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Environmental Injustice and Data Centers

Understanding the Intersection Between Longstanding
Environmental Inequalities in Correlation with AI Infrastructure.

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Introduction

Artificial intelligence (“AI”) is frequently conceptualized as an immaterial technology, operating remotely “in the cloud” and largely disconnected from the physical environment. In practice, however, every AI query is processed within a data center, and a single large-scale facility may consume electricity equivalent to the usage of approximately 100,000 households while requiring up to five million gallons of water per day. As federal policy accelerates data center construction across the United States, the geographic distribution of these facilities has become an increasingly urgent policy concern. In Chicago, this issue must be understood within the context of the city’s history of racial and spatial inequality. Redlining, discriminatory zoning, and uneven patterns of industrial development concentrated polluting infrastructure in South and West Side neighborhoods, many of which continue to experience disproportionate environmental burdens, including limited tree canopy and some of the city’s highest summer temperatures. As AI continues to rapidly scale, it is increasingly important for communities to be proactive in response to the technological innovations that have been shaping our world, especially as the environmental impacts of these changes become more evident. Environmental injustice, or the unequal distribution of environmental hazards and benefits, have long shaped the landscape of communities in Chicago. This report examines how the rapid expansion of AI infrastructure intersects with these longstanding inequalities. It argues that without deliberate intervention by municipal and state authorities, data center development risks intensifying the environmental injustices that these communities have endured for generations.

We will begin by providing contextual background, from present conditions in communities like Cicero, Illinois to historical community responses to environmental injustices. Then, we will delve into the laws that have shaped the formation of data centers and AI in these communities, as well as those that must be formalized to ensure no further harm is endured. Lastly, we will explore an alternative, community-led approach to the implementation of AI and calls to action.

Present Conditions: Cicero, Illinois

Cicero, Illinois is a 5.87 square mile Chicago suburb with a population of 81,858.¹ Historically a sundown town, Cicero experienced a remarkable influx of Hispanic and Latino residents in the 1980s and 1990s. Today, almost 90% of the residents of Cicero, Illinois are Hispanic or Latino. Due to its demographics and socioeconomic characteristics, Cicero serves as a representation of the types of communities in the Chicagoland area that have experienced greater environmental and health consequences associated with concentrated industrialization. As the data center market undergoes a transformative boom due to the explosive growth of AI, digital consumption, and cloud migration,² cities with similar industrial development as Cicero are susceptible to an exacerbation of existing environmental and health inequities. Cicero is an industrial hub in the Chicago metropolitan area containing dozens of warehouses, distribution centers, and freight-related facilities whose operations contribute to air pollution through constant truck traffic and the release of pollutants into the atmosphere. Heavy duty vehicles such as trucks release air toxins by emitting carbon monoxide, nitrogen oxides, particular matter (PM), and black carbon through the burning of fossil fuels like diesel and gasoline.³ Cicero alone hosts FedEx, Amazon Warehouse, a UPS access point location, an industrial multi-tenant complex, as well as a United Warehouse Company facility that operates as a warehouse and transloading site. These warehouses, which are only a few of the logistics and distribution facilities in Cicero, combined with Koppers, one of the largest chemical plants in the country, regularly puts the community at risk of developing health problems. And, with about 21.5% of the observed tree population in the town at below average conditions, the town has fewer trees to rely on to remove pollutants from the air and promote cooling.⁴

¹ United States Census Bureau, “QuickFacts Cicero town, Illinois,”

<https://www.census.gov/quickfacts/fact/table/cicerotownillinois/RHI625224#RHI625224>

² Jake Buckwalter, “How Data Centers Work - and Their Growing Impact on U.S. GDP,” Whitaker Myers Wealth Managers, Ltd (March 17),

<https://www.whitakerwealth.com/post/how-data-centers-work-and-their-growing-impact-on-u-s-gdp>

³ Milken Institute School of Public Health, “Warehousing Industry Increases Health-Harming Pollutants,” (July 23, 2024), <https://publichealth.gwu.edu/warehousing-industry-increases-health-harming-pollutants>; Shun waste, “Trucks’ Air Pollution: Understanding The Impact” (May 10, 2025),

<https://shunwaste.com/article/what-kind-of-air-pollution-comes-from-trucks>

⁴ Jon Carlson and Leslie Delles, “TOWN OF CICERO URBAN FORESTRY MANAGEMENT PLAN,” (March 26, 2026), https://thetownofcicero.com/wp-content/uploads/2026/04/Cicero_UFMP_FINAL.pdf

Toxins and their Effects on Health

Carbon Monoxide (CO)

Carbon Monoxide is a colorless, odorless gas that can be fatal to humans when inhaled. Due to its toxicity and the difficulty of detecting it, CO poisoning claims the lives of hundreds every year.⁵ CO is catalyzed by the incomplete combustion of fossil fuels such as gas, which is then released through vehicle tailpipes.⁶ CO inhalation is a danger to all age groups as it interferes with the body's ability to circulate oxygen to critical organs, starving the cells. Early symptoms of CO poisoning are often misinterpreted as the flu or a migraine, allowing the effects to mature, further deteriorating the health of the poisoned individual which affects daily functioning and can ultimately result in death.

Nitrogen Oxides (NO_x)

Nitrogen oxides are gases composed of nitrogen and oxygen. The instability of these gases cause chemical reactions in the atmosphere. Low levels of NO_x in the atmosphere can cause irritation, shortness of breath, and nausea. High levels of NO_x if inhaled can cause swelling of the tissues, build-up in the lungs, spasms, rapid burning, and death.⁷

Particulate Matter (PM)

Particulate matter is, “the term for a mixture of solid particles and liquid droplets found in the air”.⁸ Because the particles are so small, they can bypass the body’s defense system causing respiratory and cardiovascular effects such as heart disease, irritation of the eyes, and cancer.

Black Carbon (BC)

Black carbon is formed by incomplete combustion and it is a form of particulate matter that absorbs light. BC has direct warming effects on the surrounding atmosphere as its contact with sunlight allows for the absorption of solar radiation, trapping heat and directly contributing

⁵ CDC, “Carbon Monoxide Poisoning Basics,” (Jan 12, 2026), <https://www.cdc.gov/carbon-monoxide/about/index.html>

⁶ *Ibid*; Shun waste, “Trucks’ Air Pollution: Understanding The Impact” (May 10, 2025), <https://shunwaste.com/article/what-kind-of-air-pollution-comes-from-trucks>

⁷ UCAR Center for Science Education, “Nitrogen Oxides,” <https://scied.ucar.edu/learning-zone/air-quality/nitrogen-oxides>

⁸ EPA, “Particulate Matter (PM) Basics,” <https://www.epa.gov/pm-pollution/particulate-matter-pm-basics>

to climate change by disrupting weather and rain patterns.⁹ BC is linked to premature death as the particles can enter the bloodstream, amplifying preexisting health problems such as asthma.¹⁰

Ground Level Ozone

Ground level ozone is known as a secondary pollutant because it is formed by chemical reactions in the atmosphere. Pollutants from industrial facilities, motor vehicle exhausts, and chemical solvents are some of the main sources of volatile organic compounds (VOC) as well as oxides of nitrogen (NO_x). When VOC and NO_x come into contact with heat and sunlight, ozone is created¹¹. Ozone is a powerful oxidant that can irritate the airways and exposure to ozone can cause muscles in the airways to constrict, trapping air in the alveoli¹², making it difficult to breathe, cause sore or scratchy throat, aggravate lung diseases, and increase the frequency of asthma attacks¹³

Health Related Data in Cicero Illinois

The City Health Dashboard's metric overview for Cicero provides insight that can be used to assess the overall health of a community. According to the overview, an average of 21,403 metric tons of CO₂ were emitted from all sectors in 2024. A primary source of climate change, CO₂ traps heat, warming the lower atmosphere and Earth's surface contributing to the 'greenhouse effect.' Its prolonged presence in the atmosphere is what makes CO₂ so consequential. Activities related to fossil fuel combustion that emit CO₂ also emit pollutants such as fine particulate matter (Pm_{2.5}) that have been linked to hypertension. Cicero's City Health Dashboard shows that between 2013 and 2023, the percentage of adults reporting high blood pressure increased from 23% to 27.2%, a rise of 4.2 percentage points.¹⁴ The increase can be linked to a combination of factors, including Cicero's lead problem, though data shows that

⁹ Climate and Clean Air Coalition, "Black Carbon,"

<https://www.ccacoalition.org/short-lived-climate-pollutants/black-carbon>

¹⁰ Jake Buckwalter, "How Data Centers Work - and Their Growing Impact on U.S. GDP," Whitaker Myers Wealth Managers, Ltd (March 17),

<https://www.whitakerwealth.com/post/how-data-centers-work-and-their-growing-impact-on-u-s-gdp>

¹¹ EPA, "Ground-level Ozone Basics," (February 24, 2026),

<https://www.epa.gov/ground-level-ozone-pollution/ground-level-ozone-basics#effects>

¹² EPA, "Health Effects of Ozone Pollution," (February 24, 2026),

<https://www.epa.gov/ground-level-ozone-pollution/health-effects-ozone-pollution>

¹³ City Health Dashboard, "City health for Cicero, IL,"

<https://www.cityhealthdashboard.com/IL/Cicero/city-overview?metricId=2&dataPeriod=202412>

¹⁴ Geneva Switzerland, "Billions of people still breathe unhealthy air: new WHO data," World Health Organization (April 4, 2022), <https://www.who.int/news/item/04-04-2022-billions-of-people-still-breathe-unhealthy-air-new-who-data>

the air we breathe impacts our cardiovascular health. According to the World Health Organization, “almost the entire global population (99%) breathes air that exceed WHO air quality limits, and threatens their health...(and) over 6000 cities in 117 countries are now monitoring air quality, but the people living in them are still breathing unhealthy levels of fine particulate matter and nitrogen dioxide”.¹⁵ Cicero’s estimated average of fine particulate matter concentration was 8.8 micrograms per cubic meter ($\mu\text{g}/\text{m}^3$). Although under the average of $9.5 \mu\text{g}/\text{m}^3$ across the Dashboard cities, the PM 2.5 is an indicator of the particulate pollution residents are exposed to from vehicle exhausts and industrial emissions. Ground level ozone is another pollutant which despite being below the dashboard average, has increased over time. In December of 2018, Cicero’s estimated average ozone concentration was 16 parts per billion (ppb) compared to an average of 25.8 ppb across the Dashboard's cities.¹⁶ In December 2024, the estimated average ozone concentration was 19.4 ppb compared to an average of 30.1 ppb across the Dashboard's cities. As temperatures rise due to climate change and emissions of pollutants from industrial facilities continue to proliferate with inadequate environmental safeguards, ozone is expected to continue increasing.¹⁷ Despite concentrations remaining below average, continued exposure to these pollutants contribute to respiratory and cardiovascular health decline.

