



Community Mobility Resilience Plan

PUBLIC WORKSHOP #1

February 13th, 2020

District 56

Meeting Overview

- Welcome, Introductions, and Agenda review
- Overview of Community Mobility Resilience Plan
- Analysis and anticipated flooding, heat, and fiscal impacts
- Small group discussion of impacts and resiliency strategies
- Reports from small groups
- Review action items and next steps

Community Mobility Resilience Plan Overview

Project Purpose

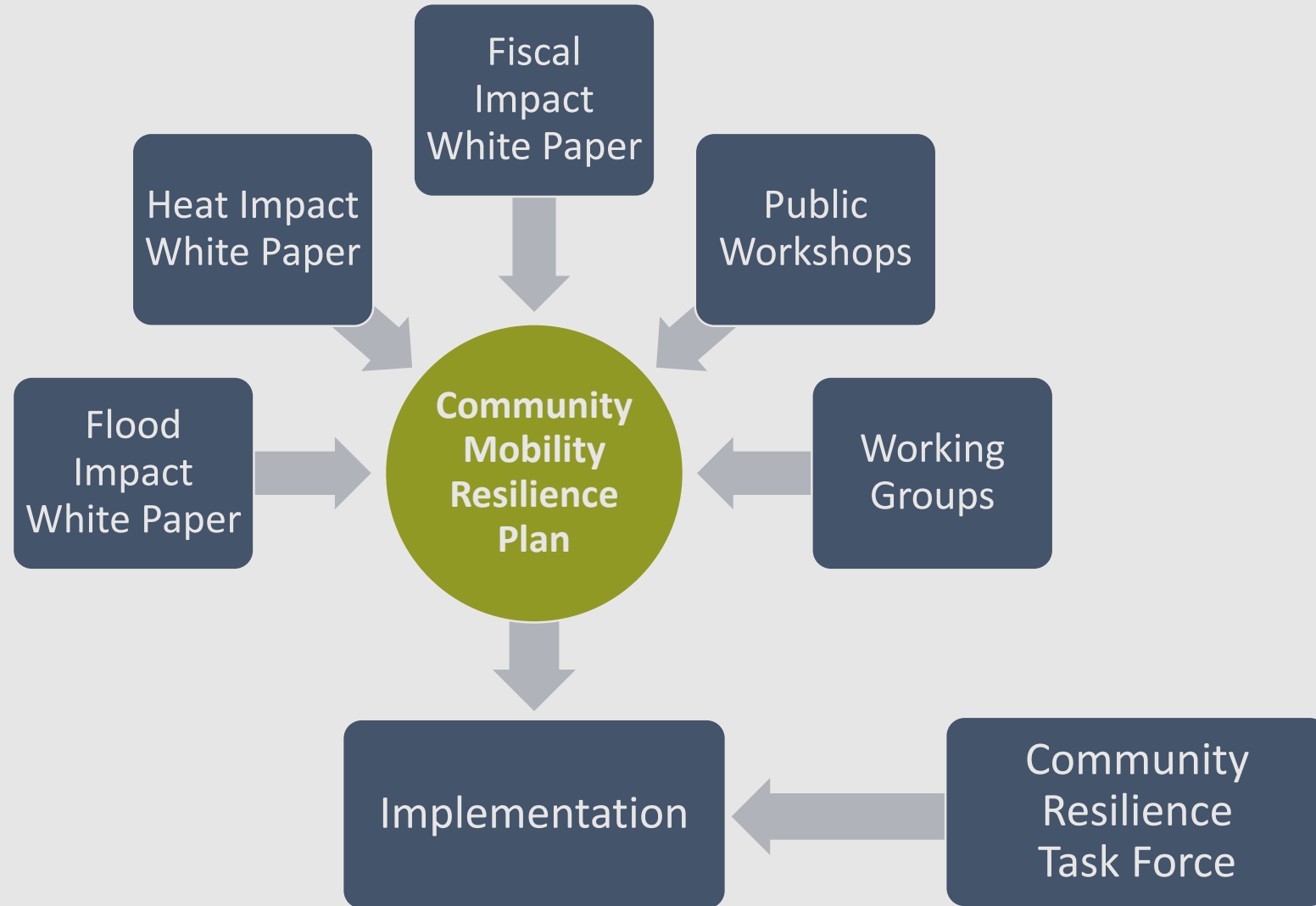
- The plan will develop detailed actions, funding strategies, and partnerships to respond and adapt to the local impacts of climate change on the transportation system and its associated impacts.

Community Mobility Resilience Plan Overview

Project Process

- Impacts addressed through working groups and white papers:
 - Precipitation and flooding impacts
 - Heat-related impacts
 - Fiscal impacts of changing mobility landscape
- Community Resilience Task Force established for assistance during plan implementation

