Creating and using a publicly available multimodal transportation data archive

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Raychaudhuri, Aman Soldaki

























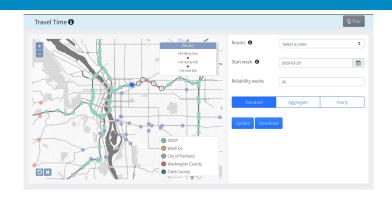
The Portals: A MultiModal (Transportation Data) Archive

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 web site



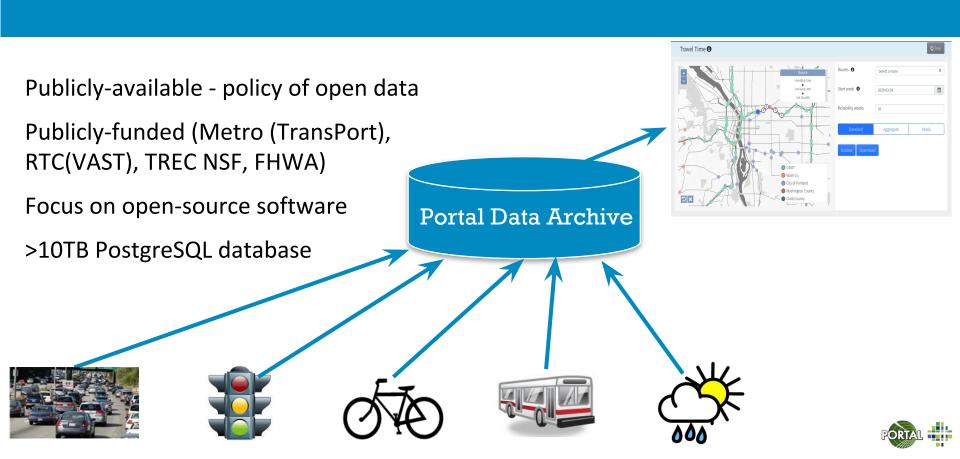


PORTAL and BikePed Portal: Archiving multimodal transportation data

PORTAL:

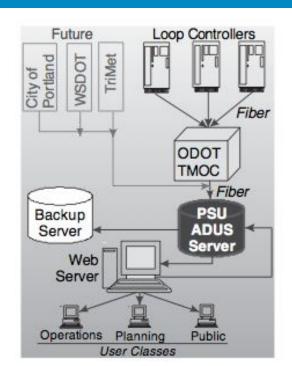
- Transportation data archive for the Portland-Vancouver-Hillsboro metropolitan area
- Uses: regional performance measures, research, education
- Data:
 - o Highway: speed volume, occupancy, VMT, VHT, travel time, delay
 - Vehicle length: volume
 - *Transit:* quarterly ridership & on-time performance
 - Arterial: traffic signal data, bike counts, system detector counts
 - Incidents +: TOC incident data, VMS, VAS
 - Weather: wind speed, temperature, humidity, precipitation, visibility

PORTAL Architecture



PORTAL Architecture

Publicly-available - policy of open data Publicly-funded (Metro (TransPort), RTC(VAST), TREC NSF, FHWA) Focus on open-source software Portal Data Archive >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







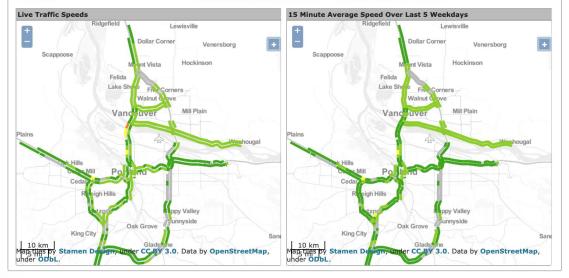
PORTAL

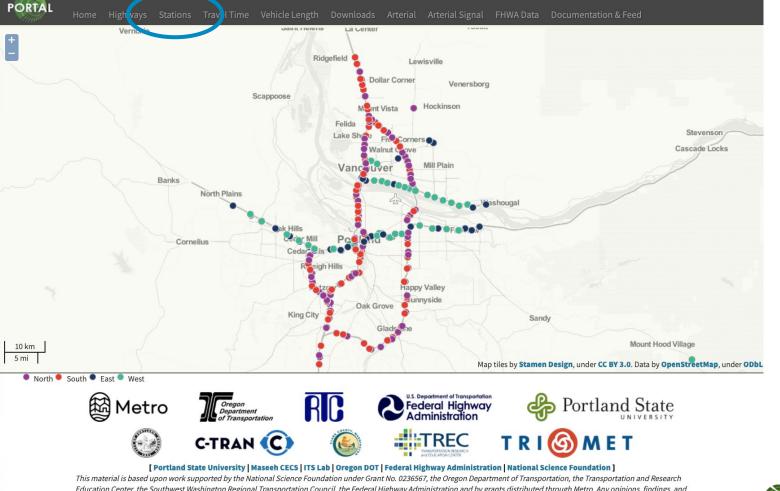
PORTAL is the official transportation data archive for the Portland-Vancouver Metropolitan region.

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 20-second granularity loop detector data from freeways in the Portland-Vancouver metropolitan region, arterial signal data, travel time data, weather data, incident data, VAS/VMS 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.

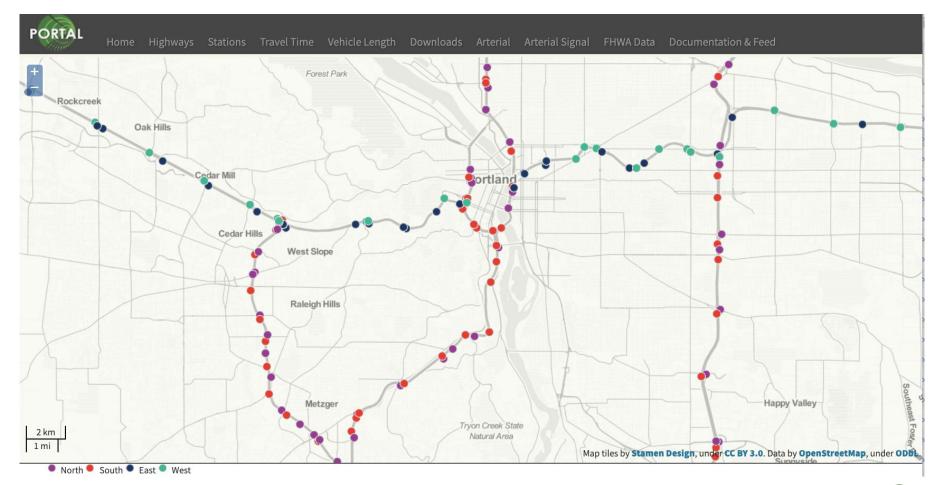
PORTAL is currently supported by funding from Metro, the Southwest Washington Regional Transportation Council (RTC), and the Transportation Research and Education Center (TREC) at Portland State. In addition, PORTAL has received funding from the Federal Highway Administration (FHWA) and the National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



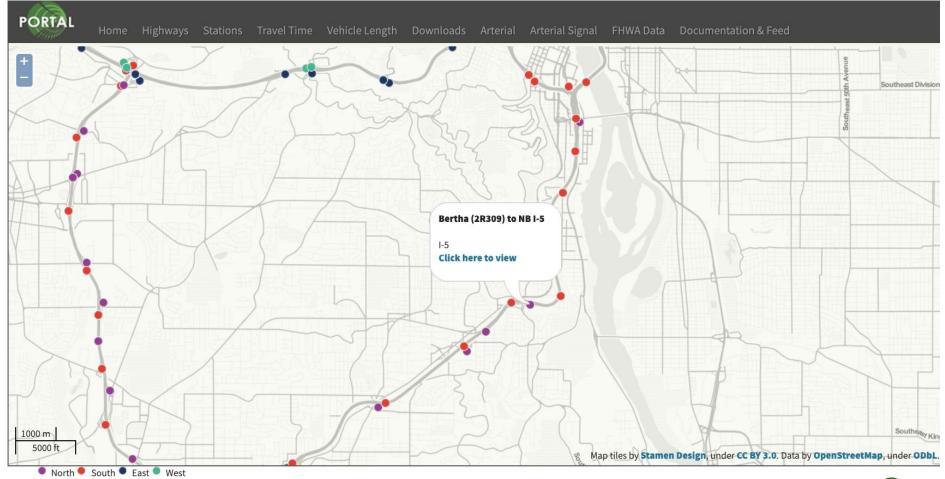


Education Center, the Southwest Washington Regional Transportation Council, the Federal Highway Administration and by grants distributed through Metro. Any opinions, findings, and conclusions or recommendations expressed in this material are those of the author(s) and do not necessarily reflect the views of the funding organizations.





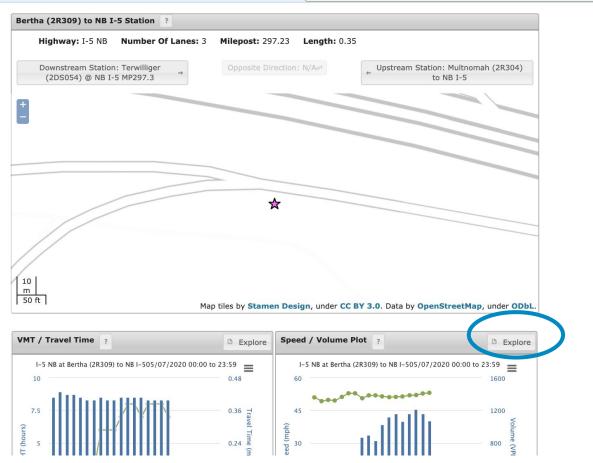






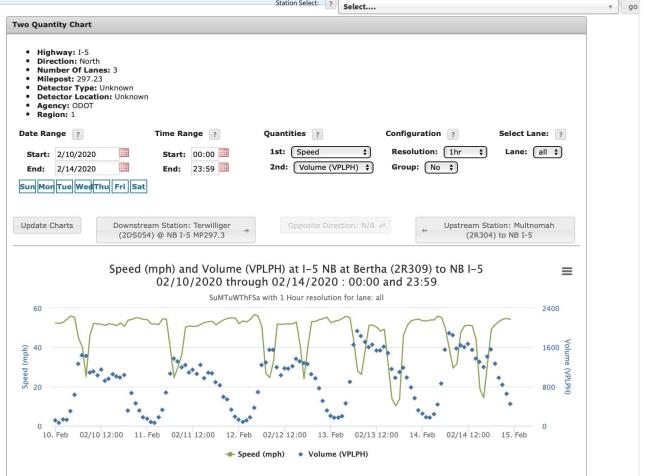
Portland-Vancouver Stations Page --> Bertha (2R309) to NB I-5

Station Select: Select....

