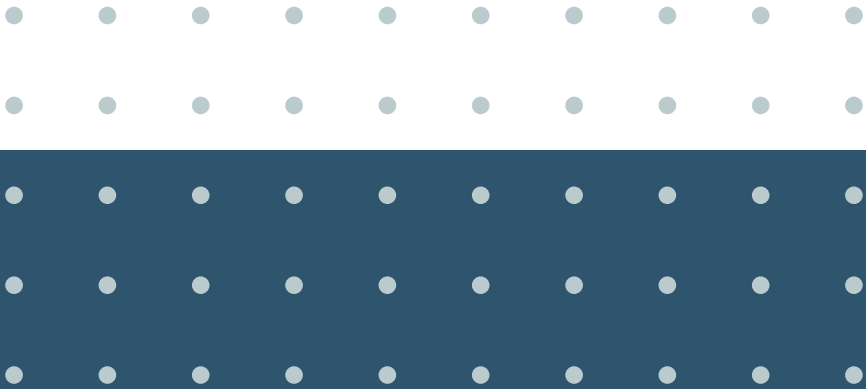




Top 10 Issues Municipalities Should Consider: AI Data Centre Developments

Presented by



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- Expropriation Law
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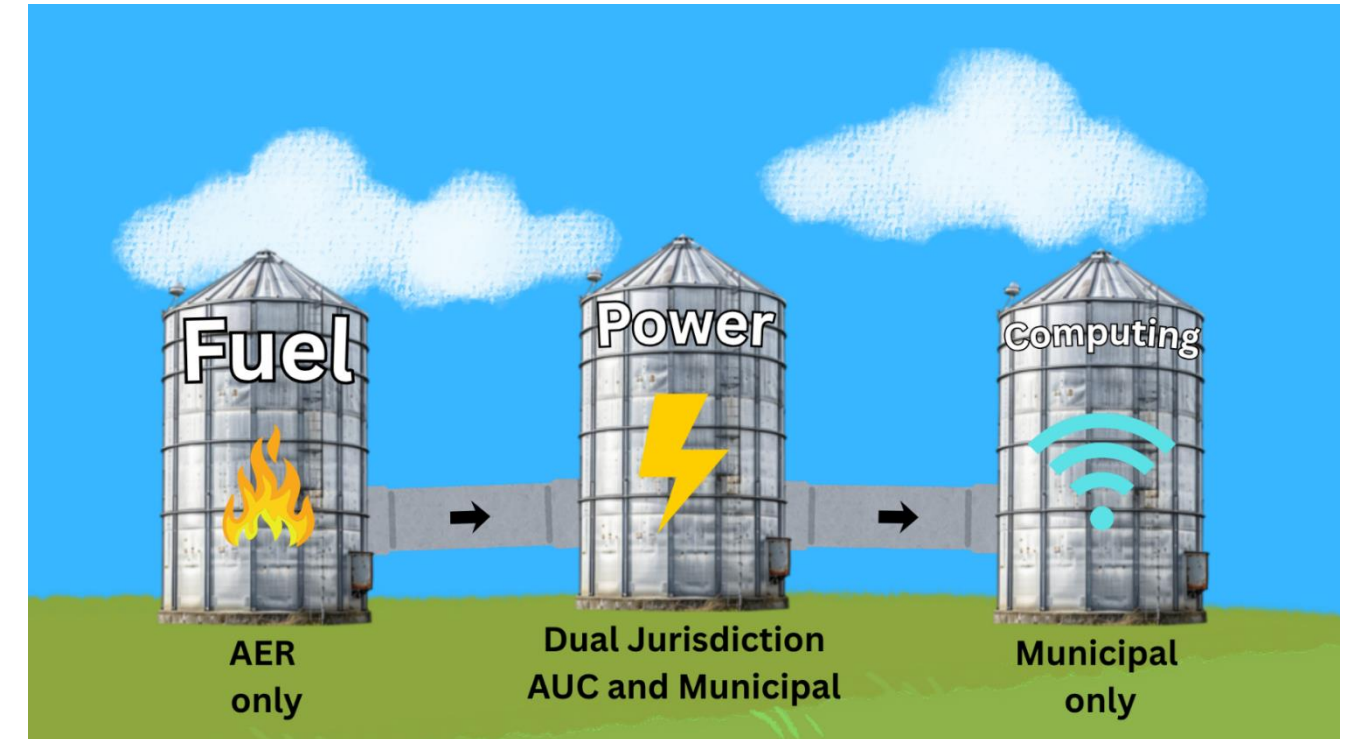
Roadmap

