Utilizing Big Traffic Data

Mobility, Traffic & Parking Subcommittee Meeting
October 26, 2023

Culver CITY

Public Works Department

Mobility & Traffic Engineering Division

What is BIG DATA Analytics?

- Leveraging technology to analyze large data sets to uncover patterns or trends
- Output helps to make more informed, data-driven decisions and target City resources where needed the most
- Trying to know what we don't know

What is BIG DATA Analytics?

Two transportation related use cases

1. Pass-through trips
2. Prevalence of certain driver behaviors

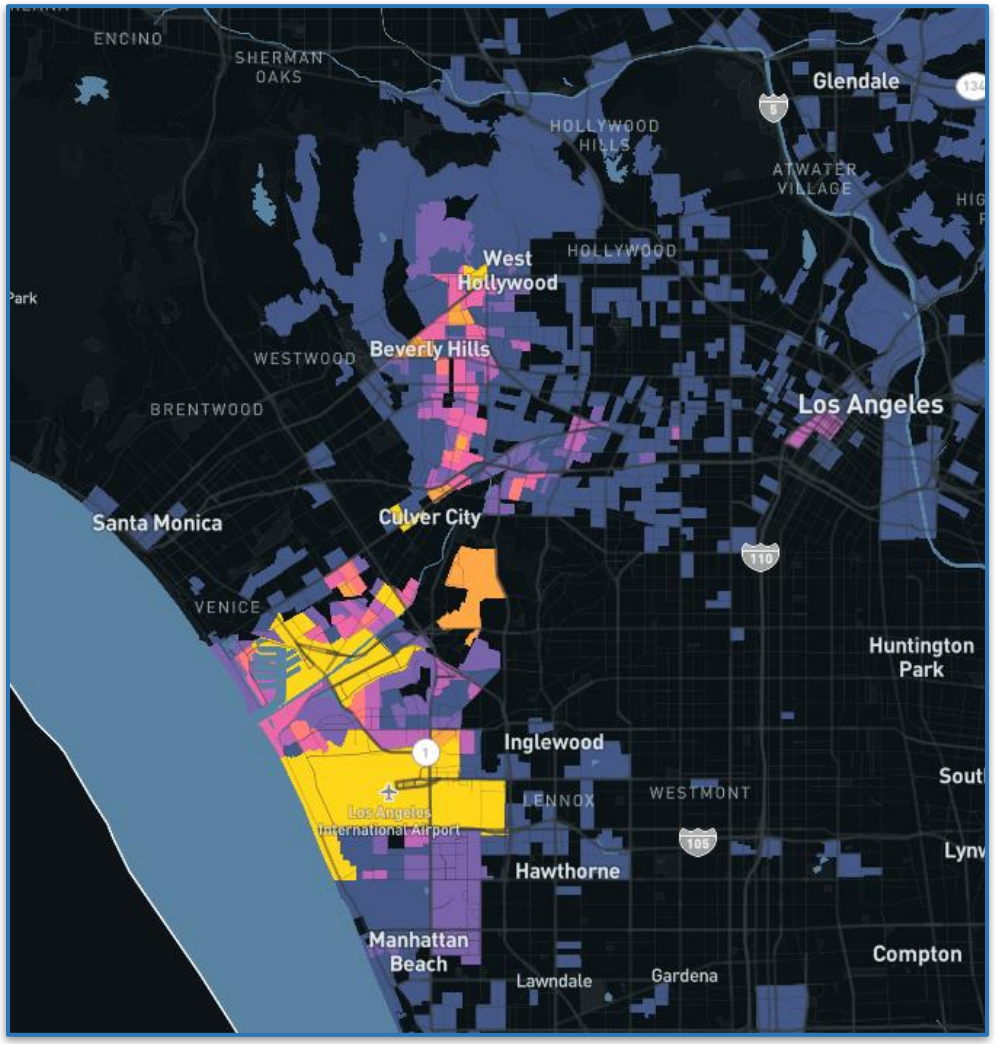
What is Replica?

- Mobility and data analytics company
- Provide an online platform that transforms vast, disparate datasets into a holistic picture of mobility, land use, people, and economic activity - and the ways they interact
- City subscription since 2022

Analysis of Culver City Pass-Through Trips

- Culver Blvd btw Main and Canfield
- Fall 2019
- 4pm – 7pm
  - 7,000 trips

Analysis of Culver City Pass-Through Trips

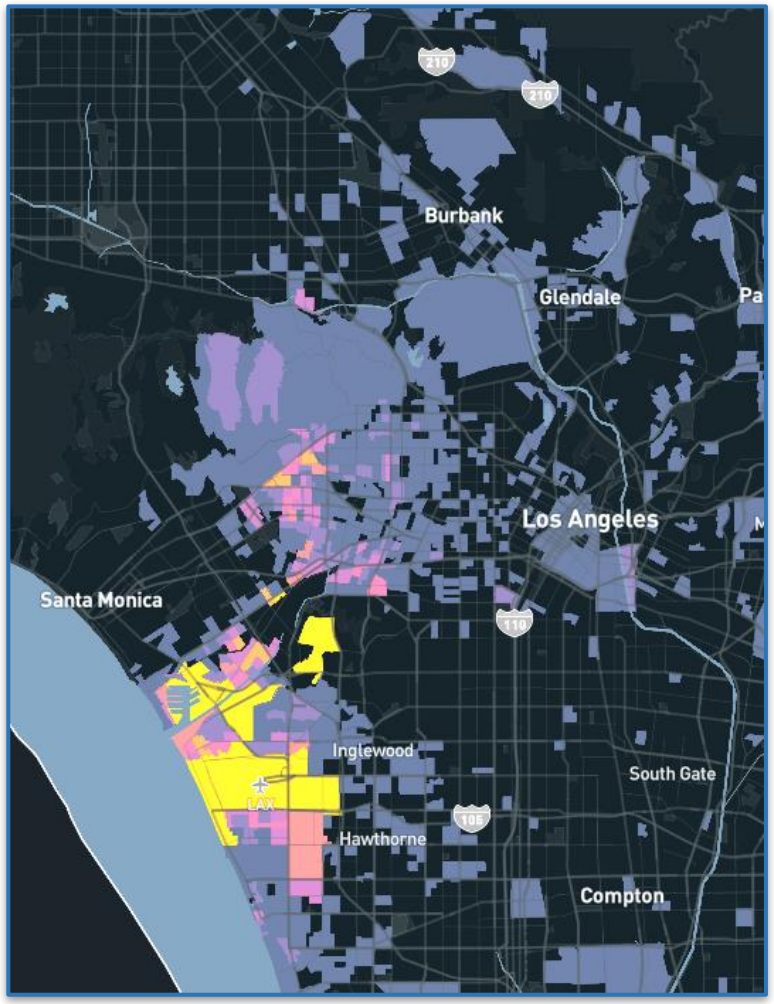


- Trips passing through Culver City and Culver Blvd segment
  - 3,020 trips
- Map shows destinations
  - Marina Del Rey ~300
  - Playa Vista ~140

