From: Mountain Patriots Think Tank **9 December 2025**

To: Frederick County Planning Department (Attn: Wyatt Pearson)

Subject: Proposed additions to the Fredreick County Building Code

Dear Mr. Pearson:

We are a group of concerned Frederick County residents who respect the established chain of authority in our local government. As a grassroots think tank comprising engineers, activists, influencers, and community experts—all local to the area—we are endorsed by Mountain Patriot Educational Ministries. Our goal is to positively influence the ongoing debate surrounding data centers in our county.

We acknowledge the rapid expansion of data centers across the nation, driven by the United States' ambition to lead in artificial intelligence. This growth involves substantial financial investments and promises of significant tax revenues for local governments like ours. However, we urge caution: history teaches us to be wary of developers, corporations, and legal teams offering such "gifts," as they often come with hidden costs.

While data centers bring economic opportunities, they also pose serious challenges, including cultural disruptions, personal impacts, potential health risks, privacy concerns, and harm to our historical landmarks. Many of these issues could be mitigated by implementing targeted building code requirements that allow the county to share equitably in the generated wealth.

In brief, the potential collateral damage includes visual blight, increased noise pollution, excessive water consumption that strains our fragile aquifer, unmet demands for electricity infrastructure, the loss of valuable farmland, and other environmental and community impacts.

To balance progress with preservation, we propose permitting data centers in Frederick County under strict ordinances integrated into the county's building code. These measures would limit the industry's monopolistic tendencies while safeguarding the historic, scenic, and productive character of our Shenandoah Valley. The additional costs to developers would be minimal in the grand scheme—extending their return on investment by mere months—yet yield lasting benefits for residents.

Attached is our detailed report, outlining our proposals and rationale. We believe this approach will empower the electorate and ensure Frederick County is not exploited by large corporations or Big Data interests.

Respectfully,

Charles Markert

Daniel Best

Dana Brunn

Leslie Spencer

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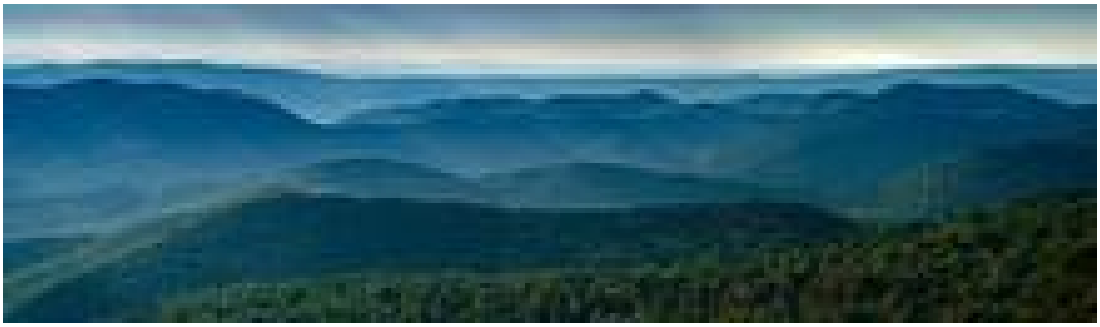
DATA CENTERS: QUESTIONS & CONCERNS



Shenandoah Valley Citizens Speak Out!

A Report from the

Mountain Patriot DATA CENTER THINK TANK

Frederick County, VA

Data Center Development: Issues & Solutions

December 9, 2025

Volunteers:

- **Charles Markert**
- **Dan Best**
- **Dana Brunn**
- **Leslie Spencer**

Frederick County, VA Data Center Development: Issues & Solutions

December 09, 2025

A Report Prepared by the Mountain Patriots' Data Center Task Force.

Table of Contents

Introduction:

Data Center growth in Northern Virginia is spilling into the Shenandoah Valley. This raises multiple issue of concern for residents. On one hand, **Frederick County** needs new revenue sources to address current and anticipated budget shortfalls if it is to avoid significant tax increases.

On the other hand, Data Center development raises a number of issues that require resolution, such as: agricultural land preservation; tourism impact; resource utilization; quality of life and others.

