CHICAGO, IL 60652

Prepared for:

BRIDGE INDUSTRIAL

ROUX			FIGURE
	Compiled by: MO	Date: 7/7/2025	2
	Prepared by: MO	Scale: NOT TO SCALE	
	Project Mgr: MS	Project: 3165.0049I000	
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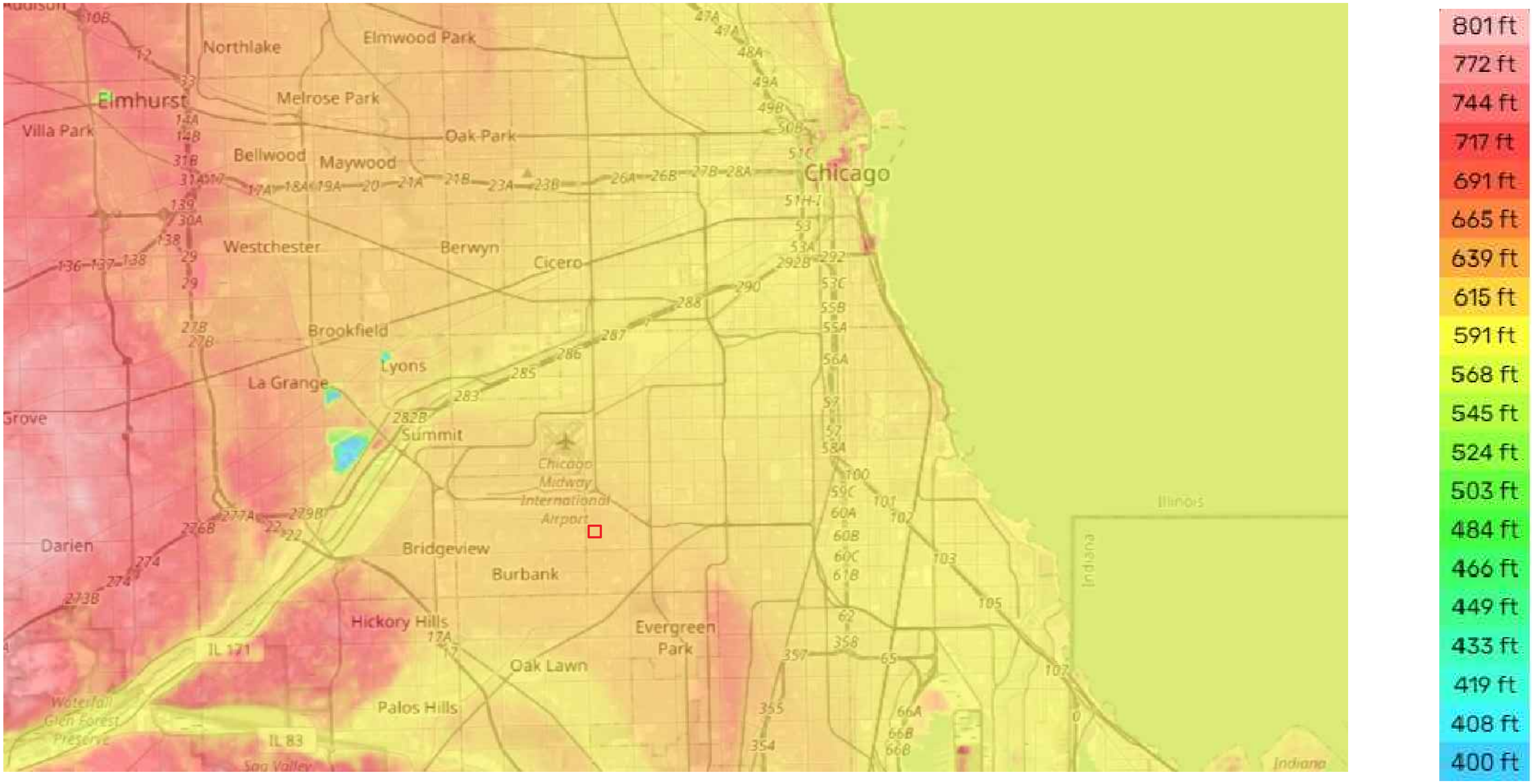

Chicago, Cook County, Illinois, United States

N

Title:

Local Topography of the Area Surrounding the Site

7601 S CICERO AVE, CHICAGO, IL 60652

Prepared for:

BRIDGE INDUSTRIAL

ROUX	Compiled by: MO	Date: 05/30/2025	FIGURE
	Prepared by: MO	Scale: NOT TO SCALE	3
	Project Mgr: MS	Project: 3165.0049I000	
	File: FORDCITYMALL_FIGURES.DWG		

Source: https://en-us.topographic-map.com/maps/ncg/Chicago/

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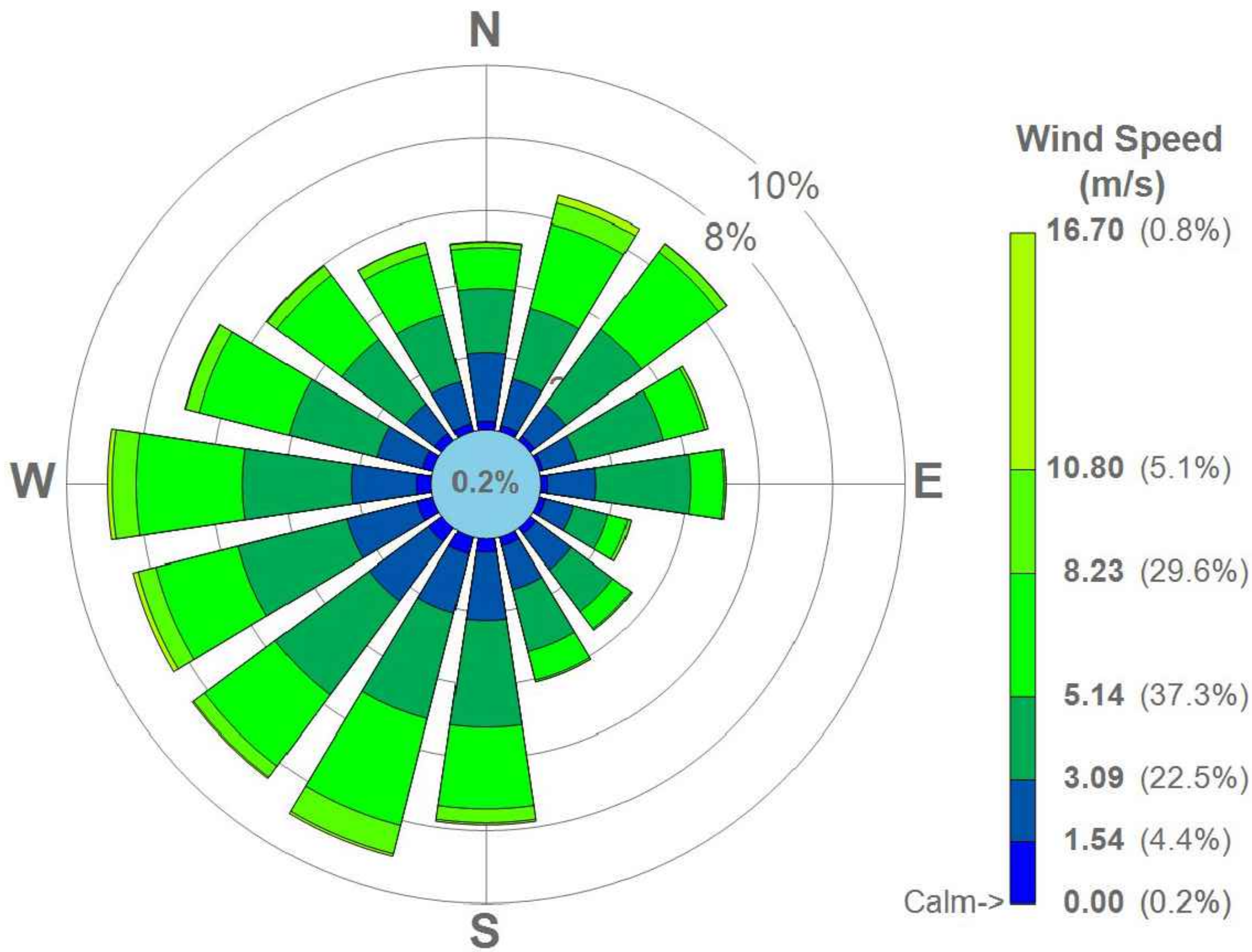

Title:

Windrose for Midway Chicago IL Station for the Time Period January 1, 2016 - December 31, 2020

7601 S CICERO AVE, CHICAGO, IL 60652

Prepared for:

BRIDGE INDUSTRIAL

ROUX	Compiled by: MO	Date: 05/30/2025	FIGURE
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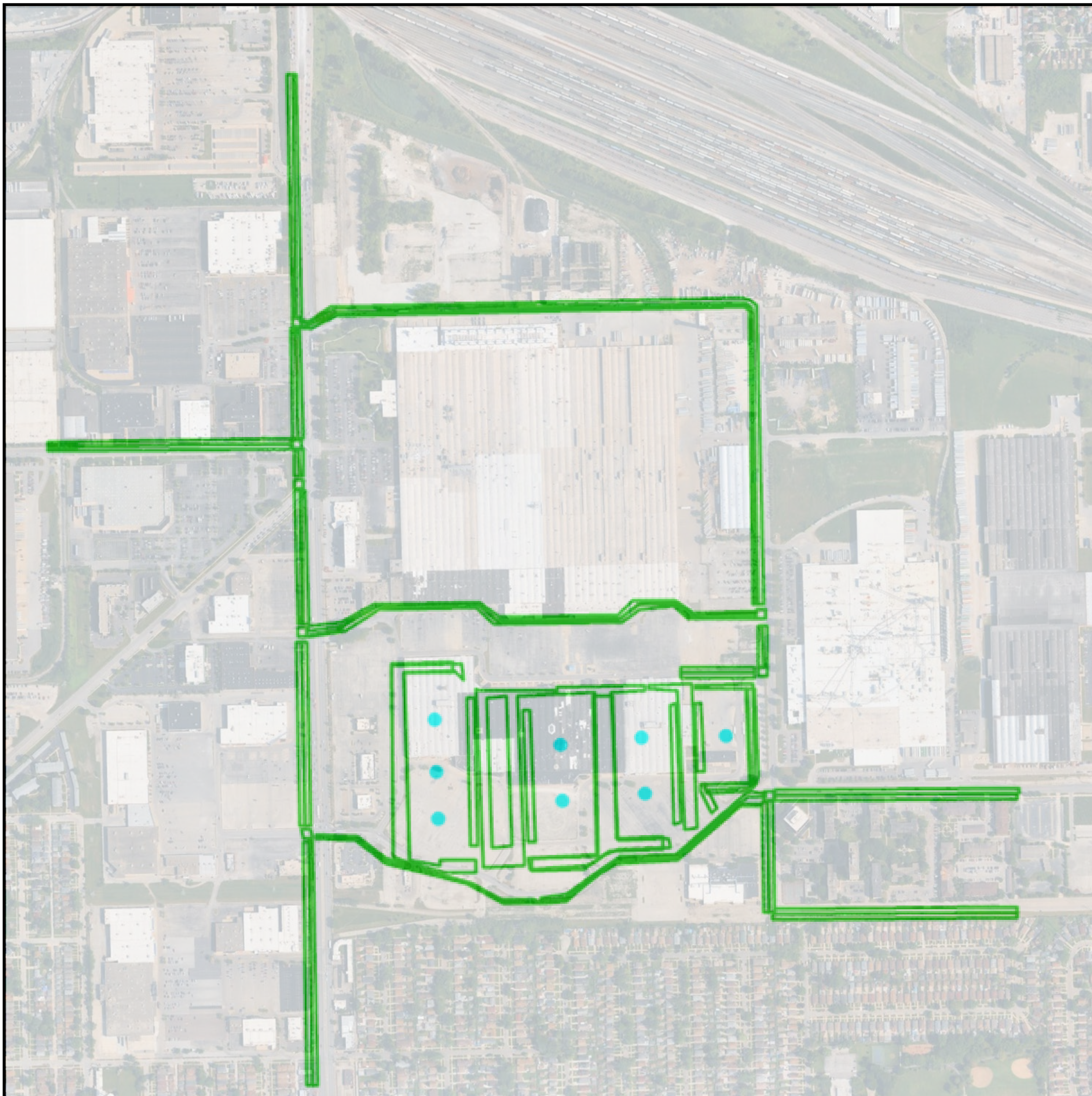

