

# 1. Before the Count

## Creating a Count Program

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## Suggested Technology



It is recommended that users utilize Google Chrome, Firefox, or Safari when using the ATDB. Internet Explorer has limited functionality.

## Creating a Count Program

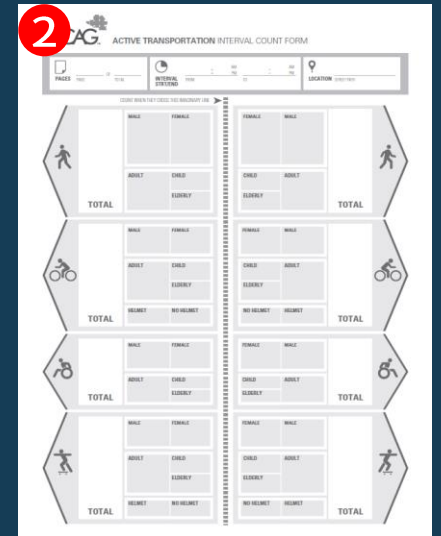
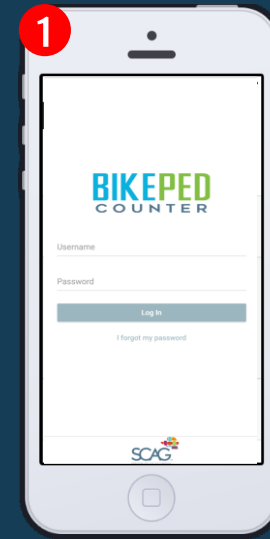
- Step 1 – Determine the Purpose of the Counts
- Step 2 – Determine When to Count
- Step 3 – Determine Where to Count
- Step 4 – Determine the Resources Needed and Plan Ahead

## 1. Determine the Purpose of the Counts

- Common reasons for counting include:
  - Required by grant funding
  - To support traffic studies
  - For long range planning and modeling
  - As part of community engagement efforts
  - Before and after counts for infrastructure projects

# 1.1 Determine the Purpose of the Counts

- There are different counting tools for different purposes, including:
  - Manual counting tools
    - 1 Mobile app
    - 2 Paper count forms
  - Automated counters
    - 3 Permanent automated bicyclist and pedestrian counters
    - 4 Portable automated bicyclist pedestrian counters



# 1.2 Determine the Purpose of the Counts

## Count Types by Purpose

Count Type	Duration	Resources	Purpose
Manual	<ul style="list-style-type: none"> <li>• 2-3 Hours</li> <li>• AM/PM Weekday Peak and/or Weekend</li> </ul>	<ul style="list-style-type: none"> <li>• Mobile App</li> <li>• Paper Count Forms</li> <li>• Volunteers</li> </ul>	<ul style="list-style-type: none"> <li>• ATP Grants/Before and After Counts</li> <li>• Community Engagement</li> <li>• Observational Data</li> </ul>
Short Duration Automated	<ul style="list-style-type: none"> <li>• 1-2 Weeks</li> </ul>	<ul style="list-style-type: none"> <li>• Automated Counters</li> </ul>	<ul style="list-style-type: none"> <li>• Traffic Studies</li> <li>• ATP Grants/Before and After Counts</li> </ul>
Permanent Automated	<ul style="list-style-type: none"> <li>• Ongoing</li> </ul>	<ul style="list-style-type: none"> <li>• Automated Counters</li> </ul>	<ul style="list-style-type: none"> <li>• Determine Annual and Daily Adjustment Factors</li> <li>• Modeling and Forecasting</li> <li>• Before and After Counts</li> </ul>