- 01.** Understanding What a Data Centre Is
- 02.** Land Use Bylaw and Development Permit Framework
- 03.** Power Supply, Generation and Regulatory Jurisdiction
- 04.** Servicing, Development Agreements and Infrastructure Costs
- 05.** Water Supply and Wastewater Management
- 06.** Public Engagement and Social Licence
- 07.** Noise, Vibration, Lighting, Security and Other Operational Impacts
- 08.** Consistency with Municipal Plans and Policies
- 09.** Fiscal Reality: Tax Benefits versus Infrastructure Costs
- 10.** Economic Benefits, Critical Infrastructure and Community Impacts



What is a Data Centre?

- A data centre is “a facility or facilities, or a proposed facility or facilities, the purpose of which is to house and operate computing equipment for applications including data hosting and cloud computing, digital asset mining, artificial intelligence and machine learning and digital services and content delivery.” – *Data Centre Regulation* s. 1(1)
- A data centre can be broken up into three components:
 1. Fuel Source
 2. Power Plant
 3. Data Processing Centre



What is a Data Centre?

- Data centres store data and run the software behind a variety of services people use daily.
- There is no one size fits all data centre.
- Data centre often resemble nothing more than a large warehouse building



02.

Land Use & Development

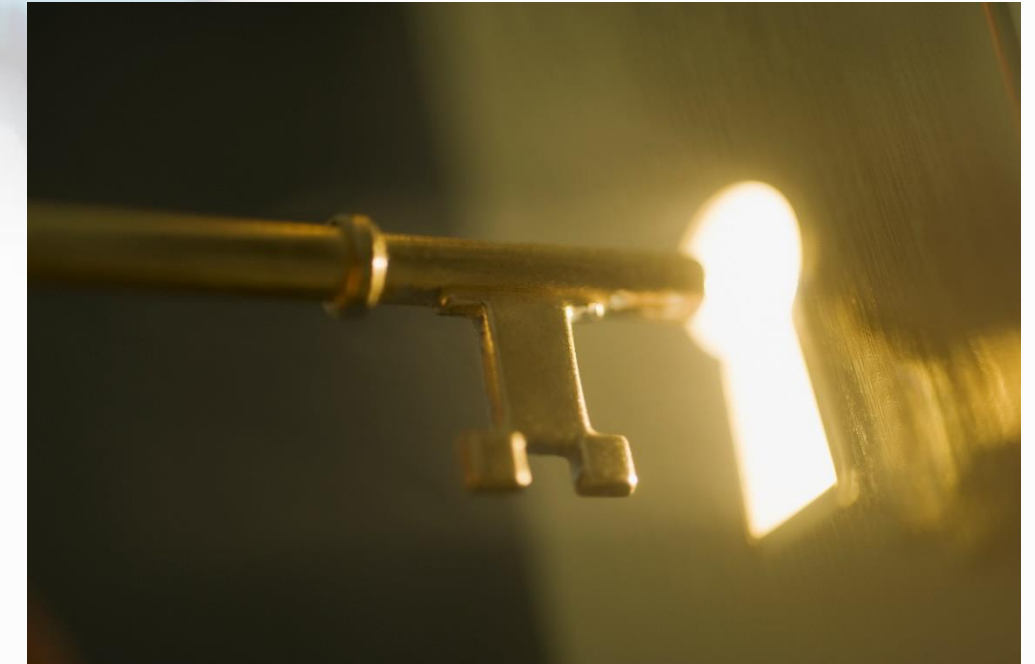
- The unique nature of data centres require a detailed plan to implement them.
- There are a variety of useful tools to develop, define, and regulate data centres. Such examples include:
 - Land Use Bylaws
 - Development Permit Frameworks
- Considerations for how these tools are used will be situationally dependent and vary by municipality.



