# Data Centers:
# Frequently Asked Questions (FAQs)

The City of Aurora is evaluating potential regulations related to large-scale data center development. City staff have received many questions about this rapidly growing industry.

This document provides answers to Frequently Asked Questions (FAQs) about:

- What data centers are and how they operate
- Potential impacts on communities and infrastructure
- How data centers are currently regulated
- How artificial intelligence (AI) and privacy laws relate to data centers
- Why Aurora is considering updates to its policies

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# Data Centers in Aurora: FAQs

# Data Centers Overview and Impacts

## What is a data center?

A data center is a facility that houses large numbers of computer servers used to store, process, and transmit digital information. Because these systems must run continuously, most data centers operate 24 hours a day, 365 days a year and require significant electricity and cooling infrastructure. [1] Data centers support many services people use every day, such as:

- Cloud computing
- Artificial intelligence (AI) systems
- Online banking and financial transactions
- Streaming video and social media
- Government and business data systems

The global data center market is currently valued at roughly $350–$400 billion, depending on the methodology used, with estimates around $347 billion in 2024 and about $380 billion in 2025. The sector is expected to grow rapidly—potentially reaching $650–$900+ billion by the early 2030s, driven largely by demand for cloud computing, artificial intelligence, and digital services.[2]

## Why are data centers expanding rapidly?

Demand for computing power is growing quickly due to artificial intelligence and marching learning systems, cloud computing platforms, video streaming and digital services, and large-scale data storage. The U.S. Department of Energy estimates that data centers consumed approximately 4–4.4% of total U.S. electricity in 2023, and projections suggest this could increase to 6.7–12% by 2028 as AI technologies expand.[3]

## How many data centers currently exist or are proposed in Aurora?

Aurora has become an attractive location for data center development due to its infrastructure and location.

Currently:

- **Four** large-scale data centers are operational in Aurora

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[1] U.S. Department of Energy – Evaluating the Increase in Electricity Demand from Data Centers, https://www.energy.gov

[2] https://brightlio.com/data-center-stats/

[3] https://www.energy.gov

# Data Centers in Aurora: FAQs

- **Five** additional facilities are under construction or in permitting or development review

More broadly:

- More than 3,000 data centers operate in the United States, with hundreds more planned.[4]
- The U.S. hosts approximately 36% of all data centers worldwide, more than any other country.[5]
- The Chicago metropolitan area is *one of the largest data center markets* in North America due to its strong fiber connectivity, central location, and power infrastructure.

## Why are data centers interested specifically in Aurora?

Several factors make Aurora attractive for data center development:

- Proximity to the Chicago metropolitan area
- Access to regional electrical infrastructure
- Availability of large industrial parcels
- Proximity to major fiber optic network routes
- Access to reliable water resources historically used for cooling systems

## Why do data centers cluster in certain regions?

Data centers often cluster in regions where key infrastructure is available. Because these requirements are difficult to replicate everywhere, data centers frequently concentrate in specific regions, increasing local demand for electricity and infrastructure. Three primary factors influence location decisions:

- Reliable electricity - Large computing facilities require stable, high-capacity power supplies.
- High-speed fiber networks - Fiber optic infrastructure allows rapid transmission of large amounts of data.
- Industrial land and zoning - Large campuses require significant land areas and appropriate zoning.

## Where are Aurora's data centers located?

The current and proposed data centers can be seen on the map on the next page.

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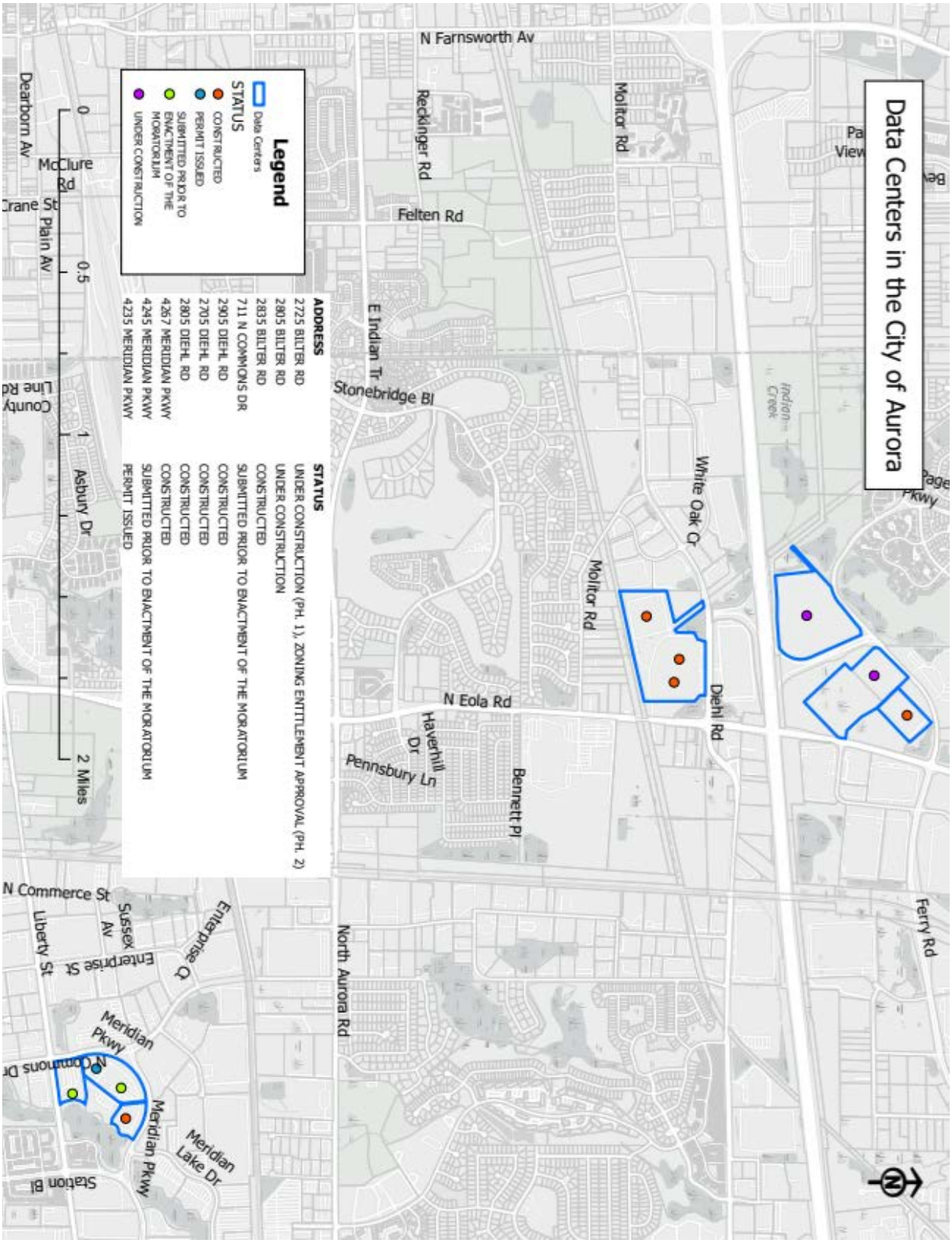
[4] https://abc7chicago.com/post/what-is-data-center-expect-more-centers-illinois-like-cyrusone-aurora-il-amid-noise-electric-bill-complaints/18610141/

[5] https://www.datacentermap.com/datacenters/

# Data Centers in Aurora: FAQs



# Data Centers in Aurora: FAQs

## Why did Aurora enact a temporary moratorium on data center development?

Like many communities in the Chicagoland area, Aurora has seen an increased interest in data center development.

