Data Centers in Your Township

PSATS Webinar June 18th, 2025

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1

Introduction

Data Centers are an emerging use in Pennsylvania.

There are a variety of factors that are bringing this use to the Commonwealth and the impact of this use will vary by based on the community and municipality.

Data Centers form the backbone of digital information networks, and in particular the internet, Artificial Intelligence (AI) computing, cellular networks, and a variety of other digital frame works that we engage with everyday

This session will provide information on Data Centers, their development, land use, planning, and examine potential source material and information to consider when looking at updating your ordinances.

2

What is a Data Center?

3

What is a Data Center?

Amazon Web Services (AWS) defines a Data Center as,
"a physical location that stores computing machines and their related hardware equipment. It contains the computing infrastructure that IT systems require, such as servers, data storage drives, and network equipment. It is the physical facility that stores any company's digital data."

We all engage with Data Centers everyday.
By definition, the small server rack in the closet is a "Data Center"

We are not concerned about the small server rack in the closet…

When it comes to zoning and land use considerations we are concerned about a different scale of Data Center

These facilities are the physical location where all our online activity is processed, stored, and analyzed. They are the physical representation of "the Cloud"

Large scale Data Centers as a principal stand alone use are the emerging use that we are here to discuss today

Footnotes:
- https://aws.amazon.com/what-is/data-center/

4

What is a Data Center?

Examples of Data Centers

Equinix NY5 Data Center

Located: Secaucus, NJ

Building Size: 275,322

Power Use: 10.0 MW

Iron Mountain VA-1 Northern Virginia

Located: Manassas, VA

Building Size: 168,000

Power Use: 12.0 MW

Footnote:
Info from Datacenters.com
(https://www.datacenters.com/)

5

What is a Data Center?

Local Examples of Data Centers

Amazon AWS / Talen Energy Site
Salem Township, Luzerne County

Nautilus Cryptomine

100 MW "Bitcoin" facility

Designed for 200 MW

Susquehanna Steam Electric Station

Nuclear generation station

2,494 MW (2.5 GW) Generation Potential

AWS Data Center

Site under development limited power use

Footnote:
Info from datacenterdynamincs.com.com
(https://www.datacenterdynamics.com/en/news/aws-acquires-talens-nuclear-data-center-campus-in-pennsylvania/

6

What is a Data Center?

Local Examples of Data Centers

Iron Mountain WPA-1 Western Pennsylvania & Pittsburgh
Cherry Township, Butler County

Facility Size: 330,000 SF
Power Use: 15.0 MW

Footnote:
Info from Datacenters.com
(https://www.datacenters.com/)

7

What is a Data Center?

The four sites we just looked at are examples of "Hyperscale" Data Centers.

Hyperscale is one of six (6) types of Data Centers

The six (6) "Types" of Data Centers are:

1. Enterprise: This is facility for a single entity and the traditional understanding of Data Centers. Enterprise facilities may be inside a company headquarters or may be a stand alone facility collecting and sharing data across multiple sites for the same company. Many companies still rely on Enterprise type facilities for internal business purposes.

2. Hyperscale: This is a facility that can either be for a single entity in an Enterprise type capacity, or can have multiple tenants using the digital space. These facilities are in the hundred of thousands of square feet, into the millions of square feet. This type is based more on the size and computing power of the facility and not the ownership or server occupancy.

3. Micro: This facility, like Hyperscale, is more defined more by its size and computing power. These types of facilities would best be recognized as the large server room at a local bank or similar establishment.

4. Modular: Similar to Micro in its function, Modular facilities are a sub-type of Micro facility that are best described as a self -contained portable micro center. Mostly housed in shipping containers, these facility types are equipped with everything they need for cooling, they just need a stable power source. This type of unit might be seen at a hospital or airport where they need the computing ability but don't have the physical building space for a facility

Footnote:
https://blog.enconnex.com/6-types-of-data-centers

8

What is a Data Center?

Micro/Modular Data Center Examples

Footnote:
Photos: EdgeMicro & Microsoft

9

What is a Data Center?

Date Centers Types

5. Edge: This facility is based on its location in relation to the rest of the network and not necessarily the size or computing power of the facility. Edge facilities are popular with social media firms, cell phone providers, video conferencing, and similar users in that they can place these facility types at the "edge" of their network and increase the response time of the network in a particular area.

