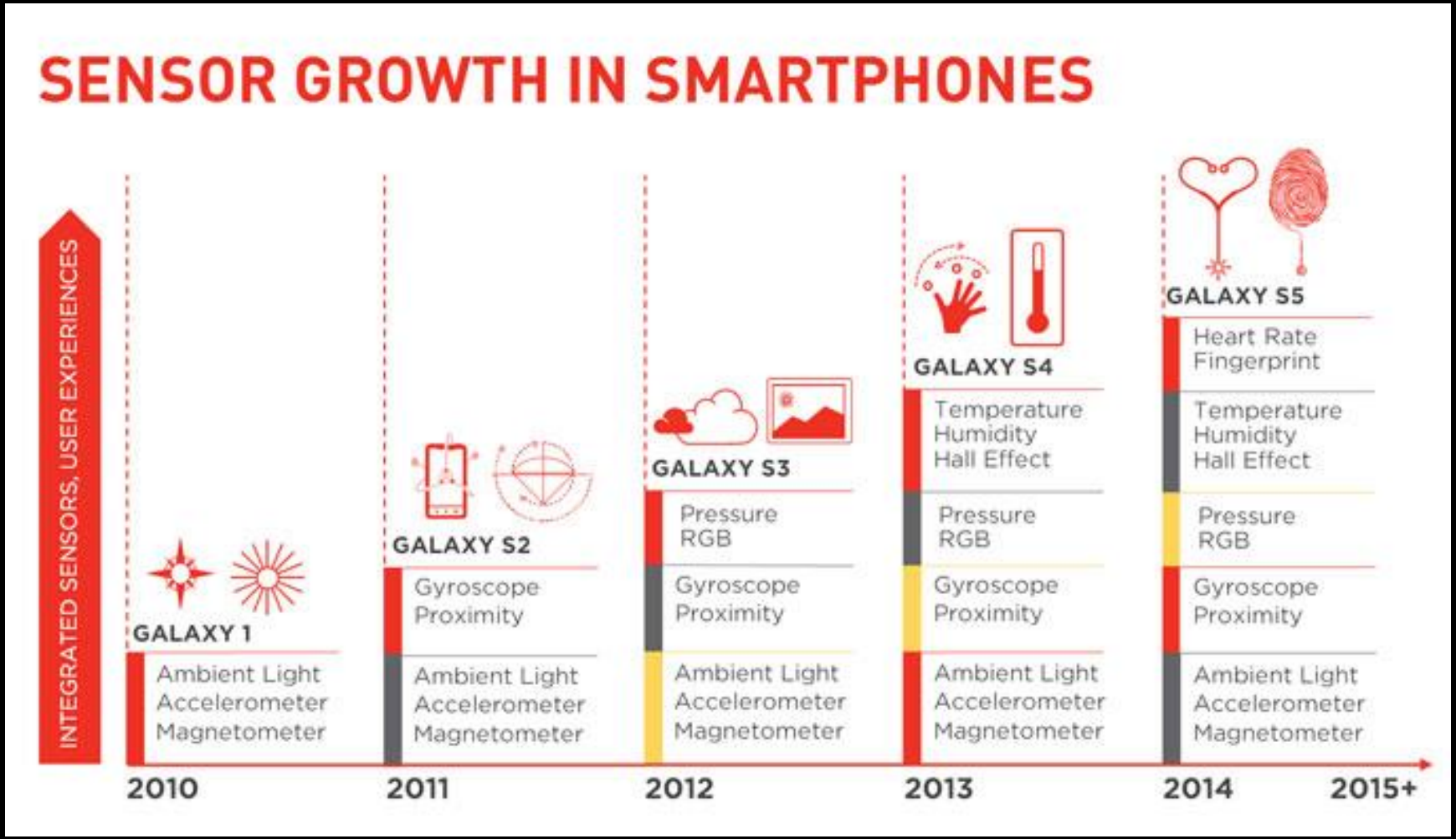
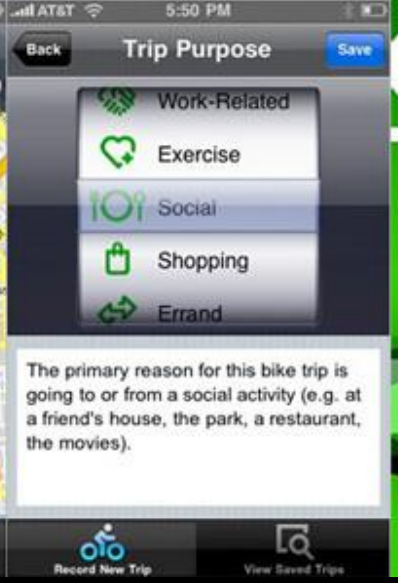
CyclePhilly: Development, Deployment, Data, and (future) Directions

Cassidy Boulan, AICP
Will Tsay
dvrpc

May 12, 2015

Smarter Phones





- 2009-2013
- Understand needs and prioritize infrastructure
- Use to create a bicycle route choice model
- Information about plan implementation

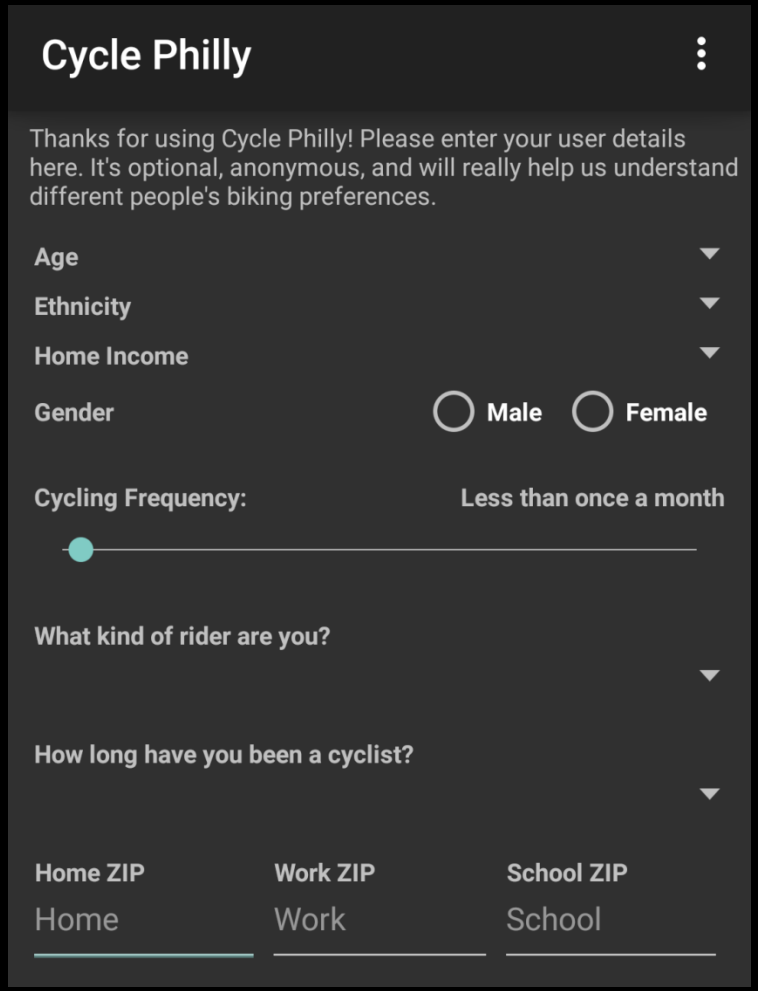
- Austin
- Raleigh
- Minneapolis/St. Paul
- Seattle
- Salt Lake City
- Toronto
- Los Angeles

CODE FOR PHILLY + dvrpc =

Improvements: better anonymization, bike to transit, interest in the entire region

User Demographics

- User Characteristics
  - Age
  - Ethnicity
  - Gender
  - Income (Household)
- Cycling Frequency
- Cyclist Classification
- Cycling History



84% 10:47 AM

Cycle Philly

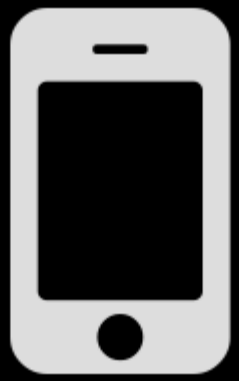
Start Trip!

