

# Backgrounder – Vehicle Kilometer Traveled (VKT) measurement and estimation in BC

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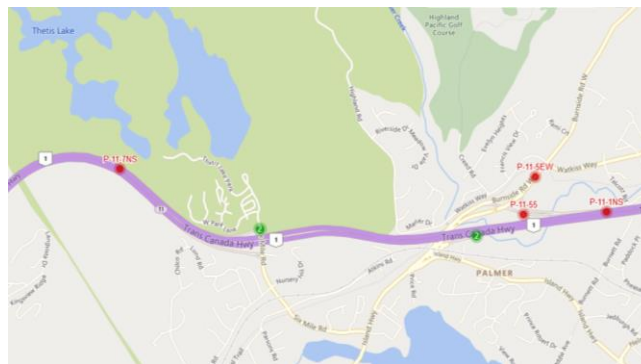
In October 2021 the government of BC adopted the CleanBC target to reduce “distances travelled in light-duty vehicles by 25% by 2030, compared to 2020.” This is the most ambitious target for reducing vehicle kilometers travelled (VKT) in Canada, and is only achievable with significant changes in provincial transportation policy and collaboration from municipalities and regional districts.<sup>1</sup>

The provincial government is now working on a new Clean Transportation Action Plan (CTAP), which includes a strong focus on meeting the 25% by 2030 VKT reduction target.

In recent meetings with staff and elected officials at multiple levels of government, however, BC Climate Emergency Campaign members have heard claims of uncertainty on how to measure or estimate VKT. This uncertainty is delaying action on meeting this target.

Meanwhile, jurisdictions including Washington State and California have longer standing traffic reduction targets and largely rely on traffic counts. *There is no justification for delay.*

**Figure 1: Map showing four permanent count stations in Greater Victoria**



**Traffic counts are essential and provide adequate data for many purposes:**

A common, and very valuable, way to track VKT is traffic counts using permanent and temporarily installed automatic traffic recorders. The BC Ministry of Transportation and

<sup>1</sup> Road space reallocation by municipalities is a key action for reducing VKT. See: Eric Doherty (2022) “Traffic Evaporation: Why planners need to understand climate impacts of reallocating road space” Plan Canada, Vo.62(3) pp 16-19. <https://ecoplanning.ca/wp-content/uploads/2023/11/Traffic-Evaporation-Plan-Canada-Fall-2022.pdf>

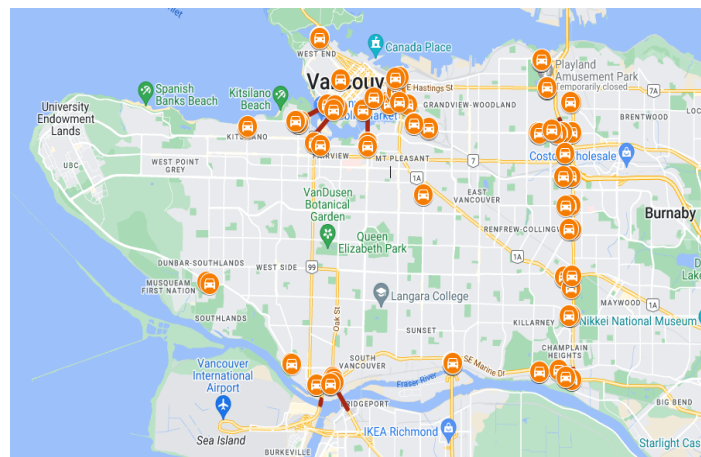
Infrastructure monitors traffic volumes continuously at 120 permanent count stations, and every three years at over 500 other locations.

**Figure 1** above shows four permanent count stations in Greater Victoria, marked by red dots, where traffic volumes are monitored continuously.<sup>2</sup> Continuous traffic count stations can use several different technologies, including inductive loops in the pavement and video cameras with software to count vehicles.<sup>3</sup>

The value of continuous traffic counts includes the fact that they can provide timely information on the impacts of interventions to reduce VKT, such as reallocating existing road space to bus lanes or protected bike and roll lanes.

