

# Getting It Right: Local Approaches to Data Center Development



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# **Getting It Right: Local Approaches to Data Center Development**

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The Southern Environmental Law Center is a nonpartisan, nonprofit organization that works throughout six Southern states to promote policies and decisions that strengthen our communities and protect our environment, health, and natural resources.

## **For more information, contact:**

Morgan Butler, SELC Senior Attorney  
mbutler@selc.org

Christina Libre, SELC Associate Attorney  
clibre@selc.org

Southern Environmental Law Center  
120 Garrett Street, Suite 400  
Charlottesville, VA 22902



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# Introduction

Data centers — large facilities that house the computer systems and associated components used to store, process, and distribute massive volumes of digital information — are an increasingly prominent part of our modern society. But for all the services they enable and the tax revenue they can generate, data centers are extremely resource-intensive and can consume vast amounts of energy, water, and land. Their explosive growth in many areas of the country in recent years is putting tremendous pressure on energy systems, electricity rates, water supplies, and natural and historic resources, while often generating significant air and noise pollution. It is crucial that all levels of government work to ensure that data center development occurs in a way that safeguards communities, public health, and the environment. However, local governments have a particularly important role to play because local zoning authority often provides communities with their best — and sometimes only — opportunity to exert any meaningful influence over data center development.

SELC has been advocating on data center land use issues for several years, and this report offers various considerations for using zoning ordinances and

local advocacy to address the unique challenges data centers present. Zoning ordinances that promote transparent and accountable decision-making and facilitate informed public engagement can help ensure that local residents themselves, not developers and data center companies, determine how this industry impacts their communities.

Section 1 of this report provides general information on some of the community and environmental impacts that data centers can cause and that are important for communities and their elected officials to understand. Section 2 discusses various options for how local zoning ordinances can effectively empower local governing bodies — and, by extension, the public — to address data center development in an informed, responsible, and transparent way. Section 3 covers the inclusion of data center-specific development requirements in zoning ordinances and summarizes examples of provisions from several localities in Virginia, the state that has experienced the most data center development. Finally, Section 4 offers general suggestions for how local residents can engage most effectively on individual data center proposals.



## SECTION 1

# Environmental and Community Impacts

Data center development can cause substantial community, environmental, and other impacts. The impacts discussed in this section are only a partial list that reflects those often causing the most concern.

### Energy

Data centers require a tremendous amount of electricity to both power their computer servers and to operate the cooling systems that keep the servers at an optimal temperature. A large hyperscale data center operated by major tech companies like Amazon, Google, and Microsoft can use as much power as roughly 80,000 homes.<sup>1</sup> Utilities across the country are pointing to this power demand to justify the buildout of expensive, polluting power facilities — undermining climate emission reduction goals and driving up electricity bills.

### Water

Data centers can also consume vast amounts of water, particularly when they rely on water for their cooling needs. Lawrence Berkeley National Laboratory found that in 2023 alone, U.S. data centers consumed approximately 66 billion liters (or 17.4 billion gallons)

of water.<sup>2</sup> This amount of water — which does not capture any of the data centers built in the U.S. in the last two years — would satisfy the household needs of nearly 160,000 American families for an entire year.<sup>3</sup> The hyperscale data centers of one large tech company reportedly use approximately 200 million gallons of water — per facility — in a single year.<sup>4</sup> For context, that amount of water would fill an Olympic-sized swimming pool stretched to a length of over 9 miles. Further, these figures do not account for the substantial amount of water that is consumed in the process of generating the power that data centers use.<sup>5</sup>

### Air Pollution

As noted above, utilities are using data center power demand to justify building new fossil fuel power plants that emit harmful air pollutants, including sulfur dioxide (SO<sub>2</sub>), nitrogen oxides (NO<sub>x</sub>), and fine particulate matter (PM<sub>2.5</sub>).<sup>6</sup> These pollutants are associated with cardiovascular and respiratory illnesses<sup>7</sup> and place residents at higher risk of hospitalization.<sup>8</sup> In some instances, developers have proposed to build polluting fossil fuel power plants on the same site as data centers to avoid having to purchase primary power from the electric grid.





