SWEDEN-CANADA SMART CITIES WORKSHOP LAKEVIEW VILLAGE

FEBRUARY 24, 2020

THE SWEDISH TRADE COMMISSION, MISSISSAUGA'S COMMISSIONERS, THE AMBASSADOR OF SWEDEN, GLOBAL EXPERTS IN SUSTAINABILITY, LOCAL COUNCILLORS, CITY & REGIONAL LEADERS JOIN TOGETHER TO DISCUSS INNOVATIVE AND SUSTAINABLE SOLUTIONS FOR BUILDING *FUTURE-READY CITIES*





Region of Peel

EVENT OVERVIEW



ON FEBRUARY 24TH, 2020, BUSINESS SWEDEN, THE CITY OF MISSISSAUGA, LAKEVIEW COMMUNITY PARTNERS LIMITED, THE EMBASSY OF SWEDEN, THE REGION OF PEEL, AND GLOBAL LEADERS IN THE SUSTAINABILITY SECTOR JOINED TOGETHER AT THE SMALL ARMS INSPECTION BUILDING TO DISCUSS INNOVATIVE AND SMART SUSTAINABLE SOLUTIONS FOR BUILDING FUTURE-READY CITIES.

Through a series presentations and workshops, attendees had the opportunity to:

- 1. Learn about innovative, tech-driven, sustainable city building solutions from some of Sweden's most prominent companies
- Understand global best practices for data management, information and communications technology, public transportation, and sustainable technologies such as District Energy and Vacuum Waste
- 3. Discuss important trends and challenges within the areas of urban development, sustainability and smart infrastructure
- 4. Tour the Lakeview Village site to understand the project's scale and the unique opportunity it provides for creating a new sustainable, smart city on Mississauga's waterfront
- Engage in a working session on four key challenge statements specific to pillars from the City of Mississauga Smart Cities Strategy and the Lakeview Village Master Plan, including:
 - Green Development Standards: District Energy
 - · Smart Cities & Lakeview Village's Innovation District
 - Sustainable Transportation: First Mile/Last Mile Solutions
 - Waste Management: Leading Canada-Wide Evolution
- Establish a working group to define future practices for city building innovation with senior leadership from globally recognized Swedish companies, the City of Mississauga, the Region of Peel, the Province and other members of government

Attendees included:

- · Mayor Bonnie Crombie
- Ward 1 Councillor Stephen Dasko, Ward 2 Councillor Karen Ras, Ward 3 Councillor Chris Fonseca, Regional Chair Nando Iannicca
- Mississauga Commissioners, including: Paul Mitcham, Commissioner of Community Services; Gary Kent, Commissioner of Planning Building; Geoff Wright, Commissioner of Transportation and Works
- City of Mississauga, Region of Peel and Credit Valley Conservation Staff Members
- · His Excellency Urban Ahlin, Ambassador of Sweden to Canada
- Representatives from Swedish businesses: City of Gothenburg, Volvo Bus/Nova Bus, Axis Communications, Ericsson, Envac and Nordic Heat
- Bruce Ander, President and CEO of Markham District Energy
- Lakeview Community Partners Limited team members and project consultants from transportation, planning, smart cities, urban design and landscape architecture, retail development, sustainability and district energy
- Moderator Jonas Tornblom, Former Senior Vice President of Envac





SWEDEN-CANADA SMART CITIES WORKSHOP || LAKEVIEW VILLAGE

EVENT OVERVIEW [CONT'D]



"Mississauga is changing how we develop. We are no longer building sprawling subdivisions, but instead, we are engineering master-planned, mixed use, sustainable communities where people can live, work and play. It is my hope that everyone here today will have the opportunity to learn from leading Swedish companies about their approach to sustainable and smart development, and that we may bring some of these lessons here to not only the Lakeview Development, but the development of our entire City and Region"

Mayor Bonnie Crombie



"Soon Lakeview will be a place where we can welcome a delegation from Sweden or others from around the world to show everybody how we have done it right. It is an exciting time in Mississauga and Ward 1, we have an opportunity like Chicago did... with a blank canvas on our waterfront"

Ward 1 Councillor Stephen Dasko



"I am very happy to be here in Canada where the politicians are thinking about the same things [as Sweden] and doing the right things, because it is all about the future of this planet. I can tell the Lakeview group and Mississauga that you will be honoured in the future for the work you are doing because the future generations will look upon politicians and developers and say "what did you do to build a sustainable future for me and my kids", and I am sure that you will be on the right side of history."

