Data Centers Development in U.S. Cities

Bloomberg Associates

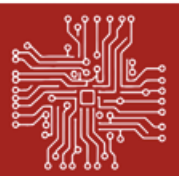
What are Data Centers?

- Data centers are **facilities containing racks of computer servers that store, process, and transmit digital information**, supported by networking equipment and systems for electricity, backup power, and cooling.

- They are used for **digital services** such as cloud tools and artificial intelligence (AI) applications, financial systems, logistics, and government platforms.

Understanding Data Center Workloads

HIGHEST IMPACT



AI TRAINING FACILITIES: Large facilities that process large data sets over extended computing runs, characterized by the highest energy and cooling intensity due to continuous, demanding computational tasks.

NON-AI HYPERSCALE CENTERS: Very large and continuously operating facilities that are used for general cloud computing, storage, and enterprise workloads. Require significant, but less concentrated power needs than AI Training Facilities.

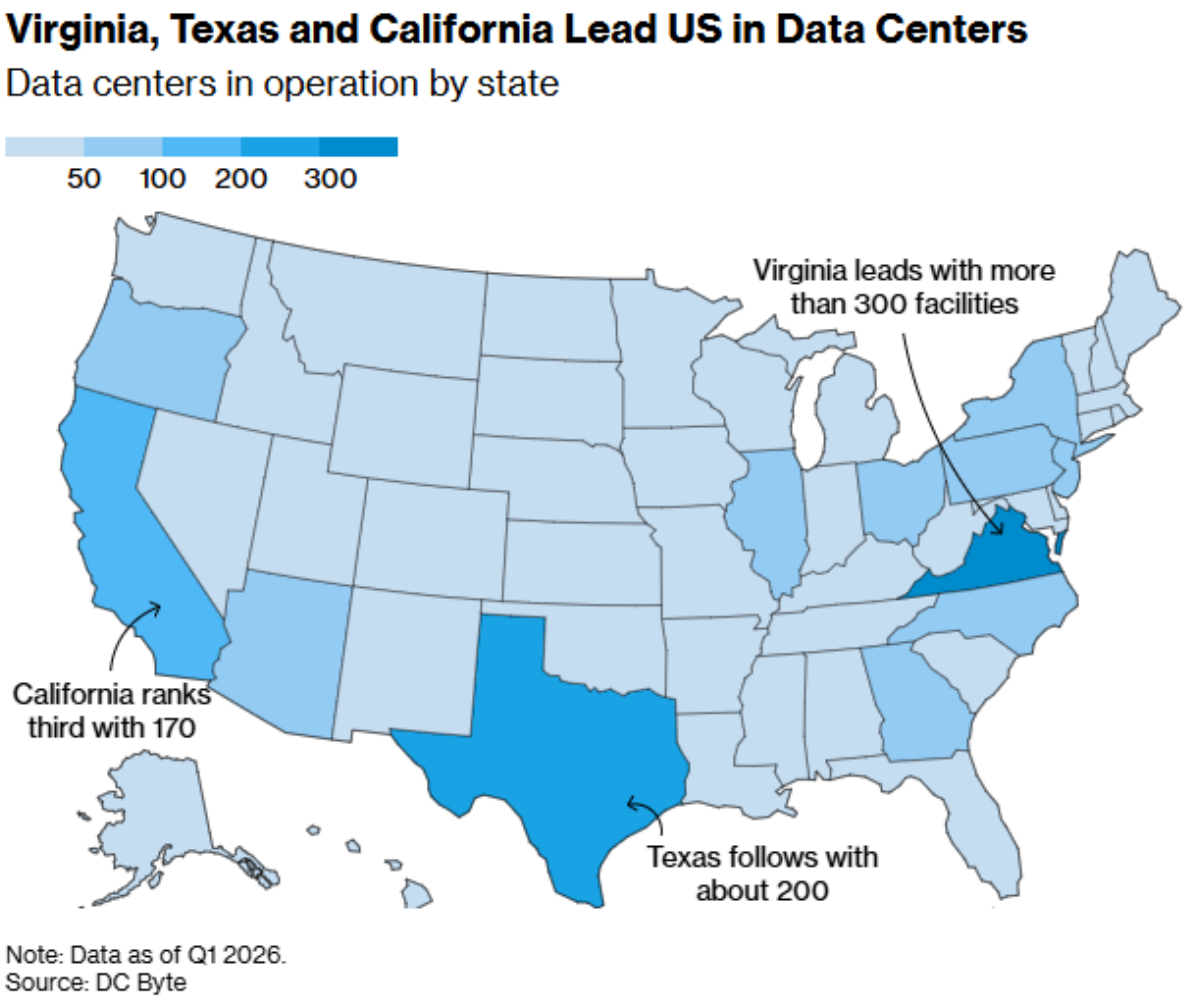
AI INFERENCE FACILITIES: Smaller, distributed facilities that run optimized, pre-trained models for specific tasks. Require less power than training facilities and often need to be closer to users due to low latency requirements.