This report represents the work of a small cadre of local Mountain Patriots (MTN-PATS.com) to flesh out both potential issues and potential solutions and promote fact-based discussions between proponents and opponents of data center development in Frederick County. The objective of this report is not to take sides, but to stimulate constructive discussion by presenting potential Data Center solutions and identifying the problems/challenges they could mitigate. The hope of the authors that such discussion can lead to the development of zoning guidelines applicable to high-resource extractive industries and that protect the interests of both businesses and county residents.

This report was partially facilitated with the use of Artificial Intelligence (GROK).

Finally, it is strongly recommended that all information and claims presented in this report be independently vetted by all parties to the discussion.

Identified Challenges

This report identifies the following challenges that should be addressed:

- Scenic Degradation
- Historical Land Preservation
- Rural Community Devaluation
- Threat to Agriculture
- Threat to Agro-Tourism
- Threat to Historical Tourism
- Construction-Related Traffic Congestion
- Construction Debris Remediation
- Noise Pollution
- Electrical Power Demands
- Water resource demands
- Potential EMF (electromagnetic frequency) Emissions
- Heat Sinks

- Geological Stability (e.g., sinkholes)
- Revenue capture
- Security (including cybersecurity)
- Obsolescence & Bankruptcy
- Frederick County Revenue Flow Patterns
- Site Selection

Solutions and the Problems Resolved

This table presents potential solutions to the aforementioned challenges. Details are provided in the next section of this report.

The Solution	The Problem That It Solves
All new Data Centers are to be entirely underground in an onsite excavation with fill material on top of the structure. **The only surface structure would be the personnel ingress / egress, loading docks, air ducts, utility banks, parking, and security.**	**Viewshed Is a big issue for both local residents and visiting tourists.**
	There would be a highly impactful noise footprint
	EMF Emissions pose potential interference and health issues.
	There is a huge demand for cooling energy.
	Heat from cooling system may impact the local weather environment.
	Construction curb appeal remediation.
	Negative impressions of the voting public.
	Unacceptable noise is likely uncontained: limiting noise emissions to 65 db at the property line may be problematic and hard to enforce.
Closed loop cooling system w/o water	**There is a lack of sufficient water for cooling**
	The Shenandoah Valley's water table will be adversely impacted by Data Centers water consumption needs.
	Rural wells may run dry.
	Data Centers need a heat sink to reduce cooling requirements.

	Data Centers potential drought contributions.
	Public water costs will likely rise.
Emergency Power internal to Underground Data Centers	**Noice emissions likely to be poorly contained and intrusive to neighbors.**
	The Valley would be more noisy and less enjoyable.
	Noise from cycling emergency generators is bothersome to adjacent businesses and residents.
Self-Generated Main Electrical Power is to be located within the Data Center underground structure or Off-Site.	**Power demands on the grid would be more costly to non-data center consumer because of energy imports, expensive transmission lines & substation maintenance requirements.**
Off-Site energy production by Data Center companies sold-back into the grid under power swapping arrangements.	**Off-site locations for power generation (e.g. gas-powered generation in other industrial locations could minimize local impact. Power swapping would minimize impact on electricity pricing.**
Site Selection Limitations • **No Data Centers West of I-81 unless identified by Comprehensive Plan in an Industrial area.** • **No historical areas may be used** • **Limit site selection to only Documented Geologically Stable Areas. Avoid sinkhole potential.** • **Data Centers must be located along the path of the future Route 37 Eastern bypass.**	**Developers want to locate on farmland areas West of I-81**
	Data Centers are likely to interfere with area historical sites and agro-tourism.
	Possible building over sinkhole is potentially dangerous to upsetting the underground water 'ecosystem'. The areas West of I-81 have problematic geologic features in many areas.
	Data Center developers are more likely to build in occupied areas of the county instead of areas out of the site line and without nearby neighbors. **Note: Route 37 Bypass is not likely to get started because a lot of it would be through undeveloped land.** **As Warren County's Inland Port demonstrates, it is possible to locate large business operations east of**

