

Data Centers Decoded

2026 National Association of State Trust Lands
Medora, ND

Progress forged with care.

We're experts in data centers, you're the experts in your community

COMMUNITY PRINCIPLE 1

Plain-language education

COMMUNITY PRINCIPLE 2

Transparent project updates

COMMUNITY PRINCIPLE 3

Community feedback loops

COMMUNITY PRINCIPLE 4

Clear follow-through

Who is Applied Digital

Applied Digital is a specialized technology landlord.

We build large data center campuses and lease space inside them to major technology companies.

We provide the critical services that keep the site running:

- Power access and backup generation
- Cooling systems for high-density equipment
- Physical security
- Site maintenance and operations
- Local support for customers and the community

Our customers use the space to run AI, cloud, and other digital infrastructure.



Founded

2021

Headquarters

Dallas, TX

Focus

**AI Factories +
Data Centers**

Community Goal

**Build with the
community**

Deployment Overview

NORTHERN REGION | POLARIS FORGE PLATFORM

What is a Data Center

A data center is a purpose-built facility that houses rows of servers, networking equipment, electrical systems, cooling systems, and security infrastructure. These facilities support everyday technology such as websites, streaming, phone calls, cloud services, AI tools, and more.



Traditional

General-purpose facilities serving a wide range of cloud, enterprise, and internet workloads.



Blockchain

Specialized facilities designed for high-density compute tied to blockchain operations.



AI Factory

Purpose-built campuses designed to turn large-scale power into operational AI capacity.

Data Center Types Compared

<u>Feature</u>	<u>Traditional</u>	<u>Blockchain</u>	<u>AI Factory</u>
Use	Wide range	Specialized	Specialized AI workloads
Cooling	Primarily air	Air / some liquid	Primarily liquid + optimized airflow
Power Density	Low to moderate	High	Very high
Networking	High bandwidth	Lower bandwidth needs	High fiber counts + specialized networking
Location	Traditional markets	More flexible	Depends on power, land, fiber, community
Employment	10s–100s	10s	100s
Rack Layout			

Artificial Intelligence in Plain Terms

What Is AI?

Artificial intelligence, or AI, is a tool that learns from data and helps people complete tasks, recognize patterns, and make decisions.

Like any tool, AI needs to be used properly, responsibly, and with human oversight.

Common Examples of AI

ChatGPT and language tools

Self-driving vehicle systems

Medical image analysis

Farming optimization

Oil and gas operations

Where AI Happens

AI may appear on a phone, laptop, or app — but the heavy computing work happens inside large data centers.

Applied Digital builds and operates the infrastructure that enables these technologies.



What is an AI Factory?

Before someone uses ChatGPT, Claude, Google, or other AI tools, the equipment behind those services needs a home.

An AI Factory is a purpose-built data center designed to support that equipment at large scale. It provides the power, cooling, security, and operations needed to keep modern AI systems running.

How An AI Factory Supports Computing Equipment

1

Power is transformed, cleaned, and backed up.

