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Data Center Developments and
NPDES permitting considerations

ACWA Industrial Permitting
Workshop April 8, 2026



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Topics covered today

- Data Center 101
- NPDES interactions
- Other considerations



Data Centers – why now?

Monthly Average Data Centers Starts Spending
(12-MMA in \$, Billions)



Source: ConstructConnect, spending figures represent recent years of same-month results.



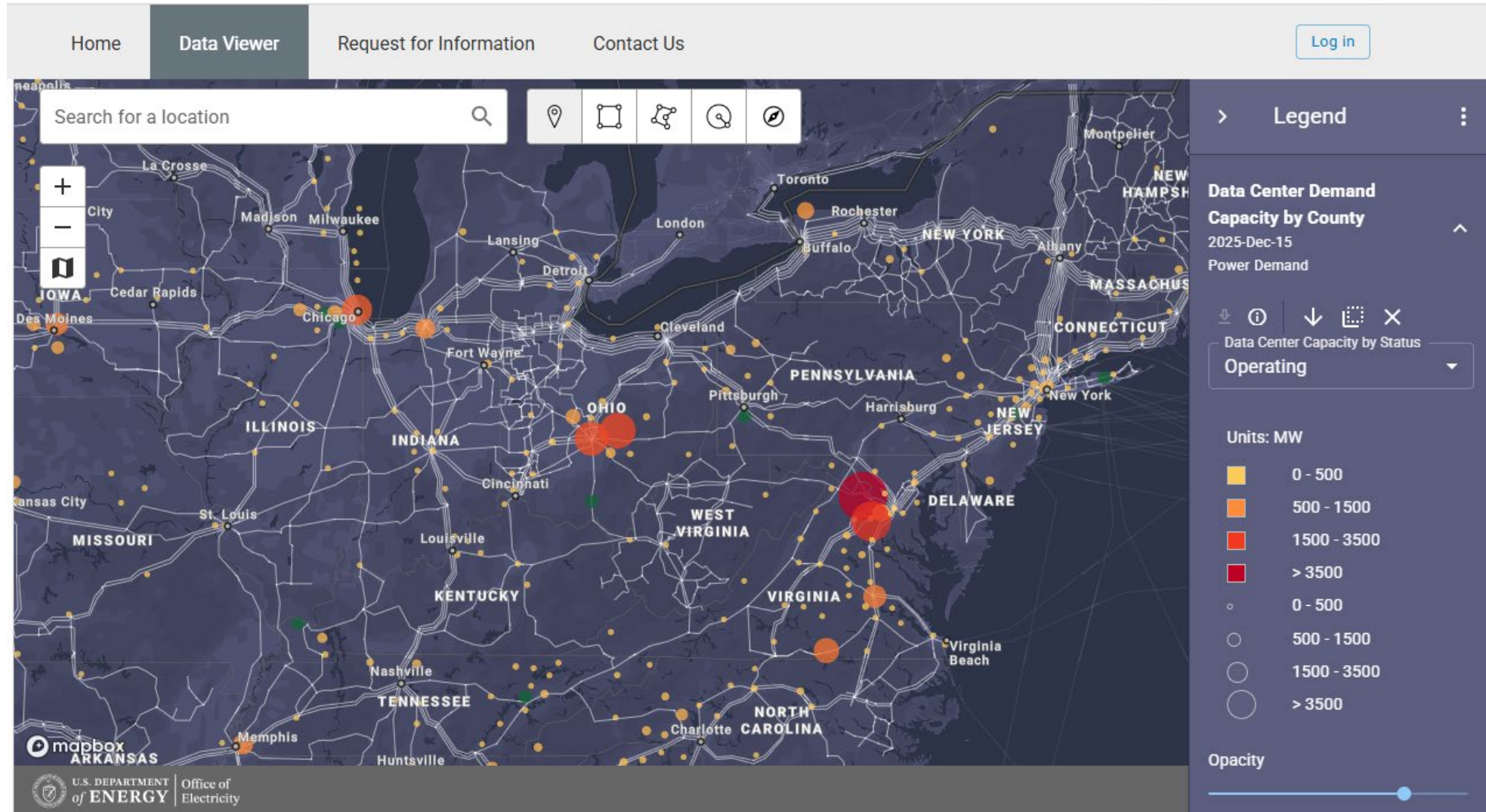
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Currently operating data centers

