

UNDERSTANDING HYPERSCALE DATACENTERS:

Community Benefits, Concerns and
Environmental Impacts



WHAT IS A DATA CENTER?

- **A data center is secure, physical building that houses an information technology (IT) infrastructure, including servers, storage systems, and networking components**
- **Data centers process, store, and manage massive amounts of data, acting as the backbone of digital services like cloud computing, internet browsing, and artificial intelligence (AI) workloads**

Hyperscale data centers (HDCs)

- **Hyperscale data centers (HDCs) are very large, highly scalable, and efficient data center facilities operated by major cloud providers to support vast, higher-volume, and data-intensive AI and cloud services**
- **Often developed in a campus-like setting with multiple facilities on the same property**
- **AWS (Amazon), Azure (Microsoft), Meta (Facebook) and Alphabet (Google)**
- **Rapid rise of generative AI computing is driving the expansion of hyperscale data centers**
- **Historically concentrated in Virginia, California and Texas, HDCs are now popping up across the country**



Mississippi HDC Projects (and a nearby LA project)

NEWS

Amazon announces \$3 billion data center planned for Warren County

by [Katherine Lin](#)
November 20, 2025



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It's official: Amazon behind record \$10 billion investment in Mississippi

By: Sarah Ulmer - January 25, 2024

AVAIO Digital to construct \$6 billion data center in Rankin County

By [Caleb Salers](#) · August 19, 2025

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NEWS

What the \$10 billion Meridian data center project will mean for state. Get the details

[Ross Reilly](#)
Mississippi Clarion Ledger
Jan. 19, 2025, 4:02 a.m. CT

SPECIAL REPORT

Tiny Louisiana parish becomes AI boomtown as Meta builds \$10B data center: 'It's changing fast'

The \$10 billion Meta data center in Richland Parish is sparking opportunity and disappointment; 'It's changing fast'

By STEPHANIE RIEGEL | Staff writer Aug 20, 2025 10 min to read

Community Benefits



- **Massive Capital Investment**
 - Projects announced in Mississippi to date range from \$3B to \$25B

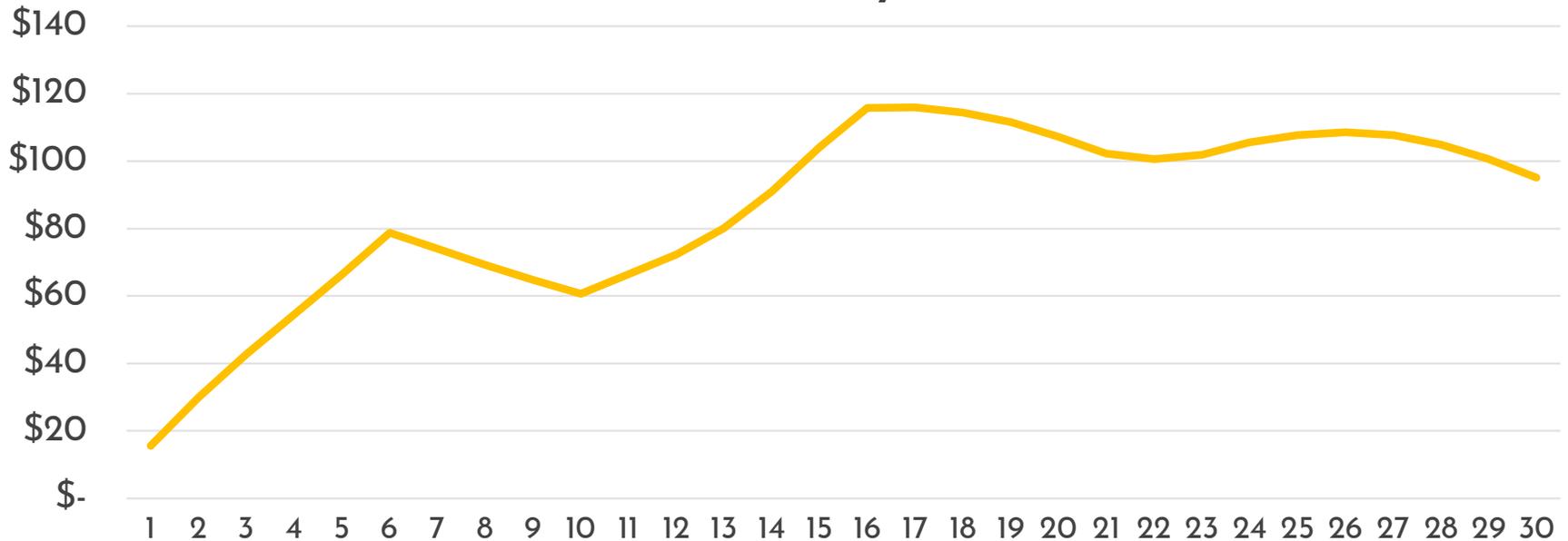
- **New jobs**
 - HDCs do not create 1,000s of new jobs
 - 30-60 per HDC depending on size and purpose (200-300 jobs based on 6 facilities)
 - But much higher salaries/wages