Community Mobility Resilience Plan Overview



Project Timeline

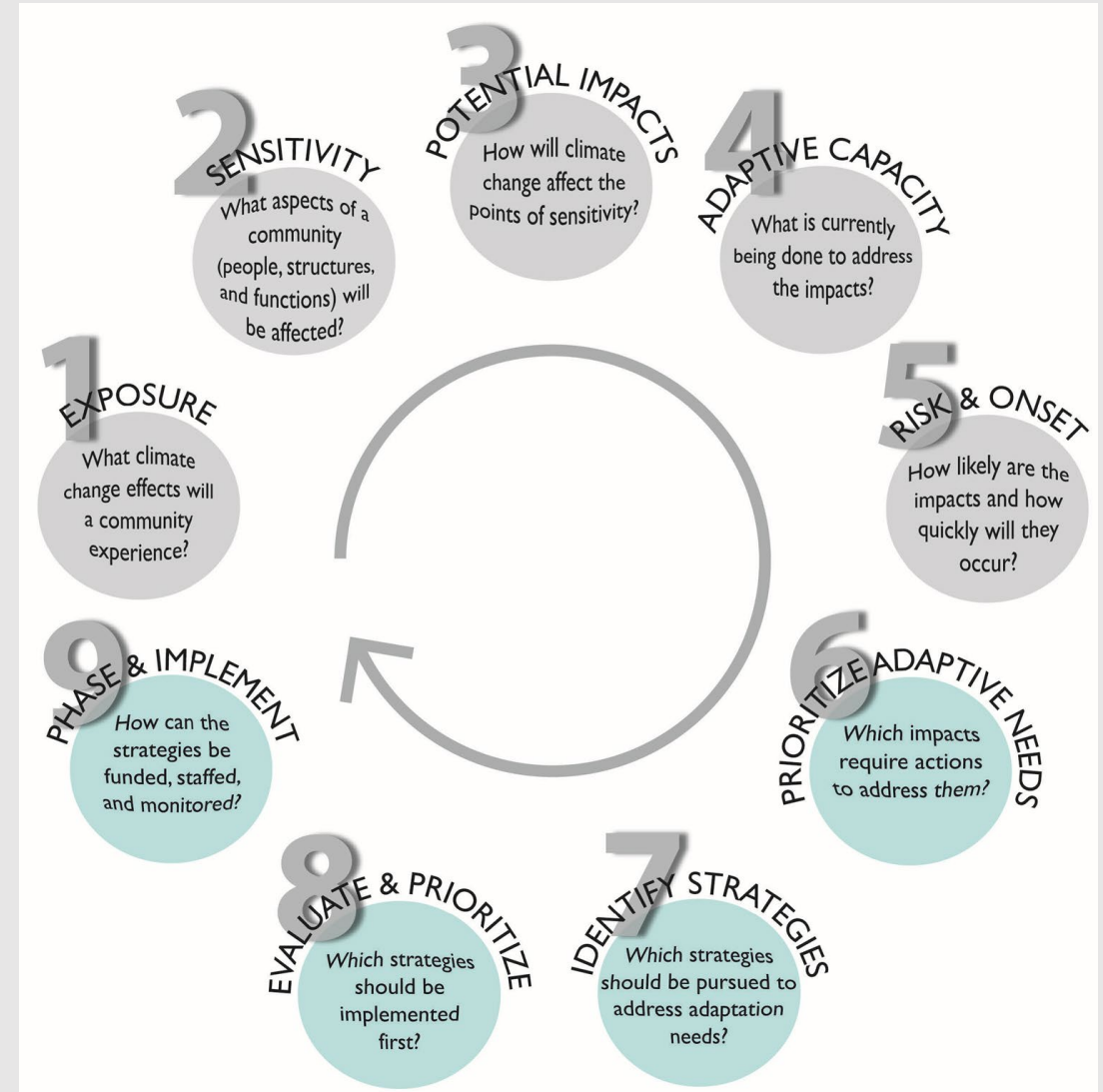


Analysis & Anticipated Impacts



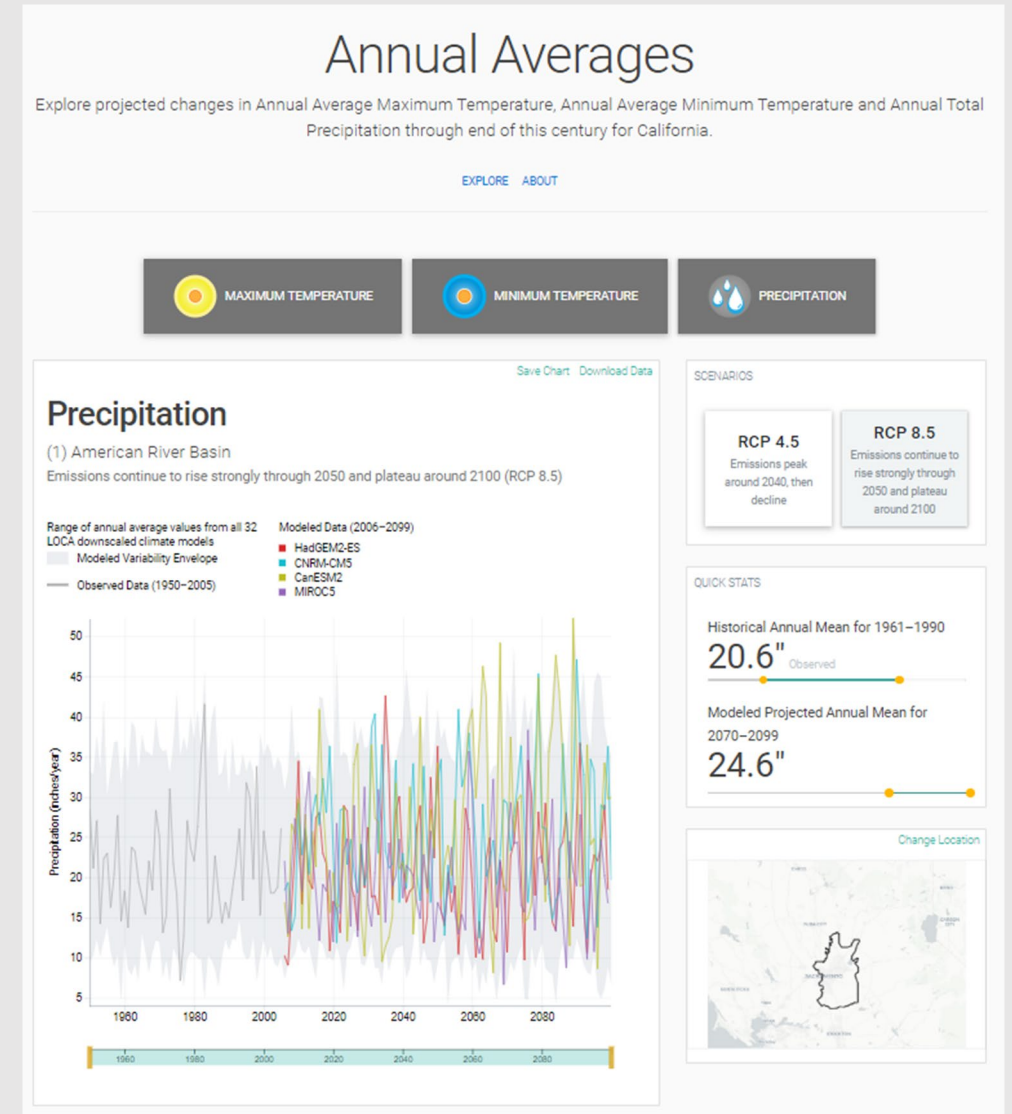
Adaptation Planning Process

- **California Adaptation Planning Guide**
 - Vulnerability Assessment
 - Adaptation Strategy Development
- Using FHWA and Caltrans Guidance as well
- SACOG Adaptation Plan



Cal-Adapt and Emissions Scenarios

- Analysis uses Cal-Adapt data
- Includes local climate change affects in California
- Uses global climate modeling
- Uses "downscaled" model outputs to project local impacts



