THE FUTURE IS NOW:
Data Center Fundamentals for EDD Staff

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Introduction

The AI revolution has changed our nation's digital and economic landscapes, but it is also changing the nation's physical landscape. In order to keep up with the increasing load of internet communications coming from new AI programs and traditional internet services, communities across the nation are becoming homes to new data centers. These data centers are attracting billions of dollars in investment from tech companies to rural and suburban communities. With this investment comes increased usage of digital, power, and water infrastructure. As counties, towns, and cities across the country grapple with how to manage this new demand, Economic Development Districts (EDDs) can serve as important partners in the decision-making process.

Key Takeaways

- The demand for data centers is growing as the use of AI and the size of information stored online increases.

- The electricity needed to run data centers and the water used in data center cooling systems represent a significant demand on existing infrastructure.

- Data centers are best thought of as infrastructure projects, creating a burst of jobs during initial construction but fewer in upkeep compared to projects of similar size.

- EDDs can act as a convener of regional interests during the planning phase of projects and also assist counties and municipalities with clarifying their zoning regulations on the issue of data centers.

- Data centers are able to bring marginal land into productive use and increase property tax revenue which can be used to offset their cost.

- Data centers have become a fraught issue and EDDs can serve as a neutral source of information for their regions.

Why Data Centers? Why Now?

A data center is a building designed to house a collection of computers used to store and process large quantities of information. Data centers have been used since the very beginning of digital computing. ENIAC, the first general-use digital computer developed in the mid-1940s, was 1,800 square feet and weighed 30 tons. This first computer produced intense heat of over 120 degrees Fahrenheit and required a large cooling system to prevent the machine from damaging itself. The complex equations that ENIAC performed can now be done on any smart phone or basic laptop, but the physical needs of computers remain the same even today. A computer uses electricity to store, process, and display information. Heat is created as a byproduct of this process. If the heat becomes too great, a computer risks damaging itself, so a cooling system is required.

Most consumer-grade computers are able to accomplish this with an internal fan, but they have limited processing power and memory. In order to accomplish more complex tasks or store large amounts of data, multiple computers are connected together and function as one unit. As the processing power of these units goes up, they require more electricity to run and produce more heat as they operate. Modern data centers are complex systems that use vast amounts of electricity and water to run and cool the computers they house while sending information out to

users around the globe.

At present there are more than [4,000 data centers](#) operating throughout the United States, with the highest concentrations in Virginia and Texas. These data centers provide the backbone for the modern internet, allow for gargantuan amounts of data to be stored and processed, like training the Chat GPT-5 AI model on a [petabyte of data](#) or storing [exabytes of data](#) for Google cloud storage services. The modern internet is theorized to be over [175 zettabytes in size](#) and every day more information is produced, processed, and stored. This requires an ever-expanding digital infrastructure of data centers to support.

Though the data center has been part of the data infrastructure since the beginning of computers, our increased use of the internet, digital storage in "the cloud," and the rise of AI has led to their rapid proliferation. New larger data centers are being built and rural communities are taking center stage in their construction. In October 2025, Amazon opened an [$11 billion dollar, 1,200 acre data center](#) in rural Indiana to keep up with the demand for Amazon Web Services (AWS). Similar data centers are being built in [Richland Parish, Louisiana](#), [Millard County, Utah](#), and other rural places across the country.

As EDDs and their member governments explore how to position their communities to attract this emerging type of investment, several factors come into play, including site readiness, infrastructure needs, and workforce capacity. This report outlines the roles EDDs can play in this process and identifies additional factors to consider when evaluating data center development.

The Evolving Role of EDDs in Data Center Planning

EDDs can play important roles as their local communities make decisions related to data centers. The most common role is that of an advisor to communities. Data centers have become hotly debated political issues, with some advocates seeing data centers as an unbridled engine for economic growth while others see them as extractive drains on community resources. By cultivating unbiased knowledge on data centers and combining that knowledge with existing regional expertise, EDDs can help separate the signal from the noise on data center projects and provide proper guidance to their communities. The [Central Pines Regional Council](#) in North Carolina has created a [Data Center Resources page](#) to make information on data centers easily accessible to their communities. Being a trusted source of accessible information is an important role for EDDs on this and any issue a community might be facing.