6. Colocation: This is an emerging term in the industry. Colocation has referred to a facility that is more than likely hyperscale in size but was not "Enterprise" in that it would be owned and operated by a third-party and the server space rented to others. The data on the hard drive might be for Target, McDonalds, Pepsi, GoDaddy, AirBnB, or some other platform, but the physical facility is owned and operated by another firm. Colocation has started to take on a new meaning recently, being used to refer to a Data Center and its proximity to its power source.

The AWS/Talen energy site in Luzerne County is an example of this definition of Colocation. There is debate about facilities seeking to co-locate in this manner. While Talen and AWS are contracted for up to 480MW for this site and would like to seek 960MW of power, FERC (Federal Regulatory Energy Commission) rejected a proposed amendment to their ISA (Interconnection Service Agreement) which currently allows Talen to use 300MW of power pre-grid for the collocated facilities. There are concerns from regulators about this approach taking power off the grid and in a unmetered/pre-grid manner

This is still an emerging discussion in the industry

Footnote:
https://blog.enconnex.com/6-types-of-data-centers

https://www.datacenterdynamics.com/en/news/ferc-upholds-rejection-of-proposed-interconnection-agreement-between-aws-data-center-and-pennsylvania-nuclear-plant/

10

What is a Data Center?

Similar to the various “Types”, Data Centers operate in various “Tiers”.

The Uptime Institute is a leading firm in the industry and they have established the Tier system for Data Centers which has become widely recognized and used in the industry. The system has four (4) tiers each with varying levels of security, redundancy, allowable operational downtime, and infrastructure needs.

Tier 1: The lowest classification, this will be your basic server cart or server room. Very low security requirements, this tier is designed to protect against human error but not from infrastructure failures such as power failures and has minimal capacity for redundancy or system backups. Physical system maintenance usually requires a full system shutdown

Tier 2: This tier is provided moderate security requirements, this tier is provided some additional failure protection
This tier is designed to allow some physical system maintenance without a full system shutdown

Tier 1 and 2 are what we typically engage with on a regular basis, Tier 3 and 4 are part of the use we are discussing today

Footnote:
- What is a Data Center? Tiers, Types, and More: Nlyte Software (https://www.nlyte.com/faqs/what-is-a-data-center/)
- Tier Classification System: Uptime Institute (https://uptimeinstitute.com/tiers)

11

What is a Data Center?

Similar to the various “Types”, Data Centers operate in various “Tiers”.

Tier 3 and 4 operate at a high level and require redundancy for not only the data components but the operational components

Tier 3: An upgraded Tier 2 facility that allows for continual operation so that maintenance can occur without impacting operations. Annual system “down time” for a facility of this tier is a little as 1.6 hours. This provides an annual continuous operation, or “up time”, of 99.982%

Tier 4: The highest tier classification. They are designed for complete redundancy with every component in the system having a fail safe equal to itself. A Tier 4 facility is both physically and virtually independent to prevent any human or technological event from compromising the redundant systems simultaneously.

Annual down time for a Tier 4 facility is as little as 26.3 MINUTES, allowing for an annual up time of 99.995%

Tier 3 and 4 facilities can be thought of as two identical cars parked in a garage together.
If you walk out and one doesn’t start, you walk over to the other and drive out and no one knows the difference

Footnote:
- What is a Data Center? Tiers, Types, and More: Nlyte Software (https://www.nlyte.com/faqs/what-is-a-data-center/)
- Tier Classification System: Uptime Institute (https://uptimeinstitute.com/tiers)

12

Why Pennsylvania?

13

Why Pennsylvania?

1. Market Access

One-quarter (25%) of the US population can be reached within a five (5) hour drive of the Commonwealth

Think of all the Metro and Sub Metro areas that can be reached from Pennsylvania within a reasonable drive:

- Philadelphia
- Pittsburgh
- Lehigh Valley
- Wilkes-Bare/Scranton
- Harrisburg/Lancaster
- York/Gettysburg
- Camden, NJ
- Newark, NJ
- Trenton, NJ
- Jersey Shore
- New York City
- Syracuse, NY
- Buffalo, NY
- Albany, NY
- Rochester, NY
- Boston, MA
- Springfield, MA
- New Haven, CT
- Hartford, CT
- Providence, RI
- Portland, ME
- Baltimore, MD
- Washington D.C.
- DE & MD Beaches
- Wilmington, DE
- Morgantown, WV
- Cleveland, OH
- Akron, OH
- Columbus, OH
- And MORE!