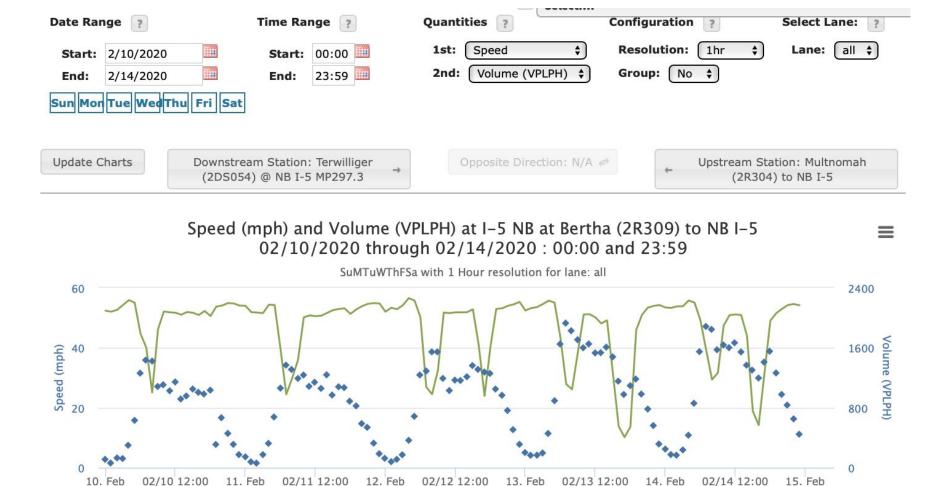




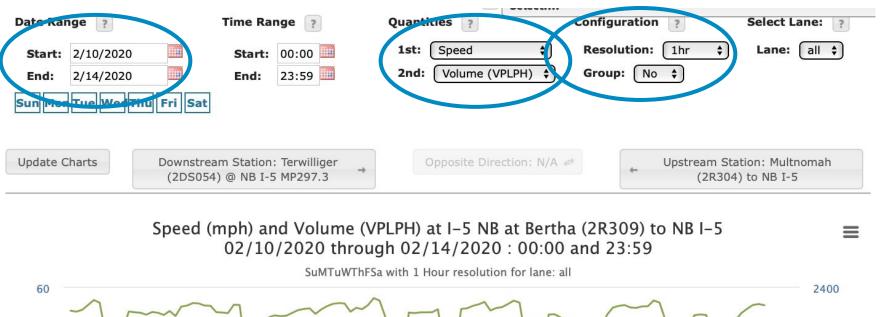
Portland-Vancouver Stations Page --> Bertha (2R309) to NB I-5 --> Two Quantity Chart

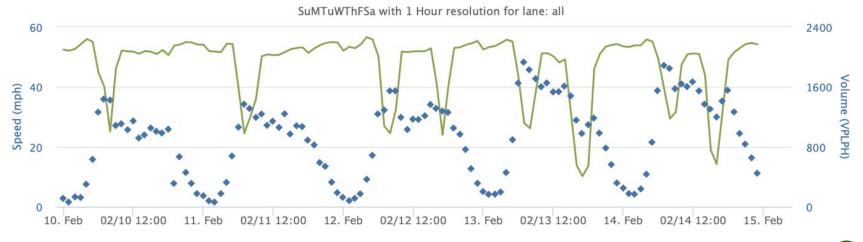








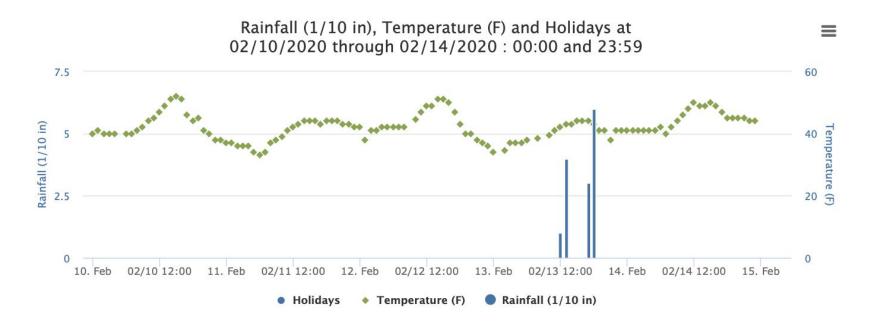




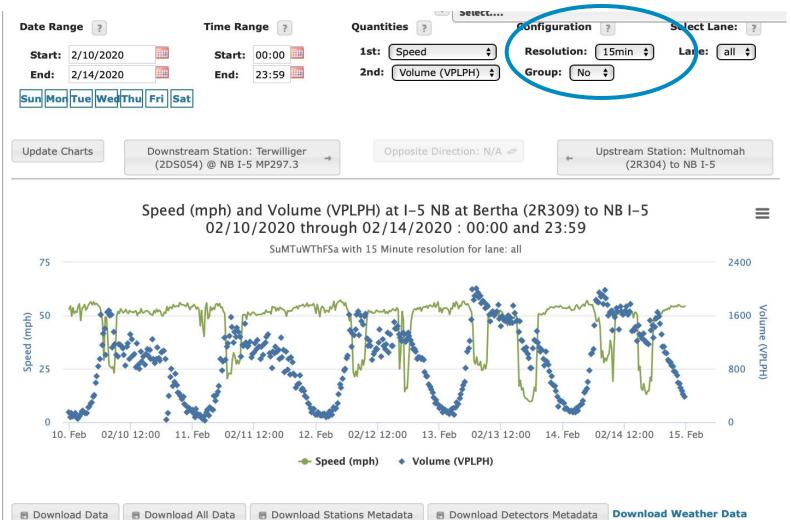
Speed (mph)

Volume (VPLPH)