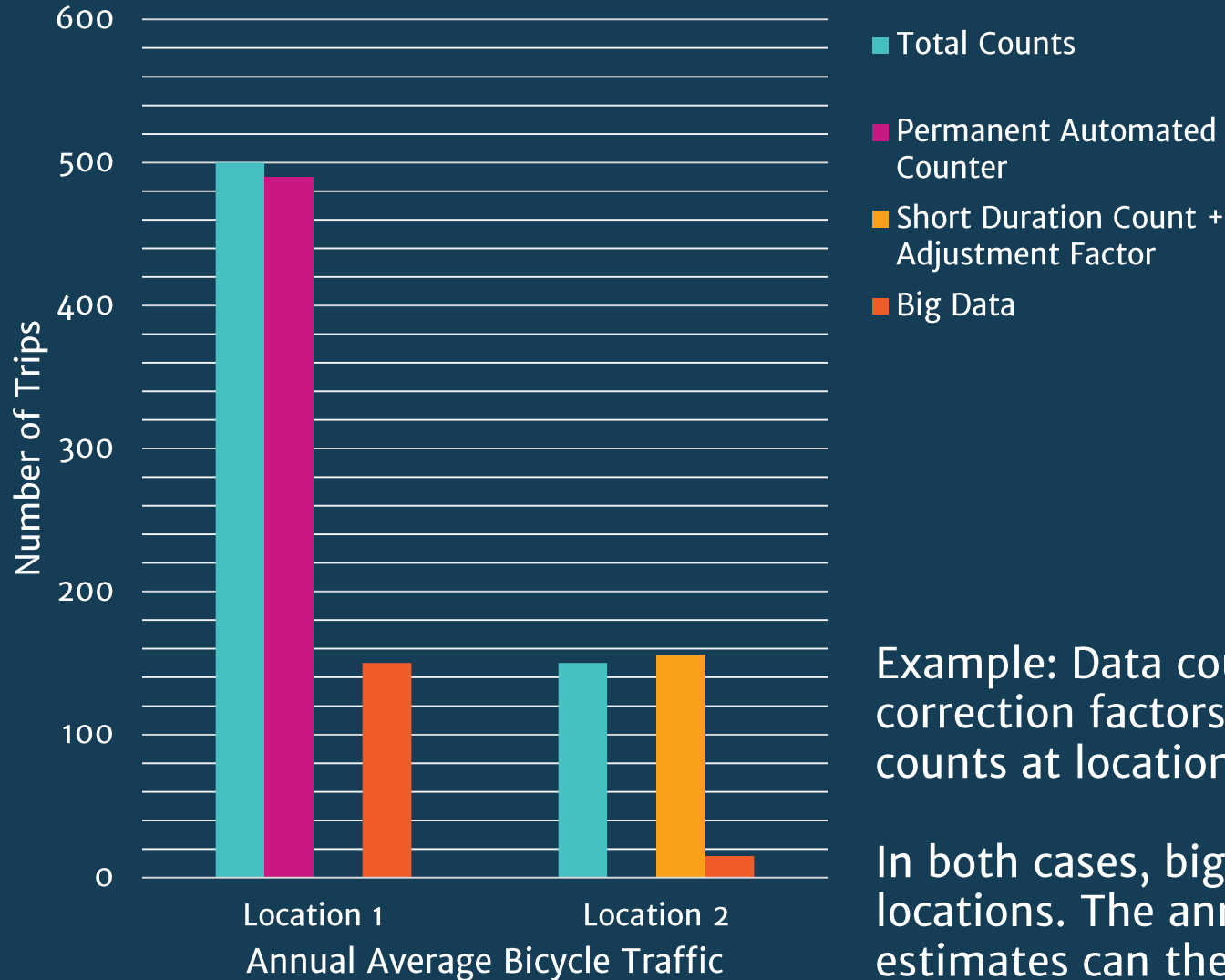
\*\*\*Refer to [Caltrans Interim Count Methodology Guidance](#) for more details.\*\*\*

## 1.2 Example: Using Permanent Counters to Develop Annual Adjustment Factors





# 1.2 Example: Using Adjustment Factors to Create Heat Maps



Example: Data could be collected at Location 1 to develop annual correction factors. These would be applied to the short term counts at location 2 to create a estimate for the year.

In both cases, big data would provide a smaller sample for these locations. The annual correction factors and short durations site estimates can then be used to estimate usage of the entire network as per the example above from Strava.