His Excellency, Urban Ahlin, the Ambassador of Sweden





SWEDEN-CANADA SMART CITIES WORKSHOP || LAKEVIEW VILLAGE

CHALLENGE STATEMENT Nº1



GREEN DEVELOPMENT STANDARDS: DISTRICT ENERGY

As the global population is starting to come to terms with the impact of climate change, cities spanning all continents are moving towards the development of Green Building Standards which address and promote sustainable site and building design. The City of Mississauga has shown its commitment towards tackling climate change and decreasing its carbon footprint through its first comprehensive Climate Change Action Plan, adopted by City Council in December 2019. Mississauga's plan includes both adaptation and mitigation measures and focuses both on what the corporation and community can do to address the issue.

While Mississauga's Climate Change Action Plan does not currently prescribe or provide performance measures to building standards for new development projects, it does identify action items which will, over time, lead to the updating of the City's Green Development Standard to include energy and resilience considerations within building and site features. Developers of new communities are faced with the decision to incorporate progressive building performance features in their new builds while remaining cost competitive with other new communities that may choose not to.

From a building energy performance standpoint, Net Zero and Passive House buildings are becoming a hot topic of discussion. What is not widely understood is the cost premium that these buildings incur.

Questions:

- Green development is always creating new technologies. How does Sweden support this innovation and experimentation while being risk-averse?
- With so many green development standards on the market which standard did Sweden adopt and why?
- How did Sweden educate, incentivize and regulate its development industry to build green buildings?
- How does Sweden ensure that once the green building is constructed and occupied, there are policies and enforcement mechanisms to maintain those green technologies/features in perpetuity?
- Can buildings which incorporate high performance standards compete in a marketplace?
- How can these cost premiums be minimized to demonstrate how sustainability can be achieved profitably?
- How can Swedish experiences be drawn on, with respect to both building technology and economics, to address this?
- In a project of Lakeview Village's scale, how can District Energy be successfully implemented to achieve these goals on a wider community basis while remaining cost competitive?



GREEN DEVELOPMENT STANDARDS: DISTRICT ENERGY

Mississauga's Climate Change Action Plan, adopted last year, identifies action items which will, over time, lead to the updating of the City's Green Development Standard to include energy and resilience considerations within building and site features. The discussion during this workshop focused on what opportunities or strategies are available to developers of new communities for incorporating innovative building features while remaining cost competitive with other new communities that may choose not to.

KEY TAKEAWAYS

- Appropriately managing risk is a critical element: Strategies can be employed to help try and align capital with development timing, but there is often still a gap between invested capital and the revenue that can be earned by the utility while maintaining affordable rates during the early stages of development (i.e. when the number of connected buildings is small).
- Implementation through creative governance models: External funding for District Energy is critical to closing the funding gap. City and Regional staff are uniquely positioned to advance a District Energy system at Lakeview Village and play an important role in securing governmental funding. Working with the City to define the type of partnership model appropriate for this project will ensure implementation, investment, operation and replication are successful, including consideration for shared governance (public and private sector).

New Ideas vs. Business As Usual:

BAU will not be able to support and accomplish Mississauga's Sustainability and Smart Cities goals; District Energy infrastructure at Lakeview Village is crucial to achieving City-wide low carbon or zero carbon targets.