Therefore, lower than average concentrations do not necessarily equate to lower health risks. An investigative series carried out by Cicero Independiente journalists addresses residents' environmental concerns including bad air quality and toxic smells. During their interviews, residents living near the Koppers coal tar plant mentioned that they noticed white smoke, bad smells, and poor air quality. One of the residents recalled her doctor asking if she worked in a pesticide factory during a visit for respiratory problems she says she developed after a decade of living in Cicero.¹⁸ These cumulative environmental burdens are intensified by limited access to healthcare, with a 2023 report of Cicero indicating that 20.9% of the population under 65 years

¹⁵ *Ibid*; City Health Dashboard, “City health for Cicero, IL,”

<https://www.cityhealthdashboard.com/IL/Cicero/city-overview?metricId=2&dataPeriod=202412>

¹⁶ The Nature Conservancy Illinois, “Climate Change in Illinois: Urban Impacts,”

https://www.nature.org/content/dam/tnc/nature/en/documents/IL_UrbanClimateImpactsFactSheet.pdf

¹⁷ Dillon Bergin et al., “The Air We Breathe: How the Koppers Plant Became, and remains, Cicero’s Toxic neighbor,” Cicero Independiente (December 6, 2023),

<https://www.ciceroindependiente.com/english/cicero-news-stickney-koppers-epa-violations-air-pollution-industrial-muck-rock>

¹⁸ Harsh Savani, “What Is an AI Data Center: A Complete Guide,” Aegis (March 24, 2026),

<https://www.aegisofttech.com/insights/ai-data-center/>

old did not have health insurance, making it more difficult to seek professional help and delaying necessary treatment.

As artificial intelligence evolves at an amplified pace, the demand for (a) data center(s) which is a, “purpose-built facility designed to train, deploy, and manage AI and machine learning workloads at scale”¹⁹ continues to grow. Although part of technological advancement in our constantly developing society, large data centers can consume 1.8 billion gallons of water annually²⁰ and with most data centers in the Chicago area relying on municipal drinking water, Chicago’s water demands exceed what the city can supply.²¹ With data center reliance on fossil fuels, the emission of air pollutants to host communities pose increased health risks especially to those with asthma.²² Though there are no projected plans of a data center being housed in Cicero, data centers in the Chicagoland area are placed in suburban industrial zones with similar characteristics to Cicero. Cicero should serve as a clear demonstration of the cumulative environmental burdens that corporations and local governments in the Chicago metropolitan area should consider before prioritizing economic development, as it is the historical prioritization of economic development that forced marginalized communities to suffer. But it is one example of many communities in Chicago that have continually endured environmental injustice, from the city’s inception to today.

Historical Background of Environmental Injustice in Chicago

The uneven distribution of environmental harm in Chicago today extends back to its earliest days. Before becoming an American city, the area was home to indigenous Americans who had lived in the area for thousands of years and called the area *Shikaakwa*.²³ After the indigenous Americans were forcibly removed from the region, Chicago grew rapidly, big businesses flourished, but marginalized communities suffered. To help understand how and why

¹⁹ Miguel Yanez-Barnuevo, “Data Centers and Water Consumption,” Environmental and Energy Study Institute (June 25, 2025), <https://www.eesi.org/articles/view/data-centers-and-water-consumption>

²⁰ Tatjana Washington, “Data Centers, Pollution, and the Communities Left Behind,” Sustainability Dialogue The University of Chicago (Feb 23, 2026), <https://sustainabilitydialogue.uchicago.edu/news/data-centers-pollution-and-the-communities-left-behind/>

²¹ American Name Society, “How Chicago got its name,” accessed July 8, 2026, <https://www.americannamesociety.org/how-chicago-got-its-name/>; Chicago Architecture Center, “Indigenous People in Chicago,” accessed July 8, 2026, <https://www.architecture.org/online-resources/architecture-encyclopedia/indigenous-people-in-chicago>.

²² Id.

²³ American Name Society, “How Chicago got its name,” accessed July 8, 2026, <https://www.americannamesociety.org/how-chicago-got-its-name/>; Chicago Architecture Center, “Indigenous People in Chicago,” accessed July 8, 2026, <https://www.architecture.org/online-resources/architecture-encyclopedia/indigenous-people-in-chicago>.

certain communities in Chicago experience environmental justice today, the history of Chicago and some of its early corporations can illuminate some of the persistent dynamics between the environment, communities, governments, and corporations.

Chicago's Founding

The first star on the city of Chicago's flag represents Fort Dearborn, the first permanent settlement in Chicago, built as a U.S. military outpost in 1803.²⁴ What followed were decades of military aggression towards the indigenous population.²⁵ Eventually, in 1830, President Andrew Jackson signed the Removal Act of 1830, more commonly known as the "Indian Removal Act," into law which formalized the forcible removal of indigenous populations in the western U.S. territories, including Chicago.²⁶ By 1837, Chicago was a U.S. city. There are likely numerous reasons behind the initial settlement, the subsequent decades of aggression towards indigenous Americans, and eventually the forcible removal of those Americans by the U.S. military. However, at least one of the reasons is abundantly clear: if the U.S. controlled Chicago, it could become a center for big business, and now, it is. Just as the pursuit of profit was used as justification for the forcible removal of the indigenous population, this justification has similarly been used to allow environmental injustice.

Before the U.S. military outpost, colonists had set up in the Chicago area because of the trading opportunities it presented. In 1673, French colonists observed that the short portage²⁷ route used by indigenous Americans between the Des Plaines River and the Chicago River connected the Great Lakes and its waterways with the Des Plaines and Mississippi River which

²⁴ Chicago Architecture Center, "Fort Dearborn," accessed July 8, 2026, <https://www.architecture.org/online-resources/architecture-encyclopedia/fort-dearborn>; City of Chicago, "Chicago History," accessed July 8, 2026, <https://www.chicago.gov/city/en/about/history.html>; Frommer's, "History in Chicago," accessed July 8, 2026, <https://www.frommers.com/destinations/chicago/in-depth/history/>.

²⁵ See Fawn Pochel, "Erasing Native Chicago Through Settler Occupation," *Sixty Inches From Center* (December 8, 2022), <https://sixtyinchesfromcenter.org/erasing-native-chicago-through-settler-occupation/>.

²⁶ U.S. Office of the Historian, "Indian Treaties and the Removal Act of 1830," accessed July 8, 2026, <https://history.state.gov/milestones/1830-1860/indian-treaties>; *Taniam*, "1830 – The Indian Removal Act," Nottawaseppi Huron Band of the Potawatomi (May 11, 2022), <https://nhbp-nsn.gov/timeline/the-indian-removal-act/>.

²⁷ Cambridge Dictionary, PORTAGE, accessed July 8, 2026, <https://dictionary.cambridge.org/us/dictionary/english/portage>. A portage is a place or route where a boat must be carried, especially over land between two areas of water.

flowed into the Gulf of Mexico.²⁸ This connection had the potential to facilitate trade from the Great Lakes all the way to the Atlantic Ocean, which would otherwise be impossible.

More than 100 years after first noticing the trade potential for the area, in 1779, the first trading post was established on the banks of the Chicago River.²⁹ Fort Dearborn followed just 24 years later. From 1803-1848, Fort Dearborn was built, the “Indian Removal Act”³⁰ was signed, Chicago was incorporated, the indigenous portage site was excavated to create a shipping canal, and the first railroad tracks were laid. In just 45 years, the environment in Chicago was being shaped to facilitate industry and business to the detriment of indigenous Americans and soon, to the detriment of many of Chicago’s new inhabitants.

In 1848, in addition to the first railroad tracks being laid, the Illinois and Michigan Canal was completed.³¹ The canal made the once-indigenous portage site into an industrial waterway. It was replaced by a much larger canal in 1900, which coincided with the reversal of the Chicago river.³² Notably, following the reversal of the river, Chicagoans continued to use the river to dump raw human and industrial waste which was sent downstream on the Mississippi.³³ There is much to say about the reversal of the river, but in short: many people died, hundreds of people’s farmland was significantly harmed, and the supreme court had to get involved.³⁴ Deciding once

²⁸ Frommer’s, “History in Chicago,” accessed July 8, 2026, <https://www.frommers.com/destinations/chicago/in-depth/history/>; Portage Park Chamber of Commerce, “History of Portage Park,” accessed July 8, 2026, <https://www.portageparkchamber.org/history-portage-park>.

²⁹ Frommer’s, “History in Chicago,” accessed July 8, 2026, <https://www.frommers.com/destinations/chicago/in-depth/history/>.

³⁰ U.S. Office of the Historian, “Indian Treaties and the Removal Act of 1830,” accessed July 8, 2026, <https://history.state.gov/milestones/1830-1860/indian-treaties>; *Taniam*, “1830 – The Indian Removal Act,” Nottawaseppi Huron Band of the Potawatomi (May 11, 2022), <https://nhbp-nsn.gov/timeline/the-indian-removal-act/>; U.S. Office of the Historian, “Indian Treaties and the Removal Act of 1830,” accessed July 8, 2026, <https://history.state.gov/milestones/1830-1860/indian-treaties>; *Taniam*, “1830 – The Indian Removal Act,” Nottawaseppi Huron Band of the Potawatomi (May 11, 2022), <https://nhbp-nsn.gov/timeline/the-indian-removal-act/>.

³¹ *Encyclopedia of Chicago*, “Portage Park,” accessed July 8, 2026, <http://www.encyclopedia.chicagohistory.org/pages/1039.html>; Frommer’s, “History in Chicago,” accessed July 8, 2026, <https://www.frommers.com/destinations/chicago/in-depth/history/>.

³² Candace Brown, “A River Reversed,” (September 2011), https://mwrdr.org/sites/default/files/documents/A_River_Reversed_090821.pdf; I & M Canal, “The History of the I&M Canal,” accessed July 8, 2026, <https://iandmcanal.org/canalhistory/>; *See The Backward River*, accessed July 8, 2026, <https://thebackwardriver.org/>. The Chicago River is the only river in the world that artificially flows backwards.;

³³ WTTW “How Chicago Reversed Its River: An Animated History,” accessed July 8, 2026, <https://www.wttw.com/chicago-river-tour/how-chicago-reversed-river-animated>.