Footnote:
- Map generated from Google Maps

14

Why Pennsylvania?

2. Power Availability/Grid Space

Pennsylvania is a top leader in energy generation and exporting due to its low and declining power consumption and its continuing increase in energy production

The U.S. Energy Information Administration tracks how much energy is used and generated per state in the US with the most recent data set being for 2022

Pennsylvania ranked 5th in the nation for energy consumption, using 3,737 trillion BTUs of energy

Pennsylvania ranked 2nd in the nation for energy production, producing 9,951 trillion BTUs of energy

That leaves a net balance of 6,214 trillion BTUs of energy available from Pennsylvania

A lot of that power is being sold to other states and markets.

The Independent Fiscal Office published in a February 2025 report that Pennsylvania sold 87 terawatt hours (or 87 million megawatts hours) in 2024 to other states.

This surplus of energy is a leading factor in Data Center Development interest in the Commonwealth

Footnote:
- https://www.eia.gov/state/data.php?sid=PA
- http://www.ifo.state.pa.us/releases/819/Pennsylvania-Electricity-Update/

15

Why Pennsylvania?

3. Government Support

Pennsylvania is quickly becoming a focus of Data Center development due to state level support

Act 25-2021 created the Computer Data Center Equipment Exemption Program. This legislation replaced a capped refund program for use and sales taxes in the Commonwealth with a blanket exemption

"…Beginning January 1, 2022, computer data center equipment is exempt from Pennsylvania sales and use tax when it is sold to, used, or consumed in a certified data center by an owner, operator or qualified tenant holding a Computer Data Center Sales and Use Tax Certificate of Exemption issued by the department."

On January 24th, 2023, Governor Shapiro sign Executive Order 2023-05 which created the Office of Transformation and Opportunity

The stated purpose of this office is to, *"…facilitate the implementation of transformational economic development projects, which will result in substantial quality job opportunities and capital investment in the Commonwealth…"*

This is done by, *"…coordinating and expediting interagency cooperation; marshalling federal and Commonwealth resources to maximize economic development opportunities for Pennsylvania …and leveraging the role of the Governor as Chief Executive of the Commonwealth to engage the global business community on the Commonwealth's behalf."*

This office oversees and assist with a variety of projects at the State level, including Data Centers

Footnote:
- https://www.pa.gov/agencies/revenue/incentives-credits-and-programs/computer-data-center-equipment-program.html
- https://www.pa.gov/agencies/oto.html

16

Why Pennsylvania?

3. Government Support

The Shapiro Administration is actively engaged in this type of development in the Commonwealth

On June 9th, 2025, Governor Shapiro held a joint press conference with Amazon Web Services where it was announced that AWS would bring a 20 billion dollar investment to Pennsylvania for data center development

AWS plans to finish the project in Salem Township, Luzerne County and build another Hyperscale location in Falls Township, Bucks County

The Falls Township site is reported to be a 247 acre *"digital infrastructure campus"*, featuring 10 buildings providing approximately 2 million square feet under roof.

It was announced on June 11th, 2025 that Talen and Amazon had signed new deal in which the Salem Township power plant would provide Amazon 1920 megawatts strictly for AWS Date Centers

Similarly the Governor has publicly supported the April announcement of the 4.5 Gigawatt Homer City Energy Campus in Center Township, Indiana County, this is a 10 billion dollar project for a Hyperscale Collocated Natural Gas Data Campus

"I want to make sure that we win the battle on AI here in America, and we don't let China beat us on that front… Pennsylvania is going to have something to say about it…" Governor Shapiro in comments on Homer City

Footnote:

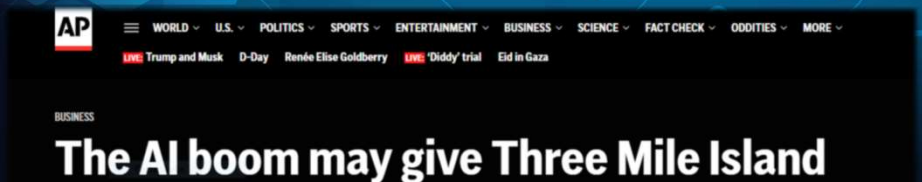
- https://dced.pa.gov/newsroom/governor-josh-shapiro-announces-amazon-plans-to-invest-20-billion-in-pennsylvania-for-ai-infrastructure-in-largest-capital-investment-in-commonwealth-history/
- https://www.reuters.com/business/energy/talen-energy-amazon-sign-nuclear-power-deal-fuel-data-centers-2025-06-11/
- https://www.fallstwp.com/resources/news/article/?id=10070
- https://www.politicspa.com/10-billion-ai-data-center-planned-for-indiana-county/141113/

17

Why Londonderry Township?

18

Why Londonderry Township?



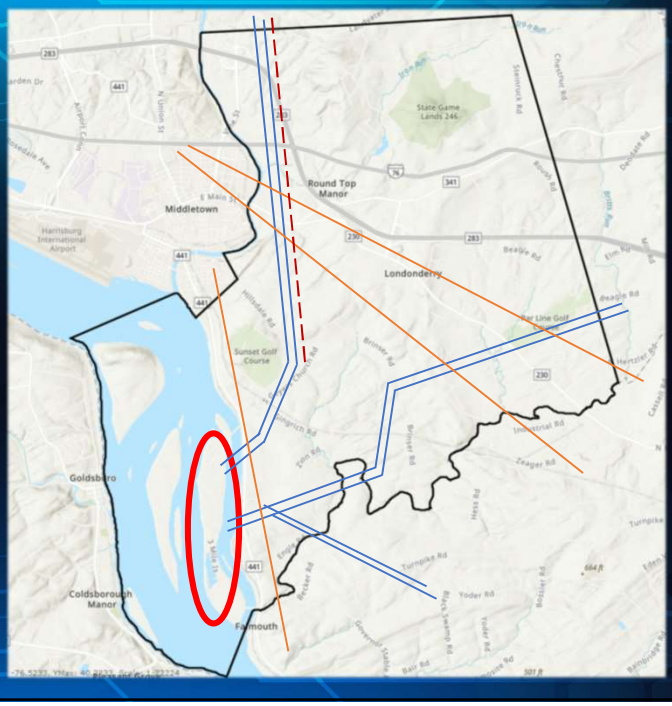
- Microsoft and Constellation Energy made the announcement in September of 2024 that Microsoft would be helping to restart and the pay for all 835MW of energy for 20 years
- TMI has since been rebranded the "Crane Clean Energy Center" and anticipated start up is in 2028
- Londonderry Townships first contacts regarding Data Centers occurred in December 2024

19

Why Londonderry Township?

- This is Londonderry Township, Middletown Borough is to our west, Derry Township (Hershey Park) is to our north, and Lancaster County is to our southeast
- Three Mile Island is just a piece of the puzzle as to why our Township was on the Data Center development radar
- There are several sets of high power transmission lines that run through the township
- Multiple local, regional, and "long haul" fiberoptic networks running through the township
- Natural gas pipeline access in close proximity to potential development sites
- The Township also offers access to water through access to the Susquehanna River, Swatara Creek, and Conewago Creek and their tributaries.

These variety of factors has made out Township a place of interest for potential Data Center development



Map is approximate and not an exact representation of any system

20

What About The Ordinance?

21

What About The Ordinance?

Currently our Ordinance Text Amendment is in draft form, set for a public hearing on July 7th, 2025 for possible adoption

When our initial contacts started in December of 2024, we had no provisions for this use. Our Zoning Ordinance would have allowed the use as a Special Exception under our "Use Not Provided For" clause

We have seen multiple sites be considered for the use in our Township and we are aware of at least 3 potential hyperscale projects that are in various phases of due diligence and site plan preparation.

One project is ready to file for a Conditional Use shortly after our July 7th hearing and will be looking to file for Land Development shortly after the Conditional Use process.

