



ACTIVE TRANSPORTATION GHG EMISSION CALCULATOR TOOL

Applicant Handbook



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BACKGROUND

The [Active Transportation GHG Emission Calculator Tool](#) (the “Tool”) was developed to help estimate the impacts of active transportation infrastructure projects in British Columbia. Its primary purpose is to estimate greenhouse gas (GHG) emission reductions by quantifying reduced vehicle kilometres travelled (VKT) resulting from mode shifts enabled by walking and cycling infrastructure. The Tool is intended to support planning and project evaluation by providing a clear and transparent way to describe potential climate benefits.

The Tool is designed as a decision-support resource, not a detailed transportation or emissions model. It provides high-level estimates that allow users to understand potential outcomes, compare projects, and communicate impacts in a structured manner. In addition to GHG emissions, the Tool also considers quantitative economic impacts and qualitative factors related to public health and social benefits. Select health and social benefits may be assessed quantitatively – if desired – using other methods, including those contemplated as part of British Columbia’s Ministry of Energy and Climate Solutions’ [Guide for Assessing the Co-Benefits of Community-Based Climate Actions](#).

Developed specifically for the British Columbia context, the Tool is delivered as an easy-to-use Excel spreadsheet that can be applied to projects of different sizes and community settings. It includes both a one-year snapshot and a longer-term lifecycle perspective, allowing users to explore how impacts may accumulate over time. This User Manual explains how to use the Tool correctly and consistently.

The Province has project-specific resources to help local governments achieve carbon neutrality and estimate the energy and GHG impact of community projects, including low/zero-emissions vehicle adoption and energy efficiency building retrofits and fuel switching. This Tool and guidance represent the 7th [project profile](#) type created.

WHEN AND HOW THE TOOL IS USED

The [Active Transportation GHG Calculator](#) can be applied at different stages of a project’s lifecycle, depending on data availability and evaluation objectives. The Tool supports both planning and post-implementation evaluations, each of which relies on different types of input data.

Pre-Implementation Evaluation

The **pre-implementation** (i.e. planning) evaluation approach is used when a project:

- Is planned or proposed; and
- Has not yet been constructed or does not yet have observed usage data.

In this approach, impacts are estimated using planning level inputs, such as roadway traffic volumes, facility characteristics, and surrounding land use context, to estimate potential changes in travel behaviour.

Post-Implementation Evaluation

The post-implementation (i.e. monitoring and evaluation) approach is used when a project:

- Is built and operating; and
- Has observed usage data available.

In this approach, impacts are estimated using observed bicycle and pedestrian counts and survey-based mode shift data to reflect actual user behaviour.

Time Horizons

The **pre-implementation** tool provides results for:

- **A single-year (Year 1) estimate**, representing a typical year of operation; and
- **A 25-year lifecycle**, allowing users to explore how impacts are expected to accumulate over time based on growth assumptions and changes in the vehicle stock.

The **post-implementation** tool provides results retroactively for a single year only.

Table 1 summarizes the evaluation pathways, data inputs, and outputs provided by the Tool.

Table 1: Evaluation Pathways and Outputs

Evaluation Pathway	When to Use	Primary Data Inputs	Outputs Provided
Pre-Implementation	Project is planned or proposed; no observed usage data	Roadway traffic volumes, facility characteristics, land use context	Year 1 and 25-year estimates of VKT reduction, fuel savings, GHG reductions, and vehicle operating cost savings
Post-Implementation	Project is built and operating; observed data available	Bicycle and pedestrian counts; user survey results	Year 1 estimates of VKT reduction, fuel savings, GHG reductions, vehicle

			operating cost savings, and qualitative impacts
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TYPES OF IMPACTS EVALUATED BY THE TOOL

The [Active Transportation GHG Calculator](#) is designed to assess a defined set of project impacts using a combination of quantitative estimates and qualitative indicators. To support clear interpretation and appropriate use, the Tool distinguishes between:

- **Quantitative impacts**, which are calculated directly within the Excel workbook; and
- **Qualitative impacts**, which are assessed using structured professional judgment.

The types of impacts assessed are consistent across both pre-implementation and post-implementation evaluations, although the data sources and methods used to estimate them differ.