02.

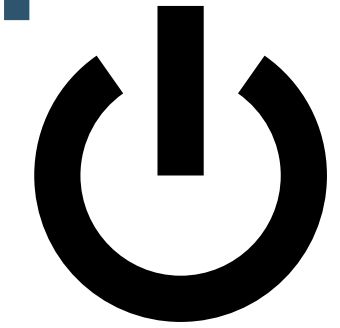
Land Use & Development Key Considerations

- Understand the scale and intensity of the Development.
- Determine if the data centre should be a permitted use or a discretionary use.
- Consider the feasibility of classifying a data centre under a current use classification.
- These three considerations will help ensure:
 - Land use bylaws properly define and regulate the data centre
 - Data centre projects are appropriately permitted.
 - Additional regulations appropriately respond to the building and operating of the data centre

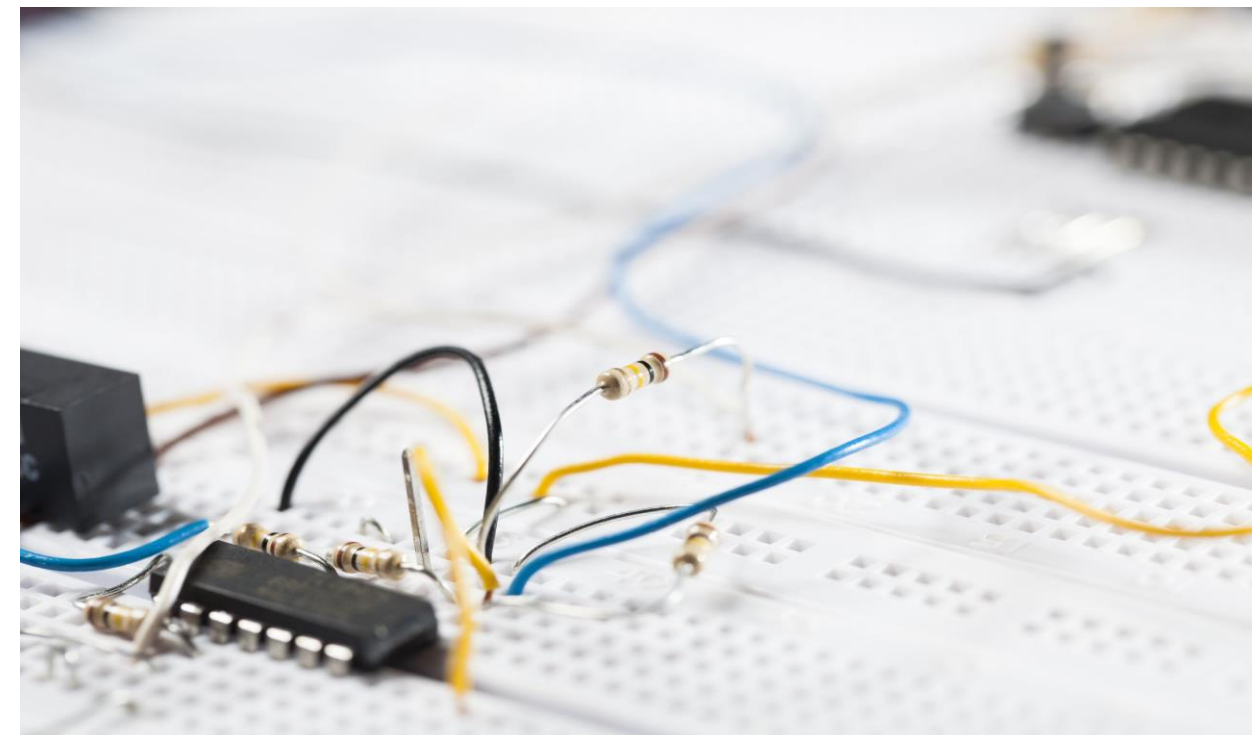


03.

Power Supply Generation



- Power supply is a critical ingredient in data centres.
- When developing a data centre, it is important to know:
 - Whether sufficient electrical capacity exists.
 - Whether new transmission facilities or substations are required.
 - Whether on-site power generation, battery storage or backup generation facilities are an option.



