

Spokane Human Rights Commission

Thursday, October 1, 2026

5:30-7:30

The Thursday, October 1, 2026 meeting will provide for in person attendance. The meeting will be held in the City Council briefing room—Lower Level of City Hall, 808 Spokane Falls Blvd. *Members of the public, Commission members, City staff, and presenters will still have the option to participate remotely via Teams by clicking the “[Meeting Link](#)” on this page or by calling the number provided.*

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Access Code: 577 455 431#

Mission Statement/Purpose: The Human Rights Commission advises and makes recommendations to the City Council regarding issues related to human rights and unjust discrimination and the implementation of programs consistent with the needs of all residents of the City of Spokane.

TIMES GIVEN ARE AN ESTIMATE AND ARE SUBJECT TO CHANGE

5:30 - 5:40

- Land Acknowledgement—What is its relevance?

Okay, White people, it's time to give up the land acknowledgments.

They were only performative to begin with and now they've become cliché.

What sound does a land acknowledgment make when no land or money or anything tangible is given to Indians?

~~Sherman Alexie

["Pie-in-the-sky dreaming": Salish School of Spokane breaks ground on riverside campus](#)

Catholic Charities Spokane seems to agree!

Ground was broken this week for a new Salish school on land beside the Spokane river. The land was donated to the Salish School by Catholic Charities in part as reparation for

the Catholic boarding schools that ripped Indian families apart, with the intent of destroying tribal cultures.

- Public Comment. Citizens are invited to address the Commission. (3 min each)

5:40 - 5:45 Roll Call & Approval of Agenda (McFadden)

5:45-6:15 Police accountability update (Debbie Novak, Washington Coalition for Police Accountability)

- Update on current work
- State-wide initiatives
- Local issues
 - What has been hopeful?
 - What was disappointing? Infuriating?
 - What can the Commission do to help? Next steps...

6:15-6:45—No Kings 2026 (Kurtis)

National Day of Action—Nothing changes unless we VOTE!

Saturday, October 17, 2026, 1-4 pm

BA Clark Park, 3922 N Normandie St

- Asking for our endorsement

6:45-7:15—Data Centers—(Mackenzie)

What is their impact?

How can we respond?

This is an introductory exploration—we'll spend more time on this in November

See attached: Health Consequences of Large Data Centers: **Air Pollution, Noise, Water Use, and Environmental Justice** by Babu George, PhD Professor, School of Business Alcorn State University,

USA Google Scholar: <https://scholar.google.com/citations?user=1knki-oAAAAJ&hl=en>
ORCID: <https://orcid.org/0000-0002-2791-828X>

7:15-7:30 Spokane Human Rights Champion's Awards, November 12, 2026, 5-8 pm

The Centennial, 303 North River Drive, Spokane, WA

Future planning:

- Housing Issues for Older Adults in Spokane (follow up from Lynn Kimball)

Next Human Rights Commission meeting is scheduled for **November 5, 2026, 5:30-7:30**

We are what we imagine. Our very existence consists in our imagination of ourselves. Our best destiny is to imagine, at least, completely, who and what, and that we are. The greatest tragedy that can befall us is to go unimagined.

~~N. Scott Momaday, Kiowa poet

"Pie-in-the-sky dreaming": Salish School of Spokane breaks ground on riverside campus

Outside the Salish School of Spokane, students formed a crowded circle on a concrete patio. They ranged in age from babies to ninth graders. All of them—even the babies—held a drum.

They had gathered for their daily “greet the day” ceremony. As a teacher recited a prayer, students faced the sun and began to drum and sing.

Founded in 2009, the private, nonprofit Salish School aims to teach and revitalize four critically endangered Southern Interior Salish languages.

LaRae Wiley is the school’s cofounder and elder linguist. After studying r’səp̓gír’ (Colville Salish) under a master speaker, she decided to bring the near-forgotten language back to her family and community.

“Because I was a schoolteacher, I wanted us to build a school,” she said. “Because schools are a place where people gather, and you can bring people in.”

She added: “It’s also an economic engine.”

The Salish School began as a basement immersion program for just a few kids. It now serves 58 students and has a robust adult learners’ program.

The school has far outgrown its small home on North Maple Street, according to capital campaign director Jim Dawson.

“Right now there’s not a space inside the Salish campus that can hold the entire class,” Dawson said.

The Salish School recently broke ground on a new campus, which backs up to the Spokane River, near Spokane Falls Community College.

Christopher Parkin, the Salish School’s principal, said back in 2021, Catholic Charities of Eastern Washington approached the Salish School about the then-vacant property.

