

APPENDIX 1: QUERY

Data centers have myriad adverse effects on communities where they are located, and beyond. Some specific examples are the following:

1. Lake Tahoe Area & Northern Nevada (Tahoe-Reno Industrial Center)

- **Resource & Structural Impact:** NV Energy announced a reduction of power allocations to Liberty Utilities (affecting ~49,000 California/Nevada border customers) to redirect capacity toward the hyper-growth of Northern Nevada data centers (e.g., Switch Citadel campus). Data centers consumed 22% of Nevada's electricity in 2024, projected to hit 35% by 2030, triggering emergency energy procurement.
- **Health & Community Manifestations:** Severe utility rate hikes causing energy poverty. Omitted health risks include **hypothermia or heat stroke** due to self-rationing of heating/cooling, and mechanical failure of life-sustaining medical equipment (oxygen concentrators, ventilators) during forced blackouts or economic shutoffs.

2. Box Elder County, Utah (Stratos AI Project)

- **Resource & Structural Impact:** Approved via the Military Installation Development Authority (MIDA) on ~40,000 acres, this mega-project is projected to scale up to 9 Gigawatts (GW)—surpassing the current total grid capacity of Utah. It demands billions of gallons of water annually from aquifers feeding the already critically depleted Great Salt Lake basin.
- **Health & Community Manifestations:** Exacerbation of the Great Salt Lake's desiccation, which exposes toxic lakebed dust containing **arsenic and heavy metals**, causing widespread **chronic respiratory diseases, lung cancer, and metabolic disorders** when airborne. Localized thermal plumes worsen heat exhaustion in a desert environment.

3. Fayetteville & Newton County, Georgia (Meta & QTS Facilities)

- **Resource & Structural Impact:** Construction of Meta's \$750M Newton County facility disrupted local hydrogeology, leading to nearby private well failures (sediment clogging, dry wells). Simultaneously, the QTS facility in Fayetteville drew ~29 million gallons of unmetered water during severe drought conditions while residents faced strict water restrictions.
- **Health & Community Manifestations:** Loss of clean running water forces reliance on unmonitored or contaminated water sources, risking **bacterial gastrointestinal infections (E. coli, Giardia)**. Severe psychological stress, anxiety, and sleep disturbances stem from acute utility insecurity.

4. Memphis, Tennessee & Southaven, Mississippi (xAI Colossus Facility)

- **Resource & Structural Impact:** The xAI Colossus facility bypassed standard environmental pre-permitting by installing a massive array of natural gas combustion turbines (estimated between 27 and 46+ units) to augment grid power. This sparked lawsuits in early 2026 by the NAACP, SELC, and Earthjustice citing Clean Air Act violations.

- **Health & Community Manifestations:** Located in predominantly Black, historically marginalized neighborhoods, the facility emits immense volumes of Nitrogen Oxides (NO_x), Volatile Organic Compounds (VOCs), and formaldehyde. This directly triggers **acute asthma exacerbations, chronic obstructive pulmonary disease (COPD), cardiovascular strain, and elevated long-term cancer risks**, alongside **acoustic trauma** from turbine noise.

5. Dublin, Ireland (EirGrid Constraint Area)

- **Resource & Structural Impact:** Data centers consume over 20% of Ireland's total grid electricity, prompting EirGrid to issue a de facto moratorium on new Dublin-area connections to protect grid stability. Some projects are only permitted if they feature dedicated on-site fossil-fuel (gas/diesel) generation.
- **Health & Community Manifestations:** Increased systemic risk of rolling blackouts. The indirect health risks include **disruption of hospital operations, failure of cold-chain storage for critical medications (insulin, vaccines)**, and heightened anxiety regarding infrastructure reliability.

6. Loudoun County, Virginia ("Data Center Alley")

- **Resource & Structural Impact:** The densest concentration of data centers globally has forced the rapid construction of high-voltage overhead transmission lines (e.g., 500kV lines) through established residential neighborhoods, historic preservation areas, and conservation zones.
- **Health & Community Manifestations:** Chronic stress from eminent domain battles and property devaluation. Chronic exposure to the low-frequency hum of nearby substations and transmission lines induces **sleep architecture disruption** and psychological distress.

