



# MOVE

TRANSPORTATION EXPO & CHARRETTE

INSTITUTE WITHOUT  
BOUNDARIES





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### Letter of Invitation for Transportation Charrette:

From November 10 to 13, 2011, the Centre for Green Cities at Evergreen Brick Works, together with George Brown College's Institute without Boundaries (IWB), will be conducting a unique and bold charrette on the future of urban transportation and sustainable cities.

To generate innovative ideas and solutions in sustainable transportation, 10 interdisciplinary teams will work together in a co-creative process to examine how to transform our cities and make them more resilient and vibrant. Over the course of three days, each team will take on a different transportation challenge based on the future needs of the citizens of our region, proposing design solutions, timelines and financial models for 10 locations for a 2040 time horizon.

Because of your expertise, we are hoping that you will join us as a key participant and contribute your experience, passion and ideas. You will find attached a full list of the topics as well as more detail about the charrette challenges. Please note that previous knowledge of the challenge and location is not necessary. Background research will be provided and participants will have the opportunity to visit their site before the charrette begins.

Evergreen, since 1991 Canada's national environmental charity and creator of the award-winning Evergreen Brick Works, has recently launched its newest initiative, the Centre for Green Cities. Located in the landmark brick works in the heart of the Don Valley, it is a dynamic venue for sustainable city building, for public engagement, and a unique "living lab" for companies, researchers and environmental innovators to showcase their products to potential investors, to markets and to the public at large.

Founded in 2003, The Institute without Boundaries at George Brown is a Toronto-based studio that works towards collaborative design action and seeks to achieve social, ecological and economic innovation.

The charrette will culminate in a public presentation and the results will be prominently featured at the Transportation Expo at the Brick Works. In addition, the outcome of each charrette will include policy suggestions and actionable recommendations to be made available to key stakeholders in the coming months.

Each team will be composed of a facilitator, lead designer and transportation expert and will be supported by three to five professionals and/or students in disciplines ranging from graphic design and illustration, to urban planning, architecture, transportation and industrial design. A team reporter will document the charrette, capturing the creative process for future publication. Each team will also receive insight, support and feedback from two professional advisors chosen for their knowledge of the specific challenge, site and community.

We sincerely hope that you will be able to join us in this collaborative effort to create inspiring and visionary concepts for the future of Toronto transportation.

If you have any questions or would like to confirm your availability, please contact project producer Lucia Piccinni at [lpiccinni@evergreen.ca](mailto:lpiccinni@evergreen.ca) or 416-415-5000 x 6188.

**Geoff Cape**  
Executive Director  
Centre for Green Cities  
Evergreen

**Luigi Ferrara**  
Director  
Centre for Arts and Design  
George Brown College

**Participant Schedule:**

**All charrette team members\* and volunteers** are expected to attend the following:

DATE	TIME	LOCATION	DESCRIPTION
Thurs., Nov. 10 <sup>th</sup>	7PM – 9PM	Artscape Wychwood Barns	Keynote lecture, launch and team introductions
Fri., Nov. 11 <sup>th</sup>	9AM – 1PM	Various locations	Site visits and presentations by stakeholders
	2PM – 7PM	Institute without Boundaries	Charrette
Sat., Nov. 12 <sup>th</sup>	9AM – 7PM	Institute without Boundaries	Charrette
Sun., Nov. 13 <sup>th</sup>	9AM – 7PM	Institute without Boundaries	Charrette
Sun., Nov. 20 <sup>th</sup>	10:30AM – 5PM	Evergreen Brick Works	Presentations

\*Facilitators, lead designers, transportation experts and documenters should also attend the following:

Thurs., Nov. 3 <sup>rd</sup>	6 – 8PM	Institute without Boundaries	Training Session (dinner provided)
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**Advisors** are expected to attend the following:

DATE	TIME	LOCATION	DESCRIPTION
Thurs., Nov. 3 <sup>rd</sup>	6 – 8PM	Institute without Boundaries	Training Session (dinner provided)
Thurs., Nov. 10 <sup>th</sup>	7PM – 9PM	Evergreen Brick Works	Keynote lecture, launch and team introductions (optional attendance)
Fri., Nov. 11 <sup>th</sup>	5 – 5:30PM	Institute without Boundaries	Welcome/Orientation
	5:30 – 6:30PM	Institute without Boundaries	Advisor Session
Sat., Nov. 12 <sup>th</sup>	12 – 1PM	Institute without Boundaries	Advisor Session
Sun., Nov. 13 <sup>th</sup>	9:30 – 10:30AM	Institute without Boundaries	Advisor Session: Concept Presentation
Sun., Nov. 20 <sup>th</sup>	10:30AM – 5PM	Evergreen Brick Works	Presentations (optional attendance)

**Stakeholders** are expected to attend the following:

DATE	TIME	LOCATION	DESCRIPTION
Fri., Nov. 11 <sup>th</sup>	9AM – 1PM	Institute without Boundaries/ various locations	One-hour presentations by stakeholders
Sun., Nov. 20 <sup>th</sup>	10:30AM – 5PM	Evergreen Brick Works	Presentations (optional attendance)

**Important Addresses:**

Evergreen Brick Works  
550 Bayview Avenue  
Toronto, ON

Institute without Boundaries (IwB)  
230 Richmond Street East  
Toronto, ON

Artscape Wychwood Barns  
60 Christie Street  
Toronto, ON



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## Charrette Teams

Each team will be composed of 10-12 people consisting of a facilitator, lead designer, transportation expert and supporting students and professionals from a variety of disciplines including graphic design, urban planning, financial planning, architecture, engineering and industrial design.

