# Focus Group

## Inaugural Meeting

June 16, 2017 ◦ 10:00 a.m. to 2:00 p.m.

Technology Ventures Building ◦ University of Maryland

# Welcome / Self-intros

(All)

## Agency group members

- David Heller (SJTPO)
- Wenjing Pu (FHWA)
- Peng Xiao (VDOT)
- Keith Miller (NJTPA)
- Terrell Hughes (VDOT; alternate)

## CATT Lab participants

- John Allen
- Nikola Ivanov (may call in)
- Jenny Lees
- Catherine Plaisant (if available)
- Mark Franz

## Other UMD participants

- Nikola Markovic (CATT)
- Di Yang (NTC)

**SJTPO** – South Jersey Transportation Planning Organization **NJTPA** – North Jersey Transportation Planning Authority **NTC** – National Transportation Center

# Meeting Objectives

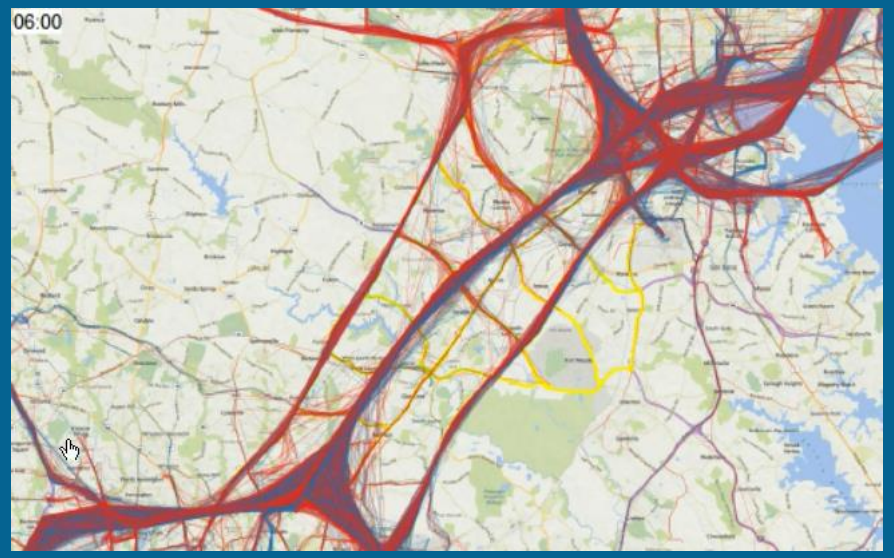
(Allen)

# Our key takeaways for today

- Better understanding of your agency's vision / priorities (related to O-D data use)
- Your current uses of O-D data
- Specific O-D use cases that are most important to you
- What future O-D uses, and use cases will be important to you
- Features and functions you'd like to see included in the OD Data Suite
- Visualizations, summaries and types of reporting that would be most helpful

# Background / Context

(Markovic)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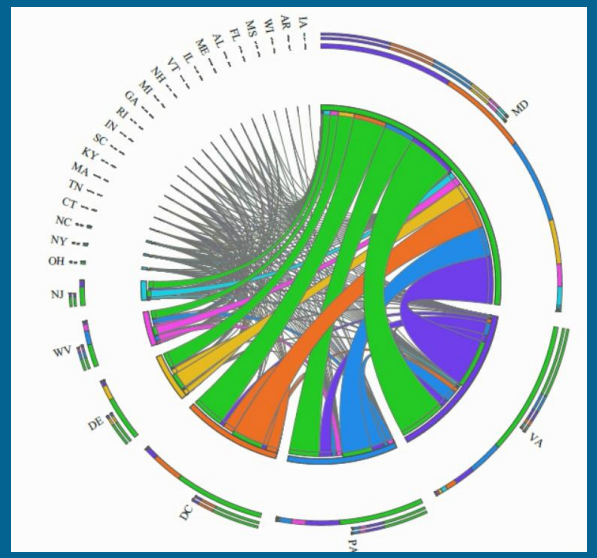
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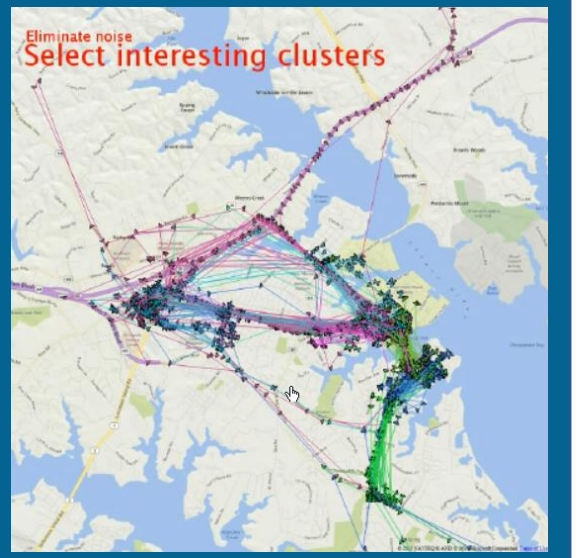

Eliminate noise
Select interesting clusters

# The Case for Use Cases

(Franz)

# Trajectory Data Potential

- Trajectory data allows for:
  - A new data source for conducting legacy planning and operations analysis
    - historical network analysis (travel times, speeds, etc.)
    - travel pattern analysis (O-D matrices, trip generation and distribution rates)
  - New (and long overdue) travel behavior analysis
    - Trip departure, route choice and travel time evaluation
    - Dynamic O-D matrix analysis
    - Pass through Link/Geography studies

**Need to define desired tool functionality and associated use cases...**

# Potential Functions

- O-D matrices and maps
- Select link/geography analysis
- Performance assessment
- Planning applications

# O-D Matrices and Maps

## Functionality

- Create customizable O-D Matrices
  - Select time period and geographies of interest
  - Select specific days of weeks and hours of day
  - Select vehicle types (commercial, passenger, all)
  - Travel time and trip distance statistics between O-D pairs

## Use Case

- Develop local and high resolution trip generation rates
- Discover high frequency O-D pairs for improving/expanding transit services

# Select Link/Geography Analysis

## Functionality

- Select segment(s) of interest to create:
  - O-D matrix of all trips that passed through link/geography for the time period of interest
  - Filter by vehicle type
  - O-D Map
  - Map displaying full routes of trips using link of interest
  - Travel time and trip distance statistics between O-D pairs
  - Average departure time and departure time standard deviation

## Use Case

- Identify locations to promote/incentivize demand management strategies such as tele-work, flex hours and car-pooling

# Performance Assessment

## Functionality

- Show change in travel patterns and network performance
  - Delta O-D matrices
  - Change in route usage, travel times, trip distances, etc.

## Use Case

  - Before-After study of the impacts of a mixed-use development

# Planning Applications

## Functionality

- Filter by common planning variables such as:
  - Household income/Value of Time
  - Trip Purpose (Mandatory or Non-Mandatory)
  - Vehicle Occupancy
  - Other socio-demographic variables

## Use Case

- Asses the impact of proposed installation of HOT lanes on the segment of a major commute interstate segment

# **OD** data suite ◦ usability matrix

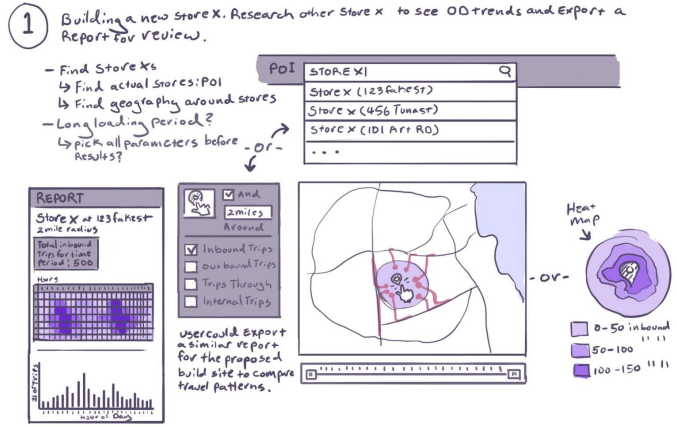
Created on: 02.13.17

| I want to... | Key Study Aspects (O-D / Trajectory-related) | Study Analysis Steps | Key Function / Features | Results Page(s) Visualizations / Summaries / Reports: Map | Animated Map | Arc Chart | Graph (B, P, L) | O-D Table | Specialized | Reports | Etc. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Conduct a Traffic Impact Study | › Trip Distribution<br>- Regional<br>- Local project (am/pm)<br>- Local related projects (am/pm) | › Search for comparable development type (POI function)<br>› Gather data about the traffic on local nearby roads (define radii of influence)<br>› Focus on volume on each local roads at different day and times<br>› Select the new proposed location (probably as a small area drawn by hand)<br>› Gather the local pattern(s) within new proposed location<br>› Export report on proposed location and comparable.<br>› Export all the data so it can be used in a separate simulation | › Search for comparable POI<br>› Define radii of influence<br>› Select days / time<br>› Define a geography (Map draw, other)<br>› Define trajectories for selected geography / days & times<br>› Export to report(s) for proposed locations & comparable<br>› Export all data for use in separate simulations (TDM sub-area) | ✓ | | | | ✓ | | | |

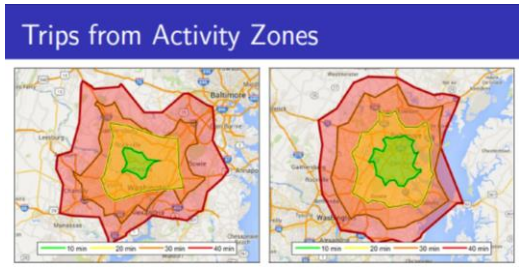
## Example Story

A local land developer is interested in purchasing a parcel of land to develop a shopping center. Before being approved, a traffic impact study must be conducted under the supervision of the local transportation agency. Recent applications of the trip generation and distribution models have underestimated the traffic impact of similar proposed developments as they were based on a national survey conducted eight years ago. To better estimate the trip generation and distribution rates, the local transportation agency will utilize the new CATT Lab OD analysis suite using recent and local data.

## Supporting Story UX (Mockups, etc.)




Heat Map Concept




AM Peak Hour Inbound

AM Peak Hour Outbound

Usability matrix concept to organize and track various use cases and applicable features, functions and results

# Questionnaire Results

(Allen)

# Agency Vision / Transportation Priorities (as it relates to using OD data)

- **NTC**
  - Provide travel demand model users with a *more intuitive understanding of model results* by visualizing OD tables and showing travel patterns
- **SJTPO**
  - Desire quality O-D data to: *validate the Travel Demand Model; general roadway trip type* (e.g.; resident vs visitor); *major event prep* (Atlantic City Air Show); *large corridor studies* (conducted/funded); *support mandated Federal processes* (e.g.; Congestion Management Process)

**Bottom Line:** clear understanding and depiction of travel (patterns, trip type, etc.) for planning & project development

# Current O-D use

- **NTC**
  - We obtain OD data from activity-based travel demand models and *use OD tables for assignment* (both static and dynamic assignment)
- **SJTPO**
  - *Model calibration* (OD data gleaned from a Regional Household Travel Survey, specifically for trip purpose), *supplement major corridor planning studies*

**Bottom Line:** primary focus is on travel demand modeling (calibration, assignment, etc.)

# Current O-D use cases (priorities ◦ benefits ◦ challenges)

- **NTC**
  - Regarding activity-based travel demand models, the major challenge is to *develop tools that allow users to display customized OD tables based on vehicle class, trip purpose, time of day, etc.*
- **SJTPO**
  - *Priorities include SJ Model Recalibration & Validation,* the major challenge is *compiling this data into a package that is easily manageable, and where staff members can make some solid conclusions without spending inordinate amounts of time.*

**Bottom Line:** quick and easy way agencies can manage data and develop robust, customized output

# Future O-D use / use cases

- **NTC**
  - We plan to use *OD data as an indicator of travel patterns* which aids in understanding impacts of different policy scenarios on travel patterns.
- **SJTPO**
  - Creating *visually appealing & informative maps for planning studies and reports,* conducting some *before/after analysis of major improvement projects,* help to show *regional external vs internal traffic to possibly leverage additional federal funding,* demonstrate the level of *tourism of the region (FAST Act planning factor)*

**Bottom Line:** quality visuals (maps) for reports, major project assessment, and travel type and pattern results (to leverage funding, meet requirements, etc.)

# Features & functions; visualization, summaries & reporting

- **NTC**
  - **Function**: *customizing/filtering OD data based on different travel characteristics* (e.g. vehicle class, trip purposes, etc.).
  - **Visualization**: *show OD data for a selected link/corridor* to understand the origin and destination of vehicles that use this link/corridor.

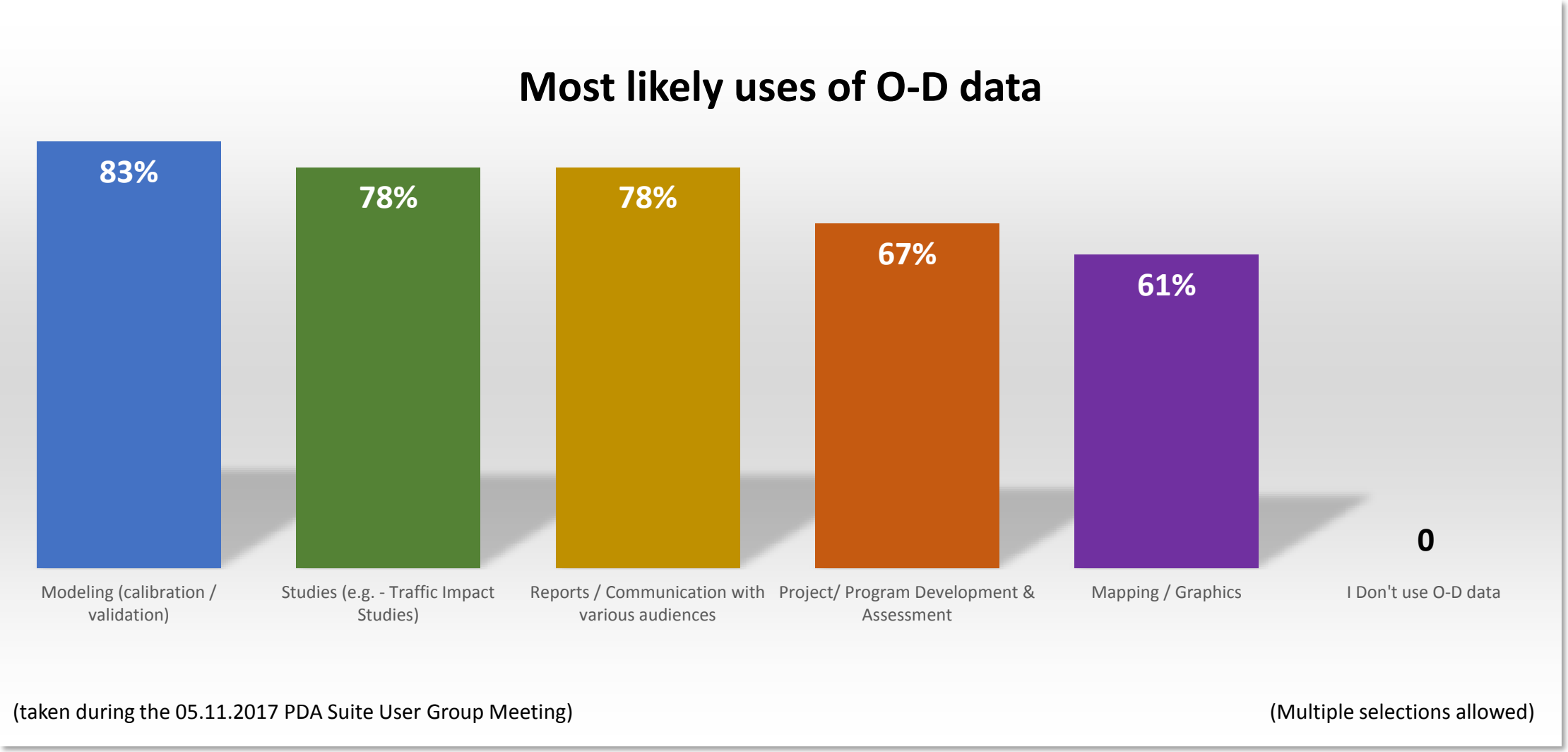
**Bottom Line:** travel characteristic custom filtering; select link analysis visuals

# Misc.

- **SJTPO**
  - More than ever, need to *tell a story and be visually appealing*, without getting into a lot of technical jargon.