Extreme Heat Assessment

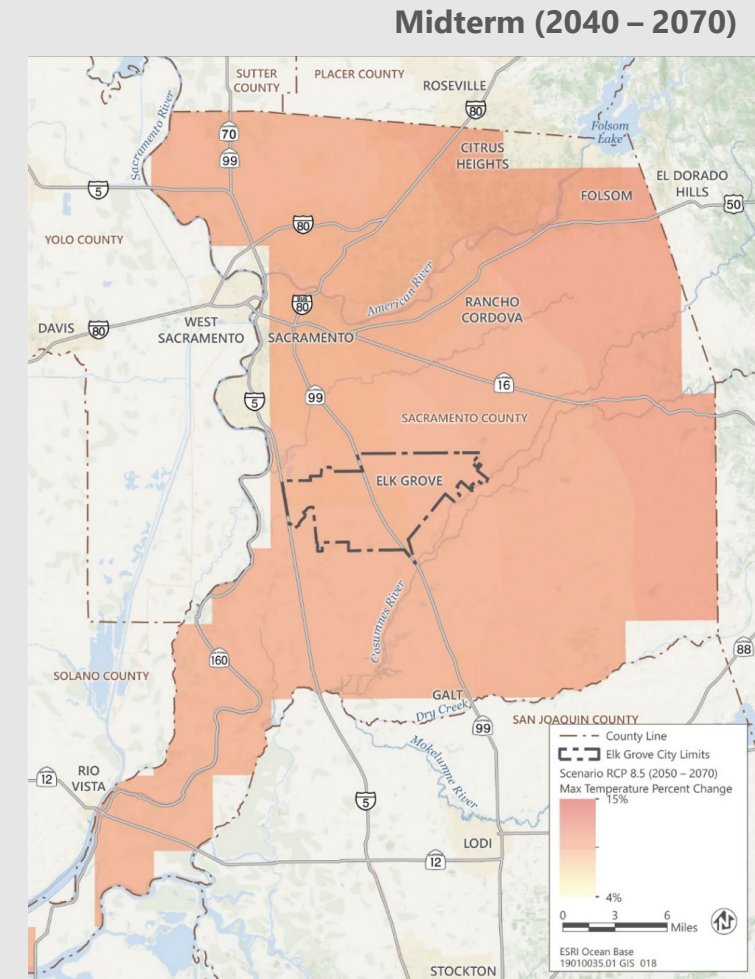


Extreme Heat Days and Heat Waves

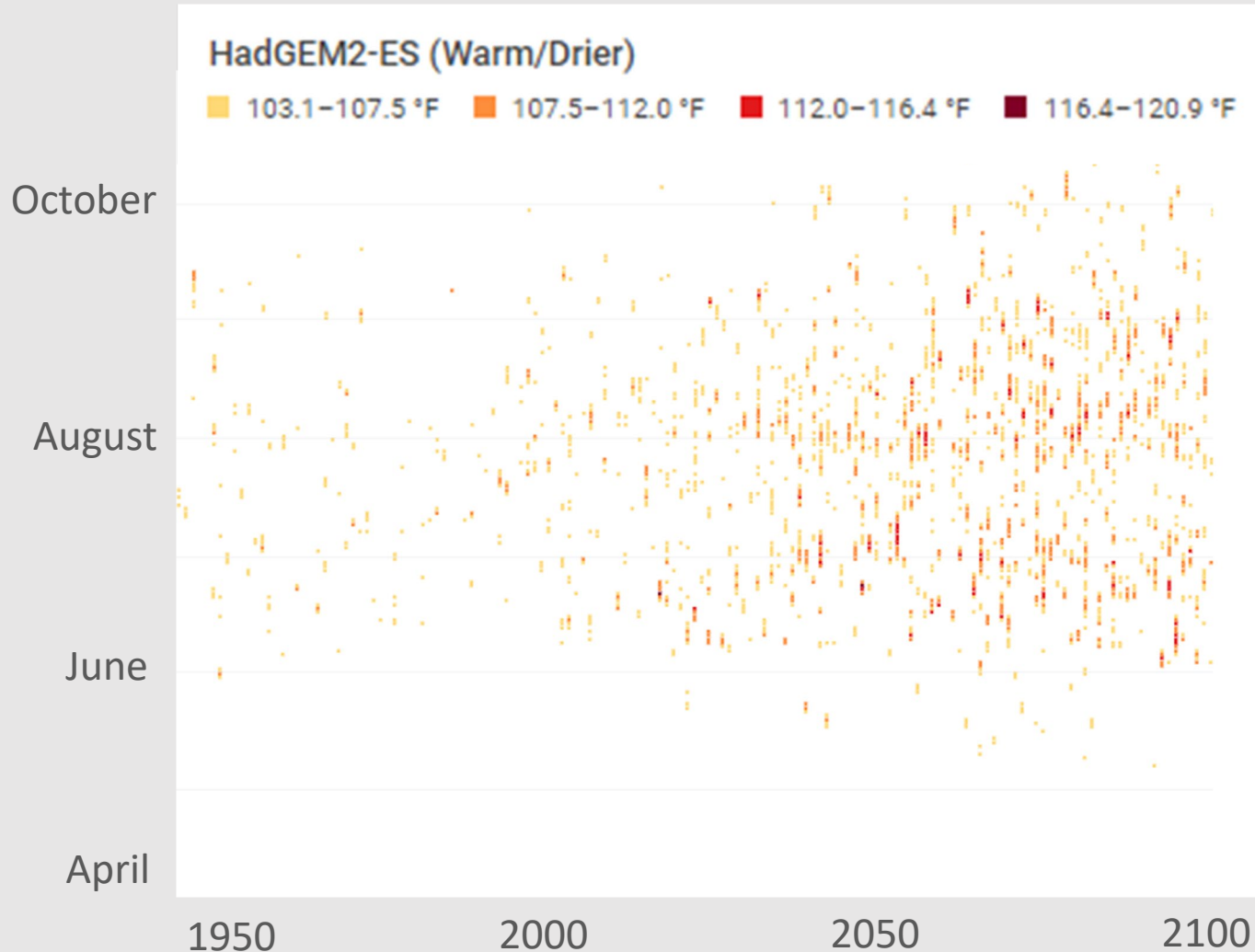
Extreme Heat Days and Heat Waves

Extreme Heat Indicator	Historic (1961-1990)	Near Term (2020-2040)	Mid Term (2040-2070)
Annual Extreme Heat Days above 103°F	4	15	24
Annual Heat Wave Event Frequency	0.2	1.6	3.1
Average Heat Wave Duration (Days)	2	5.3	7