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For example, a recent rezoning request to allow a data center campus in Pittsylvania County, Virginia, included a proposed gas-fired power plant to provide power to a data center campus. A report from the Harvard Data Science Initiative and the lab of Dr. Francesca Dominici conservatively estimated that the proposed gas plant would have emitted 326.53 tons of fine particulate matter each year, exposing more than 17,500 people to concentrations of this pollutant associated with severe health impacts, including heart attack, pneumonia, or, in some cases, stroke or cancer.<sup>9</sup>

In addition, data centers are typically equipped with commercial-scale, diesel-powered generators to ensure a constant source of power during electricity outages. Large data centers can have dozens or even

hundreds of these backup generators on site, and they emit many of the same harmful pollutants described above. Even though they are usually only operated during power losses and for testing, these generators can still be a problem for those who live and work nearby.

### Land Use and Community Impacts

Data center development can consume natural areas and large swaths of undeveloped land, especially as developers seek to co-locate multiple facilities and create data center “campuses” that can occupy thousands of acres.<sup>10</sup> In Virginia — the state with the most data center development<sup>11</sup> — over 340 data centers totaling 63 million square feet of data center space and occupying roughly 7,200 acres of land<sup>12</sup> had already been built as of 2024, and significant additional construction in 2025 has increased these numbers even further. But Virginia is not alone, as data center development is accelerating in other states and communities across the country. Without proper land use planning and design standards, data center development can lead to sprawl, destruction of valuable habitat and farmland, damage to historic and scenic viewsheds, and loss of land that would be better used for housing, employment, and other local needs and opportunities.

Data centers can also be particularly disruptive to nearby homes, businesses, and other community resources such as schools. They often emit around-the-clock noise from the constant humming of fans and other equipment used in their cooling systems. The large buildings and the vast areas of pavement that surround them can also increase polluted stormwater runoff into local bodies of water. And, as described above, the air pollution from onsite power generation can harm nearby residents’ health. Data center development can also result in indirect impacts that go well beyond the immediate vicinity of the facility itself, like construction of new electric transmission infrastructure to connect data centers to power sources.

## SECTION 2

# Addressing Data Centers in Local Zoning Ordinances

Given the substantial impacts of data centers, it is not surprising that the rapid increase of these facilities is generating significant concerns. Data centers' impact on many environmental issues, including energy use, air pollution, climate change, water consumption, and land development, are not only felt locally, but are often statewide, national, and even global in scale. Yet it is *local* elected governing bodies — through their land use and zoning authority — that are often the only governmental entity that has a meaningful say on whether, where, and even many aspects of how a data center may be built.

To be sure, a data center proposal might trigger various federal or state permitting requirements — for example, if it would impact federally protected wetlands or require a large surface water withdrawal. However, developers can often design their proposals to avoid such triggers, and even if they cannot, the decisions on those permits are typically more difficult to influence than a local governing body's zoning decision. Among other challenges, state and federal permitting authorities are much further removed from — and less responsive to — the impacted community and its specific concerns than the locally elected officials. In addition, a zoning decision typically comes at a much earlier stage of project development and before it has acquired significant regulatory inertia, whereas any federal and state permitting decisions usually occur after a proposal has received the necessary local approval — making it that much harder to convince state or federal officials to demand significant improvements or to reject the proposal outright. As a result, even if the local zoning process is not always the community's only chance to influence a data center proposal, it is usually its best opportunity.

It is therefore crucial for local officials and communities that wish to influence data center development to understand how their local land use ordinances apply to data centers, and, if necessary, to consider changes that could maximize transparent, accountable, and informed decision-making.

Key considerations include whether a locality's zoning ordinance provides the governing body with the ability to review and either approve or deny data center proposals, and whether the ordinance provides meaningful opportunities for public comment. These essential protections can take various forms, and the mechanisms are different in each state due to differences in state land use law. This report highlights some options available under Virginia zoning law because that is where much of the local land use work on data centers has been done to date. Although these Virginia-specific options are likely similar to potential options in most other states, **it is necessary to assess your own state and locality's land use laws to determine the extent of their applicability, and the ideas and options offered in this document should not be considered legal advice.**

### BACKGROUND INFORMATION ON ZONING

Local zoning ordinances typically divide the territory of a locality into different zoning districts (e.g., Light Industrial, Heavy Industrial, Highway Commercial, Residential, Agricultural). The specific areas of the locality that fall within each zoning district are shown on the locality's official zoning map.

