DRB Data Center Update

Michael Thompson, P.E.
Senior Water Resource Engineer

October 15, 2025
Water Management Advisory Committee (WMAC)

Delaware River Basin Commission
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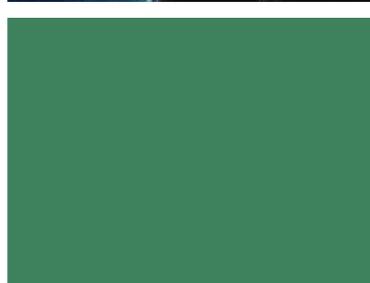
Outline

1. Why is DRBC thinking about data centers

2. Water use and power in the Delaware River Basin

3. All about data centers (background info)

4. Data centers and the DRB

5. Proposed data centers in the Delaware River Basin

Section 1

Why is DRBC thinking about data centers?

FY26-28 Water Resources Program

Section 1.5 Emergent Issues

- 1.5.8 Data Centers

The growing importance of data centers and their potential impacts on water resources within the Basin are important to understand. Data centers consume large volumes of potable water for various purposes, primarily for cooling systems and humidity control, and the Commission has received inquiries for construction of data centers in recent years. DRBC will research and develop a briefing document on the potential impacts that data centers may have on water resources in the Basin.

Section 2.2 Work Program

- 2.2.1.1.1 Water Supply Planning for a Sustainable Water Future 2060

DRBC will work to develop a briefing document on the potential impacts that data centers may have on water resources.
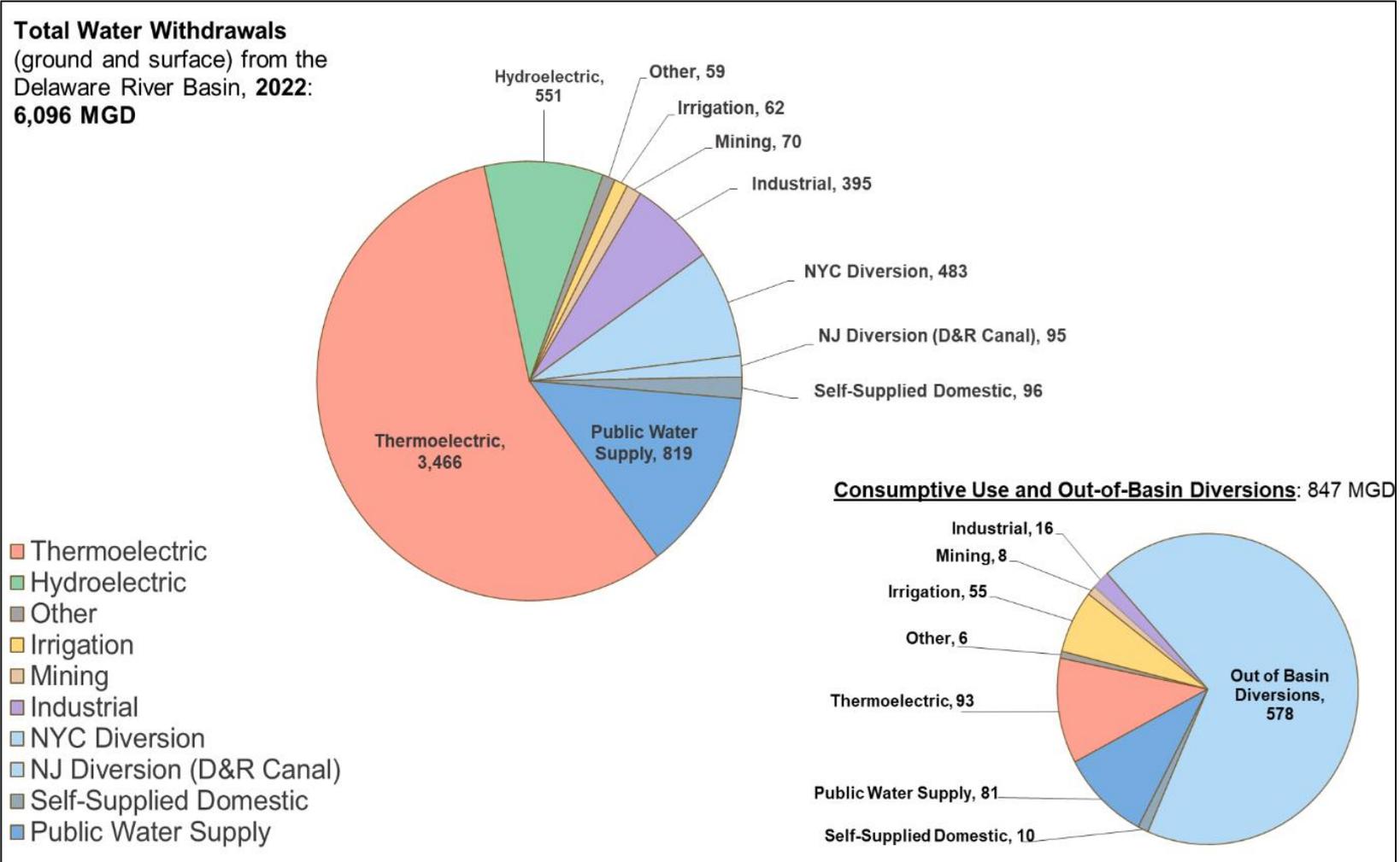
June 2025

WATER RESOURCES PROGRAM

FY 2026-2028

Report No. 2025-3

Managing, Protecting and Improving the Water Resources of the Delaware River Basin since 1961

DRBC
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Section 2

Water use and power in the Delaware River Basin

FY26-28 WRP : 2022 DRB Water Withdrawals

Total Water Withdrawals (ground and surface) from the Delaware River Basin, **2022**: **6,096 MGD**

- Thermoelectric, 3,466
- Hydroelectric, 551
- Other, 59
- Irrigation, 62
- Mining, 70
- Industrial, 395
- NYC Diversion, 483
- NJ Diversion (D&R Canal), 95
- Self-Supplied Domestic, 96
- Public Water Supply, 819

Legend:
- Thermoelectric
- Hydroelectric
- Other
- Irrigation
- Mining
- Industrial
- NYC Diversion
- NJ Diversion (D&R Canal)
- Self-Supplied Domestic
- Public Water Supply

Consumptive Use and Out-of-Basin Diversions: 847 MGD
- Industrial, 16
- Mining, 8
- Irrigation, 55
- Other, 6
- Thermoelectric, 93
- Public Water Supply, 81
- Self-Supplied Domestic, 10
- Out of Basin Diversions, 578

Figure 7. *Total water withdrawals and consumptive use / major exports from the Basin in CY 2022.*

~ 6 BGD in 2022

- ~3.5 BGD is thermoelectric
- 0.8 BGD is PWS

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Historical and projected water withdrawals from the Delaware River Basin

Figure 8. *Historical and projected water withdrawals from the Delaware River Basin, initially published in* Thompson & Pindar, 2021 *through 2017. The predictive interval shown represents the aggregated predictive intervals for all sectors. The figure has been amended with complete years of data through 2022.*

Water Withdrawals 1990 - 2022

~ 10,000 MGD in 2005 (10 BGD)

~ 6,000 MGD in 2022 (6 BGD)

~ 4,000 MGD *decrease* (4 BGD)

Decrease Projected to 2060

FY26-28 WRP: 1990 – 2022 DRB Consumptive Water Use

Historical and projected consumptive water use in the Delaware River Basin

Figure 9. *Historical and projected consumptive use of water in the Delaware River Basin, initially published in* Thompson & Pindar, 2021 *through 2017. The predictive interval shown represents the aggregated predictive intervals for all sectors, excluding the out-of-Basin diversions which did not have a calculated predictive internal. The figure has been amended with complete years of data through 2022.*

Consumptive Water Use

~ 1,100 MGD in 1990 (1 BGD)

~ 850 MGD in 2022 (0.850 BGD)

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~ 300 MGD decrease (0.3 BGD)

Projected to remain constant

Withdrawals in the Delaware River Basin
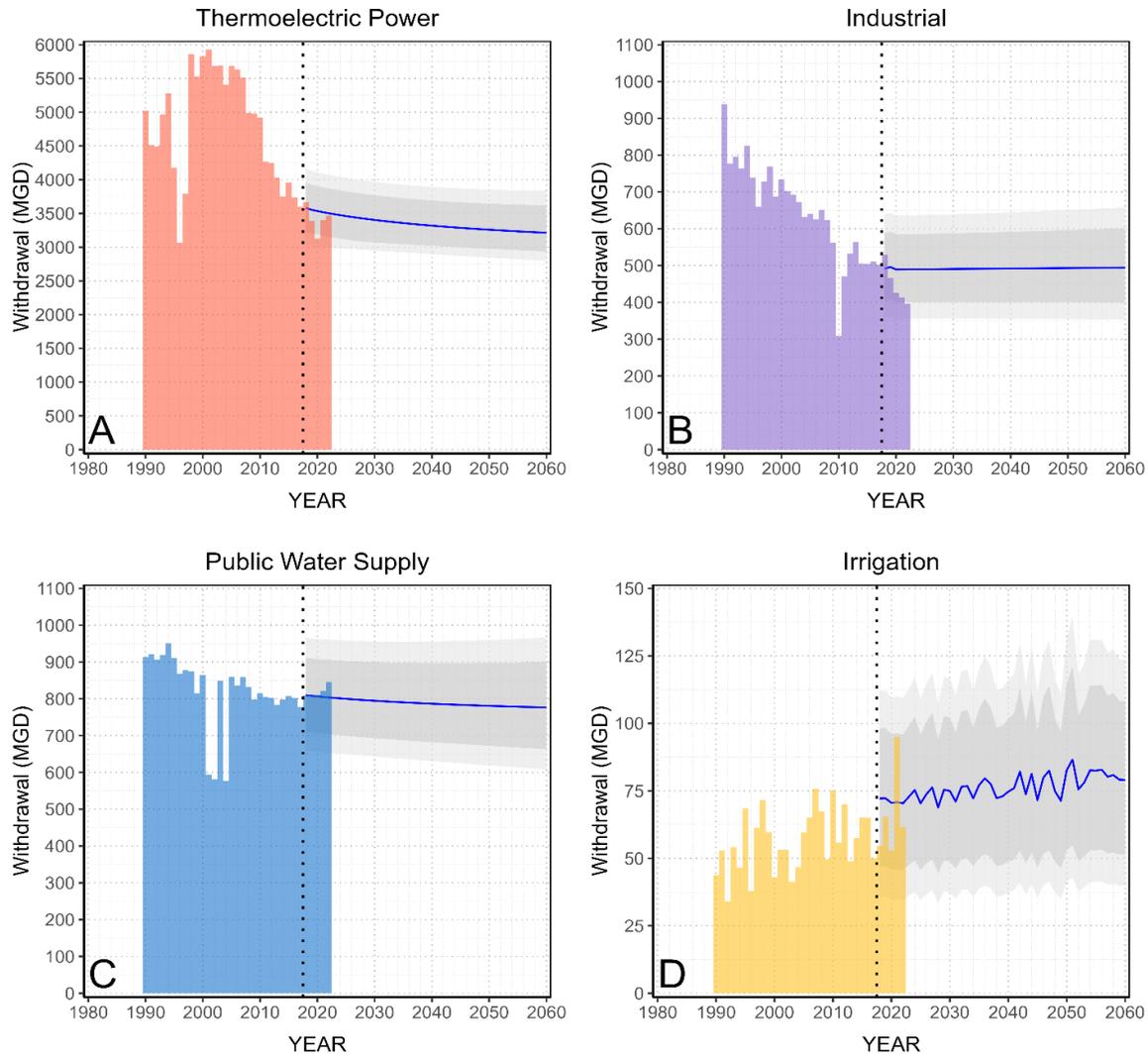
Notes