Weather Alert:
Clear throughout the day.

41 saved trips:

Exercise	**7/12/14 1:36 PM**
6.9 miles, 42 minutes.	
Errand	**7/12/14 1:26 PM**
0.9 miles, 7 minutes.	
Exercise	**7/6/14 10:38 AM**
2.0 miles, 14 minutes.	
Exercise	**7/6/14 10:02 AM**
0.8 miles. 33 minutes.	

Data Collection Flow



Cycle Philly

User starts recording their trip

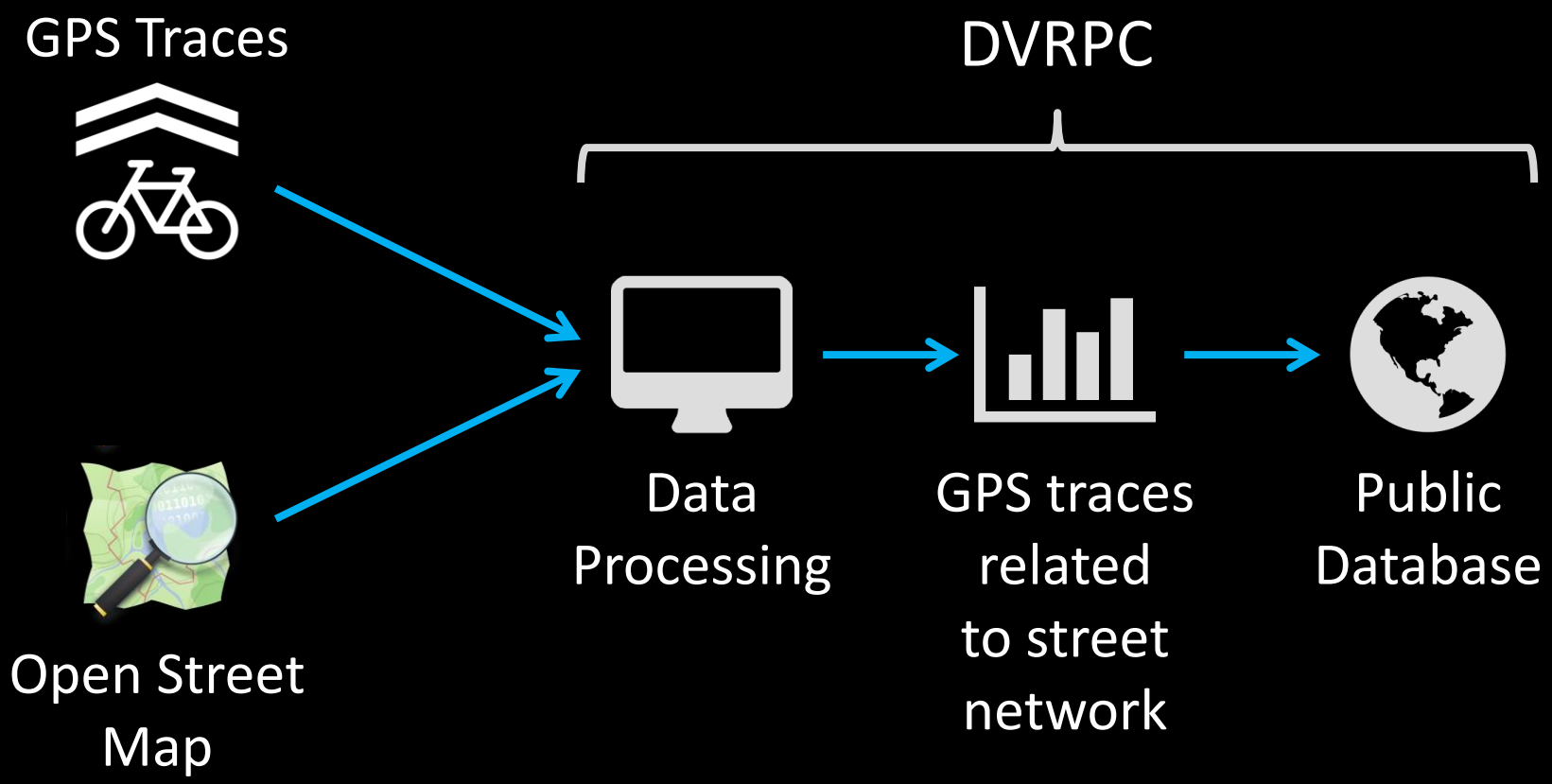
GPS Tracking

App records time-stamped geographic coordinates

Data Upload

Once the trip is completed, recorded data is uploaded