• The setback distance to nearby residences is at least 2,000 feet.	I-80 with minimal visual, historical or agro-tourism impact.
Require Insurance against obsolescence and bankruptcy.	The risks to the county revenue stream and future remediation costs must be insured against.
Require Escrow Fund	Funding is going to be needed to restore/secure/protect defaulted facilities against abandonment or bankruptcy by owner.
Landscape rehabilitation plan must require approval by local residents and the county.	Landscaping of the property may not be designed to the satisfaction of the surrounding community and Frederick County.
More Fiscal Transparency by Data Centers and our local government. Require 3rd-party audits of taxable property and written projections by the Data Center management of expected and actual revenue amounts and timing. Require a Data Center surcharge for their non-profit customers.	The public is suspicious and non-supportive due to lack of trust because of secrecy, NDAs, no transparency, and the bad experiences in other communities where Big Data ran roughshod over the citizens and failed to deliver on promises .
	The county will likely lack accurate data in order to know what revenues are due the county from data center operations.
	It is expected that Frederick County will have difficulty obtaining accurate tax basis data from Data. This tax revenue is the primary benefit touted by the data center developers as the primary attraction for us to allow data centers.

Frederick County Data Center Ordinances

This section represents some of the Frederick County ordinances that we propose be passed in order to address the solutions proposed above.

The existing Ordinance section on data centers (§ 165-204.41. Data Centers) is included for context and our proposals are added as sections 6 and 7.

We renumbered the section for clarity. It should be noted sections 1 through 5 would need to be edited to comport with Ordinances 6 & 7.

Existing Ordinances

§ 165-204.41. Data centers. [Proposed Revisions 12-4-2025]

All data centers must meet the following requirements:

1. **Prior to the approval of a rezoning application or conditional use permit, the following shall be provided:**
   1.1. A site assessment to examine the sound profile of the data center on residential units and schools located within 500 feet of the data center property boundary in accordance with Subsection E.
   1.2. A site assessment evaluating the effect of the proposed facility on: (i) ground and surface water resources; (ii) agricultural resources; (iii) parks; (iv) registered historic sites; and (v) forestland on the data center site or immediately contiguous land.
   1.3. Details of any new or existing substations that will be used to serve the data center and the anticipated transmission voltage required to serve the data center.
2. **Generator testing and cycling shall be limited** to weekdays (Monday to Friday) between the hours of 8:00 a.m. to 5:00 p.m. Notwithstanding the foregoing, all noise generated by any on-site generator shall comply with County Code § 165-201.12.
3. **Mechanical equipment.**
   3.1. Location. Ground-mounted mechanical equipment shall be prohibited in the primary setback.
   3.2. Screening. Ground-mounted and rooftop mechanical equipment shall be screened from public roadways and adjoining properties on all sides.
   3.3. Generators. All generators shall be enclosed with a manufacturer-approved enclosure or located within the primary structure.
   3.4. Other mechanical equipment. An opaque screen shall be provided by either the principal building, louvered wall, or equivalent screen approved by the Zoning Administrator. The maximum height of the opaque screen should correspond to the tallest piece of equipment being shielded from view.
4. **Setback and screening requirements.**
   4.1. Structures must be set back at least 200 feet from the common property line when adjoining land is zoned RA, RP, R4, R5 and MH1. Otherwise, the base zoning district dimensional standards shall apply.

4.2. A category C full-screen-type buffer shall be provided around the perimeter of the property. If the adjoining property is zoned B3, TM, M1, or M2, no buffer is required.

5. Noise and noise monitoring.

5.1. The applicant shall submit an Environmental Noise Impact Assessment prepared by a qualified full member of the Acoustical Society of America (ASA), a member of the Institute of Noise Control Engineering (INCE), or a member of the National Association of Acoustical Consultants (NCAC). The purpose of such noise impact assessment, modeled in SoundPLAN, CadnaA, or accepted equivalent, shall model anticipated noise levels as a result of facility operation and establish a baseline noise level prior to approval of a rezoning or conditional use permit.

5.2. A noise study certifying noise levels shall be conducted 12 months after the issuance of the first certificate of occupancy (CO) and every five years thereafter. Each noise study shall be submitted for review to the Zoning Administrator and/or his/her designee to assess the actual impact of the completed project.