This project would be eight (8) buildings, using 650 MW of power, each building being 95 feet tall and having a foot print of 165,000 Square Feet, providing roughly 2.4 Million SF on this one site.

While I am the one presenting on this today, this was a team effort with a lot of input from our Township Manager, Township Solicitor, Planning Commission, and Board of Supervisors.

A lot of time, research, discussion, and consideration from everyone went into the preparation of this Ordinance.

22

What About The Ordinance?

Our approach was to see what was out in the world regarding the use and to see what the best pieces were to incorporate into our potential Ordinance

At the time there was not much available locally as very few Municipalities had started to tackle this topic

- West Middlesex, Cumberland County
  - Was working on language as part of a larger comprehensive rewrite
  - Cumberland County Planning Commission had published a white paper on the topic which was a beneficial starting point and got our group moving in the right direction.
  - This Ordinance has since been pulled from the comprehensive rewrite and passed as a stand alone amendment
  - Developer is proposing an 18 building, 5 million SF, Hyperscale site on 700 Acres
- Limerick Township, Montgomery County
  - Passed an amendment to allow Data Centers in an existing district
  - Limerick Township is home to Limerick Generating Station, a nuclear power plant owned by Constellation Energy
  - It is unknown if any projects are being proposed in Limerick Township

We decided to look outside Pennsylvania. Particularly at "Data Center Alley" in Northern Virginia

Loudon, Fairfax, and Prince William Counties in Virginia are home to roughly 412 of the 578 Data Centers in the state as listed on DataCenterMap.com

23

What About The Ordinance?

Using the ordinance provisions from these counties we starting piecing together an initial draft

We learned that Fairfax and Prince William counties were actively working on rewrites to their Data Center provisions and those drafts and proposed revisions being publicly available, we were able to benefit from their work

Our Ordinance addressed the following topics and items:

- Approach: Traditional vs Overlay / By-Right vs SE/CU
- Definitions
- Lot size and coverage
- Building height and setback
- Light and sound
- Environmental Considerations (Water Use)

As with any problem or situation we needed to figure out the What, When, Where, and How

We knew the "What" and the "When" = Data Centers and NOW
The "Where" and "How" were the next steps

24

What About The Ordinance?

Approach = "Where"

We started by looking at our Township and our Zoning Map and asking "Where"

The proposed development we were presented with was in an applicable zone, but what about the other development we were hearing about and we knew would follow

We had two choices:

1. Traditional Approach – place it in applicable zones and regulate it
2. Overlay Approach – create a new overlay district and regulate it

We chose Option 2: Overlay
For a variety of reasons and considerations an overlay made the most sense for our Township

The choice to do an overlay based on the zoning map and the underlying districts brought other considerations to the table

Do we do this "By-Right" as a permitted use or do we require the use to go through a Special Exception or Conditional Use process and in which districts of the overlay would each apply?

Our Board of Supervisors decided that they preferred to have this use come to them in select districts as a Conditional Use we have five (5) zoning districts that are apart of the overlay, Two (2) were selected to be "By-Right" as permitted use and the other three (3) districts were selected to be reviewed under Conditional Use

25

What About The Ordinance?

Approach = "Where"

The five (5) districts in our Township affected by the overlay were

1. C2 Commercial Shopping Center – Mixed Use District mainly commercial uses with limited residential
2. I1 Industrial Light – Variety of traditional manufacturing, logistics, and industrial uses
3. R2 Residential, Multi-Family Suburban – Mixed Use, mainly residential with limited commercial use
4. AG Agricultural – Mainly agricultural and similar uses with limited residential allowed
5. PR Planning and Research – Commercial geared towards professional offices, medical facilities, and laboratories

Some of these district might not seem applicable to a Data Center. Looking at our zoning map, a variety of developable lots that had multiple zoning districts, and the recently adopted Comprehensive Plan which outlined a Designated Growth Area. We aligned our overlay proposal accordingly

The Board of Supervisors decided that based on the recent approval of a Designated Growth Area in our Comprehensive Plan and the historical agricultural nature of the Township among other factors that the use considerations should be:

By Right / Permitted Use
1. C2 Commercial Shopping Center
2. I1 Industrial Light

Conditional Use
1. R2 Residential, Multi-Family Suburban
2. AG Agricultural
3. PR Planning and Research

26

What About The Ordinance?