Analysis of Culver City Pass-Through Trips

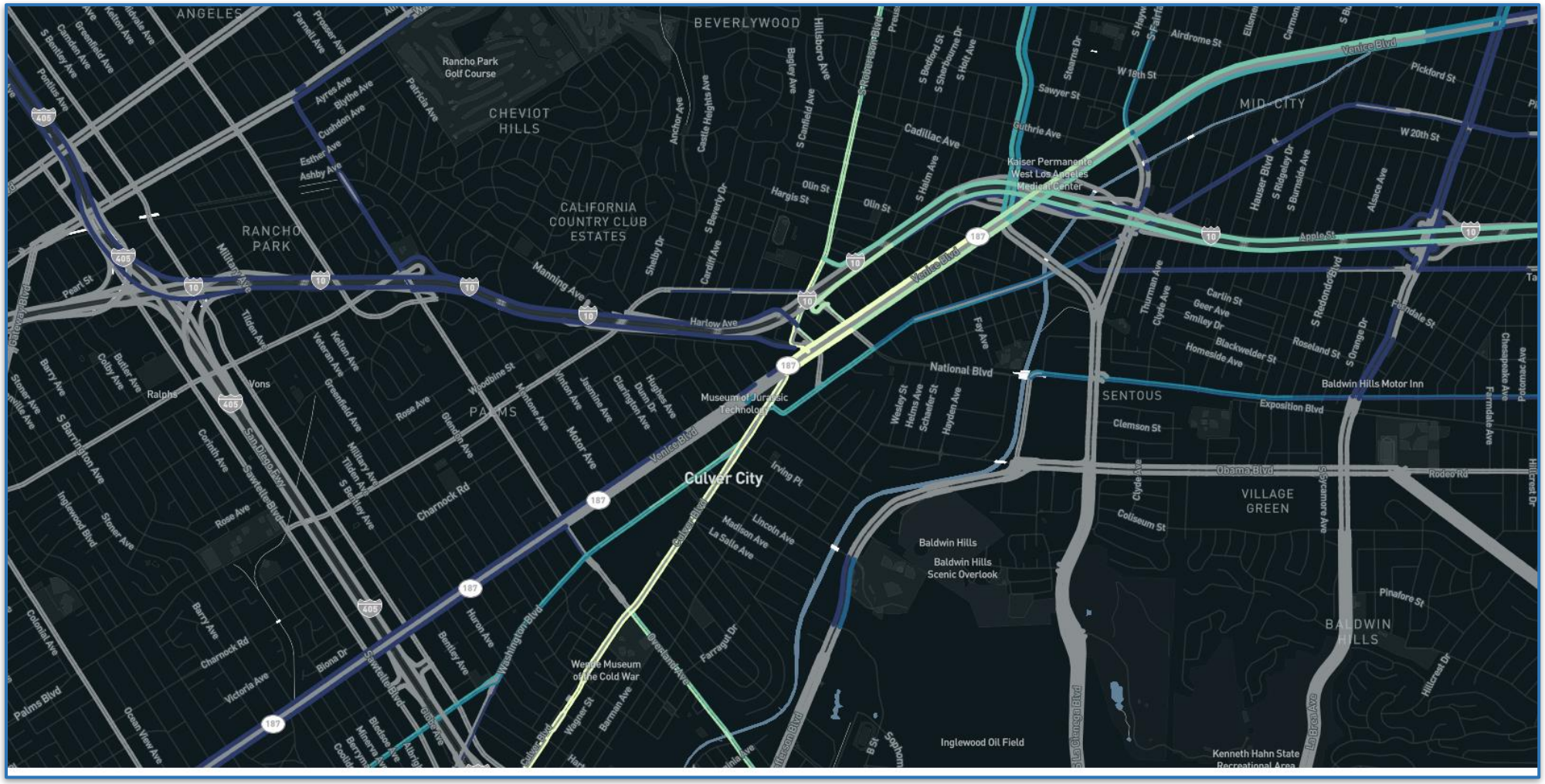
- Culver Blvd btw Main and Canfield
- Spring 2023
- 4pm – 7pm
  - 10,400 trips

Analysis of Culver City Pass-Through Trips



- Trips passing through Culver City and Culver Blvd segment
  - 5,500 trips
- Map shows destinations
  - Marina Del Rey ~650
  - Playa Vista ~200
  - Airport ~150

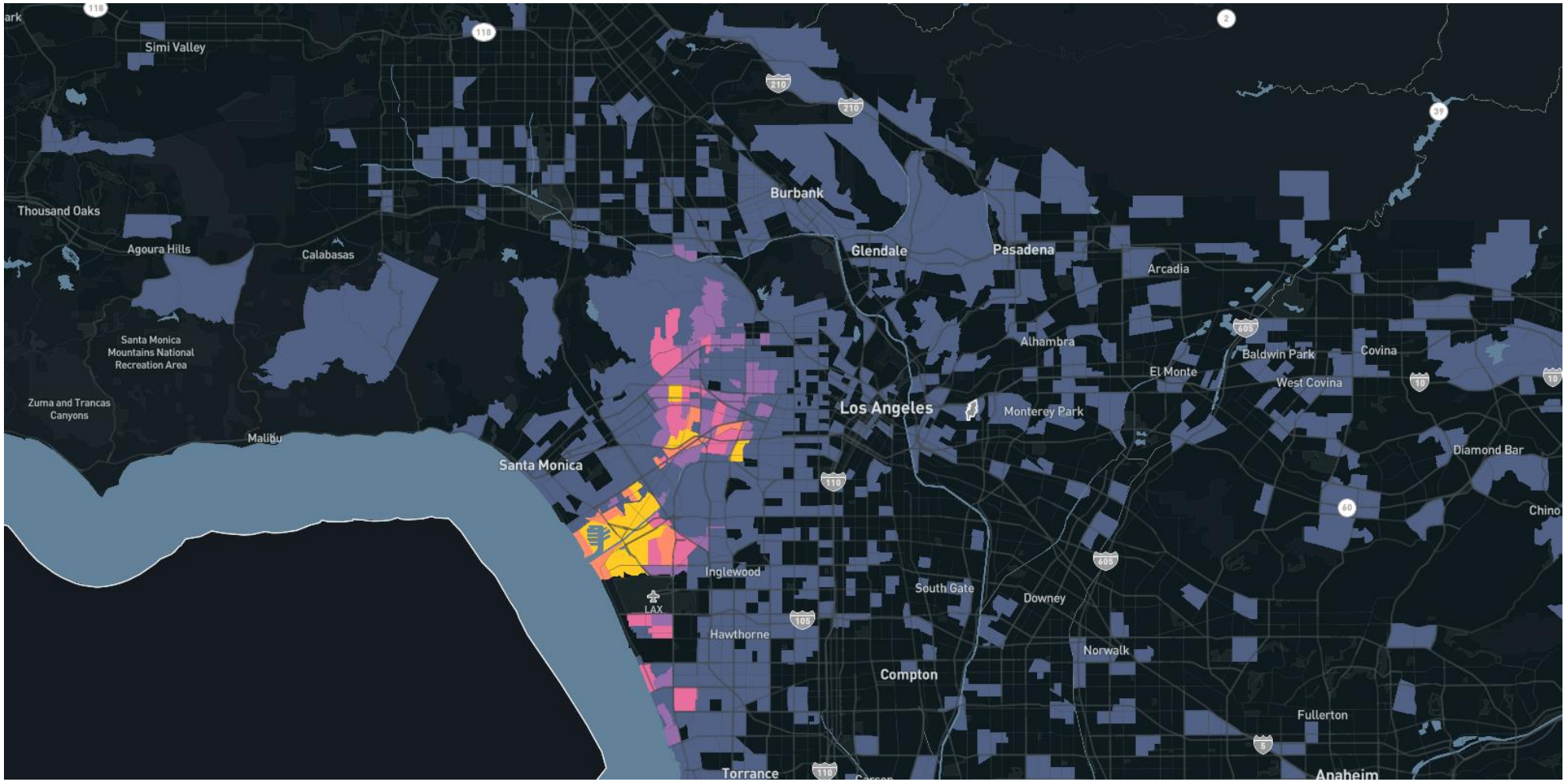
Analysis of Culver City Pass-Through Trips



