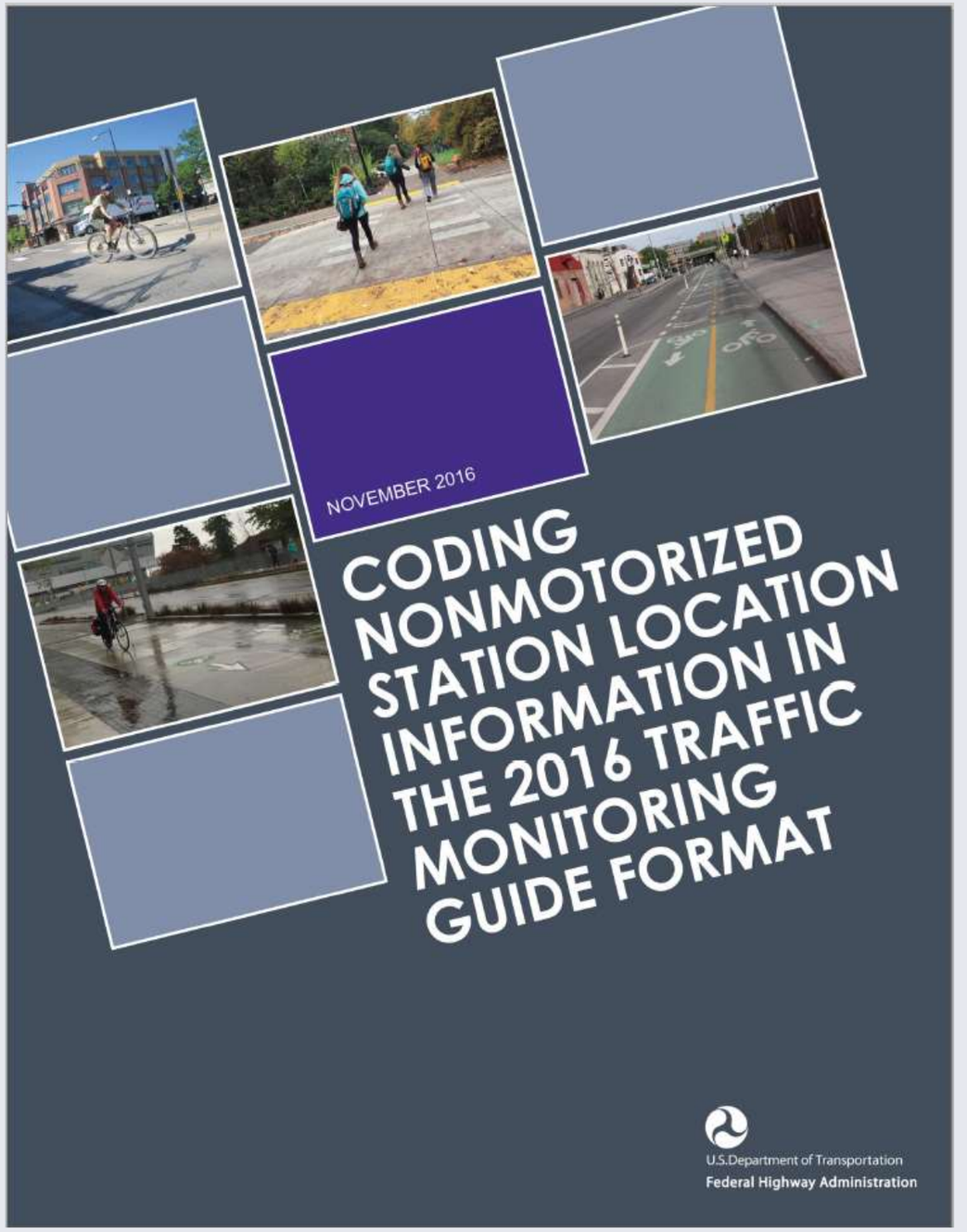
# The Traffic Monitoring Guide: Counting Bicyclists and Pedestrians

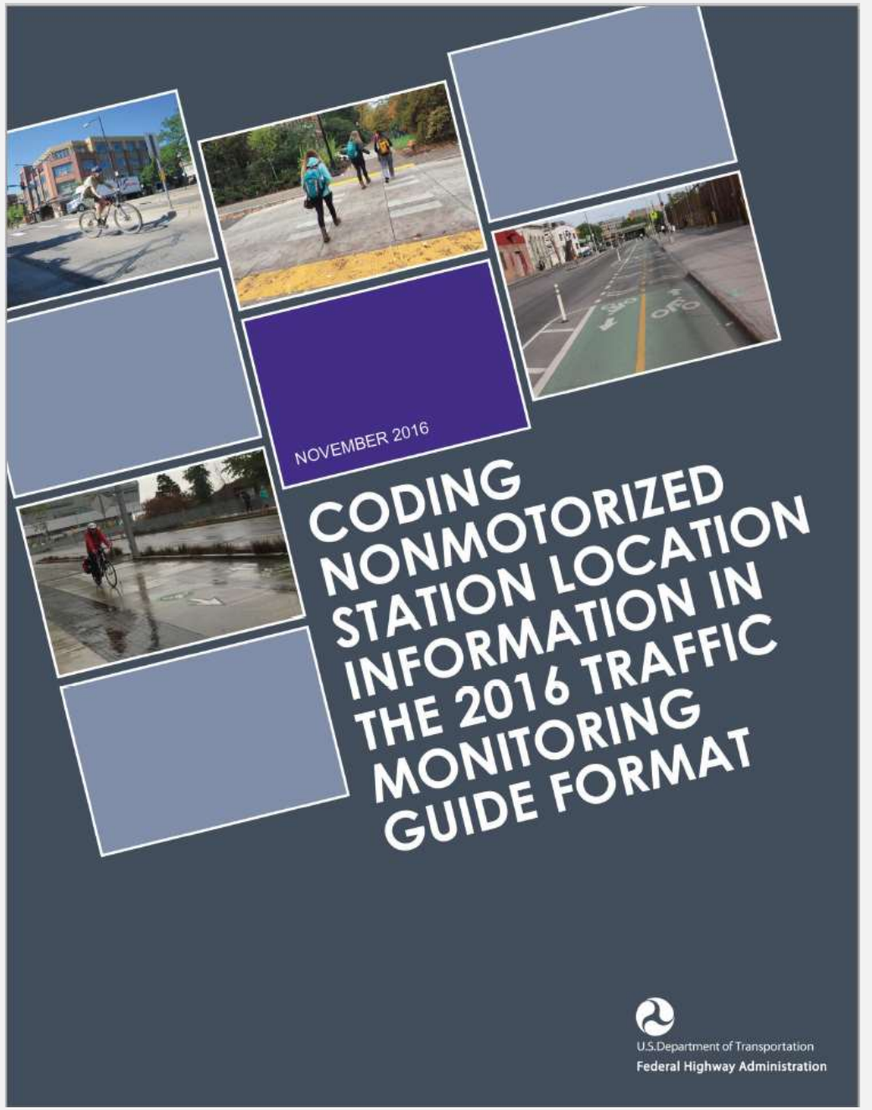
APBP 2017

June 28: 11:15am-12:45pm



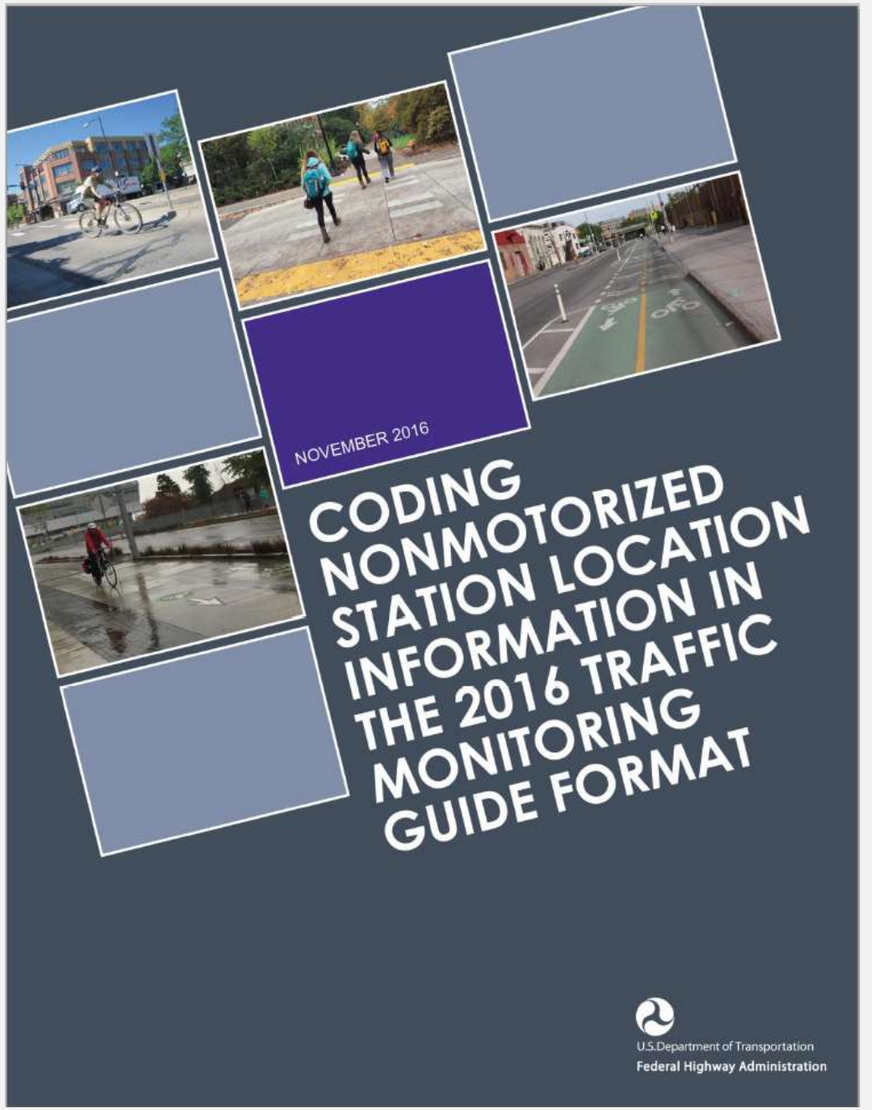
# Presentation Organization

- Why count bicyclists and pedestrians?
- Why report count data?
- What resources are available?
- How do I record counts?



# Before We Begin a Few Questions…

- Do you currently collect bicycle and pedestrian data? Why or why not?
- If you collect data, how do you use it?
- What are barriers to collecting data (or more data)?
- How do you store and manage data?
- What resources do you need you don’t have?



# Why count bicyclists and pedestrians?

- Measure facility usage
- Evaluate before & after volumes
- Analyze safety
- Identify user characteristics
- Estimate network volumes
- Prioritize projects
- Assess mode split
- Identify activity patterns

# Measure Facility Usage

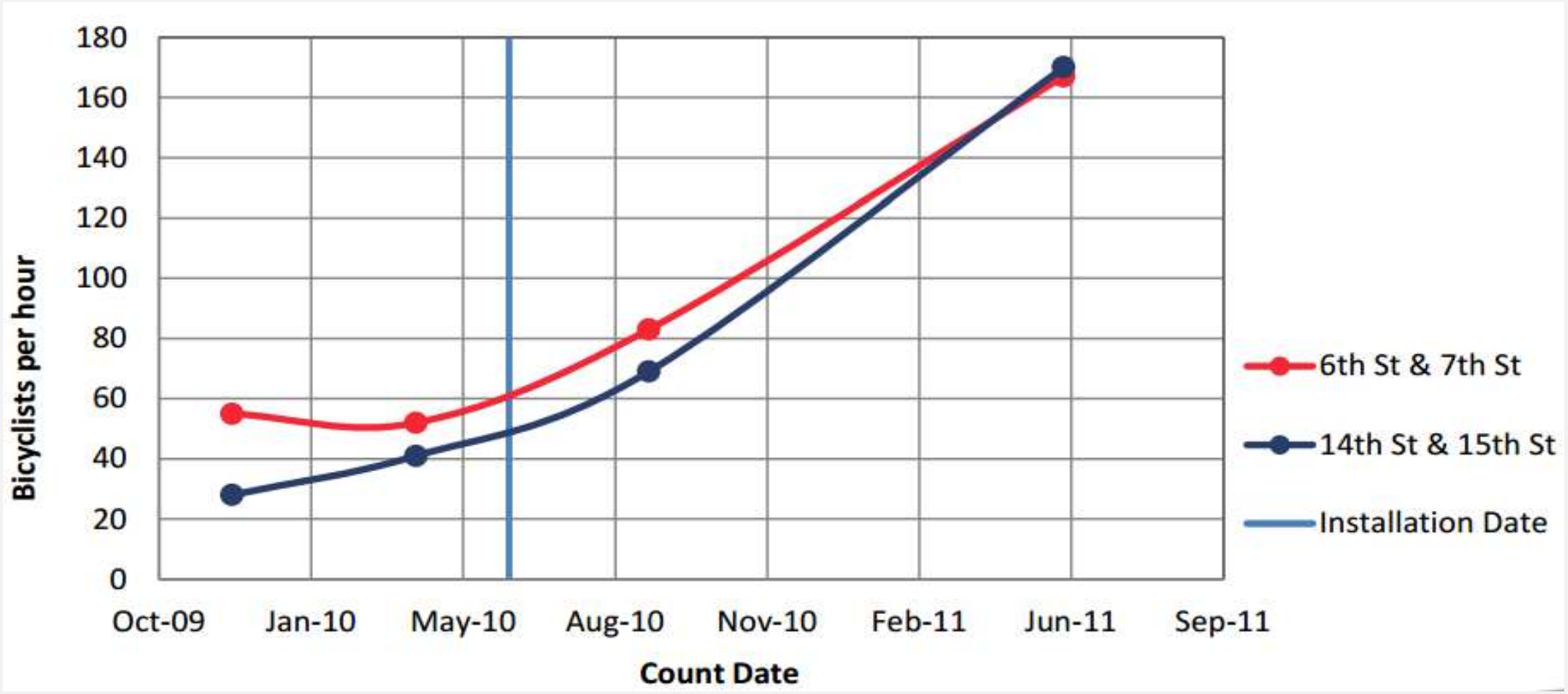
- Transportation system monitoring program
- Typically requires collecting counts at set locations and regular intervals
- Critical for tracking progress, measuring success


*Change in walking and bicycling activity at Washington State count sites, 2009–2012*
*Source: Washington State DOT (2012)*

# Evaluate Before-and-After Volumes

- Measure volumes before and after facility is opened
- Forecast usage of planned facilities

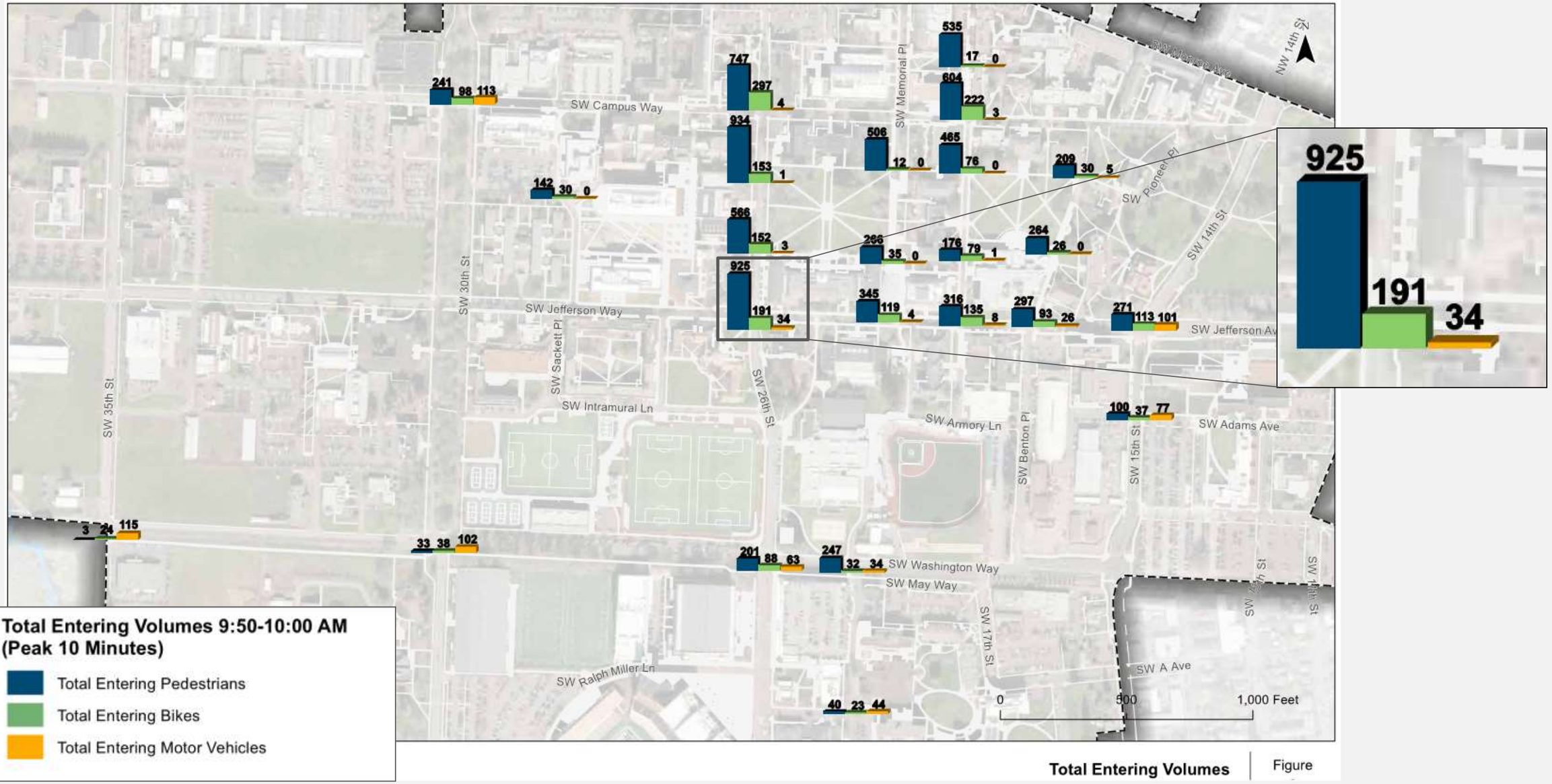
*Before-and-after bicycle facility usage: buffered bicycle lanes on Pennsylvania Ave., Washington, DC*
*Source: Kittelson & Associates, Portland State University, and Toole Design Group (2012)*



# Analyze Safety

- Quantifying exposure
  - *Challenge*: in general, more pedestrian & bicycle activity at a location → more reported crashes
  - Variety of methods proposed to quantify exposure
  - One method compares pedestrian–vehicle collisions to average annual pedestrian volumes
- Assessing friction between modes

