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
• 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

Total Entering Volumes 9:50-10:00 AM (Peak 10 Minutes)
- Total EnteringPedestrians
- Total Entering Bikes
- Total Entering Motor Vehicles
## Analyze Safety

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

- Demographics
  - Gender
  - Age
  - Disabilities

- Behaviors
  - Helmet use
  - Looking before crossing
  - Yielding to pedestrians

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

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)

Proposed Condition

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

<table>
<thead>
<tr>
<th>Mode</th>
<th>April 2009</th>
<th>April 2013</th>
<th>% change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bicyclists</td>
<td>487</td>
<td>1,004</td>
<td>+106%</td>
</tr>
<tr>
<td>Pedestrians</td>
<td>1,077</td>
<td>1,586</td>
<td>+47%</td>
</tr>
</tbody>
</table>
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!
• 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
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
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

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)

- Count station description record (L)

- When counts are collected
- How many users are counted

- Where counts are collected
- What is counted
- How counts are collected
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.

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

Example: 0 (not at an intersection)

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

1. Traffic on the side of the road for listed direction of route

2. Traffic on the opposite side of the road

3. Traffic on both sides of the road

4. Traffic crossing the roadway

LOCATION OF COUNT RELATIVE TO ROADWAY
Count Station Description (Location)

DIRECTION OF MOVEMENT

1. Travel monitored in *same* direction of route
2. Travel monitored in *opposite* direction of route
3. Travel monitored in *both* directions
4. All movements at an *intersection*
5. Travel *perpendicular* to the route, from left to right
6. Travel *perpendicular* to the route, from right to left

Direction of Route
Count Station Description (Location)

Direction of Movement = 1
(travel monitored in direction of route, i.e. northbound cyclists)

Direction of Route = North

Location of count relative to roadway orientation = 3 (both sides of road)

DIRECTION OF ROUTE, LOCATION OF COUNT RELATIVE TO ROADWAY, AND DIRECTION OF MOVEMENT ILLUSTRATION
## Count Station Description (Location)

<table>
<thead>
<tr>
<th>Code</th>
<th>Short Description</th>
<th>Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>Trail not associated with a roadway</td>
<td><img src="image1.jpg" alt="Example 1" /> <img src="image2.jpg" alt="Example 2" /> <img src="image3.jpg" alt="Example 3" /></td>
</tr>
<tr>
<td>1</td>
<td>In roadway right of way (shared space)</td>
<td><img src="image4.jpg" alt="Example 4" /> <img src="image5.jpg" alt="Example 5" /> <img src="image6.jpg" alt="Example 6" /></td>
</tr>
</tbody>
</table>
## FACILITY TYPES

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
<th>Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>Crosswalk (legal crossing)</td>
<td><img src="image1.png" alt="Examples" /></td>
</tr>
<tr>
<td>3</td>
<td>Sidewalk (for pedestrians)</td>
<td><img src="image2.png" alt="Examples" /></td>
</tr>
</tbody>
</table>
## Count Station Description (Location)

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
<th>Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>Striped bike lane</td>
<td><img src="image1.png" alt="Example" /> <img src="image2.png" alt="Example" /></td>
</tr>
<tr>
<td>5</td>
<td>Overpass</td>
<td><img src="image3.png" alt="Example" /> <img src="image4.png" alt="Example" /></td>
</tr>
</tbody>
</table>
# Count Station Description (Location)

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
<th>Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>6</td>
<td>Underpass</td>
<td><img src="image1.jpg" alt="Underpass Example" /> <img src="image2.jpg" alt="Underpass Example" /> <img src="image3.jpg" alt="Underpass Example" /></td>
</tr>
<tr>
<td>7</td>
<td>Separated bicycle lane</td>
<td><img src="image4.jpg" alt="Separated Bicycle Lane Example" /> <img src="image5.jpg" alt="Separated Bicycle Lane Example" /> <img src="image6.jpg" alt="Separated Bicycle Lane Example" /></td>
</tr>
</tbody>
</table>
# Count Station Description (Location)

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
<th>Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>8</td>
<td>Sidepath adjacent to roadway</td>
<td><img src="image1.png" alt="Image" /> <img src="image2.png" alt="Image" /></td>
</tr>
<tr>
<td>9</td>
<td>General area count</td>
<td><img src="image3.png" alt="Image" /> <img src="image4.png" alt="Image" /></td>
</tr>
</tbody>
</table>
Count Station Description (Location)

METHOD OF COUNTING
EXAMPLES

Human Observation
Portable
Permanent
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.