2

AI Equipment generates heat in the data halls

3

Heat is pumped out of the data halls

4

Closed-loop cooling cools the the water-glycol glycol mix

5

Cool water is recirculated back into the data halls

6

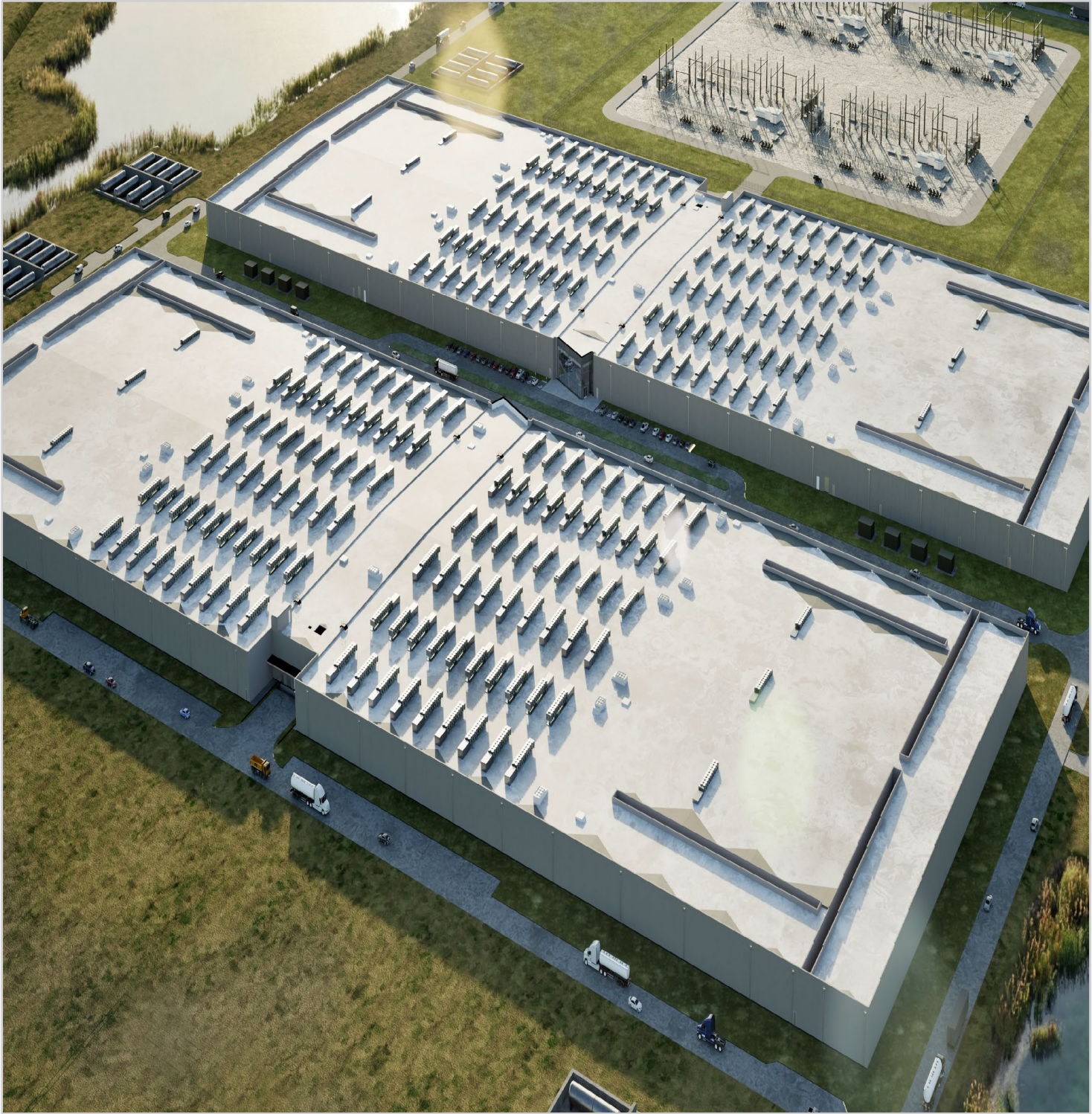
Employees maintain the infrastructure

7

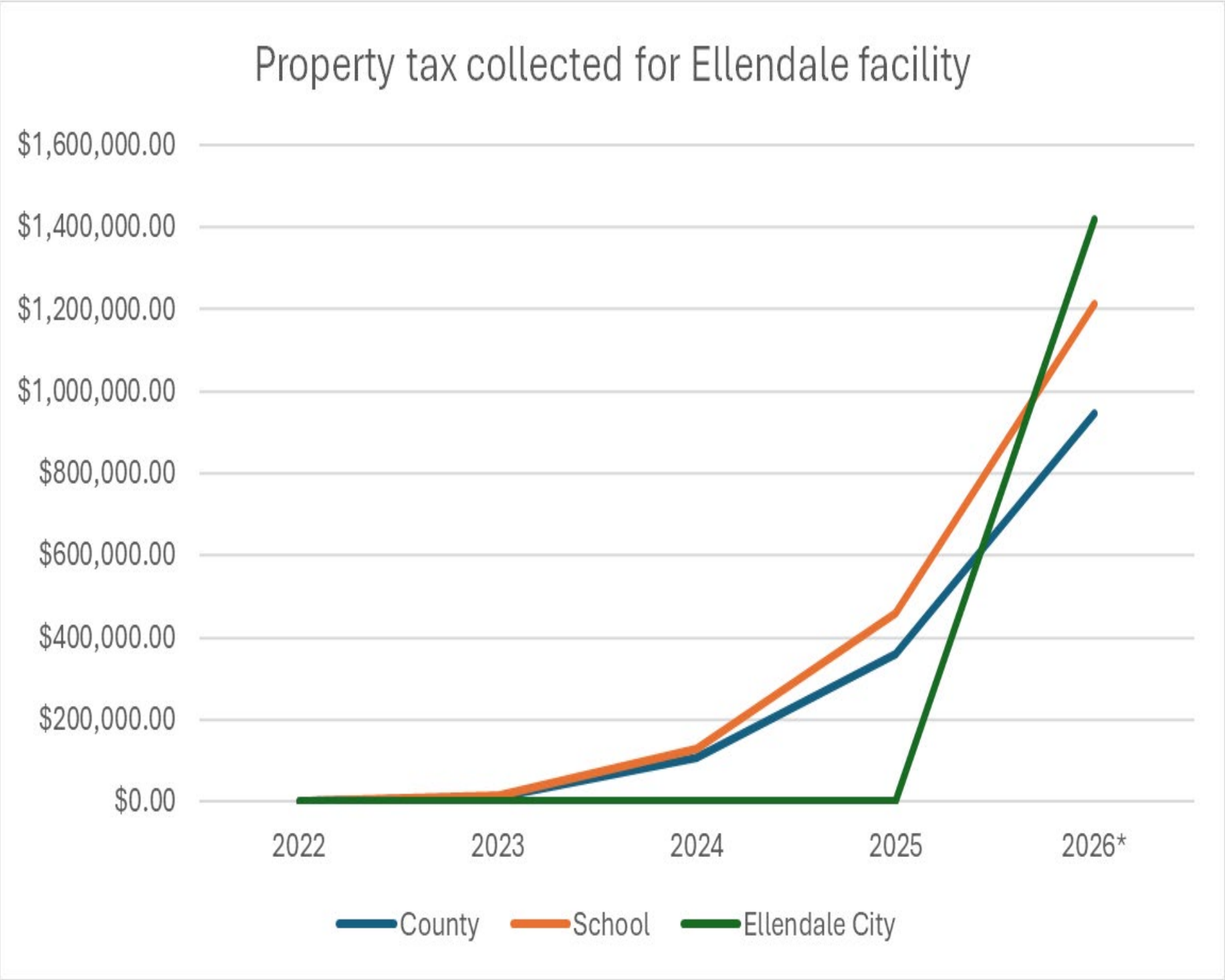
Communities receive long-term benefits

Project Snapshot

Campus Polaris Forge 1	Location Ellendale, ND	Planned Capacity 400 MW Critical IT Load	Site Area 320 acres
Building Count 14	Status 11 Complete 3 Partial	Construction Peak 2,200+ workers	Permanent Jobs 300+



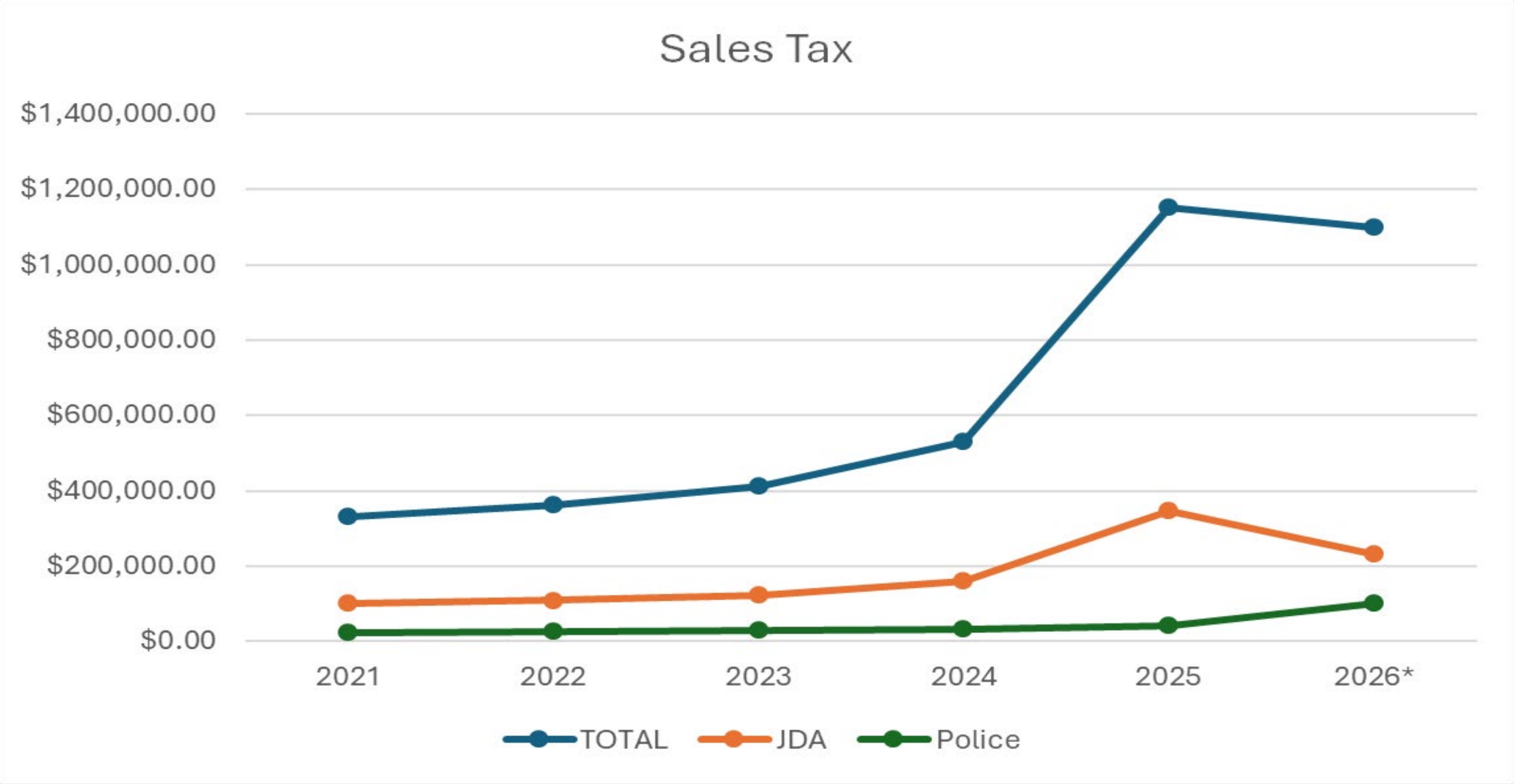
Property Taxes for PF1



Year	County	School	City of Ellendale
2022	\$155.87	\$179.28	\$0.00
2023	\$12,242.27	\$14,279.50	\$0.00
2024	\$109,334.67	\$129,631.00	\$0.00
2025	\$358,525.59	\$460,313.76	\$0.00
2026*	\$944,581.93	\$1,212,755.76	\$1,420,050.31

*2026 estimated based on 2025 mill levie

Sales Taxes for PF1



*2026 is two months of collections

AI Factory Design



COOLING

Closed-loop system

Water is recirculated through the system instead of being regularly consumed for cooling. Regional climate conditions can also support more efficient cooling during cooler periods.

ENERGY

Planned with utilities

Power infrastructure is coordinated with utility utility partners before the project moves forward, with a focus on grid compatibility, compatibility, reliability, and long-term operations.

BUILDINGS

Purpose-built structures

Steel and precast concrete buildings support high-performance computing, long-term durability, and better control of equipment placement and site operations.

SAFETY

Controlled operations

Facilities include controlled access, monitoring, emergency planning, and regulated backup systems used for resilience and required testing.

North Dakota Benefits

North Dakota is emerging as a powerful hub for technology and innovation, and Harwood stands at the center of that momentum. The state's strong work ethic, pro-business policies, and tax incentives create an ideal environment for sustainable growth. By leveraging stranded power from wind, coal, and natural gas, we're helping turn North Dakota's resources into a model of responsible, forward-looking energy use.