5.3. The measurement of sound or noise pursuant to this section shall be as follows:

5.3.1. [1] The measurement of sound or noise shall be made with a Type 1 or Type 2 sound level meter which meet the standards prescribed in ANSI S1.4:2014, Specification for Sound Level Meters. The instruments shall be maintained in calibration and good working order. A minimum of three sound level readings shall be taken. The average of these readings will be used as the average sound level. If the background noise is equal to the levels set forth in this section, 3 dB shall be subtracted out of the average sound level.

5.3.2. [2] The slow meter response of the sound level meter shall be used to determine that the average amplitude has not exceeded the dBA readings or the limiting noise spectra set forth in this section.

5.3.3. [3] Unless otherwise specified, the measurement shall be taken at the property boundary on which such noise is generated.

5.3.4. (b) Any additions, alterations, or expansion of a facility or its equipment shall require a new noise impact assessment to be submitted and approved by the Zoning Administrator.

5.3.5. (c) If the post construction noise study exceeds the maximum noise level permitted, additional noise mitigation strategies, improvements, or operational changes shall be required.

5.3.6. (3) Any equipment necessary for cooling, ventilating, or otherwise operating the facility, including power generators or other power supply equipment on the property, whether ground-mounted or roof-mounted, shall include the following noise-mitigation elements:

5.3.6.1. Low-noise emission fans.

5.3.6.2. Acoustic wraps for compressors and oil separators.

5.3.6.3. An acoustic perimeter, which may include a perimeter around a group of individual chillers, which may be louvered or solid.

5.3.6.4. Other sound-attenuation measures as approved by the Zoning Administrator.

5.3.6.5. The owner shall provide documentation, in the form of technical specifications, photographs, and/or engineered plans, of the above mitigation measures contained in Subsection E(3) with each building permit for a data center building on the property and shall further provide documentation that such

Proposed Ordinances

6. Data Center Construction Requirements.

6.1. Data Center Structures: All data center structure shall be constructed entirely underground, except for the entrance, office space, loading docks and receiving station.

6.2. Siting: All data centers shall be constructed in documented geologically stable areas

6.3. Utilities: Within the boundaries of the property, all utilities shall service the data center through underground infrastructure.

6.4. Emergency Generators: All Emergency Generators and other power supply equipment shall be placed underground or off-site, sound attenuated and muffled to the surface and limited to a maximum of 55 dB, continuously monitored, at the property border.

6.5. Cooling Systems: All cooling systems shall be located underground and shall not consume water beyond local median business consumption rates at the time of becoming operational.

6.6. Excavation material may be used for either landscaped berms and/or disposed of offsite as approved by the county.

7. Tax Data Transparency: (New)

7.1. The data center owner/operator shall provide annual access for the county or its representative, to audit all equipment eligible for taxation in the current tax year, through unencumbered 3rd-party audits to be shared equally between the business and the county government.

7.2. Projected tax revenue shall be in writing and agreed upon by the county and the data center owner/operator annually before the ensuing tax year.

7.3. All revenue projections shall be made public.

8. Data Center Development Schedule

8.1. The county shall limit the development of operational data centers to two (2 x 10 MWh facilities) per every 3-year period.

Details Of Potential Solutions:

Data Center Placement Underground

Solution	Challenges Addressed
Data Center Placement Underground	**Minimal Scenic Degradation**
	Significant Noise Abatement
	Reduced EMF Emissions (buffered by earth)
	Reduced Cooling Requirements
	Reduced Heat Island effect
	Faster Construction (Less curb appeal remediation)
	Improved Security (incl. Cybersecurity)
	EMP (electromagnetic pulse) Protection

Explanation:

There is a growing movement to place data centers underground.

Underground data centers are increasingly popular for their natural cooling, enhanced physical security (e.g., protection from natural disasters, cyberattacks, and geopolitical risks), and efficient use of repurposed spaces like mines, bunkers, and caverns. They reduce energy costs by up to 40% through ambient temperatures and minimize surface land use. As of November 2025, the trend is accelerating due to AI-driven demand, with new projects focusing on sustainability and resilience. Below is a summary of key companies actively building or operating these facilities, based on recent developments.