Each zoning district's regulations typically include lists of specific land uses that are permissible within that district, such as office buildings, apartment buildings, warehouses, and data centers. When a developer seeks to build a particular land use on a specific parcel, the applicable review process will be dictated by whether the proposed use on that parcel is allowed "by right," requires approval as a "special use," or would require a rezoning. These different categories are further explained below.

A locality's zoning ordinance will also usually include a textual section for each zoning district, laying out a set of development standards that apply to land development within that district. These development standards regulate things like maximum structure height, the distances that buildings must be set back from property lines, and the permissible development densities in a district, and they apply to



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all development allowed in that district regardless of the specific land use.

In addition to these district-based development standards, a zoning ordinance may include a set of development requirements specific to particular land uses, such as data centers. These use-specific requirements, which often cover design and operational aspects (for example, prohibitions on data centers testing their backup generators during nighttime hours), apply to any proposal for that use regardless of the zoning district in which it is proposed to be located, and they apply on top of the district-specific development standards. (Section 3 shares examples of some data center-specific development requirements from various Virginia localities.)

### By-Right Uses

Each zoning district’s regulations typically list a set of land uses that are allowed without any review by the public or approval by local elected officials as long as the proposal complies with the applicable development standards for that zoning district and that particular use. These uses are most often referred to in Virginia as **“by-right”** or **“permitted” uses**. This means that if a zoning district allows data centers by right and a data center proposal meets all applicable development standards and use-specific requirements, then the local government

## Determining Who Reviews Special Use Permit Applications

In Virginia, it is often the locally elected governing body (i.e., a City Council or County Board of Supervisors) that reviews and then votes to approve or deny an application for a special use permit. However, these decisions may be delegated to a local zoning board (in Virginia, called a Board of Zoning Appeals or “BZA”) whose members are appointed. Because these appointed bodies are usually further removed from local residents than the members of the governing bodies (whom local residents directly elect), the public may have a better chance to impact decisions on special use permits for data centers when these decisions are the responsibility of the governing body. Localities that have the authority to choose between the governing body or an appointed body like the BZA should carefully consider which body they want to review and decide on special use permit applications for data centers.

has no ability to deny the proposal. Local elected officials are unable to vote on it, and they may not even be aware of it before it receives administrative approval from the locality's planning staff. And with no local government decision required, there is no requirement for a public hearing or other formal opportunity for public input. In other words, if the local planning staff confirms that the proposal meets all the applicable development standards, then it is allowed as a matter of right and there is no role for the public or the elected officials.

### Special Uses

Each zoning district's regulations will often also list a second set of uses that are allowed only with the approval of a local governmental body. These uses are generally referred to in Virginia as **"special uses," "conditional uses,"** or **"special exceptions."**

Special uses are considered to have a potentially greater impact on neighboring properties or the public than uses permitted by right, so a public review process and a decision by a local governmental body is required before they may be built. Although the features of the public review process for a special use permit may vary by state and locality, in Virginia they often include:

- Publication of notice of the proposal in a local newspaper, including information about where the public can view the application and related materials;
- A public hearing before the locality's planning commission, and a recommendation from the planning commission to the local governmental body;
- A public hearing before the local body; and
- A public vote by the local body.

Further, the local body may be able to place protective conditions (e.g., reasonable limitations on the amount of water the proposal may use, or requirements for additional noise reduction equipment) on any special use permit it decides to approve to help mitigate the proposal's adverse impacts. Such conditions must comply with constitutional and any statutory parameters. (For example, they must be both reasonably related and roughly proportional to the impacts the public body is seeking to address.) Significantly, however, there is no requirement under Virginia law that the conditions be agreed to by the applicant.

Pushing for strong protections via reasonable conditions is an important way the public can participate in the special use permit process to lessen the negative impacts of data center proposals. For inappropriately sited proposals whose impacts cannot be adequately mitigated, members of the public may also advocate that the local body simply deny the special use permit request.

