

Welcome!

SACOG

2021 Travel Model User Conference

March 9-11



2021 SACOG Travel Model User Conference

- Meeting is being recorded
- Use mute when you are listening
- Use the chat window to ask questions and comments
- There will be interactive polls
- Q/A time given at the end each presenter

SACOG Data & Analysis Group

Focus is regional data and tools to support decision-making

- **Transportation Modeling & Analysis**
 - **SACSIM model, big data**
 - **Yanmei Ou, Team Leader**
 - **Kyle Shipley, Shengyi Gao, Darren Conley**
- **Data and Mapping Services**
 - **GIS, Census & related data, aerial imagery, data portal**
 - **Jineui Hong, Team Leader**
 - **Tina Glover, Pete Atwood, Laura Bell, Warren Navarro**

2021 SACOG Travel Model User Conference

Date	Morning (10am-12pm)	Afternoon (1pm – 3pm)
March 9th	Session1: Welcome and Introduction Moderator – Bruce Griesenbeck	Session2: Reducing Mitigation Anxiety: SB 743 Implementation & VMT Analysis Moderator - Maricela Salazar
March 10th	Session3: Is it 2024 yet? Planning for the future Moderator – Kye Shipley	Session4: Working Smarter not Harder: Data & Support Moderator – Shengyi Gao
March 11th	Session4: Nuts and Bolts: Analysis Tools & Methodology Moderator – Darren Conly	Follow Up - TBD

Session 1 Welcome and Introduction

- **Welcome and Introduction**
- **SACSIM and its applications**
- **Air Quality and Conformity Analysis**
- **Other Analysis Tools**
- **What's next?**
- **Introduction of next session**

Highlights of 2020

- [Modeling Website](#)
- [Model Documentation](#) (available online)
- SCS Submission to CARB (competitive funding, CEQA streamlining—more in Session 3)
- MTIP Amendment and Data Release ([more details in Session 4](#))
- SB743 Data and Analysis Support ([more details in Session 2](#))
- Big Data Pilot – Replica ([more details in Session 4](#))
- [Land Use SACSIM Processing \(Session 5\)](#)

Polling – Who you are

- Please tell us your affiliation
- Please tell us your professions or what your responsibilities in the current job
- Please tell us how much you know about the following tools and processes

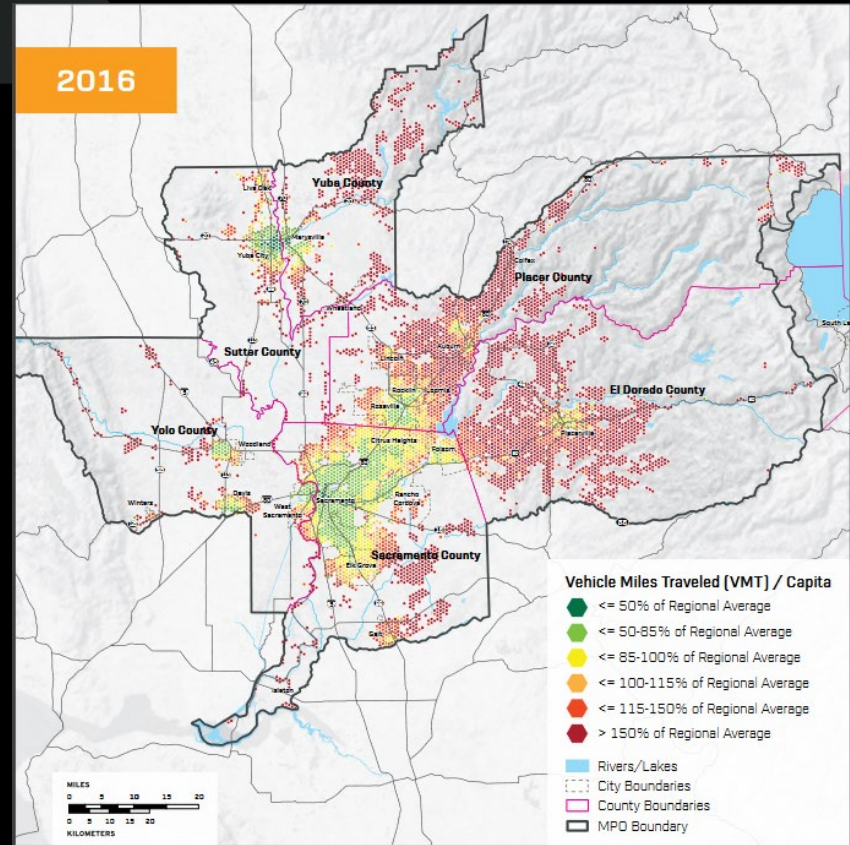
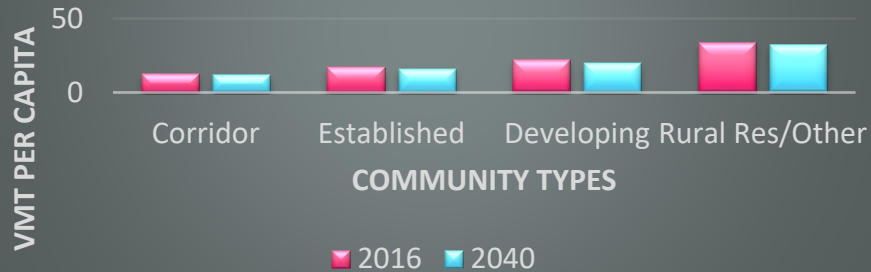
Introduction to SACSIM - Kyle Shipley

