

Environmental Justice/Title VI Review
Hoffman Estates Data Center
I.D. No.: 031449ADS
Application No.: 23110003

1. Introduction

This document describes the various Environmental Justice (EJ) and Title VI¹-related considerations undertaken by the Illinois EPA's Bureau of Air in evaluating the above-referenced construction permit application. Because the proposed project will be located in an EJ area of concern, the Illinois EPA's policies for enhanced public outreach and evaluating potential impacts to overburdened communities were addressed in the permit review process. In addition, a Title VI-related settlement agreement (i.e., Informal Resolution Agreement or IRA) entered between the Illinois EPA and the USEPA in February 2024² was applied to this review process and resulted in a written analysis of the applicant's history of prior adjudications and past compliance, as discussed later.

2. Permitting Project:

Microsoft Corporation (Microsoft) proposes to construct two electronic data centers to operate in conjunction with an existing data center located at or around 2045 Lakewood Boulevard in Hoffman Estates, Illinois. Hoffman Estates is a largely residential community that has experienced considerable growth in the last few decades due to certain commercial and office/research/high-tech developments. A hyperscale data center campus, developed by Compass, is among one of the higher profile developments, which is located at the site of the former Sears Headquarters that closed in 2021.

Microsoft's existing data center (known as Hoffman Estates Data Center and designated CHI05) was permitted by the Illinois EPA in March 2022 and houses various forms of information technology, including computer, storage, and networking infrastructure, that serve organizational end-users like Microsoft. The permit authorized the construction of 21 internal compression emergency generators, which are used to support the data center when electrical generating power from the grid is not available due to outages.

The current project proposes an additional 34 emergency generators to service the two data centers (designated CHI06 and CHI07) planned for construction. The permit application acknowledges that all three data centers will be treated as a single stationary source for purposes of air permitting programs. These operations are generally classified as Computer Processing and Data Preparation and Processing

¹ Title VI refers generally to the requirements of Title VI of the federal Civil Rights Act of 1964, which is one of eleven titles to the law and is entitled "Nondiscrimination in Federally Funded Programs." See, 42 U.S.C. §§2000d to §§2000d-7.

² The negotiated terms of this IRA involved a Title VI disparate impacts complaint filed with USEPA in 2020 stemming from the issuance of a construction permit to General III for the relocation of a scrap metal recycling facility to Chicago's Southeast Side. The *General III* IRA memorializes the Illinois EPA's commitment to consider additional factors in its review of certain construction permit applications, as well as to enhance its public participation policies, for the purpose of improving transparency and assuring meaningful public access to its programs and activities. Additional information concerning the settlement agreement can be found on the Illinois EPA's webpage (i.e., use the Environmental Justice tab from the General Information drop-down menu).

Services, Code 7374, under the Standard Industrial Classification system. Recent media reports indicate that increasing demands for internet-driven services, cloud storage and artificial intelligence (AI) technology are spurring new or expanding data center developments across the industry. Such efforts are generally viewed as essential to promoting the Nation’s modern infrastructure needs.

For this construction permit, Microsoft is limiting its annual fuel usage and hours of operation from the proposed emergency generators to restrict its potential-to-emit of conventional pollutants to less than major source thresholds. For emissions of Nitrogen Oxides (NOx), which are a pollutant of concern because they are generated in the highest amounts during the run-time of the emergency generators, combined permitted emissions from the three data centers are roughly 63 tons per year (tpy).

This construction project would result in proposed increases in annual permitted emissions of criteria pollutants from the facility, as follows:

Pollutants	Proposed Emissions Increase (Tons per Year)
NOx	39.34
Carbon Monoxide (CO)	7.75
Particulate Matter (PM)	0.68
Volatile Organic Material (VOM)	1.83

Microsoft will be required to account for emission increases from the project and the broader source (both existing and new data centers) in a revised application for a Federally Enforceable State Operating Permit (FESOP); a FESOP application for the existing data center is currently on file. It is anticipated that the Chicago metropolitan ozone non-attainment area will be re-classified by USEPA in the near future, changing from a moderate to a serious designation for the 2015 National Ambient Air Quality Standards (NAAQS) for ozone. This will mean that the potential-to-emit threshold for triggering a major source under the Illinois Clean Air Act Permit Program (CAAPP) will be lowered for both NOx and VOM from 100 tpy to 50 tpy. The company will be obliged to decide whether to submit a CAAPP application for its operations or to reduce emissions below CAAPP thresholds within 12 months after becoming a new CAAPP source via the redesignation.

3. *EJ Screen Results:*

A copy of the USEPA’s EJ Screen’s Community Report was retrieved by the Illinois EPA for the facility’s location utilizing a one-mile radius. A review of the EJ Indexes for this location (combining data on low income and people of color populations with selected environmental indicators) reveals percentiles greater than 80%³ based on Illinois averages for one indicator: Toxic Releases to Air at 81%.