³⁴ Britannica “One Good Fact About the Chicago River,” (June 4, 2024), <https://www.britannica.com/one-good-fact/why-are-people-considering-re-reversing-the-chicago-river>; WTTW “How Chicago Reversed Its River: An Animated History,” accessed July 8, 2026, <https://www.wttw.com/chicago-river-tour/how-chicago-reversed-river-animated>.

in Chicago's favor, then later imposing restrictions on the diversion of water from Lake Michigan into the river which is required to continuously reverse the flow of the river.³⁵ Even now, invasive species are entering the Chicago river system and the backwards river has become such a challenge that the city has considered "re-reversing" the river.³⁶

After the completion of the canal and the laying of the first railroads, Chicago developed rapidly as a crucial city in the meatpacking, railroad construction, and lumber industries. This rapid development meant rapid population growth, from the 1860s to the 1880s, Chicago grew from 100,000 to over 1,000,000 inhabitants.³⁷

During this same period, some of early Chicago's most iconic corporations flourished while the city's workers suffered from environmental injustice. Corporations like Union Stock Yard & Transit Company (Union Stock Yards) and the North Chicago Rolling Mill Company (South Works Steel Mill) became enormously profitable by relying on unsafe working conditions, exploitative labor practices, and disregarding environmental harm.

The Union Stock Yards

One of the most harmful industries in Chicago's history is the meatpacking industry. The first commercial meatpacker, Bull's Head Market, opened in 1848, the same year that the first railroads were laid and the Illinois and Michigan Canal was completed.³⁸ In 1864, nine railroad companies formed the Union Stock Yard & Transit Company and consolidated the several existing stockyards into one industrial complex.³⁹ The Union Stock Yards were a central marketplace for livestock from the south and west to arrive by train before being slaughtered and their carcasses transported to market.⁴⁰ The Union Stock Yards used the Chicago River as its source of water and as a dumping site for animal waste.⁴¹ This use of the river gave the portion

³⁵ WTTW "How Chicago Reversed Its River: An Animated History," accessed July 8, 2026, <https://www.wttw.com/chicago-river-tour/how-chicago-reversed-river-animated>.

³⁶ *Ibid.*

³⁷ University of Chicago Library, "And After the Fire: Chicago in the 1860s, 1870s, and 1880s," accessed July 8, 2026, <https://www.lib.uchicago.edu/collex/collections/and-after-fire-chicago-1860s-1870s-and-1880s/>.

³⁸ Ray Johnson, "The History of the First Chicago Stockyards," *Dr. Loih Journal*, November 20, 2019, <https://drloihjournal.blogspot.com/2019/11/history-of-first-chicago-stockyards.html>.

³⁹ University of Pennsylvania Graduate School of Education, "Backstory: Chicago's Union Stock Yards and the Turn-of-the-Century Red Meat Wars," accessed April 13, 2026, <https://collaborativehistory.gse.upenn.edu/stories/backstory-chicago>.

⁴⁰ *Ibid.*

⁴¹ *Ibid.*

by the stockyards the nickname “Bubbly Creek” because the mixture of blood, animal parts and organs, and manure made the river stagnant and the surrounding area noxious.⁴²

As Upton Sinclair described in his now famous novel, *The Jungle*, these environmental conditions fell mostly on the extremely poor immigrant community working in the stockyards and living right next to them in the “Back of the Yards” neighborhood.⁴³ Workers in the stockyards were at increased risk to contract lung diseases, to develop sores, and to experience serious injury including amputation.⁴⁴ They were not provided a bathroom in their workplaces and had to work 16-18 hours per day.⁴⁵

The Union Stock Yards, one of Chicago’s first and most lucrative corporations, subjected workers to horrible conditions and was responsible for making the river so noxious that it would occasionally catch on fire.⁴⁶ The people impacted by the harms of the Union Stock Yard & Transit Company continuously advocated for their own dignity at work and in their neighborhoods. Community members like Mary McDowell dedicated themselves to documenting the links between pollution, disease, and poverty and advocating for improved sanitation and labor conditions for decades.⁴⁷

In addition, workers would regularly strike in protest of unsafe working conditions and long hours.⁴⁸ The early strikes were crushed, and later strikes were undermined by the corporations hiring Black people who were migrating from the South.⁴⁹ Significant advances have been made in working conditions but even as recently as the 2020 COVID-19 pandemic,

⁴² Sentient Media, “Water Pollution from Chicago’s Infamous Factory Farm Got Cleaned Up at Bubbly Creek,” accessed April 13, 2026,

<https://sentientmedia.org/water-pollution-from-chicagos-infamous-factory-farm-got-cleaned-up-at-bubbly-creek/>.

⁴³ University of Pennsylvania Graduate School of Education, “Backstory: Chicago’s Union Stock Yards and the Turn-of-the-Century Red Meat Wars.”

⁴⁴ WTTW, “The Union Stockyards: A Story of American Capitalism,” accessed July 8, 2026,

<https://www.wttw.com/chicago-stories/union-stockyards/the-union-stockyards-a-story-of-american-capitalism>.

⁴⁵ *Ibid.*; Kansas State University Olathe, “Unveiling the One Health Paradigm,” accessed April 13, 2026,

<https://olathe.k-state.edu/research/one-health-newsletter/issues/vol16-iss1/unveiling-the-one-health-paradigm.html>.

⁴⁶ Upton Sinclair, “The Jungle” (1906), *via* Chicagology, “A Day at the Union Stock Yards,” accessed July 8, 2026,

<https://chicagology.com/prefire/prefire084/dayattheyards/>.

⁴⁷ WTTW, “Mary McDowell and the Fight for Environmental Justice for the Back of the Yards,” accessed April 13, 2026,

<https://www.wttw.com/chicago-stories/union-stockyards/mary-mcdowell-and-the-fight-for-environmental-justice-for-the-back-of-the-yards>.

⁴⁸ WTTW, “The Union Stockyards: A Story of American Capitalism,” accessed July 8, 2026,

<https://www.wttw.com/chicago-stories/union-stockyards/the-union-stockyards-a-story-of-american-capitalism>.

⁴⁹ *Ibid.*

meatpacking workers were extremely underpaid while working overtime at a significantly increased risk of danger.⁵⁰

Despite the best efforts of the workers and communities harmed by the Union Stock Yards, the corporation continued its unsafe operations due to “a legal regime that empowered management, checked the nascent power of unions, and limited liability for worker injury.”⁵¹

While workers and communities suffered, the City of Chicago and the financial backers of the Union Stock Yards reaped significant benefits. The city grew to be a hub of transit and commerce in the U.S. As the stockyards grew to be the largest in the country, Chicago rapidly grew to the second largest city in the country. In its first 16 years of operation, the value of the Union Stock Yards grew thirteenfold.⁵²

The Union Stock Yards could only grow this fast because they paid workers so little, disregarded the health of surrounding communities and disregarded the environment. The conditions surrounding the stockyards are a particularly illustrative example of environmental injustice: the poor immigrants who worked in the stockyards also lived in its dumping grounds and as a result, many of them developed chronic illnesses and injuries, with some working nearly to death.⁵³ All the while, the stockyards continued to process and slaughter millions of animals every year until 1971.⁵⁴ The relationship between the Union Stock Yards and the people living in the Back of the Yards is a clear example of environmental injustice: while the Union Stock Yards continued to increase its profits, the people who worked there and lived in its dumping grounds were at an increased risk of injury, illness, and death.

⁵⁰ *Ibid.*

⁵¹ Jonathan Specht, *Red Meat Republic: A Hoof-to-Table History of How Beef Changed America* (Princeton, NJ: Princeton University Press, 2020), 180, quoted in University of Pennsylvania Graduate School of Education, “Backstory: Chicago’s Union Stock Yards and the Turn-of-the-Century Red Meat Wars,” accessed July 8, 2026, <https://collaborativehistory.gse.upenn.edu/stories/backstory-chicago>.

⁵² Knapp, Joseph G. “A Review of Chicago Stock Yards History.” *The University Journal of Business* 2, no. 3 (June 1924): 331–346. <https://www.jstor.org/stable/2354664>.

⁵³ John L. Puckett, “Backstory: Chicago’s Union Stock Yards and Turn of the Century Red Meat Wars,” WPCB, accessed July 8, 2026, <https://collaborativehistory.gse.upenn.edu/stories/backstory-chicago%E2%80%99s-union-stock-yards-and-turn-century-red-meat-wars>.

⁵⁴ Bernie Lubell, “Chicago’s Union Stockyards: 40 Years Since Closing,” WTTW (December, 20, 2011), <https://news.wttw.com/2011/12/20/chicagos-union-stockyards-40-years-closing>.

South Works Steel Mill

South Works Steel Mill was originally opened by the North Chicago Rolling Mill Company in 1882 along the Calumet River in Southeast Chicago.⁵⁵ South Works Steel Mill opened after the U.S. Army Corps of Engineers dredged and straightened the river, transforming it into the world's largest inland harbor.⁵⁶ This transformation of the land allowed the mill to efficiently receive large quantities of raw materials including iron ore, coal, and limestone by boat. The mill grew to be a part of the world's largest corporation at one point, U.S. Steel.⁵⁷ At its peak, the mill employed 20,000 workers.⁵⁸ South Works became a cornerstone of Chicago's economy by producing vast quantities of steel used for construction around the world.

While South Works Steel Mill was incredibly successful for the local and global economy, its workers and the people in the surrounding neighborhoods have suffered. Since the mill closed in 1992, it has remained a vacant brownfield.^{59, 60} During the time that the mill was open, it killed almost all living things in the water and on the land around the factory by constantly leaking toxic byproducts of steel production.⁶¹ South Works Steel Mill continuously poured slag, the waste of steel production, into Lake Michigan.⁶² When slag cools, it forms rock, so the slag constantly dumped into the lake created new land and decreased the size of the lake. The steel mill eventually grew almost 8 times its original size by dumping slag into Lake Michigan.⁶³

In addition to destroying the surrounding environment, South Works Steel Mill was incredibly dangerous for its workers. Before World War I, the mill averaged 1200 worker

⁵⁵ Springs Research and Cultural Center, "Chicago's Temple of Steel: South Works Since 1882," accessed July 8, 2026, <https://springs-rcc.org/chicagos-temple-of-steel-south-works-since-1882/>.

⁵⁶ Ibid.

⁵⁷ Ibid.

⁵⁸ Rod Sellers, *Chicago's Southeast Side Industrial History* (Chicago: Chicago State University, n.d.), <https://www.csu.edu/cerc/researchreports/documents/ChicagoSESideIndustrialHistory.pdf>.

⁵⁹ U.S. Environmental Protection Agency, "Brownfields Overview and Definition," accessed April 13, 2026, https://19january2017snapshot.epa.gov/brownfields/brownfield-overview-and-definition_.html

⁶⁰ Forgotten Chicago, "South Works," accessed April 13, 2026, <https://forgottenchicago.com/articles/south-works/>.