A team documenter will capture the charrette by recording the creative process for future publication. Each team will also receive insight, support and feedback from professional advisors and stakeholders chosen for their knowledge of the specific challenge, site and community.

### > Lead Designer

The lead designer is responsible for developing the design concept in partnership with the transportation expert and with the support of the rest of the team. The designer will bring their expertise in sustainability, transportation, and community engagement to ensure that the proposal responds to the brief in a manner that is compelling, visionary and feasible. The lead designer will spearhead the visualization of the proposal and oversee the development of design deliverables, from drawings and plans, to models and presentation materials. They will provide guidance for other supporting documents such as user experience scenarios and budgets.

### > Transportation Expert

The transportation expert will work closely with the lead designer to guide the concept development. The expert will contribute information and resources about the charrette challenge, issues of sustainability and transportation, best practices, current trends and stakeholder needs. The transportation expert will help to ensure that the team proposal is both innovative and feasible, and takes into account the constraints of the site and the future requirements of the community. The expert will ensure that proposal content is accurate and that the rationale behind the design is strong. The transportation expert will provide guidance for supporting documents such as implementation plans, policy recommendations and budgets.

### > Facilitator

The facilitator is responsible for keeping the project on track, assigning roles to the members of the team and ensuring consistency between the different elements of the design. They will coordinate project communication materials and ensure that results come together in a unified final presentation. They will contribute ideas, knowledge and other skills as necessary.

### > Documenter

The documenter will record the creative process, capturing different charrette activities and discussions using photography, video and text. The documenter will provide commentary during the charrette by posting updates on-line. Following the charrette, the documenter will produce a report based on their team's activities.

### > Other Team Members

Each team will include three to five students and professionals who will bring additional skills in design, business and transportation. They will contribute to the overall concept and design development, and execute particular elements of the proposal such as 3-d and virtual models, technical drawings, systems diagrams, video, budgets, materials sourcing, implementation plans, and the final presentation.

### > Advisors

The advisors will visit their assigned teams three times during the charrette. They will review the team's work, commenting on concepts, design development, final proposals and presentation materials. The advisors will provide insight, support and feedback based on their knowledge of the specific challenge, site and community.

# MOVE:

## TRANSPORTATION CHARRETTE

**Drafted:** September 15, 2011

**Organized by:** Institute without Boundaries and Evergreen's Centre for Green Cities

**Charette/Presentation Dates:** November 10-13 and 20th, 2011

# Executive Summary

## Organizers

Institute without Boundaries at George Brown College and Evergreen's Centre for Green Cities

## Charrette Date/ Location

November 10 - 13, 2011

Institute without Boundaries

George Brown College School of Design

230 Richmond Street East, Toronto

[www.worldhouse.ca](http://www.worldhouse.ca)

## Public Presentation

November 20, 2011

Evergreen Brick Works

550 Bayview Avenue, Toronto

[www.evergreen.ca](http://www.evergreen.ca)

## Expo Advisory Committee

**Geoff Cape**

**Executive Director, Evergreen, Centre for Green Cities**

Geoff Cape is one of Canada's best known social entrepreneurs. He's the founder of Evergreen, a charitable organization that encourages Canadians to take a hands-on approach to improving the health of their cities. Evergreen focuses on integrating nature into urban design through sustainable greening projects in schoolyards, parks, communities and at Evergreen Brick Works, a unique environmental community centre in Toronto. Since its inception in 1990, Evergreen has grown to over 115 employees and several locations across Canada.

**Luigi Ferrara**

**Director, Institute without Boundaries and Centre for Arts and Design, George Brown College**

In addition to his role at George Brown College, Luigi Ferrara is a Registered Architect, a member of the Ontario Association of Architects and the Royal Architectural Institute of Canada. Luigi previously served as a principal of Ferrara Contreras Architects Inc., President and CEO of DXNet Inc., Vice-President of the Design Exchange and as an architectural consult. Luigi has curated exhibitions and has published works with the University of Toronto, the Joseph D. Carrier Gallery, the Ontario Heritage Foundation, the Triennale of Milan, the Architectural Literacy Forum and the Design Exchange. Luigi also founded Digifest, a festival for new media.