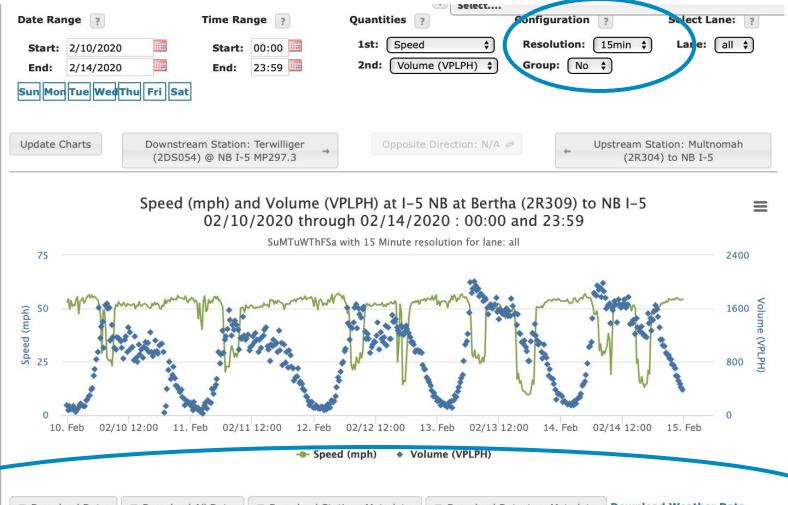








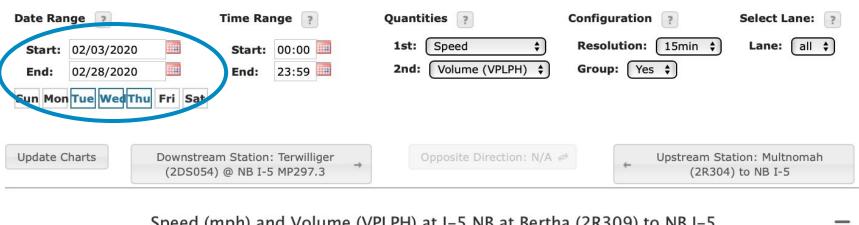


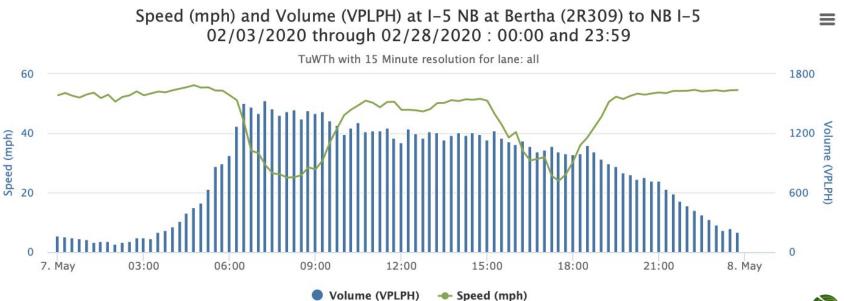




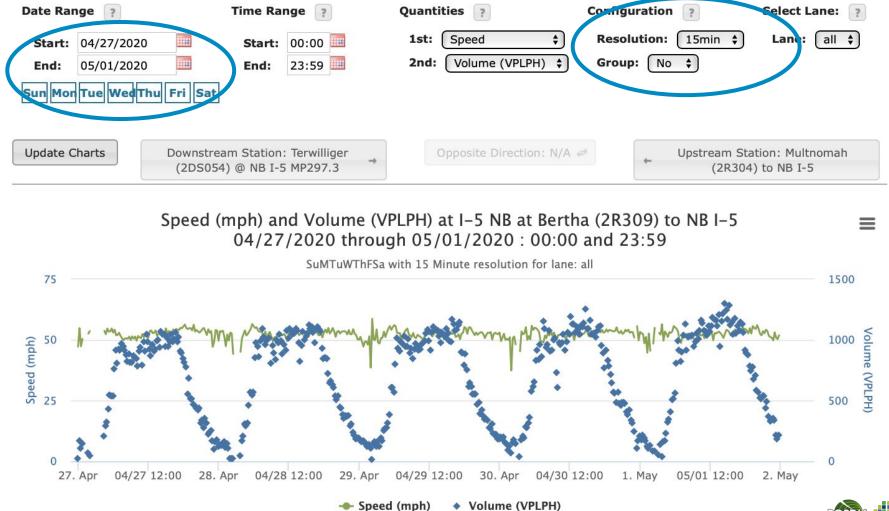




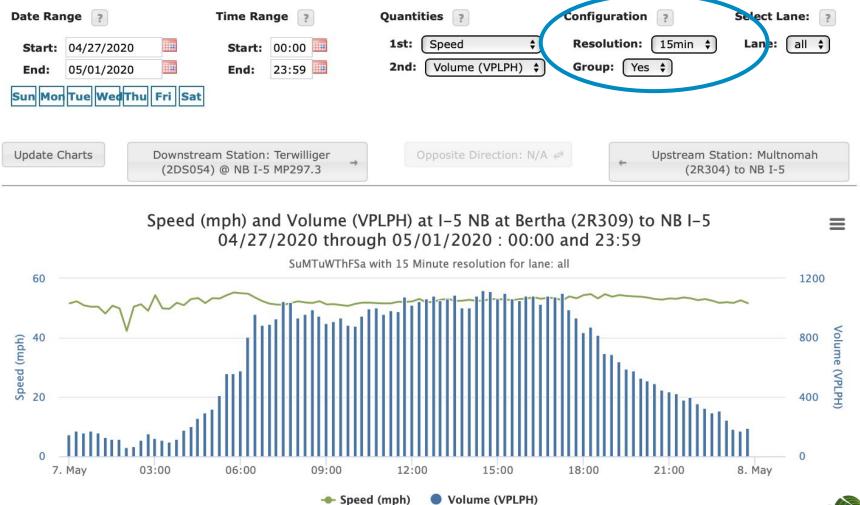






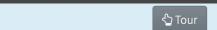


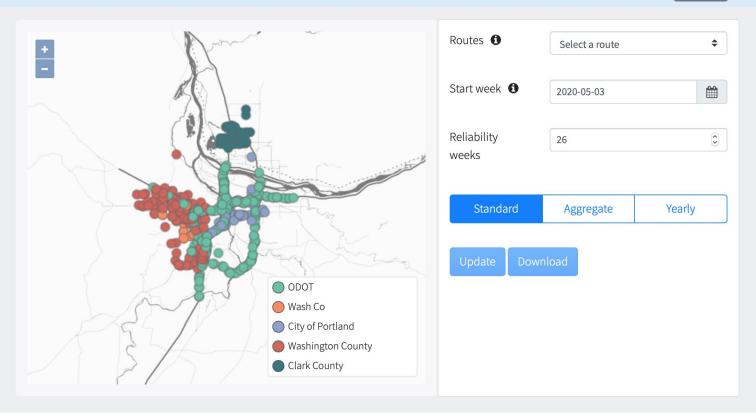




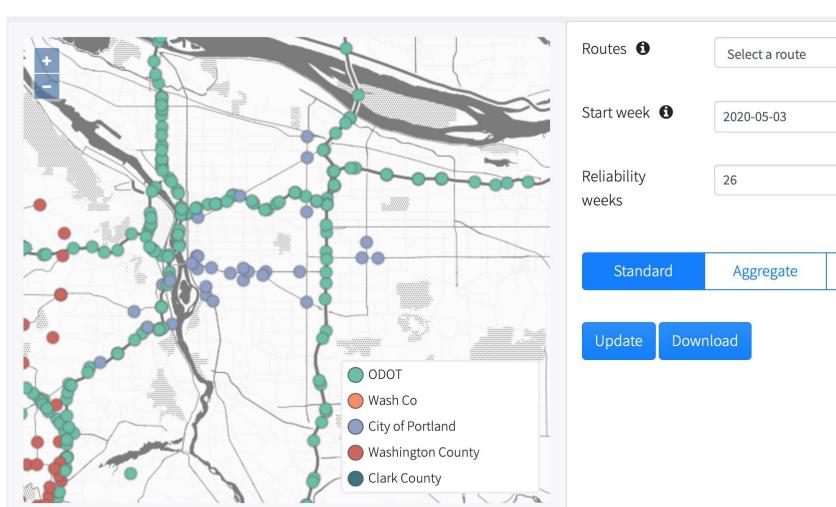


Travel Time 1





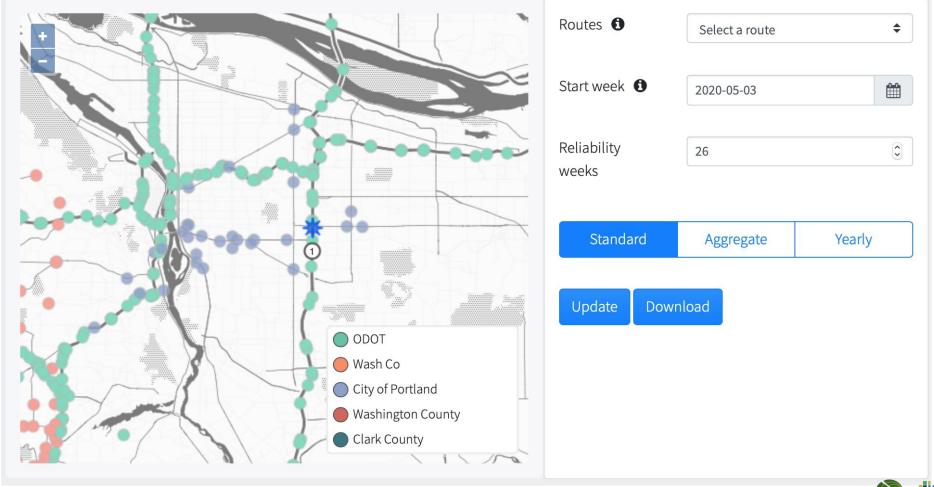




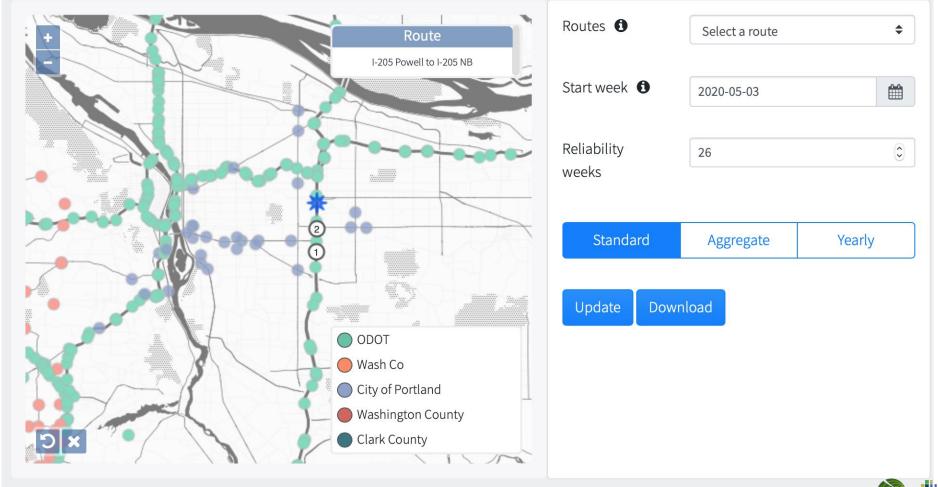