Currently, Aurora's zoning ordinance and building codes do not include specific standards for data center developments and instead classify them as warehouses. These facilities have unique neighborhood and environmental impacts — including noise, emissions, high energy and water use, stormwater management challenges, utility demand, infrastructure strain, and long-term fiscal considerations. City staff have responded to multiple complaints and concerns from data center neighbors, demonstrating that our current policies do not adequately address these issues.

Planning professionals and zoning agencies across the country are beginning to address neighborhood impacts of data centers in new and more effective ways — approaches that are not yet reflected in Aurora's current ordinance. By studying these emerging best practices, we can identify and recommend updates that better protect our residents and neighborhoods. This review will help strengthen the City's ordinances and reduce legal vulnerability.

By taking this pause, the City is:

- Creating clear rules that protect residents and businesses
- Giving developers certainty and confidence when proposing projects
- Ensuring long-term sustainability and livability for the community

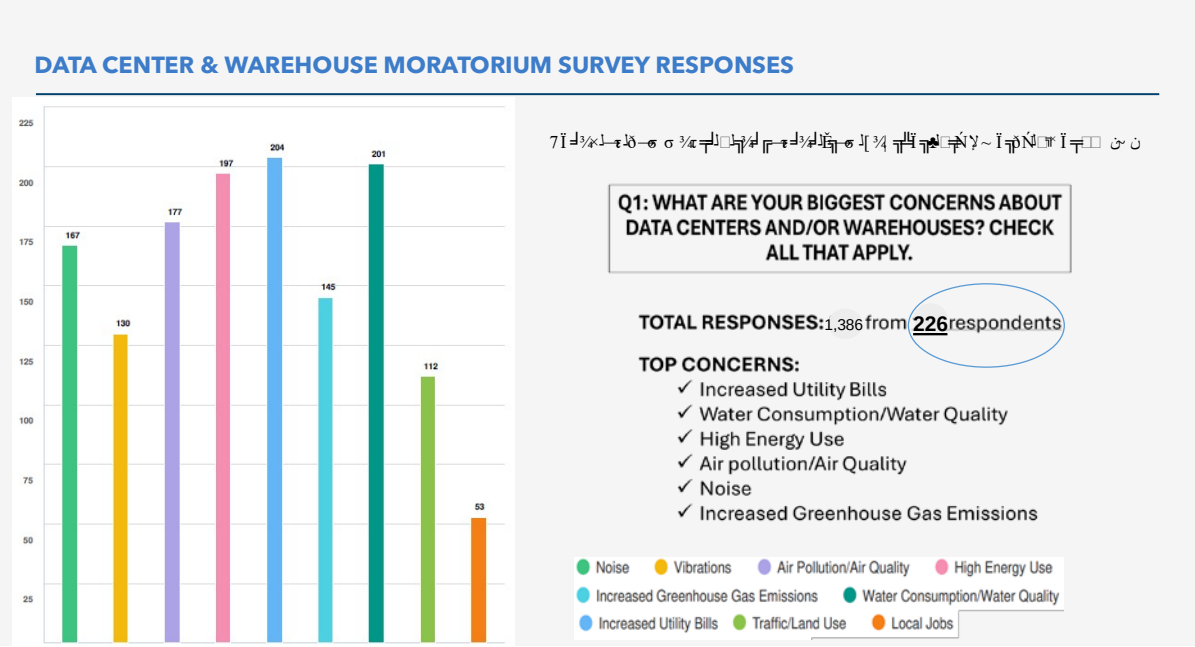
## What are the biggest concerns about data centers in Aurora?

Generally, common concerns have included:

- Energy use
- Increased utility bills
- Water consumption and quality
- Long-term operational transparency
- Noise and vibrations
- Utility infrastructure strain
- Greenhouse gas emissions
- Pollutants that affect air quality
- Artificial Intelligence (AI) and privacy protections

The City hosted an online survey whose results are summarized (through March 3rd) in the image below. The total survey results can be found here.

# Data Centers in Aurora: FAQs




## How large are modern data centers?

Modern data centers are typically large industrial-scale buildings. A single hyperscale data center building can be as large as 15–20 football fields.[6]

Typical characteristics of data centers can include:

- Buildings from 100,000 to over 1 million square feet
- Multi-building campuses across dozens or hundreds of acres
- Dedicated electrical substations and backup generators
- Extensive cooling infrastructure

[6] Pew Research Center – *Energy and water use of U.S. data centers*, https://www.pewresearch.org

# Data Centers in Aurora: FAQs

## How much electricity does a large data center use?

Electricity use varies widely depending on facility size and computing demand. Large hyperscale data centers may require 100–300 megawatts of electricity, comparable to the energy demand of tens of thousands of homes.[7] Artificial intelligence computing systems may require even greater energy use because of specialized hardware.

## How much energy do Aurora's data centers use?

Aurora's four currently operating data centers range from 9 megawatts to 98 megawatts in size.

## Do data centers affect electricity costs?

Large electricity users, including data centers, can influence regional electricity markets and infrastructure costs. Modern hyperscale data centers require extremely large amounts of electricity. A single facility may demand **100–300 megawatts of power**, which can be comparable to the electricity consumption of **tens of thousands of homes or a mid-sized city**. Artificial intelligence computing systems can require even more energy due to specialized computing hardware.

### Electricity Demands in Data Centers

**Typical energy comparisons**

- Average home: about 1–2 kilowatts
- Grocery store or large retail store: about 1 megawatt
- Hospital or large office building: 5–10 megawatts
- Aurora data centers: from 9–98 megawatts
- Large hyperscale data center: 100–300 megawatts

This means a single hyperscale data center may require as much electricity as tens of thousands of homes or a new mid-sized city be added to the grid all at once.