Accelerating Speed to Power



NATIONAL LABORATORY OF THE ROCKIES

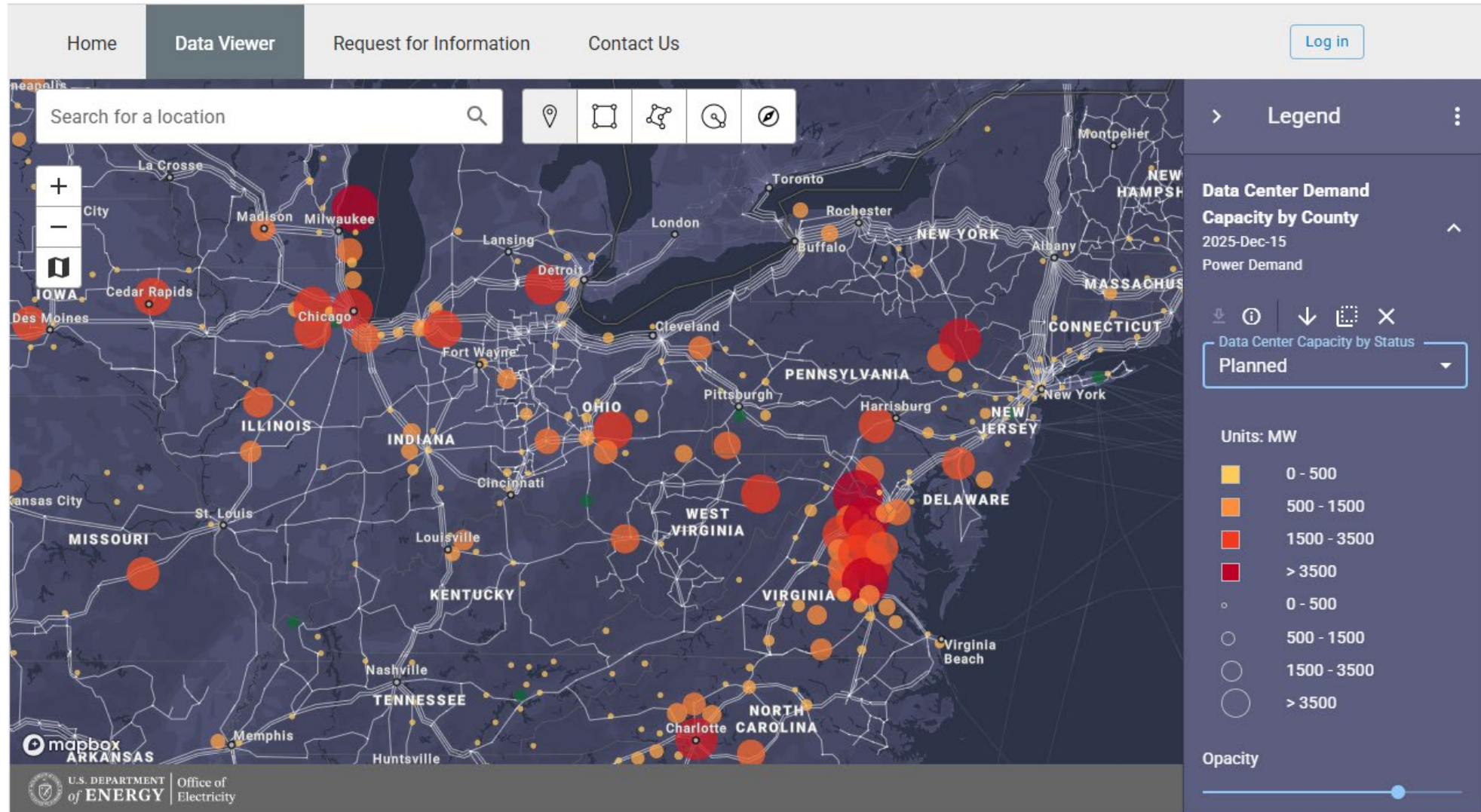


Planned data center construction

Accelerating Speed to Power



NATIONAL LABORATORY OF THE ROCKIES



Data Center Map



Data Center Map

Map

Database

Pricing

About

Search...