Key Companies and Projects

Below are two prominent examples from ongoing and recently announced projects. These are primarily colocation or hyperscale facilities, often repurposed from existing underground structures. Many of these structures are situated 60-100 feet underground in limestone cave or mine formations.

Separately, a Swiss company, ECCUS Eco-Caverne (https://www.eccus.ch/en/), is promoting underground data center development using excavations made under existing buildings.

The following article lists some underground data center projects planned, underway or completed:

https://datacentremagazine.com/data-centres/top-10-underground-data-centres

Company	Location	Key Details	Stat
Iron Mountain	Boyers, Pennsylvania, USA (WPA-1 facility)	220 feet underground in a former limestone mine; 330,000 sq ft; uses an underground lake for cooling; BREEAM-certified for sustainability.	Oper com
Iron Mountain	Kansas City, Missouri, USA (KCM-1 facility)	110 feet underground; 50,000 sq ft with 3.9 MW power; carrier-neutral with dark fiber access.	Oper high

A preliminary analysis indicates that underground development should not significantly add to the financial cost of a data center, as the 15-25% estimated surcharge for underground placement is offset by significant reductions in operating costs. For underground placement, it is important that such placement be done in geologically appropriate areas.

A typical underground placement is envisioned to include site excavation, building construction with the roof 10 feet below ground level and then covered with backfill of at least 10 feet thick.

Underground placement also significantly reduces the data center footprint (by 75 – 90%, according to some reports) and makes possible favorable environmental remediation (e.g., covering the facilities with native landscaping).

Understand Decibel Noise Equivalents

Current Frederick County noise codes for data centers (§ 165-204.41; added 4/9/2025) permit noise levels of 65 – 75 decibel (dB) emissions in industrial areas during daytime.

- **0–20 dB**: Almost inaudible (breathing → whisper)
- **20–40 dB**: Very quiet (library → quiet room)
- **40–55 dB**: Comfortable background (quiet office → light conversation)
- **55–65 dB**: Everyday normal noise (conversation at 1 m → busy restaurant or street traffic from the sidewalk)

Closed loop immersion cooling system

SOLUTION	CHALLENGES ADDRESSED

SOLUTION:	Significant water-demand reduction
Closed loop immersion cooling system w/o water	Water table is not impacted by data centers
	Rural wells are not an issue
	Earthen heat sink can reduce cooling needed

Closed-loop cooling immersion technology involves immersing the data chips in a heat-transfer solution, which then transfers heat to other media (gas or liquid) for radiation back into the atmosphere. Some projects in Europe recycle the waste heat for industrial or urban heating purposes.

For example,

- A 95–98 % reduction is routine when pairing immersion with dry coolers (the majority of new deployments).

- A 100 % reduction is achieved when all heat is exported for district heating or industrial processes (fastest-growing segment in northern Europe)

Examples

Concrete Large-Scale Examples (2024–2025)

Facility	Cooling Type	Annual IT Load	Water Saved vs. Equivalent Air-Cooled
Microsoft Dublin (Project Natick follow-on)	Single-phase immersion + dry coolers	~30 MW	~100 million liters/year (essentially zero on-site water)
Meta Odense Phase 3 (Denmark)	Immersion + 100 % district heating	120 MW	>500 million liters/year saved (zero evaporative loss)
LiquidStack 100+ MW hyperscale (Asia)	Immersion + dry coolers	100 MW+	0.0 L/kWh WUE 1.0 (only trace makeup for humidification)

In short: a 100 MW immersion-cooled data center using dry coolers or heat reuse typically consumes less water in a year than a single traditional 10 MW air-cooled hall did in a month. That is why Google, Microsoft, Meta, and most AI hyperscalers have shifted new high-density builds almost entirely to immersion + zero/near-zero water designs.

For more information on waterless cooling options for data centers, see https://zutacore.com/

Independent Power Generation

SOLUTION	CHALLENGES ADDRESSED

Independent Power Generation	**Noise abatement (from generators and emergency generators).**
	Protecting pastoral quality of the Valley.
Carve-Outs with Underground Transmission	**Energy Generation protected from the elements.**
	Protection Against Grid Failure
	Protection Against Electricity Price Inflation

Barring a) “cut-out” pricing schedules for high-power demand businesses by utilities or b) power swap arrangements for off-site electricity production, data centers should provide their own power onsite and internal to the data center.

