2-14-2014

A Recipe for an Online, Geospatial Transit Performance Archive

Jon Makler

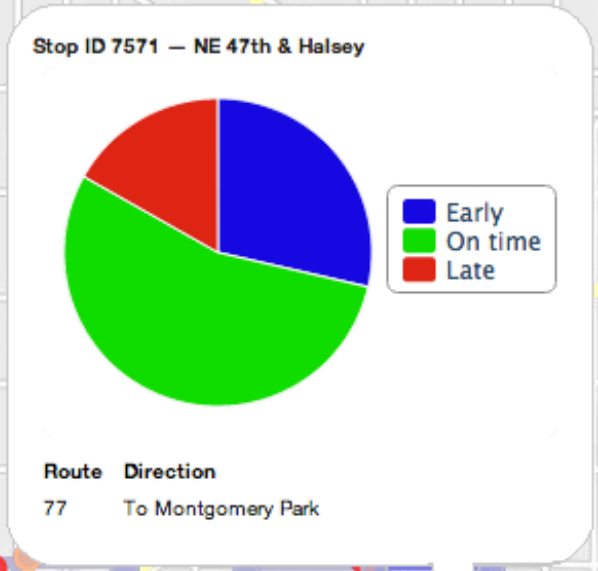
joy

OF WEB-BASED, GEOSPATIAL TRANSIT PERFORMANCE DATA ARCHIVES

Jon Makler, AICP | @plangineering
Portland State University
Oregon Transportation Research & Education Consortium

Happy Valentine's Day

Weekday service during AM Peak service times



Portland State UNIVERSITY

Morgan Harvey, Developer
Dr. Kristin Tufte, Architect

TRIMET
See where it takes you.

Steve Callas
Service & Performance Analysis Manager

About GIS in Transit

- Center for Urban Transportation Research at University of South Florida has hosted biennial "GIS in Transit" conference since 2009 (see www.transitgis.org)
- Accessibility is a key term
  - WMATA, for example, uses GIS to comprehensively track the accessibility of its services and facilities
  - Accessibility Observatory at University of Minnesota uses transit service data for demographic, geospatial analysis
- Emergence of standardized, open data is enabling new generation of analytical tools
  - Oregon State/ODOT Research Project
  - SUNY Albany's AVAIL (service analysis)
- Travel time reliability isn't just a highway concept

Why?

- More informed decision making through visualization
- Efficient support for user requests for data
- Enable innovative performance analysis

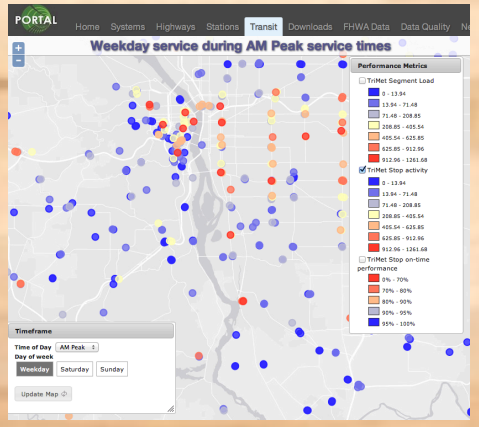
What Will We Cook Today?

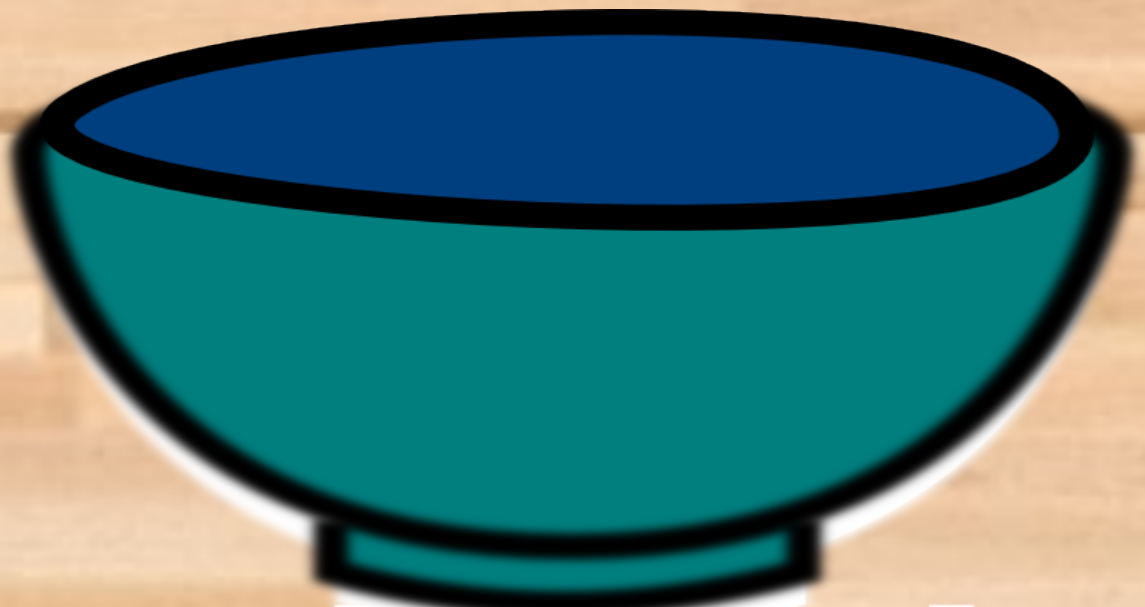
Transit Performance Data

Geospatial

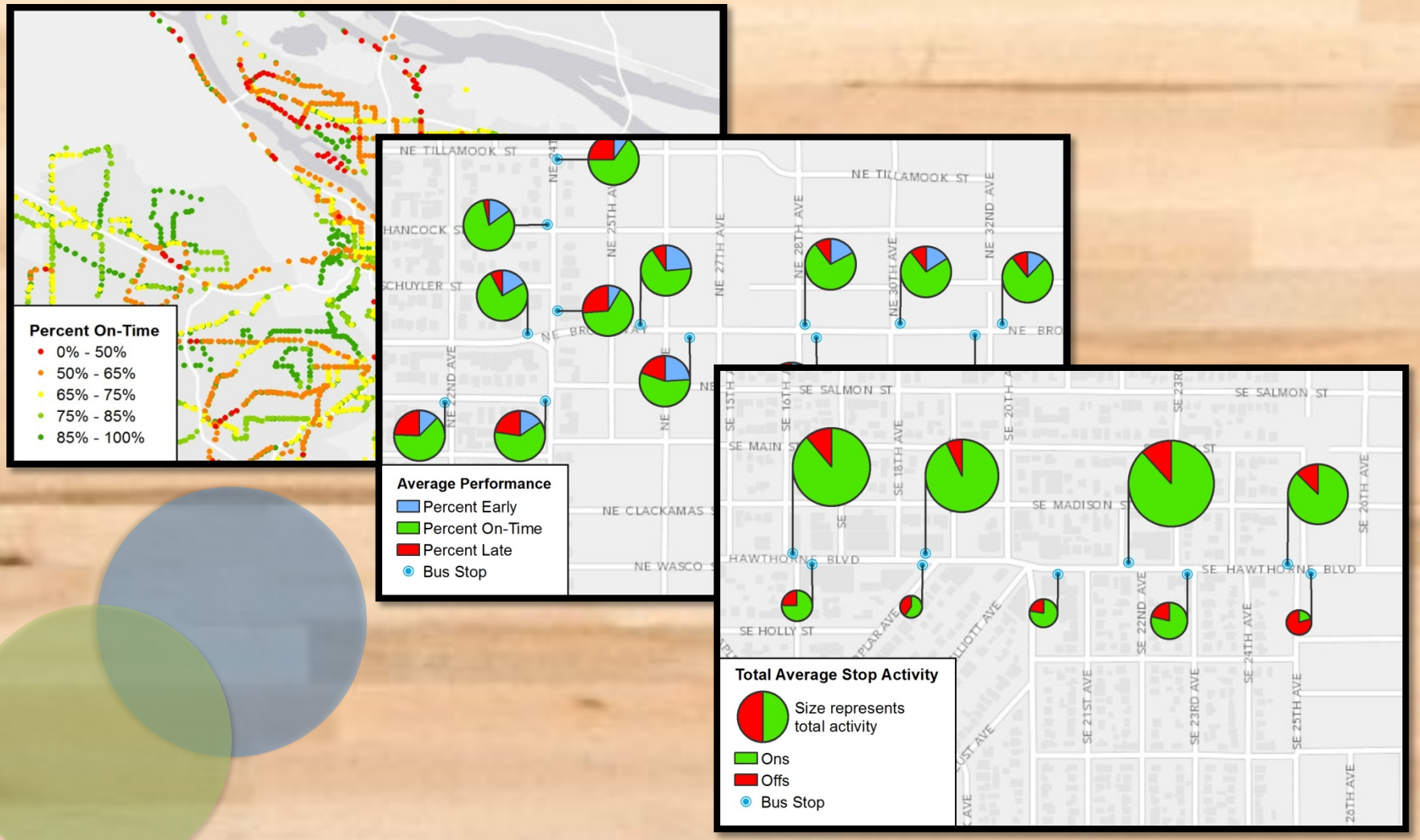
Web-based

Ingredients





Menu Planning



Prepare the Ingredients!

- Prepare GTFS data and set aside
- Collect daily APC and AVL data
- Clean the data based on error messages, mismatched ons and offs, more
- Aggregate by quarter for “typical” data
- Be prepared for partial people
- Export data with enough fields to support GTFS matching

Step 1: Convert GTFS to Feature Class

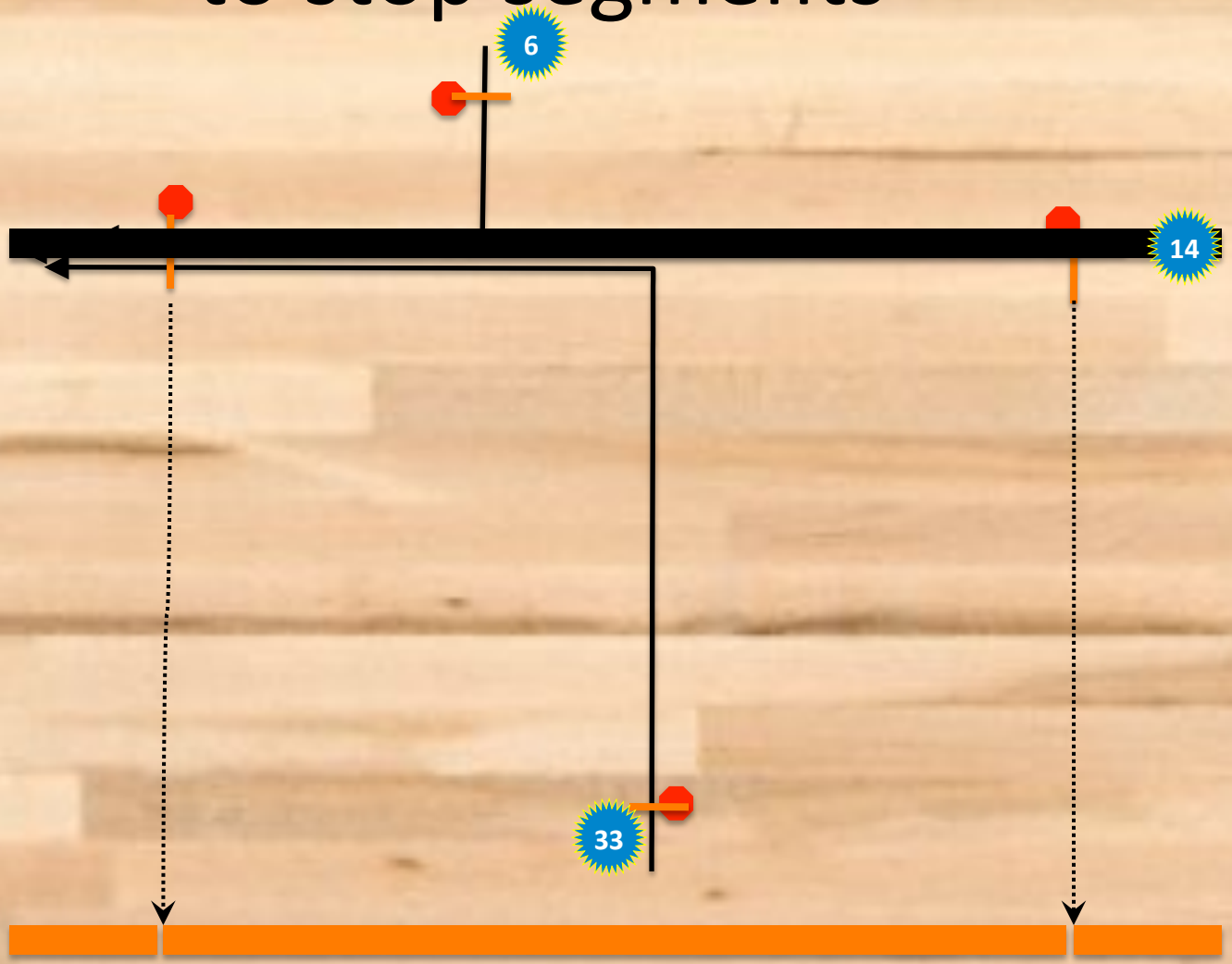
routes.txt

```
route_id,route_short
R10,10,Airport - Dow
```

trips.txt

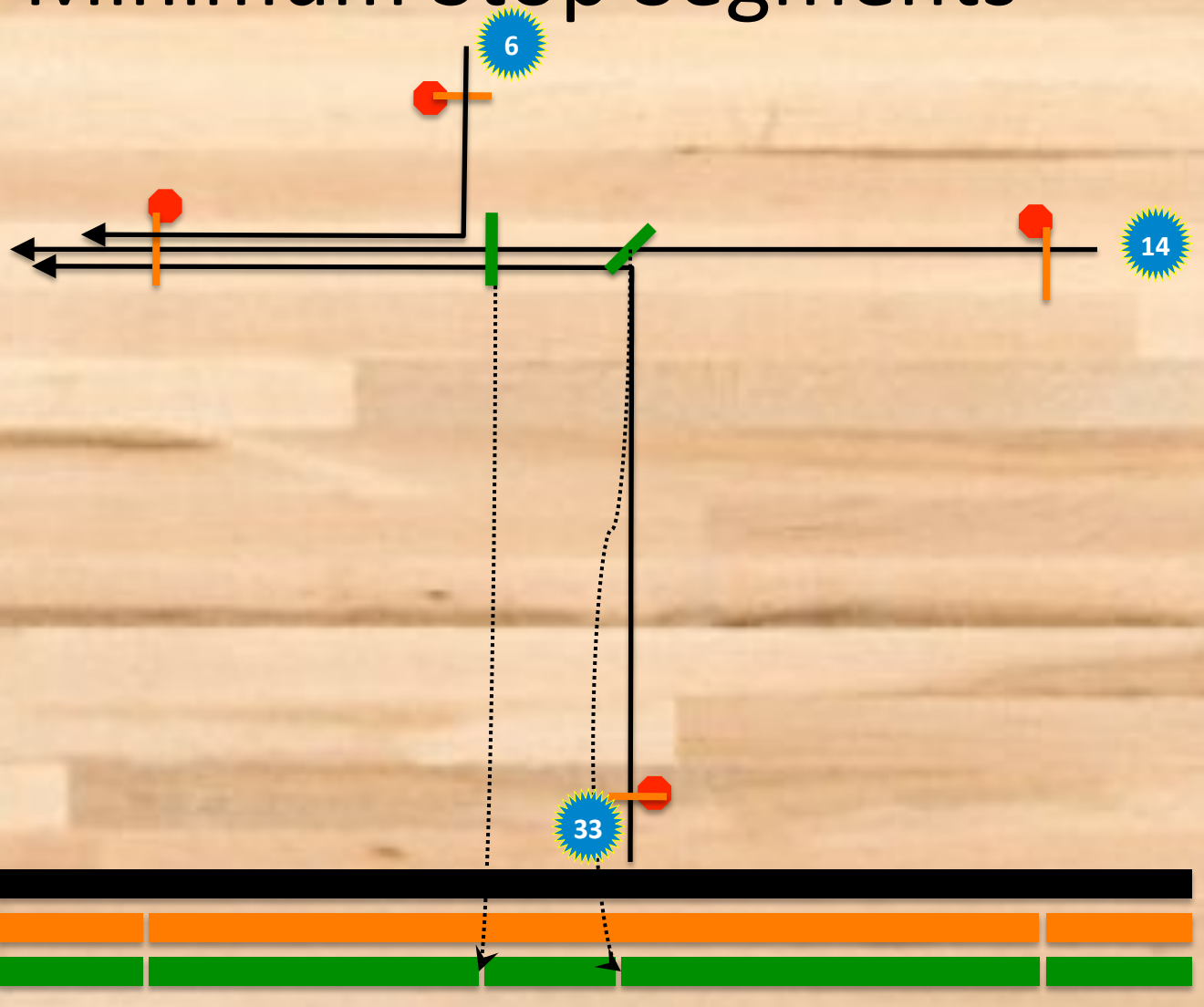
```
route_id,trip_id,tri
R10,T-10-1,Airport,(
R10,T-10-2,Downtown,
```

Step 2: ArcPy converts pattern lines to stop segments



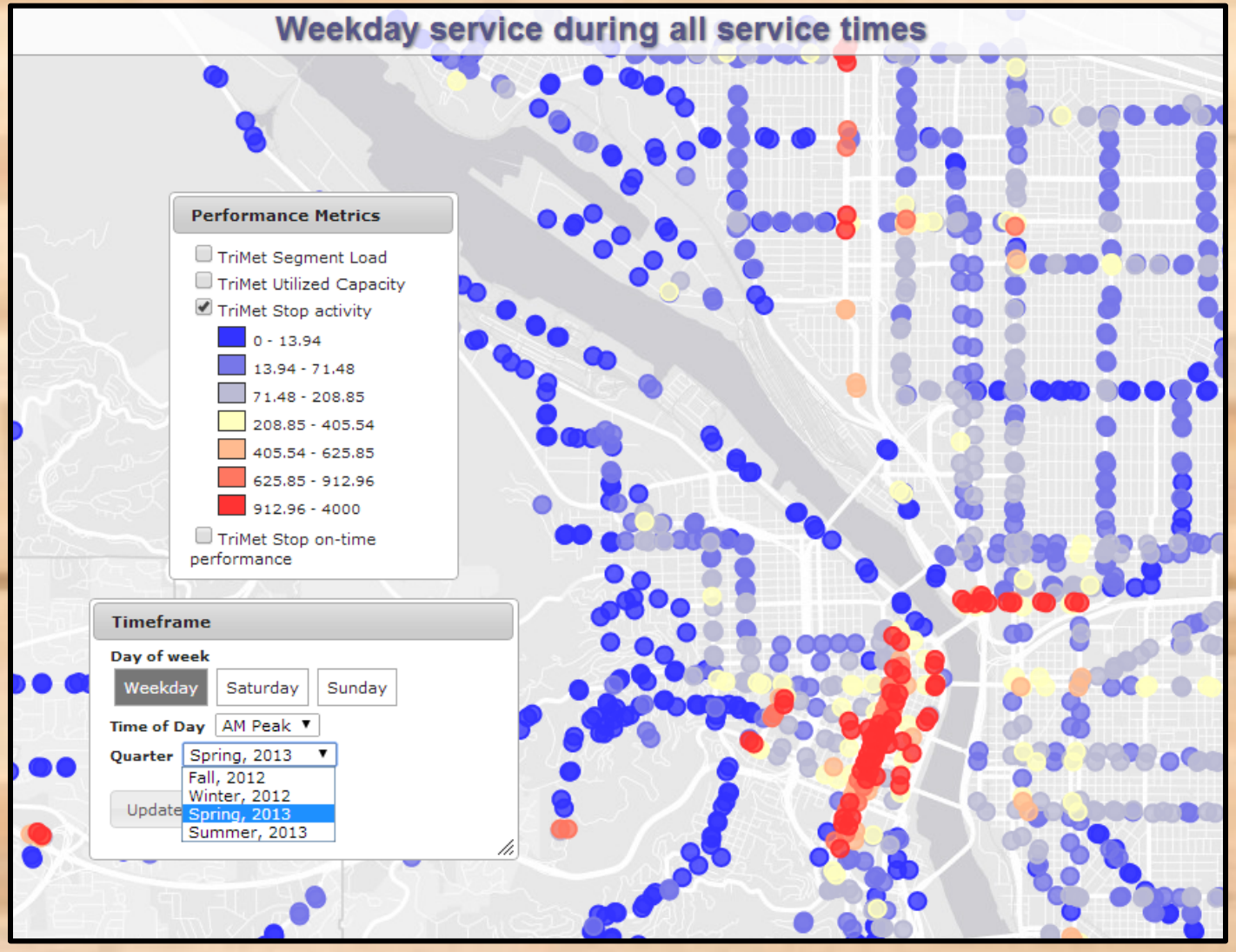
Now you can match GTFS and PAX Data!

Step 3: Create Minimum Stop Segments

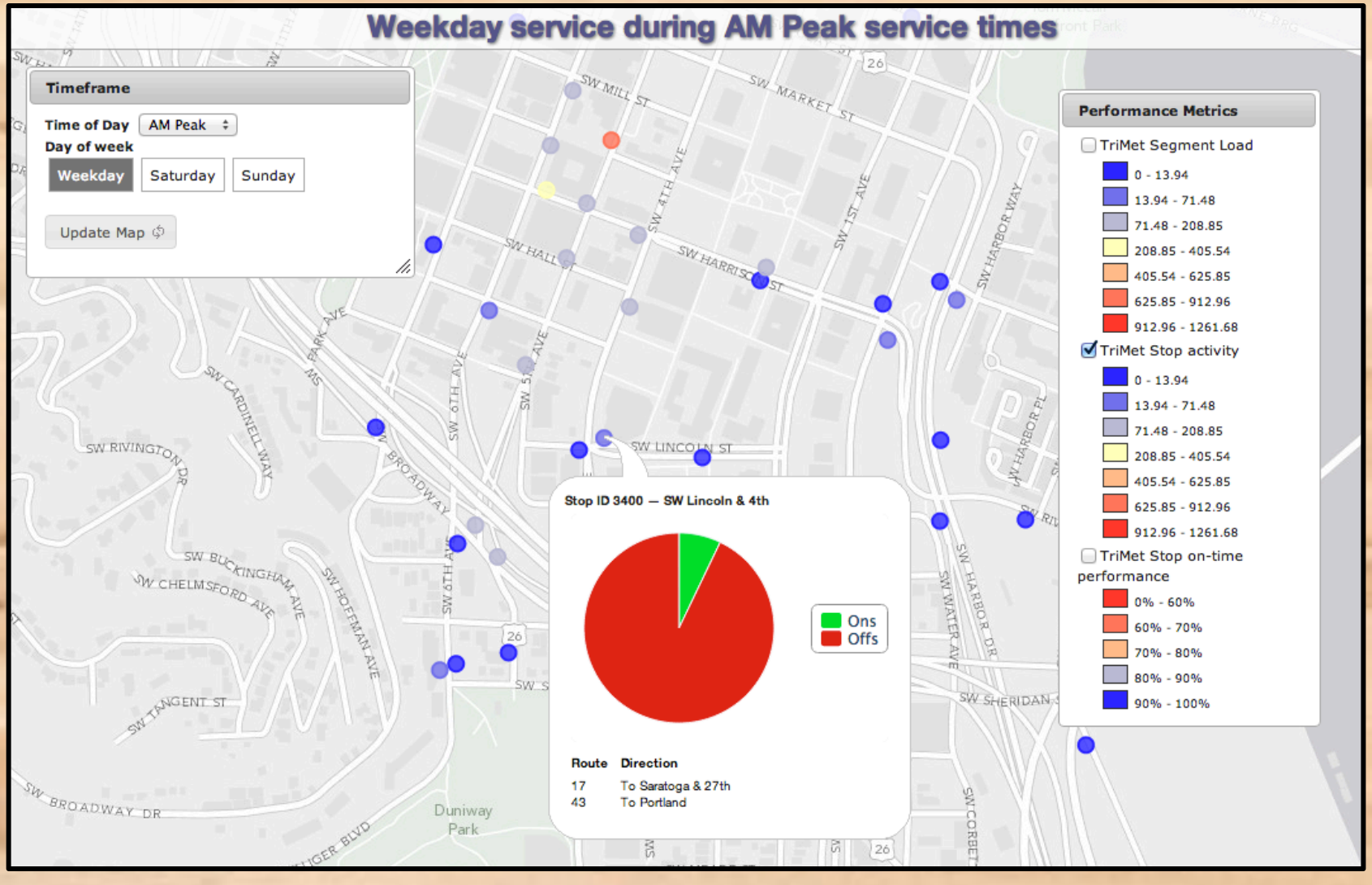


Now you can aggregate across routes!

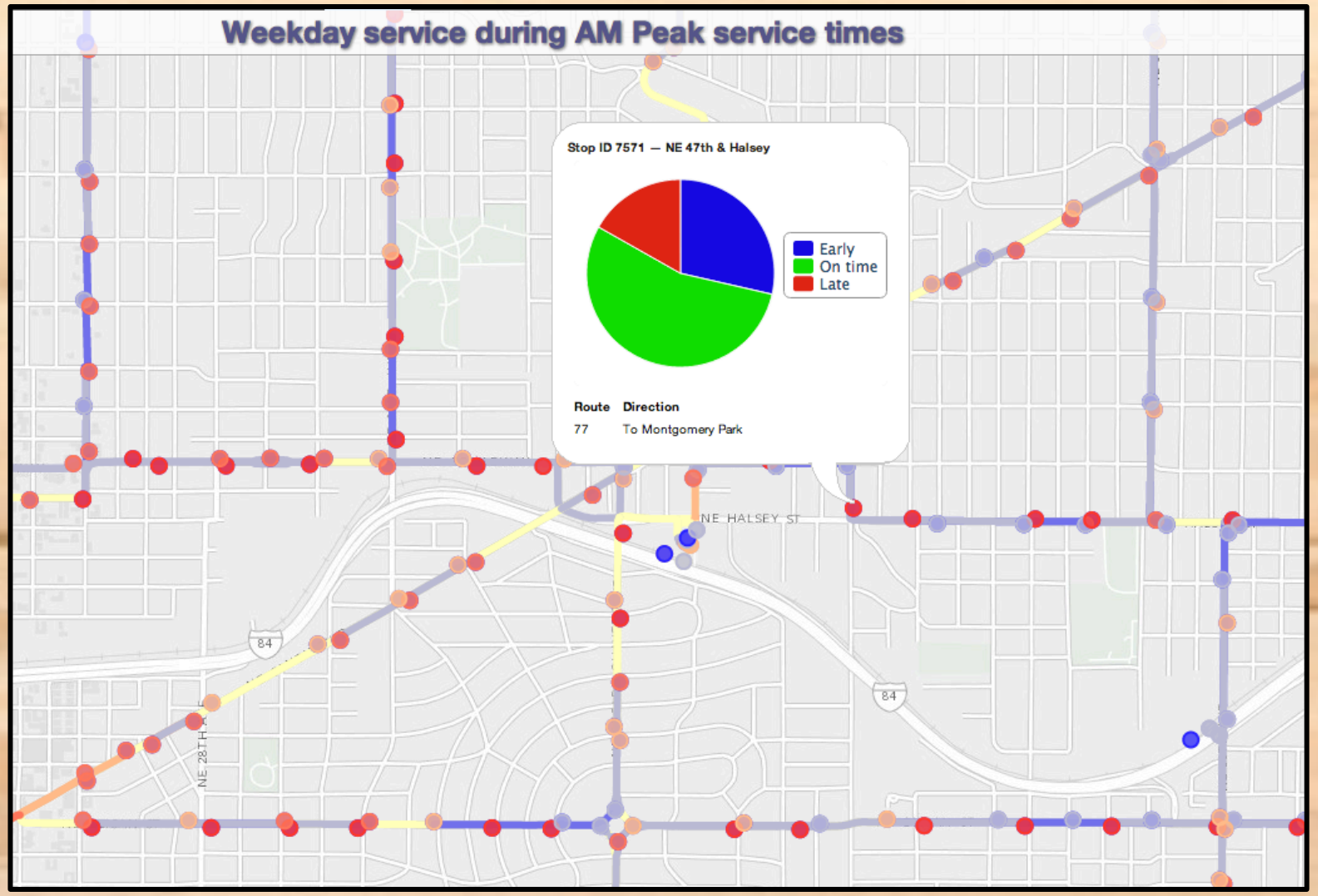
Garnish and Serve!



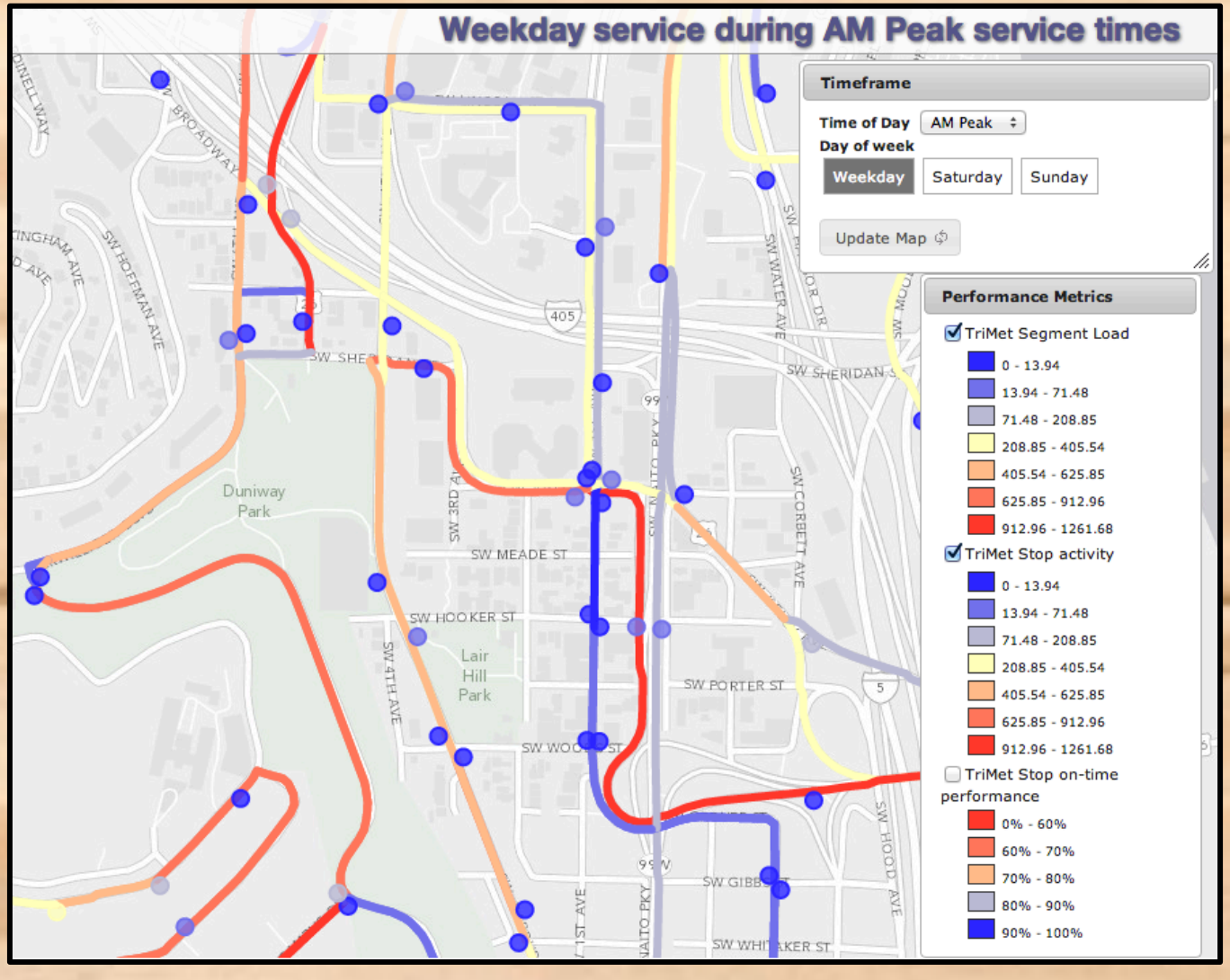
Garnish and Serve!



Garnish and Serve!



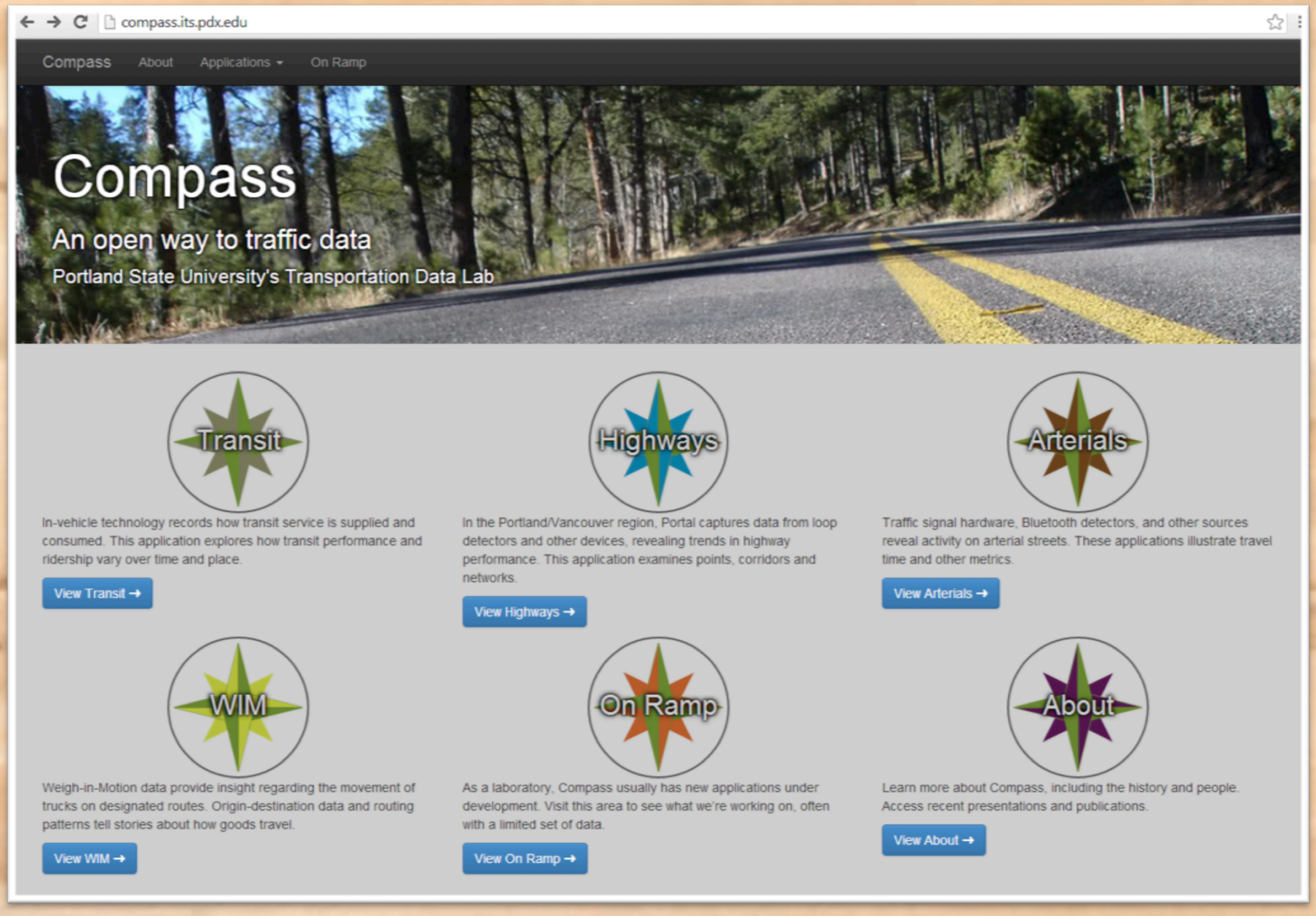
Garnish and Serve!



Dessert
(aka, next steps)

- Cartographic refinements
  - Line Offsets
  - Point symbology
- Integrate data visualizations (pie charts & plots)
- Data download capability
- Non-temporal queries

Please Visit Us:



Thank You!

Jon Makler, AICP
makler@pdx.edu

Kristin Tufte, Ph.D.
tufte@pdx.edu

Morgan Harvey
morgan@pdx.edu

compass.its.pdx.edu