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DU CANADA

# REDUCING TRANSPORTATION GHG EMISSIONS IN CANADA

A Dialogue on a Lower Carbon Future



REPORT ON THE OTTAWA ROUNDTABLE,  
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**Reducing Transportation GHG Emissions in Canada**  
A Dialogue on a Lower Carbon Future – Ottawa Roundtable



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## **Reducing Transportation GHG Emissions in Canada**

### A Dialogue on a Lower Carbon Future – Ottawa Roundtable

#### ***Background***

Canada's Public Policy Forum has undertaken a project to examine the potential for greenhouse gas (GHG) emissions reductions in Canada's transportation sector, with a focus on road transportation. With the sponsorship of the Canadian Fuels Association, the Forum has launched *Reducing Transportation GHG Emissions in Canada: A Dialogue on a Lower Carbon Future*. This project includes a literature review of the issue and a series of dialogue sessions, each of which examines one element of the highly complex policy environment surrounding GHG emissions.

On September 17<sup>th</sup>, 2013, the Forum convened a roundtable discussion in Ottawa to explore some of the challenges and opportunities related to transportation infrastructure, municipal and land use planning and the ability of policy shifts in these areas to reduce GHG emissions. This session involved leaders and experts from industry, associations, academia, non-governmental organizations and the public sector.

Two experts provided opening remarks. Bruce McCuaig, President and CEO of Metrolinx, shared his expertise on infrastructure and regional transit planning issues. Brent Gilmour, Executive Director of Quality Urban Energy Systems of Tomorrow (QUEST), offered his perspective on how land use planning can contribute to reducing GHGs.

Dialogue around these two related topics allowed participants to explore the links and policy challenges affecting transportation at the municipal and regional levels. There was agreement that proper planning and strategic vision are necessary to create effective, integrated transportation solutions, and that this can have a substantial impact on GHG emissions. Agreement was also found on the need for creative partnerships, including multiple levels of government and private sector leaders, to achieve this.

#### ***Context***

The continued global increase in GHGs is a major policy concern, given the associated environmental, social and economic impacts. The interaction of many factors that affect GHG emissions contributes to a very complex range of issues, which defy simple solutions.

Transportation is a leading contributor to Canadian and global GHGs. At least 25% of Canada's GHG output is related to this sector. While this is comparable with global averages for developed countries, it suggests an opportunity for efforts to achieve reductions. However, transportation is also intrinsic to the Canadian way of life. Canada is a large, cold country. We are also a major trading and exporting nation. Our ability to move people and goods safely and efficiently is essential to our standard of living.

Any efforts to decrease GHGs in the Canadian transportation sector must consider these complex relationships. Focus should be placed on using innovation to achieve the greatest, most economically viable reductions. There is great potential to achieve this end, but it will require collaboration and leadership. New partnerships will be needed, requiring frank and open discussion about the issues. The purpose of this project is to provide a forum for such a dialogue.

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#### ***Public Transport Infrastructure Investment/Expansion***

##### **Presentation**

Bruce McCuaig opened discussions by sharing his insights on the challenges he faces as head of Metrolinx (Greater Toronto and Hamilton Area – GTHA). Coordinating and integrating transportation solutions over 8,000 square kilometers, encompassing 30 municipalities, 10 autonomous transit agencies and four levels of government, is a huge undertaking. With 100,000 new residents in the region each year, growth and congestion are sure to continue. The average commute in the region now stands at 82 minutes, and costs \$6 billion each year in lost time and productivity. One quarter of the region's GHG emissions is congestion-related.

Addressing such challenges requires balancing supply with demand. This means finding a way to increase transportation infrastructure and services, while decreasing demand for personal vehicle use by making public transit more convenient. Metrolinx is pursuing both tracks, including building new infrastructure to fill a gap resulting from a generation of under-investment, as well as managing demand through education programs and ride-sharing services.

The challenge is not limited to the movement of people, but also goods. Congestion particularly affects short range goods shipments within urban centers, leading to economic losses and increasing GHGs. The future movement of goods needs to be taken into account in the integration of different modes of urban transport.