Data centers use very high amounts of energy and there are serious concerns relying on: a) price inflation; b) electrical power availability and grid reliability; c) noise emissions from intermittent electrical generator activity.

Price inflation is likely as data center power demands will require importation of electricity from other states at higher prices for all electricity consumers. However, there are other options, such as multi-level pricing schedules that charge higher rates to high-level users, whereby to mitigate the cost-impact on residents and other consumers. Power availability is a serious issue: even today in Virginia, there exist fully constructed “zombie” data centers that lack the electricity to operate.

https://richmond.com/news/state-regional/government-politics/article_bbd7cb3e-2e5d-406d-b7d7-456a1b6c0359.html#tracking-source=home-top-story

"Independent power generation" typically refers to data centers that use on-site (or "captive") power systems as a **primary energy source**, rather than relying solely on the utility grid. A recent article points to another trend: **off-site power generation** sold-back to the utility in “power swaps”.

Alternate energy sources include behind-the-meter setups like fuel cells, natural gas turbines, solar/wind farms, or small modular reactors (SMRs) co-located with the facility. Most data centers have backup generators (e.g., diesel), but these are for redundancy, not primary use.

Some of these technologies (e.g., SMRs, fuel cells) are still prospective and it cannot be assumed that they will be available in 4-5 years when new data centers in Frederick County would be expected to become operational.

As of November 2025, exact global data center counts are elusive due to varying definitions, proprietary data, and rapid AI-driven growth. However, industry surveys and reports provide

reliable estimates, primarily focused on the U.S. (home to ~70% of global hyperscale capacity). Key trends:

- **Current adoption is low** but accelerating due to grid delays (2–5+ years for connections) and AI power demands (up to 500+ MW per site).
- **Projections show explosive growth**: Driven by hyperscalers like Microsoft, Google, and Meta.

Based on the *Bloom Energy 2025 Data Center Power Report* (surveying ~100 hyperscaler and colocation leaders):

- **~13% of U.S. data center facilities** currently use some on-site generation for primary power (up from ~5–10% in 2023).
- **~1% are fully powered by on-site generation** (a baseline that's already shifting).

Other sources:

- AFCOM 2025 State of the Data Center Report: **62% of data centers are exploring** on-site power generation for efficiency/resilience, but only ~19% have implemented it as primary (per BCG estimates).
- Total U.S. data centers: 5,426 operational as of March 2025 (EESI report), implying **700 facilities** with some primary on-site reliance today. Globally, estimates range from 8,000–10,000 facilities, suggesting **~1,000–1,300 worldwide** use on-site power generation.

A new concept actively being pursued by large data center operators such as Alphabet and Amazon is “power swaps”, whereby data center operators agree to generate power equivalent to their own utilization back to the primary utilities servicing the data centers (see article below). This could conceivably be handled through independent 3rd-party energy providers (e.g. existing gas power generation providers). At present, independent power producers (IPPs) like Talen Energy or private equity firms (e.g., Panda Power Funds, Blackstone) operate gas plants elsewhere in Virginia, but none in the Valley. Dominion Power owns a gas-powered generation plant in Warren County and independent provider Panda Power operates a unit in Loudoun County.

Another consideration is to require data centers to bury their electrical feeder transmission lines below ground on their properties. This would help reduce the visual impact of data centers on tourism areas and local communities.

Challenge: Bankruptcy & Obsolescence & Remediation

The technology and demand development for power centers is rapid and there is always a risk of technological obsolescence before the full costs of data centers are recovered. Communities must address the risk of obsolescence and potential costs of property remediation.

Potential Solutions: **1) Escrowed remediation funds**

2) Remediation Insurance

The Data Center industry is fast evolving even as states compete for their business with greater-and-greater incentives. Original data centers were cooled by water but now use direct immersion into coolants. New data centers are being built underground, removing many of the negative impacts on communities while enhancing security.