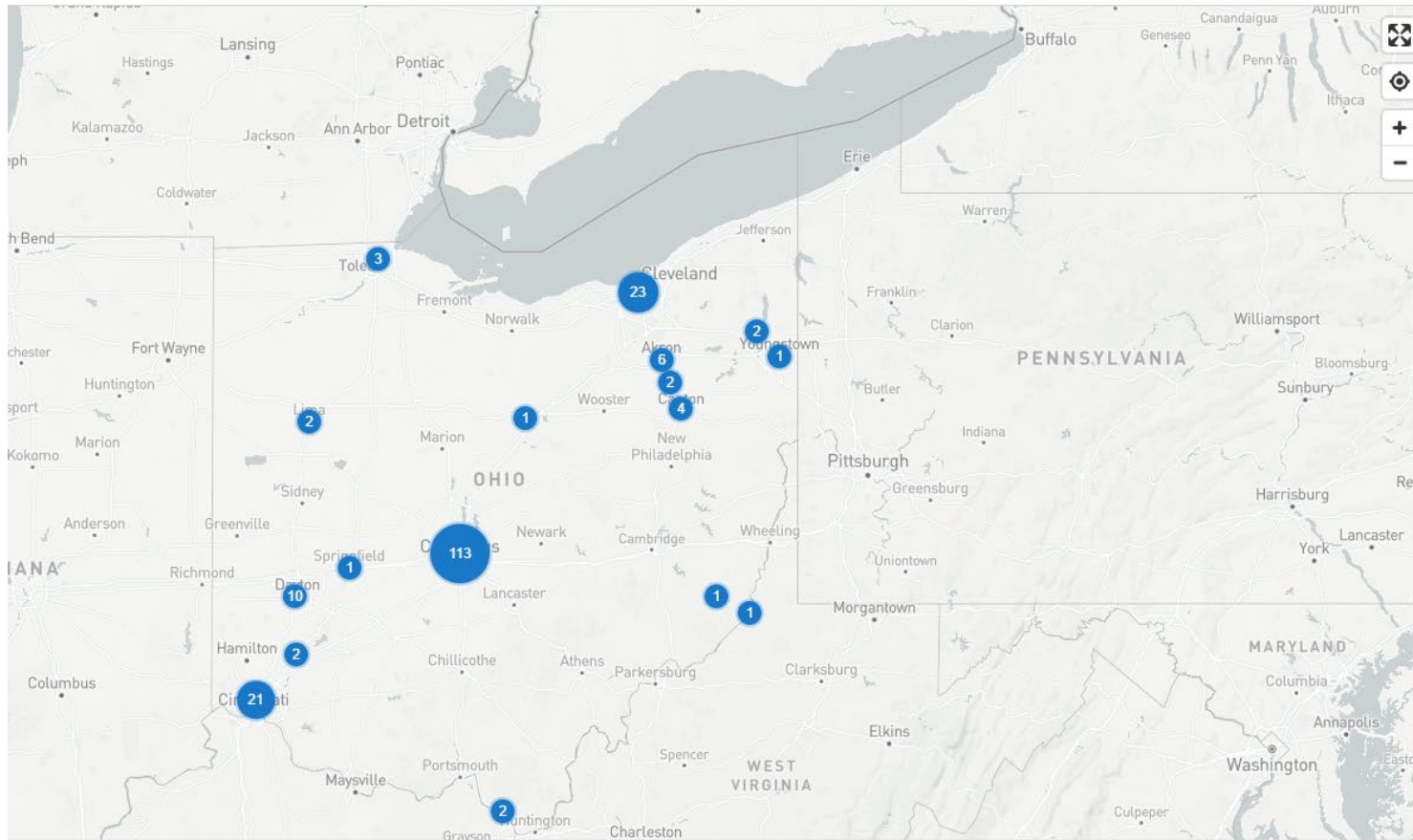
Sign In

Ohio Data Centers

We currently have **195 data centers** listed, from 17 markets in Ohio. Click on a market below, to explore its data center locations.