NET EXPORTER OF POWER

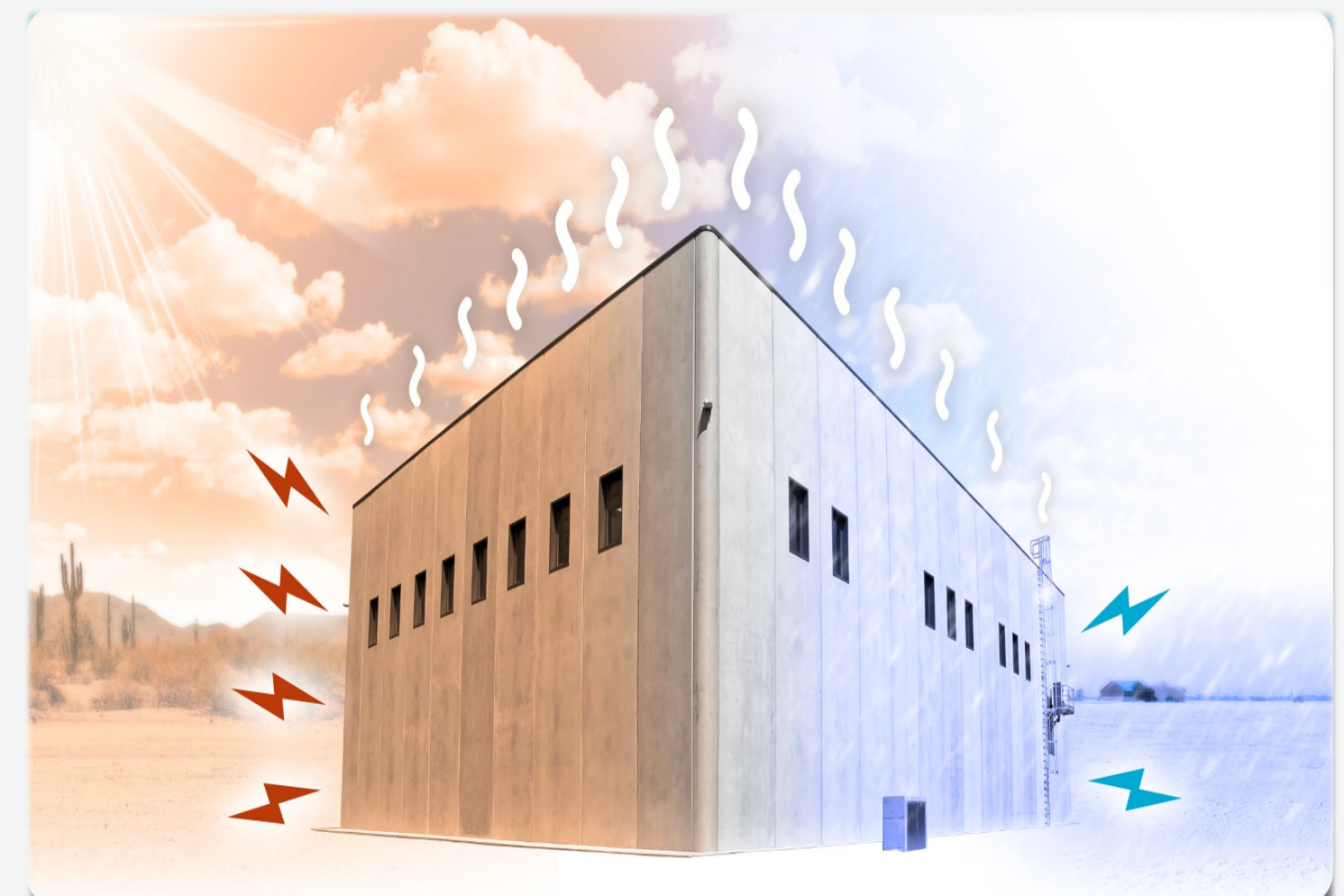
- North Dakota generated 50% more electricity than it used in 2023, producing 42 million MWh vs 28 million MWh consumed
- Applied Digital utilizes electricity generated in ND, reducing power transmitted out of state.

FREE COOLING

- North Dakota's cold climate and consistent winds create ideal conditions for our data centers.
- Cold air is harvested and circulated through our systems to allow for our tech fluid to be cooled naturally.
- 200+ days of free cooling a year.

SUSTAINABLE OPERATIONS

- With free cooling available, operating equipment is scaled back reducing the total PUE. (Power Usage Effectiveness)
- Less total site electrical consumption on days where natural cooling is used.



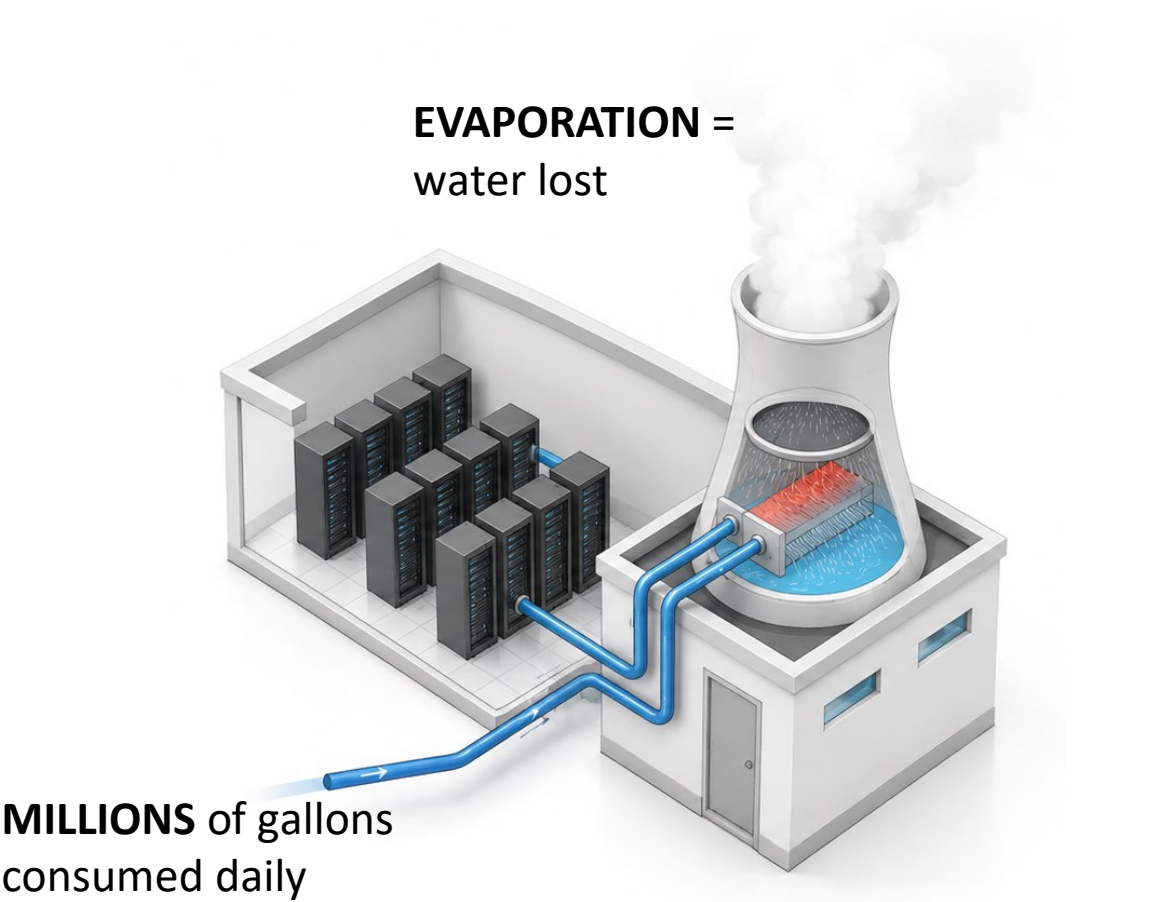
*Hot Climate: **MORE** energy is needed to keep buildings cool while the average temperature outside is warmer.*

*Cold Climate: **LESS** energy is needed to keep buildings cool while the average temperature outside is cooler.*

Evaporative cooling = water. Closed-loop dry rejection = power.

EVAPORATIVE COOLING

Cooling towers reduce mechanical load by evaporating water. That can help PUE but creates recurring local water consumption.