“They kind of proactively reached out and said, ‘Hey, you all are interested in getting back to the river and having a place where you could have more space for your programming, maybe develop housing,’” Parkin said. “‘And we have this amazing site that we’re going to be developing.’”

Catholic Charities offered 3.5 acres to the Salish School as a form of reparations for historical abuse.

The Catholic Church was the main operator of Native American boarding schools in the U.S. Those schools regularly separated Indigenous children from their families, language and culture.

"It's a huge reason why so many Indigenous languages in the U.S. and Canada are now critically endangered," Dawson said.

LaRae Wiley recalls her school and community debating for a long time whether to take the land from Catholic Charities.

"It wasn't easy because there is so much historical trauma with the boarding schools and the churches," she said. "But we decided to work together to make this a beautiful place for future generations."

The school accepted the land in 2023 and construction officially began this August.

Catholic Charities is working with the Salish School to develop the new campus, alongside affordable housing units that Catholic Charities will maintain. It's one of the first such partnerships in the nation.

"Catholic Charities is hoping that other Catholic Charities around the country will take it up as an example," Dawson said.

The new school is set to open in 2028, with capacity for more than twice the enrollment of the current school. The campus will eventually include not just a schoolhouse, but a cultural center and athletic fields.

The Salish School has raised more than \$17 million to fund the new campus, which will be constructed in three phases.

LaRae Wiley never imagined she would see a new campus during her lifetime.

"We decided we were going to do a school, and as we were talking about our dream, we just laughed and said, 'Yeah, and someday we'll have a full-blown school with everything along the river,'" Wiley said. "And we just cracked up, because we were pie-in-the-sky dreaming."

~~Spokane Public Radio, Audrey Nelson, September 28, 2026

Endorsement No Kings 5

National Day of Action - Nothing changes unless we VOTE!

Saturday, October 17, 2026 | 1:00–4:00 PM

BA Clark Park | 3922 N Normandie St, Spokane, WA

The No Kings 5 Community Planning Team invites your organization to endorse the largest one-day protest in the country.

Across the nation, people are coming together with one clear message: Nothing changes unless we vote

Endorse No Kings 5

By endorsing, your organization publicly supports democratic principles and collective action. Endorsing organizations will have their name and logo featured on some promotional materials and event communications. There is no cost to endorse.

Please complete the attached endorsement form and return it by **October 7, 2026** to: Sami Perry at: hello@wehavethepowermovement.com

Together, we can make October 17th a defining moment.

No Kings 3 – Organizational Endorsement Form

“Nothing changes unless we vote” - October 17, 2026

Thank you for endorsing No Kings 5.

Organization Information

Organization Name: _____

Organization Type (optional): _____

Website (if applicable): _____

Authorized Representative

I confirm that I am authorized to endorse No Kings 3 on behalf of this organization.

Name: _____
Title: _____
Email: _____
Phone: _____
Signature: _____
Date: _____

Logo Submission

- ☐ Logo attached
 - ☐ Logo will be emailed separately
- (High-resolution PNG, JPG, or vector file preferred.)

By submitting this form, you grant permission for your organization's name and logo to be displayed on No Kings 3 promotional materials.

Return completed form to: **hello@wehavethpowermovement.com**

No Kings. The People Decide.

Health Consequences of Large Data Centers: Air Pollution, Noise, Water Use, and Environmental Justice

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Abstract

The global expansion of large, energy-intensive data centers, accelerated by cloud computing, cryptocurrency, and artificial intelligence (AI), has created growing concern about implications for human health. Emerging scholarship highlights multiple health-relevant pathways: increased emissions of criteria air pollutants from power plants and onsite diesel backup generators, chronic environmental noise from cooling infrastructure, intensive water withdrawals that strain public supplies, and land-use changes that intersect with social determinants of health. Direct epidemiologic evidence on communities living near data centers remains sparse, with most work to date relying on lifecycle emissions modeling and indirect analogy with established air and noise pollution literatures. Nevertheless, modeling studies consistently project that by the late 2020s, U.S. data centers could be responsible for roughly 1,300 premature deaths and up to 600,000 asthma symptom cases annually, with an associated public health burden approaching \$20 billion per year. Case studies reviewed document risks related to air pollution, water stress, and noise that fall disproportionately on vulnerable communities, with per-household health cost burdens estimated to reach multiple times the national average in some disadvantaged counties. Drawing on environmental health, noise science, water security, and environmental justice literatures, this article synthesizes current evidence, proposes a conceptual framework organizing four principal exposure pathways, identifies critical research gaps, and outlines policy and planning priorities to ensure that digital infrastructure development is compatible with public health protection and equity.

