Creating And Using A Publicly Available Multimodal Transportation Data Archive

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Creating and using a publicly available multimodal transportation data archive

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Team: Basem Elazzabi, Hau Hagedorn, Kyuri Kim, Tatiana Luchian, Will Mass, Utsav Raychaudhuri, Aman Soldaki
The Portals: A MultiModal (Transportation Data) Archive

PORTAL is: a transportation data archive for the Portland-Vancouver-Hillsboro Metropolitan area

BikePed Portal is: a national archive for bicycle and pedestrian data

Today we will see:
- A tour of PORTAL
- Trends in traffic volume since Covid-19
- A sneak-peek at the new BikePed Portal website
PORTAL and BikePed Portal: Archiving multimodal transportation data

PORTAL:
- Transportation data archive for the Portland-Vancouver-Hillsboro metropolitan area
- Uses: regional performance measures, research, education
- Data:
  - Highway: speed volume, occupancy, VMT, VHT, travel time, delay
  - Vehicle length: volume
  - Transit: quarterly ridership & on-time performance
  - Arterial: traffic signal data, bike counts, system detector counts
  - Incidents +: TOC incident data, VMS, VAS
  - Weather: wind speed, temperature, humidity, precipitation, visibility
Publicly-available - policy of open data
Publicly-funded (Metro (TransPort), RTC(VAST), TREC NSF, FHWA)
Focus on open-source software
>10TB PostgreSQL database
Publicly-available - policy of open data

Publicly-funded (Metro (TransPort), RTC(VAST), TREC NSF, FHWA)

Focus on open-source software

>10TB PostgreSQL database
PORTAL and BikePed Portal: Archiving multimodal transportation data

BikePed Portal:
- National archive for bicycle and pedestrian data.
- Uses: regional performance measures, research, education
- Data:
  - Permanent and short-duration counts
  - Automatic and manual counts
  - Turning movement counts
PORTAL is the official transportation data archive for the Portland-Vancouver Metropolitan region.

PORTAL provides a centralized, electronic database that facilitates the collection, archiving, and sharing of data and information for public agencies within the region. The data stored in Portal includes 26-second granular loop detector data from freeways in the Portland-Vancouver metropolitan region, arterial signal data, travel time data, weather data, incident data, VMS/SMTP message data, truck volumes, transit data, and arterial signal data. Many of these data feeds are received by Portal in real-time or on a daily basis and for most, the retrieval and archiving process is fully automated.

PORTAL’s multi-modal transportation data archive aims to support Metro’s Regional Transportation Plan, the production of regional performance measures, support for regional transportation agencies and their consultants, and researchers at Portland State and elsewhere. Project objectives include producing tools and performance measures useful to local transportation professionals, exploring new and innovative uses of the data, and making the PORTAL data and system more accessible to agency personnel.

PORTAL is currently supported by funding from Metro, the Southwest Washington Regional Transportation Council (RTC), and the Transportation Research and Education Center (TREC) at Portland State. In addition, PORTAL has received funding from the Federal Highway Administration (FHWA) and the National Science Foundation (NSF).
Bertha (2R309) to NB I-5

Click here to view
Two Quantity Chart

- Highway: I-5
- Direction: North
- Number Of Lanes: 3
- Milepost: 297.23
- Detector Type: Unknown
- Detector Location: Unknown
- Agency: ODOT
- Region: 1

Date Range
Start: 2/10/2020
End: 2/14/2020

Time Range
Start: 00:00
End: 23:59

Quantities
1st: Speed
2nd: Volume (VPLPH)

Configuration
Resolution: 1hr
Group: No

Select Lane: all

Update Charts
Downstream Station: Terwilliger (20D594) @ NB I-5 MP297.3
Opposite Direction: N/A
Upstream Station: Multnomah (2R304) to NB I-5

Speed (mph) and Volume (VPLPH) at I-5 NB at Bertha (2R309) to NB I-5
02/10/2020 through 02/14/2020: 00:00 and 23:59
SuMTuWThF Sa with 1 Hour resolution for lane: all

