



NEW JERSEY ENVIRONMENTAL JUSTICE ALLIANCE

What's Happening?

From AI chatbots to Google Drive, data centers are the hidden infrastructure that powers everyday life on the internet. Their rapid expansion over the past few years is creating a new set of environmental-justice problems in New Jersey; dozens of data-center proposals are targeting water-stressed, overburdened and grid-constrained communities — often with very minimal public review or notice. This convergence of high power demand, massive water use, and limited community oversight is turning the Garden State into a testing ground for climate-unfriendly, health-hazarding technology.

- **Scale:** As of 2024, there are roughly 1136 hyperscale facilities worldwide. A typical hyperscale facility dedicated to training AI models or hosting AI chatbots generally uses 300 megawatts (MW) or more of power, which is enough to power 100,000 homes.
- **Energy:** U.S. data centers consumed over 4% of national electricity in 2024, but over 40% of that comes from fossil fuels. This means more power for data centers, strain on the grid, and increased cost and pollution for residents. New data shows that the global fleet of hyperscale data centers has more than doubled in the past five years – rising to 1,136 facilities by the end of 2024 – and U.S. operators now account for roughly half of total worldwide capacity. The firm projects that total hyperscale capacity will double again within the next four years, driven largely by AI-intensive workloads.
- **Water:** While a “medium-sized” data center uses about 110 million gallons of water a year, a hyperscale center can use 3–7 million gallons per day. That’s about as much as a small town’s water supply over a year, such as West Orange or East Brunswick.
- **Air Pollution:** Because of the size and scale of these facilities, many - if not all - need diesel backup generators, which can emit 200-600 times more nitrogen oxides (NOx) per kilowatt-hour (kWh) than modern gas plants. Often, these back-up generators run in times of peak demand or in emergency situations, which can create severe spikes of toxic air pollution and pollute the local air quality.
- **Noise:** HVAC and generator noise from hyperscale data centers can easily reach up to 96 dBA, which is well above the threshold for hearing damage for the average person. Long-term exposure can lead to ringing in the ears, change in hearing, and permanent hearing loss.
- **Consumer Cost:** As PJM and utility companies try to adjust pricing for the increased energy needs of these facilities, costs are passed onto ratepayers, i.e. every day residents. As a result, New Jersey households can expect to see energy bills rise by \$20 per month or more along with rising water rates.
- **Health & Equity:** Residents living around data centers will be exposed to toxic air pollutants which can add billions in health costs nationwide. Low-income and environmental justice communities bear an increasing burden for health and safety costs per household.
- **Health & Safety:** Storing large volumes of diesel on-site creates multiple health and safety hazards. If tanks are not properly sealed, maintained, or equipped with necessary containment, leaks can contaminate soil and groundwater with acidic sediments, gums, and microbial by-products that pose long-term exposure risks to nearby residents.
- **Cooling Towers:** Data centers generally rely on the use of cooling towers which use vast quantities of water to create mist. That mist can often migrate to nearby properties. If not properly maintained, it can cause public health issues like the growth of Legionella. Legionnaires disease, a type of pneumonia contracted by inhaling small droplets of water in the air containing Legionella bacteria, can often be contracted near cooling towers.

Case Study – Data One/Nebius AI-Focused Data Center, Vineland, NJ

While each data center is likely to be slightly different depending on its capacity, layout, and the needs of local permits, development of hyperscale data centers, such as the emerging infrastructure in Vineland, NJ, can give a glimpse into the scope and risk associated with these projects.

In Vineland, NJ, the multi-national corporation DataOne and proposed facility operator Nebius are pushing forward with a 300 MW “AI-native” facility that most would consider to be “hyperscale.” Despite community opposition, the center has been fast-tracked, which sidelines environmental safeguards and imposes air, water, and other resource degradation burdens onto the surrounding community.

