CONTRA COSTA
transportation
authority

CCTA Countywide Data & Corridor Analysis
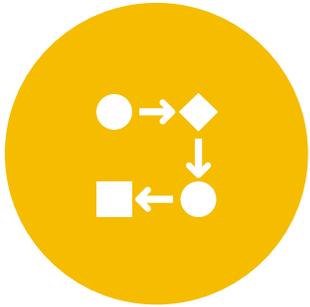
TRANSPLAN TAC MEETING

JUNE 27, 2024

John Hoang
Director, Planning

CCTA DATA INITIATIVES

VISUALIZE DATA

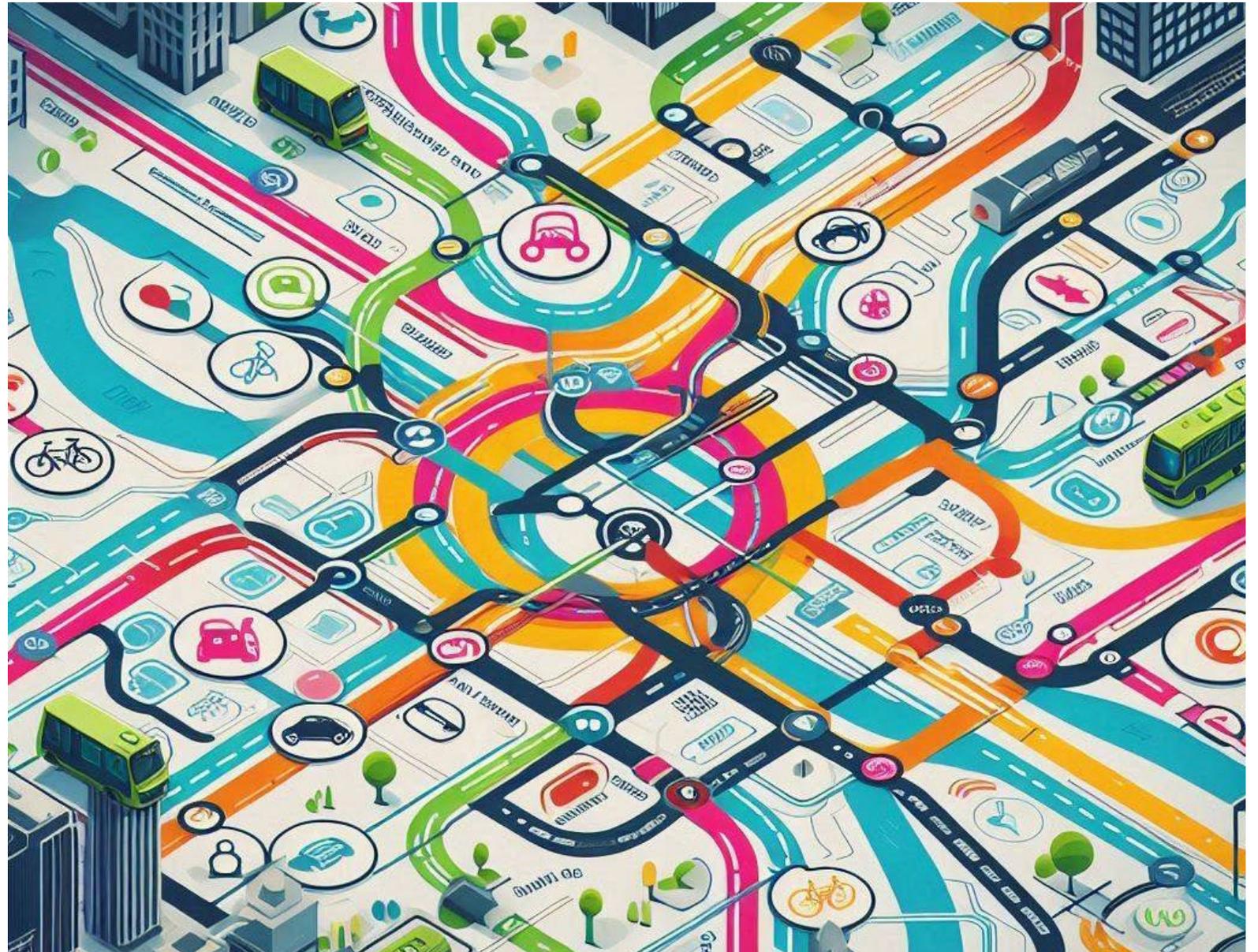**PROVIDE INSIGHTS**

TELL A STORY

TARGETED AUDIENCE

DATA COLLECTION

- Speed
- Volume
- Traffic Congestion
- Road Safety /Collision
- Pedestrian and Bicycle Crash
- Realtime & Historical Data
- Transit

