

TaigaNova Eco-Industrial Park

What's Happening in the Canadian Oil Sands?

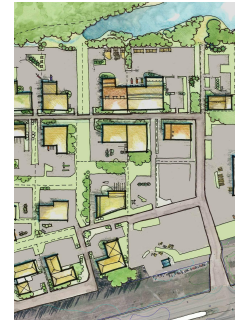
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Local Context

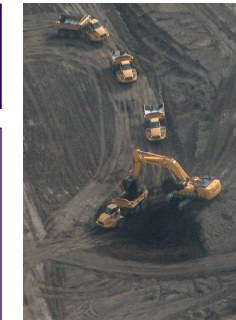
The TaigaNova EIP is being developed in Fort McMurray (Alberta) by the Wood Buffalo Housing and Development Corporation. Here are a few of the project's features:

- Location near the world's largest oil sands industry;
- Rapid economic growth and activity in the region;
- Sparse availability of industrial land and significant business demand;
- Very tight timelines for bringing land to use;
- Interest from large oil & gas companies in carbon offsets in exchange of financial support for the project,
- Stigma that this location constitutes the "absolute opposite of sustainability"



From Theory to Practice: Challenges to EIPs

The full implementation cycle of eco-industrial parks (EIPs) – from planning to operation – sees a number of issues associated with working differently than in traditional projects. Many of these challenges are not covered in eco-industrial networking courses. Developing EIPs involves transforming practices in the municipal, design and construction communities, affecting both mindsets and processes. This is complex and requires a good dosage of practicality and communication.



Construction

Tender Process

Because of the legal binding power and very specific attention to details, tender documents need to reflect the unconventional features and practices that are envisioned for the EIP. There is a fine balance between terms too loose that are not binding contractors to perform, and terms too strict that scare bidders away. It is a challenge to incorporate new terms and concepts in the traditional document templates.

For TaigaNova it was decided to include requirements for a Construction Sustainability Plan in the call for tenders, but not to withhold payment to the hired contractors if they defaulted from those engagements.

Contractors

Contractors are used to their way of doing things, and do not necessarily prioritise greener practices. The main objective is to make profits from the job. Although more sustainable practices often achieve that result, additional efforts to change their processes may not seem worth it. It is important to educate contractors on the objectives and vision for the project, and define the specific practices they are required to undertake.

Planning

Timing

The development of TaigaNova is meant to follow conventional timing and budget. Hence decision-making and approval processes can't sustain many delays due to innovative practices or technologies. So far the project is in line with this objective.

Rezoning

The Municipality had to modify existing Highway Commercial and Business Industrial zoning designations to reflect eco-industrial principles (e.g. more intense land use, optimize potential for renewable energy). This approach allows the municipality to 'pilot' the new zoning regulations in one area first, which can then be extended to other industrial areas in the future.

Subdivision

Additional and creative use of easements were required to accommodate pedestrian movement and natural stormwater management without losing saleable land. The developer also negotiated with the Province to incorporate provincial land in the subdivision for public works such as a flood mitigation berm; stormpond; parks and trails. The new subdivision has been successfully registered.

Development Permit & Guidelines

The development permit application process has been amended to include environmental performance requirements. A set of mandatory and optional guidelines assist buyers with designing efficient facilities.

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Design

District Energy

The final development density and business uses of thermal energy is difficult to estimate before it is known which businesses will be operating in the park. A high-level analysis nonetheless deemed distributed energy system technically feasible for the site. However, it was believed that regulatory processes would cause too much delay to suit the aggressive project timeline. The municipality did not have formal language and policies in place to guide the procedures and technical details of district energy systems.

To leave the door open for a future retrofit and make it easier for buildings to connect to a district energy system, space for piping was allocated and approved with other underground utilities.

Stormwater Management

The ecological approach includes vegetated swales to collect and convey stormwater to an on-site retention and treatment pond. The swales were meant to replace a traditional underground collection system, displacing the use of piping material and providing more vegetation for the site. Education and reiteration of project goals helped the design team to understand the purpose of the swales, and retract the suggestion that swales should be lined with concrete instead of vegetation.

Roads

The roadway cross-section deviates from the RMWB's engineering standards to reduce the width of pavement, and increase space for utility corridors, swales and pedestrian walkways. Based on the design vehicle identified for the park, it was possible to demonstrate that a narrower roadway could accommodate local traffic.

Market

Consultation

Early consultation with local developers and the community was essential in creating and implementing the planning tools. The planning and design teams needed to know what basic services were required, what was desired, and the extent of the prospective commitment to sustainability.

Sales Strategy

The creation of a site-specific sales process weaved in all three pillars of sustainability. A Request for Development Proposals asked businesses seeking land to describe their commitment to green building and operations in TaigaNova, and their proposals were ranked accordingly. Some "points" were also given for social and local economic considerations, encouraging job creation, community involvement, and local and/or small business applicants. The top three proposals for each lot were then placed in a lottery.

Feedback

Although the EIP project is located in an area and within an industry not known for its progressive outlook, there has been consistent level of interest from small and large businesses alike. Most of the industries who have expressed interest to date are not 'green' businesses; they are just looking to expand their current activity and willing to consider reducing their development and operations impact to secure land in TaigaNova. Some are hoping to reinforce and reflect the principles in their own corporate sustainability activity; others are keen to reap the benefits of green development on their operations; others see long term value in adding green industrial projects to their land holding portfolios.

Operations

Buyers Workshop

A workshop for lot buyers and their design team presented green building strategies and eco-friendly approaches they could consider when planning and designing their facilities and operations. While some participants were relatively up-to-date with green practices, it was an introduction to some other people. Hence the workshop was indirectly a tool to comply with the development guidelines. This event was also an opportunity for networking with future neighbours.

Business Mix – Synergies?

Most lot buyers in TaigaNova are conventional businesses, not specifically offering green products or services. Lots are available both to small local firms and international giants. Business applications are reviewed in a free market fashion, and the process does not force specific businesses to be neighbours. Hence there is no control or advance knowledge of potential synergies. However, the sales process and development guidelines explicitly require applicants to produce a list of their inputs and outputs, and consider the lists of other businesses in the park for potential synergies.