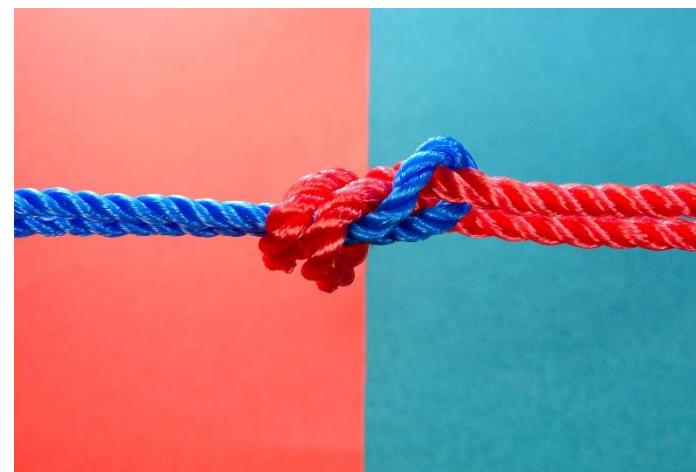
03.

Regulatory Jurisdiction of Power

- The Alberta Utilities Commission (AUC) and municipalities have dual jurisdiction over power. Thus, an applicant needs approval from both entities.

BUT, in the case where the AUC and a municipality disagree...

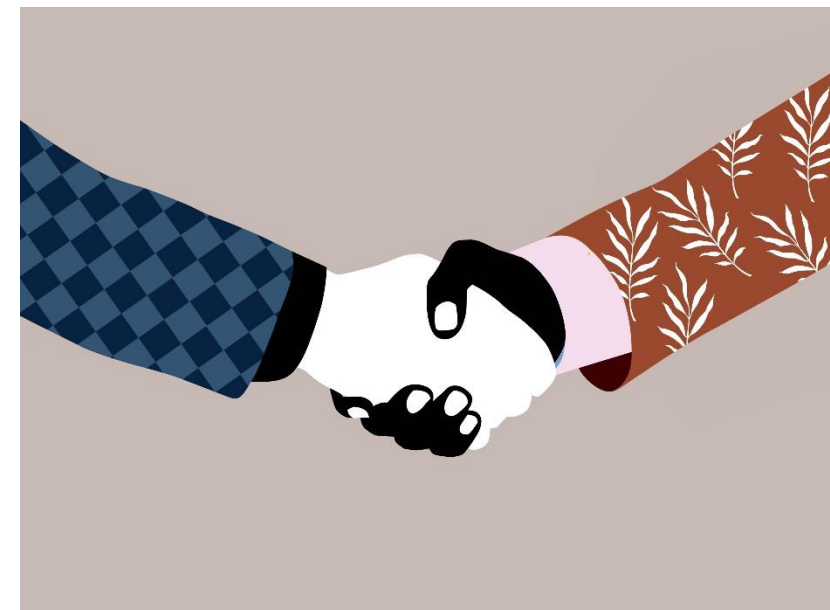
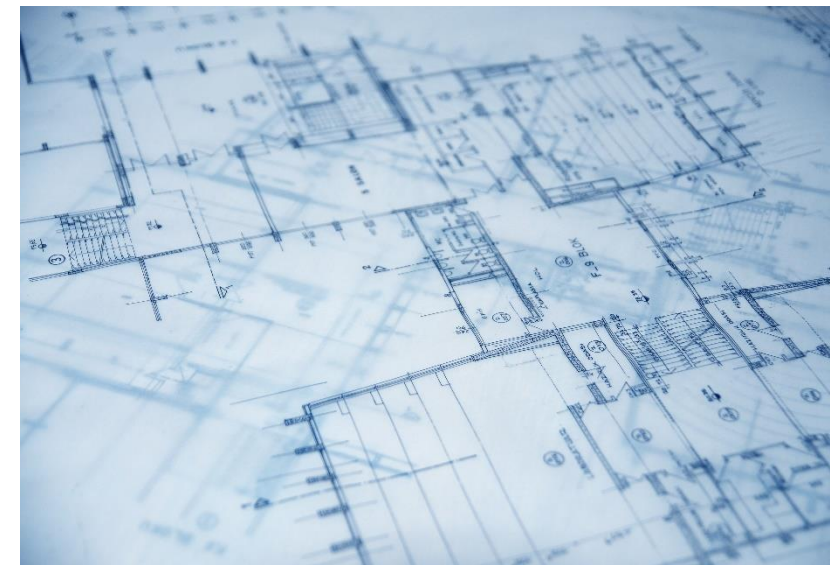
- An approval granted by the AUC **prevails** over any statutory plan, land use bylaw, subdivision or development decision by a subdivision or development authority, a SDAB, or the LPRT. – s. 619 MGA



