Count Methodology Guide for the California Transportation Commission's Active Transportation Program

Updated March 19, 2026

The Count Methodology Guide (Guide) is a handbook to help meet the minimum requirements for conducting user counts, surveys, and other evaluations for active transportation projects funded through the California Transportation Commission's (CTC) Active Transportation Program (ATP).

The following project types are required to collect user count data: infrastructure only, non-infrastructure (NI) only, and combination projects (infrastructure with NI components). User count data helps to inform the ATP's progress toward achieving its statutory goal of increasing walking and biking. The SB 1 Accountability and Transparency Guidelines outline the reporting requirements for awardees.

This Guide covers several topics intended to ensure that ATP awardees provide consistent and uniform project-user data in project progress and completion reports.

The guidance provided here is required for all ATP projects, excluding Plans. Specific expectations apply to certain ATP cycles, as follows:

- The long-term (5-year) project counts are mandatory for Cycles 6 and beyond. See Section 3.
- The revised count data collection methods in this Guide are mandatory for before, near-term after, and long-term after counts for all projects programmed in the ATP as described in this Guide.
  - ATP projects which allocate for any project phase at or after the March 2026 CTC meeting must follow the provisions of this Guide when conducting user counts. ATP projects that have allocated Construction (CON) or Construction Non-Infrastructure (CON-NI) – or Combination projects that have allocated both CON and CON-NI - prior to the adoption of this Guide may continue to deliver counts based on the August 2024 version of the Interim Count Methodology Guidance for Active Transportation Program.

1. Determining the Type of User Data Collection Needed

Agencies that receive ATP funds to create a plan are not required to conduct or report user data but may do so if the agency is interested in obtaining current user

levels.

A variety of methods exist for collecting user data, including screenline counts (see Figure 1), intersection turning movement counts (TMC) (see Figure 2), student travel tallies, and parent and/or community-wide surveys. In addition, within a particular method there are often many varieties of counting or enumerating active travel. For example, screenline counts can be completed manually, by video, using automated technologies, etc. Surveys can be administered online or in-person and can measure general travel patterns or specific travel patterns. This Guide provides standard expectations for estimating user data for each type of ATP project; and seeks to follow national best practices and accommodate existing regional pedestrian and bicycle count methodologies across California.

Table 1 summarizes the required types of user data for each project type. For projects that include infrastructure and NI components (i.e. Combination projects), a combination of data collection strategies must be used such that the infrastructure and NI components are measured individually. Infrastructure projects require active transportation (walking and bicycling) counts with a minimum duration of one week (7 continuous days) to ensure that annual average daily pedestrian or bicyclist traffic (AADPT or AADBT) may be estimated with minimal error. Each count shall be conducted three (3) times, once before the project, once near-term after the project, and once long-term after the project (See Section 3 for specific guidance on timing of counts). As shown in Table 1, school tallies are recommended for Safe Routes to School (SRTS) NI while project-specific surveys and/or modeling are recommended for community/jurisdiction-wide projects. SRTS NI projects can opt to conduct week-long (7 continuous days) counts in lieu of school tallies. Details are provided in Appendix B of this document. If an agency believes an alternative method of data collection would be more suitable for NI projects, they must have the alternative methodology approved by the Caltrans ATP NI Program Manager prior to implementing their method of data collection by sending an email to ATP-NI@dot.ca.gov (see Section 6). Agencies will be asked to provide detailed documentation of their proposed methodology to a level that ensures consistency in user data collection throughout the project. Infrastructure projects are required to meet the guidelines in Table 1.

For infrastructure projects, the selection of a screenline count or TMC shall be based on the design of the project. For projects that include linear infrastructure elements, a screenline count shall be used. For projects that include intersection treatments, a TMC shall be used. For projects with both linear and intersection elements, screenline count or TMC may be used.

Screenline counts: As shown in Figure 1, a screenline count is one in which bicyclists

and pedestrians are counted separately across the screenline by the direction of travel.

Turning Movement Count (TMC): As shown in Figure 2, a TMC enumerates the bicyclists' movement to and from each intersection leg, and pedestrians crossing each crosswalk leg by direction.

It is important to note that screenline and TMC counts measure pedestrians differently. Screenline counts will count each pedestrian once, while TMCs will count the same pedestrian for each crosswalk leg that they use. In addition, pedestrians that follow a sidewalk around a corner, remaining on the sidewalk without entering the intersection will not be counted in a TMC study. For consistency, it is important to use the same method for each project count conducted.