Source: Cal-Adapt 2019



Timing of Extreme Heat Days



Source: Cal-Adapt 2019

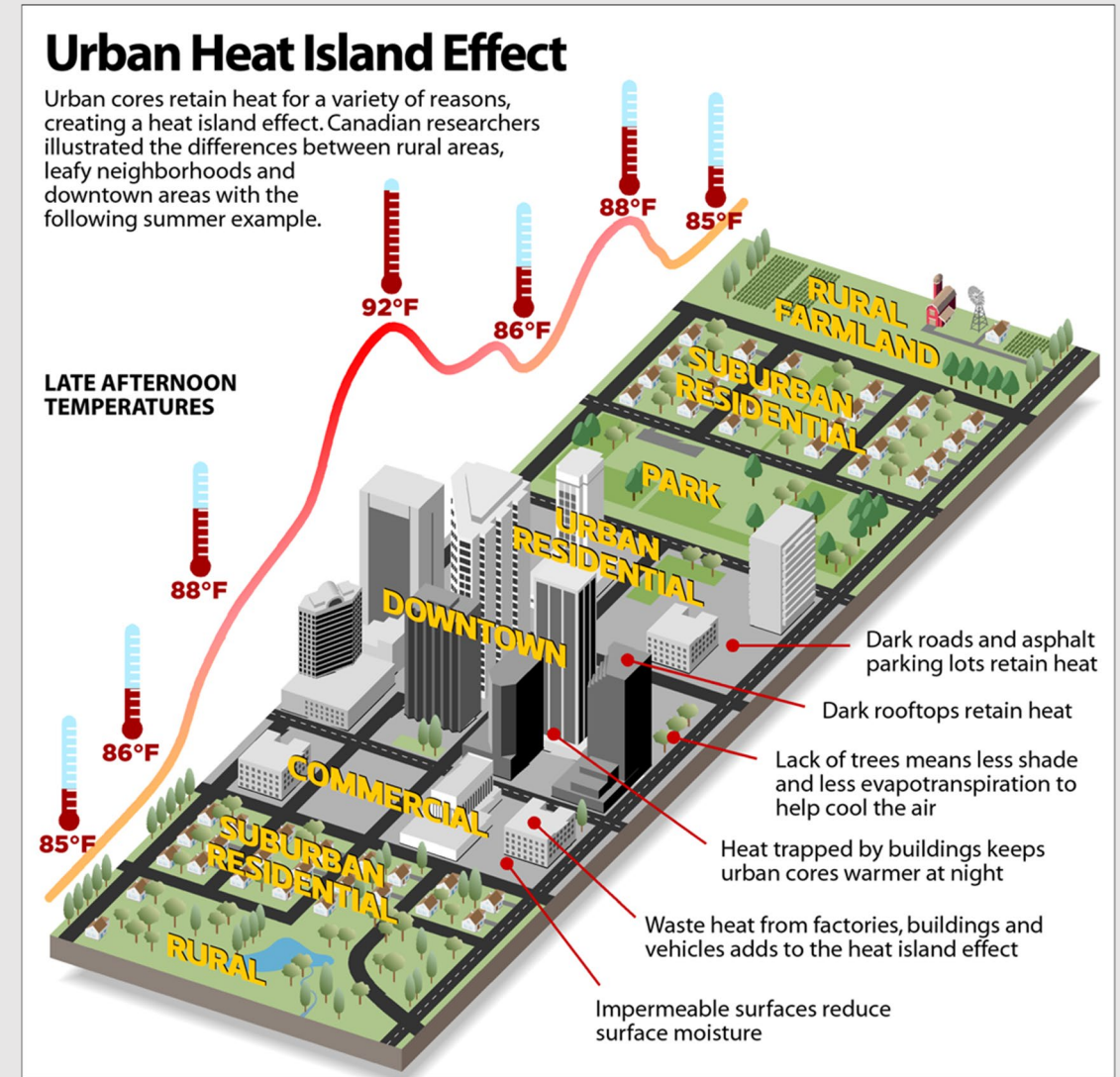
Timing of Extreme Heat Days

- Increase in frequency of extreme heat days
- Increased exposure in August and September
- Two days per year above 111°F by 2050

Heat Impacts

Urban Heat Island Impacts

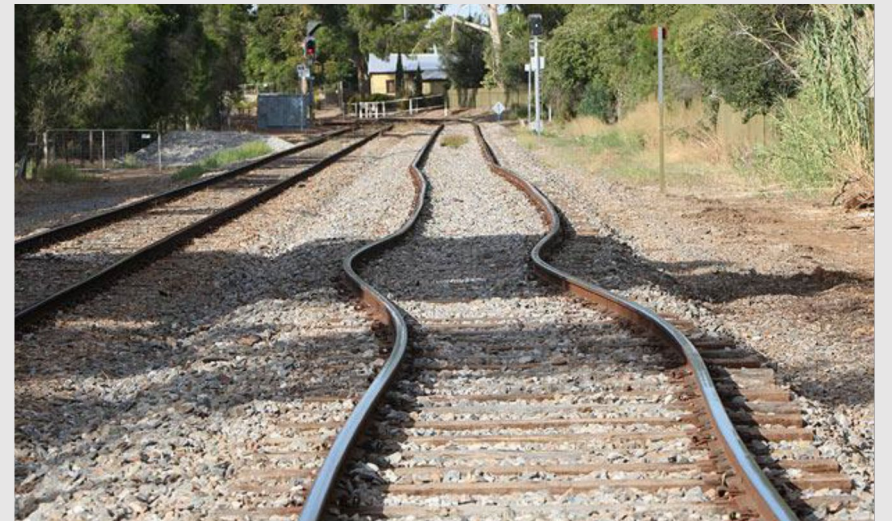
- Increased daytime and nighttime temperatures
- Decreased ability for nighttime cooling
- Increased energy demand for cooling
- Impaired water quality
- Decreases in air quality



Heat Impacts

Transportation Impacts

- Asphalt rutting and buckling
- Rail buckling and potential for train derailment
- Transit vehicles overheating
- Thermal expansion of bridge joints
- Decreased comfort for walking and biking



Heat Impacts

Population Impacts

- Health risks from ozone and particulate air pollution
- Heat-Related Illnesses
- Increased risk for vulnerable populations including seniors, youth, and unhoused

Community Impacts

- Emergency services and hospital room visits
- Increased energy demand for cooling



Recommended Heat Resilience Strategies

Strategy Categories

- A Resilient Roadway Network
- A Climate-Smart Electricity Grid
- A Climate-Ready Community
- A Resilient Built Environment
- A Resilient Transportation System
- Social and Economic Resilience