7. Pacific Northwest (Oregon - Portland General Electric Footprint)

- **Resource & Structural Impact:** Massive data center expansions in eastern and western Oregon have driven Portland General Electric (PGE) to implement consecutive, double-digit rate increases (~50% cumulative in recent cycles) to fund new generation and transmission infrastructure.
- **Health & Community Manifestations:** High systemic **energy burden** on low- and fixed-income populations. Funds are diverted from medical care, nutritional needs, and prescriptions, leading to a measurable decline in overall community health metrics.

8. Phoenix Metropolitan Area, Arizona (Grid & Microclimate Strain)

- **Resource & Structural Impact:** Extreme clusters of data centers in Mesa, Chandler, and Phoenix strain the electrical grid during peak summer ambient temperatures exceeding 110°F. ASU research confirms that data center mechanical yards create microclimatic "heat plumes," raising local ambient temperatures by several degrees.
- **Health & Community Manifestations:** Amplification of the **urban heat island (UHI) effect**, leading to spikes in **heat-related mortality, heat stroke, renal failure, and severe dehydration**, particularly among unhoused populations and outdoor workers.

9. Omaha, Nebraska (North Omaha Station Coal Plant Delay)

- **Resource & Structural Impact:** Massive energy demands from Meta and Google data center expansions forced Omaha Public Power District (OPPD) to delay the planned decommissioning and gas-conversion of the North Omaha coal-fired power plant.
- **Health & Community Manifestations:** Prolonged exposure to coal combustion byproducts ($\text{PM}_{2.5}$, SO_2 , mercury) in historically redlined, low-income communities. This causes **increased rates of pediatric asthma, ischemic heart disease, low birth weights, and premature mortality.**

10. North Carolina (Duke Energy System)

- **Resource & Structural Impact:** Exploding data center load growth has caused Duke Energy to alter its Integrated Resource Plans, proposing new natural gas plants and delaying the retirement of carbon-heavy assets.
- **Health & Community Manifestations:** Regional air quality degradation. Omitted health effects include **chronic inflammatory airway diseases and elevated cardiovascular morbidity** due to prolonged exposure to fossil-fuel combustion particulates.

11. The Dalles, Oregon (Google Aquifer Depletion)

- **Resource & Structural Impact:** Google data centers consume up to 30% of the city's total potable water supply for evaporative cooling. The tech company engaged in protracted legal battles to keep its specific water consumption data secret from the public.
- **Health & Community Manifestations:** Long-term depletion of the critical Columbia River basalt aquifers. This threatens municipal water security, increases the concentration of naturally occurring contaminants in remaining water, and induces **community-wide psychological stress over resource scarcity.**

12. Chandler, Arizona (CyrusOne Acoustic Disturbances)

- **Resource & Structural Impact:** Industrial-scale chiller plants and rooftop evaporative cooling fans operate continuously, generating a relentless, low-frequency airborne acoustic profile.
- **Health & Community Manifestations:** Neighbors documented a chronic, low-frequency hum. This causes **sensory overload, persistent sleep deprivation, clinical anxiety, chronic migraines,** and elevated levels of stress hormones (cortisol), which elevates long-term risk for **hypertension and ischemic heart disease.**

13. Prince William County, Virginia (Chiller Squeal & Digital Gateway)

- **Resource & Structural Impact:** The approval of the massive PW Digital Gateway (QTS and Compass campuses) required rezoning thousands of acres of rural/agricultural land near the Manassas National Battlefield Park, resulting in extensive deforestation and grading.
- **Health & Community Manifestations:** High-frequency chiller "squeal" and low-frequency noise pollution. Community side effects include **cognitive impairment and learning delays in children** exposed to chronic environmental noise, alongside profound mental health deterioration from the loss of historic and natural spaces.