The Tool assesses four categories of impacts:

- **Environmental impacts**, quantified through estimates of reduced vehicle travel and associated greenhouse gas (GHG) emissions;
- **Economic impacts**, (also dependent on reduced VKT/fuel consumption) quantified through estimates of private vehicle operating cost savings, which reflect a narrowly applied view of overall economic impacts¹;
- **Public health impacts**, assessed qualitatively to reflect changes associated with increased walking and cycling; and
- **Social and equity impacts**, assessed qualitatively to capture changes in access, connectivity, and transportation choice.

Public Health, Social and Equity Impacts

Public health, social and equity impacts are assessed qualitatively under both evaluation approaches. These impacts are not calculated numerically within the Tool, but instead are rated using consistent qualitative categories:

- No change

¹ Published research looking at the economic benefits of infrastructure often include things like health impact costs due to increased exercise and improved air quality, economic impacts of reduced congestion, reduction in auto crashes, etc. For example, the following tool by the WHO available online at: https://www.heatwalkingcycling.org/?&heat_locale=en-US&heat_lang=en#homepage. The present tool does not incorporate these considerations.

- Moderate improvement
- Significant improvement

Public health impacts relate primarily to increased levels of walking and cycling associated with the project. Social and equity impacts relate to changes in transportation choice, access to destinations, network connectivity, transit coverage, and reliance on private vehicles.

These qualitative assessments are intended to complement the quantitative results, providing additional context on broader project benefits that are important for decision-making but not readily expressed in numerical terms. Additionally, the complementary tool, [Guide for Assessing the Co-Benefits of Community-Based Climate Actions](#), provides a robust method for quantifying economic, environmental and social benefits in monetary terms relating to community climate projects and policies beyond GHG reductions.

Summary of Impacts Assessed

Table 2 summarizes the types of impacts assessed by the Tool, how each impact is evaluated, the nature of the outputs, and the time horizon over which results are reported.

Table 2: Scope of Impacts Assessed by the Active Transportation GHG Calculator

Impact Category	How the Impact Is Assessed	Quantitative Output Type	Qualitative Output	Time Horizon
Environmental	Estimates reductions in private vehicle travel resulting from shifts to walking and cycling; converts avoided travel to fuel and GHG impacts using built-in assumptions	VKT reduction, fuel savings, GHG emissions	X	Year 1 and 25-year lifecycle
Economic	Estimates avoided private vehicle	Vehicle operating cost savings	X	Year 1 and 25-year lifecycle

	operating costs associated with reduced driving			
Public Health	Assesses potential health outcomes associated with increased walking and cycling	X	No change / moderate improvement / significant improvement	General (descriptive)
Social/Equity	Assesses changes in transportation choice, access to destinations, network connectivity, transit coverage, and vehicle dependence	X	No change / moderate improvement / significant improvement	General (descriptive)

APPROACH TO ESTIMATING GHG EMISSION REDUCTIONS

To support consistent and practical assessment, the [Active Transportation GHG Calculator](#) uses a straightforward and transparent approach to estimate GHG emission reductions from active transportation infrastructure projects. The approach is designed to balance transparency, consistency, and ease of use, allowing users to estimate climate impacts without the need for technical modelling expertise.

Specifically, the Tool:

- **Focuses on project outcomes**, assessing how active transportation infrastructure can reduce private vehicle travel and associated GHG emissions through changes in travel behaviour;
- **Applies a consistent evaluation framework** across projects, while allowing flexibility in inputs so users can rely on readily available data, observed counts, surveys, or reasonable planning-level assumptions;

- **Produces clear, repeatable outputs**, including estimated reductions in vehicle kilometres travelled (VKT), fuel consumption, and GHG emissions, supporting comparison over time for a single project and across different projects;
- **Simplifies the assessment process** through clear guidance, built-in default assumptions, and transparent calculations that are visible to users; and
- **Is implemented as an Excel-based tool**, allowing results to be easily viewed, documented, and updated as new information becomes available.

CORE DATA AND ASSESSMENT COMPONENTS

All assessments and data collection required to power these assessments focus around three core aspects: usage, mode shift, and trip characteristics.

- **Usage** refers to how many individuals use or are expected to use the improved infrastructure over a given period of time. For example, how many cyclists and pedestrians will use a new multi-use path in a year.
- **Mode Shift** relates to the share of trips that used to use a less desirable transportation mode and now use the improved infrastructure in lieu. For example, if the project relates to the construction of a new multi-use path, what is the share of cycling and walking trips on the multi-use path that, in the absence of the path, would have been made by automobile?
- **Trip Characteristics** refer to typical trip distances (in km) that are estimated or now completed using the improved infrastructure. For example, what is the average distance of trips made using the multi-use path?