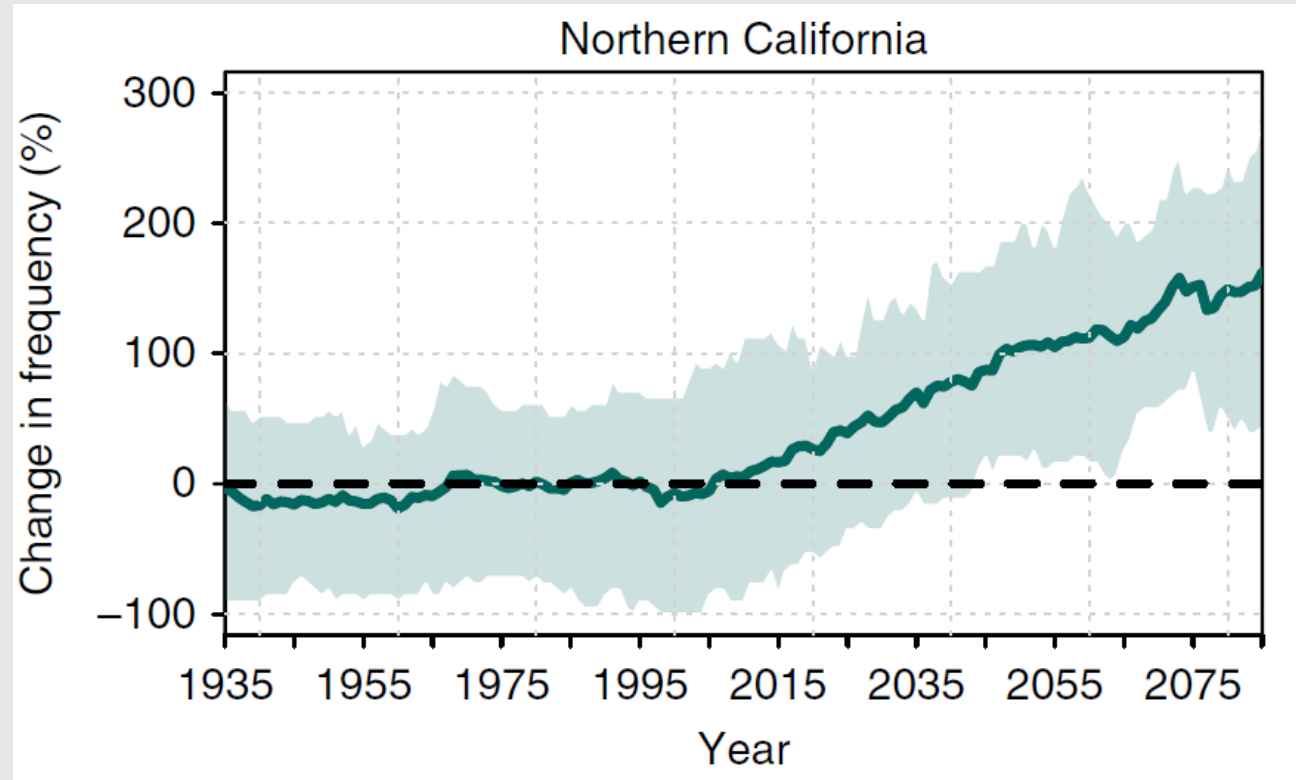


Flooding Assessment



Flooding Exposure

Change in frequency of extremely wet seasons 1935 to 2085

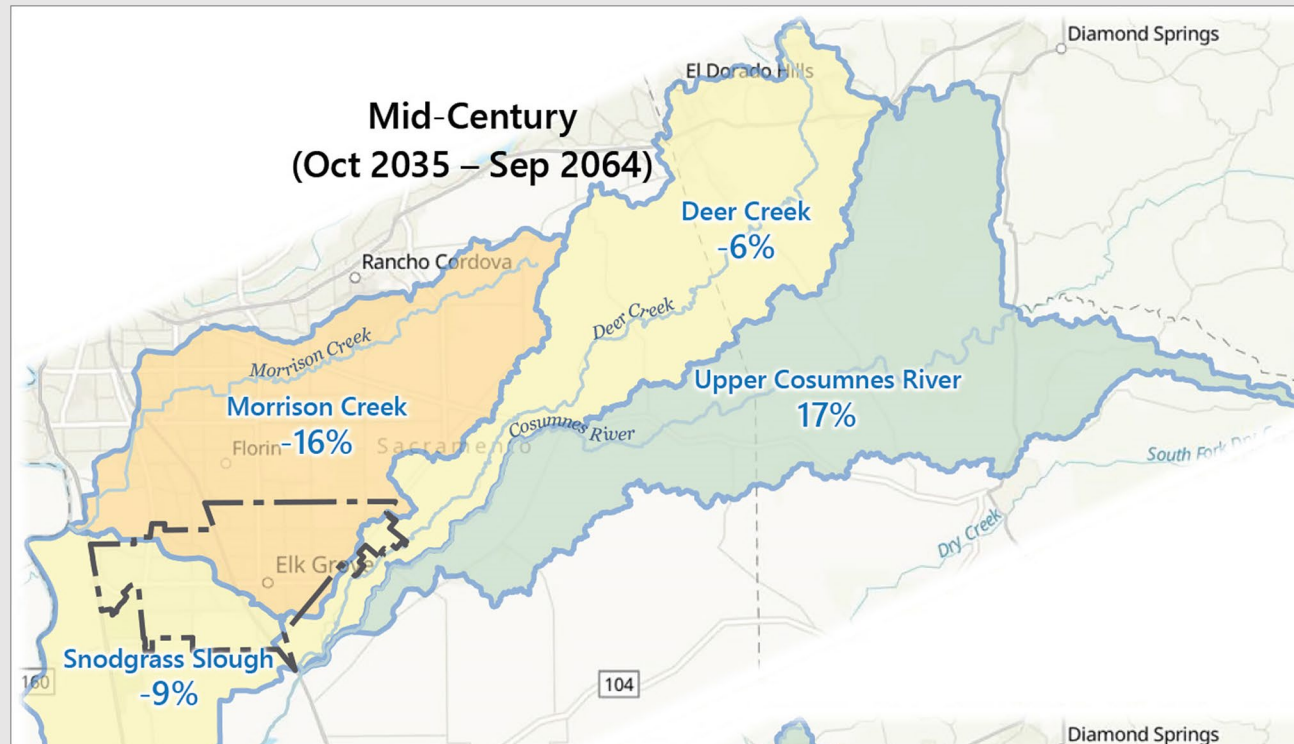


Source: Swain et al. 2018

- Increase in frequency of November–March precipitation levels exceeding historic
- Impacts from large storm events projected to increase

Flooding Exposure

Change in rainfall during 100-year storm events



- Increase in November – March precipitation levels exceeding historic
- Small increases in small storm events may affect localized flooding
- Increase in intensity and impacts from large regional storm events projected

Flooding Impacts

Stormwater Drainage Impacts

- Drainage overflows
- Clogged drains with debris

Transportation Flooding Impacts

- Asphalt stripping
- Concrete corrosion
- Subbase erosion
- Route closures
- Rail and railway roadbed damage



Flooding Impacts

Population Impacts

- Increased flooding risk for residents in and near flood zones
- Potential increases in property damage

Community Impacts

- Potential disruption of signal operations
- Travel delays
- Increased need for emergency services



Recommended Flood Resilience Strategies

Strategy Categories

- A Resilient Stormwater Management System
- Climate-Smart Green Infrastructure
- A Climate-Ready Community
- A Coordinated Regional Flood Management System
- A Resilient Transportation System
- Social and Economic Resilience
- An Adaptive Flood Management Strategy