A fast-evolving industry increases the risk of technological obsolescence. This November (2025), Elon Musk predicted that space-based data centers in space would offer the lowest-cost option in “four to five years” (the expected time that it would take for Frederick County data centers to become operational).

Technological obsolescence is only one reason why data center businesses could become obsolete and/or go bankrupt. Acts of God, poor business management or resource depletion (e.g. water) or resource price inflation (e.g. electricity) are others. Once bankrupt, a defunct company carries no liability for environmental clean-up and restoration. Frederick County should anticipate that any data center project could become obsolete or go bankrupt, leaving Frederick County with the cost of remediation.

One option is to make data center companies pay into escrow funds designed to demolish data centers and remediate their environmental footprint in the event of bankruptcy. However, this would not help Frederick County should the data centers become obsolete and/or bankrupt within the next “four or five” years (before revenues are generated). A better solution may be insurance.

It is possible in many jurisdictions to buy specialized insurance policies that specifically cover the costs of demolition, site decontamination, and environmental remediation in the event of bankruptcy or insolvency. These are generally called **Environmental Impairment Liability (EIL)** policies with added Cost Cap / Cleanup Cost Cap coverage, or dedicated Pollution Legal Liability (PLL) coverage. Insurance companies that offer such insurance include Allianz, Hartford and AIG.

Challenge: Revenue Capture

Potential Solutions:

- **Customized county property tax schedule**
- **Mandated revenue and expense transparency.**
- **Verification through 3rd Party audits.**
- **Resource & Infrastructure Utilization Tax**

A salient concern among Virginia counties considering data center development is the potential divide between “forecast” versus “actual” net revenues from data center projects. Another is the discretion that counties have over taxation and tax breaks issued at the state level. Data centers are not major employers of personnel once they have been built and put into operation, so added employee contributions to the Frederick County economy would remain low. Thus, the two most likely sources of significant tax revenues for Frederick County are:

1) Real-estate taxes based on environmental footprints.
2) Property taxes based on industrial equipment.

The shortcomings of these two options are:

1) real-estate taxes in Frederick County remain relatively low and do not cover the upfront expenses (e.g., infrastructure) expected to be incurred by the county until several years-hence.
2) property taxes are based on Virginia’s depreciation schedules, which rapidly draw down the taxable property values for industrial equipment within 5-7 years.

3) There is no clearly identified source of data center-based tax revenue for Frederick County beyond 5-7 years beyond continuing to build new data centers (as Loudoun and Prince William counties discovered). By then, counties may have transformed the initial revenue surges into ongoing project commitments that require continued revenue infusions. This is a trap. The response of many communities has been to promote new data center development to maintain high-revenue streams once the initial revenue streams have been depreciated away. This leads to “out of control development”.

Meanwhile, data centers continue to draw from county resources long after their taxable value has been eroded by time through overly generous Depreciation Schedules. Potentially, this could be addressed by a separate “maintenance” tax schedule for infrastructure support and resource inputs (e.g., water, electricity).

One major concern includes the impact of State or Federal tax abatements on collective revenues. Tax abatement policies also tend to be front-end loaded during the periods when property tax returns would have been maximized. Also, actual taxable value has been obscured in some jurisdictions by non-disclosure agreements that prevent clear assessments of taxable value. For example, Virginia’s tax incentives these incentives—primarily sales and use tax exemptions on equipment—ballooned into a $1 billion annual subsidy in fiscal 2024, up from $685 million in 2023, representing nearly 80% of the state's total economic development spending. (Source: https://www.pilotonline.com/2025/11/24/virginia-data-center-tax-incentives-nearly-doubled-last-year-meaning-the-state-lost-out-on-1b/). Over the past decade, this has meant $2.7 billion in forgone state revenue at a 4.3% sales tax rate.

Virginia's flagship incentive is the Data Center Retail Sales and Use Tax Exemption (DCRSUT), enacted in 2010 and extended through June 30, 2035 (with options to 2040–2050 for major investments like AWS's $75 billion commitment since 2011). It exempts purchases of servers, cooling systems, HVAC, generators, and enabling software, provided projects meet thresholds. These are exactly the type of purchases that would be expected to provide property tax income to Frederick County. (Source: https://www.vedp.org/incentive/data-center-retail-sales-use-tax-exemption)

It has been argued by several sources that Virginia's tax abatements to data centers (since 2014) have resulted in enormous losses in commonwealth tax revenues.