**Bottom Line:** quick and easy way agencies can manage data and develop robust, customized output

# O-D data uses (as reported in a recent "Instant Poll" by PDA Suite User Group members)




(taken during the 05.11.2017 PDA Suite User Group Meeting)

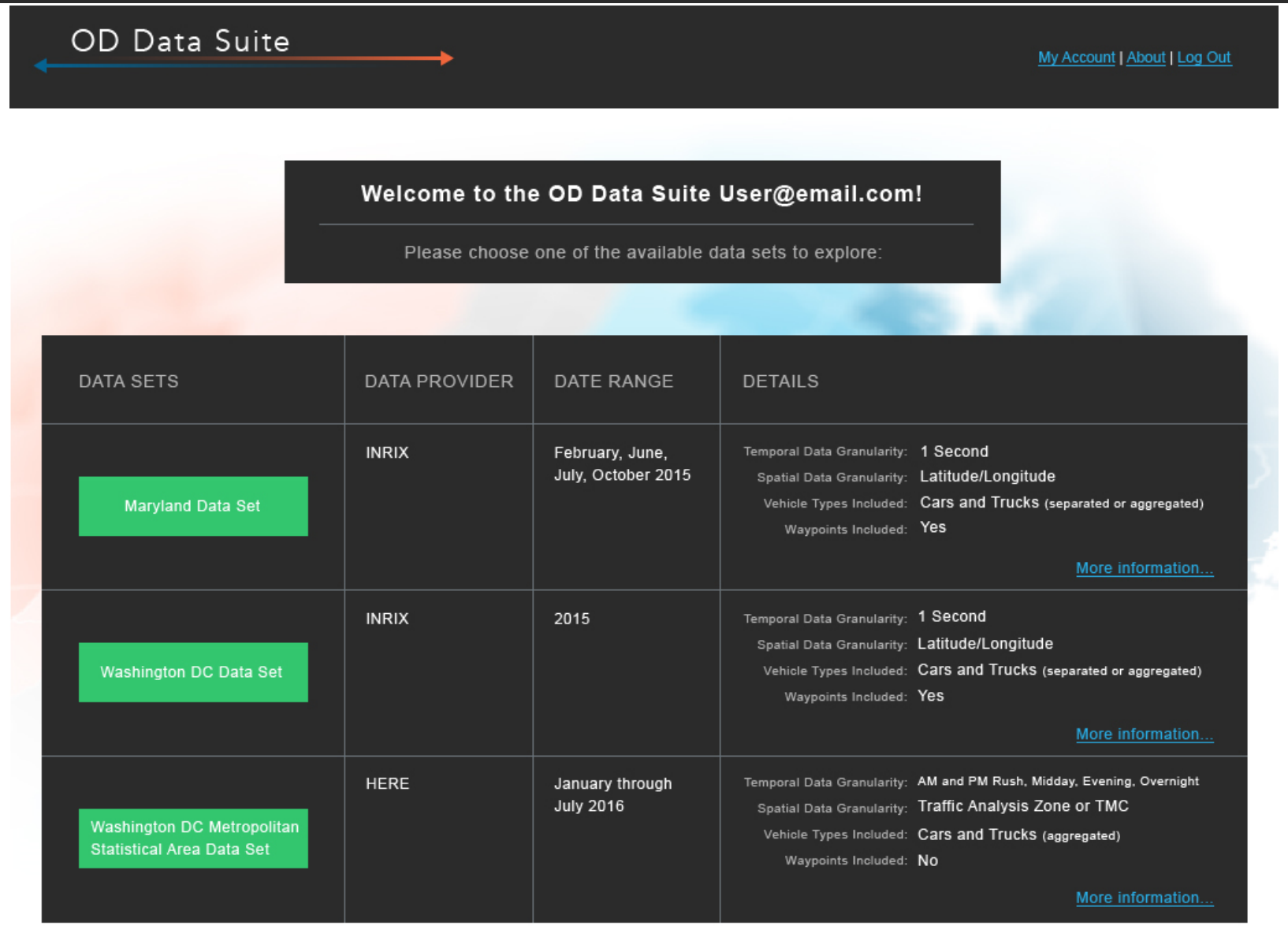
(Multiple selections allowed)

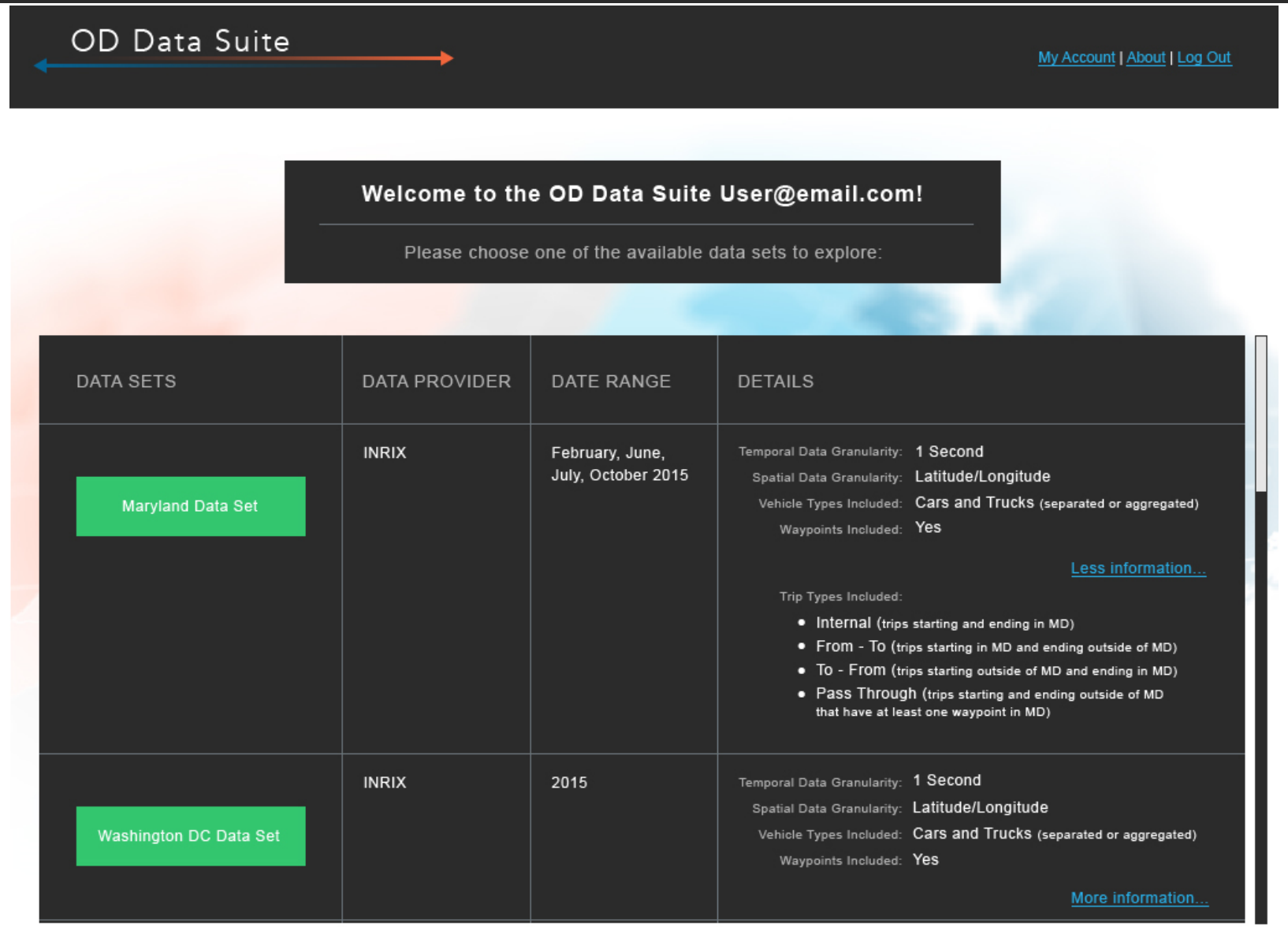
# Our Concepts

(Lees ◦ Franz ◦ Allen )

# Choosing an O-D data set


OD Data Suite
Enter Username...
Enter Password...
Register for Account
Forgot Password
Login


OD Data Suite
My Account | About | Log Out
Welcome to the OD Data Suite User@email.com!
Please choose one of the available data sets to explore:
DATA SETS
DATA PROVIDER
DATE RANGE
DETAILS
Maryland Data Set
INRIX
February, June, July, October 2015
Temporal Data Granularity: 1 Second
Spatial Data Granularity: Latitude/Longitude
Vehicle Types Included: Cars and Trucks (separated or aggregated)
Waypoints Included: Yes
More information...
Washington DC Data Set
INRIX
2015
Temporal Data Granularity: 1 Second
Spatial Data Granularity: Latitude/Longitude
Vehicle Types Included: Cars and Trucks (separated or aggregated)
Waypoints Included: Yes
More information...
Washington DC Metropolitan Statistical Area Data Set
HERE
January through July 2016
Temporal Data Granularity: AM and PM Rush, Midday, Evening, Overnight
Spatial Data Granularity: Traffic Analysis Zone or TMC
Vehicle Types Included: Cars and Trucks (aggregated)
Waypoints Included: No
More information...


OD Data Suite
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Welcome to the OD Data Suite User@email.com!
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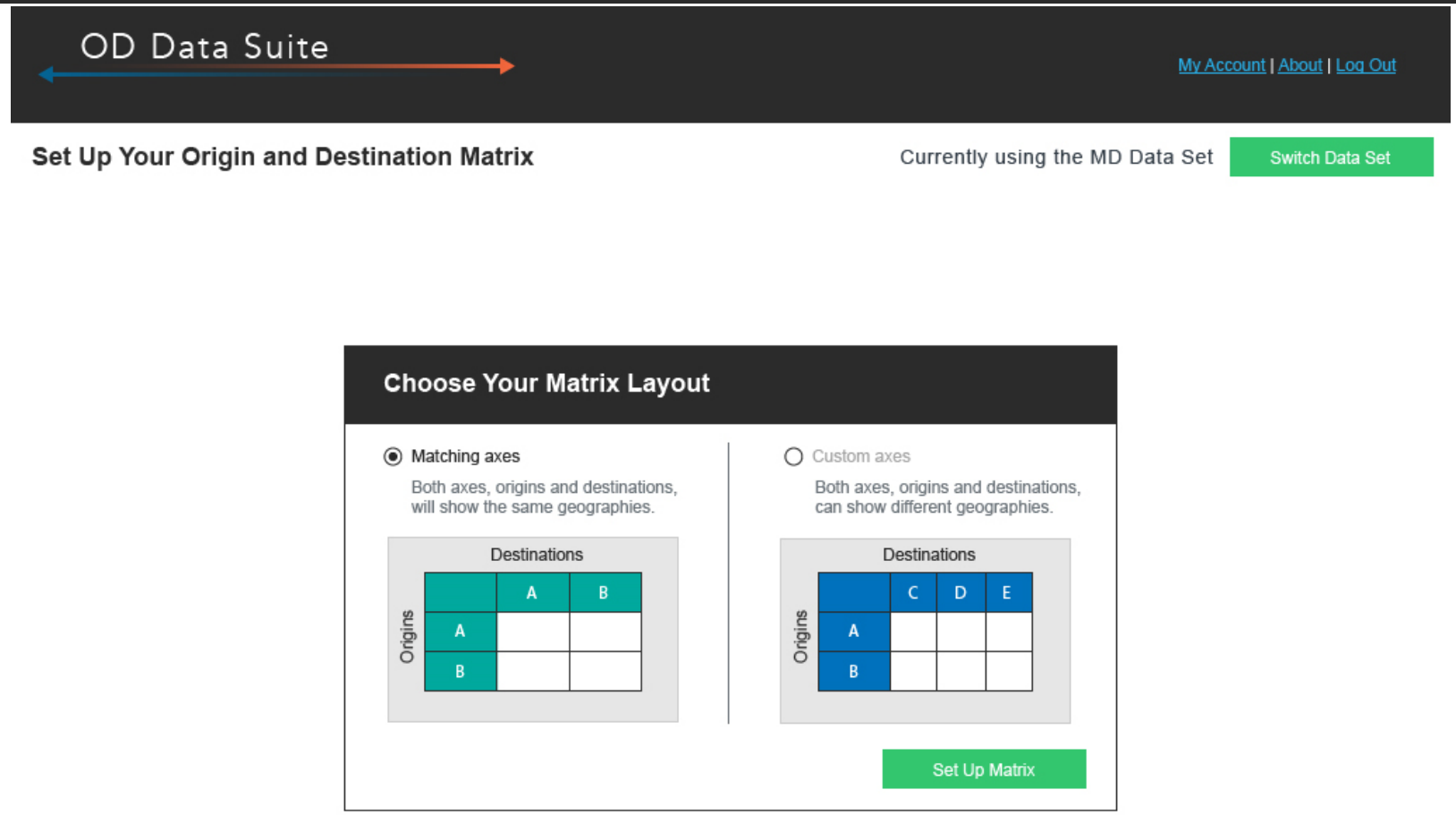
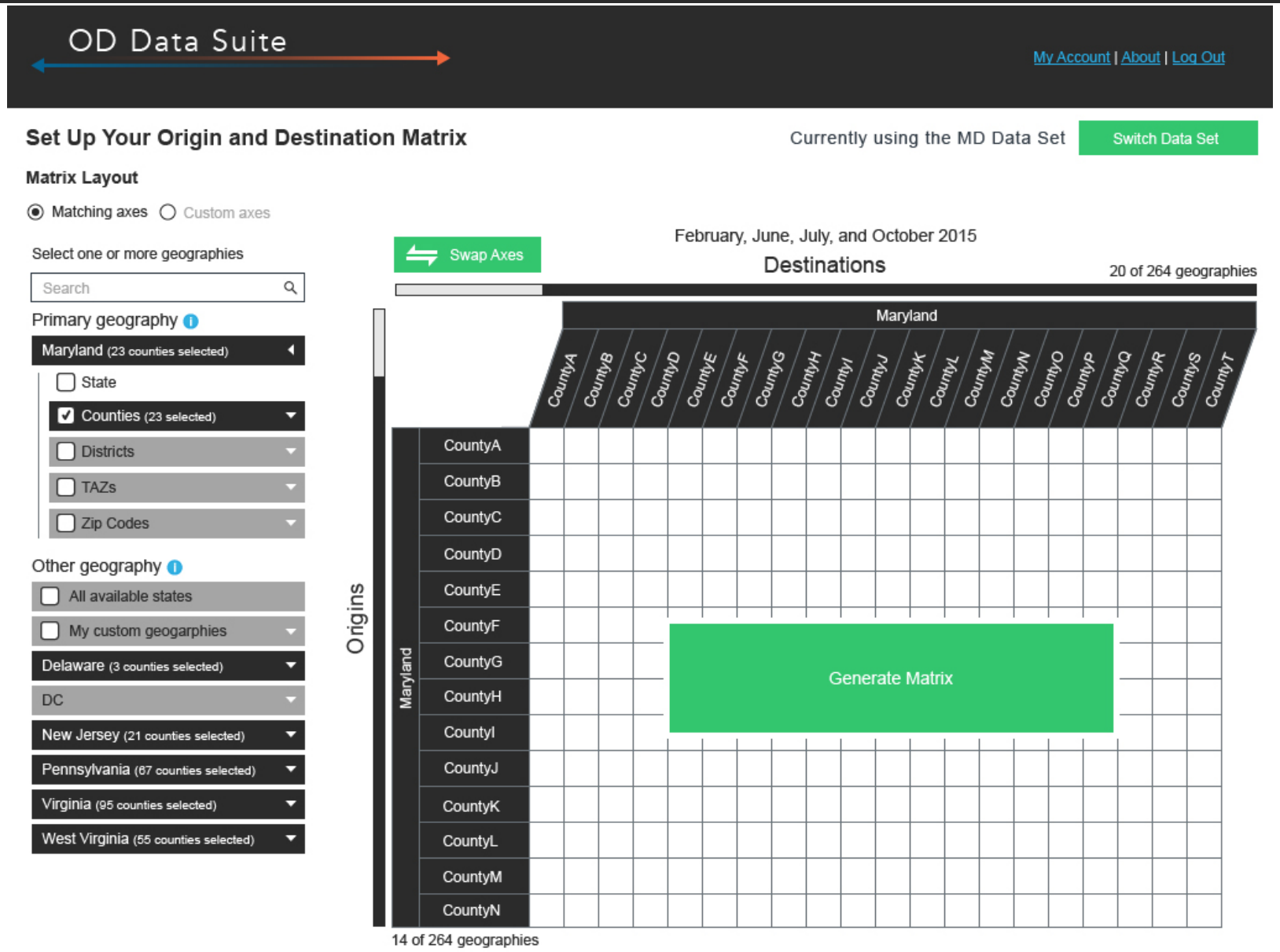
DATA SETS
DATA PROVIDER
DATE RANGE
DETAILS
Maryland Data Set
INRIX
February, June, July, October 2015
Temporal Data Granularity: 1 Second
Spatial Data Granularity: Latitude/Longitude
Vehicle Types Included: Cars and Trucks (separated or aggregated)
Waypoints Included: Yes
Less information...
Trip Types Included:
Internal (trips starting and ending in MD)
From - To (trips starting in MD and ending outside of MD)
To - From (trips starting outside of MD and ending in MD)
Pass Through (trips starting and ending outside of MD that have at least one waypoint in MD)
Washington DC Data Set
INRIX
2015
Temporal Data Granularity: 1 Second
Spatial Data Granularity: Latitude/Longitude
Vehicle Types Included: Cars and Trucks (separated or aggregated)
Waypoints Included: Yes
More information...

# Building an Origin – Destination Matrix


OD Data Suite
My Account | About | Log Out
Set Up Your Origin and Destination Matrix
Currently using the MD Data Set
Switch Data Set
Choose Your Matrix Layout
Matching axes
Both axes, origins and destinations, will show the same geographies.
Destinations
Origins
A
B
Custom axes
Both axes, origins and destinations, can show different geographies.
Destinations
Origins
C
D
E
Set Up Matrix