Yearly



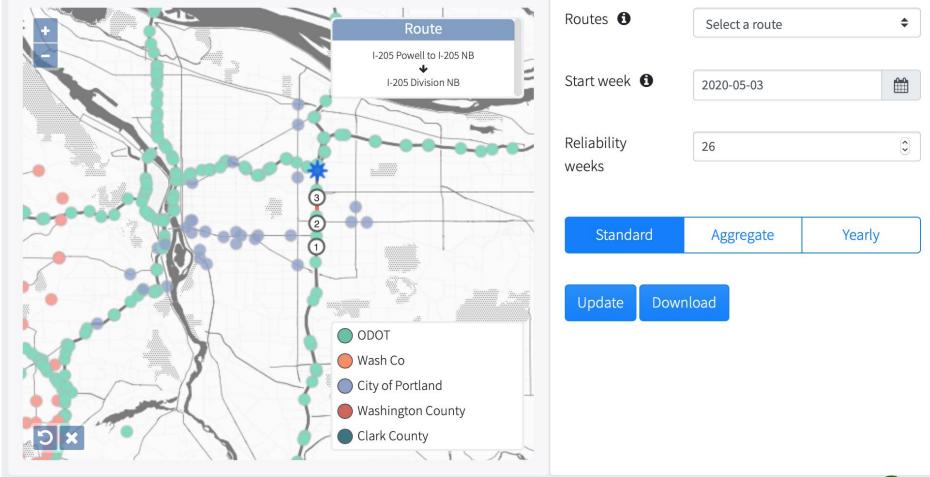




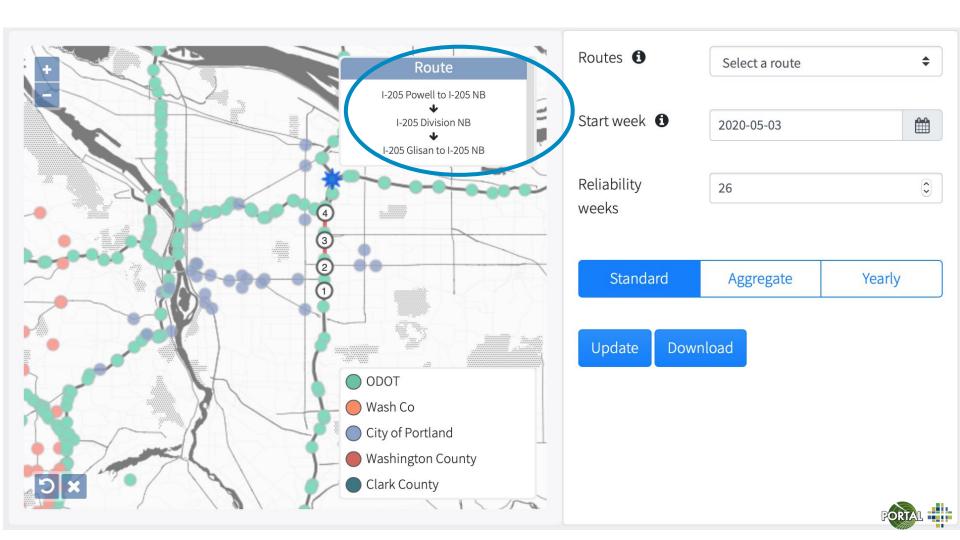


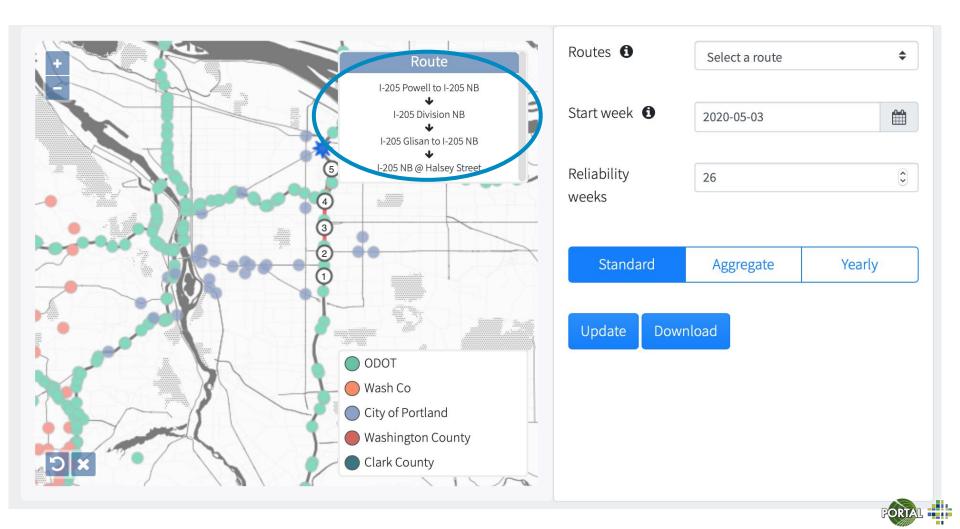


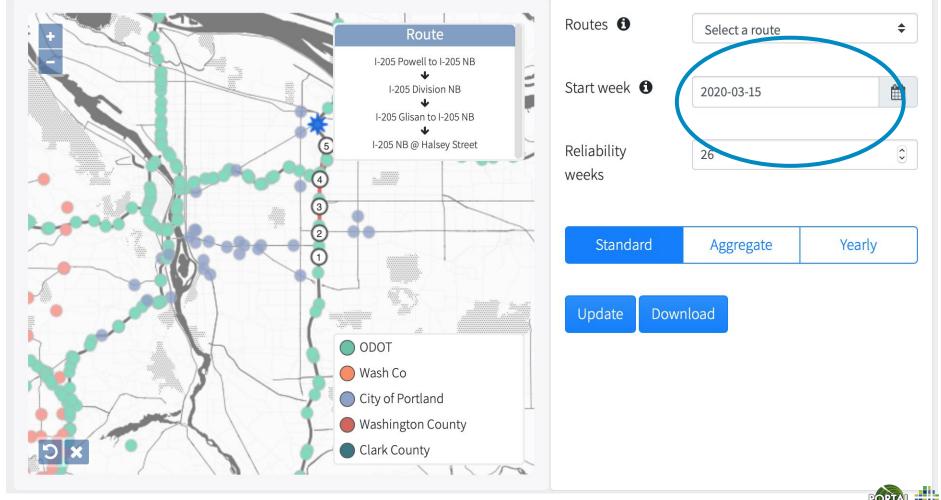




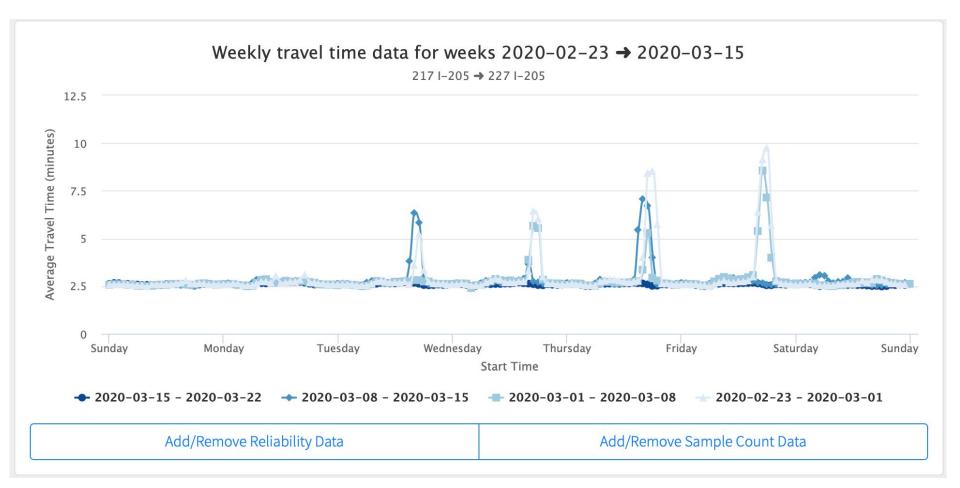




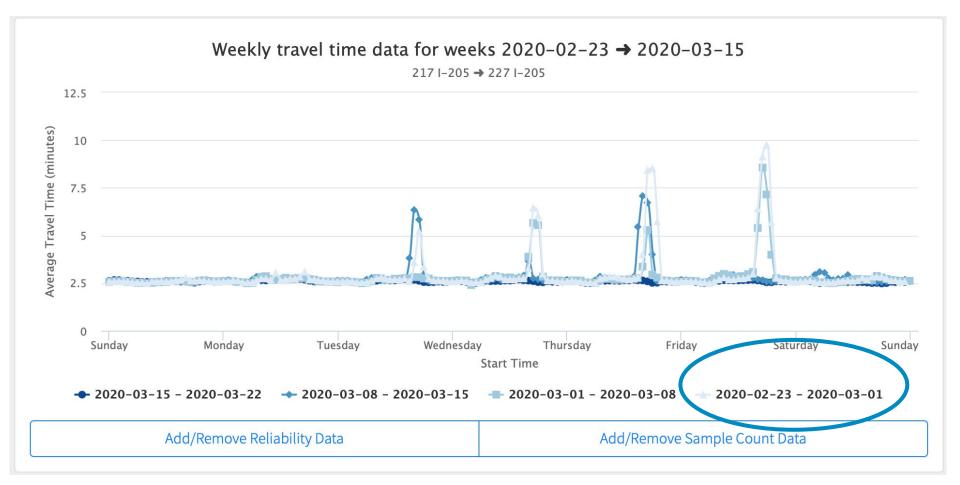












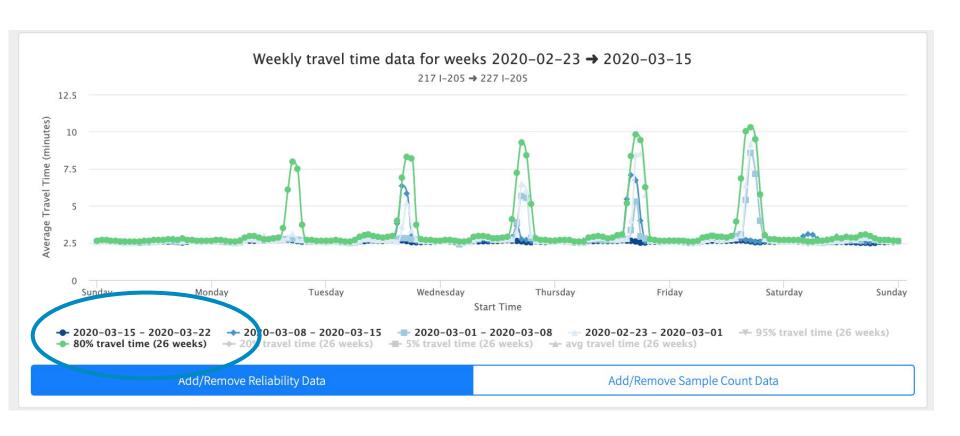


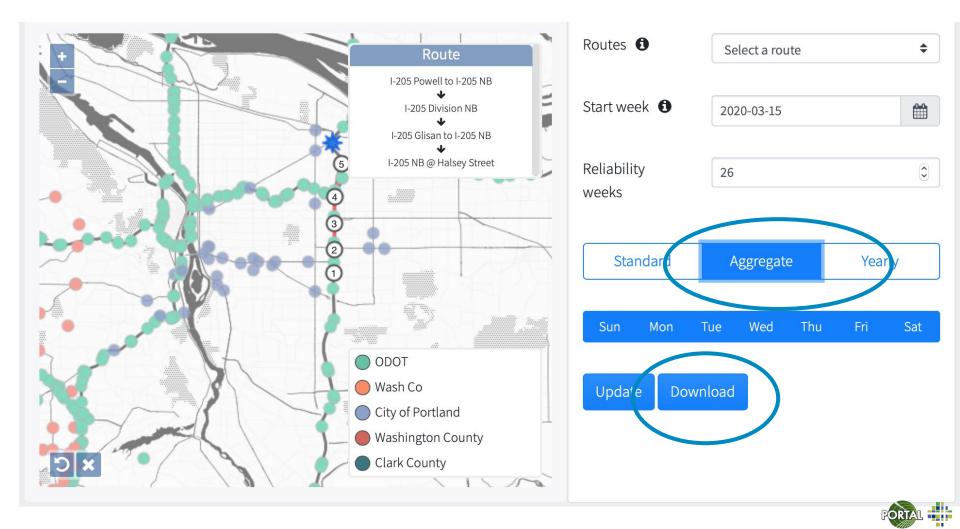
Weekly travel time data for weeks 2020-02-23 → 2020-03-15