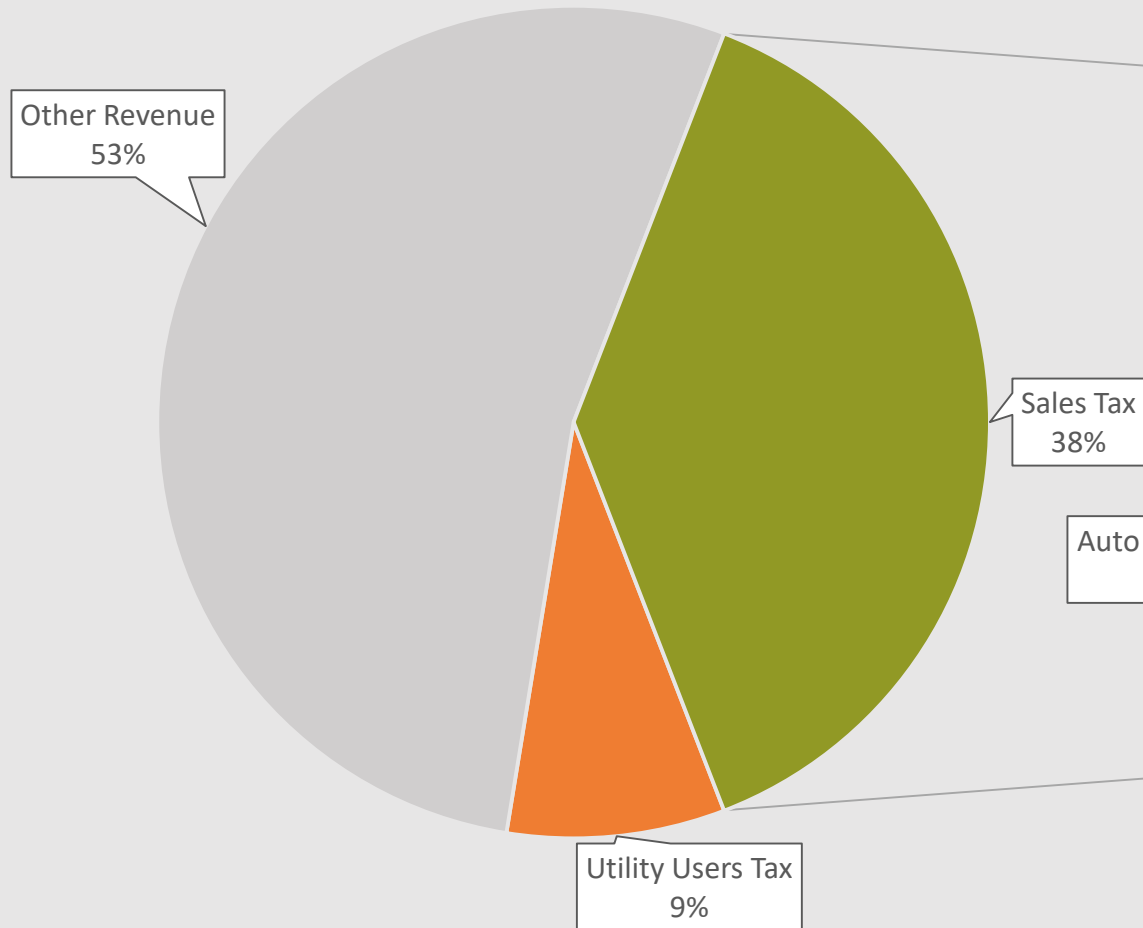


Fiscal Assessment

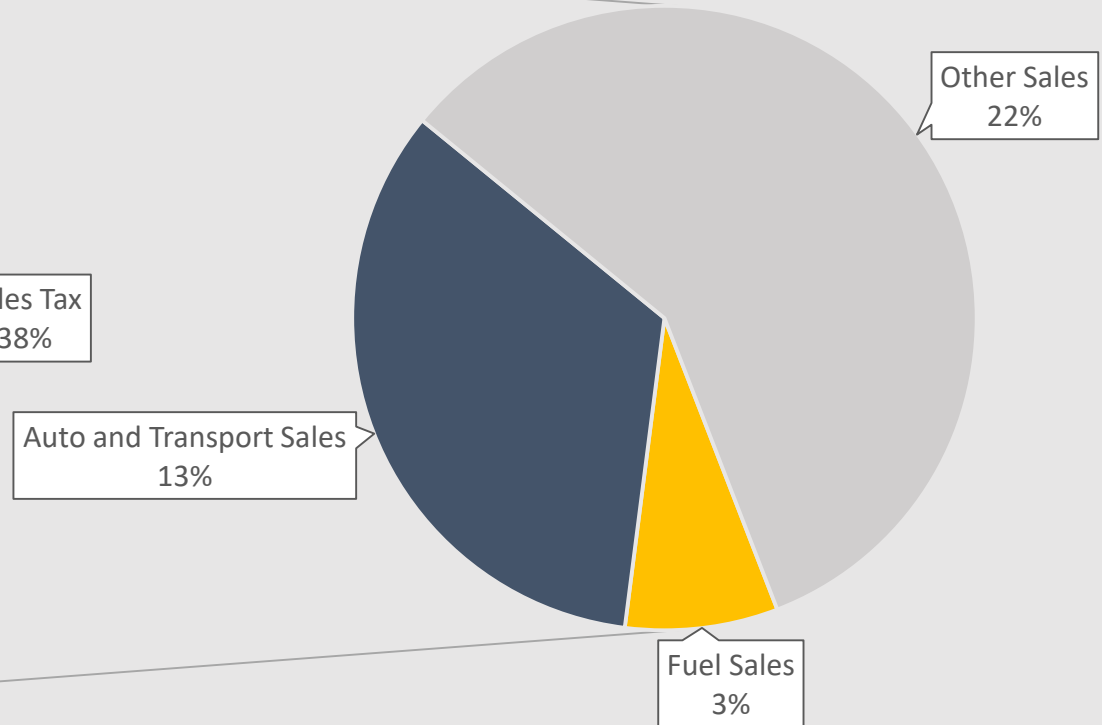


Vehicle-Related Revenue