If these issues can be addressed, then GHG reductions in the region may be substantial. The GTHA regional transit strategy, *The Big Move*, puts forward an integrated transportation plan that includes GHG emission reductions as a consideration. If implemented, the strategy could realize 29% emissions reduction, 28% reduction in energy use per person, and a 12% increase in transit use during peak demand periods.

To reach these objectives, full integration and coordination will be needed. Community leadership is essential, coupled with input from all levels of government. Sustained funding and better integration of transportation and urban planning are also critical.

##### **Discussion**

Participants began the discussion by reinforcing the complexity surrounding transportation coordination. The interrelation of urban planning, multi-modal transport, consumer preferences, and multiple levels of governments creates a challenging environment for progress on GHG reductions. However, an inclusive set of solutions is possible, centering on integrated regional and transportation planning, local leadership, cross-government partnerships and cultural shifts among consumers.

Canada's international standing on integrated transportation planning is not as strong as it once was. From the 1950s to 1970s, Canadian cities were often looked to as effective models of transportation and urban planning, but under-investment in infrastructure in the ensuing years has slowed our progress. The need to reassert Canadian leadership in these areas, with progressive actions such as *The Big Move* in the GTHA, was strongly supported.

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Local leadership and strong partnerships across different levels of government are critical to transportation planning. The need to carefully consider the policy options, capabilities and roles of different levels of governments was explored. Participants noted that local leadership can create the community-focused orientation which transportation planning requires. But the provincial and federal governments must remain key partners in the conversation. Municipalities are limited in their funding capabilities, and also lack policy levers, such as certain types of taxation or infrastructure user pricing. A bottom-up approach, with municipal leadership at the forefront, can ensure that transportation plans meet unique regional needs. However, the provincial and federal levels of government must be fully engaged.

Integrated regional transportation planning was noted to have the greatest potential impact on reducing GHGs, as well as on other issues such as traffic congestion. This includes movement of people and goods, and, most importantly, a seamless multi-modal system. Participants stated that transportation in urban and regional systems should not be discussed with the belief that single actions – such as the building of a new element of infrastructure – can provide necessary holistic solutions. A combination of different modes of transport, and providing users with choices, can most easily increase the use of lower GHG-emitting transportation options.

Advancing integrated transportation and urban planning will require effective public engagement. Increased awareness, education and information-sharing about transportation systems can help facilitate greater public transit use, along with other alternatives, such as cycling. Unified information portals and single payment mechanisms, such as the Presto pre-paid transit card recently introduced in Toronto and Ottawa, can help. Communication and education are vital in supporting the cultural shift necessary for switching to lower-emission transport alternatives. Automobiles are culturally ingrained in most of Canada, and changing this mindset will require efforts to demonstrate the value and convenience of other commuting options. Efforts to change the culture, participants noted, may be best concentrated on younger generations. Current trends show lower automobile usage among young Canadians, particularly in urban centres. Exploring this shift, and transforming youth into lifelong transit users, may help generate lasting change.

Changing public behavior goes hand in hand with recognizing the priorities of transit users. Customer service must remain a focal point of planning and public transportation operations. To reduce GHGs through increased public transit, consumers must use the service. This means identifying and meeting their needs. There is a measurable link between the quality of transit service — for example, on-time performance and availability of seats — and the number of people who use it. Most Canadians can choose how they commute, and a compelling case must be made to make public transit an attractive option.

To create effective and efficient integrated systems, new investment is essential. Advocating for increased financial support in transportation systems requires a solid business case. The principal argument, particularly when seeking public support, should be economic. The lost productivity due to congestion, and the increased quality of life that better-integrated transportation can bring, are most likely to draw government support. Emission reductions are important, but are not likely to be the most prominent factor in investment decisions.

The final point of discussion focused on the imperative to integrate transportation and urban planning. The single greatest contribution that can be made to lowering emissions is to reduce commuting distance. Effective integration of urban planning and transportation strategy can

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encourage transit use and reduce consumer reliance on higher-emitting forms of transportation, such as personal vehicles. This topic was also a significant focus of the second part of the roundtable.