14. Shanwei, Guangdong Province, China (Marine Thermal Pollution)

- **Resource & Structural Impact:** Coastal data centers utilizing open-loop surface water cooling discharge billions of gallons of heated effluent directly back into the local marine environment.
- **Health & Community Manifestations:** The thermal discharge causes localized marine die-offs and alters ecological balances, leading to harmful algal blooms (HABs). This risks **paralytic shellfish poisoning** if contaminated seafood is consumed, and destroys traditional fishing economies, triggering **livelihood-loss induced depression and alcoholism**.

15. Zeewolde, Netherlands (Meta Hyperscale Agricultural Conflict)

- **Resource & Structural Impact:** Meta proposed a massive hyperscale data center facility on highly fertile, active agricultural land, which was ultimately halted after widespread public and political backlash.
- **Health & Community Manifestations:** Threatens regional food security by removing arable land from production. The indirect health impact is the **long-term nutritional vulnerability** associated with shifting localized agriculture to industrialized, import-dependent food chains.

16. West Virginia (Rural Topographical Deforestation)

- **Resource & Structural Impact:** Clearing and leveling mountainous, forested terrain to create massive, flat concrete pads for data center campuses.
- **Health & Community Manifestations:** Destruction of natural carbon sinks and severe soil erosion. Runoff clogs local waterways with sediment, destroying recreational areas and **contaminating surface-water intakes with suspended solids and agricultural chemicals**, threatening drinking water safety.

17. Altoona, Iowa & Quincy, Washington (Economic & Employment Disparity)

- **Resource & Structural Impact:** Municipalities granted long-term property and sales tax exemptions to attract hyperscale facilities. These massive complexes require minimal permanent staff (primarily security and a few systems engineers) relative to their enormous physical footprint.
- **Health & Community Manifestations:** Severe distortion of local economies; skyrocketing land prices price out diversified industries. This strains municipal budgets for **public health, emergency services, and mental health infrastructure**, leaving communities vulnerable during economic downturns.

18. Atlanta, Georgia (Urban Heat Island Acceleration)

- **Resource & Structural Impact:** Rapid conversion of urban tree canopies and green spaces into massive, low-slung concrete data center complexes and sprawling electrical substations.
- **Health & Community Manifestations:** Accelerates the urban heat island effect. This directly correlates with **increased emergency room admissions for heat exhaustion, stroke, and acute renal failure** within inner-city neighborhoods.

19. Culver City, California (Zoning and Aesthetic Encroachment)

- **Resource & Structural Impact:** Insertion of windowless, monolithic industrial structures into high-density, mixed-use, or historically significant urban neighborhoods.
- **Health & Community Manifestations:** Degradation of the visual landscape and walkable urban environments. This leads to **reduced physical activity, decreased neighborhood social cohesion, and heightened depressive symptoms** due to a sterile living environment.

20. Prineville, Oregon (Battery Storage & Chemical Hazards)

- **Resource & Structural Impact:** Siting of massive Uninterruptible Power Supply (UPS) rooms containing thousands of lithium-ion or lead-acid batteries to prevent computing interruptions.
- **Health & Community Manifestations:** Thermal runaway incidents and battery fires release highly toxic gases, including **hydrogen fluoride (\$HF\$), volatile organic compounds, and heavy metal particulates**. Inhalation causes **acute chemical pneumonitis, permanent pulmonary scarring, and severe skin burns** to responders and downwind communities.

21. Granbury, Texas (Bitcoin Mining Acoustic Crisis)

- **Resource & Structural Impact:** A massive, high-density cryptocurrency mining facility utilizing thousands of open, high-RPM cooling fans operating 24/7 immediately adjacent to residential zones.
- **Health & Community Manifestations:** Severe, uninterrupted high-velocity acoustic pollution. Residents within a multi-mile radius (especially a nearby mobile home park) documented **vertigo, permanent tinnitus, debilitating nausea, chronic migraines, clinical insomnia, and inner ear fluid imbalances**, creating an acute public health emergency.