LEGEND:

Area Source

Point Source

SCALE: 1:13,500

0 — 0.3 Mile

N

Title:

AERMOD Source Layout

7601 S CICERO AVE, CHICAGO, IL 60652

Prepared for:

BRIDGE INDUSTRIAL

ROUX

Completed by: MO	Date: 7/8/2025	FIGURE
Prepared by: MO	Scale: AS SHOWN	5
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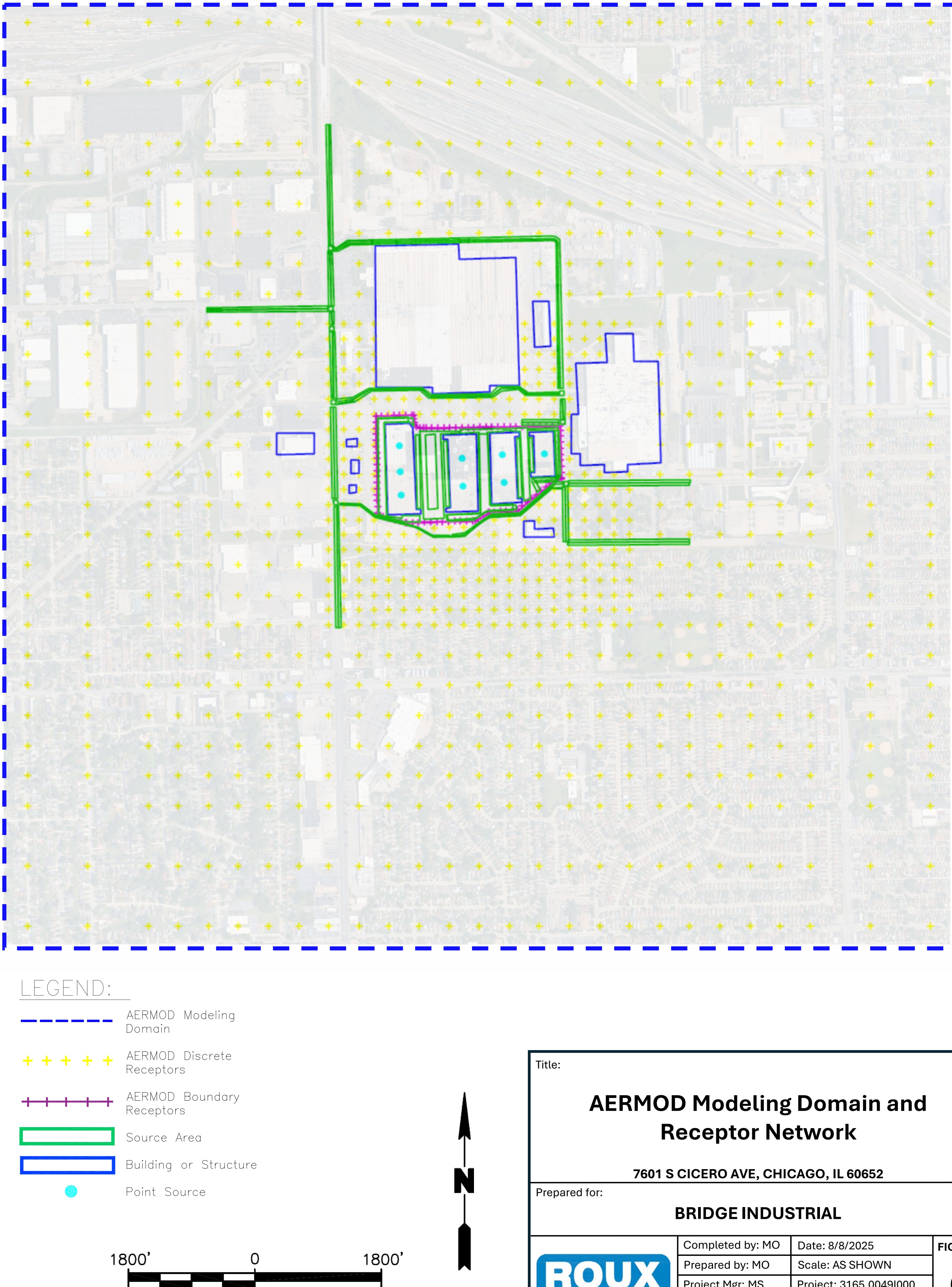

Title:

AERMOD Modeling Domain and Receptor Network

7601 S CICERO AVE, CHICAGO, IL 60652

Prepared for:

BRIDGE INDUSTRIAL

ROUX

Completed by: MO	Date: 8/8/2025	FIGURE
Prepared by: MO	Scale: AS SHOWN	6
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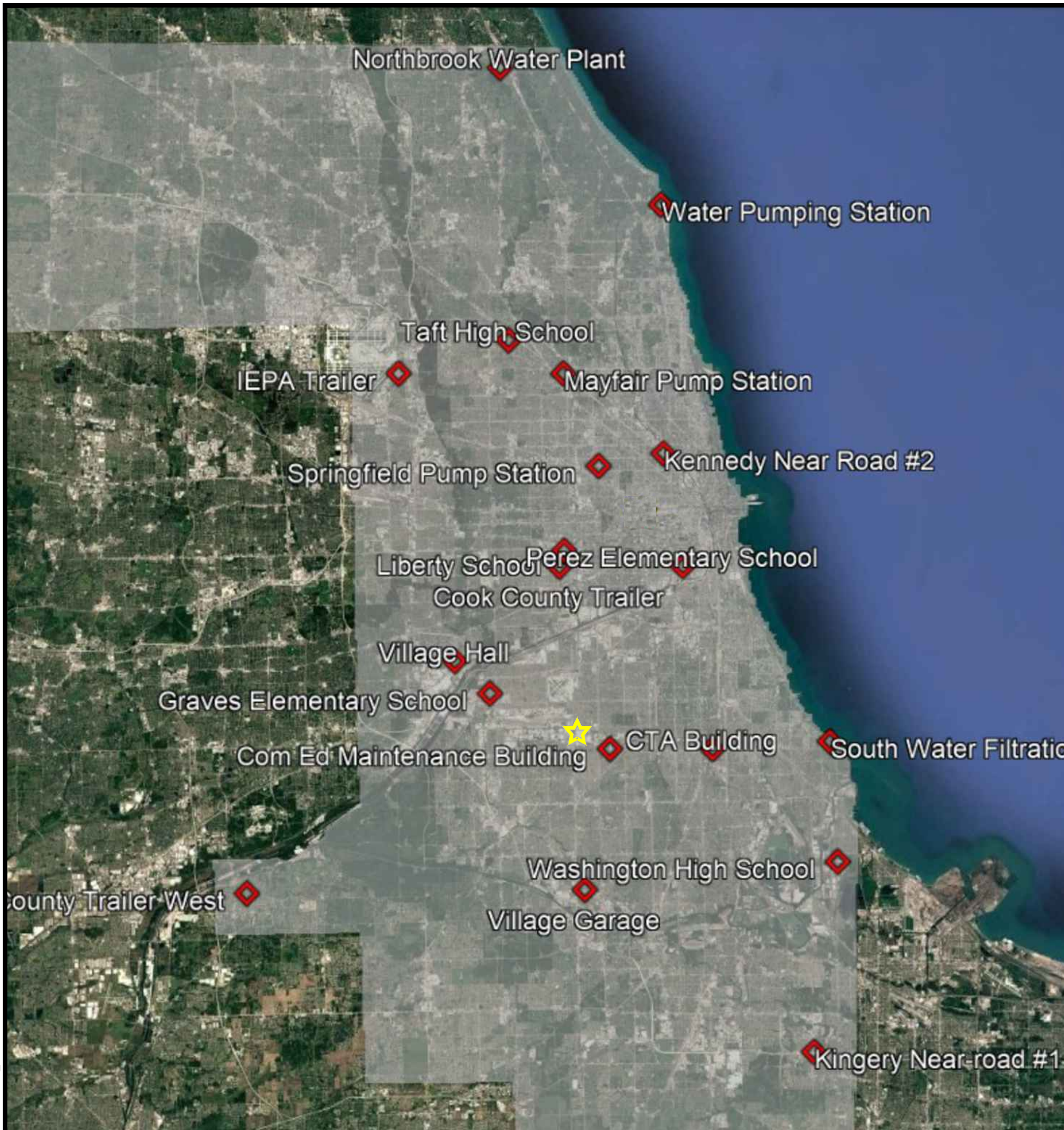

LEGEND:

- Monitoring Site
- Project Site
- Cook County Boundary

N

500' 0 500'

Title:

Cook County Monitoring Site Locations - 2020

7601 S CICERO AVE, CHICAGO, IL 60652

Prepared for:

BRIDGE INDUSTRIAL

ROUX

Compiled by: MO	Date: 05/30/2025	FIGURE
Prepared by: MO	Scale: AS SHOWN	7
Project Mgr: MS	Project: 3165.0049I000	
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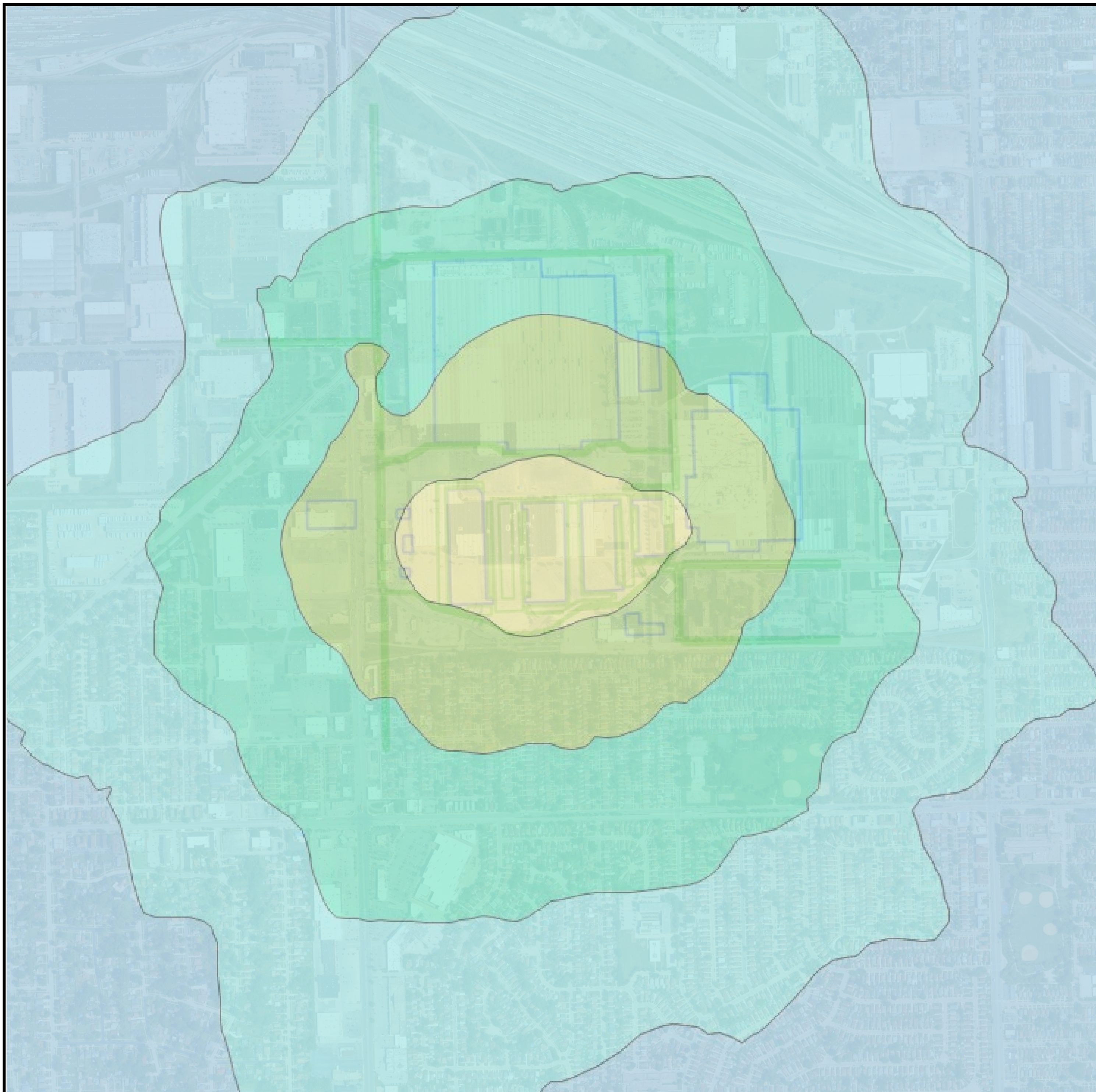

NOTE:
National Ambient Air Quality Standard (NAAQS) for 1-Hour NO_2 is 188 ug/m^3

400 m

ug/m3

Red	188.00
Yellow	97.00
Green	93.75
Teal	93.10
Cyan	92.95
Light blue	92.90

N

Title:
98^{th} Percentile 1-Hour Average NO_2 Concentration Predictions with Seasonal Hourly Background

7601 S CICERO AVE, CHICAGO, IL 60652

Prepared for:
BRIDGE INDUSTRIAL

ROUX

Completed by: MS	Date: 7/24/2025	FIGURE
Prepared by: MO	Scale: AS SHOWN	8
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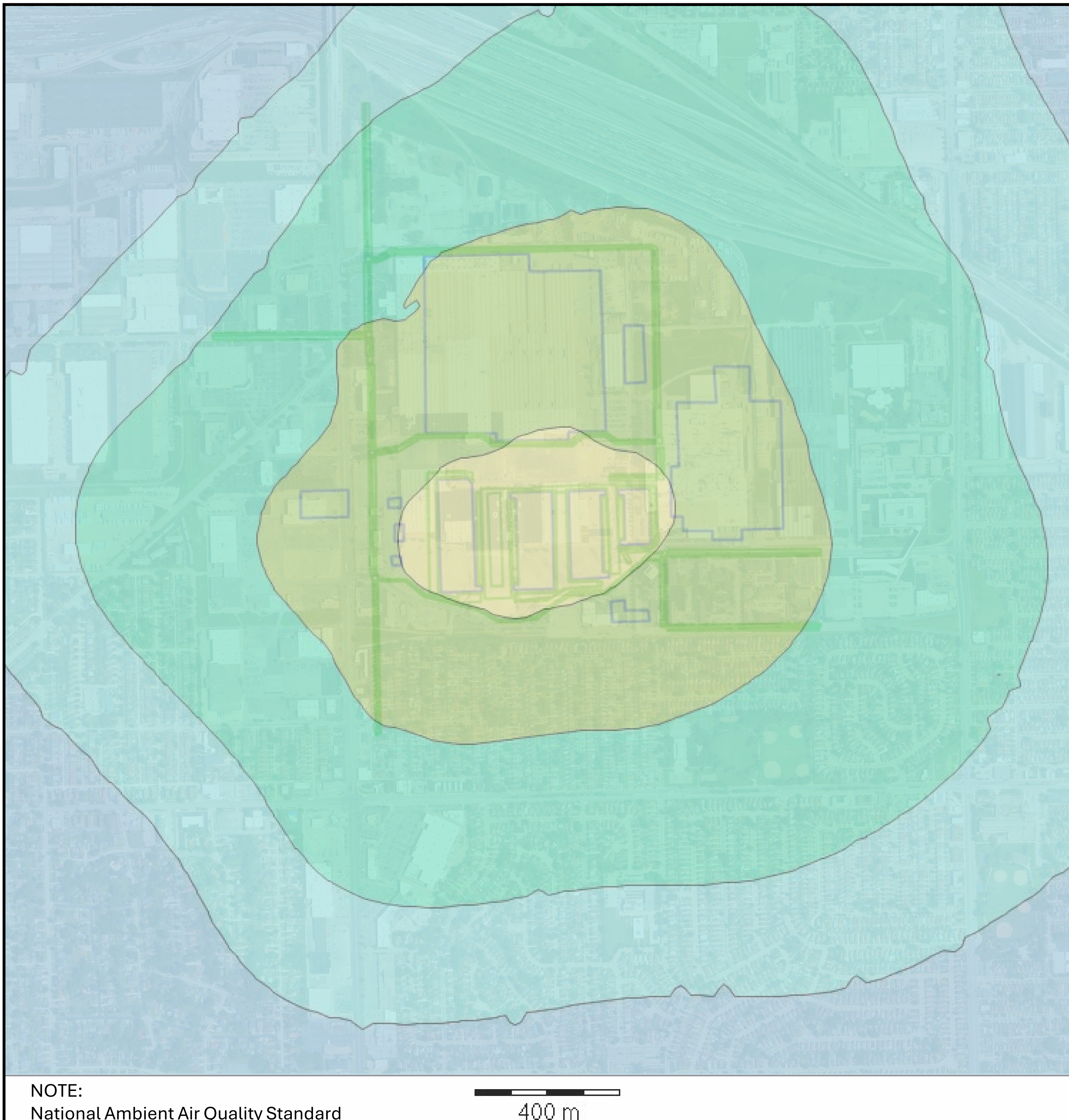

NOTE:
National Ambient Air Quality Standard (NAAQS) for Annual NO_2 is 99.6 ug/m^3

ug/m3

- 99.60
- 30.50
- 29.38
- 29.17
- 29.11
- 29.09

N

Title:

Highest Annual Average NO_2 Concentration Predictions (with Background)

7601 S CICERO AVE, CHICAGO, IL 60652

Prepared for:

BRIDGE INDUSTRIAL

ROUX

Completed by: MO	Date: 7/24/2025	FIGURE
Prepared by: MO	Scale: AS SHOWN	9
Project Mgr: MS	Project: 3165.0049I000	
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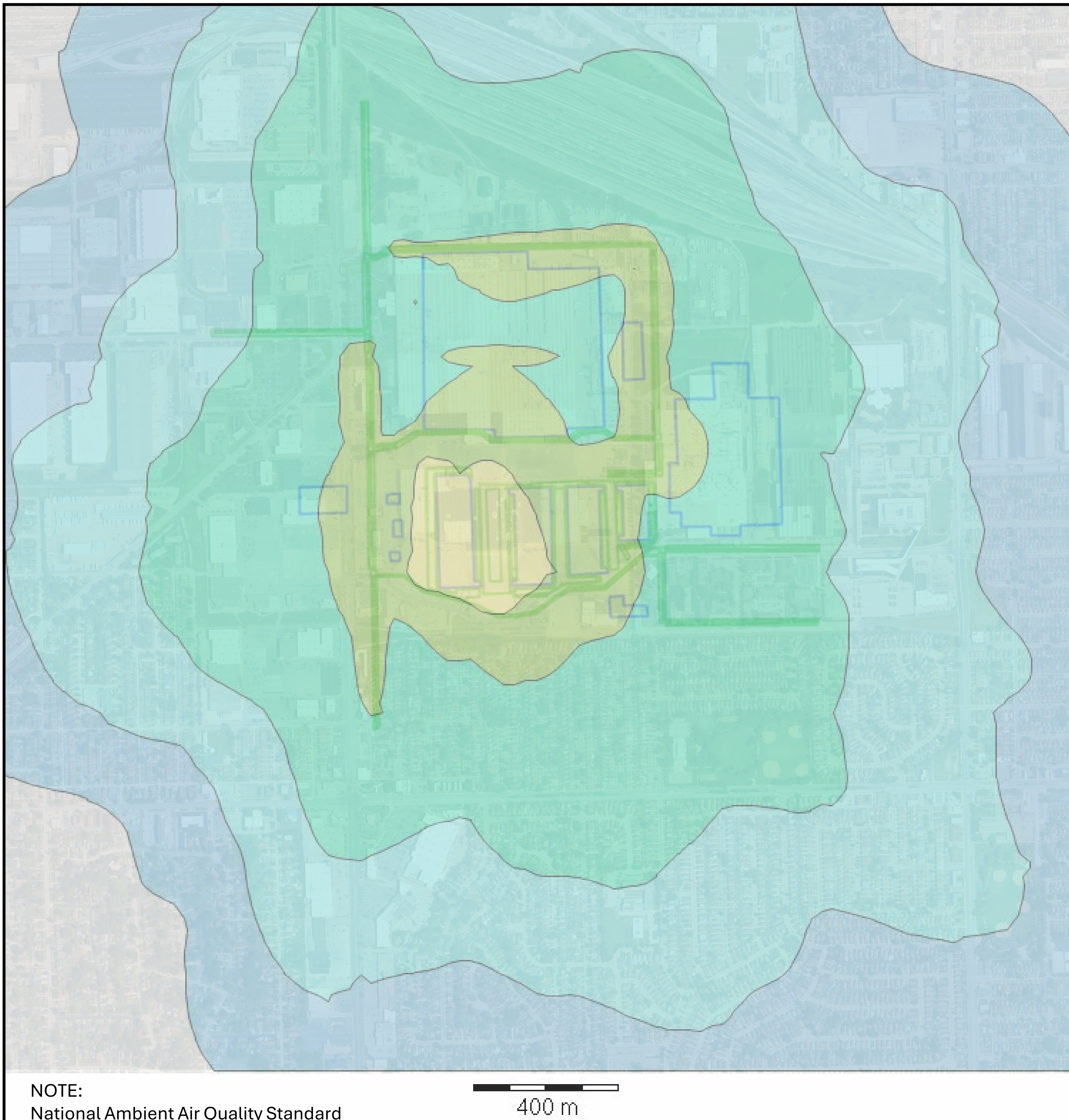