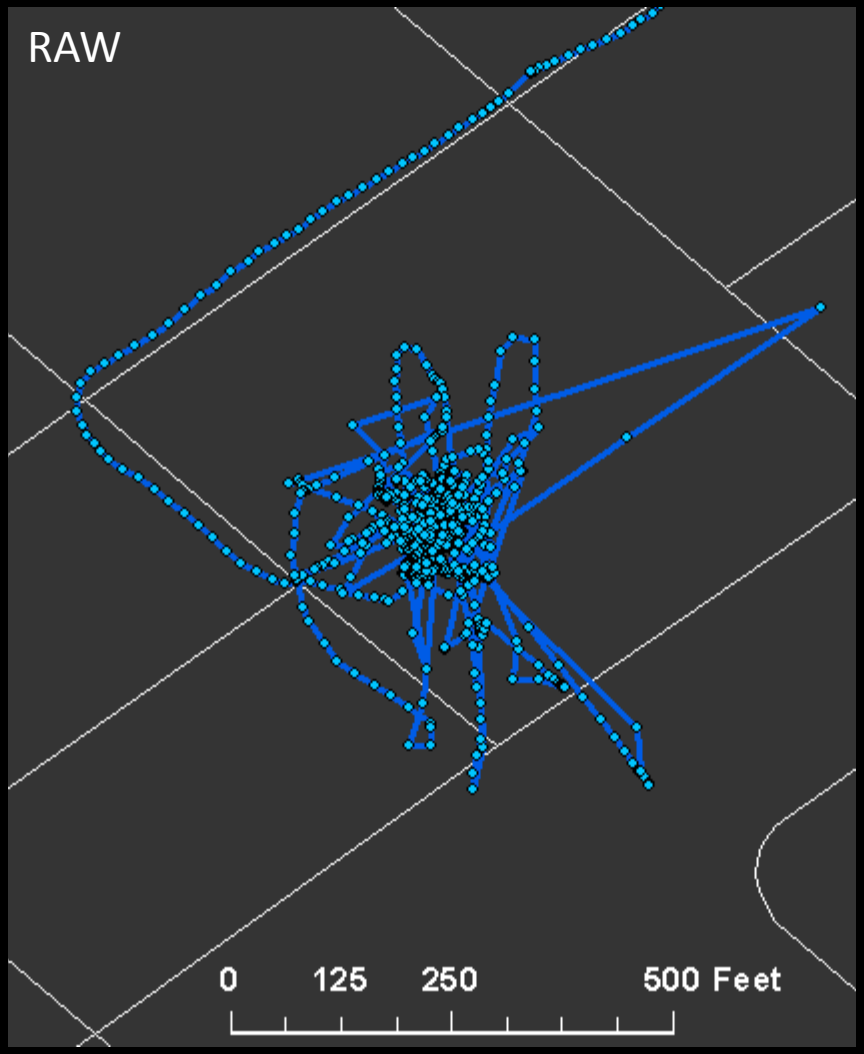
Data Processing Flow

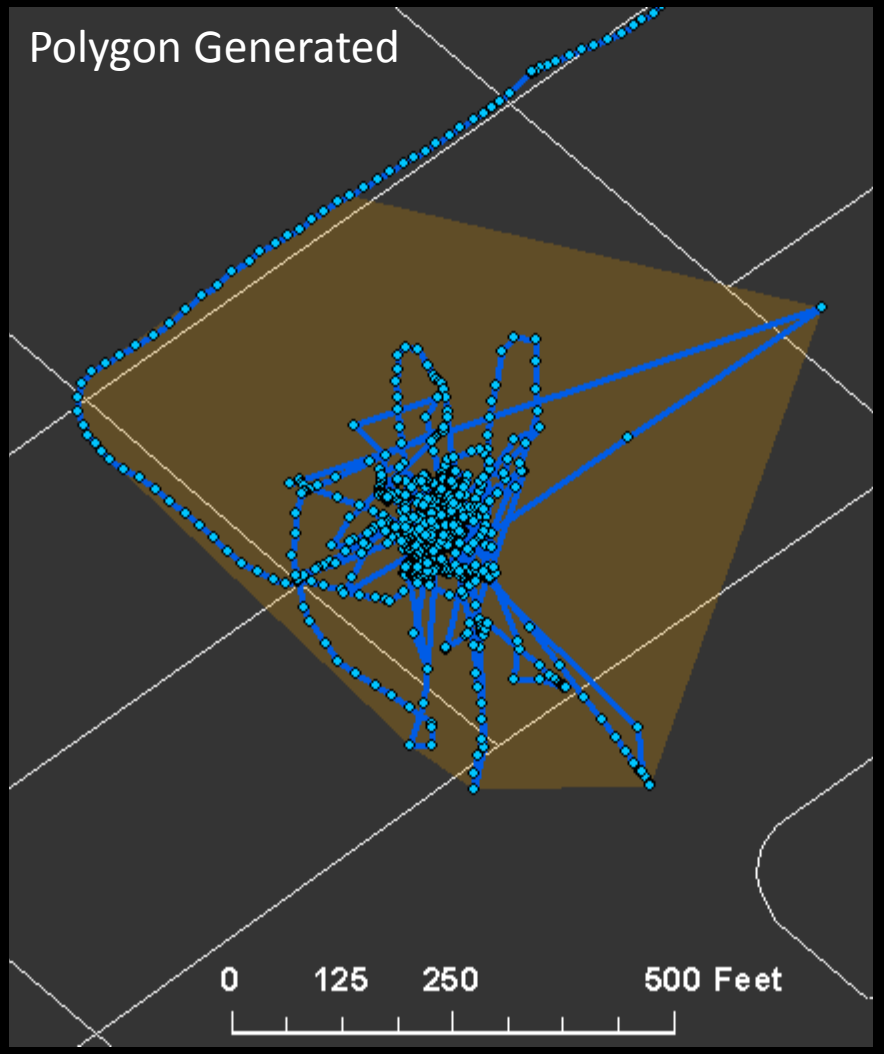


Handling Raw Data

- GPS accuracy variability
  - Urban (Street) Canyon
  - Obscured line of sight
- Anonymization concerns
- Accidental multi-modal trips
- … other unspecified strangeness

Cleaning & Anonymization





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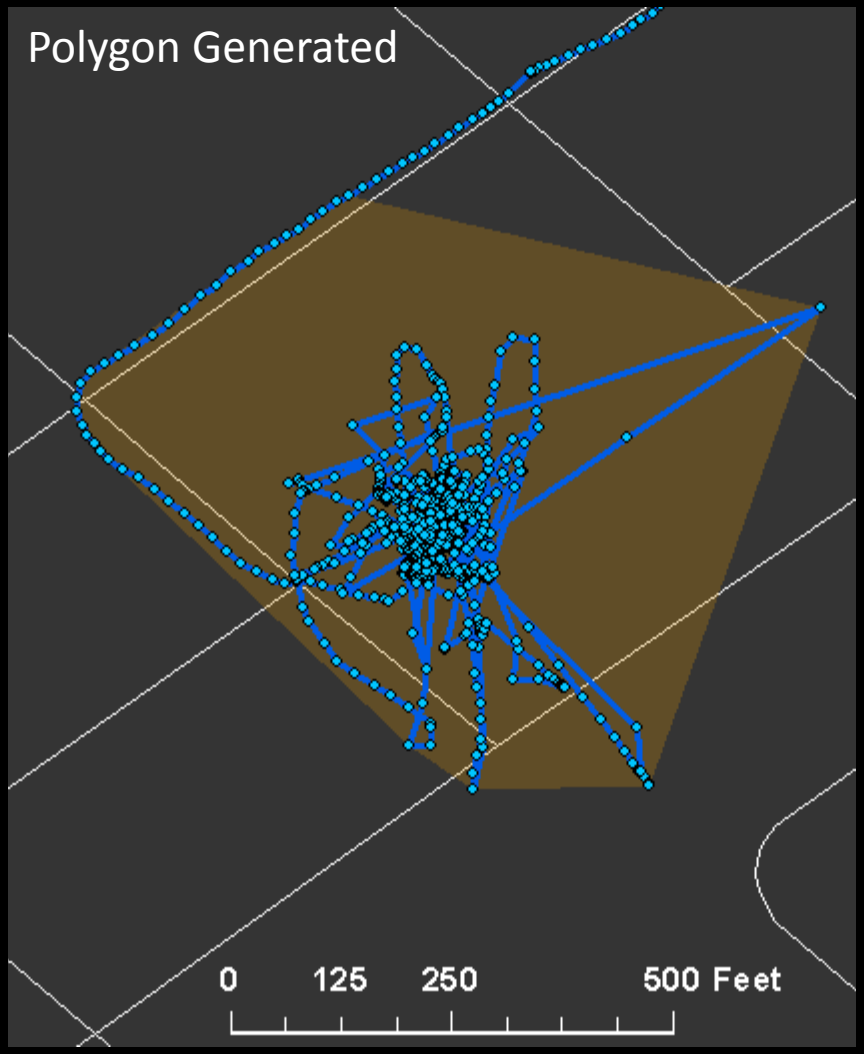
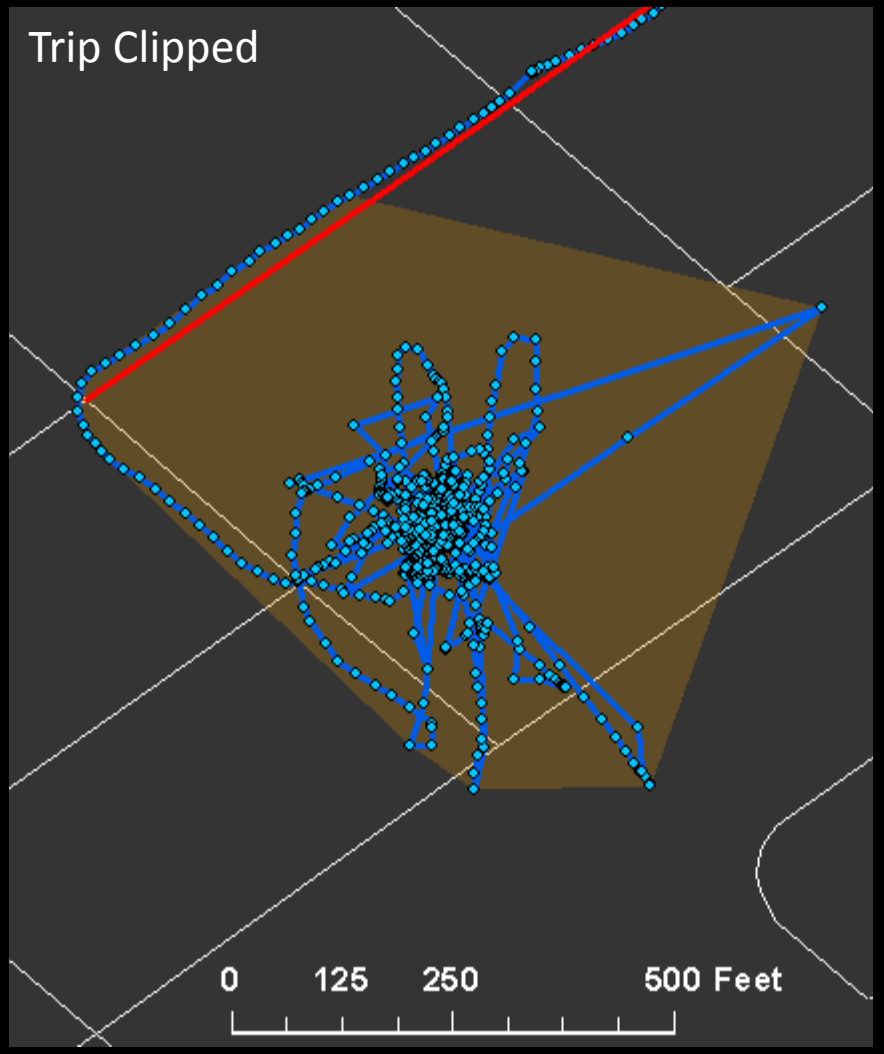
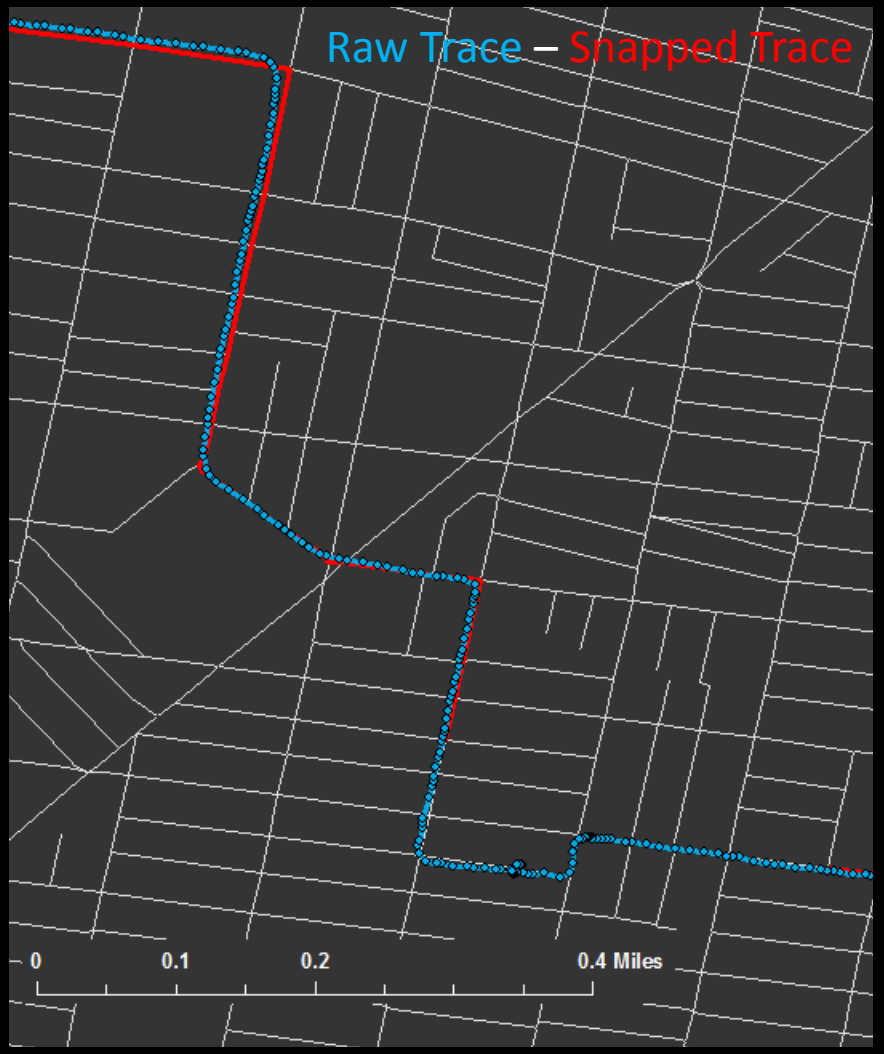