OD Data Suite
My Account | About | Log Out
Set Up Your Origin and Destination Matrix
Currently using the MD Data Set
Switch Data Set
Matrix Layout
Matching axes
Custom axes
Select one or more geographies
Search
Primary geography
Maryland (23 counties selected)
State
Counties (23 selected)
Districts
TAZs
Zip Codes
Other geography
All available states
My custom geogarphies
Delaware (3 counties selected)
DC
New Jersey (21 counties selected)
Pennsylvania (87 counties selected)
Virginia (95 counties selected)
West Virginia (55 counties selected)
Swap Axes
February, June, July, and October 2015
Destinations
20 of 264 geographies
Maryland
CountyA
CountyB
CountyC
CountyD
CountyE
CountyF
CountyG
CountyH
CountyI
CountyJ
CountyK
CountyL
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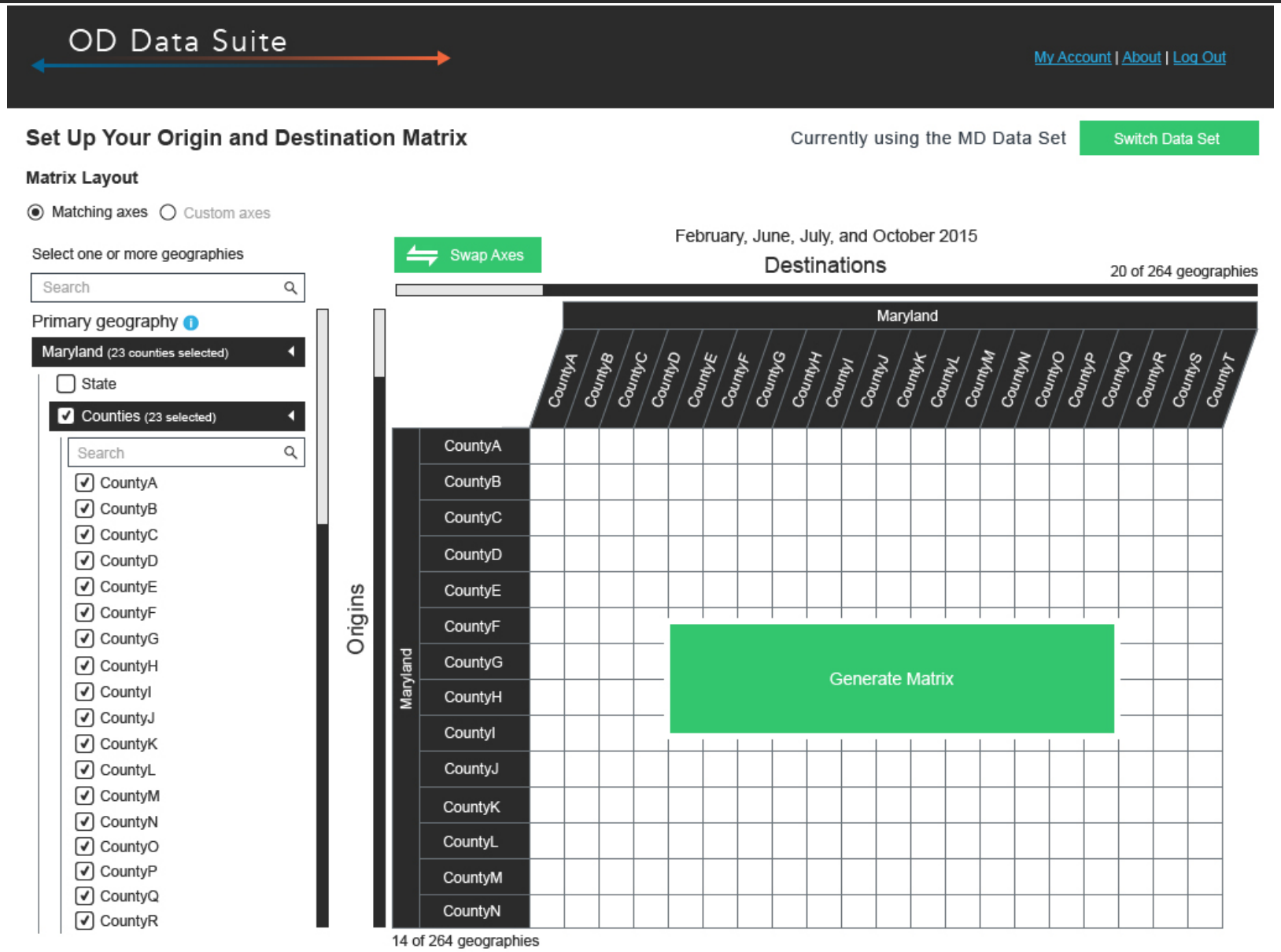
CountyN
CountyO
CountyP
CountyQ
CountyR
CountyS
CountyT
Origins
Maryland
Generate Matrix
14 of 264 geographies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Set Up Your Origin and Destination Matrix
Currently using the MD Data Set
Switch Data Set
Matrix Layout
Matching axes
Custom axes
Select one or more geographies
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Primary geography
Maryland (23 counties selected)
State
Counties (23 selected)
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CountyA
CountyB
CountyC
CountyD
CountyE
CountyF
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CountyH
CountyI
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CountyP
CountyQ
CountyR
Swap Axes
February, June, July, and October 2015
Destinations
20 of 264 geographies
Maryland
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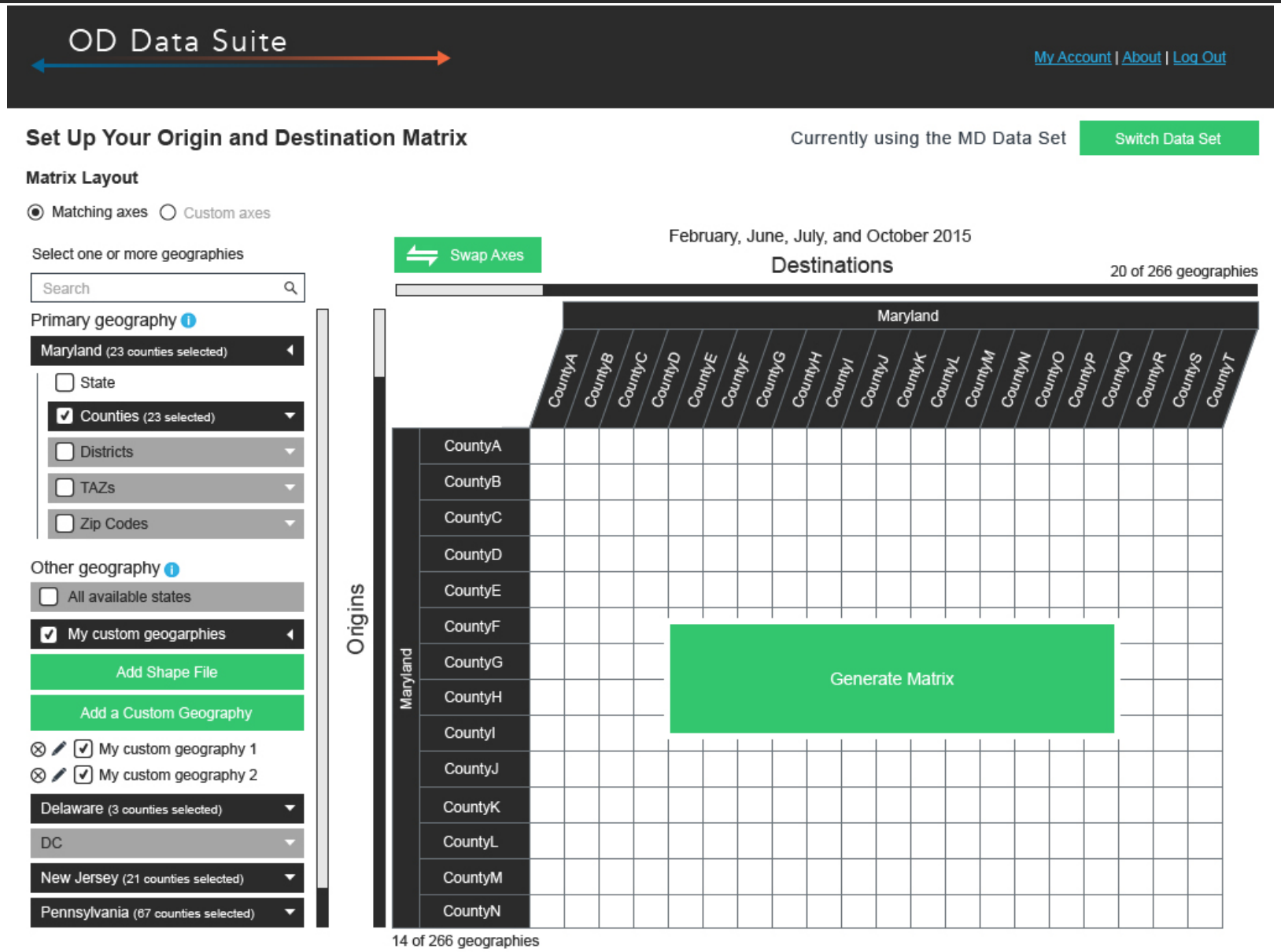
Maryland
Generate Matrix
14 of 264 geographies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Set Up Your Origin and Destination Matrix
Currently using the MD Data Set
Switch Data Set
Matrix Layout
Matching axes
Custom axes
Select one or more geographies
Search
Primary geography
Maryland (23 counties selected)
State
Counties (23 selected)
Districts
TAZs
Zip Codes
Other geography
All available states
My custom geogarphies
Add Shape File
Add a Custom Geography
My custom geography 1
My custom geography 2
Delaware (3 counties selected)
DC
New Jersey (21 counties selected)
Pennsylvania (67 counties selected)
Swap Axes
February, June, July, and October 2015
Destinations
20 of 266 geographies
Maryland
CountyA
CountyB
CountyC
CountyD
CountyE
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CountyS
CountyT
Origins
Maryland
Generate Matrix
14 of 266 geographies

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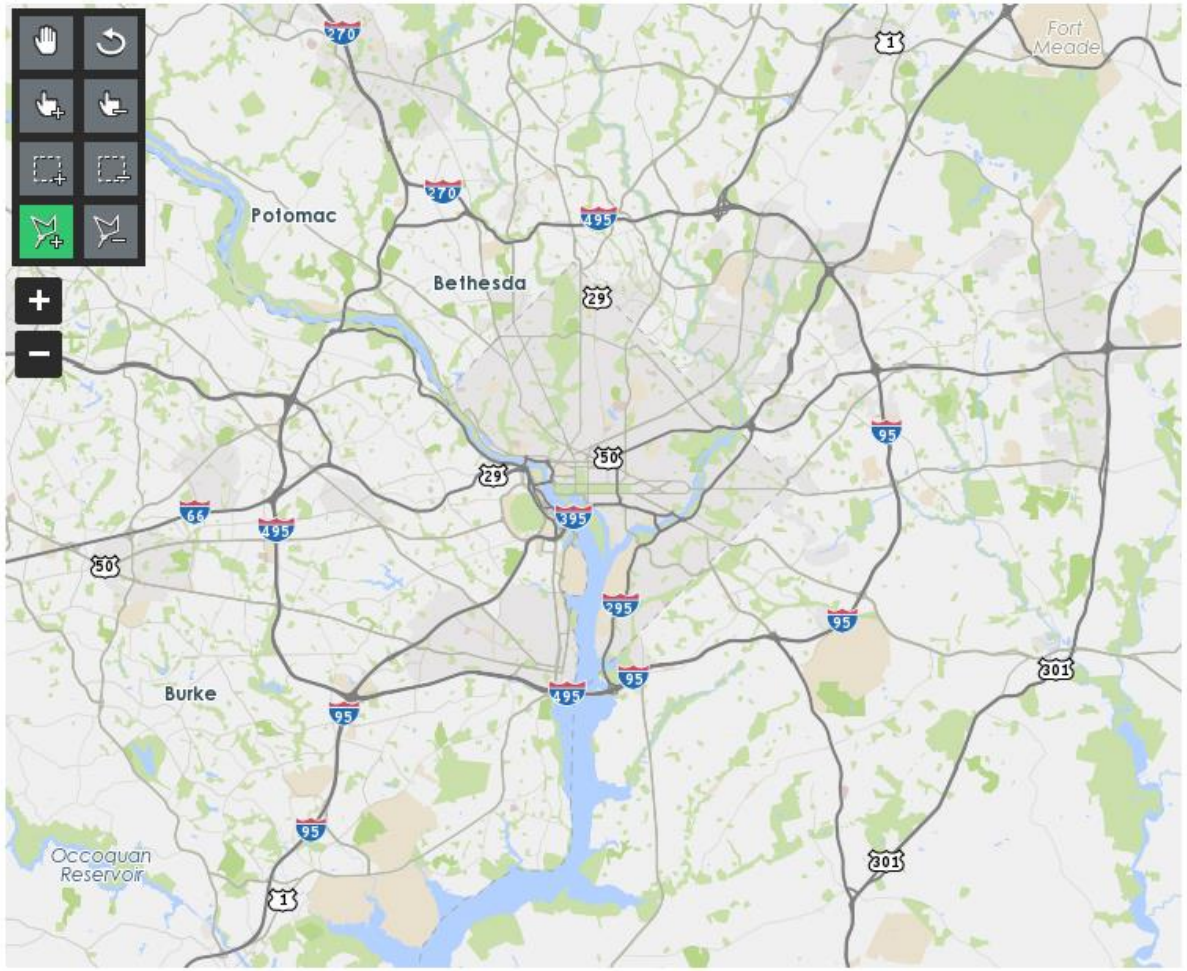
## Set Up Your Origin and Destination Matrix

Currently using the MD Data Set

Switch Data Set

**Select geography from map**

Use the controls on the map to define your geography. Controls with a '+' allow you to add space while controls with a '-' allow you to remove space from your selection.




Back to Query Page

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## Set Up Your Origin and Destination Matrix

Currently using the MD Data Set

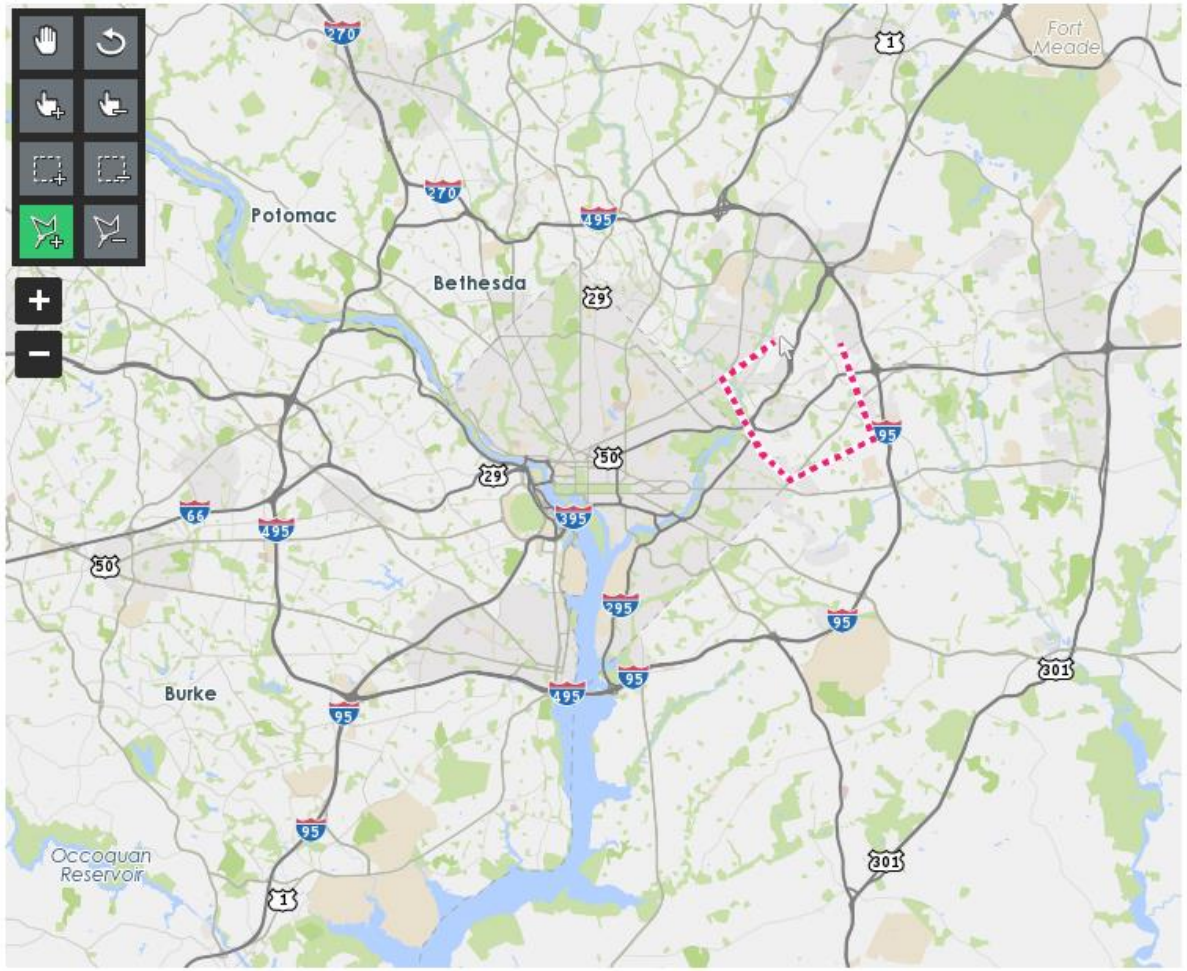
Switch Data Set

**Select geography from map**

Use the controls on the map to define your geography. Controls with a '+' allow you to add space while controls with a '-' allow you to remove space from your selection.

When you are finished making your selection click the done button.

Done

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Currently using the MD Data Set

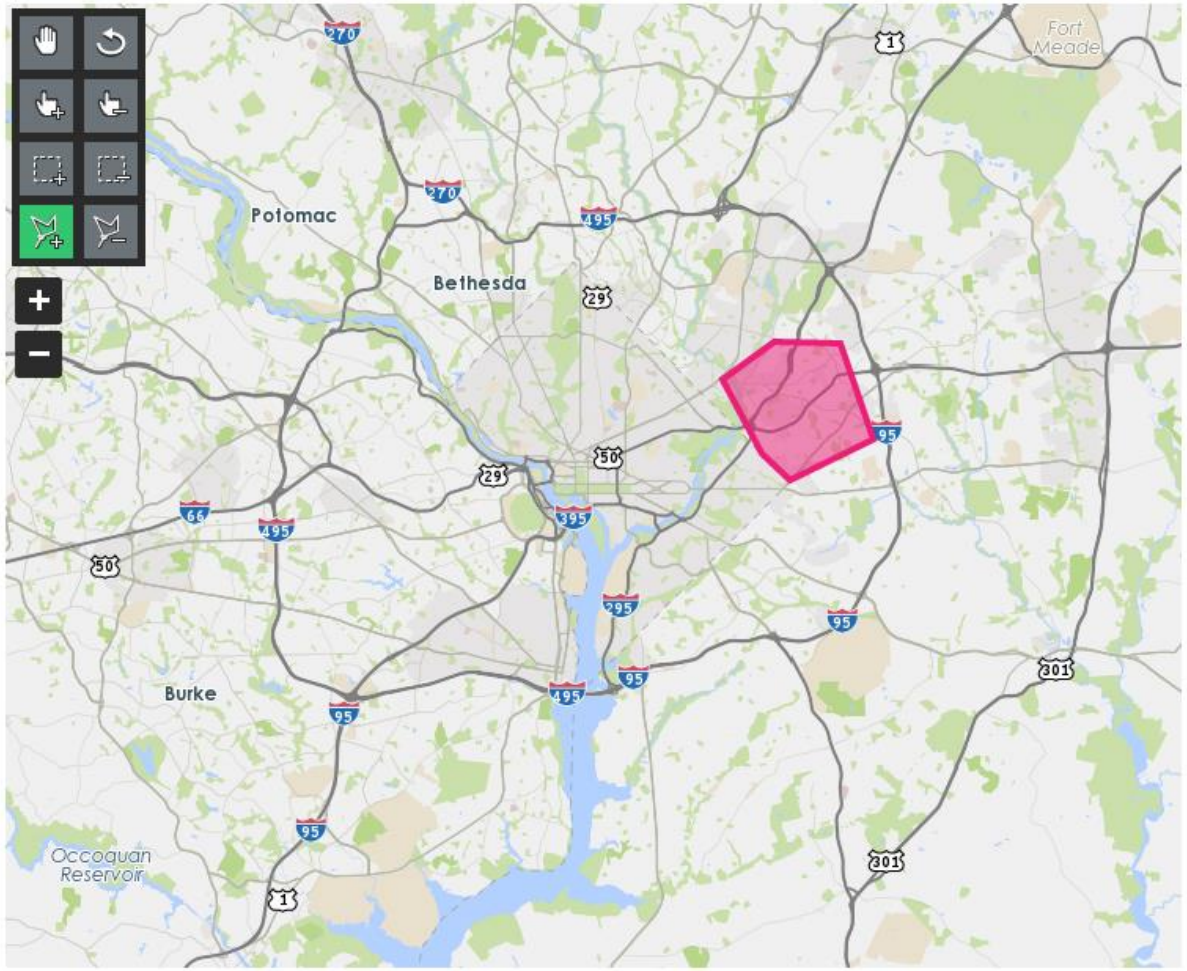
Switch Data Set

**Select geography from map**

Use the controls on the map to define your geography. Controls with a '+' allow you to add space while controls with a '-' allow you to remove space from your selection.