NOTE:
National Ambient Air Quality Standard (NAAQS) for 24-Hour PM_{10} is 150 ug/m^3

ug/m3

- 150.0
- 112.0
- 105.5
- 103.1
- 102.7
- 102.5

N

Title:

Highest 24-Hour Average PM_{10} Concentration Predictions (with Background)

7601 S CICERO AVE, CHICAGO, IL 60652

Prepared for:

BRIDGE INDUSTRIAL

ROUX

Completed by: MO	Date: 7/24/2025	FIGURE
Prepared by: MO	Scale: AS SHOWN	10
Project Mgr: MS	Project: 3165.0049I000	
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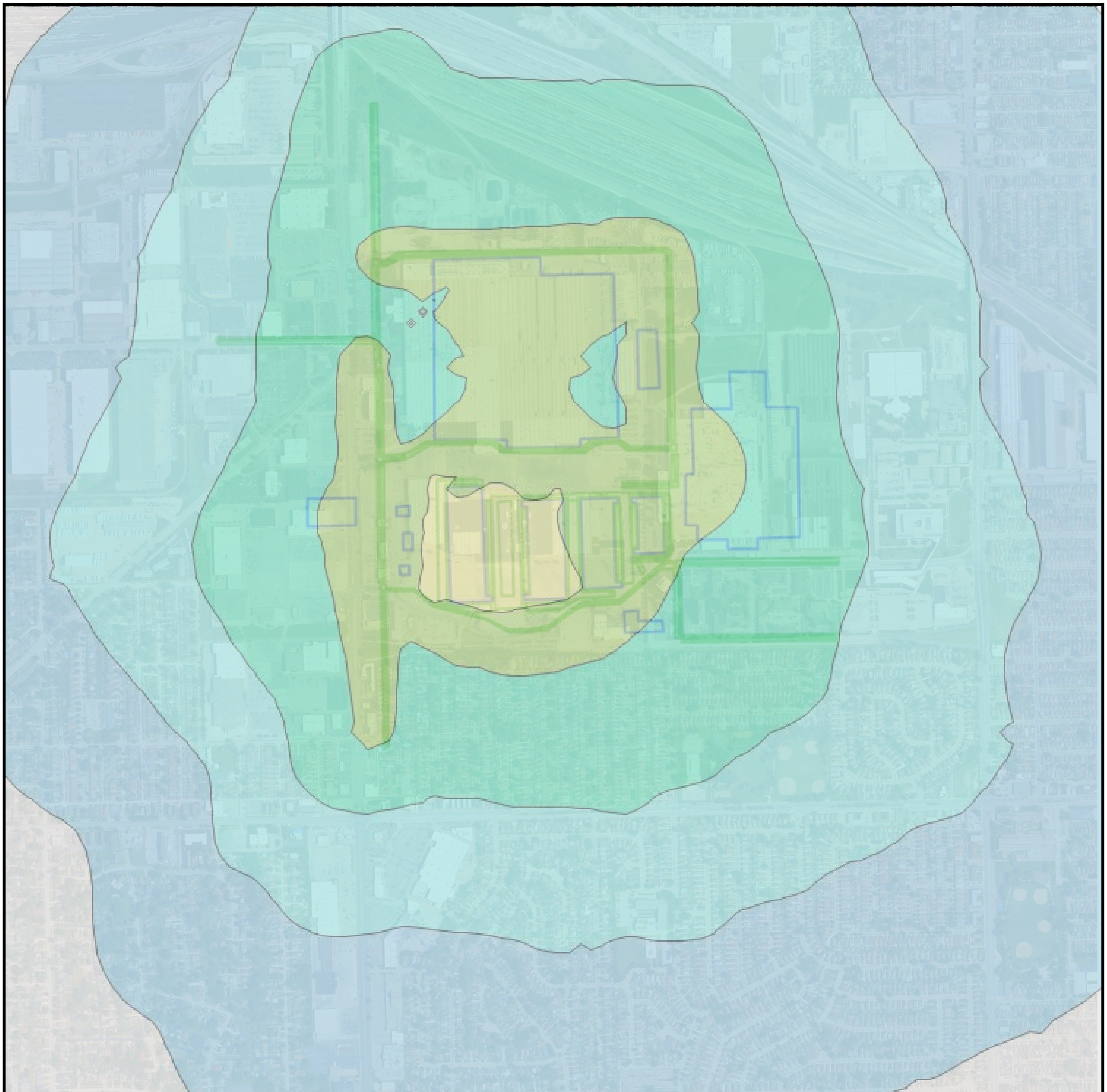

400 m

NOTE:
National Ambient Air Quality Standard (NAAQS) for 24-Hour $PM_{2.5}$ is 35 ug/m^3

ug/m3

- 35.00
- 24.50
- 23.50
- 23.20
- 23.12
- 23.07

N

Title:

98th Percentile 24-Hour Average $PM_{2.5}$ Concentration Predictions (with Background)

7601 S CICERO AVE, CHICAGO, IL 60652

Prepared for:

BRIDGE INDUSTRIAL

ROUX

Completed by: MO	Date: 7/24/2025	FIGURE
Prepared by: MO	Scale: AS SHOWN	11
Project Mgr: MS	Project: 3165.0049I000	
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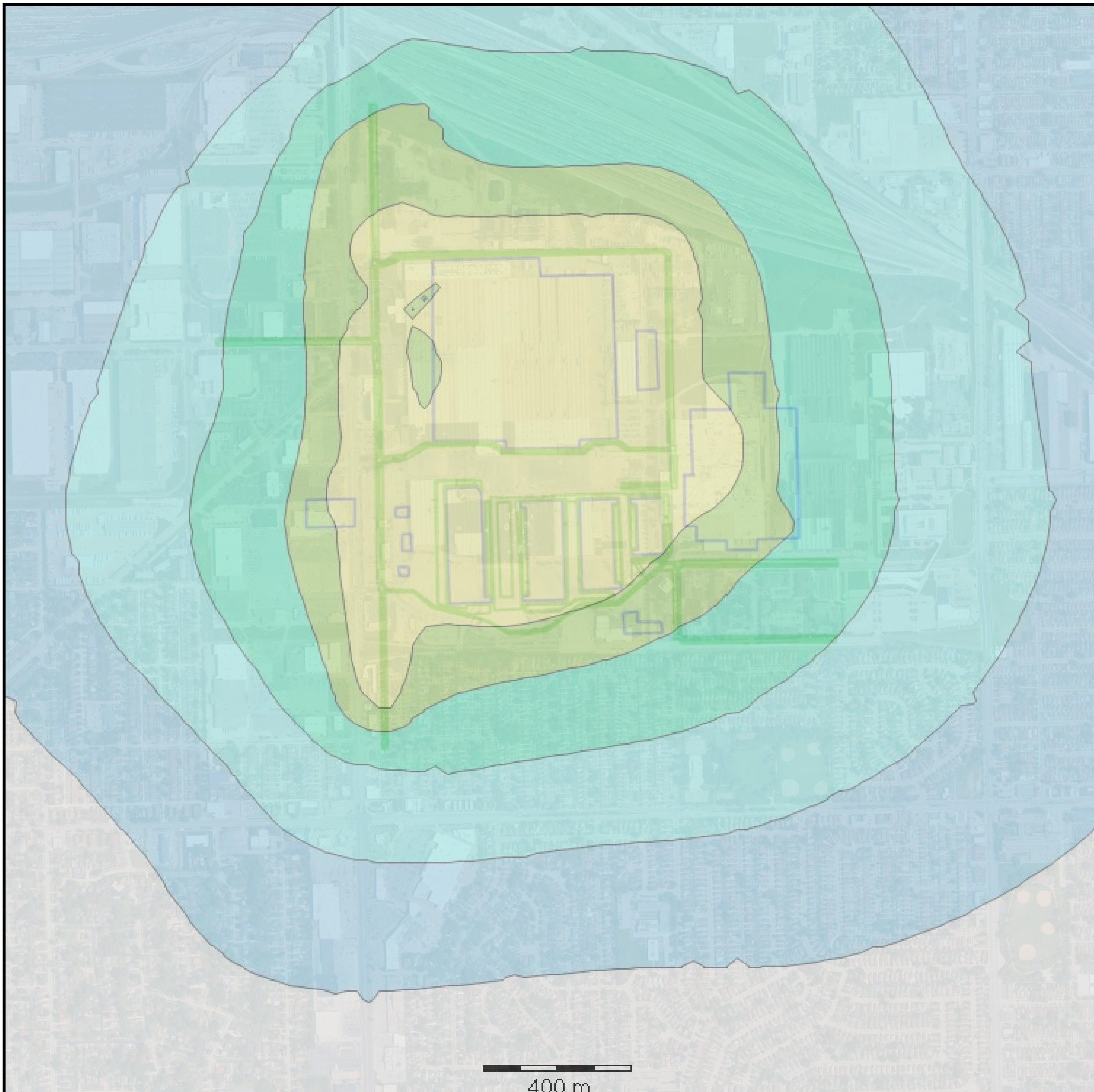

NOTE:
The Significant Impact Level (SIL) for Annual $PM_{2.5}$ is 0.13 ug/m^3

ug/m3

0.13
0.06
0.03
0.02
0.01

N

Title:

Highest Annual Average $PM_{2.5}$ Concentration Predictions (without Background)

7601 S CICERO AVE, CHICAGO, IL 60652

Prepared for:

BRIDGE INDUSTRIAL

ROUX

Completed by: MO	Date: 7/24/2025	FIGURE
Prepared by: M0	Scale: AS SHOWN	12
Project Mgr: MS	Project: 3165.0049I000	
File: FORDCITYMALL_FIGURES.DWG		

APPENDICES

APPENDIX A

Proposed Site Plan

1 PROPOSED SITE PLAN
SCALE: 1" = 100'-0"

Cornerstone Architects Ltd.
A NELSON Worldwide Company
NELSONWW.com

CLIENT: BRIDGE Industrial
9525 W. Bryn Mawr, Suite 700
Rosemont, ILLINOIS

PROJECT: POTENTIAL INDUSTRIAL DEV.
7601 S. CICERO AVENUE
CHICAGO, ILLINOIS

DATE: 01/22/2025
PROJECT #25027

SHEET: PROPOSED SITE PLAN

APPENDIX B

Site Activity Emission Calculations

Parameter	A	B	C	D	Units	Reference
Space Heater - Building #1	4.00	1.00	4.00	4.00	MMBTU/hr	-
Facility Area	**308,200**	**53,700**	**224,450**	**112,800**	ft2	App. A
# of Space Heaters	3	2	2	1	-	-
Heating requirement for space	12	2	8	4	MMBTU/hr	-
Load Factor	0.21	0.21	0.21	0.21	-	EPA 2010[1]
Heating requirement for space	0.00247	0.00041	0.00165	0.00082	MMSCF/hr	-
NOx Emission Factor (Uncontrolled)	100	100	100	100	lb/MMSCF	Table 1.4.1
PM10 Emission Factor (Uncontrolled)	7.6	7.6	7.6	7.6	lb/MMSCF	Table 1.4.2
PM2.5 Emission Factor (Uncontrolled)	7.6	7.6	7.6	7.6	lb/MMSCF	Table 1.4.2