Link Volumes

- EB Venice Blvd - 2,100
- EB Washington Blvd - 300

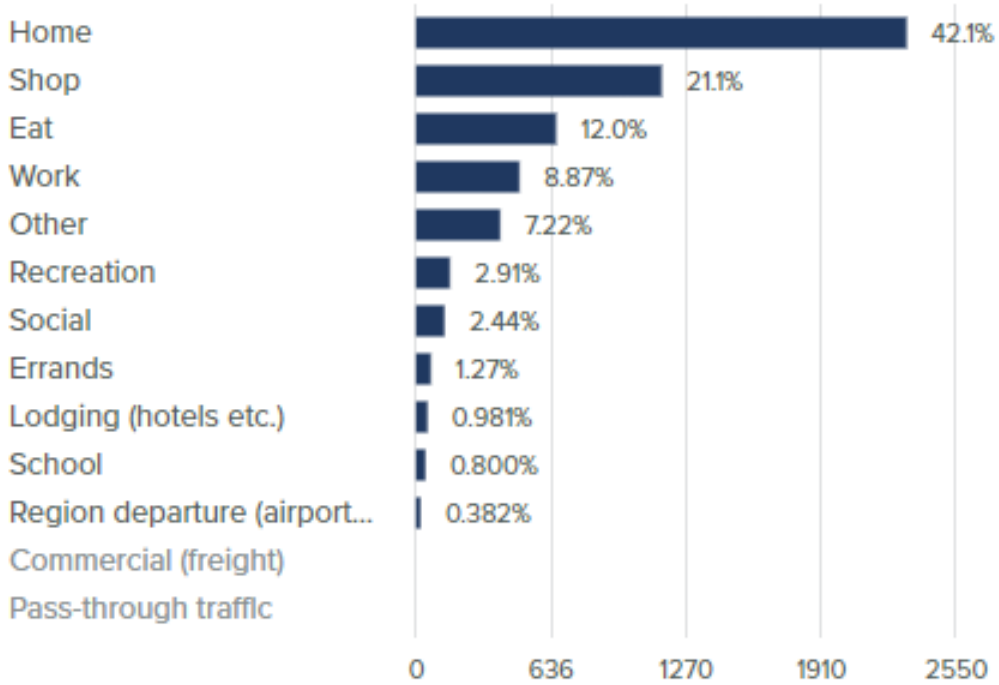
Analysis of Culver City Pass-Through Trips



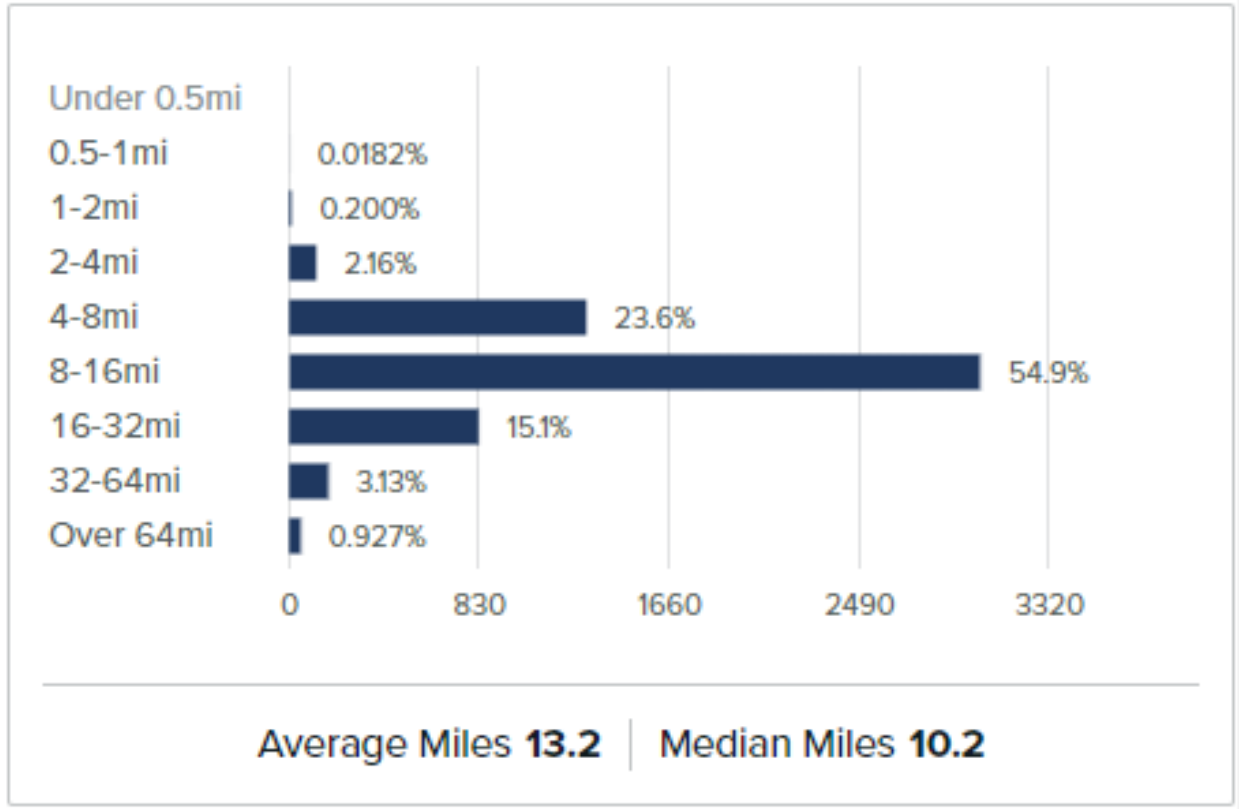
Home Location

Analysis of Culver City Pass-Through Trips

Trip Purpose



Trip Distance (Miles)