Save the trouble of contacting the providers yourself, check out our [Quote Service](#).

Filter Markets



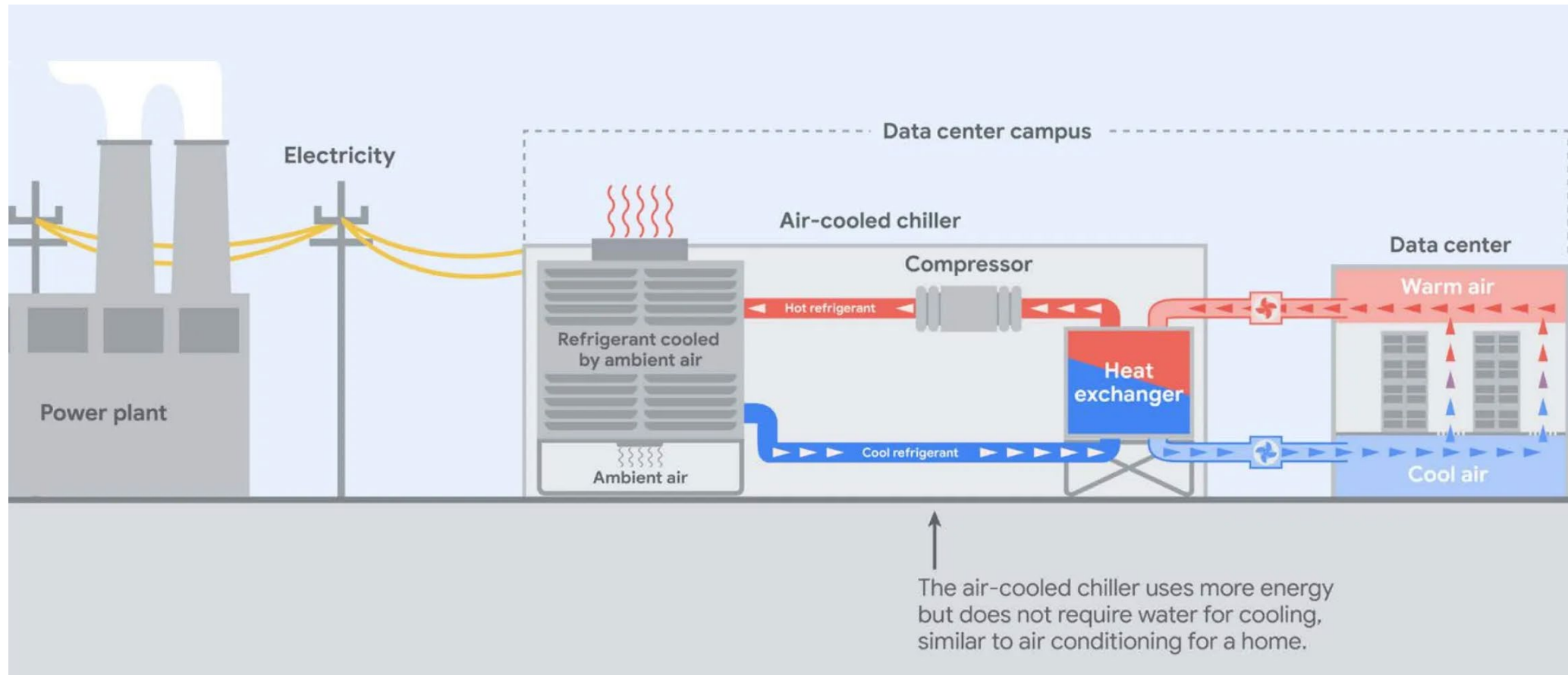
The best day to enable your AI infrastructure deployment is yesterday.