Usage, mode shift, and trip characteristic data can be gathered from a variety of sources, some of which are public and commonly available. **Figure 1** below displays a range of data sources that could be used as inputs for usage, mode shift, and trip characteristic data ranging from less accurate (i.e. informed guesses) on the left end of the diagram to more accurate (i.e. observed data) on the right end. Pre-implementation planning and feasibility studies would generally draw from data sources closer to the left, while post-implementation pilot or capital projects should include more accurate sources of data. Ultimately, data sources should align with level of investment, data availability, and what is required for your evaluation.

Figure 1: Data Sources for Usage, Mode Shift, and Trip Characteristic Data

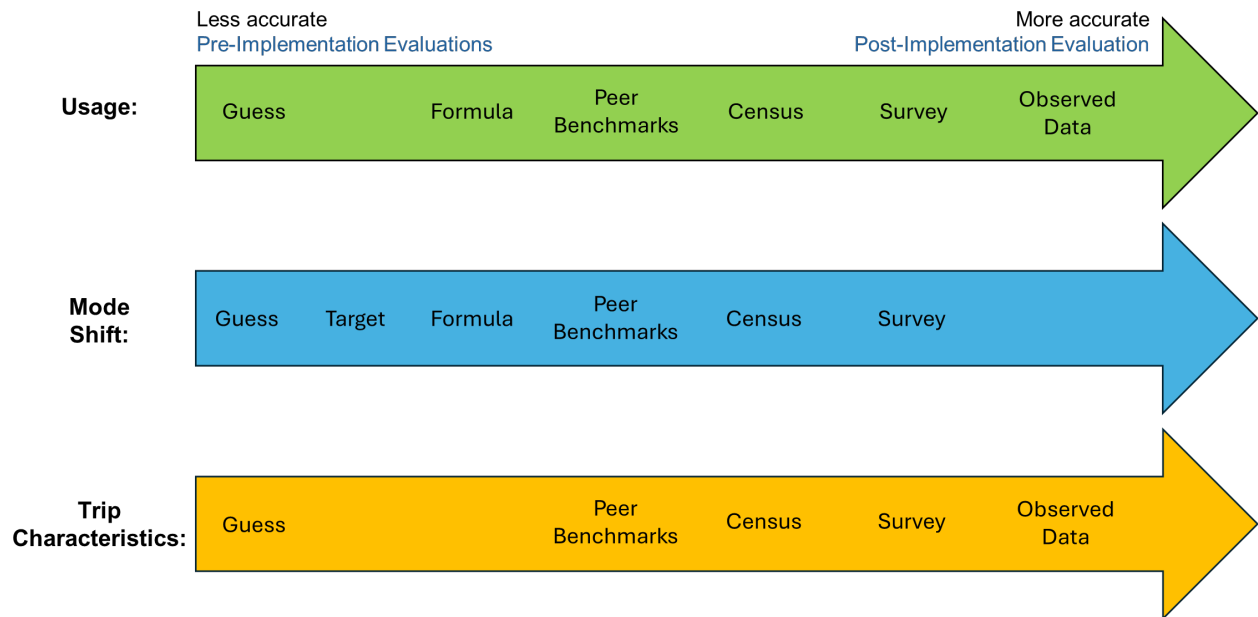


Table 3 explores data sources in further detail including applicability, where to access the data, and sample use.

Table 3: Data Source Accuracy and Applicability

Data Source	Accuracy	Where to Access Data	Applicability
Informed guess	Low	-	Educated or researched guesses can be used to represent <u>usage, mode shift, or trip characteristic</u> data in cases where no peer data or formulas are yet available (i.e. autonomous vehicle strategies, ride-pooling as public transit).
Target	Low-Medium	Planning documents (i.e. Master Plan mode share targets), consultation	<u>Mode shift</u> : Target share of walking / cycling trips along a corridor / in a municipality or region at a planning horizon year compared to today's mode share.
Formula	Medium	California Air Resources Board formula ²	Formula used for estimating <u>usage</u> and <u>mode shift</u> for active transportation corridors from