⁶¹ Kathleen A. Brosnan, Ann Durkin Keating, and William C. Barnett, eds., *City of Lake and Prairie: Chicago's Environmental History* (Pittsburgh: University of Pittsburgh Press, 2020); Craig E. Colten, *Industrial Wastes in the Calumet Area, 1869-1970: An Historical Geography* (Champaign, IL: State Water Survey Division, Illinois Department of Energy and Natural Resources, 1985); and Joel Greenberg, *A Natural History of the Chicago Region* (Chicago: University of Chicago Press, 2002), all quoted in Springs Research and Cultural Center, "Chicago's Temple of Steel: South Works Since 1882," accessed April 13, 2026, <https://springs-rcc.org/chicagos-temple-of-steel-south-works-since-1882/>.

⁶² Springs Research and Cultural Center, "Chicago's Temple of Steel: South Works Since 1882."

⁶³ Springs Research and Cultural Center, "Chicago's Temple of Steel: South Works Since 1882."

accidents each year and over 40 deaths.⁶⁴ Many of the workers developed chronic illness from toxic chemical exposures while working in the mill.⁶⁵

To do this dangerous work, South Works Steel Mill relied on large waves of immigrants first from Eastern Europe, then Mexico, and then Black Americans from the South to work in the plants. Many of these immigrants would form communities in the neighborhoods surrounding the mill. Even though the mill closed decades ago, the land and the homes surrounding it are still polluted by petroleum, heavy metals, and other contaminants linked to negative health outcomes.⁶⁶ Recently, it has been scheduled for development into the Illinois Quantum and Microelectronics Park, a facility that will eventually use as much energy as 200,000 homes.⁶⁷

Key moments in Chicago's early history, from the construction of Fort Dearborn to the financial success of corporations like the Union Stock Yard & Transit Company and the North Chicago Rolling Mill Company were also instances of environmental injustice, the legacies of which persist today. But for as long as there has been environmental injustice in Chicago, there have been people speaking out against it, demanding their government protect them from injustice. When all else has failed, communities experiencing environmental justice have felt they have no choice but to take direct action and organize themselves in an attempt to protect themselves from injustice. This collective knowledge has emerged as a form of community knowledge that can inform the approach to the technological advancements we see today.

Community Knowledge as Environmental Governance

Community member-led responses to environmental injustice in Chicago emerged alongside the early political and economic conditions that produced a concentrated higher environmental risk within particular neighborhoods. As a result, the Chicago Housing Authority development, Altgeld Gardens, represents one of the earliest and most influential sites of environmental justice organizing in Chicago, illustrating a pattern of community-led advocacy

⁶⁴ Sellers, *Chicago's Southeast Side Industrial History*.

⁶⁵ Stuart M. Brooks, "Health Hazard Evaluation Determination Report HE 78-66-542: U.S. Steel South Works: Chicago, Illinois" (1978), <https://doi.org/10.26616/NIOSHHHE7866542>.

⁶⁶ Chicago Sun-Times, "Quantum Shore: Related Midwest, CRG, IEPA Site Remediation at South Works," November 11, 2025, <https://chicago.suntimes.com/environment/2025/11/11/quantum-shore-related-midwest-crg-iepa-site-remediation-south-works>.

⁶⁷ Farpoint_development, "The former U.S. Steel South Works closed in 1992. For 33 years, 440 acres of Chicago lakefront sat vacant...", Instagram post, March 30, 2026, https://www.instagram.com/p/DWhlOn4Ahws/?img_index=5; Stephanie Gadlin, "Poison, Displacement and Surveillance: Southeast Side Demands Answers on Quantum Campus," The Chicago Crusader, March 29, 2026, <https://chicagocrusader.com/poison-displacement-surveillance-southeast-side-quantum-campus/>.

that would shape coalitions across Chicago. Referred to as the “toxic doughnut” by a prominent advocate, the Gardens were encircled by polluting industries prevalent on the south side of Chicago.^{68, 69}

At its inception, Altgeld Gardens was home to a predominantly Black community—the south side neighborhood was 70 percent African American and 11 percent Latinx around the time Chicago environmental advocate Hazel Johnson’s political emergence in Chicago.⁷⁰ At its inception, Altgeld Gardens was encircled by a high number of industrial facilities and landfills.⁷¹ The concentration of locally unwanted land uses (LULUs) around predominantly Black public housing developments reveals a telling truth: race operates as an independent determinant of exposure to environmental harm.⁷² In the case of Altgeld Gardens, yet wisely inferred in other contexts, the communities face obstacles across dimensions, making any challenge to LULUs historically an uphill battle, allowing environmental injustice to accompany other injustices facing their own.

This imbalance extended beyond the unequal distribution of environmental burdens to the production of knowledge itself for Altgeld Gardens. Existing regulatory and risk assessment practices provided comparatively few mechanisms for recognizing cumulative community experiences of environmental harm. As environmental justice advocates argued throughout the late twentieth century, conventional risk assessment emphasized individual contaminants and single sources of pollution while overlooking the multiple, cumulative hazards disproportionately borne by low-income communities and communities of color.⁷³ Consequently, environmental harms were more readily interpreted as isolated incidents than as manifestations of broader patterns embedded within land-use policy and industrial development. Community organizations of the 20th century emerged, in part, to close the legibility gap by documenting the cumulative harms that decisionmakers had failed to recognize. Through neighborhood

⁶⁸ Robert D. Bullard, “The Threat of Environmental Racism,” *Natural Resources & Environment* 7, no. 3 (Winter 1993): 25, <https://www.jstor.org/stable/40923229>

⁶⁹ Lisen Holmström, “The Mother of Environmental Justice,” *Q Magazine*, Institute for Sustainability, Energy, and Environment, University of Illinois Urbana-Champaign, May 23, 2018, <https://q.sustainability.illinois.edu/hazel-johnson-and-the-toxic-doughnut/>

⁷⁰ Bullard, “The Threat of Environmental Racism,” 25

⁷¹ Holmström, “The Mother of Environmental Justice.”

⁷² Robert D. Bullard, “The Threat of Environmental Racism,” *Natural Resources & Environment* 7, no. 3 (Winter 1993): 23, <https://www.jstor.org/stable/40923229>

⁷³ Jason Corburn, “Environmental Justice, Local Knowledge, and Risk: The Discourse of a Community-Based Cumulative Exposure Assessment,” *Environmental Management* 29, no. 4 (2002): 451.

observation, early environmental organizers sought to increase the visibility of these patterns that had gone unacknowledged by media and civic institutions.

The organizing capacity of Hazel Johnson and fellow environmental advocates at Altgeld Gardens required them to become producers of knowledge about their own environment—forging connections that translated isolated experiences into documentation and visualization of recurring illness patterns into a public narrative that could be taken to government officials and news organizations.⁷⁴ In doing so, these actors established a governance blueprint that is still eminent to this day for tending to transgressions against communities not given serious consideration by media and civic institutions.

Residents of Altgeld Gardens were experiencing disproportionate cancer rates compared to neighboring communities. As opposed to accepting the cancer-related death of her husband and these illnesses as unrelated personal tragedies, Johnson began investigating why so many of her neighbors were becoming sick or facing other disease burdens. By recognizing these experiences as the materialization of a broader pattern facing her community, she translated her neighborhood “watchdog” sensibilities into a systemic critique that garnered the attention of public officials and the *Chicago Tribune*. This effort was the bedrock for establishing the grassroots organization People for Community Recovery (PCR) that continues to operate to this day.

Led by scientific evidence and a clear narrative, the grassroots organization brought political change to local, state, and eventually national politics by fighting environmental racism and advocating against industrial practices that would have adverse effects on human health.⁷⁵ As part of the broader environmental justice movement, People for Community Recovery contributed to the national momentum that culminated in Executive Order 12898 in 1994. The Order directed federal agencies to “make achieving environmental justice a part of [their] mission” by identifying and addressing disproportionately high and adverse environmental and human health effects on minority and low-income populations (US [government](#)).⁷⁶ On the policy dimension, the action would strengthen public health and environmental protections for Black

⁷⁴ People for Community Recovery, “Hazel M. Johnson’s Legacy,” accessed April 11, 2026, <https://www.peopleforcommunityrecovery.org/our-story/legacy>

⁷⁵ David Naguib Pellow and Robert J. Brulle, “Poisoning the Planet: The Struggle for Environmental Justice,” *Contexts* 6, no. 1 (Winter 2007): 37–41, <https://www.jstor.org/stable/41802737>

⁷⁶ Angela C. Jones, “Role of the U.S. Environmental Protection Agency in Environmental Justice,” *Congressional Research Service*, September 7, 2023, <https://www.congress.gov/crs-product/IF10529>

and brown communities by mandating an interagency framework. Symbolically, the Order corroborates community-generated knowledge as the foundation for emboldened and observation-oriented governance in the days ahead.

The contributions of Johnson and PCR transcend this particular policy outcome. Altgeld Gardens depicts more than a community burdened by environmental injustice; it illustrates how a policy regime can produce environmental harm while rendering its cumulative effects difficult to recognize within existing institutions. However, the development of neighborhood observations into organized knowledge—and ultimately a political coalition—proves that communities can transform their lived experience into a more encompassing acknowledgment of their shared condition that can alter policy for generations to come. Executive Order 12898 extends beyond its significance as a policy milestone precisely because it institutionalized the notion that disproportionate environmental exposure must first be recognized before it can be effectively addressed. The trajectory of environmental organizing establishes an enduring precedent for this century: communities most affected by environmental hazards possess knowledge that is indispensable to effective environmental governance amid the necessary call for continued industrial advancement. Contemporary debates surrounding AI data centers inherit this same institutional challenge, while maintaining the same opportunity expressed in this section to translate knowledge into narratives on broader trends that escalate the responsiveness of environmental governance.

Community Approaches to Environmental Injustice

Over 30 years after the signing of Executive Order #12898 community organizations in Chicago continue to advocate for protections against environmental injustice and racism in their neighborhoods. Under the leadership of executive director Cheryl Johnson, the PCR remains active with significant milestones hit in the past few years. Most recently, their efforts were materialized through the Climate and Equitable Jobs Act, a bill signed into law by Governor J.B. Pritzker in September of 2021. This act aims to phase out the use of coal and natural gas by 2045 and provide hubs for equitable job training in renewable energy sectors⁷⁷. The PCR has also created the Solar on the Southside program, in which they provide community education and technical skill training to increase access to solar energy programs. They also are currently

⁷⁷ “Mission and People.” People for Community Recovery, www.peopleforcommunityrecovery.org/our-story/mission-and-people#our-milestones. Accessed 2 June 2026.

working to ensure that the Chicago Housing Authority follows through on their promise to build a solar array in Altgeld Gardens and other public housing communities across Chicago⁷⁸. PCR continues to exemplify the crucial relationship between community organizations and policy makers and representatives in the fight for environmental justice.