Findings and discussion points on the vision and implementation of District Energy included:

- 1. District Energy (DE) is not necessarily less expensive than Business As Usual (BAU), but can be competitive enough to merit implementation.
- The United Nations has recognized that the only way to get buildings/communities to be low carbon or zero carbon is through sustainable technologies such as District Energy infrastructure.
- Lakeview proposes to utilize the treated effluent from the wastewater treatment plant next door to act as a heat source and heat sink, providing an optimal balance between energy costs and environmental performance for the development.
- 4. A "green" DE solution (i.e. with significant carbon reduction) often has a cost premium over a conventional (i.e. boiler and chiller) BAU. This is typically due to upfront capital costs and/or the marginal additional cost of electricity versus natural gas as an energy source (particularly in heating).
- 5. External funding can play a key role in closing the dollar value gap between BAU and DE.
- The associated risk needs to be considered with maintaining affordable rates during the early stages of the development. Strategies can and should be employed to help try and align capital with development timing.
- The major barrier to this concept is that it costs more to utilize a low carbon source like treated effluent vs. what a typical building in Mississauga would otherwise use to heat and cool.
- 8. A potential solution would be to seek funding from Federal/Provincial/Municipal levels of government to bridge the funding gap.
- 9. Lakeview/Corix/Mississauga should work together to explore what funding options are available to make the low carbon District Energy System a reality.



CHALLENGE STATEMENT №2



SMART CITIES & THE LAKEVIEW INNOVATION DISTRICT

Smart Cities are socially engaged, financially stable, businessoriented, data-driven, environmentally friendly and energyefficient cities who utilize technology to solve civic challenges and improve quality of life. As a result of these characteristics, Smart Cities directly and indirectly drive economic growth. Lakeview Village presents a rare opportunity in which the City and Lakeview have a near blank slate to develop a new mixeduse community - combining residential, commercial / retail, employment, arts, recreation, and active transportation, while creating a smart city of the future.

A key aspect of the future development is the Lakeview Village Innovation District, the future science, technology and culturalinfused economic hub of Lakeview Village, plus an innovation driver of the regional and global economy. While preliminary planning and development for the site is underway, there is a unique opportunity to integrate the site as a testing ground (aka a Living Lab). This Smart City initiative will serve to drive civic challenge solutions throughout Lakeview Village and the The City of Mississauga. The City seeks direction to confirm the focus of the site as a Smart Cities Living Lab, however the final opportunity will be market driven.

Questions:

- What types of partnership models are there for Innovation Districts?
- · How successful have they been?
- What are the key benefits and outcomes (provide specific examples for each model)?
- How successful are Living Labs in attracting global innovation anchors (e.g. companies, institutions)?
- Has the application of innovative Smart City and sustainable infrastructure (e.g. vacuum waste collection, district energy) been successful in drawing private sector capital investment?
- How can the City leverage this opportunity as an investment driver to site (and region)?



SMART CITIES & THE LAKEVIEW INNOVATION DISTRICT

The Lakeview Village site provides a unique opportunity to act as a testing ground, or "Living Lab" for the future Lakeview Village Innovation District, a science and technology hub and innovation / economic driver for the region. This workshop focused on the types of partnership models available to Innovation Districts as well as key benefits and outcomes for these models. Discussion also centred around how sustainable infrastructure such as Vacuum Waste and District Energy could be successful in drawing private sector capital investment to Innovation Districts such as the one at Lakeview Village.

KEY TAKEAWAYS

Investment Attracts Talent

Investment in infrastructure and new technologies such as a Living Lab will attract talent, industry and business to the Lakeview Innovation District from across the region and around the world, driving the local, regional and federal economy through the creation of jobs, local activity and new business brought to the City of Mississauga. Drawing on academia, industry, and government for implementation should be considered to support economic and social development.

Create a Centre of Excellence

There is an opportunity to use the undeveloped lands at Lakeview Village to create a "100 km sandbox" that connects to the Kitchener-Waterloo-Toronto Corridor and draws top talent to a centre for education and innovation. Focusing on key industry sectors (i.e. Energy, Water, Waste) creates opportunities (locally, regionally, nationally) and fosters global attention and recognition to generate future investment and innovation anchors.