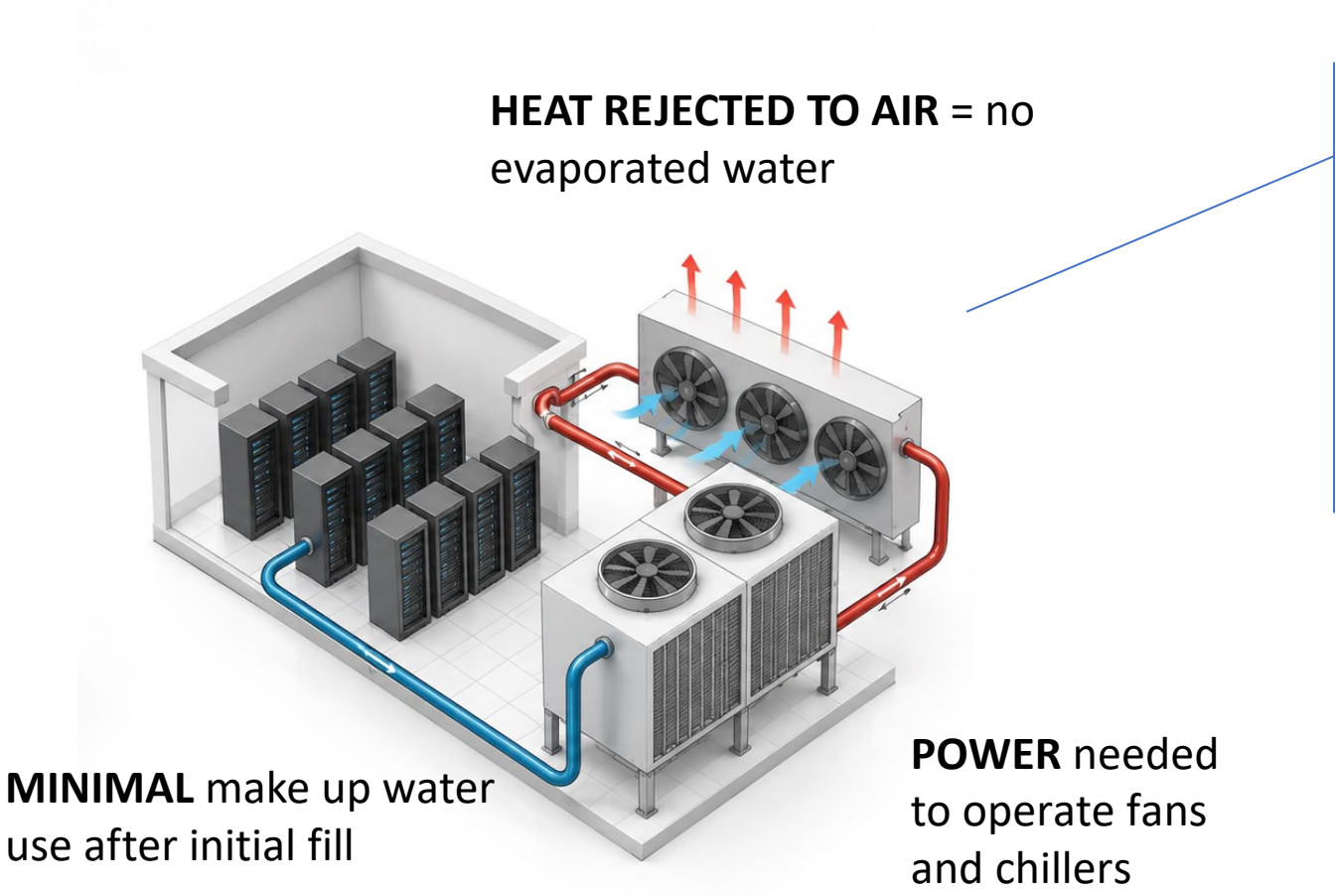


High water

Lower power

CLOSED-LOOP DRY REJECTION

Heat is rejected to air through dry coolers or air-cooled chillers. Water is filled once and topped up only for maintenance.



Household-level water

Higher power

With North Dakota’s cool climate, Applied is able to use “free cooling” over 60% of the year – letting the ambient air cool down the return water loop. Electricity-hungry chillers with compressors are only run during the hot summer months.

Site Impact: Water

Applied Digital campuses use closed-loop cooling systems. That means the cooling fluid circulates through the system, rejects heat outside, and is reused.

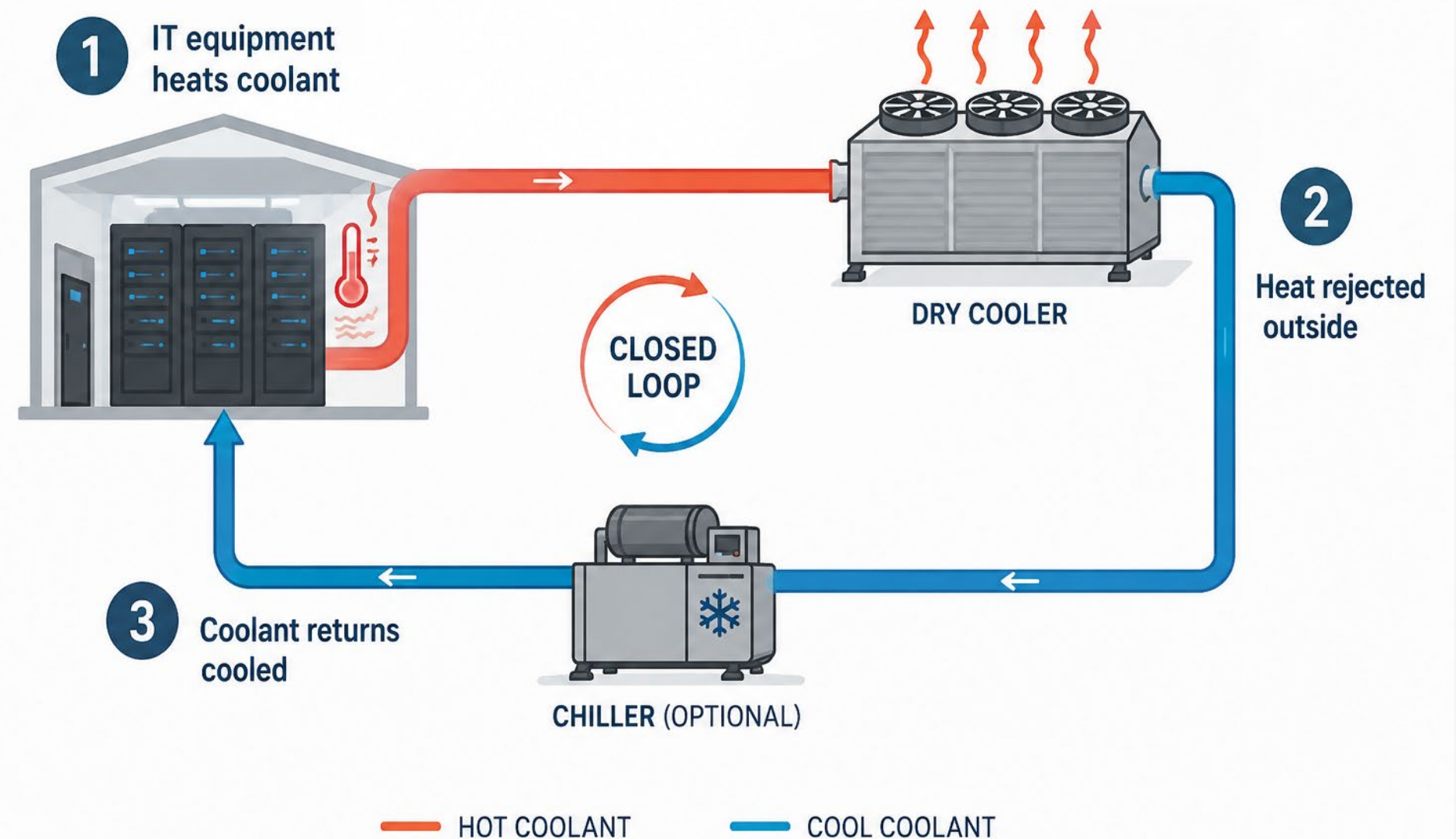
The facility does not rely on regular water consumption to cool computers. Most day-to-day water use is for normal building needs.

What do we use water for?