BIG DATA

- INRIX

- SWITRS

- PemS

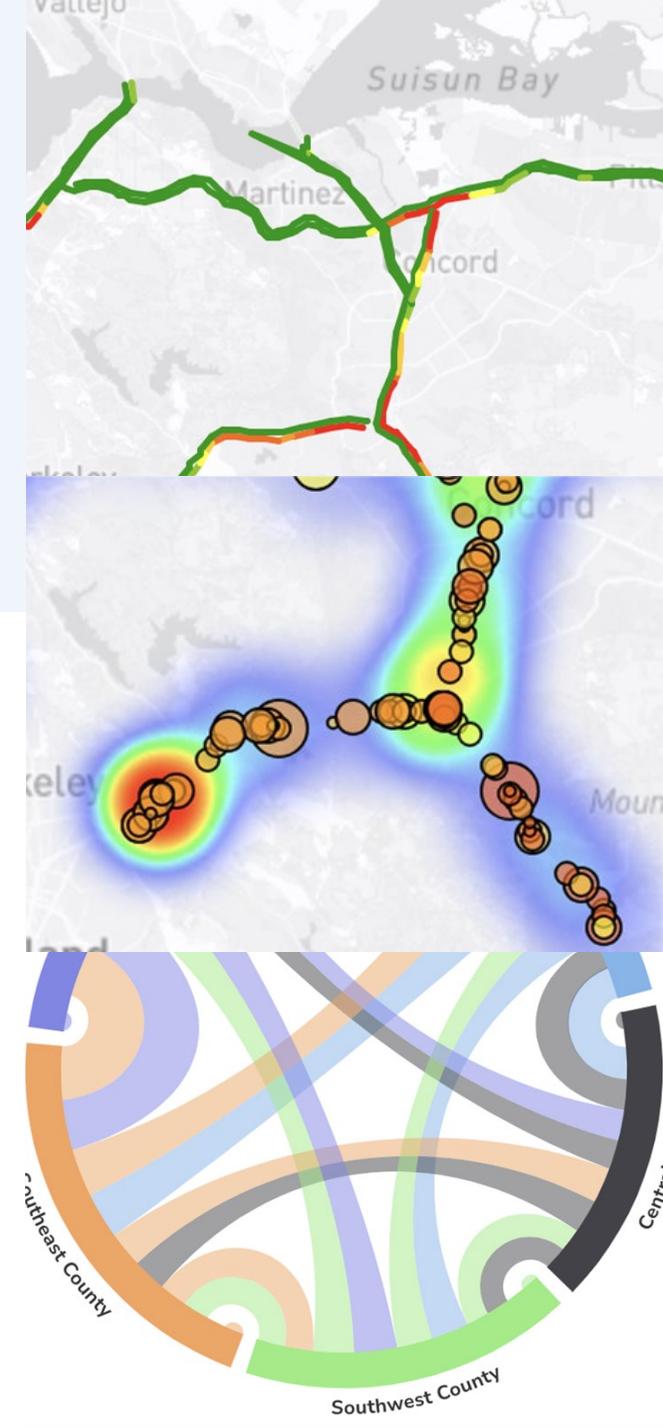- StreetLight

- 511.org

- Other Sources

Data and Maps: Traffic Safety and Congestion Management Countywide

CCTA and its regional partner agencies are using real-time traffic data to help manage congestion on county roadways. This website shares some of the key data that informs CCTA's decision-making around transportation challenges. It also provides tools for you to make informed decisions about how and when you travel.
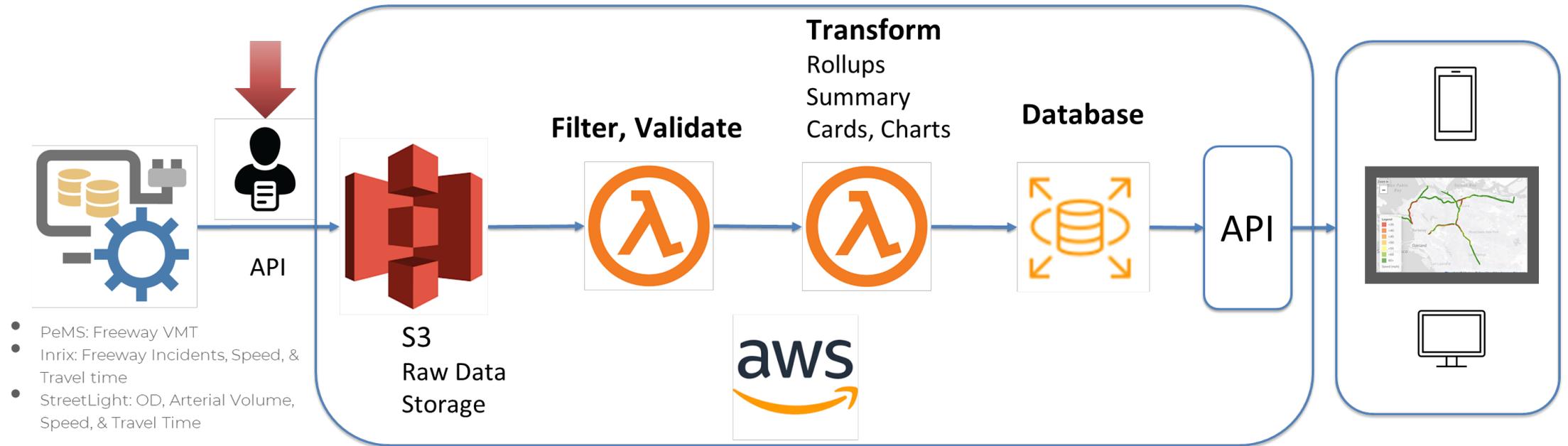
CCTA Data Dashboard   https://data.ccta.net/

- Visual Storytelling through Data Science and Applied Software Development

- Monitoring/Intelligent Decision-Making Use Cases

- Started with data available: Inrix, StreetLight, and PeMs.