# Analyze Safety

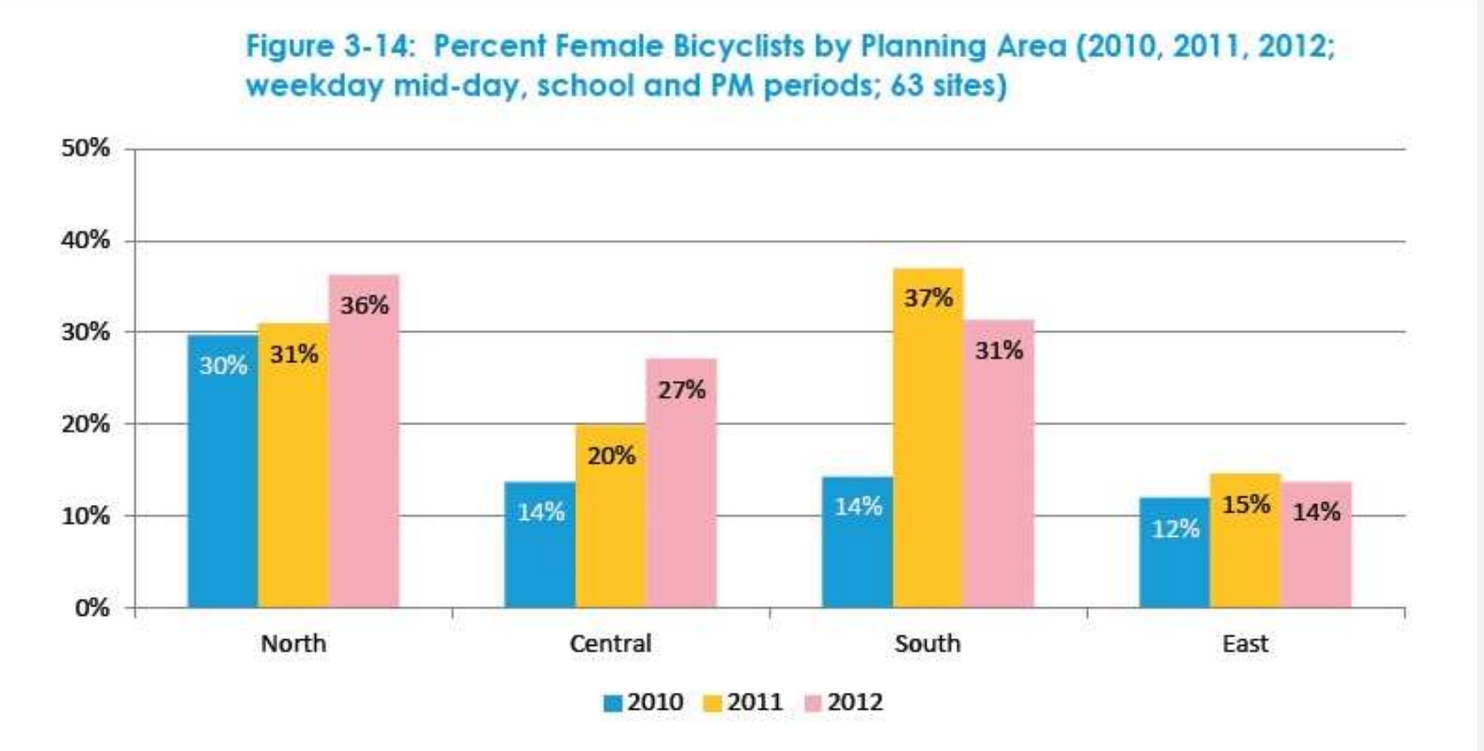


# Analyze Safety

| | Location | Pedestrian-Bicyclist Exposure (Cars*(Peds+Bikes)) | Pedestrian-Bicyclist Friction (Peds*Bikes) | Pedestrian Exposure (Cars*Peds) | Bicyclist Exposure (Cars*Bikes) |
|---|---|---|---|---|---|
| R | 14th Street-15th Street & Jefferson Way | 38.78 | 30.62 | 27.37 | 11.41 |
| B | 30th Street & Campus Way | 38.53 | 23.81 | 27.46 | 11.07 |
| N | 26th Street & Jefferson Way | 38.11 | 177.63 | 31.62 | 6.49 |
| W | 26th Street & Washington Way | 18.21 | 17.69 | 12.66 | 5.54 |
| S | 15th Street & Adams Ave | 10.63 | 3.74 | 7.78 | 2.85 |
| Q | Benton Place & Jefferson Way | 10.14 | 27.62 | 7.72 | 2.42 |
| X | Stadium Avenue & Washington Way | 9.49 | 7.90 | 8.40 | 1.09 |
| U | 30th Street & Washington Way | 7.24 | 1.25 | 3.37 | 3.88 |
| C | 26th Street & Campus Way | 4.20 | 223.34 | 3.01 | 1.19 |
| P | Waldo Place & Jefferson Way | 3.68 | 43.88 | 2.60 | 1.08 |
| T | 35th Street & Washington Way | 3.11 | 0.07 | 0.35 | 2.76 |
| D | Waldo Place & Campus Way | 2.72 | 152.07 | 2.06 | 0.67 |
| J | 26th Street & Southern MU Quad Walkway | 2.15 | 86.03 | 1.70 | 0.46 |
| O | Langton Place & Jefferson Way | 1.86 | 41.06 | 1.38 | 0.48 |
| I | Pioneer Place & Northern Library Quad Walkway | 1.20 | 6.27 | 1.05 | 0.15 |
| F | 26th Street & Northern MU Quad Walkway | 1.09 | 142.90 | 0.93 | 0.15 |
| L | Waldo Place & Southern Library Quad Walkway | 0.26 | 13.90 | 0.18 | 0.08 |
| H | Waldo Place & Northern Library Quad Walkway | | 35.34 | | |
| K | Memorial Place & Southern MU Quad Walkway | | 9.31 | | |
| A | SE Corner Weniger Hall | | 9.15 | | |
| M | SE Corner Library Quad Walkway | | 6.86 | | |
| G | Memorial Place & Northern MU Quad Walkway | | 6.52 | | |
| E | West of the Learning Innovation Center | | 4.26 | | |

# Identify User Characteristics

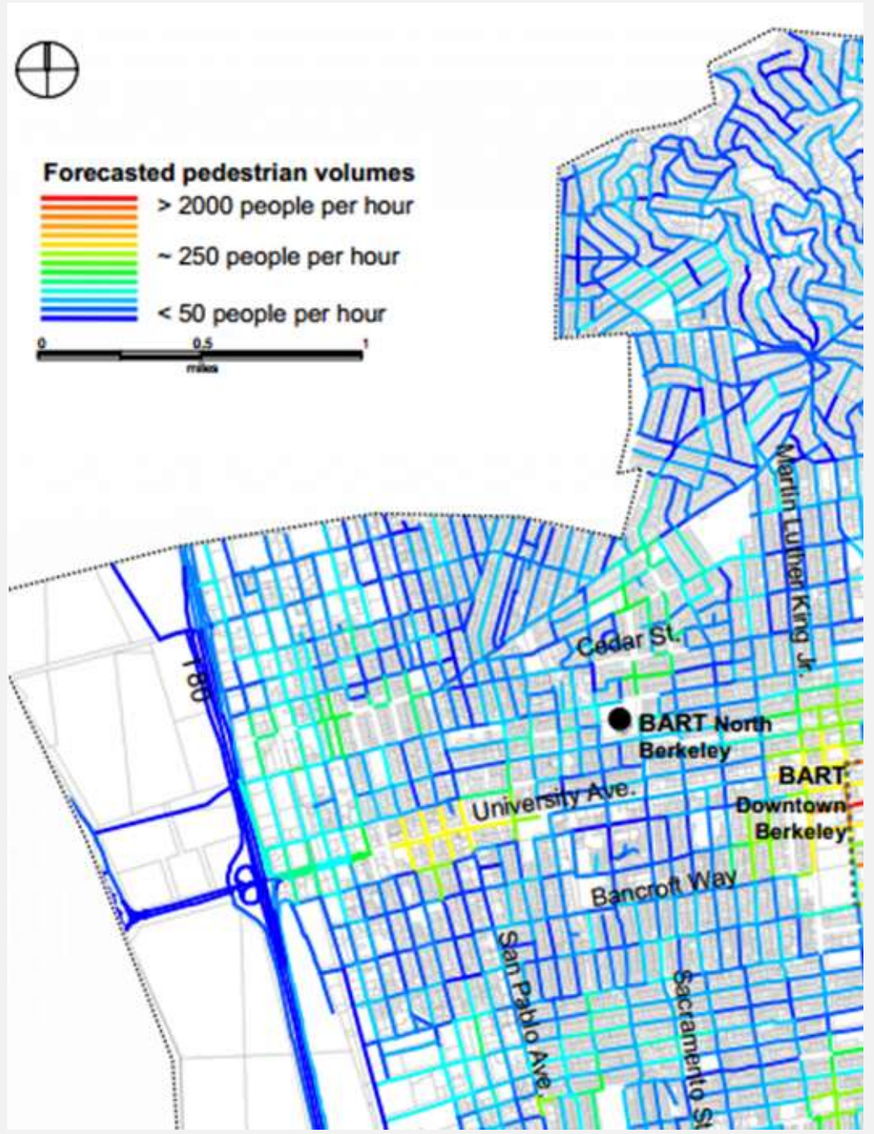
- Demographics
  - Gender
  - Age
  - Disabilities
- Behaviors
  - Helmet use
  - Looking before crossing
  - Yielding to pedestrians




*Source: Alameda County Transportation Commission.* Pedestrian and Bicycle Manual Counts Report: 2002-2012*, Prepared by Wheeler Consulting and Switchpoint Planning, August 2013.*

# Estimate Network Volumes

- Multimodal travel demand modeling is an emerging field
- Potential to estimate demand over a large area and forecast influence of infrastructure changes




*Source: City of Berkeley, CA Pedestrian Master Plan*

# Prioritize Projects

- Identify high-priority locations for improvements
- Counts & estimated network volume can be used as a demand factor for ranking locations

| | A | B |
|---|---|---|
| 1 | **Step 2: Select Factors** | |
| 2 | **Factor** | **Select?** |
| 3 | Stakeholder Input | Yes |
| 4 | Constraints (Cost and Legal) | No |
| 5 | Opportunities (Upcoming Projects) | Yes |
| 6 | Safety | Yes |
| 7 | Existing Conditions | No |
| 8 | Demand | Yes |
| 9 | Connectivity | No |
| 10 | Equity | Yes |
| 11 | Compliance | No |

| | ID | Location | Prioritization Score | Prioritization Rank |
|---|---|---|---|---|
| 7 | 3 | 3RD ST | 275.3 | 1 |
| 8 | 1 | CENTRAL AVE | 164.0 | 2 |
| 9 | 7 | OSBORN RD | 158.2 | 3 |
| 10 | 19 | 24TH ST | 142.2 | 4 |
| 11 | 10 | 3RD/5TH | 142.2 | 5 |
| 12 | 4 | 12TH ST | 141.2 | 6 |
| 13 | 9 | 20TH ST | 137.9 | 7 |
| 14 | 5 | 15TH AVE | 120.3 | 8 |
| 15 | 2 | WASHINGTON/JEFFERSON ( | 117.8 | 9 |
| 16 | 8 | OAK ST | 111.0 | 10 |
| 17 | 37 | MARYLAND AVE | 96.2 | 11 |
| 18 | 36 | MISSOURI AVE | 95.5 | 12 |
| 19 | 35 | GRAND CANAL | 91.1 | 13 |
| 20 | 26 | RAY RD | 88.6 | 14 |
| 21 | 25 | 48TH ST | 81.9 | 15 |
| 22 | 16 | 7TH AVE | 78.3 | 16 |
| 23 | 29 | INDIAN BEND WASH | 76.6 | 17 |

*Source: Toole Design Group, NCHRP 07-17 Report, ActiveTrans Prioritization Tool (APT)*

# Assess Mode Split

- Mode split can help define priorities and select appropriate facilities
- Assess changes over time

*New York City Department of Transportation (2013)*


Peak hour traffic volumes:

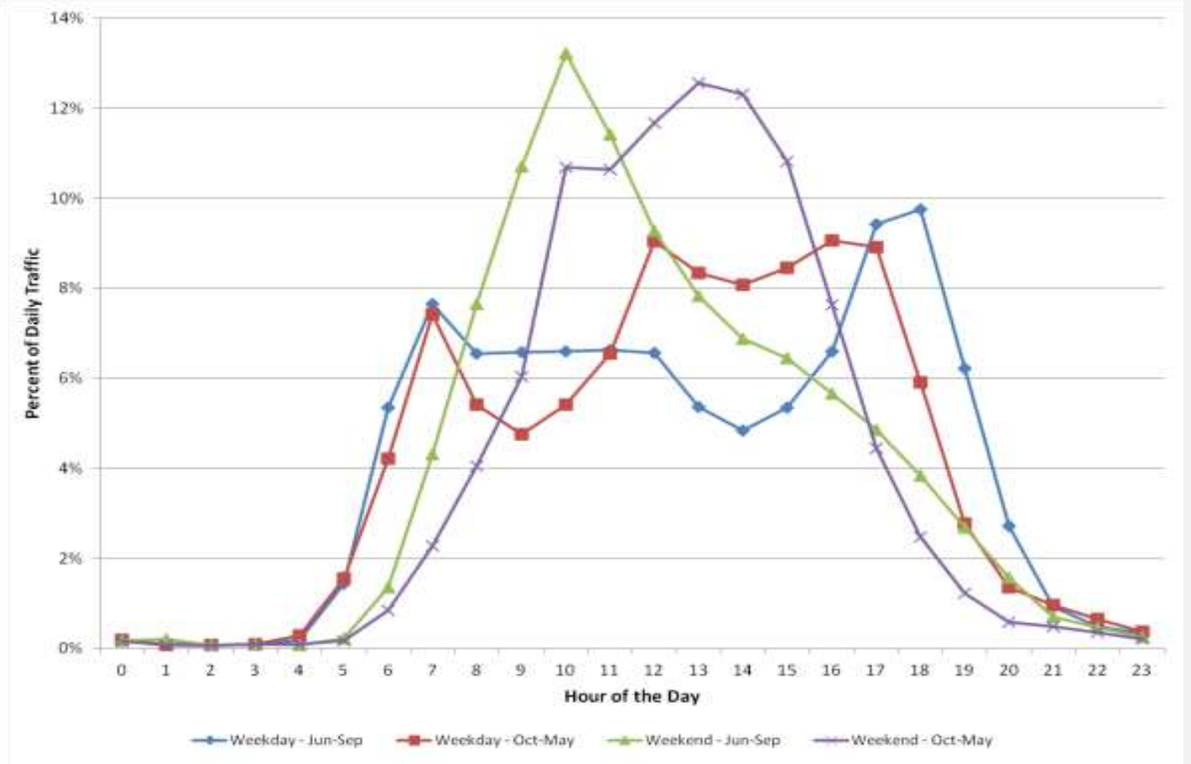
- 1,559 vehicles (Brooklyn-bound, 4:30-5:30pm)
- 1,556 vehicles (Queens-bound, 8-9am)

Pulaski Bridge Weekday Bicycle/Pedestrian Counts
7-11am & 2-7pm

| Mode | April 2009 | April 2013 | % change |
|---|---|---|---|
| Bicyclists | 487 | 1,004 | +106% |
| Pedestrians | 1,077 | 1,586 | +47% |

# Why Report Count Data?

- Understand time-of-day, day-of-week, and monthly variations in nonmotorized travel
- Estimate annual average daily bicycle traffic (AADBPT), AADPT, AADNT from short duration counts
- Report and compare facility use



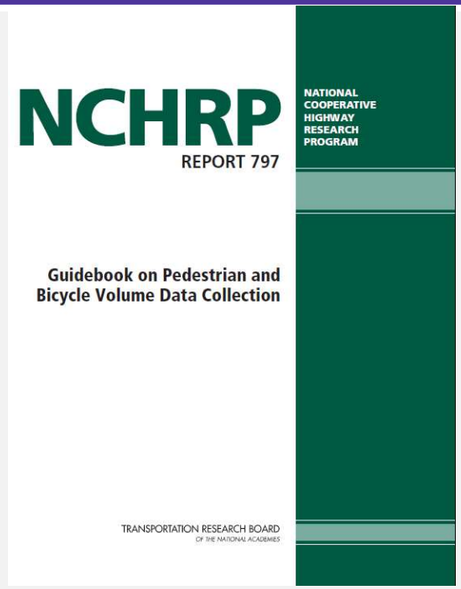

*Cherry Creek Trail continuous count data, Colorado Department of Transportation, 2010*

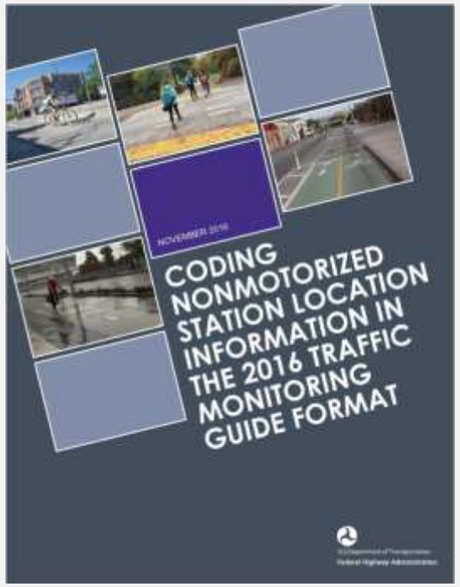
# Why Report Count Data?

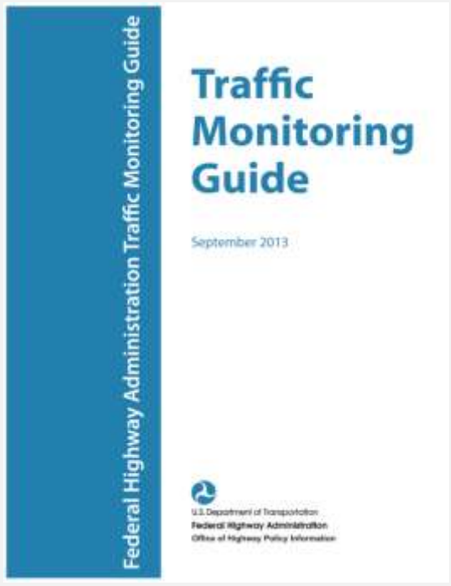
- Contribute to national repository of data for researchers
- Develop accurate and consistent demand and usage figures to measure impact of investments
- Understand trends between bicycle and pedestrian volumes and other factors (facility type, land use, vehicle volumes, etc.)

# What Resources are Available?

- National Bicycle and Pedestrian Document Project (NBPD)
- NCHRP 797
- Traffic Monitoring Guide
- Coding Nonmotorized Station Location Information in the 2016 TMG Format
- Many examples from agencies!