Findings and discussion points on the vision and implementation of Smart Cities initiatives included:

- Lakeview Village has an Incubation opportunity (both hardware and software) – to become a test bed opportunity for new and existing technology. By creating a synergy of companies, Lakeview Village can become the Silicon Valley of Canada
- Lakeview Village has the opportunity to connect to the Kitchen-Waterloo-Toronto Corridor and create a 100 km "sandbox" of innovation. Lakeview Village could become the connection between Toronto and Hamilton.
- 3. Infrastructure needs to be in place (technology) to attract people and companies to the Innovation District.
- 4. The City of Mississauga has certain limitations: Experience in this domain, competition for resources to execute and opportunities: learn the right business model, invest in infrastructure, leverage land holding to achieve the overall return.
- Utilize the Triple Helix approach to innovation academia, industry, and government to foster economic and social development.
- 6. The vision of the Innovation District includes profitability, social innovation, environmental and sustainable (green living), scalable/transferable ideas, global identity/ opportunity to stand out. In order to achieve this vision, the following should be considered:
 - Change in thinking at the governmental level to create interim opportunities
 - Looking locally, regionally, nationally as an approach to targeting opportunity for the district
 - · A "common ground" on what is being aimed for
 - Create a Center of Excellence
 - Focus on key industry sectors (i.e. Energy, Water, Waste) for investment purposes
 - · Have an approach that targets a group of industry leaders



CHALLENGE STATEMENT Nº3



SUSTAINABLE TRANSPORTATION: FIRST-MILE/LAST-MILE SOLUTIONS

Mississauga is facing new demands on its transportation system as a result of changing demographics and new emerging features of modern life, such as e-commerce, worklife balance adjustments, and the gig economy. Safeguarding and enhancing the freedom to move around the city is of utmost importance to sustaining growth and city building. Mississauga has recently approved a Transportation Master Plan which focuses on all forms of mobility with a goal that everyone and everything will have the freedom to move safely, easily, and efficiently to anywhere at any time.

Served by local transit and regional transit, the Mississauga Lakeview community offers great opportunities for transitintegrated development. While walking and cycling are integral to the planning and development of these communities, other last-mile solutions will help make transit more attractive for residents, workers, and visitors, especially during the cold winter months. Through its Transportation Master Plan, the City is seeking to reduce automobile use and ownership, and enhance transit ridership and active transportation modes.

Questions:

- What are some examples of successful cases in "first mile, last mile" – transit and infrastructure solutions that are currently successful in Sweden or have been implemented through Swedish companies that can be implemented in Mississauga and more specifically in the Lakeview Village?
- What are some examples of how the public and private sectors have partnered to implement first mile-last mile solutions, and what partnership models have proven to be most successful?
- How can Mississauga identify and plan for innovative mobility solutions and transportation investments that focus on providing transit services, smart traffic management systems, and cycling and pedestrian networks that are safe, comfortable, connected, and convenient?
- How can Mississauga effectively address the first mile-last mile problem?



SUSTAINABLE TRANSPORTATION: FIRST-MILE/LAST-MILE SOLUTIONS

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KEY TAKEAWAYS

A Site with Transit Opportunities

Lakeview Village is a blank slate that offers opportunities for the integration of new transit infrastructure such as with the Lakeview Connecting Communities Master Plan and can serve as a testing ground for new transportation technologies such as autonomous vehicles and electric buses. Providing shuttle buses and integration with MiWay within the site delivers greater accessibility to transit for residents; this along with newly built trails and cycle pathways will encourage people to be less reliant on vehicles as the primary mode of transportation.

Flexibility in the Future

Establishing reduced parking requirements to be more flexible to the changing demand for cars is key to achieving sustainable targets and climate change goals; this flexibility within the City Planning process will support the advancement of future expansions and transit improvements. It is also important to consider who will manage local connectivity (role clarity) when the vision is complete.

Findings and discussion points on the vision and implementation of Sustainable Transportation initiatives included:

- 1. A shared desired future for residents and visitors that highlights Choice, Safety and Convenience and considers all modes of transportation.
- 2. The City of Mississauga will need to consider flexibility in future as this can create both limitations and opportunities for the transit plan at Lakeview Village.
- 3. This vision can be reached incrementally, but data is needed to help implement and make intelligent decisions
- By prioritizing transit goals, gains achieved will include social, societal, planet, and peer pressure on other locations.
- 5. In order to realize this vision certain steps should be taken, including: Detailing, Role Clarity, Timing & Silo Breaking.
- Pedestrian/cycling opportunities will be available at Lakeview Village via the newly constructed waterfront trail.
- 7. Lakeview Village is a blank slate that offers opportunities for the integration of new transit infrastructure such as with the Lakeview Connecting Communities Master Plan.
- 8. Lakeview Village can act as a testing ground for new transportation technologies such as autonomous vehicles and electric buses.
- 9. Shuttle services at Lakeview Village can provide greater access to transit infrastructure and open up accessibility for residents to take transit more, and drive less.
- 10. Being less reliant on cars is key to achieving sustainable targets and climate change goals.
- 11. Establishing reduced parking requirements to be more flexible to the changing demand for cars is key to future urban planning.
- 12. Forward Looking: need to consider who will manage local connectivity when vision is complete.