- **How big is it?:** The facility is planned to be approximately 2.6 million square feet, roughly 45 football fields. The facility has a leased value of up to \$19.4 billion to Microsoft.
- **What are the approval gaps?** The Vineland Special Planning Board meeting announced a little over 1 week in advance; minutes contain no discussion of fuel mix, emissions controls, or water use.
- **What type of energy will power this center?:** This facility is likely to run via on-site natural-gas combustion, with diesel generators for backup. If this is the case, the facility will be extremely polluting to the local community and increase both greenhouse gas (i.e., climate warming gases) and greenhouse gas-copollutant levels, which have severe impacts on public health. At this time, Vineland has not put into place an air pollution mitigation plan for DataOne/Nebius.
- **How much water will be used?:** Data centers generate an immense amount of heat from being constantly run and processing high loads of data. To ensure the center doesn’t overheat, DataOne/Nebius say they will use a “closed loop” cooling system that recirculates water but still relies on cooling towers, producing mist that can drift onto nearby properties and, if poorly maintained, foster Legionella growth. Even with recirculation, the plant will consume hundreds of thousands of gallons per day.
- **Will this contaminate the local environment?:** The project in its current form uses very few protective measures to prevent groundwater contamination. For example, the project will have reduced setbacks - shortened buffers between the data-center structures and nearby wetlands, streams, or groundwater recharge zones, undermining a core tool for protecting water quality - no access drives or safety fencing, and a bio-retention basin that assumes a ‘clean’ roof runoff on a facility nearly guaranteed to have settled pollution from combustion. Bio-retention basins are landscaped infiltration cells, so any “clean” roof runoff that actually contains combustion by-products will trickle through the soil and can directly pollute groundwater. This design, combined with reduced setbacks and missing safety fencing, greatly heightens the risk of contaminating Vineland’s already stressed aquifer. This decided lack of protection raises the risk of groundwater contamination in a region already dealing with aquifer stress.
- **Besides air, land, and water, how will residents be affected?:** The use of fossil fuel combustion and diesel back-up generators will lead to localized air pollution which can increase public health risks including cardiovascular illness, asthma, and lung cancer. The noise from the facility - at or above 90 dBA - will affect nearby residents. Sustained exposure to loud noise has been shown to have neurological and mental health effects. Finally, additional water usage will place strain on the local community’s water supply and residential needs.
- **Will this project bring on sustained jobs?:** DataOne/Nebius have made no specific claims about the jobs that this project will bring to the community. Typically, construction of a hyperscale center will generate a short-term surge of skilled-trade work, roughly 1,000–1,500 temporary positions, but once the hyperscale facility is operational, average staffing levels flatten at 100 permanent employees, delivering only modest long-term employment relative to the billions of dollars invested. By comparison research from the Institute of Governance & Sustainable Development shows that for every one billion dollars of electricity bill savings today, from cost-effective energy efficiency

improvements and investments in cost-effective clean renewable energy technologies—whether they benefit households or businesses—the national economy will gain a net increase of 7,400 new jobs, as long as those savings are spent within the country.

- **Are there societal benefits that the project is going to offer the community?:** Although DataOne and Nebius claim community gains, the reality is far less compelling. The project will only deliver a brief construction boom of workers and an estimated 100 permanent high-skill jobs—numbers that pale in comparison to the hundreds of thousands of gallons of water that will be consumed and higher utility prices imposed. The 19.4 billion lease generates modest property-tax revenue and spurs ancillary spending, but those funds are unlikely to offset the long-term health, noise, and pollution burdens. Any promised societal benefits are limited, temporary, and outweighed by the enduring environmental and economic costs to Vineland’s residents.

AI-driven hyperscale data centers are not merely “cloud” infrastructure; they act as large, fossil-fuel-dependent power plants that externalize environmental and health costs onto nearby, often disadvantaged communities.

The DataOne/Nebius case study offers a glimpse into a future of:

- Rapid permitting,
- On-site polluting fossil fuel-based generation,
- Unquantified water use
- Waived permits and environmental protections
- Increasing public health risks
- Increasing cost passed on rate-payers, with the highest economic burden for low-income households.

It’s important that residents, elected officials, and advocates make smart choices now, to safeguard our future from highly risky large-scale data centers taking up community resources.

For more information about what you can do in your community, reach out to NJEJA at info@njeja.org.