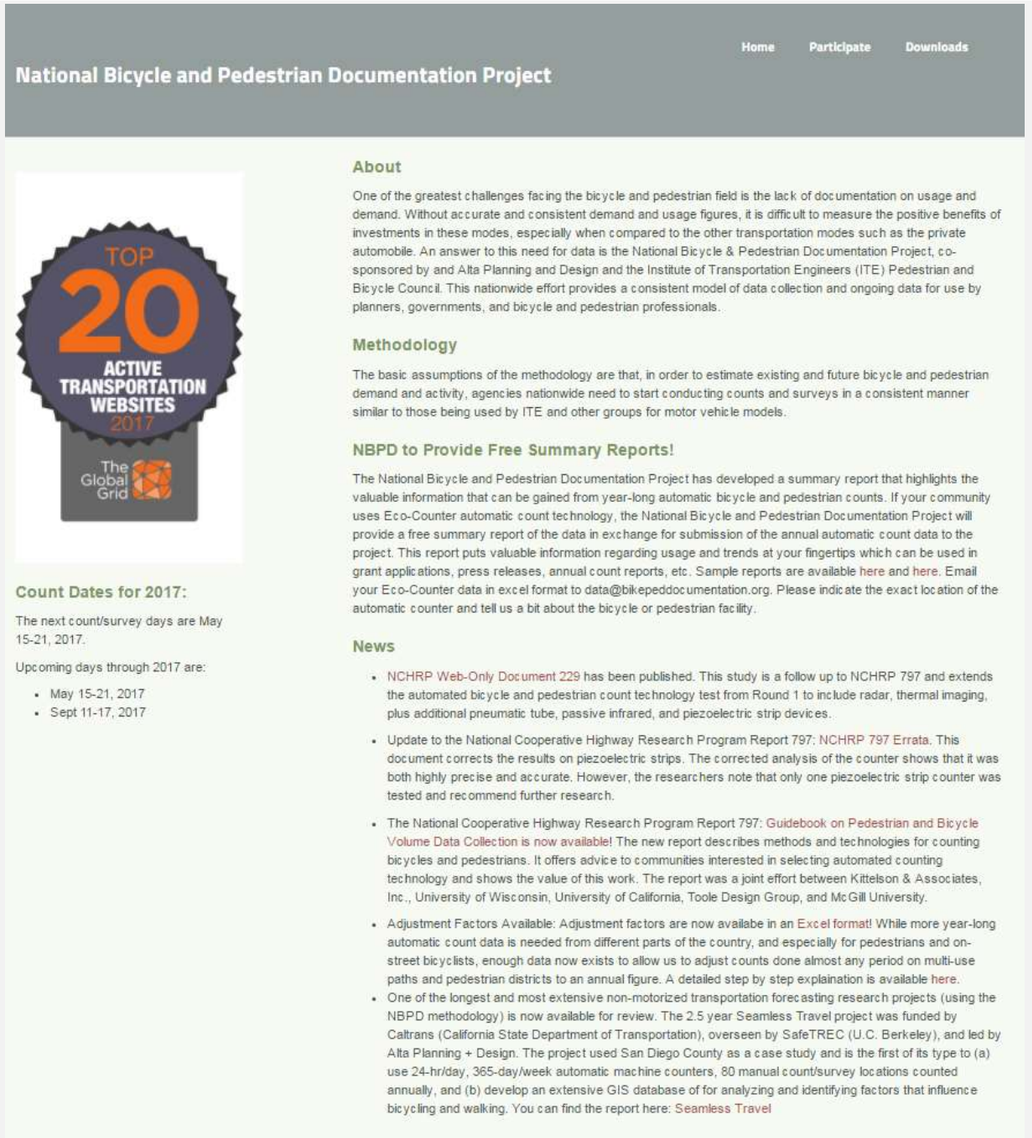



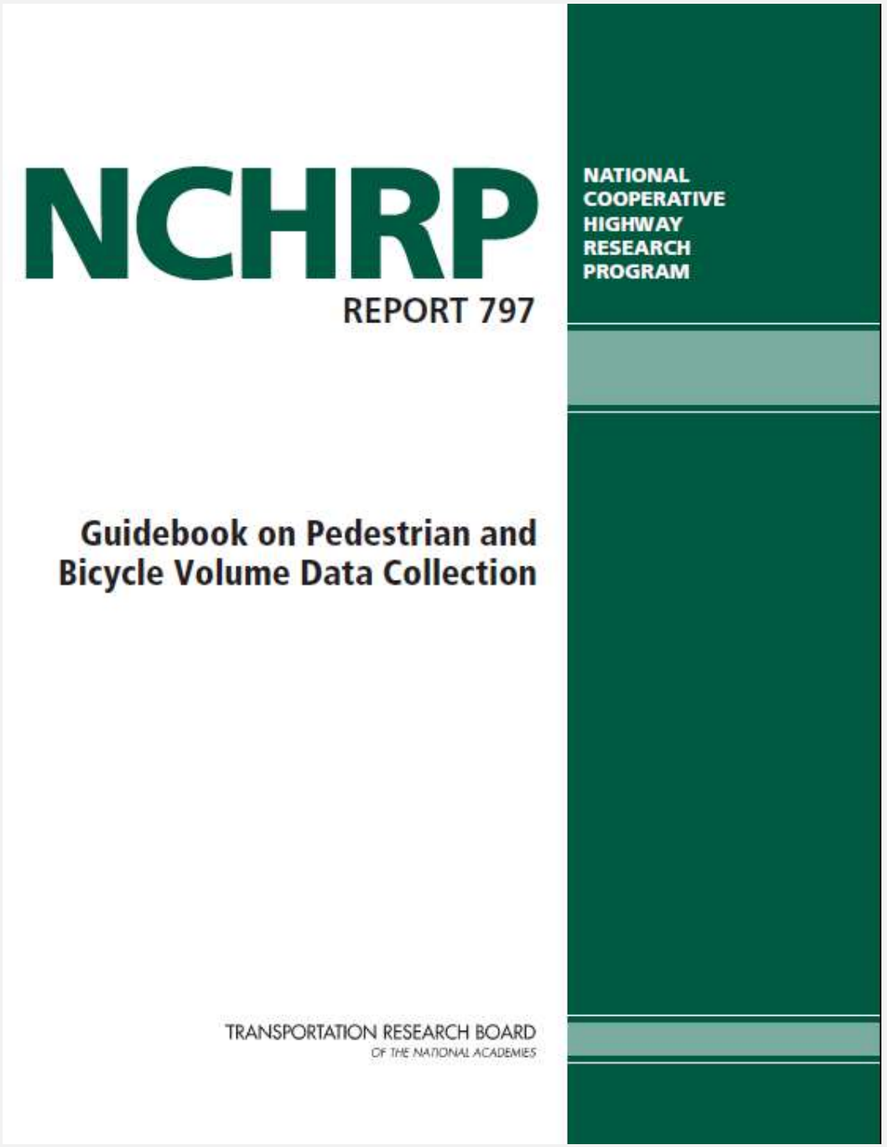
# NBPD

- Started in 2014
- Led by Alta Planning + Design in collaboration with ITE Pedestrian & Bicycle Council
- One of first attempts to create national repository for walking and bicycling data
- Includes resources for collecting manual counts



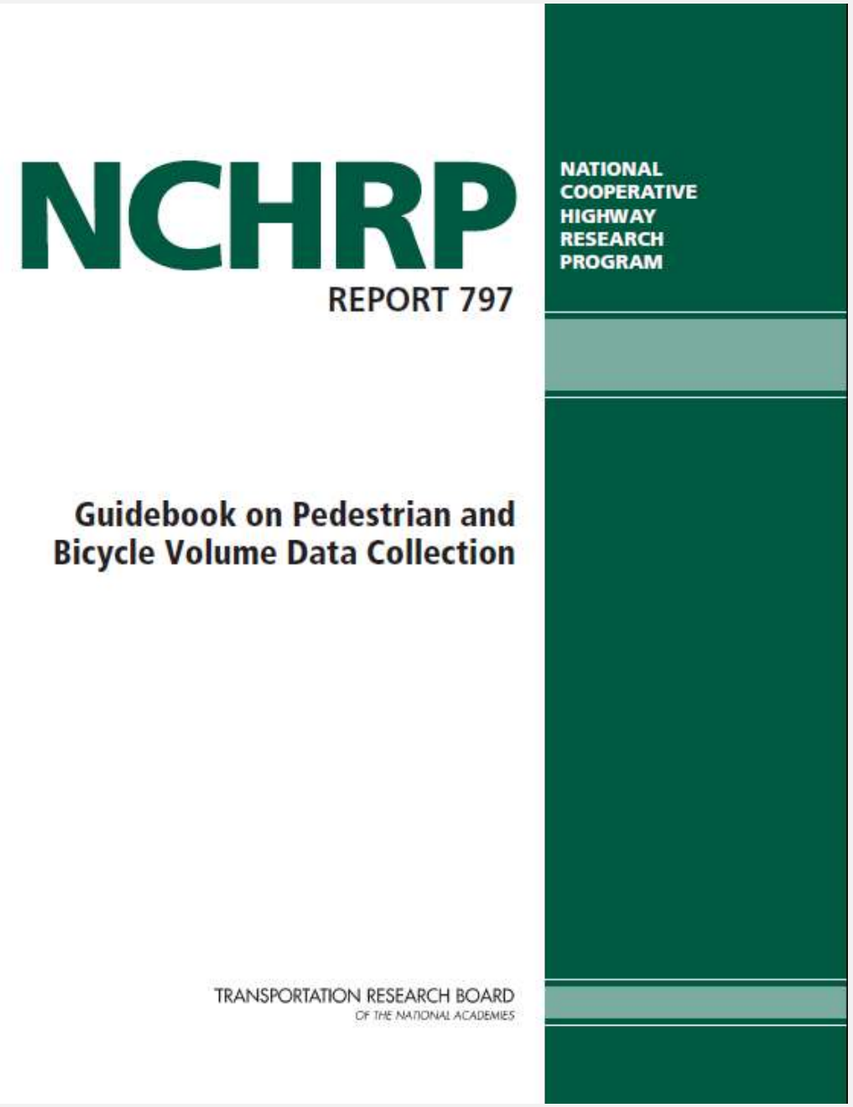
# NCHRP 797

- NCHRP 797: Guidance for Practitioners
- NCHRP Web-only Document 205: documentation of the research effort



# NCHRP Report 797 Topics

- Count applications with case studies
- Planning and implementing a count program, with checklists and case studies
- Correcting raw count data for to account for site- and product-specific counting errors
- Expanding short-term count data to estimate longer-duration volumes
- Typical applications, strengths/limitations, relative cost, installation needs, and accuracy of counting technologies



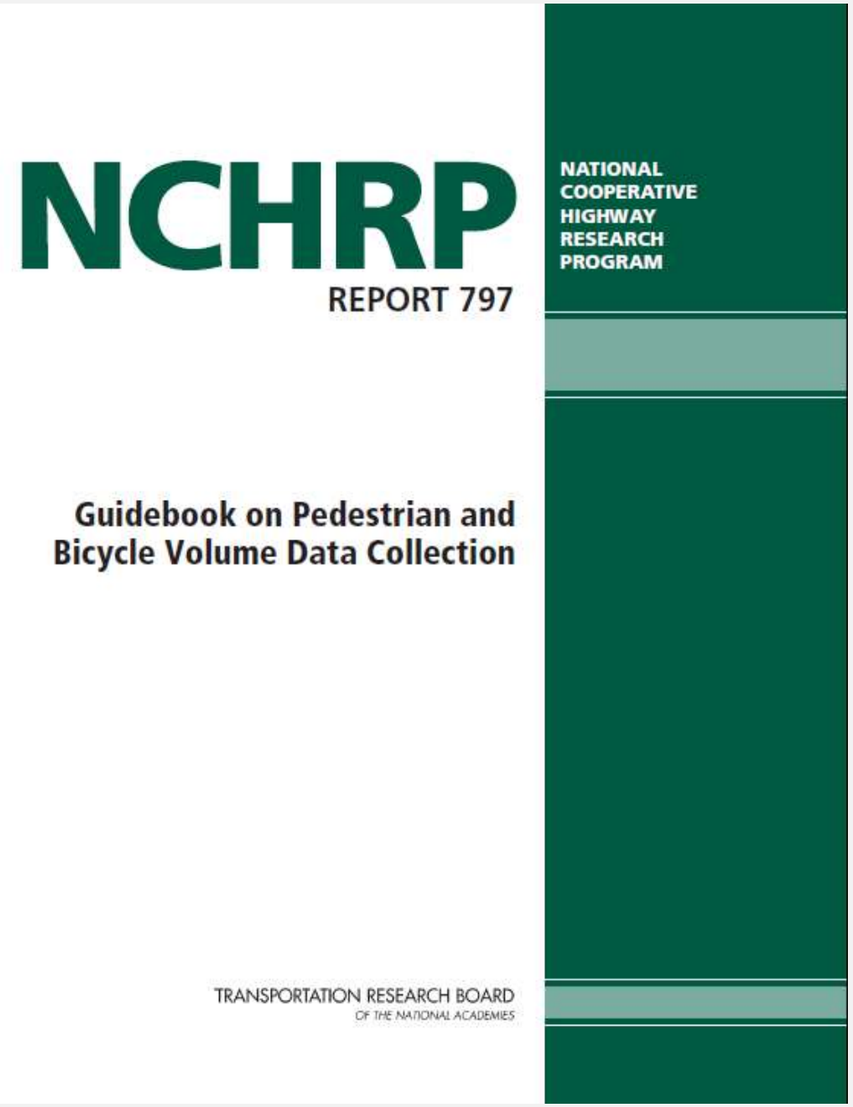
# NCHRP Report 797 Contents

Quick Start Guide

1. Introduction
2. Non-Motorized Count Data Applications
3. Data Collection Planning and Implementation
4. Adjusting Count Data
5. Sensor Technology Toolbox

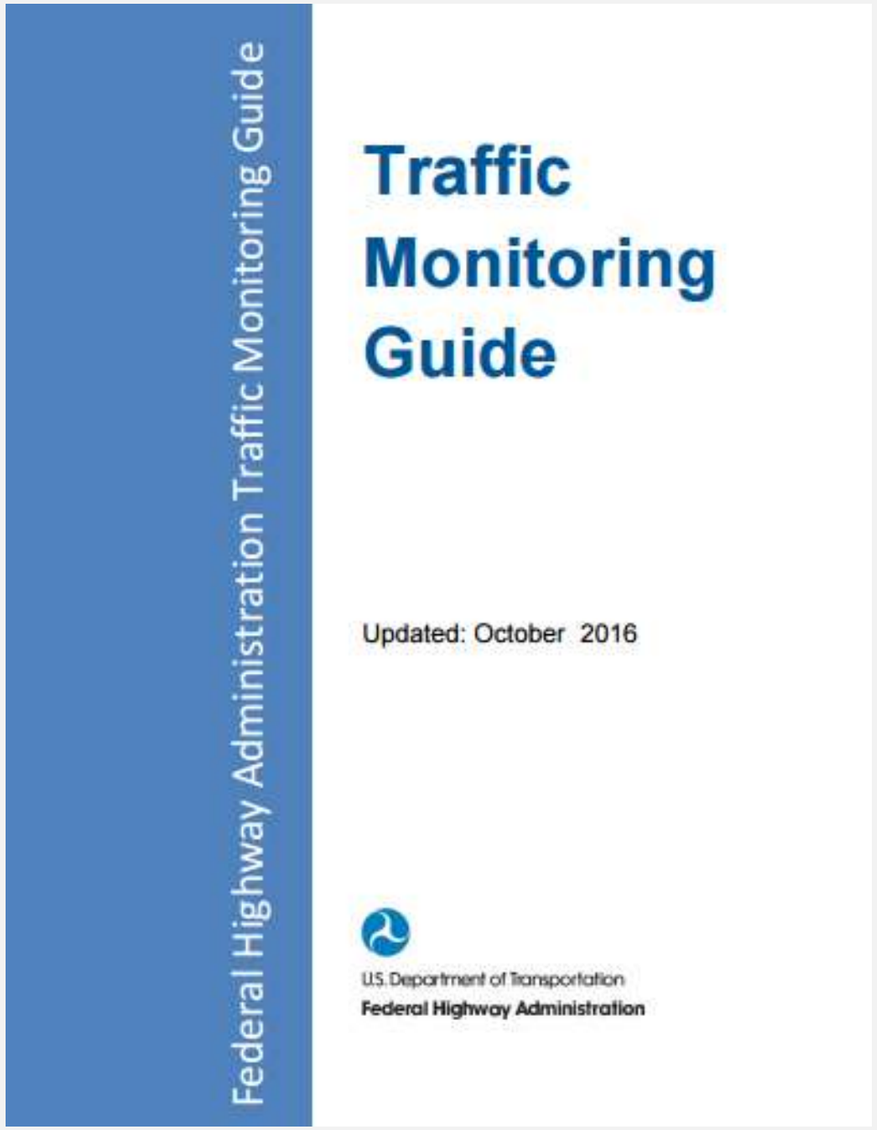
*Appendices*

Case Studies
Manual Pedestrian and Bicyclist Counts: Example Data Collector Instructions
Count Protocol Used for NCHRP Project 07-19
Day-of-Year Factoring Approach



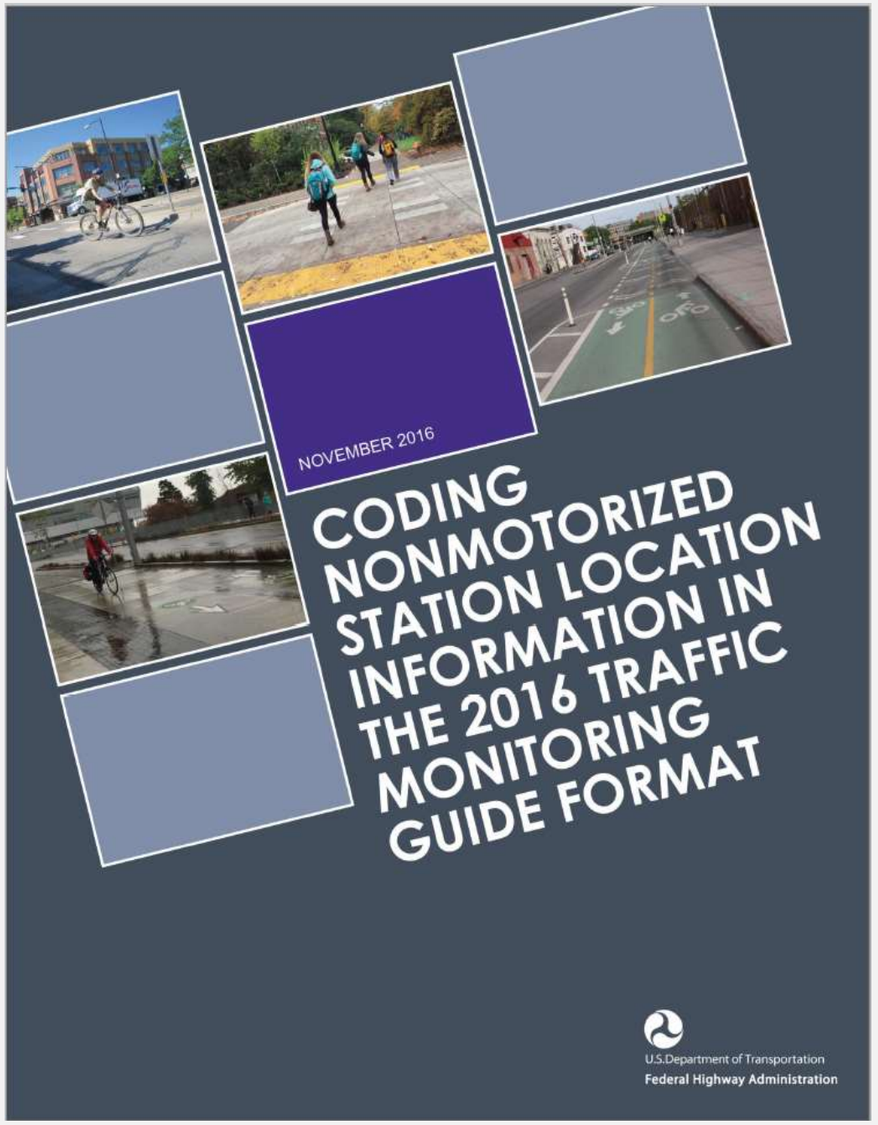
# Traffic Monitoring Guide

- Chapter on nonmotorized traffic introduced in 2013 guide
- 2016 guide includes updates to nonmotorized data format
- Guidance on collecting and reporting data