### Rezoning

If a proposed land use is not included as either a by-right use or a special use within a zoning district, then it is most likely not allowed in that district. However, it is important to check with the locality's planning staff, as some localities may interpret data centers as a subset of some broader land use (such as "Warehouse/Storage" or "Utility Facility") that is listed as either a by-right or special use in a zoning district.

Once it is confirmed that a particular zoning district does not allow data centers either by right or as a special use, a developer seeking to build a data center on property within that zoning district would need to seek a "rezoning" of the property to a different zoning district classification that does allow data centers. Under Virginia law, the rezoning process typically includes similar opportunities for public engagement as those outlined above for special use permits (e.g., public notice in local newspaper, public hearing and recommendation from the locality's planning commission, and a public hearing and vote by the governing body). In addition, the governing body generally may seek "proffers" from the applicant, which are voluntary conditions or commitments the applicant offers to help mitigate the potential impacts of the proposed development on the surrounding community. However, because Virginia law requires proffers to be voluntary on the part of the applicant and imposes other restraints on their use, the governing body's authority is more limited with proffers than it is with conditions on special use permits.

In summary, both a special use permit and a rezoning will typically require a public process with at least one public hearing and a public vote by a local governmental body. These processes provide members of the public with a crucial opportunity to obtain information on, engage with, and help shape individual data center proposals in their community, and in so doing, they promote more transparent,

informed, and accountable decision-making. As a result, if a locality wishes to allow data centers at all, consideration should be given to these different options for ensuring public review and approval processes for data center proposals.

### **Understanding the Zoning Ordinance’s Definition of “Data Center”**

For localities that do want to allow some level of data center development, it is important to consider whether the zoning ordinance’s definition of “data center” is specific to the computer systems and their directly associated components (such as telecommunications, storage, and cooling systems). If the definition is broad enough that it can be read to cover gas turbines or other fossil-fuel-based primary power generation sources that an applicant may wish to build on the same site to power the data center, those uses might be considered part of a data center that is either allowed by right or approved as a special use and thereby evade review by the local governing body.

The key takeaway is that communities should be proactive and get out in front of data center development (or the next data center development) in their locality. The first step is to figure out what the zoning ordinance currently allows. Are data centers allowed by right, and if so, where? Are those locations and the scale of buildout allowed by right acceptable to the community? If not, the locality should consider options like those above that require a public review process and the governing body’s approval before a data center may be built. A locality that is not deliberate about how its zoning ordinance addresses data centers may sacrifice its residents’ best and only opportunity to impact this industry’s development in their communities.

### **RESPONSIBLE DATA CENTER ZONING STRATEGIES**

Localities wishing to structure their zoning ordinance to promote transparent, accountable, and informed decision-making on data center proposals should consider the following options:

- Amending the local zoning ordinance, if necessary, to eliminate all by-right allowances for data centers.
- Localities that wish to allow some level of data center development should consider allowing data centers only by special use permit, and only in zoning districts intended for large-scale industrial uses with major impacts (primarily “heavy industrial” districts and possibly “light industrial” districts).
- If a locality decides to allow some level of data center development by right, it should consider limiting the by-right allowance to data centers under a certain size threshold (e.g., 40,000 square feet) and/or to industrial zoning districts.

## SECTION 3

# Data Center-specific Development Requirements

Zoning ordinances that allow data centers either by right or by special use permit often include a set of use-specific development requirements that all data centers must meet, regardless of the zoning district in which they may be located. These requirements are typically intended to reduce specific impacts (e.g., water use or noise) and can take a variety of forms. This section summarizes examples of data center development requirements that Virginia localities have adopted or proposed.

Please note that this section is intended to provide a general sense of how some Virginia localities are approaching the regulation of various data center impacts, and inclusion of a provision below is not intended as a blanket endorsement. Each locality that wishes to allow some level of data center development will want to consider its own specific development requirements based on its unique context and the impacts that are of concern to its residents.

Any ordinance provision that goes beyond what a particular locality wishes to include in its zoning ordinance as a mandatory development requirement for all data centers could alternatively be considered as a condition to attach to a special use permit or as a proffer to include in a rezoning for an individual data center proposal.