#### ***Land Use Planning, Urban Energy Systems & GHG Emissions Reduction***

##### **Presentation**

Brent Gilmour reviewed urban land-use and energy systems factor related to transportation GHGs (the second fastest growing source of emissions in Canada projected to 2020<sup>1</sup>). With approximately 80% of Canadians living in urban areas, looking at transportation in cities is key to reducing GHGs. The three forces that shape cities are transportation, economy and cultural priorities. However, urban planning decisions reflect priorities under these themes at a specific point in time, and do not always include longer term considerations. The infrastructure of many urban areas was established through prior planning decisions, sometimes dating back a century or more. Recognizing the crucial link between land use planning and GHG emissions, it is important to remember that today's decisions will have a profound and lasting impact on transportation systems and emissions for decades.

While Canadians tend to live in urban centres, they are increasingly congregating in the suburban areas of these cities. The suburbs have traditionally required personal automobiles, but as these neighborhoods mature and density increases, shifts are being seen. The case of Mississauga provides an example. The city was originally very spread out and typically required a car to get around. Today, Mississauga is the fifth largest city in Canada, and wants to build a denser downtown core. This will require a reconsideration of local and regional transportation. At present, only 6% of residents are regular transit users. As suburbs mature, higher density development may become more common. Properly preparing for this presents an opportunity to better integrate urban and transportation planning.

The land-use planning component of transportation policy is tied to distance and proximity – the closer destinations are, the less transportation is required. GHG emissions do not typically factor into current discussions, as energy use from different land-use planning models is not yet firmly ingrained in the policy development process. But some progress is being made, particularly by Canada's largest cities where the emissions reduction potential of improved urban land-use planning is most tangible and significant. For example, the QUEST model shows that Ottawa could see a 5-7% increase in transit use, translating to a 3 – 12% decrease in transportation GHGs, through better integrated land-use and transportation planning. There is still much work to be done to achieve the inclusion of GHG reduction potential into policy development, but progress is occurring.

##### **Discussion**

The key discussion points included the need to better integrate transportation and land use planning, with an emphasis on stronger stakeholder engagement to create more effective partnerships. Participants underlined the need for clarification of the roles of different levels of

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<sup>1</sup> Emissions growth rates projected to 2020, *Canada's Emissions Trends*, Environment Canada, 2011.

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government, as well as regulatory challenges, and how best to use the planning tools municipalities have at their disposal.

The need to create new models of partnership was also expressed by participants, particularly in relation to large-scale transit projects. While public-private-partnerships are a well-established and functional model, decision-makers should not limit themselves to this approach. New collaborations between sectors and across different levels of government may be successful, particularly if experimentation is explicitly supported.

Clarification is needed about the role municipalities may play in these new partnerships, particularly when multiple levels of government are involved. As previously noted, bottom-up leadership is preferred, with municipalities being key drivers of transportation and land use planning. However, this should not be seen as an opportunity for provincial and federal governments to download responsibility for emissions reductions onto municipalities. GHG reductions are not currently part of the mandate of municipal governments; but transit and land use planning issues are. With collaboration across governments to link these two policy areas, GHG reductions could be more easily achieved. An effective mechanism may include working with municipalities to undertake and track meaningful reductions through their existing planning processes. Zoning regulations are an essential tool for municipalities in this regard. Zoning adjustments and integration with transportation planning was noted as one of the areas with the greatest potential GHG reductions.

Further to this point, there was discussion of the need to reconsider the roles and responsibilities of governments, specifically pertaining to the issue of emission reductions. Participants discussed the possible need to review the mandates of different levels of government if we, as a country, are to seriously address issues related to climate change.

Collaborations are not limited to governments. Other key agencies, while neither transportation service providers nor land use planning authorities, play an important role in the energy systems of urban centres. For example, utilities, their regulators, and the policy-makers who set mandates, must all be engaged in efforts to adapt land use planning and land-use strategies to help reduce GHGs. At present, there appears to be less than optimal flexibility and oversight, particularly on issues such as rate adjustment and pilot projects.

To close the roundtable, participants discussed pricing transportation infrastructure — i.e., charging users rather than funding infrastructure through general tax bases. While such strategies have been considered in Canada, they have not yet been implemented. In the case of the GTHA, the lack of available transportation alternatives and uncertainty about the ability of pricing to actually modify behavior, were important considerations in the decision to not pursue this avenue.