Trip Snapping



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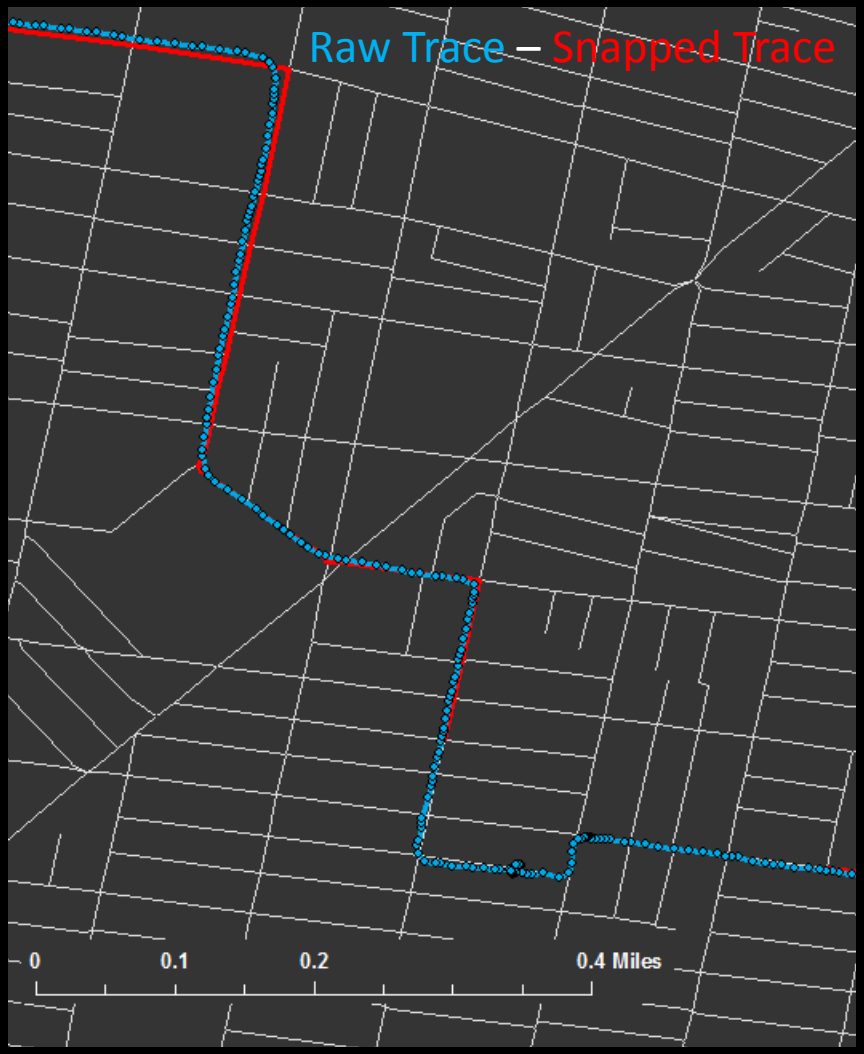