## **George Hazel**

### **Professor, Chairman MRC McLean Hazel**

Professor Hazel is an expert in city and mobility analysis, policy advice and development and in innovative funding and delivery mechanisms. He has extensive experience of how towns and cities work having written a book in 2004 on “Making Cities Work” and led the team which produced the Megacities Challenges report for Siemens which was launched at the World Economic Forum in Davos in 2006. He has also acted as advisor to a number of towns and cities in the UK, Europe, North America, Australia and New Zealand.

## **Eric Miller**

### **Professor, Civil Engineering, University of Toronto**

Dr. Miller is Director of the University of Toronto's Cities Centre, a multi-disciplinary research institute that aims to encourage and facilitate research on cities and on a wide range of urban policy issues, both in Canada and abroad. He is the former Director of the Urban Transportation Research and Advancement Centre within the University of Toronto Department of Civil Engineering. He was also the past Chair of the International Association for Travel Behaviour Research, and he also served on a number of committees for transportation research in Canada and the US. Eric's “GTAModel” modeling system is used by the City of Toronto to forecast regional travel demand in the Greater Toronto Area to support urban transportation policy analysis and decision-making. He is also the principal investigator of the research team currently developing advanced microsimulation systems for modeling travel and other urban spatial processes.

## **Susan Zielinski**

### **Managing Director of SMART University of Michigan**

Susan Zielinski is Managing Director of SMART (Sustainable Mobility and Accessibility Research and Transformation), a project of CARSS, the Center for Advancing Research and Solutions for Society. It undertakes research, demonstration projects (in India, South Africa, Brazil, and the U.S.), education, and global learning exchange on a range of issues related to the future of transportation in city regions around the world.

Also, as a transportation planner for the City of Toronto, she worked for over 15 years developing and leading transportation and livability policies and initiatives. She has advised on a range of local, national, and international initiatives, including the National Advisory Committee on Energy Efficiency, Transport Canada's Sustainable Development Advisory Committee, the Gridlock Panel of the Ontario Smart Growth Initiative, the OECD's Environmentally Sustainable Transport (EST) Project, the King of Sweden's jury of the Stockholm Partnerships for Sustainable Cities, and the European Conference of Ministers of Transport (ECMT). She was also a long-time board member of Canada's Center for Sustainable Transportation and founding board member of the Green Tourism Association.

## Charrette Overview

Evergreen and the Institute without Boundaries have organized 10 interdisciplinary teams to address 10 different sustainable transportation challenges based on the future needs of the Greater Toronto Hamilton Area (GTHA). They will propose design solutions for 10 geographic locations based on a 2040 time horizon. Drawing inspiration from international case studies and best practices, the teams will explore issues such as energy, environment, health, land use and infrastructure as they relate to a sustainable transportation future.

There will be a public presentation of the charrette results at Evergreen Brick Works on November 20, 2011.

The charrette results will further be exhibited at MOVE! The Transportation Expo that will open at Evergreen Brick Works in May 2012.

## Why a Charrette?

As part of Evergreen's commitment to thought leadership in sustainable city building, a partnership with the Institute without Boundaries has been created to showcase and exhibit ideas around the critical topics of *Transportation, Energy, Housing, Food, Water and Waste*. To generate inspiring solutions in these realms, interdisciplinary teams will work together in a co-creative process to examine how to transform our cities and make them more resilient and vibrant by design.

For this year's charrette, these teams will envision 21st century sustainable transportation solutions for the GTHA. Each team will be led by an IwB facilitator and include transportation experts, planning, engineering and design professionals, students, faculty and community representatives. Tackling the most pressing mobility issues, the teams will develop proposals with the intent of creating a blueprint for a more sustainable transportation system that will position our region for success.

# 10 CHALLENGES

## OF THE TRANSPORTATION CHARRETTE

# 01: Beyond the Car

What are our vehicles of the future?

## Project Location

Oshawa, Ontario – GM District

## Project Vision

Imagine a new sustainable mobility vehicle and a new future for the automobile-manufacturing sector beyond the car.

## Project Mission

Transform the future of the transportation manufacturing industry in Oshawa by imagining a sustainable mobility vehicle and its green production process. (Just as the car replaced the horse and carriage, what should replace the car? Will that include the manufacturing of transit vehicles, vehicles geared to small urban freight movement or services such as fractional car use, community car sharing, shuttle vehicles?)

## The Challenge

We have managed to burn nearly half of all global oil reserves in merely 125 years.<sup>1</sup> Since the 1970's, there has been a growing realization that the global supply of oil is in decline – causing the cost of fossil fuels to increase and placing pressure on the automobile industry to provide new, innovative solutions that are more efficient and less reliant on fossil fuels as their primary source of energy. The automotive industry is Canada's largest manufacturing sector, accounting for roughly 12% of manufacturing GDP and over 2% of total industrial GDP.<sup>2</sup> Failing to adapt to the global market, the US auto manufacturing giants referred to as the Big Three – GM, Ford & Daimler Chrysler - have decreased production over the past few years. This has greatly affected communities where the auto industry is the major employer, including Oshawa, Ontario. In the 1980s, Oshawa's GM plant employed 18,000 locals. Today, that number has been significantly reduced to 3,800.<sup>3</sup> In order to revitalize the economy and give new life to a dated industry, personal mobility and the associated manufacturing/production processes must be re-imagined.