Air Quality and Conformity Analysis - Shengyi Gao

Other Analysis Tools - Darren Conly

Application

Weekday Household Vehicle Miles Traveled per Capita by Community...



Resources

- Check Out SACOG Modeling Website for Data Requests and Additional Resources:
<https://www.sacog.org/modeling>
 - New Model Documentation and User Guide for SACSIM19
 - <https://www.sacog.org/travel-model-documentation>
 - Past Conference Presentation
 - <https://www.sacog.org/travel-model-users-conference>

Thank You

For more information on SACSIM contact

kshipley@sacog.org or visit

<https://www.sacog.org/modeling>



Modeling Vehicle Emissions & Air Quality Conformity

Shengyi Gao

Sacramento Area Council of Governments

sgao@sacog.org



What is AQC & Why Is It Important?

- AQC = "air quality conformity"
 - SACOG demonstrates that transportation + land use plans will result in vehicle emissions that "conform" with state/federal standards
- Ensures transportation does its part to clean the air
- Ensures that projects are qualified to receive state and federal funding

Federal Regulatory Requirements

- Federal regulations
 - Clean Air Act (CAA)
 - Criterial pollutants: Lead (Pb), Carbon Monoxide (CO), Sulfur Dioxide (SO₂), Nitrogen Dioxide (NO₂), Ozone (O₃), Particulate Matter (PM₁₀ and PM_{2.5})
 - National Ambient Air Quality Standards (NAAQDS)
 - Transportation Improvement Program (TIP)
 - State Implementation Plan (SIP)
 - Metropolitan Transportation Improvement Plan (MTIP)