- **Derivative benefits throughout extended construction projects**
 - HDC campuses are multi-year projects employing thousands in the construction field
 - Hotels, restaurants and retail benefit
 - Local housing benefits

Projected City Property Tax Revenues by Year

	Year 1	Year 6	Year 10	Over 30 Years
City Revenues	\$15.61	\$78.74	\$60.62	\$2,570.08

In Millions \$ by Year



* Calculated on the basis of only six (6) new datacenter facilities constructed on the Clarksdale site over six (6) consecutive years and average floor plate size of 620,000 sq.ft. each

Funding Opportunities



- **Add new police personnel to improve public safety**
 - **Address blighted properties**
 - **Upgrade and repair existing infrastructure**
 - Repave streets
 - Improve stormwater drainage
 - **Provide inducements for new retail (e.g., grocery store)**
 - **Make community healthcare more accessible and sustainable**
 - **Improve parks and recreation assets (e.g., new playgrounds and sports fields)**
 - **Fund activity programming for community youth**
 - **Develop a long-range plan and fund it**
-

Other Local Revenue Benefits

- **Property tax projections do not capture the entire project impact.**
- **HDC campus projects yield multiple other community benefits**
 - Greater sales tax diversions to City from new hotel, restaurant, fuel and other retail sales over multi-year project development
 - Higher local discretionary income and spending arising from long-term construction period jobs and longer-term data center jobs



Community Concerns



Hyperscale Datacenters Have Evolved in Recent Years



- **Use energy more efficiently than ever**
 - **Closed loop cooling systems use substantially less water**
 - **Advances in cooling systems and acoustic insulation reduce noise**
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Emissions

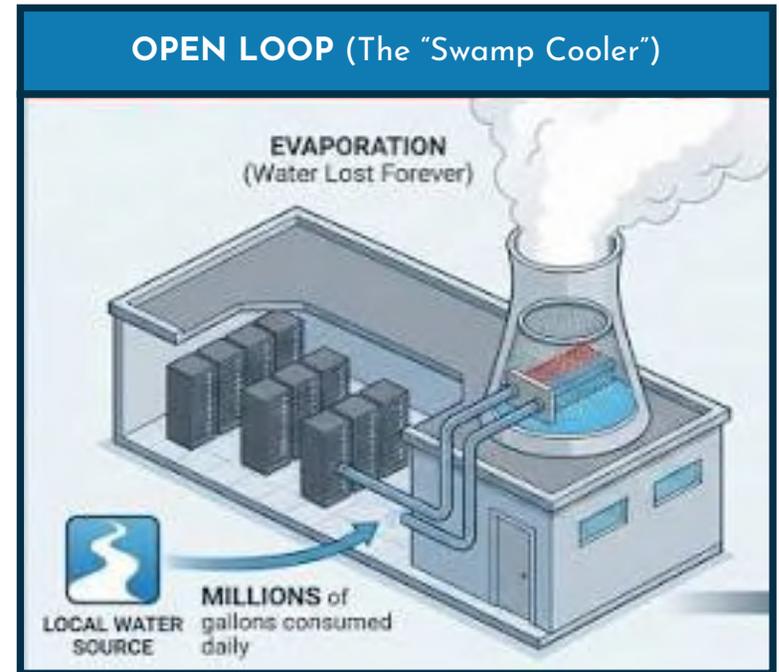
- **Only emissions are from back-up generators**
 - Run only during power outages and maintenance testing
 - Must still comply with state and federal air quality requirements
 - Usually require a Minor New Source Review (NSR) air permit
- **New HDCs are increasingly deploying BESS (Battery Energy Storage Systems)**



Water Usage

Open Loop Cooling Systems

- IT generates heat
- HDCs must keep internal temps cool
- In the past, many used water evaporation to cool hot server air
 - Referred to as a “open loop” system
 - Requires a continuous source of new water
- Often required tremendous volumes of water to maintain cool temps during hotter weather