Note:

MM = million

1 SCF = 1020 BTU

Combustor Type = Small Boiler (<100 MMBtu/hr Heat Input)

[1]Load Factors from "Median Life, Annual Activity, and Load Factor Values for Nonroad Engine Emissions Modeling" https://nepis.epa.gov/Exe/ZyPDF.cgi?Dockey=P10081RV.pdf

Parameter	Units	Nox	PM10	PM2.5
EF (Uncontrolled)	lb/MMSCF	100	7.6	7.6
Emissions (Uncontrolled) - A	lb/hr	2.47E-01	1.88E-02	1.88E-02
Emissions (Uncontrolled) - A	gr/sec	3.11E-02	2.37E-03	2.37E-03
Emissions (Uncontrolled) - B	lb/hr	4.12E-02	3.13E-03	3.13E-03
Emissions (Uncontrolled) - B	gr/sec	5.19E-03	3.94E-04	3.94E-04
Emissions (Uncontrolled) - C	lb/hr	1.65E-01	1.25E-02	1.25E-02
Emissions (Uncontrolled) - C	gr/sec	2.08E-02	1.58E-03	1.58E-03
Emissions (Uncontrolled) - D	lb/hr	8.24E-02	6.26E-03	6.26E-03
Emissions (Uncontrolled) - D	gr/sec	1.04E-02	7.89E-04	7.89E-04

Note:

EF = Emission Factor

Assumptions:

100% heater rating usage for 24/7, 365 days/yr

Climate zone 5:

https://basc.pnnl.gov/images/iecc-climate-zone-map

https://www.energy.gov/sites/default/files/2015/10/f27/ba_climate_region_guide_7.3.pdf

PM2.5 and PM10 emission factors were assumed to be equal to toal PM

Parameter	B	Units	Reference
Cooler - Building #B			
Facility Area	214,800	ft2	App. A
# of AC Refrigeration	1	-	-
Power of RTU	5.16	MMBTU	
Power of RTU	2,026	hp	
Load Factor	0.21	-	EPA 2010[1]
NOx Emission Factor (Uncontrolled)	0.973	g/hp-hr	lookup table
PM10 Emission Factor (Uncontrolled)	0.058	g/hp-hr	lookup table
PM2.5 Emission Factor (Uncontrolled)	0.058	g/hp-hr	lookup table

Note:

1 ton of cooling power per 500 square feet

1 ton = 12,000 BTU/hr

BTU = 3.93E-04 HP

Parameter	Units	Nox	PM10	PM2.5
Emissions (Uncontrolled) - B	gr/sec	1.15E-01	6.87E-03	6.87E-03

Parameter	Value	Units	Reference
Emergency backup power generator	100	kW	-
# of generators	1	-	-
Total generator power	134	hp	-
Running time	500	hr/year	-
Load Factor	0.21	-	EPA 2010[1]
NOx Emission Factor	0.031	lb/(hp-hr)	Table 3.3.1
PM10 Emission Factor (Uncontrolled)	2.20E-03	lb/(hp-hr)	Table 3.3.1
PM2.5 Emission Factor (Uncontrolled)	2.20E-03	lb/(hp-hr)	Table 3.3.1

Note:

1 KW = 1.34 hp

Parameter	Units	Nox	PM10	PM2.5
EF (Uncontrolled)	lb/(hp-hr)	3.10E-02	2.20E-03	2.20E-03
Emissions (Uncontrolled)	lb/yr	4.36E+02	3.10E+01	3.10E+01
Emissions (Uncontrolled)	gr/yr	1.98E+05	1.40E+04	1.40E+04
Emissions (Uncontrolled)	gr/sec	6.27E-03	4.45E-04	4.45E-04

Note:

EF = Emission Factor

[1]Load Factors from "Median Life, Annual Activity, and Load Factor Values for Nonroad Engine Emissions Modeling" https://nepis.epa.gov/Exe/ZyPDF.cgi?Dockey=P10081RV.pdf

Assumptions:

Total annual operating hours = 500 hrs/yr for the maximum allowable hours of operation for an emergency generator

PM2.5 and PM10 emission factors were assumed to be equal to toal PM

Diesel Fuel Engines < 600 Hp

Emergency backup power generator system assumed to be the same for both Building #1 & Building #2

Parameter	Value	Units	Reference
Fire pumps	50	hp	-
# of fire pumps	1	-	-
Total fire pumps power	50	hp	-
Running time	500	hr/year	-
Load Factor	0.21	-	EPA 2010[1]
NOx Emission Factor (Uncontrolled)	0.031	lb/(hp-hr)	Table 3.3.1
PM10 Emission Factor (Uncontrolled)	2.20E-03	lb/(hp-hr)	Table 3.3.1
PM2.5 Emission Factor (Uncontrolled)	2.20E-03	lb/(hp-hr)	Table 3.3.1

Parameter	Units	Nox	PM10	PM2.5
EF (Uncontrolled)	lb/(hp-hr)	3.10E-02	2.20E-03	2.20E-03
Emissions (Uncontrolled)	lb/yr	1.63E+02	1.16E+01	1.16E+01
Emissions (Uncontrolled)	gr/yr	7.38E+04	5.24E+03	5.24E+03
Emissions (Uncontrolled)	gr/sec	2.34E-03	1.66E-04	1.66E-04

Note:

EF = Emission Factor

[1]Load Factors from "Median Life, Annual Activity, and Load Factor Values for Nonroad Engine Emissions Modeling" https://nepis.epa.gov/Exe/ZyPDF.cgi?Dockey=P10081RV.pdf

Assumptions:

Total annual operating hours = 500 hrs per year for the maximum allowable hours of operation for fire pump