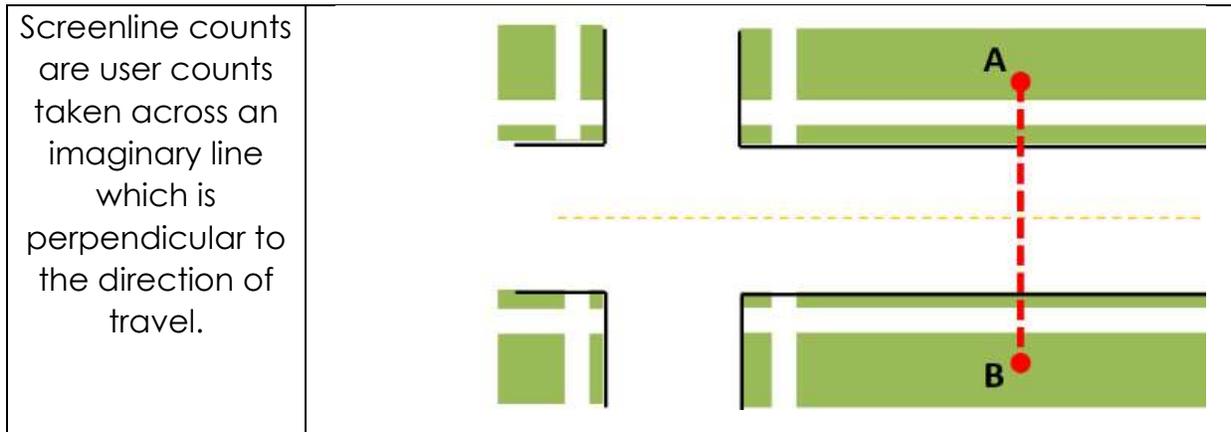See Section 5 Reporting Data for the specific count data requirements.

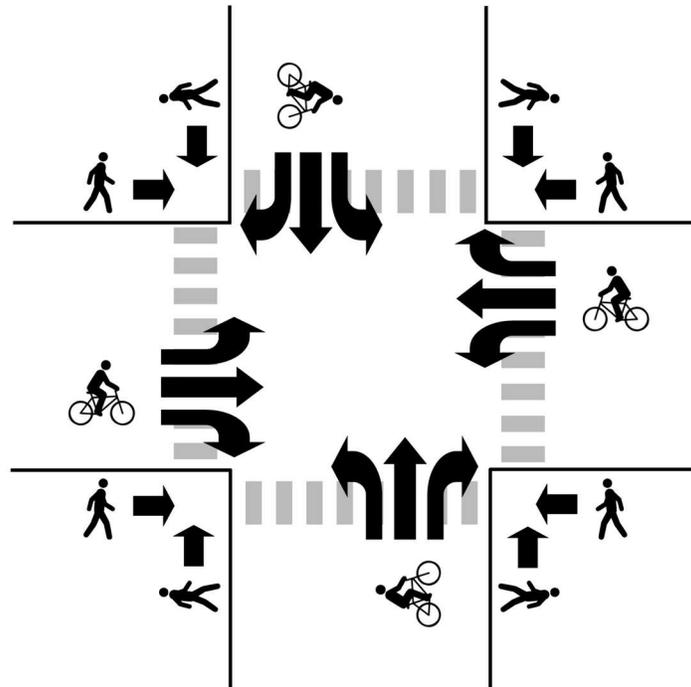| Screenline counts are user counts taken across an imaginary line which is perpendicular to the direction of travel.	

Figure 1. Screenline Count Diagram

Figure 2. Diagram of movements captured in turning movement count study

Table 1. Count Data Collection Methods

ATP Project Types	Minimum Required # Locations		Recommended Count Type & Method	Duration	Alternative Method/ Minimum Requirement
Infrastructure*‡	Small	1	Manual Count from Video	One Week (7 continuous days) at each location	Automated** (e.g., tubes, infrared, video/lidar analytics, etc.)
	Medium	2			
	Large	3			
Safe Routes to School Non-Infrastructure	1 school per 10 schools receiving programming ***		Classroom Student Travel Tallies***	Two Days (averaged)	Follow infrastructure project methodology
Community-Wide /Jurisdiction-Wide Non-Infrastructure	NA (Survey or Modeling)****		Surveys****/ Modeling	NA	NA

* In some cases, the number of locations for a project may not be appropriate (e.g., a large infrastructure bridge project may not need 3 count locations). Contact your Caltrans ATP Program Manager (atp-pm@dot.ca.gov) to determine if an alternative requirement is

allowed.
** See Appendix A for counter validation procedure.
*** See Appendix B for details on the Student Travel Tallies.
****Mineta Institute's Pedestrian and Bicycle Survey is the recommended general travel survey for ATP projects. Additional ideas for collecting data to inform community-wide non-infrastructure evaluation can also be found in Alta Planning + Design's Measure for Success: New Tools for Shaping Transportation Behavior. Your MPO may also have suggested tools and methods.
‡ Counts shall be conducted for SRTS Infrastructure projects while the target school(s) is in session (not during a holiday or summer break).