Keywords: data centers, environmental health, air pollution, noise, water use, environmental justice, artificial intelligence

Introduction

Large-scale data centers have become critical infrastructure for the digital economy, enabling cloud services, streaming media, cryptocurrency networks, and increasingly compute-intensive AI applications. Their global footprint is expanding at an accelerating pace, with the United States hosting thousands of facilities and major new hyperscale campuses planned in multiple regions (Tao & Gao, 2025). Historically, scholarly and policy debates have centered on data centers' energy consumption and climate impacts, framed primarily in terms of carbon footprints and grid reliability. Only recently has a distinct literature begun to examine their implications for human health.

Tao and Gao (2025) argue that global data center expansion constitutes an emerging environmental health issue and explicitly call for empirical research to quantify health outcomes associated with these facilities. Gour et al. (2026) provide an exploratory assessment of health risks in Virginia's Data Center Alley, one of the world's densest data center hubs, and argue that data centers create public health harms through multiple pathways, even though many impacts remain poorly quantified. Parallel work in computer science and energy systems has begun to model how data center-driven emissions of fine particulate matter and other pollutants translate into morbidity and mortality burdens (Han et al., 2025). A preprint from Harvard's T.H. Chan School of Public Health analyzed 2,132 U.S. data centers, representing 78% of all facilities, and found that they account for more than 4% of total U.S. electricity consumption, with 56% derived from fossil fuels and 16% from coal, generating more than 105 million metric tons of CO₂-equivalent emissions in 2023 (Guidi et al., 2024).

The scale of this infrastructure is projected to grow substantially. Han et al. (2025) estimate that U.S. data centers consumed approximately 176 terawatt-hours of electricity in 2023 and project that consumption could rise to 325-580 terawatt-hours by 2028, driven primarily by AI workloads. The International Energy Agency (IEA, 2025) projects that global data center electricity demand will reach approximately 945 terawatt-hours by 2030, with AI as the primary driver. These trajectories have direct implications for pollutant emissions and, by extension, for the health of communities hosting these facilities and populations living near the power plants that serve them.

This article synthesizes current knowledge regarding the health consequences of large data centers, focusing on (a) air pollution and associated cardiorespiratory outcomes; (b) environmental noise and related cardiovascular and sleep effects; (c) water use, water security, and related health risks; and (d) distributional and environmental justice dimensions. It highlights the considerable reliance on modeling and indirect evidence, outlines priorities for epidemiologic and exposure-assessment research, and discusses policy options for integrating health into data center siting, design, and operations.

Conceptual Framework: Pathways Linking Data Centers to Health

Data centers influence health primarily through environmental and social pathways rather than through direct contact with servers or digital services. Building on Tao and Gao (2025), Gour

et al. (2026), and broader environmental health frameworks, at least four interrelated domains can be distinguished.

The first is air pollution, both local and regional. Scope 1 emissions from onsite diesel backup generators and, in some cases, gas turbines used as supplementary power sources emit nitrogen oxides (NO_x), primary particulate matter (PM), and precursor pollutants during testing and operation (Environmental Health Project, 2026; Han et al., 2025). Scope 2 emissions from electricity generation for grid-connected data centers increase emissions from fossil-fuel power plants, including fine particulate matter (PM_{2.5}), NO_x, and sulfur dioxide (SO₂). Scope 3 emissions arise from semiconductor manufacturing.

The second pathway is environmental noise. Continuous operation of high-capacity cooling systems, including chillers, cooling towers, air-handling units, and condenser fans, and periodic testing of backup generators create persistent industrial noise with internal levels of 70-90 dBA and community-facing levels that can exceed 48-60 dBA without adequate mitigation. This affects both workers and nearby residents (Gour et al., 2026).

The third pathway is water use and water security. Evaporative cooling and other thermal management strategies require large volumes of water, often drawn from municipal drinking water systems or local aquifers (EESI, 2025; Brookings Institution, 2026). When withdrawals occur in water-stressed regions, they can compromise supply reliability, increase costs, and indirectly affect nutritional and sanitation outcomes.

The fourth pathway encompasses land use, infrastructure, and social determinants. Large campuses transform land cover, may contribute to local heat island effects, and can strain existing power and water infrastructure (Lincoln Institute of Land Policy, 2025). Rising energy costs and tax incentives that shift infrastructure costs toward households affect social determinants of health such as housing affordability and energy insecurity (FAS, 2025; Gour et al., 2026).