Data Tools Overview

Darren Conly

**SACOG Travel Model Users Conference
March 2021**

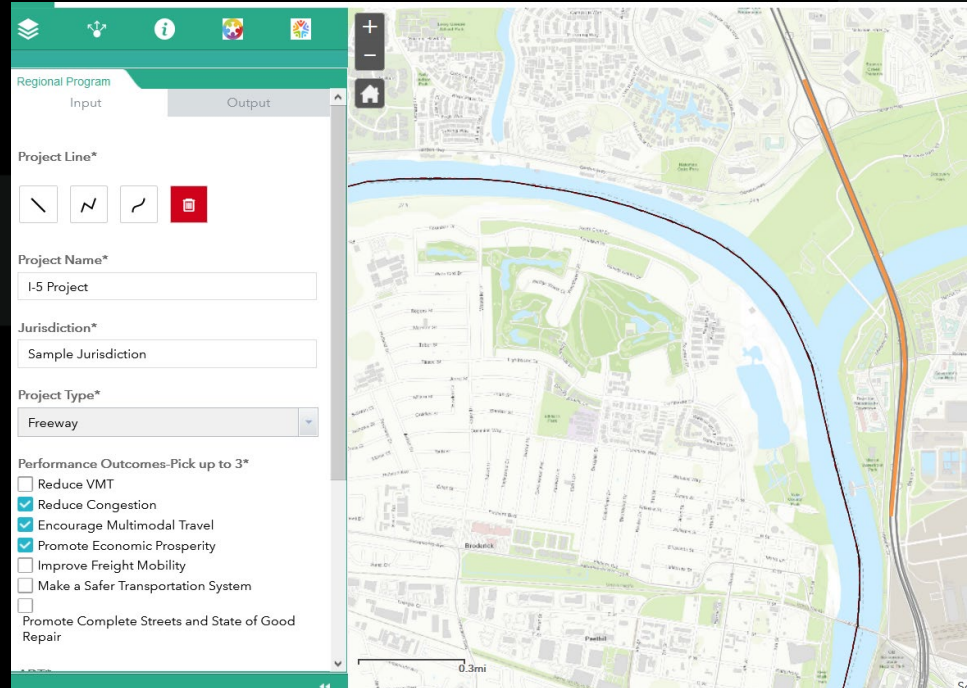


Tool 1

PROJECT PERFORMANCE ASSESSMENT (PPA) TOOL

About the PPA

- Web-based project evaluation tool
- Calculates 80+ metrics
- Helped score 100+ projects in 2020 competitive Funding Round



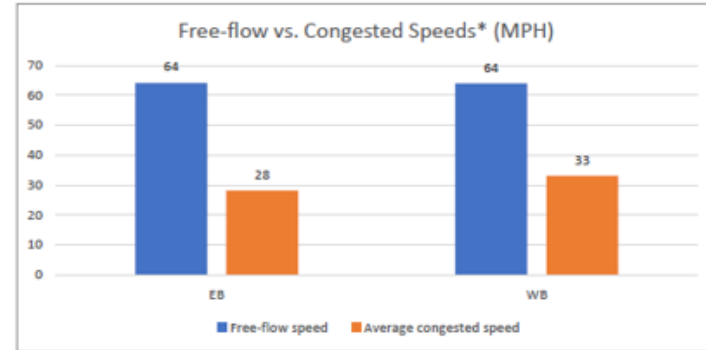
Sample PPA Outputs



Project name: Business 80 HOV Lanes
Project community type: Established Communities