Let's Get Started!

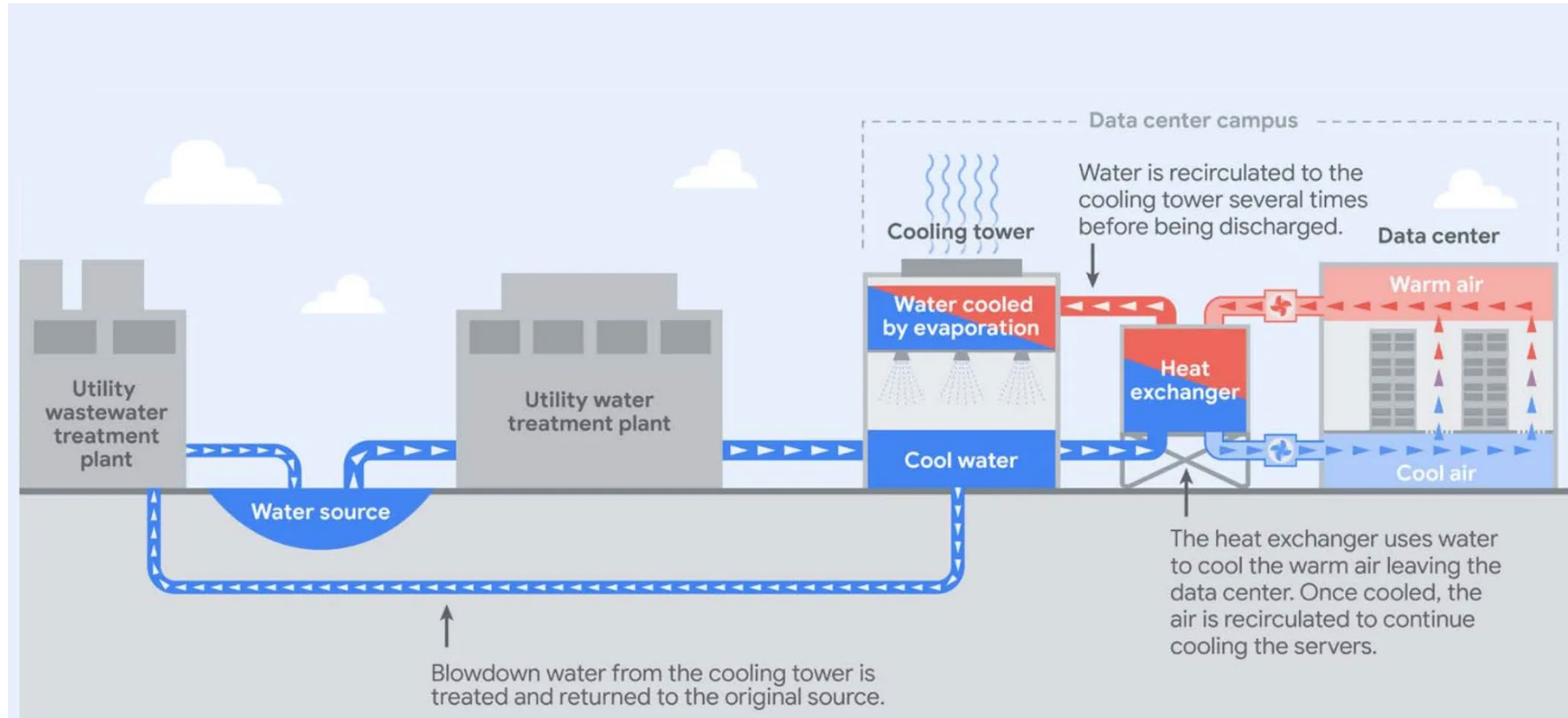
STREAM
DATA CENTERS

Market	Data Centers
Akron	6
Cincinnati	21
Columbus	113
Cleveland	23
Dayton	10
Canton	4
Lima OH	2
Toledo	3
Springfield	1
Warren	2
Lebanon	2