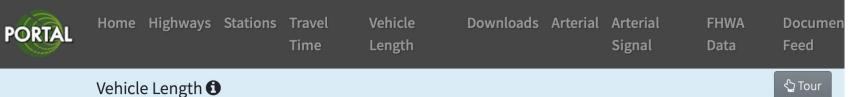


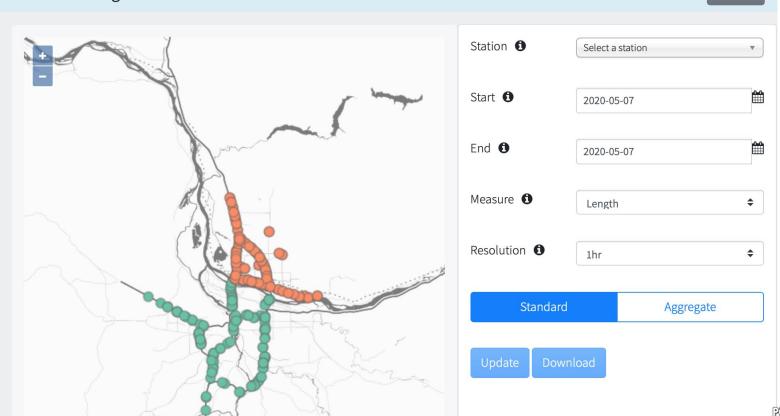




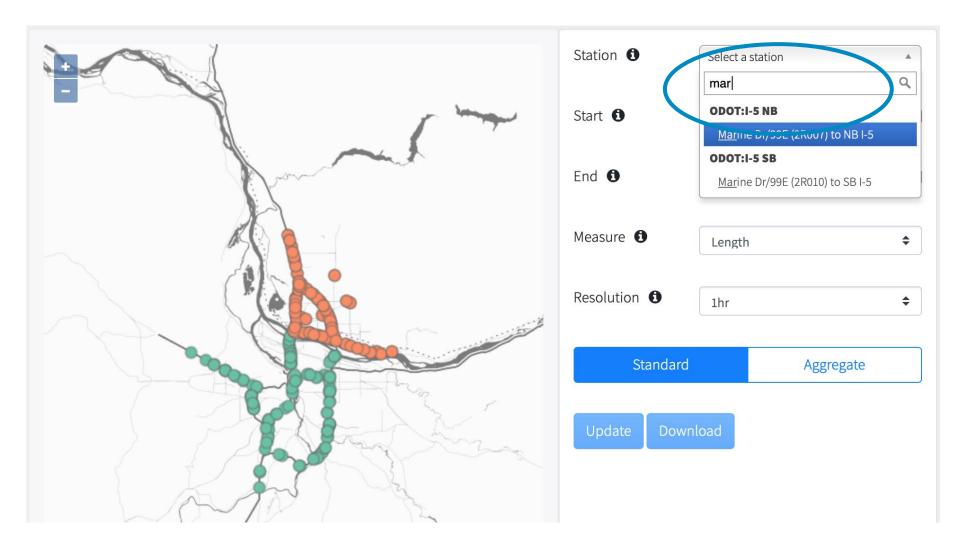


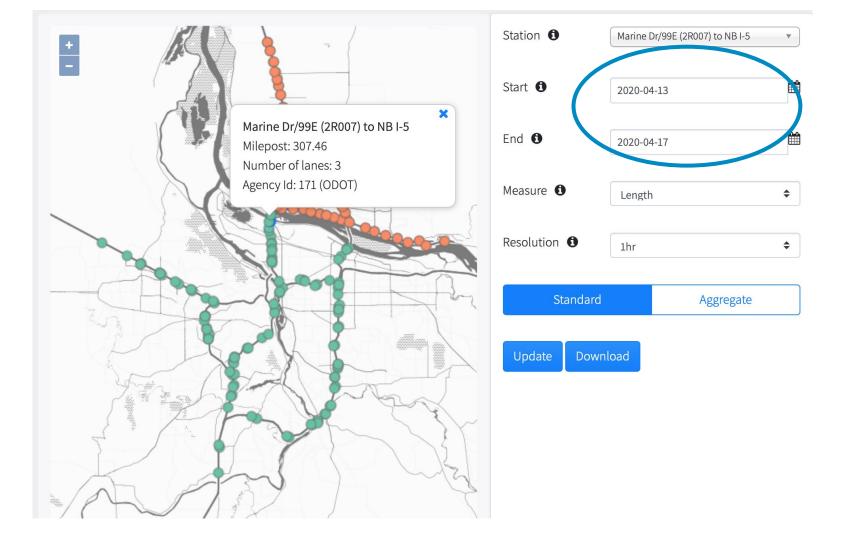


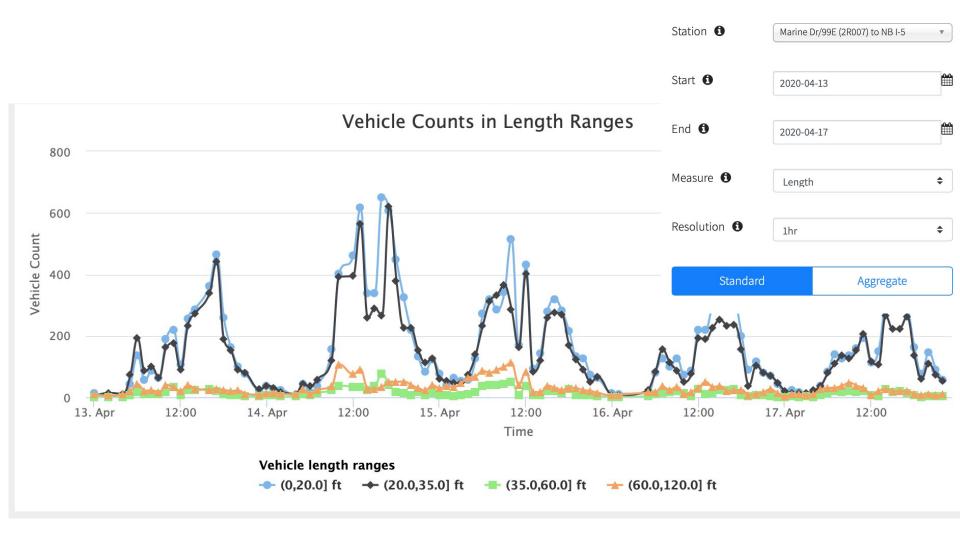


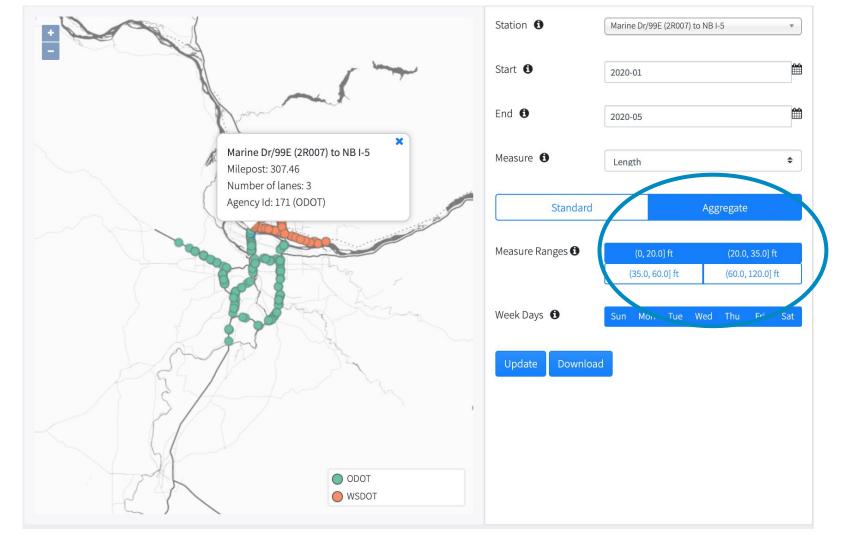


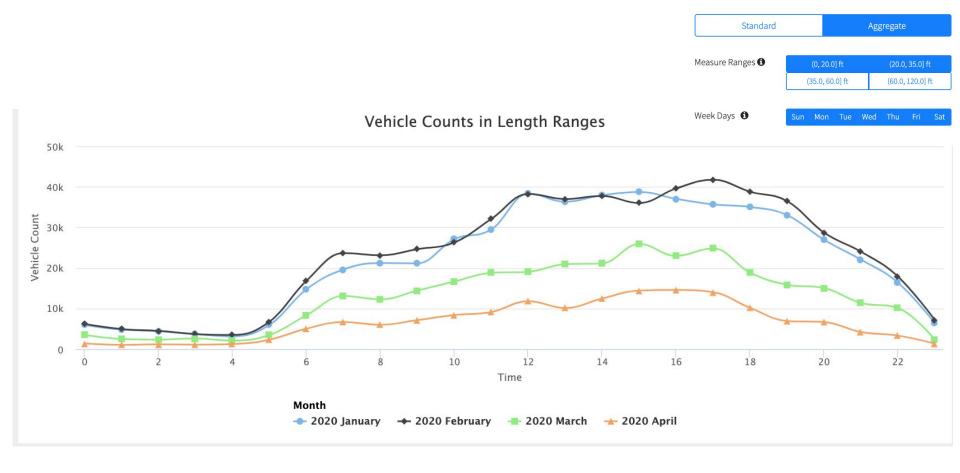






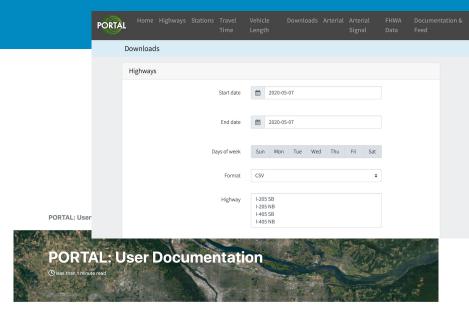






Additional features and data sources

- 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



PORTAL

The official transportation data archive for the Portland-Vancouver Metropolitan region. PORTAL is the official transportation data archive for the Portland-Vancouver Metropolitan region. Information provided in this space contains user documentation and additional resources for each page in PORTAL, data sources and availability, and release notes and notices.