Reduce congestion

Congestion indicator 1: Traffic congestion severity on project segment



Congestion Ratio	EB	WB
Congested speed / Free-flow speed	0.44	0.52

Project AADT

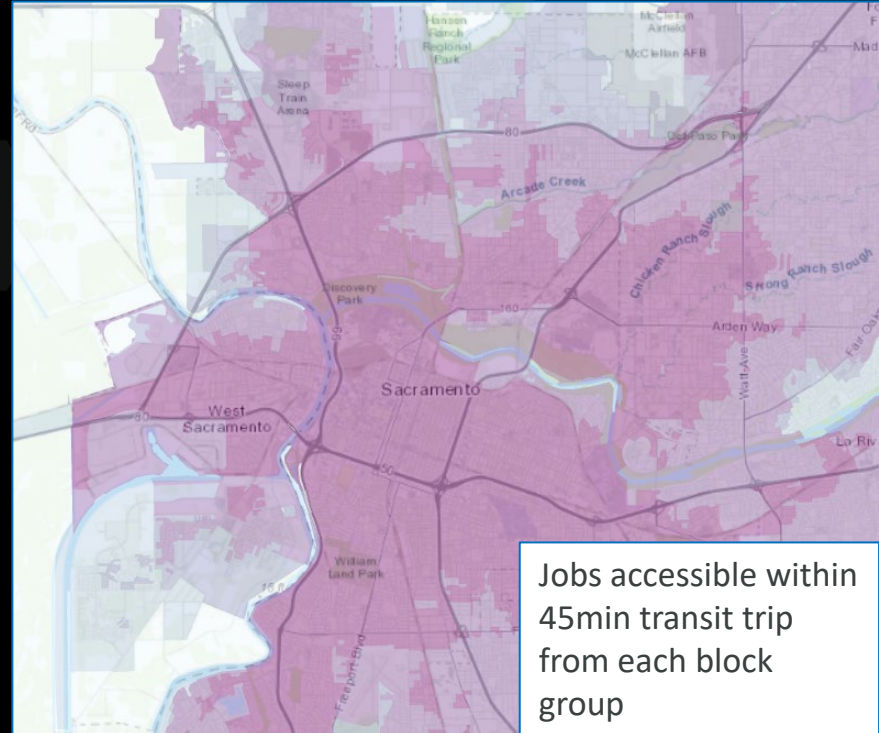
190,000

Tool 2

CUBE ACCESS

CUBE Access Overview

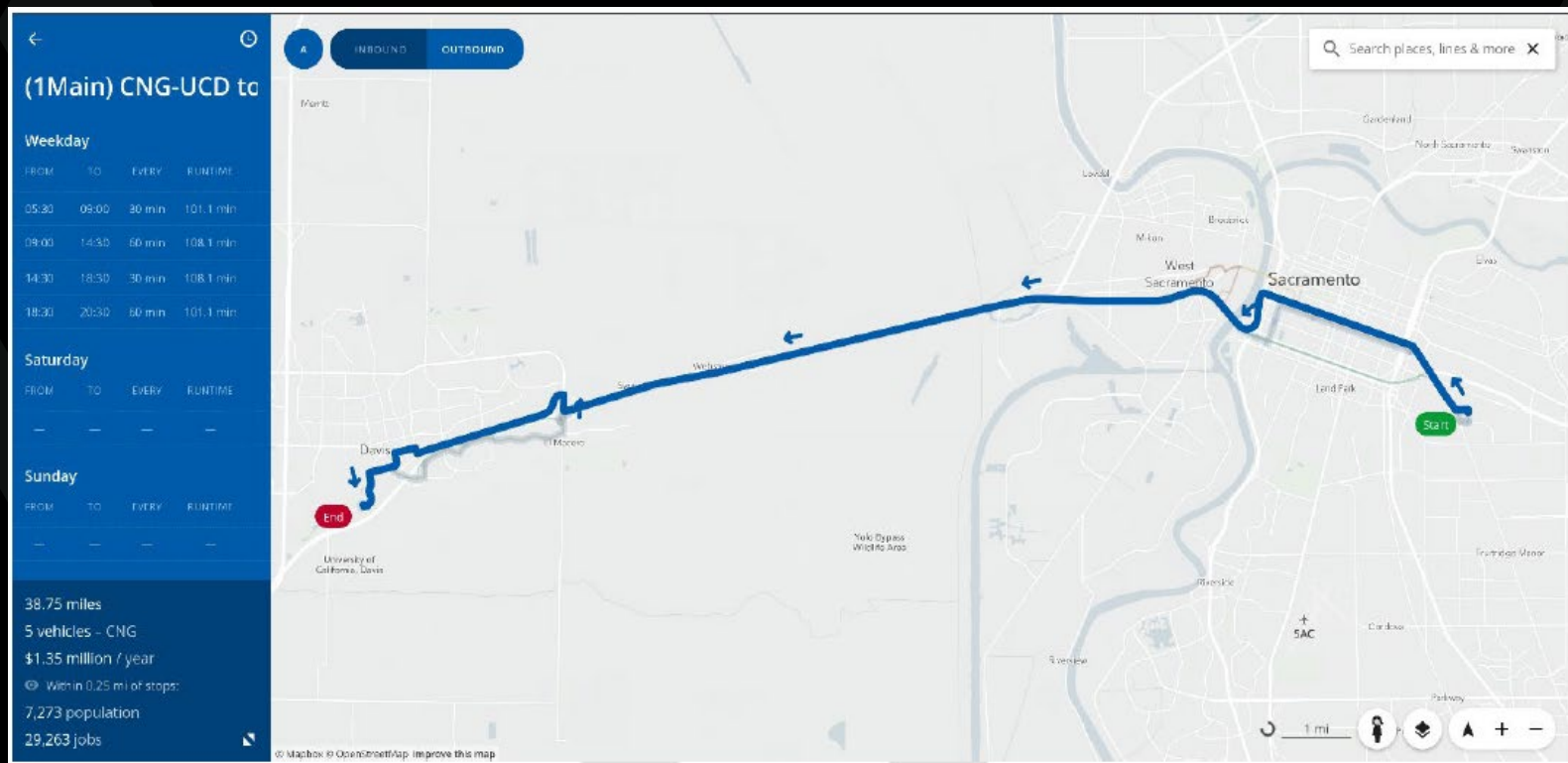
- Provided by Bentley Systems
- Measures access to a variety of destination types with various modes