Air cooled data center

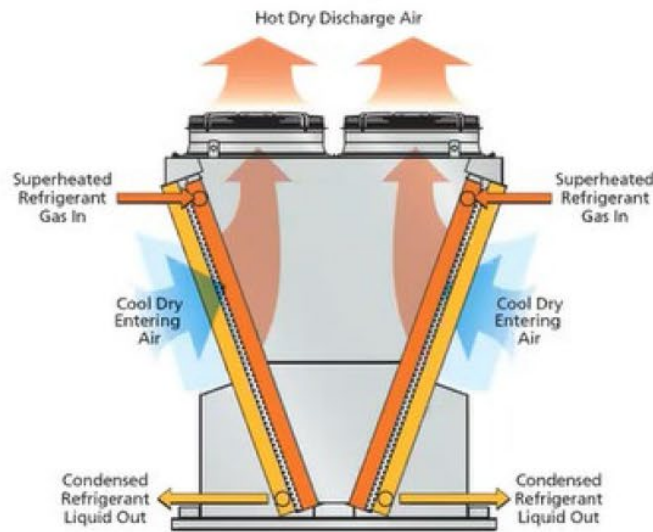


Water cooled data center

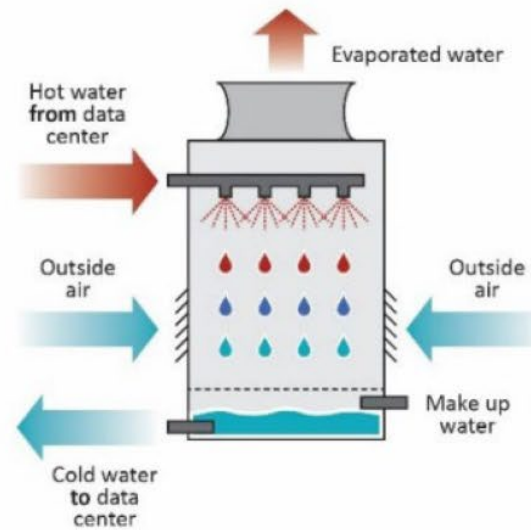


Industrial Cooling Technologies

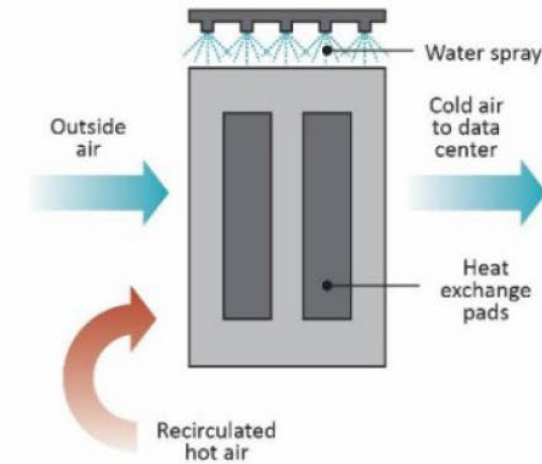
Dry Cooling/ Non-Evaporative



Evaporative Cooling



Evaporative cooling tower



Direct evaporative cooling

Source: Arcadis, WaterReuse Association, JLARC



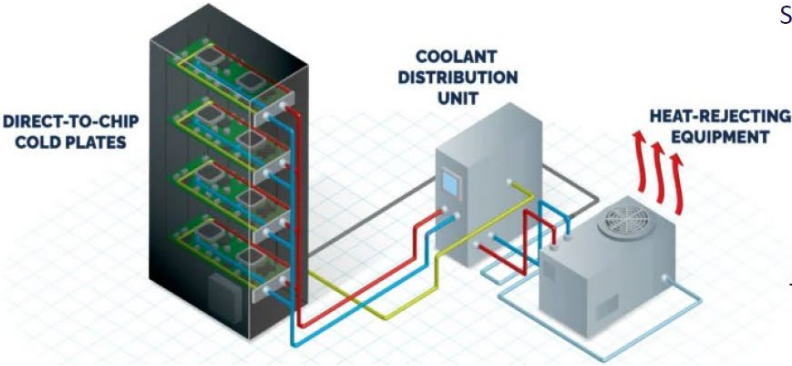
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Emerging data center cooling



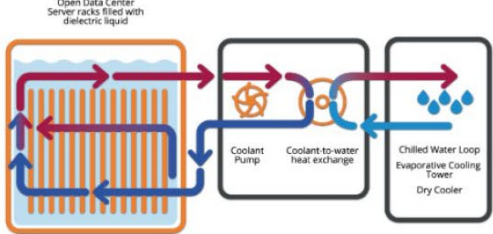
Cooling technologies for AI and advanced computing

DIRECT-TO-CHIP COOLING

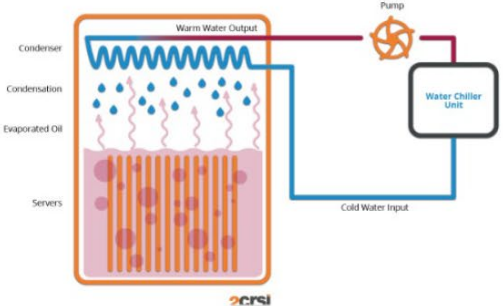


Immersion Cooling

Single Phase



Two-Phase



Sources: Park Place Technologies, 2crsi



Ohio specifics

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Filter Markets

MOVE FAST. SCALE SMART. STAY AHEAD WITH FUTURE-PROOF, AI-READY DATA CENTERS.

Deploy Smarter In Canada

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NPDES interactions

- Cooling water discharge is a process wastewater
 - Temperature, TDS, additives, biocides
- Water conditioning rejects
 - Ion exchange, RO, sediments
- Blowdowns and condensates
- Other



Cooling water - Temperature

- Ohio has water quality standards for temperature
 - Can adversely impact aquatic species reproduction and survival
 - Different values for Lake Erie and Ohio River direct discharges and tributary streams
 - Values range from 44 to 89 °F