2. Selecting Count Locations

Selecting the most effective locations to collect counts is critical to collecting relevant data. There is no set formula for determining the best count locations, however, there are some generally accepted best practices outlined below. The project implementer's knowledge and judgement of the project limits and/or project scale should also inform which locations are chosen to conduct the counts. The guidance below is specifically for the required counts on the project footprint.

The following guidance was adapted from the National Bicycle and Pedestrian Documentation (NBPD) Project. Implementing agencies must select locations that meet at least one best practice criterion listed below, however, agencies are encouraged to choose location(s) that meet multiple criteria, if possible.

Select a count location on the project footprint where:

   a. Existing pedestrian and bicyclist activity is expected to be highest (for example, a downtown area, near schools, parks, etc.)
   b. Bicyclist and/or pedestrian collision numbers are the highest
   c. Gaps or pinch points exist that will be targeted for improvement by the project
   d. The most significant intervention is proposed

The following considerations are also recommended:

   ● For corridors where counts are conducted at a single location, it should be centrally located along the corridor and where volumes are expected to be highest.
   ● For long corridors, multiple count locations should be evenly distributed along the corridor.

Additional guidance on determining count locations can be found in the following resources:

- 2022 FHWA Traffic Monitoring Guide (TMG) (Chapter 4): https://rosap.ntl.bts.gov/view/dot/74643
- National Cooperative Highway Research Program (NCHRP) 797 – Guidebook on Pedestrian and Bicycle Volume Data Collection (Chapter 3): https://www.nap.edu/catalog/22223/guidebook-on-pedestrian-and-bicycle-volume-data-collection
- Washington State Department of Transportation – Collecting Network-wide Bicycle and Pedestrian Data: A Guidebook for When and Where to Count (Chapter 4): https://www.wsdot.wa.gov/research/reports/800/collecting-network- wide-bicycle-and-pedestrian-data-guidebook-when-and-where

3. Conducting Pedestrian and Bicycle Counts:

In an effort to create consistency for ATP project counts, this guide establishes baseline requirements for user counts and requires that all field-counts be consistent with California Active Transportation Data Portal guidelines.

The timing of counts shall follow the following steps:

- General consistency for all methods
  a. Three (3) count periods for each project shall be conducted at the same location during the same month of the year. All projects must conduct before counts, near-term after counts, and long-term after counts as outlined in Table 2.

Table 2. Count Data Collection Timeline

Project Counts	Time Period
Before*	0-6 months before start of construction or project implementation
Near-term After	6-18 months after project completion** (same month as before counts)
Long-term After	5 years after project completion (same month as before counts)

* Note: Infrastructure projects that are composed *entirely* of new facilities, where it is difficult to collect data on existing active transportation usage can request a waiver for Before counts by contacting their Caltrans ATP Program Manager (atp-pm@dot.ca.gov).
** Project completion is defined as construction contract acceptance or the project becoming operable (open to the public), whichever comes sooner

When choosing the dates that counts will be collected, the implementing agency should consider the following:

      i. If inclement weather occurs, counts should be rescheduled to the next possible 7-day period with a generally clear weather forecast.
      ii. If another temporary constraint occurs, the start of counts should be rescheduled to the next possible day.
      iii. If geometrical design, traffic conditions have changed since the before-project user counts were conducted due to a change unrelated to the ATP funded project, the agency should contact their Caltrans ATP Program Manager (atp-pm@dot.ca.gov) for assistance before completing the near-term after user counts.
      iv. If any conditions make it impossible to satisfy the timing requirements in Table 2, the agency should request and receive approval for an alternative date from their Caltrans ATP Program Manager (atp-pm@dot.ca.gov).

    b. Consistency related to location, time of year and weather conditions is extremely important and should be accounted for prior to initiating user data collection.