Definitions = "How"

Next we turned to defining the Use.

As our discussions and developments progressed we had to add several definitions that were not in our Ordinance

We developed three (3) definitions related to Data Center development directly

DATA CENTER
A facility used for the housing, operation, and/or co-location of computer and communication equipment for the purpose of storage, management, processing, and/or transmission of digital information necessary for the operation of one of more business, commercial, or governmental entities.

DATA CENTER ACCESSORY USE
Systems, equipment, facilities, and/or components used in the air cooling, water or liquid cooling, power supply systems, telecommunication, cloud communication, and mechanical or environmental controls when used in the support or enabling of a Data Center.

DATA CENTER PARK
A tract of land, developed as an integrated planned development that is laid out exclusively for a group of three or more Data Centers with no other use permitted within the park and having separate building sites designed and arranged in accordance with, and complying with the requirements of, Part 14 (Data Center Overlay District) of this Zoning Ordinance, and other applicable provisions of this Zoning Ordinance; the Londonderry Township Subdivision and Land Development Ordinance; and other applicable ordinances of the Londonderry Township Code of Ordinances, where the purpose is to allow sub-lots to be subdivided as independent tax parcels subject to the regulations as found in Chapter 27 § 1405.

27

What About The Ordinance?

Definitions = "How"

When discussing and looking at potential development we had to address a few things definitionally

Data Centers bring not only a unique use, but unique support structures and accessory uses

What other uses can you think of that need a electrical substation dedicated solely to that use?

What other uses exist that require large water/liquid cooling systems with pumps, fans, and other equipment to support and enable the primary/principle use?

Data Center development is also unique in that a typical SALDO process might not be what they are interested in.

The "Data Center Park" definition was developed to address the desire of potential developers to have a sort of condominium or shopping center type site, where the entire tract occupied by multiple users of the same use

AWS, Google, Microsoft, etc. might all want to be on that site but not necessarily tied to each other through land ownership. The park model approach we took would allow sublots with separate and distinct tax parcels to exist within a parent tract without actually subdividing the land into separate lots

Another way to think of it is how manufactured/mobile home parks are often handle for tax purposes in which the "Park" owns the land but the structures are owned by another party and have a sub tax id under the parent tax number

28

What About The Ordinance?

Lot Size and Coverage = "How"

We looked at not just hyperscale site development but potential smaller development of the use in the future and considered the available parcels and parcel size that we were being told were of interest.

For our community we landed on 30 acres as the minimum lot size

We needed to provide for multiple building in the "Park" concept, we did this requiring the parent tract to meet the 30 acre minimum and allowing 6 acre sub-lots

So an applicant that is proposing a single Data Center would be required to have a 30 acre parcel. Where an applicant that is proposed three (3) or more Data Centers in a "Park" concept under the definition would be allowed to have the 30 acre minimum but use it in a different way for a higher building concentration

Similarly with coverage we considered the existing base district coverage limits and what the potential needs or desires of development might be.

For single lot development 75% was allotted with a requirement for 10% green/open space that could not include stormwater facilities – This worked out to be 22.5 acres for impervious cover and 3 acres for green/open space

When applied to the "Park" concept the parent tract is required to meet the 75% in total and the 10% green/open space, but the 6 acre sublots are also required to not exceed 75% - While the numbers work out to the 22.5 acre aggregate the intent was to avoid overloading of any individual sublot

29

What About The Ordinance?

Building Height and Setback= "How"

Building height is an important topic in the Data Center space.

There will be a variety of building heights in various ordinances that range from 75 to 120 feet

We considered a variety of factors, including existing provisions in our ordinances and what our fire company and mutual aid departments where able to do in regards to height

Our ordinance permits a building height of 95 feet. This for the Data Center and any Data Center Accessory Uses

This provides for the tallest building heights in our code of ordinances, but was also limited by the fact that the available fire apparatus is limited to 100 feet.

For this reason we added a clarification on building height:
"Building height shall be calculated from the lowest adjacent grade to the top edge of the roof and excludes any mechanical or accessory equipment, facades and/or parapets."

We provided that any roof mounted accessory equipment be limited to 10 feet above the "top edge of the roof"

This use will present at various heights depending on development intent.

