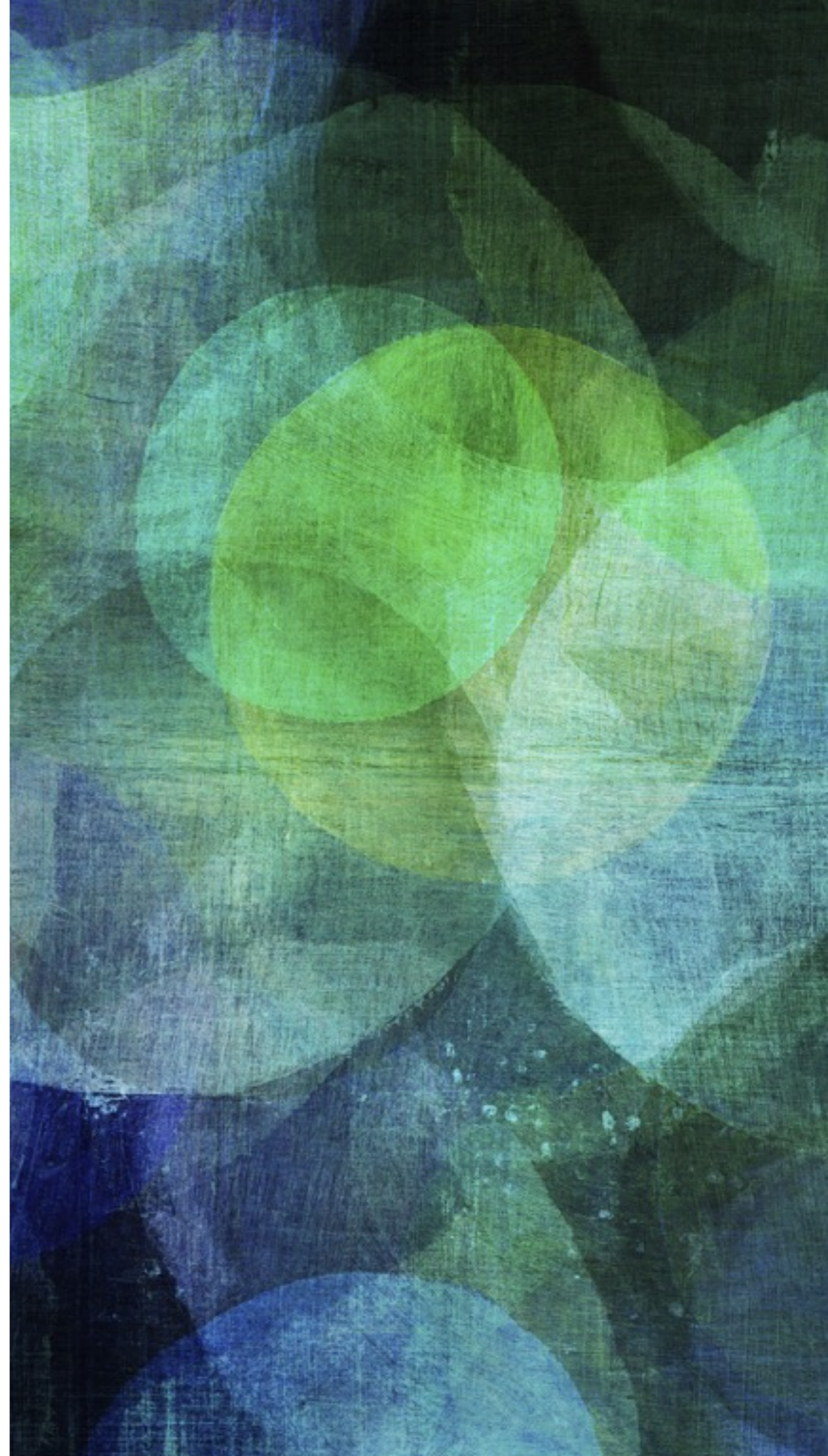


ARTERIAL DATA VISUALIZATION

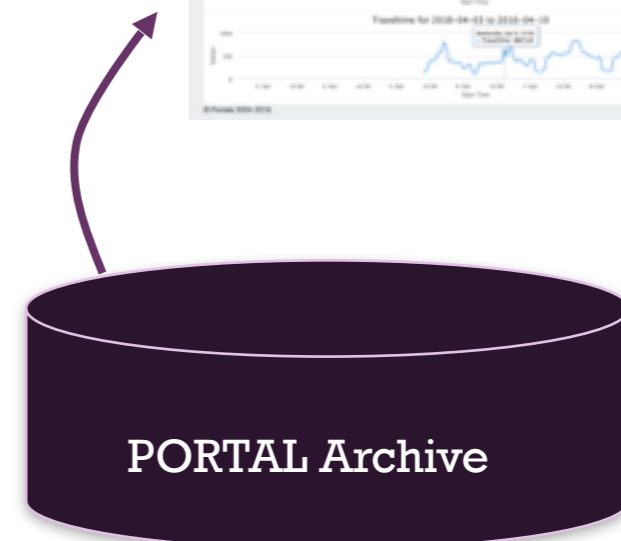
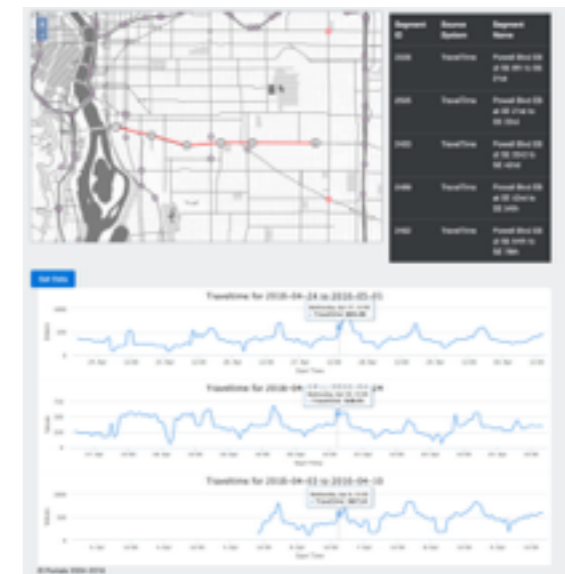
Kristin Tufte

NATMEC 2016 - May 4, 2016



PORTAL ARCHIVE

- Portland, OR - Vancouver, WA
Transportation Data Archive
- Begun in 2004
- Policy of open data
- Publicly funded
- Focus on open source software
- Database + User Interface + APIs
- Data: Freeway, arterial, transit, WIM, signal, travel time, weather, VMS/VAS...
- Users: Agencies, consultants, researchers