CHALLENGE STATEMENT Nº4



WASTE MANAGEMENT: LEADING CANADA-WIDE EVOLUTION

Garbage disposal and waste management are at the forefront of sustainability and climate crisis discussions; it is clear the global climate crisis is due, in part, to the enormous amount of waste generated around the world. According to the 2019 OEDC Waste Index, Canada remains 8th worst, amongst the 36 member countries, in managing its waste (i.e., waste generation, recycling, diversion from landfill, etc.). As municipalities within Canada and Ontario continue to grow, so too does the amount of waste generated.

The Region of Peel has been working with partners to assess the feasibility of implementing a Vacuum Waste Collection system to service Lakeview Village. If implemented the Lakeview Village Vacuum Waste Collection System ("LVWCS") will revolutionize how solid waste is sorted, collected, and transported in the Peel Region. While vacuum waste technologies have been utilized world-wide, the LVWCS would be the first of its kind in Canada. At the scale proposed, it will act as a precedent for communities across Canada and around the Americas.

An opportunity exists in Lakeview Village to utilize the Vacuum Waste Collection technology, in a new mixed use community setting, along with its data collection capabilities to monitor, analyze, educate, and perhaps to incentivize, in an effort to change the perceptions and the behaviors/habits of the end user.



Questions:

- How do we best address this opportunity?
- How can a Vacuum Waste Collection system be successfully implemented on a wider community basis while remaining cost competitive?
- How can these cost premiums be minimized to demonstrate how sustainability can be achieved profitably?
- How can communities who incorporate high performance waste-management standards compete in a marketplace?



WASTE MANAGEMENT: LEADING CANADA-WIDE EVOLUTION

The Region of Peel has been working with partners to assess the feasibility of implementing a Vacuum Waste Collection system to service Lakeview Village. This discussion focused on how the system could be successfully implemented on a wider community scale while remaining cost competitive, particularly at Lakeview Village. The Lakeview Village Vacuum Waste Collection System ("LVWCS") would be the first of its kind in Canada, and at the scale proposed, will act as a testing ground and precedent for communities across Canada and around the Americas for future implementation.

KEY TAKEAWAYS

Collaborative Investment

Ensuring profitability for both government, partners and developers, improving quality of life for citizens and working towards a greener, cleaner environment are important features of Vacuum Waste; implementing this technology at Lakeview Village provides an important opportunity to greatly reduce Mississauga's carbon footprint and improve waste management processes. To ensure success and to close the funding gap, there must be collaboration, support and investment by various stakeholders; developing strong partnerships between all levels of government, consultants and developers – unified under a shared vision – is required to navigate through the implementation of these practices.

Model Development

Utilizing the Vacuum Waste Collection technology in a new mixed-use community setting such as Lakeview Village offers a unique opportunity to leverage data collection, provide incentives and educate end users to shift perceptions/ behaviors/habits and ultimately deliver success for this new technology. The undeveloped lands of Lakeview Village will allow a new network to be constructed before a community is built; there is also the ability to create a "learned model" through monitoring, analyzing and results-driven data that can be used to replicate in future developments.

Findings and discussion points on the vision and implementation of Waste Management technologies such as Vacuum Waste:

- 1. Vision: sustainability and the fulfillment of Climate Change Master Plans.
- 2. Opportunity/Interest for future residents is powered by everyday convenience and safer sites.
- Opportunities for the Region of Peel include: Provincial/ Federal government and builders covering the costs
- 4. Benefits of Vacuum Waste Collection:
 - Cleaner communities
 - · Eliminate storage & increased space in buildings
 - Trucks off road
 - 24/7 service
 - · Less waste if more recycling
 - Create efficiencies
 - New jobs at terminals
- 5. Forward Looking Goals:
 - New behavior mindset
 - New innovative leaders
 - Model development
 - Clean communities
 - Envac runs the system for a few years and then hands it over to the municipality. Management contract with Envac after this period in an advising role
 - Cost: need to consider Business as Usual vs. Vacuum Waste (what is the premium?)
 - · Pay as you throw system
 - · Scalability is questionable, this will need to be explored
- 6. In order to implement, governance, financial, rules and agreements must be considered. Potential to seek input from Academia & Community.