- Thermoelectric **at** projection
- Industrial **below** projection
- PWS shows **increase**
- Irrigation shows **increase**

Figure 10. Historical and projected water withdrawals for the major sectors within the Delaware River Basin. These data used to generate these figures have been adopted from Thompson & Pindar, 2021 through 2017; however, the historical data has been updated through 2022.

FY26-28 WRP – PWS Water Use

Public Water Supply
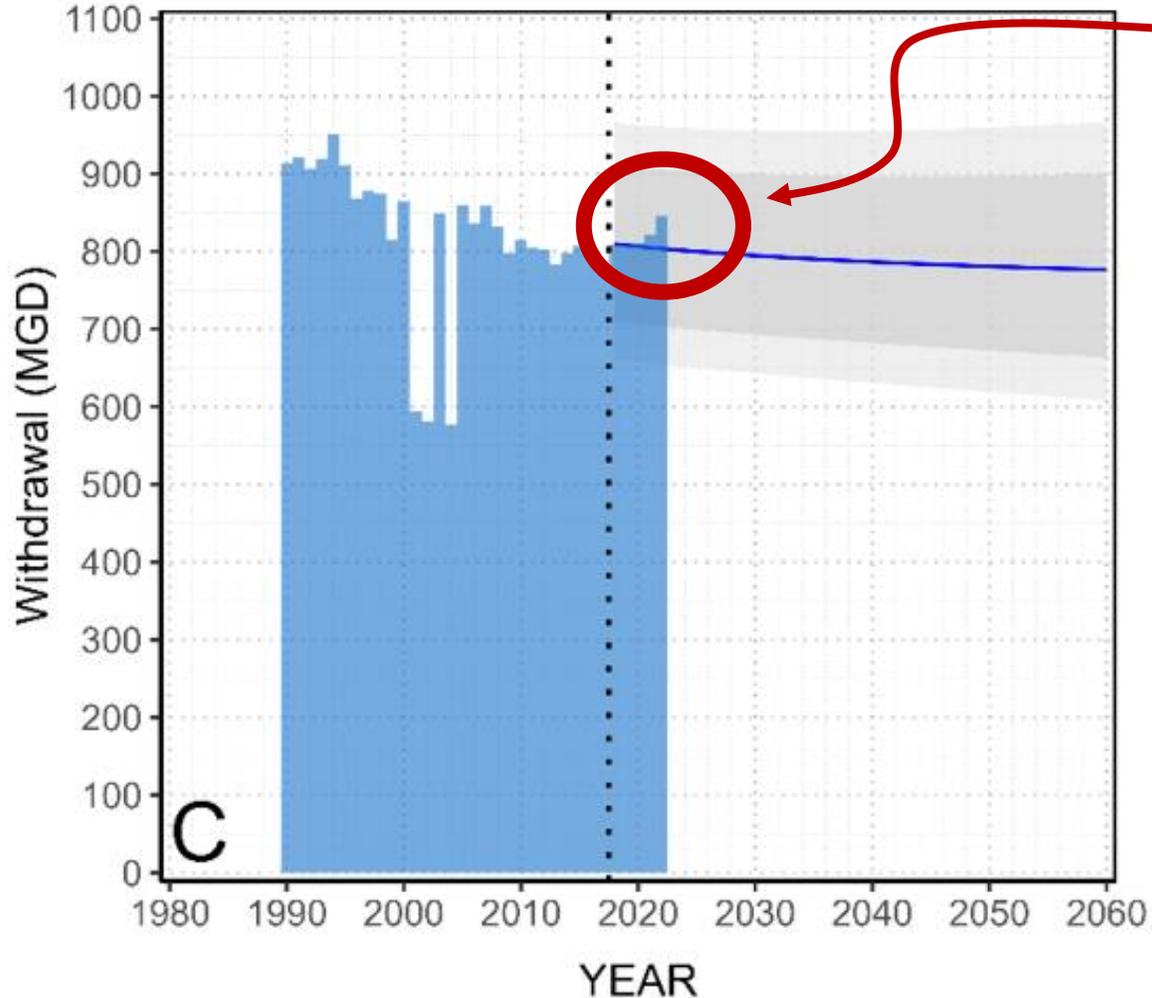
Notable observation: First time in decades that the PWS sector has seen a multi-year increase in withdrawals

Observation drivers: The largest increases and decreases

Increase / Decrease	Rank	Facility	2022 - 2018 (MGD)
Increase	1	AQUA PA MAIN DIVISION	5.785
Increase	2	PHILADELPHIA WATER DEPT	5.429
Increase	3	N PENN & N WALES W A FOREST PARK SYS	2.086
Increase	4	Newark Public Water System	2.035
Increase	5	Wilmington Public Water System	2.016
Decrease	5	TRENTON CITY WATER DEPT	-1.010
Decrease	4	LOWER BUCKS CNTY JT MUNI AUTH	-1.045
Decrease	3	EVESHAM TWP MUA	-1.087
Decrease	2	Veoila Water Delaware, Inc.	-1.263
Decrease	1	CAMDEN CITY WATER DEPT	-5.008

PJM Grid

- Regional Transmission Organization (RTO)
- Largest grid in U.S.
- ~65 million customers
- 13 states + D.C.
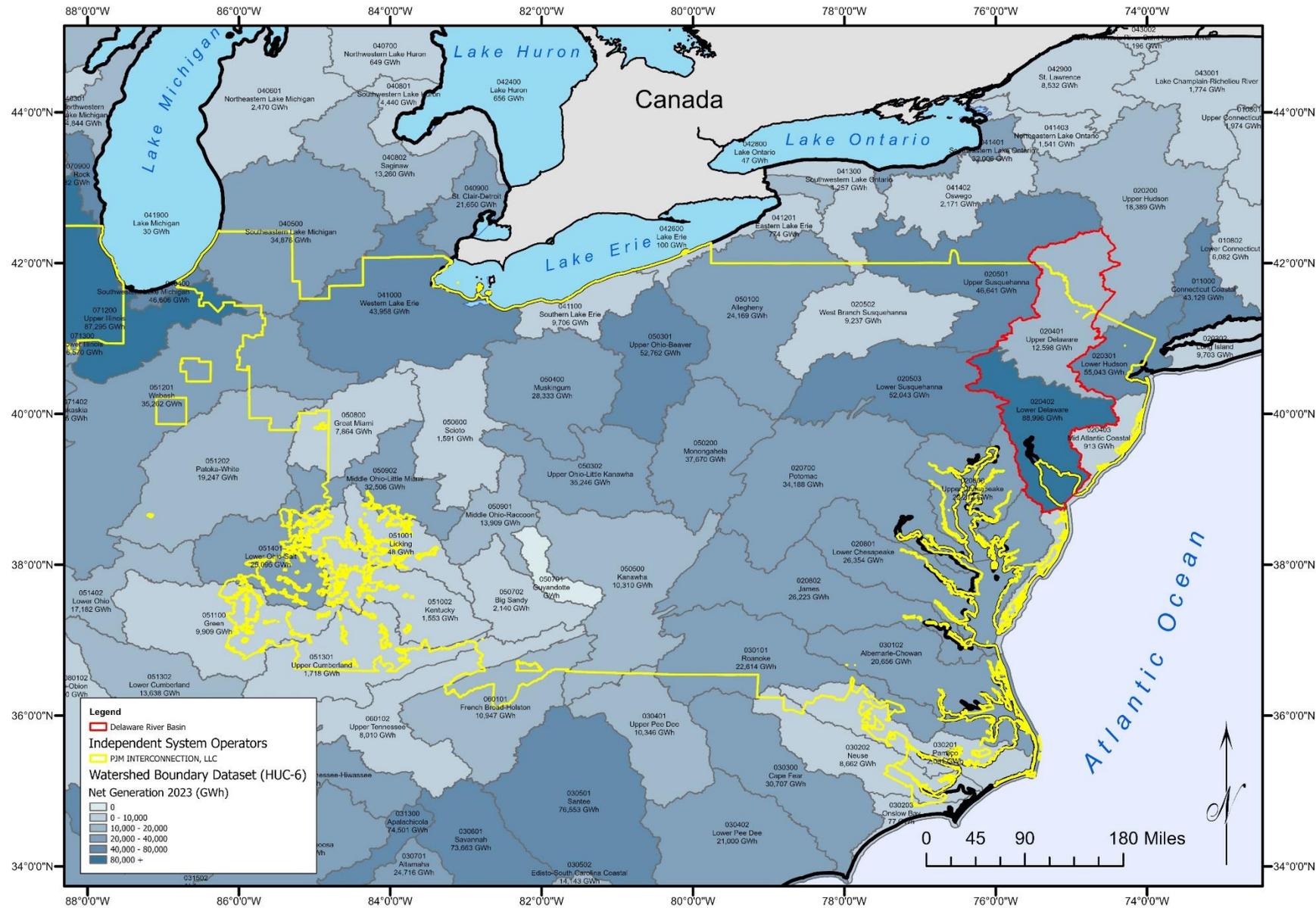- HQ in Valley Forge, PA
- Regulated by FERC