To serve these large electricity loads, utilities may need to build new substations or transmission lines, procure additional electricity generation, upgrade grid infrastructure, or secure future electricity supply through regional capacity markets. If these infrastructure costs are not fully paid by developers, they may be distributed across other electricity customers.[8]

Northern Illinois is part of the PJM Interconnection regional transmission organization, which coordinates electricity supply across 13 states and Washington, D.C. PJM operates a regional "capacity market" that determines how much electricity generation must be available to meet future demand. Because the grid operates as a regional system, large

[7] Pew Research Center – *Energy and water use of U.S. data centers*, https://www.pewresearch.org
[8] Environmental and Energy Study Institute – *Data Center Energy Demand*, https://www.eesi.org

increases in electricity demand, like those created by new data centers, can affect electricity prices across the entire PJM region.

In recent PJM capacity auctions, capacity prices increased significantly in recent auctions, reaching over $329 per megawatt-day, far higher than prices in previous years. [9] Analysts have identified rapidly growing electricity demand, including **demand from data centers**, as one factor contributing to these increases. [10]

Last year, many Aurora citizens saw increases in their electricity bills. Customers served by Commonwealth Edison (ComEd) experienced increases in electricity supply costs beginning in 2025 following the rise in PJM capacity market prices. Consumer advocates estimate that many customers saw approximately 10–15% increases in supply charges as a result of higher wholesale electricity costs. [11] Utilities such as ComEd typically pass wholesale electricity costs directly to customers without markup, meaning changes in regional market prices can affect customer bills.

## Do local regulations matter if "it's all part of PJM anyway"?

While Aurora cannot control whether data centers are developed elsewhere within the PJM grid, local governments still play an important role in managing how these facilities impact the grid in their communities.

Local regulations can help ensure that new facilities:

- Coordinate with utilities on infrastructure needs
- Minimize strain on local electrical systems
- Incorporate efficiency or resiliency measures where possible
- Responsibly manage large electricity demands

State and regional efforts are underway to ensure that data centers pay their fair share for infrastructure upgrades. To learn more, contact the Citizens Utility Board of Illinois[12].

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[9] PJM Interconnection – *Capacity Market Auction Results*, https://www.pjm.com
[10] Citizens Utility Board of Illinois – *Electric supply price increases and capacity market impacts*, https://www.citizensutilityboard.org
[11] Citizens Utility Board of Illinois – *Electric supply price increases and capacity market impacts*, https://www.citizensutilityboard.org
[12] https://www.citizensutilityboard.org/

# Data Centers in Aurora: FAQs

## Do data centers use large amounts of water?

Water use can vary significantly between data center facilities based on climate, equipment density, cooling needs and system design.

Some data centers use very little water, while others may require substantial volumes depending on their cooling technology. The industry seems to be moving toward more water-efficient cooling systems, but not in all cases.

Research estimates that U.S. data centers used about 17 billion gallons of water in 2023, and projections suggest that could increase to 16–33 billion gallons annually by 2028 depending on technology and location.[13]

Water demand varies based on cooling systems. Evaporative cooling is a higher water use system, while lower water use systems include air-cooled systems, closed-loop cooling, and water recycling technologies. Many communities now require water-efficiency standards or reporting for large data centers.

The Meta data center in DeKalb, Illinois, built in 2023, uses evaporative cooling. According to city documents, its water use is capped at 200,000 gallons of water per day[14].

### Water Demands in Data Centers

Water use in data centers varies widely depending on cooling technology and climate conditions.

**Typical water comparisons**

- Average U.S. household: about 300 gallons per day
- Hotel: 1,000–2,000 gallons per day
- Hospital: 5,000–15,000 gallons per day
- 100-megawatt data center using evaporative cooling system: hundreds of thousands to several million gallons per day (Meta data center in DeKalb is capped at 200,000 gallons per day)
- 100-megawatt data center using air-cooled or closed-loop systems: very low water use for cooling; typically similar to a warehouse or large retail facility because of the small number of employees

Water availability is becoming an increasingly important planning issue in parts of northern Illinois. Studies by the Chicago Metropolitan Agency for Planning (CMAP)[15] and the Northwest Water Planning Alliance[16] have found that portions of the region's deep groundwater aquifers are being withdrawn faster than they naturally recharge, prompting

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[13] Pew Research Center – *Energy and water use of U.S. data centers*, https://www.pewresearch.org

[14] https://northernstar.info/130777/news/dozens-gather-to-voice-concerns-over-proposed-dekalb-data-center

[15] https://cmap.illinois.gov/news-updates/new-water-demand-forecast-highlights-need-for-sustainable-water-management/

[16] https://www.nwpa.us/learn/the-regional-water-demand-forecast

some communities (e.g., Joliet[17]) to construct a pipeline to bring Lake Michigan water to the area by the end of the decade. Because aquifers can take decades or longer to replenish, regional planners have emphasized the importance of carefully managing large new water demands, including those associated with major industrial facilities such as data centers.

## Are data centers noisy?

Data centers generate continuous mechanical noise primarily from:

- Cooling systems and fans
- Electrical transformers
- Backup generators

With the right sound mitigation strategies, projected sound levels near residential property lines can range from about 50-60 decibels, but some data centers have also been shown to collectively reach upwards of over 90 decibels[18]. Data centers need to run 24 hours a day, 7 days a week, and some neighbors have complained that in addition to the noise levels, the constant humming and droning can have a negative impact on mental health.

In order to control noise pollution, cities often require noise studies, acoustic screening, and compliance with local noise ordinances.

## Do data centers create many local jobs?

Data centers require significant upfront investment in buildings, equipment, and infrastructure. Construction phases can generate substantial temporary employment, but once operational, these facilities typically employ a relatively small permanent workforce compared with other large commercial or industrial developments. For this reason, some communities evaluate data center projects differently from other types of development when considering long-term economic and land use impacts.

Data centers typically generate:

- Hundreds of temporary construction jobs during development
- 20–100 permanent operational jobs once the facility is operating, depending on size and automation.[19]

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[17] https://www.joliet.gov/government/departments/public-utilities/alternative-water-supply
[18] https://acousticalsolutions.com/data-center-noise-pollution
[19] U.S. Bureau of Labor Statistics – *Data Center and Information Infrastructure Employment*, https://www.bls.gov

# Data Centers in Aurora: FAQs

According to Governor J.B. Pritzker, the $350 million CyrusOne Aurora data center project that broke ground in October 2024 was expected to create hundreds of construction jobs during development and twenty data center positions during operation[20].

Because construction workforces are regional and often union-based, exact counts of Aurora residents working on data center construction projects are not readily publicly available.

