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Town Council Work Session Communication

Agenda Date: July 13, 2026

Subject: Consideration for Data Center Development

Attachments: 1. Data Center Presentation

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Work Session Item Description:

The following memorandum provides an overview of data centers, including their scale, utility demands, land use considerations, and potential economic impacts and partnership opportunities. The purpose of this memo is to provide Town Council with information and to solicit feedback on the direction Council would like staff to take regarding the development of a policy for the attraction and development of data centers within the Town.

I. DEFINING DATA CENTERS

- Specialized facilities that house computer systems and digital infrastructure such as servers, storage systems, and networking equipment.
- Designed to store, process, and distribute large amounts of data securely and efficiently.
- Operate 24/7 with built-in redundancy (backup power, cooling systems, security) to ensure reliability.
- Range from enterprise and small facilities (boutique/local providers) to large-scale "hyperscale" facilities/campuses operated by major technology companies.

II. DATA CENTER TYPES & EXAMPLES

Boutique Colorado Data Center Examples:

- **CoreSite – Downtown Denver:** 157,000 SF facility; campus expected to expand incrementally; 5–10 MW *(not verified, estimated)*. Moderate power demand; designed for redundancy rather than massive load. Supports the tech ecosystem rather than acting as a major tax generator.
- **Iron Mountain DEN-1 – Downtown Denver (industrial corridor along I-70):** 180,000 sq. ft. facility (6-acre campus); 14.4 MW. Uses renewable energy sources. Creates strong tax revenue with relatively

low service demand (i.e. Police, Fire, School impact).

- **Colorado Colocation (Darwin Data Center) – Lakewood:** 5,000 SF facility; campus expected to expand incrementally; 2 MW. Minimal power strain; serves regional companies and IT providers. Provides modest but stable tax revenue.
- **Earthnet Data Center (Massive Networks) – Boulder:** 24,686 SF (shared building with other users); 1–5 MW range. Very low power strain; serves startups, research, and regional businesses. Limited fiscal impact but important for the local tech ecosystem.

Hyperscale U.S. Data Center Examples:

- **Amazon Web Services – Northern Virginia (Ashburn "Data Center Alley"):** One of the largest concentrations of data centers in the world, supporting AWS cloud infrastructure. Approximately 300 data centers distributed throughout the region; 3,900 MW.
- **Microsoft – Quincy, Washington:** Campus leveraging access to affordable hydropower from the Columbia River. 270-acre campus; 622 MW.
- **Google – Council Bluffs, Iowa:** Campus supporting Google Cloud, Search, and YouTube operations; expected to expand incrementally. 2.9 million SF campus (approximately 66 acres); 40–90 MW per individual facility.
- **Meta – Altoona, Iowa:** Facility supporting Facebook, Instagram, and WhatsApp platforms. 5+ million SF facility (approximately 114 acres); 1,400 MW.

Site Selection Factors for Hyperscale Data Centers:

- As of 2026, Colorado does not have any operational hyperscale data centers. While the state has attracted smaller enterprise and colocation facilities, it has generally not been competitive for hyperscale investment due to a combination of factors, including the absence of targeted state incentives, a lack of a coordinated statewide data center attraction strategy, regulatory and permitting considerations, and constraints related to available power infrastructure and electrical capacity.
- Requires hundreds to thousands of acres of land, typically contiguous.
- Built in phases over many years.
- Extremely high utility demand; 24/7 operations (different from a home that has peak vs. non-peak hours of consumption).
- Strategic location decisions based on:
    - Power availability and cost including ability to scale up.
    - Access to fiber connectivity and reliability.
    - Climate (for cooling efficiency).
    - Robust tax and policy environment (local, regional, and state incentives).

III. DATA CENTER UTILITY IMPACTS

Energy Scale Difference between Boutique and Hyperscale:

- Boutique: 1–15 MW (power)
- Hyperscale: 100–1,000+ MW (power)

Energy Efficiency:

Data centers require large amounts of reliable, continuous power to operate efficiently. Existing power providers in CO are unable to meet those demands in the near-term without significantly investing in expanding their infrastructure.

Power providers such as Xcel Energy and United Power have created 'Large Load' request processes that put the burden on large power developers/applicants to fund the studies and infrastructure upgrades required to meet their demand. These processes have a goal to ensure residents and existing power users are not affected nor impacted from a rate perspective or access to power on a large load user coming onto the grid. PVREA does not have a 'Large Load' request process.

Data Centers are increasingly located near wind and solar farms. This strategy helps absorb excess renewable energy that might otherwise be wasted. Data centers can utilize this surplus power, improving overall energy efficiency and reducing renewable energy waste.