PM2.5 and PM10 emission factors were assumed to be equal to toal PM

Diesel Fuel Engines < 600 Hp

Fire pump system assumed to be the same for both Building #1 & Building #2

APPENDIX C

Summary of Mobile Source Link Emission Calculations

On-Network Emission Rates

LinkID	Link Description (Road Name, Direction)	Link Length (ft)	Link Length (miles)	Link Width (m)	yearID	sourceTypeName	fuelTypeDesc	Volume (Peak Hour)	Total Vehicle-Miles per Peak Hour	Average Speed (mph)	avgSpeedBin	NOx EF (g/mi)	PM10 EF (g/mi)	PM2.5 EF (g/mi)	NOx EF (g/s)	PM10 EF (g/s)	PM2.5 EF (g/s)	PM10 EF (g/VMT)	PM2.5 EF (g/VMT)	PM10 EF (g/s/m2)	PM2.5 EF (g/s/m2)	Fugitive Dust PM10 EF (g/s/m2)	Fugitive Dust PM2.5 EF (g/s/m2)	LinkID	NOx EF (g/s/m2)	PM10 EF (g/s/m2)	PM2.5 EF (g/s/m2)
1	Cicero Ave SB south of 76th St	1,320	0.25	8	2030	Passenger Car	Gasoline	0	0.000	30	27.5 <= speed < 32.5 mph	0.016	0.001	0.001	0.00E+00	0.00E+00	0.00E+00	2.169733	0.542433	0.00E+00	0.00E+00	2.45E-06	6.13E-07	1	1.78E-07	2.45E-06	6.14E-07
		1,320	0.25		2030	Single Unit Long-haul Truck	Diesel Fuel	5	1.250	30	27.5 <= speed < 32.5 mph	1.648	0.015	0.013	5.72E-04	5.05E-06	4.65E-06	22.71989	5.679973	2.45E-06	6.13E-07						
2	Cicero Ave NB south of 76th St	1,320	0.25	8	2030	Passenger Car	Gasoline	24	5.875	30	27.5 <= speed < 32.5 mph	0.016	0.001	0.001	2.58E-05	1.89E-06	1.67E-06	2.169733	0.542433	1.10E-06	2.75E-07	4.04E-06	1.01E-06	2	2.21E-07	4.04E-06	1.01E-06
		1,320	0.25		2030	Single Unit Long-haul Truck	Diesel Fuel	6	1.500	30	27.5 <= speed < 32.5 mph	1.648	0.015	0.013	6.86E-04	6.06E-06	5.58E-06	22.71989	5.679973	2.94E-06	7.35E-07						
3	76th St EB east of Cicero Ave	649	0.1228	8	2030	Passenger Car	Gasoline	45	5.466	30	27.5 <= speed < 32.5 mph	0.016	0.001	0.001	2.40E-05	1.76E-06	1.56E-06	2.169733	0.542433	2.08E-06	5.21E-07	2.08E-06	5.21E-07	5	1.52E-08	2.08E-06	5.22E-07
		649	0.1228		2030	Single Unit Long-haul Truck	Diesel Fuel	0	0.000	30	27.5 <= speed < 32.5 mph	1.648	0.015	0.013	0.00E+00	0.00E+00	0.00E+00	22.71989	5.679973	0.00E+00	0.00E+00						
4	76th St WB east of Cicero Ave	649	0.1228	8	2030	Passenger Car	Gasoline	41	5.036	30	27.5 <= speed < 32.5 mph	0.016	0.001	0.001	2.21E-05	1.62E-06	1.44E-06	2.169733	0.542433	1.92E-06	4.80E-07	1.92E-06	4.80E-07	6	1.40E-08	1.92E-06	4.81E-07
		649	0.1228		2030	Single Unit Long-haul Truck	Diesel Fuel	0	0.000	30	27.5 <= speed < 32.5 mph	1.648	0.015	0.013	0.00E+00	0.00E+00	0.00E+00	22.71989	5.679973	0.00E+00	0.00E+00						
5	Cicero Ave SB north of 76th St	1,000	0.189394	8	2030	Passenger Car	Gasoline	21	3.977	30	27.5 <= speed < 32.5 mph	0.016	0.001	0.001	1.75E-05	1.28E-06	1.13E-06	2.169733	0.542433	9.83E-07	2.46E-07	3.43E-06	8.59E-07	7	1.85E-07	3.44E-06	8.60E-07
		1,000	0.189394		2030	Single Unit Long-haul Truck	Diesel Fuel	5	0.947	30	27.5 <= speed < 32.5 mph	1.648	0.015	0.013	4.33E-04	3.83E-06	3.52E-06	22.71989	5.679973	2.45E-06	6.13E-07						
6	Cicero Ave NB north of 76th St	1,000	0.189394	8	2030	Passenger Car	Gasoline	20	3.693	30	27.5 <= speed < 32.5 mph	0.016	0.001	0.001	1.62E-05	1.19E-06	1.05E-06	2.169733	0.542433	9.13E-07	2.28E-07	3.85E-06	9.63E-07	8	2.20E-07	3.86E-06	9.66E-07
		1,000	0.189394		2030	Single Unit Long-haul Truck	Diesel Fuel	6	1.136	30	27.5 <= speed < 32.5 mph	1.648	0.015	0.013	5.20E-04	4.59E-06	4.23E-06	22.71989	5.679973	2.94E-06	7.35E-07						
7	74th St EB east of Cicero Ave	1,777	0.3365	8	2030	Passenger Car	Gasoline	3	0.841	30	27.5 <= speed < 32.5 mph	0.016	0.001	0.001	3.70E-06	2.71E-07	2.40E-07	2.169733	0.542433	1.17E-07	2.93E-08	1.17E-07	2.93E-08	11	8.53E-10	1.17E-07	2.93E-08
		1,777	0.3365		2030	Single Unit Long-haul Truck	Diesel Fuel	0	0.000	30	27.5 <= speed < 32.5 mph	1.648	0.015	0.013	0.00E+00	0.00E+00	0.00E+00	22.71989	5.679973	0.00E+00	0.00E+00						
8	74th St WB east of Cicero Ave	1,777	0.3365	8	2030	Passenger Car	Gasoline	3	0.841	30	27.5 <= speed < 32.5 mph	0.016	0.001	0.001	3.70E-06	2.71E-07	2.40E-07	2.169733	0.542433	1.17E-07	2.93E-08	1.17E-07	2.93E-08	12	8.53E-10	1.17E-07	2.93E-08
		1,777	0.3365		2030	Single Unit Long-haul Truck	Diesel Fuel	0	0.000	30	27.5 <= speed < 32.5 mph	1.648	0.015	0.013	0.00E+00	0.00E+00	0.00E+00	22.71989	5.679973	0.00E+00	0.00E+00						
9	Cicero Ave SB south of State Rd	725	0.1373	8	2030	Passenger Car	Gasoline	21	2.884	30	27.5 <= speed < 32.5 mph	0.016	0.001	0.001	1.27E-05	9.29E-07	8.22E-07	2.169733	0.542433	9.83E-07	2.46E-07	3.43E-06	8.59E-07	13	1.85E-07	3.44E-06	8.60E-07
		725	0.1373		2030	Single Unit Long-haul Truck	Diesel Fuel	5	0.687	30	27.5 <= speed < 32.5 mph	1.648	0.015	0.013	3.14E-04	2.78E-06	2.55E-06	22.71989	5.679973	2.45E-06	6.13E-07						
10	Cicero Ave NB south of State Rd	725	0.1373	8	2030	Passenger Car	Gasoline	22	3.021	30	27.5 <= speed < 32.5 mph	0.016	0.001	0.001	1.33E-05	9.73E-07	8.61E-07	2.169733	0.542433	1.03E-06	2.57E-07	3.97E-06	9.93E-07	14	2.21E-07	3.97E-06	9.95E-07
		725	0.1373		2030	Single Unit Long-haul Truck	Diesel Fuel	6	0.824	30	27.5 <= speed < 32.5 mph	1.648	0.015	0.013	3.77E-04	3.33E-06	3.06E-06	22.71989	5.679973	2.94E-06	7.35E-07						
11	Cicero Ave SB north of State Rd	150	0.0284	8	2030	Passenger Car	Gasoline	24	0.668	30	27.5 <= speed < 32.5 mph	0.016	0.001	0.001	2.93E-06	2.15E-07	1.90E-07	2.169733	0.542433	1.10E-06	2.75E-07	3.55E-06	8.88E-07	17	1.86E-07	3.55E-06	8.90E-07
		150	0.0284		2030	Single Unit Long-haul Truck	Diesel Fuel	5	0.142	30	27.5 <= speed < 32.5 mph	1.648	0.015	0.013	6.50E-05	5.74E-07	5.28E-07	22.71989	5.679973	2.45E-06	6.13E-07						
12	Cicero Ave NB north of State Rd	150	0.0284	8	2030	Passenger Car	Gasoline	22	0.625	30	27.5 <= speed < 32.5 mph	0.016	0.001	0.001	2.75E-06	2.01E-07	1.78E-07	2.169733	0.542433	1.03E-06	2.57E-07	3.97E-06	9.93E-07	18	2.21E-07	3.97E-06	9.95E-07
		150	0.0284		2030	Single Unit Long-haul Truck	Diesel Fuel	6	0.170	30	27.5 <= speed < 32.5 mph	1.648	0.015	0.013	7.80E-05	6.89E-07	6.34E-07	22.71989	5.679973	2.94E-06	7.35E-07						
13	73rd St EB west of Cicero Ave	1,320	0.2500	8	2030	Passenger Car	Gasoline	3	0.750	30	27.5 <= speed < 32.5 mph	0.016	0.001	0.001	3.30E-06	2.42E-07	2.14E-07	2.169733	0.542433	1.40E-07	3.51E-08	1.40E-07	3.51E-08	19	1.02E-09	1.41E-07	3.52E-08
		1,320	0.2500		2030	Single Unit Long-haul Truck	Diesel Fuel	0	0.000	30	27.5 <= speed < 32.5 mph	1.648	0.015	0.013	0.00E+00	0.00E+00	0.00E+00	22.71989	5.679973	0.00E+00	0.00E+00						
14	73rd St WB west of Cicero Ave	1,320	0.2500	8	2030	Passenger Car	Gasoline	3	0.625	30	27.5 <= speed < 32.5 mph	0.016	0.001	0.001	2.75E-06	2.01E-07	1.78E-07	2.169733	0.542433	1.17E-07	2.93E-08	1.17E-07	2.93E-08	20	8.53E-10	1.17E-07	2.93E-08
		1,320	0.2500		2030	Single Unit Long-haul Truck	Diesel Fuel	0	0.000	30	27.5 <= speed < 32.5 mph	1.648	0.015	0.013	0.00E+00	0.00E+00	0.00E+00	22.71989	5.679973	0.00E+00	0.00E+00						
15	Cicero Ave SB north of 73rd St	600	0.1136	8	2030	Passenger Car	Gasoline	21	2.330	30	27.5 <= speed < 32.5 mph	0.016	0.001	0.001	1.02E-05	7.50E-07	6.64E-07	2.169733	0.542433	9.60E-07	2.40E-07	3.41E-06	8.53E-07	23	1.85E-07	3.41E-06	8.55E-07
		600	0.1136		2030	Single Unit Long-haul Truck	Diesel Fuel	5	0.568	30	27.5 <= speed < 32.5 mph	1.648	0.015	0.013	2.60E-04	2.30E-06	2.11E-06	22.71989	5.679973	2.45E-06	6.13E-07						
16	Cicero Ave NB north of 73rd St	600	0.1136	8	2030	Passenger Car	Gasoline	21	2.386	30	27.5 <= speed < 32.5 mph	0.016	0.001	0.001	1.05E-05	7.69E-07	6.80E-07	2.169733	0.542433	9.83E-07	2.46E-07	3.92E-06	9.81E-07	24	2.20E-07	3.93E-06	9.83E-07
		600	0.1136		2030	Single Unit Long-haul Truck	Diesel Fuel	6	0.682	30	27.5 <= speed < 32.5 mph	1.648	0.015	0.013	3.12E-04	2.76E-06	2.54E-06	22.71989	5.679973	2.94E-06	7.35E-07						
17	72nd St EB east of Cicero Ave	3,116	0.5901	14	2030	Passenger Car	Gasoline	3	1.475	30	27.5 <= speed < 32.5 mph	0.016	0.001	0.001	6.48E-06	4.75E-07	4.20E-07	2.169733	0.542433	1.17E-07	2.93E-08	6.00E-06	1.50E-06	26	2.44E-07	6.00E-06	1.50E-06