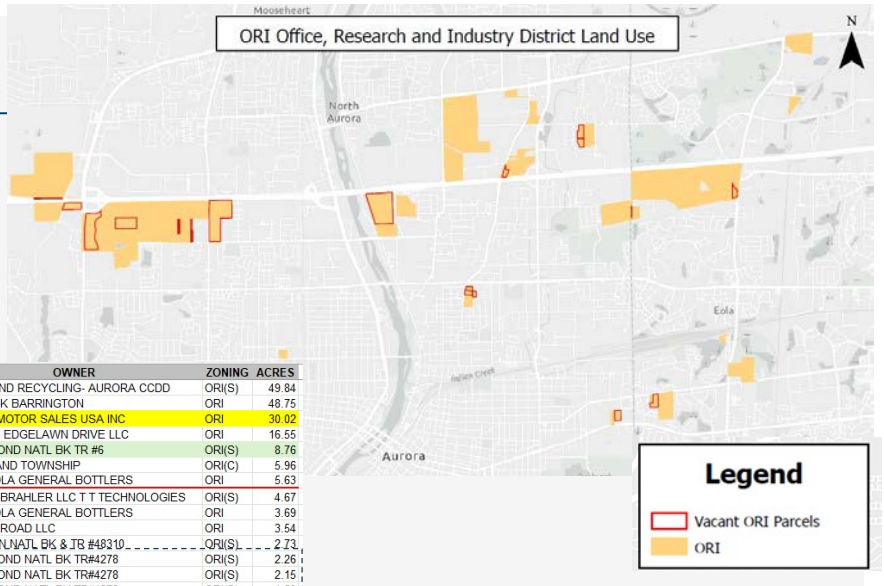
## How much land is left in Aurora for possible data center development?

Data centers currently are zoned under ORI, M-1, and M-2; vacant lots are outlined in red below.

**ORI ZONED PARCELS & VACANT ORI ZONED PARCELS**

Total Number of Vacant ORI Parcels = 20

Total Acreage of Vacant ORI Parcels = 191 Acres




| PIN | DESCRIPTION | OWNER | ZONING | ACRES |
|---|---|---|---|---|
| 15-10-126-002 | METTEL RD & IL-25 | HEARTLAND RECYCLING- AURORA CCDD | ORI(S) | 49.84 |
| 15-08-201-011 | RANDALL RD & SULLIVAN RD | HARRIS BK BARRINGTON | ORI | 48.75 |
| 15-07-101-002 | ORCHARD RD & SEQUOIA DR | TOYOTA MOTOR SALES USA INC | ORI | 30.02 |
| 15-07-201-005 | BOWMAN DR & SEQUOIA DR | BREIT KM EDGELAWN DRIVE LLC | ORI | 16.55 |
| 14-12-200-026 | ORCHARD RD & I-88 | OLD SECOND NATL BK TR #6 | ORI(S) | 8.76 |
| 07-19-101-015 | LIBERTY ST & WOLVERINE DR | WHEATLAND TOWNSHIP | ORI(C) | 5.96 |
| 15-01-177-008 | BILTER RD & PREMIUM OUTLETS BLVD | PEPSI-COLA GENERAL BOTTLERS | ORI | 5.63 |
| 15-24-276-034 | E NEW YORK ST & | SCHMIDT-BRAHLER LLC T T TECHNOLOGIES | ORI(S) | 4.67 |
| 15-01-327-017 | BILTER RD & PREMIUM OUTLETS BLVD | PEPSI-COLA GENERAL BOTTLERS | ORI | 3.69 |
| 07-08-100-011 | EOLA RD | MOLITOR ROAD LLC | ORI | 3.54 |
| 15-02-401-008 | CHURCH RD & I-88 | AMERICAN NATL BK & TR #48310 | ORI(S) | 2.73 |
| 15-14-126-015 | BROUCH LN & CHURCH RD | OLD SECOND NATL BK TR#4278 | ORI(S) | 2.26 |
| 15-14-126-014 | BROUCH LN & CHURCH RD | OLD SECOND NATL BK TR#4278 | ORI(S) | 2.15 |
| 15-14-126-005 | BROUCH LN & CHURCH RD | OLD SECOND NATL BK TR#4278 | ORI(S) | 1.59 |
| 15-08-152-006 | SEQUOIA DR | 1785 N EDGELAWN LLC | ORI | 1.37 |
| 15-08-176-002 | SEQUOIA DR | PRIME AURORA BUS PARK ASSO INC | ORI | 1.28 |
| 15-08-176-005 | SEQUOIA DR | PRIME AURORA BUS PARK ASSO INC | ORI | 1.27 |
| 14-12-100-025 | I-88 | PODOLSKY ORCHARD 88 | ORI | 0.97 |
| 15-12-276-013 | COUNTY LINE RD | ABBEY PAVING & SEALCOATING CO | ORI(S) | 0.39 |
| 15-08-201-008 | N OF SVS TEMPLE | HARRIS BK BARRINGTON | ORI | 0.32 |

16

[20] https://www.connectcre.com/stories/cyrusone-breaks-ground-on-aurora-data-center/

# Data Centers in Aurora: FAQs

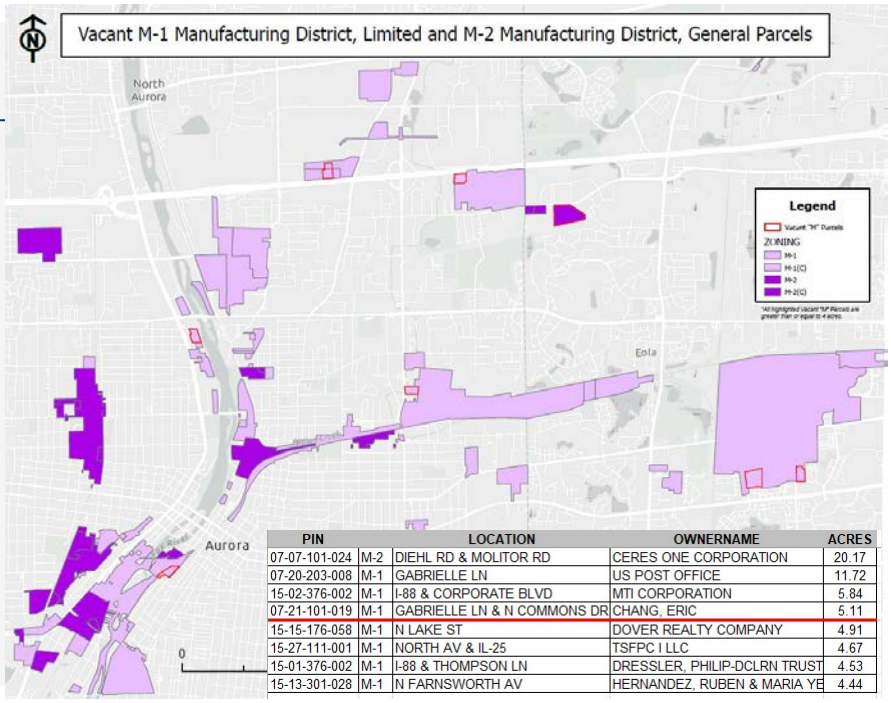
**M-1 & M -2 PARCELS**

Total* Number of Vacant M Parcels > 5 acres = 4

Total* Acreage of Vacant M Parcels > 5 acres = 43 acres

*Note: Government Owned and Rail Owned parcels have been removed from calculations