### WATER USE

In an effort to account for and address the heavy strain that data centers can place on water resources, some Virginia localities have adopted or proposed provisions that require developers to provide information about likely water use and to incorporate design features that reduce water consumption. Some of those provisions include:

- Requiring applicants seeking a special use permit for data centers to disclose how much water a facility is projected to use once fully developed and operating.<sup>13</sup>
- Requiring connection to a public water system and prohibiting use of wells for water supply.<sup>14</sup>

- Requiring special use permit applicants to submit a letter from the public water utility indicating the system has sufficient capacity to serve the proposed data center.<sup>15</sup>
- Requiring that data centers use a closed-loop or recycled water system.<sup>16</sup>
- A requirement limiting flushes and refills of cooling system water to times approved by the local water authority.<sup>17</sup>

### ENERGY AND TRANSMISSION INFRASTRUCTURE

Data centers generally require vast amounts of power and may also necessitate new transmission infrastructure to connect to the source(s) of that electricity. Some Virginia localities have adopted or proposed provisions that require data center developers to provide information to help the locality assess and address these needs. Examples include:

- Requiring that special use permit applicants provide information on how electricity would be provided to serve the proposed data center.<sup>18</sup>
- Requiring an applicant for a special use permit for a data center to submit a letter from the electric utility indicating that the project would be able to connect to a substation and transmission lines with sufficient capacity and proximity.<sup>19</sup>

### BACKUP GENERATORS

Data centers typically have backup power sources located onsite, and these often take the form of commercial-scale diesel generators that emit hazardous air pollutants and can generate significant noise. Development requirements that Virginia localities have adopted or proposed to try to reduce these impacts include:

- Requiring onsite backup generators to meet or exceed EPA Tier 4 emission standards.<sup>20</sup>
- Limiting routine generator testing or maintenance to certain days and times.<sup>21</sup>
- Requiring that generators be located within sound-limiting enclosures.<sup>22</sup>

## LOCATION AND COMPATIBILITY WITH OTHER LAND USES

Some Virginia localities have established development standards in an effort to reduce the disruptive impacts that data centers can have on nearby land uses. These include:

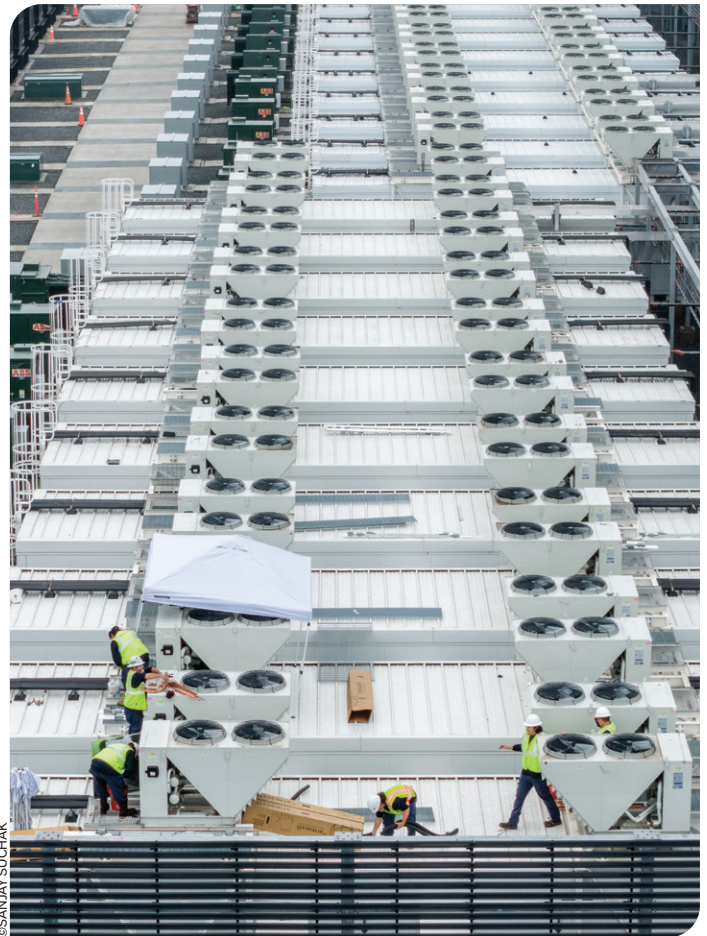
- Requiring setbacks from adjoining property lines and sensitive land uses.<sup>23</sup>
- Requiring vegetated buffers near sensitive features and adjoining land uses.<sup>24</sup>
- Requiring mechanical equipment to be screened or enclosed within a building.<sup>25</sup>
- Prohibiting data centers from locating within a certain distance of transit stations to avoid impeding transit-oriented development.<sup>26</sup>