Source:
https://www.cnbc.com/2025/06/20/tax-breaks-for-tech-giants-data-centers-mean-less-income-for-states.html

It is unknown to the authors of this backgrounder to what degree commonwealth tax abatement policies can be overridden at the local /county level.

Challenge: Transparency

Potential Solutions:

1) **NDA bans for county officials and public hearings.**
2) **Third-party auditing and disclosure reports**

Role of NDAs in Obscuring Liabilities

NDAs are rampant, with a Virginia Mercury FOIA analysis (April 2025) revealing that 25 of 31 localities hosting data centers require them for negotiations. Such NDAs often impede public disclosure of data center development terms of interest to the public as well as impeding the verification of data center compliance with county strictures. For example:

Source:
https://vcnva.org/wp-content/uploads/2025/08/ADDRESSING-DATA-CENTER-IMPACTS_ONE-PAGER.pdf

They mandate officials disclose "as little as legally possible" under FOIA, notify companies of requests, and use pseudonyms (e.g., "Project Aurora" for a Microsoft site). This hides: Recipient Details: No breakdown of exemptions by company; Virginia reports only lump sums (e.g., $730M for FY2024).

Compliance Metrics: Job promises (often 50–100 per site) and investments are unverifiable publicly; clawbacks for non-delivery are rare.

Indirect Costs: Environmental reviews (water use: up to 1M gallons/day per center) and energy demands (projected to double state's usage by 2035) are shielded, shifting burdens to ratepayers.

It is common industry practice to submit agreements to 3rd party audits for compliance verification through companies such as The Deloitte Network, KPMG, BDO or similar firms. Full, unencumbered third-party audits for agreement verification by data centers should be mandated with compliance disclosure to Frederick County government and bottom-line disclosure to the public.

Miscellaneous Sources:

Source:
https://www.govtech.com/products/virginia-data-center-tax-incentives-have-nearly-doubled

Source: BloomEnergy Data Center Power Report

https://www.bloomenergy.com/midyr-2025-data-center-report/

Power Trading:

https://www.techbuzz.ai/articles/meta-enters-electricity-trading-to-fuel-ai-data-centers

https://biz.loudoun.gov/wp-content/uploads/2020/02/Data_Center_Report_2020.pdf

Conclusion:

We recognize the unstoppable force thundering through the nation as data centers and the huge push for the USA to dominate the AI world. We also know that huge amounts of money are changing hands in this nation-wide data center endeavor.

We also recognize that big promises have been made about huge amount of tax windfalls that will be provided to our county government. Beware of developers, corporations and lawyers bearing gifts.

There are also many cultural challenges, personal impacts, potential health issues, privacy intrusion, and historical damages that arrives as a result of the data centers and that could be largely avoided by sharing in their wealth stream by requiring data center building code limitations for the benefit of the county residents.

What is the likely collateral damage? In a nutshell it is a visual blight, increased noise, the huge consumption of water impacting the fragile water table, the huge demand for electricity which is not yet available, the destruction of farmland, and many other impacts.

Given these realities, we propose data centers be allowed to be in Frederick County, but only under ordinances to be formalized into the Frederick County building code that are strong enough to hold this monopolistic endeavor to limits that preserve the nature of our part of the historic, beautiful, and productive Shenandoah Valley, while coexisting with data centers.

The extra expense due to our proposed ordinances is but a small amount, compared to the big picture. and it will only extend the owner's Return On Investment (ROI) by a matter of months.

We hope you accept our rationale and approve these ordinances for Frederick County which should make the electorate confident that we will not be taken advantage of by Big Corporations and Big Data.

You have an opportunity to make it so Data Centers can amicably coexist with the citizens of Frederick County. We hope this will help. Please adopt these proposed Ordinances.

Respectfully,

Charles Markert

Daniel Best

Dana Brunn

Leslie Spencer