March 17, 2026




| PIN | | LOCATION | OWNERNAME | ACRES |
|---|---|---|---|---|
| 07-07-101-024 | M-2 | DIEHL RD & MOLITOR RD | CERES ONE CORPORATION | 20.17 |
| 07-20-203-008 | M-1 | GABRIELLE LN | US POST OFFICE | 11.72 |
| 15-02-376-002 | M-1 | I-88 & CORPORATE BLVD | MTI CORPORATION | 5.84 |
| 07-21-101-019 | M-1 | GABRIELLE LN & N COMMONS DR | CHANG, ERIC | 5.11 |
| 15-15-176-058 | M-1 | N LAKE ST | DOVER REALTY COMPANY | 4.91 |
| 15-27-111-001 | M-1 | NORTH AV & IL-25 | TSFPC I LLC | 4.67 |
| 15-01-376-002 | M-1 | I-88 & THOMPSON LN | DRESSLER, PHILIP-DCLRN TRUST | 4.53 |
| 15-13-301-028 | M-1 | N FARNSWORTH AV | HERNANDEZ, RUBEN & MARIA YE | 4.44 |

# Data Center Regulations

## How are data centers currently regulated?

There is no single comprehensive regulatory framework specifically for data centers in the United States. Facilities must comply with existing laws governing land use and zoning, building and fire codes, energy and water use, environmental permitting, and electrical grid interconnection, while some operators also follow voluntary industry standards for reliability, security, and sustainability.

In addition to government regulations, many data center operators follow industry standards and voluntary certification frameworks related to reliability, security, and sustainability. Common standards and frameworks include the Uptime Institute Tier Standard (which rates facility reliability and redundancy), ANSI/TIA-942 telecommunications infrastructure standards, and international certification systems such as ISO 27001 for information security and ISO 50001 for energy management. In practice, these standards are often adopted by operators or required by customers *rather than mandated directly by local governments*.

Because comprehensive national standards do not exist, many municipalities have begun developing local regulations tailored to data centers that protects local infrastructure and

community interests while supporting technological innovation. City staff reviewed policies from multiple jurisdictions across the United States to understand current best practices[21].

## What happens if Aurora does not regulate data centers?

If Aurora does not update its policies before the current moratorium expires, future data centers would continue to be regulated under the same classification used previously: *warehouse* uses.

Under the current ordinance, this means:

- There may be limited opportunities for public engagement or City Council oversight depending on zoning classification
- Data centers could be approved without specific performance standards addressing their unique operational characteristics
- Facilities would not be required to meet standards specifically addressing issues such as energy demand, water use, vibration, noise, or emissions

## Can a city ban data centers entirely?

In most cases, cities cannot simply prohibit specific property use. Instead, municipalities regulate development through:

- Zoning districts
- Special/conditional use permits
- Development and performance standards
- Permitting and building code regulations
- Various agreements with developers, landowners, and others
- Temporary moratoria while regulations are studied and updated

## Can Aurora simply continue extending the data center moratorium?

A moratorium is a common planning tool used by municipalities to allow time to study emerging development issues and consider updates to local regulations. However, moratoria are intended to be *temporary* measures, not permanent restrictions on development.

Extending a moratorium indefinitely can raise legal and practical concerns. Courts generally expect moratoria to be used for a limited period while a municipality actively studies and adopts updated policies or regulations. For this reason, many municipalities

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[21] https://www.aurora.il.us/files/assets/mainsite/v/1/data-centers-and-warehouses-research-combined.pdf

aim to use moratoria as a short-term planning tool while developing clear and predictable regulations that address the specific characteristics of emerging industries.

In Aurora, the current moratorium also includes a hardship provision. This provision allows applicants to request an exception to the moratorium if they can demonstrate that the restriction creates an undue hardship.

If the moratorium were extended without adopting new regulations, developers could potentially apply for a hardship exemption. Under the current ordinance, this would mean that a data center approved through a hardship request could:

- Be reviewed under warehouse zoning standards
- Proceed without the proposed data center performance requirements related to energy, water, noise, or vibration
- Potentially move forward without a conditional use process requiring City Council approval or public input

City Staff would prefer not to extend the moratorium. Aurora's goal is to adopt long-term standards tailored to data center development, providing both community protections and regulatory certainty for future projects.

## What are other cities doing to regulate data centers?

Many countries regulate data centers through national policies addressing energy use, water consumption, land use, and data privacy. For example, the European Union has adopted energy-efficiency and reporting requirements for data centers, while countries such as Singapore, the Netherlands, and Ireland have imposed national or regional limits on new data center development due to concerns about electricity demand, land availability, or environmental impacts.

In the United States, there is no single national regulatory framework for data centers, so cities and counties across the country are developing their own policies to address the unique characteristics of data centers. Common regulatory approaches include zoning restrictions or special use permits, energy or water performance standards, noise and vibration limits, setback and design requirement, and infrastructure coordination with utilities. City Staff analyzed multiple jurisdictions to understand best practices and current regulations[22].

[22] https://www.aurora.il.us/files/assets/mainsite/v/1/data-centers-and-warehouses-research-combined.pdf

# Data Centers in Aurora: FAQs

## Can Aurora make data centers pay for infrastructure costs so utility bills don't increase for customers?

Electricity infrastructure is typically regulated by utilities and state agencies rather than municipalities. In northern Illinois, electricity transmission and capacity markets are coordinated by PJM Interconnection, while distribution service is provided by Commonwealth Edison. Because of this regulatory structure, *cities generally cannot directly control* how regional electricity costs are allocated among utility customers. However, local governments can:

- Adopt zoning and development standards that address infrastructure impacts, like requiring renewables/batteries, and high operational performance
- Evaluate whether sufficient electrical infrastructure exists before approving development
- Require coordination with utilities during project review

At the state and regional level, policymakers are increasingly discussing reforms to ensure large electricity users contribute more directly to the infrastructure needed to serve them.

- The Citizens Utility Board has recommended reforms to ensure new large electricity users help cover grid infrastructure costs rather than shifting those costs to residential customers[23].
- Proposed legislation such as the Illinois POWER Act[24] seeks to strengthen oversight of electricity demand and grid impacts associated with large facilities.