04.

Development Agreements

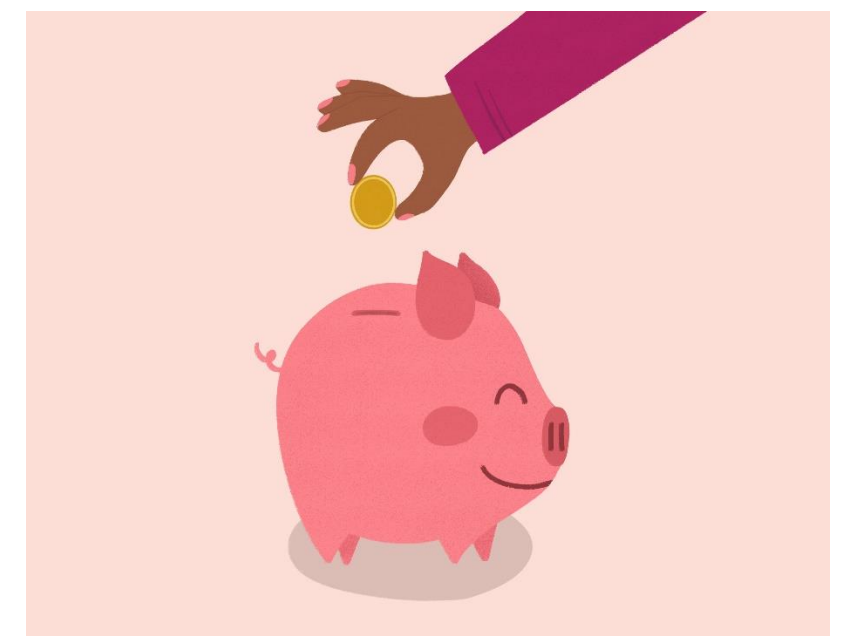
- Building a data centre requires additional planning beyond the data centre itself.
- Data centres impact:
 - Roads
 - Utilities
 - Land preservation
- Development agreements can deal with these impacts by addressing:
 - Roads and access improvements
 - Water servicing
 - Wastewater servicing
 - Stormwater management
 - Utility extensions
 - Construction timing



04.

Servicing and Infrastructure Costs

- Data centres are resource intensive facilities.
- Specific servicing requirements for data centres can minimize the larger impact a data centre can have on a municipality's broader environment and utility infrastructure.
- Infrastructure costs for data centres are extensive. It is important to anticipate costs for:
 - Development of the data centre; and
 - Development of the land where the data centre is being built as well as the adjoining lands



05.

Water Requirements

- Data centres use water to:
 - Control Heat
 - Generate Electricity
- A large amount of data servers so densely packed together create large amounts of heat that can impact data server performance.
- It is important that developers consider:
 - Available water capacity
 - Long-term sustainability of supply
 - Impact on residential customers
 - Drought and emergency curtailment provisions
 - Potable versus non-potable water alternatives

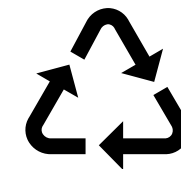


05.

Wastewater Requirements

- Once water has been used in a data centre, there are generally two options:

1. Dispose of the water
2. Treat the water for reuse



- A large portion of water used is potable water. As such, it is important to assess water treatment options so that water does not go to waste.
- If a portion of the water used is to be disposed of, policies and procedures will need to be implemented for its disposal.



06.