CY2023 net power generation
Lower Delaware HUC

2nd in the country
1st in the PJM

88,690 GWh in 2023

Total net power generation (from all sources) as reported through EIA Form-923 (CY2023), aggregated to a HUC-6 scale for the entire country. Labels within each watershed indicate the watershed name, as well as the net generation in gigawatt-hours (GWh).
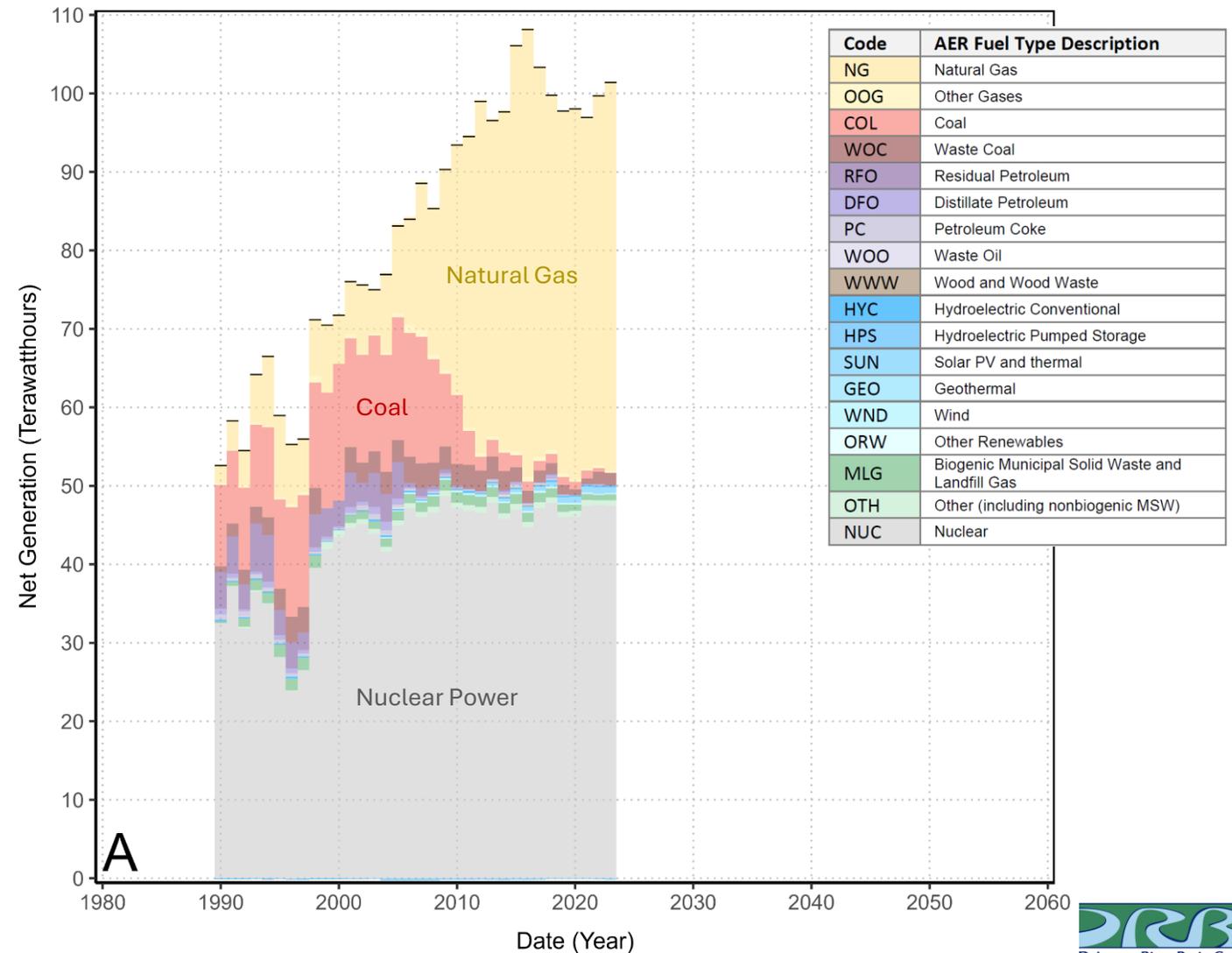
Sources:
United States Energy Information Administration (EIA) Form 923, Form 860 and "PowerPlants" shapefile.
USGS Watershed Boundary Dataset (HUC-6 boundaries)

The Delaware River

historical context for essential power generation

Power Facility Net Generation in the Delaware River Basin Categorized by AER Fuel Type

All power generation facilities

Code	AER Fuel Type Description
NG	Natural Gas
OOG	Other Gases
COL	Coal
WOC	Waste Coal
RFO	Residual Petroleum
DFO	Distillate Petroleum
PC	Petroleum Coke
WOO	Waste Oil
WWW	Wood and Wood Waste
HYC	Hydroelectric Conventional
HPS	Hydroelectric Pumped Storage
SUN	Solar PV and thermal
GEO	Geothermal
WND	Wind
ORW	Other Renewables
MLG	Biogenic Municipal Solid Waste and Landfill Gas
OTH	Other (including nonbiogenic MSW)
NUC	Nuclear

*Total net power generation includes facilities in the Upper Delaware (020401) and the Lower Delaware (020402).

Section 3

All about data centers

What is a data center?

Gemini

2.5 Flash ▼

What is a data center? Specifically those which are developed to support things like Machine Learning or Artificial Intelligence.

A **data center** is a centralized physical facility—a building, a dedicated room, or a collection of buildings—that houses computer systems and associated components, such as servers, storage systems, and networking equipment, which are necessary for storing, processing, and managing large amounts of data and applications. They serve as the critical infrastructure backbone for IT operations.

Data centers are equipped with robust supporting infrastructure, including:

- **Power Subsystems:** Uninterruptible Power Supplies (UPS) and backup generators to ensure continuous operation.

- **Cooling Equipment:** Systems to dissipate the significant heat generated by the IT hardware.

- **Security Systems:** Physical and digital measures to protect critical assets and sensitive data.

- **Network Infrastructure:** High-bandwidth cabling, routers, and switches for data transfer.

What is a data center?

Table 4.1. Data Center Space Types Considered in This Study

Space Type	Description
Telco Edge	Deployment of small closets/rooms to micro data centers and network infrastructure by communications companies as points of presence throughout their network
Commercial Edge	Network closets, server rooms, and micro-data centers deployed to support modern digital, infrastructure, and software delivery services to edge locations for commercial (focused on customer and business operations) and industrial (focused on supply chain and channel operations)
Small and Medium Businesses (SMB)	SMB deployments in their own internal facilities
Enterprise Branch	Classic remote and branch office (ROBO) deployments for large enterprises in their own internal facilities (network closets, server rooms)
Internal	Data centers run by enterprises, internally, for their own use
Communications Service Providers (Comms SPs)	Data centers run by telecommunications/cable companies to support internal services required to enable provision of communications technology services to their customers
Colocation – Sm/Med Scale	Data centers built by local colocation companies typically providing retail leasing at smaller scale
Colocation – Large Scale	Data centers built by major colocation companies providing wholesale and retail colocation leasing, typically deploying large and mega datacenters
Hyperscale	Data centers built by companies that deploy internet services and platforms at massive scale

Currently exist within the Delaware River Basin
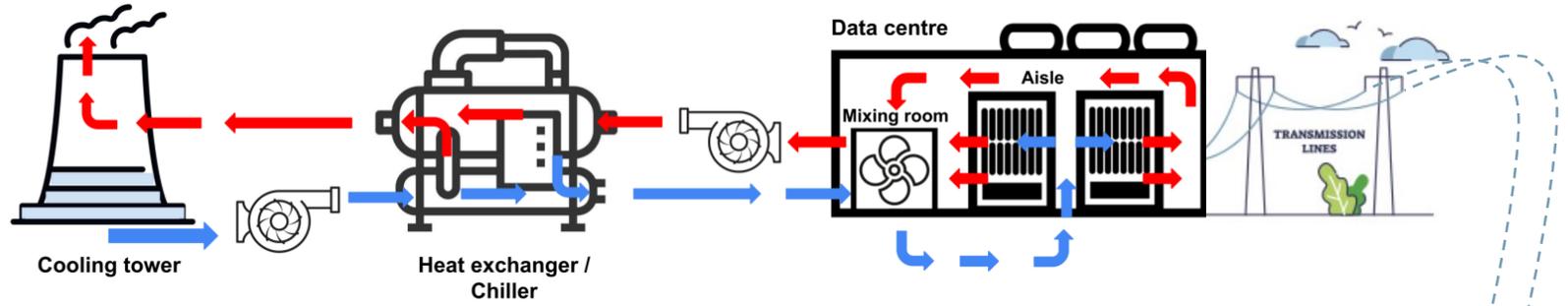
Reference:
2024 United States Data Center Energy Usage Report
Arman Shehabi, Sarah J. Smith, Alex Hubbard, Alex Newkirk, Nuoa Lei, Md Abu Bakar Siddik, Billie Holecek, Jonathan Koomey, Eric Masanet, and Dale Sartor
Energy Analysis and Environmental Impacts Division, Lawrence Berkeley National Laboratory
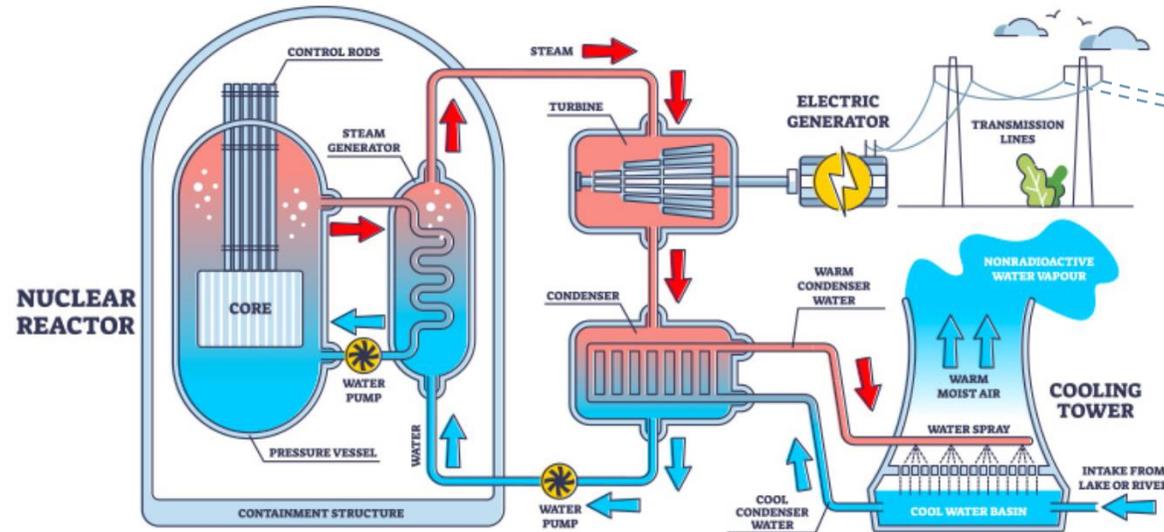
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How do data centers use water?