## What can Aurora do to improve its existing data centers?

All of Aurora's existing data centers were approved under earlier zoning and development standards, before the City began evaluating regulations specifically tailored to data center operations. As Aurora updates its policies, the City is also evaluating whether and how certain performance standards may apply to existing facilities, particularly in situations such as expansions, major equipment replacements, or operational changes.

Applying new regulations to existing developments involves important legal considerations:

- Nonconforming uses and structures: Buildings and operations that were lawfully approved under previous regulations are often allowed to continue operating under those rules.

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[23] https://www.citizensutilityboard.org/

[24] https://www.ilga.gov/ftp/legislation/104/BillStatus/HTML/10400HB5513.html

# Data Centers in Aurora: FAQs

- Property rights and vested approvals: Developers and property owners may have legal rights associated with permits or approvals that were granted under earlier ordinances.
- State and constitutional protections: Municipal regulations must respect established legal protections for existing property uses.

Because of these factors, cities may choose to focus on standards that apply to new facilities or significant expansions first, while evaluating other tools to address concerns related to existing developments. The City's goal is to ensure that both existing and future data center facilities operate in a way that protects nearby neighborhoods, supports reliable infrastructure, and reflects current best practices, while respecting applicable legal constraints.

# Artificial Intelligence, Data Centers, and Privacy

## Is the increased use of Artificial Intelligence (AI) accelerating the development of data centers?

Yes. Artificial intelligence systems require large amounts of computing power to train and operate complex models. These systems rely on specialized computer hardware that consumes substantial electricity and generates significant heat. As a result, many technology companies are expanding or building new data centers designed specifically to support AI workloads. Industry analysts widely expect AI growth to significantly increase global demand for data center capacity over the coming decade.

## Should residents be concerned about AI being connected to data centers?

Artificial intelligence itself is a software technology, while data centers provide the physical infrastructure that allows computing systems to operate. Data centers do not inherently create or control AI systems. Instead, companies that use the facilities may develop or operate AI applications. Public discussions about AI often focus on broader issues such as:

- Data privacy
- Algorithm transparency
- Potential misuse of biometric information

## Do data centers collect personal or biometric data?

Data centers generally do not *collect* personal data themselves. Instead, they provide infrastructure (servers, storage, and networking equipment) that other companies use to process and store digital information. Companies using data center facilities are

responsible for collecting data from users, developing software systems, and complying with privacy laws governing data collection and use.

## What is the Illinois Biometric Information Privacy Act (BIPA)?

The Illinois Biometric Information Privacy Act (BIPA) is a state law enacted in 2008 that regulates how companies collect and use biometric identifiers and biometric data.

Biometric identifiers include:

- Fingerprints
- Facial recognition scans
- Voiceprints
- Retinal or iris scans.[25]

The law requires companies to:

- Notify individuals before collecting biometric data
- Obtain written consent
- Securely store the data
- Delete the data when it is no longer needed.

## Why does protecting biometric privacy matter?

Biometric identifiers are unique and permanent characteristics of an individual. Unlike passwords or credit card numbers, *biometric information cannot be changed if compromised or misused*. For example, if biometric data such as a facial scan is collected without proper safeguards, it could potentially be used to identify an individual across different systems that rely on facial recognition technology.

Because of this, many policymakers consider biometric information particularly sensitive and have adopted laws requiring stronger protections related to consent, storage, and data retention. Strong legal protections help ensure individuals maintain control over their biometric data and reduce risks related to identity theft, unauthorized tracking, or misuse of personal data.[26]

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[25] Illinois General Assembly – *Biometric Information Privacy Act (740 ILCS 14)*, https://www.ilga.gov
[26] National Conference of State Legislatures – *Biometric Privacy Laws*, https://www.ncsl.org

# Data Centers in Aurora: FAQs

## How is artificial intelligence related to privacy, and why do some companies argue that BIPA creates challenges?

Artificial intelligence (AI) systems often rely on large datasets that may include images, voice recordings, or other information that could be used to identify individuals. Some technology companies have expressed concerns that strict biometric privacy laws can create legal risks or compliance challenges when training AI systems that may involve biometric information.

At the same time, privacy advocates emphasize that strong safeguards are necessary because biometric identifiers are permanent and highly sensitive forms of personal data. As AI technologies evolve, policymakers are continuing to evaluate how to balance technological innovation with privacy protections.

## How could BIPA-style protections help address concerns about AI?

Artificial intelligence systems often rely on large datasets that may include facial images, voice recordings, or other biometric information. Municipal governments generally cannot prohibit the use of artificial intelligence technologies, which are widely used across many industries. However, cities can address certain related concerns through zoning and development regulations, transparency and privacy policies, and coordination with state and federal regulatory frameworks. Policies modeled on BIPA can help address public concerns by requiring:

- Transparency about data collection
- Consent before biometric information is captured
- Limits on data sharing or sale
- Secure storage and deletion requirements

These protections help ensure new technologies operate in a way that respects privacy and individual rights.

## Why is the City addressing privacy issues at the local level?

Aurora is a Home Rule municipality, which allows the City to adopt local regulations that protect residents and address community concerns. Local standards can complement state law by:

- Reinforcing compliance expectations
- Providing local enforcement mechanisms
- Helping maintain continuity of protections if state laws change in the future

# Data Centers in Aurora: FAQs

Municipalities regularly adopt local ordinances that mirror or reinforce state policy frameworks when an issue has significant local impacts. For example, Illinois cities commonly adopt local regulations that build upon state law in areas such as:

- Labor and employment standards, where some municipalities adopt local wage or workplace regulations consistent with state law
- Building and safety codes, where municipalities frequently adopt standards that exceed state minimum requirements
- Local licensing requirements for restaurants, liquor establishments, and other regulated businesses, even when they are already regulated at the state level

In these cases, local governments are not replacing state law, but reinforcing existing policy frameworks and ensuring clear expectations for businesses operating within their jurisdiction.

Aurora's proposed biometric privacy provisions follow a similar approach. The intent is not to replace the Illinois Biometric Information Privacy Act (BIPA), but to complement existing protections and help ensure that companies operating within the City follow clear privacy standards in a fast-developing industry.

## If companies or governments outside Illinois may mishandle biometric data, why do local privacy protections still matter?

Transparent operations by data centers were a common theme of public sentiment amongst Aurora residents.

While no single law can control how biometric data is handled everywhere in the world, local protections can still play an important role in ensuring that companies operating within the community respect privacy and follow responsible data practices.