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
<th>Type</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>7</td>
<td>Location of count relative to roadway</td>
<td>C</td>
<td>May change if counts taken on a different side of the roadway</td>
</tr>
<tr>
<td>8</td>
<td>Direction of movement</td>
<td>C</td>
<td>Change if counts taken in a different direction</td>
</tr>
<tr>
<td>11</td>
<td>Type of count</td>
<td>C</td>
<td>Change if different type of traveler counted</td>
</tr>
<tr>
<td>12</td>
<td>Method of counting</td>
<td>C</td>
<td>May change if different method used to count user</td>
</tr>
</tbody>
</table>
Collecting Multiple Counts

• Number of count records required per year:

Number of directions counted separately (i.e. northbound and southbound) × Number of locations counted separately (i.e. east and west side of roadway) × Number of modes counted separately (i.e. bicyclists and pedestrians) = Number of station location records required per year
Collecting Multiple Counts

COUNT DATA RECORDS
BASED ON COUNT DURATION

24-hour count for single day

1 Count Data Record (Number of reporting periods dependent on count interval)

288 reporting periods if 5-minute count interval
144 reporting periods if 10-minute count interval
96 reporting periods if 15-minute count interval
72 reporting periods if 20-minute count interval
48 reporting periods if 30-minute count interval
24 reporting periods if 60-minute count interval

72-hour consecutive count

AM and PM peak hour counts on single day

Complete year of data

365 Count Data Records (Number of reporting periods dependent on count interval)

3 Count Data Records (Number of reporting periods dependent on count interval)
Station Location Examples

- Guidebook includes 29 examples organized by type
- Provides guidance specific to each example type
### 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 20 illustrates the location of count relative to the roadway and direction of movement.

![NE MULTNOMAH STREET LOOKING WEST (TOP), GRAPHIC SHOWING AERIAL VIEW (BOTTOM)](image)

![Diagram of westbound cyclists counted](image)

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

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
<th>Type</th>
<th>Entry</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Nonmotorized station/location record identifier (L)</td>
<td>C</td>
<td>L</td>
<td>L indicates this is a count station/location</td>
</tr>
<tr>
<td>2</td>
<td>State FIPS Code</td>
<td>C</td>
<td>41</td>
<td>Oregon’s code is 41</td>
</tr>
<tr>
<td>3</td>
<td>County FIPS Code</td>
<td>C</td>
<td>051</td>
<td>Multnomah County’s code is 051</td>
</tr>
<tr>
<td>4</td>
<td>Station ID</td>
<td>C</td>
<td>MULTBB</td>
<td>Indicates count on NE Multnomah Street buffered bike lanes (this ID is used to link other counts taken at the same “place,” like westbound bicyclists)</td>
</tr>
<tr>
<td>5</td>
<td>Functional classification of the roadway</td>
<td>C</td>
<td>7U</td>
<td>An urban, local roadway</td>
</tr>
<tr>
<td>6</td>
<td>Direction of route</td>
<td>C</td>
<td>3</td>
<td>East, to correspond with increasing building numbers</td>
</tr>
<tr>
<td>7</td>
<td>Location of count relative to roadway</td>
<td>C</td>
<td>2</td>
<td>Count is taken on the opposite side of the road from the listed direction of route (left side of the road when facing east)</td>
</tr>
<tr>
<td>8</td>
<td>Direction of movement</td>
<td>C</td>
<td>2</td>
<td>Travel westbound (occurring opposite the direction of route) is being counted</td>
</tr>
<tr>
<td>9</td>
<td>Facility type</td>
<td>C</td>
<td>7</td>
<td>Count is collected in a physically separated bicycle lane</td>
</tr>
<tr>
<td>10</td>
<td>Intersection</td>
<td>C</td>
<td>0</td>
<td>Not at an intersection</td>
</tr>
<tr>
<td>11</td>
<td>Type of count</td>
<td>C</td>
<td>2</td>
<td>Only bicyclists are counted</td>
</tr>
<tr>
<td>12</td>
<td>Method of counting</td>
<td>C</td>
<td>2</td>
<td>Portable traffic recording device used for the counts</td>
</tr>
<tr>
<td>13</td>
<td>Type of Sensor</td>
<td>C</td>
<td>R</td>
<td>Air blade is used for the counts</td>
</tr>
<tr>
<td>14</td>
<td>Year of Data</td>
<td>C</td>
<td>2015</td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>Factor Group 1</td>
<td>O</td>
<td></td>
<td></td>
</tr>
<tr>
<td>16</td>
<td>Factor Group 2</td>
<td>O</td>
<td></td>
<td></td>
</tr>
<tr>
<td>17</td>
<td>Factor Group 3</td>
<td>O</td>
<td></td>
<td></td>
</tr>
<tr>
<td>18</td>
<td>Factor Group 4</td>
<td>O</td>
<td></td>
<td></td>
</tr>
<tr>
<td>19</td>
<td>Factor Group 5</td>
<td>O</td>
<td></td>
<td></td>
</tr>
<tr>
<td>20</td>
<td>Primary count purpose</td>
<td>O</td>
<td>P</td>
<td>Count taken to report use of corridor by bicyclists</td>
</tr>
<tr>
<td>21</td>
<td>Posted speed limit</td>
<td>O</td>
<td>25</td>
<td>25 miles per hour posted speed limit</td>
</tr>
<tr>
<td>22</td>
<td>Year station established</td>
<td>C</td>
<td>2016</td>
<td></td>
</tr>
<tr>
<td>23</td>
<td>Year station discontinued</td>
<td>O</td>
<td></td>
<td></td>
</tr>
<tr>
<td>24</td>
<td>National highway system</td>
<td>O</td>
<td>N</td>
<td></td>
</tr>
<tr>
<td>25</td>
<td>Latitude</td>
<td>C</td>
<td>45531594</td>
<td>Indicates location of device for data collection</td>
</tr>
<tr>
<td>26</td>
<td>Longitude</td>
<td>C</td>
<td>123559216</td>
<td></td>
</tr>
<tr>
<td>27</td>
<td>Posted route signing</td>
<td>O</td>
<td>1</td>
<td>Route is not signed</td>
</tr>
<tr>
<td>28</td>
<td>Posted signed route number</td>
<td>O</td>
<td></td>
<td></td>
</tr>
<tr>
<td>29</td>
<td>LRS identification</td>
<td>O</td>
<td></td>
<td>Multnomah St E. of NE 8” Ave, buffered bike lane</td>
</tr>
<tr>
<td>30</td>
<td>LRS location point</td>
<td>O</td>
<td></td>
<td></td>
</tr>
<tr>
<td>31</td>
<td>Station location</td>
<td>O</td>
<td></td>
<td></td>
</tr>
<tr>
<td>32</td>
<td>Other notes</td>
<td>O</td>
<td></td>
<td>Dir of route based on ascending building numbers</td>
</tr>
</tbody>
</table>