(1) **Direct water footprint**
(onsite usage, e.g. cooling)

(2) **Indirect water footprint**
(e.g. cooling for power generation)

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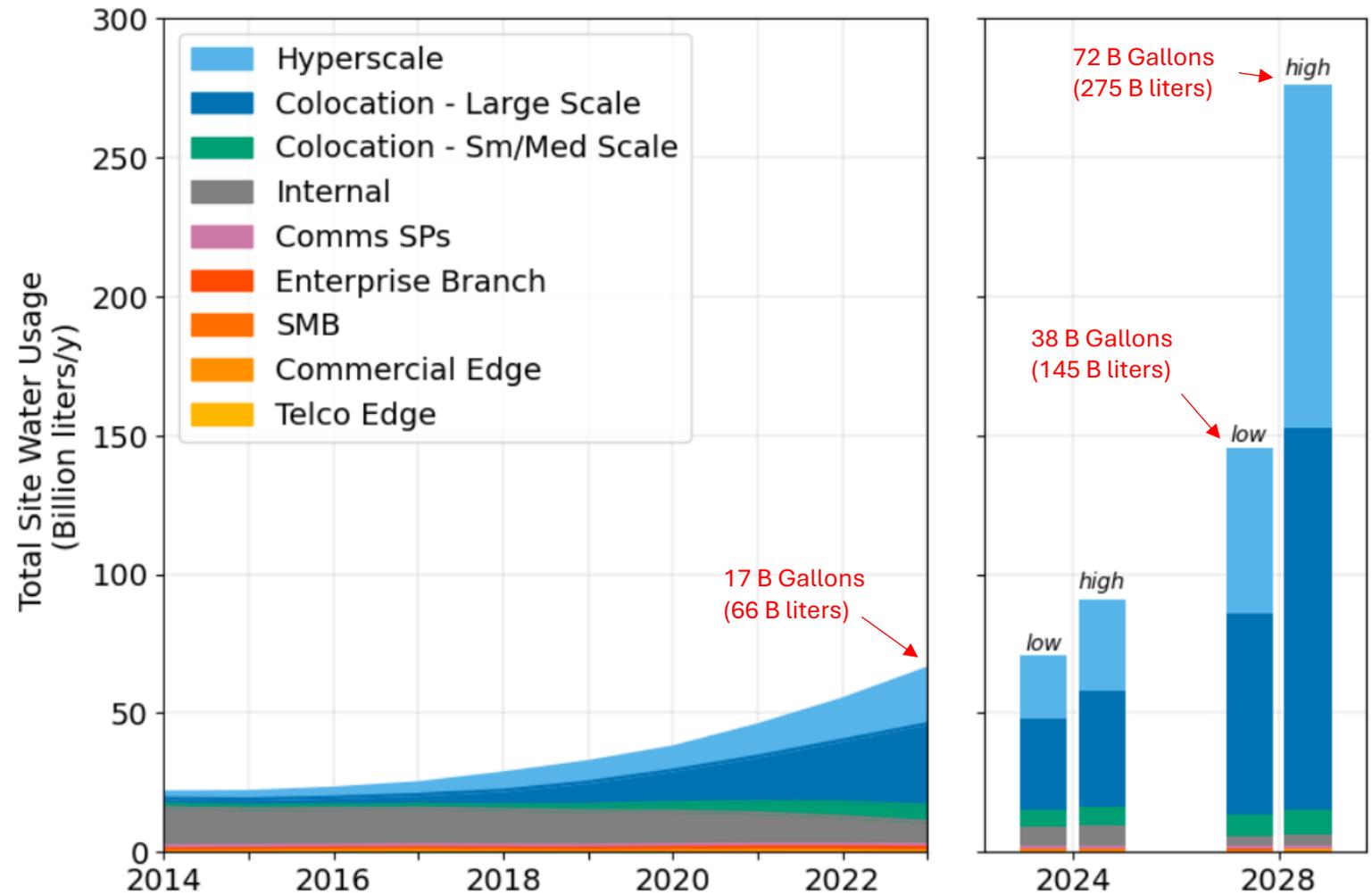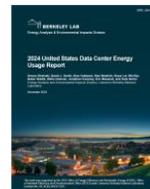UNITED STATES OF AMERICA

Water use on a national scale?

Figure 5.9. Direct water consumption by data center type.

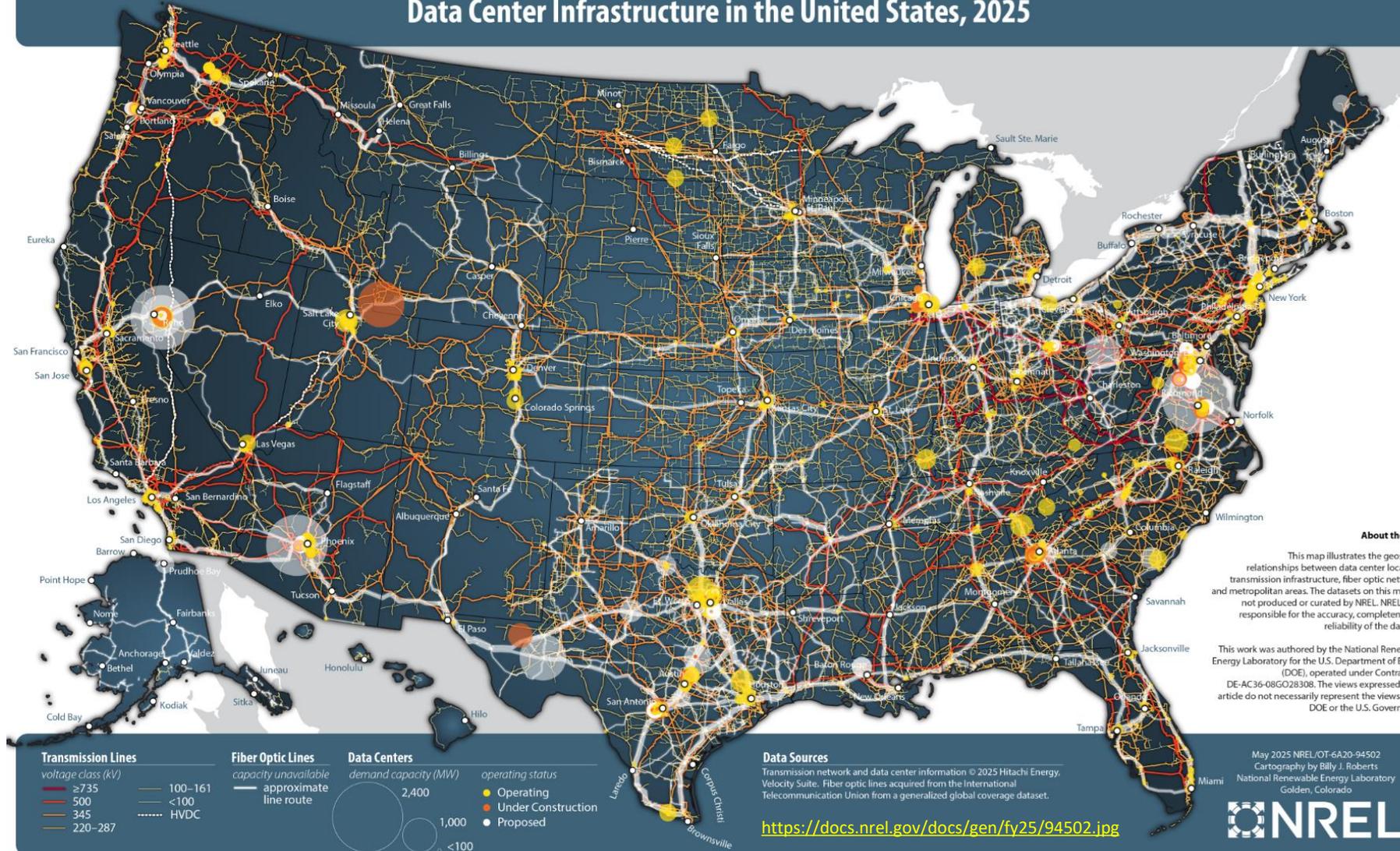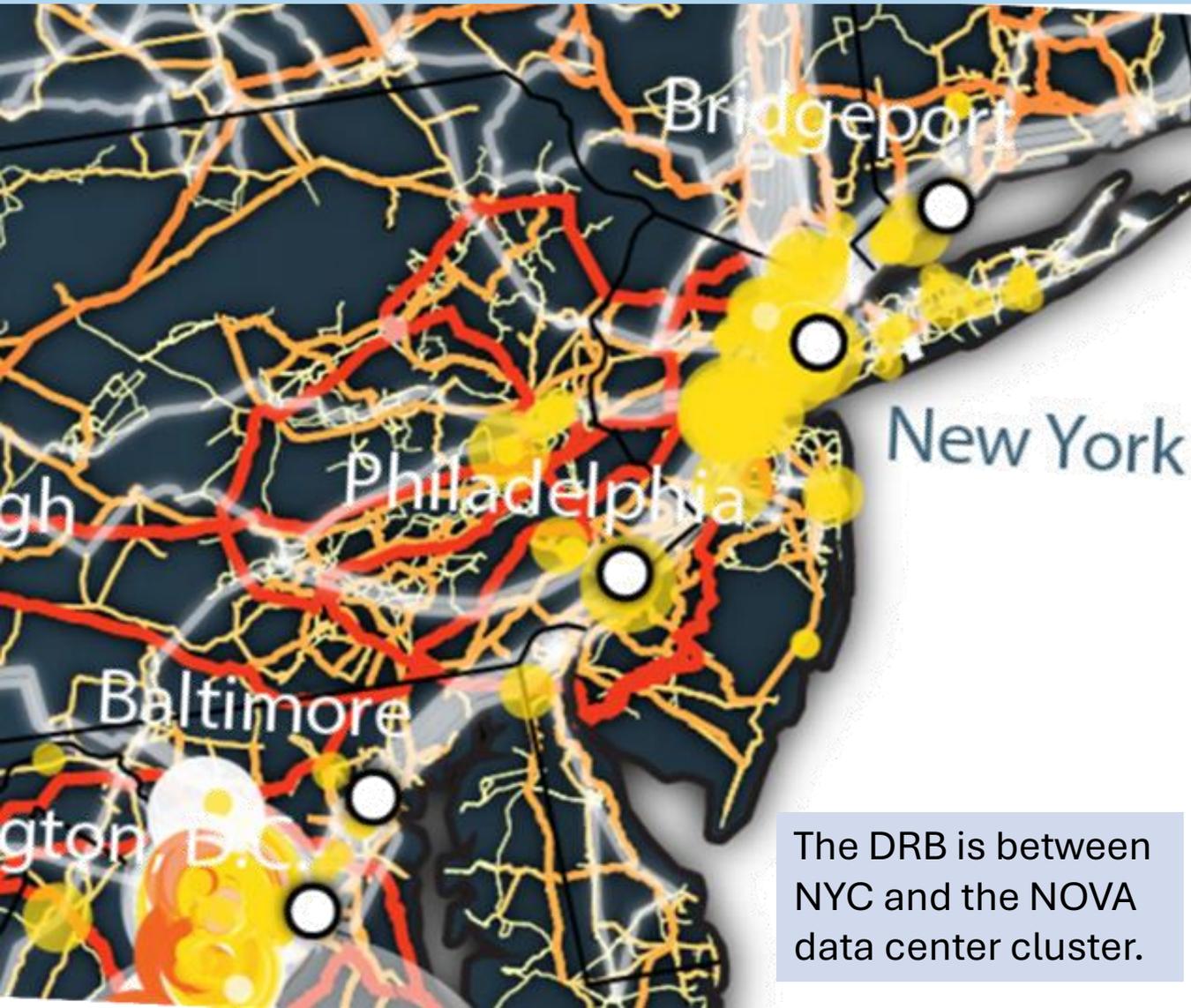**Reference:**
2024 United States Data Center Energy Usage Report
Arman Shehabi, Sarah J. Smith, Alex Hubbard, Alex Newkirk, Nuoa Lei, Md Abu Bakar Siddik, Billie Holecek, Jonathan Koomey, Eric Masanet, and Dale Sartor
Energy Analysis and Environmental Impacts Division, Lawrence Berkeley National Laboratory