These pathways are mediated by siting decisions, regulatory regimes, technological choices (for example, cooling system design, backup power technology, and energy source), and broader patterns of structural inequality. The following sections review the evidence in each domain, emphasizing what is established and where uncertainty remains.

Air Pollution, Respiratory Disease, and Cardiovascular Outcomes

Emissions From Backup Generators and Power Plants

Data centers require exceptionally high levels of power reliability, leading operators to install banks of large diesel or gas-fired generators for backup power. Investigative and policy analyses indicate that individual campuses may host hundreds of megawatts of diesel generation capacity, often permitted under emergency or limited-use categories that afford regulatory flexibility (Environmental Health Project, 2026; FAS, 2025). Individual facilities in Texas, for instance, have been estimated to emit approximately 12 metric tons of NO_x annually from generator testing alone (Eslami, 2025). Research at Virginia Commonwealth University found that emissions from data center backup generators in Northern Virginia can rival, and in some cases exceed, those from nearby power plants, generating between \$190 million and \$260 million per year in regional health costs and, at maximum permitted emissions, potentially reaching \$1.9 to

\$2.6 billion per year in a single region (Han et al., 2025; Virginia Commonwealth University, 2026).

At the same time, the aggregate electricity consumption of data centers is increasing sharply. Guidi et al. (2024) found that the carbon intensity of U.S. data center electricity already exceeds the national average by 48%, reflecting the disproportionate reliance on fossil fuels. The IEA (2025) projects that fossil fuels will meet more than 40% of additional demand through 2030 unless deliberate policy interventions accelerate decarbonization.

Diesel exhaust presents a particular hazard at facilities with large generator fleets. The International Agency for Research on Cancer classified diesel engine exhaust as Group 1, carcinogenic to humans, in 2012 (IARC Monographs Vol. 105, 2014), with sufficient evidence of elevated lung cancer risk. Beyond carcinogenicity, diesel exhaust is associated with elevated cardiovascular disease risk. Communities located downwind of data center generator testing events are exposed to episodic but potentially high-concentration diesel exhaust plumes.

Modeled Health Burdens

The most comprehensive quantification of data center health burdens comes from Han et al. (2025), who used the EPA's Co-Benefits Risk Assessment (COBRA) model to estimate lifecycle pollutant emissions across scope 1, 2, and 3 categories. Their analysis estimated that air pollution attributable to U.S. data centers resulted in roughly \$5 billion in health-related damages in 2023 and could reach or exceed \$20 billion annually by 2028, projecting approximately 1,300 premature deaths per year along with large numbers of non-fatal outcomes such as hospital admissions and asthma exacerbations. A related synthesis aimed at policymakers reports projections of 600,000 asthma symptom cases and 1,300 deaths per year by 2030 under medium growth scenarios (Environmental Health Project, 2026; FAS, 2025).

Regional analyses reinforce these projections. Research summarized by Next 10 and the University of California, Riverside found that modeled health impacts from pollution associated with California data centers tripled between 2019 and 2023 and could increase by another 72% by 2028 in the absence of mitigation, with projected impacts including approximately 3,900 asthma cases and \$266 million in annual health costs in California alone by 2028 (University of California, Riverside, 2025). A Harvard analysis of a proposed Georgia power plant expansion to serve data centers estimated \$31 million in annual health costs initially, rising to \$625 million cumulatively by 2040, with impacts falling disproportionately on older, lower-income, and Black populations; that analysis contributed to the proposal's withdrawal (Dominici et al., 2025).

The closest peer-reviewed analog to a direct epidemiologic study is Guidi et al. (2025), who examined pollution from 34 major Bitcoin mining operations, effectively specialized data centers, consuming 32.3 terawatt-hours annually. The study, published in *Nature Communications*, found that 1.9 million Americans were exposed to at least 0.1 $\mu\text{g}/\text{m}^3$ of additional $\text{PM}_{2.5}$, with pollution crossing state boundaries, and was the first to trace particulate matter from computing operations through power plant emissions to specific affected communities.

Although most of these analyses rely on emissions inventories and exposure-response functions derived from broader air pollution epidemiology, rather than cohort studies of communities near data centers, they provide consistent evidence that data center-driven emissions already contribute non-trivially to respiratory and cardiovascular morbidity and mortality at regional and national scales. The coal component of data center electricity deserves particular attention: Henneman et al. (2023), using 650 million person-years of Medicare data published in *Science*, found that coal-derived PM_{2.5} is associated with 2.1 times greater mortality risk than PM_{2.5} from all sources combined.