Not all pages have been documented as this remains a work in progress. If there are any questions, comments, or recommendations please either email us or post an issue.

Recent posts

PUG Meeting 2020-03-18

(1) less than 1 minute read Meeting location: ODOT, Room 337 (call-in available)

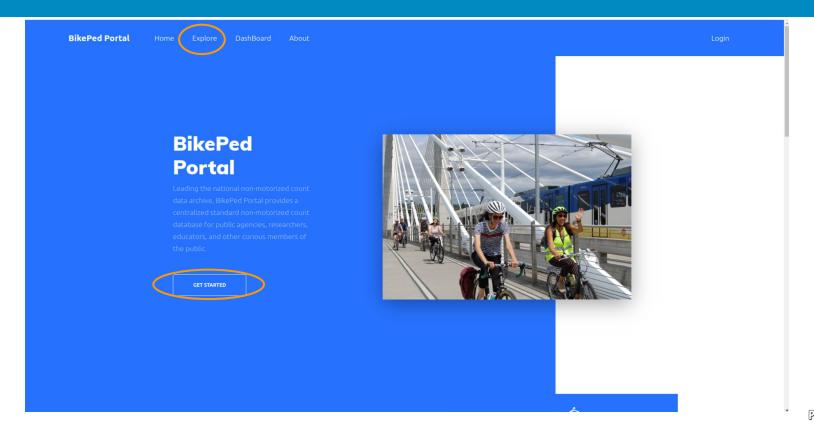


Upcoming projects

- 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

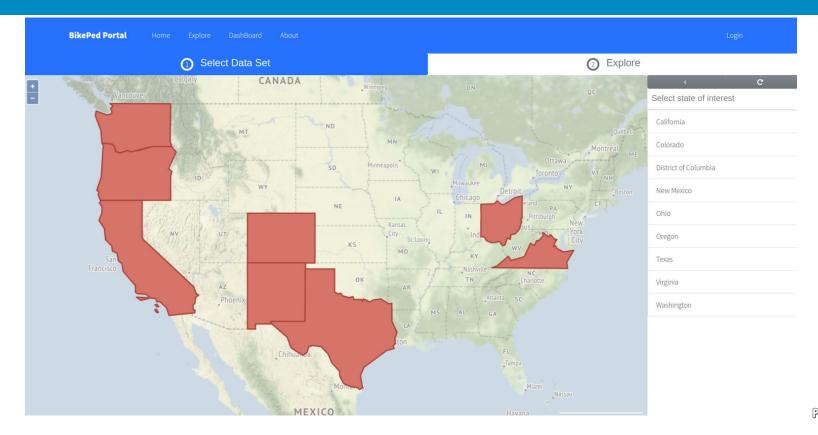


BikePed Portal

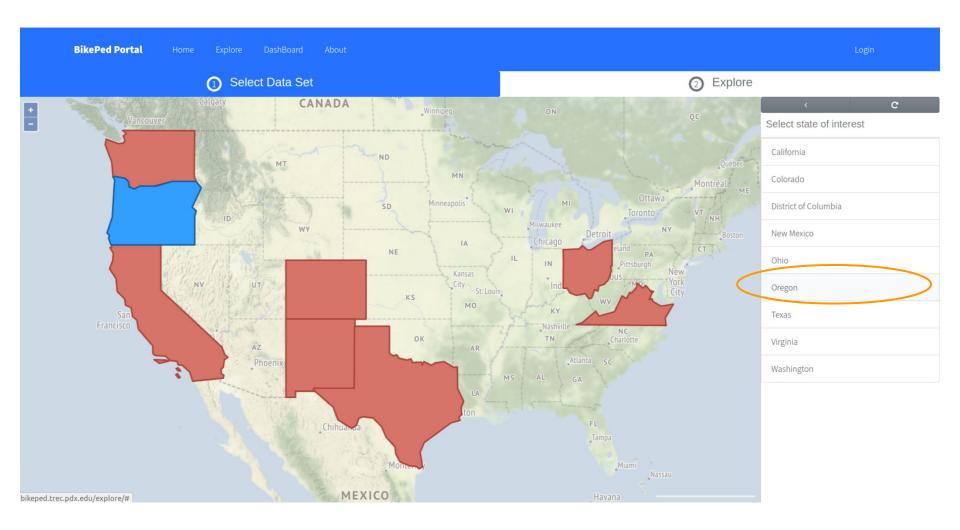


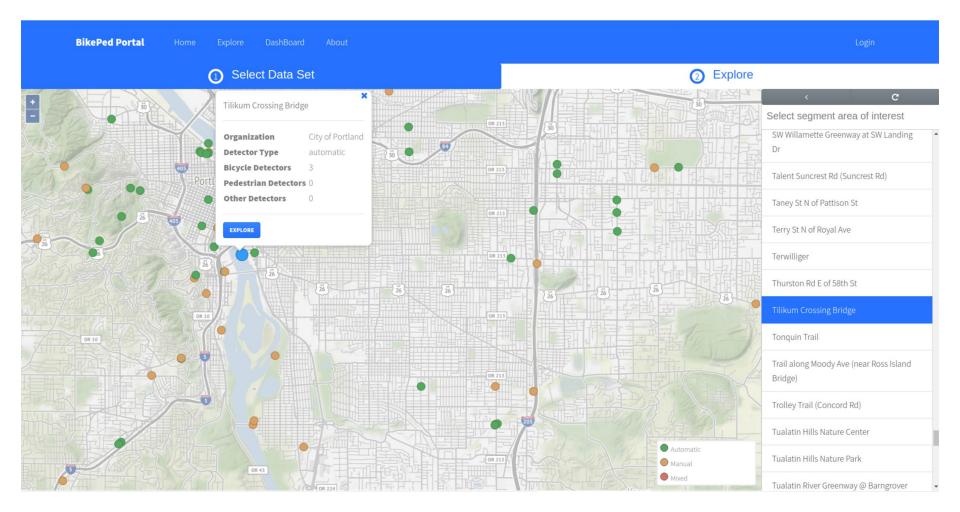


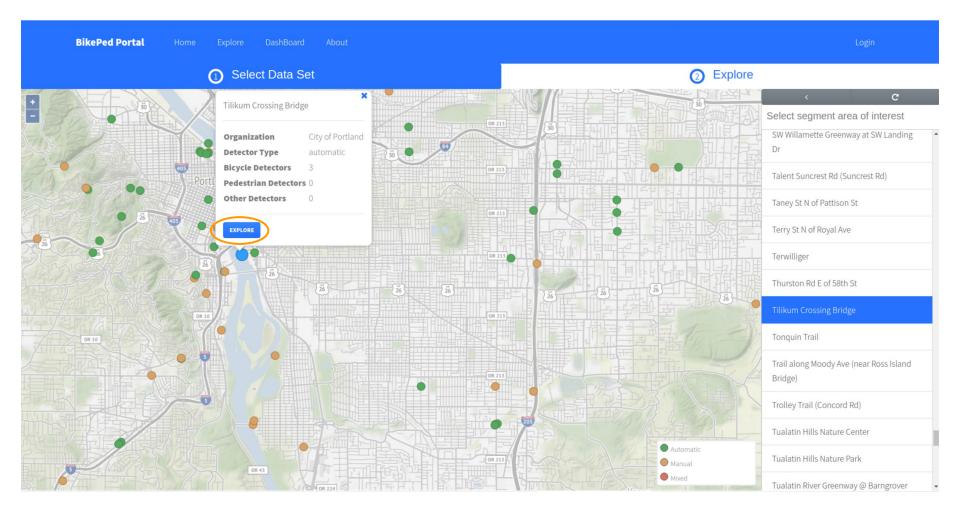
BikePed Portal: Explore











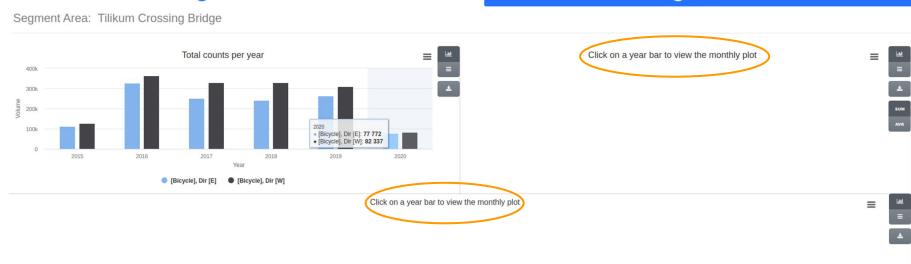






Select Data Set

Data Set ② Explore



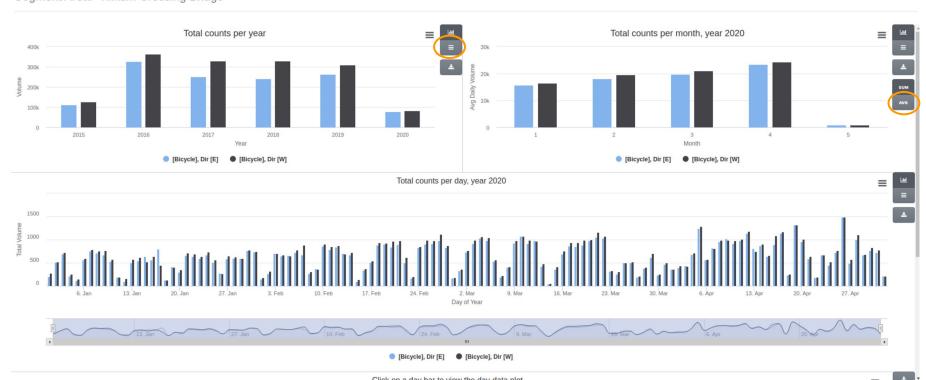


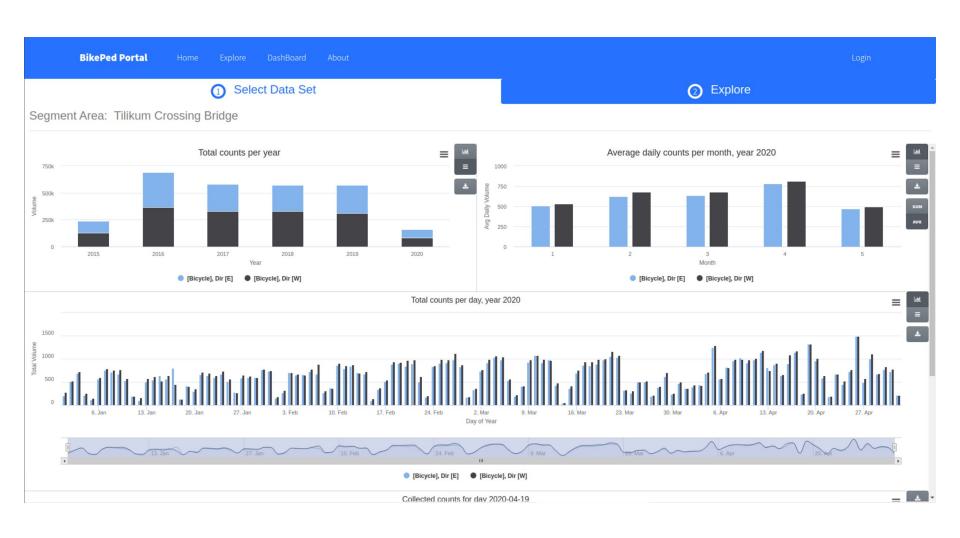


BikePed Portal 2 Explore Select Data Set

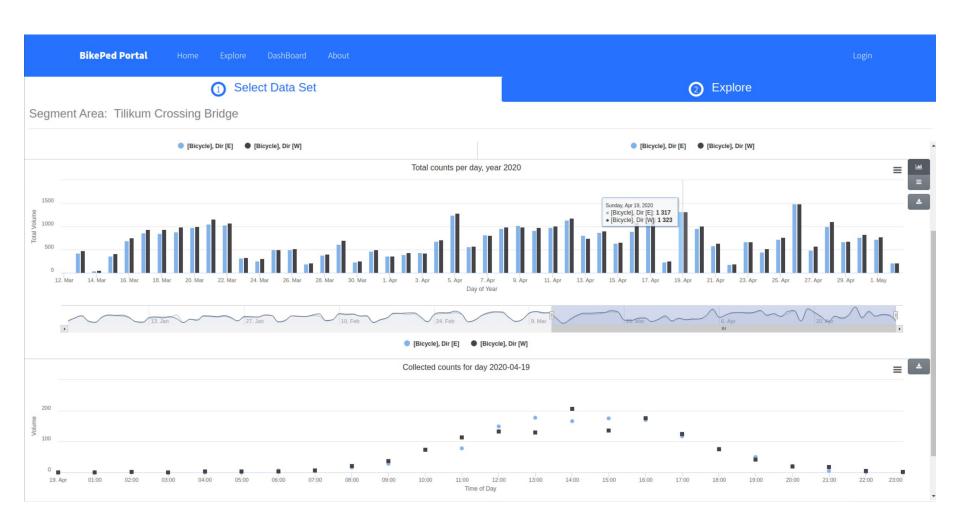