- **Bathrooms**
- **Kitchens**
- **Cleaning**
- **Make Up Water for Cooling System (Minimal)**
- **Irrigation for Landscaping (Rainwater)**

CLOSED-LOOP COOLING

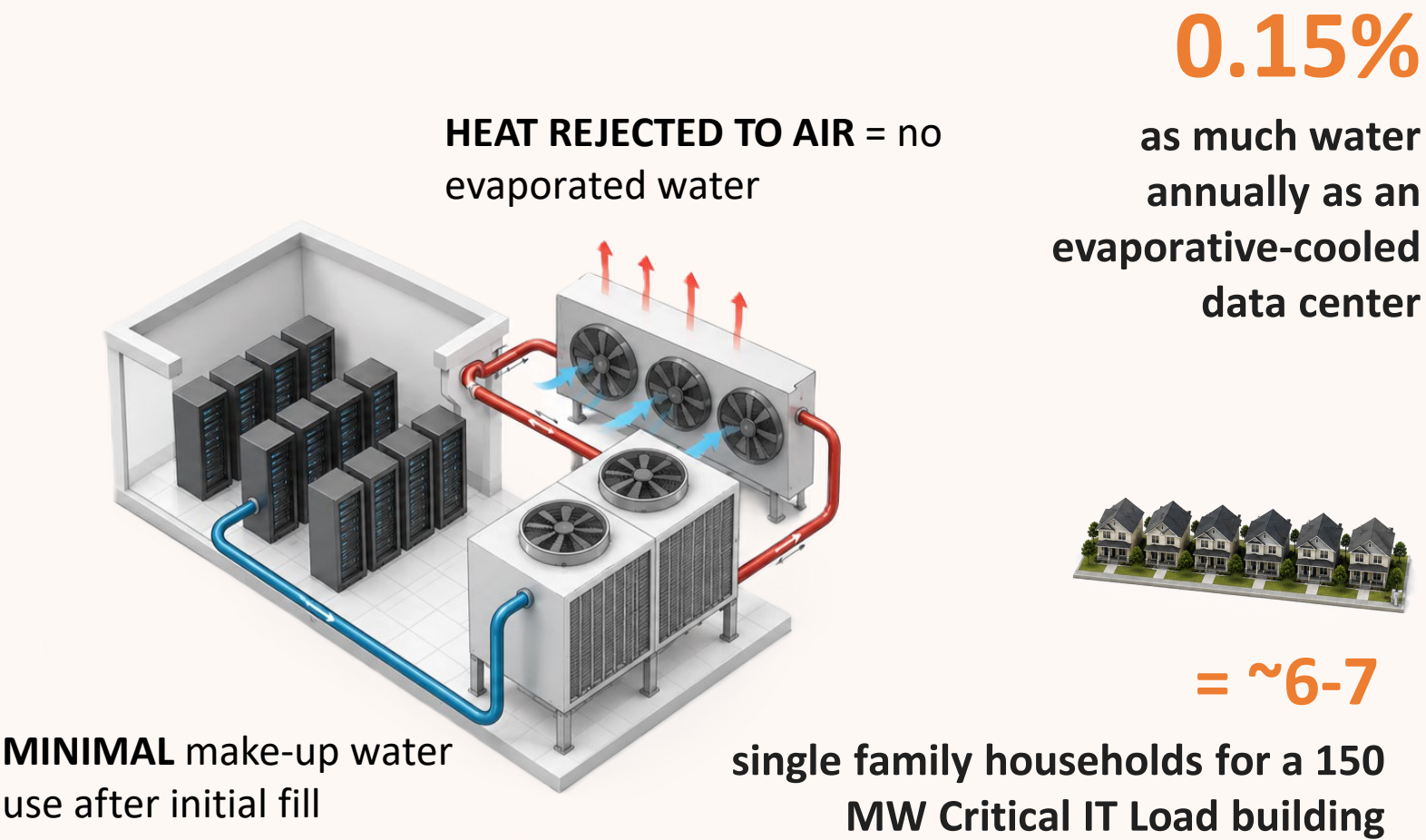
Fluid circulates, rejects heat outside, and returns cooled — reused again and again.



Applied data centers are designed differently: unlike conventional evaporative cooling, **we don't guzzle your water.**

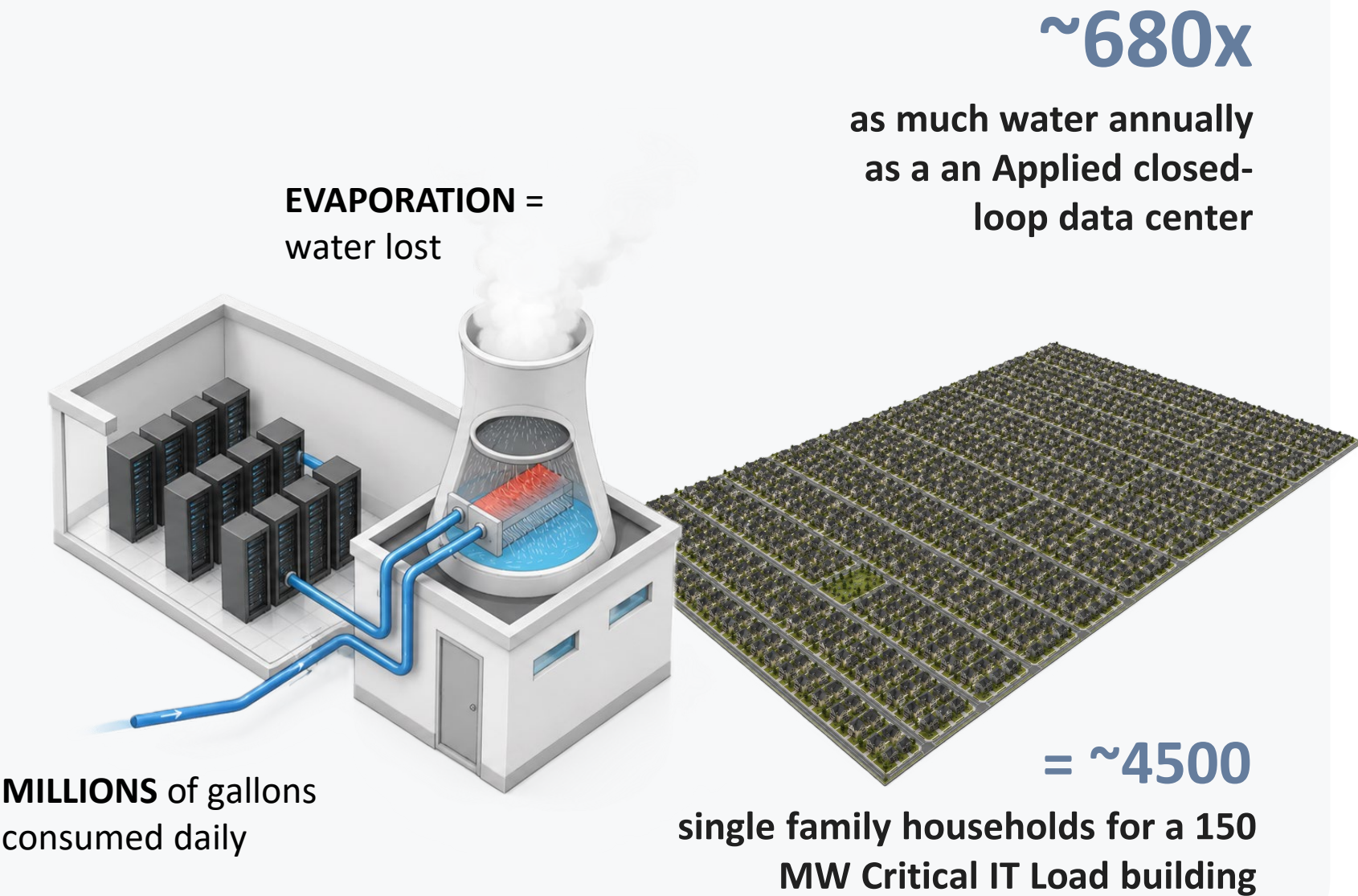
Applied's Design CLOSED-LOOP COOLING

Think of it like a **car radiator**. Water moves through a closed loop, carries heat away from the equipment, and fans release that heat into the air. The same water keeps circulating, so after the system is filled, it only needs small top-ups for maintenance.



Conventional EVAPORATIVE COOLING

Think of it like **sweating**. Water is used to cool the system by evaporating into the air. Once that water evaporates, it is gone, so the system has to keep adding new water every day.



Applied data centers require house-hold equivalent water for people on-site, **very little water for IT operations.**

ONE-TIME WATER DRAW: 1.266M gal

< less than 2.5" of rain on our 20 acre building

150 MW Critical IT Load
Applied Data Center Building

~400k

gal initial fill for fire sprinkler tank

Municipal water, fire-protection reserve. Sits in tank; not consumed except in emergency.