³ According to USEPA’s EJ Screen technical manual [EJScreen Technical Documentation for Version 2.3 \(epa.gov\)](https://www.epa.gov/ej-screen-technical-documentation-for-version-2.3), USEPA identified the 80th percentile filter as an initial starting point when screening for EJ concerns. In other words, an area with any of the 13 EJ Indexes at or above the 80th percentile should be considered as a potential candidate for further review.

A review of the Supplemental Indexes for this location (combining data on percent low income, percent persons with disabilities, percent less than high school education, percent limited English speaking, and percent low life expectancy with a single environmental indicator) does not reveal percentages greater than 80% based on Illinois averages for any of the indicators.

A review of the Environmental Burden Indicators data from the Community Report, which provides estimated values for pollution impacts and proximity to other sources, reveals percentiles greater than 80% based on Illinois averages for the following indicator: Toxic Releases to Air at 88%.

4. EJ Outreach and Public Participation Process:

The Illinois EPA conducted enhanced outreach through the EJ notification process. The EJ notification letter was sent to 71 separate groups, individuals, and elected officials on November 8, 2023. No inquiries were received in response to the EJ notification letter.

In accordance with the Illinois EPA Language Access Plan (LAP), Illinois EPA reviewed the USEPA's EJ Screen community data for the area within one mile of the facility. The number of Limited English-Speaking is 3%, which is below the threshold for language access service found in the LAP.

5. Air Quality Modeling Analysis:

At the Illinois EPA's request, the project underwent a comprehensive air quality modeling analysis to predict the air quality impacts from the project. The modeling conservatively estimated the source impact of running all emergency generators operating at the source (generators from both the proposed data centers and from the existing data center) at the same time. In doing so, the modeling contemplated both the potential broader effects of the data centers operating during times of electrical outages, as well as during the normal operating state of maintaining generator readiness, when the generators are subject to on-going, periodic testing and maintenance.

Microsoft's consultant performed an air quality dispersion modeling analysis to assess the environmental impact of increased emissions associated with the emergency generators from all three data centers. The Modeling Unit of the Permit Section audited the consultant's modeling files and a source impact analysis of relevant NAAQS and their respective averaging periods. This initial review found that some pollutants, after accounting for the primary impacts of the pollutant as well as secondary impacts to ozone and secondary PM_{2.5} formation, exceeded the relevant significant impact levels (SILs)). A subsequent cumulative impact analysis of PM₁₀ (24-hour (hr)), PM_{2.5} (24-hr), NO₂ (1-hr and annual), and CO (1-hr and 8-hr) revealed that modeled impacts from the permitted source and nearby inventoried sources (i.e., located within a 10 kilometer radius except for intermittent sources evaluated in the 1-hr NO_x analysis) would be below their respective standard and respective averaging period values.

An air toxics analysis was also performed by the consultant to evaluate the impact of benzene emissions from the project, a pollutant comprising the largest share of Hazardous Air Pollutants (HAPs) emitted by the emergency generators. Modeled impacts of the pollutant at the source were compared to reference exposure levels (RELs) adopted by California, which have frequently been used by the Illinois EPA for

comparison with modeled toxicity values. Results of the toxics analysis showed modeled concentrations being below the reference concentration levels for the applicable averaging period.

For additional discussion of the modeling analysis, see the appended Memorandum from the Modeling Unit to the State Permits and FESOP Unit of the Permit Section, dated November 27, 2024.

6. *Permit Enhancements:*

Permit enhancements consist of permit conditions that are incorporated into construction permits by the Illinois EPA to assure that a source can achieve compliance with applicable requirements, or that are necessary to accomplish the purposes of the Illinois Environmental Protection Act (Act) and are not inconsistent with Illinois Pollution Control Board (PCB) regulations. The Illinois EPA frequently considers permit enhancements when authorized by existing law.

The issued construction permit contains limitations on both the operation of the emergency generators and on permitted emissions. Special Condition 12(a) provides for separate limits on the hours of operation (run-time expressed in hours/year), limits on the fuel usage (expressed in gallons/month and gallons/year) and emission limits (expressed in pounds (lb) per hour and tpy) for the 32 larger generators and for the 2 smaller generators respectively. As such, the construction permit restricts NOx emissions to levels below that which would trigger major source requirements under the nonattainment areas regulations found at 35 Ill. Adm. Code Part 203. The finding of non-applicability of the major source rules, as shown in Special Condition 12(c) of the permit, included an assessment of permitted limits from the existing data center in conjunction with the proposed project.

Microsoft also must observe certain operating restrictions as conditions of the air quality modeling analysis, two of which are addressed in the final construction permit. Special Condition 12(a) restricts the generators to 62 hours/year based on the rated output of the relevant engines. Special Condition 12(b) contains a requirement that the generators be operated one-at-a-time, on a monthly frequency, for short periods of time (each for less than 2 hours). The requirement to observe a limit of 679,000 gallons of fuel per year for all 52 emergency generators with a rated capacity of 3-megawatts, and a separate limit of 6,730 gallons per year for all 3 emergency generators with a rated capacity of 500-kW, will be addressed as part of the review of the FESOP application.