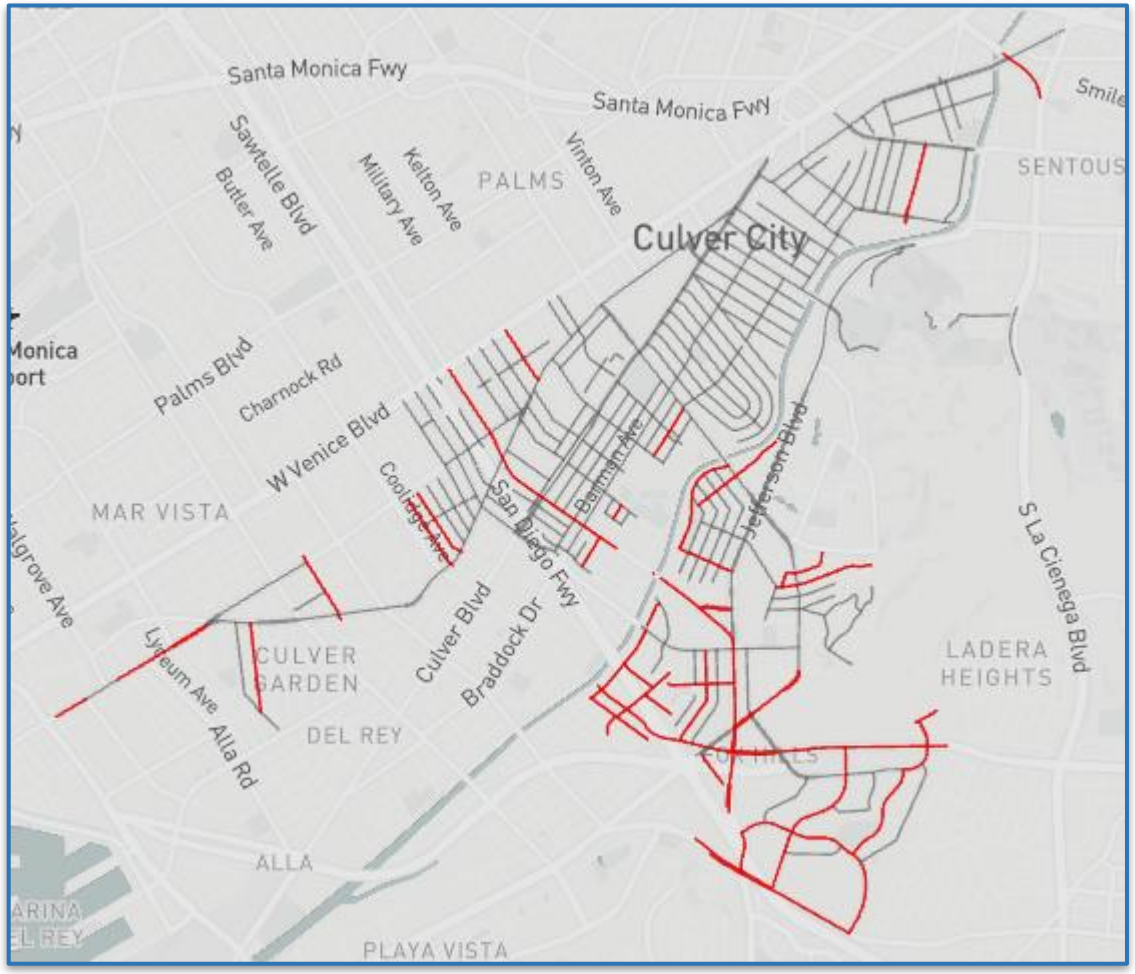
Reactive vs Proactive

- Traditional traffic data collection provides information about a single location in a snapshot in time
- Data is collected based on reactive inputs
  - Crash history
  - Qualitative Observations
  - Community feedback
  - Political Priorities
- How can we know what we don't know??

Reactive vs Proactive

- Replica data in partnership with Arity/Michelin
- Collects driver behavior data through cell phone apps/data
  - Speeding (>10 mph above speed limit)
  - Hard Braking
  - Near-miss detection/collision
- Overlaid to areas of active transportation (peds/bikes/seniors)