PORTAL ARTERIAL DATA SOURCES

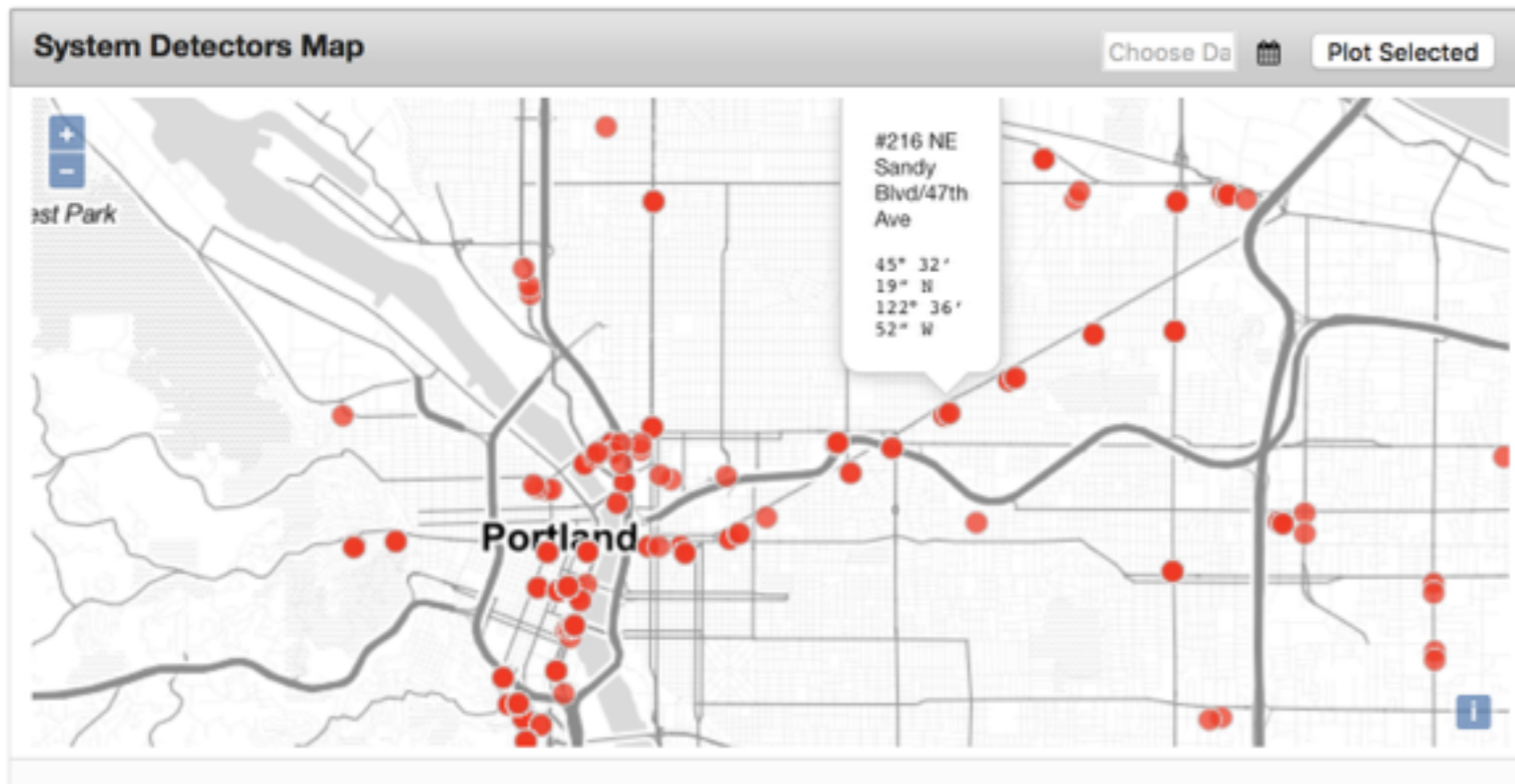
- City of Portland Traffic Signal Data
 - Files exported every 5 minutes from TransSuite system (volumes, MOE logs, and more...)
- City of Portland and Oregon DOT Travel Times
 - Custom bluetooth sensors - integrated travel time capture and matching system; “real-time” XML data feed to PSU
- Vancouver, WA - Travel times
 - Travel times from BlueMAC software; anonymized ids for future research
 - API for retrieval
- Vancouver, WA - Wavetronix data (volumes)
- Vancouver, WA - SPAT data (coming soon)