Data center projects, like all economic decisions, provide both costs and benefits. It is up to communities to decide what tradeoffs they want to engage in, and EDDs can ensure that everyone makes these decisions with full knowledge. The [Comprehensive Economic Development Strategy (CEDS)](#) process is integral to this advising role. Through the CEDS, EDDs can take an inventory of regional assets such as open land, brownfield sites, existing power and water infrastructure, as well as regional workforce characteristics that can be leveraged for data centers. The CEDS process can also highlight regional weaknesses that would need to be overcome to ensure a region could accept a data center project. The CEDS process also helps to identify community assets

that a new data center project might put at risk, like green spaces or a power grid that is already at capacity. All of these need to be taken into account so communities and data center developers can make an informed decision that is best for all parties.

Another important role for all EDDs is that of a regional convener. Data center projects, particularly large data centers, will have impacts that go beyond individual municipalities or counties. As a convener, EDDs can foster cooperation among the communities that may be impacted by data center construction. As data center construction has continued throughout the country, some communities and individuals within communities have taken steps to resist them. Through this convener role, EDDs can help to get decision makers on the same page about a region's approach to data centers, ensuring that those with concerns have the opportunity to be heard and those who see the benefits of data centers can make their case. Every community should have the right to determine for itself if a data center would be a net positive or net negative and make policies to encourage or limit data center construction. EDDs can provide the space and information to help communities come to a decision and act on that decision in the most informed way.

Some EDDs will also have more expanded roles in the conversation around data centers depending on other functions they might perform for their regions. As regional planning entities or organizations that provide planning consultations for municipalities, EDDs may become directly involved in the zoning rules for data centers. Adam Hazell, AICP, is the planning director for the Georgia Mountains Regional Commission and described

the role of his EDD in the data center conversation as advisory. In the state of Georgia projects beyond a certain size labeled "Developments of Regional Impact (DRI)" must undergo a regional review process. He recommends that EDDs in a similar advisory position should "make sure of the facts about the development and about the track record of data centers as an industry, and be prepared for outside comments to which you may need to respond that may lack evidence or validity." Hazell also suggests treating data centers like any other project. The goal of an EDD is to provide clear and unbiased information to member communities. "We obviously want to support our member governments, but we want to ensure our involvement doesn't muddy the waters, confuse folks less familiar with our roles, and risk making a scene appear more political instead of less so."

EDDs that are direct service providers of water or other utilities may see their service areas impacted by new data centers and those that provide workforce transportation may need to reshape routes to accommodate development. EDDs may also be called on to create grant proposals that fund infrastructure upgrades to prepare the regional grid, water, or telecommunication systems for a data center. EDDs should continue to familiarize themselves with local, state, and federal incentives and regulations around data centers. Overall, the best way for EDDs to serve their communities is to be active participants in the process of economic development, providing their area knowledge and technical support.

Key Economic Considerations for Data Center Development

Size

Though the largest data centers are the ones that grab headlines, like a $14.9 billion planned data center in Bessemer, Alabama, data centers can come in all shapes and sizes. There are a variety of ways to classify data centers including power draw, size, or promised reliability from data center operators.

One way to categorize data centers, regardless of size, is the reliability that the data center operators promise to clients. Depending on the level of data security needed and the use of the data center, these different "Tiers" are attractive to different data companies. PhoenixNAP, and IT companies, categorize data centers into four tiers. Tier 1 data centers have a single system of heating, cooling, and power with no backups and are expected to be operational 99.6% of the year which equates to 28.8 hours of downtime projected a year. They operate with minimal or no staff and typically serve small organizations. Tier 2 data centers have a single source for power and cooling but have internal redundancies to help prevent data loss during any downtime. These data centers will have some staff but will not keep that staff available at all times. These are often used by small data companies that need increased reliability.