## 1.2 Example: Active Transportation Program Before and After Counts

### ATP Cycle 3 – Reporting Requirement

- Performance outcomes derived from the project as compared to those described in the project application. This should include before and after pedestrian and/or bicycle counts, and an explanation of the methodology for conducting counts.

### ATP Cycle 4 – Reporting and Eligible Expense

#### B. Project Completion Report:

Within six months of construction contract acceptance or the project becoming operable (open to the public), whichever comes sooner, the Implementing Agency shall provide a Completion Report to Caltrans on the scope of the completed project, its estimated final cost, estimated schedule, and project benefits as compared to those included in the executed project agreements.

- Conducting bicycle and/or pedestrian counts, walkability and/or bikeability assessments or audits, or pedestrian and/or bicycle safety analysis.

## 2. Determine When to Count

### Count Purpose by Type and When

Purpose	Count Type	When
Before and After/ATP Grants	Preferred: Short Duration Automated Optional: Manual	1 year prior to construction and 1 year post construction, then every other year
Traffic Studies	Preferred: Short Duration Automated Optional: Manual	Prior to project initiation, then 1 year post completion
Annual and Daily Adjustment Factors Modeling and Forecasting Validate Big Data	Required: Permanent Automated Preferred: Additional Short Duration to Expand Count Locations	Ongoing for core locations, rotating basis every other year for additional locations
Community Engagement/Specialty Counts	Preferred: Manual	Repeat every two years

### 3. Determine Where to Count

Step 1



Align Purpose With Site Selection Methodology

Step 2



Follow Site Selection Process

Step 3



Determine Count Methodology

## 3.1 Align Purpose With Site Selection Methodology

### Site Selection Process by Purpose

Purpose	Site Selection Process	Example
Before and After/ATP Grants	Identify Project Location Use Engineering Judgment	Before and after the addition of new Class IV cycle tracks on both sides of a street
Traffic Studies	Identify Project Location Use Engineering Judgment	Before and after the installation of Safe Routes to School safety measures Before and after the installation of a bicycle boulevard with diverters and traffic circles
Annual and Daily Factors Modeling and Forecasting Validating Big Data	Use Site Selection Methodology for Ongoing Counts	Validating big data sets from private data providers (Strava, HERE, Streetlight, etc.) Creating AADT estimates for a network
Community Engagement/Specialty Counts	Identify Project Location Use Community Input	Determining overall trends in the number of male/female riders Collecting counts for advocacy purposes related to a specific project