22. Lansing, New York (Terawulf AI Repurposing Proposal)

- **Resource & Structural Impact:** Proposed conversion of the retired Somerset/Cayuga coal plant into a high-density AI data center, leveraging the existing grid connection and seeking massive water draws from Cayuga Lake for cooling.
- **Health & Community Manifestations:** Threatens the thermal and ecological equilibrium of a critical freshwater body. Destabilization of the lake ecosystem risks triggering cyanobacterial (blue-green algae) blooms, which release **potent neurotoxins and hepatotoxins** into municipal drinking water sources.

23. Saline Township, Michigan (Stargate/OpenAI-Oracle Proposal)

- **Resource & Structural Impact:** A multi-billion-dollar, multi-gigawatt computing campus proposed on pristine agricultural land without initial transparent public disclosure.
- **Health & Community Manifestations:** Massive displacement of localized food production and severe groundwater drawdown. The lack of corporate transparency causes **chronic community anxiety, hypervigilance, and political polarization**, destroying local social fabric.

24. Tucson, Arizona (Project Blue / Beale Infrastructure)

- **Resource & Structural Impact:** A proposed facility demanding millions of gallons of desert groundwater daily, which was unanimously rejected by the city council after a massive community uprising.
- **Health & Community Manifestations:** If built, it would have accelerated the depletion of vulnerable desert aquifers. Community health threats included **acute water scarcity, compromising residential sanitation, and the psychological trauma** associated with living in an increasingly unlivable arid climate.

25. Monterey Park, California (Urban Proximity Conflict)

- **Resource & Structural Impact:** A multibillion-dollar data center campus proposed immediately adjacent to high-density residential developments, prompting emergency ordinances and a public ballot measure to declare them a public nuisance.
- **Health & Community Manifestations:** Widespread community alarm regarding industrial noise, localized grid failure risks, and magnetic field exposure, culminating in **chronic stress-induced ailments, hypertension, and erosion of municipal trust.**

26. Bessemer, Alabama (Environmental Justice Grievance)

- **Resource & Structural Impact:** Tech conglomerates targeted pristine, pine-forested land in historically underinvested, predominantly Black communities for industrial rezoning.
- **Health & Community Manifestations:** Systemic environmental racism and injustice. Siting these facilities in vulnerable communities strips away natural greenspaces that act as mental health sanctuaries and natural air filters, leaving residents with **heightened baseline stress and higher vulnerability to respiratory illnesses.**

27. Warrenton, Virginia (Amazon Web Services Proposal)

- **Resource & Structural Impact:** AWS proposed an industrial data center campus requiring a new substation and overhead transmission lines, generating massive public litigation and an electoral backlash that unseated local officials.
- **Health & Community Manifestations:** Protracted community litigation and political warfare leading to **chronic psychosocial stress, hypervigilance, sleep disturbances, and fractured community relationships.**

28. Hillsboro, Oregon (Grid Cost Shift)

- **Resource & Structural Impact:** Extreme concentrations of hyperscale data centers forced massive grid infrastructure upgrades, causing Portland General Electric to implement severe system-wide rate hikes.
- **Health & Community Manifestations:** Financial destabilization of vulnerable households. Shifting industrial infrastructure costs onto residential ratepayers creates **food insecurity and healthcare rationing,** directly degrading public health.

29. Council Bluffs, Iowa (Google Water Consumption)

- **Resource & Structural Impact:** Google's hyperscale footprint consumes hundreds of millions of gallons of potable water annually from local municipal systems located within highly intensive agricultural zones.
- **Health & Community Manifestations:** During drought cycles, this massive industrial draw strains water tables, forcing agricultural operations to dig deeper wells, which **increases the concentration of agricultural nitrates and heavy metals** in shallow residential wells, risking **methemoglobinemia ("blue baby syndrome") and cancers**.

30. Global E-Waste Recipient Communities (Agbogbloshie, Ghana / Guiyu, China)

- **Resource & Structural Impact:** Hyper-short server hardware refresh lifecycles (3–5 years) generate millions of tons of industrial electronic waste, much of which is exported to informal recycling sectors in the Global South.
- **Health & Community Manifestations:** Informal burning of server wire jackets and acid-leaching of circuit boards releases catastrophic levels of **dioxins, furans, lead, cadmium, and mercury** into local air, soil, and water. This causes **severe neurodevelopmental damage in children, high rates of miscarriages, acute respiratory failure, and terminal cancers** among workers and nearby populations.