Data centers electrical demand?

Increase in electricity consumption will likely impact water withdrawals for thermoelectric generation in DRB.
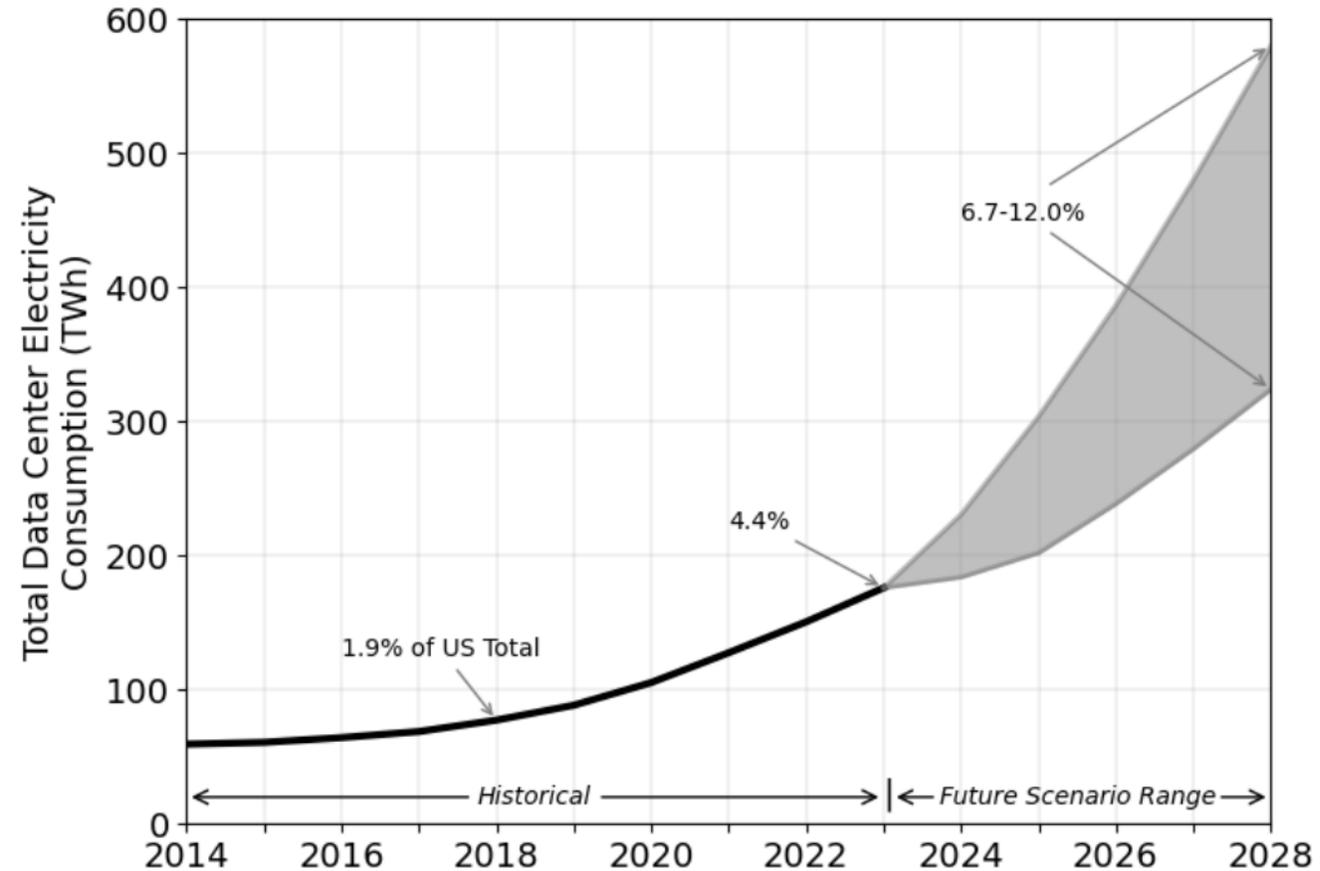
Figure ES-1. Total U.S. data center electricity use from 2014 through 2028.

Reference:
2024 United States Data Center Energy Usage Report
Arman Shehabi, Sarah J. Smith, Alex Hubbard, Alex Newkirk, Nuoa Lei, Md Abu Bakar Siddik, Billie Holecek, Jonathan Koomey, Eric Masanet, and Dale Sartor
Energy Analysis and Environmental Impacts Division, Lawrence Berkeley National Laboratory

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Data Center Infrastructure

Data Center Infrastructure in the United States, 2025

https://docs.nrel.gov/docs/gen/fy25/94502.jpg

Data Center Infrastructure

Transmission Lines
voltage class (kV)
- ≥735
- 500
- 345
- 220–287
- 100–161
- <100
- ······· HVDC

Fiber Optic Lines
capacity unavailable
— approximate line route

Data Centers
demand capacity (MW)
2,400
1,000
<100

operating status
- Operating
- Under Construction
- Proposed

The DRB is between NYC and the NOVA data center cluster.

https://docs.nrel.gov/docs/gen/fy25/94502.jpg
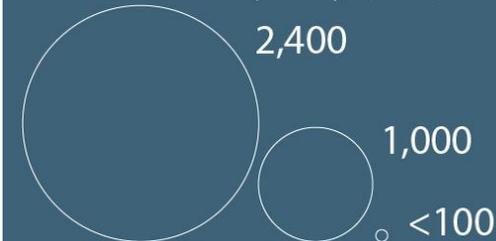
Section 4

Data centers and the DRB...

What is DRBC's planning section up to?

1 – DRB Locations

Establish a list of existing and proposed in-basin Data Centers
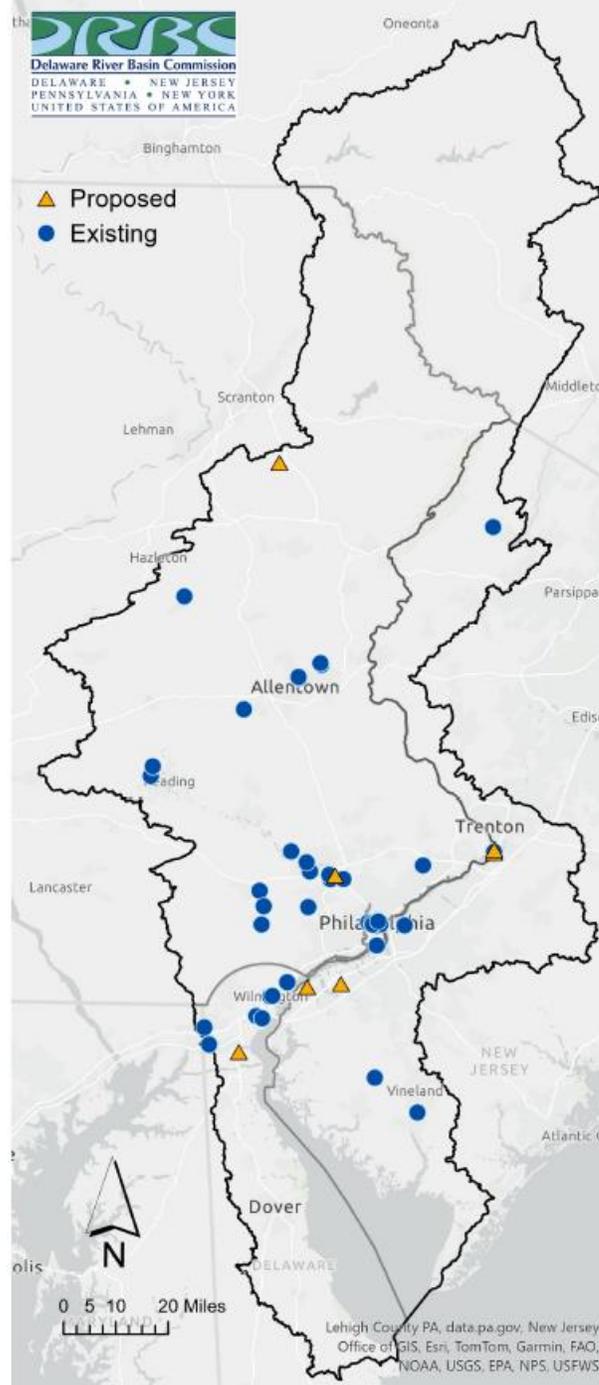
Data sources:

- *Datacentermaps.com*
- *Media publications*
- *NAICS*

2 – Public Water Supply

Map known locations against PWS service areas to identify which utility serves each DC

* No DC applications have come through Project Review to date.