## 3.2 Follow Site Selection Process – Ongoing Counts



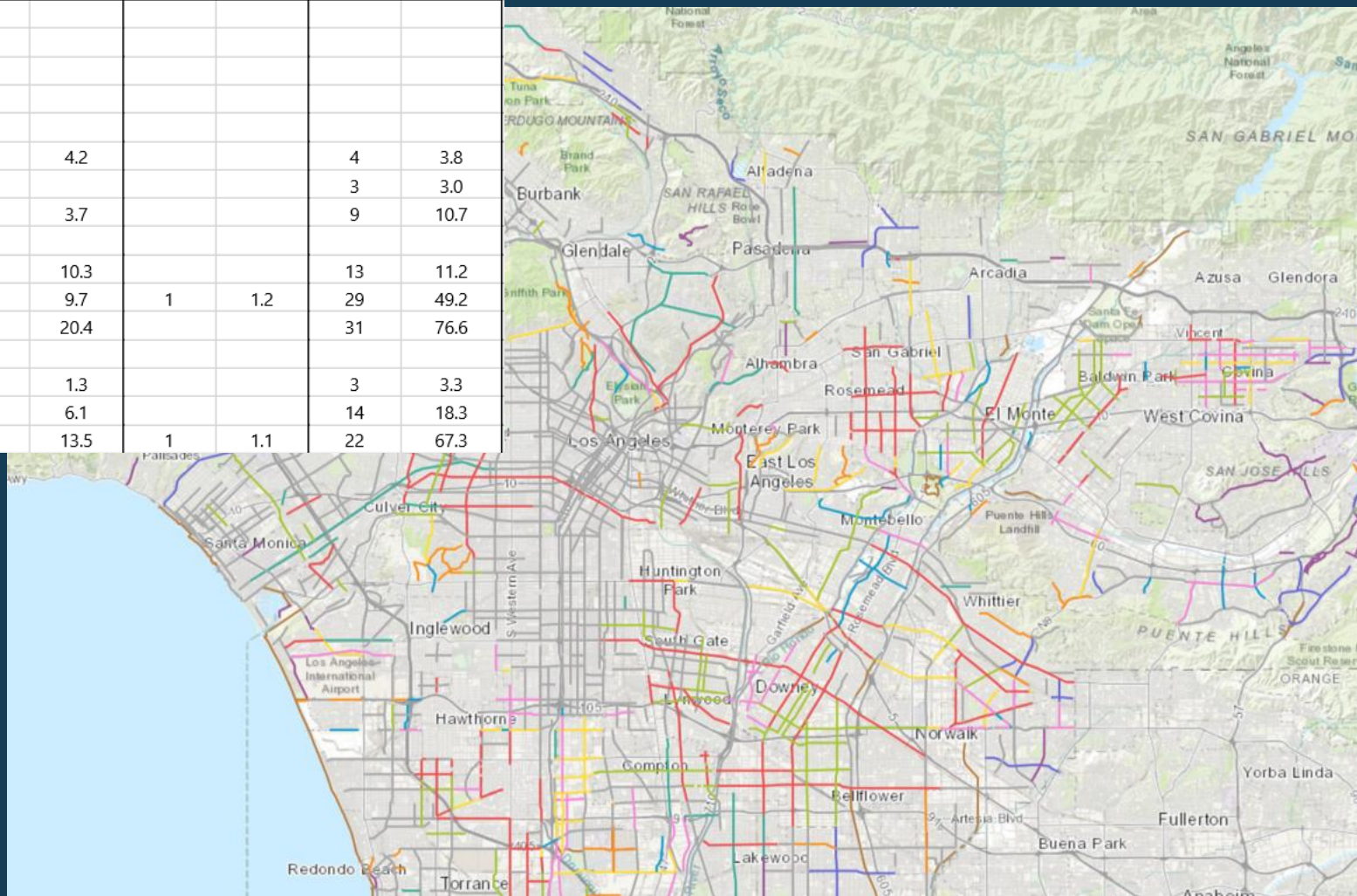
- Bicycle Methodology ([Link](#))
  - Population and Employment Density
  - Median Household Income
  - Level of Traffic Stress
- Pedestrian Methodology ([Link](#))
  - Land Use
  - Demographics
  - Accessibility



# 3.3 Determine Count Siting Methodology

Representation by Strata of Continuous 0.5 mile or Greater Bikeway Segments (or 0.25 mile or Greater after Split at City boundary)

DENSITY	STRATA		Total		Class I		Class II		Class IV		No Facility	
	INCOME	COMFORT	Segments	Miles	Segments	Miles	Segments	Miles	Segments	Miles	Segments	Miles
High	Very High	Very High										
High	Very High	High										
High	Very High	Medium										
High	Very High	Low										
High	High	Very High	1	0.7	1	0.7						
High	High	High	8	8.0			4	4.2			4	3.8
High	High	Medium	3	3.0							3	3.0
High	High	Low	12	14.4			3	3.7			9	10.7
High	Medium	Very High	6	5.4	6	5.4						
High	Medium	High	21	21.5			8	10.3			13	11.2
High	Medium	Medium	39	60.1			9	9.7	1	1.2	29	49.2
High	Medium	Low	50	97.0			19	20.4			31	76.6
High	Low	Very High										
High	Low	High	5	4.6			2	1.3			3	3.3
High	Low	Medium	19	24.4			5	6.1			14	18.3
High	Low	Low	35	81.9			12	13.5	1	1.1	22	67.3



## 4. Determine the Resources Needed and Plan Ahead



1. Intersection vs. Screenline Resources
2. Manual vs. Automated Resources
3. Portable vs. Permanent Automated Counters
4. Technology Guidance
5. Time Required



## 4.1 Intersection vs. Screenline Resources

- The current ATDB user interface has been designed for screenline counts.
- If your agency would like to upload intersection counts, please contact [atdb@scag.ca.gov](mailto:atdb@scag.ca.gov). SCAG expects to improve options for intersection counts in the future once demand can be ascertained.