LOWEST IMPACT

COLOCATION FACILITIES: Multi-tenant sites with more variable energy load profiles and cooling needs. Feature the lowest relative intensity, housing diverse workloads.

Growth of Data Centers in U.S

- **Hundreds of data centers are currently under construction,** and more than **1,500 additional facilities are in the broader U.S. development pipeline.**
- U.S. data centers are projected to consume nearly **12% of the nation's electricity by 2030,** compared to 4.4% in 2023.*
- Virginia, Texas, Illinois, Georgia, and Arizona account for over half of the growth.



*Source: Lawrence Berkeley National Laboratory, June 2026.

Data Center Impacts

Energy and Water: Data centers have unusually high infrastructure demands. They require large, immediate electricity loads (with hyperscale centers using between 20-100 MW, equivalent to the electricity needed to serve between 16,000 and 82,000 households) and millions of gallons of water per day.

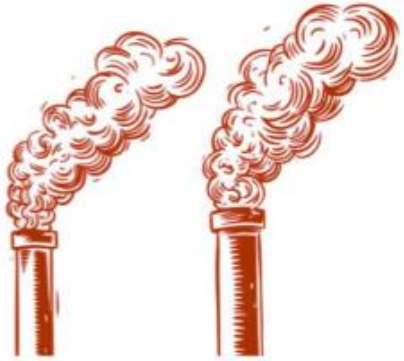
Jobs: Data centers generate short-term construction jobs, and a limited number of permanent jobs in operations.

Tax Revenue: Data centers can generate significant property, sales, and income tax revenue.

Noise: Equipment at data centers can cause noise levels which contribute to short- and long-term health impacts, including sleep disturbance, cardiovascular effects, and hearing impairment.

Community Investment: Through community benefits agreements and other negotiations, data centers can bring additional discretionary investments for community priorities such as local jobs, energy and water infrastructure, residential energy upgrades, and schools.

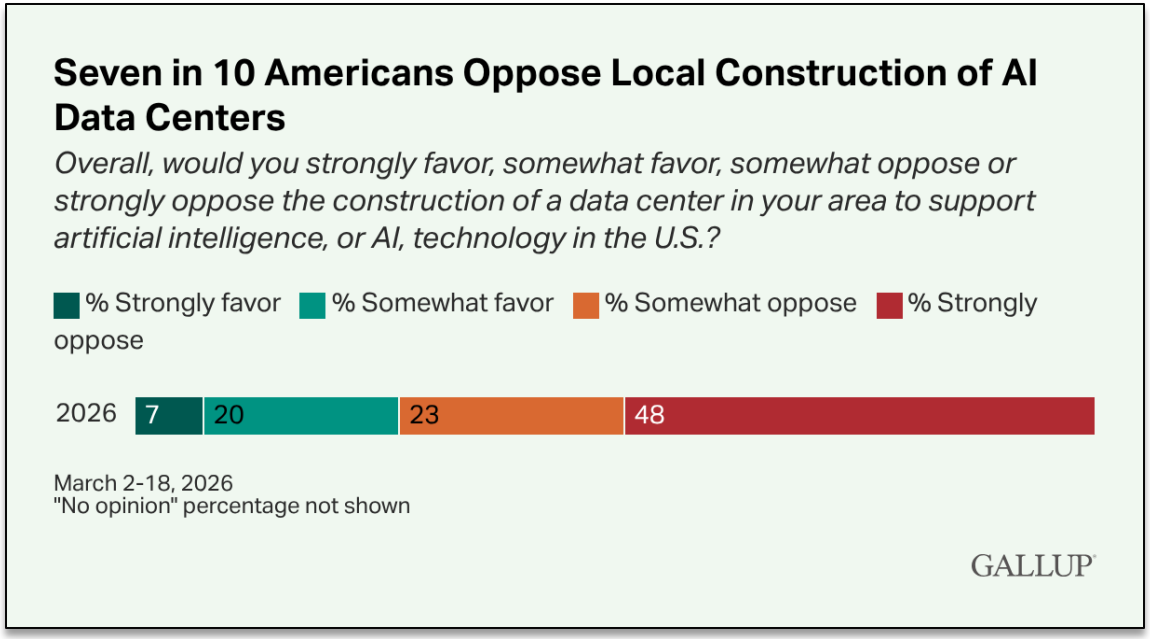
Land Use: Data centers have large footprints (some up to 200-500 acres) with no street activation. These facilities are typically large, windowless industrial buildings or multi-building campuses surrounded by security fencing, electrical substations, and cooling equipment.