		3,116	0.5901		2030	Single Unit Long-haul Truck	Diesel Fuel	12	7.081	30	27.5 <= speed < 32.5 mph	1.648	0.015	0.013	3.24E-03	2.86E-05	2.63E-05	22.71989	5.679973	5.88E-06	1.47E-06						
18	72nd St WB east of Cicero Ave	3,116	0.5901	14	2030	Passenger Car	Gasoline	2	1.180	30	27.5 <= speed < 32.5 mph	0.016	0.001	0.001	5.18E-06	3.80E-07	3.36E-07	2.169733	0.542433	9.36E-08	2.34E-08	5.24E-06	1.31E-06	26	2.14E-07	5.24E-06	1.31E-06
		3,116	0.5901		2030	Single Unit Long-haul Truck	Diesel Fuel	11	6.196	30	27.5 <= speed < 32.5 mph	1.648	0.015	0.013	2.84E-03	2.50E-05	2.30E-05	22.71989	5.679973	5.15E-06	1.29E-06						
19	Cicero Ave SB north of 72nd St	1,320	0.2500	8	2030	Passenger Car	Gasoline	24	5.875	30	27.5 <= speed < 32.5 mph	0.016	0.001	0.001	2.58E-05	1.89E-06	1.67E-06	2.169733	0.542433	1.10E-06	2.75E-07	4.04E-06	1.01E-06	26	2.21E-07	4.04E-06	1.01E-06
		1,320	0.2500		2030	Single Unit Long-haul Truck	Diesel Fuel	6	1.500	30	27.5 <= speed < 32.5 mph	1.648	0.015	0.013	6.86E-04	6.06E-06	5.58E-06	22.71989	5.679973	2.94E-06	7.35E-07						
20	Cicero Ave NB north of 72nd St	1,320	0.2500	8	2030	Passenger Car	Gasoline	23	5.750	30	27.5 <= speed < 32.5 mph	0.016	0.001	0.001	2.53E-05	1.85E-06	1.64E-06	2.169733	0.542433	1.08E-06	2.69E-07	3.77E-06	9.43E-07	26	2.03E-07	3.78E-06	9.45E-07
		1,320	0.2500		2030	Single Unit Long-haul Truck	Diesel Fuel	6	1.375	30	27.5 <= speed < 32.5 mph	1.648	0.015	0.013	6.29E-04	5.56E-06	5.11E-06	22.71989	5.679973	2.70E-06	6.74E-07						
21	Kostner Ave SB south of North Access	225	0.0426	8	2030	Passenger Car	Gasoline	3	0.107	30	27.5 <= speed < 32.5 mph	0.016	0.001	0.001	4.68E-07	3.43E-08	3.04E-08	2.169733	0.542433	1.17E-07	2.93E-08	6.00E-06	1.50E-06	31	4.27E-07	6.00E-06	1.50E-06
		225	0.0426		2030	Single Unit Long-haul Truck	Diesel Fuel	12	0.511	30	27.5 <= speed < 32.5 mph	1.648	0.015	0.013	2.34E-04	2.07E-06	1.90E-06	22.71989	5.679973	5.88E-06	1.47E-06						
22	Kostner Ave NB south of North Access	225	0.0426	8	2030	Passenger Car	Gasoline	2	0.085	30	27.5 <= speed < 32.5 mph	0.016	0.001	0.001	3.74E-07	2.75E-08	2.43E-08	2.169733	0.542433	9.36E-08	2.34E-08	5.24E-06	1.31E-06	32	3.74E-07	5.24E-06	1.31E-06
		225	0.0426		2030	Single Unit Long-haul Truck	Diesel Fuel	11	0.447	30	27.5 <= speed < 32.5 mph	1.648	0.015	0.013	2.05E-04	1.81E-06	1.66E-06	22.71989	5.679973	5.15E-06	1.29E-06						
23	South Access EB west of Kostner Ave	400	0.0758	8	2030	Passenger Car	Gasoline	2	0.152	30	27.5 <= speed < 32.5 mph	0.016	0.001	0.001	6.66E-07	4.88E-08	4.32E-08	2.169733	0.542433	9.36E-08	2.34E-08	5.24E-06	1.31E-06	33	3.74E-07	5.24E-06	1.31E-06
		400	0.0758		2030	Single Unit Long-haul Truck	Diesel Fuel	11	0.795	30	27.5 <= speed < 32.5 mph	1.648	0.015	0.013	3.64E-04	3.22E-06	2.96E-06	22.71989	5.679973	5.15E-06	1.29E-06						
24	South Access WB west of Kostner Ave	400	0.0758	8	2030	Passenger Car	Gasoline	3	0.189	30	27.5 <= speed < 32.5 mph	0.016	0.001	0.001	8.32E-07	6.10E-08	5.40E-08	2.169733	0.542433	1.17E-07	2.93E-08	6.00E-06	1.50E-06	34	4.27E-07	6.00E-06	1.50E-06
		400	0.0758		2030	Single Unit Long-haul Truck	Diesel Fuel	12	0.909	30	27.5 <= speed < 32.5 mph	1.648	0.015	0.013	4.16E-04	3.67E-06	3.38E-06	22.71989	5.679973	5.88E-06	1.47E-06						
25	76th Street EB west of Kostner Ave	747	0.1415	8	2030	Passenger Car	Gasoline	2	0.283	30	27.5 <= speed < 32.5 mph	0.016	0.001	0.001	1.24E-06	9.12E-08	8.07E-08	2.169733	0.542433	9.36E-08	2.34E-08	9.36E-08	2.34E-08	37	6.82E-10	9.37E-08	2.35E-08
		747	0.1415		2030	Single Unit Long-haul Truck	Diesel Fuel	0	0.000	30	27.5 <= speed < 32.5 mph	1.648	0.015	0.013	0.00E+00	0.00E+00	0.00E+00	22.71989	5.679973	0.00E+00	0.00E+00						
26	76th Street WB west of Kostner Ave	747	0.1415	8	2030	Passenger Car	Gasoline	6	0.849	30	27.5 <= speed < 32.5 mph	0.016	0.001	0.001	3.73E-06	2.74E-07	2.42E-07	2.169733	0.542433	2.81E-07	7.02E-08	2.81E-07	7.02E-08	38	2.05E-09	2.81E-07	7.04E-08
		747	0.1415		2030	Single Unit Long-haul Truck	Diesel Fuel	0	0.000	30	27.5 <= speed < 32.5 mph	1.648	0.015	0.013	0.00E+00	0.00E+00	0.00E+00	22.71989	5.679973	0.00E+00	0.00E+00						
27	76th Street EB east of Kostner Ave	1,320	0.2500	8	2030	Passenger Car	Gasoline	0	0.000	30	27.5 <= speed < 32.5 mph	0.016	0.001	0.001	0.00E+00	0.00E+00	0.00E+00	2.169733	0.542433	0.00E+00	0.00E+00	0.00E+00	0.00E+00	39	0.00E+00	0.00E+00	0.00E+00
		1,320	0.2500		2030	Single Unit Long-haul Truck	Diesel Fuel	0	0.000	30	27.5 <= speed < 32.5 mph	1.648	0.015	0.013	0.00E+00	0.00E+00	0.00E+00	22.71989	5.679973	0.00E+00	0.00E+00						
28	76th Street WB east of Kostner Ave	1,320	0.2500	8	2030	Passenger Car	Gasoline	9	2.250	30	27.5 <= speed < 32.5 mph	0.016	0.001	0.001	9.89E-06	7.25E-07	6.41E-07	2.169733	0.542433	4.21E-07	1.05E-07	4.21E-07	1.05E-07	40	3.07E-09	4.22E-07	1.06E-07
		1,320	0.2500		2030	Single Unit Long-haul Truck	Diesel Fuel	0	0.000	30	27.5 <= speed < 32.5 mph	1.648	0.015	0.013	0.00E+00	0.00E+00	0.00E+00	22.71989	5.679973	0.00E+00	0.00E+00						
29	Kostner Ave SB south of 76th Street	600	0.1136	8	2030	Passenger Car	Gasoline	2	0.227	30	27.5 <= speed < 32.5 mph	0.016	0.001	0.001	9.99E-07	7.32E-08	6.48E-08	2.169733	0.542433	9.36E-08	2.34E-08	9.36E-08	2.34E-08	41	6.82E-10	9.37E-08	2.35E-08
		600	0.1136		2030	Single Unit Long-haul Truck	Diesel Fuel	0	0.000	30	27.5 <= speed < 32.5 mph	1.648	0.015	0.013	0.00E+00	0.00E+00	0.00E+00	22.71989	5.679973	0.00E+00	0.00E+00						
30	Kostner Ave NB south of 76th Street	600	0.1136	8	2030	Passenger Car	Gasoline	0	0.000	30	27.5 <= speed < 32.5 mph	0.016	0.001	0.001	0.00E+00	0.00E+00	0.00E+00	2.169733	0.542433	0.00E+00	0.00E+00	0.00E+00	0.00E+00	42	0.00E+00	0.00E+00	0.00E+00
		600	0.1136		2030	Single Unit Long-haul Truck	Diesel Fuel	0	0.000	30	27.5 <= speed < 32.5 mph	1.648	0.015	0.013	0.00E+00	0.00E+00	0.00E+00	22.71989	5.679973	0.00E+00	0.00E+00						
31	77th Street EB east of Kostner Ave	1,320	0.2500	8	2030	Passenger Car	Gasoline	2	0.500	30	27.5 <= speed < 32.5 mph	0.016	0.001	0.001	2.20E-06	1.61E-07	1.42E-07	2.169733	0.542433	9.36E-08	2.34E-08	9.36E-08	2.34E-08	43	6.82E-10	9.37E-08	2.35E-08
		1,320	0.2500		2030	Single Unit Long-haul Truck	Diesel Fuel	0	0.000	30	27.5 <= speed < 32.5 mph	1.648	0.015	0.013	0.00E+00	0.00E+00	0.00E+00	22.71989	5.679973	0.00E+00	0.00E+00						
32	77th Street WB east of Kostner Ave	1,320	0.2500	8	2030	Passenger Car	Gasoline	0	0.000	30	27.5 <= speed < 32.5 mph	0.016	0.001	0.001	0.00E+00	0.00E+00	0.00E+00	2.169733	0.542433	0.00E+00	0.00E+00	0.00E+00	0.00E+00	44	0.00E+00	0.00E+00	0.00E+00
		1,320	0.2500		2030	Single Unit Long-haul Truck	Diesel Fuel	0	0.000	30	27.5 <= speed < 32.5 mph	1.648	0.015	0.013	0.00E+00	0.00E+00	0.00E+00	22.71989	5.679973	0.00E+00	0.00E+00						
PassPark1	Passenger Cars travel to park - Bldg A	12,876	2.4387	8	2030	Passenger Car	Gasoline	34	41.984	5	2.5 <= speed < 7.5 mph	0.026	0.004	0.003	3.00E-04	4.30E-05	3.81E-05	2.169733	0.542433	8.06E-07	2.01E-07	8.06E-07	2.01E-07	PassPark1	9.54E-09	8.07E-07	2.02E-07
PassPark2	Passenger Cars travel to park - Bldg B&C	18,922	3.5837	8	2030	Passenger Car	Gasoline	63	112.914	5	2.5 <= speed < 7.5 mph	0.026	0.004	0.003	8.06E-04	1.16E-04	1.02E-04	2.169733	0.542433	1.47E-06	3.69E-07	1.47E-06	3.69E-07	PassPark2	1.75E-08	1.48E-06	3.70E-07
PassPark3	Passenger Cars travel to park - Bldg D	4,580	0.8674	8	2030	Passenger Car	Gasoline	15	6.311	5	2.5 <= speed < 7.5 mph	0.026	0.004	0.003	4.50E-05	6.47E-06	5.72E-06	2.169733	0.542433	3.41E-07	8.52E-08	3.41E-07	8.52E-08	PassPark3	4.03E-09	3.41E-07	8.54E-08
TruckPark1	Trucks travel to park - Bldg A&B	31,311	5.9301	8	2030	Single Unit Long-haul Truck	Diesel Fuel	18	52.255	5	2.5 <= speed < 7.5 mph	6.797	0.041	0.037	9.87E-02	5.89E-04	5.42E-04	22.71989	5.679973	4.32E-06	1.08E-06	4.32E-06	1.08E-06	TruckPark1	1.29E-06	4.32E-06	1.08E-06
TruckPark2	Trucks travel to park - Bldg C&D	8,769	1.6607	8	2030	Single Unit Long-haul Truck	Diesel Fuel	5	4.049	5	2.5 <= speed < 7.5 mph	6.797	0.041	0.037	7.64E-03	4.56E-05	4.20E-05	22.71989	5.679973	1.20E-06	2.99E-07	1.20E-06	2.99E-07	TruckPark2	3.58E-07	1.20E-06	3.00E-07