Case Study – Google Campus, Pine Island, Minnesota (1,900 MW): In partnership with Xcel Energy, Google is developing a clean energy data center campus designed to be carbon free. It includes:

- 200 MW of solar power
- 1,400 MW of wind energy
- 300 MW iron air battery system

Waste Heat Recovery:

Waste heat recovery means data centers can capture excess heat generated by servers and repurpose it for beneficial uses, improving overall energy efficiency and reducing wasted energy. Depending on location and available infrastructure, recovered waste heat can be used to heat nearby commercial buildings, residential developments, district energy systems, greenhouses, or industrial facilities, reducing overall energy demand.

Municipalities can encourage or require waste heat recovery through development standards, building codes, or development agreements where appropriate and economically feasible.

Case Study – U.S. National Renewable Energy Laboratory (NREL), Golden, Colorado: Since 2010, NREL has utilized waste heat generated from an on-site data center to heat its laboratory and office building. The project includes:

- An on-site data center where the heat it generates is used to heat the remainder of the building
- Waste heat recovery used to heat a 220,000-square-foot laboratory and office facility
- Successful operation since 2010, demonstrating the feasibility of capturing and reusing excess heat. A model that has helped advance broader adoption of waste heat recovery technologies in data

center design

***Power Demand Equivalency – Context for Johnstown:**

Total Johnstown Housing Units: 8,097 (SFH & Multi); estimated overall energy consumption of 26 MW (during peak).

Power Level	Equivalent Homes (2,000 sq. ft. home approx.)	Scale Reference
1 MW	~309 homes	
10 MW	~3,086 homes	Comparable to a small town
50 MW	~15,432 homes	Comparable to a mid-size city (ex. Raleigh, NC)
100 MW	~30,863 homes	
1,000 MW (1 GW)	~308,632 homes	Comparable to a principal city (ex. Los Angeles, CA)

Water Demand & Cooling Technology:

Data center cooling systems are becoming more advanced and are designed to reduce both energy and water use over time. Many modern facilities utilize several water efficient cooling systems. Below is a general description of several of the more common cooling systems.

- **Air Cooling:** One of the most common and traditional cooling methods used in data centers. This system uses air conditioning units, vents, and ducts to remove heat generated by servers and IT equipment. Cool air is circulated through server rooms while hot air is exhausted away from the equipment. This process is not efficient or effective for data centers utilizing large amounts of electricity.
- **Open-Loop Cooling:** Uses water evaporation to cool IT rooms and equipment. Water is circulated through cooling towers where heat is released through evaporation into the atmosphere. This process is similar to evaporative cooling methods used in agriculture and industrial operations. It is highly effective for removing heat but is highly water intensive.
- **Closed-Loop Cooling:** Continuously recycles and reuses water instead of discharging it after one use. Heated water is cooled through a cooling tower or heat exchanger and then recirculated back through the system. This process can reduce water waste and can be supplemented by incorporating recycled wastewater, capturing rainwater, and non-potable water sources.
- **Direct-to-Chip Cooling:** Delivers liquid coolant directly to GPUs and CPUs through tubes or cooling plates. The liquid absorbs heat at the source before circulating to a heat exchanger. Because direct-to-chip cooling systems use liquid coolants, operators select non-corrosive, electrically non-conductive fluids and incorporate leak detection sensors, high-quality seals, and preventative

monitoring to minimize the risk of leaks. Cooling systems must also comply with environmental and safety regulations to protect personnel, equipment, and the surrounding environment. This process is highly efficient in delivering coolant where needed, comparable to drip irrigation in agriculture. However, this is a costly system and requires specialized infrastructure and maintenance.

***Water Cooling Technology Ranking:**

Cooling System	Relative Water Use	Relative Energy Intensity	Efficiency Considerations
Air Cooling	Lowest	Highest	Requires little to no process water. Not efficient from an energy perspective, requires higher energy demand to cool facility.
Closed-Loop	Low	Low	Continuously recycles and reuses water instead of discharging it after one use. More energy efficient than air cooling. Some makeup water may be needed.
Direct-to-Chip	Moderate-Low	Lowest	Delivers liquid coolant to GPUs and CPUs through tubes or cooling plates. The liquid absorbs the heat efficiently. The liquid must be disposed of properly and building these types of data centers are very costly and require specialized infrastructure and maintenance. Small amounts of makeup water may be needed.
Open-Loop	Highest	Moderate	Uses water evaporation to remove heat from IT equipment. Water is circulated through cooling towers, where heat is released into the atmosphere through evaporation. Offers good energy efficiency but has the highest water consumption due to evaporation and continuous replacement of new water.