## NOISE

The persistent low-frequency noise that many data centers emit can be a source of significant concern for nearby schools, homes, and businesses. Some of the development requirements that Virginia localities have considered include:

- Prohibiting data centers (including generators and other equipment) from emitting noise in excess of certain thresholds during the daytime and nighttime.<sup>27</sup>
- Requiring developers to conduct and submit a noise study prior to site plan approval demonstrating that the project will comply with the locality's noise limits.<sup>28</sup>
- Requiring developers to submit a post-construction noise study demonstrating that the project complies with noise limits.<sup>29</sup>

However, data center noise is a particularly difficult impact to address effectively because it is the constancy of the noise, not its volume, that is often the source of neighbors' frustration, and most noise ordinances (like the examples referenced above) focus on volume.



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## SECTION 4

# Tips for Effective Public Engagement

After a locality's zoning ordinance is structured to require public input and the governing body's review of some or all data center proposals, the next question for local residents is how to engage effectively when an individual data center is proposed. The context around each local decision on a data center proposal is unique. The impacts of a particular proposal will depend on the project's location, size, and design, and different localities will diverge in their balancing of costs against benefits. Unfortunately, residents seeking a thoughtful and informed decision on a data center proposal coming before their local governing body often face serious challenges. Many data center companies go to great lengths to limit public disclosure of information they deem as trade secrets or sensitive, and most have substantial financial and staffing resources they can bring to bear during local review processes. However, there are some general steps that interested groups and individuals can take to engage effectively. Here are some suggestions:

**Obtain a copy of the proposal and study it.** As soon as you learn about the proposal, visit or contact your locality's planning department and request a copy of the application and all related documents. Go through the documents carefully, and then follow up with local planning staff to ask questions.

**Know the rules of the process.** There are rules that govern how the public review processes for rezonings and special use permits are intended to work. These rules are meant to ensure the public has a reasonable opportunity to learn about the proposal and then provide their input to decision-makers before a vote. For example, these processes often require public hearings, and the locality or the applicant may be required to post a notice of an upcoming hearing in a public setting (e.g., in a local newspaper) a certain number of days before the hearing takes place. Similarly, a data center applicant may seek to postpone a scheduled public hearing on their proposal because they would like more time to lobby the governing body, and the governing body may have bylaws or its own specific rules and procedures that

**“Public participation in the data center discussion on a local level is especially critical, given that this is an industry still in its adolescence, with virtually no state-wide regulations.”**

— Judge Leisa K. Ciaffone, Roanoke City Circuit Court, Virginia.  
(*Gendreau v. McEvoy*, 2025)<sup>30</sup>

govern how and when scheduled public hearings may be removed from its meeting agendas. It is helpful to be at least somewhat familiar with these rules to help make sure the procedural requirements are being met with such requests.

**Create an online hub** (such as a Facebook group) for communicating information about the project and for posting details on upcoming meetings and public hearings.

**Host a community information meeting** to share what you have learned about the proposal and to try to get additional information.

- Consider inviting the applicant to attend the meeting to present their project and answer questions from attendees. They may decline, but giving them the opportunity to explain the proposal, listen to community members' concerns, and respond directly to residents' questions can provide helpful information and may open avenues of communication that lead to meaningful commitments to mitigate impacts.
- A community-organized meeting can have distinct benefits in contrast to a meeting organized by the applicant. Although applicant-hosted meetings can be informative, the applicant sets the agenda. They may steer the discussion toward the issues they want to address and not necessarily toward the community's most pressing questions and concerns.