At the request of the Illinois EPA, the source submitted an episode action plan on December 13, 2024, to voluntarily comply with the requirements of Subpart C, entitled Episode Action Plans, of 35 Ill. Adm. Code Part 244. Special Condition 11 of the construction permit address these requirements.

7. *Past Adjudications and/or Past Compliance History of Applicant:*

Because the construction project implicated the requirements of the *General III* IRA, the EJ/Title VI review document for this permitting action affirmatively considered the prior adjudications and past compliance history of the permit applicant, consistent with existing permit authorities found in the Act.

A review of the applicant's history at the Hoffman Estates' facility does not reveal any prior adjudications or the entry of agreed consent orders by Illinois state courts, federal courts, or by the PCB. Similarly, a review of the applicant's past compliance history for air-related matters for the facility (per USEPA's Enforcement and Compliance History Online (ECHO)) does not reveal any recent involvement by the source in the pre-enforcement processes of either the Illinois EPA or USEPA.

A Violation Notice letter was sent to Microsoft's Busse Farm data center, located in Elk Grove, Illinois, in September 2022. The letter alleged that the facility failed to submit an Annual Emissions Report (AER) for calendar year 2021. A proposed Compliance Commitment Agreement (CCA) submitted by the company was subsequently accepted by the Illinois EPA in early January 2023. The CCA required that Microsoft submit the AER (which was received November 1, 2022) and a written policy to assure the timely submittal of future AERs (which was also received November 1, 2022).

8. Additional Considerations:

Increased emissions of PM (especially PM_{2.5}) and HAP-related emissions from a permitting project may present concerns to people residing in the vicinity of a project's planned location, particularly where there are other industrial sources located nearby. PM_{2.5} is often a pollutant of concern in communities that border areas of industrial or manufacturing activity because of the adverse effects that smaller-sized particles of PM may pose to the environment or to human health. For this project, there is a negligible increase in permitted annual emissions of PM (i.e., at 0.68 tpy) projected to occur from the emergency generators for the two new data centers. As shown by EJ Screen's Community Report profile, environmental indicators rank PM pollution as being slightly above the state average for this location (source value of 9.02 as compared to State average of 8.96) but in the 51st percentile of total rankings. The air quality modeling analysis confirmed that modeled concentrations of PM_{2.5} and PM₁₀ emissions for this project (and the combined source) would be below the applicable standard and respective averaging periods for both components of PM.

HAP-related emissions from a construction project may also pose public concerns due to their individual or collective impacts. For this project, the company addressed air quality modeling for its benzene emissions due to the pollutant being the highest HAP emitted from the emergency generators. The modeling analysis confirmed that benzene emissions attributed to the project (and facility) will not exceed the RELs used for comparison in the analysis. The construction permit contains standard permit limits for limiting the project's potential to emit to 10 tpy for any single HAP and 25 tpy for any combination of total HAPs, assuring that the source avoids major source status under the requirements of Section 112(g) of the Clean Air Act.

9. Evaluation of Title VI Criteria for Disparate Impact Discrimination:

As described by the Overview and Implementation webpage for the *General III* IRA, the criteria for evaluating whether agency action is responsible for disparate impact discrimination is 1) identifying the policy or practice at issue, 2) a showing of adversity/harm, 3) a showing of disparity and 4) a showing of causation. Although this examination can be complicated, the operative criterion in most cases involving the permitting of air pollution sources is adversity/harm. The Illinois EPA's analysis in this review

document examines the issue of alleged adversity/harm by assessing whether circumstances would support an enforcement action brought under existing environmental laws and regulations.

a. Substantive Standards

The issued construction permit will increase annual permitted emissions of NO_x and, to a much lesser degree, CO, VOM, PM, and single/collective HAP emissions. However, based on the air quality modeling analysis, increased emissions from the project will not violate the NAAQS or relevant reference exposure levels for the highest-quantity HAP generated by the combustion of the emergency generators. The construction permit will also limit fuel usage and hours of operation from the emergency generators to assure that the source remains a minor source (nonmajor for purposes of air permitting programs). Nothing presented in the permit review indicates that the proposed project would cause a violation of air emission standards addressed by the Act, the PCB's Subtitle C (Air Pollution) regulations, or applicable federal regulations adopted by USEPA and enforceable by the Illinois EPA under state law.

b. Narrative Standards

The Illinois EPA has no information that would demonstrate a violation of a narrative standard of air pollution based on possible health impacts.

c. Nuisance-Based Standards

There is no history of odor complaints or nuisance believed to be associated with the proposed facility, such that a claim of statutory or common law nuisance could be demonstrated.