Tier 3 data centers will have multiple sources of energy and cooling to prevent downtime and increase reliability. They will also have redundant systems that will keep the center online while maintenance procedures are done. These facilities will keep more staff on hand to address problems and are generally targeted to

larger businesses that have more traffic and need the reliability. Tier 4 data centers are the more reliable and will have multiple sources of energy, internal redundancy, and will compartmentalize data to prevent loss in the event of a system failure. They will also keep staff available at all times to address any issues. These are the kinds of data centers that large companies and government organizations rely on to ensure reliability. A data center of this kind is expected to have less than 27 minutes of downtime per year. Though a data center of any size can be at any of these tiers, typically the larger a data center is the higher its tier level.

The size of a data center is described in a few, sometimes overlapping, ways. In general, the more power a data center draws, the more land it takes up and the more data it can process. To a certain extent these characteristics are transferable, with physically large data centers using more power and having more data processing capacity, and data centers with more processing capacity requiring more power and space. The data centers management company, Stream Data Centers, reports that a small 1-2 megawatt datacenter can easily be built within pre-existing office buildings while larger data centers that pull 40 megawatts or more require several football fields worth of space. Real estate firm Cushman and Wakefield found the average land acquisition for data center construction in 2024 was 224 acres, a 144% increase from 2022. This indicates a market preference for larger data centers, driven by the increased processing power needed to run AI programs.

As communities are approached by data center developers, it is important that they have a clear understanding of what is

being built in their area and what the land use requirements will be. This can help pre-select sites as possible candidates for future development. It can also help local utilities providers get a sense of the impact of data center construction.

Site Preparation

Data centers are like any other commercial project in that they have site requirements to consider. In general, they need a strong and reliable connection to the power grid, fiber optic broadband internet access, and a water line that can accommodate its needs. What makes rural communities attractive to data centers development is that with modern fiber optic technology, the distance between a data center and end users is not as important an issue as other considerations. According to the LandGate data center site selection company, the low cost of land, safety from natural disasters, and "friendly regulatory environments" are primary considerations. Cushman and Wakefield found that the price of land for data centers is going up with demand. The land prices for hyperscale data centers have risen from $2.89 per square foot in 2022 to $5.38 per square foot in 2024.

As the prices in established markets go up, firms looking to build data centers will continue to look for lower cost alternatives like rural communities outside of traditional tech hubs.

The need for infrastructure connection and the preference for inexpensive land makes brownfield sites particularly attractive to data center development. On July 23, 2025, President Donald Trump promulgated Executive Order 14318 Accelerating Federal Permitting of Data Center Infrastructure which explicitly called for brownfield sites to be identified and used

for data centers. The existing infrastructure at certain brownfield sites allows for a faster conversion to data centers than many greenfield sites. In some places, this conversion has been remarkably fast. In Kansas City, Missouri, a brownfield site that was previously used as a production facility for the Kansas City Star newspaper was repurposed as a data center in only 90 days. Brownfield sites are also being used for large scale data centers. A brownfield industrial site in Coshocton County, Ohio, is in the process of being converted into a 192-acre data center. GAI Consultants has noted that former power plants are strong candidates for redevelopment into data centers due to their existing connections to the power grid and initial construction decisions that favored reliability and redundancy.

NADO's Associate Director of Data and Research, Bret Allphin, has been working actively with stakeholders to evaluate potential data center project locations in rural southeastern Ohio. On the subject of attracting data centers Bret notes, "These projects tend to find you, if you have the prerequisites. I observe limited value in marketing areas as a potential data center location unless the site has immediate access (less than 2 miles away) to industrial scale power and available generation and grid capacity to actually deliver it."

As part of managing brownfield programs, EDDs have long sought to help communities see former industrial sites as assets for future development. Data centers are one more possible use for a brownfield site that should be considered. Some of the concerns around data centers, in particular the noise pollution that they may cause, can be addressed by placing them in industrial locations that already produce noise pollution.