Environmental Noise, Sleep, and Cardiometabolic Health

Noise Characteristics of Data Centers

Residents living adjacent to large data center campuses frequently report persistent low-frequency hums from cooling equipment and episodic louder noise episodes associated with generator testing, sometimes occurring at night or early morning (Gour et al., 2026; Lincoln Institute of Land Policy, 2025). Systematic measurements near facilities are limited, but occupational and monitoring data from industrial analogues indicate that sound levels near operating equipment can approach or exceed thresholds at which long-term exposure becomes harmful, particularly where facade insulation is modest.

Cooling systems produce continuous noise dominated by low-frequency components below 250 Hz, a spectral character that standard A-weighted measurements systematically underestimate. Thakre and Vijay (2024) found a 39.4 dB discrepancy between A-weighted and C-weighted measurements inside adjacent residences, revealing that regulatory monitoring based on A-weighting alone can miss a large share of the low-frequency noise burden. Baliatsas et al. (2016), in the first systematic review of low-frequency noise and health, found that low-frequency noise complaints comprise approximately 35% of total noise complaints filed with environmental health authorities, reflecting both the prevalence of industrial sources and the particular annoyance and sleep disruption associated with low-frequency exposure.

Evidence From the Environmental Noise Literature

In the absence of data center-specific epidemiology, inference must draw on the extensive literature on environmental noise and health. Systematic reviews conducted for the World Health Organization's Environmental Noise Guidelines for the European Region provide high-quality evidence that long-term exposure to transportation and other environmental noise increases risks of ischemic heart disease (IHD), hypertension, and other cardiometabolic outcomes (van Kempen et al., 2018; WHO Regional Office for Europe, 2018). A meta-analysis underpinning the guidelines found that each 10 dB increase in day-evening-night noise level from road traffic was associated with an 8% increase in IHD incidence (relative risk 1.08, 95% confidence interval [1.01, 1.15]; van Kempen et al., 2018). The WHO guidelines and subsequent European Environment Agency analyses estimate that environmental noise contributes to tens of thousands of new cases of IHD and thousands of premature deaths annually in Europe, with the WHO estimating approximately 48,000 new cases of ischemic heart disease and 12,000 premature deaths annually attributable to environmental noise (WHO Regional Office for Europe, 2018). Across Western Europe, at least

1.6 million healthy life-years are estimated to be lost annually due to traffic noise (Munzel et al., 2021).

The biological mechanisms are well characterized. Noise acts as a nonspecific stressor, activating neuroendocrine pathways, elevating stress hormones and blood pressure, and disrupting sleep, which in turn elevates cardiovascular risk through NADPH oxidase activation and endothelial nitric oxide synthase uncoupling (Munzel et al., 2024; van Kempen et al., 2018). Nighttime noise is considered especially harmful because sleep serves a cardiovascular restorative function; WHO guidelines recommend maximum nighttime outdoor levels of 40 dB L_{night} to avoid adverse effects, with cardiovascular effects becoming evident above 55 dB (WHO Regional Office for Europe, 2009).

Beyond cardiovascular outcomes, a meta-analysis by Liang et al. (2024), published in BMC Public Health, found that low-frequency noise exposure significantly impairs higher-order cognitive functions. Given that many data center campuses operate 24 hours a day, seven days a week, and are expanding into suburban and exurban residential areas, the potential for chronic, sleep-disrupting, cognitively impairing noise exposure in nearby communities is a plausible and growing concern.

Given this evidence, it is plausible that communities experiencing chronic exposure to data center noise, especially where nighttime sound levels exceed guideline thresholds, face elevated risks of annoyance, sleep disturbance, and cardiovascular outcomes. Empirical quantification will require systematic noise mapping, long-term monitoring, and linkage to health data in specific data center regions.

Water Use, Water Security, and Indirect Health Risks

Magnitude and Concentration of Water Use

Large data centers are significant water users, primarily for evaporative cooling. EESI (2025) estimates that a medium-sized data center can consume approximately 110 million gallons of water per year, equivalent to the annual use of about 1,000 households, while larger facilities can use up to 5 million gallons per day, roughly equivalent to a town of 10,000 to 50,000 residents. Across more than 5,000 U.S. data centers, combined direct water consumption is estimated at well over 100 billion gallons annually, with indirect water use through electricity generation adding hundreds of billions of gallons more (EESI, 2025).