² [California ARB methodology for Pedestrian facilities](#); [California ARB methodology for Bicycle facilities](#)

			commonly available inputs (traffic, corridor characteristics)
Peer Benchmark	Medium-High	Reviews of peer community experience with similar projects	<u>Usage:</u> Peer system usage data (KM travelled, total trips) <u>Mode shift:</u> Benchmark vehicle substitution rates; mode shift from other communities with similar projects <u>Trip characteristics:</u> Average trip length for a similar system / facility in a peer community
Census	High	Canada Census Useful data include: <ul style="list-style-type: none"> • Average commute distance (by mode) • Mode share to work • Workforce size 	<u>Usage:</u> Total KM travelled for work (average commute distance * workforce) <u>Mode shift:</u> Mode share to work contrasted with target or previous census data that represents a baseline <u>Trip characteristics:</u> Average commute distance by mode (typically on a community basis)
Survey	High	Various survey types which can include: <ul style="list-style-type: none"> • Survey of facility or system users; • Bike / pedestrian counts • Municipal or regional travel demand survey; • Macroscopic model (EMME) 	<u>Usage:</u> Number of facility users over a given time period, KM travelled (on facility OR in municipality/region) <u>Mode shift: Key question:</u> “If the facility / system wasn’t present, how would you have travelled?” Trip Characteristics: Typical trip length
Observed Data	Very High	System data downloads (bikeshare, car share, ride-hailing services), permanent count stations, mobile GPS	<u>Usage:</u> System usage data (KM travelled, total trips) <u>Trip Characteristics:</u> Average trip length, duration, speed

Brief note on transportation surveys:

Facility or system usage surveys can provide important input for estimating the impacts of transportation investments. Applicants are encouraged to be practical when designing and administering surveys to the general public. Applicants should strive to obtain a reasonable snapshot of users, with a recognition that statistical significance is not normally achievable for practical project-based purposes.

For more information on transportation surveys and related techniques see: [Victoria Transport Policy Institute](#)

Brief note on conducting traffic and active transportation facility usage counts:

Traffic and active transportation facility usage counts are important for baselining usage. Data can be collected via automated sensors or manually by hand. Traffic and active transportation facility usage counts should be taken over a representative period of at least several days during typical usage periods (typically Tuesday-Thursday in the Fall or Spring are preferred).

For more information on conducting traffic and facility usage counts see: [NCHRP Guidebook on Pedestrian and Bicycle Volume Data Collection](#)

The evaluation to estimate the impact of the transportation investment on target population VKT is then generally calculated as follows:

$$\text{Annual change in VKT} = \text{Usage} * \text{Mode Shift} * \text{Trip Characteristics}$$

By means of example, the impact of a newly opened multi-use corridor is calculated to illustrate the evaluation. Pedestrian and cyclist counts are taken along the corridor to collect usage information during an assumed average usage period. An intercept survey asks corridor users the key question: “if the facility was not present, how would you have completed your trip?”. Finally, Census Canada journey to work trip data is consulted to determine average commute distance in the community. The following key characteristics were determined:

- **Usage:** Pedestrian & cyclist counts noted 1,250 corridor users per day.
- **Mode shift:** 10% of corridor users noted that if the path were not there, they would have driven.
- **Trip characteristics:** Census Canada notes a 5 km typical trip length to work.

$$\text{Annual Change in VKT} = \text{Usage} (1,250 * 365 \text{ days/year}) * \text{Mode Shift} (10\%) * \text{Trip Characteristics} (5 \text{ km})$$
$$\text{Annual Change in VKT} = 228,125 \text{ km}$$

Once the impact of the proposed improvement on VKT is estimated for the target population, additional metrics such as GHG reduction, economic impacts and health impacts can be calculated using standard multipliers as noted in **Table 4**.

Table 4: Complementary Assessments

Output	Calculation
Annual GHG Reduction (T)	VKT Reduction * Standard fuel consumption (9.4 L per 100 km ³) * Standard emissions factors
Economic – Reduction in Private Vehicle Costs (\$)	VKT Reduction * Standard Canada Revenue Agency vehicle operations cost rates (per km)
Health	Additional annual km walked or cycled Alternately: Qualitative indicator (no change, moderate improvement, significant improvement)
Social / Equity	Qualitative indicators (no change, moderate improvement, significant improvement) to assess: <ul style="list-style-type: none"> • Transportation choice • Access to key destinations • Active transportation network coverage • Transit system coverage • Reduced vehicle dependence

USING THE TOOL: STEP-BY-STEP WORKSHEET GUIDE

The [Active Transportation GHG Emission Calculator Tool](#) is organized into multiple worksheets, each with a specific role in the evaluation process. Some worksheets require user input, while others are provided for calculation, reporting, or reference purposes only.