Tool 3

REMIX TRANSIT PLANNING TOOL

Remix Interface Example



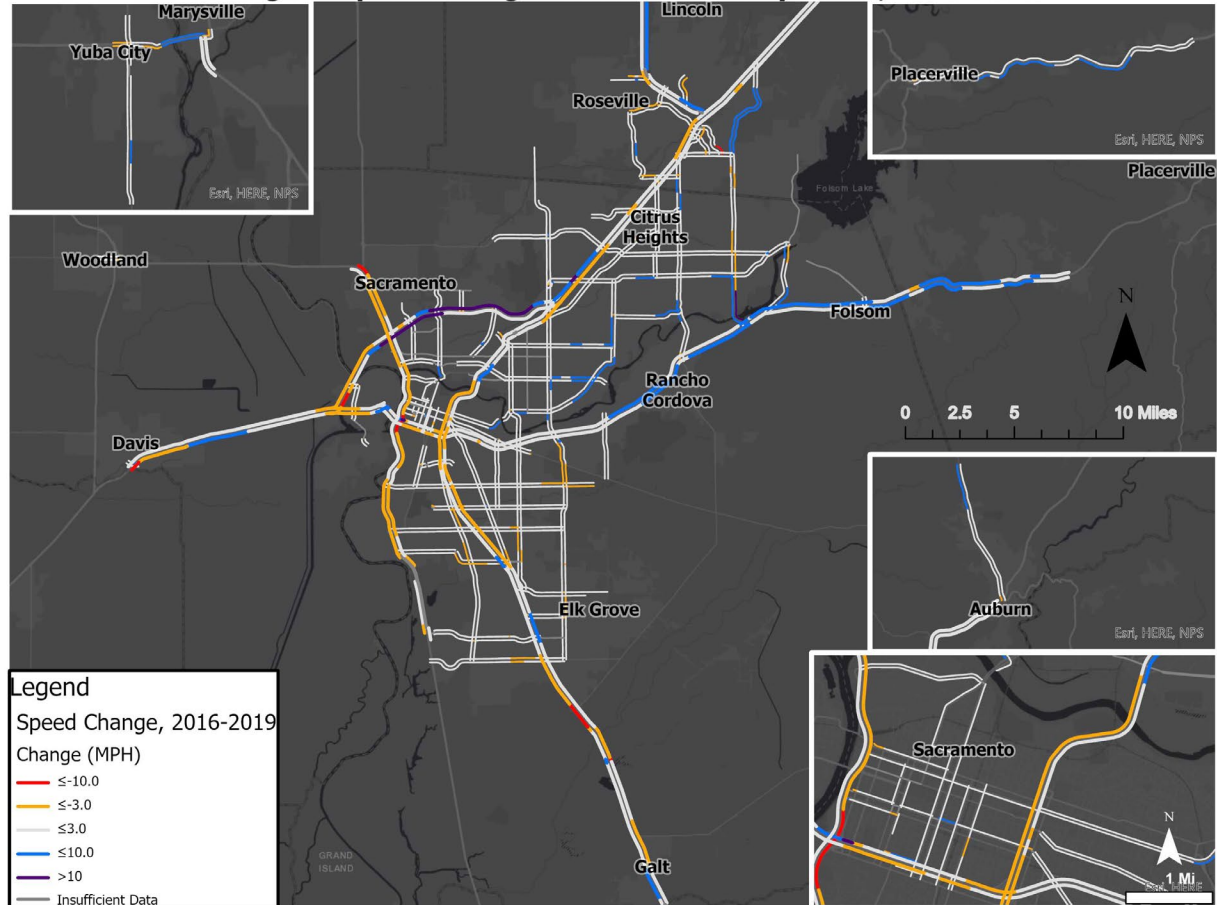
Tool 4

NPMRDS SPEED DATA

The NPMRDS Speed Data

- Archived vehicle travel times available at 5-minute intervals for over 7,000 roadway segments in SACOG region.
- Comes from in-vehicle GPS systems and mobile devices with location-tracking apps enabled

Change in Speed During 4 Slowest Weekday Hours, 2016-2019



Speeds shown represent the average speed during the 4 slowest hours for weekdays.

