Bike-Ped Portal: National Bicycle and Pedestrian Count Archive

Sirisha Kothuri, Research Associate
Portland State University

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Outline

• Why count?
• Types of counts
• Existing archives
• Phase 1: Creating Bike-Ped Portal
• Phase 2: Enhancement of Bike-Ped Portal
• Next Steps
Why count?

- Determine how many are walking/biking
- Help determine and prioritize investments
- Chart trends over time
- Measure impacts of new facilities
- Quantify benefits of biking and walking
Types of counts

• Surveys
  • National
  • Regional
  • Local
  • Intercept

• GPS

• Counts
  • Permanent
  • Short Duration
    • Manual
    • Automated
Where to count?

Intersection

Screenline

Credit: metro.net
Existing Archives

- Bike Count Data Clearinghouse (UCLA)  
  http://www.bikecounts.luskin.ucla.edu/

- Central Lane Metropolitan Planning Organization

- Delaware Valley Regional Planning Commission
Phase I: Creating BikePed Portal

Data types: Continuous data, short duration counts, manual counts
Segment Area

A segment area is a stretch of transportation right-of-way over which the volume of non-motorized traffic is not expected to substantially change.

Credit: K.Nordback
Segment Area Example

Google Maps

Credit: K.Nordback
Flows and Detector Example

Measured Flow: Eastbound Bicyclists

Unmeasured Flow: East- and westbound Pedestrians
PHASE I: Creating Bike-Ped Portal

PHASE II: Enhancements Public Portal BETA

Upload Data

Download Data

Archive

Password-Protected

Public Portal

Visualization
Phase II: Public Portal BETA

Dashboard

560 Detections
36,034,192 Count Records
223,558,268 Times

Number of Counters

Pedestrians and Bicycles Counted

Manual Count Sites
Portland, OR: 53
Bend, OR: 21
Gresham, OR: 15
Ore-Gon, OR: 7
Wheeler, OR: 6

Automatic Count Sites
Portland, OR: 75
Boulder, CO: 37
San Diego, CA: 29
Ashland, OR: 27
Aberdeen, WA: 12

Trip By Mode

By Facility Type
Phase II: Public Portal BETA

Enter location name

Click on a cluster

Simple filter by mode or detector type

Map View
Phase II: Public Portal BETA

Click on a cluster

Zoomed into a location
Hawthorne Bridge

Viewing Data

Stacked  Unstacked  Automatic  Day  Week  Month

Zoom: 1 month  6 Month  Year  All

From 2009-09-01 To 2018-03-01

200k
100k

Jul '10  Jul '11  Jan '12  Jul '12  Jan '13  Jul '13  Jan '14  Jul '14  Jan '15  Jul '15  Jan '16  Jul '16  Jan '17  Jul '17  Jan '18

- Hawthorne Bridge south Automated, Bicycle E
- Hawthorne Bridge north Automated, Bicycle W
- Hawthorne Bridge south Automated, Bicycle E
- Hawthorne Bridge north Automated, Bicycle E
- Hawthorne Bridge south Automated, Bicycle W
- Hawthorne Bridge north Automated, Bicycle W
- Hawthorne Bridge south Manual, Bicycle W/E
- Hawthorne Bridge north Automated, Bicycle E
- Hawthorne Bridge north Automated, Bicycle W
- Hawthorne Bridge north Manual, Bicycle W/E

ErikaPac Portal

Close
Viewing Data

Week Aggregate

Week from Monday, Jul 13, 2015
NW 9th Ave N of NW Lovejoy St north Automated, Bicycle: 5,236
Aggregated Daily Count
Hourly Count
Comparing Patterns

Viewing Data

Stacked  Unstacked  Automatic  Day  Week  Month

Zoom  1 month  6 Month  Year  All

From 2011-08-01 To 2017-11-08

Hawthorne Bridge south Automated, Bicycle E
Hawthorne Bridge north Automated, Bicycle E
Hawthorne Bridge south Automated, Bicycle W
Hawthorne Bridge north Automated, Bicycle W
Key Bridge Automated, Bicycle N
Key Bridge Automated, Pedestrian N
Key Bridge Automated, Bicycle S
Key Bridge Automated, Pedestrian S
Key Bridge Automated, Bicycle S
Key Bridge Automated, Pedestrian S
Comparing Patterns

Viewing Data

Stacked  Unstacked  Automatic  Day  Week  Month

Zoom  1 month  6 Month  Year  All

From 2015-01-01  To 2018-03-01

BikeFed Portal
Count Data All in One Place

- Manual counts
- Short duration counts
- Continuous counts

[Image of a map with various data points and labels for different types of counts]
Data Upload

BikePed Portal: Account Access

The BikePed Portal is a national platform for bicycle and pedestrian count data. You'll be able to check bicyclists and pedestrian traffic patterns around the U.S. and add your own count data. BikePed Portal supplies support staff to help answer your data entry questions, recorded by hand or as an online form.