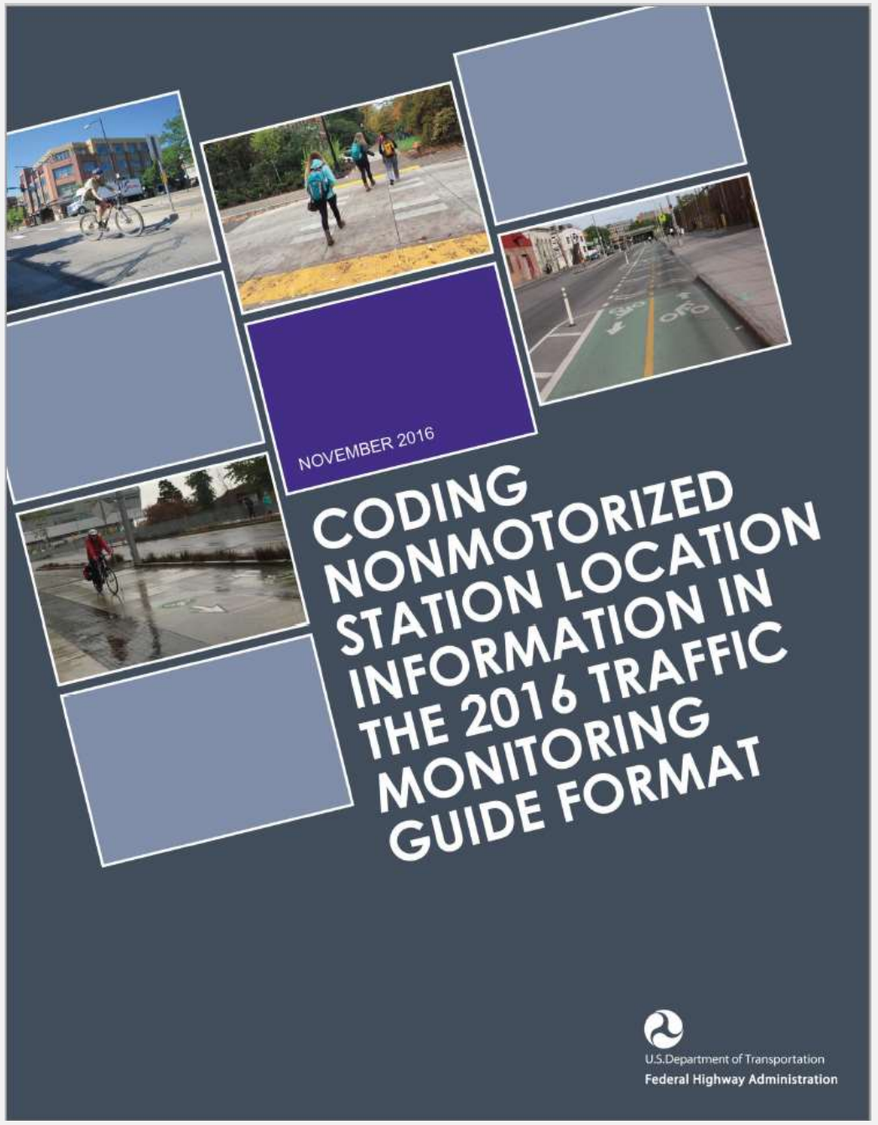
# TMG Format Guidance

- Guidebook for TMG Format
- Intent to create flexible, comprehensive data format
- This guidebook's goal is to make the format accessible
- Focus of today's presentation

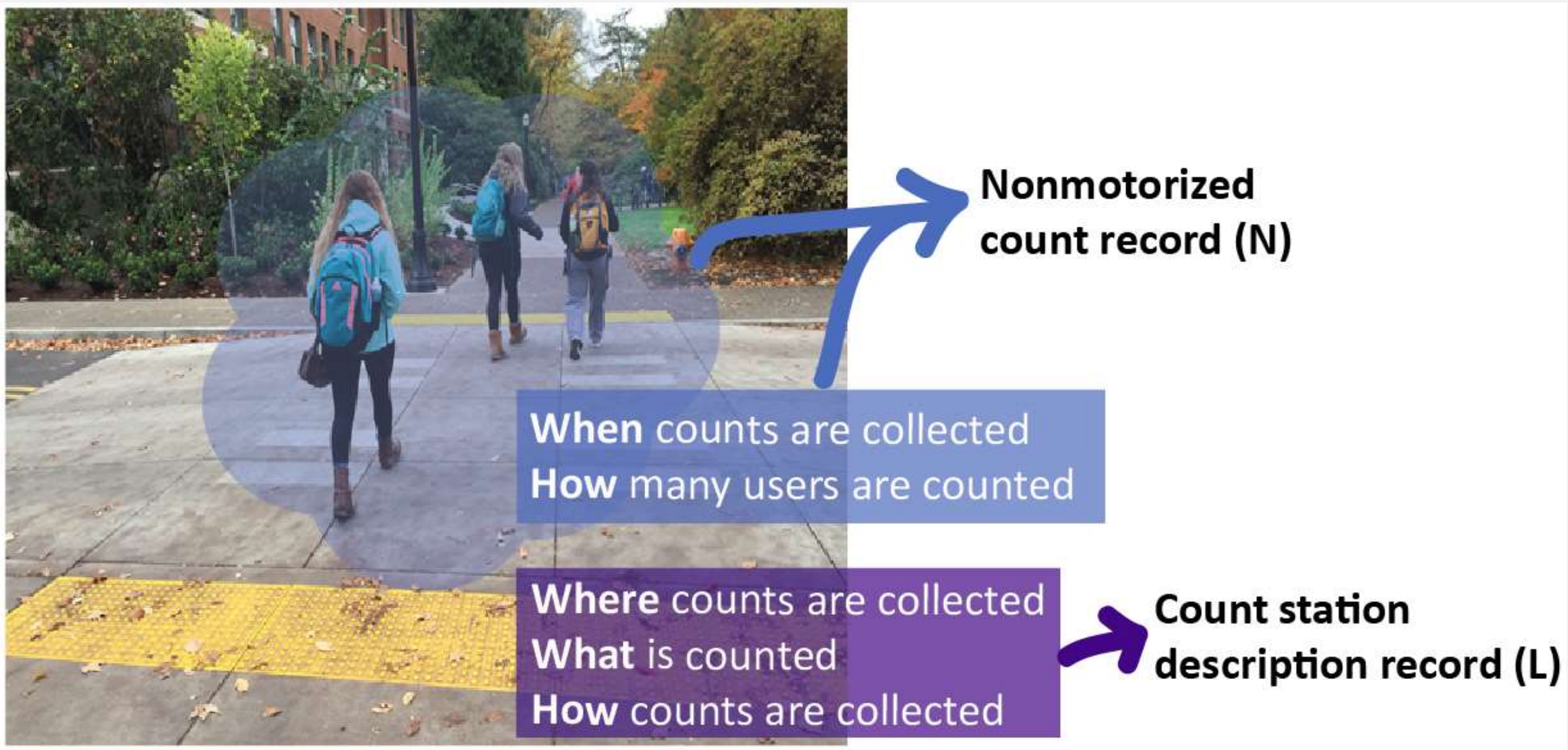


# How Do I Report Counts?

- Systematically
- Consistently
- Using the TMG Format



# TMG Format


Nonmotorized
count record (N)
When counts are collected
How many users are counted
Where counts are collected
What is counted
How counts are collected
Count station
description record (L)

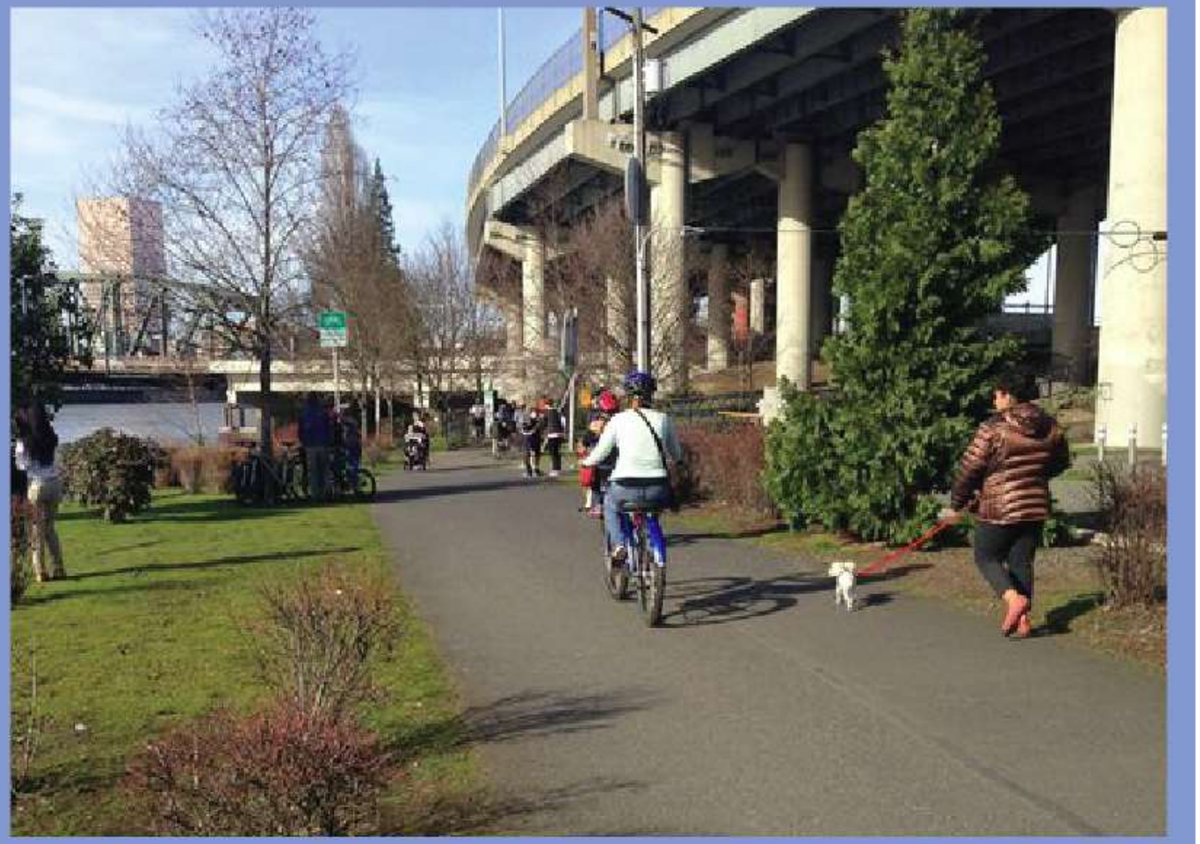
# Count Station Description (Location)

- Describes primarily where the count was collected, as well as what was counted and how it was counted

**Location:** shared use path with pedestrians and cyclists traveling in both directions

**To count:**

- ➜ Total number of multimodal users = ***1*** station location record
- ➜ Total number of cyclists and total number of pedestrians = ***2*** station location records
- ➜ Number of pedestrians in each direction = ***2*** station location records



# Count Station Description (Location)

## 10. INTERSECTION (FIELD 10/COLUMN 19) – OPTIONAL

- Indicates whether count is at an intersection and if so whether it is a roundabout or not.
- When deciding whether a location is located at an intersection or not, consider the context of the count. If the point is to count people using/negotiating an intersection (i.e. we're interested in the movements through/across the intersection), code the location as at an intersection. If the point is to count people using a through facility (and we just happened to set up near an intersection because that is where the best physical location was), code the location as not at an intersection. Exhibit 10 provides an example of each scenario.

Exhibit 10. **INTERSECTION CODING OPTIONS**

Temporary inductive loops are used to count cyclists using NW Banks Road. The bicycle lane shown ends farther east, so the point of the count is to assess use of the roadway by cyclists.

Intersection: 0 (not at an intersection)

Road tubes are temporarily set-up to capture cyclists on Dunsmuir Street just south of Howe. The purpose of the count is to assess bicyclist exposure through the intersection, utilizing vehicle counts at the intersection.

Intersection: 1 (at an intersection)

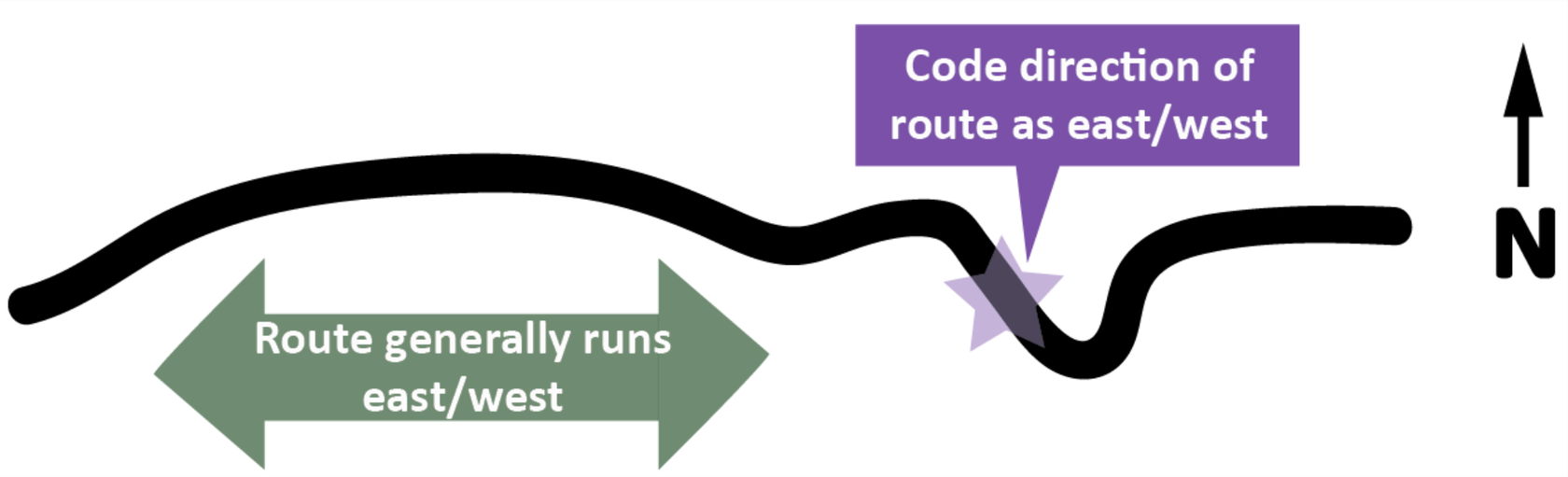
- *Example: 0 (not at an intersection)*

| Code | Type of Count |
|---|---|
| 0 | Other animals<br>specify in Field 32, Other Notes |
| 1 | Pedestrians<br>(only) |
| 2 | Bicycles<br>(only) |
| 3 | Equestrians<br>(only) |
| 4 | Person in<br>Wheelchairs |
| 5 | Persons using other pedestrian assistive devices<br>i.e. skates, skateboards, Segway®, hoverboards, etc. |
| 6 | Motorized vehicles on a trail<br>e.g. snowmobiles, all-terrain vehicles, etc. |
| 7 | All pedestrians and bicycles<br>Sum code 1 and 2 |
| 8 | All nonmotorized traffic<br>Sum codes 1-5 |
| 9 | All traffic on a trail<br>Sum codes 1-6 |

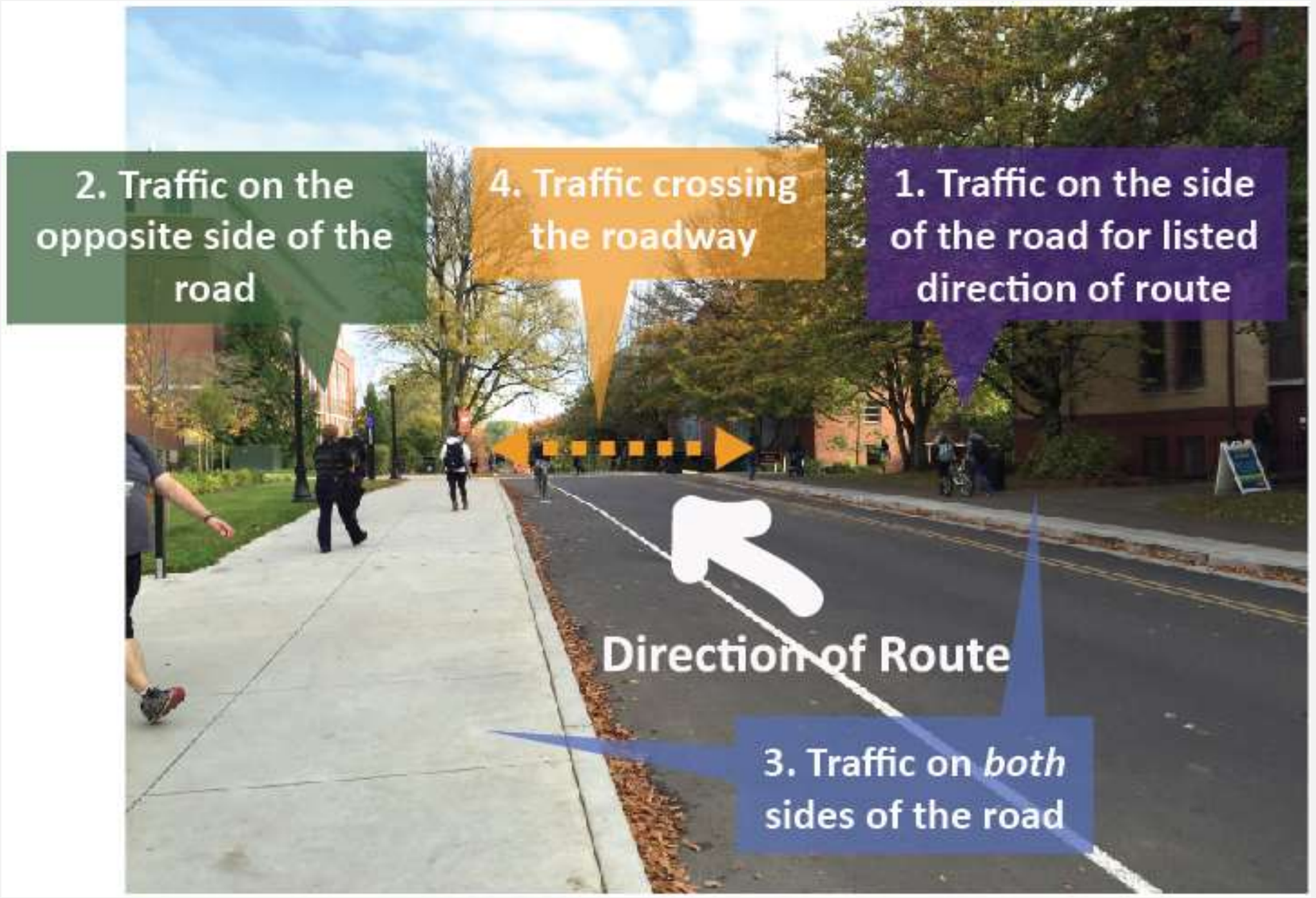
# Count Station Description (Location)