- All deployed in AWS

- Existing pages: Congestion, Safety, Trends, CMP, Projects, & 511CC

- Monthly data updates

- Working on: BART Ridership, Arterial Data

- Future work: Transit dashboard

Dashboard's Data Journey

- PeMS: Freeway VMT
- Inrix: Freeway Incidents, Speed, & Travel time
- StreetLight: OD, Arterial Volume, Speed, & Travel Time

API

S3
Raw Data
Storage

Filter, Validate

Transform
Rollups
Summary
Cards, Charts

Database

aws

API

CCTA Multi-Year Data Plan

Complexity

2022- Phase I

Demonstrated cloud
capabilities as a POC.

2023 – Phase II

Analytics dashboard
utilizing data available (Inrix
planning speed and
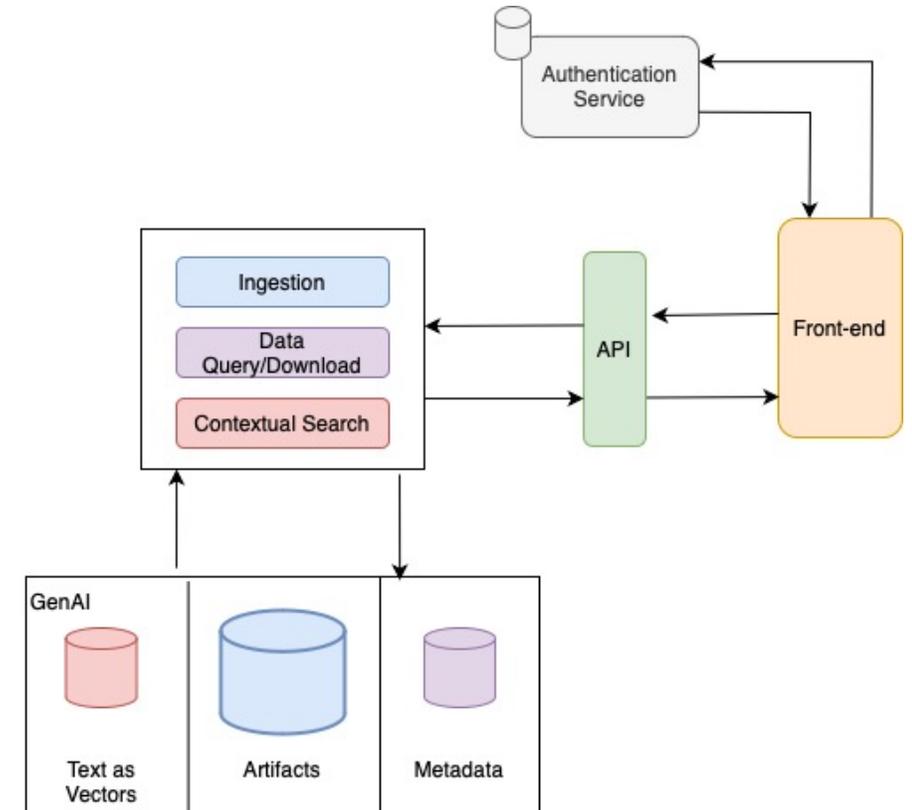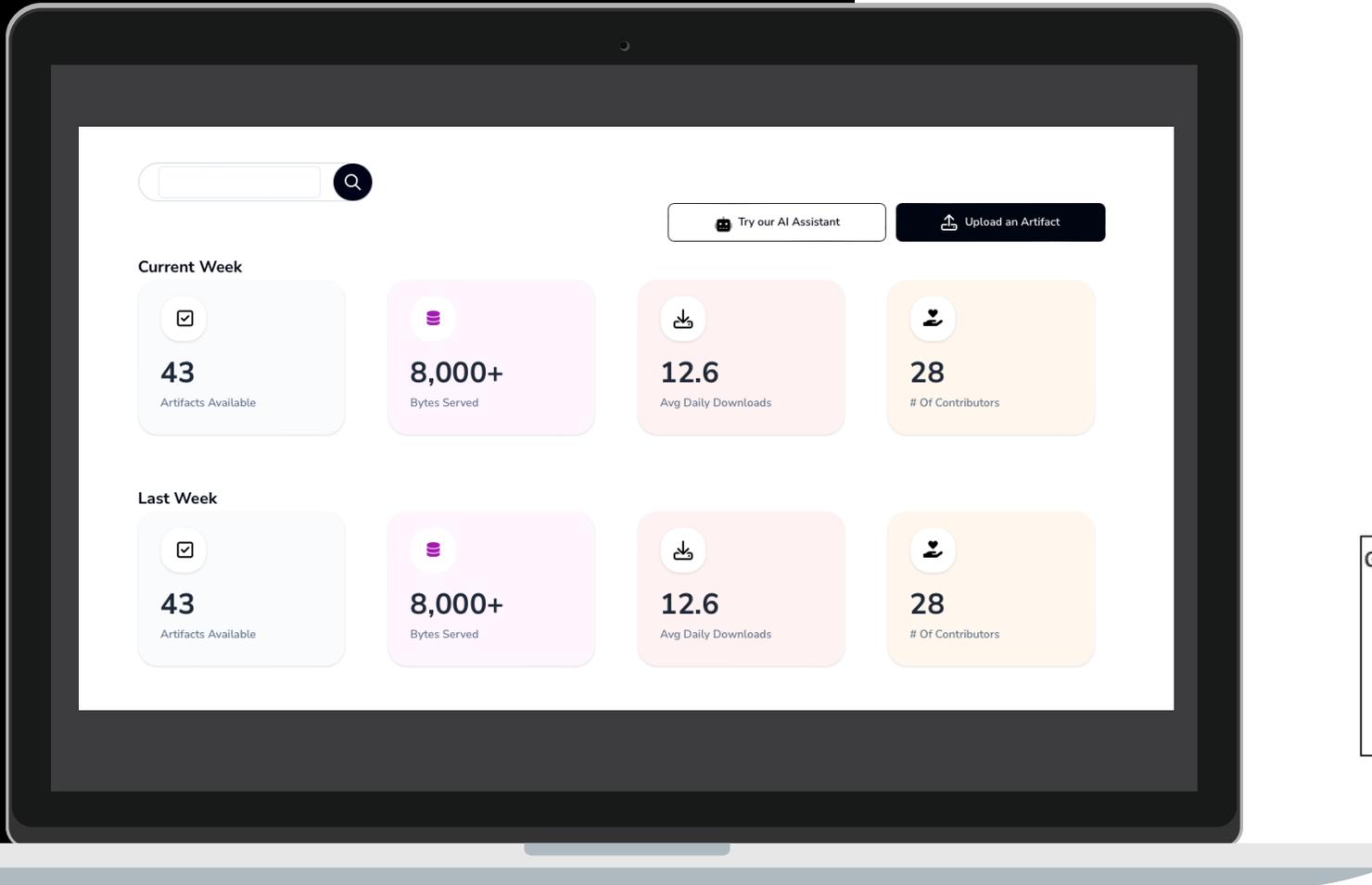incident data, PeMS, and
Streetlight.