Selected geography

Geography 1

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## Set Up Your Origin and Destination Matrix

Currently using the MD Data Set

Switch Data Set

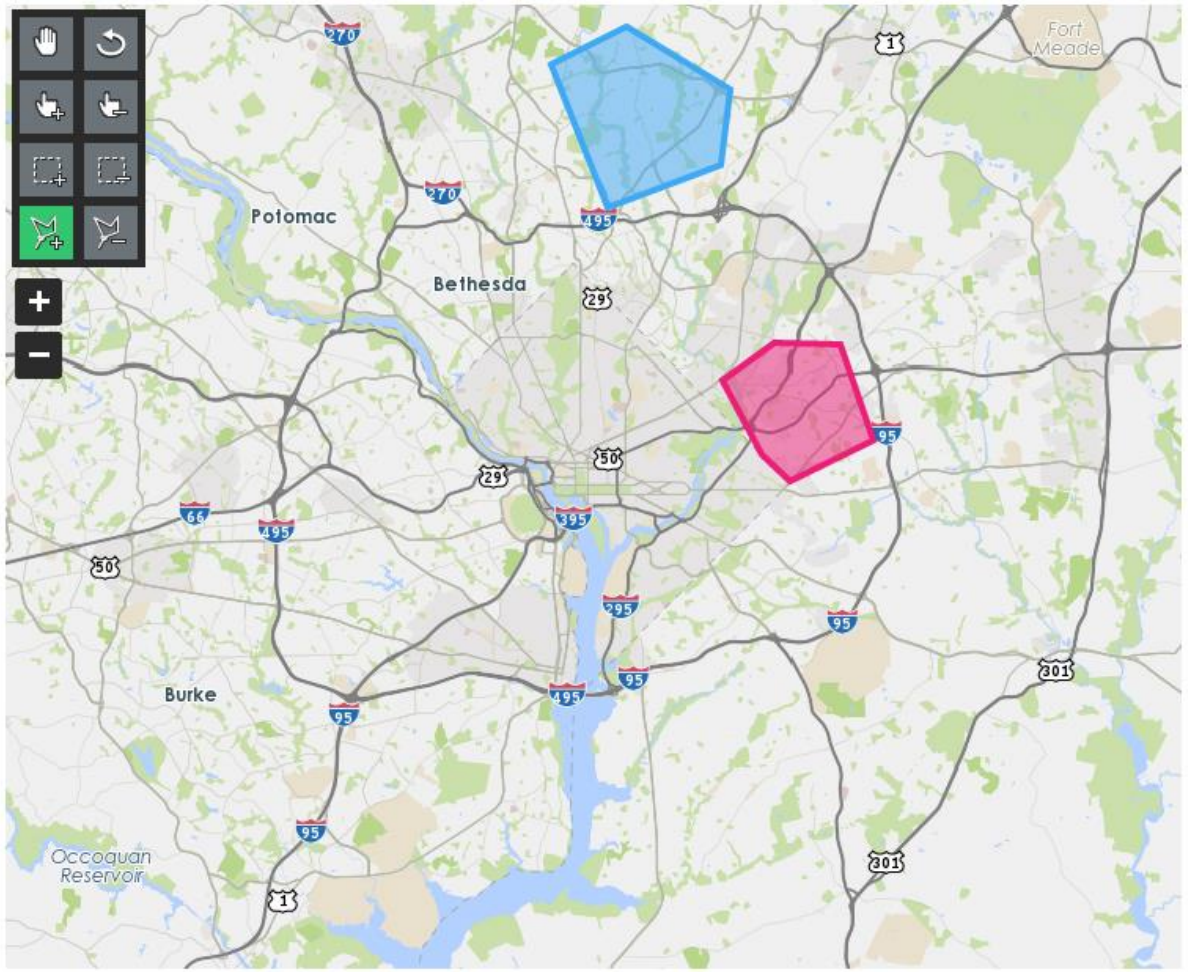
**Select geography from map**

Use the controls on the map to define your geography. Controls with a '+' allow you to add space while controls with a '-' allow you to remove space from your selection.

Selected geography

Geography 1

Geography 2

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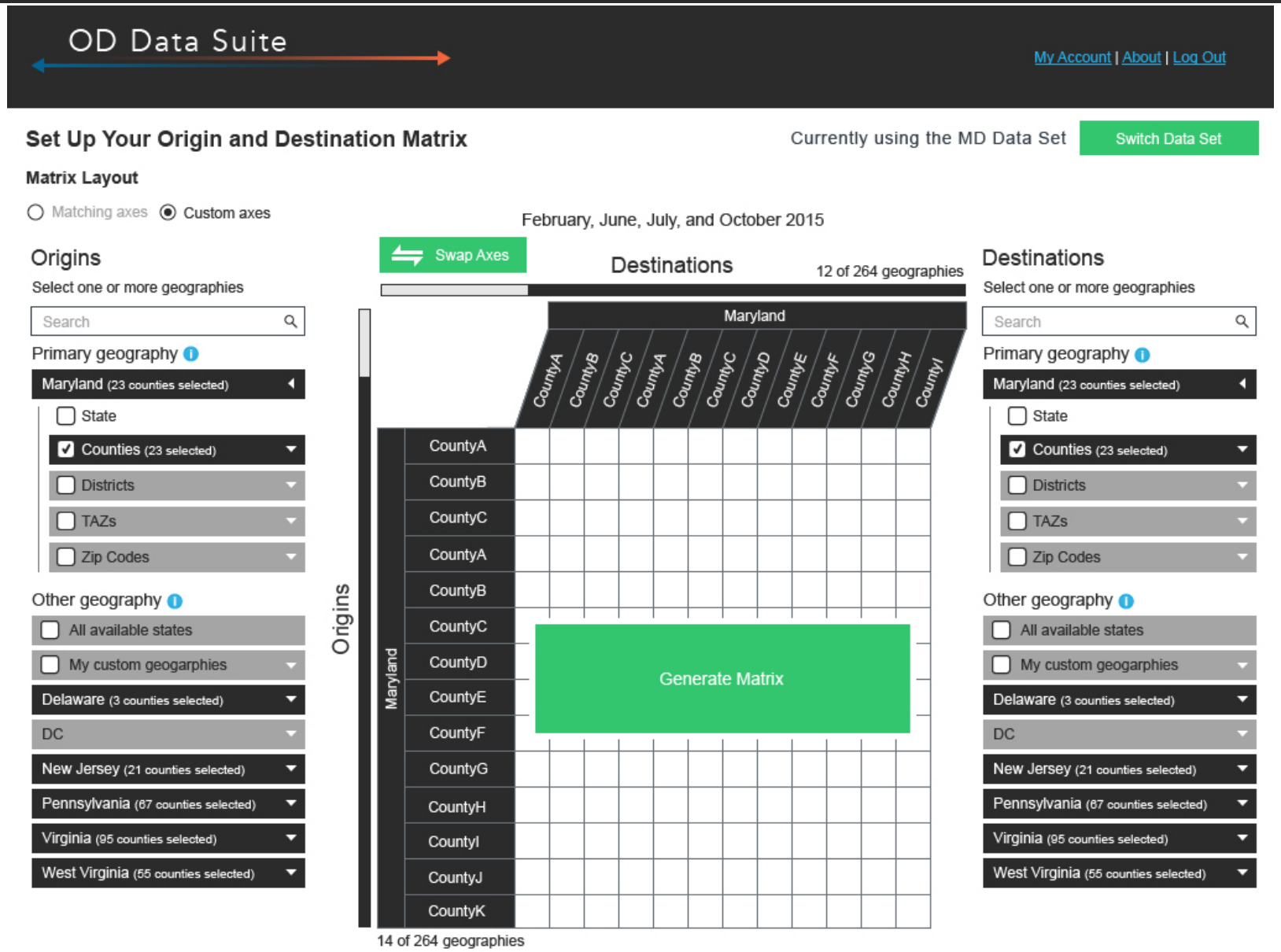
OD Data Suite
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Set Up Your Origin and Destination Matrix
Currently using the MD Data Set
Switch Data Set
Matrix Layout
Matching axes
Custom axes
February, June, July, and October 2015
Origins
Select one or more geographies
Search
Primary geography
Maryland (23 counties selected)
State
Counties (23 selected)
Districts
TAZs
Zip Codes
Other geography
All available states
My custom geogarphies
Delaware (3 counties selected)
DC
New Jersey (21 counties selected)
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Swap Axes
Destinations
12 of 264 geographies
Maryland
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CountyG
CountyH
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CountyJ
CountyK
Generate Matrix
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Destinations
Select one or more geographies
Search
Primary geography
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Delaware (3 counties selected)
DC
New Jersey (21 counties selected)
Pennsylvania (67 counties selected)
Virginia (95 counties selected)
West Virginia (55 counties selected)

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## Origin and Destination Matrix

Currently Using the MD Data Set SWITCH DATA SET

Selected date range June and July 2015 and March 2016 All Days of Week | Matrix controls | Display options

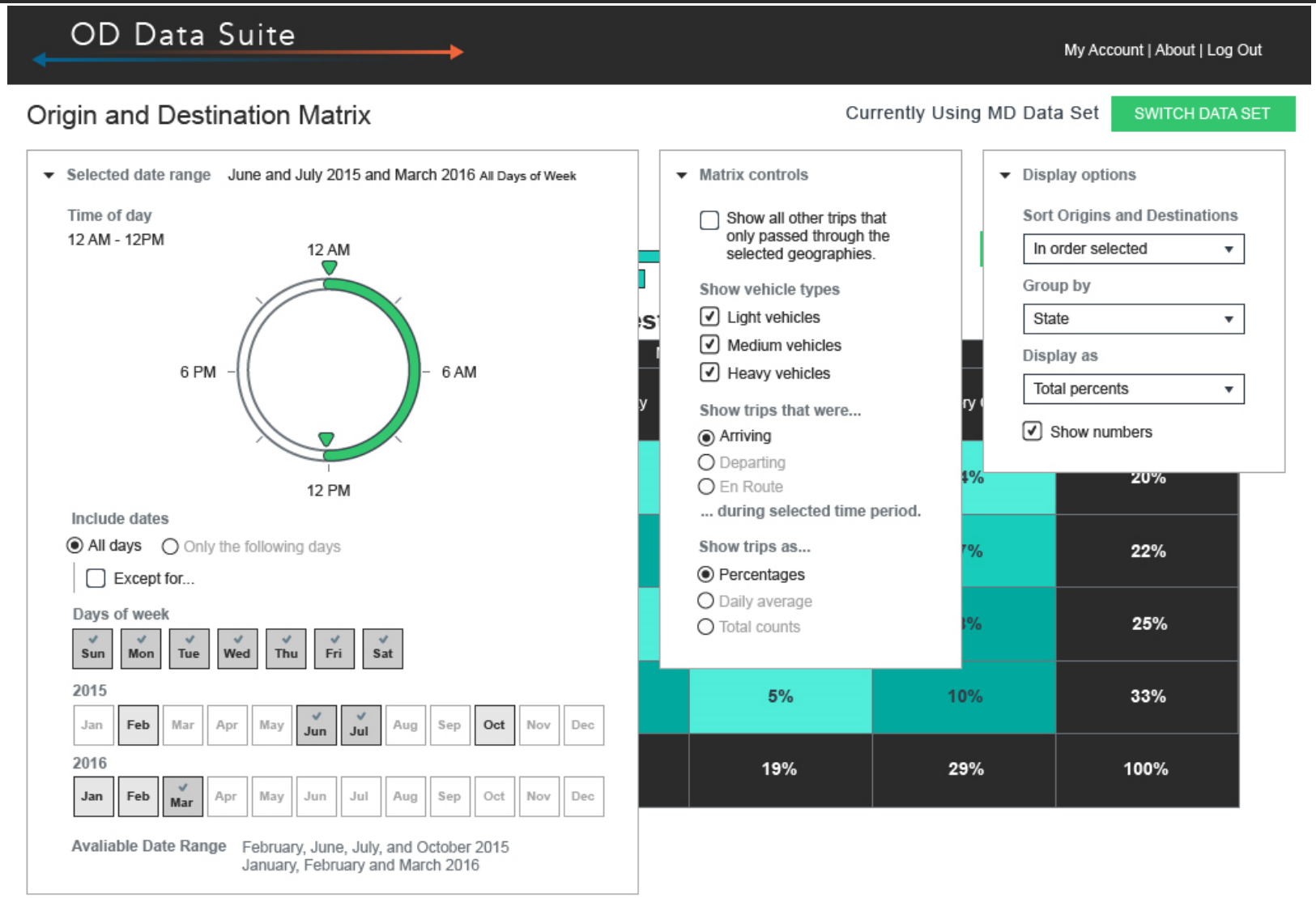
Legend

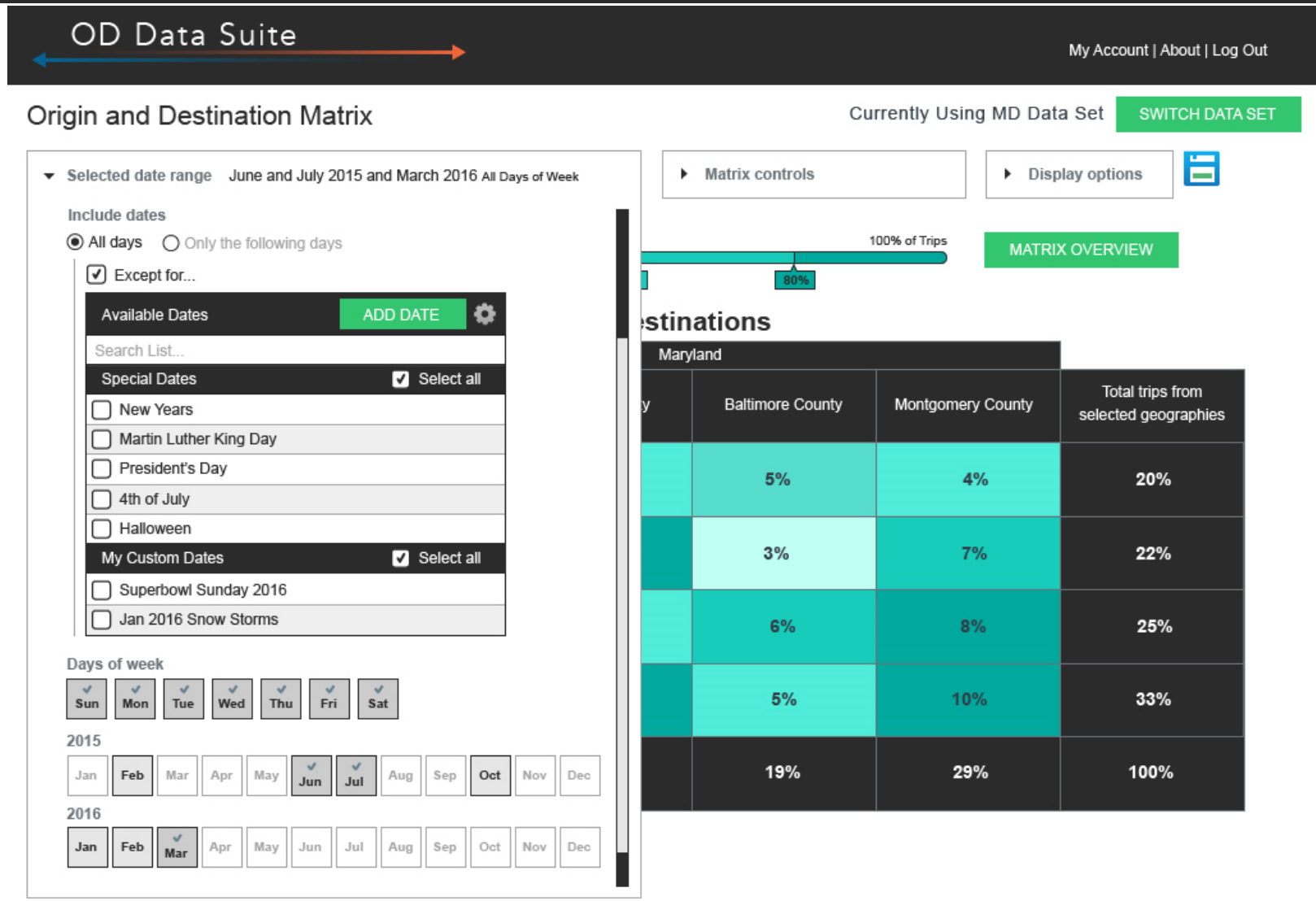
0% of Trips — 2% — 4% — 6% — 8% — 10%+ of Trips