Air Quality: Data centers need backup power to cover outages on the grid. Most data centers use fossil fuel generators for backup power, which are usually diesel-powered and emit PM2.5, NOx, and ultrafine particles.

Public Perception of Data Centers

- A recent Gallup poll shows that **seven out of ten Americans oppose data center construction in their area.**
- **Opposition has grown sharply since 2025**. While 26% of respondent opposed new data centers in their area in March 2025, that figure rose to **65% opposition by April 2026** (Change Research).
- Opposition is most often linked to **concerns over increased electricity bills, grid reliability, and excessive water usage**.



Shaping Sustainable Data Center Development

1 Negotiate with Intent

- **Engage residents early and transparently** so the City understands resident concerns before negotiations begin and can represent them with developers.
- **Set clear requirements and pathways** when entering negotiations to reduce friction, shorten negotiations, and strengthen the City's position.
- **Think holistically** and ensure negotiations include the full range of interactions between the company and city.

2 Coordinate Beyond City Boundaries

- **Coordinate with peer municipalities** on standards, incentives, conditions, and negotiated outcomes to create collective expectations.
- **Engage regional partners** across electricity, water, and air quality systems.
- **Amplify collective positions at the state level** where local authority is constrained.

3 Leverage Data Center Development to Advance Climate and Sustainability Goals

- **Use data center investment to advance clean energy and grid resilience** by going beyond impact mitigation to pursue broader climate and energy benefits.
- **Capture community benefits from data center investment** through commitments and investments that deliver value to residents and the broader community.

Land Use Planning and Design

- Define data centers as **their own class within zoning codes.**
- Create **zoning and overlay districts for data centers,** so the City can decide in advance where they can go and what rules apply when they sit close to neighborhoods.
- Establish clear, **specific site requirements** into the permit process, covering distance from homes, water use, road access, and grid capacity.
- Adopt **design standards** addressing height, footprint, noise mitigation, etc.
- Require **Conditional-Use Permits** with performance requirements and clear standards before being built.
- Enact **temporary moratoria** to pause new data center approvals with the goal of developing targeted policy.

Land Use Planning and Design

- Define data centers as **their own class within zoning codes.**
- Create **zoning and overlay districts for data centers,** so the City can decide in advance where they can go and what rules apply when they sit close to neighborhoods.
- Establish clear, **specific site requirements** into the permit process, covering distance from homes, water use, road access, and grid capacity.
- Adopt **design standards** addressing height, footprint, noise mitigation, etc.
- Require **Conditional-Use Permits** with performance requirements and clear standards before being built.
- Enact **temporary moratoria** to pause new data center approvals with the goal of developing targeted policy.

Land Use Planning and Design

Policy:

- **Prohibits data centers within its Beltline Overlay district** and within a half mile of transit stations and requires special use permits for data centers with energy, water, and tree removal disclosure.

Tools:

- **Removed "as of right" approval.**
- **Created a zoning and overlay district** for data centers.