Zoning

In their capacity as regional planning entities, EDDs might be called on by their communities to assist with zoning considerations for proposed data centers. In an American Planning Association article about data center zoning, Jacques Fluet of the Telecommunications Industry Association highlighted that the main zoning consideration during the data center site selection process is whether areas have clear zoning regulations that permits or restricts data center placement. Preexisting zoning regulations for industrial or commercial areas may be difficult to apply to data centers, as their specific needs often create ambiguities that the regulations were not designed to address. An example of this that Fluet points to is a zoning regulation meant to prevent chemical spills in Texas's Lake Travis drainage basin that makes it impossible to build a data center in that area, despite data centers not posing the same risks as traditional industrial sites. Small and rural municipalities are particularly likely to have older zoning regulations that do not make explicit provisions for data centers. These ambiguities have allowed some municipalities to take a more permissive approach to data centers, while others choose to be more restrictive.

Whether in an official capacity as a regional planning organization or in an unofficial advisory capacity, EDDs can provide assistance as municipalities update their zoning in the wake of data center proposals. Whether local governments intend to create regulations that are welcoming to data centers, or looking to limit their growth, the goal should always be to create a clear and actionable zoning code. In 2022, the American Planning

Association published *Zoning for Data Centers and Crypto Mining* which provides a variety of consideration and examples of zoning codes that EDD staff might find helpful as they provide guidance to their member municipalities. The York County Planning Commission of York County, Pennsylvania, has also published a *Data Center Model Ordinance* that can also stand as a guide for planners. Fairfax County, Viriginia, also recently updated its zoning ordinances to take better account of data centers.

EDDs are in a strong position to provide regionally sensitive zoning guidance to their member municipalities. This is particularly true for EDDs that also serve as regional planning councils or as other official planning entities. EDDs that provide fee-for-service planning services may also be available to provide zoning guidance to their member communities. Whether a community is seeking to create a zoning environment that is friendly to data centers or not, clarity is key. Local and regional zoning entities should update their zoning guidelines to explicitly include or exclude data centers from construction in industrial, commercial, or other zoning districts. This clarity will ensure that a project is not delayed by ambiguous zoning language or permitted in an unfriendly environment through a technicality. Smaller communities are more likely to be in need of assistance from regional planning entities because they often lack the administrative staff to regularly update their codes.

Impacts on Infrastructure

One key concern that many communities have about data centers is the impact that data centers have on local and regional infrastructure. In particular, data centers

place heavy demands on electrical and water systems. As said above, the basic function of a data center is to turn electricity into information and heat. In order to dissipate the heat, cooling systems that are dependent upon water are needed. The amount of resources a data center will pull from existing infrastructure systems will depend on the size of the data center. Data centers are different from other projects of comparable size because they do not abide by traditional "up time" and "down time" usage patterns. Data centers operate 24 hours a day, 7 days a week, 365 days a year and will generally have consistent infrastructure usage during that time. In 2025 alone, energy usage by data centers has grown by 22% and is expected to triple by 2030, while in 2025 American data centers consumed 620 billion gallons of water, with that number expected to rise in coming years.

A typical data center will use between 5-10 megawatts of power annually according to the International Energy Agency. For scale, 10 megawatts is about as much energy as 8,100 homes use in a year. Based on a study of data center water usage, a 10 megawatt data center would use 162 million gallons of water each year, which is the same annual water usage as 4,000 people. Larger data centers, sometimes called a Hyperscale Data Center, can require hundreds of megawatts and some, like a planned Meta data center in El Paso, could use over a gigawatt of power each year. Each data center will have unique power and water needs and it is important that these are taken into consideration during the planning phase of the project.

One of the main concerns for data center project planning from the side of the data center is the ability of the local grid to meet their power needs. According to NADO's

Bret Allphin, "In our experience, the key factor to data center site consideration is proximity to power, specifically at the levels of 138kv and above, coupled with the ability to secure a power purchasing agreement from the provider that is servicing that distribution. Many times, there is distribution infrastructure, but the provider can't provide the actual level of power needed due to generation limitations, which is why the power purchase agreement is so difficult and critical." If a community wants to be attractive to data center development, energy availability is a key factor. It is also not enough to just meet the anticipated needs of the data center by itself, but also the current and future power needs of the local population and other businesses.

Another important consideration for communities that are looking into data center construction is what impact increased demand will have on costs for other local power and water consumers. The economics of energy and water infrastructure are governed by the same laws of supply and demand as any other good in the economy. Communities across the country are already starting to feel the energy price squeeze from data centers and some power grids are struggling to keep up with demand. Water systems are feeling a similar squeeze at both the individual and systemic levels.