- Key element of format is to describe the location of count, which includes:
  - Direction of route (field 6)
  - Location of count relative to roadway (field 7)
  - Direction of movement (field 8)

**DIRECTION OF ROUTE EXAMPLE**

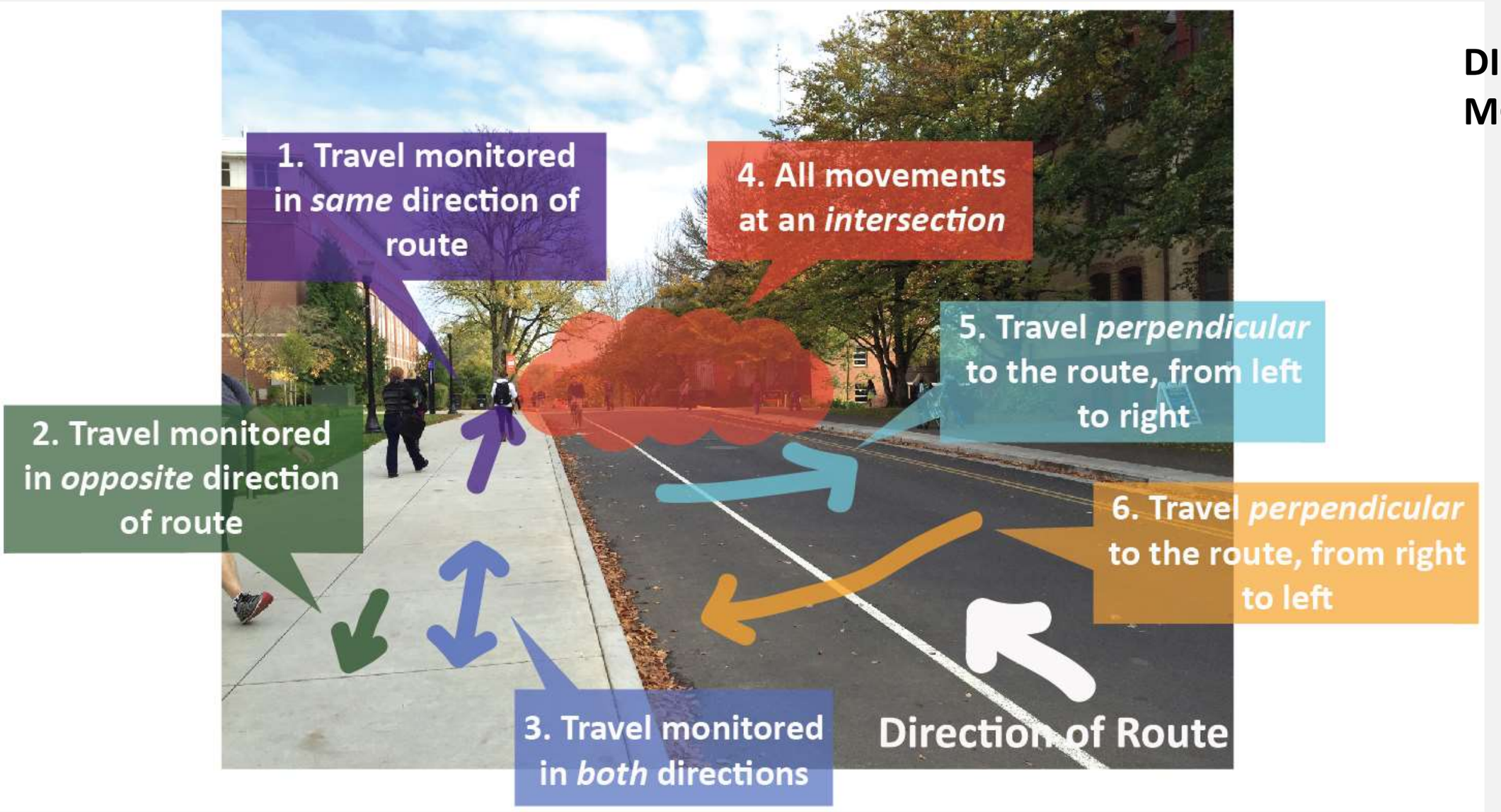


# Count Station Description (Location)




**LOCATION OF COUNT RELATIVE TO ROADWAY**

# Count Station Description (Location)



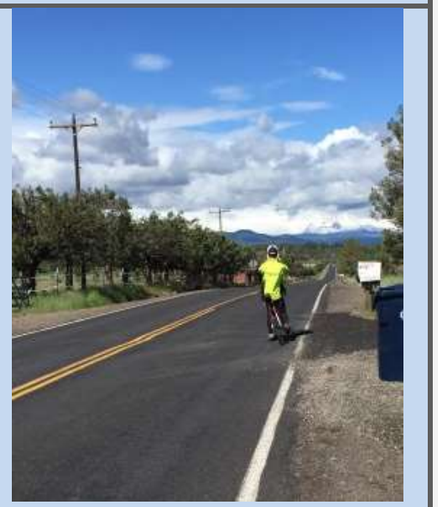

**DIRECTION OF MOVEMENT**

# Count Station Description (Location)


**DIRECTION OF ROUTE, LOCATION OF COUNT RELATIVE TO ROADWAY, AND DIRECTION OF MOVEMENT ILLUSTRATION**

# Count Station Description (Location)

FACILITY TYPES

| Code | Short Description | Examples |
|---|---|---|
| 0 | Trail not associated with a roadway |   |
| 1 | In roadway right of way (shared space) |    |

# Count Station Description (Location)

FACILITY TYPES

| Code | Short Description | Examples |
|---|---|---|
| **2** | Crosswalk (legal crossing) |   |
| **3** | Sidewalk (for pedestrians) |     |

# Count Station Description (Location)

FACILITY TYPES

| Code | Short Description | Examples |
|---|---|---|
| 4 | Striped bike lane |   |
| 5 | Overpass |   |

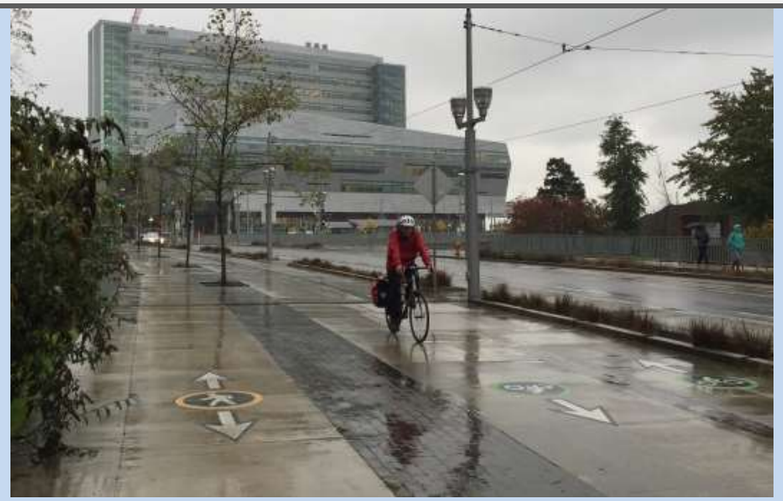
# Count Station Description (Location)

FACILITY TYPES

| Code | Short Description | Examples |
|---|---|---|
| 6 | Underpass |   |
| 7 | Separated bicycle lane |    |

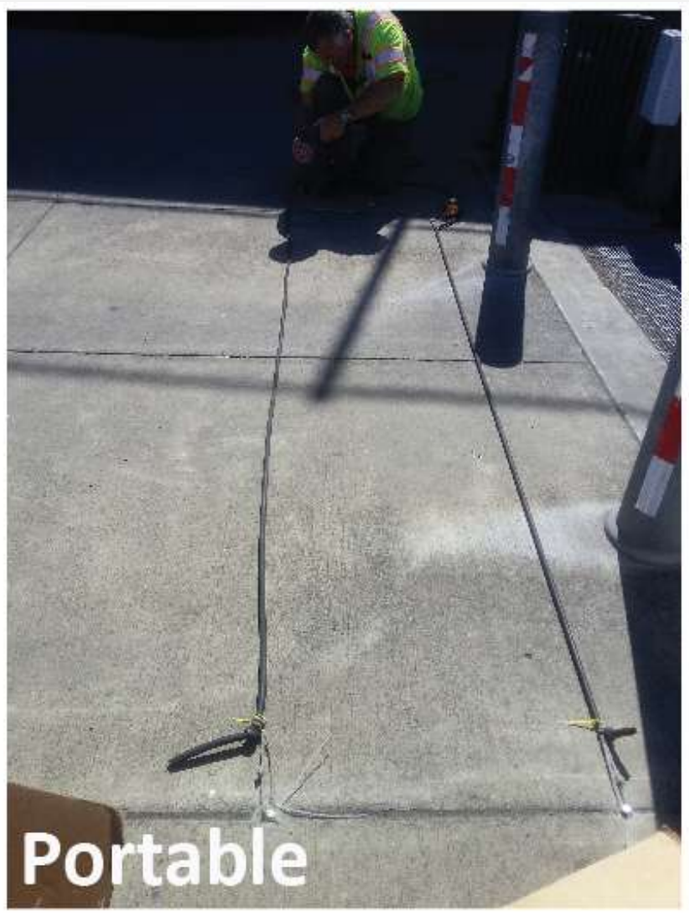
# Count Station Description (Location)

FACILITY TYPES

| Code | Short Description | Examples |
|---|---|---|
| 8 | Sidepath adjacent to roadway |   |
| 9 | General area count |   |

# Count Station Description (Location)

**METHOD OF COUNTING EXAMPLES**

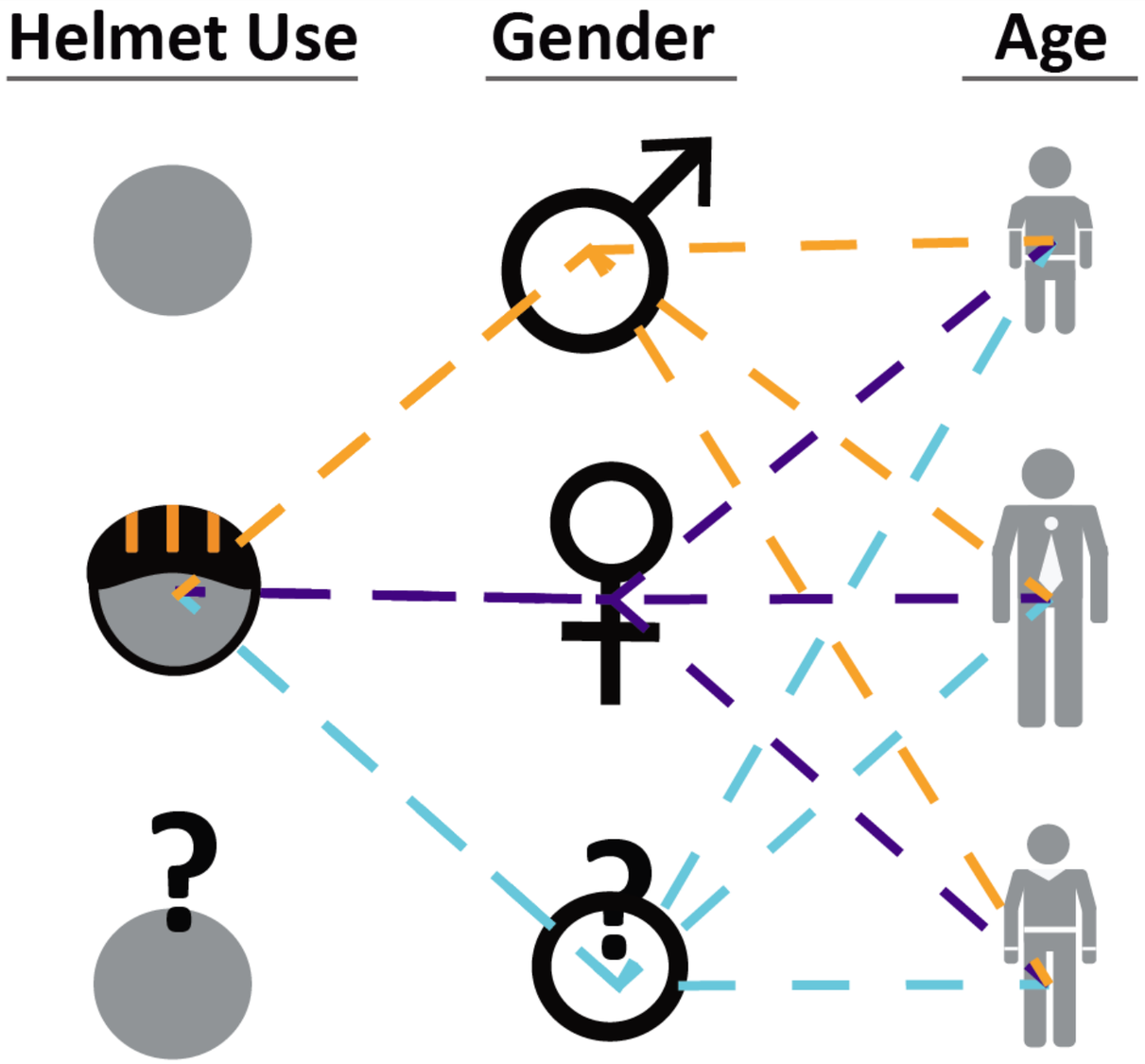




# Count Data

- Describes the count data collected
- Repeats some fields from the Station Location record
- Describes conditions of count (i.e. weather)
- Option to include additional data about count subject

# Count Data

- Count subject – can include data on helmet use, gender, and/or age



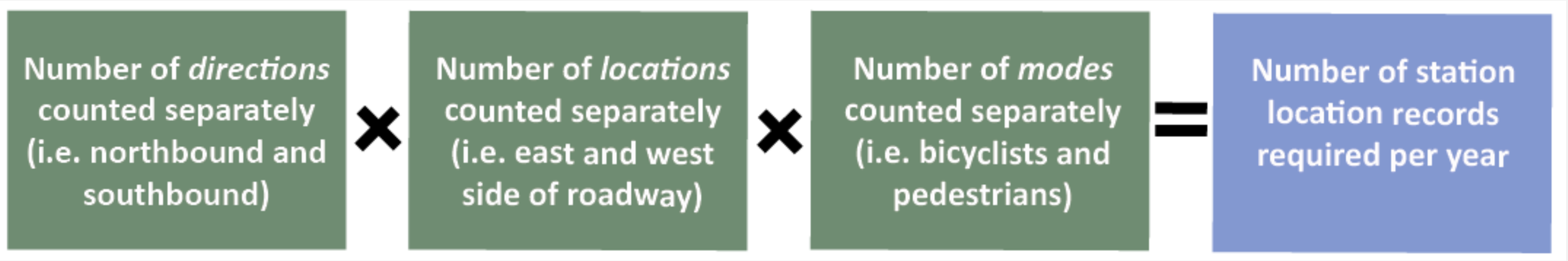
# Collecting Multiple Counts

- A separate count station description (location) record is needed for each direction, side of the roadway, and mode for which counts are collected

| Field | Description | Type | Notes |
|---|---|---|---|
| **7** | Location of count relative to roadway | C | May change if counts taken on a different side of the roadway |
| **8** | Direction of movement | C | Change if counts taken in a different direction |
| **11** | Type of count | C | Change if different type of traveler counted |
| **12** | Method of counting | C | May change if different method used to count user |