Speed (mph)  Volume (VPLPH)
Speed (mph) and Volume (VPLPH) at I-5 NB at Bertha (2R309) to NB I-5
02/10/2020 through 02/14/2020: 00:00 and 23:59

SuMTuWThFSa with 1 Hour resolution for lane: all
Speed (mph) and Volume (VPLPH) at I-5 NB at Bertha (2R309) to NB I-5
02/10/2020 through 02/14/2020: 00:00 and 23:59
SuMTuWThFSa with 1 Hour resolution for lane: all
Rainfall (1/10 in), Temperature (F) and Holidays at 02/10/2020 through 02/14/2020: 00:00 and 23:59
Speed (mph) and Volume (VPLPH) at I-5 NB at Bertha (2R309) to NB I-5
02/10/2020 through 02/14/2020: 00:00 and 23:59
SuMTuWThFSa with 15 Minute resolution for lane: all
Speed (mph) and Volume (VPLPH) at I-5 NB at Bertha (2R309) to NB I-5
02/10/2020 through 02/14/2020: 00:00 and 23:59

SuMTuWThFSa with 15 Minute resolution for lane: all
Speed (mph) and Volume (VPLPH) at I-5 NB at Bertha (2R309) to NB I-5
02/10/2020 through 02/14/2020: 00:00 and 23:59

SuMTuWThFSa with 15 Minute resolution for lane: all
Speed (mph) and Volume (VPLPH) at I-5 NB at Bertha (2R309) to NB I-5
02/03/2020 through 02/28/2020 : 00:00 and 23:59
TuWTh with 15 Minute resolution for lane: all
Speed (mph) and Volume (VPLPH) at I-5 NB at Bertha (2R309) to NB I-5
04/27/2020 through 05/01/2020: 00:00 and 23:59

SuMTuWThFSa with 15 Minute resolution for lane: all
Speed (mph) and Volume (VPLPH) at I-5 NB at Bertha (2R309) to NB I-5
04/27/2020 through 05/01/2020: 00:00 and 23:59
SuMTuWThFSa with 15 Minute resolution for lane: all

- Start: 04/27/2020
- End: 05/01/2020
- Start Time: 00:00
- End Time: 23:59
- Resolution: 15min
- Lane: all
- Group: Yes

Downstream Station: Terwilliger (2DS054) @ NB I-5 MP297.3
Opposite Direction: N/A
Upstream Station: Multnomah (2R304) to NB I-5
Weekly travel time data for weeks 2020-02-23 → 2020-03-15

217 I-205 → 227 I-205

Average Travel Time (minutes)

Start Time

Sunday  Monday  Tuesday  Wednesday  Thursday  Friday  Saturday  Sunday

2020-02-23 - 2020-03-01  2020-03-01 - 2020-03-08  2020-03-08 - 2020-03-15  2020-03-15 - 2020-03-22

Add/Remove Reliability Data  Add/Remove Sample Count Data
Weekly travel time data for weeks 2020-02-23 → 2020-03-15

217 I-205 → 227 I-205

Average Travel Time (minutes)

0 2.5 5 7.5 10 12.5

Sunday Monday Tuesday Wednesday Thursday Friday Saturday Sunday

Start Time

- 2020-03-15 - 2020-03-22
- 2020-03-08 - 2020-03-15
- 2020-03-01 - 2020-03-08
- 2020-02-23 - 2020-03-01

Add/Remove Reliability Data Add/Remove Sample Count Data
Weekly travel time data for weeks 2020-02-23 → 2020-03-15

217 I-205 → 227 I-205

Average Travel Time (minutes)

Start Time

Sunday | Monday | Tuesday | Wednesday | Thursday | Friday | Saturday | Sunday

2020-03-15 - 2020-03-22 | 2020-03-08 - 2020-03-15 | 2020-03-01 - 2020-03-08 | 2020-02-23 - 2020-03-01
Routes
- I-205 Powell to I-205 NB
- I-205 Division NB
- I-205 Glisan to I-205 NB
- I-205 NB @ Halsey Street