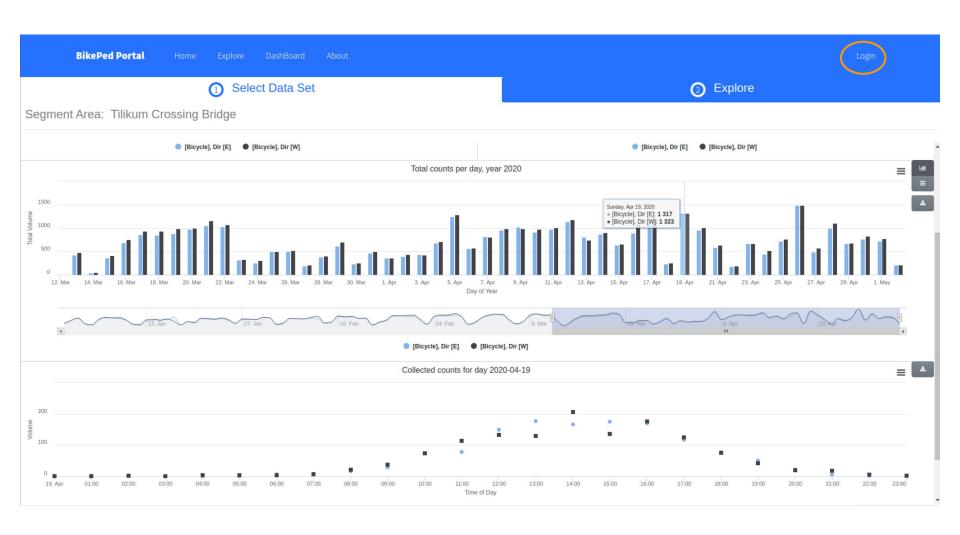
BikePed Portal Select Data Set 2 Explore





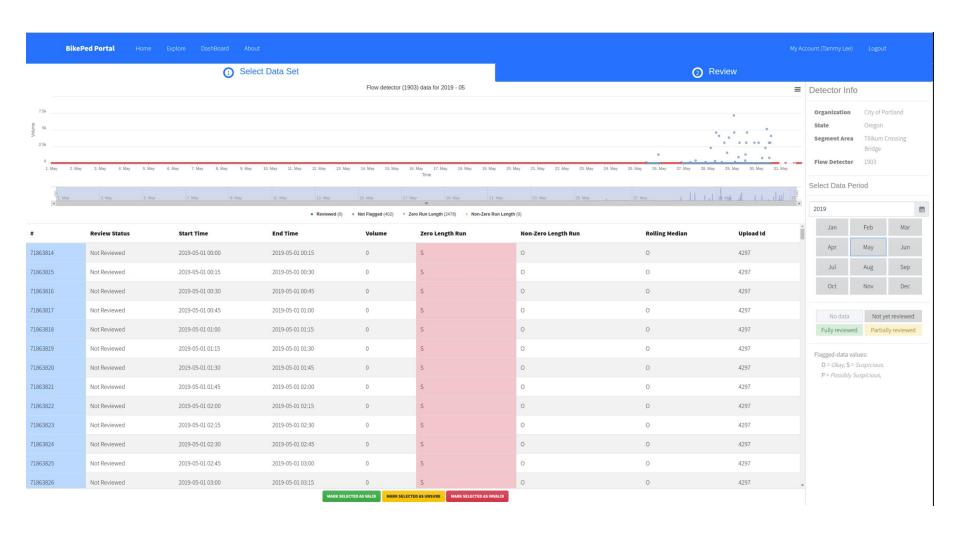


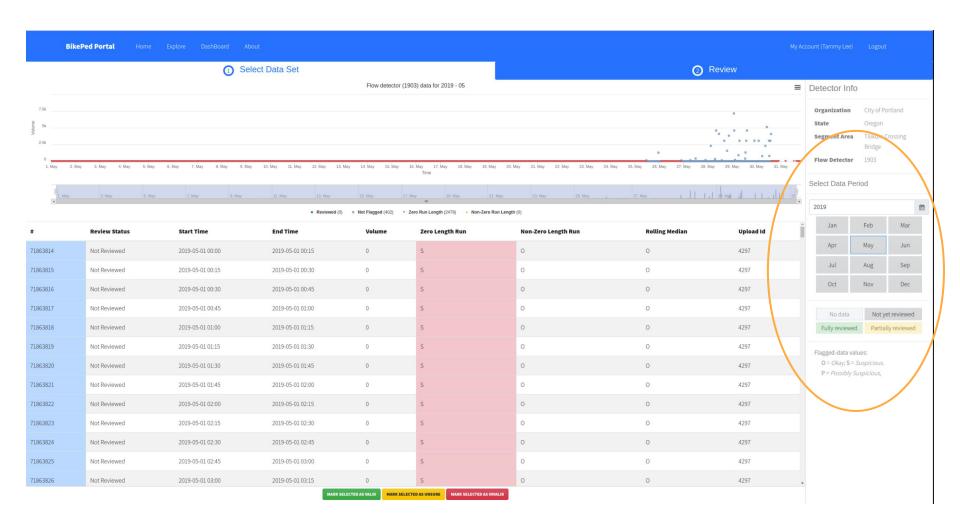




| BikePed Portal | Home | Explore | DashBoard | |
|--------------------|-----------------------------------|---------|-----------|--|
| QAQC | My Account: Welcome Jennifer Dill | | | |
| Download Data | | | | |
| My Info | | | | |
| Change My Password | | | | |
| | | | | |

| BikePed Portal | Home Explore DashBoard About | My Account (Jennifer Dill) |
|--------------------|-----------------------------------|----------------------------|
| QAQC | My Account: Welcome Jennifer Dill | |
| Download Data | | |
| My Info | | |
| Change My Password | | |





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



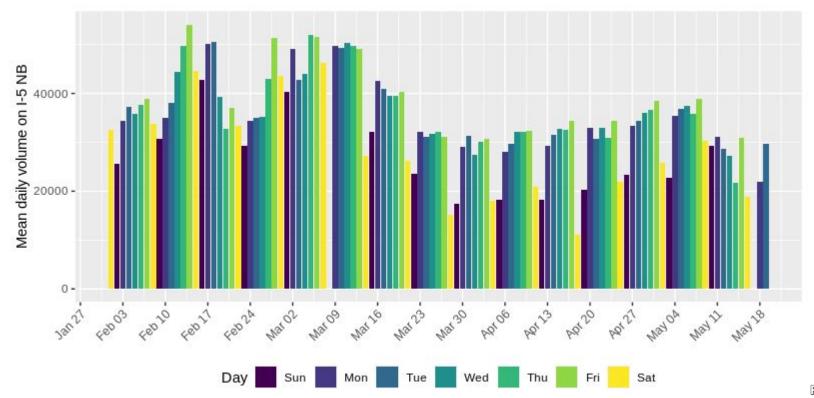
Transportation trends since the detection of COVID-19 in Oregon