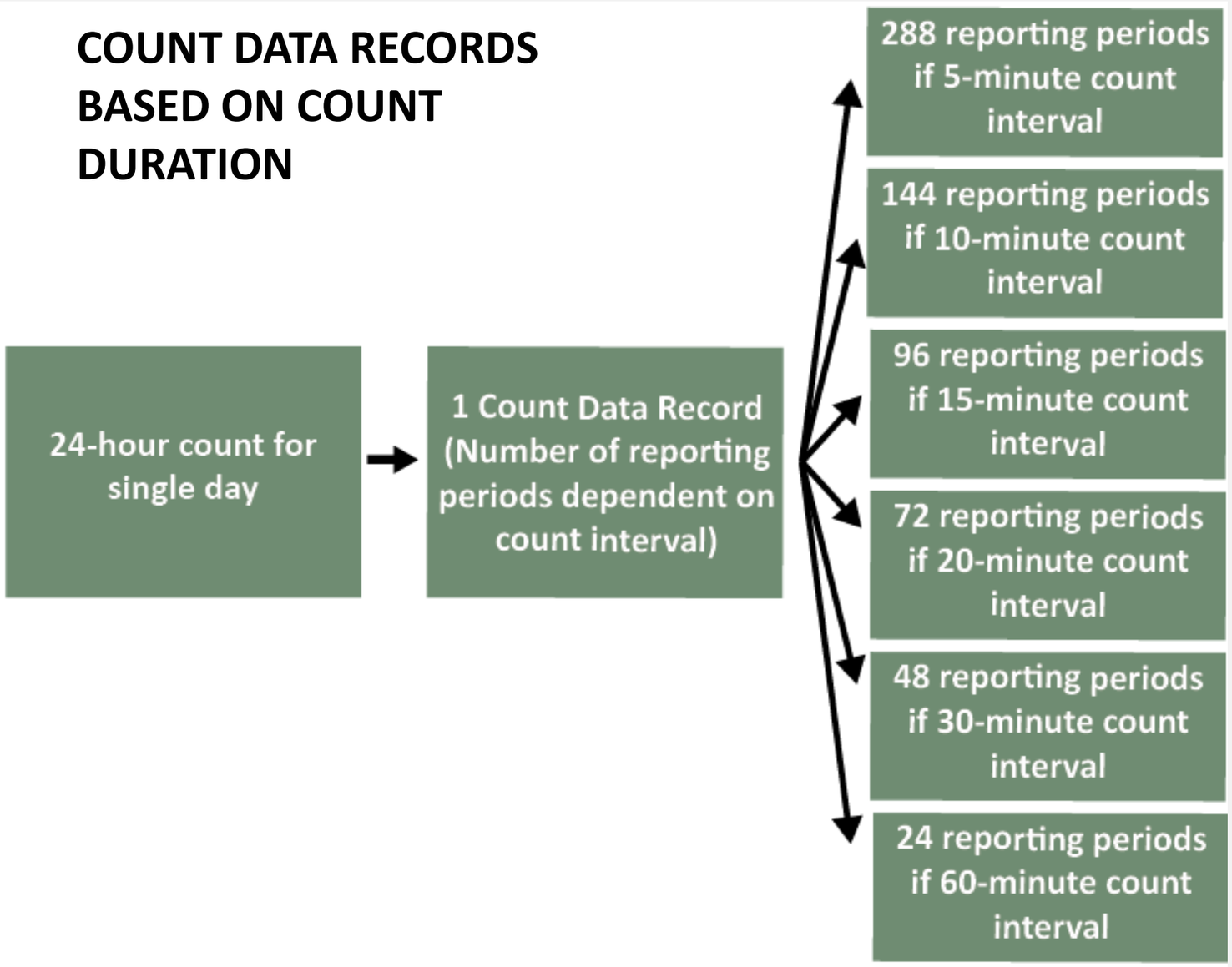
# Collecting Multiple Counts

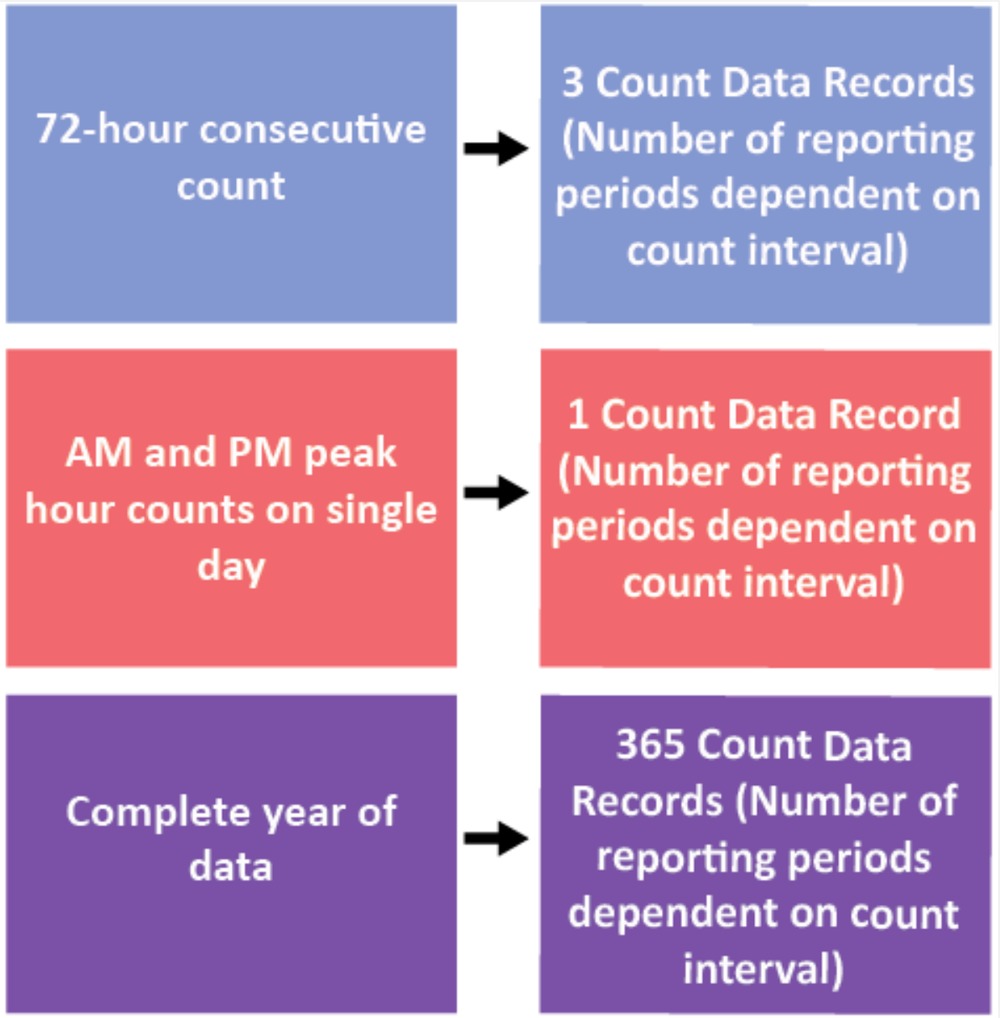
- Number of count records required per year:



# Collecting Multiple Counts

**COUNT DATA RECORDS BASED ON COUNT DURATION**



# Station Location Examples

- Guidebook includes 29 examples organized by type
- Provides guidance specific to each example type

| | Typical Users | Facility Type | Direction of Movement | Example |
|---|---|---|---|---|
| Shared Use Paths |  | 0 - trail<br>5 - overpass<br>6 - underpass<br>8 - sidepath | 1 - travel in same direction of route<br>2 - travel in opposite direction of route |  |
| Shared Vehicle Lanes |  | 1 - roadway right of way | 1 - travel in same direction of route<br>2 - travel in opposite direction of route |  |
| Bicycle Lanes |  | 4 - striped bicycle lane<br>7 - separated bicycle lane | 1 - travel in same direction of route<br>2 - travel in opposite direction of route |  |
| Contraflow Bicycle Lanes |  | 4 - striped bicycle lane<br>7 - separated bicycle lane | 1 - travel in same direction of route<br>2 - travel in opposite direction of route |  |
| Sidewalks |  | 3 - sidewalk | 1 - travel in same direction of route<br>2 - travel in opposite direction of route |  |
| Roadway Shoulders |  | 1 - roadway right of way | 1 - travel in same direction of route<br>2 - travel in opposite direction of route |  |
| Roadway Crossings |  | 1 - roadway right of way<br>2 - crosswalk<br>5 - overpass<br>6 - underpass | 3 - travel in both directions<br>5 - travel left to right<br>6 - travel right to left |  |
| Intersections |  | 2 - crosswalk<br>9 - general area | 4 - travel at an intersection<br>5 - travel left to right<br>6 - travel right to left |  |

# Station Location Examples



## EXAMPLE 1: NE MULTNOMAH STREET BUFFERED BIKE LANE

The example below walks through setting up the station location record for a count collected on NE Multnomah Street, a roadway with buffered bicycle lanes. The roadway generally runs east/west and the direction will be considered east since the building numbers increase heading east. For this example, cyclists traveling in the westbound direction are being counted. A second count station description would be needed to report eastbound riders, with the same station ID used to link the counts to the same place. Exhibit 29 illustrates the location of count relative to the roadway and direction of movement.

Exhibit 29. **NE MULTNOMAH STREET LOOKING WEST (TOP), GRAPHIC SHOWING AERIAL VIEW (BOTTOM)**

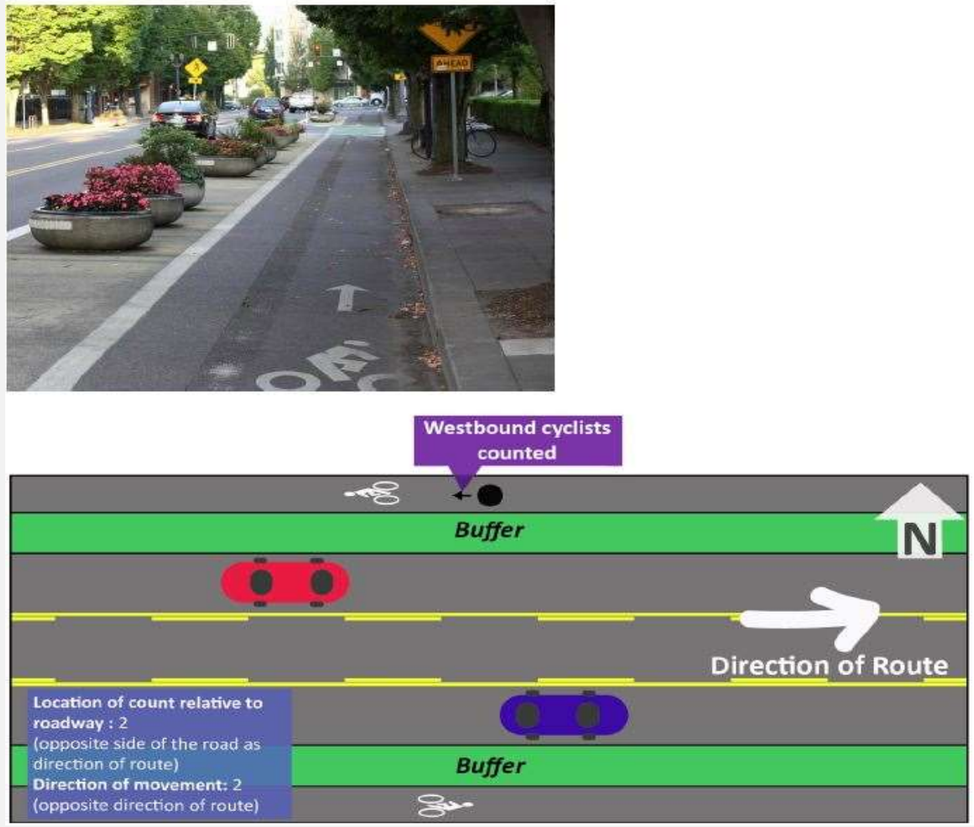



**TABLE 23. STATION LOCATION DATA FIELDS – NE MULTNOMAH STREET BUFFERED BIKE LANE**

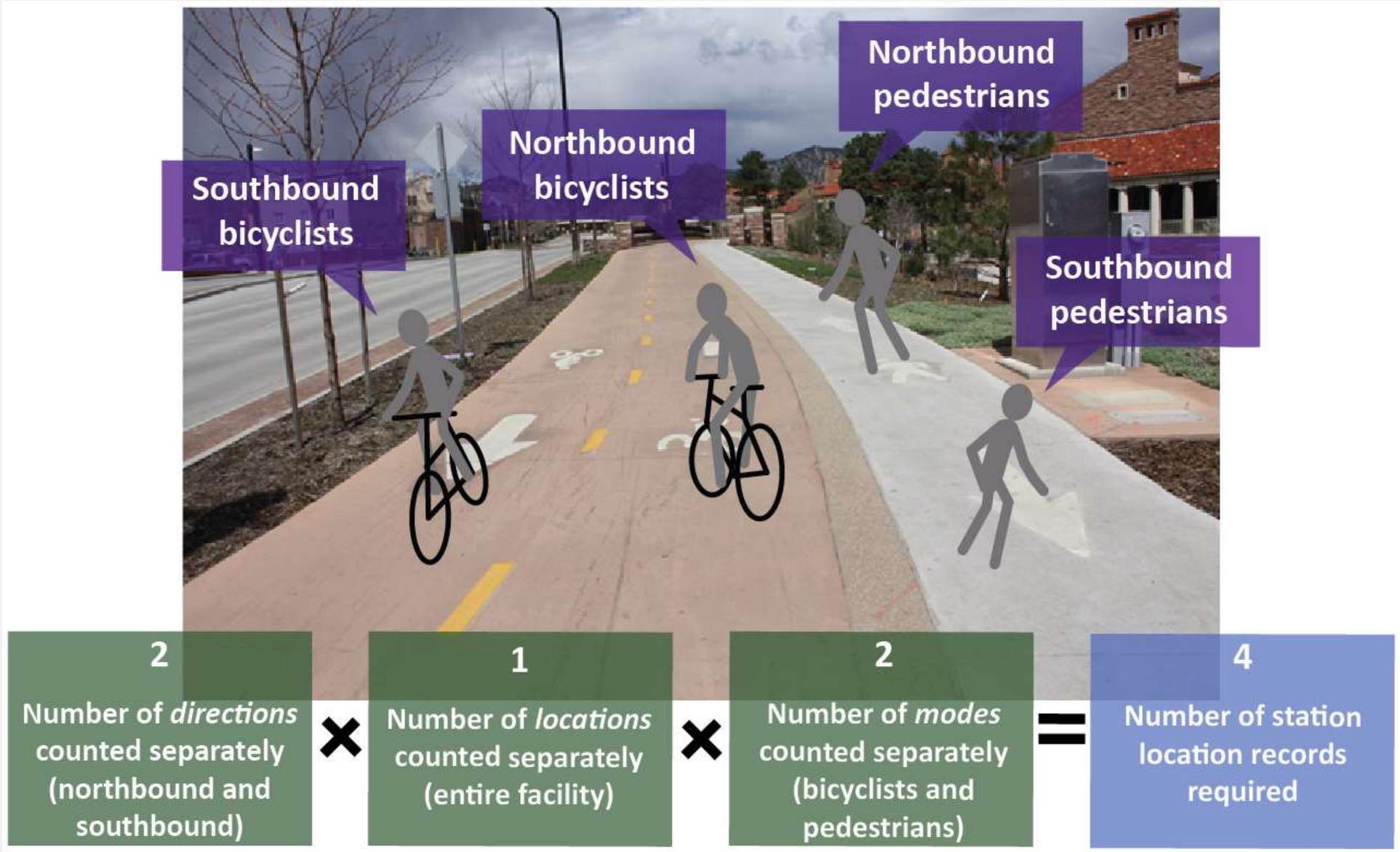
| Field | Description | Type | Entry | Notes |
|---|---|---|---|---|
| 1 | Nonmotorized station/location record identifier (L) | C | L | L indicates this is a count station/location |
| 2 | State FIPS Code | C | 41 | Oregon's code is 41 |
| 3 | County FIPS Code | C | 051 | Multnomah County's code is 051 |
| 4 | Station ID | C | MULTBB | Indicates count on NE Multnomah Street buffered bike lanes (this ID is used to link other counts taken at the same "place," like eastbound bicyclists) |
| 5 | Functional classification of the roadway | C | 7U | An urban, local roadway |
| 6 | Direction of route | C | 3 | East, to correspond with increasing building numbers |
| 7 | Location of count relative to roadway | C | 2 | Count is taken on the opposite side of the road from the listed direction of route (left side of the road when facing east) |
| 8 | Direction of movement | C | 2 | Travel westbound (occurring opposite the direction of route) is being counted |
| 9 | Facility type | C | 7 | Count is collected in a physically separated bicycle lane |
| 10 | Intersection | O | 0 | Not at an intersection |
| 11 | Type of count | C | 2 | Only bicycles are counted |
| 12 | Method of counting | C | 2 | Portable traffic recording device used for the counts |
| 13 | Type of Sensor | O | R | Air tube is used for the counts |
| 14 | Year of Data | C | 2016 | |
| 15 | Factor Group 1 | O | | |
| 16 | Factor Group 2 | O | | |
| 17 | Factor Group 3 | O | | |
| 18 | Factor Group 4 | O | | |
| 19 | Factor Group 5 | O | | |
| 20 | Primary count purpose | O | P | Count taken to report use of corridor by bicyclists |
| 21 | Posted speed limit | O | 25 | 25 miles per hour posted speed limit |
| 22 | Year station established | C | 2016 | |
| 23 | Year station discontinued | O | | |
| 24 | National highway system | O | N | |
| 25 | Latitude | C | 45531594 | Indicates location of device for data collection |
| 26 | Longitude | C | 122659219 | |
| 27 | Posted route signing | O | _1 | Route is not signed |
| 28 | Posted signed route number | O | | |
| 29 | LRS identification | O | | There is no LRS for this location |
| 30 | LRS location point | O | | |
| 31 | Station location | O | Multnomah St E. of NE 6$^{th}$Ave, buffered bike lane | |
| 32 | Other notes | O | Dir of route based on ascending building numbers | |

# A Few Examples

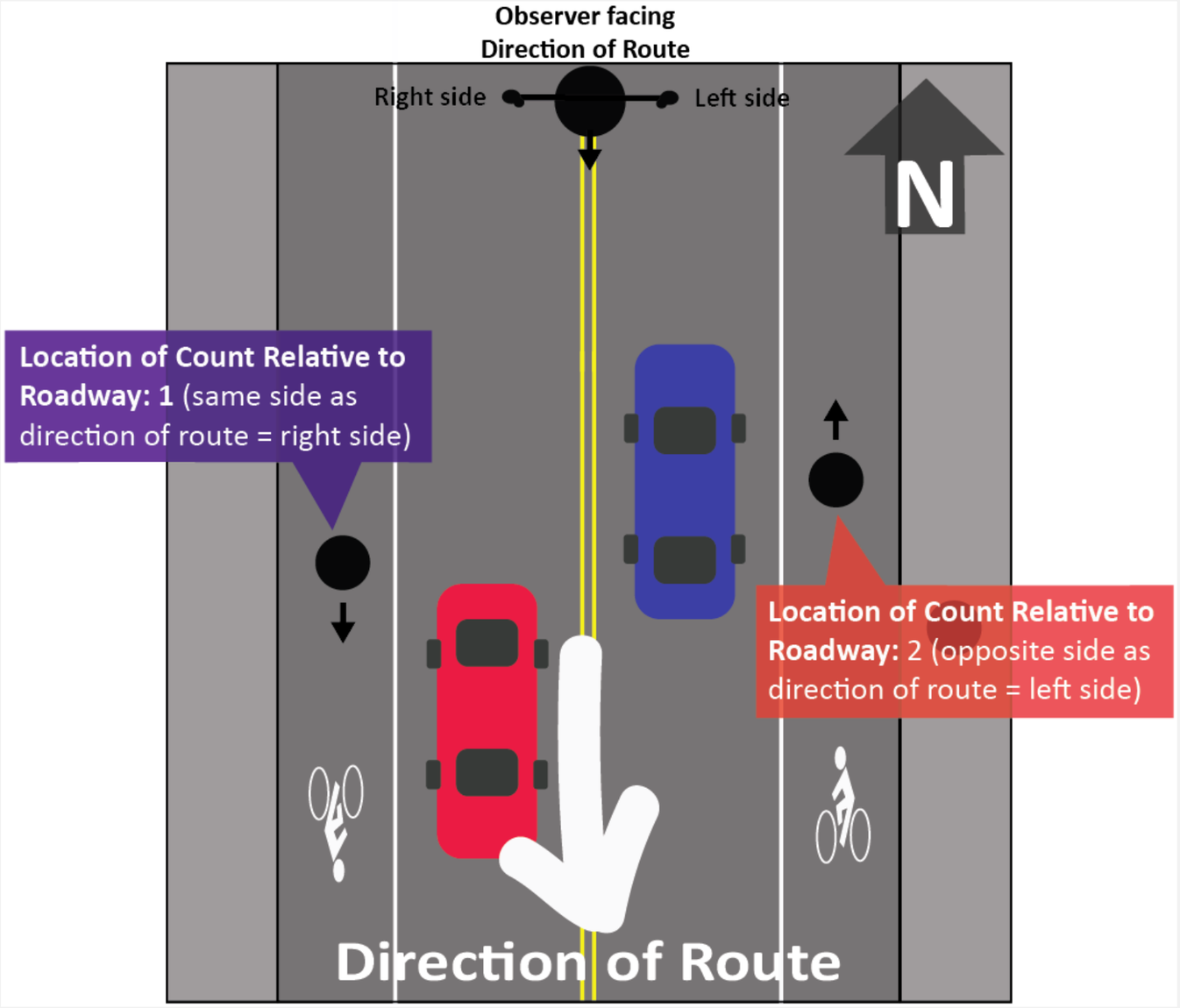
A video camera is used to collect data which is then manually reduced. Pedestrians and bicyclists are counted separately and direction is recorded