Public Engagement



- Data centres impact resources used daily by municipal residents. This can lead to concern and discussion about:
 - Power consumption
 - Water Use
 - Environmental Impacts
 - Social morality concerns
- This creates an emphasis on:
 - Public Consultation
 - The scope of the consultation – how much notice is given and to how many people
 - Public engagement
 - Time of the engagement – consistently throughout the project or only predevelopment



06.

Responsibilities: Municipality vs. Developer

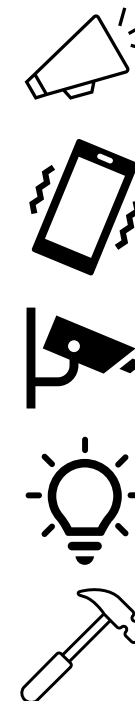
- Developers and municipalities share similar responsibilities regarding the public:
 - Resident quality of life
 - Uninterrupted use and enjoyment of surrounding neighbourhoods
 - Environment preservation
- However, a municipality's public responsibility is often broader.
- A municipality must continue to regulate data centre operations once in existence. This demands continued consultation with the public.
- For developers, public engagement is important throughout the development, but the public engagement is not as enduring.



07.

Other Operational Impacts

- Potential impacts that stem from the development of a data centre entail:
 - Cooling equipment noise
 - Vibration
 - Security
 - Proper Lighting
 - Construction zone



07.

Regulating Operational Challenges

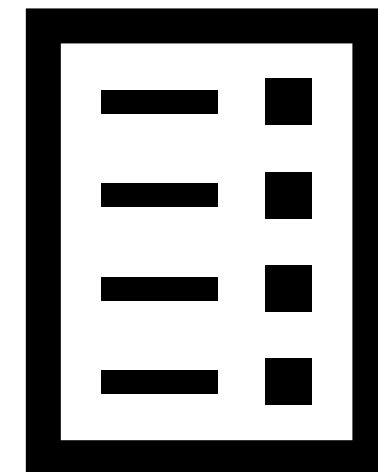
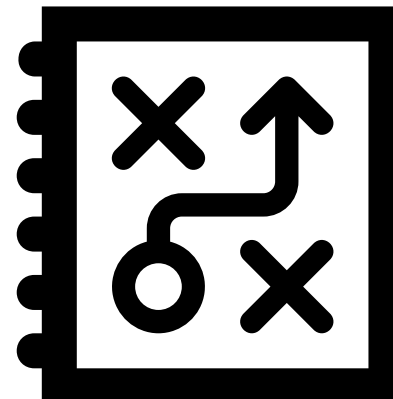
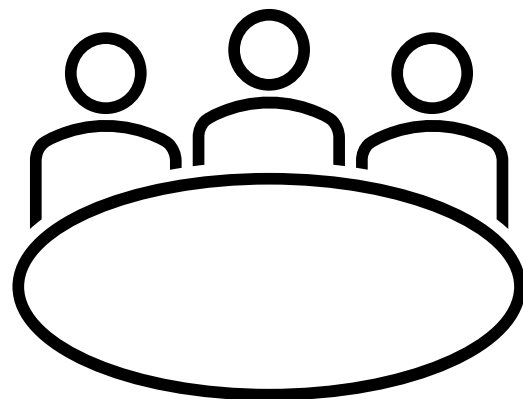
- A municipality can regulate operational impacts through:
 - Land use bylaws
 - Community standards bylaws
 - Development permit conditions
- For developers it is important to understand the permit conditions and how those conditions are used to mitigate operational impacts.



08.

Consistency with Municipal Plans

- Development plans for data centres should be consistent with municipal plans and other municipal planning tools.
- This can help avoid:
 - Time delays
 - Excess costs
 - Enforcement penalties
 - Persuasive at AUC



08.

Consistency with Municipal Policies

- Development policies for both a developer and a municipality should be supported by:
 - Research/studies
 - Consultation
 - Communication between the developer and the municipality
- Is the location appropriate for this type of development?
- Does the project support long-term municipal objectives?
- Could it limit future land use opportunities?