 - Rules allow for mixing zones



Cooling water – Total Dissolved Solids

- Recirculating cooling systems can “concentrate” or “upcycle” salts and minerals.
- Ohio has a water quality standard for TDS, 1500mg/L.
- Compliance with standard can limit the number of times water can be cycled.
- TDS can also contribute to whole effluent toxicity at levels greater than 2300 mg/L.
- Rules allow for mixing zones



Cooling water – Additives and Biocides

- Additives maintain water chemistry to prevent scale & corrosion
 - Can contribute to toxicity
 - Must be preapproved by Ohio EPA
 - May include phosphorus
 - May prevent approval and necessitate alternatives or additional testing
 - Molybdenum and Azoles
- Biocides prevent biological growth within system piping
 - Often use chlorine or bromine derivatives
 - Requires limits for total residual oxidants



Water conditioning rejects

- Ion exchange water softeners
 - Can contribute to TDS when regenerating media
- Reverse Osmosis
 - Reject water often contains high TDS
 - Often include additives to protect membranes from fouling
 - May also include membrane cleanings



Blowdowns and Condensates

- Boilers and heat exchangers
- Air compressors



Other considerations

- Construction stormwater
- Industrial stormwater
- Pretreatment Program requirements for indirect discharge
- “ Behind the fence” power generation
- Intake Structures



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