- Remember that credibility is important in the public review process. Always strive to verify a factual, defensible basis for any information that you share.

**Broaden your reach.** In addition to neighbors and friends, reach out to businesses, schools, houses of worship, and other groups and organizations that could be negatively impacted by the proposal to make sure they are aware of it and understand its potential impacts. It will be beneficial to demonstrate to the decision-making body that concerns are widespread throughout the locality and are not limited to residents in the immediate vicinity of the proposal.

#### **Research the applicant and their past projects.**

Because large data center companies frequently use subsidiaries or shell companies when acquiring land and applying for special use permits and rezonings, the true identity of data center applicants may be difficult to uncover during local reviews. However, it is still worth researching the applicant's history to try to identify any other projects they have developed. In particular, try to discover whether the applicant has effectively mitigated the harmful impacts of other projects, or if their projects have violated any environmental provisions or damaged the hosting communities' quality of life. Similarly, it can be useful to know whether the applicant company and its executives are from the area, or if they reside somewhere far from the community where they are asking to build. Sharing factual information with local officials about an applicant's history as a developer can be helpful context for local officials, but keep in mind that making sweeping or misleading statements about an applicant can undercut your credibility and possibly even leave you vulnerable to legal liability.

#### **Help decision-makers understand the impacts.**

Data center applicants will often provide detailed estimates of the local tax revenue their projects might generate, but they may not be as forthcoming with information about the costs their projects could impose on the community. Urge your local governing body members to get answers to questions like the ones below — and to make those answers available to the public — before they consider voting.

**Is the proposal consistent with the locality's comprehensive plan (sometimes referred to as a "general plan" or "master plan")?**

- A comprehensive plan is a document that serves as a "blueprint" for the long-range development of land in the locality. In many states it is a key guidance document for the local officials tasked with deciding rezonings and special use permit requests, and a proposal's inconsistency with the comprehensive plan can present a compelling argument for denying it. For example, a data center proposal would generally not be consistent with a comprehensive plan's designation of an area for high-density residential or agriculture/conservation.
- If the comprehensive plan includes provisions that a community deems too permissive toward data centers (either generally or in specific areas of the locality that may be inappropriate for data center development), advocacy efforts may need to focus on amending the plan to remove or change those provisions.

**What valuable community and natural resources are located on the site or nearby that would be damaged or disrupted by the proposal?**

- Data centers are often massive buildings that require significant acreage and can generate substantial amounts of pavement and noise. They are often built in "campuses" with a dozen or more buildings, along with all the other components they include. When proposed in or near resources such as public parks, forests, agricultural areas, and historic buildings or landscapes, data centers can inflict irreparable damage on these resources and the many values they provide to the community.

**What will be the primary source(s) of power for the proposal, and will it require onsite power generation?**

- A growing number of data center proposals are seeking to provide their own onsite primary power generation sources. Depending on the power source proposed, this can present a host of additional negative impacts — such as significant air pollution from the burning of fossil fuels like methane gas — that local governments should quantify and understand before deciding on a proposal.

**Will backup diesel generators be installed, and if so, how many and what size and type will they be?**

- Data centers predominantly rely on large-scale diesel generators for backup energy, and larger data center campuses can be equipped with hundreds of them. These generators can be significant sources

of hazardous air pollutants such as PM<sub>2.5</sub> (see Section 1), and they pose particularly concerning health risks when located near schools, hospitals, and other community resources where vulnerable people spend time.

**How much water will the proposal use, and what will be the source of that water?**

- Data centers can use a huge amount of water, and they may pull it from the public water system, withdraw it directly from local waterways, or extract it from the ground. Each of these options poses risks to public safety, environmental resources, or both. It is crucial for local decision-makers to understand how much water will be consumed and what effect that will have on area aquifers, stream flows, and public water supplies.

**Would the data center, by itself or in combination with other data centers, require new or expanded electricity transmission lines or water infrastructure?**

- These secondary infrastructure projects are often overlooked or ignored by local officials. It is important to know what other infrastructure projects may need to be built to serve the data center and to assess what impacts those other projects may have.