Various other organizations across the city have followed the framework established by Hazel Johnson and the PCR but with varying rates of success. One such organization is The Pilsen Environmental Rights and Reform Organization (PERRO). PERRO is a grassroots community group of Pilsen residents who seek to combat the "disproportionate amount of pollution in the Pilsen neighborhood"⁷⁹. Historically, Pilsen has served as an industrial hub for highways, rail lines, and the Sanitary Ship Canal—directly contributing to the growth and success of Chicago's most crucial industries⁸⁰. This material success arising from Pilsen came at the cost of the health and safety of its residents, with increased cases of respiratory illnesses and dangerously high lead levels in the soil and air. By informing residents of pollution sources in Pilsen and working with city departments, the EPA, elected officials, and other community-based organizations, PERRO seeks to achieve a "significant reduction in pollution from industrial sources" while retaining industrial jobs and businesses in Pilsen. PERRO recognizes the instrumental role corporations have had in creating jobs for Pilsen residents while refusing to compromise the long-term health and environmental harm these same corporations bring about. This commitment to compromise, though ideal, is rarely reciprocated by corporations and policy makers and even more difficult to accomplish when corporations have long posed generational chronic health risks to the community. As a result, PERRO's efforts have prioritized advocating for the health of their residents and creating community benefits agreements with corporations.

In a 2012 advocacy collaboration led by PERRO and the Little Village Environmental Justice Organization (LVEJO), the Fisk and Crawford coal-powered plants in Pilsen were shut down because of the recorded pollution and health risks tied to them⁸¹. In 2020, Hilco Redevelopment was fined over \$12 million by the city and state in a class-action lawsuit because

⁷⁸ "Mission and People." People for Community Recovery

⁷⁹ *P.E.R.R.O.*, pilsenperro.org/about-our-campaign/. Accessed 2 June 2026.

⁸⁰ "March Partner Spotlight: P.E.R.R.O — Midwest Environmental Justice Network," Midwest Environmental Justice Network, accessed July 13, 2026, <https://www.mwejn.org/news/march-partner-spotlight-perro>.

⁸¹ "History - LVEJO," Little Village Environmental Justice Organization, accessed July 13, 2026, <http://www.lvejo.org/about-us/history/>.

they incorrectly imploded the Crawford plant to make way for a Target Warehouse⁸². Today, several plant structures remain but their demolition is still being discussed because of the heavy dust clouds that pollute the neighborhood afterwards. LVEJO and PERRO continue to advocate for their residents, exemplifying the sustained community efforts and the necessary collaboration with government to maintain a healthy and equitable environment.

The Alliance of the Southeast, “an interfaith coalition of 40+ churches, schools, businesses and community organizations, is attempting to establish a similar relationship through their proposed Community Benefits Agreement with the current U.S. Steel Works project⁸³. The proposed project is estimated to cost around \$4 billion, including \$184 million in public funds and remains highly debated because of the potential contaminants in the water and soil, halting development⁸⁴. This agreement would include equitable hiring practices, the creation of a community center for local residents, and environmental safeguards that “protect human safety and local wildlife, preserve open space, maximize use of land...and preserve the character of arterial streets”⁸⁵. Yet to be recognized by U.S. Steel Works, the proposed community agreement is just one potential solution to the web of negative impacts the construction could have on the Southeast. This precarious balance between corporations and community organizations is constantly being discussed throughout Chicago communities to ensure the livelihood and health of their residents are not disproportionately compromised as corporations seek to expand.

In the historically Black neighborhood of North Lawndale, West Side United is a community-healthcare organization working to eradicate the infamous 16-year life expectancy gap between the Chicago Loop and the predominantly Black neighborhoods on the West Side, such as North Lawndale. One of their initiatives, Live Healthy West Side, focuses on healthcare interventions including yoga classes and cervical cancer and mammogram screenings⁸⁶. This

⁸² Brett Chase, “Pilsen Coal Plant Demolition Puts Pressure on City Not to Repeat Little Village Fiasco,” Chicago Sun Times, accessed July 13, 2026, <https://chicago.suntimes.com/environment/2025/09/17/fisk-coal-plant-pilsen-demolition-midwest-energy-crawford-little-village-hilco>.

⁸³ Abby Miller, “Quantum Shore Developers Expect to Spend Millions on Remediation at Old South Works Site,” Chicago Sun Times, accessed July 13, 2026, <https://chicago.suntimes.com/environment/2025/11/11/quantum-shore-related-midwest-crg-iepa-site-remediation-south-works>.

⁸⁴ Amalia, et al. “US Steel South Works Development.” Asechicago.Org, 19 Apr. 2026, <asechicago.org/2018/04/01/southworks/>.

⁸⁵ Amalia, et al. “US Steel South Works Development.” Asechicago.Org, 19 Apr. 2026, <asechicago.org/2018/04/01/southworks/>.

⁸⁶ “Programs - Uniting for a Stronger West Side.” West Side United, www.westsideunited.org/programs. Accessed 2 June 2026.

more grounded approach to combatting environmental injustice demonstrates the various ways that communities are fighting to maintain the health of their residents.

Section 1, Article XI of the Illinois Constitution declares that it is both the public policy of the State and the duty of each person to “provide and maintain a healthy environment for the benefit of this and future generations”⁸⁷. While communities across Chicago have continued to advocate for their constitutional right to a “healthy environment”, the legislation which they have advocated for is inconsistent in its implementation and enforcement, a task designated to the Illinois General Assembly. As a result, historically marginalized Black and Brown communities (such as North Lawndale and Pilsen) experience the greatest consequences of unregulated corporate pollution. Though much progress has been made, environmental injustice in Chicago remains a large concern. PCR, PERRO, and West Side United serve as poignant examples of communities consistently taking charge and advocating for their right to a healthy environment, but it is critical that their efforts be bolstered and continually supported by government action to create lasting change.

Policies Perpetuating Environmental Injustice

With the historical pattern of environmental injustices in mind, today the rise of AI data centers is accelerating environmental injustices for Chicago residents. Chicago’s environmental legislation allows AI data centers to rapidly expand and grow in capital at the expense of marginalized communities. As a result of rapid developing technology questions arise if current legislation can be implemented effectively enough to address the environmental harms AI data centers bring to marginalized communities. These companies generate carbon pollution, diseases, and excess water usage for Black and Brown communities across Chicago. Past reform efforts have failed to eliminate these unjust environmental harms, revealing a pattern of inconsistency and ineffectiveness. The expansion of AI data centers becomes an increasing issue highlighting environmental injustice in Chicago communities.

Illinois, due to its high supply of nuclear energy, abundance of water, and flat land is a hot spot for AI data centers. The massive amount of electricity necessary to train these AI models puts financial and infrastructural burdens on residents in Aurora, the South Loop, and Northlake.⁸⁸ The burdens that data center expansion brings, especially for marginalized

⁸⁷ Wayne H, Lrb. Illinois Constitution - Article XI, lrb.ilga.gov/Commission/lrb/con11.htm. Accessed 2 June 2026.

⁸⁸ “HydraVault,” accessed July 12, 2026 <https://www.hydravault.com/>.

communities, reflects a history of environmental injustices. The Aurora area currently houses four data centers and has five more on the way.⁸⁹ A report from the Environmental and Energy Study Institute found that large data centers can consume up to 5 million gallons of water per day which is enough water to supply a small town of 50,000 residents with water for 24 hours.⁹⁰ The growing demand for AI data centers is straining local water supplies and increasing utility bills for communities across Chicago even in water-rich regions. Residents and legislators are calling for more regulation regarding data centers water usage and how this cap can be enforced. However, efforts to slow this growth have faced significant obstacles. A previously proposed two-year pause on tax incentive proposed by Governor Pritzker would not affect AI projects that currently hold certificates, allowing previously approved developments to continue. Therefore, tax incentives continue to attract data center investments and grow competition.⁹¹ The attempted elimination of AI though tax cuts have not been effective in terminating these harms. Although AI powered data centers were originally enacted to promote efficiency, they consume vast amounts of water for cooling and electricity across the nation with little federal oversight.

Executive orders and environmental acts have been proposed in an effort to fully eliminate these data centers in Chicago, but have been unsuccessful. Legal action taken by the EPA with the Clean Air and Clean Water Act, allows data centers to consume roughly 4.4% of US electricity.⁹² Furthermore, executive orders like the “Accelerating Federal Permitting of Data Center Infrastructure” order, signed in July of 2025, speeds up construction of AI data centers. This order focused heavily on reducing environmental review times and easing access to federal land.⁹³ Under the National Environmental Protection Act (2024), environmental reviews are accelerated and the use of natural gas, nuclear, and coal power equipment rather than renewable

⁸⁹ Audrina Sinclair and Aida Mogos, “Data Centers for AI Use Huge Amounts of Electricity, Water, Driving Up Costs and Climate Concerns,” *CBS Chicago*, February 13, 2026, <https://www.cbsnews.com/chicago/news/data-centers-for-ai-electricity-water-climate-health/>.

⁹⁰ Helena Volzer, “Data Centers Are Increasing in the Great Lakes at What Cost?” *Alliance for the Great Lakes*, March 5, 2025, <https://greatlakes.org/2025/03/data-centers-are-increasing-in-the-great-lakes-at-what-cost/>.

⁹¹ Enki AI, “Illinois AI Data Centers: 2026 Grid Crisis Hits Boom,” accessed July 12, 2026, <https://enki.ai/data-center/illinois-ai-data-centers-2026-grid-crisis-hits-boom/>.

⁹² U.S. Department of Energy, “DOE Releases New Report Evaluating Increase in Electricity Demand from Data Centers,” December 20, 2024, <https://www.energy.gov/articles/doe-releases-new-report-evaluating-increase-electricity-demand-data-centers>

⁹³ The White House, “Accelerating Federal Permitting of Data Center Infrastructure,” July 23, 2025, <https://www.whitehouse.gov/presidential-actions/2025/07/accelerating-federal-permitting-of-data-center-infrastructure/>

resources is expressly permitted.⁹⁴ NEPA's broad language allows for state interpretation and continual environmental harm. Illinois is working but currently fails to balance AI industry growth with environmental and energy concerns.

AI data centers consume resources in marginalized communities deepening existing patterns of environmental injustice. The lack of governmental legislation addressing these data centers causes expansion in communities across Illinois and exposes the need for stricter regulation. Executive Orders and loopholes within the EPA expose the broader failure of environmental protection and community efforts. Although progress has been made to address these harms, the current state of environmental legislation in Chicago still lacks enforcement and clarity to promote meaningful change. However, there have been many strides at the federal level.

Policies to Combat Environmental Injustice

The United States Environmental Protection Agency defines Environmental Justice as “the fair treatment and meaningful involvement of all people regardless of race, colour, national origin, or income, with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies.”⁹⁵ While there have been federal and state policies implemented to address the issue of environmental injustice that pose a burden to members of low-income communities and people of color, they fail to prevent harmful development before it occurs.