Data centers in the DRB?
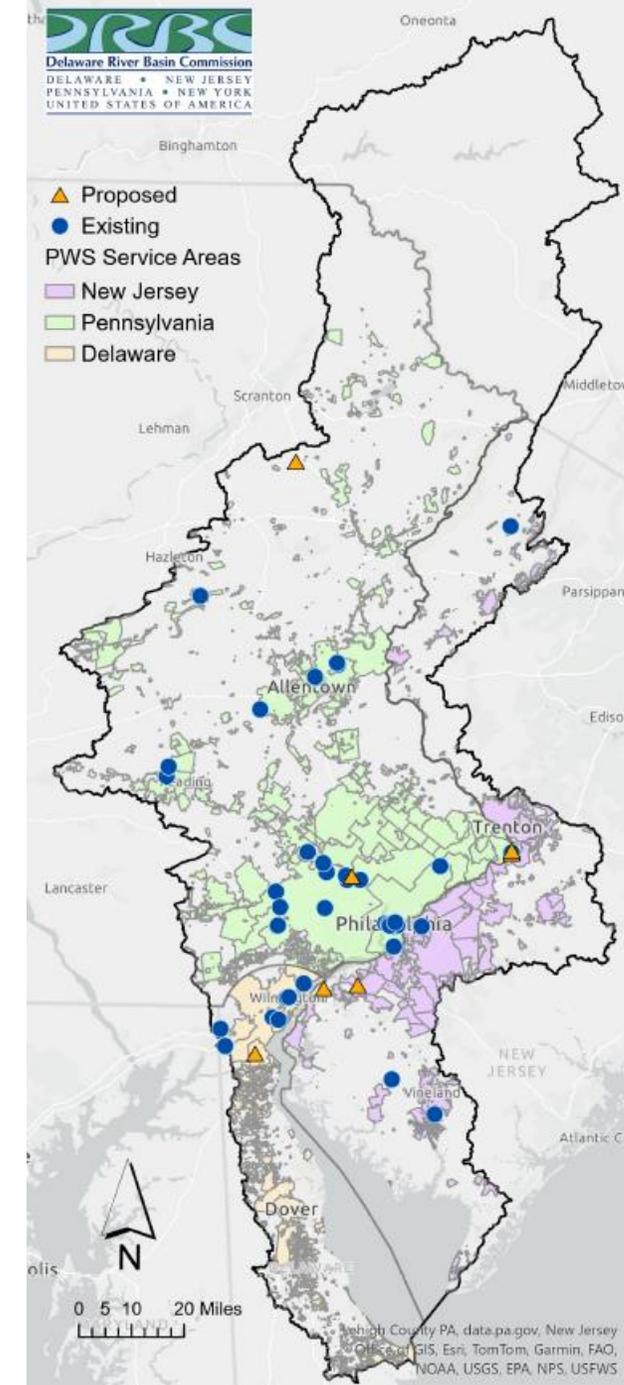
Basin State	Existing	Proposed
Pennsylvania	48	6
New Jersey	6	2
Delaware	9	1
New York	0	0
	63	**9**

North American Industry Classification System (NAICS)

- Six-digit self-reported business classification

- DC included in multiple NAICS codes
  - At least 11 codes associated with the current list of known DC

- NAICS Association data purchase
  - Purchase order by geography and unique code
  - 70,380 results for top 5 codes in DRB counties

- NAICS approach has issues
  - Self-reported
  - Federal and academics DCs not included
  - None of the current ~60 DCs are Hyperscale

NAICS Code	Business Type	DRB Count
517112	Wired and Wireless Telecommunications	2,031
518210	Computing Infrastructure Providers, Data Processing, and Web Hosting	1,225
541110	Legal Services	15,329
541512	Computer Systems Design	16,445
5416	Management, Scientific, and Technical Consulting Services	35,667

DRBC's Project Review

- Threshold for DRBC review/approval
  - Basin-wide GW / SW: 100,000 gpd over 30 consecutive days
  - SEPA GWPA GW: 10,000 gpd
  - Administrative Agreements: Withdrawals: PA / NY – DRBC lead
- No applications to date
- Inquiries with DRBC
  - Amazon/Keystone (Bucks County)
- Tracking proposed data center activity(via news etc…)

Data Centers in DRB – What have we learned?

- ~60 operating in the DRB

- all currently served by PWS

- not "hyperscale"

- water supply utilities likely have Non-Disclosure Agreements (NDA) with data center developers

- facility level data is difficult to obtain

- meetings with other regulatory agencies are helpful

Water Resource Considerations

1. Water withdrawals / use - PWS and thermoelectric trends reverse?

2. Consumptive use - Is 10% consumptive for PWS accurate?

3. Consumptive use make-up – If significant, propose policy similar to thermoelectric requirement?

4. 365 days per year / 24 hour operations - Drought operations

5. Wastewater discharges – Industrial customer to public wastewater collection systems?

Section 5

Proposed data centers in the Delaware River Basin

Proposed data centers

6	Pennsylvania
2	New Jersey
1	Delaware
0	New York

Cleveland-Cliffs

Address: 900 Conshohocken Road, Montgomery County
Parent Company: MLP Ventures
Scale: unknown
Nearby PWS: Aqua PA Main Division
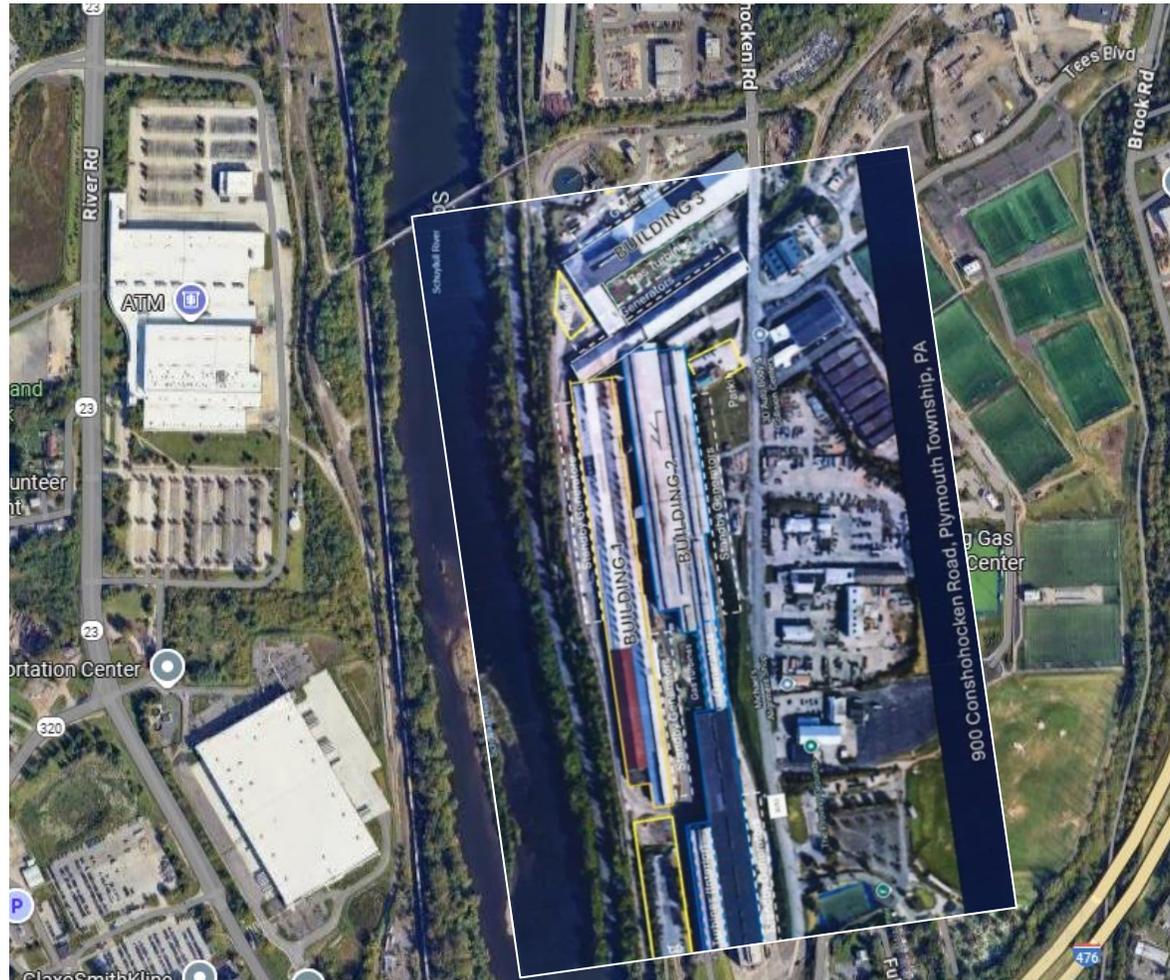
Google Maps Link:
https://www.google.com/maps/@40.085117,-75.3227566,1847m/data=!3m1!1e3?entry=ttu&g_ep=EgoyMDI1MTAwOC4wIKXMDSoASAFQAw%3D%3D

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Proposed data centers

6	Pennsylvania
2	New Jersey
1	Delaware
0	New York

Gouldsboro

Address: North of Clifton Beach Road, Lackawanna County
Scale:
- 1,000 acre, 35 building campus (4.4-9.4 million sq ft)
- Gas power plant would also be built on site

Nearby PWS: AQUA PA THORNHURST CC EST
Parent Company: 1778 Rich Pike LLC

Google Maps Link:
https://www.google.com/maps/@41.2751528,-75.5268672,5035m/data=!3m1!1e3?entry=ttu&g_ep=EgoyMDI1MTAwOC4wIKXMDSoASAFQAw%3D%3D