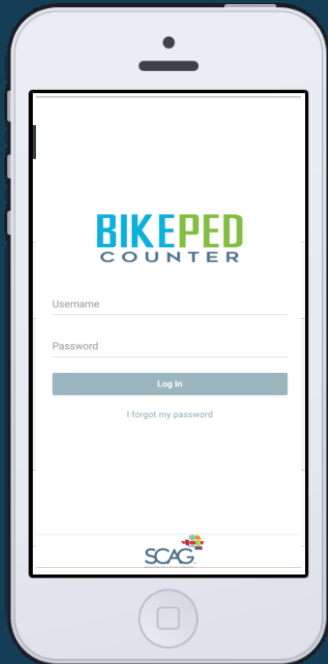
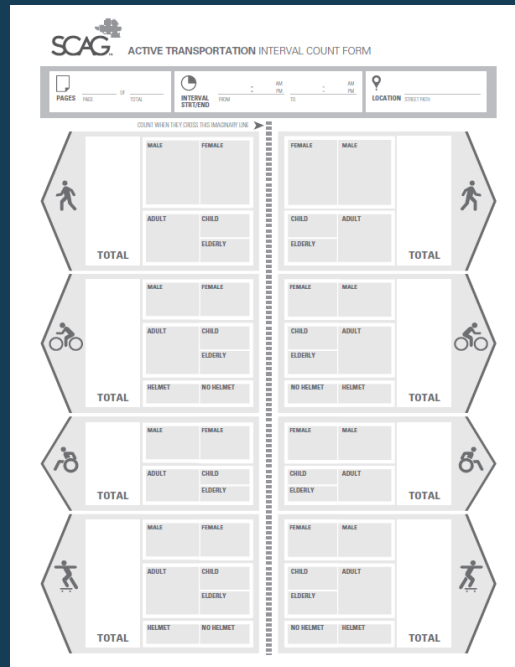
# 4.2 Manual vs. Automated Resources

## Manual

- Counters/Staff
- Counter Tool (App or Paper Form)
- Count Assignments
- 2 Hour AM/PM Peak

## Automated

- Automated Counters
- Rotation/Maintenance Schedule
- IT/Technical Staff
- One Week Duration

The image shows a paper form titled 'SCAG ACTIVE TRANSPORTATION INTERVAL COUNT FORM'. It includes fields for 'PAGES', 'TOTAL', 'INTERVAL', 'DATE', 'TIME', and 'LOCATION'. The form is divided into four sections for different modes of transport: Pedestrian, Bicyclist, Wheelchair User, and Roller Skater. Each section contains a grid for recording counts by gender (Male/Female) and age group (Adult/Child/Elderly). The Bicyclist section also includes a grid for helmet status (Helmet/No Helmet). Each section has a 'TOTAL' field.



## 4.3 Portable vs. Permanent Automated Counters

- Portable
  - Counters/Staff
  - Rotation Schedule
  - Upload Methodology
- Permanent
  - Counters/Staff
  - Maintenance Schedule
  - Upload Methodology
- Data Upload Process for Both Portable and Permanent
  - Purchase and Install Automated Counters
  - Determine Data Upload Pipeline
  - Use Automated Counter Interface or Direct Upload using API

## 4.4 Technology Guidance

- Federal Travel Monitoring Guide
- NCHRP Guidebook on Pedestrian and Bicycle Volume Data Collection
- Federal Guidance PPT
- FHWA Bicycle-Pedestrian Count Technology Pilot Project

## 4.5 Time Required

Manual:

2 Hour AM Peak +  
2 Hour PM Peak +  
2 Hour Weekend  
(6 hours Minimum)

Automated:

One Week Minimum



Thank you

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