Table 5 provides a high-level overview of all worksheets included in the Tool, including when each worksheet should be used and whether user input is required. Detailed, step-by-step instructions for completing each worksheet are provided in the sections that follow.

Table 5: Overview of Worksheets and Intended Use

Worksheet	When to Use	Is User Input Required?
Project Info	Always	Yes

³ Typical fuel consumption according to US EPA.

Evaluation – Pre-Implementation (Year 1)	For planned or proposed projects	Yes
Evaluation – Pre-Implementation (Year 25)	Optional long-term analysis for planned or proposed projects	Yes
Evaluation – Pre-Implementation (Lifecycle)	Reporting and review of 25-year impacts	No
Evaluation – Post-Implementation (Year 1)	For built projects with observed usage and survey data	Yes
Average Commute Distance by Mode	Reference sheet only. Use only when no local trip length data are available.	No
Default Values	Reference sheet only (assumptions and parameters)	No

Project Info Worksheet

The Project Info worksheet records basic information about the project and identifies which impact categories are being evaluated. While this worksheet does not perform calculations, it provides essential context for interpreting and reporting results.

How to Use this Worksheet

Users should complete all relevant fields at the top of the worksheet, including:

- Project name and location
- Date of assessment
- Project type (Pilot Project or Capital Project)
- Brief project description and goals

Users should then indicate which impact categories are being evaluated by selecting the appropriate checkboxes. Environmental and economic impacts are assessed quantitatively while public health and social/equity impacts are evaluated qualitatively.

Project Impact Evaluation: VKT and GHG Reduction											
Project Name:											
Location:											
Date of Assessment:											
Project Type:	Pre-Implementation										
Tool Type:	MULTI-USE PATH / BIKE FACILITY / PED FACILITY										
Project Description:											
Project Goal(s):											
What is Being Evaluated:	<table border="1"> <tr> <td>Environmental Impact</td> <td><input type="checkbox"/></td> </tr> <tr> <td>Economic Impact</td> <td><input type="checkbox"/></td> </tr> <tr> <td>Public Health Impact</td> <td><input type="checkbox"/></td> </tr> <tr> <td>Social / Equity Impact</td> <td><input type="checkbox"/></td> </tr> <tr> <td>Other</td> <td><input type="checkbox"/></td> </tr> </table>	Environmental Impact	<input type="checkbox"/>	Economic Impact	<input type="checkbox"/>	Public Health Impact	<input type="checkbox"/>	Social / Equity Impact	<input type="checkbox"/>	Other	<input type="checkbox"/>
Environmental Impact	<input type="checkbox"/>										
Economic Impact	<input type="checkbox"/>										
Public Health Impact	<input type="checkbox"/>										
Social / Equity Impact	<input type="checkbox"/>										
Other	<input type="checkbox"/>										
NOTE OTHER HERE (IF APPLICABLE)											

Fill out project information

Select categories to be evaluated

Cells requiring user input are visually distinguished using shading as shown in **Figure 2**. Calculated or reference cells should not be edited. This is consistent across all worksheets in the Tool.

Figure 2: Cell Shading Legend

User input required
User input optional
Default value
Calculated value-Do not amend

Evaluation – Pre-Implementation (Year 1) Worksheet

This worksheet is used to estimate first-year impacts for projects that have not yet been constructed or do not yet have observed usage data. It relies on planning-level inputs to estimate potential changes in travel behaviour and associated reductions in vehicle kilometres travelled (VKT).

How to Use this Worksheet

The worksheet is organized into two main tables:

1. Year 1 Input Table

Users enter information describing the surrounding context of the facility, as well as trip characteristics including:

- Average Annual Daily Traffic (AADT) which refers to vehicle traffic on the road being evaluated.
- Facility length.
- Whether the project includes cycling and/or pedestrian components.
- Presence of activity centres (nodes such as shopping complexes, commercial zones or institutional complexes) or universities within 400m of the corridor and a further 800m.
- Estimated number of days per year the facility is used (addresses seasonal variability). This value can be informed by general walking and cycling usage in a community and should be altered based-on best available data sources.
- Average trip length for active transportation trips which can come from one of two sources: (1) a municipal or regional trip diary, which is preferred, if available; (2) Census Canada commute distance by mode information and default multipliers that convert commute trip length to average trip length.