In order to be effective new industries should consider how to take advantage of existing infrastructure, labour and expertise to re-tool for the industry of the future. The challenge is to stretch our vision beyond the sustainable personal vehicle and re-imagine how we can manufacture a sustainable transportation system “door-to-door” that provides the traveller with efficient choices in the most cost-effective and convenient manner.

## Objectives

- Consider how the City of Oshawa, its automobile industry, residents and labour force can adapt to a future that is less dependent on manufacturing cars and the consumption of fossil fuels.
- Design a new, sustainable vehicle that will meet future requirements for personal mobility by offering an attractive, economic alternative to cars that fosters more sustainable and healthier lifestyles.

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<sup>1</sup> [www.oildecline.com](http://www.oildecline.com)

<sup>2</sup> Canadian Vehicle Manufacturers Association

<sup>3</sup> CTV News, May 14, 2009



- Take a cradle to cradle approach, considering the full life-cycle of the product in order to reduce the environmental impact of local and global manufacturing, shipping, emissions during use, and end-use/recycling.
- Consider how to re-adapt the automobile industry in our current economy in order to accommodate an attractive, economic alternative to cars that will ultimately encourage better use of natural resources and foster more sustainable/healthier lifestyles

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# 02: The Energy Way

How can highways generate energy and power transportation?

## Project Location

QEW/Gardiner Expressway Between Toronto and Hamilton

## Project Vision

Create net zero, carbon neutral highway networks by building infrastructure that generates energy which in-turn can be used to power vehicles.

## Project Mission

Re-design the QEW and Gardiner Expressway corridor into a smart, energy generating transportation and service corridor by integrating digital technology, collecting energy from vehicles, and generating renewable energy from infrastructure installations.

## The Challenge

Much of the cumbersome transportation infrastructure that defines so many Canadian cities was built in the 1970s and 1980s, and did not take into consideration city-wide population growth and resulting urban sprawl. Emphasis was placed on highway infrastructure not on mass transit as a means of connecting those neighbouring municipalities to the city, saddling the GTHA with some of the longest commutes in major cities around the world.

Highways will continue to be a crucial part of our transportation system. However as our population continues to grow, and infrastructure ages, we will need to adapt more creative solutions to move people and products by placing an emphasis on technology, the environment and approaches that increase the efficiencies and effectiveness of the transit system overall. The Gardiner Expressway spans 18km, while the QEW from Toronto to Niagara is approximately 140km. This amount of surface area has great potential to not only act as infrastructure for automobiles, but to be used as a collector and generator of energy. Highways of the future should consider how to integrate multiple modes of transportation, move traffic efficiently, integrate information technologies, collect and generate renewable energy and work to further develop the economy through a “smart” and “light” infrastructure approach. Using up such large tracts of land, highways can be redesigned to maximize use of space to absorb various forms of energy, for example kinetic, piezo-electric or solar, and ultimately deliver it back to power automobiles and the city as a whole.

## Objectives

- Create a carbon neutral, net-zero transportation and service corridor with infrastructure that accommodates multiple modes of transportation and facilitates transfer from one mode to another.
- Consider how this corridor can function as an alternative energy generation and distribution system.
- Consider how this system can be accessed by multiple stakeholders, from individual consumers to public transit companies starting from the commuter's home in the suburbs, to refueling stations, to transportation hubs, to the QEW and Gardiner Expressway, to the downtown business district (e.g. solar panels built into the highway infrastructure, linear induction coils in roadways, piezo electric energy collection, electric car stations, etc).



- Address the needs of aging infrastructure through strategic improvements that combine old and new technologies. Consider how “virtual infrastructure” can make movement more convenient and efficient on the Highway 400 series.
- Considering how service design and smart technology (i.e. dedicated bus lanes, using the shoulder lanes for a covered bicycle path, establishing specific trucking times, car pooling incentives), can cut down congestion, trip length and frequency and improve the flow of overall traffic patterns in the region.
- Design a system that puts the commuter first, allowing them to access up to the minute travel information (i.e. traffic updates, construction, bus departures) and choose the fastest and most convenient route to their destination.

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# 03: Reconnect

How can we connect isolated neighbourhoods through more accessible transportation networks?

## Project Location

Kingston Galloway – Scarborough, Ontario

## Project Vision

Improve the overall equality of access to transportation infrastructure and investment in isolated neighbourhoods and ensure access to transportation for all.

## Project Mission

Re-imagine Scarborough village as an integral, connected neighbourhood with appropriate transportation systems.