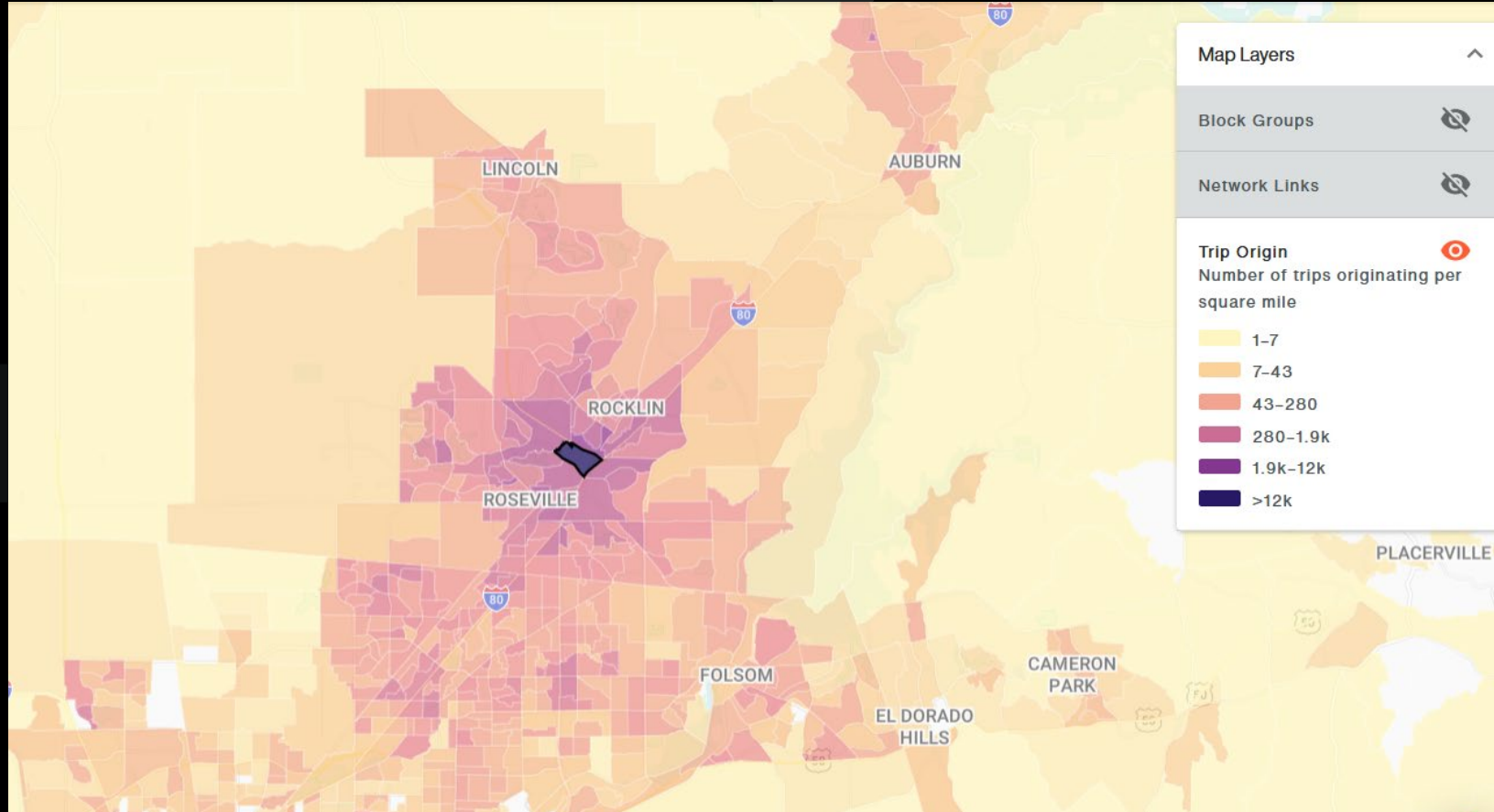
Tool 4

REPLICA BIG DATA PILOT

About Replica

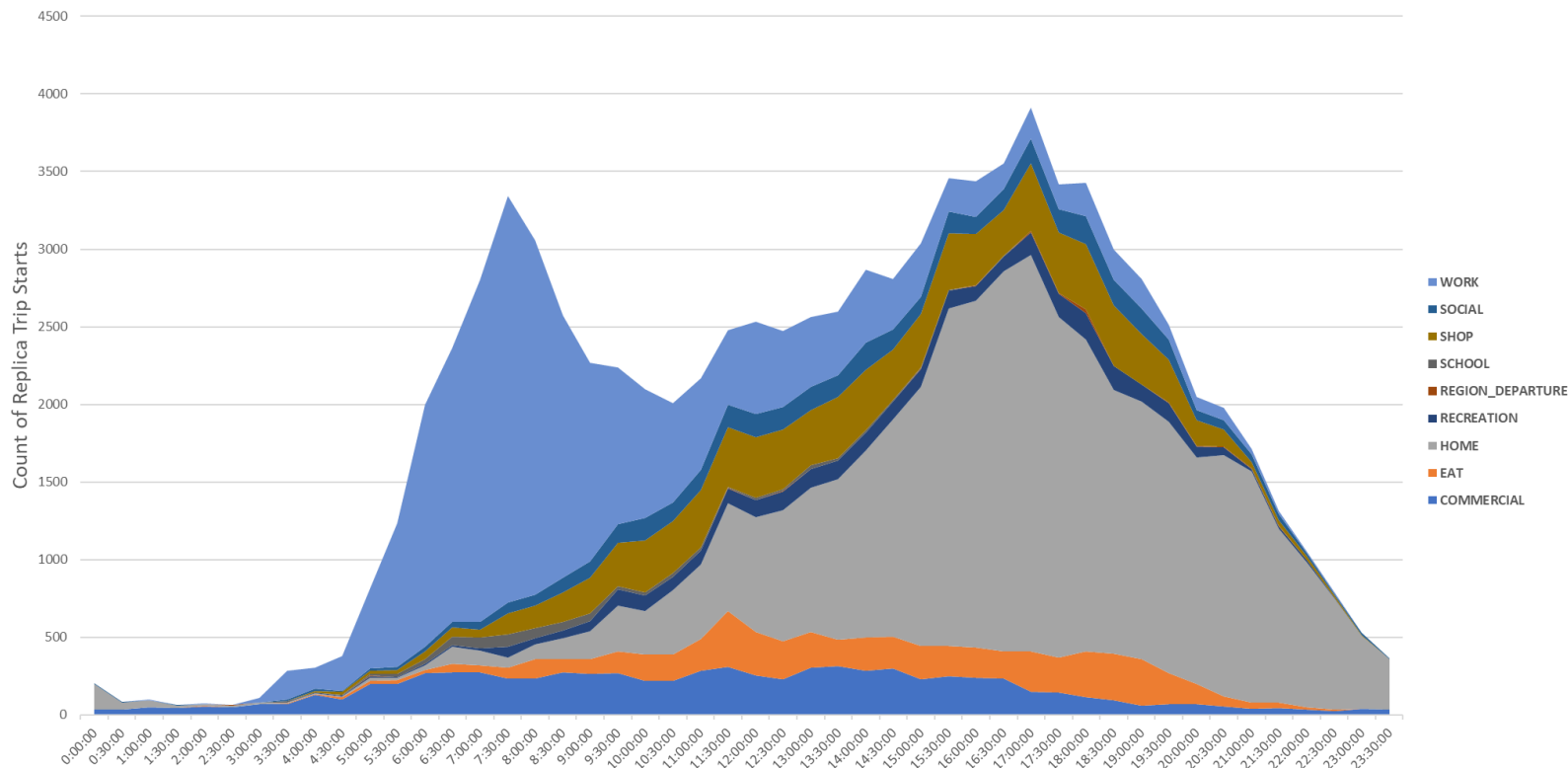
- Creates a “replica” of a typical travel day
- Based on extrapolating from variety of observed data sources

Example 1 – Where do travelers come from?



Example Replica Analyses

Trip starts by purpose and time of day, SR-51 NORTHBOUND at American River,
Thursdays, Sep-Nov 2019



Tool 5

SACOG OPEN DATA PORTAL

SACOG Open Data Portal

- Wide variety of regional data relevant to planning and modeling
- GIS, tabular, other data formats
- data.sacog.org



Tool 5

CENSUS PRODUCTS

2020 Census Updates

- Data dissemination dates block level redistricting data
- 2020 Census geographies are now available
- data.census.gov has replaced American Factfinder
- More census information available from Session 4!