31. Becker, Minnesota (Xcel Energy / Google Project)

- **Resource & Structural Impact:** Google planned a multi-building hyperscale campus designed to connect to the infrastructure of the retiring Sherco coal plant. This required massive new natural gas infrastructure pipelines to guarantee continuous backup thermal power.
- **Health & Community Manifestations:** Locking in decades of fossil-fuel infrastructure delays regional decarbonization. Communities along the new pipeline corridors experience **heightened anxiety over pipeline leaks/explosions** and prolonged exposure to localized fracking/distribution emissions (CH₄, VOCs), which are linked to **respiratory and hematological complications**.

32. Changhua County, Taiwan (Google Data Center Coastal Aquifer Strain)

- **Resource & Structural Impact:** Situated in an area dominated by aquaculture and agriculture, this massive facility relies on groundwater and local utilities for cooling, accelerating coastal land subsidence (sinking).
- **Health & Community Manifestations:** Sinking land damages local sewage and clean water piping infrastructure, leading to **cross-contamination of drinking water with wastewater**. This exposes the local population to **enteric pathogens and hepatitis A**, while also increasing vulnerability to catastrophic coastal flooding.

33. Quilicura, Santiago, Chile (Google Hyperscale Cerrillos Project Alteration)

- **Resource & Structural Impact:** Google originally designed a 100-liter-per-second groundwater evaporative cooling system in a region suffering a multi-decade mega-drought, sparking intense local protests and environmental court battles that forced a shift to air cooling.

- **Health & Community Manifestations:** The psychological and physical threat of losing drinking water access caused **widespread community trauma, acute stress, and social unrest**. Had the original design proceeded, water rationing would have caused **hygiene failures, increasing the spread of infectious skin and gastrointestinal diseases**.

34. Mesa, Arizona (Meta Campus Water Rights Exploitation)

- **Resource & Structural Impact:** Meta secured a deal guaranteeing millions of gallons of water per day for its multi-million square foot campus, utilizing historic water rights in a region facing severe Colorado River tier-reductions.
- **Health & Community Manifestations:** The diversion of dwindling municipal water reserves forces suburban expansion onto even less sustainable groundwater sources. This creates long-term **water insecurity anxiety** and risks localized dust-storm intensification (haboobs), which carry *Coccidioides* fungal spores, causing **Valley Fever (coccidioidomycosis)**.

35. Johor, Malaysia (Sedenak Tech Park - YTL & Sea Ltd Campuses)

- **Resource & Structural Impact:** Hyper-rapid development of data centers has diverted immense volumes of municipal treated water and electricity away from local communities, contributing to localized water rationing and blackouts in neighboring residential areas.
- **Health & Community Manifestations:** Unscheduled water disruptions undermine household sanitation, leading to a rise in **foodborne illnesses and skin infections (scabies, dermatitis)**, while intermittent power losses disable domestic medical equipment and increase heat-stress vulnerability.

36. Hamina, Finland (Google Data Center Gulf Sea-Water Extraction)

- **Resource & Structural Impact:** Google utilizes an innovative system that sucks in cold sea water from the Gulf of Finland and discharges it back out at an elevated temperature.
- **Health & Community Manifestations:** Localized marine thermal pollution alters brackish-water ecosystems, encouraging the rapid proliferation of toxic **cyanobacteria (blue-green algae)**. This introduces **dermal toxins and neurotoxins** into popular public swimming and fishing areas, causing severe allergic reactions, liver damage, or neurological symptoms upon contact.

37. Noel, Missouri (Crypto-Compute Facility Substation Hum)

- **Resource & Structural Impact:** A high-density crypto-compute facility positioned directly adjacent to a residential valley, utilizing uninsulated industrial transformers and cooling fans.
- **Health & Community Manifestations:** The geography of the valley reflected and amplified low-frequency sound waves. Residents suffered from **vibroacoustic disease (VAD)**, characterized by **cardiac valve thickening, systemic cognitive fatigue, profound sleep architecture destruction, and severe clinical depression**.

