Sustainable Development at Transport Canada

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What Is Sustainable Development?

- Development that meets the needs of the present without compromising the ability of future generations to meet their own needs.”

  (Our Common Future, WCED, 1987)

It is about balancing social, economic and environmental principles in decision-making.
What Does It Mean for Transportation?

SUSTAINABLE TRANSPORTATION

Social
- safety
- security
- health
- mobility/access
- noise
- equity
- availability

Economic
- employment
- trade/tourism
- competitiveness
- affordability
- subsidies
- congestion

Environmental
- air quality
- climate change
- urban sprawl/land use
- water pollution
- spills
Transportation Plays a Major Role in Our Economy

- Transportation is a derived demand – it grows in sync with the economy, as do emissions
- Emissions are rising, particularly for freight
- For most Canadians, the car is key to personal mobility – \textit{ownership ratio: 1 for every 2 Canadians}
- Canadians value safety and performance – fuel economy ranks low in vehicle purchase considerations
The Challenge

• The challenge is to find a way to decouple the growth in population, economic activity and transportation demand, on the one hand, from fuel consumption and emissions growth on the other.
Transportation is a Shared Jurisdiction

- Federal level: - TC
  - Environment Canada
  - Industry Canada
  - Natural Resources Canada
- Provincial and territorial governments
- Local communities/cities
Transportation Trends in Canada

Passenger

- 1990 to 2003: Car passenger travel rose by 24%

- In 2003:
  - car travel accounted for about 74% of passenger activity
  - air travel accounted for approximately 18%
  - intercity bus, rail, and urban transit modes (combined) accounted for less than 10%
Transportation Trends in Canada

Freight

• Nearly 70% of freight was shipped via truck in 2004.

• Overall, freight movement is expected to increase by 60% between 1990 and 2020, with the largest growth in the aviation and trucking sectors.
TC Plays an Important Role in Supporting the Government’s Environmental Agenda

- Climate Change
- Clean Air
- Clean Water
- Contaminated Sites
- Environmental Assessment
Climate Change

- **Cars & Light Trucks** Contribute 12.6% of Canadian GHGs

- **Stationary Combustion** (i.e. Electricity and Heat Generation, Fossil Fuel Industry, Manufacturing and Residential/Commercial) 47.2%

- **Fugitive (Solid Fuels, Oil & Gas)** 8.7%

- **Pipelines** 1.1%

- **Heavy Duty Vehicles** 6.4%

- **Rail/ Air/ Marine (Domestic), Motorcycles & Off Road Vehicles** 5.8%

- **Agriculture** 7.2%

- **Industrial Processes** 7.1%

- **Other (i.e. Solvent, Waste)** 3.9%
Air Pollution Emissions from Transportation
Reducing Air Emissions

Regulatory Agenda

- In October 2006, government introduced a Notice of Intent to regulate major sectors of economy, including transportation.

- Notably, the government signalled its intent to regulate the auto industry by building on the existing MOU with auto industry, and will regulate fuel efficiency, beginning with the 2011 model year.

- Government also announced its intent to regulate rail, marine, and aviation sectors.
GHGs and Motor Vehicles

• **Air Emissions**
  Cars typically emit up to 90% less pollution than their 1971 counterparts - *97% less hydrocarbons, 95% less CO and 83% less NOx*

• **GHGs**
  However, the GHG story is different, as cars account for almost half of transportation GHG emissions and 12% of total Canadian emissions - *More people are driving more cars*

• **Actions**
  • Respect MOU – until 2010
  • Regulation after expiry of MOU – Regulatory standard will be benchmarked against stringent, dominant North-American standard
  • Memorandum of Cooperation with the U.S.
• **Air Emissions**
  Heavy trucks accounted for approximately 9% of transportation SOx and 24% of transportation NOx in 2005.

• **GHGs**
  • Trucks accounted for 34% of transportation GHGs in 2004.
  • GHG emissions are on the rise due to expansion of the economy and intra- and international trade.

• **Actions**
  • More stringent standards for smog-forming emissions in place since 2004, resulting in 95% less NOx
  • The Sulphur in Diesel Fuel Regulations – reduction of the sulphur level in Canadian on-road diesel fuel
  • GHGs are challenging – actions needed to address regulatory, technological and financial barriers to more fuel-efficient truck configurations
TC/TDC Is Working with Industry

• Testing of fuel-saving technologies at our Blainville test tracks
TC Initiatives

- ecoTRANSPORT Strategy
- Moving on Sustainable Transportation Program
- Urban Transportation Showcase Program
- Sustainable Development Strategy (SDS)
- TC Central R&D Program
TC ecoTRANSPORT Strategy

• ecoMOBILITY: $10M over 4 yrs
  Urban passenger modal shift, TDM; for municipalities

• ecoFREIGHT: $61M over 4 years
  Proven emission-reducing technologies for freight fleets

• ecoTECHNOLOGY for Vehicles: $15M – 4 yrs
  Buy, test and showcase Adv. Technology. Vehicles

• ecoAUTO: $160M over 2 years
  Rebate for new energy efficient car purchase
Other TC initiatives

• Moving on Sustainable Transportation
  – Support to community and non-profit for education and tools for sustainability

• Urban Transportation Showcase Program
  – Support to 8 demonstration projects with municipalities
Sustainable Development Strategy (SDS)

• Fourth SDS tabled December 2006
• SDS focused on areas where the department can make significant contributions
  • 21 commitments
  • Focused on urban, freight and marine
• $1M/year for 3 years to support innovative sustainable transportation projects submitted by TC staff (AVPRNet)
TC Central R&D Program ($4M/year recurring)

- Managed by Transportation, Technology and Innovation Directorate within Policy Group
- Funds R&D projects supporting departmental vision (safe, secure, efficient and environmentally responsible transportation) in the following priority areas:
  - Gateways and Corridors
  - Northern Transportation
  - Environmental Responsible Transportation
  - Accessibility
Environmentally Responsible Transportation

- Work in partnership with OGD, OLG, industry and academia
- Leverage funds from various R&D programs (PERD/ecoETI, TC SDS)
- Current projects
  - Unicell Electric Parcel Delivery Truck
  - PHEV Vehicle and Component Development
  - AVPRNet
  - Light materials for transportation
Unicell Electric Parcel Delivery Truck

Targets:
- Lightweight
- Efficient electric drive
- System optimized for parcel delivery operation
Advanced Vehicle Powertrain Research Network

- Regroup capacity and interest
- Solidify and synergize modelling & optimization of advanced powertrain components and systems (HEV, PHEV, fuel cell hybrids…)
- Improve Canadian industry competitiveness
- Based on academia serving industry needs
- Simulation seminar and survey at PHEV2007 Conference
AVPRNet

• 2½ year program
• McGill feasibility study ends March 08
• Modelling projects by McGill & Manitoba U.
  – Unicell truck
  – PHEV Prius

Argonne National Lab.
Moving Forward

- Hybrids, PHEVs, EVs are promising technologies to advance sustainable transportation
- TC has been actively involved for more than a decade in electric mobility initiatives
  - Worked with CEVEQ on several projects
  - EMC Associate member
- TC will continue to support initiatives in this R&D area
- Lightweight vehicles will also play an important role in improving the environmental footprint of transportation
Thank you!