2024 –Phase III

- CCTA Data Repository
- Gen-AI
- Predictive analytics
- Project Central Platform

2025 & after – Phase IV

- Large-scale data lake
  (data management
  center)
- Scaled real-time data
  ingestion and export
- Complex ML/AI
  algorithms

CCTA Data Repository V 1.0 Architecture

StreetLight Data – helping Contra Costa Partners with granular and accurate metrics
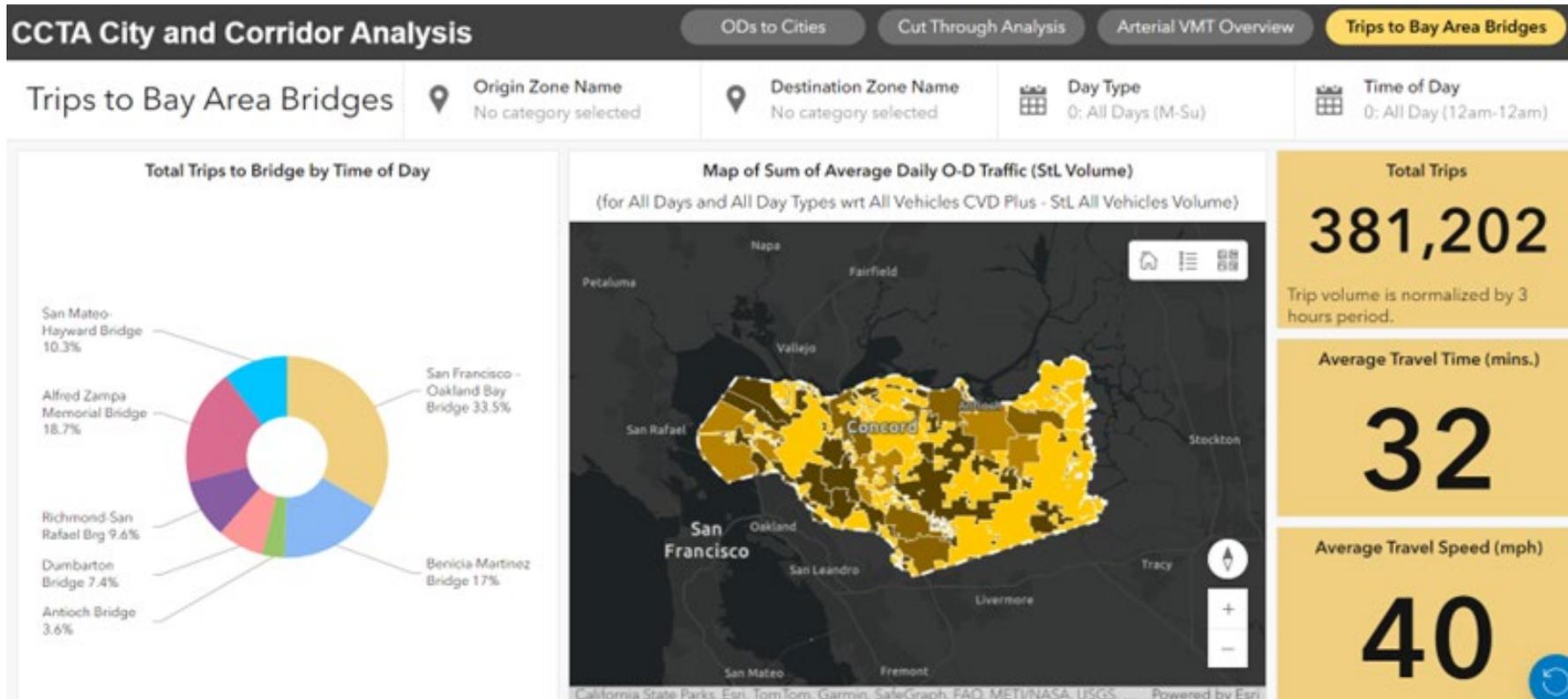
Most popular use cases for cities are:

○ Intersection and Corridor Studies

○ Corridor and Network Safety Analyses

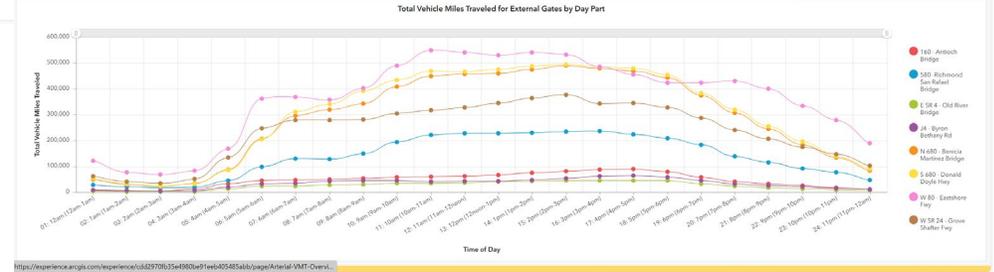○ Signal Retiming and Monitoring

Custom Dashboard – County Trips to Bay Area Bridges
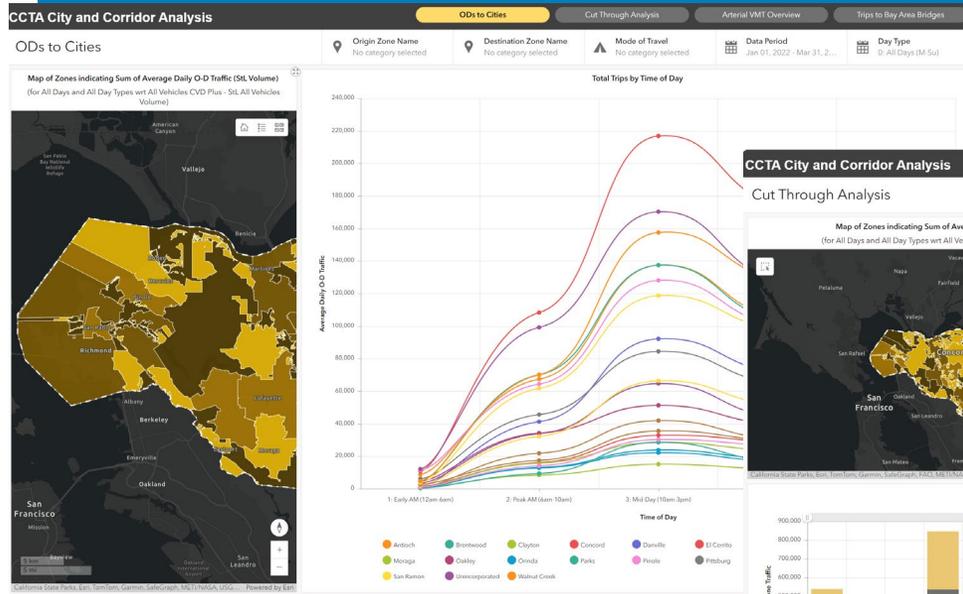