## The Challenge

Since the 1970s the proportion of low-income neighborhoods in Toronto has changed dramatically from 19% of territory to 53% in 2005 as result of a shrinking middle class. It is essential to ensure transportation infrastructure and investment meets the needs of all residents and ensures equal access to jobs, affordable housing and other amenities. The cost of living in major downtown centers is becoming increasingly expensive. This has driven lower income families away from city centers and into areas that are often less connected to essential transportation services that guarantee full access to all of the amenities, opportunities and services that the city has to offer. According to David Hulchanski's *The Three Cities Within Toronto*, only 19 of the subway systems 68 stations are within or near low- income neighborhoods. The Kingston & Galloway neighborhood is just one of many examples in Toronto. It illustrates the need for strategies that connect neighbourhoods, and their residents to the rest of the city.

## Objectives

- Consider how to connect the Kingston Galloway neighbourhood to the rest of the city and GTHA.
- Consider how to increase mobility, independence, and interaction within the neighbourhood
- Consider how to make transportation to and within Kingston Galloway safe, accessible and affordable for a range of residents who rely on public transit
- Consider how to put the citizen first through choice, reliability and convenience
- Consider how to "Complete the Streets" - everything from walkability to bicycle paths, wayfinding, transportation access points and intersections.
- Take into account the needs of new immigrants, families and youth, commuters, and their need to access essential services such as schools, hospitals, places of work and grocery stores.
- Consider how innovative service design can reduce the need for cars and parking in the automobile privileged post-war suburbs.

# 04: Huburbia

How can we create mobility hub networks that connect edge cities to the core and to each other?

## Project Location

Vaughan, Ontario – Keele and Major MacKenzie and connecting Highway 7 and Jane Street

## Project Vision

Connect edge cities by developing mobility hub networks that offer various modes of transportation and create zones of intensified development for working, living, shopping and play.

## Project Mission

Design a network of connected, scalable mobility hubs that connect regional main streets with local and regional transportation systems. Consider how the model hub would provide the traveller with a holistic experience by bringing together different modes of transportation, integrating services (such as daycare), accommodating retail and business and featuring a universally designed public space.

## The Challenge

As suburbs continue to grow, increased numbers of people need to move and connect to other suburban cities and regions. An increase in commuters affects the percentage of people using transit (transit-modal split), highlights the need to transform the urban structure by creating mobility hubs to effectively connect people through a variety of transportation systems. Restructuring a city that is car-oriented to one that focuses on public transit is not a simple task. One must anticipate transportation uses, population growth, and employment targets. According to Metrolinx, a mobility hub is “a place of connectivity, where different modes of movement, from walking to high speed rail, come together seamlessly... a place in the urban region which there is an attractive, intensive concentration of employment, living, shopping and enjoyment around a transit interchange” (Green Paper#2, 3).

The Vaughan Metropolitan Centre (Highway 7 and Jane St), expected to be in service by 2015 (Vaughan.ca) and is one such planned mobility hub. The challenge is to create a network of hubs, with tailored roles to service its users in distinct ways. The hubs must be well connected and serviced with linkages to all other major hubs. The additional, scalable hubs will provide more local services. Create a series of mobility hubs connecting the Vaughan Metropolitan Centre to its neighboring suburbs.

## Objectives

- Increase connectivity to the rest of the GTHA and neighbouring suburbs like King, Markham, Richmond Hill, and Newmarket.
- Consider how a regional system of scalable central and local mobility hubs can spread out from the proposed Vaughan Corporate Centre to create a complete transportation system. (e.g. suburban neighbourhood clusters plug into larger municipal hubs, which then plug into regional hubs)

- Consider how different modes of transportation can accommodate users significantly reducing dependence on automobiles.
- Create a mobility hub that brings together multiple modes and carriers of transportation.
- Consider how the mobility hub can contribute to intensification and improved quality of life through spaces that accommodate working, living, shopping and playing
- Consider how the Vaughan Corporate Centre mobility hub can be a model for the other hub locations identified by Metrolinx across the GTHA.

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# 05: Altered Grids

How can we create a dynamic web of mobility options for our dense city centres?

## Project Location

Toronto, Ontario – Downtown Core

## Project Vision

Envision the grid as an intense transportation network made up of interconnecting larger and smaller fibers (such as transit-priority routes, pedestrian plazas, separated bike lanes, and service laneways) to facilitate the spectrum of activities taking place within a highly urbanized setting.

## Project Mission

Redesign the street grid as a dynamic web of multi-functional and "flexible" streets (meeting a variety of needs at different times of the day and for different times of the year) in Toronto's central business district.

## The Challenge

The majority of Canadians (80%) live in urban areas. Toronto will need to accommodate more than 3 million NEW people and 1.6 million NEW jobs within 20 years, with the lion's share of growth in the downtown and other mixed-use centres and avenues. The challenge is to design and manage the limited space and infrastructure to enable the complex activities that take place in these centres of commerce and daily life. In downtown areas, streets provide multiple functions – as vibrant places for people living, working, visiting, and traveling to destinations for entertainment, recreation, arts/culture, innovation, economic transactions and services (education, hospitals, community centres). The challenge is to re-evaluate the overall functionality, efficiency and effectiveness of transportation and mobility corridors within the downtown core and design and map a new mobility city grid for the 21st century.