Public opinion, and the willingness of citizens to pay for infrastructure and carbon emissions, is also critically important in discussing revenue models for new transportation arrangements. Fluctuations in public perception of the importance of GHG levels confounds the ability of policy-makers and political leaders to accurately put in place a long-term strategy to reduce transportation GHGs, particularly when a cost to consumers is involved.

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***Conclusion***

The Ottawa roundtable reinforced some of the broader trends noted during previous discussions in the series. Included within the key points are a need to understand the interconnectedness and complexity of the different policy areas relating to transportation GHGs, and the appetite for creative, collaborative policy to address them. Innovation and experimentation in planning models, partnerships, and governance were encouraged.

Participants emphasized a need for bottom-up leadership, the importance of engaging all stakeholders, and a need for champions to help lead a cultural shift. There was also a renewed call for continued dialogue on this important issue, so that Canadians can share their experiences, successes, and ideas. Cultural change is dependent upon commuters, particularly those who have options to use personal vehicles. Therefore, future emphasis on policies and operations that will foster a generational shift towards public transit use is essential.

To conclude, participants at the Ottawa roundtable expressed optimism about reducing GHGs through more coordinated transportation and land use planning. But they also underscored the requirement to plan for the likely shifts resulting from climate change. Communities across Canada are facing more extreme weather events. GHG reductions must go hand in hand with both the realities of daily commuting and proper planning for the long term.

**Reducing Transportation GHG Emissions in Canada  
A Dialogue on a Lower Carbon Future**

**Ottawa Session: Transportation Infrastructure and Land Use Planning**

**September 17<sup>th</sup>, 12:00 – 4:30**  
**Offices of the Public Policy Forum**  
**130 Albert St., Suite 1405, Ottawa, ON**

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- 12:00 p.m. Session Begins**  
Lunch provided
- 12:10 p.m. Welcoming Remarks**  
*David Mitchell, President & CEO, Canada's Public Policy Forum*
- Overview of the meeting objectives and proceedings
- 12:20 p.m. Contextual Introduction**  
*Jill Baker, Vice President, Canada's Public Policy Forum*
- Project overview noting the complex relationships which affect Canada's transportation GHG emissions profile (fuels, vehicle technology, economy, and consumer behavior) and implications to cost-effective emissions reductions
  - Highlight opportunities for, and challenges of, reducing transportation GHG emission related to infrastructure and municipal planning (reference: *Background Brief*)
- 12:30 p.m. Presentation: Public Transport Infrastructure Investment/Expansion**  
*Bruce McCuaig, President and CEO, Metrolinx*
- 12:40 p.m. Q&A and Moderated Discussion**
- What are the opportunities and practical limitations of public transport for reducing vehicle miles travelled and transportation GHG emissions?
  - What are the most significant challenges relating to transport infrastructure expansion/improvement? How can they be overcome?
  - What will drive consumers to choose public transport over cars?
  - What are the broader policy implications of increased use/reliance on public transport?
- 2:15 p.m. Health Break**
- 2:30 p.m. Presentation: Land Use Planning, Urban Energy Systems & GHG Emissions Reduction**  
*Brent Gilmour, Executive Director, QUEST (Quality Urban Energy Systems of Tomorrow)*
- 2:40 p.m. Q&A and Moderated Discussion**
- How can a more coordinated approach to land use planning and regional and urban infrastructure help reduce overall demand for transportation and GHG emissions?
  - What strategies offer the most promise for achieving an integrated approach to urban transportation systems that effectively and efficiently contribute to lower emissions?
  - What are the respective roles of municipalities, utilities and developers for driving transportation emissions reductions? What levers/tools does each have?
  - How can their efforts and actions be better coordinated?
- 4:15 p.m. Concluding Comments and Thanks**
- 4:30 p.m. Meeting Adjourn**

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## Appendix B: List of Participants

Jill Baker  
Vice President  
Public Policy Forum

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President  
Canadian Fuels Association

Michael Buda  
Director, Policy and Research  
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Director, Transportation Division  
Environment Canada

Ryan Conway  
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Rod Diaz  
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Sustainable Development Technology Canada

Deborah Elson  
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Canadian Renewable Fuels Association

Maxime Génier  
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Executive Director  
QUEST

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Railway Association of Canada

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Canadian Gas Association

Jenny Luu  
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Bill Simpkins  
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Alex Wood  
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