Traffic counts provide municipalities with information about what they can influence most directly – travel on their municipal road network. **Figure 2** below shows the City of Vancouver’s network of permanent traffic count stations.

**Figure 2: Vancouver’s network of permanent traffic count stations.**<sup>4</sup>



Establishing reasonably accurate 2020 baseline traffic counts for most municipalities and regional districts should not be expensive or challenging. A high degree of precision is not required given that the target is to cut VKT by ¼ in only a decade (with less than that remaining) – the trend needs to be a rapid and dramatic reduction in traffic volumes, not subtle and difficult to detect changes.

Experts can use traffic counts to estimate increases or decreases in VKT, with greater or lesser precision depending on the number and placement of stations. Continuous traffic counts are

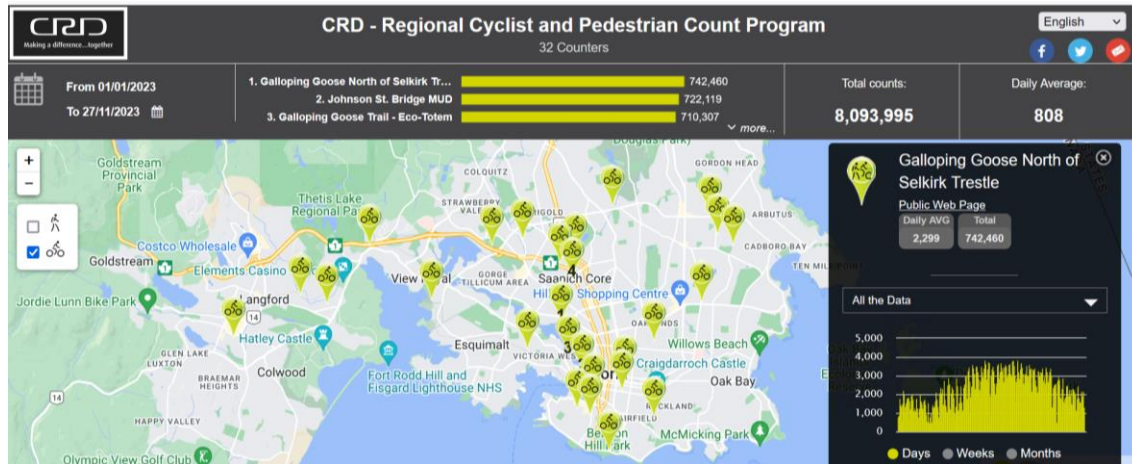
<sup>2</sup> <https://www.th.gov.bc.ca/trafficData/index.html>; <https://prdoas6.pub-apps.th.gov.bc.ca/tsg/>

<sup>3</sup> E.g. [https://www150.statcan.gc.ca/n1/en/pub/18-001-x/18-001-x2022001-eng.pdf?st=OHOMeN\\_W](https://www150.statcan.gc.ca/n1/en/pub/18-001-x/18-001-x2022001-eng.pdf?st=OHOMeN_W); <https://www.vizion.com/vehicle-count.html>

<sup>4</sup> <https://vancouver.ca/streets-transportation/traffic-count-data.aspx#permanent-count-stations>

relatively inexpensive, as illustrated by the fact that Capital Regional District (Greater Victoria) already has a good network of continuous bicycle traffic count stations, shown in **Figure 3** below.

**Figure 3: Permanent bicycle traffic count stations in Greater Victoria<sup>5</sup>**



Permanent stations that collect data 24/7 provide more valuable data than periodic counts only done for a few days every two or three years. However, it is normal that the baseline uses whatever traffic counts are available.