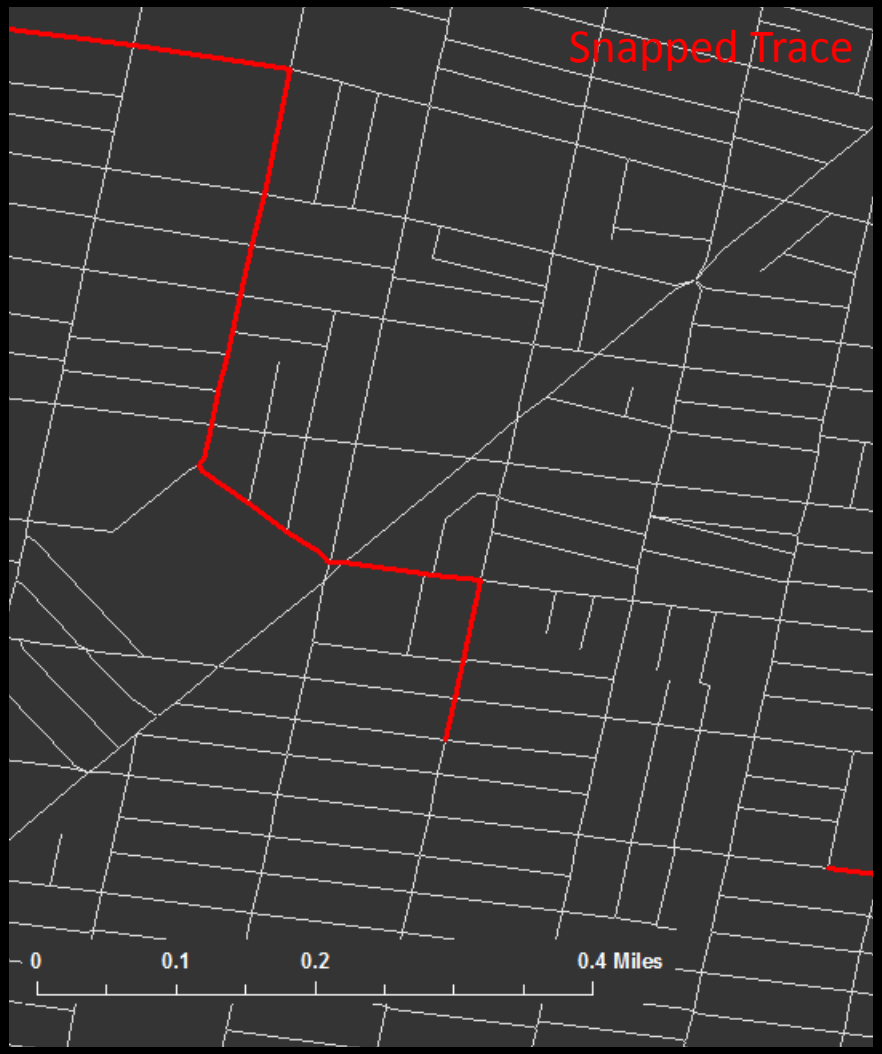

All Trips

Total CyclePhillyTrips per Segment
1 - 10
11 - 50
51 - 150
151 - 250
251 - 500
501 - 866
POWERED BY CARTODB
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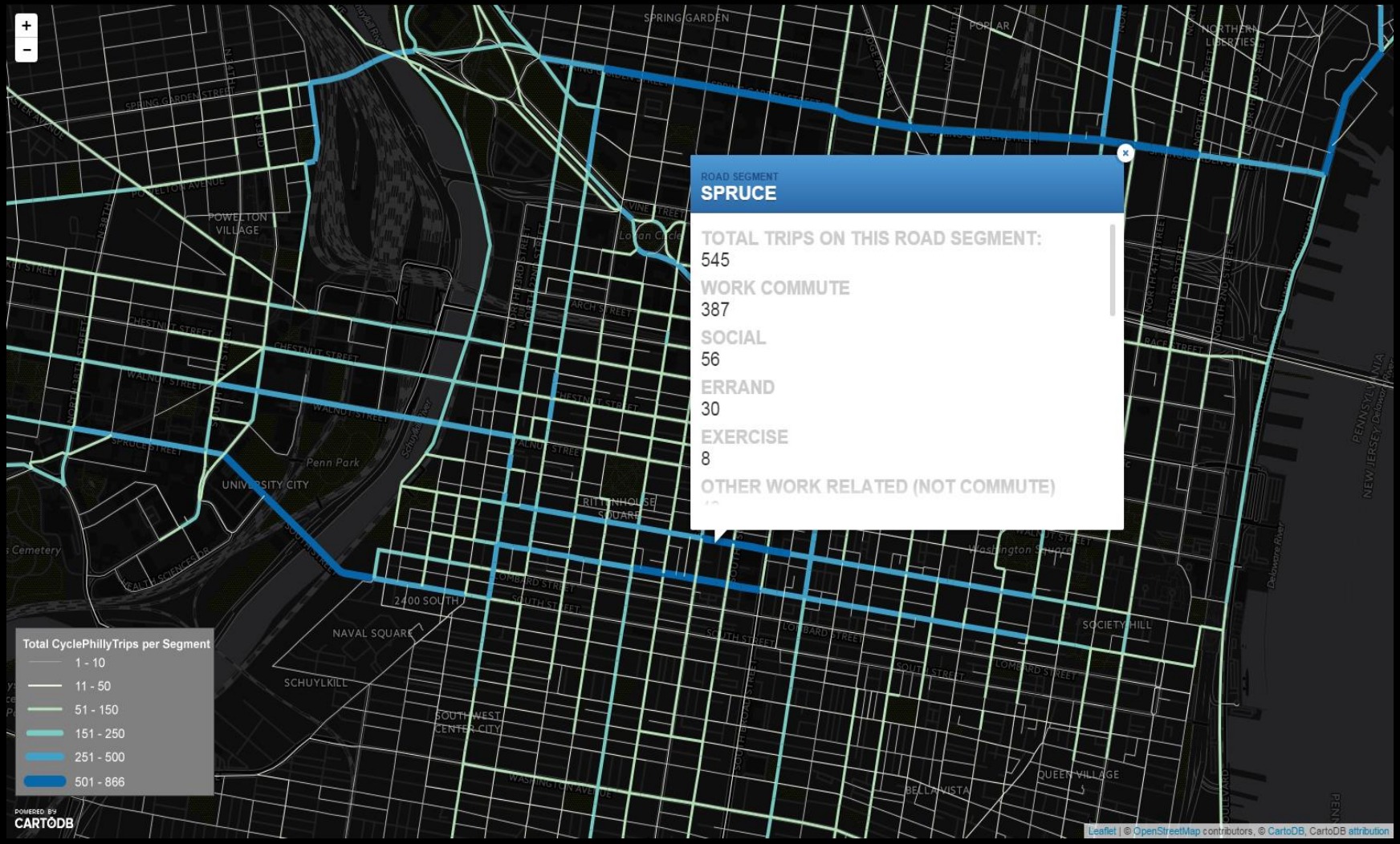
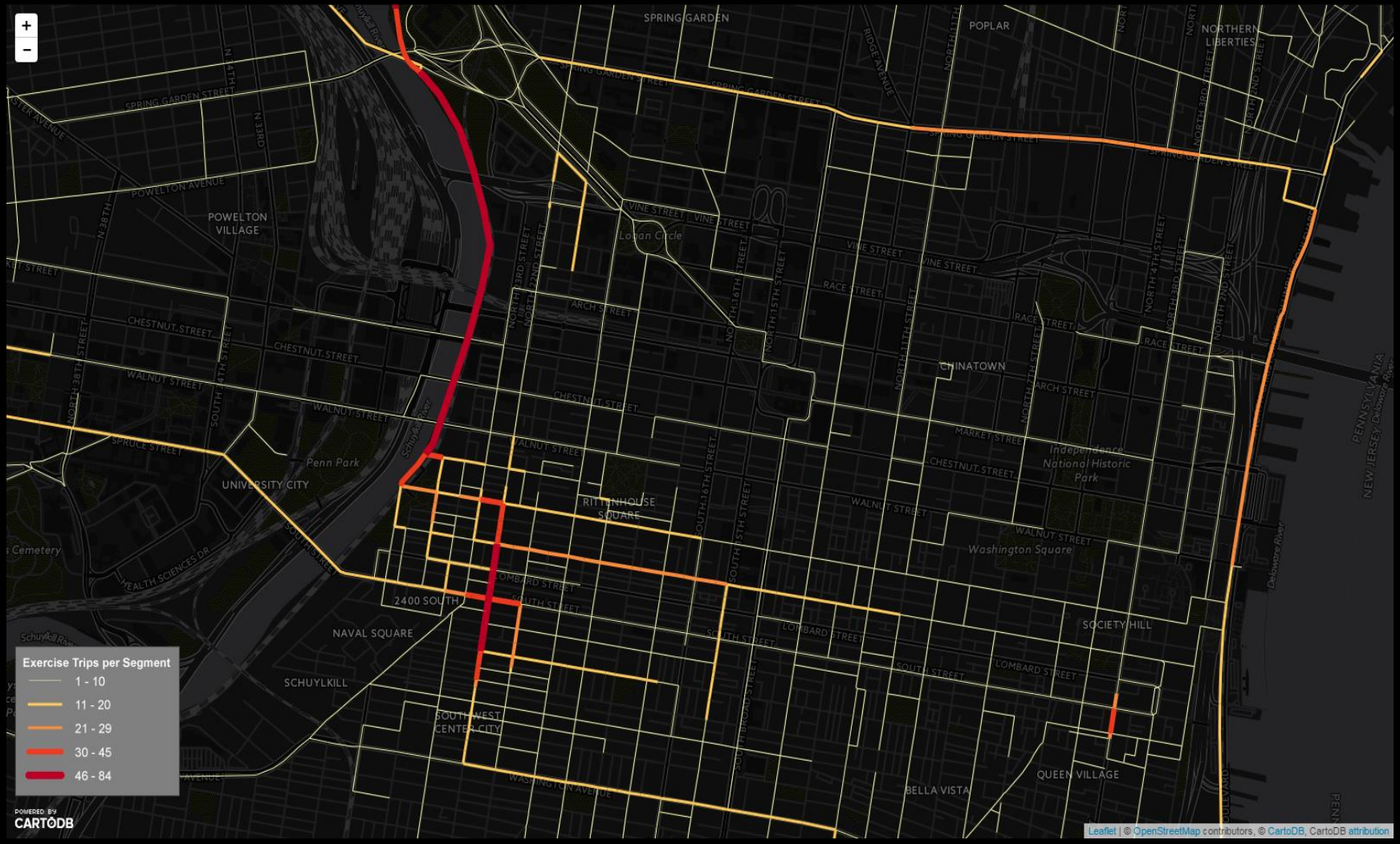
SPRING GARDEN
POPLAR
POWELTON VILLAGE
CHESTNUT STREET
WALNUT STREET
SPRUCE STREET
Penn Park
UNIVERSITY CITY
RITTENHOUSE SQUARE
CHINATOWN
Independence National Historical Park
Washington Square
SOCIETY HILL
2400 SOUTH
NAVAL SQUARE
SCHUYLKILL
SOUTH WEST CENTER CITY
QUEEN VILLAGE
BELLA VISTA
PENNSYLVANIA
NEW JERSEY