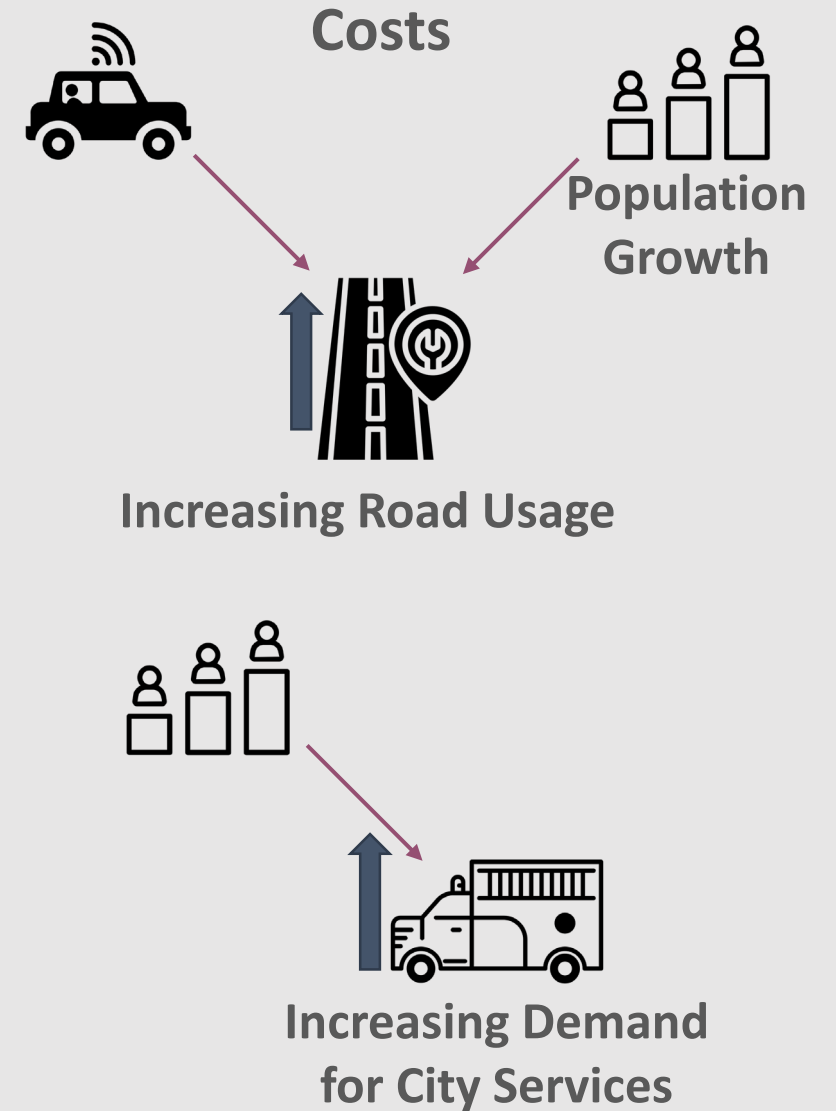
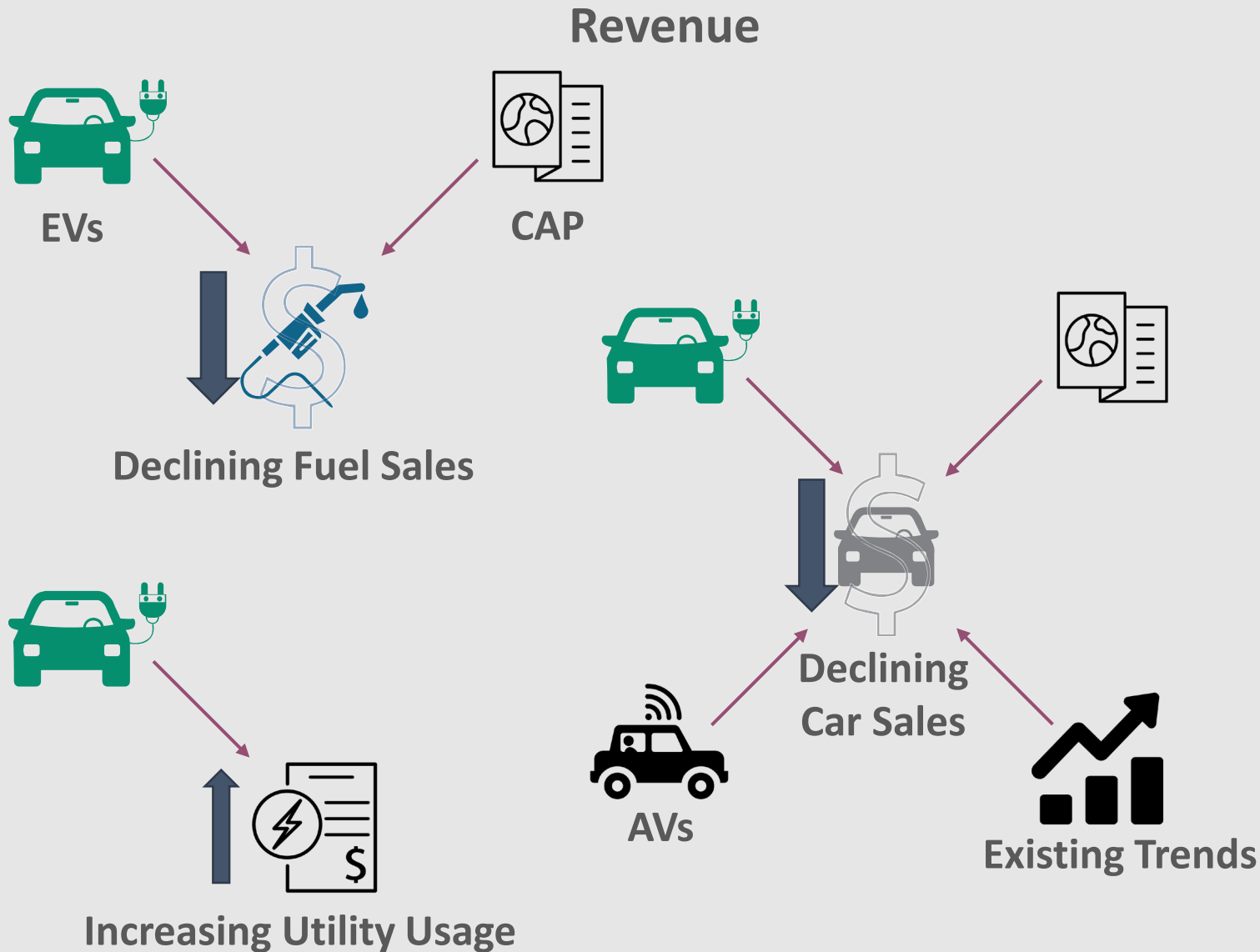
General Fund Revenue