**Promote strong turnout at public meetings.**

Last but not least, ensure that the public hearings on the proposal are heavily attended. It can be very difficult for decision-makers to look out on a room full of constituents who are all in agreement on an issue and then vote the other way. Use visual cues such as matching signs, shirts, or buttons to help the decision-makers easily identify all the people in the room who are on your side of the issue. This also helps give a “voice” to any people who attend the hearing but may not be comfortable providing their own public comment.

## **Conclusion**

Given the scale of the impacts and the explosive growth of the data center industry, effective leadership and engagement is needed from all levels of government to ensure that development is occurring in a way that protects communities, public health, and the environment. Local governments have a key role to play given their authority over local land use, and it is essential that local zoning ordinances promote meaningful public engagement on data center proposals, require review and approval from governing bodies, and establish protective development requirements for any data centers that are approved.

Community members also play a crucial part, and by engaging effectively in the public review of data center proposals, they contribute to the paramount goals of transparent and informed decision-making. Combining thoughtful zoning ordinances with smart public involvement is one of the best strategies currently available for shaping responsible data center development, and it is one that all localities confronting this growing challenge should be pursuing.

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- <sup>4</sup> Dashveenjit Kaur, *Cloud’s Hidden Cost: Data Centre Water Consumption Creates a Global Crisis*, *Cloud Computing* (July 15, 2025), [https://www.cloudcomputing-news.net/news/data-centre-water-consumption-crisis/#:~:text=Hyperscale%20facilities%20operated%20by%20companies%20like%20Google,gallons%20\(760%20million%20litres\)%20annually%20per%20facility;see%20also%20Mary%20Zhang,Data%20Center%20Water%20Usage:A%20Comprehensive%20Guide,Dgtl%20Infra\(Ja.17,2024\)https://dgtlinfra.com/data-center-water-usage/](https://www.cloudcomputing-news.net/news/data-centre-water-consumption-crisis/#:~:text=Hyperscale%20facilities%20operated%20by%20companies%20like%20Google,gallons%20(760%20million%20litres)%20annually%20per%20facility;see%20also%20Mary%20Zhang,Data%20Center%20Water%20Usage:A%20Comprehensive%20Guide,Dgtl%20Infra(Ja.17,2024)https://dgtlinfra.com/data-center-water-usage/)
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- <sup>14</sup> York County Zoning Ordinance at § 24.1-489.1(b).
- <sup>15</sup> York County Zoning Ordinance at § 24.1-489.1(a)(2).
- <sup>16</sup> Albemarle County Zoning Ordinance at § 18-5.1.65(B)(2).
- <sup>17</sup> Albemarle County July 2025 Draft Ordinance Amendment at § 18-5.1.65(B)(3).
- <sup>18</sup> Albemarle County July 2025 Draft Ordinance Amendment at § 18-5.1.65(I).
- <sup>19</sup> York County Zoning Ordinance at § 24.1-489.1(a)(1).
- <sup>20</sup> Albemarle County July 2025 Draft Ordinance Amendment at § 18-5.1.65(D)(3).
- <sup>21</sup> Loudoun County Zoning Ordinance at § 4.06.02(D)(8)a-b); Albemarle County Zoning Ordinance at §.18-5.1.65(D)(1).
- <sup>22</sup> Albemarle County Zoning Ordinance at § 18-5.1.65(D)(2).
- <sup>23</sup> Albemarle County Zoning Ordinance at § 18-5.1.65(C).
- <sup>24</sup> Loudoun County Zoning Ordinance at § 4.06.02(D)(11).
- <sup>25</sup> Henrico County Zoning Ordinance at § 24-4328(B); Loudoun County Zoning Ordinance at §4.06.02(D)(2).
- <sup>26</sup> Fairfax County Zoning Ordinance at § 4102.6(A)(5).
- <sup>27</sup> Albemarle County July 2025 Draft Ordinance Amendment at § 18-5.1.65(G)(1).
- <sup>28</sup> Fairfax County Zoning Ordinance at § 4102.6(A)(6).
- <sup>29</sup> Fairfax County Zoning Ordinance at § 4102.6(A)(6).
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