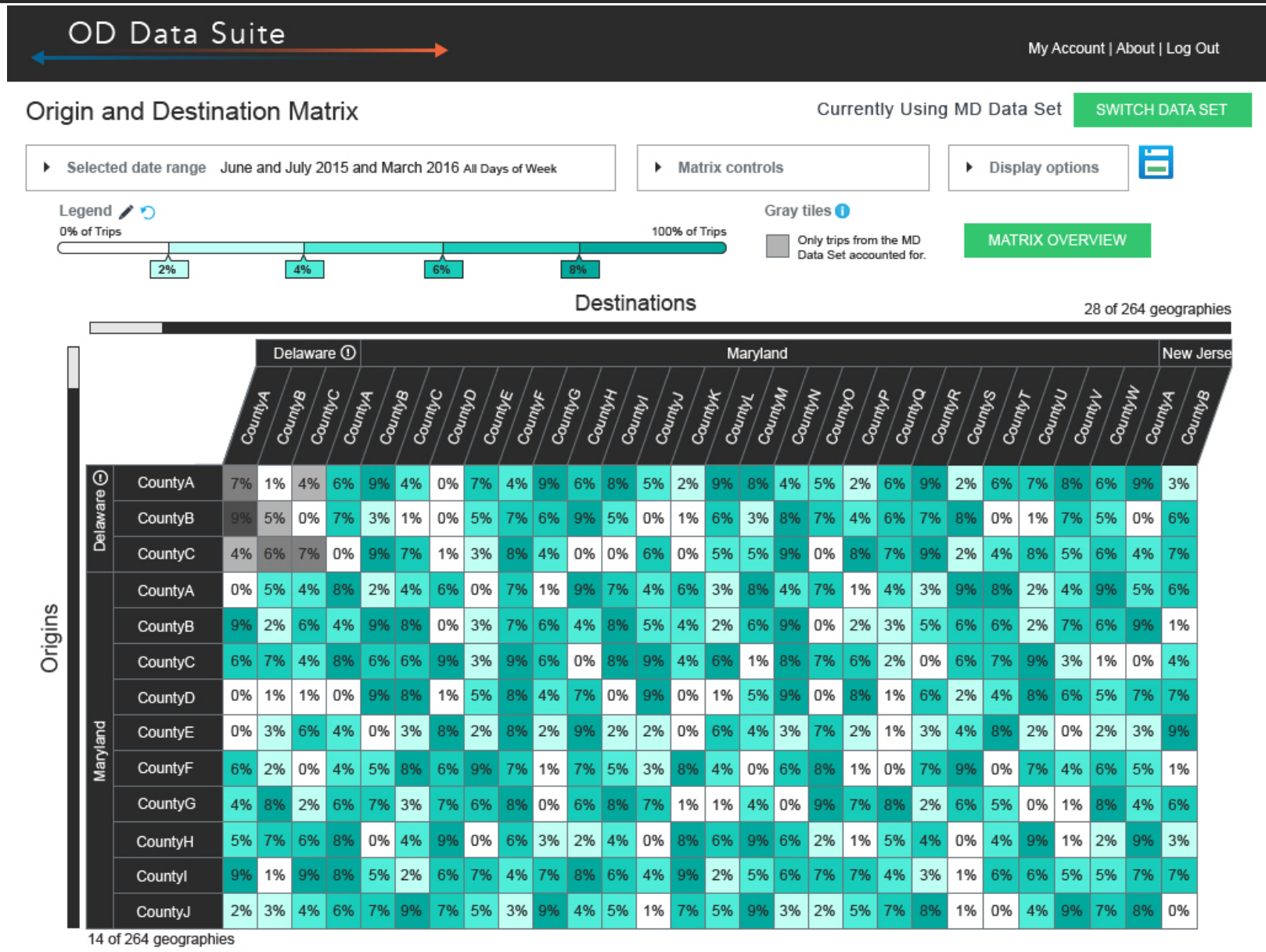
MATRIX OVERVIEW

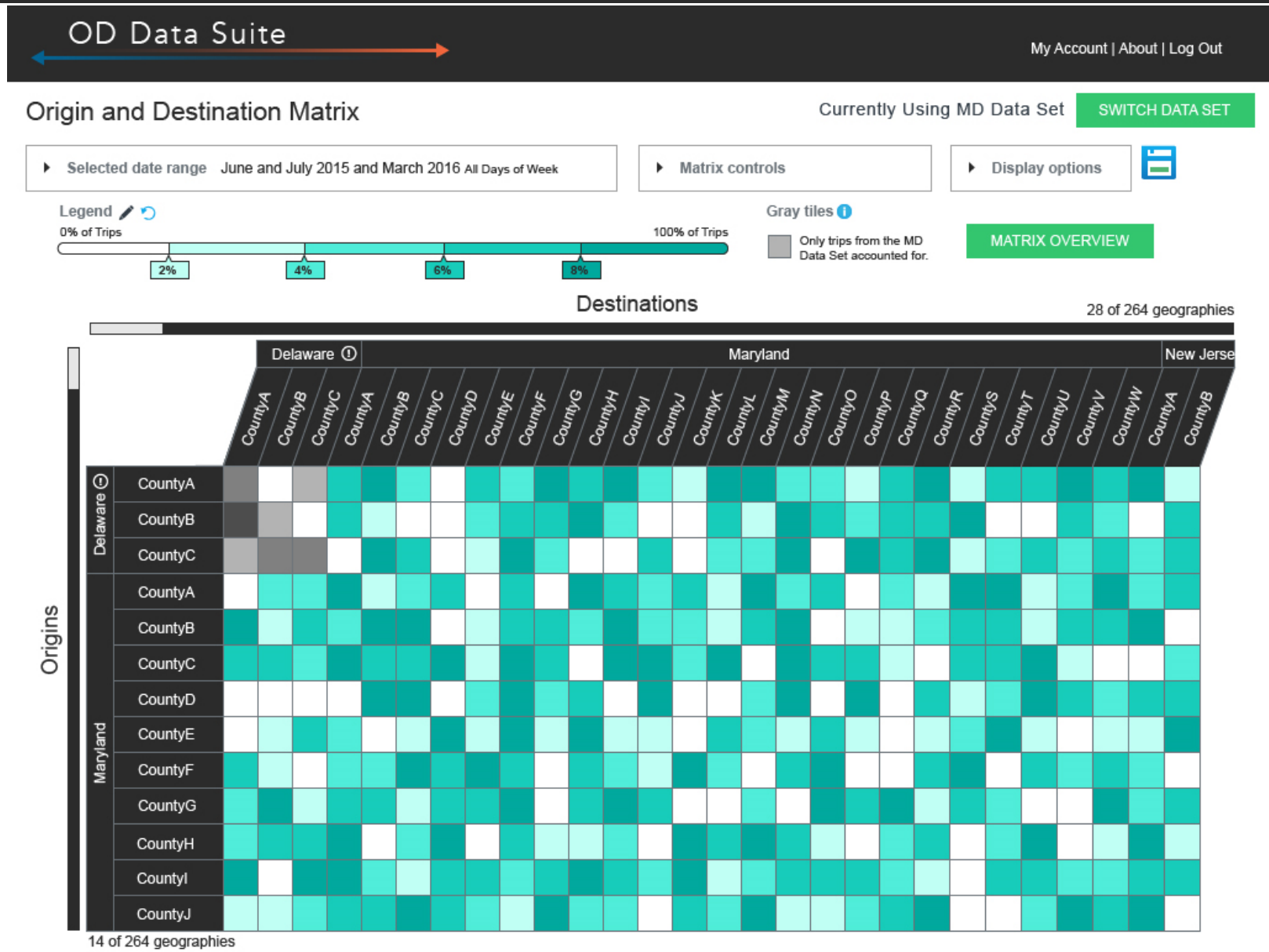
**Destinations**

| Origins: Maryland | Maryland: Frederick County | Maryland: Howard County | Maryland: Baltimore County | Maryland: Montgomery County | Total trips from selected geographies |
|---|---|---|---|---|---|
| Frederick County | 6% | 5% | 5% | 4% | 20% |
| Howard County | 4% | 8% | 3% | 7% | 22% |
| Baltimore County | 7% | 4% | 6% | 8% | 25% |
| Montgomery County | 7% | 12% | 5% | 10% | 33% |
| Total trips into selected geographies | 24% | 29% | 19% | 29% | 100% |


OD Data Suite
My Account | About | Log Out
Origin and Destination Matrix
Currently Using MD Data Set
SWITCH DATA SET
Selected date range June and July 2015 and March 2016 All Days of Week
Time of day
12 AM - 12PM
12 AM
6 PM
6 AM
12 PM
Include dates
All days
Only the following days
Except for...
Days of week
Sun Mon Tue Wed Thu Fri Sat
2015
Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
2016
Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
Avaliable Date Range
February, June, July, and October 2015
January, February and March 2016
Matrix controls
Show all other trips that only passed through the selected geographies.
Show vehicle types
Light vehicles
Medium vehicles
Heavy vehicles
Show trips that were...
Arriving
Departing
En Route
... during selected time period.
Show trips as...
Percentages
Daily average
Total counts
Display options
Sort Origins and Destinations
In order selected
Group by
State
Display as
Total percents
Show numbers
20%
22%
25%
33%
5%
10%
19%
29%
100%


OD Data Suite
My Account | About | Log Out
Origin and Destination Matrix
Currently Using MD Data Set
SWITCH DATA SET
Selected date range June and July 2015 and March 2016 All Days of Week
Include dates
All days
Only the following days
Except for...
Available Dates
ADD DATE
Search List...
Special Dates
Select all
New Years
Martin Luther King Day
President's Day
4th of July
Halloween
My Custom Dates
Select all
Superbowl Sunday 2016
Jan 2016 Snow Storms
Days of week
Sun Mon Tue Wed Thu Fri Sat
2015
Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
2016
Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
Matrix controls
Display options
100% of Trips
80%
MATRIX OVERVIEW
estinations
Maryland
Baltimore County
Montgomery County
Total trips from selected geographies
5%
4%
20%
3%
7%
22%
6%
8%
25%
5%
10%
33%
19%
29%
100%


OD Data Suite
My Account | About | Log Out
Origin and Destination Matrix
Currently Using MD Data Set
SWITCH DATA SET
Selected date range June and July 2015 and March 2016 All Days of Week
Matrix controls
Display options
Legend
0% of Trips
100% of Trips
2%
4%
6%
8%
Gray tiles
Only trips from the MD Data Set accounted for.
MATRIX OVERVIEW
Destinations
28 of 264 geographies
Delaware
Maryland
New Jerse
CountyA CountyB CountyC CountyA CountyB CountyC CountyD CountyE CountyF CountyG CountyH CountyI CountyJ CountyK CountyL CountyM CountyN CountyO CountyP CountyQ CountyR CountyS CountyT CountyU CountyV CountyW CountyA CountyB
Origins
Delaware
CountyA 7% 1% 4% 6% 9% 4% 0% 7% 4% 9% 6% 8% 5% 2% 9% 8% 4% 5% 2% 6% 9% 2% 6% 7% 8% 6% 9% 3%
CountyB 9% 5% 0% 7% 3% 1% 0% 5% 7% 6% 9% 5% 0% 1% 6% 3% 8% 7% 4% 6% 7% 8% 0% 1% 7% 5% 0% 6%
CountyC 4% 6% 7% 0% 9% 7% 1% 3% 8% 4% 0% 0% 6% 0% 5% 5% 9% 0% 8% 7% 9% 2% 4% 8% 5% 6% 4% 7%
Maryland
CountyA 0% 5% 4% 8% 2% 4% 6% 0% 7% 1% 9% 7% 4% 6% 3% 8% 4% 7% 1% 4% 3% 9% 8% 2% 4% 9% 5% 6%
CountyB 9% 2% 6% 4% 9% 8% 0% 3% 7% 6% 4% 8% 5% 4% 2% 6% 9% 0% 2% 3% 5% 6% 6% 2% 7% 6% 9% 1%
CountyC 6% 7% 4% 8% 6% 6% 9% 3% 9% 6% 0% 8% 9% 4% 6% 1% 8% 7% 6% 2% 0% 6% 7% 9% 3% 1% 0% 4%
CountyD 0% 1% 1% 0% 9% 8% 1% 5% 8% 4% 7% 0% 9% 0% 1% 5% 9% 0% 8% 1% 6% 2% 4% 8% 6% 5% 7% 7%
CountyE 0% 3% 6% 4% 0% 3% 8% 2% 8% 2% 9% 2% 2% 0% 6% 4% 3% 7% 2% 1% 3% 4% 8% 2% 0% 2% 3% 9%
CountyF 6% 2% 0% 4% 5% 8% 6% 9% 7% 1% 7% 5% 3% 8% 4% 0% 6% 8% 1% 0% 7% 9% 0% 7% 4% 6% 5% 1%
CountyG 4% 8% 2% 6% 7% 3% 7% 6% 8% 0% 6% 8% 7% 1% 1% 4% 0% 9% 7% 8% 2% 6% 5% 0% 1% 8% 4% 6%
CountyH 5% 7% 6% 8% 0% 4% 9% 0% 6% 3% 2% 4% 0% 8% 6% 9% 6% 2% 1% 5% 4% 0% 4% 9% 1% 2% 9% 3%
CountyI 9% 1% 9% 8% 5% 2% 6% 7% 4% 7% 8% 6% 4% 9% 2% 5% 6% 7% 7% 4% 3% 1% 6% 6% 5% 5% 7% 7%
CountyJ 2% 3% 4% 6% 7% 9% 7% 5% 3% 9% 4% 5% 1% 7% 5% 9% 3% 2% 5% 7% 8% 1% 0% 4% 9% 7% 8% 0%
14 of 264 geographies


OD Data Suite
My Account | About | Log Out
Origin and Destination Matrix
Currently Using MD Data Set
SWITCH DATA SET
Selected date range June and July 2015 and March 2016 All Days of Week
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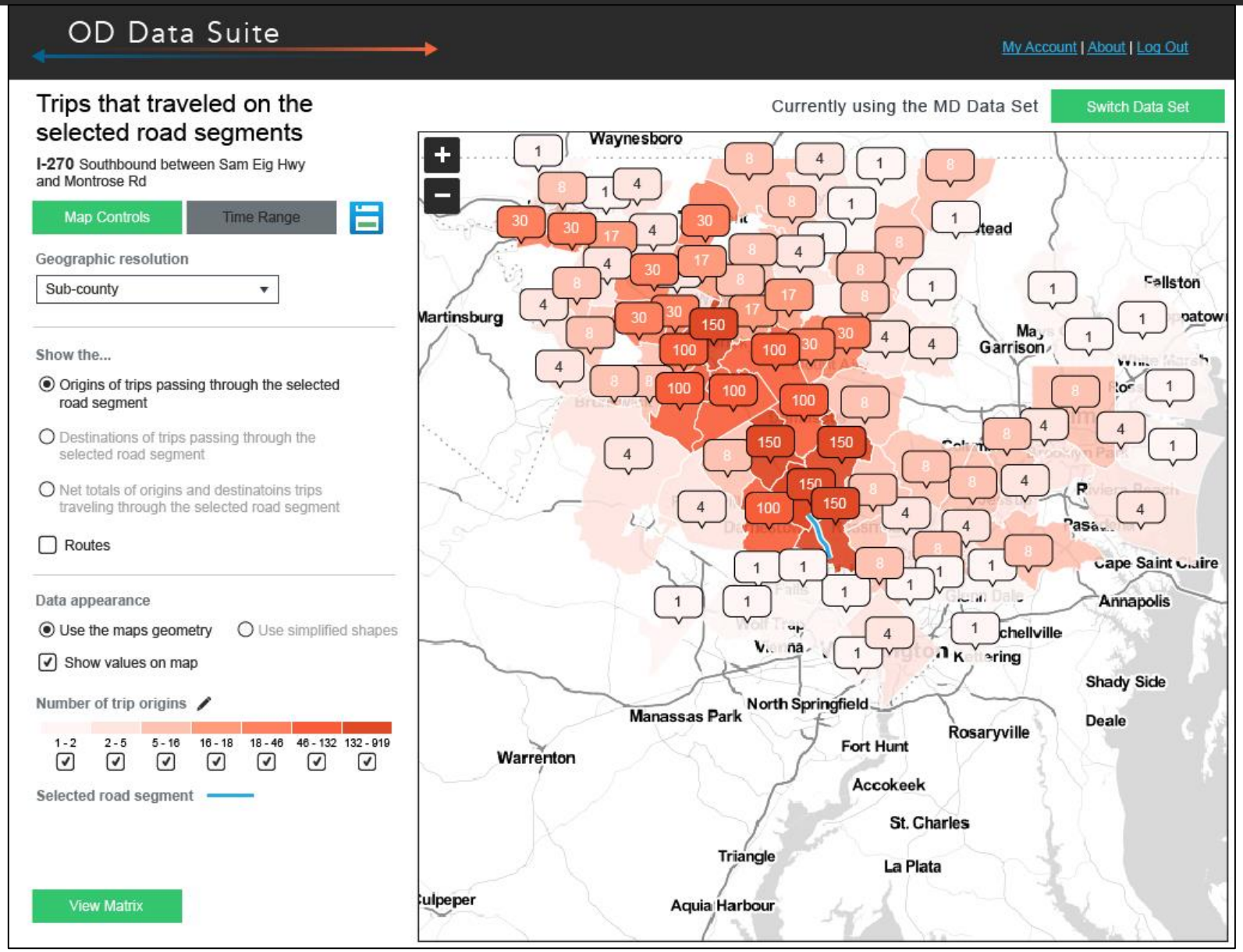
CountyK
CountyL
CountyM
CountyN
CountyO
CountyP
CountyQ
CountyR
CountyS
CountyT
CountyU
CountyV
CountyW
Origins
14 of 264 geographies

# Visualizing roadway segment trip O-Ds


OD Data Suite
My Account | About | Log Out
Trips that traveled on the selected road segments
I-270 Southbound between Sam Eig Hwy and Montrose Rd
Map Controls
Time Range
Geographic resolution
Sub-county
Show the...
Origins of trips passing through the selected road segment
Destinations of trips passing through the selected road segment
Net totals of origins and destinatoins trips traveling through the selected road segment
Routes
Data appearance
Use the maps geometry
Use simplified shapes
Show values on map
Number of trip origins
1 - 2
2 - 5
5 - 16
16 - 18
18 - 46
46 - 132
132 - 919
Selected road segment
View Matrix
Currently using the MD Data Set
Switch Data Set
Waynesboro
Martinsburg
Garrison
Annapolis
Shady Side
Deale
Rosaryville
North Springfield
Manassas Park
Warrenton
Fort Hunt
Accokeek
St. Charles
Triangle
La Plata
Aquia Harbour

OD Data Suite

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## Trips that traveled on the selected road segments

**I-270** Southbound between Sam Eig Hwy and Montrose Rd

Map Controls | Time Range

Geographic resolution

Sub-county

Show the...

- (•) Origins of trips passing through the selected road segment
- ( ) Destinations of trips passing through the selected road segment
- ( ) Net totals of origins and destinatoins trips traveling through the selected road segment