Outcomes:

- **Compatibility** with surrounding land uses.
- **Reduced community and environmental impacts.**
- Alignment with **infrastructure capacity**.
- Increased **transparency.**

Credit: ©Rafael Macia

Electricity Rates

Cities with Municipal Utility

- Design **special data center tariffs** that require full cost recovery and prohibit cost-shifting away from developers.
- **Scrutinize special contracts** and ensure costs are not shifted to households or businesses.
- Require **100% additional clean energy.**
- Design rates to **encourage reducing or shifting of power use during peaks**.
- Require **on-site storage or microgrids**.
- Tie interconnection approval to **developer-funded grid upgrades**.
- Require participation **in demand-response programs**, which ask data centers to reduce or shift electricity use when the power grid is under high demand or stress.
- **Require project co-benefits** and explore shared infrastructure investments.

Cities with State-Regulated Utility

- Negotiate **community benefits agreements**.
- Condition land use approval on **infrastructure and sustainability requirements**.
- Engage with **state legislators and Public Utilities Commission.**
- **Leverage renegotiation** of franchise agreement with utilities.
- Coordinate with **peer cities**.

Electricity Rates

Cities with Municipal Utility

- Design **special data center tariffs** that require full cost recovery and prohibit cost-shifting away from developers.
- **Scrutinize special contracts** and ensure costs are not shifted to households or businesses.
- Require **100% additional clean energy.**
- Design rates to **encourage reducing or shifting of power use during peaks**.
- Require **on-site storage or microgrids**.
- Tie interconnection approval to **developer-funded grid upgrades**.
- Require participation **in demand-response programs**, which ask data centers to reduce or shift electricity use when the power grid is under high demand or stress.
- **Require project co-benefits** and explore shared infrastructure investments.

Cities with State-Regulated Utility

- Negotiate **community benefits agreements**.
- Condition land use approval on **infrastructure and sustainability requirements**.
- Engage with **state legislators and Public Utilities Commission.**
- **Leverage renegotiation** of franchise agreement with utilities.
- Coordinate with **peer cities**.

Electricity Rates

Policy:

- **Approved a tariff for customers above 100 MW** that requires them to sign long-term power contracts with steep penalties for early exit and requires utilities to demonstrate that large customers will shoulder all additional interconnection and transmission costs.

Tools:

- **Design special data center tariffs** that require full cost recovery and prohibit cost-shifting.
- **Engage with state legislators and the Public Utilities Commission.**

Outcome:

- **No cost-shifting** onto households or small businesses.

Water Usage

General

- Include requirements for data center water use in **building codes and design standards.**
- **Conduct water availability and environmental assessments.**
- Engage in **regional water resource coordination.**
- Require **audited water use reports** for business licenses.
- Collaborate with the state to set **daily groundwater withdrawal limits.***

Municipal Utilities

- Require a **conservation plan** with water applications from large quantity customers.
- Set **daily consumption limits.**
- Enforce the **Clean Water Act's pretreatment regulations** for industrial users.
- Integrate data center water use in **master and asset management plans.**
- Prohibit water departments from supplying **potable water for cooling.**
- **Require developers/users to pay** for new or upgraded infrastructure.

Private Utilities

- **Regulate asset planning and wastewater management** between utilities and data centers.
- Enforce State Pollutant Discharge Elimination System **(SPDES)** programs.**

*Where states manage groundwater rights **In states authorized to implement Clean Water Act programs

Water Usage

General

- Include requirements for data center water use in **building codes and design standards.**
- **Conduct water availability and environmental assessments.**
- Engage in **regional water resource coordination.**
- Require **audited water use reports** for business licenses.
- Collaborate with the state to set **daily groundwater withdrawal limits.***

Municipal Utilities

- Require a **conservation plan** with water applications from large quantity customers.
- Set **daily consumption limits.**
- Enforce the **Clean Water Act's pretreatment regulations** for industrial users.
- Integrate data center water use in **master and asset management plans.**
- Prohibit water departments from supplying **potable water for cooling.**
- **Require developers/users to pay** for new or upgraded infrastructure.

Private Utilities

- **Regulate asset planning and wastewater management** between utilities and data centers.
- Enforce State Pollutant Discharge Elimination System **(SPDES)** programs.**

*Where states manage groundwater rights **In states authorized to implement Clean Water Act programs

Water Usage

Policy:

- **Developed a city-owned $31M water reuse utility** that treats data center cooling-water wastewater and returns it to the Microsoft campus for reuse, reducing reliance on potable groundwater and municipal treatment capacity.
- **Structured the project so the data center user pays the costs.** Microsoft financed the system's capital and operating costs under a 30-year agreement, while future users must pay connection and upgrade costs.