- Consistency in tracking and recording data:
      a. Each time-period count must be delivered in the following format:
        i. Following the CSV Format description in the CAT Data Portal tutorial
        ii. Separated by active transportation modes (bicycle, pedestrian, wheelchair, other wheeled vehicle, and mixed)
        iii. At 15-minute intervals
- Safe Routes to School Non-Infrastructure
      a. Appendix B has additional guidance for conducting student travel tallies.
      b. If the project only spans one school year, tallies should be taken on the same days of the week on days with similar temperature and weather conditions.
- Community-wide and Jurisdiction-wide Non-Infrastructure
      a. Surveys can utilize in-person or electronic methods, but implementers should consider how the target community will access the platform

and resource the effort accordingly. This may require paid staff to conduct surveys in person.

b. To best measure impacts, surveys should target the same population involved in the program or event before and after the intervention. For projects including an open street event or encouragement program addressing a subset of the population, for instance, the before survey may be conducted up until the first project activity, and the after survey during or after the activity. Community-wide programs should try to survey a representative sample of community members.

c. Modeling of mode shift impacts of projects should be conducted in partnership with county and regional planning organizations.

d. The Pedestrian and Bicycling Survey (PABS) from MTI Report 10-3 Appendix A is the recommended basis for community travel surveys. The survey can be adjusted to meet the needs of the community, but it must contain questions that can track mode shift.

Reporting Data

For count data, awardees shall upload data to the California Active Transportation Data Portal (CAT Data Portal) in a timely manner directly after collection. To submit data, follow the CAT Data Portal tutorial. Once the data is submitted, awardees shall submit cumulative summaries generated by CAT Data Portal into CalSMART. Before-project counts must be reported in CalSMART starting with the first Progress Report to indicate an Actual Begin Construction milestone—in other words, once construction or non-infrastructure activities are reported to have started. Near- and long-term counts must be reported to CalSMART in the Final Delivery Report and Performance Analysis Report, respectively.

Approval Process for Other Count Methodologies

If an agency determines that none of the previously mentioned methodologies are appropriate for their project, a request to use another count methodology must be submitted to the Caltrans ATP Program Manager (atp-pm@dot.ca.gov) for approval. The process is as follows:

- Contact your Caltrans ATP Program Manager and notify them that you are planning to request approval of a count method that does not conform and/or is not mentioned in this guidance.
- E-mail the Caltrans ATP Program Manager your proposed count methodology and equations along with a map that indicates your proposed count locations.
  o Include any reference literature that supports your proposed method.

- Count methodology approval will be issued via an e-mail and may take up to one month for approval.

Glossary

- Allocation
  When a project is ready to proceed, the CTC must vote to allocate the funds. Any work that is started prior to the allocation of funds is not eligible for reimbursement.

- Infrastructure
  A project that constructs facilities, such as bike lanes, sidewalks, or trails.

- Non-Infrastructure (NI)
  A project that does not result in construction but does education and encouragement activities.

- Parent Survey
  A survey of a school's parents designed to help understand the various forms of travel used by students to get to and from the school.

- Plan
  A community-wide active transportation plan, including bike, pedestrian, safe routes to schools, or comprehensive active transportation plans.

- Screenline Counts or Segment Counts
  User counts taken across an imaginary line which is perpendicular to the direction of travel. Pedestrians and bicyclists are counted separately by direction.

- Student Travel Tallies
  Data collected by teachers or another data collector in classrooms to gather how students travel from home to school and back.

- Turning Movement Count (TMC)
  A TMC enumerates the bicyclists' movement to and from each intersection leg, and pedestrians crossing each crosswalk leg by direction.

Appendix A. Pedestrian & Bicycle Counter Validation

Use this procedure:

- When you install a new continuous counter station (CCS)
- When you obtain a new short-term counting device
- When you make changes to a continuous counter that might impact accuracy, such as changing settings, replacing loops, or installing a new data logger.
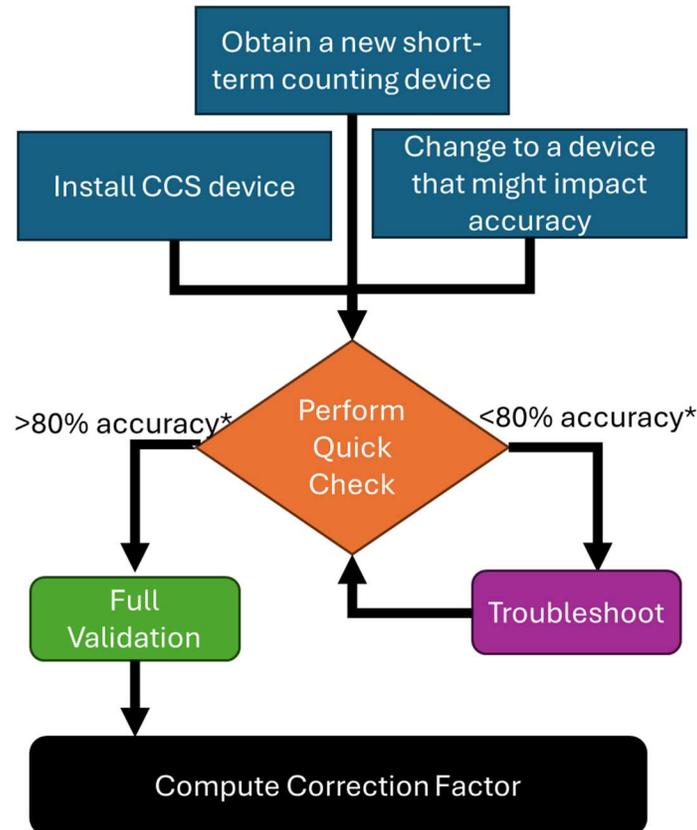
Accuracy = 1 − |Total Device Count − Total Groundtruth| ÷ Total Groundtruth

Figure 3. Procedure for Conducting Counter Validation

Compute Correction Factor (CF)

$$CF = \frac{\text{(ground truth count for full validation period*)}}{\text{(device count for full validation period)}}$$

* including those who bypass the detection zone

Per Traveler Quick Check and Full Validation Form

This form only works for devices that provide immediate feedback that the counter has correctly counted an active traveler, or which provide timestamped per traveler records, similar to "per vehicle record" format for motor vehicles. Additional sheets can be printed for longer validation.

FIELD VALIDATION WORKSHEET

Date _____ Human Observer _____

Location _____

Weather and other notes _____

IN = towards _____ OUT = towards _____

Device Settings_____

Time	Human Count				Device Count				Error?	Notes
	Pedestrians		Bikes		Pedestrians		Bikes			
	IN	OUT	IN	OUT	IN	OUT	IN	OUT		

Appendix B. SRTS NI Count Guidance

This guidance addresses minimum standards for evaluation data collection for ATP Safe Routes to School non-infrastructure awardees. All ATP applicants and awardees must do the necessary advanced preparation to ensure pre- and post-project data collection protocols meet the following requirements for each school targeted by the project or covered under the umbrella of the project for a school district/region-wide project:

- Utilization of the National Center for Safe Routes to School (NCSRTS) Student Travel Tally form and protocol OR utilization of an existing regional or local Student Travel Tally form that captures student travel mode data similar to the NCSRTS tool. The NCSRTS Student Travel Tally form is available from Caltrans at https://dot.ca.gov/programs/local-assistance/fed-and-state-programs/active-transportation-program/report under "NI Resources." Please check with your MPO to see if an alternate form may be available
- Administration of the Student Travel Tally on two (2) separate days within the same week and averaging for each time-period (before and after).
- Consistent timing of pre-project implementation ('Before') data collection:
  o Within six (6) months prior to the implementation of the first ATP non-infrastructure programming, and
  o Within the regular school year.
- Consistent timing of post-project implementation ('After') data collection:
  o Within six (6) months after the completion of the last ATP public non-infrastructure programming,
  o Within the regular school year; and, if possible,
  o Within the same month and roughly the same days during which the 'Before' data collection occurred.

ATP awardees must submit tally summary reports for a minimum of 1 school for each 10 schools receiving non-infrastructure programming. Data must be reported at the school level and include a sample of students matching these criteria:[1]

- If the number of students receiving the non-infrastructure programming is less than 100 at the selected school, conduct travel tallies for all students at the school.

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[1] These criteria were chosen to approximate a +/- 5% sampling error for California sized elementary schools without requiring the use of the following standard formula: Sample Size (n) = [N * Z² * p * (1 - p)] / [e² * (N - 1) + Z² * p * (1 - p)] where N is the population of students receiving the non-infrastructure activity, Z is the z-score for the 95% confidence interval (1.96), p is the estimated baseline active transportation proportion (conservatively estimated to be 0.5), and e is the margin of error (0.05 or 5%).

- If the number of students receiving the non-infrastructure programming at the selected school is 100 or more students, conduct travel tallies for a minimum of 60% or 280 of the students receiving the non-infrastructure programming at the selected school (whichever is less).