38. Fredericksburg, Virginia (Amazon Web Services Diesel Array)

- **Resource & Structural Impact:** AWS deployed massive banks of multi-megawatt emergency diesel backup generators (hundreds of units across the region) to ensure uptime during grid fluctuations.
- **Health & Community Manifestations:** Regular maintenance testing and emergency operation release high volumes of diesel particulate matter (\$DPM\$), a known human carcinogen. Nearby residents experience **acute inflammatory lung responses, heightened pediatric asthma admissions, and elevated lifetime risks of lung and bladder cancers.**

39. Sandviken, Sweden (Microsoft Hyperscale Biomass/Grid Conflict)

- **Resource & Structural Impact:** Microsoft's massive Swedish data centers draw vast amounts of electricity from the regional grid, competing directly with local industrial decarbonization projects (like green steel and battery manufacturing).
- **Health & Community Manifestations:** By crowding out manufacturing industries that provide diverse, long-term employment, it enforces localized economic stagnation. Economic displacement is structurally linked to **higher rates of substance abuse, clinical anxiety, and decreased access to elective healthcare.**

40. Eemshaven, Netherlands (Google Facility Avian Disruption)

- **Resource & Structural Impact:** Construction of massive hyperscale footprints and high-voltage substation switchyards directly along critical migratory bird flyways and wetlands.
- **Health & Community Manifestations:** Extensive industrial light pollution (24/7 security lighting) and acoustic hum disrupt avian migration and local wildlife behaviors, leading to local ecosystem collapse. The loss of local biodiversity and natural tranquility causes **solastalgia** (distress caused by environmental change) among indigenous and long-term rural residents.

41. Cheyenne, Wyoming (Microsoft Campus Substation Expansion)

- **Resource & Structural Impact:** Microsoft's massive expansion required a rapid buildout of heavy industrial substations directly adjacent to residential developments and municipal parks.
- **Health & Community Manifestations:** High-voltage equipment produces unquantified but highly concerning Electromagnetic Fields (EMFs) and perpetual acoustic crackle. This induces **chronic hypervigilance, somatic symptom disorders, and extreme stress** among parents concerned about long-term childhood health anomalies.

42. King County, Washington (Seattle Suburban Edge Data Centers)

- **Resource & Structural Impact:** Siting data centers within suburban rings strains local wastewater treatment plants due to chemical blowdown disposal (water treated with anti-scaling chemicals and biocides discharged from cooling towers).
- **Health & Community Manifestations:** Heavy discharge strains municipal treatment capabilities, risking the release of **endocrine-disrupting chemicals and chemical residues** into local rivers. This contaminates downstream drinking water intakes and recreational waters, risking **reproductive health disorders.**

43. Toronto, Ontario, Canada (Downtown High-Rise Data Centers)

- **Resource & Structural Impact:** Conversion of existing historic downtown commercial high-rises into dense data hotels, requiring massive rooftop chiller installations and diesel storage tanks inside urban cores.
- **Health & Community Manifestations:** Rooftop chiller acoustic resonance vibrates down through nearby residential high-rises, causing **chronic sleep fragmentation, cognitive performance drops in school-aged children, and elevated baseline blood pressure** for thousands of dense-urban residents.

44. Cyberjaya, Malaysia (Hyperscale Cluster Heat Island)

- **Resource & Structural Impact:** Intense geographic clustering of data center facilities has replaced tropical vegetation with massive concrete blocks and asphalt roads.
- **Health & Community Manifestations:** This creates an intense localized microclimatic heat island. In a humid tropical climate, this pushes the "wet-bulb temperature" closer to human tolerance limits, severely compromising the body's ability to cool itself and triggering **acute cardiovascular failure and heat stroke** during peak periods.