Link Selection

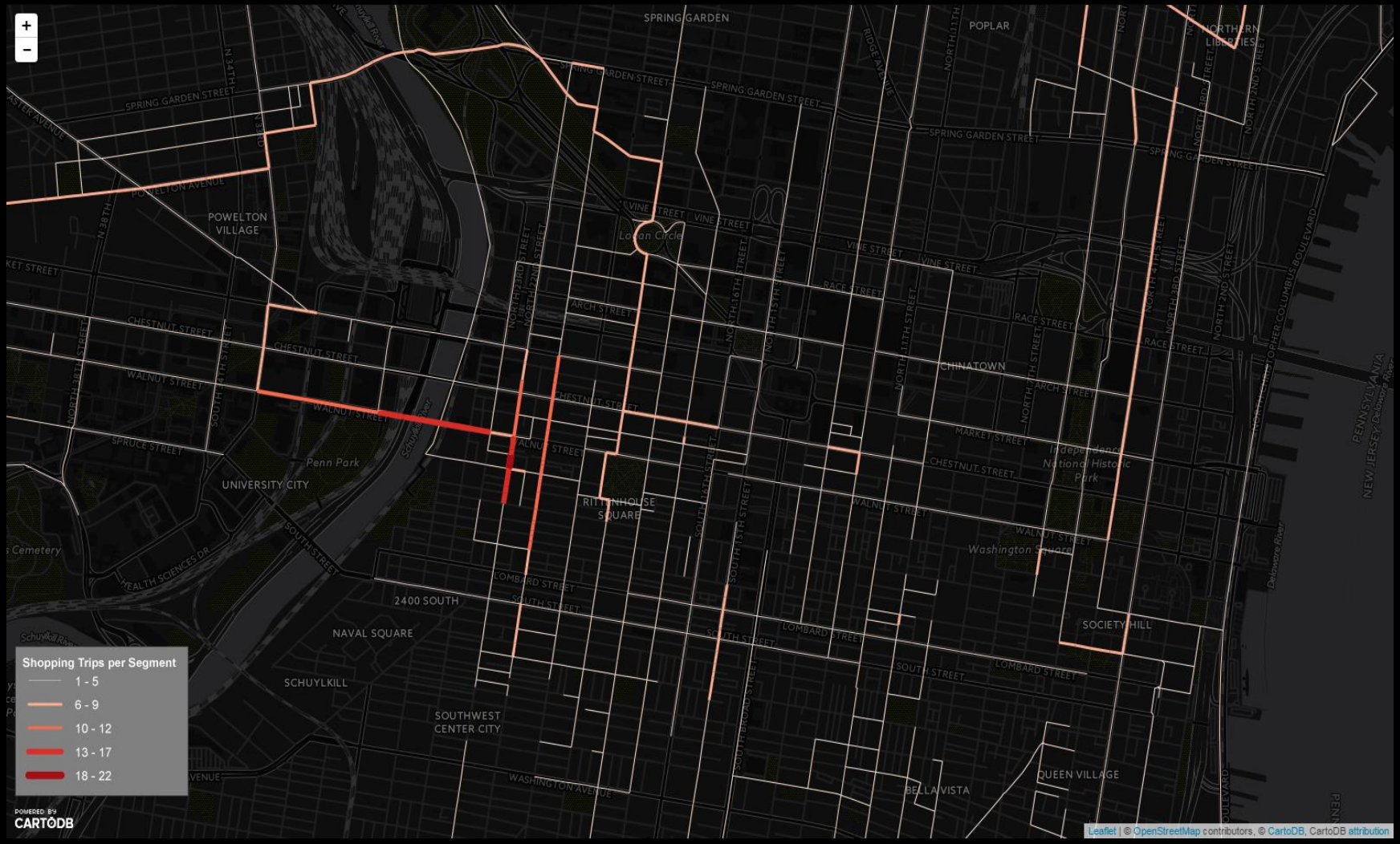


Purpose: Errand

Purpose: Exercise

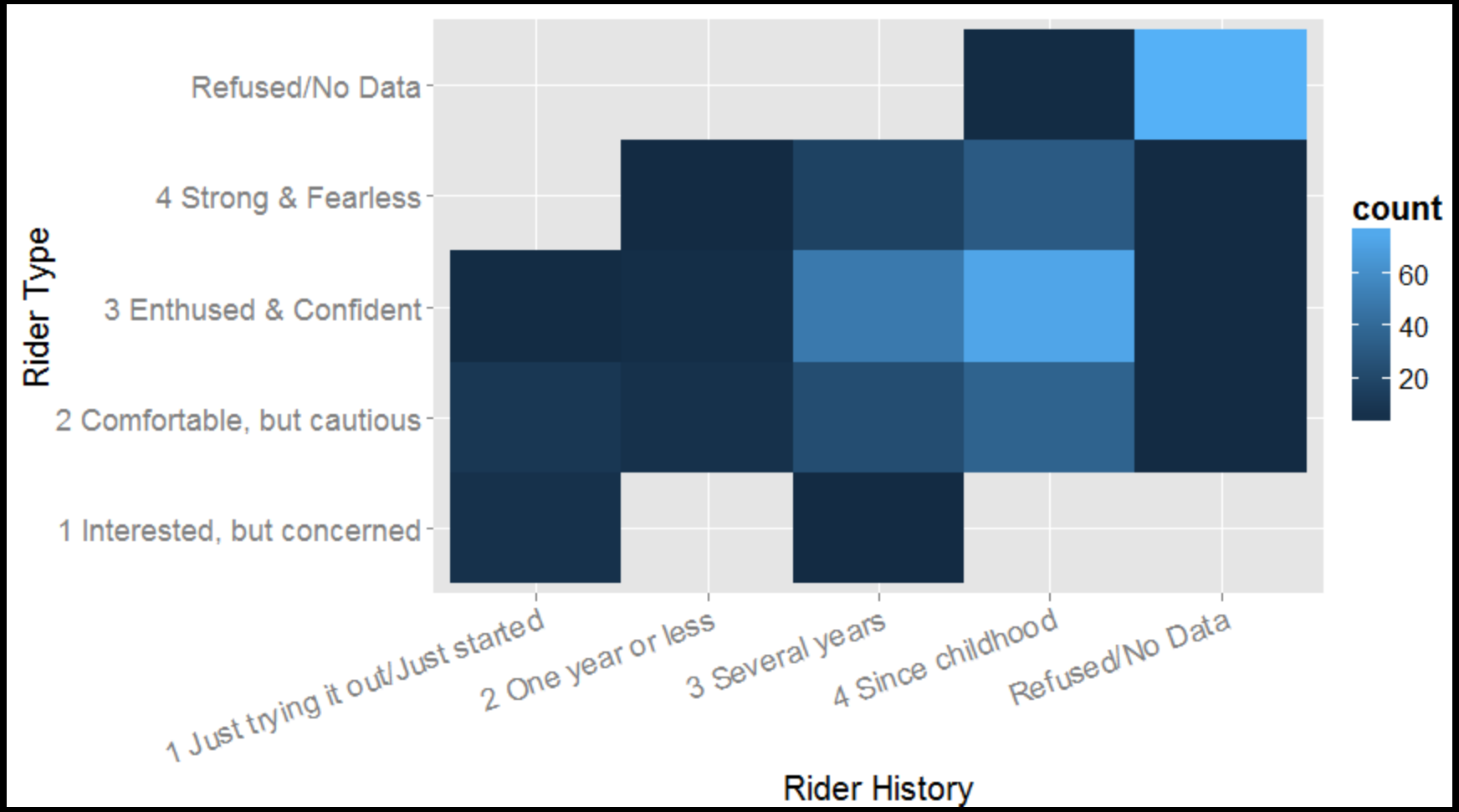


Purpose: Shopping

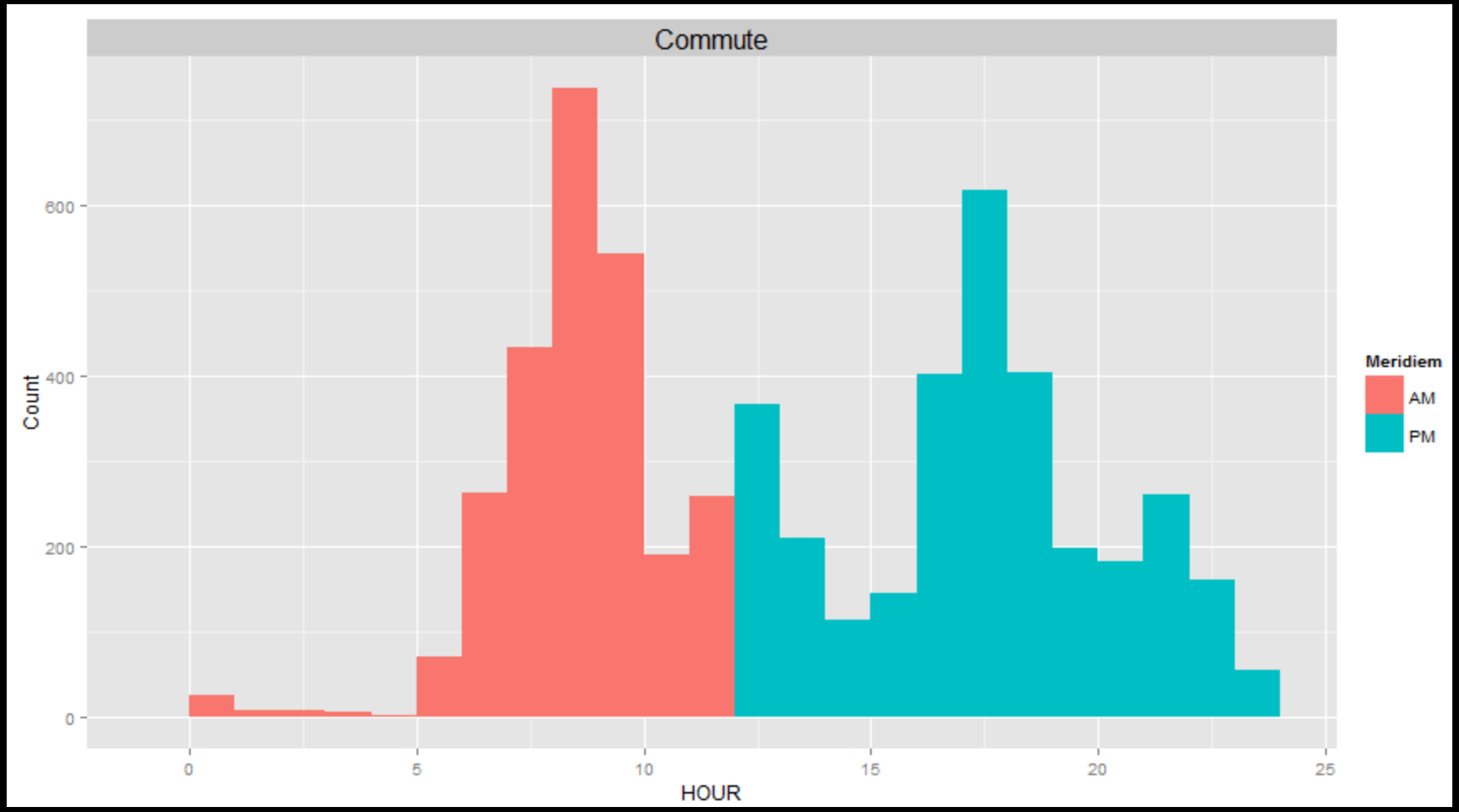