[ ] Routes

Data appearance

(•) Use the maps geometry ( ) Use simplified shapes

[✓] Show values on map

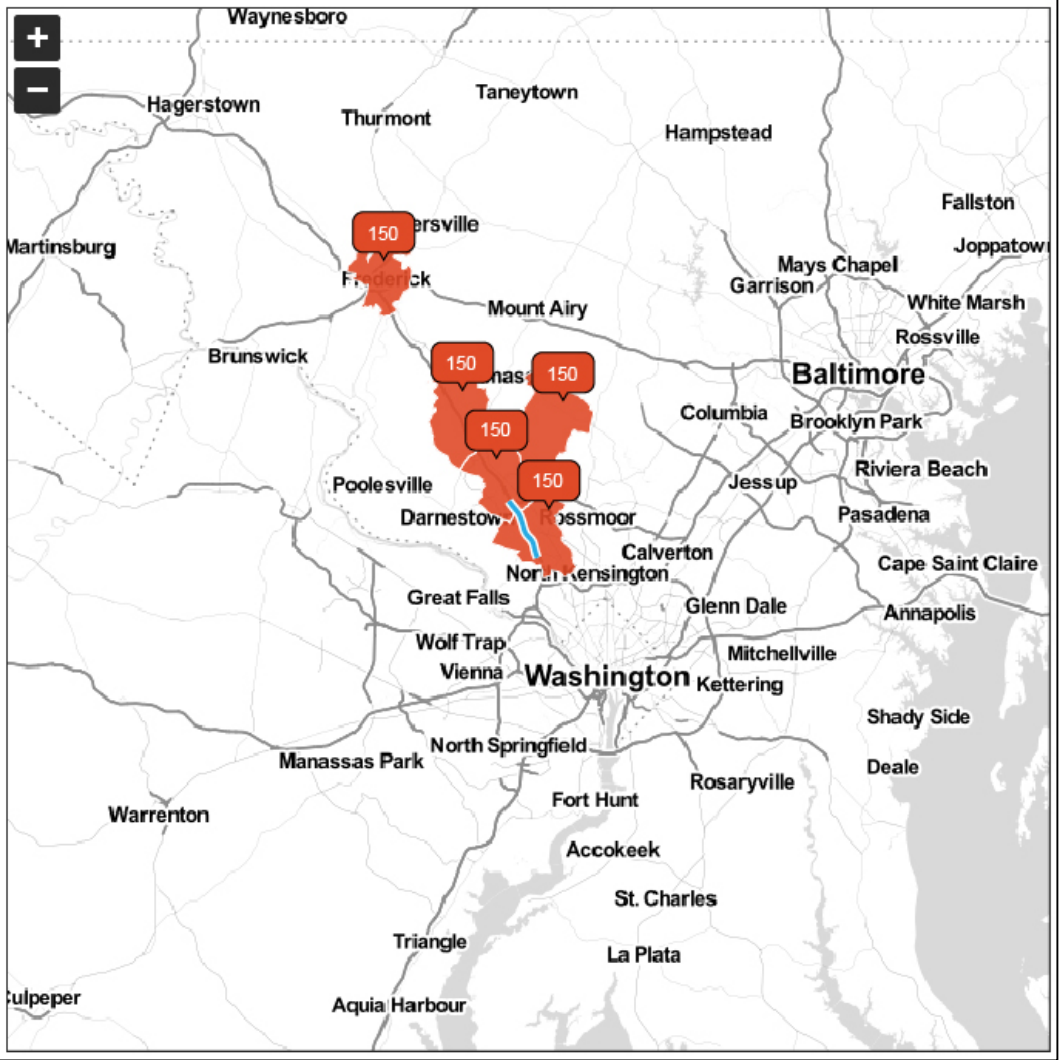
Number of trip origins

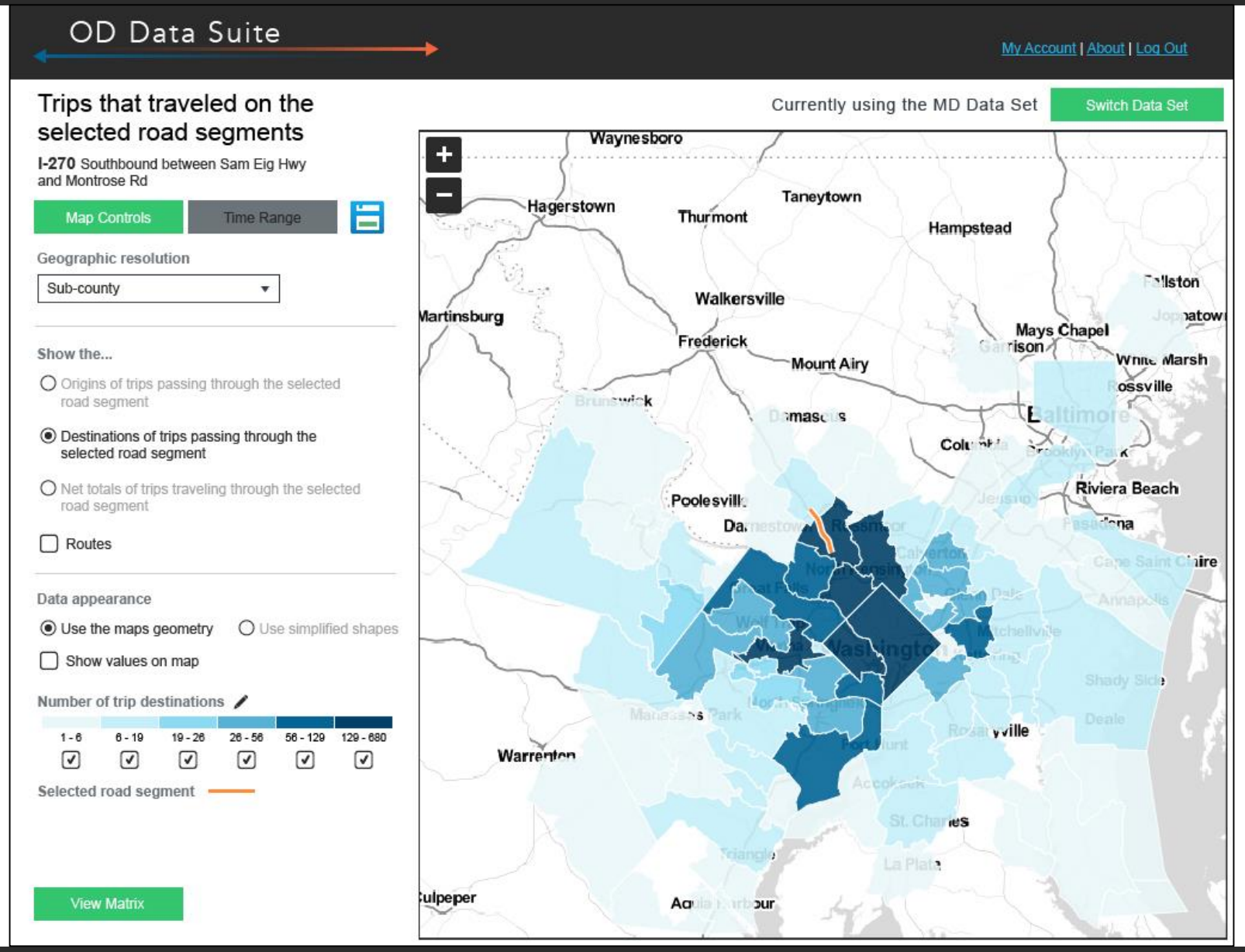
| 1 - 2 | 2 - 5 | 5 - 16 | 16 - 18 | 18 - 46 | 46 - 132 | 132 - 919 |
|---|---|---|---|---|---|---|
| [ ] | [ ] | [ ] | [ ] | [ ] | [ ] | [✓] |

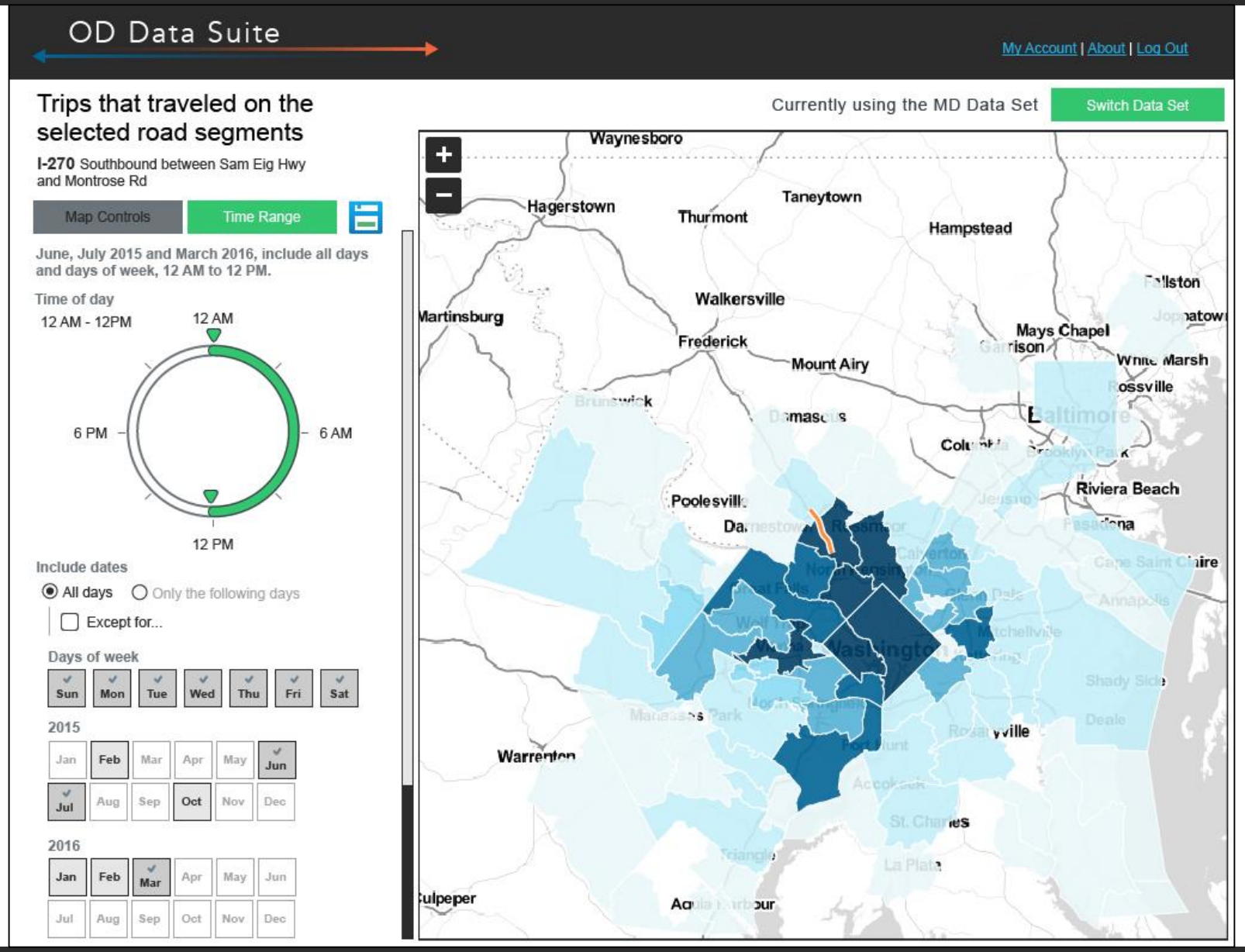
Selected road segment

View Matrix

Currently using the MD Data Set | Switch Data Set




OD Data Suite
My Account | About | Log Out
Trips that traveled on the selected road segments
I-270 Southbound between Sam Eig Hwy and Montrose Rd
Map Controls
Time Range
Geographic resolution
Sub-county
Show the...
Origins of trips passing through the selected road segment
Destinations of trips passing through the selected road segment
Net totals of trips traveling through the selected road segment
Routes
Data appearance
Use the maps geometry
Use simplified shapes
Show values on map
Number of trip destinations
1 - 6
6 - 19
19 - 26
26 - 56
56 - 129
129 - 680
Selected road segment
View Matrix
Currently using the MD Data Set
Switch Data Set
Waynesboro
Hagerstown
Thurmont
Taneytown
Hampstead
Walkersville
Frederick
Mount Airy
Mays Chapel
Riviera Beach
Warrenton


OD Data Suite
My Account | About | Log Out
Trips that traveled on the selected road segments
I-270 Southbound between Sam Eig Hwy and Montrose Rd
Map Controls
Time Range
June, July 2015 and March 2016, include all days and days of week, 12 AM to 12 PM.
Time of day
12 AM - 12PM
12 AM
6 AM
12 PM
6 PM
Include dates
All days
Only the following days
Except for...
Days of week
Sun Mon Tue Wed Thu Fri Sat
2015
Jan Feb Mar Apr May Jun
Jul Aug Sep Oct Nov Dec
2016
Jan Feb Mar Apr May Jun
Jul Aug Sep Oct Nov Dec
Currently using the MD Data Set
Switch Data Set
Waynesboro
Hagerstown
Thurmont
Taneytown
Hampstead
Walkersville
Frederick
Mount Airy
Mays Chapel
Riviera Beach
Warrenton

OD Data Suite

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Trips that traveled on the selected road segments

**I-270** Southbound between MD-109 and Montrose Rd

Map Controls | Time Range

Geographic resolution

Sub-county

Show individual segments

Show the...

- Origins of trips passing through the selected road segment
- Destinations of trips passing through the selected road segment
- Net totals of origins and destinatoins trips traveling through the selected road segment

Routes

Data appearance

Use the maps geometry | Use simplified shapes

Show values on map

Number of trip origins

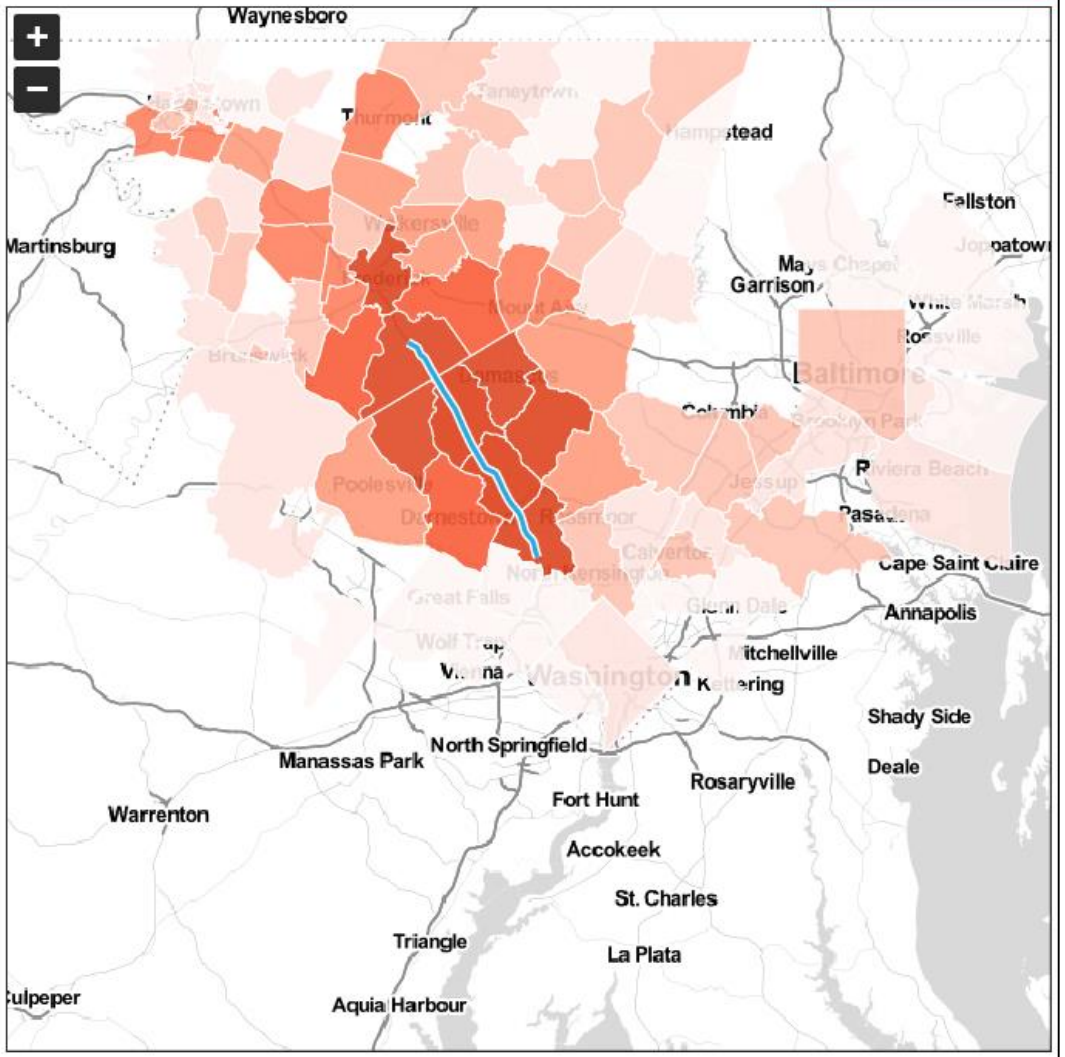
| 1 - 2 | 2 - 5 | 5 - 16 | 16 - 18 | 18 - 46 | 46 - 132 | 132 - 919 |
|---|---|---|---|---|---|---|
| ☑ | ☑ | ☑ | ☑ | ☑ | ☑ | ☑ |

Selected road segment

View Matrix

Currently using the MD Data Set

Switch Data Set



OD Data Suite

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Trips that traveled on the selected road segments

**I-270** Southbound between MD-109 and Montrose Rd

Map Controls | Time Range

Geographic resolution

Sub-county

Show individual segments

Segment 5

Show the...

- Origins of trips passing through the selected road segment
- Destinations of trips passing through the selected road segment
- Net totals of origins and destinatoins trips traveling through the selected road segment

Routes

Data appearance

Use the maps geometry | Use simplified shapes

Show values on map

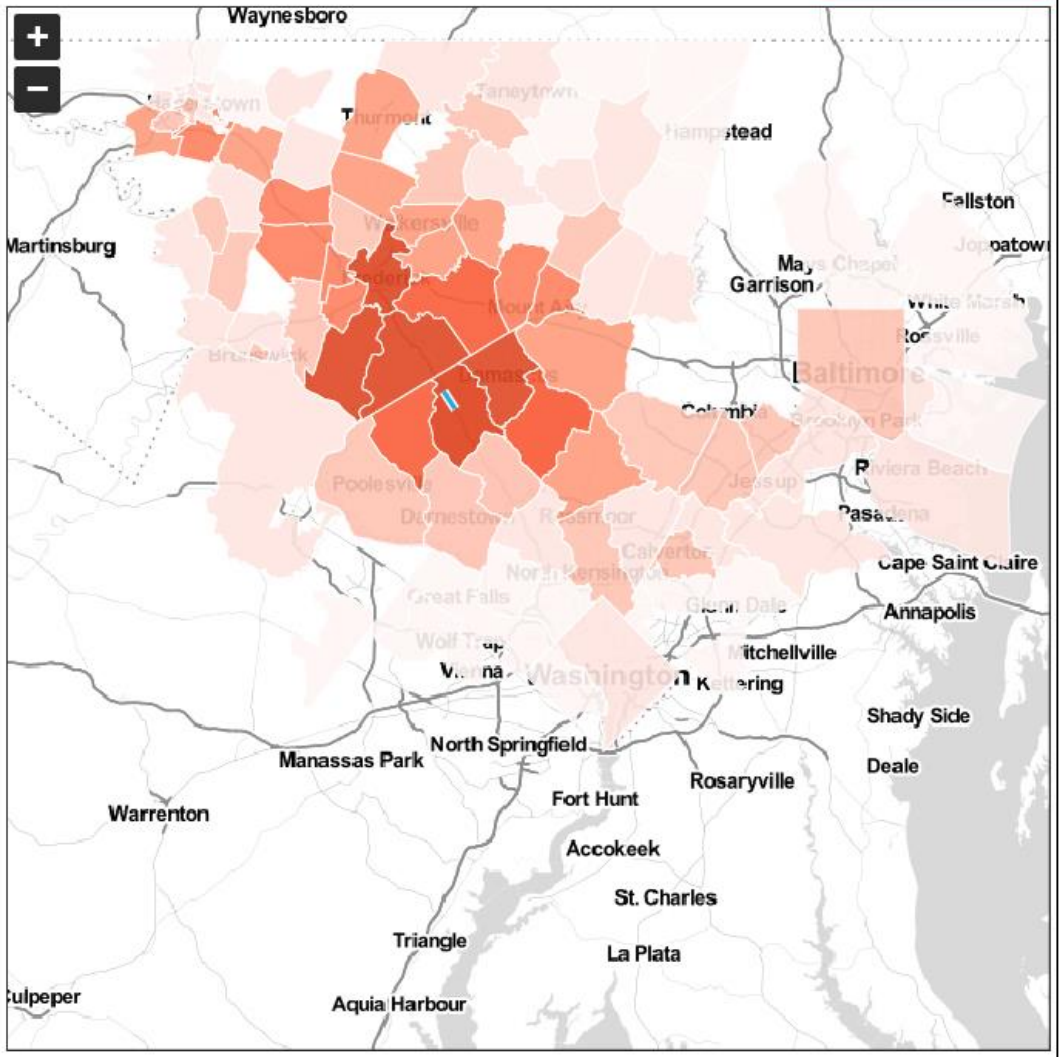
Number of trip origins

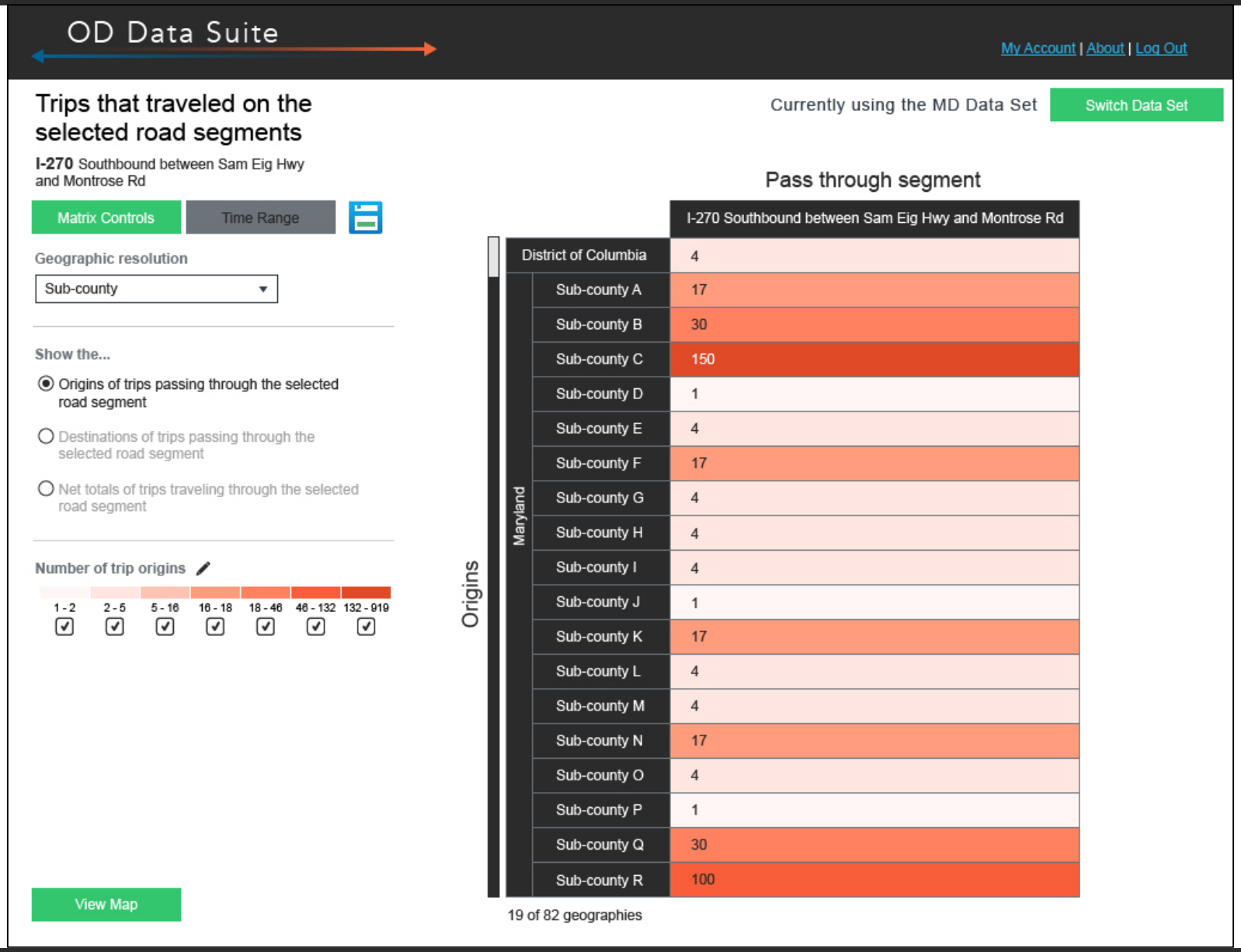
| 1 - 2 | 2 - 5 | 5 - 16 | 16 - 18 | 18 - 46 | 46 - 132 | 132 - 919 |
|---|---|---|---|---|---|---|
| ☑ | ☑ | ☑ | ☑ | ☑ | ☑ | ☑ |

Selected road segment

View Matrix

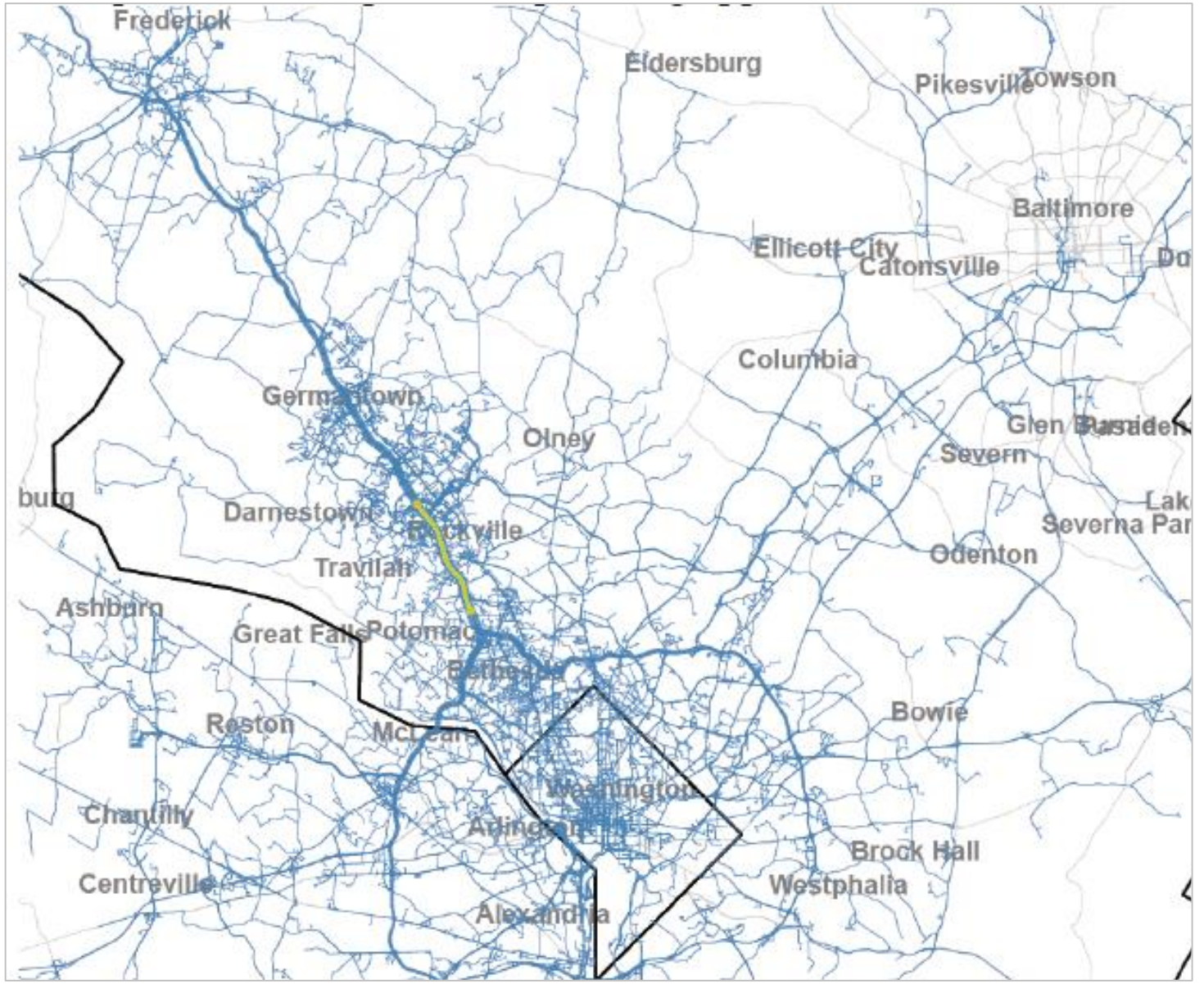
Currently using the MD Data Set | Switch Data Set



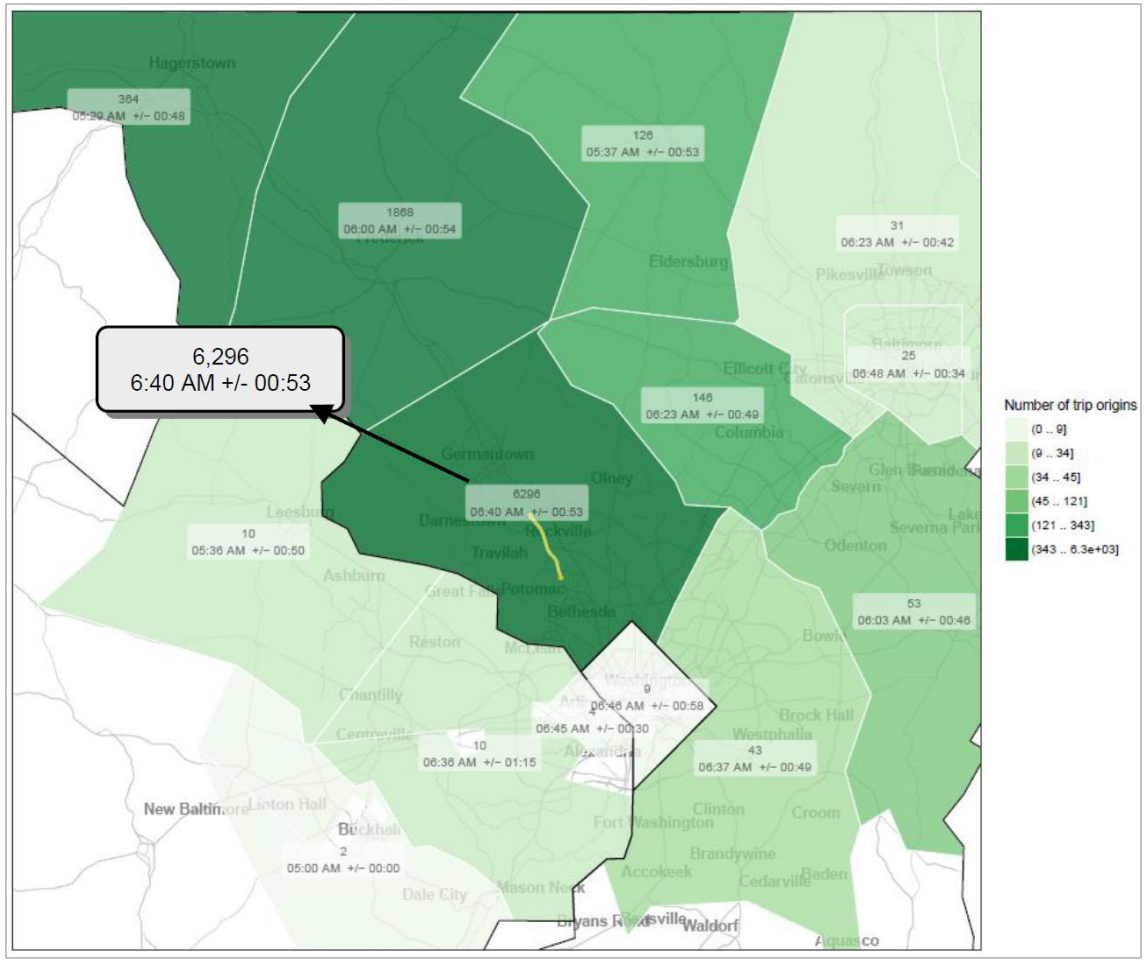

OD Data Suite
My Account | About | Log Out
Trips that traveled on the selected road segments
I-270 Southbound between Sam Eig Hwy and Montrose Rd
Matrix Controls
Time Range
Geographic resolution
Sub-county
Show the...
Origins of trips passing through the selected road segment
Destinations of trips passing through the selected road segment
Net totals of trips traveling through the selected road segment
Number of trip origins
1 - 2
2 - 5
5 - 16
16 - 18
18 - 46
46 - 132
132 - 919
View Map
Currently using the MD Data Set
Switch Data Set
Pass through segment
I-270 Southbound between Sam Eig Hwy and Montrose Rd
Origins
Maryland
District of Columbia 4
Sub-county A 17
Sub-county B 30
Sub-county C 150
Sub-county D 1
Sub-county E 4
Sub-county F 17
Sub-county G 4
Sub-county H 4
Sub-county I 4
Sub-county J 1
Sub-county K 17
Sub-county L 4
Sub-county M 4
Sub-county N 17
Sub-county O 4
Sub-county P 1
Sub-county Q 30
Sub-county R 100
19 of 82 geographies

# Other potential visuals

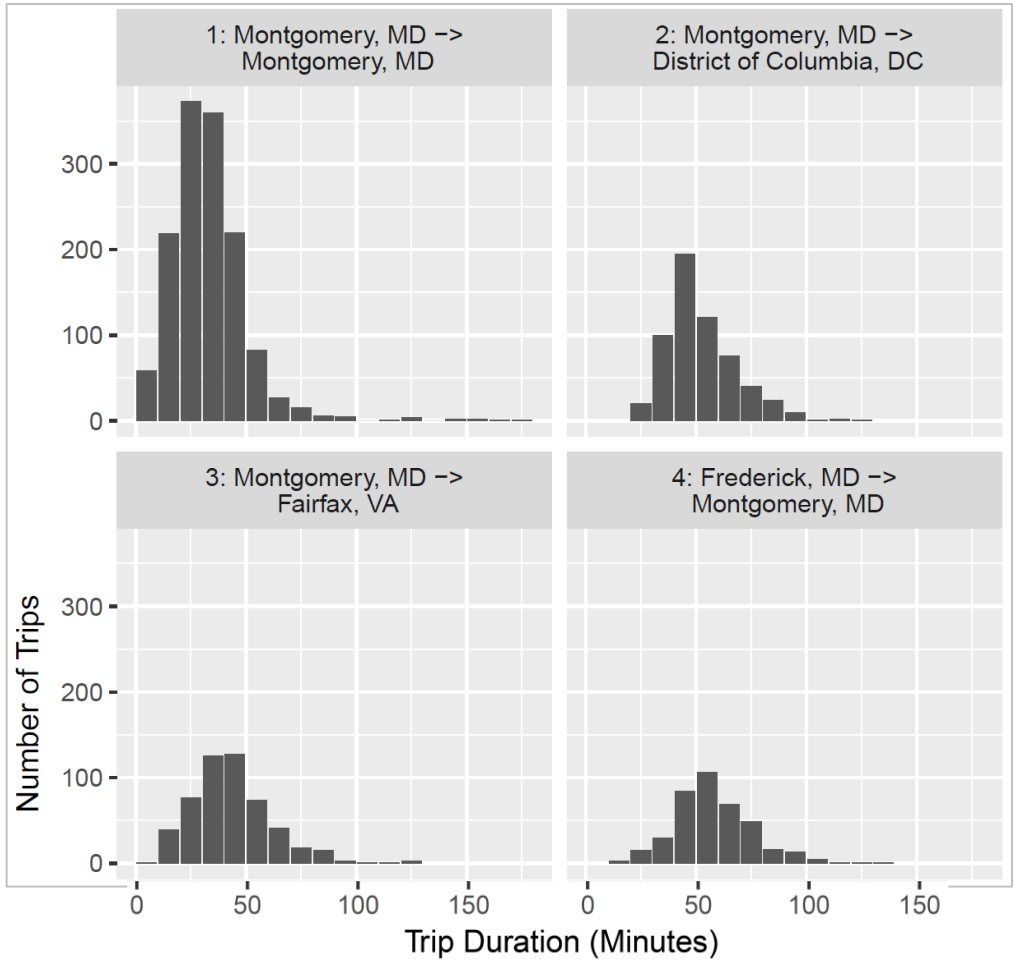
- Map displaying routes used with line thickness representing route use frequency
- Filter for segments with:
  - top XX% of routes
  - YYY trips or greater