~866k

gal initial fill for cooling loops

Deionized water shipped in — not drawn from local municipal supply.

= ~51k

gal/year amortized over 25 years

ANNUAL WATER USE: 735k gal

~685k

gal/year use by staff

Restrooms, kitchens, cleaning, and normal occupied-building use.

= ~6

single family households for our people



= ~1

single family US household for IT



+ ~50k

gal/year cooling water makeup

Maintenance / testing top-ups only. No evaporative loss.

Note: glycol arrives as a pre-mixed chemical

Site Impact: Energy

How Applied Digital’s power use can support local utility efficiency

1. We pay for our power

The data center pays for the electricity, utility service, and infrastructure required to operate its facilities.

2. We create steady demand

Our facilities operate as large, consistent power customers, which can help utilities better plan, balance, and use available generation.

3. Customers can benefit

In the Ellendale case study, MDU filings show approximately **\$38.4M** in customer benefits from 2023–2026.

**Ellendale Case Study:
MDU Customer Benefits**

Filing Year	Transmission Rider	Fuel & Purchased Power	Total
2023	\$7,629,933	-	\$7,631,956
2024	\$9,823,661	\$1,916,266	\$11,741,951
2025	\$7,365,540	\$4,974,388	\$12,341,953
2026	-	\$6,685,799	\$6,687,825
Total	\$24,819,134	\$13,576,453	\$38,395,587

\$38.4M

Total customer benefit shown in MDU filings

Site Impact: Sound

Sound is reviewed during site planning, construction, and operations.

Applied Digital uses setbacks, layout choices, blocking, and sound studies to understand potential impacts and adjust as needed.

Sound Study

Completed before operation and again once operational to understand and mitigate impacts as needed.

Distance

Setbacks and facility placement help reduce sound exposure for nearby neighbors.

Blocking

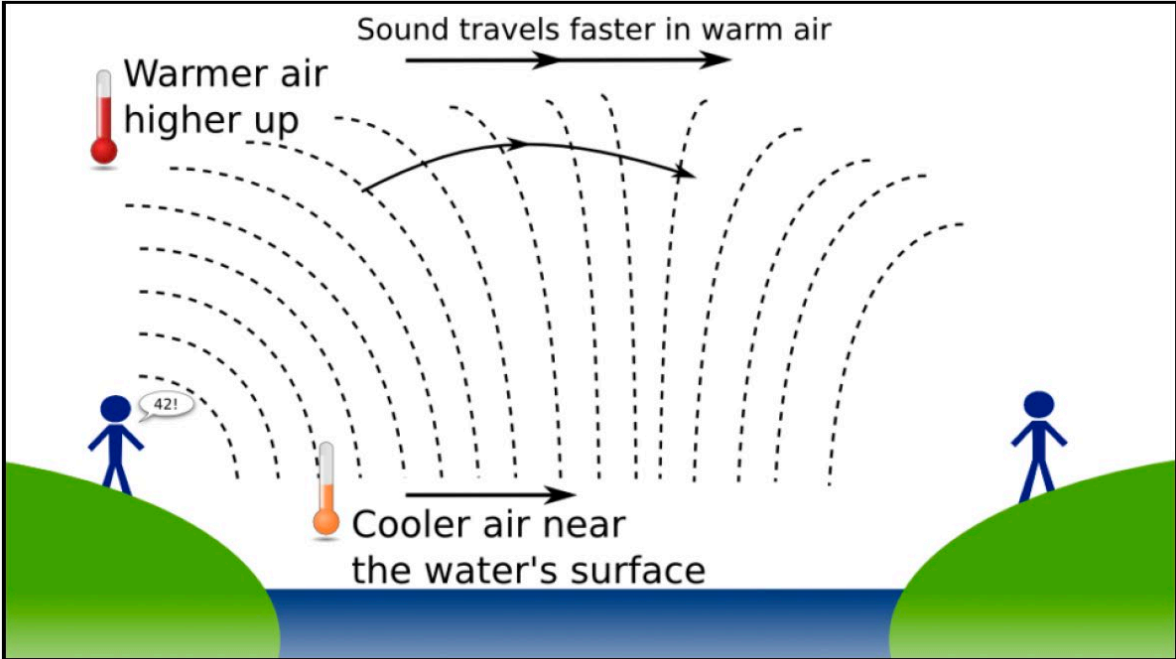
Buildings, barriers, and layout choices can help control sound movement.

Working With Neighbors

Questions and concerns should be captured, tracked, and addressed directly.



Site Impact: Sound



Date	Hour	L50 Noise Level, dBA				Crit- erion	Weather Conditions			
		Measured					Temp	Wind		Condition
		Loc. A	Loc. B	Loc. C	Loc. D			Speed	Dir	
Thursday, February 12, 2026	2:00 PM	-	-	47	-	50	65 °F	3 mph	VAR	Cloudy
	3:00 PM	-	50	49	-		67 °F	0 mph	CALM	Mostly Cloudy
	4:00 PM	40	57	52	-		70 °F	5 mph	SSE	Fair
	5:00 PM	42	61	57	43		71 °F	5 mph	VAR	Fair
	6:00 PM	45	61	60	49		71 °F	3 mph	WSW	Fair
	7:00 PM	46	62	61	51		69 °F	0 mph	CALM	Fair
	8:00 PM	47	61	59	49		63 °F	3 mph	ESE	Fair
	9:00 PM	44	60	58	50		61 °F	0 mph	CALM	Fair
	10:00 PM	44	59	57	48		61 °F	0 mph	CALM	Fair
	11:00 PM	41	56	55	47	60 °F	0 mph	CALM	Fair	
Friday, February 13, 2026	12:00 AM	42	56	55	47	50	59 °F	0 mph	CALM	Fair
	1:00 AM	41	54	52	48		55 °F	0 mph	CALM	Fair
	2:00 AM	44	54	53	48		56 °F	0 mph	CALM	Fair
	3:00 AM	45	56	54	49		54 °F	0 mph	CALM	Fair
	4:00 AM	45	59	58	48		53 °F	0 mph	CALM	Mist
	5:00 AM	47	60	58	51		52 °F	0 mph	CALM	Fog
	6:00 AM	48	60	58	55	60	51 °F	0 mph	CALM	Fog
	7:00 AM	49	58	56	54		49 °F	0 mph	CALM	Fog
	8:00 AM	49	53	52	50		49 °F	0 mph	CALM	Fog
	9:00 AM	46	51	51	46		51 °F	0 mph	CALM	Fog
	10:00 AM	38	49	49	42		57 °F	0 mph	CALM	Fair
	11:00 AM	37	49	48	40		62 °F	3 mph	SE	Fair