Although Aurora generally cannot regulate how individuals, companies, or governments operate outside its borders, the City does have the authority to establish standards for companies operating within their limits. Local policies can help ensure that organizations doing business in Aurora follow clear rules related to the collection, storage, retention, sharing, and sale of biometric data.

Because biometric identifiers are permanent characteristics of an individual—and cannot be changed if compromised or misused—Aurora is evaluating protections to help ensure that strong privacy standards remain in place for data centers operating within the City, even if state laws such as the Illinois Biometric Information Privacy Act (BIPA) were weakened or changed in the future.

# Data Centers in Aurora: FAQs

Even when biometric data may be collected or processed elsewhere, local laws can help ensure that companies operating in Aurora follow clear and enforceable privacy standards. These policies help ensure that residents, employees, and visitors in Aurora benefit from consistent protection when their biometric information may be collected, stored, or processed by facilities operating within the City.

## How would a local BIPA-like ordinance work?

A local ordinance modeled on BIPA would reinforce requirements for companies operating within Aurora that collect or use biometric information. Such an ordinance could require:

- Notice and informed consent before collecting biometric data
- Secure storage of biometric information
- Deletion once the data is no longer needed
- Limits on sharing or selling biometric information

If BIPA were repealed or significantly weakened, companies operating in Illinois would no longer be subject to the specific biometric privacy protections currently required under state law. Without these provisions, companies would still be subject to other general privacy, consumer protection, and data security laws, but the specific safeguards governing biometric identifiers could be reduced or eliminated.

A local-BIPA like ordinance would provide a safeguard for individuals whose biometric data is collected or used in Aurora data centers. This protects anyone, Aurora residents included, who have biometric information stored or used in Aurora data centers. Individuals whose biometric data is improperly collected or used by companies operating in Aurora data centers may bring legal claims even if they do not live in Aurora.

Because biometric information is unique and generally cannot be changed if compromised, many policymakers and privacy advocates view these protections as an important safeguard for individuals. Aurora's policy discussions reflect a desire to ensure that strong privacy protections remain in place for residents, regardless of potential future changes to state law and regardless of how other companies operate outside of Illinois.

## How would Aurora know if biometric privacy protections are being followed?

While the Illinois Biometric Information Privacy Act (BIPA) remains in effect, Aurora's proposed privacy provisions would primarily require an additional step: companies operating data centers in the City would provide annual confirmation that they are complying with BIPA's requirements. This type of reporting helps ensure transparency and provides the City with assurance that facilities operating locally are aware of and following existing privacy obligations.

# Data Centers in Aurora: FAQs

BIPA is primarily enforced through private legal actions, and many claims brought under the law have occurred through class action lawsuits when individuals believe their biometric information was collected or used without proper notice or consent. These cases often arise when individuals—such as employees, customers, or visitors—learn that biometric systems were used in workplaces or public-facing services. In some cases, individuals may discover the use of biometric technology through workplace policies, software disclosures, or internal company practices that did not fully comply with BIPA's notice and consent requirements.

Aurora's proposed provisions are intended to reinforce these protections locally. If BIPA were repealed or weakened in the future, the City's ordinance would help ensure that similar biometric privacy standards would continue to apply to data centers operating within Aurora. The goal of these provisions is to maintain clear expectations and accountability for companies operating in the City, while supporting responsible technology development and protecting individual privacy.

## Does BIPA drive development to other states, and will having similar language drive data center development out of Aurora?

Some technology companies and industry groups have expressed concerns that strict biometric privacy laws can increase legal risk or compliance costs for companies developing artificial intelligence systems or biometric technologies. As a result, these companies sometimes argue that laws such as BIPA may make certain types of technology development more challenging.

At the same time, many factors influence where data centers are located, such as:

- Access to reliable and affordable electricity
- Proximity to fiber optic networks and internet exchange points
- Availability of large industrial parcels
- Regional demand for cloud and computing services
- Tax incentives and economic development policies

Because of these factors, the *Chicago metropolitan region remains one of the largest data center markets in North America,* despite the presence of BIPA and other regulatory requirements. Data centers currently looking to operate in Illinois should already be preparing to meet these standards being proposed by Aurora.

# Data Centers in Aurora: FAQs

# Aurora's Proposed Data Center Requirements

## What is Aurora proposing to address data center development?

Aurora is proposing updates to its zoning ordinance and development standards to better address the unique characteristics of data center facilities. These proposed regulations are intended to:

- Protect local infrastructure capacity
- Ensure compatibility with surrounding neighborhoods
- Transparently address operational impacts such as noise, water use, and electricity demand
- Provide clear expectations for developers and residents

The goal is to create predictable standards tailored to data center operations, rather than regulating them under the same framework currently used for warehouses.