EDDs can respond to this new demand by helping to secure funding to update existing infrastructure. EDDs can also provide communities with information on the current output of the electric grid and water systems to give decision makers a sense of how consumption from a data center might impact local providers and customers. These negative impacts do not necessarily outweigh the

economic benefits data centers bring to communities, but they should be carefully considered when designing incentives and development agreements to attract them.

Workforce

Job creation and retention are always top priorities for EDDs and their communities. Data centers will create jobs in a region in two phases. The first phase is the jobs that are required for data center construction and the second phase includes the jobs required to continually operate the data center. At the level of a construction project, the number of jobs created and the level of technical skill required to carry out those jobs will be determined by the tier of data center being constructed and the overall size of the project. The boom in data center construction has already been an economic windfall for construction companies and their workers. As with other new building construction, the size of the workforce required will be dependent on the size of the project. Large and hyperscale data centers may require thousands of workers with a variety of skill sets. Though these are well paying jobs, by their nature they are temporary and will not have a lasting impact on a regional economy.

On the other hand, data centers employ a significantly smaller number of permanent employees than industrial or commercial projects of a similar size and budget. The Wall Street Journal reports that a large data center that requires thousands to build will employ at most two hundred permanent employees. A typical data center of between 5-20 megawatts will likely employ between 15 and 35 permanent employees according the recruiting firm Broadstaff. Says Adam Hazell of the Georgia Mountains Regional Commission,

"The rule of thumb we're seeing thus far is that they don't generate a lot of new jobs, compared to, say goods production, but the ones created are technical and high paying. Depending on the scale of operation, they will hire a comparably fair amount of security personnel and need general electrical contractors to monitor special substations, back-up generators, and cooling units."

This is because by their nature, most of the tasks performed by a data center are either entirely automated, like data storage, or hosting an active task like AI training that is occurring remotely. The workforce needs of data centers focus primarily on maintenance and security. The maintenance requirements for data centers will take the form of both relatively commonplace building maintenance like cleaning and facility upkeep as well as more technical computer maintenance. Hardware and software technicians may work onsite in larger Tier 1 and 2 data centers to ensure the continual reliability of a data center while a lower tier data center may only have a team of technicians that is "on-call" to service the facility as needed. Security requirements will also vary depending on size of the facility and what kinds of data is processed. Lower tier data centers may only require a basic level of security on par with any commercial building, while a higher tier data center or one that hosts sensitive data may require more advanced security protocols.

If a region's workforce pipeline is not producing a consistent number of software and hardware technicians, a data center is likely to bring in workers from outside the region. The World Economic Forum has released a report on how communities can build resilient tech workforces to respond to the needs of data centers. A

majority of data centers have reported they are struggling to both attract and retain qualified staff. This creates an opportunity for workforce programs that provide the qualifications these data centers need. The report recommends short-term programs targeted at providing the specific technical skills data centers need and altering existing workforce and community college curricula to be in line with industry needs. EDDs can support regional workforce development efforts by helping create these programs, whether they host them directly or collaborate with partner organizations. Though data centers are unlikely to be a major source of employment in a region, they can be an important part of a diverse regional employment strategy and provide high paying jobs to those with technical skills.

Use of Data Center Revenue

Data center projects can deliver substantial investment to communities, from the large upfront spending during construction to the long-term benefits of local wages and property tax revenues. Because data centers generate relatively few permanent jobs comparted to other projects of similar size, property tax revenue typically becomes their most significant contribution toward offsetting the community's costs associated with construction and operation. A study on the impact data centers on the Ohio economy has found they increased state GDP by $11.8 billion and generated $5.1 billion in state and local tax revenue from 2017-2024. A case study by the Northern Virginia Technology Council found that the state of Virginia collected more than $600 million in state and local taxes from data centers in 2018. This positive impact is also being felt in rural areas. A report from the Washington

Technology Industry Association studying the six rural counties with data centers in that state found that from 2017 to 2021, data centers generated $238.5 million in property, sales, and utility taxes.