The Executive Order 12898 was issued February 11, 1994 by President Clinton.⁹⁶ The purpose of the order was to direct federal agencies to identify and address the disproportionately high adverse health or environmental effects of their policies or programs on low-income people and people of color.⁹⁷ It also directed federal agencies to look for ways to prevent discrimination by race, color, or national origin in any federally funded programs dealing with health or the

⁹⁴ The White House, “Accelerating Federal Permitting of Data Center Infrastructure,” July 23, 2025, <https://www.whitehouse.gov/presidential-actions/2025/07/accelerating-federal-permitting-of-data-center-infrastructure/>

⁹⁵ ClientEarth, “What is environmental justice?,” accessed July 6, 2026, https://www.clientearth.org/latest/news/what-is-environmental-justice/?gad_source=1&gad_campaignid=20735830495&gbraid=0AAAAAp8lXbz--Y-HAlod8fqNj9-2iP_oA&gclid=CjwKCAjwgajSBhBEEiwASicJU1DZbrkN-IGdmKfYGbyVw-WXr9G0f83IXT7RBZXHL55WWYaLEbRh_RoCv3wQAvD_BwE

⁹⁶ Minnesota Journal of Law & Inequality, “Environmental [in]Justice: Why Executive Order 12898 Falls Short in Creating Environmental Equity for Vulnerable Communities,” accessed July 6, 2026, <https://journals.law.umn.edu/lawineq/2021/05/18/environmental-injustice-why-executive-order-12898-falls-short-in-creating-environmental-equity-for-vulnerable-communities>

⁹⁷ Ibid.

environment. This order increased consideration of minority and low-income communities in federal decision making. Although the Executive order increased consideration for environmental justice, there were limitations surrounding it. The order was not judicially enforceable, included no metrics or reporting mechanisms, and has not been significantly updated since 1994. The Executive Order failed to protect low-income communities from disproportionate environmental harms because it didn't require agencies to take specific actions and lacked the force of legislation.

President Biden issued the Executive Order 14008 which included the Justice40 Initiative. The initiative requires that at least 40 percent of the overall benefits from federal climate and infrastructure investments go toward disinvested and overburdened communities.⁹⁸ The goal was to direct federal funding and resources towards communities disproportionately affected by pollution and climate change. This initiative failed in its endeavors due to implementation issues. One of the implementation difficulties that the initiative faced was that many federal programs distribute money through state governments or block grants which makes it difficult for federal agencies to ensure 40 percent of benefits actually reach disadvantaged communities.⁹⁹ The second challenge with Justice40 is how it decides which communities are considered disadvantaged¹⁰⁰. The tools introduced to identify these communities relies on limited data which can cause some disadvantaged communities and environmental problems to be overlooked.

The Illinois Environmental Justice Act aims to address the disproportionate impacts of pollution on communities of color and low-income areas by increasing community participation and transparency in the permitting process, and adding more protective review standards that assess whether the proposed project would increase environmental justice disparities.¹⁰¹ If fully implemented, this act will prevent harmful facilities from being established in communities that

⁹⁸ Courtney Lindwall, NRDC, "What Is the Justice40 Initiative?," accessed July 6, 2026,

<https://www.nrdc.org/stories/what-justice40-initiative>

⁹⁹ Margaret A. Walls, Resources for the Future, "Implementation of Justice40: Challenges, Opportunities, and a Status Update," accessed July 6, 2026

<https://www.rff.org/publications/reports/implementation-of-justice40-challenges-opportunities-and-a-status-update/>

¹⁰⁰ Ibid.

¹⁰¹ Gina Ramirez, CEJN, "Environmental Justice for Illinois," accessed July 6, 2026

<https://www.chicagoejn.org/articles/a9auxa32nsl33upx0rs0l07v3qnrflh>

already experience high levels of pollution. However, many of its protections depend on agency implementation and enforcement.

The IL EPA-Environmental Justice is an amendment to the Environmental Protection Act set to begin January 2027. This will strengthen environmental justice protections in Illinois by changing how the state reviews air pollution permits for facilities located in or near communities already experiencing disproportionate environmental burdens.¹⁰² The Illinois EPA must conduct additional environmental justice reviews when it receives certain air pollution construction permits applications for facilities located in areas of environmental justice concern.

Environmental justice policies have made substantial progress in regards to recognizing that low-income communities and communities of color face disproportionate environmental problems. Federal initiatives such as Executive order 12898 and the Justice40 Initiative increased awareness of environmental injustice and encouraged agencies to consider equity when making decisions. Illinois has also taken important steps to strengthen environmental justice and is currently working on implementing new policies. However, these policies have often fallen short because they rely heavily on agency discretion and lack strong enforcement mechanisms and do not always provide communities with the legal authority to stop these agencies. As a result, communities continue to face a disproportionate share of pollution.

Ongoing Legislation

The persistence of environmental hazards in Illinois and surrounding Midwestern communities, such as from coal ash pollution in Waukegan or to excessive noise and emissions from data centers in Aurora, highlights the common thread of regulatory progress remaining fragmented and, largely, reactive rather than preventative. While there are current legal precedents that exist in an attempt to hold these public interferences from escalating to personal or public injury, such as public nuisance law, the development of new technology calls into question the kinds of issues these legislative pieces can reliably account for. In respect to state sovereignty, considering these centers could be a source of income and employment, it is also important to note state versus federal approaches to the issue of environmental hazards conceived by AI data centers, or related infrastructure. For the present issue of AI related

¹⁰² Illinois General Assembly, “Bill Status of SB3772,” accessed July 6, 2026 <https://ilga.gov/Legislation/BillStatus?DocNum=3772&GAID=18&DocTypeID=SB&LegId=167086&SessionID=114>

environmental and sociological impacts, it is necessary that stakeholders examine prior industries that significantly altered environmental conditions and ultimately required regulatory intervention. Notably, causation remains a persistent barrier in environmental claims, particularly where harms are cumulative or not immediately visible. As legal scholarship notes, this challenge is especially pronounced “in cases involving diffuse and low-level environmental harms,” where long-term risk (such as groundwater contamination or chronic exposure to emissions) may be more severe than acute, visible threats but significantly harder to prove in court. This limitation becomes increasingly relevant when evaluating the distributed and long-term environmental impacts of AI infrastructure.

Federal Progress

While federal and state governments have introduced new measures, their impact depends on continuous enforcement, transparency, and community empowerment. On the federal level, the EPA’s 2024 final rule on coal combustion residuals (CCR) marked a critical advancement. The rule expanded regulation to include legacy surface impoundments and inactive CCR sites. The EPA now mandates closure of unlined coal ash ponds, with deadlines extending through 2031. However, enforcement depends on sustained political will and funding. Environmental advocates argue that without accelerated timelines or federal funding for remediation, these rules risk reproducing the same delays that allowed contamination in the first place.

State-Level Progress

The Coal Ash Pollution Prevention Act and follow-up IEPA enforcement rulings show a growing readiness to challenge corporate noncompliance. Complementing this, the proposed *POWER Act (SB4016/HB5513)* could reshape the relationship between state agencies, corporations, and impacted communities. The legislative document details mandatory cumulative impact analyses, water impact permits, and community benefit agreements for large-scale developments (such as AI data centers) which directly aim to standardize and improve environmental justice principles rather than treating them as optional add ons post environmental tragedy. As of early 2026, the Act remains stalled in committee, illustrating how legislative ambition is currently falling short of concrete solutions. At the same time, doctrines like public nuisance continue to influence how environmental harms are framed at the state level,

particularly in cases where statutory law has not yet caught up to new industries. However, challenges in proving causation remain significant, especially “in cases involving diffuse and low-level environmental harms,” where long-term or indirect impacts may be more severe than immediate threats but far harder to attribute to a single source. This limitation highlights the need for legislation like the POWER Act to move beyond reactive legal remedies and instead establish proactive, measurable standards for emerging technologies. As of early 2026, the Act remains stalled in committee, illustrating a broader pattern in which legislative ambition has yet to translate into timely reform.

Corporate Pressure and Public Accountability

Corporations such as CyrusOne and Midwest Generation face dual pressure from new EPA rules and Illinois legislation. The federal requirement for air permits under the *Clean Air Act*, along with the *POWER Act*’s proposed quarterly reporting, forces companies to balance operational growth against environmental performance. Nevertheless, enforcement mechanisms remain narrowly technical, defined by numbers or levels rather than integrating community health metrics or long term monitoring. Without stronger penalties for pollution or incentives for renewable transition, corporate boards tend to pursue minimal compliance or relocate altogether.

As seen across Chicago’s industrial suburbs, pollution continues to persist where corporate influence intersects with under-resourced communities. Until regulatory models evolve to prioritize community health outcomes alongside economic growth, and until enforcement mechanisms address both visible and diffuse harms, existing legal frameworks risk perpetuating the same patterns they were designed to correct.

Ultimately, the limitations of current environmental governance demonstrate a critical need for more anticipatory and integrated regulatory frameworks. While public nuisance law reflects an early effort to safeguard collective well-being, its ambiguity and evidentiary challenges make it insufficient as a primary tool for addressing modern, technology-driven environmental harms. As AI data centers and similar infrastructures expand, effective regulation will require not only clearer statutory standards but also enforcement mechanisms that account for cumulative, long-term, and community-specific impacts. Without this shift, legislative efforts risk continuing a cycle of delayed response, where environmental and public health protections lag behind the very industries they are meant to regulate.

Alternative Vision

Dialogue surrounding artificial intelligence and its environmental impact treats the two as fundamentally negative, as though society must choose between technological progress and ecological survival. That framing is unhelpful because it ignores a basic reality, AI is now embedded in search engines, navigation apps, scientific research, medicine, the global economy and it is not going to disappear. The more productive question is therefore not whether we can eliminate AI, but how we can use it efficiently so that its benefits are preserved while its environmental and community burdens are minimized and distributed fairly. An alternative vision for AI starts from this premise. If the technology is here to stay, the goal of an environmentally just future must be to make every unit of computation cleaner, more transparent and more accountable to the communities that host the infrastructure behind it.

This reframing matters for environmental justice specifically. The harms of AI infrastructure are not distributed evenly. A national review of roughly 700 data centers found that nearly half sit in census tracts already carrying above-median environmental burdens such as air and water pollution¹⁰³. Civil-rights organizations have documented that these facilities are disproportionately situated in low-income neighborhoods and communities of color, where they compound existing exposure to industrial pollution¹⁰⁴. An efficiency-centered vision is thus not only about saving energy, but “it is about reducing the concrete line that AI places on the people least equipped to absorb it”.