Purpose: Social

Rider Characteristics



Trips by Purpose



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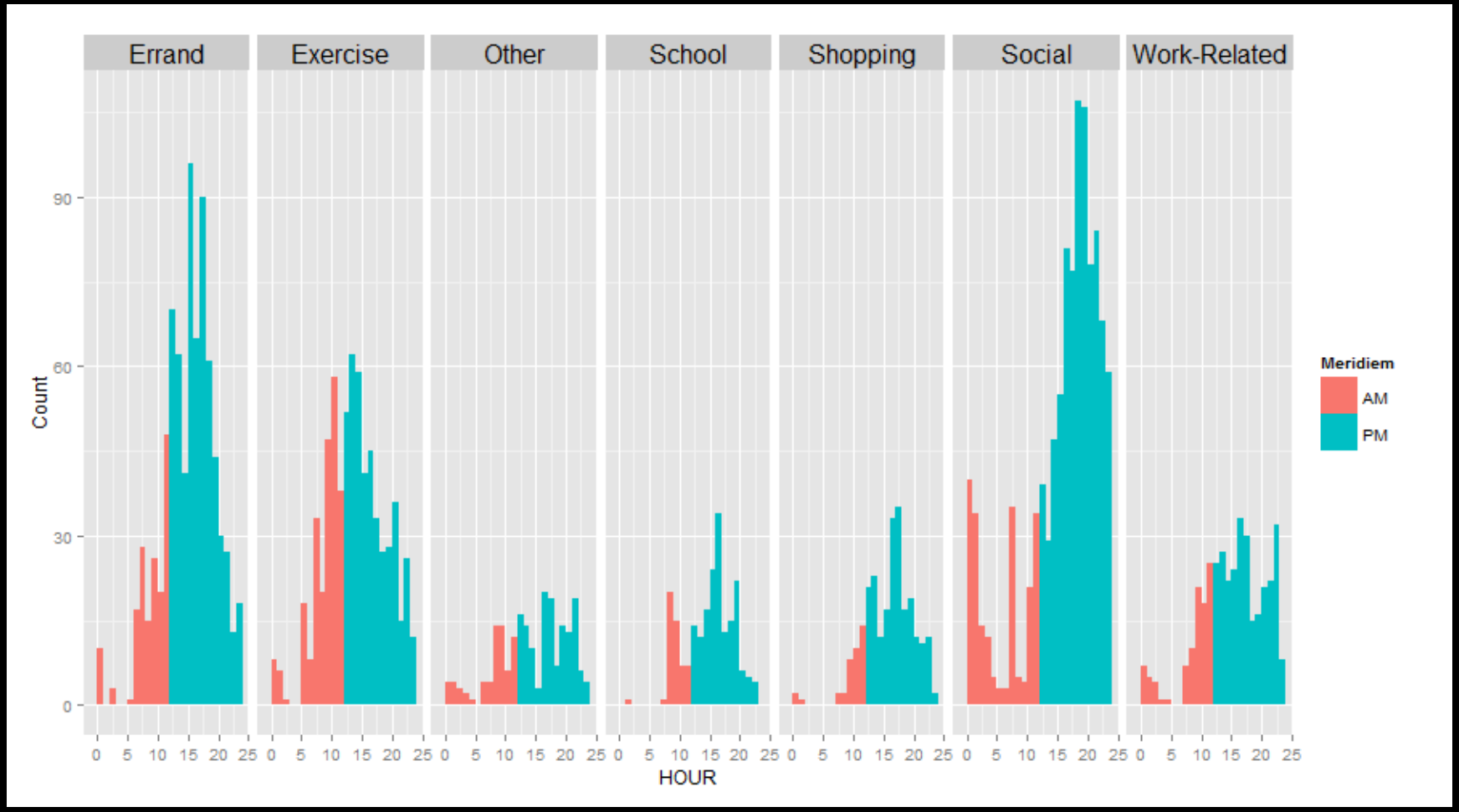
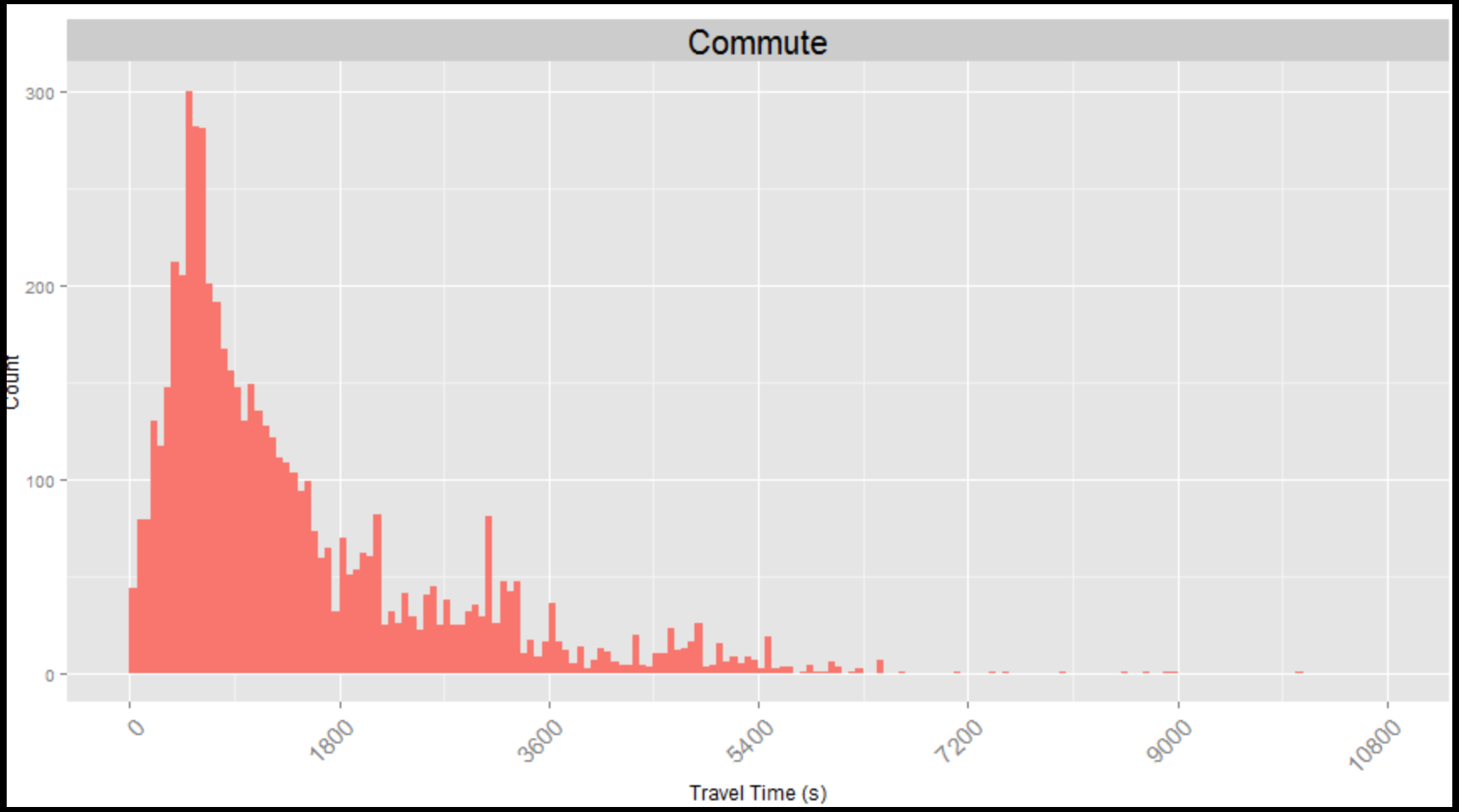