A VISION FOR MISSISSAUGA



THE FUTURE OF MISSISSAUGA IS DEPENDENT ON THE CREATION OF ECONOMIC AND SOCIAL RESILIENCE

Socially engaged, financially optimized, business-oriented, environmentally resilient and energy-efficient communities who utilize technology will become the communities of the future. It is these types of ecosystems that will solve civic challenges, improve quality of life, and drive economic growth globally.

This workshop provided a significant opportunity for the City of Mississauga and the Region of Peel, bringing together key stakeholders and leaders including Mayor Bonnie Crombie and Regional Chair Nando Iannicca, Mississauga's Commissioners, local Councillors and City and Regional Staff to drive the discussion around the future of sustainable development and areas of opportunity, specifically the site at Lakeview Village. Based on the findings of this workshop, eight principles were developed. These will serve to guide future sustainable urban development and smart city building initiatives, create a set a mandates to be leveraged for all levels of government, support the advancement of technologies at Lakeview Village, and drive towards achieving the City of Mississauga's sustainability goals and Climate Change Action Plan objectives.



8 GUIDING PRINCIPLES:

Lakeview Innovation District: A future science and technology economic hub, the Lakeview Innovation District will help to drive the regional and national economy. Geographically positioned between Waterloo and Toronto, the Lakeview Innovation District will connect the "1000 km sandbox of innovation" in Ontario. Mississauga's strength in attracting global and Fortune 500 businesses will only expand with the addition of an Innovation District at Lakeview Village.

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The Living Lab: As seen in Gothenburg through the digital twin approach, the Living Lab is a necessary practice to achieve future readiness. The deployment of data-rich Living Labs that can guide and inform our future development practices is essential. Lakeview Village acts as an ideal testing ground / Living Lab because of the mix of uses within the community and the population density that it offers. Data is required to inform civic challenge solutions and Lakeview Village can provide statistically relevant data across the extensive mixed-use development that is planned.

Vacuum Waste: Canada remains the 8th worst, amongst 36 member countries in waste management. When cities grow, waste grows with it. The Lakeview Village Vacuum Waste Collection System (LVWCS) will act as a sustainable model for communities throughout Canada. The mixed-use nature of Lakeview Village and its population size will provide a range of waste management uses cases to learn from, while delivering a larger overall impact on carbon neutrality.

District Energy: Building a District Energy system at Lakeview Village will drive towards achieving Mississauga's Climate Change Action Plan goals. The site, with its access to the nearby GE Booth Waste Water Treatment Plant's effluent, provides operational efficiencies to the deployment of this type of energy solution. With a community of over 15,000 inhabitants and a strong mix of residential, retail, office, institutional and cultural uses, there is no better scenario in the region to test District Energy and how it can scale beyond one building and into a larger community framework.

Sustainable Transportation: Lakeview Village is a master-planned mixed-use community designed specifically with active transportation in mind. The size, population, street network and proximity to MiWay and GO, and connected directly to Mississauga's Lakeshore Connecting Communities improvements presents an unparalleled opportunity for innovation. Lakeview Village supports transit re-invention and is an optimal testing ground for new mobility solutions to connect to the larger network of transportation in Mississauga with the aim of delivering First and Last-mile solutions.

Reinvention: Business as Usual will not deliver the significant changes required to meet climate change goals. How we build, how we invest, and how we manage all must change. Flexibility in every aspect of the development life-cycle is required. Collaboration and solution-based thinking will be the only way we shift, or alter our practices to meet the challenges of future readiness.