Tax Benefits Versus Infrastructure Costs

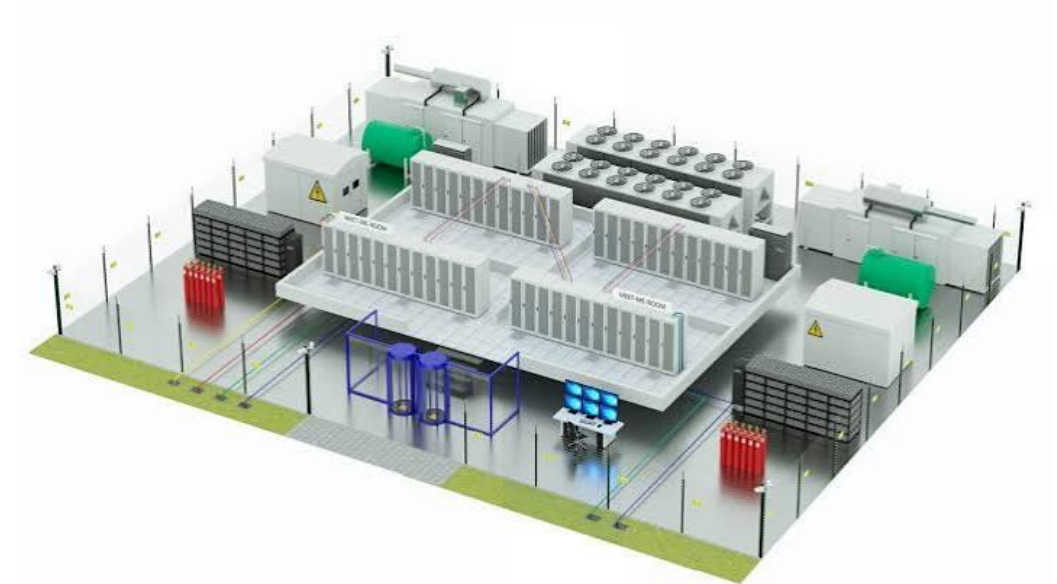
- In Alberta, machinery and equipment is subject to assessment and taxation.
 - “machinery and equipment” means, ...materials, devices, fittings, installations, appliances, apparatus and tanks, ...that forms an integral part of an operational unit intended for or used in ... (ii) processing ... or, (vi) an electric power system
- Generally understood to **exclude** computer processors.
- Application to data centres:
 - No longer any ambiguity
 - Recent amendments to the *Matters Relating to Assessment and Taxation Regulation* - “machinery and equipment’ **does not include** computing equipment, including computing equipment used in a data centre.” (ss 2(2.2))



09.