HVAC Noise Without vs With Mitigation

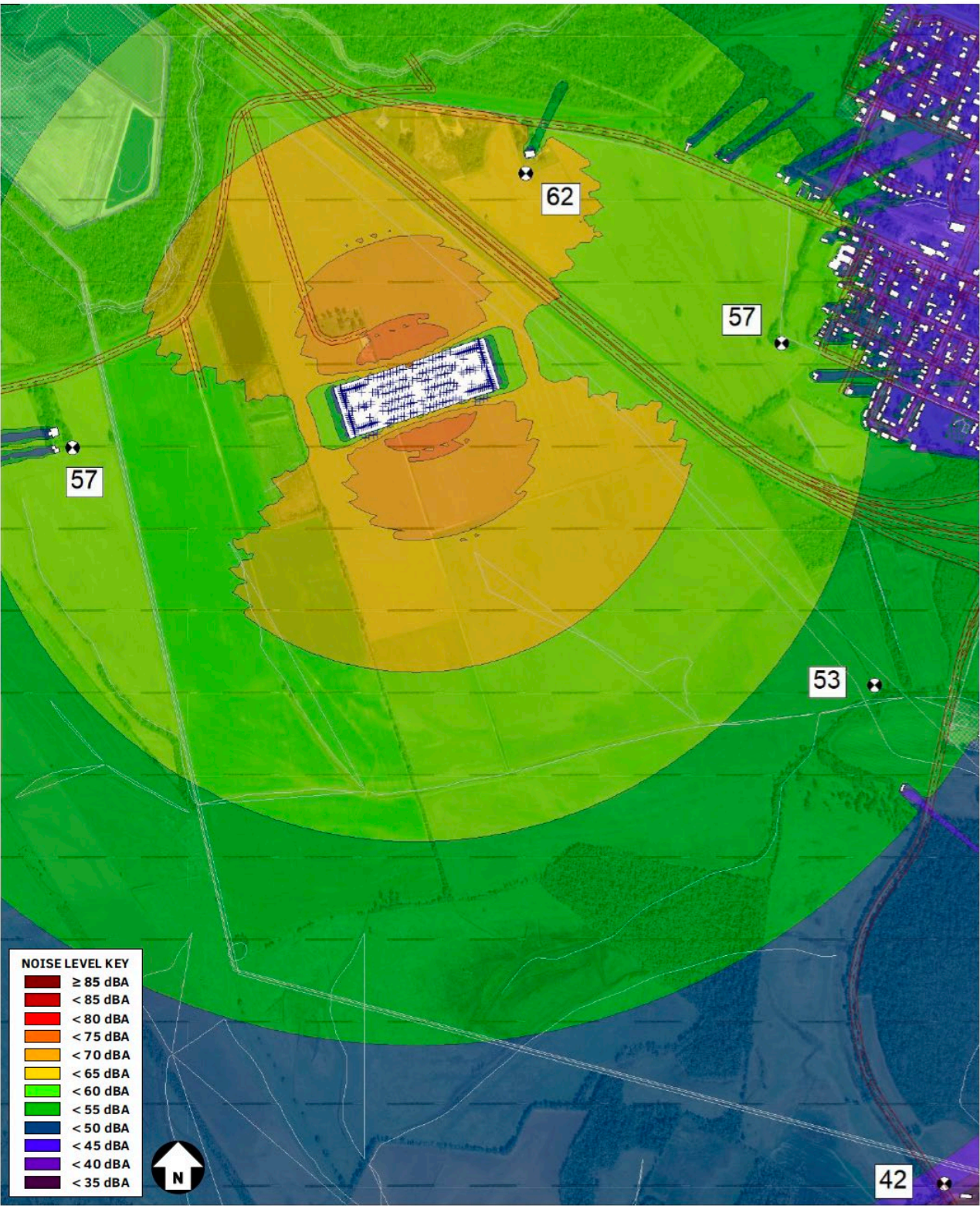


Figure D-7: Noise contour plot showing AEX01 HVAC only noise at neighboring sites.

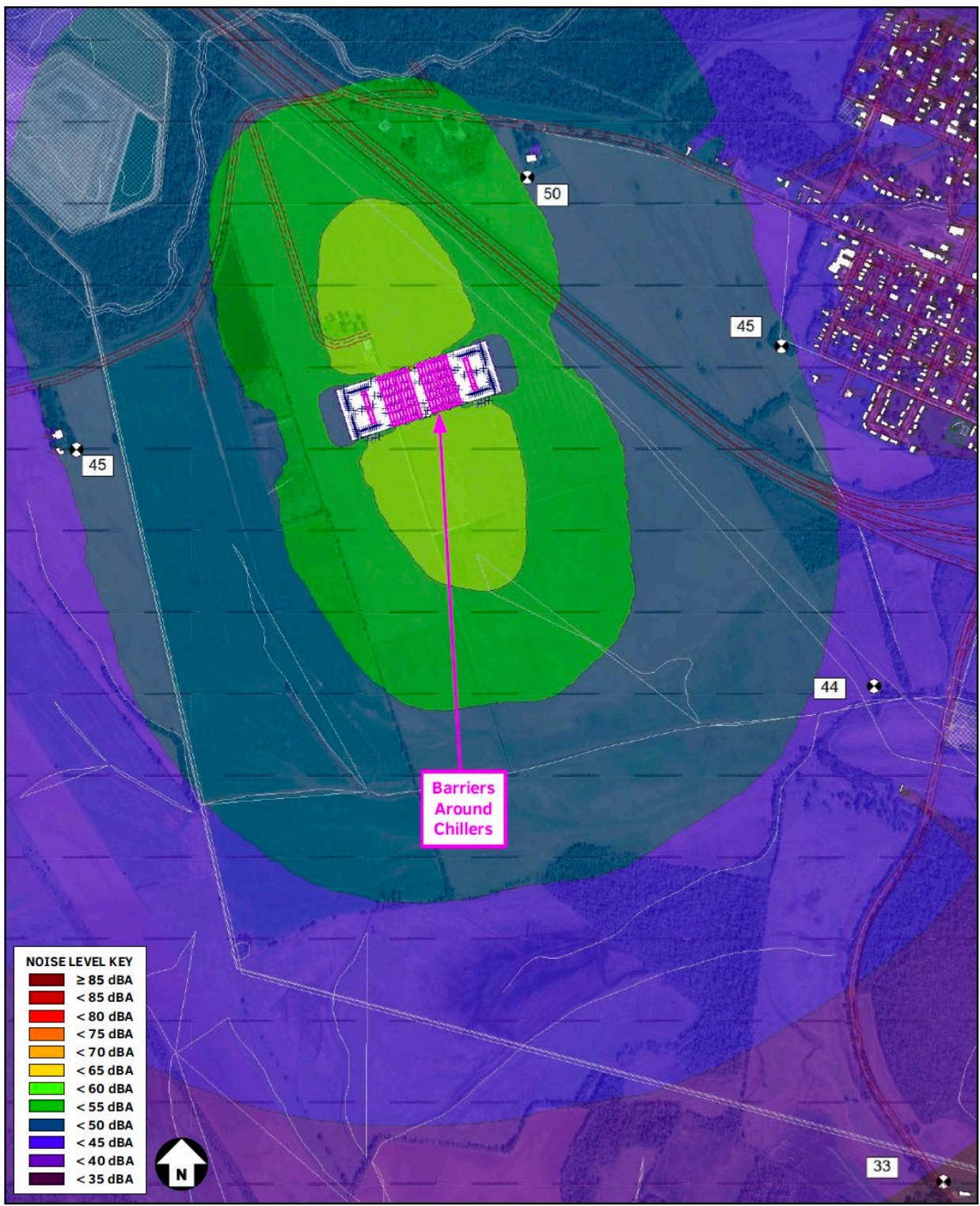


Figure E-4: Noise contour plot showing AEX01 HVAC only noise, with noise control recommendations, at neighboring sites.