Communities that are benefiting from this increased tax revenue are using it in a variety of ways. Martha Shickle, executive director of the regional development organization PlanRVA in Richmond, Virginia, has noted how one of its member counties, Henrico County, used data center tax revenue to fund an affordable housing trust fund. The trust fund is able to marshal $60 million in tax revenue from local data centers to provide affordable housing options to households earning between 60 to 120% of the area median income. Shickle also points to how Henrico County is using data center tax revenue to pay for putting more land into conservation. Increased tax revenue from data centers can help offset the negative tradeoffs of their construction when allocated effectively. Clarifying how this revenue will be used before it is collected can make decisions about whether to permit data centers in a community more transparent and informed.

At both the local and state level, some communities are adopting tax breaks and credits to incentivize data center development. According to CNBC, "42 states provide full or partial sales tax exemptions to data centers or have no state sales tax at all. Of those, 37 have passed legislation specifically granting sales tax exemptions for data centers, and 16 of those states have granted nearly $6 billion in exemptions over the past five years." Though these tax breaks may help to attract data centers they limit the ability of states and localities from benefiting from the increased tax revenue. On the

other hand, some states and localities are adopting tax regimes to attempt to taper data center growth or collect more revenue from their construction and operation. Localities can also set up Payment in Lieu of Taxes (PILOT) arrangements to gain revenue from data center construction outside of traditional property taxes. West Feliciana Parish in Louisiana set up a PILOT arrangement with a data center project that could create $90 Million in revenue.

Though EDDs are not taxing entities, they can still provide an advisory role to their member communities and highlight ways other communities have used data center tax revenue. Depending on the projects that are funded by tax revenue, EDDs may play a direct role in program planning and administration.

Risks of an AI Bubble

Though traditional web services are driving a portion of data center demands, the lion's share is being driven by AI. The consultant firm McKinsey predicts that by 2030, there will be more than $7 trillion invested in data centers and 70% of that investment will be in support of AI projects. The data centers that are being built today are in response to that growing demand. Some are warning that such rapid growth in such a short period is not the result of a growing industry, but of an unsustainable bubble that could pop at any moment taking billions of dollars with it. The International Monetary Fund and the Bank of England have both warned investors about the possibility of an AI bubble.

The main concern is that while the investments in AI companies and the infrastructure to support them is continually growing, AI companies often

struggle to return a profit to their growing investors. In a study on AI companies, the Massachusetts Institute of Technology found that 95% of AI companies found no return, despite multi-billion dollar investments. This is due to the high startup and upkeep costs to run an AI company. Though an increase in the supply of data centers would help to bring costs down, many remained concerned.

If an AI bubble were to pop, this would have serious ramifications for communities that have built or are in the process of building data centers. A significant contraction in the number or size of AI companies would cut demand for data centers, leading to the cancellation of planned data centers and even the closure of underutilized existing data centers. This would leave communities with millions of dollars in site preparation investments tied up in an unused site.

One-way regions can limit the impact of any economic contractions related to data centers would be to limit the permitting of "spec data centers." These would be data centers built without a particular client in mind with the hopes of attracting a client upon completion of the data center. If a client is not found the data center stands unused and can become blighted real estate if the disuse persists. Regions should work to cultivate strong partnerships with companies that intend to expand into their data centers to ensure future business sustainability.

Conclusion

The conversation around data centers continues to evolve as demands on telecommunications infrastructure grow. EDDs will remain central to these discussions - as planners, technical

assistance providers, regional convenors, and in other capacities. In all of these roles, EDDs are well-positioned to offer clear, unbiased information about the potential impacts of data centers on both local communities and the broader region.

Like any major development, data centers come with tradeoffs. Land dedicated to these facilities cannot support other uses, and their substantial power and water needs can affect how those services are delivered across the community. At the same time, data centers can generate significant tax revenue and put underutilized land to productive use. Because no single approach fits every community, each region must determine its own priorities and decide how and whether data centers align with them. Throughout this process, EDDs can serve as a valuable resource, helping communities navigate these issues and reach decisions that align with long-term regional goals.

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