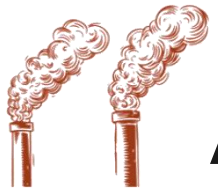
Tools:

- **Require developers/users to pay** for new or upgraded infrastructure.

Outcome:

- **Created a circular water supply that offsets an estimated 138 million gallons of water demand annually**, reduces pressure on groundwater resources and municipal wastewater infrastructure, and preserves city ownership and operational control.

Credit: ©Wikimedia Commons



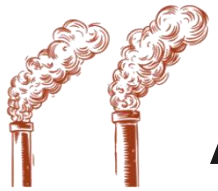
Air Quality and Noise

City-Led

- Conduct an **environmental screen of noise and air pollution.**
- **Prohibit on-site fossil fuel generation** for primary or routine operations.
- **Restrict the use of diesel generators** to encourage backup options with lower emissions.
- **Restrict generator operation to emergencies** and testing windows to limit public exposure to noise.
- Require a **traffic analysis and transportation plan** to plan ways to reduce congestion and other potential neighborhood disruptions.
- **Update design rules** to keep data centers farther from residential areas and reduce noise and air pollution.
- Establish **noise limits** through zoning or other ordinances.
- Mandate independent **noise impact studies**.
- Ensure a **noise complaint and monitoring process.**

City-State Coordination (Air Quality only)

- Mandate **air quality permits** for industrial backup generators.
- **Establish standards for NOx and PM emissions** from distributed energy sources.
- Prohibit generator testing and maintenance **on days with high air pollution.**
- **Set annual hourly limits** on non-emergency generator use.



Air Quality and Noise

City-Led

- Conduct an **environmental screen of noise and air pollution.**
- **Prohibit on-site fossil fuel generation** for primary or routine operations.
- **Restrict the use of diesel generators** to encourage backup options with lower emissions.
- **Restrict generator operation to emergencies** and testing windows to limit public exposure to noise.
- Require a **traffic analysis and transportation plan** to plan ways to reduce congestion and other potential neighborhood disruptions.
- **Update design rules** to keep data centers farther from residential areas and reduce noise and air pollution.
- Establish **noise limits** through zoning or other ordinances.
- Mandate independent **noise impact studies**.
- Ensure a **noise complaint and monitoring process.**

City-State Coordination (Air Quality only)

- Mandate **air quality permits** for industrial backup generators.
- **Establish standards for NOx and PM emissions** from distributed energy sources.
- Prohibit generator testing and maintenance **on days with high air pollution.**
- **Set annual hourly limits** on non-emergency generator use.

Air Quality and Noise

Policy:

- **Restricted data center siting and generator emissions** by limiting hyperscale facilities to heavy industrial areas, requiring a 1,000-foot buffer from residential and other non-industrial properties, and requiring diesel backup generators to meet EPA Tier 4 or Tier 4-equivalent emission standards.
- **Limited routine generator testing** to Monday through Friday, 10:00 a.m. to 4:00 p.m., and required hyperscale facilities to provide 24-hours' notice to nearby property owners and post scheduled testing online.

Tools:

- **Update design rules** to keep data centers farther from residential areas and reduce noise and air pollution.
- **Restrict the use of diesel generators** to encourage backup options with lower emissions.
- **Restrict generator operation to emergencies** and testing windows to limit public exposure to noise.
- **Ensure a noise complaint and monitoring process.**

Outcome:

- **Reduced neighborhood exposure to generator emissions and noise** by separating hyperscale facilities from sensitive uses, requiring cleaner diesel technology, and constraining when routine generator testing can occur.

Economic Development

- Require Community Benefits Agreements to **secure enforceable commitments.**
- **Limit tax abatements, exemptions, or financial incentives** to projects that meet criteria.
- Tie eligibility for **incentives to specific project features and local employment outcomes.**
- Include **clawback mechanisms** to recover public incentives if data centers fail to meet agreed requirements.
- Condition **public investments** on developer contributions and alignment with city plans.
- **Design Tax Increment Financing** tools to capture a portion of additional property taxes.
- **Adjust tax structures** to capture the value created by data centers.

Thank You

Read the full report: