A Recipe for an Online, Geospatial Transit Performance Archive

Jon Makler

Follow this and additional works at: https://pdxscholar.library.pdx.edu/trec_seminar

Part of the Transportation Commons, and the Urban Studies and Planning Commons

Let us know how access to this document benefits you.

Recommended Citation
https://pdxscholar.library.pdx.edu/trec_seminar/65

This Book is brought to you for free and open access. It has been accepted for inclusion in TREC Friday Seminar Series by an authorized administrator of PDXScholar. Please contact us if we can make this document more accessible: pdxscholar@pdx.edu.
OF WEB-BASED, GEOSPATIAL TRANSIT PERFORMANCE DATA ARCHIVES

Jon Makler, AICP | @plangineering
Portland State University
Oregon Transportation Research & Education Consortium
Happy Valentine’s Day
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](http://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 - Downtown

trips.txt
route_id,trip_id,trip
R10,T-10-1,Airport,0
R10,T-10-2,Downtown,1
```
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!
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:

Compass
An open way to traffic data
Portland State University’s Transportation Data Lab

Transit
In-vehicle technology records how transit service is supplied and consumed. This application explores how transit performance and ridership vary over time and place.
View Transit →

Highways
In the Portland/Vancouver region, Portal captures data from loop detectors and other devices, revealing trends in highway performance. This application examines points, corridors and networks.
View Highways →

Arterials
Traffic signal hardware, Bluetooth detectors, and other sources reveal activity on arterial streets. These applications illustrate travel time and other metrics.
View Arterials →

WIM
Weigh-in-Motion data provide insight regarding the movement of trucks on designated routes. Origin-destination data and routing patterns tell stories about how goods travel.
View WIM →

On Ramp
As a laboratory, Compass usually has new applications under development. Visit this area to see what we’re working on, often with a limited set of data.
View On Ramp →

About
Learn more about Compass, including the history and people. Access recent presentations and publications.
View About →
Thank You!

Jon Makler, AICP  
makler@pdx.edu

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

Morgan Harvey  
morgan@pdx.edu

compass.its.pdx.edu