- 75 to 85 foot buildings are typically a one story Data Center
- 90 to 100 foot buildings are typically two story Data Centers
- 100 feet and above are typically three story Data Centers

This is due to unique construction methods and considerations of the buildings that differ from traditional large commercial structures

30

What About The Ordinance?

Building Height and Setback= "How"

Setbacks were an important discussion point during development of the ordinance.

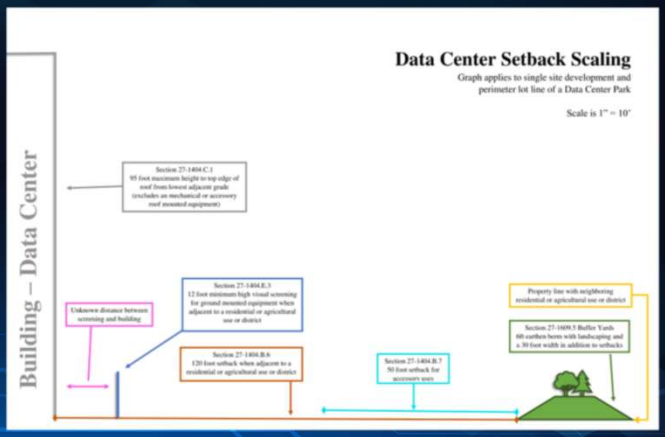
Similar to how this use allowed the tallest building heights in our ordinance, it also provides the strictest setbacks, particularly when adjacent to residential zones and users

Our Ordinance provides to a 150ft minimum set back when adjacent to residential and agricultural users or zoning districts

We put this image together as a hand out for our Board to discuss the setbacks in this case

This represents the earthen berms and landscaping requirements, with physical setbacks and other required physical sound reduction

Smaller setbacks were permitted for accessory uses, Data Centers not abutting residential or agricultural uses/zones, and for the interior lot lines when part of a "Park" concept application



31

What About The Ordinance?

Light and Sound = "How"

Two of the biggest discussion topics were light and sound. Which are always a topic when uses of this type are discussed

Most ordinances have lighting standards as part of their SALDO. Items that were added to address specific concerns were the requirement to submit a photometric plan showing light projection within certain parameters and restricting the height as which fixtures could be mounted

We required that no more than .25 foot-candles be permitted at the lot or right-of-way line and that no fixture be higher than 38 feet and be shielded or cutoff to assist with light projection

When it comes to sound, it is not necessarily the Data Center itself that is of concern but the accessory uses

Generators, cooling fans, water pumps, transformers, and more that are positioned on the roof and the sides of the Data Center will be the sound generators that cause the complaints and concerns

Prince William County published a study dated March 18th, 2025 regarding Data Sounds considerations as part of their ordinance change provisions

This was a comprehensive study of areas of the county in which Data Centers are both absent and present and provided recommendations on acceptable levels

Using this study from Virginia and looking into other audiological information regarding sound and decibel types several things became apparent that needed to be addressed

32

What About The Ordinance?

Light and Sound = "How"

Sounds comes in two principal forms when related to Data Centers – dbA and dbC – which are decibel weightings

dbA is a more inclined curve designed to be similar to we hear sounds

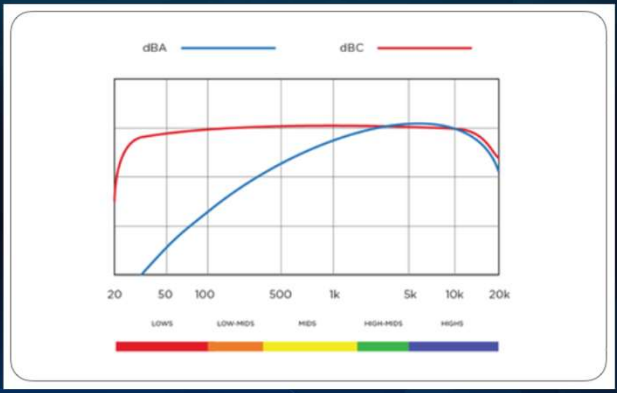
dbC is a flatter consideration of noise and is more reflective of how sound is felt

A sounds at one level in a dbA scale might not be considered bothersome while that same sound level in a dbC scale might be drastically different depending on the person

Think of it this way
dbA is the car next to you jamming out to Taylor Swift

dbC is the next car pumping bass and subwoofers

You feel one more than the other



33

What About The Ordinance?

