In 2016, the Tracking Progress study estimated seven indicators through the household-level Nova Scotia Travel Activity (NovaTRAC) survey and emission modelling. The NovaTRAC 2016 survey was conducted between July and December. The survey required respondents to provide their household travel information for a 24-hour period. The survey responses were geocoded to determine the travel patterns, and were also used to develop energy use and emission estimates for the Province. A transport network model was developed for the Halifax Regional Municipality (HRM). Emission factors were used to estimate fuel consumption, greenhouse gas (GHG) emissions and criteria pollutants from the passenger transport sector.

The indicators are listed below:

<table>
<thead>
<tr>
<th>Focus Area</th>
<th>Indicators</th>
<th>Data source</th>
<th>Baseline</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Travel Choices and Behaviour</strong></td>
<td>1. Modal share of work trips (%)</td>
<td>NovaTRAC 2016</td>
<td>NovaTRAC 2015</td>
</tr>
<tr>
<td></td>
<td>2. Modal share for non-work trips (i.e. shopping, recreation and entertainment, etc.)</td>
<td>NovaTRAC 2016</td>
<td>NovaTRAC 2015</td>
</tr>
<tr>
<td></td>
<td>3. Total distance traveled per person by trip purposes (in km)</td>
<td>NovaTRAC 2016</td>
<td>NovaTRAC 2015</td>
</tr>
<tr>
<td></td>
<td>4. Average daily travel time per person (in minutes)</td>
<td>NovaTRAC 2016</td>
<td>NovaTRAC 2015</td>
</tr>
<tr>
<td><strong>Energy Use and Emissions</strong></td>
<td>5. Fuel consumption for passenger transport per capita</td>
<td>Multi-source, Estimation</td>
<td>2015 Emission Study</td>
</tr>
<tr>
<td></td>
<td>6. GHG emissions per capita and total amount</td>
<td>Multi-source, Estimation</td>
<td>2015 Emission Study</td>
</tr>
<tr>
<td></td>
<td>7. Amount of criteria pollutants from passenger transport</td>
<td>Multi-source, Estimation</td>
<td>2015 Emission Study</td>
</tr>
</tbody>
</table>
Travel Choices and Behaviour

1 Modal Share of Work Trips (%)

*Data source: NovaTRAC 2015 and 2016 (Statistics Canada 2011 census data for comparison)
Modal Share for Non-Work Trips (%)

**Auto: Driver**
- **2016**
  - 65%

**Auto: Passenger**
- **2016**
  - 6%

**Public Transit**
- **2016**
  - 9%

**Walk**
- **2016**
  - 14%

**Bicycle**
- **2016**
  - 5%

% Difference 2015-2016
- **Auto: Driver** 2%
- **Auto: Passenger** 1%
- **Public Transit** 0%
- **Walk** 1%
- **Bicycle** 2%
Average Distance Travelled Per Person for Non-Work Trips (Km)

28 Km Vehicle Kilometers Traveled (VKT)

8.1 Km Traveled by Transit and Active Transportation (AT)

Average Daily Travel Time for Auto Drivers (minutes)

2010: 51 minutes
2015: 61 minutes
2016: 56 minutes

*Data source: NovaTRAC 2015 and 2016 (General Social Survey (GSS) 2010 data for comparison)
Energy Use and Emissions

Fuel Consumption for Passenger Transport per Capita and Total Amount

2015
- 1203 L per capita
- 1109.25 millions of L

2016
- 1204 L per capita
- 1198.34 millions of L

GHG Emissions for Passenger Transport per Capita and Total Amount

2015
- 2.987 tonnes per capita
- 2.75 million tonnes

2016
- 3.012 tonnes per capita
- 2.99 million tonnes
Amount of Criteria Pollutants from Passenger Transport

- **CO**
  - Total Emissions (Tonne): 2015: 70,183, 2016: 73,358
  - Per Capita (Kg): 2015: 76.14, 2016: 73.69

- **NOx**
  - Total Emissions (Tonne): 2015: 8,017, 2016: 8,378
  - Per Capita (Kg): 2015: 8.70, 2016: 8.42

- **VOC**
  - Total Emissions (Tonne): 2015: 8,017, 2016: 8,378
  - Per Capita (Kg): 2015: 8.21, 2016: 7.64

- **THC**
  - Per Capita (Kg): 2015: 8.70, 2016: 8.42

- **PM2.5**
  - Per Capita (Kg): 2015: 6.00, 2016: 7.07

- **PM10**
  - Total Emissions (Tonne): 2015: 34, 2016: 64
  - Per Capita (Kg): 2015: 0.04, 2016: 0.06

- **PM0.1**
  - Per Capita (Kg): 2015: 0.03, 2016: 0.03
Significance

The Tracking Progress report characterizes the trends in travel choices and behaviour obtained from the Nova Scotia Travel Activity (NovaTRAC) 2015 and 2016 survey, and identifies estimates of energy use and emissions for the Province. The finer grain data provides increased confidence in the estimation results, presenting valuable insights for decision makers to consider when planning how to move forward towards a more sustainable transportation system for the Province.

Conclusion

Overall, Nova Scotians predominantly remain auto dependant for work and non-work trips. Fuel consumption and greenhouse gas (GHG) emissions increased slightly, as well as most criteria pollutants. However, there is a positive trend and an increase in people using active transportation modes (i.e. walk and bike) for trips. Further growth in the use of transit and active transportation (AT) would be achieved by investing transit and AT infrastructure, to allow communities across Nova Scotia offer diversified travel choices, and reduce fuel consumption and emissions.

Recommendations

The travel activity and emission estimates generated through this study provide the trends and newer baselines for key sustainability indicators for the Province of Nova Scotia. It is recommended that the NovaTRAC survey be conducted bi-annually starting in 2018. The survey will help with the continuation of tracking progress, and monitoring of sustainable transportation indicators. Additionally, the HRM transport model can be improved and used for policy scenario testing, including carbon pricing scenarios and identifying it’s impact on travellers. Finally, we would need to develop a simulation-based emission model for better and consistent estimation of GHG emission, criteria pollutants and fuel consumption. Particularly, we are interested to expand the model by utilizing the Motor Vehicle Emission Simulator (MOVES) platform sponsored by the US EPA.

For additional information on the content of this summary, contact daltrac@dal.ca or check DalTRAC research website at http://www.dal.ca/sites/daltrac.html.