Implications for the Assessment of Data Centres

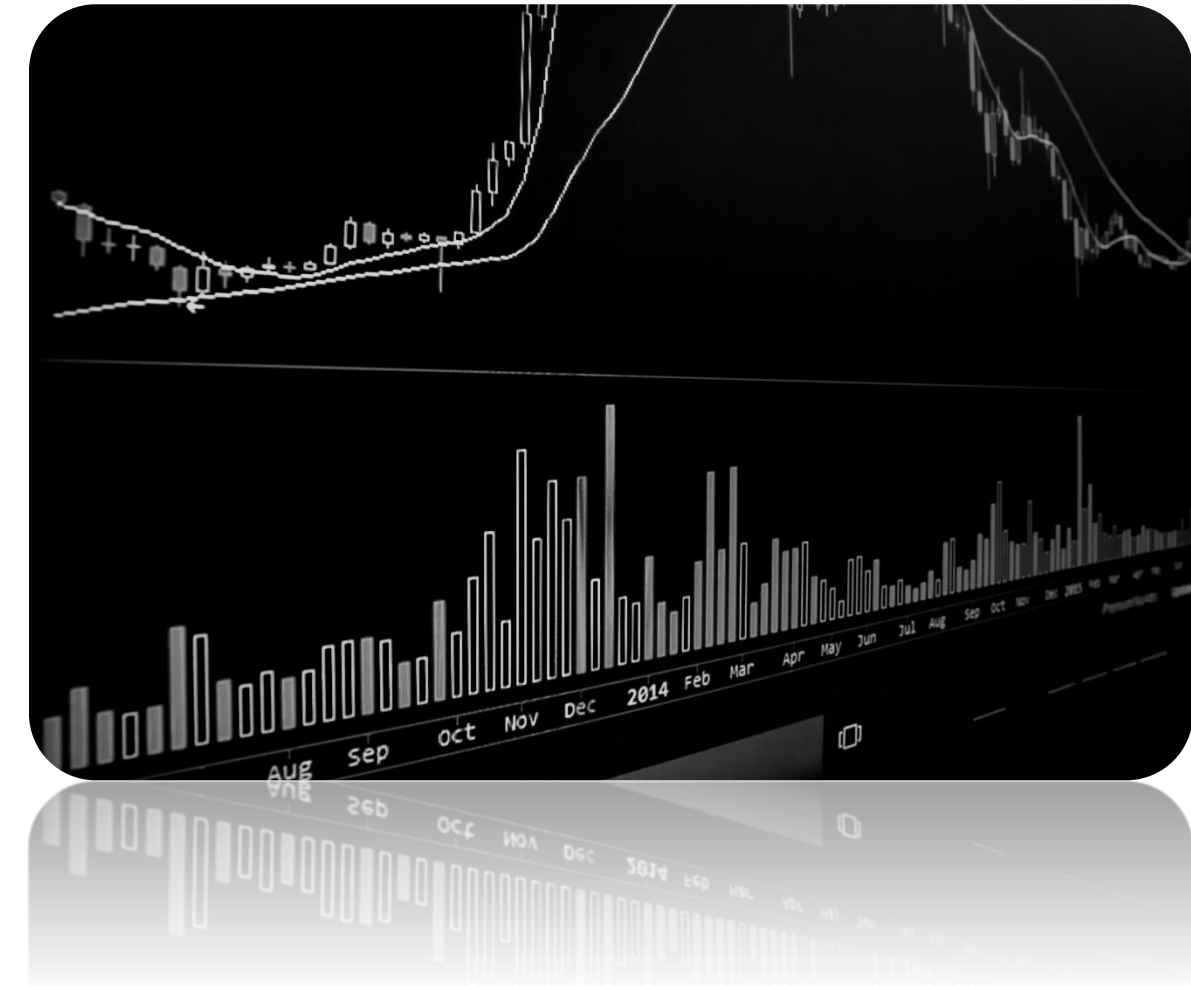
- Majority of the expense of construction is for the acquisition and installation of computer processors
- Alberta's Data Centre Levy – 1 to 2% as of December 31, 2026.
- What *is* assessable?
 - Land
 - Improvements (e.g. buildings and fixtures)
 - Electrical generation



10.

Economic Benefits of Data Centres

- Data centre construction can create short term economic benefits by:
 - Creating new jobs
 - Providing work to companies in an array of sectors
- However, once built data centres do not produce the same amount of work as other industrial developments do.
- Municipalities must prepare for:
 - short-term economic growth when building a data centre
 - the fall off in economic opportunity once the data centre is established

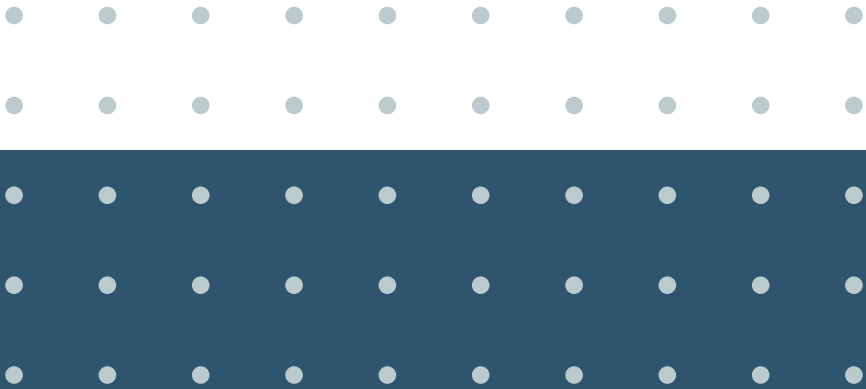


10.

Economic Benefits of Data Centres

- Are anticipated economic benefits realistic?
- What long-term value does the project create for the municipality and surrounding region?
- Does the project create strategic infrastructure or emergency management obligations for the municipality?





Questions?



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