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Proposed data centers

6	Pennsylvania
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Northpoint: Keystone

Address: 700 S. Port Rd & 1 Ben Fairless Dr, Bucks County

Parent Company: NorthPoint Development/ Keystone

Scale:
- 10 buildings (5.5 million sq ft), 1,800 acres (completed in first two phases)
- Eventually 20+ buildings making the campus 10-15 million sq ft capacity

Nearby PWS: Morrisville Municipal Authority

Notes: n/a

Google Maps Link:
https://www.google.com/maps/@40.1612087,-74.7543762,10918m/data=!3m1!1e3?entry=ttu&g_ep=EgoyMDI1MTAwOC4wIKXMDSoASAFQAw%3D%3D

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Proposed data centers

6	Pennsylvania
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Northpoint: "Project Hazelnut"- Hazleton

Address: 450 E. Arthur Gardner Highway, Luzerne County
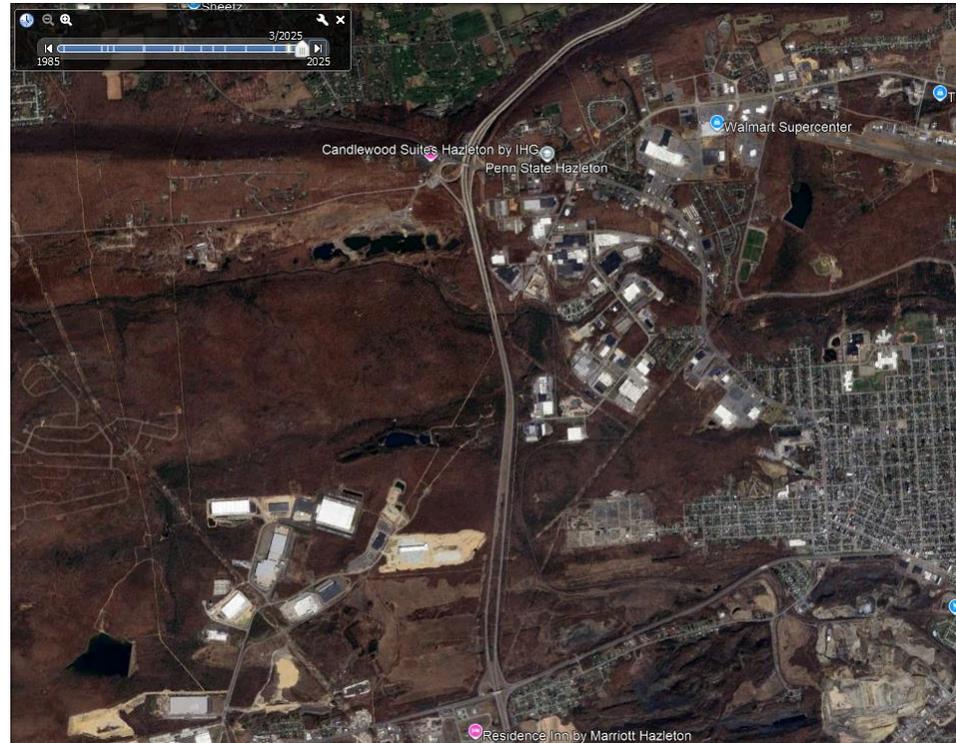**Parent Company**: NorthPoint Development
Scale: 15 buildings on a 1283-acre campus
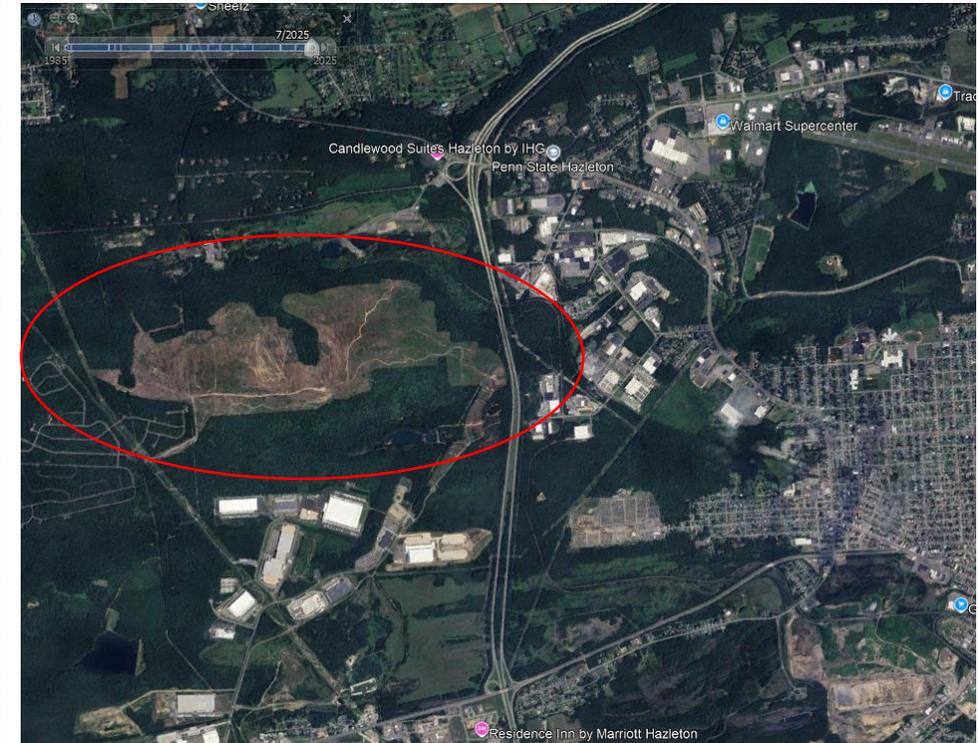**Nearby PWS**: Hazleton Water Authority
Notes: Located outside the DRB boundary

Google Maps Link:
https://www.google.com/maps/@40.9640084,-76.0447926,3913m/data=!3m1!1e3?entry=ttu&g_ep=EgoyMDI1MTAwOC4wIKXMDSoASAFQAw%3D%3D

March 2025

July 2025

Proposed data centers

Pocono Manor

Address: Tobyhanna Township, Monroe County
Parent Company: Pocono Manor Investors
Scale: Hyperscale (multi-story buildings on a 193-acre campus)
Nearby PWS: n/a
Notes: n/a

Google Maps Link:
https://www.google.com/maps/place/Sullivan+Trail,+Pennsylvania/@41.0915291,-75.399851,2675m/data=!3m1!1e3!4m6!3m5!1s0x89c48caa59011edd:0xc7ba04c89e7d51da!8m2!3d41.0813369!4d-75.3768196!16s%2Fg%2F1tfrswgr?entry=ttu&g_ep=EgoyMDI1MTAwOC4wIKXMDSoASAFQAw%3D%3D

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Proposed data centers

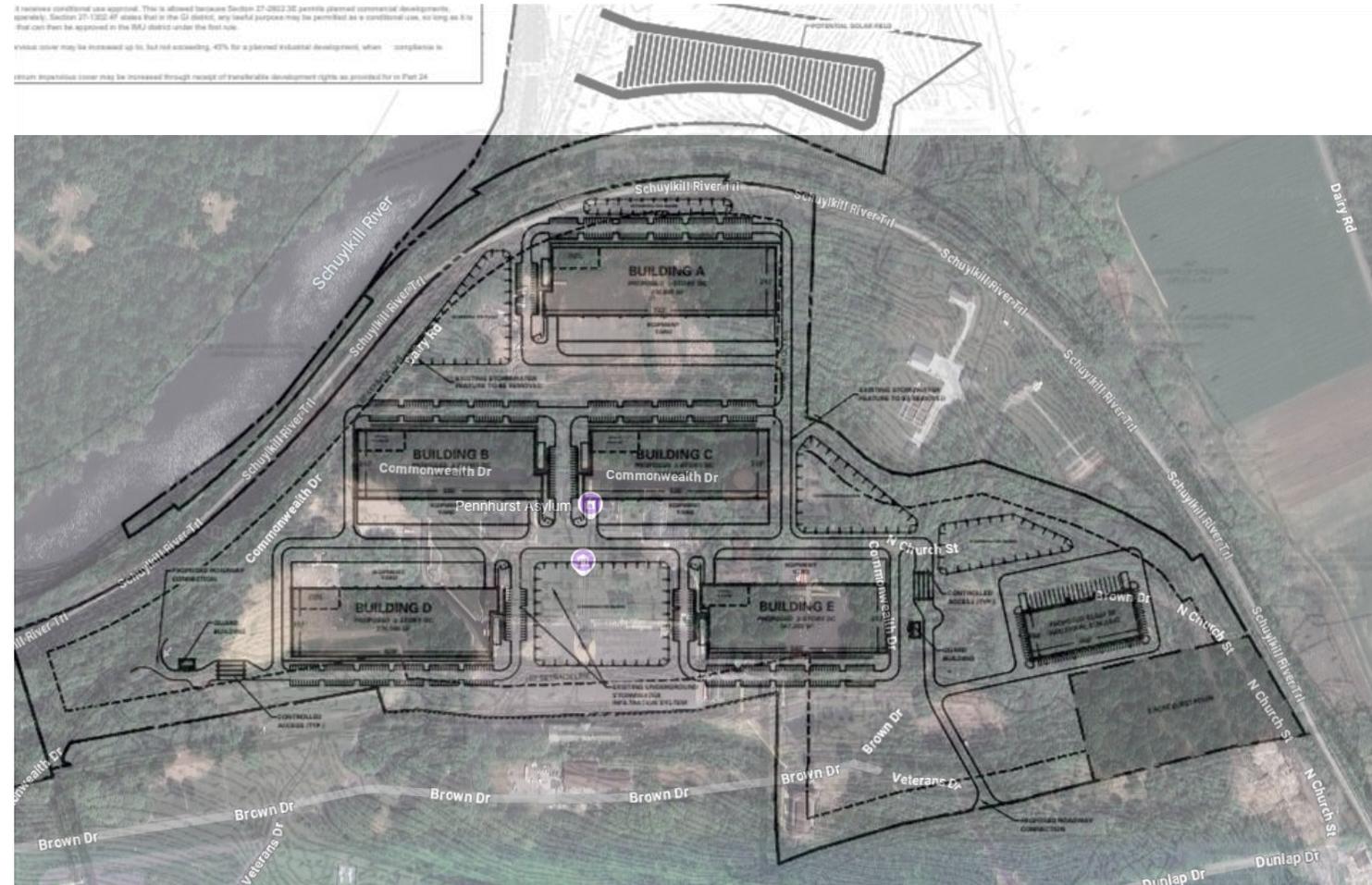| 6	Pennsylvania
2	New Jersey
1	Delaware
0	New York