Travel Time by Purpose



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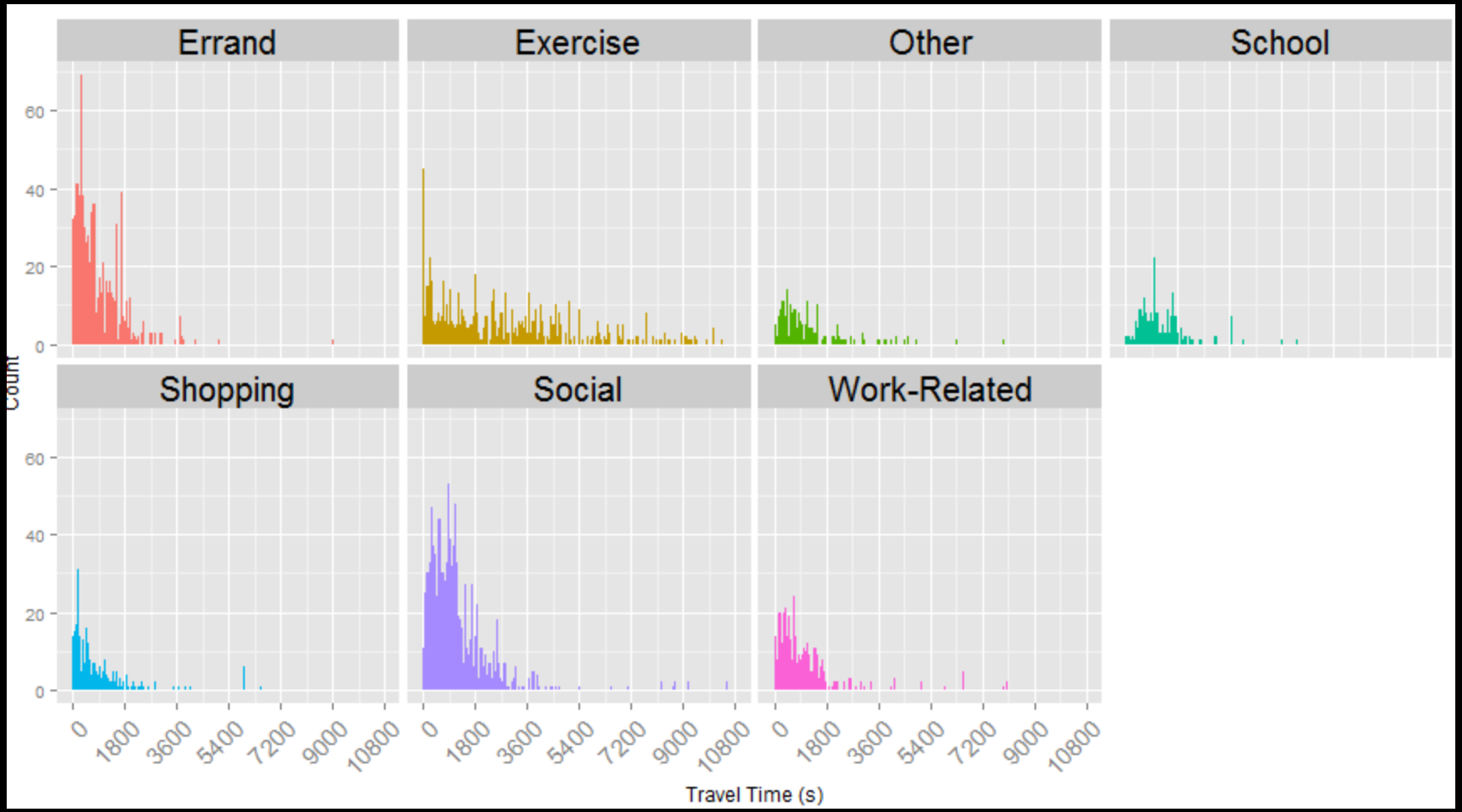

App development

Improvements for 2015:

- New user types
- Fix bugs
- Ability to share trips
- Question about bike share

Long-term work:

- Total rebuild
- Create white label version

Data generation and usage

Improvements for 2015:

- Improved and expanded publicity
- Giveaways!!
- User and trip goals
- Analysis of 2014 data

Long-term work:

- Analysis pre- and post-bike share
- Analysis using CyclePhilly and regional bike counts
- Development of a regional bike plan
- On-going improvements to processing

Data:

http://www.dvrpc.org/webmaps/cyclephilly

Questions:

cboulan@dvrpc.org
wtsay@dvrpc.org

dvrpc

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