43
A video camera is used to collect data which is then manually reduced. Pedestrians and bicyclists are counted separately and direction is recorded.
A Few Examples

2
Number of directions counted separately (northbound and southbound)

1
Number of locations counted separately (entire facility)

2
Number of modes counted separately (bicyclists and pedestrians)

4
Number of station location records required

Northbound pedestrians
Southbound pedestrians
Northbound bicyclists
Southbound bicyclists
A Few Examples

LOCATION OF COUNT RELATIVE TO ROADWAY FOR BICYCLE Lanes

Location of Count Relative to Roadway: 1 (same side as direction of route = right side)

Location of Count Relative to Roadway: 2 (opposite side as direction of route = left side)
A Few Examples

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

Westbound cyclists counted

Buffer

Location of count relative to roadway: 2
(opposite side of the road as direction of route)

Direction of movement: 2
(opposite direction of route)
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 than paint)
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

1. Travel monitored in same direction of route
2. Travel monitored in opposite direction of route
3. Travel monitored in both directions

Direction of Route
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

Location of count relative to roadway: 1
(traffic on same side of the road as direction of route)
Direction of movement: 3
(travel in both directions)

Direction of Route

Pedestrians in both directions counted
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

Direction of movement: 6 (right to left facing direction of route)

Direction of movement: 3 (travel in both/all directions)

Direction of movement: 5 (left to right facing direction of route)
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

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

### BICYCLISTS ON NORTH LEG

<table>
<thead>
<tr>
<th>Description</th>
<th>Entry</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Functional classification of the roadway</td>
<td>7U</td>
<td>An urban, local roadway (based on 1&lt;sup&gt;st&lt;/sup&gt; Avenue)</td>
</tr>
<tr>
<td>Direction of route</td>
<td>5</td>
<td>South, to correspond with increasing building numbers on 1&lt;sup&gt;st&lt;/sup&gt; Avenue</td>
</tr>
<tr>
<td>Location of count relative to roadway</td>
<td>2</td>
<td>Traffic on the opposite side of the road for listed direction of route</td>
</tr>
<tr>
<td>Direction of movement</td>
<td>2</td>
<td>Travel in opposite direction of route</td>
</tr>
<tr>
<td>Facility type</td>
<td>1</td>
<td>Count is collected in a shared roadway</td>
</tr>
<tr>
<td>Intersection</td>
<td>1</td>
<td>Count is taken at an intersection (not a roundabout)</td>
</tr>
<tr>
<td>Type of count</td>
<td>2</td>
<td>Only bicycles are counted</td>
</tr>
<tr>
<td>Posted speed limit</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Posted route signing</td>
<td>„1</td>
<td>Refers to 1&lt;sup&gt;st&lt;/sup&gt; Avenue</td>
</tr>
<tr>
<td>Posted signed route number</td>
<td></td>
<td></td>
</tr>
<tr>
<td>LRS identification</td>
<td></td>
<td></td>
</tr>
<tr>
<td>LRS location point</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other notes</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*NB bicyclists on 1<sup>st</sup> 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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