Participating Jurisdictions

CCTA
Contra Costa County
El Cerrito
Hercules
Lafayette
Moraga
Oakley
Orinda
Pinole
Pittsburg*
Richmond
San Pablo
Walnut Creek

Corridor Analysis (dashboard) Dashboards

Corridor Analysis
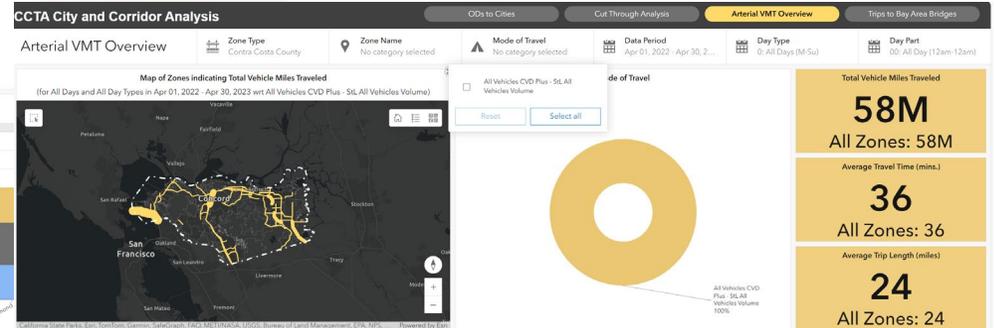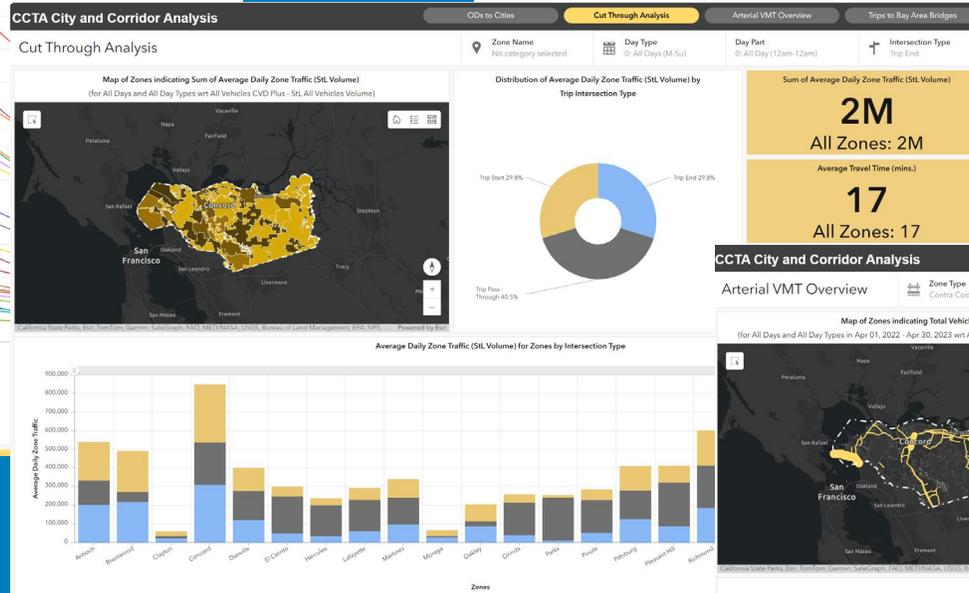
2019 *Pre-COVID19* Average Daily Traffic