SYSTEM DETECTOR - VOLUMES



Home Systems Highways Stations Freight Arterial **Arterial Signal** Transit

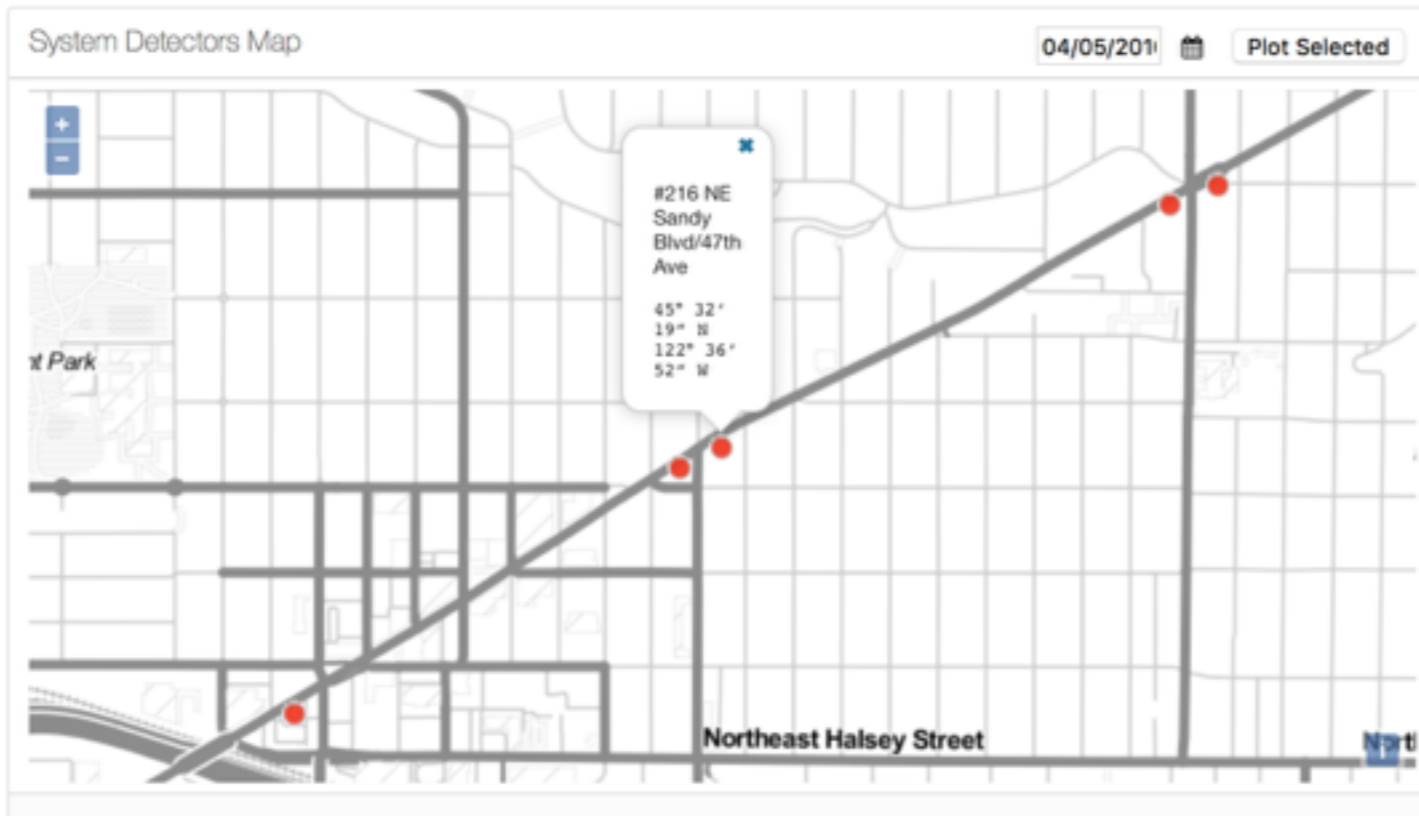
Volume Chart Plan Table



Detectors List Selected Unselect All 47th

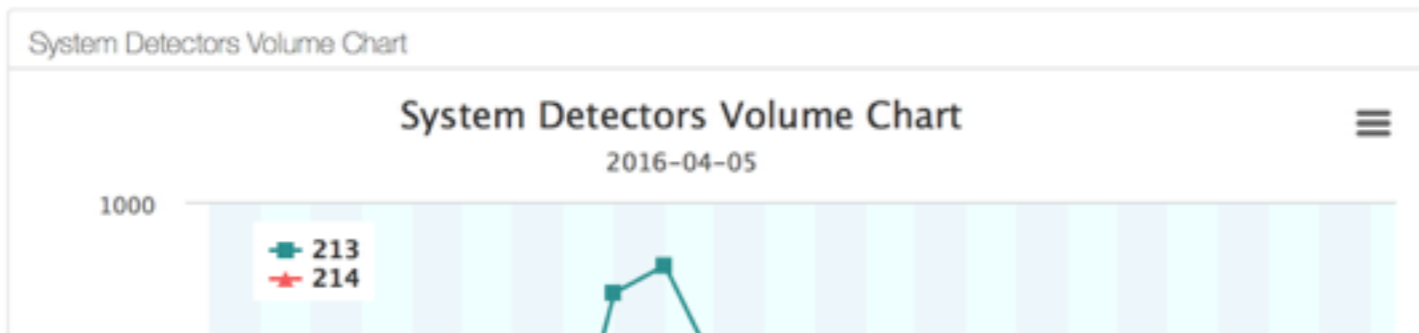
| id | street | cross_street | lat | lon | direction |
|------------------------------|---------------|--------------|-----------|-------------|-----------|
| 213 <input type="checkbox"/> | NE Sandy | 47th Ave | 45.538230 | -122.615389 | West |
| 214 <input type="checkbox"/> | NE Sandy Blvd | 47th Ave | 45.538197 | -122.615359 | West |
| 215 <input type="checkbox"/> | NE Sandy Blvd | 47th Ave | 45.538532 | -122.614504 | East |
| 216 <input type="checkbox"/> | NE Sandy Blvd | 47th Ave | 45.538508 | -122.614478 | East |

SYSTEM DETECTOR - VOLUMES

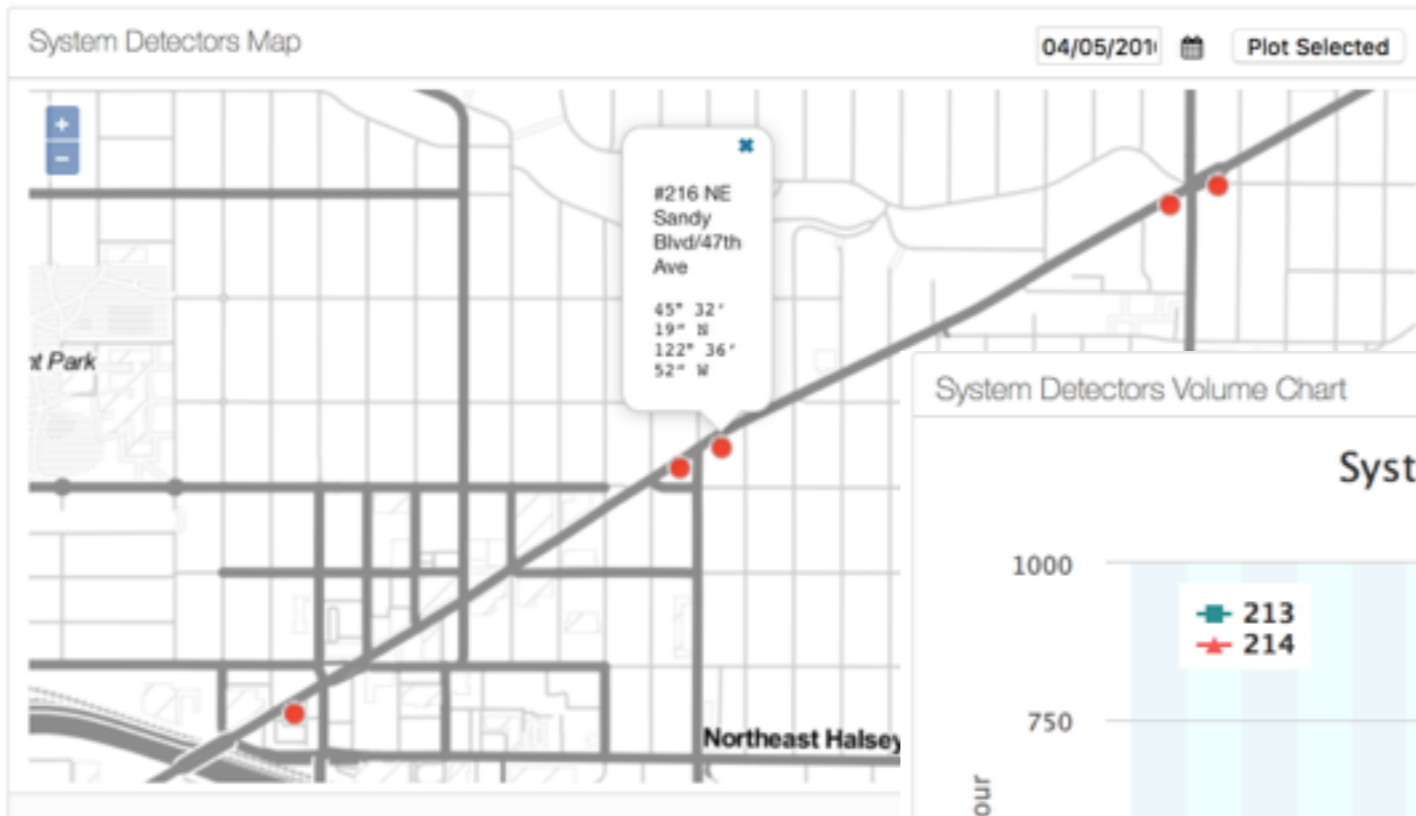


Detectors List Selected Unselect All 47th

| id | street | cross_street | lat | lon | direction |
|---|---------------|--------------|-----------|-------------|-----------|
| 213 <input checked="" type="checkbox"/> | NE Sandy | 47th Ave | 45.538230 | -122.615389 | West |
| 214 <input checked="" type="checkbox"/> | NE Sandy Blvd | 47th Ave | 45.538197 | -122.615359 | West |
| 215 <input type="checkbox"/> | NE Sandy Blvd | 47th Ave | 45.538532 | -122.614504 | East |
| 216 <input type="checkbox"/> | NE Sandy Blvd | 47th Ave | 45.538508 | -122.614478 | East |

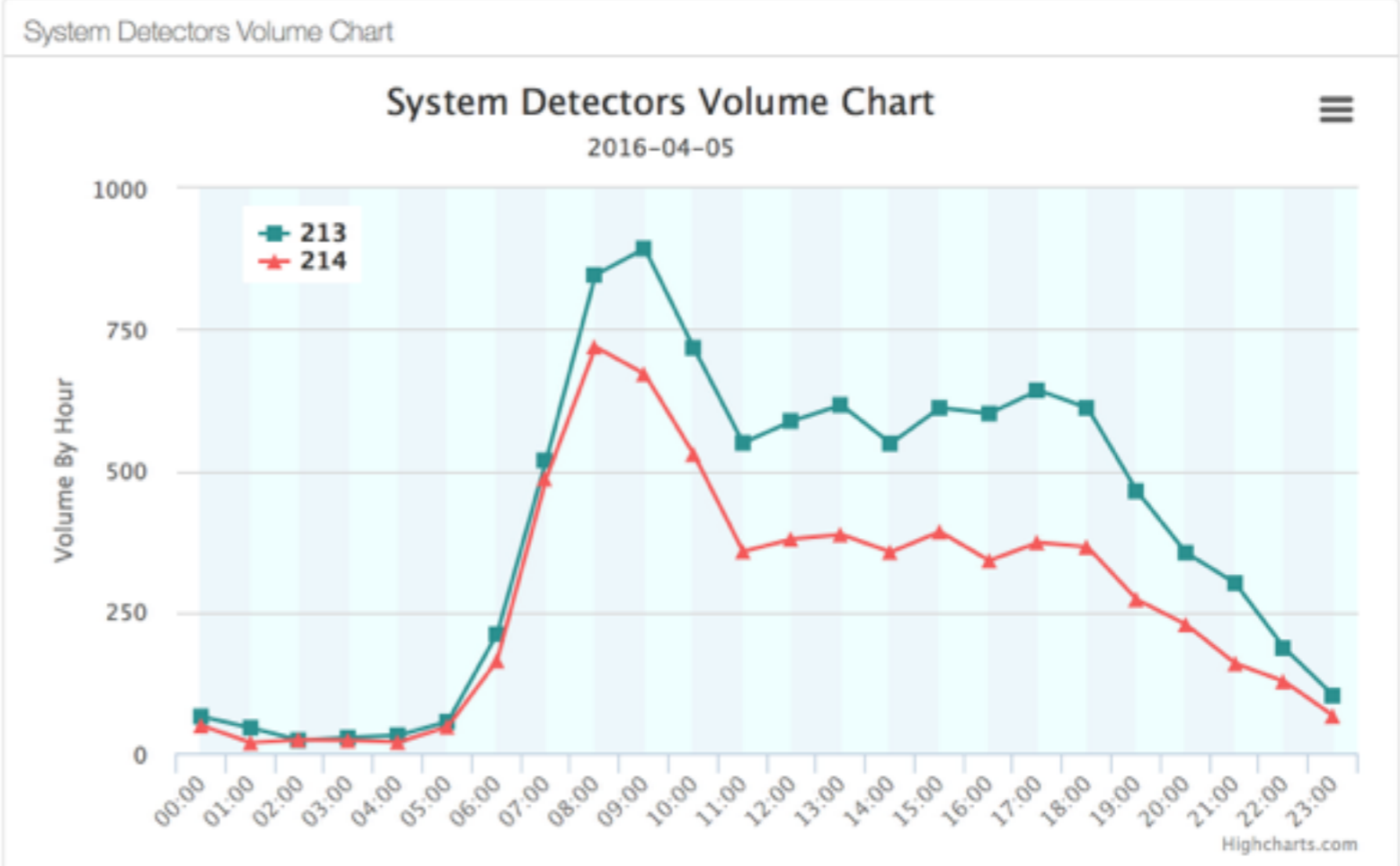
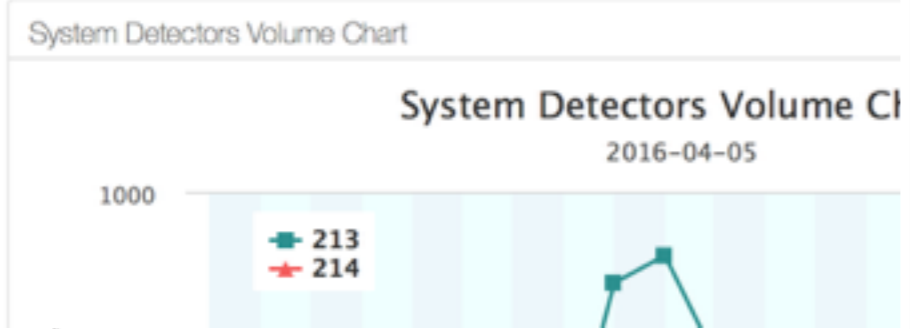


SYSTEM DETECTOR - VOLUMES



Detectors List Selected Unselect All 47th

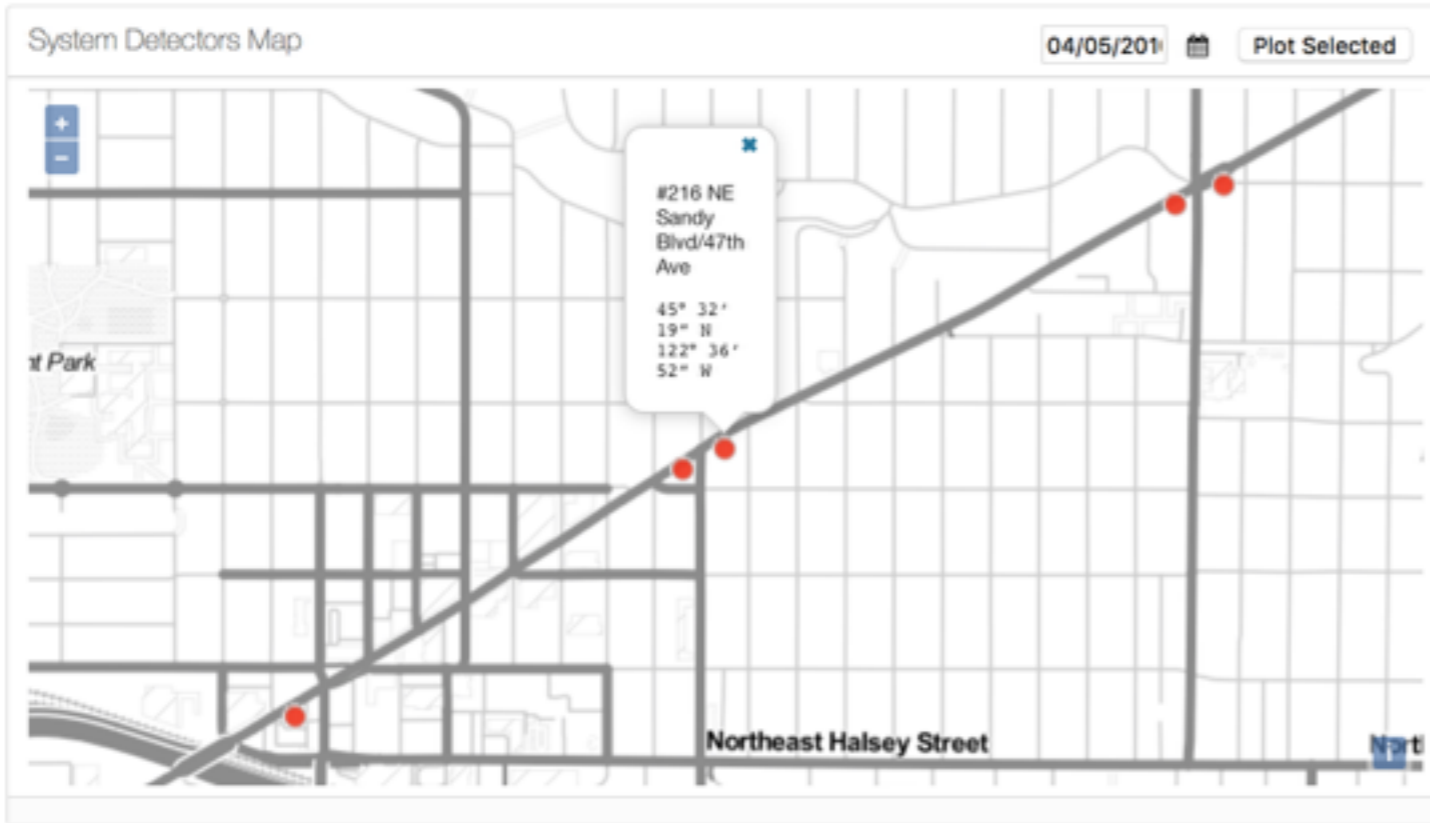
| id | street | cross_street | lat | lon | direction |
|---|---------------|--------------|-----------|-------------|-----------|
| 213 <input checked="" type="checkbox"/> | NE Sandy | 47th Ave | 45.538230 | -122.615389 | West |
| 214 <input checked="" type="checkbox"/> | NE Sandy Blvd | 47th Ave | 45.538197 | -122.615359 | West |
| 215 <input type="checkbox"/> | NE Sandy Blvd | 47th Ave | 45.538532 | -122.614504 | East |



SYSTEM DETECTOR - VOLUMES - EB AND WB

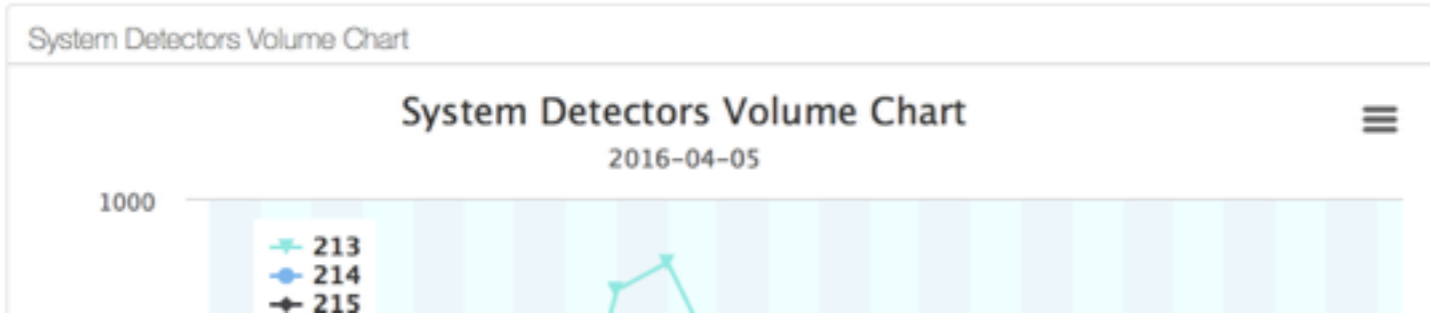
PORTAL Home Systems Highways Stations Freight Arterial **Arterial Signal** Transit

Volume Chart Plan Table



Detectors List Selected Unselect All 47th

| id | street | cross_street | lat | lon | direction |
|---|---------------|--------------|-----------|-------------|-----------|
| 213 <input checked="" type="checkbox"/> | NE Sandy | 47th Ave | 45.538230 | -122.615389 | West |
| 214 <input checked="" type="checkbox"/> | NE SANDY Blvd | 47th Ave | 45.538197 | -122.615359 | West |
| 215 <input checked="" type="checkbox"/> | NE Sandy Blvd | 47th Ave | 45.538532 | -122.614504 | East |
| 216 <input checked="" type="checkbox"/> | NE Sandy Blvd | 47th Ave | 45.538508 | -122.614478 | East |



SYSTEM DETECTOR - VOLUMES - EB AND WB

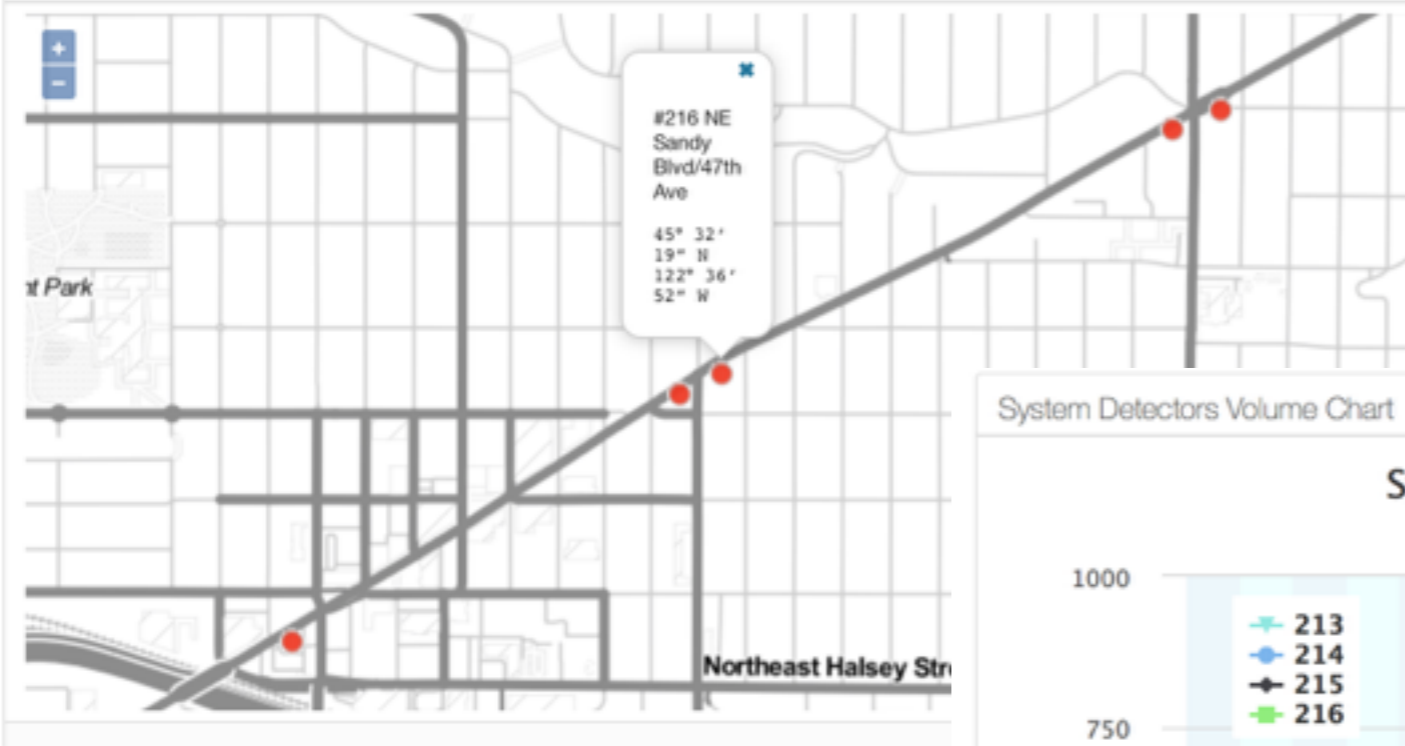


Home Systems Highways Stations Freight Arterial **Arterial Signal** Transit

Volume Chart Plan Table

System Detectors Map

04/05/2016 Plot Selected

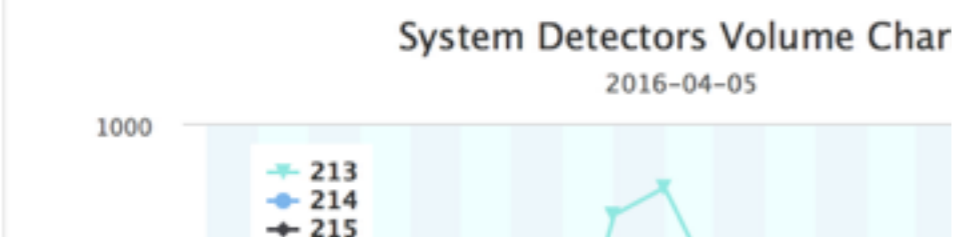


Detectors List

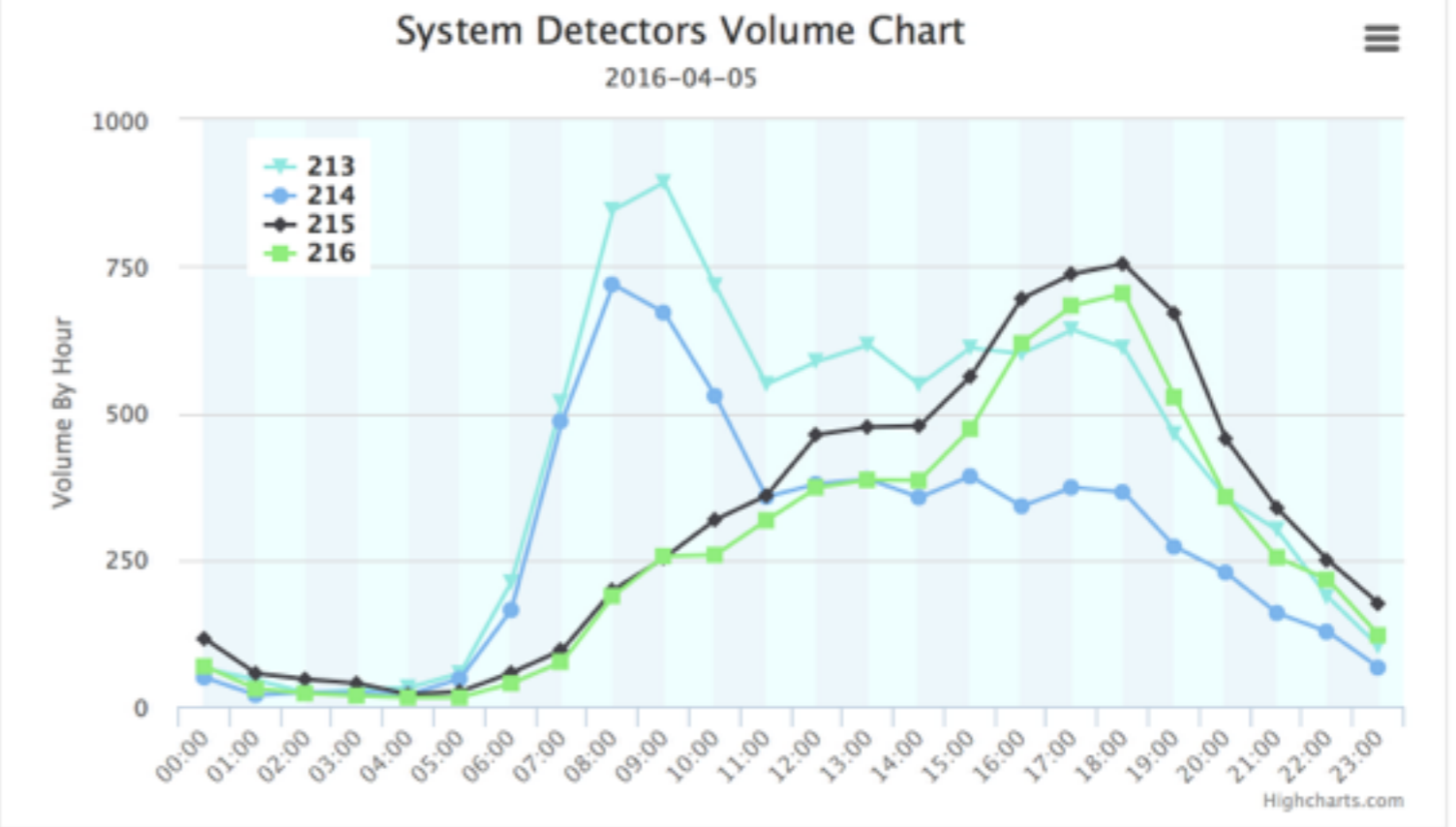
Selected Unselect All 47th

| id | street | cross_street | lat | lon | direction |
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System Detectors Volume Chart



System Detectors Volume Chart



PLAN TABLE



Home Systems Highways Stations Freight Arterial **Arterial Signal** Transit

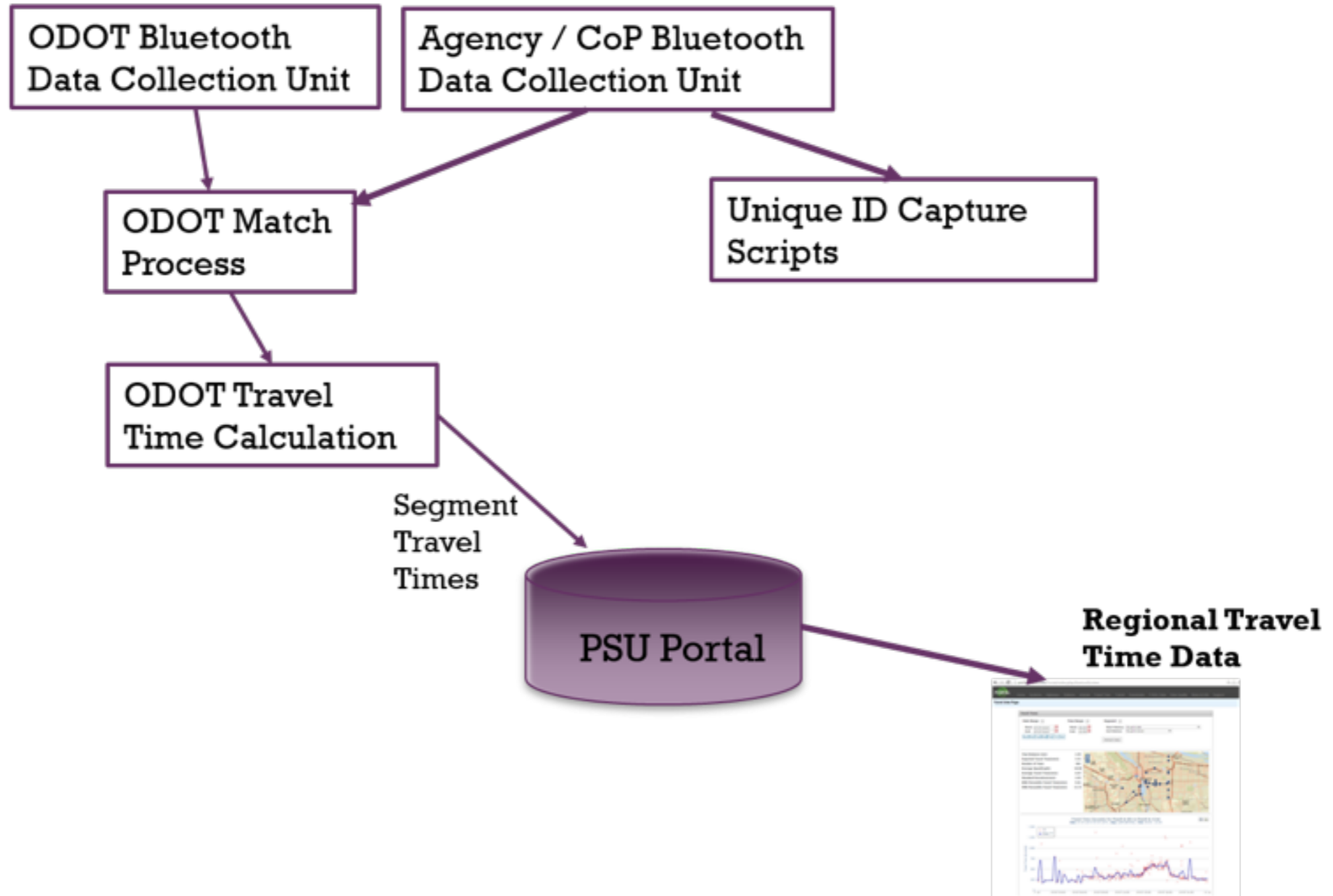
Volume Chart [Plan Table](#)