In order to meet our future needs, consider creative ways to accommodate multiple modes of transportation and to optimize the space available by intensifying, extending and connecting the grid to brownfield sites in the downtown core.

## Objectives

- Consider how to re-utilize the existing infrastructure to accommodate multiple modes of transportation within the downtown core.
- Increase the overall efficiency and effectiveness of transportation and mobility corridors within the downtown core by re-evaluating their current use and configuration, management and operations.
- Take a user-centered design approach to ensure accessibility, safety and comfort for a wide range of abilities, ages, sizes and incomes.
- Develop a dynamic, multi-functional and responsive web of mobility options for the densely populated urban core, that is "people-focused" (commuters, residents, business and tourists).
- Consider how to "Complete the Streets" - accommodating all forms of travel; including automobiles, bicycles, pedestrians, personal mobility devices, transit and freight in a safe, attractive and comfortable environment.



# 06: The Mega-Metro

How can we move people and products in the mega regions of the future?

## Project Location

Quebec Ontario - Mega region - Quebec City/Windsor Corridor

## Project Vision

Imagine the movement of goods and people within the large, densely populated regions of the future.

## Project Mission

Analyze and propose a holistic inter-modal shipping and public transportation system for the Quebec/Windsor corridor.

## The Challenge

As major cities and their economies expand, mega regions are emerging, consisting of a number of large city centres that interact as a single entity enabling them to increase their competitiveness in the global market. Richard Florida describes mega regions as "... agglomerations of contiguous cities and their suburbs... ranging in size from five to more than 100 million people and producing hundreds of billions, sometimes trillions of dollars in economic input" (Richard Florida, *Who's Your City*, Pp.42-4). One of the largest mega regions in North America includes Quebec City, Montreal, Ottawa, Toronto, Kitchener/Waterloo, London and Windsor. This mega region is currently linked by the Quebec City/Windsor corridor, which connects to the US and Europe. In 2006, the average economic costs of congestion to commuters within the GTHA were 3.3 billion, while costs to the economy were close to 3.7 billion. Under current trends, these costs have the potential to increase to 7.8 billion per year by 2031 (The Big Move, Metrolinx). In order to maximize the economic competitiveness of this mega region, the overall transportation network needs to be re-evaluated. The challenge is to build an integrated, environmentally-sound system that can efficiently and effectively move people and products through a connected corridor.

The challenge is to imagine:

- Mega regions, and their importance in the future
- Goods/people movement within the Quebec City/Windsor corridor
- The relationship of this region within the global economy

## Objectives

- Consider how to connect the Quebec City/Windsor corridor at a regional, national and global level by improving connection hubs and points of entry (ports, bus & train stations, distribution centres) and integrating modes of transportation (air, ship, rail, road)
- Consider how to make use of multiple routes including the Great Lakes transportation system
- Consider how to reduce carbon footprint and GHG emissions (e.g. by reconfiguring the trucking industry to emphasize modes with less impact such as trains and ships)

- Consider how to make the system more efficient through new technology and tracking systems
- Consider how to improve safety and congestion on routes shared by commercial shipping and individual travelers
- Consider issues such as customs and increasing congestion at border crossings because of growing international trade and security issues
- Consider how this corridor will be used in the future to move people for purposes including business travel, tourism and recreation, and for the shipment of goods to local and global destinations.

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# 07: Low Car<sup>b</sup> Diet

How can we encourage healthy lifestyles through active transportation in the suburbs?

## Project Location

Markham, Ontario – Markham Rd. – North/South connection from Major Mackenzie to Steeles Ave.

## Project Vision

Re-imagine the transportation infrastructure in the suburbs to reduce car dependency while encouraging more active sustainable and healthy transportation alternative for all demographics from ages 8 to 80.

## Project Mission

Adapt the concept of a "Complete Street" to create a "Complete Neighbourhood" that encourages exercise and healthy lifestyles through active transportation.

## The Challenge

Suburban communities were created specifically to cater to the automobile as the primary method of transportation. This was true for many of the municipalities in York Region, which consumed large amounts of agricultural lands over the past 30 years to create low-density residential development to meet demand. Markham is one of these communities. Markham is considered one of the fastest growing cities in Canada and with a population of over 300,000, is the fourth largest municipality in the GTHA. With a mentality change in planning and development shifting from suburban sprawl to the creation of compact communities Markham now faces the challenge of transforming into a complete community that increases density in designated areas while enhancing transportation networks. While the government has been extremely proactive and many plans are currently underway to enhance the transportation systems, economy and quality of life in Markham, there is an excellent opportunity to re-imagine more complete streets in Markham that provide residents with alternative sustainable, active and healthy methods of travel within their community.

