

**REPORT TO THE PLANNING AND TRANSPORTATION COMMITTEE  
MEETING OF WEDNESDAY, OCTOBER 28, 2009**

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**SUBJECT**

*Visioning and Backcasting for Transport in Victoria* (VIBAT VICTORIA) Pilot Study – Final Report

**PURPOSE**

To transmit a transportation report, entitled *Visioning and Backcasting for Transport in Victoria* (VIBATVICTORIA). The VIBAT study (Attachment A) was a pilot project for the Capital Region, prepared by Halcrow Consulting Inc. for Transport Canada. The study utilized a number of data sources from the Capital Regional District including the Community Energy Plan GHG inventory, the regional transportation model and the TravelChoices Strategy to examine opportunities for reducing greenhouse gas (GHG) emissions associated with the transportation sector.

**BACKGROUND**

The VIBAT study utilizes a scenario-based modelling approach to help decision makers and planners better understand the scale of change required to meet senior government GHG reduction targets. The program is funded through Transport Canada's *Sustainable Development Strategy*, a Federal Government program to implement projects that enhance the decision making capacity for governments and the transportation sector.

The pilot study consisted of using a Canadian urban region to test *Visioning and Backcasting for Transport* (VIBAT), an approach that has been successfully applied in London England to assess the impacts of Greenhouse Gas (GHG) reduction policies such as support for fuel efficient and hybrid passenger vehicles, increased fuel and parking prices, sustainable development practices and promotion of cycling, walking and public transit.

The Capital Region provided an interesting test case for this type of study because of the high percentage of GHG emissions associated with transportation (67%); highlighting the importance of transportation related reduction measures and policies for meeting targets set by all levels of Government.

The VIBAT study uses a "backcasting" methodology. 'Backcasting' is a type of analysis where a desired future outcome is envisioned based on the attainment of specific targets and goals. Once this desired end state is known, it then "casts back" to the present and develops a number of scenarios and policy approaches to move from present state to the desired future state. This differs from the more common forecasting approaches which starts with present conditions and

then projects current trends through a series of "what-if" scenarios (an approach that was used to develop the 2003 Regional Growth Strategy).

The VIBAT study began with a baseline transport CO<sub>2</sub> emission level for 2006 and a target level for 2020 which reflected the provincial GHG reduction target. It then produced an inventory of possible transportation and planning-related interventions designed to meet the future emissions target. The possible interventions are then modelled and evaluated to assess their impact and effectiveness. The end result is a high-level transport-carbon policy calculator for the Capital Region.

## **TRANSPORTATION & GHG IMPLICATIONS**

The VIBAT study analyzed and modelled the GHG reduction effects of seven different transportation and planning "policy packages" - or approaches considered appropriate for addressing GHG emission reductions. They examine three different implementation intensity options: low (modest changes), medium and high (requiring significant level of effort and/or investment) and examined the extent to which each would contribute to the established federal and provincial GHG reduction targets by 2020. While the report authors recognize that all policy approaches will likely be required; the study provides information on order-of-magnitude impacts associated with each approach.

The study findings are summarized below: *(Unless otherwise noted, the results reflect the "medium level" of implementation intensity).*

1. **Low emission vehicles** and alternative fuels: this approach could realize a 10% GHG emission reduction. Vehicular fuel efficiency would have to change from current average of 9.8 litres/100 km to 8.3 litres/100 km (or 28.8 miles/gallon to 34.3 miles/gallon).
2. **Pricing mechanisms:** a combination of higher carbon taxes and parking fees could reduce GHG emissions by 4.1% by 2020.
3. **Transit:** an increased investment in the transit fleet; improved network investments and marketing initiatives would result in a 2.5% reduction in GHG emissions by 2020.
4. **Walking and cycling:** Additional investments in cycling and walking infrastructure, improved public realm and a bike hire program would reduce GHG emissions by 1.8% by 2020. The study suggested that a "Netherlands style" cycling network with extensive facilities and expanded network would contribute to a 3.6 % reduction in GHG emissions by 2020
5. **Urban Planning:** A "medium" level of intensification around the Core and designated centres, as envisioned in the 2003 RGS, would result in a 2.1% decrease in GHG emissions by 2020. A higher level of intensification around centres and transit-oriented corridors, combined with reduced development in peripheral areas, would result in a 4.1% reduction in GHG emissions.
6. **Transportation Demand Management (TDM):** Use of travel behavior programs, ride-sharing programs, home shopping and marketing campaigns would contribute to a 2.5% reduction in GHG emissions for a "medium level" of investment. This would increase to

4.1% GHG reduction if a "high level" of investment is made for a more ambitious TDM program.

7. **Ecological Driving:** research has shown that drivers could save between 5-10% of fuel consumption and associated GHG emissions by adopting more fuel efficient driving styles (avoiding excessive acceleration and harsh braking, keeping tire inflated, avoiding unnecessary idling, etc.).

The combined impact of the seven policy packages, implemented at a "medium" level of intensity, results in a 27.9% reduction in GHG emissions within the CRD by 2020. This means the CRD could realize over 91% of the federal GHG reduction target (20% by 2020) and achieve 66.7% of the provincial target (33% by 2020). The comparative values for each policy package by implementation intensity level is shown on page 33 of the VIBAT report.

### **FINANCIAL IMPLICATIONS**

There has been no cost or demands on Regional Planning's budget for participation in the initial stages of this project.

### **SUMMARY**

Participation in the VIBAT project has provided the CRD with the opportunity to learn about an approach to assess GHG reduction policies for the transportation sector.

The findings of this study reinforce the importance of the improving both travel options and energy-efficient land use patterns in order to meet the provincial GHG emission targets. The CRD has many of the requisite building blocks in place - including the Regional Growth Strategy, the TravelChoices Strategy, the Community Energy Plan, the regional transportation model -as well as some in development - the Regional TDM Strategy, the Pedestrian and Cycling Master plan and the E&N Rail Trail project. As the report authors point out, the challenge for the region will be developing the right mix of initiatives, the appropriate level of implementation intensity, and the ongoing support of the public in order to meet the ambitious targets established by the Federal and Provincial governments.

Additional information on the VIBAT project is available on-line at: <http://www.vibat.org/>

**RECOMMENDATION**

That the *Visioning and Backcasting for Transport in Victoria* (VIBATVictoria) pilot study and associated staff report be received for information.

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Malcolm MacPhail, MCIP  
Senior Transportation Planner  
Regional Planning

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Tracy Corbett, MCIP  
Senior Manager  
Regional Planning

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Robert Lapham, MCIP  
General Manager  
Planning and Protective Services

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Kelly Daniels, Chief Administrative Officer

**COMMENTS:**