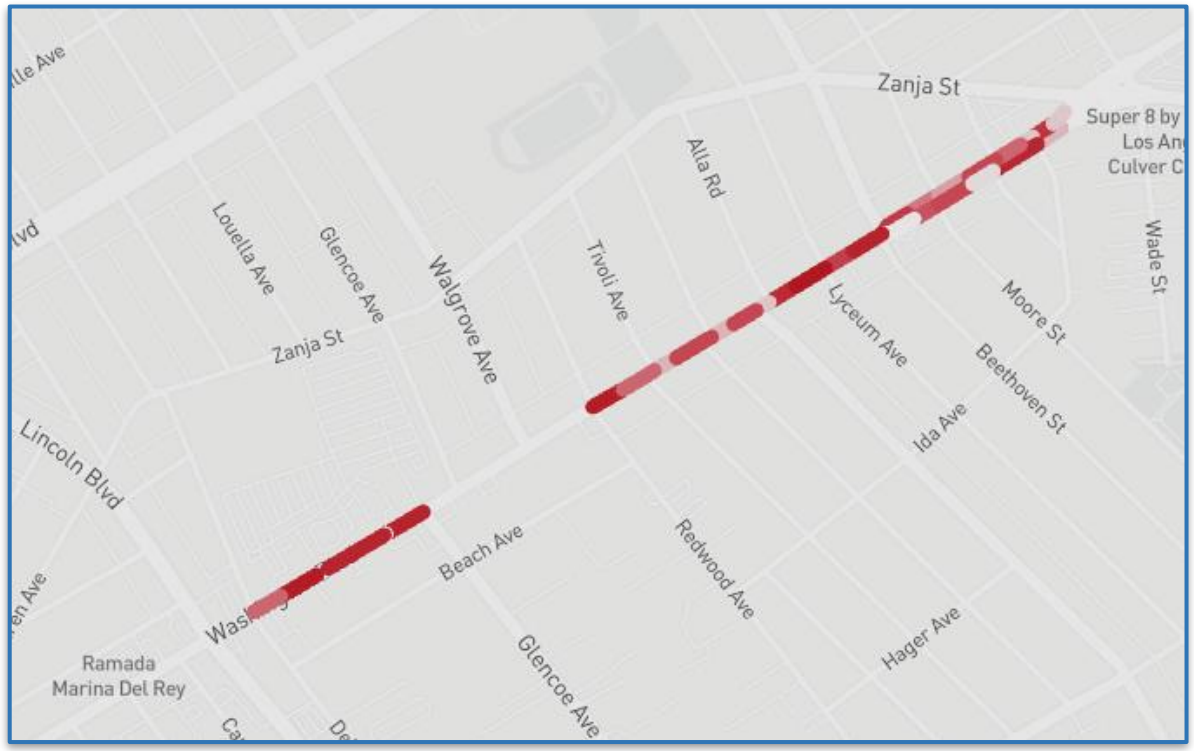
Reactive vs Proactive



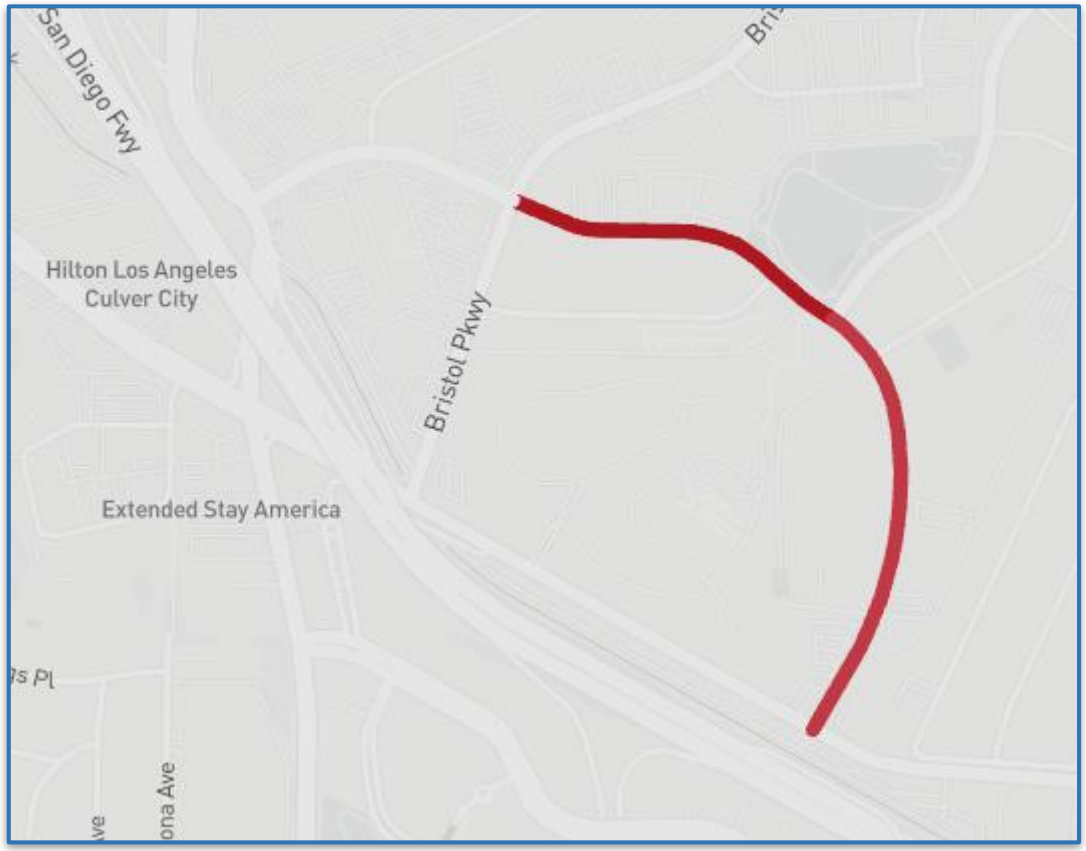
- Highest 25% of corridors on corridors 0.25 mile or longer
- Typical Weekday in Fall 2021
- Driver Behaviors
  - Speeding
  - Hard Braking
  - Near-miss detection/collision
- Active transportation