Sales Tax Revenue



What's down the road?



Methodology



Existing Trends

- Vehicle Fleet Size
- Vehicle Miles Traveled

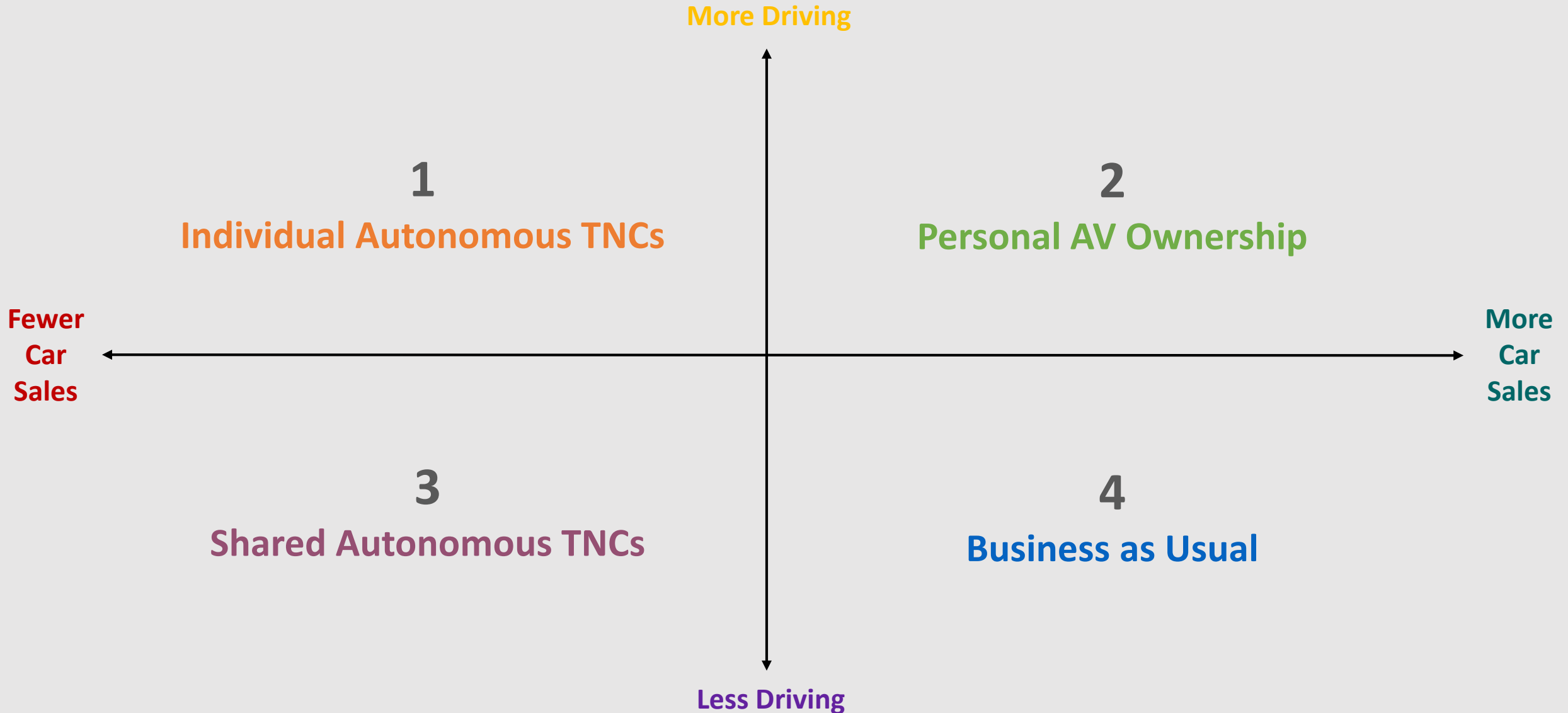


Electric Vehicles

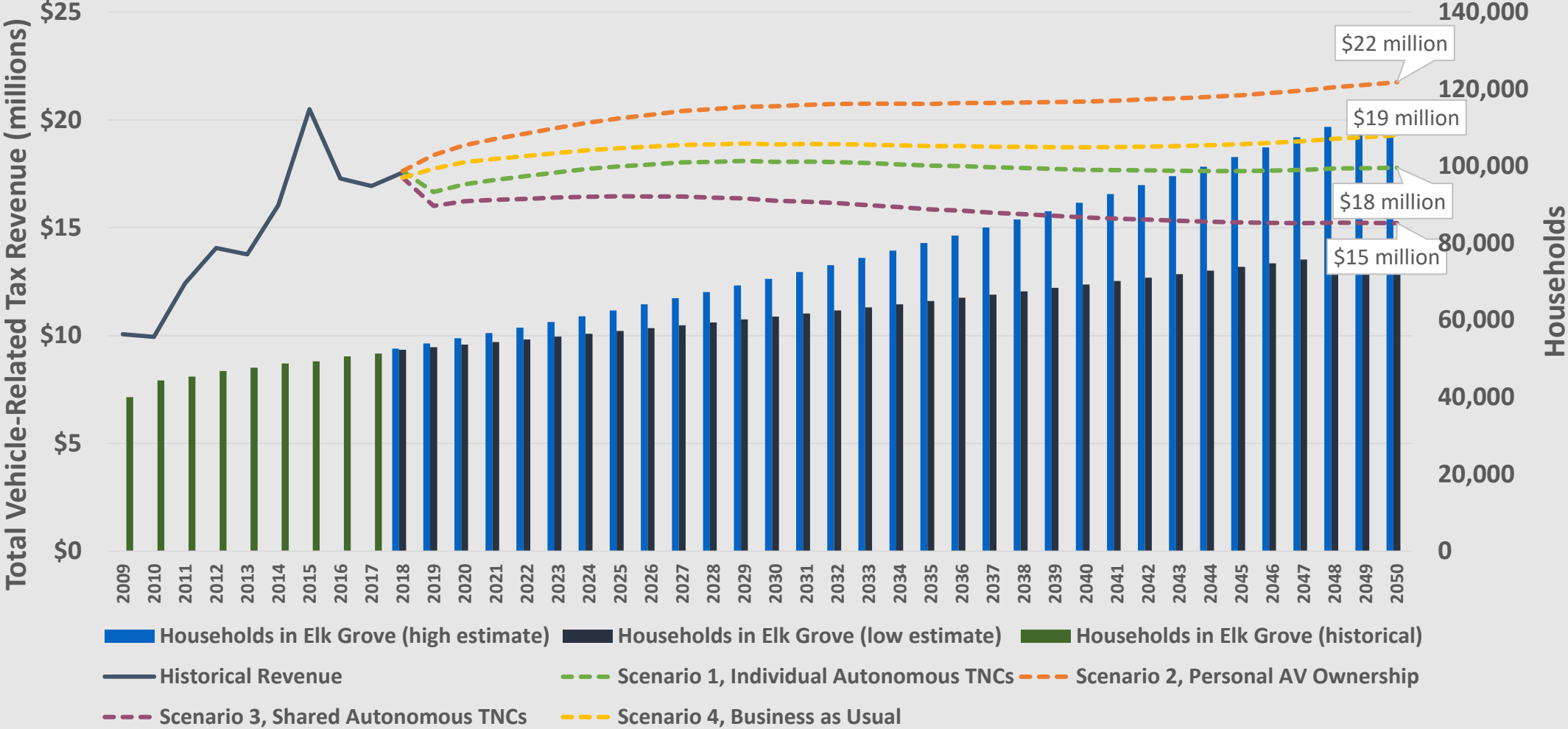
- Vehicle Purchasing
- Fuel Consumption
- Electricity Consumption

Scenario Development

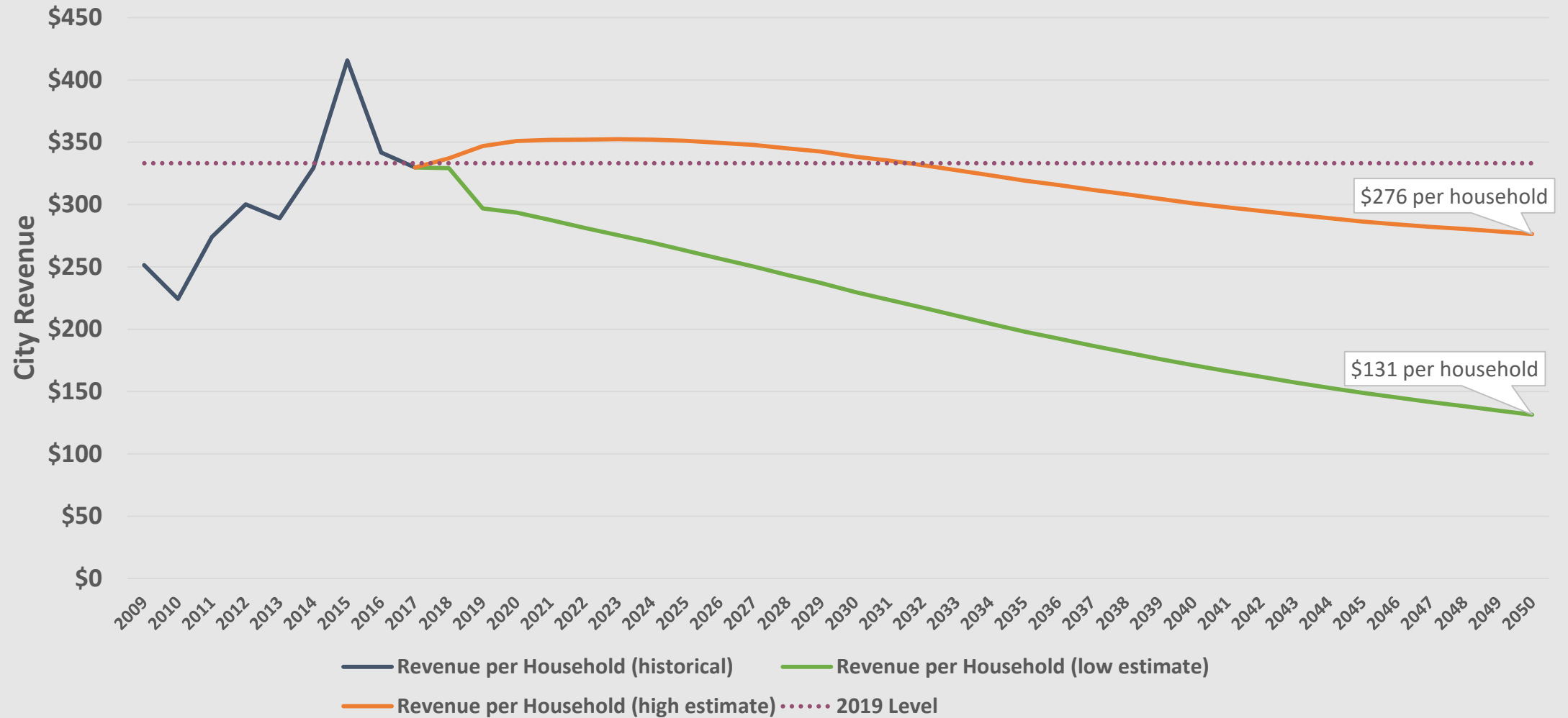
Scenarios



Model Output



Revenue per Household



Recommended Fiscal Resilience Strategies

State Strategies

- Vehicle Miles Traveled Tax

Local Strategies

- Congestion pricing
- Form-based zoning
- Parking meters
- Reduced parking requirements
- TNC Tax

Strategies for Additional Study

- Parcel Tax
- Sales Tax increase
- Utility Users Tax increase



Questions?



Small Group Discussions



Reports from Small Groups



Next Steps

Next Steps for the Plan

- Three white papers released in February
 - Comments and feedback
- Second Public Workshop in Summer 2020
- Draft Plan released in Late Summer 2020
- Interested in Community Resilience Task Force process?

Thank You!