Any reliable solution must begin with an honest accounting of the problem it aims to solve. The International Energy Agency estimates that data centers consumed roughly 415 terawatt-hours of electricity in 2024 about 1.5 percent of global supply and projects this could climb to about 945 terawatt-hours by 2030, with AI identified as the primary driver of that growth¹⁰⁵. In the United States alone, data centers used an estimated 183 terawatt-hours in 2024,

¹⁰³ Walker, Carla D, and Ian Goldsmith. *From Energy Use to Air Quality, the Many Ways Data Centers Affect US Communities*, 17 Feb. 2026, www.wri.org/insights/us-data-center-growth-impacts.

¹⁰⁴ Pavlinich, Elan Justice. *The Dangers of Data Centers*, 27AD, www.environmentalhealthproject.org/post/the-dangers-of-data-centers.

¹⁰⁵ Gabbatiss, Josh. *AI: Five Charts That Put Data-Centre Energy Use – and Emissions – into Context - Carbon Brief*, 15 Sept. 2025, www.carbonbrief.org/ai-five-charts-that-put-data-centre-energy-use-and-emissions-into-context/.

more than four percent of national electricity consumption¹⁰⁶. Beyond electricity, researchers estimate that AI systems could be responsible for between 32.6 and 79.7 million tons of carbon dioxide and a water footprint of 312.5 to 764.6 billion liters in 2025 alone¹⁰⁷. United Nations University scientists warn that by 2030 the water footprint of AI infrastructure could rival the basic annual needs of 1.3 billion people.¹⁰⁸

These figures are large, but two facts make the efficiency argument compelling. First, the impacts are geographically concentrated, so local effects on a community's grid, water table, and air quality can be far more severe than the modest global percentages suggest¹⁰⁹. The International Energy Agency makes this exact point: even though data centers' share of global electricity use has stayed roughly flat, a single hyperscale facility can require 100 to 150 megawatts of grid capacity and consume hundreds of gigawatt-hours a year, concentrated in one place. The IEA has described this as the gap between "global headlines" and "local headaches": a national figure of roughly one percent becomes, at the community level, an interconnection queue, a transformer shortage, or a strained aquifer.¹¹⁰ Second, the same body of research shows that a substantial share of this consumption is avoidable through better engineering and policy. On the policy side specifically, state legislatures have shifted sharply from courting data centers with tax incentives toward regulating them directly; more than 300 data-center bills were introduced across over 30 states in just the first six weeks of 2026.¹¹¹ These include mandatory efficiency reporting, requiring disclosure of power usage effectiveness (PUE) and water usage effectiveness (WUE), modeled on the European Union's Energy Efficiency Directive, ratepayer-protection laws that force data centers to cover the full cost of new grid infrastructure

¹⁰⁶ Leppert, Rebecca. *What We Know about Energy Use at U.S. Data Centers amid the AI Boom*, 24 Oct. 2025, www.pewresearch.org/short-reads/2025/10/24/what-we-know-about-energy-use-at-us-data-centers-amid-the-ai-boom/.

¹⁰⁷ Vries-Gao, Alex de. *The Carbon and Water Footprints of Data Centers and What This Could Mean for Artificial Intelligence - Sciencedirect*, 9 Jan. 2026, www.sciencedirect.com/science/article/pii/S2666389925002788.

¹⁰⁸ *Rising Emissions, Depleting Water and Vanishing Land—Un Scientists: Ai Is Threatening Natural Resources for Billions | United Nations University*, 3 June 2026, unu.edu/inweb/news/environmental-cost-of-AIs-Energy-use-carbon-water-and-land-footprints.

¹⁰⁹ *Energy Demand from AI – Energy and AI – Analysis - IEA*, www.iea.org/reports/energy-and-ai/energy-demand-from-ai. Accessed 13 July 2026.

¹¹⁰ Kamiya, George, and Oskar Kvarnström. *Data Centres and Energy – from Global Headlines to Local Headaches? – Analysis - IEA*, 20 Dec. 2019, www.iea.org/commentaries/data-centres-and-energy-from-global-headlines-to-local-headaches.

¹¹¹ Shonerd, David, and Kim Miller. *State Data Center Legislation in 2026 Tackles Energy and Tax Issues | Multistate*, 20 Feb. 2026, www.multistate.us/insider/2026/2/20/state-data-center-legislation-in-2026-tackles-energy-and-tax-issues.

instead of shifting it onto residential customers and outright construction moratoriums, including Maine's bill pausing new data centers until late 2027,¹¹² the first statewide suspension of its kind. The problem is serious, but it is also highly responsive to the choices that developers, operators and regulators make.

The single most effective way to shrink AI's footprint is to make the models themselves leaner. Researchers at MIT describe improving model efficiency as the most important step available for reducing the environmental cost of AI.¹¹³ A growing collection of methods makes this possible. Knowledge distillation, in which a large model trains a smaller one, can deliver roughly 60 percent faster inference with about 40 percent fewer parameters while retaining around 97 percent of the original performance, as demonstrated by compact models such as DistilBERT (Green AI Review, 2026).¹¹⁴ Quantization—running models at lower numeric precision such as 8-bit or 16-bit instead of 32-bit, can cut energy use by up to half and efficient architectures designed for fewer parameters lower compute and memory demand further. Choosing the right-sized model for each task is equally powerful. A 2025 study found that applying intelligent model selection, using a smaller model when a smaller model is sufficient, could reduce global AI energy consumption by roughly 28 percent, a saving of about 31.9 terawatt-hours worldwide, equivalent to the annual output of five nuclear reactors.¹¹⁵ Emerging research pushes even further: a proof-of-concept neuro-symbolic system that pairs neural networks with symbolic reasoning has shown the potential to cut energy use by up to one hundred times while improving accuracy.¹¹⁶ Bigger is not always better and treating computation as a scarce resource rather than an unlimited one yields enormous environmental returns.

In contrast, even an efficient model runs on physical infrastructure, and the concern is how data centers are powered, cooled and scheduled. On the power side, operators can match consumption with carbon-free generation. Microsoft for example, committed to supplying its

¹¹² *Data Center Legislative Trends* | Encino Environmental Services, 2 Apr. 2026, encinoenviron.com/data-center-legislative-trends/.

¹¹³ Zewe, Adam. *Responding to the Climate Impact of Generative Ai* | MIT News | Massachusetts Institute of Technology, 30 Sept. 2025, news.mit.edu/2025/responding-to-generative-ai-climate-impact-0930.

¹¹⁴ *Green AI Techniques for Reducing Energy Consumption in AI Systems* - Sciencedirect, Mar. 2026, www.sciencedirect.com/science/article/pii/S2590005625002796.

¹¹⁵ Silva Barros, Tiago da, et al. *Reducing the World AI Energy Consumption Through*, 2 Oct. 2025, arxiv.org/pdf/2510.01889.

¹¹⁶ AI Breakthrough Cuts Energy Use by 100X While Boosting Accuracy | Sciencedaily, 5 Apr. 2026, www.sciencedaily.com/releases/2026/04/260405003952.htm.

facilities with new renewable generation matching its electricity use and has set a goal of fully carbon-free energy at all hours by 2030.¹¹⁷ Cooling is the other major lever, Water-intensive evaporative cooling can be replaced with closed-loop and air-cooled designs that consume essentially no water for cooling; Microsoft's next-generation zero-water designs are being piloted in Arizona and Wisconsin, while firms such as Evolution Data Centres and LiquidStack advance air-cooled and immersion systems.¹¹⁸

A third infrastructure strategy is carbon-aware scheduling (MIT News, 2025). Because the carbon intensity of electricity varies throughout the day, flexible AI workloads that do not need to run immediately can be shifted to hours when more solar and wind power is on the grid, meaningfully lowering a facility's emissions without reducing output (MIT News, 2025). Earlier algorithmic work by DeepMind reduced the energy used for data-center cooling by as much as 40 percent, illustrating that AI can optimize the very infrastructure it depends on.¹¹⁹ Combined with thoughtful siting that steers facilities toward regions with cooler climates, ample water and access to renewables and away from already overburdened communities, these measures can dramatically reduce the local footprint of each new data center. This is what turns siting from a technical optimization into an environmental-justice intervention: injustice happens precisely when the same communities keep getting chosen to absorb new pollution because they're already zoned industrial, already lack the political capital to fight a permit, or already sit on cheaper land. As the earlier data on the roughly 700 reviewed data centers shows, nearly half already sit in tracts with above-median pollution burden — that is the compounding pattern siting policy is meant to break. A rule that explicitly excludes overburdened communities from the pool of eligible sites, rather than simply chasing the cheapest available land, stops treating those neighborhoods as the default landing spot for new industrial burden and interrupts the cycle in which the same populations absorb every new source of harm.

¹¹⁷ *Using Life Cycle Assessment to Drive Innovation for Sustainable Cool Clouds* | Nature, 30 Apr. 2025, www.nature.com/articles/s41586-025-08832-3.

¹¹⁸ Solomon, Steve. *Sustainable by Design: Next-Generation Datacenters Consume Zero Water for Cooling* | the Microsoft Cloud Blog, 9 Dec. 2024, www.microsoft.com/en-us/microsoft-cloud/blog/2024/12/09/sustainable-by-design-next-generation-datacenters-consume-zero-water-for-cooling/.

¹¹⁹ Parker, Josh. *At Climate Week NYC, Nvidia Details Ai's Key Role in Energy Efficiency*, 23 Sept. 2025, blogs.nvidia.com/blog/ai-energy-innovation-climate-research/.

Efficiency and clean infrastructure cannot be verified, let alone enforce it without reliable data, yet transparency remains one of the weakest links. Corporate sustainability reports rarely separate AI workloads from other computing and methodological inconsistencies make published per-query figures difficult to compare.¹²⁰ Closing this gap is essential to an alternative vision. The Federation of American Scientists has proposed a standardized AI energy lifecycle measurement framework, beginning with voluntary reporting overseen by federal agencies and progressing toward a mandatory regime.¹²¹ United Nations University researchers argue that disclosure standards should require carbon, water and land footprints jointly, in standardized units, across both training and inference. Policy is beginning to respond. As of 2026, at least fourteen data-center bills had been introduced across six states, including measures requiring operators to disclose energy use, water consumption and carbon emissions.¹²² California's climate disclosure laws push large companies toward fuller emissions reporting. Mandatory, comparable disclosure does more than inform; it creates accountability, allowing regulators, investors and critically affected communities to scrutinize claims and demand better. Without transparency, every efficiency promise remains unverifiable.

An alternative vision is not merely defensive; used well, AI can actively accelerate the clean-energy transition. Research published by the Grantham Research Institute and Systemic estimates that, if applied effectively in power, transport, and food systems, AI could reduce global greenhouse-gas emissions by 3.2 to 5.4 billion tons of carbon-dioxide-equivalent annually by 2035 reductions the authors conclude would outweigh the increase in emissions from data centers themselves.¹²³ In the power sector specifically, AI can improve grid management and raise the effective output of solar and wind by as much as 20 percent. It can forecast renewable generation, balance loads, detect grid anomalies before they cause failures and model climate

¹²⁰ *Global Energy Demands within the AI Regulatory Landscape* | Brookings, 10 Apr. 2026, www.brookings.edu/articles/global-energy-demands-within-the-ai-regulatory-landscape/.