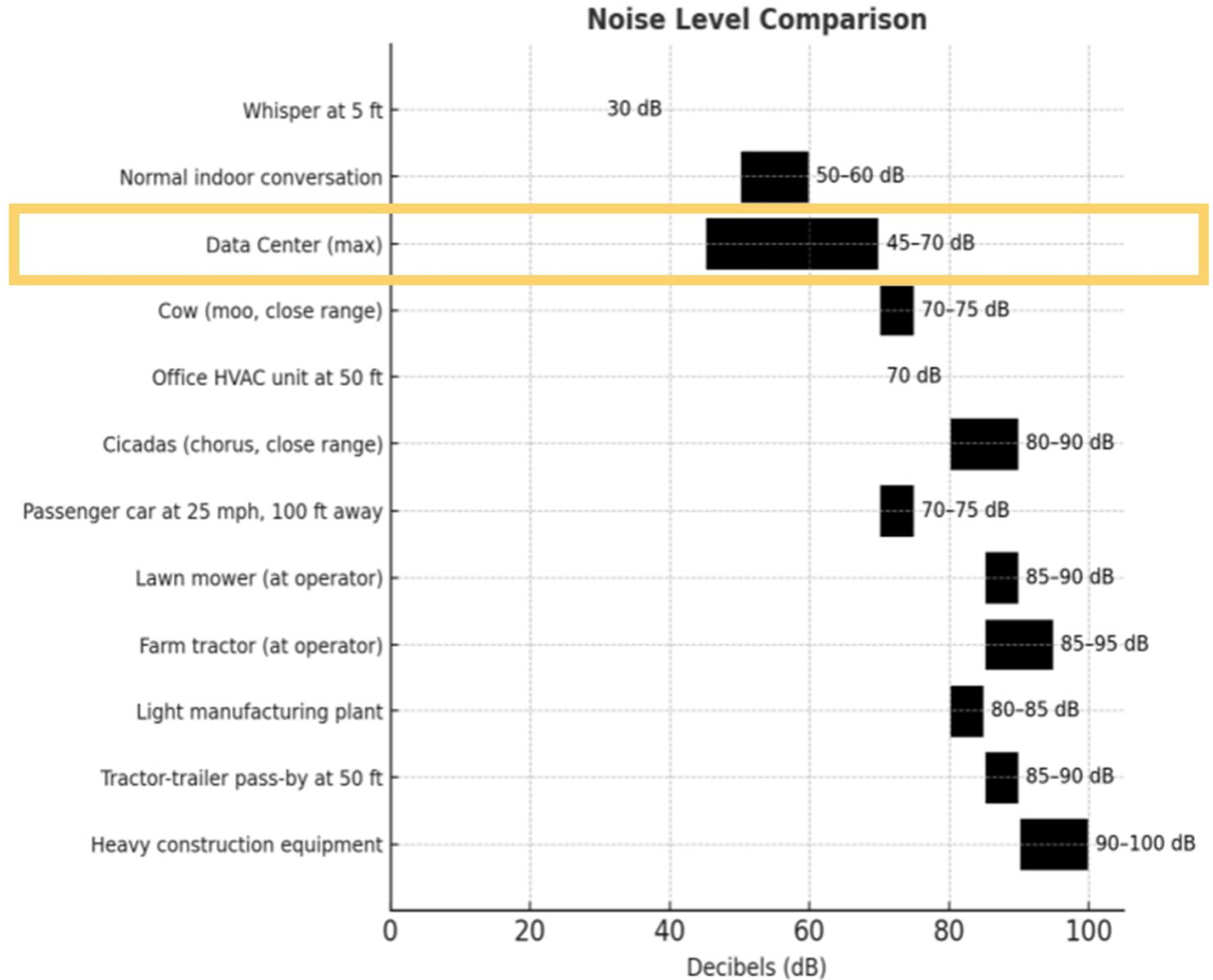
Water Usage

Closed Loop Cooling Systems

- Newer HDCs are installing “closed loop” systems that minimize water usage
- Cooling fluid is contained within a sealed environment
 - Minimizes need for regular maintenance.
 - Liquid does not come into contact with external contaminants, and almost never needs to be replaced or refilled.
 - Self-sustaining design ensures the liquid’s level, integrity and viscosity remain stable indefinitely.
- Translates into a more reliable, low maintenance and environmentally friendly cooling solution compared to open-loop or air-based alternatives



Noise



Noise



51.2 dBA



46.4 dBA



45.4 dBA



51.3 dBA



Rising Electrical Power Rates

- **Power rates have increased in some areas where a significant number of datacenters have located (e.g., Virginia)**
- **The reality is that power rates are already increasing**
 - **Power generation and transmission facilities built 50-60 years ago need to be replaced or materially upgraded**
 - **For smaller towns and cities experiencing depopulation and out-migration of business and industries, those residents and businesses that remain must bear the economic burden of funding municipal utility costs**

Rising Electrical Power Rates

- **As long as data centers are required to bear the cost of utility system upgrades and improvements, the community benefits**
- **Local residents and business benefit from utility system improvements; and**
- **The utility provider has a sizeable new customer to bear its portion of the ongoing operational costs of the system**

Another Possible Community Concern: Lumination / Lighting at Night

Lighting is directional
(downward) and targeted



Hyperscale Data Center Projects can be Transformative for Communities

- The potential to significantly transform the economic and quality of life of the communities in which they locate
- Offer immense opportunities for tax revenues, new investment, and quality job creation
- Fully fund public works projects, police and fire protection, parks and rec, as well as education