# Other potential visuals



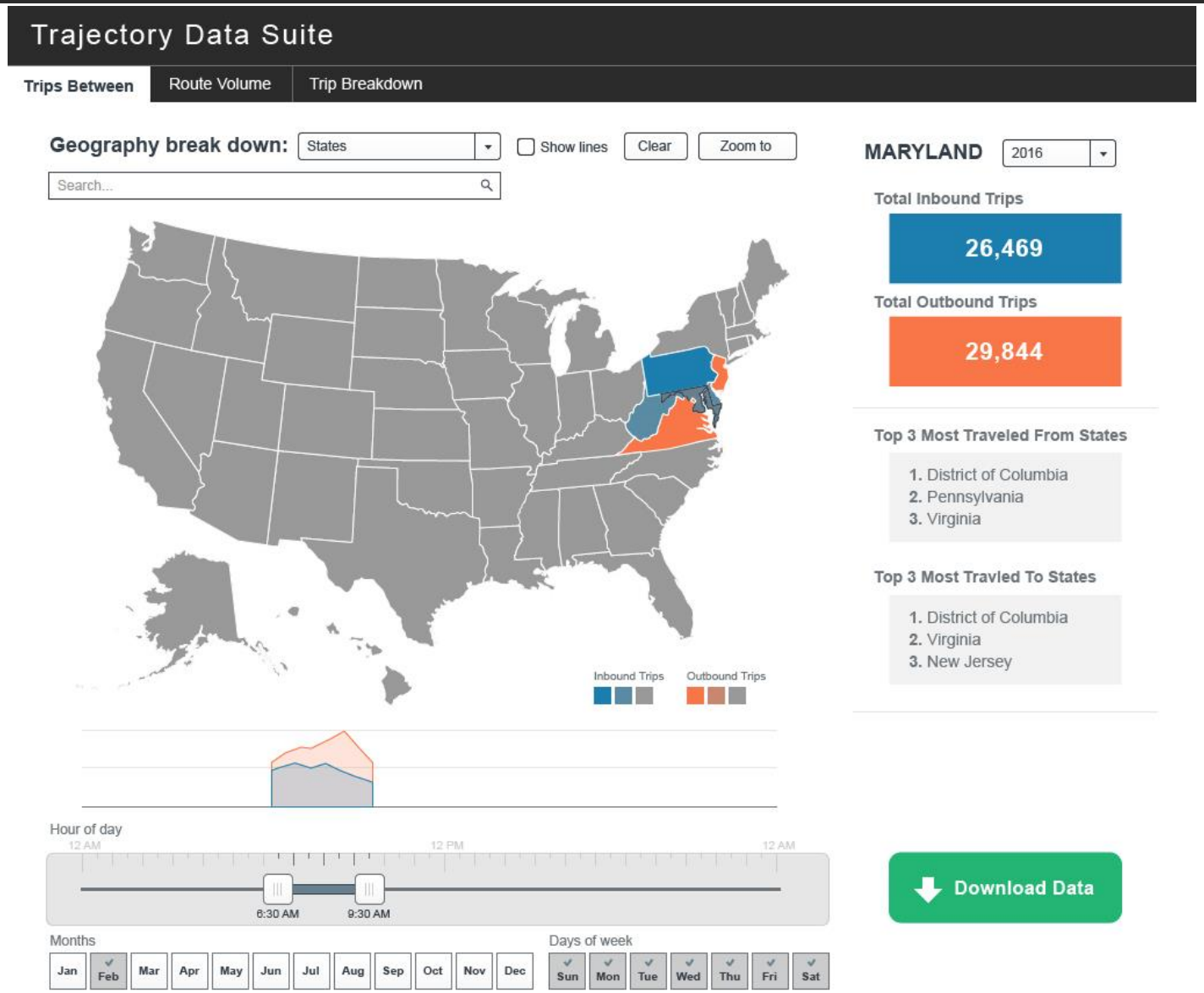

Display Average Trip Departure Stats

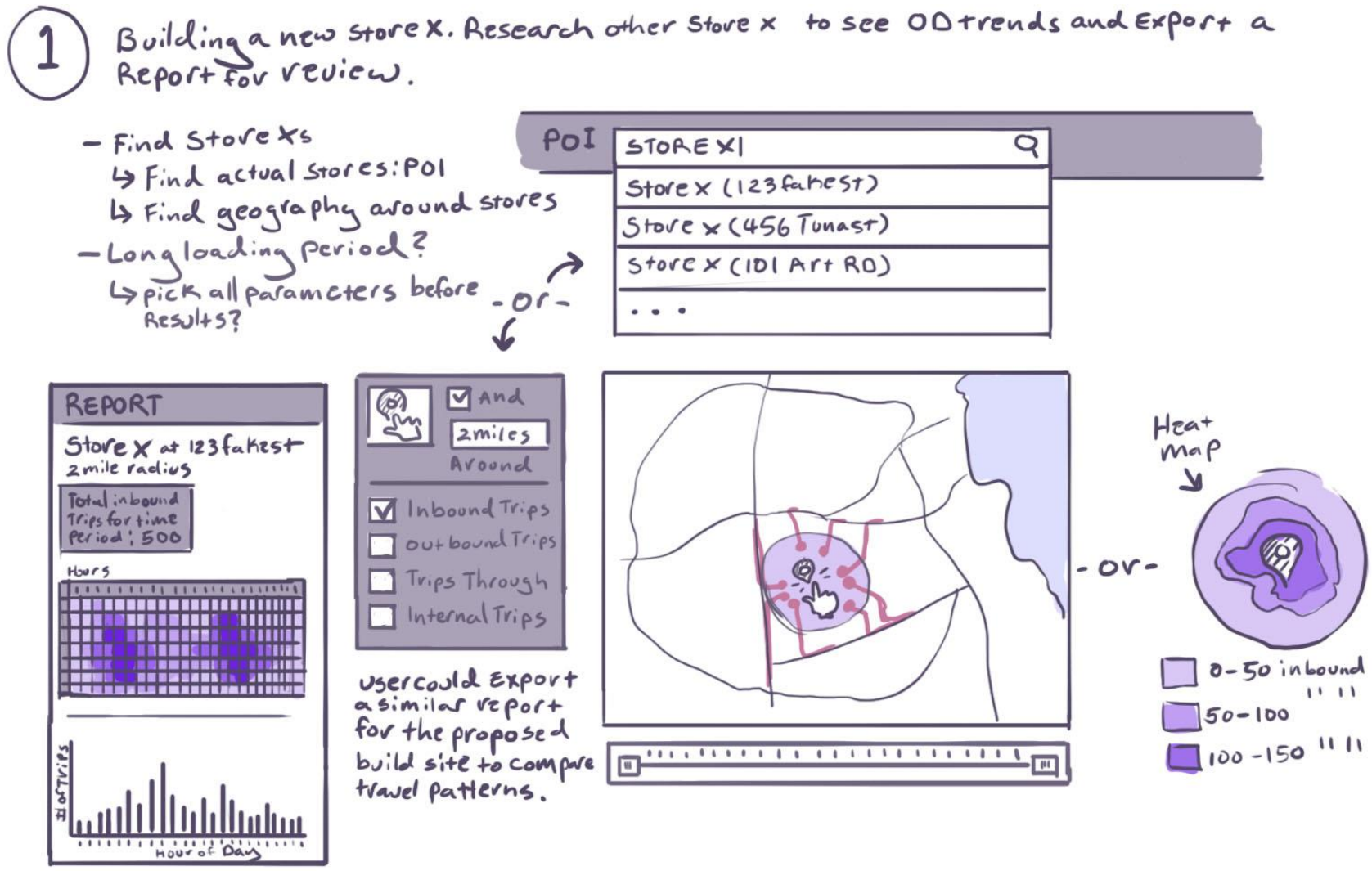



View O-D Pair Trip Duration Histograms

# Your Input / Brainstorming

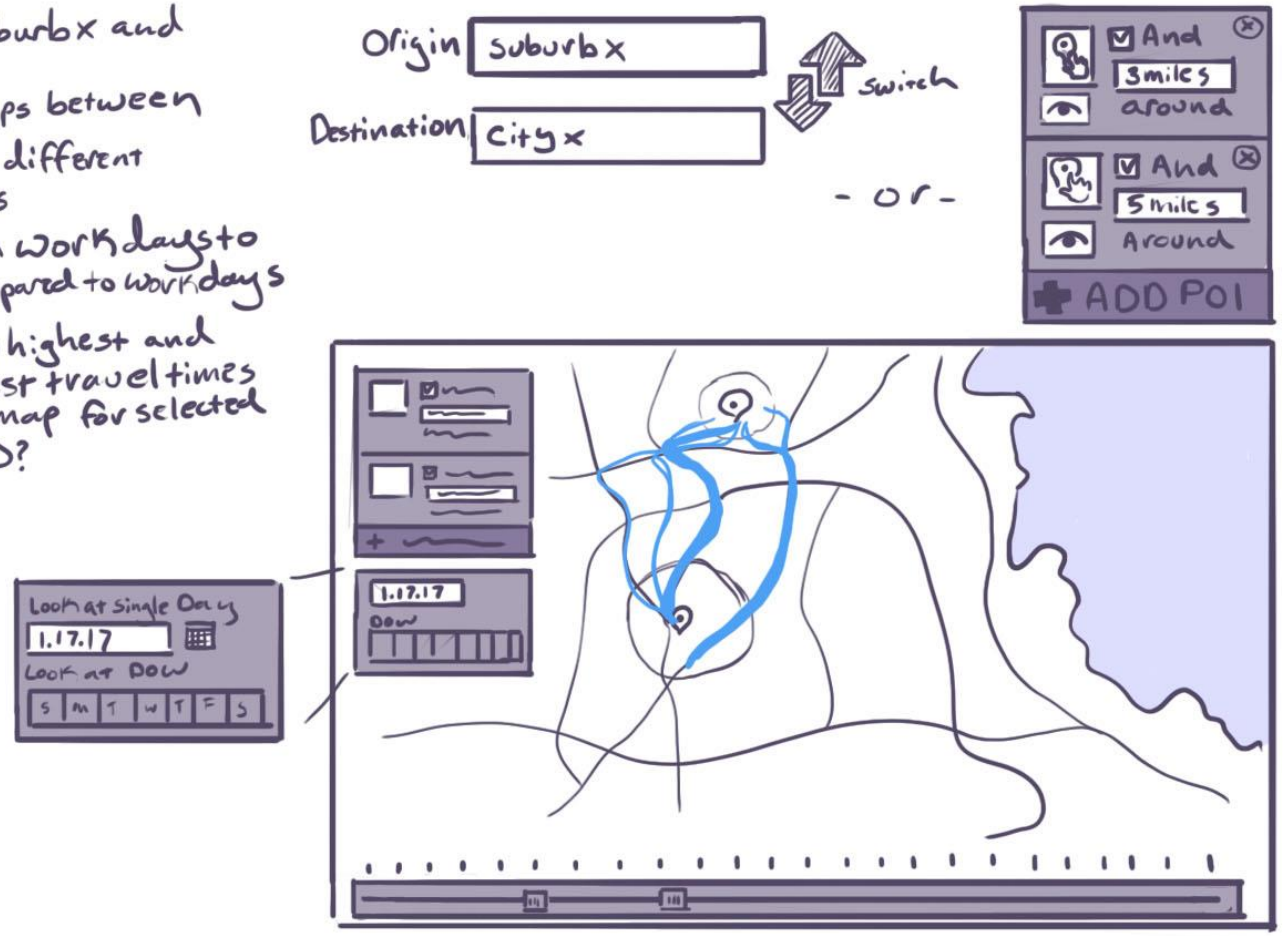
(All)

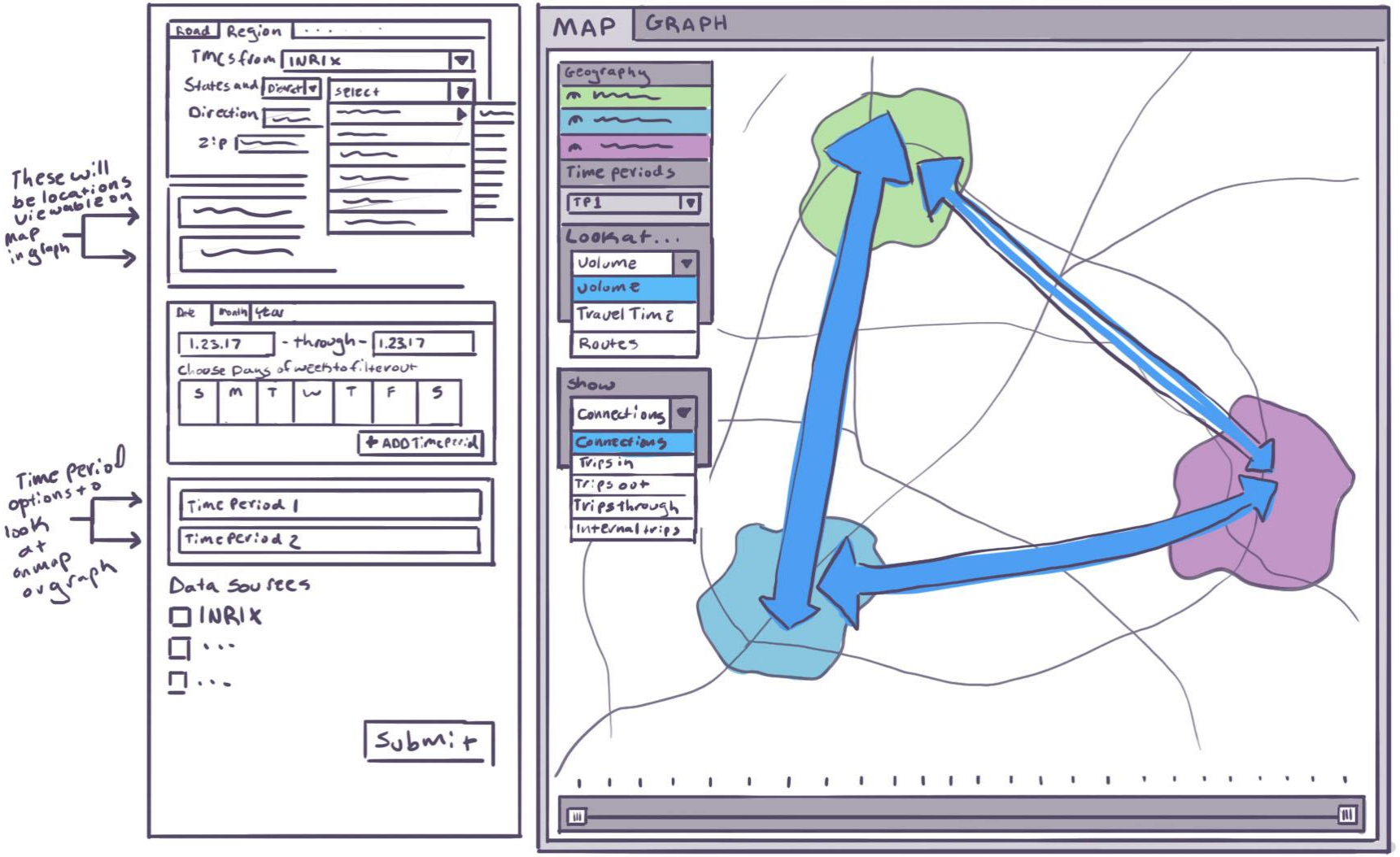

Trajectory Data Suite
Trips Between
Route Volume
Trip Breakdown
Geography break down:
States
Show lines
Clear
Zoom to
Search...
Inbound Trips
Outbound Trips
Hour of day
12 AM
12 PM
12 AM
6:30 AM
9:30 AM
Months
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec
Days of week
Sun
Mon
Tue
Wed
Thu
Fri
Sat
MARYLAND
2016
Total Inbound Trips
26,469
Total Outbound Trips
29,844
Top 3 Most Traveled From States
1. District of Columbia
2. Pennsylvania
3. Virginia
Top 3 Most Traveled To States
1. District of Columbia
2. Virginia
3. New Jersey
Download Data


1
Building a new store X. Research other store x to see OD trends and Export a Report for review.
- Find Store Xs
↳ Find actual stores: POI
↳ Find geography around stores
- Long loading period?
↳ pick all parameters before Results?
-or-
POI
STORE X|
Store x (123 fakest)
Store x (456 Tunast)
Store x (101 Art RD)
. . .
REPORT
Store X at 123 fakest 2 mile radius
Total inbound Trips for time period: 500
Hours
# of Trips
Hour of Day
And
2 miles
Around
Inbound Trips
outbound Trips
Trips Through
Internal Trips
user could Export a similar report for the proposed build site to compare travel patterns.
-or-
Heat Map
0-50 inbound
50-100
100-150

(2) Track peak hour trips between suburbx to Cityx to see what kind of impact telework options for employees would have on rush hour.

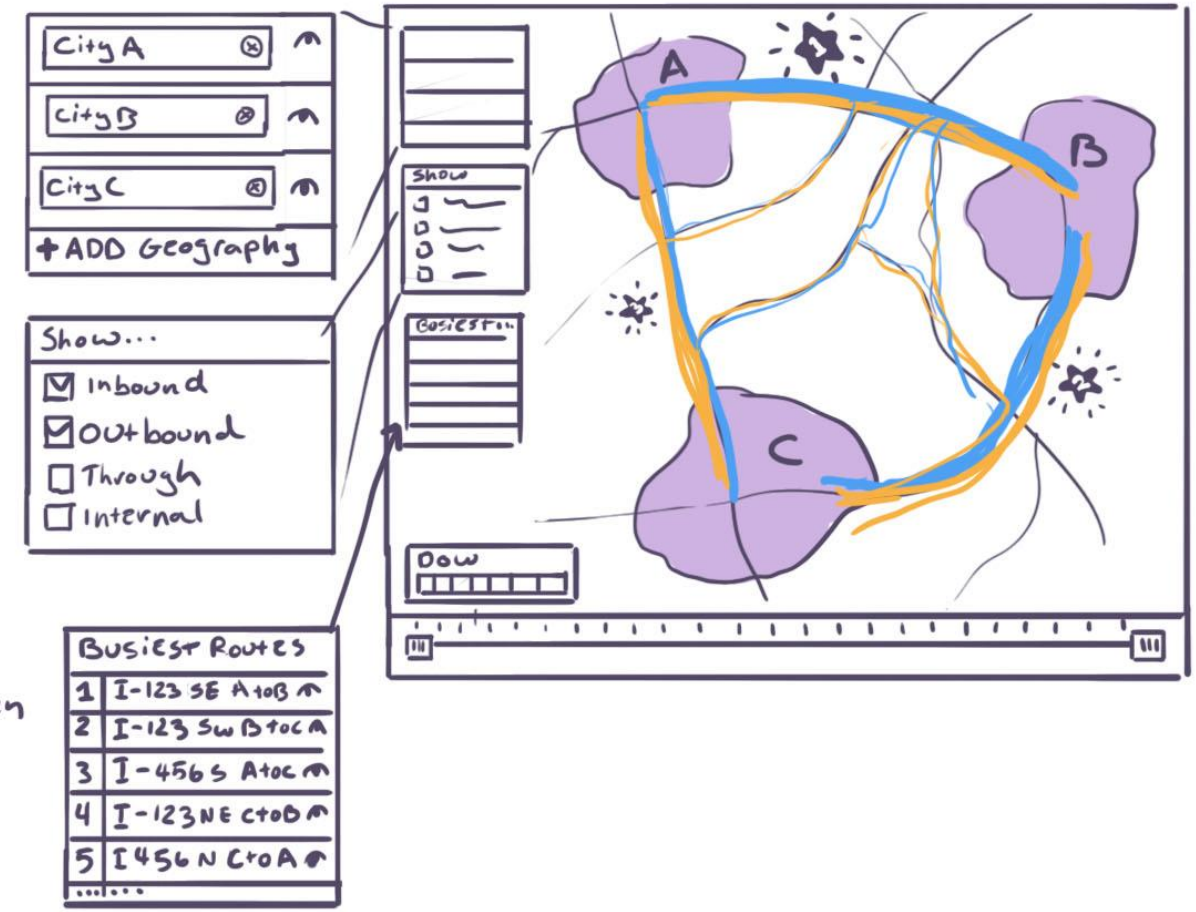
- Select suburbx and Cityx
  - ↳ view trips between
- view two different rush hours
- Pick non work days to view compared to work days
  - ↳ Show highest and lowest travel times on map for selected ToD?




These will be locations viewable on map in graph
Road
Region
TMCs from
INRIX
States and
Direct
select
Direction
Zip
Date
Month
Year
1.23.17
- through -
1.23.17
Choose Days of week to filter out
S M T W T F S
+ ADD Time Period
Time Period options to look at on map or graph
Time Period 1
Time Period 2
Data Sources
INRIX
MAP
GRAPH
Geography
Time Periods
TP1
Look at...
Volume
Volume
Travel Time
Routes
Show
Connections
Connections
Trips in
Trips out
Trips through
Internal trips

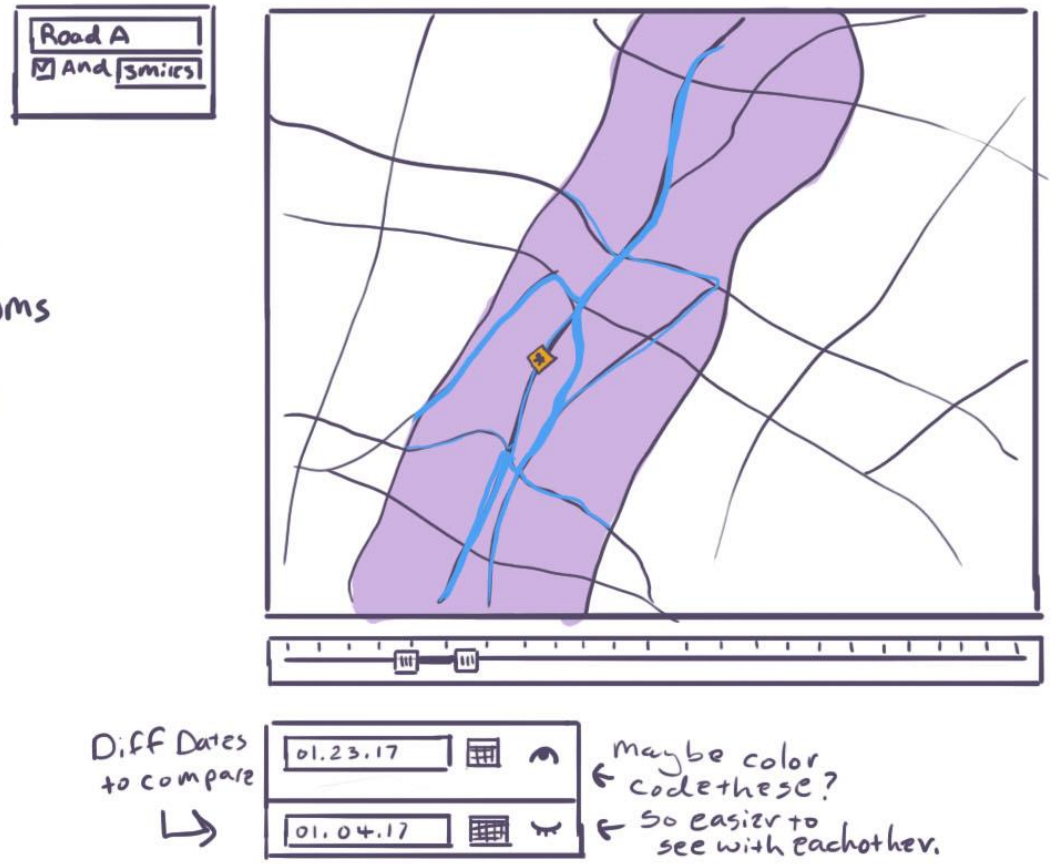
(3) Want to develop a commuter rail between 3 cities (connected by interstates currently). Help determine which of the 3 phases (city to city to city) would be most beneficial in what order.

- Select 3 different cities
  - ↳ may want to look at diff highlighted combos
    - city A + B
    - city B + c
    - city A
    - ...
- look at Diff times of Day and days of week
- see trips between All 3 cities
  - ↳ or specifically interstates between them.
    - ID top routes between cities somewhere.
      - ↳ Rank them?



(5) Road work or DMs impact on normal Routes.

- Pick an area around Road with RW/DMs
  - ↳ Picking just the road seems like it won't yield much info
- Compare a time period during and before RW/DMs
- See where traffic moves to.



# Wrap-up & Next Steps

(All)

# Wrap-up / Next Steps

- **For the group**
  - Summarize the meeting discussion
  - Send minutes out to group members for review, comment and approval
  - Share highlights with the PDA User Group at the next meeting
- **For the Lab**
  - Consider any suggestions to help refine features, functions and results (visuals, tables, etc.)
  - Use additional insight to help define and prioritize future tool development and deploy

# Thanks for participating!

For more information, please contact:

John Allen
Center for Advanced Transportation Technology Laboratory
jallen35@umd.edu | 215.666.3057 (c)