

ADDRESSING DATA CENTER IMPACTS & ENSURING TRANSPARENCY

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WHY IT MATTERS

Virginia hosts the world's largest data center market, with nearly 3 times more operational capacity than the next closest region of Beijing.¹ Data center development was initially concentrated in an industrializing portion of northern Virginia that came to be called "data center alley," with its impacts largely isolated from neighboring land uses. Currently, however, data center site proposals are getting larger, with warehouse-sized buildings constructed on campuses that can exceed a thousand acres. They are also increasingly constructed in new areas throughout the Commonwealth, resulting in industrial sprawl that is damaging natural resources and historic landscapes; impairing public parkland; impacting adjacent neighborhoods, schools, and medical facilities; and inflating land prices.

Data centers can also use a huge amount of water, and researchers project that cooling the more powerful data centers that artificial intelligence (AI) requires will significantly increase water consumption.² This raises concerns about the community and ecological impacts of lower water levels, especially in the face of increased drought. Local and regional air quality, as well as greenhouse gas emissions, are also a concern as data center developers increasingly propose gas turbines on-site to meet power demands and the industry continues to use diesel generators for backup power.³ According to records from the Department of Environmental Quality, data centers in Virginia hold air permits for nearly 9,000 backup diesel generators. Researchers with the University of California, Riverside recently published a study showing that just 10% of these backup generators' permitted emissions could result in an annual public health burden of \$190-260 million in Virginia and nearby states.⁴

Although data centers have brought tangible benefits to some Virginians, planning for and mitigating the damaging impacts of this industry at the state level can help manage its quickly compounding growth and use of resources.

CURRENT LANDSCAPE

Despite the challenges already facing impacted communities, the data center industry is expected to continue its fast pace of growth in Virginia,⁵ leading to further land use, water, and energy impacts. Localities often have the only say in approving or rejecting a data center proposal, yet they lack the purview to analyze key impacts to the grid, air quality, and regional water supply. In addition to this lack of state-level oversight, researchers have highlighted limited

transparency and the widespread use of non-disclosure agreements (NDAs), which hinder public access to crucial information on data center proposals.⁶

Further, Virginia offers a sales tax exemption to the data center industry, approaching a billion dollars in foregone state revenue each year.⁷ Although many factors impact industry siting decisions, the state sales tax exemption is a significant incentive. This is the largest industrial tax break in the state,⁸ and it has no conditions that protect communities or the environment, promote transparency around impacts, or foster state oversight of regional effects.

A recent report from the General Assembly's Joint Legislative Audit and Review Commission (JLARC) focused primarily on the growth projected in data center power demand, the new infrastructure necessary to meet that demand, and the resulting impact on Virginians' electric bills. But the report also referenced important community impacts related to land use, water supply, and air quality, where three conclusions stand out: 1) the industrial scale of data centers makes them "largely incompatible with residential uses;" 2) localities need water use information from data centers to plan adequately for future water availability; and 3) the diesel back-up generators most data centers use could impact local air quality during outages or if used for demand response.

OPPORTUNITIES

Currently, localities typically have the only say about whether and where new data centers may be built, even though they are not considering the more regional impacts data centers generate. Under this framework, localities continue to approve data centers, with adverse impacts spreading into new localities and regions in the Commonwealth, including new statewide and interstate transmission lines, new gas power plants, and regional water impacts. The JLARC report helped shine a light on many of the challenges this expanding industry is creating in Virginia, while making clear that most of the solutions require state-level action and involvement because they exceed localities' purview and authority.

At both the local and state level, more transparency is needed. In the local application review process, more information about the details of projects could help localities to better plan and protect communities, parks, and natural and cultural resources. A new state-level review could allow for consideration of broader-scale data center impacts that typically fall outside the purview of local officials, such as regional air quality and water supplies, as well as the new energy infrastructure data centers necessitate far

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beyond their local jurisdictional boundaries.

Information about on-site power and backup generators could help localities and the state better prevent excessive air pollution, and information about water consumption could help ensure holistic regional water supply planning. New transmission lines built to serve these data center campuses

often go through parks, community open space, trails, riparian buffers, and farmland, and energy generation projects to feed additional power demand are fraught with impacts like air pollution and consumption of large quantities of water. More information and a state-level review, in addition to the local review, could allow these issues to be evaluated more comprehensively.

TOP TAKEAWAYS

State review and oversight, in addition to existing local review, could help Virginia plan for and mitigate land use, water, air quality, and energy impacts from this expanding industry.

Greater transparency about the impacts of data centers could help regulators, elected officials, and the public to make responsible, informed land use decisions.

Existing incentives could be adjusted to encourage environmentally responsible development.

ENDNOTES

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