Off-Network Idle Emission Rates

LinkID	Link Description (Road Name, Direction)	Idle Link Area (m2)	yearID	sourceTypeName	fuelTypeDesc	Volume (Peak Hour)	Idle minutes per hour per vehicle	Idle minutes/ hr	Speed Bin	NOx EF (g/hr)	PM10 EF (g/hr)	PM2.5 EF (g/hr)	NOx EF (g/s)	PM10 EF (g/s)	PM2.5 EF (g/s)	NOx EF (g/s)	PM10 EF (g/s)	PM2.5 EF (g/s)	NOx EF (g/s/m2)	PM10 EF (g/s/m2)	PM2.5 EF (g/s/m2)
33-Idle	Stop Light @ Cicero Avenue with 76th Street	225	2030	Passenger Car	Gasoline	86	0.517	44.18	speed = 0 (idle) (g/hr)	0.065	0.016	0.014	1.33E-05	3.19E-06	2.82E-06	5.48E-04	6.60E-06	5.96E-06	2.43E-06	2.94E-08	2.65E-08
			2030	Single Unit Long-haul Truck	Diesel Fuel	11	0.517	5.68	speed = 0 (idle) (g/hr)	20.316	0.130	0.119	5.35E-04	3.41E-06	3.14E-06						
364-Idle	Stop Light @ Cicero Avenue with 74th Place	225	2030	Passenger Car	Gasoline	46	0.549	24.99	speed = 0 (idle) (g/hr)	0.065	0.016	0.014	7.53E-06	1.81E-06	1.60E-06	5.76E-04	5.43E-06	4.93E-06	2.56E-06	2.41E-08	2.19E-08
			2030	Single Unit Long-haul Truck	Diesel Fuel	11	0.549	6.04	speed = 0 (idle) (g/hr)	20.316	0.130	0.119	5.68E-04	3.63E-06	3.34E-06						
35-Idle	Stop Light @ Cicero Avenue with State Street	225	2030	Passenger Car	Gasoline	46	0.390	17.75	speed = 0 (idle) (g/hr)	0.065	0.016	0.014	5.35E-06	1.28E-06	1.13E-06	4.09E-04	3.86E-06	3.50E-06	1.82E-06	1.71E-08	1.56E-08
			2030	Single Unit Long-haul Truck	Diesel Fuel	11	0.390	4.29	speed = 0 (idle) (g/hr)	20.316	0.130	0.119	4.03E-04	2.58E-06	2.37E-06						
36-Idle	Stop Light @ Cicero Avenue with 73rd Street	225	2030	Passenger Car	Gasoline	46	0.695	31.62	speed = 0 (idle) (g/hr)	0.065	0.016	0.014	9.53E-06	2.28E-06	2.02E-06	7.29E-04	6.88E-06	6.24E-06	3.24E-06	3.06E-08	2.78E-08
			2030	Single Unit Long-haul Truck	Diesel Fuel	11	0.695	7.65	speed = 0 (idle) (g/hr)	20.316	0.130	0.119	7.19E-04	4.59E-06	4.22E-06						
37-Idle	Stop Light @ Cicero Avenue with 72nd Street	225	2030	Passenger Car	Gasoline	47	0.628	29.22	speed = 0 (idle) (g/hr)	0.065	0.016	0.014	8.80E-06	2.11E-06	1.87E-06	1.34E-03	1.06E-05	9.68E-06	5.95E-06	4.71E-08	4.30E-08
			2030	Single Unit Long-haul Truck	Diesel Fuel	23	0.628	14.14	speed = 0 (idle) (g/hr)	20.316	0.130	0.119	1.33E-03	8.49E-06	7.81E-06						
38-Idle	Stop Sign @ Kostner Avenue with 74th Place (N Access Road)	225	2030	Passenger Car	Gasoline	5	0.143	0.64	speed = 0 (idle) (g/hr)	0.065	0.016	0.014	1.93E-07	4.63E-08	4.10E-08	3.02E-04	1.97E-06	1.81E-06	1.34E-06	8.76E-09	8.06E-09
			2030	Single Unit Long-haul Truck	Diesel Fuel	23	0.143	3.21	speed = 0 (idle) (g/hr)	20.316	0.130	0.119	3.02E-04	1.93E-06	1.77E-06						
39-Idle	Stop Sign @ Kostner Avenue with S Access Road	225	2030	Passenger Car	Gasoline	5	0.186	0.84	speed = 0 (idle) (g/hr)	0.065	0.016	0.014	2.52E-07	6.04E-08	5.34E-08	3.94E-04	2.57E-06	2.36E-06	1.75E-06	1.14E-08	1.05E-08
			2030	Single Unit Long-haul Truck	Diesel Fuel	23	0.186	4.18	speed = 0 (idle) (g/hr)	20.316	0.130	0.119	3.93E-04	2.51E-06	2.31E-06						
40-Idle	Stop Light @ Kostner Avenue with 76th Street	225	2030	Passenger Car	Gasoline	17	0.229	3.90	speed = 0 (idle) (g/hr)	0.065	0.016	0.014	1.17E-06	2.81E-07	2.49E-07	1.17E-06	2.81E-07	2.49E-07	5.22E-09	1.25E-09	1.11E-09
			2030	Single Unit Long-haul Truck	Diesel Fuel	0	0.229	0.00	speed = 0 (idle) (g/hr)	20.316	0.130	0.119	0.00E+00	0.00E+00	0.00E+00						
Pass-Idle 1	Passenger Cars idling - Bldg A	10,510	2030	Passenger Car	Gasoline	34	1.000	34	speed = 0 (idle) (g/hr)	0.065	0.016	0.014	1.04E-05	2.49E-06	2.20E-06	1.04E-05	2.49E-06	2.20E-06	9.87E-10	2.37E-10	2.09E-10
Pass-Idle 2	Passenger Cars idling - Bldg B&C	12,608	2030	Passenger Car	Gasoline	63	1.000	63	speed = 0 (idle) (g/hr)	0.065	0.016	0.014	1.90E-05	4.55E-06	4.03E-06	1.90E-05	4.55E-06	4.03E-06	1.51E-09	3.61E-10	3.19E-10
Pass-Idle 3	Passenger Cars idling - Bldg D	3,335	2030	Passenger Car	Gasoline	15	1.000	15	speed = 0 (idle) (g/hr)	0.065	0.016	0.014	4.38E-06	1.05E-06	9.30E-07	4.38E-06	1.05E-06	9.30E-07	1.31E-09	3.15E-10	2.79E-10
DockIdle 1	Trucks idling on site at the drive-in doors - Bldg A	2,726	2030	Single Unit Long-haul Truck	Diesel Fuel	4	1.000	4	speed = 0 (idle) (g/hr)	20.316	0.130	0.119	3.67E-04	2.34E-06	2.16E-06	3.67E-04	2.34E-06	2.16E-06	1.35E-07	8.59E-10	7.91E-10
DockIdle 2	Trucks idling on site at the drive-in doors - Bldg B	2,559	2030	Single Unit Long-haul Truck	Diesel Fuel	4	1.000	4	speed = 0 (idle) (g/hr)	20.316	0.130	0.119	3.34E-04	2.13E-06	1.96E-06	3.34E-04	2.13E-06	1.96E-06	1.31E-07	8.34E-10	7.67E-10
DockIdle 3	Trucks idling on site at the drive-in doors - Bldg C	2,478	2030	Single Unit Long-haul Truck	Diesel Fuel	3	1.000	3	speed = 0 (idle) (g/hr)	20.316	0.130	0.119	2.95E-04	1.88E-06	1.73E-06	2.95E-04	1.88E-06	1.73E-06	1.19E-07	7.60E-10	6.99E-10
DockIdle 4	Trucks idling on site at the drive-in doors - Bldg D	1,283	2030	Single Unit Long-haul Truck	Diesel Fuel	2	1.000	2	speed = 0 (idle) (g/hr)	20.316	0.130	0.119	1.64E-04	1.05E-06	9.62E-07	1.64E-04	1.05E-06	9.62E-07	1.28E-07	8.15E-10	7.50E-10
TrruckStallIdle	Trucks idling at Stalls	8,058	2030	Single Unit Long-haul Truck	Diesel Fuel	10	1.000	10	speed = 0 (idle) (g/hr)	20.316	0.130	0.119	9.57E-04	6.11E-06	5.62E-06	9.57E-04	6.11E-06	5.62E-06	1.19E-07	7.58E-10	6.97E-10

APPENDIX D

CDPH-provided Seasonal Hourly NO_2 Background Concentrations

Seasonal Hourly Ambient NO_2 Concentrations, for use with Southwestern Chicago 1-Hour NO_2 Modeling:

Hour of Day		NO_2 Ambient Background 98th% (ppb)				NO_2 Ambient Background 98th% (µg/m³)			
Start Time	End Time	Winter	Spring	Summer	Fall	Winter	Spring	Summer	Fall
0:00	1:00	41.67	46.87	34.40	29.63	78.33	88.11	64.67	55.71
1:00	2:00	40.53	44.40	33.40	28.23	76.20	83.47	62.79	53.08
2:00	3:00	38.77	48.23	33.10	28.00	72.88	90.68	62.23	52.64
3:00	4:00	41.07	47.43	31.27	27.63	77.21	89.17	58.78	51.95
4:00	5:00	42.43	45.13	31.67	27.00	79.77	84.85	59.53	50.76
5:00	6:00	40.43	44.53	30.60	29.33	76.01	83.72	57.53	55.15
6:00	7:00	42.60	46.83	30.17	29.57	80.09	88.05	56.71	55.59
7:00	8:00	43.63	38.07	27.27	29.20	82.03	71.57	51.26	54.90
8:00	9:00	36.07	29.97	20.70	26.47	67.81	56.34	38.92	49.76
9:00	10:00	32.33	26.07	16.33	23.90	60.79	49.01	30.71	44.93
10:00	11:00	28.50	21.87	15.37	19.60	53.58	41.11	28.89	36.85
11:00	12:00	26.63	19.70	13.27	18.40	50.07	37.04	24.94	34.59
12:00	13:00	23.47	21.23	12.63	18.33	44.12	39.92	23.75	34.47
13:00	14:00	21.93	22.43	12.03	20.23	41.23	42.17	22.62	38.04
14:00	15:00	24.17	21.97	14.40	19.17	45.43	41.30	27.07	36.03
15:00	16:00	26.20	21.60	13.97	21.03	49.26	40.61	26.26	39.54
16:00	17:00	30.00	23.77	14.20	25.77	56.40	44.68	26.70	48.44
17:00	18:00	32.67	27.00	17.50	27.63	61.41	50.76	32.90	51.95
18:00	19:00	34.60	30.33	16.17	29.30	65.05	57.03	30.39	55.08
19:00	20:00	35.97	36.40	21.80	31.20	67.62	68.43	40.98	58.66
20:00	21:00	37.20	40.97	27.03	33.13	69.94	77.02	50.82	62.29
21:00	22:00	35.77	43.47	26.83	33.60	67.24	81.72	50.45	63.17
22:00	23:00	36.87	42.37	32.63	31.77	69.31	79.65	61.35	59.72
23:00	0:00	41.33	46.60	36.60	31.67	77.71	87.61	68.81	59.53

*Based on AQS Monitor ID 17-031-0076. Average of years 2018, 2019, and 2020 for Winter, Spring, and Fall; 2016, 2017, and 2019 for Summer.

Ambient Air Background Concentrations
City of Chicago Department of Public Health

Project Location	Pollutant	Averaging Period	3-year Ambient Design Value (ug/m3)	Monitor ID	Monitor Name	Latitude/Longitude
NORTHWEST -4 miles or greater from the lakeshore and north of the Eisenhower Expressway	NO_2	Annual	34	17-031-3103	IEPA Trailer (2018-2020)	41.965193, -87.876265
	PM_{10}	24-hour	102	17-031-1016	Village Hall (2018-2020)	41.80118, -87.832349
	$PM_{2.5}$	24-hour	24	17-031-3103	IEPA Trailer (2018-2020)	41.965193, -87.876265
		Annual	10	17-031-3103	IEPA Trailer (2017, 2019, 2020)	41.965193, -87.876265
NORTHEAST -Within 4 miles of the lakeshore and north of East	NO_2	Annual	31	17-031-0219 and 17-031-0063	Kennedy Near Road 2 (2019-2020) and CTA Building (2017)	41.920009, -87.672995 (Kennedy); 41.7514, -87.635027 (CTA Bldg)
	PM_{10}	24-hour	102	17-031-1016	Village Hall (2018-2020)	41.80118, -87.832349
and West 63rd Street	$PM_{2.5}$	24-hour	22	17-031-0057	Springfield Pump Station (2018-2020)	41.912739, -87.722673
		Annual	9	17-031-0057	Springfield Pump Station (2016, 2017, 2018)	41.912739, -87.722673
SOUTHWEST -4 miles or greater from the lakeshore and south of the Eisenhower Expressway	NO_2	Annual	29	17-031-0076	Com Ed Maintenance Bldg (2018-2020)	41.7514, -87.713488
	PM_{10}	24-hour	102	17-031-1016	Village Hall (2018-2020)	41.80118, -87.832349
	$PM_{2.5}$	24-hour	23	17-031-1016	Village Hall (2018-2020)	41.80118, -87.832349
		Annual	10	17-031-1016	Village Hall (2018-2020)	41.80118, -87.832349
SOUTHEAST Within 4 miles of the lakeshore and south of East and West 63rd Street	NO_2	Annual	19	18-089-0022	Gary, IN (2018-2020)	41.687165, -87.539315
	PM_{10}	24-hour	61	17-031-0022	Washington HS (2018-2020)	41.687165, -87.539315
	$PM_{2.5}$	24-hour	25	17-031-0022	Washington HS (2018-2020)	41.687165, -87.539315
		Annual	9	17-031-0022	Washington HS (2017, 2019, 2020)	41.687165, -87.539315

APPENDIX E

AERMOD Model Electronic Run Files