The Brookings Institution (2026) similarly reports that a typical large data center may draw about 300,000 gallons per day for cooling, with the largest AI-oriented facilities using up to 5 million gallons daily, often from municipal drinking water systems already under strain. In The Dalles, Oregon, for instance, Google's withdrawals reportedly accounted for more than a quarter of the city's supply in 2023, with withdrawals increasing markedly over preceding years (Bluefield Research, 2025). Annual water-related capital and operating expenditures for U.S. data centers are projected to grow by more than 30% between 2025 and 2030, reflecting rising demand and needed infrastructure investment (Bluefield Research, 2025). MSCI (2025) analysis indicates that a large share of new AI-oriented data center capacity is being sited in regions already facing medium-to-high water scarcity risk.

Health-Relevant Implications

The health implications of data center water demand are indirect but potentially significant. When data center withdrawals stress municipal systems, they may contribute to water scarcity and reliability issues, especially in arid or drought-prone regions, increasing the risk of intermittent supply interruptions that compromise hygiene, food safety, and healthcare facility operations. Increased competition between industrial and residential users can lead to higher water tariffs or infrastructure costs that disproportionately burden lower-income households, with downstream effects on nutrition, sanitation, and mental health (Gour et al., 2026). Shifts to less water-intensive cooling technologies, undertaken in response to scarcity pressures, can increase electricity demand and thus air pollution burdens (Han et al., 2025).

Facilities using once-through cooling or discharging cooling tower blowdown may also return water to the environment with elevated salinity, turbidity, heavy metals, and microbial contaminants (Khatib et al., 2025). High salinity can disrupt freshwater ecosystems, corrode infrastructure, and increase municipal wastewater treatment costs. Thermal discharge from once-through cooling warms receiving waterways, promoting cyanobacterial bloom formation and *Vibrio* proliferation, both of which carry well-documented human health consequences including gastroenteritis, septicemia, and cyanotoxin exposure. While the dominant cooling paradigm for modern data centers is evaporative (which consumes rather than returns water), the indirect pathway through altered water quality remains relevant for facilities that discharge into municipal systems or adjacent waterways.

Direct empirical studies linking data center water use to specific health outcomes, such as gastrointestinal infections or heat illness from restricted water access, are not yet available. However, the combination of high, localized consumption; siting in water-stressed regions; and a well-established literature on the health impacts of water scarcity supports including water-related risks in health impact assessments of proposed and existing facilities (Brookings Institution, 2026; Lincoln Institute of Land Policy, 2025).

Environmental Justice and Unequal Exposure

A consistent theme in the emerging literature on data center health impacts is the unequal geographic and social distribution of exposures and risks. Han et al. (2025) find that public health burdens from data center-related air pollution are highly heterogeneous across U.S. counties; in some disadvantaged communities, per-household health costs from data center emissions are estimated to be up to 200 times higher than in less-affected areas. Many of the most heavily impacted counties have median household incomes below the national average and substantial populations of historically marginalized groups (Harvard Political Review, 2026).

Case-study work in Virginia's Data Center Alley documents how large campuses have been concentrated in suburban and exurban communities, including areas with existing environmental burdens and infrastructural constraints (Gour et al., 2026). Community organizations and environmental justice advocates in Northern Virginia and other major hubs have raised concerns about cumulative impacts from air and noise pollution, the siting of new transmission infrastructure, and potential impacts on private wells and small water systems (Lincoln Institute of

Land Policy, 2025; Virginia Commonwealth University, 2026). FAS (2025) highlights at the national level that the health costs of data center pollution fall disproportionately on communities near fossil-fuel power plants and backup generators, many of which are low-income or communities of color.

The distributional pattern in water use mirrors that of air quality. MSCI (2025) analysis suggests that a large share of new AI-oriented data center capacity is being built in regions facing medium-to-high water scarcity risk, raising questions about who bears the costs of reduced water availability. The Lincoln Institute of Land Policy (2025) documents cases in which municipal water infrastructure was strained by sudden data center demand growth without adequate advance planning or community input.

These findings indicate that large data centers may reinforce or exacerbate existing environmental health inequities, even as the economic benefits of digital infrastructure accrue broadly. This distributional dimension strengthens the case for integrating environmental justice criteria into data center siting, permitting, and regulatory frameworks. From an ethical standpoint, the pattern is especially concerning given that the communities bearing the greatest health burden are rarely the primary beneficiaries of the computing services these facilities provide.

Occupational Health and Community Well-Being

In addition to community-level exposures, data center workers may face occupational health risks related to noise, indoor air quality, ergonomic strain, and psychosocial factors. Peer-reviewed literature specifically examining occupational health outcomes in data center workers is extremely limited. Existing guidance derives primarily from general occupational safety standards for noise, chemical exposures (including diesel exhaust during generator maintenance), and indoor environmental quality. Given the documented community-level evidence of low-frequency noise and diesel exhaust hazards at these facilities, a targeted occupational cohort study examining workers at large data center campuses would constitute a meaningful contribution to both occupational and environmental health science.