Start week: 2020-03-15
Reliability weeks: 26

Select a route:
- Standard
- Aggregate
- Yearly

Update
Download
Marine Dr/99E (2R007) to NB I-5
Milepost: 307.46
Number of lanes: 3
Agency Id: 171 (ODOT)

Start: 2020-04-13
End: 2020-04-17
Measure: Length
Resolution: 1hr

Update  Download
Vehicle Counts in Length Ranges

Month
- 2020 January
- 2020 February
- 2020 March
- 2020 April
Additional features and data sources

- **Downloads:** Can download all data found on other pages in addition to other data (e.g. metadata, transit quarterly)
- Arterial
- Arterial Signal
- Incident data, VMS, VAS
- **Documentation site**
- **PORTAL Users Group**
Upcoming projects

- API documentation
- Travel time calculations across agencies
- BikePed Portal
- Scoping for potential new data sources (ATSPM)
- Adding new stations as they are installed
- Transit page
- Improvements to Arterial page
BikePed Portal

Leading the national non-motorized count data archive, BikePed Portal provides a centralized standard non-motorized count database for public agencies, researchers, educators, and other curious members of the public.
Segment Area: Tilikum Crossing Bridge

Total counts per year

Click on a year bar to view the monthly plot.

Click on a year bar to view the monthly plot.
Segment Area: Tilikum Crossing Bridge

Total counts per year

Year

Volume
0    | 300k  | 400k  | 400k  | 300k  | 200k

Total counts per month, year 2020

Month

1    | 2    | 3    | 4    | 5
Avg Daily Volume
0    | 10k  | 20k  | 0    | 0

Total counts per day, year 2020

Day of Year

0    | 500  | 1000 | 1500
Total Volume
0    | 500  | 1000 | 1500

Click on a day bar to view the day data plot.
Segment Area: Tilikum Crossing Bridge
My Account: Welcome Jennifer Dill
My Account: Welcome Jennifer Dill
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<th>End Time</th>
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BikePed Portal: Additional features & upcoming projects

User restricted site:

- Organization owner versus organization user.
- Shared permissions with multiple organizations.
- Download raw data.
- Organization specific dashboard.
- Export data in TMAS format.
- AADNMT
Transportation trends since the detection of COVID-19 in Oregon

A few dates to keep in mind:

- Feb 28: First positive case of COVID-19
- Mar 12: Close of all K-12 schools, moratorium on gatherings >250 people
- Mar 15: Temporary shutdown of bars, restaurants, and entertainment facilities
- Mar 16: Moratorium on gatherings >25 people
- Mar 23: “Stay-at-home”, beginning of state park closures
Mean daily volume along I-5 NB
Mean daily volume along I-5 NB
% Change average daily volume along I-5 NB
(reference week: Feb 22)
Vehicle length daily volume: Marine Dr/99E to I-5 NB
% change daily volume: Marine Dr/99E to I-5 NB
(reference week: Feb 22)
Daily bicycle volume: Hawthorne and Tilikum
Daily bicycle volume: Hawthorne and Tilikum
% change daily volume: Hawthorne & Tilikum (WB)
(reference week: Feb 22)
Weekday v. weekend: Tilikum Pre & Post

Pre: 2019-01-01 through 2020-03-11
Post: 2020-03-12 through 2020-05-05
Folsom St S of Arapahoe Ave (CO) & Key Bridge (VA)
Weekday v. weekend: Folsom St S of Arapahoe Ave
Pre & Post

Pre: 2019-01-01 through 2020-03-18
Post: 2020-03-19 through 2020-05-05
Weekday v. weekend: Key Bridge Pre & Post
Pre: 2019-01-01 through 2020-03-22
Post: 2020-03-23 through 2020-05-05
Questions?

- PORTAL: portal.its.pdx.edu
- Contact info: askportal@pdx.edu
- PORTAL Documentation site: adus.github.io/portal-documentation/
- TREC: trec.pdx.edu