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

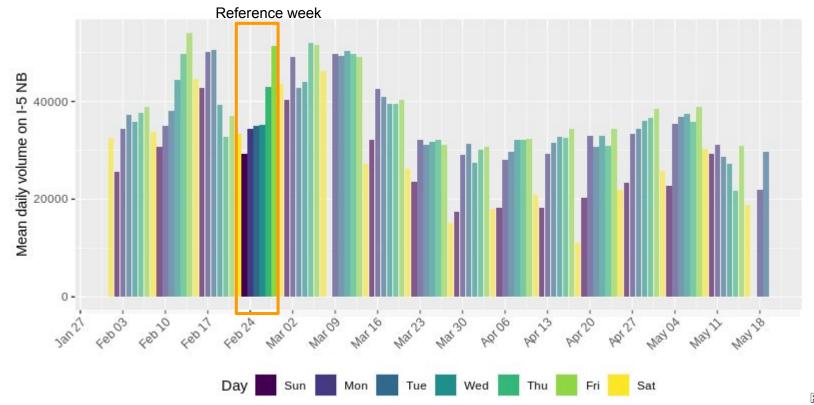


Mean daily volume along I-5 NB





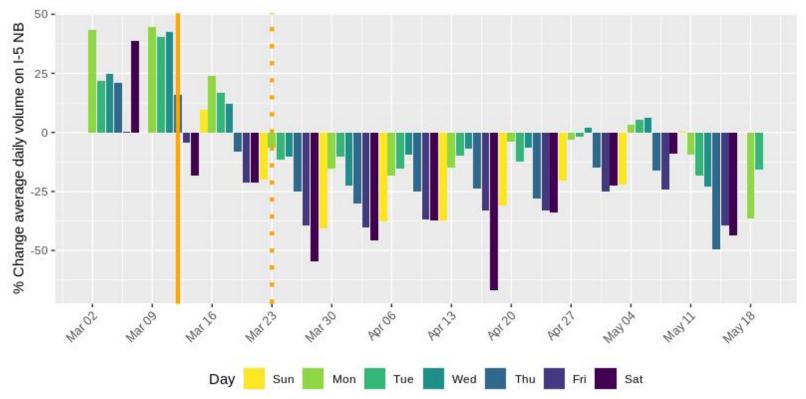
Mean daily volume along I-5 NB





% 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)



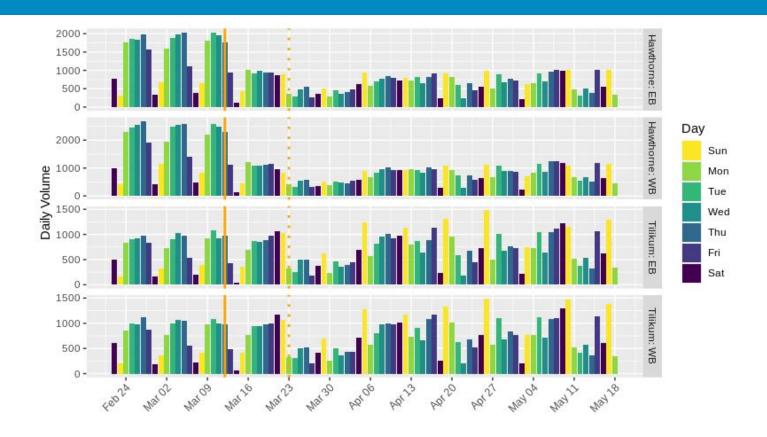


Daily bicycle volume: Hawthorne and Tilikum





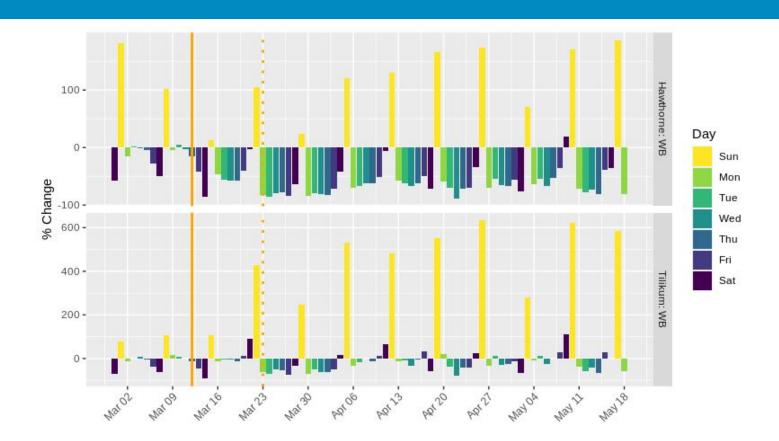
Daily bicycle volume: Hawthorne and Tilikum





% change daily volume: Hawthorne & Tilikum (WB)

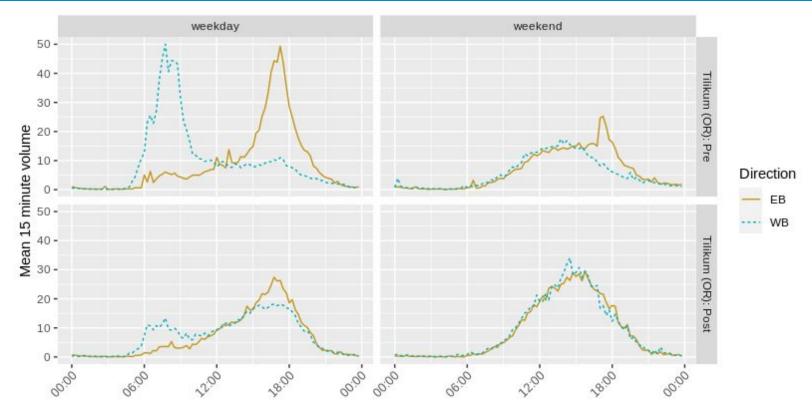
(reference week: Feb 22)





Weekday v. weekend: Tilikum Pre & Post

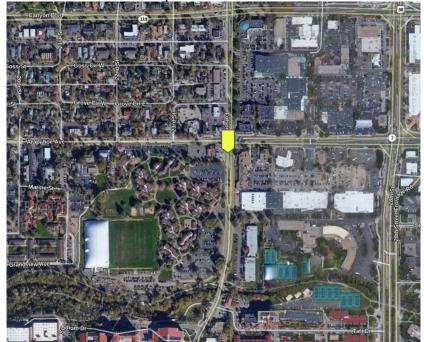
Pre: 2019-01-01 through 2020-03-11 Post: 2020-03-12 through 2020-05-18



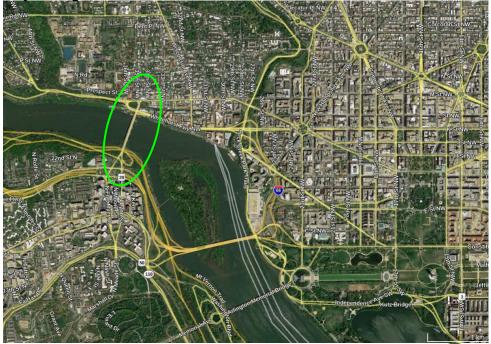


Folsom St S of Arapahoe Ave (CO) & Key Bridge (VA)

Folsom St S of Arapahoe Ave





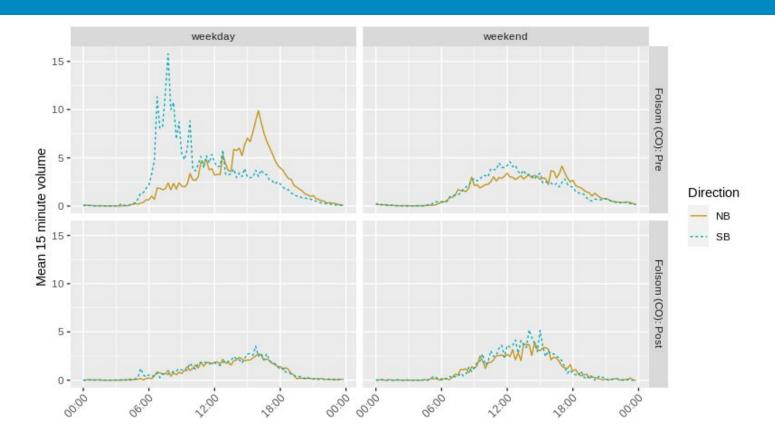




Weekday v. weekend: Folsom St S of Arapahoe Ave

Pre: 2019-01-01 through 2020-03-18 Post: 2020-03-19 through 2020-05-18

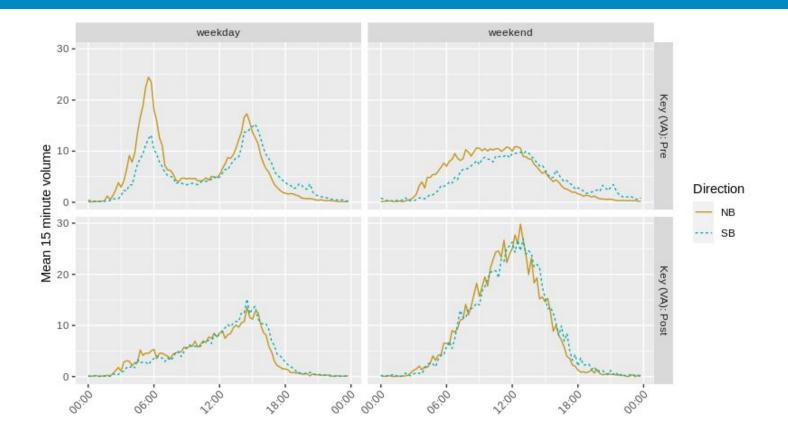
Pre & Post





Weekday v. weekend: Key Bridge Pre & Post

Pre: 2019-01-01 through 2020-03-22 Post: 2020-03-23 through 2020-05-18





Questions?

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