Gour et al. (2026) note that data centers affect community well-being through dimensions beyond strictly biomedical outcomes, including perceived loss of rural or suburban character, landscape and land-use changes, and anxiety about infrastructure reliability and future environmental change. Surveys and qualitative studies in heavily impacted regions, including parts of Virginia and the Pacific Northwest, report community concerns about sleep disturbance, property values, and distrust in permitting processes (Environmental Health Project, 2026; Lincoln Institute of Land Policy, 2025). While these outcomes are less frequently quantified in epidemiologic terms, they align with broader evidence on how industrial developments affect mental health and social cohesion.

The mental health consequences of involuntary, difficult-to-escape noise exposure are an underexplored domain. Existing noise and health research documents elevated rates of psychological distress, anxiety, and depression in chronically noise-exposed populations. As data centers expand into residential corridors, systematic survey-based and longitudinal research on mental health outcomes in affected communities would fill a significant gap.

Research Gaps and Methodological Priorities

Tao and Gao (2025) argue that despite the rapid expansion of data center infrastructure, direct empirical research on human health impacts is strikingly scarce, with most work to date focusing on energy and climate rather than on local exposures and outcomes. Gour et al. (2026) similarly characterize their assessment as exploratory and call for transdisciplinary research integrating physical sciences, engineering, and public health to quantify specific health outcomes linked to data centers. Several critical gaps emerge across the literature.

First, no published epidemiologic cohort studies have followed communities near data centers as an exposure group. The closest analogue is Guidi et al. (2025), who traced PM_{2.5} from Bitcoin mining operations through power plant emissions to affected communities, but this work examined a specialized subset of computing infrastructure. Quasi-experimental study designs, exploiting variation in data center construction and expansion as natural experiments, could provide causal estimates of health impacts while waiting for longer cohort follow-up.

Second, high-resolution measurements and modeling of ambient PM_{2.5}, nitrogen dioxide, ultrafine particles, and other pollutants in communities surrounding data centers are largely absent. The most influential analyses to date use modeled rather than measured concentrations. Systematic environmental noise monitoring and mapping around data center clusters, including diurnal patterns and characterization of low-frequency components, are similarly needed.

Third, no disability-adjusted life year (DALY) estimates specific to data centers have been published; only monetized health cost estimates exist. Global PM_{2.5} exposure contributed to 7.83 million deaths and 231.51 million DALYs globally in 2021 (Fang et al., 2025), but no analysis has apportioned a fraction of that burden specifically to data center electricity generation.

Fourth, the water and health nexus for data centers remains largely unstudied. Analyses of how data center water withdrawals affect public water system performance, and whether communities with substantial data center demand experience differential rates of water interruptions, boil-water advisories, or heat-related illness, would help establish the magnitude of this pathway.

Fifth, data center workers have never been studied as a distinct occupational cohort for noise-induced hearing loss, diesel exhaust exposure, or heat stress, despite working in environments where all three hazards are present. Sixth, no comprehensive comparative health impact analysis spanning data centers, 5G infrastructure, lithium mining, and electronic waste has been published to place data center risks in the broader context of digital infrastructure.

Methodologically, there is a strong case for pairing geospatial dispersion modeling and health-impact assessment tools with observational health data and natural experiments arising from policy or technological changes (FAS, 2025; Han et al., 2025).

Policy and Planning Implications

Despite important uncertainties, the current evidence base is sufficient to support precautionary policy action. Several categories of intervention emerge from the literature.

Energy and Emissions Policy

Grid decarbonization and clean siting can reduce both climate and health burdens substantially. Prioritizing low-carbon, low-pollution generation for data center loads and locating new facilities in regions with cleaner grids can lower health impacts per unit of computation (Han et al., 2025). Restrictions on diesel generator use, including tighter limits on hours of operation, mandates for best available control technologies, and encouragement of alternatives such as battery storage, renewable-based microgrids, or lower-emission gas generators, can mitigate local air pollution (Environmental Health Project, 2026; FAS, 2025).