Reactive vs Proactive

W Washington Blvd

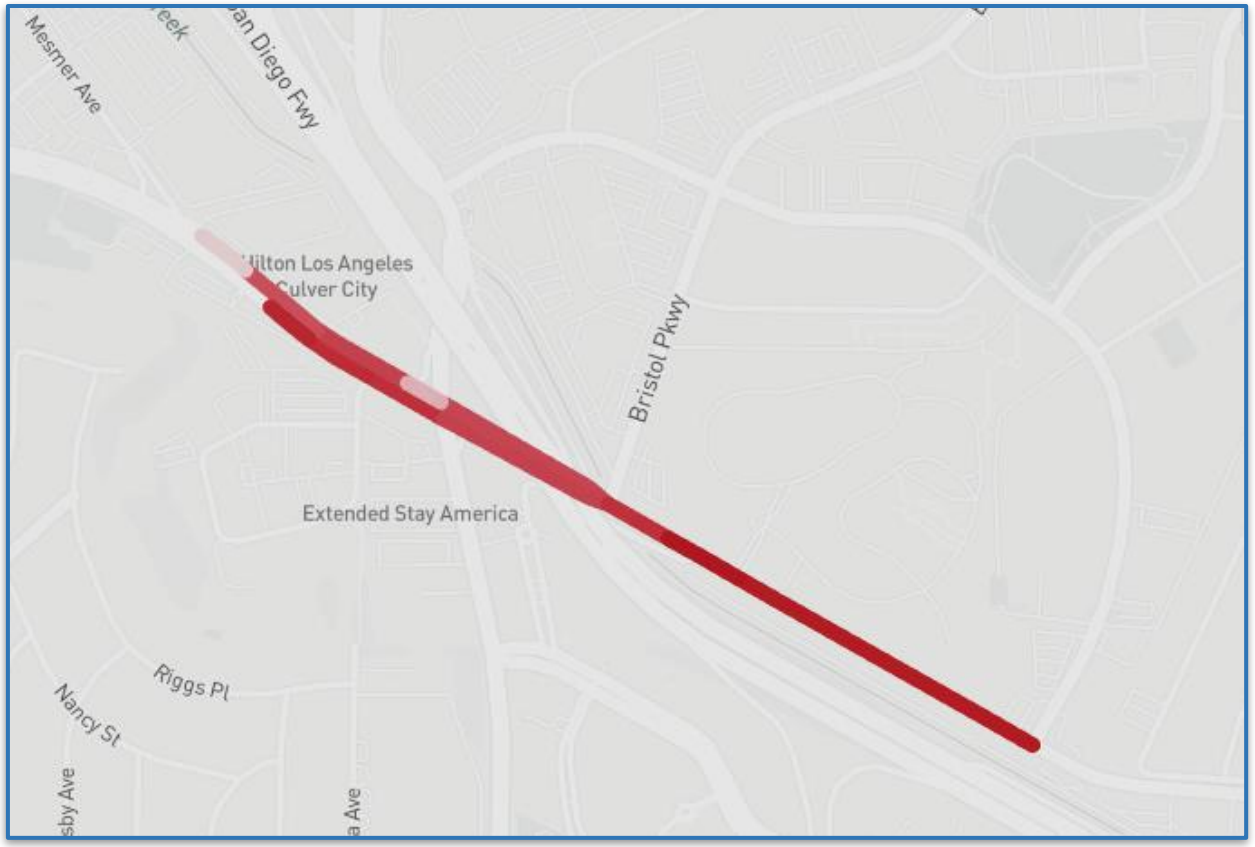


Green Valley Cir

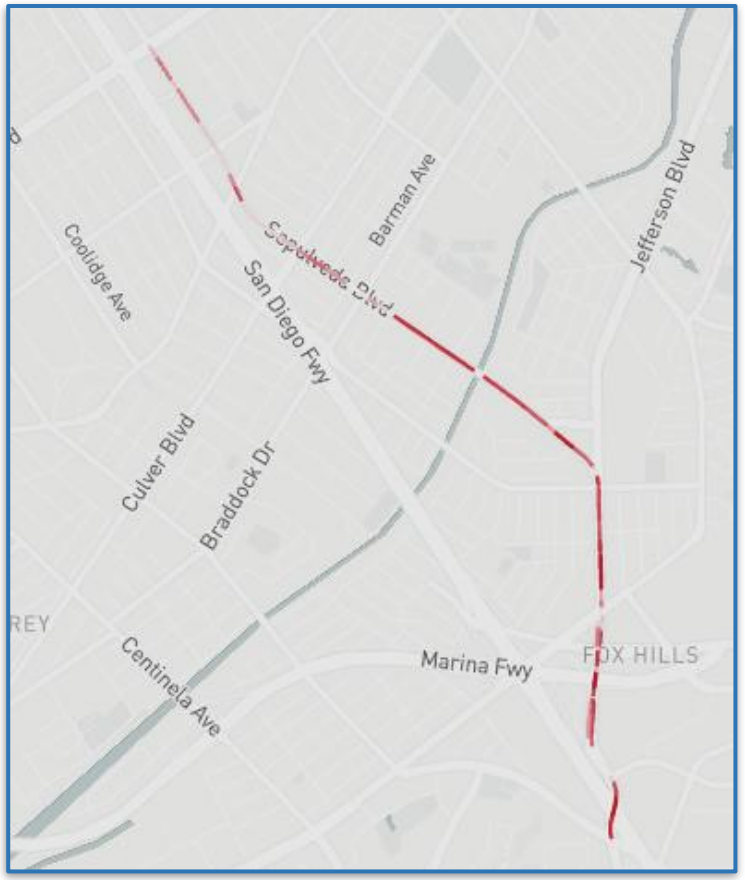


Reactive vs Proactive

Centinela Ave



Sepulveda Blvd

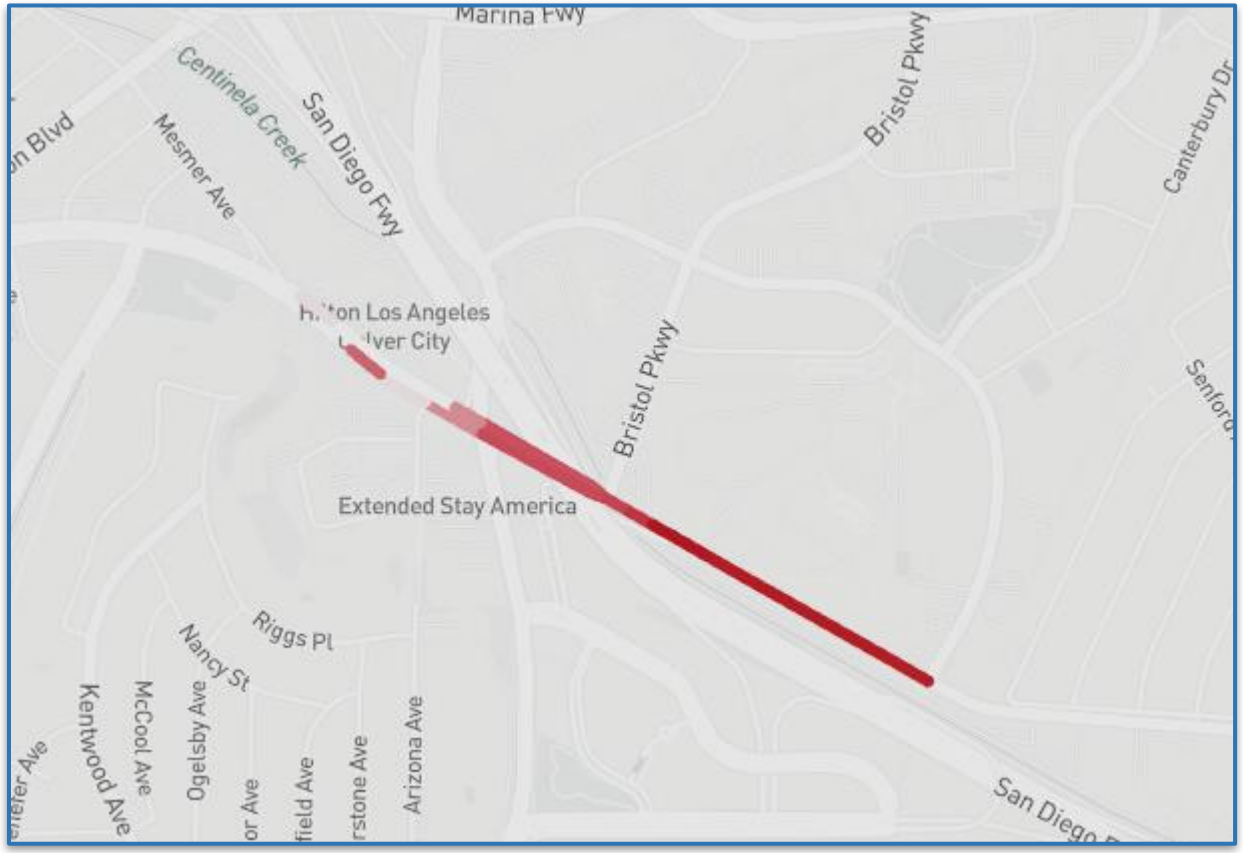