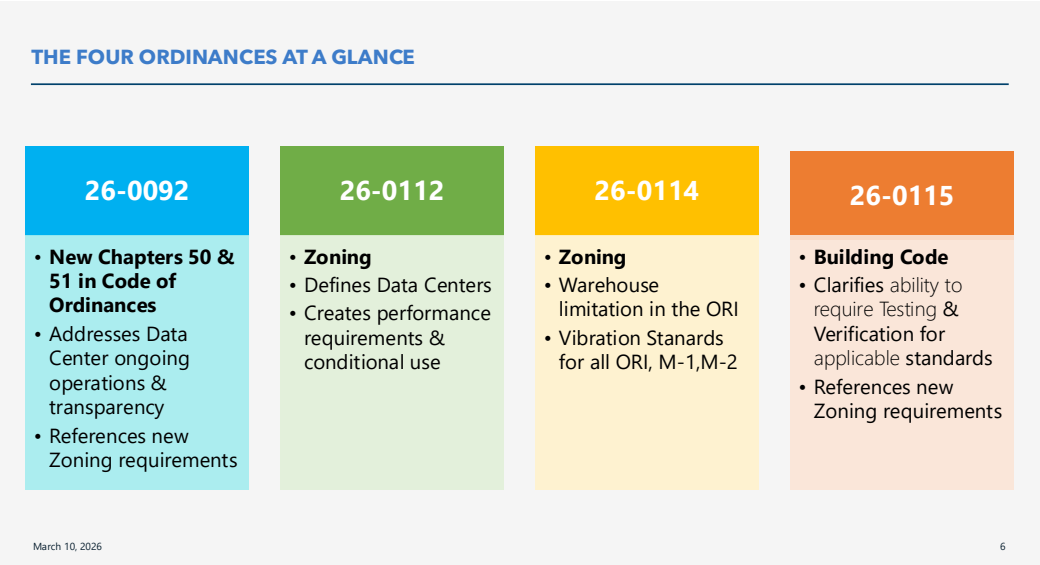
**PROPOSED CHANGES – HIGH LEVEL**

| Topic | BEFORE (Current Situation) | AFTER (Proposed Changes) |
|---|---|---|
| **NOISE** | Difficult to measure and enforce Illinois pollution control board standards referenced | Clear day and nighttime noise limits at property lines. Professional sound study required before approval. Require continuous monitoring of noise & vibration. Independent sound testing before the facility opens and if complaints are filed. |
| **WATER USE** | No required water impact study specific to data centers. | Detailed water study required showing source, demand, and community impact. Encourage water-efficient cooling systems and prohibit contaminated discharge & evaporative cooling. Annual reporting required. Water use limits set at approval. Penalties if approved limits are exceeded. |
| **ENERGY USE & GRID STRAIN** | No specific energy efficiency or renewable requirements. | On-site renewable energy or battery storage required. Energy efficiency standards and peak demand management plan required. Require energy efficiency standards and peak-demand management plans. Energy plan reviewed during approval. Reporting of electricity use. |
| **EMISSIONS** | Backup generators permitted under general regulations. | Cleaner engine standards required. Air quality impact review required. Must meet state and federal air quality standards. Simultaneously testing restricted to 2 generators at a time. |
| **PRIVACY & AI PROTECTIONS** | No local standards specific to data centers. | Required compliance with strict data privacy safeguards. Written data governance policies required. Annual compliance certification. |
| **TRANSPARENCY** | No ongoing public reporting specific to data centers. | Annual public reporting of water use, energy consumption, and noise. Reports posted online. |

To make these changes, City Staff is proposing a package of text amendments to City Council. The four ordinances are separate because they specifically deal with different intentions and pieces of Zoning, Building Codes, and the municipal Code of Ordinances. The ordinances all work together to make a comprehensive framework for addressing data center development and operations.

The explanation of each ordinance is below.

# Data Centers in Aurora: FAQs




Legistar 26-0092
Legistar 26-0012
Legistar 26-0014
Legistar 26-0015

A summary of the proposed requirements can be found here. A presentation of the proposed requirements that was presented to the Rules, Administration, and Procedures Committee can be found here.

## Can these requirements be met by data centers?

Yes. Aurora's proposed regulations are intended to reflect emerging best practices and establish clear expectations for projects proposed within the City. Many communities across the United States have adopted similar standards addressing issues such as infrastructure coordination, noise mitigation, energy use, and water consumption. Data center developers routinely design facilities to meet local zoning and operational requirements, which vary widely across jurisdictions.

# Data Centers in Aurora: FAQs

The City of Aurora proposed changes will require new data centers to meet the following energy and water requirements:

| | |
|---|---|
| 1.2 Power Usage Effectiveness (PUE) | 25% peak load on-site renewables OR 50% peak capacity for 15 minutes of on-site energy storage[27] |
| 0.2 Water Usage Effectiveness (WUE) | |

Power Usage Effectiveness (PUE) measures how efficiently a data center uses electricity. It is calculated by dividing the total energy used by the facility by the energy used by the IT equipment (servers, storage, and networking equipment).

A lower PUE indicates greater efficiency. A PUE of 1.0 would mean that nearly all electricity is used directly by computing equipment, with little additional energy used for cooling, lighting, or other building systems. Industry-wide, the average PUE for data centers is approximately 1.5–1.6, although newer facilities often achieve lower values through improved cooling and energy management.

Water Usage Effectiveness (WUE) measures how efficiently a data center uses water. It is calculated by dividing the total annual water use of the facility by the energy used by the IT equipment. WUE is typically expressed as liters of water per kilowatt-hour (L/kWh) of IT energy use. Lower WUE values indicate more water-efficient operations.

Water use varies significantly depending on cooling technology. Facilities that rely on evaporative cooling systems typically have higher WUE values, while air-cooled or closed-loop systems generally use far less water.

These standards reflect current industry best practices and will help ensure that new data centers developed in Aurora represent the highest level of operational performance. They are designed to minimize impacts on local and municipal water resources while reducing strain on the surrounding electrical grid. Below are examples of existing data centers that are meeting these requirements.

[27] Off-site renewables or storage can be used to meet the criteria if approved to be infeasible for the specific site by the City.

# Data Centers in Aurora: FAQs

## Existing Data Centers Examples - PUE and WUE Performance

| *Provider* | *PUE* | *WUE* | *Notes* |
|---|---|---|---|
| ***Colovore (Aurora)*** | ~1.33 | Closed loop so likely low | 8 MW total with 6 MW IT load. |
| ***Meta / Facebook*** | ~1.08–1.10 | ~0.24 L/kWh | Benchmarks show water efficiency among best operators. Meta has historically publicly shared efficiency dashboards reporting PUE values below 1.10 for some facilities. |
| ***LuxConnect (LU)*** | ~1.3 | ~0.206 L/kWh | Very low water usage with efficient cooling methods. |
| ***Google*** | ~1.06–1.10 | Not regularly published | Known for excellent cooling (metal channel, free cooling) leading to low PUE; frequently reports quarterly PUE metrics with best-in-class results below 1.10. |
| ***Amazon Web Service (AWS)*** | ~1.04–1.15 | Not widely published | Some regions have very competitive energy efficiency. Some AWS sites report best-in-class PUE near ~1.04. |
| ***Switch SUPERNAP*** | ~1.18 | Not widely published | Efficient HVAC, airflow management, and containment drive performance. |

## Existing Data Center Examples - Renewables and/or Battery Storage

| *Project / Facility* | *On-Site Renewables* | *Battery / Storage Capacity* |
|---|---|---|
| ***Iron Mountain NJ Data Center (Edison)*** | ~7.2 MW rooftop solar | 23 MWh Battery Energy Storage System |
| ***Creekstone Data Center (Utah)*** | Solar generation can cover 60 – 80 % of site's energy via solar & storage | Co-located battery/long duration storage planned |
| ***Aligned Data Centers Pacific NW*** | N/A | ~62 MWh Battery Energy Storage System with a 31 MW battery system |
| ***Google-associated Arizona Solar & Battery*** | 260 MW solar | ~1 GWh Battery Energy Storage System near data center site |
| ***Apple Reno/Nevada-area data center*** | Significant on-site solar generating capacity | Uses battery storage to shift solar to night loads (reported ~80 % renewable achieved with storage) |

# Data Centers in Aurora: FAQs

## Will these proposed requirements drive away development?

Clear and predictable regulations generally support responsible development rather than discourage it.

Developers typically seek locations where regulatory expectations are clear and consistent. Establishing defined standards can help reduce uncertainty during the development process and allow projects that meet those standards to move forward more efficiently.

Aurora's goal is to provide clarity for developers while protecting community infrastructure and residents. This ordinance provides clarity so projects that do comply can move forward without future risk.