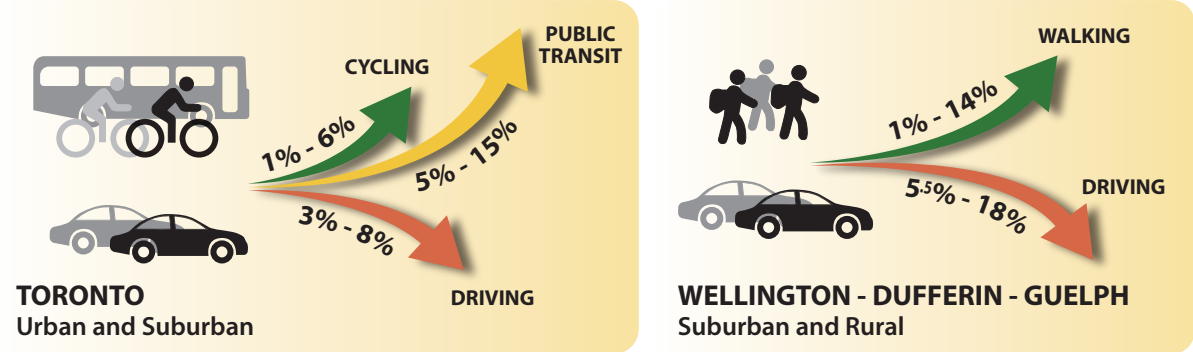




The Benefit Cost Ratio of School Travel Planning

Three sources of data are used –

1. **Change in Travel Modes** derived from classroom travel surveys at 13 urban, suburban and rural schools in Ontario.



2. Benefit of Travel Mode Shift

Benefit Value

79¢ per vehicle kilometre travelled (VKT) reduced

51¢ per additional kilometre walked

Environment health - reduction in green house gas (GHG) emissions, and criteria air contaminants (CAC)

The calculation includes benefits of –

Reduced roadway and parking costs, congestion and chauffeur time



3. Cost of STP (Year 1 Planning and Implementation)

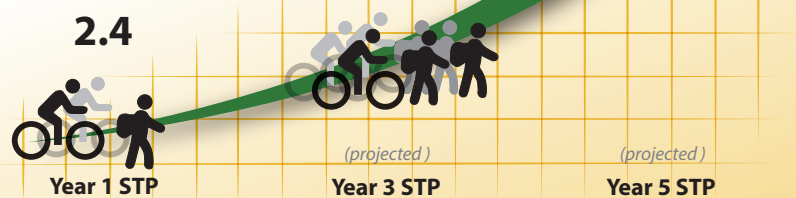
People - average hourly rates and in-kind

Materials - meeting facilities and catering; documents; incentives and promotional items; school zone infrastructure; facilitator travel

Results – For all 13 schools

TOTAL PRESENT VALUE BENEFITS	\$186,369
TOTAL COSTS	\$76,950
=	

Benefit Cost Ratio



The results show STP is a cost effective intervention that contributes to significant school travel behaviour change, and provides substantial economic, health and environmental benefits.

Link to full study:
www.saferoutestoschool.ca/galleries/research-and-results#

Benefit Cost Analysis (BCA) in Canada for School Travel Planning (STP)

The first BCA was performed collaboratively with Green Communities Canada, Metrolinx and the University of Toronto, showing STP to be ‘a relatively cost-effective intervention’ (ratio= 1.8) among 19 projects in Ontario (Metrolinx et al., 2014). This infographic details the results from STP work between 2014-16, and demonstrate that the STP program is a cost-effective intervention.

When effectively coordinated and implemented STP can result in positive school travel behaviour change, and ultimately provide substantial economic, environmental and physical activity benefits.

Green Communities work in Ontario shows that the STP model performs well in a variety of community settings – inner city, inner and outer suburbs, and rural. When travel mode data was combined with the actual costs of delivering STP the results were very encouraging: a benefit cost ratio of 2.4 after one year of implementation.

Calculating the Benefit Cost Ratio

As an indicator of cost effectiveness, the BCA is summarized as a ratio representing the amount of benefits returned for each dollar invested. The ratio is calculated by dividing present value benefits (car reduction benefits + walking benefits + cycling benefits) by present value costs (cost of people + cost of material). The benefit cost ratio is calculated for the collective 13 STP project sample and for each community (n=2). Based on the 1-year results, further ratios are then projected for a hypothetical 3-and 5-year STP implementation period. In terms of benefits, the value is cumulative for a 3- and 5- year STP project given the annual benefits. That is, the benefits are assumed to continue in a steady state annually when the following remain the same: i) percent mode shift in school travel behaviour ii) student population (i.e. the number of students annually leaving the school is replaced by an equal number of incoming students). The approach used in this time frame is conservative because it does not account for any further decreases in car travel, and increases in walking and cycling due to sustained implementation of STP and other associated STP initiatives.

STP Tools for Collecting and Analyzing Data

There is a **Benefit Cost Analysis Individual School** Excel tool and a **Benefit Cost Analyses Multiple School** Excel tool now available for use across Canada. Three sets of data are entered and generated:

1. travel mode share at baseline and follow-up.
2. benefits from increased walking, increased cycling and less driving.
3. cost of people and materials.

The benefits are automatically generated and a Configuration tab gives suggested monetary values to enter costs for each school. Generate a Benefit Cost Ratio for one school or up to 20 schools.

These tools effectively utilize the **Classroom Travel Survey** tool to collect travel mode data and are part of a comprehensive and customizable School Travel Planning Toolkit. The STP process and use of tools are designed to help deal with travel-related issues at schools and encourage safe, healthy, active travel. To review tools and their use you may read the Canadian School Travel Planning Facilitator Guide found at:

www.saferoutestoschool.ca/school-travel-planning-toolkit.