¹²¹ Jhaveri, Mitul, and Vijaykumar Palat. *Measuring AI's Energy/Environmental Footprint to Assess Impacts*, 27 June 2025, fas.org/publication/measuring-and-standardizing-ais-energy-footprint/.

¹²² *Data Center Moratorium by State 2026: Every Bill, Status & Threshold*, 17 May 2026, www.aillawsbystate.com/blog/data-center-moratorium-by-state-2026.

¹²³ *New Study Finds AI Could Reduce Global Emissions Annually by 3.2 to 5.4 Billion Tonnes of Carbon-Dioxide-Equivalent by 2035 - Grantham Research Institute on Climate Change and the Environment*, 23 June 2025, www.lse.ac.uk/granthaminstitute/news/new-study-finds-ai-could-reduce-global-emissions-annually-by-3-2-to-5-4-billion-tonnes-of-carbon-dioxide-equivalent-by-2035/.

systems with greater precision.¹²⁴ This potential should be stated carefully rather than as a blanket excuse. The net-benefit argument holds only if AI is deployed deliberately toward decarbonization and paired with the efficiency and transparency measures described above; otherwise the energy costs simply accumulate without the offsetting gains. Used as a targeted tool for environmental problem-solving, however, AI can become part of the solution to the very crisis its infrastructure contributes to.

Technical efficiency is necessary but not sufficient. An alternative vision must place the communities that host AI infrastructure at the center of decision-making, because efficiency gains mean little to a neighborhood whose water treatment plant is strained or whose air quality declines.¹²⁵ Environmental justice emphasizes that data-center impacts cannot be evaluated one issue at a time; water use, wastewater, air and noise pollution, energy demand and rising utility costs accumulate as a single cumulative burden on already overburdened communities. The recurring question they raise is whose knowledge counts before decisions are made.¹²⁶ A just vision therefore couples engineering with governance. The MIT Climate Project argues that if next-generation data centers are co-designed with community input, they could lower local electricity costs, improve grid reliability and ease competition for water rather than intensifying it.¹²⁷ This means binding requirements for clean energy and pollution limits, meaningful community consultation before siting, fair distribution of the economic benefits operators promise, and the transparency that lets residents hold developers to their commitments. Efficiency that is not accountable to affected people is not justice, it is merely cheaper harm.

If artificial intelligence cannot be eliminated, then the path forward is to demand that it is used responsibly. The evidence shows that this is achievable. Leaner models can cut energy use by significant margins. Clean power and water-free cooling can shrink the infrastructure footprint, carbon-aware scheduling and intelligent siting can reduce local strain, transparent

¹²⁴ Parker, Josh. *At Climate Week NYC, Nvidia Details Ai's Key Role in Energy Efficiency*, 23 Sept. 2025, blogs.nvidia.com/blog/ai-energy-innovation-climate-research/.

¹²⁵ Asamnew, Yanit. *Q&A with NAACP: Addressing the Growing Environmental Harms of AI Data Centers*, 13 Mar. 2026, www.apha.org/publications/public-health-newswire/public-health-newswire/articles/addressing-the-growing-environmental-harms-of-ai-data-centers.

¹²⁶ Carter, Jacob. *The AI Data Center Boom Is an Environmental Justice Crisis - The National Wildlife Federation Blog*, 7 May 2026, blog.nwf.org/2026/05/the-ai-data-center-boom-is-an-environmental-justice-crisis/.

¹²⁷ *Designing Data Centers of the Future | MIT Climate Project*, climateproject.mit.edu/designing-data-centers-future. Accessed 13 July 2026.

disclosure can make accountability possible, and AI itself can be turned toward solving environmental problems. None of these measures is sufficient alone and none excuses unchecked expansion. Taken together, and grounded in the principle that the communities bearing the heaviest burdens deserve the loudest voice, they describe a future in which AI does far less harm to the environment while still delivering its benefits. That is the alternative vision, not a world without AI, but a world where AI is finally made to earn its place.

Calls to Action

Adopting Community-led Impact Standards for Data Centers. The committee should support full implementation of the Hazel M. Johnson Cumulative Impact. The Ordinance should be pushed to a vote, and language should be included to explicitly indicate AI Data Centers as an “intensive land use.” The ordinance has been pending due to its re-referral to the City Council’s Committee on Zoning, Landmarks, and Building Standards, and it should be called on by the committee in order to advance to a vote. The legal infrastructure of this ordinance is already built and it is a significant first step in ensuring community-led initiatives are taking place to fight against environmental injustice.

Illinois data centers should be mandated to fully disclose their water and energy usage. State legislation should be drafted to require publicly available reports on a quarterly basis disclosing their Power Usage Effectiveness (PUE) and Water Usage Effectiveness (WUE). The reporting should be fragmented by individual facility, community, and census tract to build on previous disclosure bills that have already been introduced at the Illinois House of Representatives and Senate.

Adopt a bright-line siting exclusion using Illinois’ existing EJ mapping tool. Illinois’ EPA and local zoning bodies should collaborate with one another to bar large-scale data center permits within census tracts that have already been identified as environmental justice areas under the Illinois Environmental Justice Act’s mapping tool. An exception can be made if communities negotiated specific benefits and a formalized agreement for an independent, community-led cumulative impact.

Vote on the POWER Act. The POWER Act is still in committee and it should be voted on and tied to tax incentives. The committee should urge the Illinois General Assembly to advocate for the POWER Act to be passed, and push so data centers’ eligibility for state-tax incentive

certificates aligns with the Act's proposed cumulative impact analysis , water-impact based permits, and community benefit agreements.

Conclusion

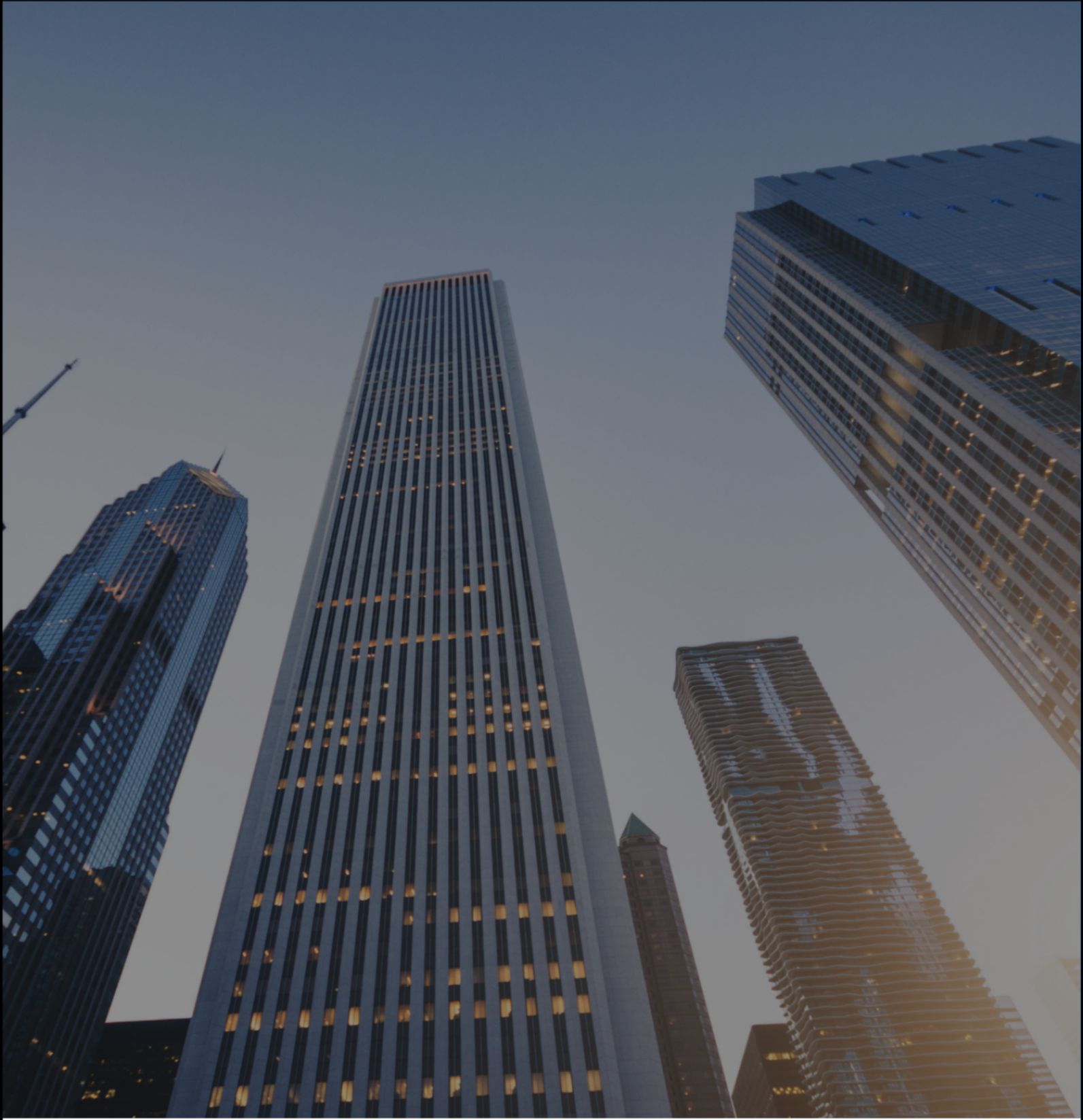
From its inception, the city of Chicago has been shaped by profound moments of environmental history: from Union Stock Years to Altgeld Gardens, there is a theme that highlights how in the pursuit of economic growth, communities with disproportionately Black and Brown neighborhoods are left to absorb costs with little agency in saying no. AI data centers have become a clear instance of this issue, exacerbated by the environmental injustices plaguing disadvantaged communities. Whether it be zoning maps, industrial corridors, water, or air, more than a century of history corroborates unaccountable development and increasing deficits. But history has also demonstrated how this pattern can be reversed. Hazel Johnson and People for Community Recovery worked to prove that community-generated solutions can transform lived experience into governance; PERRO and LVEJO proved that through sustained organizing coal plants can be shut down; and ongoing legislation and ordinances at the city, state, and federal level are already becoming new tools to extend that legacy and impact into the AI infrastructure that is being rapidly expanded into Illinois' communities. The choice Chicagoland and beyond now faces is not whether or not AI and data centers will be developed, that has already been decided for them. But rather, how will communities hosting its infrastructure build the knowledge and tools to have a say in how these processes will take place, and how to continually fight against environmental injustice and the greater injustices issues like these will inevitably produce.



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