***Disclaimer:** The estimates and equivalency comparisons in the previous tables are provided for illustrative purposes only and are based on publicly available research and generalized assumptions. They are intended to provide context for the relative scale of potential energy use and cooling technology efficiency. They should not be interpreted as definitive, site-specific, or guaranteed values. Actual resource consumption varies widely based on factors such as facility size, technology, operations, cooling systems, climate, and efficiency. The table should not be relied upon as a precise representation of the energy or water-cooling technology efficiency of any proposed data center in Johnstown.

IV. FISCAL IMPACT & EMPLOYMENT

Tax revenue will depend on the size of the facility. Boutique facilities can provide minimal to moderate property and personal business property tax revenue while hyperscale facilities generate high tax revenue. Both project types often request incentives from local and state partners, with hyperscale projects being fully reliant (incentive driven) on property and sales tax rebates and waiver of fees.

Fiscal Pros:

- **Strong Property Tax Base:** Data centers often represent high capital investment, leading to significant property tax revenues due to the value of the building and infrastructure.
- **Personal Property Tax Revenue:** Equipment housed within data centers (servers, hardware) can generate substantial personal property tax revenues, depending on state law and depreciation schedules.
- **Minimal Service Demand:** Data centers typically require limited municipal services (e.g., schools, public safety, parks), resulting in a favorable cost-to-revenue ratio.

Fiscal Cons:

- **Incentive Sensitivity:** Data center projects often seek tax incentives or abatements, which can reduce near-term fiscal benefits but, in the long term, do provide a revenue stream.
- **Depreciation of Equipment:** Personal property (PP) tax revenues may decline over time as equipment depreciates. However, as equipment is replaced with new assets, those assets are placed on new depreciation schedules, generating additional personal property tax revenues.
- **Limited Multiplier Effect:** Compared to other commercial or industrial uses, data centers generate less secondary economic activity (e.g., retail, hospitality).

Employment Impact:

Facilities typically have low employment density, meaning they generate relatively few permanent jobs compared to the amount of land and infrastructure they use. In the regional context, unemployment rates are currently 4.8% in Weld County and 4.2% in Larimer County, both of which include individuals who are not actively participating in the workforce. This suggests that, overall, most individuals who are able and willing to work are already employed in a relatively tight labor market. Within this environment, attracting data centers is often viewed as a strategic economic development approach because they do not significantly compete for the already limited local talent pool that other industries rely on for hiring and retention.

In Johnstown specifically, the local labor force is 12,284 people, which grew by 8.35% from 2024 to 2025. The Town’s unemployment rate is approximately 4%, which is 0.3% below the national average. Taken together, these indicators reflect a growing but still competitive labor market, where job-creating industries must be considered alongside their ability to align with available workforce capacity.

Employment Pros:

- **High-Wage Technical Jobs (Long-term):** Positions in IT, engineering, and facility management tend to be well-paid.
- **Construction Jobs (Short-Term):** Development phases can generate significant temporary employment.

Employment Cons:

- **Limited Permanent Employment:** Once operational, data centers typically employ relatively few people per square foot compared to other land uses.
- **Specialized Workforce Needs:** Jobs may require highly specialized skills, which may not align with the existing local workforce without targeted training programs.

V. INCENTIVES CASE STUDY – COLORADO

The following is a ***fictional case study*** to represent the potential revenue and incentives that a data center could generate and request, specific to Johnstown within Weld County. The table below outlines key assumptions of the fictional project.

Assumption	Value
Data Center Size	35 MW
New Machinery & Equipment Investment	$2,000,000,000
Assessed Value Rate	29.0%
Assessed Value	$580,000
Weld County Mill Levy Rate	15.038 mills
Town of Johnstown Mill Levy Rate	23.947 mills
Refund Percentage per Year (incentive)	50.0%

The following scenarios assume that data center equipment and machinery are replaced on either a 3- or 5-year cycle, with each replacement beginning a new depreciation schedule for personal business property tax purposes. The depreciation schedules have been fast tracked to account for the replacement of the machinery and equipment. The examples also assume a hypothetical Town incentive equal to a 50% rebate of eligible personal business property tax to demonstrate how such an incentive could function over time.