2021 *Post-COVID19* Average Daily Traffic

2019 % split	2019 Traffic	2021 % split	2021 Traffic	Road
14% / 86%	131,129	15% / 85%	111,973	N 80
23% / 77%	132,031	25% / 75%	113,936	N 680
80% / 20%	17,704	80% / 20%	15,135	W San Pablo Dam Rd
81% / 19%	25,870	84% / 16%	20,607	Contra Costa Rd
88% / 12%	35,498	88% / 12%	33,332	Ygnacio Valley Rd
89% / 11%	31,654	90% / 10%	28,460	Lone Tree Way
80% / 20%	48,357	80% / 20%	44,987	Treat Blvd
34% / 66%	178,917	34% / 66%	175,878	W 80
54% / 46%	165,917	52% / 48%	151,101	W SR 24
38% / 62%	15,151	41% / 59%	13,220	E SR 4
77% / 23%	41,162	77% / 23%	37,635	Bollinger Canyon Rd
41% / 59%	157,519	38% / 62%	147,347	S 680
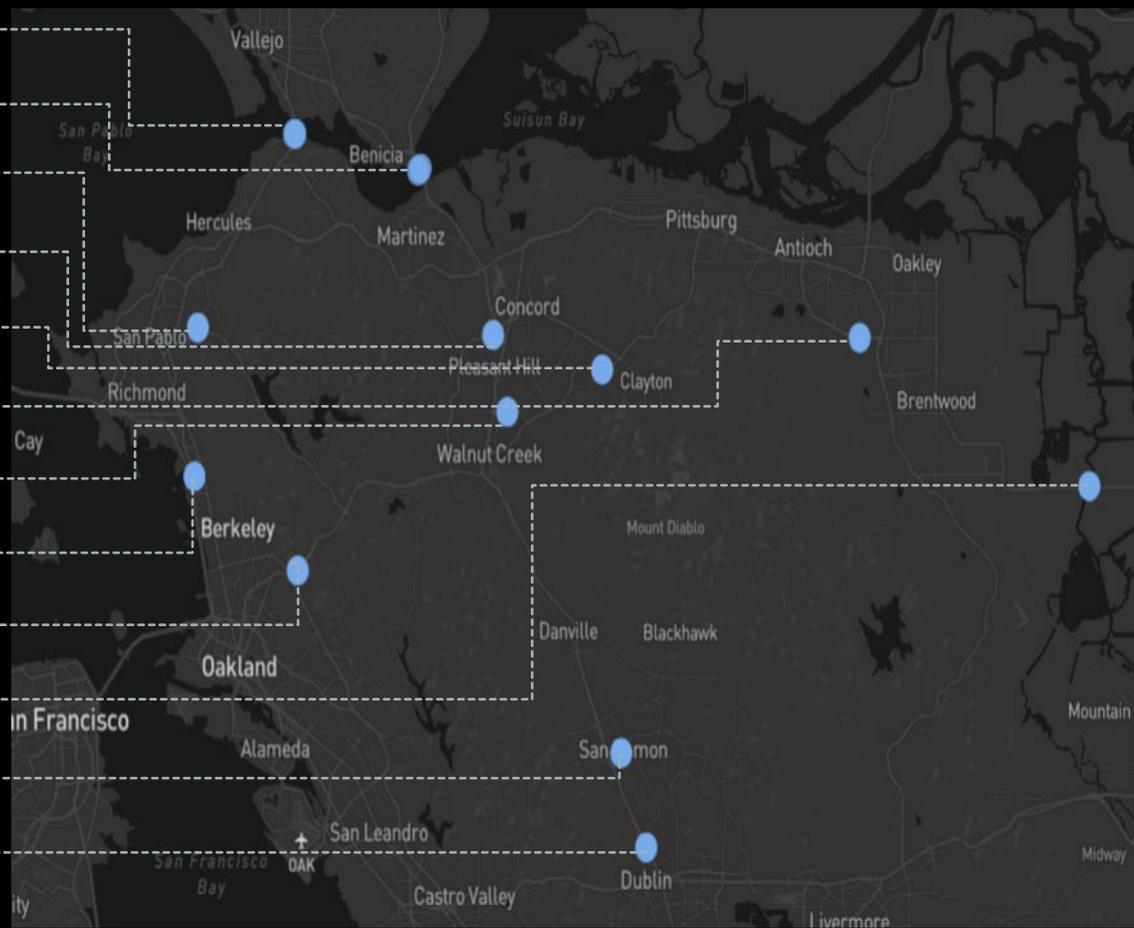
■ Trips by Residents of Contra Costa

	Average CC resident traffic Local Arterials / Highways	Average trip length Local Arterials / Highways	Average trip time Local Arterials / Highways
2019	82% / 34%	16.0 mi / 49.5 mi	46 min / 81 min
2021	71% / 34%	15.5 mi / 52 mi	42 min / 76 min

2019 Top Home Zip Codes:

Zip	%
San Ramon (94582)	5.8%
San Ramon (94583)	4.7%
Vallejo (94591)	3.9%
Antioch (94531)	2.9%
Benicia (94510)	2.8%

2021 Top Home Zip Codes:

Zip	%
San Ramon (94582)	3.7%
San Ramon (94583)	3.3%
San Pablo (94806)	3.1%
Vallejo (94591)	3.0%
Vallejo (94590)	2.1%

Trip Purpose
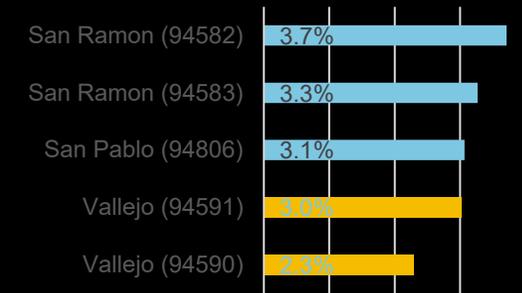
2021 Weekday – Peak AM (6am – 10am)

On average, **30%** of trips are HBW on local arterials but **26%** HBW on highways.

25% of trips are NHB on local arterials and **30%** are NHB on highways.

45% of trips are HBO on local arterials and **44%** are HNO on highways.