Fill out the form below to be notified when you can log account access to the BikePed Portal site [data.bikeped.trec.pdx.edu] in Summer 2016. Questions? Contact us at about@bikeped.edu.

* Required

Email address *
slothari@pdx.edu

First Name *
Srisa

Last Name *
Kothuri

Company/Organization *
Portland State University

Title *
Research Associate

How do you plan to use Bike Ped Portal? (Check all that apply) *

- [ ] I'd like to access the data for research purposes.
- [ ] I have data I'd like to contribute.
- [ ] Other:

Contributing data to BikePed Portal

You have indicated that you’d like to contribute data to BikePed Portal. Please fill out the form below and we will get back to you with additional information and provide assistance in uploading your data.

What type of data do you have?

- [ ] Manual counts
- [ ] Intersection turning movement counts
- [ ] Automated counts

If automated counts, please provide the type of equipment and manufacturer:

Your answer
Data Download

• Enhancements to download page currently underway
• User agreements and data sharing policies
• Send an email to asktrec@pdx.edu for any immediate data needs
Phase 3 – Next Steps

• Upload/download functions Tool Components
• AADT Estimator Tool
• QA/QC
• Bike-Ped Data → TMAS
Products


Questions?

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503-725-4208
Bike-Ped Portal

Bike-Ped PORTAL is the leading national online nonmotorized count archive. Currently, the archive includes automated and manual counts from across the country and supports counts collected on road and path segments. The archive allows users to upload, view and download data. It was established in 2015 by researchers at Portland State University through a pooled fund grant administered by NITC, the National Center for Transportation and Communities. Other project partners include the Federal Highway Administration, Oregon Department of Transportation, Metro, Lane Council of Governments, Central Lane MPO, Bend MPO, Mid-Willamette Valley Council of Governments, Rogue Valley Council of Governments, City of Boulder, City of Austin, Cycle Oregon, and Oregon Community Foundation.

To submit data to the archive, fill this form and tell us what types of data you will be submitting. For additional information or questions, please contact asktrec@pdx.edu

Disclaimer: The counts in the archive have been obtained from various agencies who are responsible for the accuracy of the data.
Extra Slides
## Potential Uses

<table>
<thead>
<tr>
<th>Application</th>
<th>Uses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Facility Usage</td>
<td>Informing or supporting planning and problem statements with data and visuals. Make the case for bicycle and pedestrian facilities.</td>
</tr>
<tr>
<td>Travel Patterns</td>
<td>Change over time - patterns and trends View aggregated trends - corridor, neighborhood, city, region. Compare to other locations.</td>
</tr>
<tr>
<td>Equipment checks</td>
<td>Identifying outliers in data, missing data for long periods of time.</td>
</tr>
<tr>
<td>Trends</td>
<td>Before-After Comparisons. Identify the effect of specific events (e.g. construction project, facility update).</td>
</tr>
</tbody>
</table>
Measuring Facility Usage
# Bike-Ped Data → TMAS

## TMAS Field Description

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
<th>Portal Columns</th>
<th>Notes</th>
<th>Width</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Start Indicator</td>
<td>segment_start_flag</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>2</td>
<td>Bike-Ped Code</td>
<td>segment,area,city_code</td>
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<td>1</td>
</tr>
<tr>
<td>3</td>
<td>County FIPS Code</td>
<td>segment,area,city_code</td>
<td>4</td>
<td>1</td>
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<td>4</td>
<td>Segment ID</td>
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<td>7</td>
<td>Location of Count Relative to Roadway</td>
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<td>1</td>
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<td>Insector</td>
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<td>Note of Failure</td>
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<td>Receiver FIPS Code</td>
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**Credit:** K. Tufte
QA/QC

- Problem: Walk and bike count data has historically not been consistently recorded, stored and analyzed. Consequently, checks for erroneous or otherwise aberrant are lacking or untested.
- Data: 15 minute and hourly counts from continuous sites with at least 30 days of data in Bike Ped Portal from 2015-2017 (~1 million intervals).
- Checks being developed:
  - Repeated zero values, repeated non-zero values (identifying acceptable thresholds based on average volume).
  - Appropriate hourly caps based on expected volume. Unexpectedly high or low counts based on recent values.
  - Inverted AM/PM data.
- Outputs: Recommended checks, including thresholds for identifying potentially erroneous data
- Implementation: Flag potentially erroneous data, and allow data owner to mark flagged data as “normal”, “abnormal, but valid”, “invalid”, “unable to determine validity”.

Credit: N. McNeil
Equipment Checks
Outlier Detection

Raw data

2015-08-09 08:00:00-07 to 2015-08-09 09:00:00-07
Volume: 1768

Reset zoom
Outlier Detection