Year 1 Input Table			
	Input	Unit	Source
USAGE / MODE SHIFT			
Average Annual Daily Traffic (AADT) on Parallel Roadway		vpd	
Facility Length (km)		km	
Project in University Area?	Yes		
Project Includes a Cycling Component	Yes		
Project Includes a Pedestrian Component	Yes		
Activity Centres within 400m of Facility			
Activity Centres 400-800m from Facility			
Days per Year Facility is Used			
TRIP CHARACTERISTICS			
Average Trip Length (Active Transportation Trips)		km	

User to fill out information and relevant sources

2. Year 1 Results Table

The table displays calculated outputs based on data input into the “Year 1 Input Table” including:

- Estimated vehicle trips eliminated
- Annual VKT reduction
- Fuel savings
- GHG emission reductions
- Vehicle operating cost savings

Public Health and Social/Equity results require manual qualitative input from the user based on professional judgement, using the provided rating categories (no change, moderate improvement, significant improvement). Parallel Ministry tools such as the [Guide for Assessing the Co-Benefits of Community-Based Climate Actions](#) allows for further evaluation.

Year 1 Results Table		Unit	Rationale
ENVIRONMENTAL			
Adjusted Daily Vehicle Trips Eliminated	-		
Adjusted Annual Vehicle Trips Eliminated	-		
Annual VKT Reduction	-	km	
Annual VKT Reduction in ICE Vehicles	-	km	
Annual Reduction in Fuel Usage	-	L	
Annual GHG Reduction	-	kg CO2e	
ECONOMIC - REDUCTION IN PRIVATE VEHICLE COSTS			
Annual Aggregate Vehicle Operations Cost Savings (excl. parking)	\$ -		
PUBLIC HEALTH			
Overall			
SOCIAL / EQUITY			
Increased Transportation Choice			
Improved Access to Key Destinations			
Increased Active Transportation Network Coverage			
Increased Transit System Coverage			
Reduced Vehicle Dependence			

↑
User to fill out qualitative input (no change, moderate improvement, significant improvement)

Evaluation – Pre-Implementation (Year 25) Worksheet

This worksheet extends the Year 1 pre-implementation analysis by applying a growth assumption to estimate impacts under future conditions.

How to Use this Worksheet

Users are only required to enter:

- An annual growth rate reflecting anticipated increases in usage over time. This growth factor can be determined based on mode shift targets in plans, if available.

All other values are automatically carried forward from the Year 1 worksheet.

Year 25 Input Table			
	Input	Unit	Source
USAGE / MODE SHIFT			
Annual Growth Rate			Historic or projected traffic growth rate or population growth rate
Average Annual Daily Traffic (AADT) on Parallel Roadway		vpd	
Facility Length (km)		km	
Project in University Area?	1		1 = "Yes"; 2 = "No"
Project Includes a Cycling Component	1		1 = "Yes"; 2 = "No"
Project Includes a Pedestrian Component	1		1 = "Yes"; 2 = "No"
Activity Centres within 400m of Facility			
Activity Centres 400-800m from Facility			Automatic input - DO NOT ALTER
Days per Year Facility is Used			Automatic input - DO NOT ALTER
TRIP CHARACTERISTICS			
Average Trip Length (Active Transportation Trips)		0.0 km	

Evaluation – Pre-Implementation (Lifecycle) Worksheet

The Lifecycle worksheet presents annual results over a 25-year period based on the Year 1 and Year 25 inputs. No user input is required for this worksheet.

Evaluation – Post-Implementation (Year 1) Worksheet

This worksheet is used to estimate impacts for projects that are already built and operating, using observed usage data.