**BROADWAY SIDEPATH LOOKING EAST**

# A Few Examples



# A Few Examples



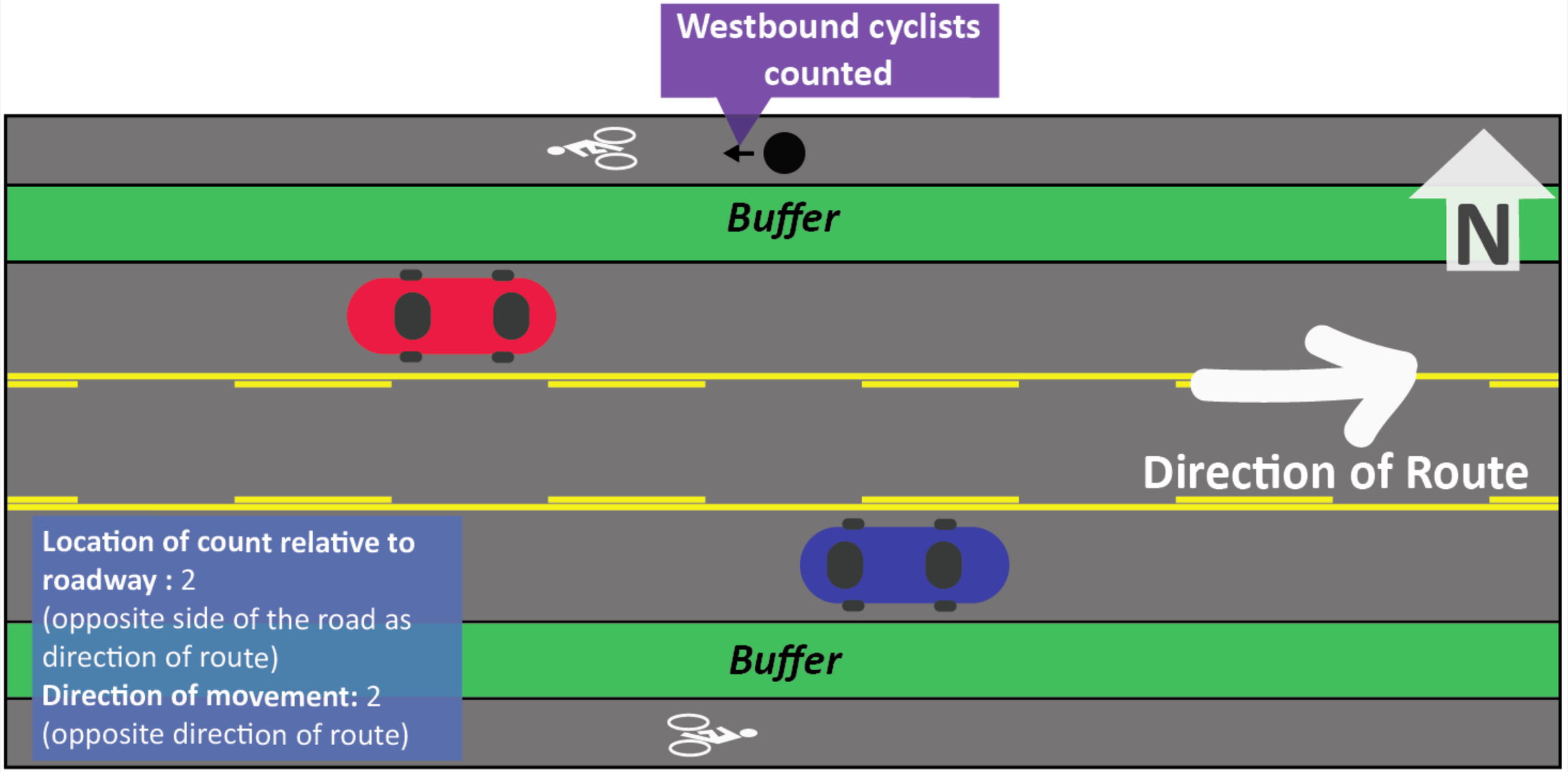

**LOCATION OF COUNT RELATIVE TO ROADWAY FOR BICYCLE LANES**

# A Few Examples


**NE MULTNOMAH STREET LOOKING WEST**

The roadway generally runs east/west and the direction will be considered east since the building numbers increase heading east. For this example, cyclists traveling in the westbound direction are being counted

# A Few Examples



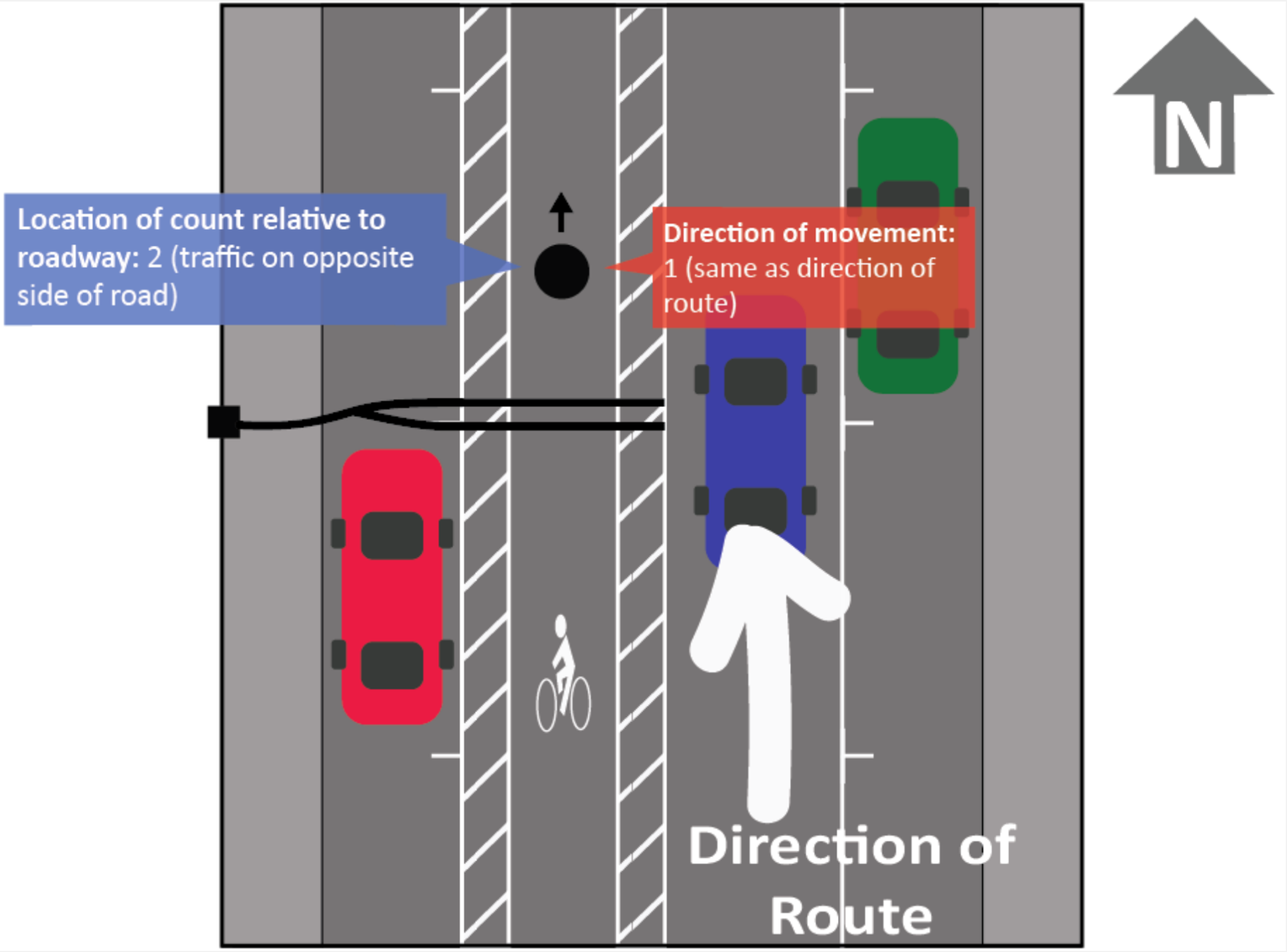
# A Few Examples

**N WILLIAMS AVENUE**
**LOOKING NORTH**

The roadway runs north/south with travel northbound, so the direction of route is considered north.

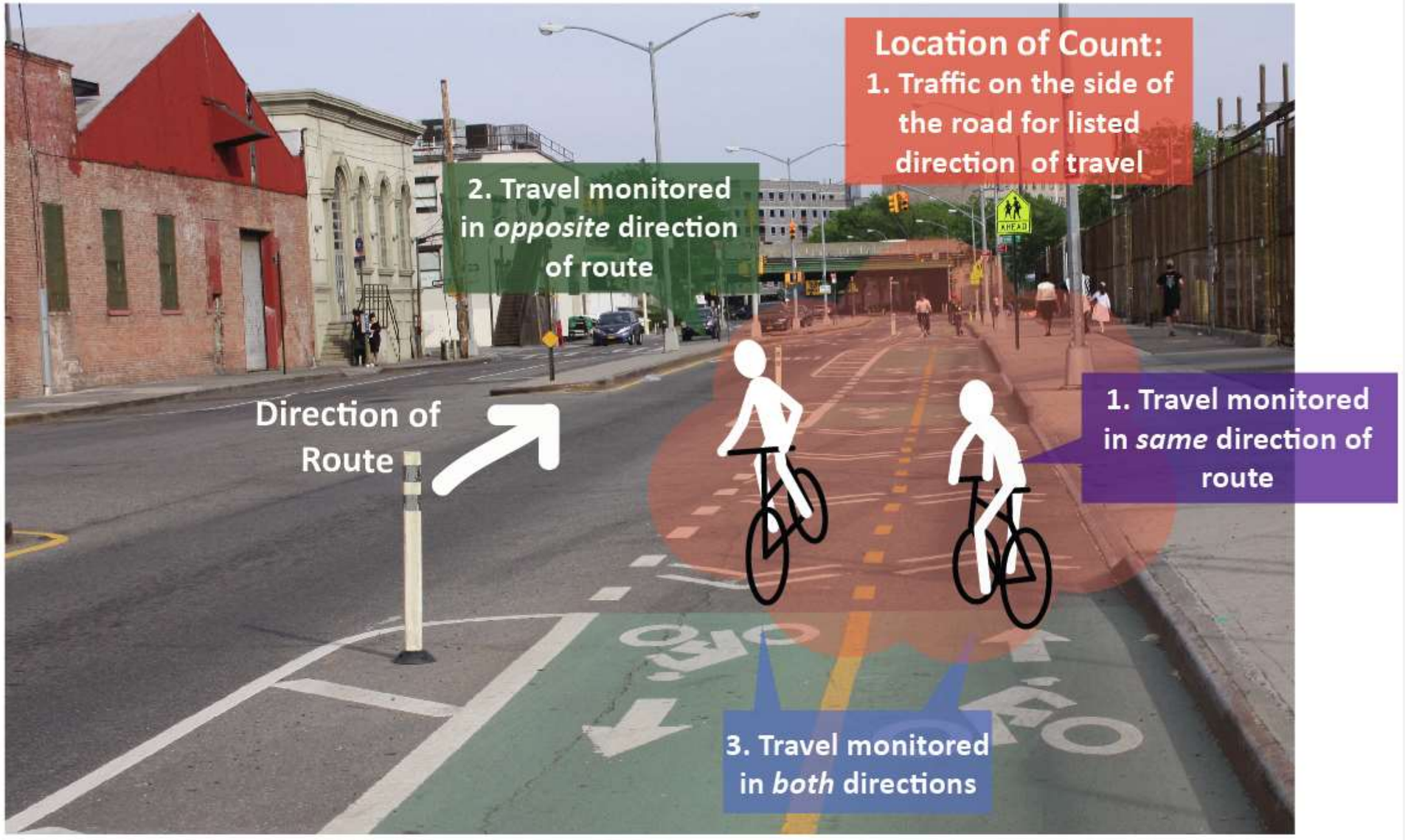
The bicycle lane is separated from vehicles with a painted buffer -> facility type 4 “in a striped (painted) bicycle lane” (because there is no physical separation other than paint)

# A Few Examples




The location of the count relative to the roadway is coded on the opposite side of the road to indicate the bicycle lane is on the left-side of the roadway relative to the direction of route, while the direction of movement is coded as the same as the direction of route.

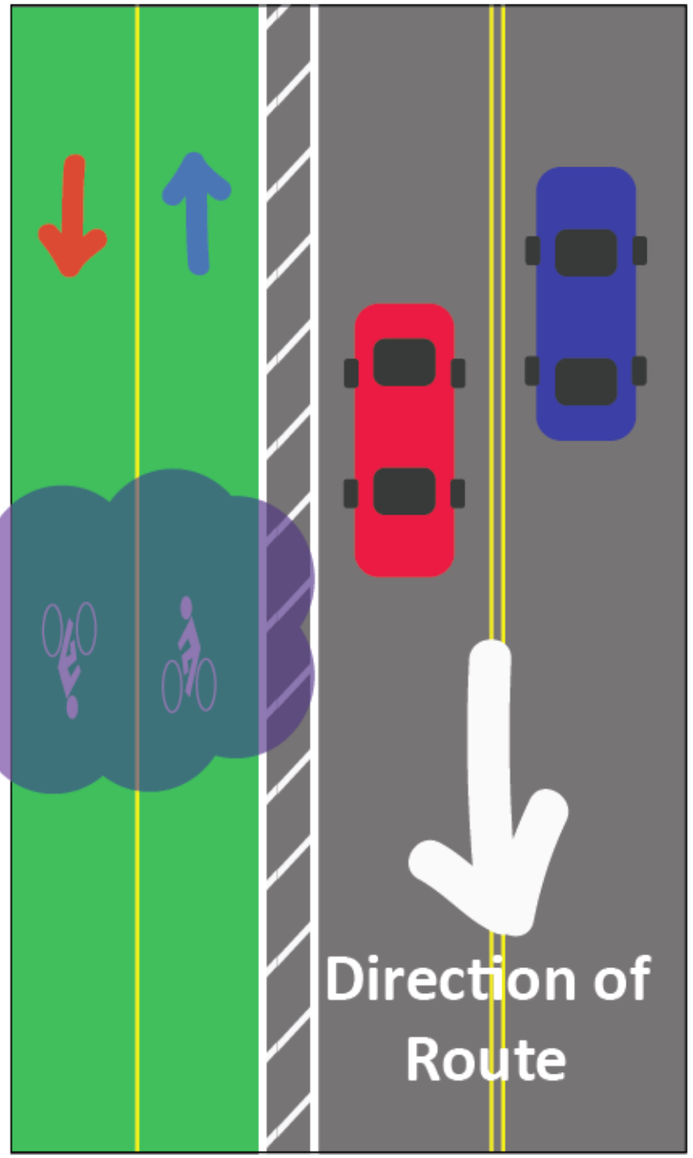
# A Few Examples




**LOCATION OF COUNT RELATIVE TO ROADWAY FOR TWO-WAY CONTRAFLOW BICYCLE LANES**

# A Few Examples

**CODES BASED ON COUNT SUBJECTS**





**If counting cyclists in both lanes:**

**Location of count relative to roadway:** 1
(same side of the road as direction of route)
**Direction of movement:** 3
(travel in both directions)
**Facility type:** 7 (in a separated bicycle lane)

**If counting northbound cyclists:**

**Location of count relative to roadway:** 1
(same side of the road as direction of route)
**Direction of movement:** 2
(travel in opposite direction of route)
**Facility type:** 7 (in a separated bicycle lane)

**If counting southbound cyclists:**

**Location of count relative to roadway:** 1
(same side of the road as direction of route)
**Direction of movement:** 1
(travel in same direction as route)
**Facility type:** 7 (in a separated bicycle lane)

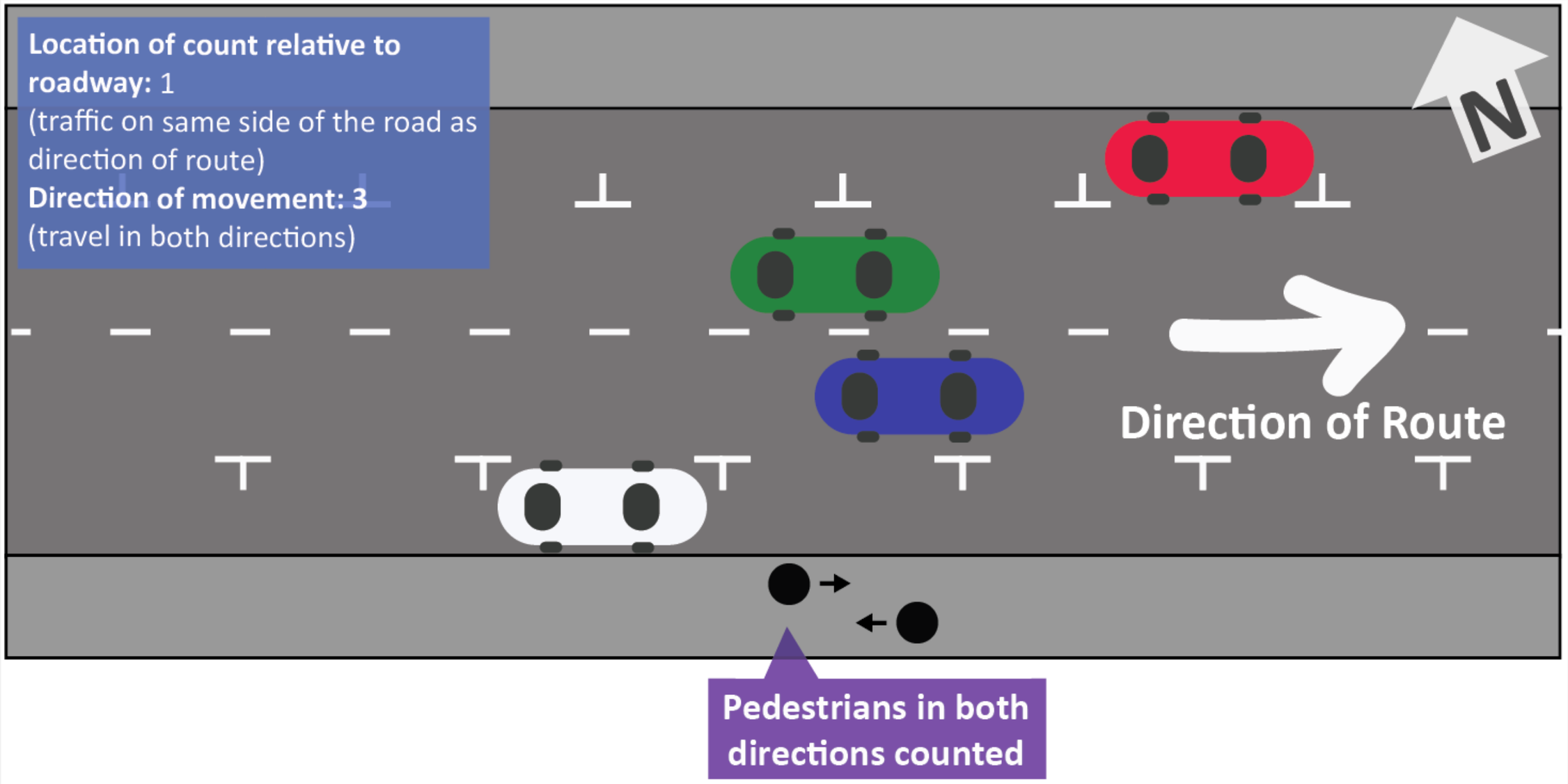
**"Other Notes" (Field 32) can be used to help explain the specific scenario and provide additional details**

# A Few Examples

SW Alder Street is one-way, with traffic moving in the southeast direction towards the river, so this is considered the direction of route.