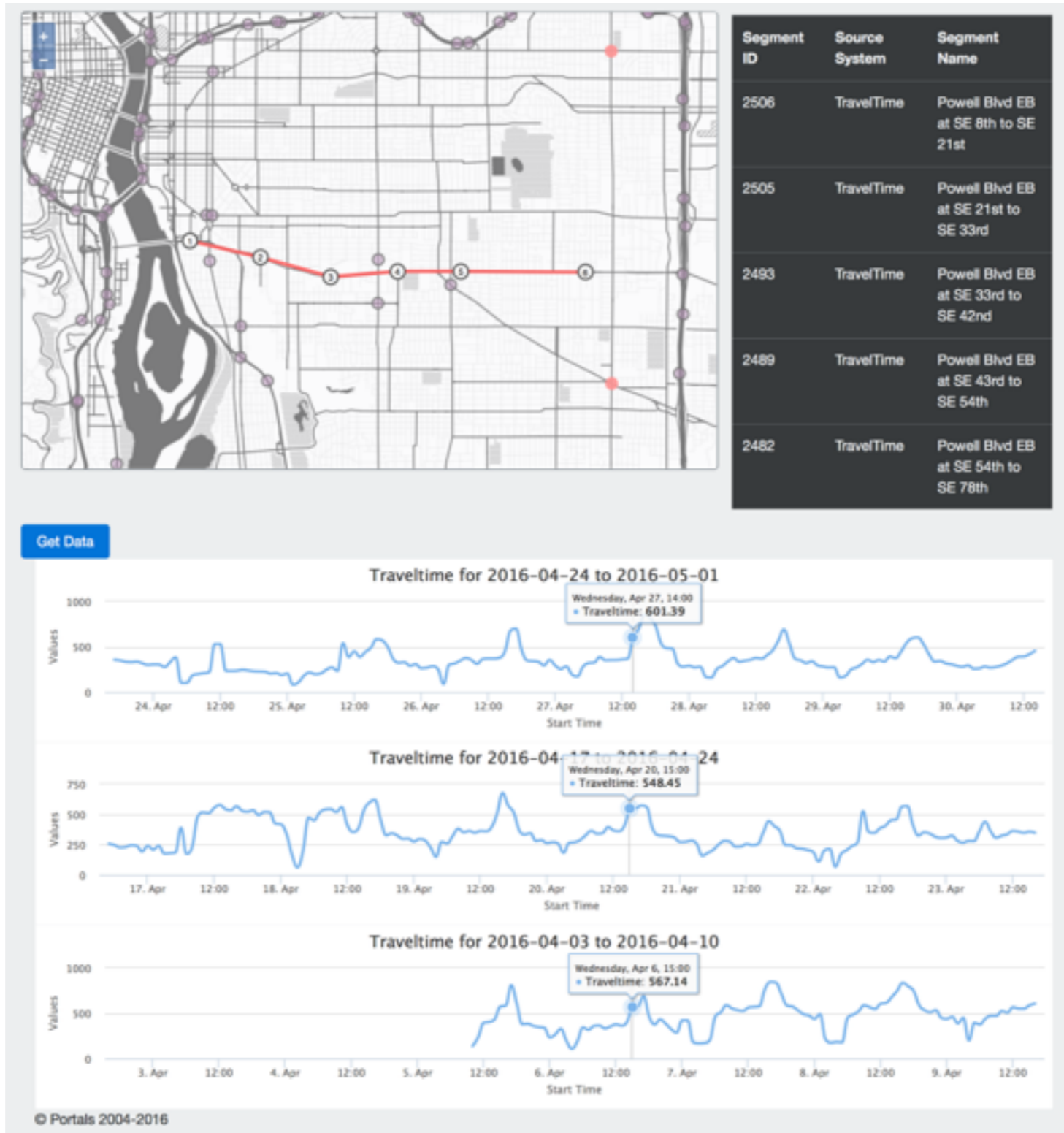
PLAN TABLE

| | | | | | | | | | | | | | | |
|-------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 06:00 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 |
| 06:15 | 2 | 2 | 2 | 2 | 4 | 4 | 2 | 2 | 2 | 2 | 2 | 4 | 4 | 2 |
| 06:30 | 2 | 2 | 2 | 2 | 4 | 4 | 2 | 2 | 2 | 2 | 2 | 4 | 4 | 2 |
| 06:45 | 2 | 2 | 2 | 2 | 4 | 4 | 2 | 2 | 2 | 2 | 2 | 4 | 4 | 2 |
| 07:00 | 2 | 2 | 2 | 2 | 4 | 4 | 2 | 2 | 2 | 2 | 2 | 4 | 4 | 2 |
| 07:15 | 2 | 2 | 2 | 2 | 4 | 4 | 2 | 2 | 2 | 2 | 2 | 4 | 4 | 2 |
| 07:30 | 2 | 2 | 2 | 2 | 4 | 4 | 2 | 2 | 2 | 2 | 2 | 4 | 4 | 2 |
| 07:45 | 2 | 2 | 2 | 2 | 4 | 4 | 2 | 2 | 2 | 2 | 2 | 4 | 4 | 2 |
| 08:00 | 2 | 2 | 2 | 2 | 4 | 4 | 2 | 2 | 2 | 2 | 2 | 4 | 4 | 2 |
| 08:15 | 2 | 2 | 2 | 2 | 4 | 4 | 2 | 2 | 2 | 2 | 2 | 4 | 4 | 2 |
| 08:30 | 2 | 2 | 2 | 2 | 4 | 4 | 2 | 2 | 2 | 2 | 2 | 4 | 4 | 2 |
| 08:45 | 2 | 2 | 2 | 2 | 4 | 4 | 2 | 2 | 2 | 2 | 2 | 4 | 4 | 2 |
| 09:00 | 2 | 2 | 2 | 2 | 4 | 4 | 2 | 2 | 2 | 2 | 2 | 4 | 4 | 2 |
| 09:15 | 2 | 2 | 2 | 2 | 4 | 4 | 2 | 2 | 2 | 2 | 2 | 4 | 4 | 2 |
| 09:30 | 2 | 2 | 2 | 2 | 4 | 4 | 2 | 2 | 2 | 2 | 2 | 4 | 4 | 2 |
| 09:45 | 2 | 2 | 2 | 2 | 1 | 1 | 2 | 2 | 2 | 2 | 2 | 1 | 1 | 2 |
| 10:00 | 2 | 2 | 2 | 2 | 1 | 1 | 2 | 2 | 2 | 2 | 2 | 1 | 1 | 2 |
| 10:15 | 5 | 5 | 5 | 5 | 1 | 1 | 5 | 5 | 5 | 5 | 5 | 1 | 1 | 5 |
| 10:30 | 5 | 5 | 5 | 5 | 1 | 1 | 5 | 5 | 5 | 5 | 5 | 1 | 1 | 5 |

REGIONAL INTEGRATED TRAVEL TIME ARCHITECTURE



REGIONAL INTEGRATED TRAVEL TIME INTERFACE



LESSONS LEARNED

- Network, network, network...
- Data integration...
 - 3 traffic signal systems (TransSuite, Wavetronix, ATMS.NOW)
 - 2-3 Travel Time Systems (City of Portland, Oregon DOT)
- And sometimes the communication is pretty difficult...

INCORPORATING INCIDENTS INTO THE UI



ADDING STATION LOCATION INFORMATION

[Home](#)
[Systems](#)
[Highways](#)
[Stations](#)
[Arterial](#)
[Travel Time](#)
[Transit](#)
[Downloads](#)
[FHWA Data](#)

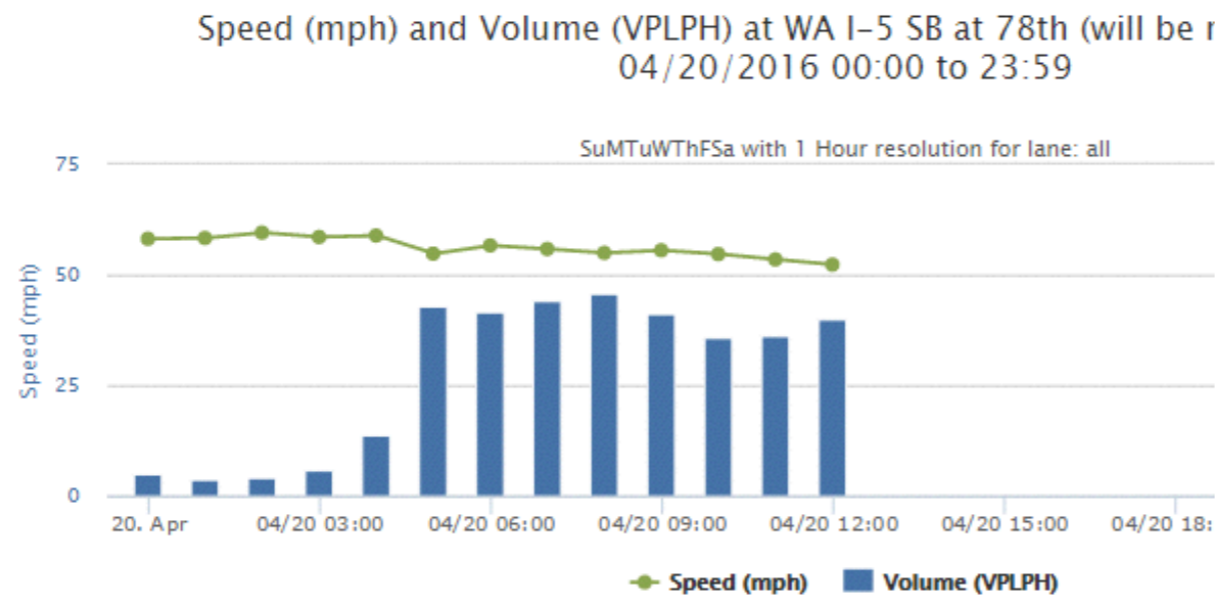
[Home](#)
[Stations Page --> 78th \(will be replaced on BSTT\) --> Two Quantity Chart](#)
Station Select:

Two Quantity Chart

- Highway: WA I-5
- Direction: South
- Number Of Lanes: 3
- Milepost: 4.25
- Detector Type: Wavetronix
- Detector Location: Between Ramps
- Agency: WSDOT
- Region: Unknown

Date Range
Time Range

Quantities 1st: 2nd:
Configuration Resolution: Group:
Select Lane: Lane:



Two Quantity Chart

- Highway: WA I-5
- Direction: South
- Number Of Lanes: 3
- Milepost: 4.25
- Detector Type: Wavetronix
- Detector Location: Between Ramps
- Agency: WSDOT
- Region: Unknown

Date Range
Time Range



Thank you. Questions?

tufte@pdx.edu