## Objectives

- Consider how to foster healthy neighbourhoods and residents in the suburbs through "complete streets" that accommodate multiple forms of transportation and improve quality of life at the street level.
- Design healthier transportation alternatives for people of all ages, reducing stress on the health care system, contributing to a cleaner environment, shortening car trips and taking more cars off congested roads.
- Consider how to make active transportation a natural option for families and youth (e.g. dropping children off at school using bike paths, pedestrian-friendly walkways and public transit).
- Create a public awareness campaign that communicates the overall benefits of active transportation for individuals, the greater community and the health care system

# 08: Booming Around

How can we adapt transportation in the inner-suburbs to fit the needs of an aging population?

## Project Location

Keele and Wilson - Downsview Park

## Project Vision

Provide efficient and accessible transportation networks that respond to an aging demographic.

## Project Mission

Re-imagine transportation systems for the elderly in the inner post-war suburbs of Toronto.

## The Challenge

In the entirety of recorded history, the world has not witnessed such an aged population cohort as that which exists globally today (United Nations Population Division). In the GTHA the population is not only consistently growing, it is aging. The period after World War II (1946-1964) was associated with increased birth rates and people born in this period are often referred to as baby boomers. Making up a large percentage of the overall population in Toronto and many other developed cities, this age group will continue to shift where people aged 65 and older will outnumber youth under the age of 16. According to the most recent census, 14 percent of Toronto's total population is over the age of 65. By 2031, this percentage will increase to an estimated 38 percent of the population (Toronto.ca/seniors). Housing availability and affordability is a concern for seniors in Toronto who struggle with low incomes. According to a Toronto Senior's Forum, availability to affordable and accessible public transit is of high priority (Toronto Senior's Forum Priority). With ongoing transit cuts looming, there are concerns as to how the elderly will move around and meet their everyday needs. The challenge is to re-imagine transport in the inner, car-oriented, post-war suburbs to make universally designed, accessible, affordable transportation services and systems that integrate and connect the original single family neighbourhood.

## Objectives

- Consider the needs of Toronto's population which will be older than those of the surrounding suburbs
- Consider the lifestyle and needs of an aging population including access to amenities, health care, family, and the associated transportation and access issues.
- Propose new living patterns for the aging that promote independence and improve quality of life through transportation and intelligent infrastructure.
- Consider how to serve aging customers through choice, reliability, convenience and appropriate user-centred design solutions
- Design a citywide "universal" system that is safe, reliable, accessible, affordable and convenient, regardless of size, age, mobility or income.
- Consider personal mobility options that do not rely on mass transit, including pedestrian friendly infrastructure and unique individual mobility devices for the aging.
- Consider how existing public transit and services such as wheel trans can be redesigned to better meet the needs of an aging population.



# 09: Greenways & Waterways

How can we use nature's corridors to move through the city?

## Project Location

Toronto Ontario – Toronto Waterfront & Don River Tributary Ravine System

## Project Vision

Working with the natural environment, establish and encourage new ways to move through our cities

## Project Mission

Utilize the ravine system and waterfront to establish connections and transportation routes down the Don River and along Lake Ontario.

## The Challenge

Greenways are often defined as a long, narrow parcel of land that is intended to provide recreational trails for pedestrian and bicycle use, while some also include streetcar, light rail and retail uses. Greenways are often associated with other natural features, running alongside rivers and waterfronts in the more traditional sense (Vancouver.ca). As urbanized areas continue to expand and increase in population, it is essential to maintain greenways and waterways that provide recreational trails, support an active, healthy lifestyle and act as a key feature of the local ecology. Flowing through the heart of Toronto, the Don River is one of Canada's most degraded urban rivers. Its 360-square kilometers of land are over 80 per cent urbanized and home to over 800,000 people (trca.on.ca). The challenge is to re-establish a transportation system that utilizes the natural waterways and greenways and creates joyful movement through the city. Connect the Toronto waterfront and the Don River watershed through transportation routes on water and through valleys, rebuilding the transportation network that existed before the street grid was implemented.

## Objectives

- Consider how a series of ports or docks may connect residents and visitors both on foot and by boat along the waterfront and up through Toronto's unique ravine system.
- On a larger scale, consider how to incorporate a public commuter service that travels by water to link the ports in major cities along lake Ontario.
- Focus on the Don River and its intersection with Lake Ontario to create a port and trail system that connects the waterfront trails with the ravine trails.
- Consider connections to existing roadways, bicycle paths, walking trails, and other amenities (ex. Community centres, tourist attractions etc.) as part of this overall system.
- Using human centered design principles, create a series of universal standards that address access, safety, lighting, and signage in our ravine system to create an exciting user experience for recreational mobility.

# 10: Food Not Crude

How can we create farms in our cities to reduce transport and energy consumption?

## Project Location

Hearn Generating Station – Port Lands - Toronto, Ontario

## Project Vision

Imagine agriculture and farming integrated in the urban fabric, thereby increasing food security within cities and revenue for local farmers while reducing the overall cost and “food miles” associated with the transportation of food products.

## Project Mission

Transform the abandoned Hearn generating station into a high-tech urban farm and establish a sustainable transportation system to distribute the harvests to residents within the city.