Generator Noise Without vs With Mitigation

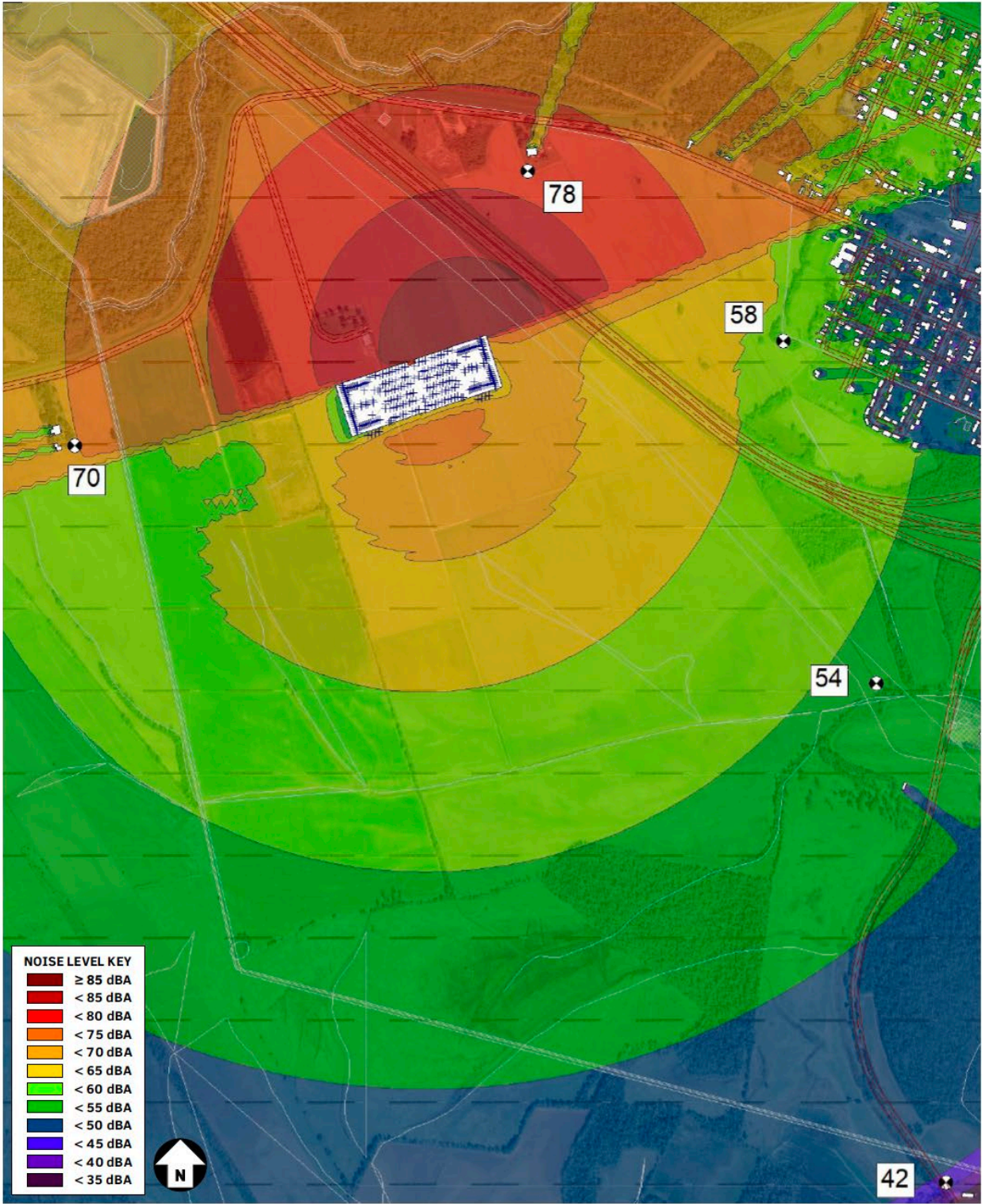


Figure D-8: Noise contour plot showing AEX01 noise from combined HVAC and generator sources at neighboring sites.

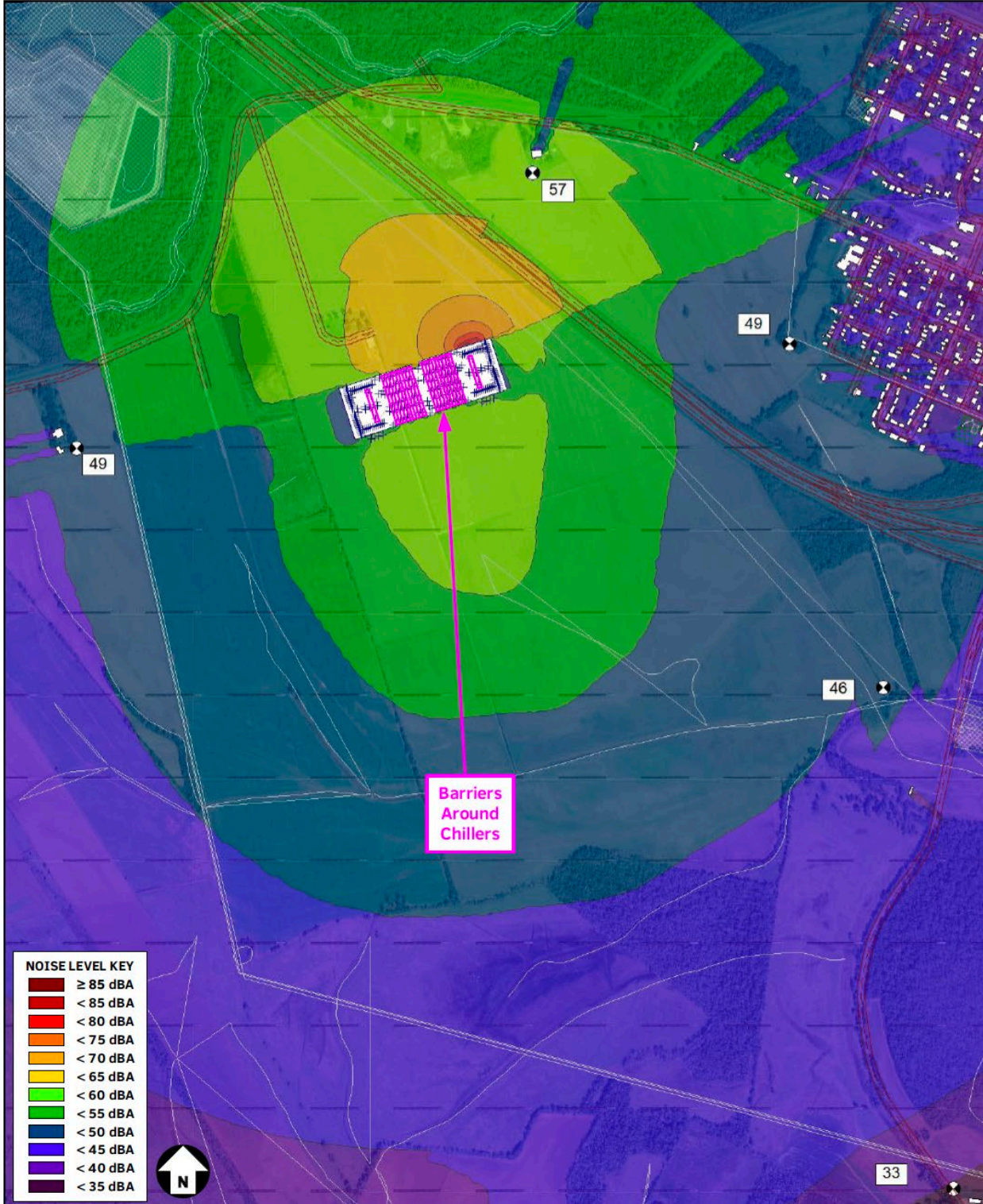


Figure E-5: Noise contour plot showing AEX01 noise from combined HVAC and generator sources, with noise control recommendations, at neighboring sites.

Site Impact: Traffic

Traffic Mitigation

- Coordinate with city/parish officials
- Share delivery instructions with drivers
- Use designated access routes
- Adjust patterns as conditions change

Navigation On Site

- Temporary/private roads where needed
- Clear entry and staging areas
- Construction office coordination
- Security and signage for safety

Community Coordination

- Open lines with local officials
- Direct path for concerns
- Timely updates at future townhalls
- Responsive issue tracking

Site Impact: Safety, Security + Emergency Planning

Our safety planning extends beyond the jobsite. We coordinate traffic, road conditions, worker expectations, emergency response, and community concerns to reduce impacts on nearby residents.

How we manage community impact

Traffic + Road Safety

Coordinate truck routes, delivery timing, traffic traffic flow, and site access to reduce disruption disruption on local roads.

Clean Roads + Debris Control

Require load covering, truck clean-off, and road and road sweeping as needed to limit rocks, rocks, mud, and construction debris.

Worker + Driver Expectations

Set clear expectations for speed limits, local road awareness, site behavior, and winter driving when needed.

Resident Issue Response

Questions and concerns, including roadway roadway issues or windshield damage, are are captured, tracked, and addressed directly. directly.

Coordination + response

Emergency Coordination

Coordinate with local law enforcement, fire, EMS, and emergency management on site access, emergency procedures, and response planning.

Project contact channels

Concern Type	Best Contact
Community questions	Community@AppliedDigital.com
Roadway / construction concern concern	Community@AppliedDigital.com
Urgent safety issue	911 / local emergency services
Townhall follow-up	Gail Adams

For emergencies, residents should always contact local emergency services first.

What do we look for?

Power

Access to reliable, large-scale energy infrastructure.

Land

Room to develop safely with appropriate setbacks and site planning.

Fiber

Connectivity needed for modern computing workloads.

Workforce

Opportunity to create skilled local and regional jobs.

Community Alignment

Long-term partnership with local leaders and residents.



Applied Digital Cares



Program Overview

Applied Digital Cares creates an opportunity for non-profit organizations to submit grant applications directly to Applied Digital for assistance on projects and funding matters.

Recent Grant Cycle, Spring 2026 :

Projects focused on public safety, education, youth development, arts and culture, and community spaces.

Example Spring 2026 Grant Cycle:

Region	Amount
Jamestown Area	\$45,326
Ellendale Area	\$488,344
Harwood Area	\$68,425
Statewide Region	\$17,500

\$619,595

awarded to initiatives across North Dakota

Thank You!

Where To Find Us

Email: Nick@AppliedDigital.com

Website www.AppliedDigital.com

Grants www.AppliedDigitalCares.com