**ALDER STREET LOOKING NORTHEAST**

# A Few Examples

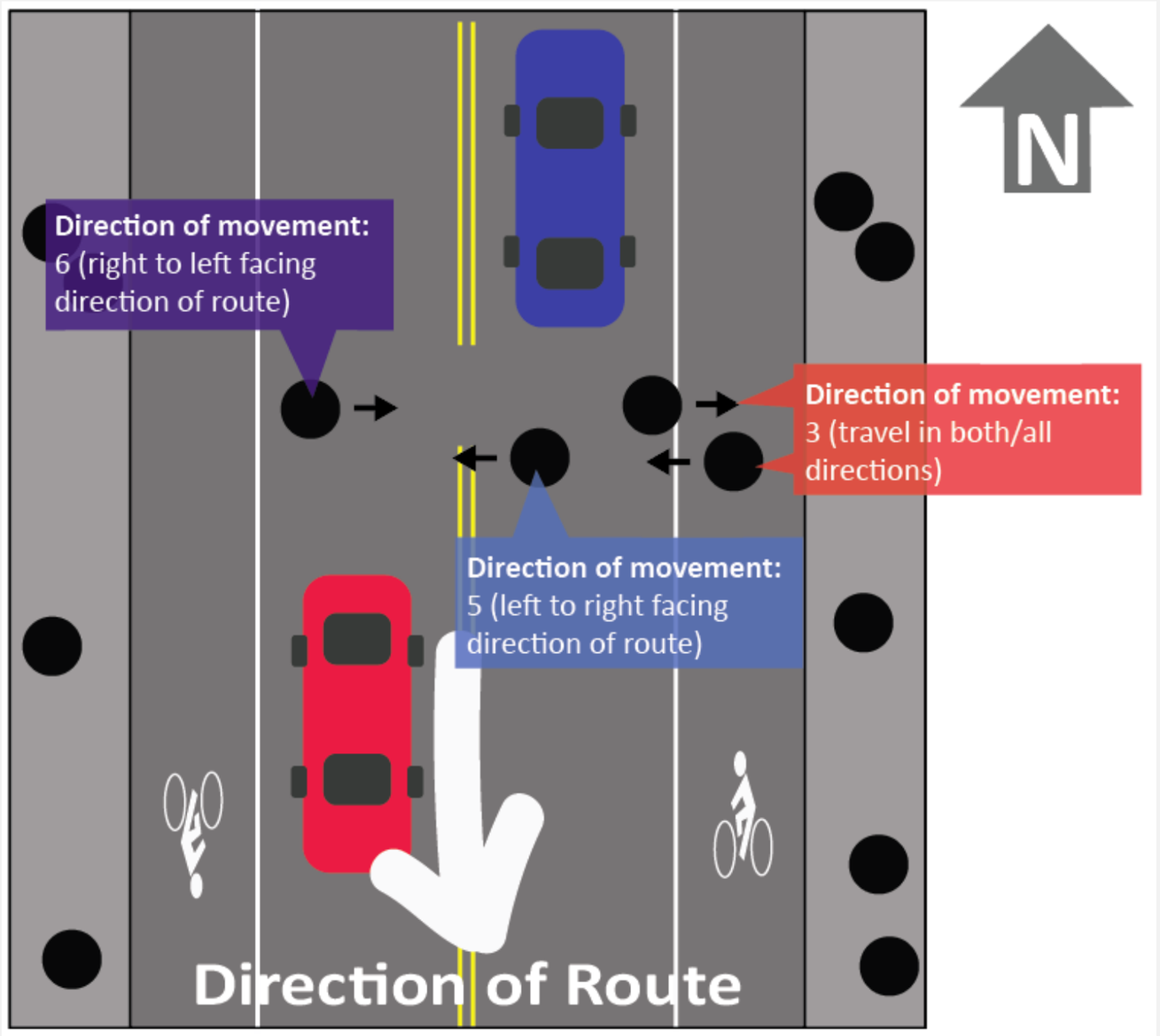


# A Few Examples

**SW 15TH STREET LOOKING NORTH**

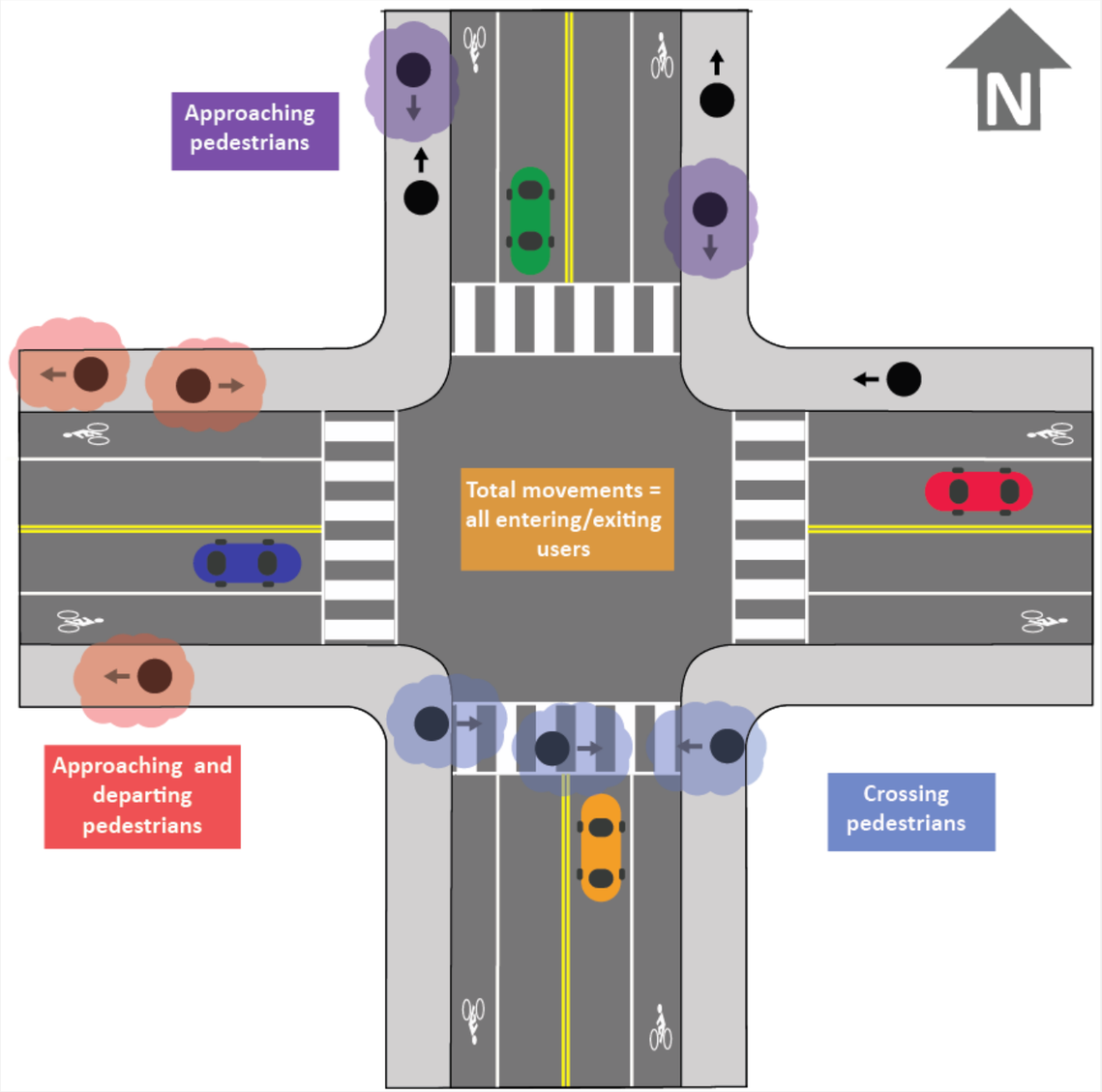
SW 15th Street is a north/south roadway with ascending street numbers in the southbound direction, so south is considered the direction of route.

# A Few Examples




# Intersections

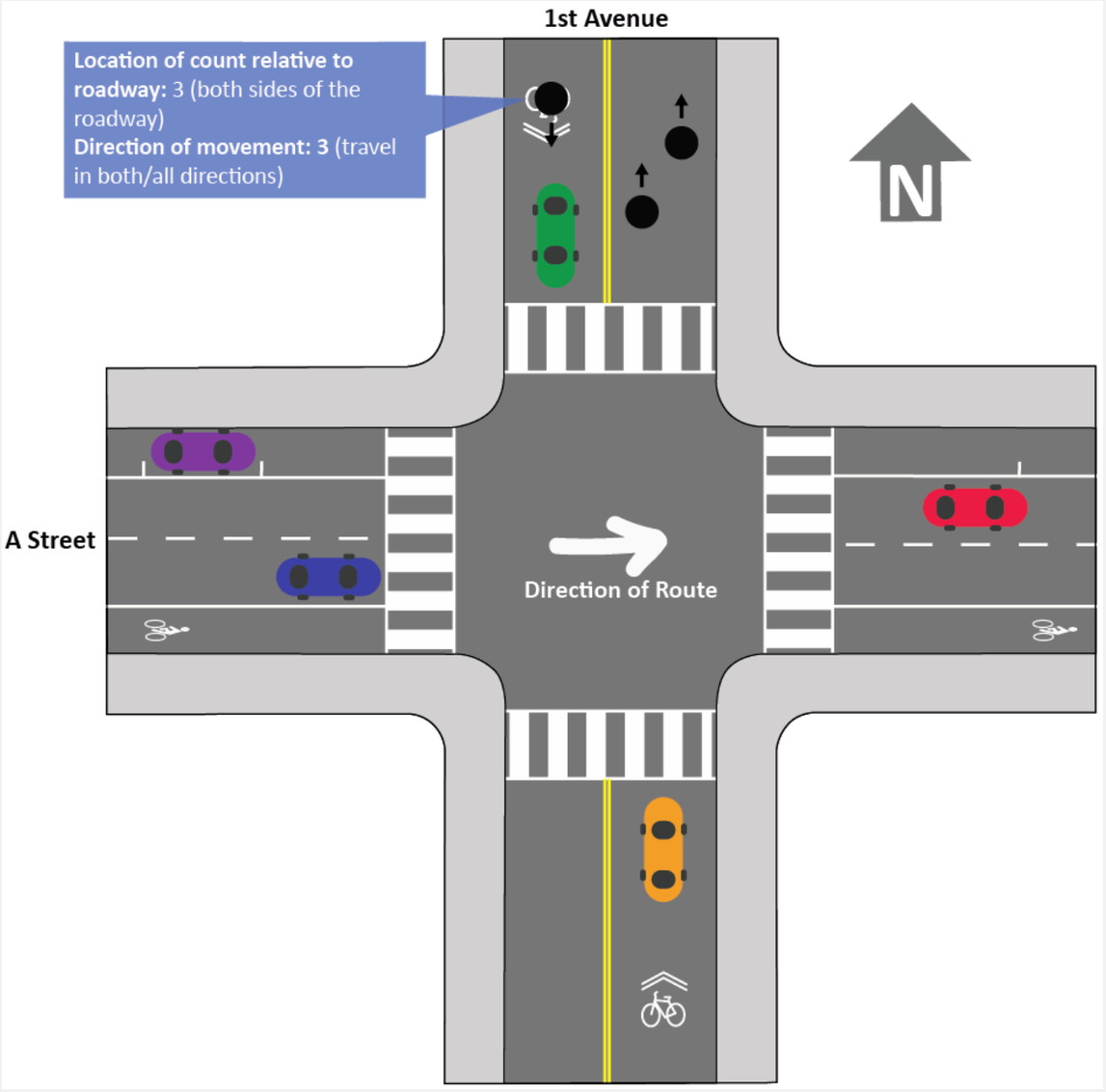
- Format directly supports counts of total movements through intersections
- Format can be adapted to report movements approaching or departing intersections, or crossing in specific directions
- Format does not support explicit turning movement counts



# Intersections

| Field | Total Movements | Approaching/Departing Movements | Crossing Movements |
|---|---|---|---|
| **5. Functional Classification of the Roadway** | 9 (general activity count) | Code the functional classification of the roadway users are on | Code the functional classification of the roadway users are crossing |
| **6. Direction of Route** | Code based on higher order roadway | Code based on roadway users are on | Code based on roadway users are crossing |
| **7. Location of Count Relative to Roadway** | 3 (both sides of the road) | 1 (traffic on side of road for direction of route), 2 (opposite side of road) or 3 (both sides of road) | 4 (perpendicular to roadway) |
| **8. Direction of Movement** | 4 (travel at an intersection including all movements) | 1 (direction of route), 2 (opposite direction of route), or 3 (travel in both directions) | 3 (travel in both directions), 5 (crossing left to right), or 6 (crossing right to left) |
| **9. Facility Type** | 9 (general area count) | Based on facility (e.g. whether bike lanes, shared roadway, etc.) | 2 (exclusively in a crosswalk) |
| **10. Intersection** | 1 (intersection) or 2 (roundabout) | 1 (intersection) or 2 (roundabout) | 1 (intersection) or 2 (roundabout) |

# Intersections

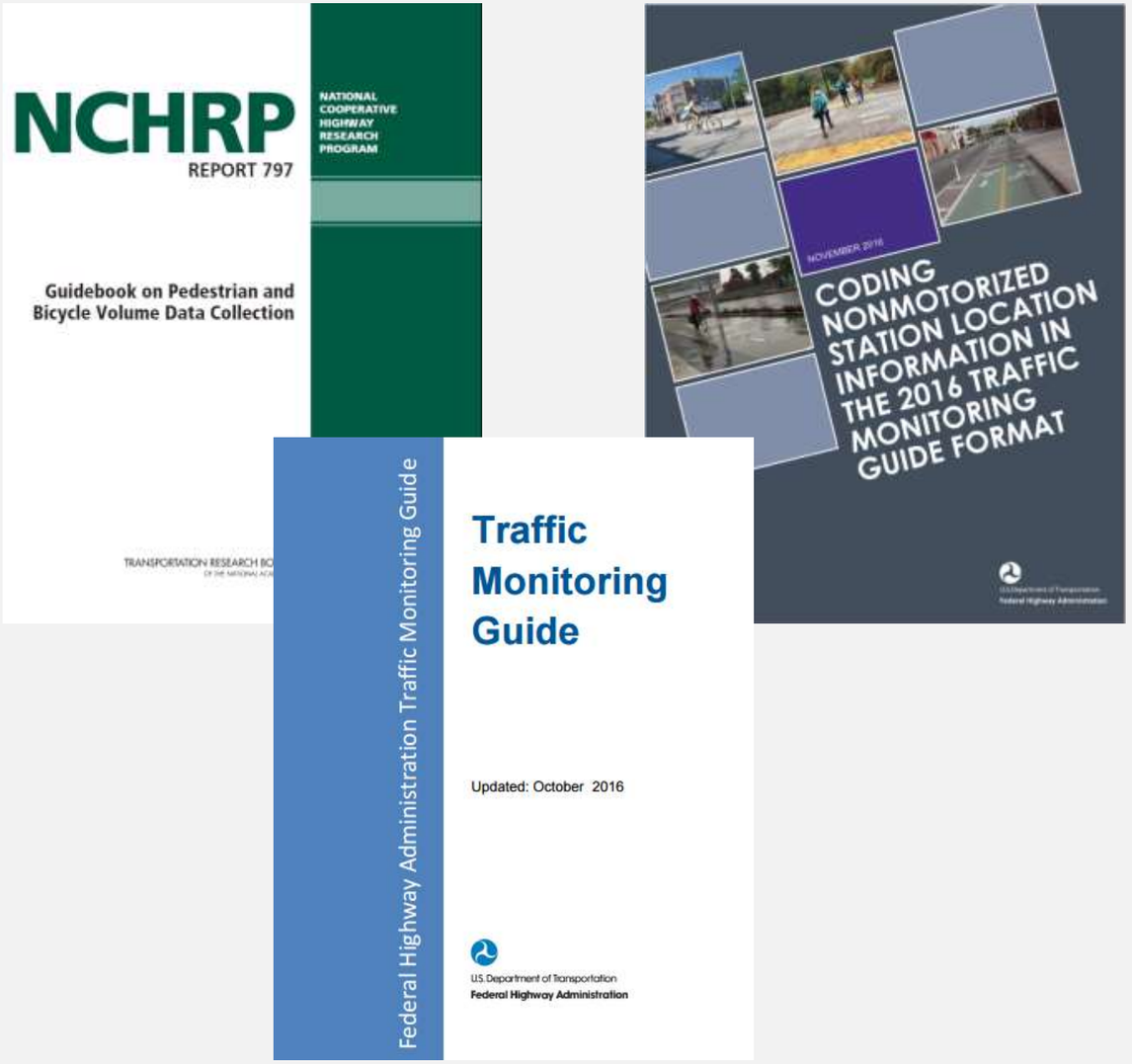



## BICYCLISTS ON NORTH LEG

| | Description | Entry | Notes |
|---|---|---|---|
| **5** | Functional classification of the roadway | 7U | An urban, local roadway (based on 1st Avenue) |
| **6** | Direction of route | 5 | South, to correspond with increasing building numbers on 1st Avenue |
| **7** | Location of count relative to roadway | 2 | Traffic on the opposite side of the road for listed direction of route |
| **8** | Direction of movement | 2 | Travel in opposite direction of route |
| **9** | Facility type | 1 | Count is collected in a shared roadway |
| **10** | Intersection | 1 | Count is taken at an intersection (not a roundabout) |
| **11** | Type of count | 2 | Only bicycles are counted |
| **21** | Posted speed limit | | |
| **27** | Posted route signing | ␣1 | |
| **28** | Posted signed route number | | Refers to 1st Avenue |
| **29** | LRS identification | | |
| **30** | LRS location point | | |
| **32** | Other notes | | NB bicyclists on 1st Ave approaching A St counted |

# In Closing…

- Check out these resources for more information, all available online for download
- Talk to others – learn what they are doing!



# Thank you!

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