Because tallies are conducted for entire classrooms, the number of classrooms selected must meet the sample size requirement. The same classrooms shall be selected for the near-term before and after counts.

Additional assistance on meeting the data collection requirements is available from the Active Transportation Resource Center by emailing ATP-NI@dot.ca.gov.

Student Travel Tally Report Conversion to Average Daily Bicycle and Pedestrian Volumes

The Travel Tally Project is a TWO (2) DAY in-classroom data collection exercise to capture how students travel to and from school. Analysis of students' travel behavior assists Safe Routes to School (SRTS) in developing plans to reduce speed and promote responsible travel by adults and children on our city streets.
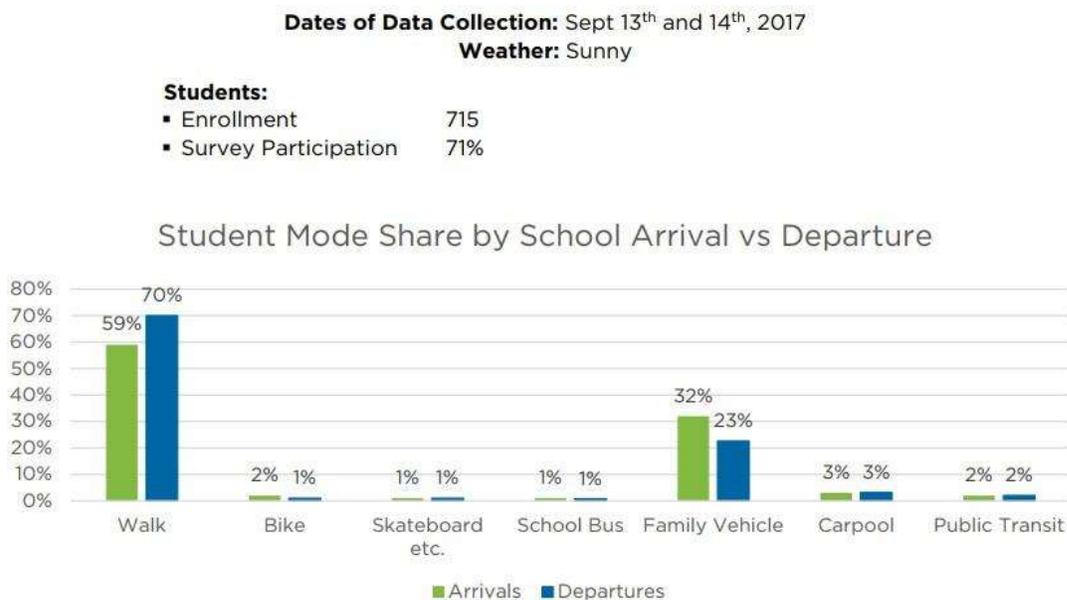
Dates of Data Collection: Sept 13th and 14th, 2017
Weather: Sunny

Students:
- Enrollment   715
- Survey Participation   71%

Student Mode Share by School Arrival vs Departure

Figure 4. Sample Student Travel Tally Report

The calculations for the Safe Routes to Schools average daily bicycle and pedestrian volumes will be as follows (the data from the report in Figure 4 shows that the data for kindergarten was collected, but was not utilized in calculating the percentages shown above):

Average Daily Mode Volume =
Enrollment × (Arrivals Share for Mode + Departures Share for Mode) ÷ 2

Average Daily Pedestrian Volume = 715 × (.59 + .70) ÷ 2 = 922.4 ÷ 2 = **461**

Average Daily Bicycle Volume = 715 × (.02 + .01) ÷ 2 = 21.4 ÷ 2 = **11**

Overview of Student Travel Tally

The Student Travel Tally form captures how students get to and from school over a few days (Tuesday – Thursday) in a given week. This form requires an in-class hand-raising protocol to collect data and a prepared individual to count and record the data on either electronic or paper form.

The NCSRTS Student Travel Tally demonstrates high test-retest reliability and validity with parental responses. More information is available here: https://activelivingresearch.org/reliability-and-validity-safe-routes-school-parent-and- student-surveys

It is planned for the CAT Data Portal to include NI data, including student travel tallies, in the future. For now, data should be submitted to ATP-NI@dot.ca.gov and reported via CalSMART.

Data collection will require close coordination with the school. Schools may have rules about collecting information from students. Data collection will require time and commitment from teachers, school staff, and administrators in order to be successful.