## The Challenge

In North America, food items travel an average of 1,500 miles before they arrive on the shelves of our local grocery stores. Global food distribution flourished as low shipping costs and advances in food storage became the norm. But recent spikes in energy prices and concern about the environment and the source of our food, are forcing a re-evaluation of the “true” cost associated with transporting food around the world. A basic diet using global ingredients can consume four times the amount of energy and create four times the amount of greenhouse gas emissions as the same diet using locally sourced products.

The GTA is expected to grow from 5.5 million to 7.45 million inhabitants by 2031, raising a number of concerns with regards to food supply, distribution and security. Taking into consideration this population growth and the loss of farm land to suburban development, there is a pressing need to cultivate solutions that will increase food production and distribution in urban settings.

The challenge is to envision the agricultural system of the future? What does a city farm look like and how would it operate. To what degree does the transportation model need to change in order to support different views of where our food should travel from? How can we reduce the the negative externalities associated with the long distance transport of our food such as greenhouse gas emissions, and impacts on our health and environment?

## Objectives

- Create an urban farming solution, building on the existing infrastructure of the abandoned Hearn generating station and its associated site.
- Address the sustainable transportation requirements from the urban farm to the city with an appropriate distribution and supply system.

- Consider connections to existing roadways, waterways, rail, bicycle paths, walking trails, and other amenities to increase the accessibility of locally produced food for citizens of Toronto.
- Consider the energy, water and waste requirements associated with the urban farm and the generation of food, and propose solutions to minimize the overall environmental impact of the urban farm.
- Develop a strong business model and case for the urban farm.

DRAFT

# What is Move: The Transportation Expo?

The Transportation Expo will engage all citizens passionate about how we move around our cities by:

- Highlighting achievements of the PAST
- Exploring the challenges and best practices of the PRESENT
- Showcasing the solutions needed to create a sustainable FUTURE

The expo will explore how we can build more sustainable transportation and, in the process, create healthier cities and a future that balances the needs of people with nature. The expo's goals and values are as follows:

- To encourage individuals to adopt more sustainable lifestyle choices
- To inspire people to become agents of change, creating momentum so that our governments and the private sector act more boldly in adopting sustainable practices
- To celebrate and showcase leadership from business, government and civil society
- To showcase innovation demonstrating solutions that will help us deal with the environmental challenges of the 21st century
- To explore sustainability through the interrelationships between environmental, economic and social issues

## What is a Charrette?

A charrette is an intensive, collaborative process that brings together professionals, community members, developers and government to develop innovative solutions for complex issues. Over a few short days of brainstorming, discussion and expert consultation, teams create a broad range of ideas around a central problem or theme. Because users and/or experts are consulted during the problem-solving process, the results are practical and meet community objectives comprehensively.

Charrettes originated as a design process used by architects and urban planners to bring together stakeholders who often hold competing interests and agendas, to address how best to manage and design complex projects such as neighbourhood planning and urban development. By working together in a charrette, these groups are able to develop feasible solutions that meet everyone's needs.

The term *charrette* is drawn from the late 1800s, where proctors at the *École Des Beaux-Arts* in Paris would circulate a cart (charrette) to collect drawing submissions, as students rushed frantically to finish their work.

# Project Partners

## Evergreen

[www.evergreen.ca](http://www.evergreen.ca)

Evergreen is a not-for-profit organization that makes cities more livable. By deepening the connection between people and nature, and empowering Canadians to take a hands-on approach to their urban environments, Evergreen is improving the health of our cities—now and for the future. Evergreen Brick Works is a unique environmental community and green cities centre for urban sustainability currently under construction in the heart of Toronto's Don River Valley. Evergreen motivates people to create and sustain healthy, natural outdoor spaces and gives them the practical tools to be successful through its three core programs:

- learning grounds transfers asphalt and barren school grounds into natural outdoor classrooms that meet a broad range of students' social, physical and educational needs
- common grounds engages diverse communities in restoring degraded public open spaces, strengthening community health and improving local environmental quality
- home grounds supports change on the home landscape through ecological landscaping approaches.

With a staff of over 80 professional educators, landscape designers, ecologists and urban planners, Evergreen has emerged as one of Canada's most innovative environmental and social change organizations.

## Institute without Boundaries

[www.worldhouse.ca](http://www.worldhouse.ca)

The Institute without Boundaries (IwB) is a unique academic and research program in the School of Design at George Brown College. IwB seeks to achieve social, ecological and economic innovation through collaborative design work. Founded in 2003, the Institute offers an innovative postgraduate program in interdisciplinary design strategy that emphasizes design thinking and systems design. The Institute without Boundaries is both a school and a design studio. Professionals and students from a wide variety of backgrounds come together to collaborate on projects. The Institute pulls from an extensive group of designers, architects, engineers, educators and experts to form skilled teams that deliver special projects such as charrettes (intensive, collaborative design projects), exhibitions, public programs, innovation in the design of housing and cities. The Institute is also known for its commitment to co-creation, community engagement and democratic design processes.