How to Use this Worksheet

The worksheet is organized into two main tables:

1. Year 1 Input Table

Users enter observed data describing how the facility is used and how users would have travelled in the absence of the facility. Inputs include:

- Average number of bicycles per day using the facility
- Average number of pedestrians per day using the facility
- Estimated number of days per year the facility is used

- Share of users who would have driven, ridden as a passenger, used transit, walked or cycled elsewhere, or not travelled if the facility were not present
- Average trip length for active transportation trips

Year 1 Input Table		
	Input	Source
USAGE		
Bikes per Day		
Pedestrians per Day		
Days per Year Facility is Used		
MODE SHIFT		
Share of Users who would have driven		User survey
Share of Users who would have ridden in a car as a passenger		User survey
Share of Users Shifting from Public Transit		User survey
Share of Users who would have Walked / Cycled along a different corridor		User survey
Share of Users who are New Corridor Travellers		User survey
TRIP CHARACTERISTICS		
Average Trip Length (Active Transportation Trips)	km	

User to fill out information and relevant sources

2. Year 1 Results Table

The table displays calculated outputs based on data input into the “Year 1 Input Table,” including:

- Estimated daily and annual vehicle trips eliminated
- Annual VKT reduction
- Fuel savings
- GHG emission reductions
- Vehicle operating cost savings
- Additional walking and cycling activity

Public Health and Social/Equity results require manual qualitative input from the user based on professional judgement, using the provided rating categories (no change, moderate improvement, significant improvement).

Year 1 Results Table			Rationale
ENVIRONMENTAL			
Adjusted Daily Vehicle Trips Eliminated	-		
Adjusted Annual Vehicle Trips Eliminated	-		
Annual VKT Reduction	-	km	
Annual VKT Reduction in ICE Vehicles	-	km	
Annual Reduction in Fuel Usage	-	L	
Annual GHG Reduction	-	kg CO2e	
ECONOMIC - REDUCTION IN PRIVATE VEHICLE COSTS			
Annual Aggregate Vehicle Operations Cost Savings (excl. parking)	\$ -		
PUBLIC HEALTH			
New Daily Corridor Walking/Cycling Trips	-		
Annual Additional KM Walked or Cycled	-	km	
Overall			
SOCIAL / EQUITY			
Increased Transportation Choice			
Improved Access to Key Destinations			
Increased Active Transportation Network Coverage			
Increased Transit System Coverage			
Reduced Vehicle Dependence			

↑
 User to fill out qualitative input (no change, moderate improvement, significant improvement)

Average Commute Distance by Mode Worksheet

This worksheet supports the estimation of average trip length using Census Canada data when local survey data are unavailable. It is based on Census 2021 results and can be updated *if needed* when updated census data is available. **This is a background worksheet and is not necessary to update regularly.**

How to Use this Worksheet

Users copy distance-to-work data by mode from Census Canada tables and paste the values into the appropriate input cells. The Tool automatically calculates average commute distance and converts it into an average trip length suitable for use in other worksheets.

Paste data obtained from Census Canada here

TABLE A: AVERAGE COMMUTE DISTANCE BY MODE - CALCULATION

	Total - Distance from home to work	Less than 1 km	1 to 2.9 km	3 to 4.9 km	5 to 6.9 km	7 to 9.9 km	10 to 14.9 km	15 to 19.9 km	20 to 24.9 Km	25 to 29.9 km	30 to 34.9 km	35 km or more
Sustainable Transportation	296,185	78,225	70,990	37,080	26,300	26,365	23,340	13,185	8,205	3,900	1,345	7,250
Public Transit	149,330	6,165	22,185	25,675	21,265	22,805	21,420	12,415	7,975	3,745	1,225	4,460
Active Transport	146,850	72,065	48,800	11,405	5,035	3,565	1,925	770	235	150	115	2,790

Mid Point Trip Length Assumed for Each Bin	TOTAL TRIPS	0.5	2	4	6	8.5	12.5	17.5	22.5	27.5	32.5	35
Sustainable Transportation	296,185	78,225	70,990	37,080	26,300	26,365	23,340	13,185	8,205	3,900	1,345	7,250
Public Transit	149,330	6,165	22,185	25,675	21,265	22,805	21,420	12,415	7,975	3,745	1,225	4,460
Active Transport	146,850	72,065	48,800	11,405	5,035	3,565	1,925	770	235	150	115	2,790

TABLE B: TRIP LENGTH BY MODE - RESULTS TABLE

	Avg Commute Distance	Avg Trip Length
Sustainable Transpo	6.2	4.1
Public Transit	9.6	6.4
Active Transpo (Excludes trips > 20 km)	1.9	1.3

Calculated results will be displayed here

Default Values Worksheet

This worksheet documents all default assumptions used by the Tool, including fuel consumption rates, emission factors, vehicle operating costs, and vehicle electrification assumptions.

No user inputs are required. Values have been provided in the worksheet for transparency and documentation. **This is a background worksheet and is not necessary to update regularly.**