N 80
NHB 32%
HBW 25%
HBO 43%

N 680
NHB 33%
HBW 24%
HBO 43%

W San Pablo Dam Rd
NHB 20%
HBW 36%
HBO 44%

Contra Costa Blvd
NHB 36%
HBW 22%
HBO 42%

Ygnacio Valley Rd
NHB 22%
HBW 32%
HBO 46%

Lone Tree Way
NHB 27%
HBW 27%
HBO 46%

W 80
NHB 30%
HBW 27%
HBO 43%

Treat Blvd
NHB 24%
HBW 33%
HBO 43%

W SR 24
NHB 26%
HBW 30%
HBO 44%

Bollinger Canyon Rd
NHB 24%
HBW 29%
HBO 47%

Key

NHB: Non-Home Based
HBW: Home Based Work
HBO: Home Based Other

Congestion on Segments

- 50.20%-54.20%
- 42.80%-50.19%
- 37.30%-42.79%
- 30.80%-37.29%
- 23.20%-30.79%
- 16.10%-23.19%
- 10.60%-16.09%
- 5.50%-10.59%
- 1.10%-5.49%
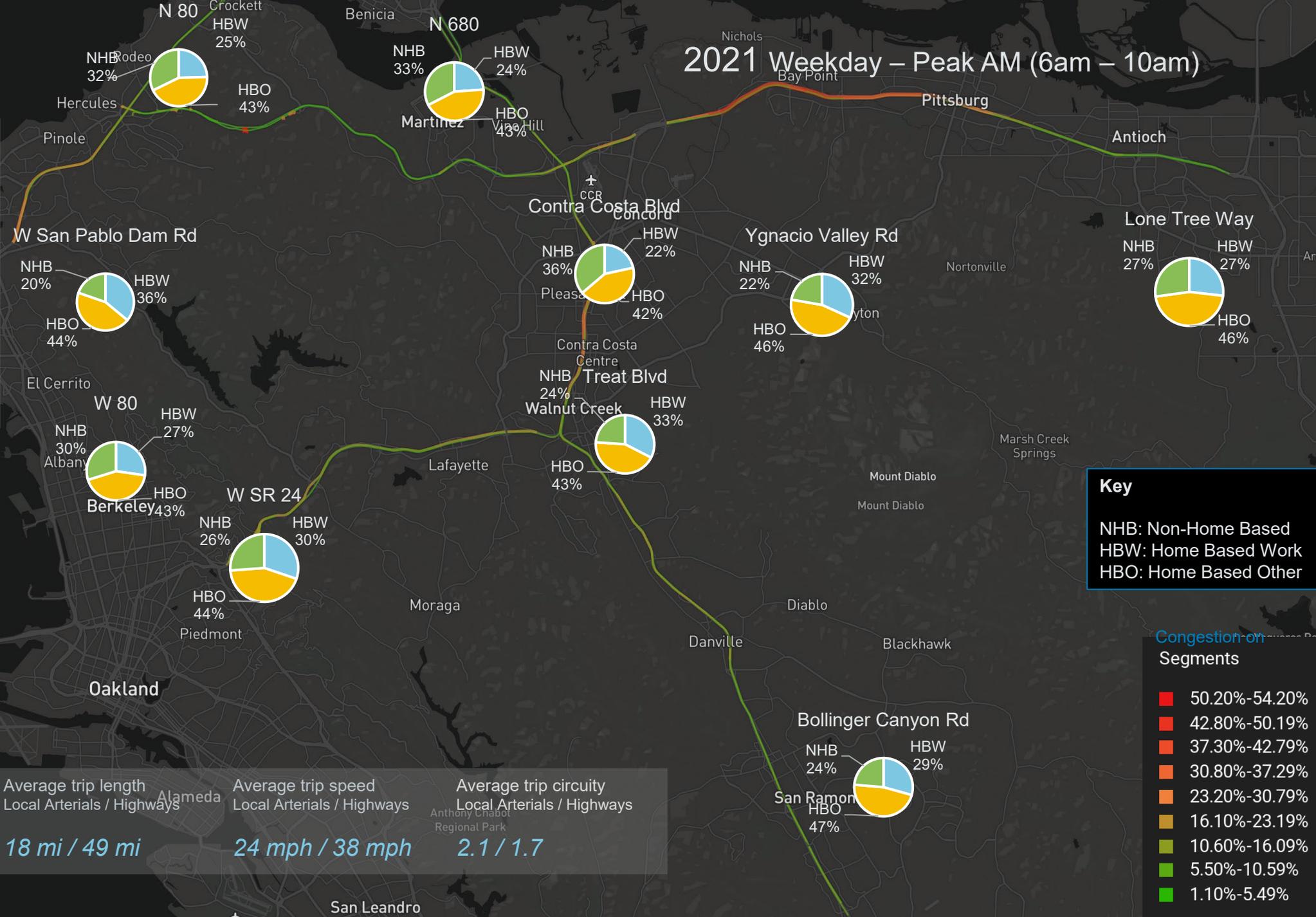
	Average travel time Local Arterials / Highways	Average trip length Local Arterials / Highways	Average trip speed Local Arterials / Highways	Average trip circuity Local Arterials / Highways
	42 min / 70 mins	18 mi / 49 mi	24 mph / 38 mph	2.1 / 1.7

STREETLIGHT

CCTA COUNTYWIDE DATA AND CORRIDOR ANALYSIS

TRANSPLAN TAC