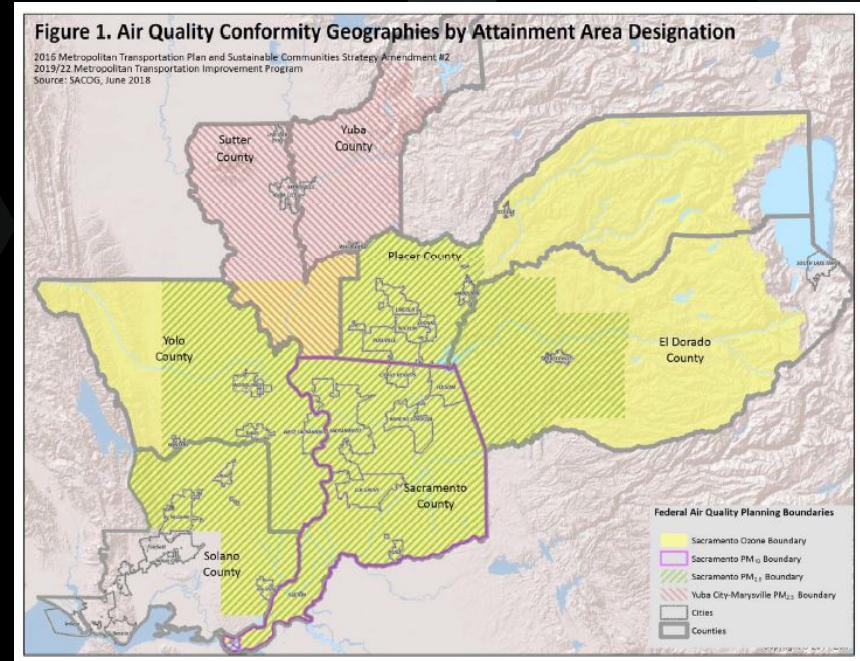
Learn More!

Tool	Session Number and Time
Project Performance Assessment	5 – Thursday @10am
Cube Access	4 – Wednesday @1pm
NPMRDS Speed Data	
Replica	
Open Data Portal	
Census	

For more information about the Remix transit planning app, please contact Michael Rosson – mrosson@sacog.org

SACOG Region Attainment Status

- Ozone
 - **Nonattainment:** ELD, PLA, SAC, YOL
 - **Maintenance:** Yuba City-Marysville
- PM2.5
 - **Nonattainment:** ELD, PLA, SAC, YOL
 - **Maintenance:** Yuba City-Marysville
- PM10
 - **Nonattainment:** None
 - **Maintenance:** SAC



State Regulatory Requirements

- California state regulations
 - AB 32
 - By 2020: to 1990 emission level
 - By 2050: 80% below 1990 emission level
 - SB 375

MPO	Targets Through September 30, 2018		Targets Beginning October 1, 2018	
	2020	2035	2020	2035
MTC/ABAG	-7%	-15%	-10%	-19%
SACOG	-7%	-16%	-7%	-19%
SANDAG	-7%	-13%	-15%	-19%
SCAG	-8%	-13%	-8%	-19%

MTIP and Conformity Analysis

- Update every two years
- Full list of transportation projects
- Regional conformity analysis
- Public review
- Board adoption
- EPA approval

MTIP Regional Conformity Analysis

- Network coding
- Estimating VMT by running SACSIM
- Estimating emissions of criteria pollutants by running Emissions Factor Model (EMFAC)
- Emissions budget test

MTP Regional Conformity and GHG Analysis

- Socio-economic forecast
- Landuse forecast
- Transportation projects with financial constraints
- Estimating VMT by running SACSIM
- Estimating emissions of criteria pollutants and GHG by running Emissions Factor Model (EMFAC)
- Emissions budget test for Environmental Impact Report (EIR) and GHG target test

Looking Forward – 2021 and Beyond

- Prepare for 2024 MTP/SCS
 - Base year update ([more details in Session 3](#))
 - Model improvements/updates
 - SACSIM re-Calibration
 - Project prioritization/inclusion in MTP methodology
- Modeling/analysis supports
 - Continue modeling and analysis supports
 - Improve data and mapping services
 - Streamline model inputs preparing process
 - Challenges – short of staff resources and budgets for outsourcing