Light and Sound = "How"

Based on these factors we came up with the following table for allowable decibel levels

Language was also placed in the ordinance requiring sound studies to be done pre and post development showing compliance with the table for all property lines

"Daytime" and "Nighttime" were defined as the relevant periods of sunrise and sunset

Table 27-1404.F.2

Maximum Sound Levels for Data Centers at Property Line

Affected Zoning District(s)	Daytime Maximum dBA	Nighttime Maximum dBA	Daytime Maximum dBC	Nighttime Maximum dBC
Agriculture (AG)	60	55	70	65
Residential (R-1, R-2, MHR)	60	55	70	65
Commercial (C-1 and C-2)	65	60	75	70
Industrial (I-1, I-1, and PR)	70	65	80	75

Exemptions:
Certain situations with sound require some flexibility

To allow for testing of auxiliary power systems, language was written to allow such activity from 7am to 7pm at decibels no greater than 80 dbA or dbC

also auxiliary power system us during an emergency or primary power system failure were included

34

What About The Ordinance?

Environmental = "How"

Being a community that is still heavily reliant on ground/well water systems. The use of water resources was a concern

Language was included that required cooling systems supplied by raw water, being riverine, ground, or other fresh water body/system provide a water needs analysis and review and approval from the Susquehanna River Basin Commission (SRBC)

The SRBC is a group formed in 1970 and recognized by Congress for the conservation of the Susquehanna River and its resources in New York, Pennsylvania, and Maryland

This requirement provides that any proposed project over 20,000 gpd of raw water consumption follow this requirement

To go along with this any direct riverine or other raw water source drafting is required to provide fencing of at least 6 feet in height around extraction and outflow components while meeting all Federal and State regulations for the activity

If cooling systems are to supplied by public water, a water needs analysis and a will serve letter from the local utility

The buildings themselves may not be served with well water, but must establish a connection to public infrastructure for all sanitary facilities

35

What About The Ordinance?

Environmental = "How"

Another concern that we was raised during the drafting processes was what happens when these facilities close

E-waste is an important consideration with these sites along with any potentially hazardous materials from cooling system or power supply system components

An November 6th, 2024 review document from Prince William County, VA raised this issue and it was decided to incorporate similar language into out ordinance

A "decommissioning plan" is required to be submitted with any land development plan submission which shows, *"…how the site will be returned to a neutral state, being a condition that is easily adapted to similar uses, and the handling and removal of any Electronic Waste (also known as "E-Waste") and/or any other hazardous material…"*

General clauses regarding emissions from exhaust and similar emittances were included to require compliance with Federal and State requirements for air quality considerations

36

Your Community

37

Your Community

Only your community knows what is right for your community in relation to this use. Our community developed an ordinance based on how we wanted to interact with the use.

What infrastructure such as power, fiber-optics, water, natural gas, or other needs are in or close to your community that may make your municipality desirable for this use?

How does your community want to engage with this use? Do they want to take a more open and inviting approach? Do they want a more restrictive approach to hold it at arms length?

These projects are long term investments in your community

These projects take a long time to get going and developers likes to have all the ducks in a row before hitting the go button

Depending on the size, a single building can take two years to launch.

While a lot of talk is going on now because of power deals being struck between generation companies and end users. It could be several years before we see this use come to fruition.

Does your community want to make that long term play? Writing an ordinance today could not see results for 5 years.

38

Conclusion

I have provided a lot of the material referenced today in a file to be shared, and done my best to footnote sources in the slides

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Fairfax County, VA (Zoning Ordinance) : https://online.encodeplus.com/regs/fairfaxcounty-va/doc-viewer.aspx#secid-2214

Loudon County, VA (Zoning Ordinance) : https://online.encodeplus.com/regs/loudouncounty-va-crosswalk/doc-viewer.aspx#secid--1

Prince William County , VA (Zoning Ordinance) :
https://library.municode.com/va/prince_william_county/codes/code_of_ordinances?nodeId=CH32ZO

39