Percentage targets are easier to work with than numerical targets. That is, it isn't necessary to know the precise VKT in a municipality to determine that VKT is down by (for example) 9% plus or minus 0.8% (between 8.2 and 9.8%).

## Recommendations:

The provincial government, regional districts, and municipalities should<sup>6</sup>

- 1) Establish and publish year 2020 traffic count baselines using the best available data.
- 2) Publish reports of the change from the baseline and if the jurisdiction is on-track to meet or exceed the 2030 target at least annually, using the available traffic counts.
- 3) Quickly increase the number of continuous, permanent, traffic count stations to allow more accurate and more frequent reporting. This would be cost effective and simple.

<sup>5</sup> <https://data.eco-counter.com/ParcPublic/?id=4828>

<sup>6</sup> Either TransLink or the Metro Vancouver Regional District could take on the regional role in Metro Vancouver.

## Additional layers of data and analysis:

As discussed above, traffic counts are essential and sufficient for many purposes (particularly at the municipal and regional district level). However, additional layers of data and analysis should be added. These should include:

- **ICBC odometer data:** Since 2010 the Union of BC Municipalities has repeatedly requested that the Insurance Corporation of British Columbia collect and provide odometer data annually.<sup>7</sup> The Minister of Public Safety and Solicitor General, who is responsible for ICBC, should ensure that this is done without delay.
- **Information on commercial truck movements:** More sophisticated traffic count stations can gather some information on the types of vehicles, including the weights of heavy trucks. Other data sources, such as port facilities, are publicly owned. Given the significant proportion of GHG emissions that come from goods movement, more data and analysis would be valuable.<sup>8</sup>
- **Analysis using traffic modeling software:** Traffic modeling software (which uses traffic counts as an input) can provide valuable insights into traffic volumes and VKT. Consideration should be given to using new or existing modeling software. Note, however, that most of the software commonly used in North America is not suitable for predicting *traffic evaporation*.<sup>9</sup>
- **Periodic surveys:** The Capital Regional District does an Origin Destination Household Travel Survey every five years.<sup>10</sup> These kinds of surveys should be done more frequently, as they can provide analysts with valuable insights into changing travel patterns for specific demographic groups.
- **Analysis and education on Traffic Evaporation:** When any jurisdiction takes action to reduce VKT, such as converting general purpose lanes to 24/7 bus lanes to induce traffic evaporation, reports should be promptly published on the results of the intervention.<sup>11</sup> Similarly, analysis and education on other traffic demand management interventions would be very valuable.<sup>12</sup> BC Transit and TransLink should be involved in this work.
- **Fuel sales data:** In addition to VKT data, motor fuel sales data would provide important information that is directly linked to GHG and local pollution levels. Providing this data should be a requirement of selling motor fuel anywhere in the province, and the provincial government should publish this information monthly.

Thank you to everyone who took the time to contribute to this document. If you have questions or comments, please contact Eric Doherty – eric[at]ecoplanning.ca.

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<sup>7</sup> EB42 ICBC Data Saanich - <https://www.ubcm.ca/sites/default/files/2023-08/2023-UBCM-Resolutions-Book.pdf>

<sup>8</sup> <https://business.edf.org/wp-content/blogs.dir/90/files/Decarbonizing-Long-Haul-Freight.pdf>

<sup>9</sup> E.g. <https://t4america.org/2023/06/29/the-traffic-forecast-used-to-justify-your-road-widening-is-bogus/>

<sup>10</sup> <https://www.crd.bc.ca/project/regional-transportation/origin-destination-household-travel-survey>

<sup>11</sup> See e.g. Eric Doherty (2022) "Traffic Evaporation: Why planners need to understand climate impacts of reallocating road space" Plan Canada, Vo.62(3) pp 16-19. <https://ecoplanning.ca/wp-content/uploads/2023/11/Traffic-Evaporation-Plan-Canada-Fall-2022.pdf>

<sup>12</sup> See e.g. <https://www.vtqi.org/tdm/index.php>