Collaborative Investment: Providing a shared costing approach [Federal, Provincial, Regional, Municipal, Developer, User] is critical to establishing a hub for research at the Lakeview Innovation District, complete with resilient infrastructure that can deliver new and validated practices including District Energy and Vacuum Waste to meet social and economic resilience for our City's future. The commitment of all levels of Government is required for these project initiatives to advance and solve civic challenges, improve quality of life, and drive economic growth in the City and Region.

Climate Change Mandate: Committing to Mississauga's Climate Change Action Plan mandate starts with establishing new practices in City and Community Building. Lakeview's ability to support Mississauga's Climate Change Action Plan goals starts by building a community that integrates best-in-class systems as well as methodologies for tackling climate change initiatives in construction and development and, across a mix of residential, commercial, retail, transportation and tourism uses.





APPENDIX

PRESENTATIONS & COMPANY OVERVIEW

A core component of the workshop was to educate and inform attendees of Sweden's globally recognized projects and innovative businesses currently working to combat climate change and build smarter cities, and how Mississauga could learn from them. High-level presentation and company summaries are below:

- The City of Gothenburg is creating a virtual copy of the city, called a "Digital Twin", to address existing challenges and create a more sustainable environment. The "Virtual Gothenburg" will be a starting point for smart planning for the city, but also act as an environment where conditions can be tested for sustainable development.
- Volvo Bus/Nova Bus develops vehicles that can handle the toughest challenges, providing sustainable transit solutions driven by city needs, including: environmentally friendly buses, high-capacity vehicles and integrated intelligent transportation.
 ElectriCity, a partnership with industry, public sector and academia, focuses on sustainable and electrified travel and transport.
 ElectriCity will be at the forefront of sustainable solutions and mobility, an arena for testing new products and services in the fields of travel and transport, and a source of inspiration and motivation for future urban development.
- Axis Communications is committed to building a smarter and safer world by using new network-based products and solutions. Axis provides a complete range of solutions for all kinds of industry segments and applications that tie into smart city goals. These solutions include smart surveillance devices which enable abilities such as: passenger flow and occupancy analysis, mobility transport, traffic management, road safety and traffic flow, real time weather data, and unauthorized parking. Together with a range of partners, Axis aims to make a difference in three areas: Safety & Security, Operational Efficiency and Customer Experience.
- Envac is reinventing how waste is collected with vacuum waste collection technology. With over 4 million daily users globally in 22 countries, Envac has created a system capable of handling the waste demand of the 21st century. Envac's vacuum waste management solution provides multiple benefits such as: 24/7 accessibility to waste disposal and recycling, optimizing hygiene and cleanliness, as well as freeing up valuable space and surfaces in and around buildings. Support for clients and partners is achieved through the lending of significant infrastructure efficiency to building owners and developers while reducing operational costs for cities.

- Ericsson creates systems that are easy to use, adopt, and scale, making customers successful in a fully connected world and providing a range of services such as: 1) developing, delivering and managing telecommunication networks, 2) managing network operations and digital services, 3) exploring emerging technologies like 5G, artificial intelligence, automation, VR/AR, and edge computing, and 4) supporting businesses by managing and optimizing telecom networks and IT operations with highly industrialized processes. Smart Cities strategies include energysaving technologies (Smart Metering and Intelligent Street Lighting), building automation, transportation measures (smart parking and autonomous vehicles), environmental monitoring and waste management, and safety and security monitoring.
- Nordic Heat & The Heat Academy is an independent peer-topeer training, advisory, resource pooling, and business innovation platform aiming to support the development of District Energy, Energy from Waste (EfW) and Waste Management solutions in Europe and beyond. Nordic Heat's goal is to speed up the ongoing decarbonization of heating and cooling while reducing costs and risks, and maximizing performance and broader benefits. The proposal for the Mississauga market is to simplify, standardize and replicate the implementations already established with over 250 partners and peer-to-peer advisors in 20 markets.
- Markham District Energy Inc. is a thermal energy utility owned by the City of Markham. Markham District Energy focuses on providing reliable, efficient, cost-competitive energy services while playing an important role in the City of Markham supporting economic growth, sustainable living and emergency preparedness. Using a holistic approach to utility integration, four different outputs are considered: financial performance, economic development, environmental performance, and Community Energy Resilience. Markham District Energy aims to invest in low carbon initiatives to achieve net zero carbon emissions by 2050.