Reactive vs Proactive

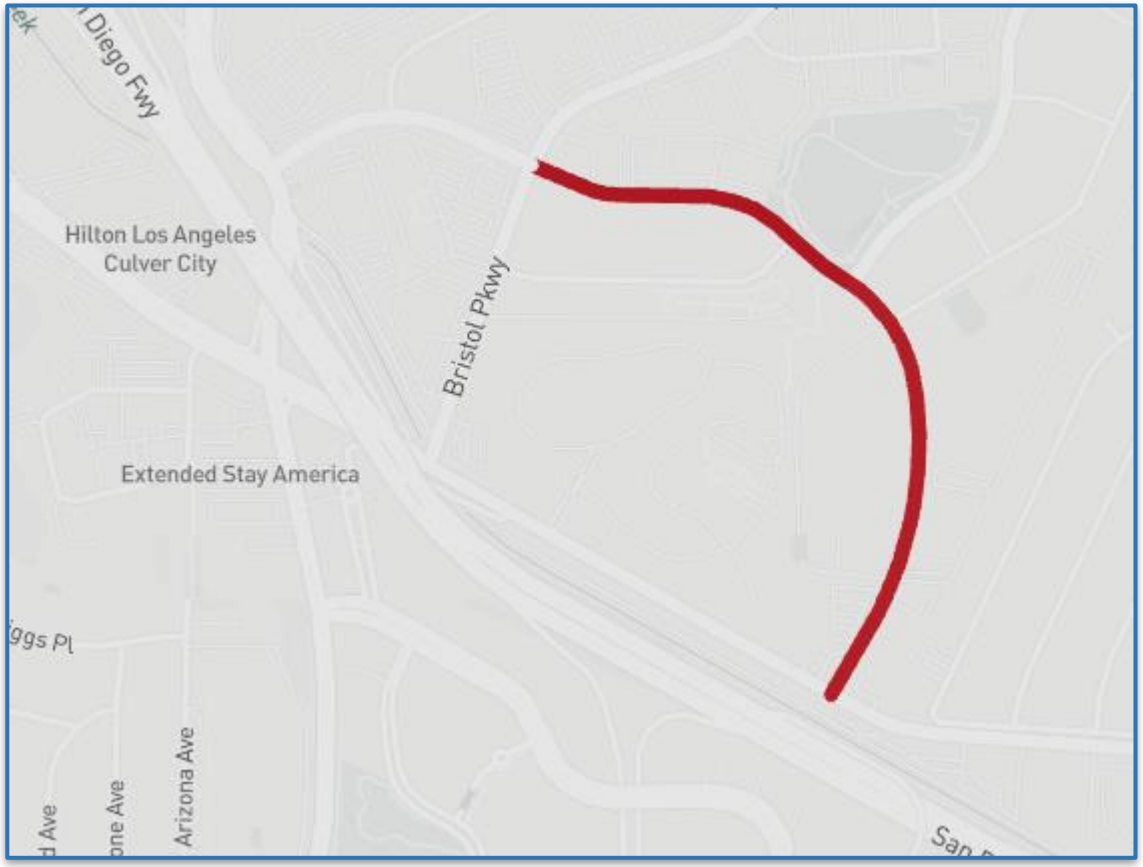
- Highest 25% of corridors on corridors 0.25 miles or longer
- Typical Weekday in Fall 2021
- Driver Behaviors
  - Speeding ONLY
- Active Transportation