3-Year Depreciation, Revenue, & Incentive Scenario:

Year	Depreciation Schedule	Assessed Value	Taxes Due to Weld County	Taxes Due to Town of Johnstown	50% Refund to Company	Net New Revenue to Town

Year 1	92.0%	$533,600,000	$8,024,277	$12,778,119	$6,389,060	$6,389,060
Year 2	50.0%	$290,000,000	$4,361,020	$6,944,630	$3,472,315	$3,472,315
Year 3	25.0%	$145,000,000	$2,180,510	$3,472,315	$1,736,158	$1,736,158
Total		**$968,600,000**	**$14,565,807**	**$23,195,064**	**$11,597,532**	**$11,597,532**

5-Year Depreciation, Revenue, & Incentive Scenario:

Year	Depreciation Schedule	Assessed Value	Taxes Due to Weld County	Taxes Due to Town of Johnstown	50% Refund to Company	Net New Revenue to Town
Year 1	92.0%	$533,600,000	$8,024,277	$12,778,119	$6,389,060	$6,389,060
Year 2	75.0%	$435,000,000	$6,541,530	$10,416,945	$5,208,473	$5,208,473
Year 3	50.0%	$290,000,000	$4,361,020	$6,944,630	$3,472,315	$3,472,315
Year 4	40.0%	$232,000,000	$3,488,816	$5,555,704	$2,777,852	$2,777,852
Year 5	22.0%	$127,600,000	$1,918,849	$3,055,637	$1,527,819	$1,527,819
Total		**$1,618,200,000**	**$24,334,492**	**$38,751,035**	**$19,375,518**	**$19,375,518**

**The Town refunds 50% of new Town tax revenue from this investment to the company each year for 3 or 5 years. Weld County property taxes are collected by the County and are not part of the Town's incentive; shown for context only.*

VI. LAND USE & DEVELOPMENT CODE CONSIDERATIONS

Johnstown's current Land Use Development Code (LUDC) does not specifically define or classify data centers as a standalone land use. As a result, data centers would currently be categorized as Warehouse with Indoor Storage, which is permitted only through a Use by Special Review (USR) process within the I-1 (Light Industrial) and I-2 (Heavy Industrial) zoning districts.

Based on the Town's current zoning, there are fewer than 160 acres west of I-25 that are zoned I-1 and could independently accommodate a data center application through the existing USR process. Because the LUDC does not contain standards specific to data centers, any application submitted today would be reviewed under the existing Warehouse with Indoor Storage criteria. The current Code does not address the unique characteristics of data centers, including high electrical demand, water use, cooling technologies, backup power systems, noise, and other environmental and infrastructure considerations discussed in this memorandum.

As communities continue to evaluate data center development, many have established land use classifications and development standards that distinguish between different types of facilities based on their scale and operational characteristics. Two common classifications include:

- **Boutique Data Centers:** Smaller facilities with relatively compact footprints that are often suited for infill or adaptive reuse projects. While these facilities can also be developed on greenfield sites, Johnstown's available industrial land could readily accommodate a boutique data center campus from a land availability perspective.
- **Hyperscale Data Centers:** Large campus-style developments that typically occupy greenfield sites and require significant electrical infrastructure. Although they encompass substantial acreage, these

facilities generally have low day-to-day activity levels, with relatively few employees and limited traffic once operational.

Land Use Development Pros:

- Low traffic generation and minimal impact on road networks (after construction activities cease).
- Limited demand for public services (schools, parks, etc.).
- Can serve as a long-term, stable land use with minimal disruption to surrounding areas.

Land Use Development Cons:

- Large land consumption with relatively low employment density.
- May limit opportunities for more active or mixed-use development.
- Often visually and functionally less integrated into community fabric.
- Rapid advancements in technology may reduce the usefulness of current data center facilities over time, creating uncertainty about their future adaptability and redevelopment potential.

VII. COUNCIL DIRECTION REQUESTED

Based on the information presented in this memorandum, staff is seeking Council feedback on the following policy considerations:

- **Approval Process:** Should data centers be permitted by right, through a Use by Special Review (USR) process, or prohibited within the Town?
- **Land Use Classification:** Should the Town establish a dedicated land use classification for data centers within the Land Use Development Code (LUDC)? If so, should the Town distinguish between boutique and hyperscale data centers based on their scale, operational characteristics, and potential impacts?
- **Zoning Districts:** In which zoning districts, if any, should data centers be permitted?
- **Development Standards:** If permitted, what development standards or review criteria should be incorporated to address topics such as electrical demand, water use, cooling technology, backup power systems, noise, environmental impacts, and compatibility with surrounding land uses?
- **Economic Development Incentives:** Should the Town consider offering economic development incentives for data center projects? If so, what types of incentives, if any, would be appropriate (e.g., infrastructure participation, fee waivers, tax increment financing, or other performance-based incentives)?
- **Performance Metrics:** What performance metrics should a data center project be required to meet to be eligible for incentives? Examples may include capital investment, job creation, wage levels, renewable energy commitments, water conservation measures, waste heat recovery, public

infrastructure improvements, or other community benefits.

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Reviewed and Approved for Presentation,

Town Manager