45. Reno, Nevada (Crypto/AI Hybrid Facility Hazardous Waste Runoff)

- **Resource & Structural Impact:** A facility utilizing direct-to-chip liquid cooling loops suffered a major structural fluid leak, spilling industrial dielectric fluids and synthetic chemical coolants into local stormwater retention basins.
- **Health & Community Manifestations:** Chemical coolants containing Polyfluoroalkyl Substances (PFAS) or specialized hydrocarbons seeped into shallow water tables, exposing nearby communities to **"forever chemicals" linked to thyroid ablation, kidney carcinomas, and severe immune system suppression.**

46. Candidate/Rural Towns, Southern New Jersey (Warehouse/Data Center Conversions)

- **Resource & Structural Impact:** Agricultural zoning was rapidly flipped to heavy industrial use to build speculative data center shells, introducing heavy construction traffic, massive utility trenching, and local road destruction.
- **Health & Community Manifestations:** Heavy diesel construction traffic through rural, narrow roads caused a spike in **severe traffic accidents and pedestrian injuries**, alongside localized spikes in **acute respiratory irritation** from fugitive silica dust generated during massive site grading.

47. Clay County, Missouri (Meta Data Center Grid Strain)

- **Resource & Structural Impact:** The massive energy consumption of this hyperscale facility requires the utility to import out-of-state fossil-fuel generated power during peak winter storms.
- **Health & Community Manifestations:** During extreme sub-zero weather events, grid instability risks localized rolling brownouts. This exposes vulnerable populations to **accidental**

hypothermia, frostbite, and carbon monoxide poisoning from the improper indoor use of portable combustion heaters.

48. Naas, County Kildare, Ireland (Hyperscale Gas-Turbine Substitution)

- **Resource & Structural Impact:** To circumvent EirGrid's Dublin-area grid restrictions, a data center developer installed a captive, continuous-duty gas-turbine power plant on-site to run the server farms 24/7.
- **Health & Community Manifestations:** This transforms a clean data center into a de facto fossil-fuel power plant in a residential corridor. Localized emissions of \$NO_2\$ and fine particulates create a permanent smog layer, driving **chronic pediatric bronchitis, adult cardiovascular inflammation, and reduced lung function development.**

49. Boydton, Virginia (Microsoft Hyperscale Rural Community Disruption)

- **Resource & Structural Impact:** Siting a massive, multi-phase hyperscale facility in an economically depressed, rural county completely distorted the local housing market by filling hotels and rentals with transient construction crews.
- **Health & Community Manifestations:** Skyrocketing rental costs priced out low-income residents, leading to a rise in **housing insecurity and hidden homelessness.** Housing displacement is directly tied to a **surge in mental health crises, domestic stress, and poor obstetric outcomes** for pregnant women.

50. Tokyo Suburbs / Chiba Prefecture, Japan (Data Center Water Loop Chemical Risks)

- **Resource & Structural Impact:** Hyperscale facilities utilizing closed-loop water chillers treat their water with high concentrations of toxic biocides (such as glutaraldehyde or isothiazolinones) to prevent deadly *Legionella* bacterial growth in the cooling towers.
- **Health & Community Manifestations:** Accidental venting or drift of aerosolized cooling tower droplets into nearby residential areas poses an acute risk. If biocide maintenance fails, it can disperse aerosolized **Legionnaires' disease (a severe, frequently fatal form of pneumonia)** directly into high-density neighborhoods; if maintenance succeeds but drifts, it causes **severe chemical asthma and ocular irritation.**

Could you please provide the following information: 1) expand on the description of the above examples, correct any mistakes in those examples, add any adverse health effects that were omitted, and place them all in the same format; 2) provide (at least) fifteen additional examples of specific adverse effects of specific data centers on the local or broader community. Try to cover as many different types of adverse effects as possible in all the specific examples you provide. Twenty or thirty additional examples of specific adverse effects of specific data centers on the local or broader community would even be better. It is important that you be specific in the examples you provide. At the front-end of your response, please provide a comprehensive Background on data centers that will allow the reader to place all of your specific findings in context. At the back-end of your response,

please provide a comprehensive Summary of your findings, which includes integration of all your specific examples to identify common themes.