Pennhurst

Address: 1205 Commonwealth Dr, Chester County
Parent Company: Pennhurst Holdings
Scale: ~125 acres, 5 buildings (1.3 million sq ft), 5-acre substation
Nearby PWS:

Google Maps Link:
https://www.google.com/
maps/@40.1940773,-
75.5638084,922m/data=!3
m1!1e3?entry=ttu&g_ep=E
goyMDI1MTAwOC4wIKXM
DSoASAFQAw%3D%3D

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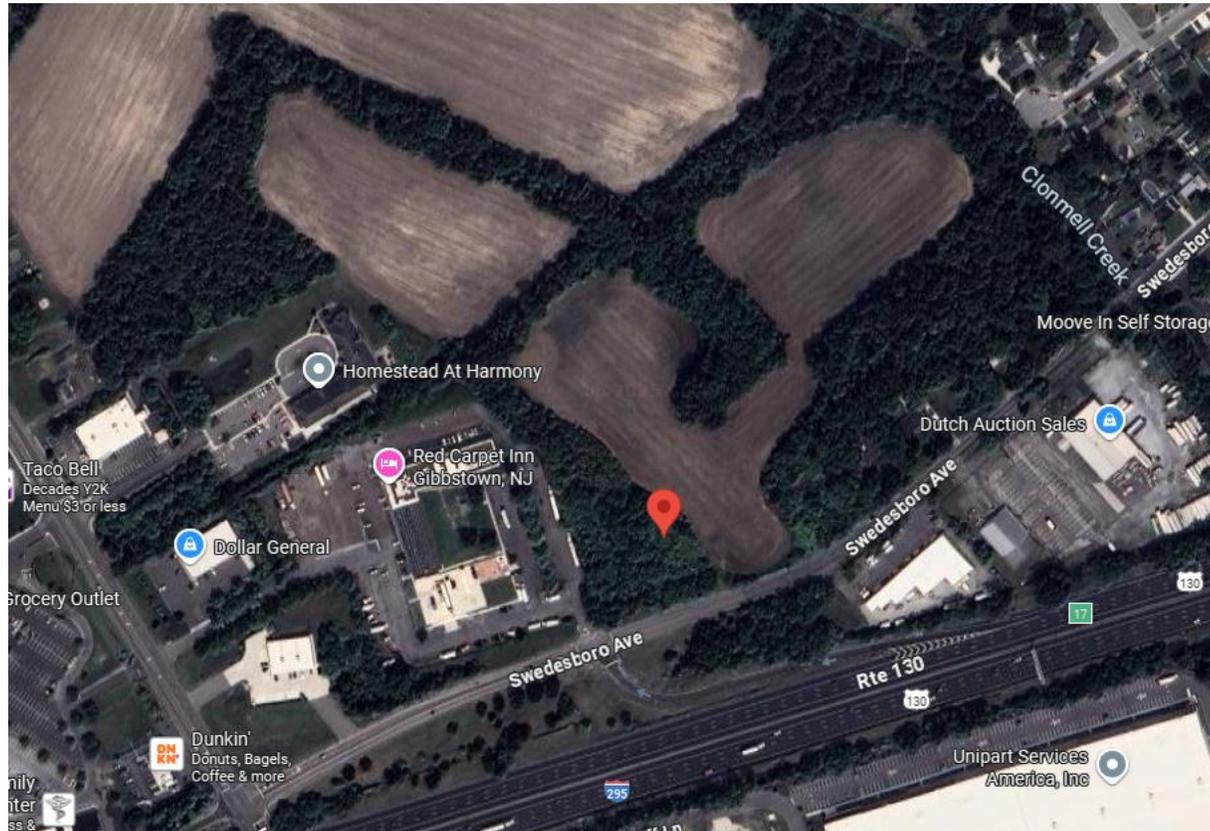|	
6	Pennsylvania
2	New Jersey
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Metrobloks: Philadelphia Metro/ PHL MB01 DC2

Address: 285 Swedesboro Avenue, Gloucester County
Parent Company: Metrobloks
Space: 12 acres, 370,000 sq ft
Nearby PWS: NJ American-Bridgeport

Google Maps Link:
https://www.google.com/maps/@39.8186185,-75.2628846,3806m/data=!3m1!1e3?entry=ttu&g_ep=EgoyMDI1MTAwOC4wIKXMDSoASAFQAw%3D%3D

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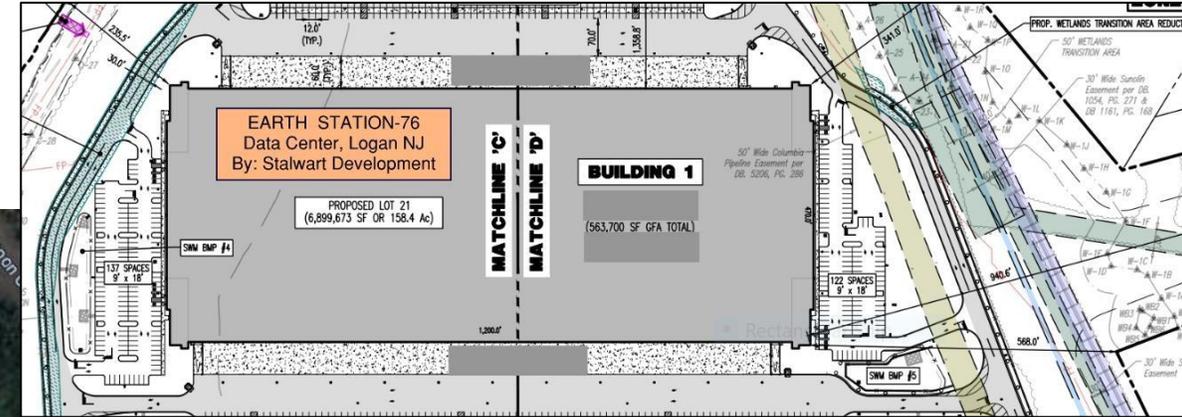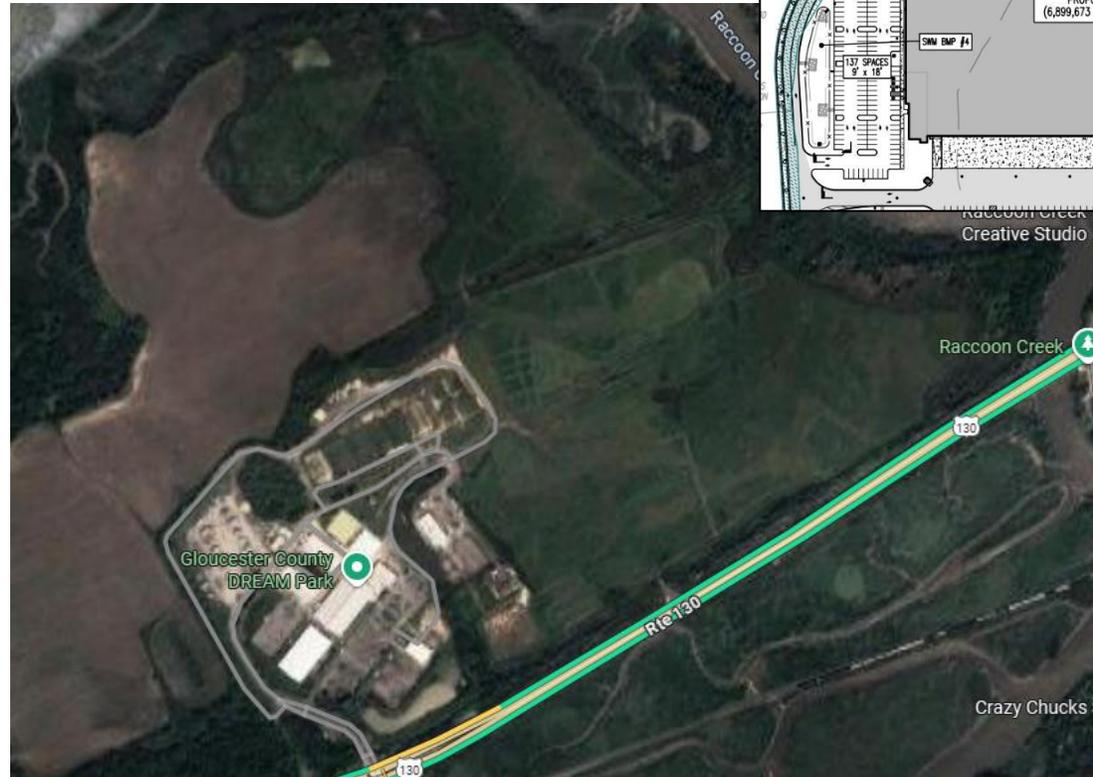

Earth Station 76

Address: Along Route 130, Logan Township, Salem County
Parent Company: Energy Concepts
Space: 560,000 sq ft (2 stories)
Nearby PWS: NJ American (Logan or Penns Grove)

- https://nrg-concepts.com/earthstation76
- https://static.datacentermap.com/company/energy-concepts/datacenter14154/EARTHSTATION76.pdf
- Proposed location: https://www.datacentermap.com/usa/new-jersey/logan/earth-station-76/specs/

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"Project Washington"- Starwood Digital Ventures

Address: adjacent to 784 Hamburg Road, Newark, New Castle County

Parent Company:

Starwood Digital Ventures (subsidiary of Starwood Capital Group)

New Castle Campus Development LLC (related to PBF Energy)

Space: 11 buildings (6,100,000 sq ft)

Nearby PWS: United Water Delaware: Southern Service Area

Google Maps Link:
https://www.google.com/maps/@39.6143112,-75.6429059,2682m/data=!3m1!1e3?entry=ttu&g_ep=EgoyMDI1MTAwOC4wIKXMDSoASAFQAw%3D%3D

Where do we go from here?

- Continue to track proposed data centers
- Seek water use information wherever possible
- Coordinate with SRBC / ICPRB / State Agencies
- Project Review & applications / inquiries
- Evaluate policies to reduce impacts