Noise Regulation and Land-Use Planning

Applying WHO Environmental Noise Guidelines (WHO Regional Office for Europe, 2018) to data centers by setting maximum allowable outdoor noise levels at sensitive receptors, especially at night, and requiring noise impact assessments during permitting would help protect nearby residents. Requiring adequate setbacks from residential areas, use of acoustic enclosures, and thoughtful placement of cooling equipment and generators can further minimize community noise exposure (Gour et al., 2026; Lincoln Institute of Land Policy, 2025). A-weighting standards for noise measurement should be supplemented by C-weighting or other low-frequency-sensitive metrics, given the documented underestimation of low-frequency noise impacts by standard methods.

Water Governance

Incorporating data center demand explicitly into water resource planning, especially in water-stressed regions, and prioritizing reclaimed water or closed-loop cooling where feasible can reduce stress on potable supplies (Brookings Institution, 2026; EESI, 2025). Conditioning permits on demonstration that withdrawals will not compromise essential domestic and public uses under drought or peak demand scenarios represents a prudent precautionary measure.

Health Impact Assessment and Monitoring

FAS (2025) recommends that state environmental and public health agencies conduct health impact assessments before and after data center construction, with transparent methods and public reporting, to evaluate both anticipated and realized impacts. Requiring operators to report emissions, water use, and noise levels in standardized formats would facilitate ongoing risk assessment and accountability. The Dominici et al. (2025) Georgia case study demonstrates that rigorous health impact assessment conducted during the permitting process can influence infrastructure decisions in ways that protect public health.

Environmental Justice Safeguards

Integrating environmental justice screening tools into siting and permitting can help avoid concentrating new facilities in communities already overburdened by pollution or infrastructural deficits (FAS, 2025; Han et al., 2025). Ensuring that economic benefits, such as tax revenues and infrastructure investments, are shared with and meaningfully benefit affected communities, rather than primarily accruing to distant shareholders, is also an important equity consideration.

Transdisciplinary Governance

Gour et al. (2026) emphasize the need for coordinated governance across energy, water, noise, land-use, and communications domains to manage health risks from data centers. This

implies meaningful collaboration among utility regulators, public health agencies, environmental departments, local planners, and community organizations, with structured community participation in siting decisions.

Conclusion

Large data centers are central to contemporary digital infrastructure, yet their health consequences have only recently begun to receive sustained scholarly attention. The emerging literature, spanning environmental health, climate-energy modeling, and regional case studies, indicates that data center expansion is already contributing to measurable health burdens through increased air pollution, with modeled projections of roughly 1,300 premature deaths and up to \$20 billion in health damages annually in the United States alone by the late 2020s (Caltech News, 2024; FAS, 2025; Han et al., 2025). Chronic environmental noise and intensive water use present additional, though less-quantified, risks to cardiovascular health, sleep, mental well-being, and water security, particularly in communities where facilities are densely clustered (Brookings Institution, 2026; Gour et al., 2026).

Tao and Gao's (2025) call for empirical research remains salient. There are no large cohort or quasi-experimental studies directly linking proximity to data centers with specific health outcomes, and many exposure pathways are inferred from analogues in transportation noise or industrial air pollution research. This gap represents both a challenge and an opportunity. Without waiting for perfect evidence, policymakers and planners can adopt precautionary measures consistent with existing knowledge about air and noise pollution, water scarcity, and environmental justice. In parallel, targeted research integrating environmental monitoring, health data, and systems modeling can refine estimates and inform more nuanced interventions.

As AI and digital services continue to expand, the choices made now about how and where data centers are built, powered, and cooled will shape not only climate trajectories and economic opportunities but also the health and equity of communities hosting this infrastructure. These decisions are being made at a pace that outstrips the current capacity of health science to evaluate their consequences. Ensuring that the digital future is also a healthy and just one requires bringing public health expertise to the center of data center governance, rather than treating it as an afterthought.

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Spokane Human Rights Champions' Awards

November 12, 2026

5:00 P.M. Silent Auction and No Host Bar

6:00 P.M. Dinner and Awards

The Centennial
303 W North River Drive, Spokane, WA

\$60.00 per person or \$450 table of 8

QR Code below for purchase



2026 Champions

Bridget Potter

Suzi Hokonson

Ed Richardson

Sorayya Mohammadi

11 Minneapolis Clergy - Gen Heywood, Jer Swigert, Meredith McKay, Lin Elizabeth Preiss,
Jonathan Cornell, Mindy Smith, Kent McDonald, Jourdan Turner, Claire Algeo, Bob Feeney, John Wallingford

Main course options:

Braised Angus Beef Tips over roasted garlic mashed potatoes, seasonal vegetables and red wine gravy

Roasted chicken breast with rice pilaf, seasonal vegetables and chicken glaze

Vegan Alternative: Mushroom & Butternut Squash Risotto with basil oil (GF) (V)