Reactive vs Proactive

Centinela Ave

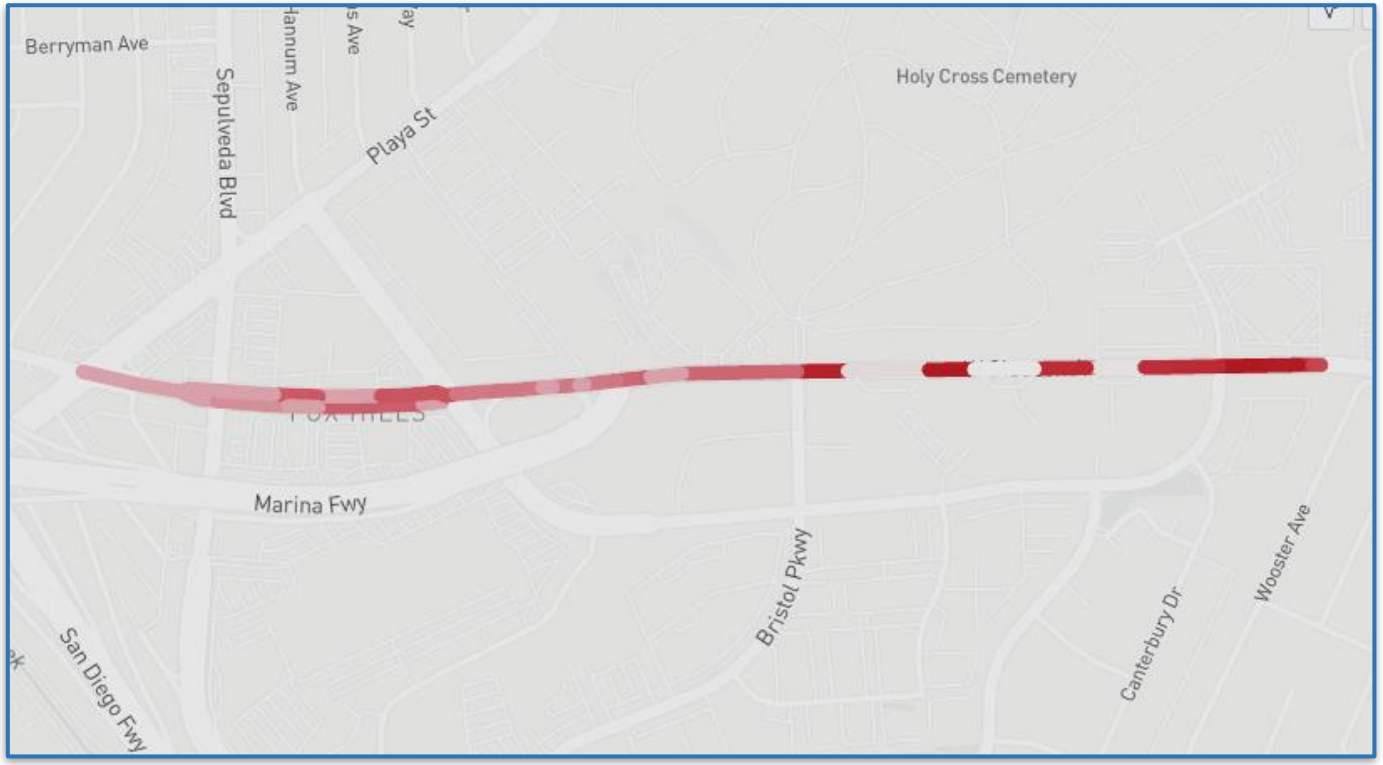


Green Valley Cir

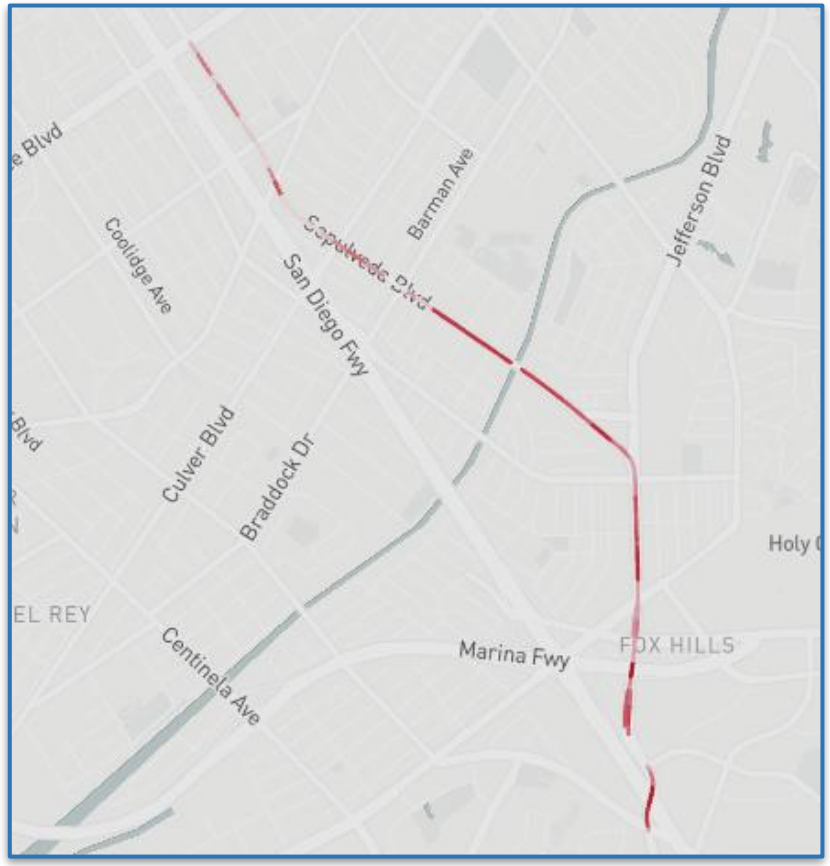


Reactive vs Proactive

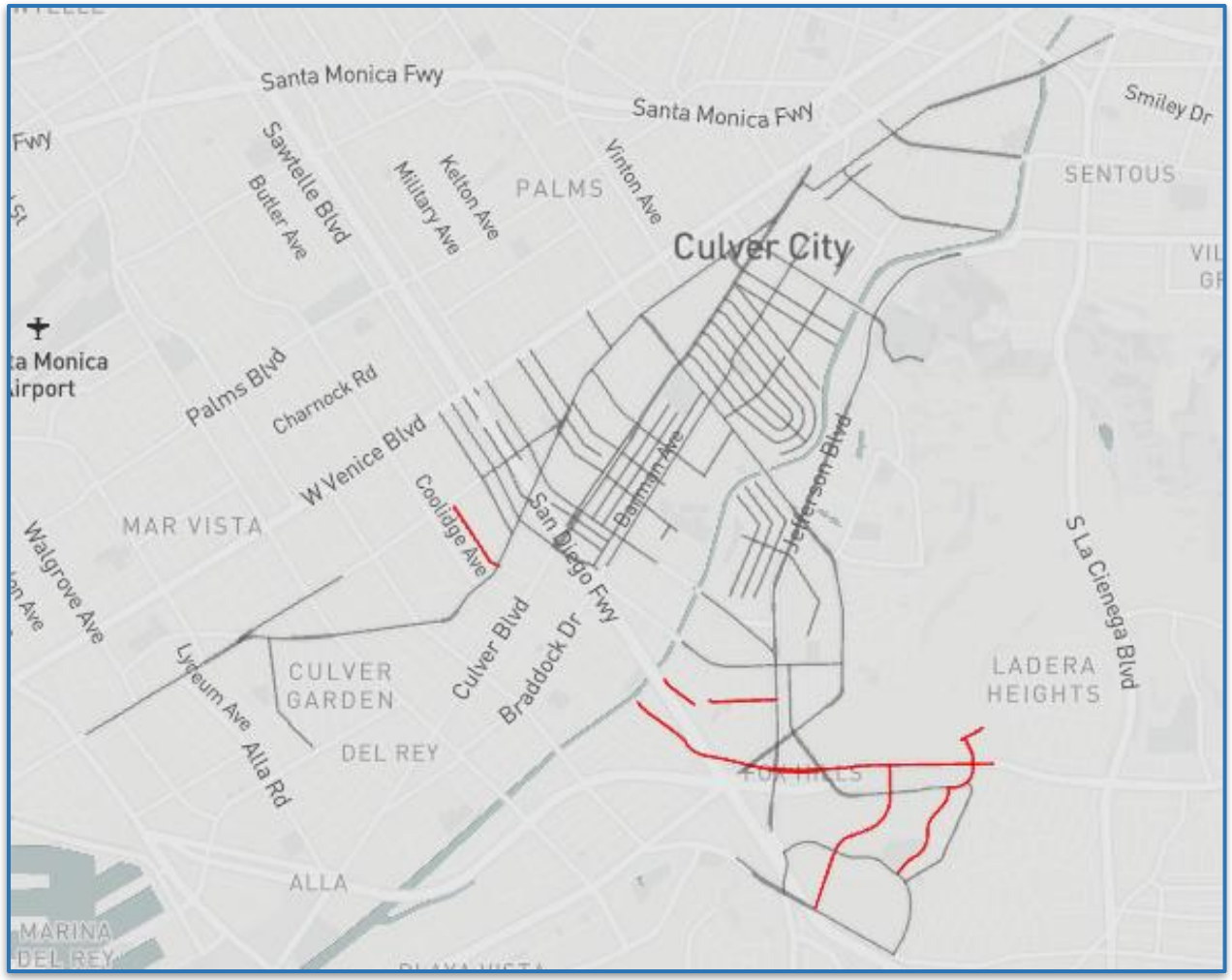
Slauson Ave



Sepulveda Blvd



Reactive vs Proactive



- Highest 10% of corridors on corridors 0.50 miles or longer
- Typical Weekday in Fall 2021
- Driver Behaviors
  - Speeding ONLY
- Active Transportation

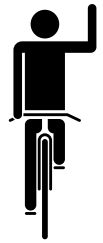
Reactive vs Proactive

- Potential Countermeasures
  - Radar Feedback Signs
  - Tighter Curb Radius
  - Leading Pedestrian Interval
  - Rest in Red Traffic Signal
  - Speed Tables
  - Traffic Signal Timing

Next Steps

- Receive more data sets from Replica/Arity
- Apply platform upgrades/tweaks
- Use data to implement context sensitive counter measures
- Coordinate with PD on highest speeding corridors

Questions?



Iconography courtesy of Noun Project (various artists)