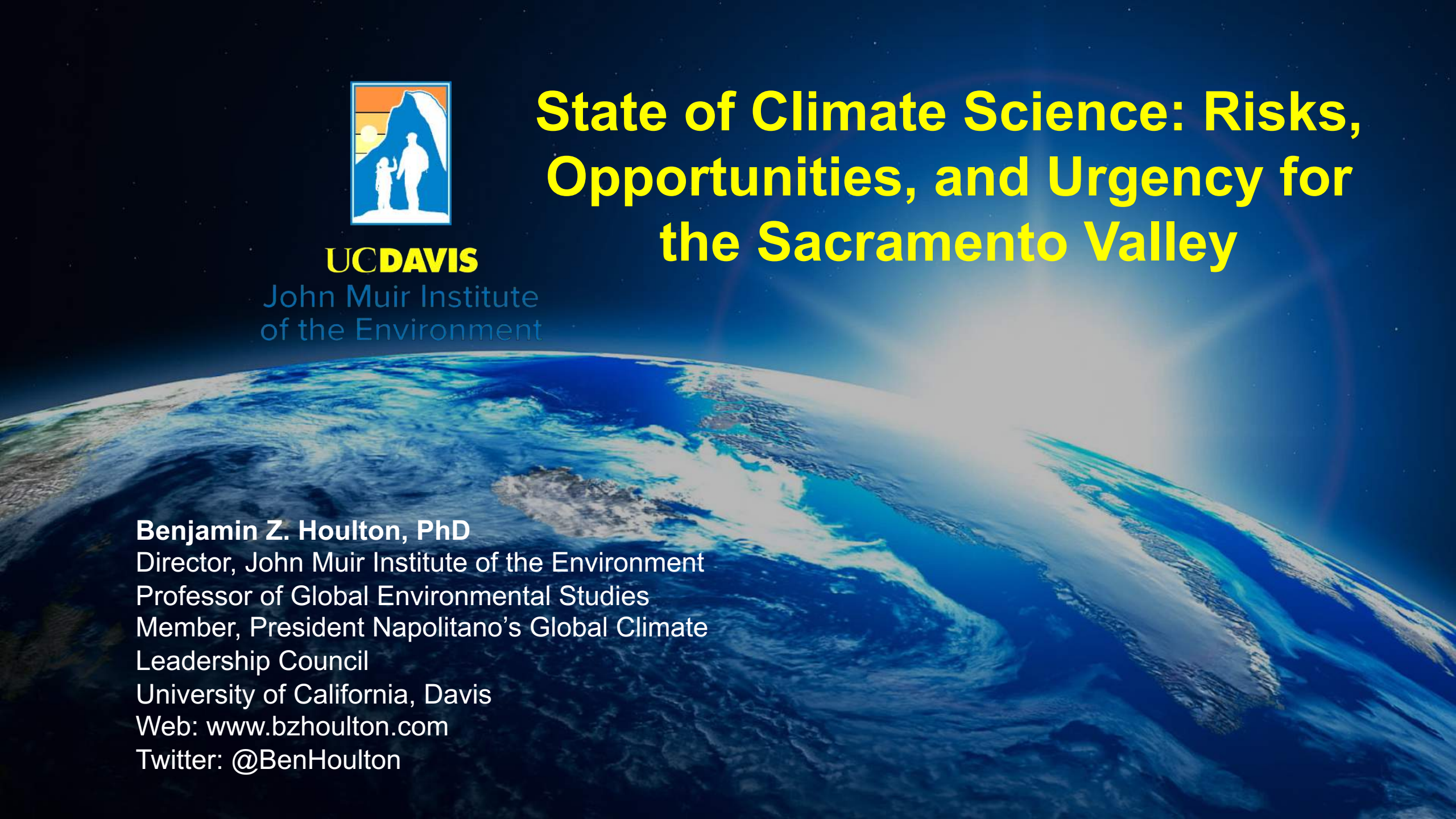
Mayors' Commission on Climate Change

Commission Meeting #1 | Monday, November 26, 2018

City of SACRAMENTO

CITY OF WEST SACRAMENTO



UCDAVIS
John Muir Institute
of the Environment

State of Climate Science: Risks, Opportunities, and Urgency for the Sacramento Valley

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Climate change has entered our living rooms.

Why Half a Degree Matters on Planet Earth

"With clear benefits to people and natural ecosystems, limiting global warming to 1.5°C compared to 2°C could go hand in hand with ensuring a more sustainable and equitable society." - IPCC Special Report on Global Warming of 1.5°C (Oct. 8, 2018)

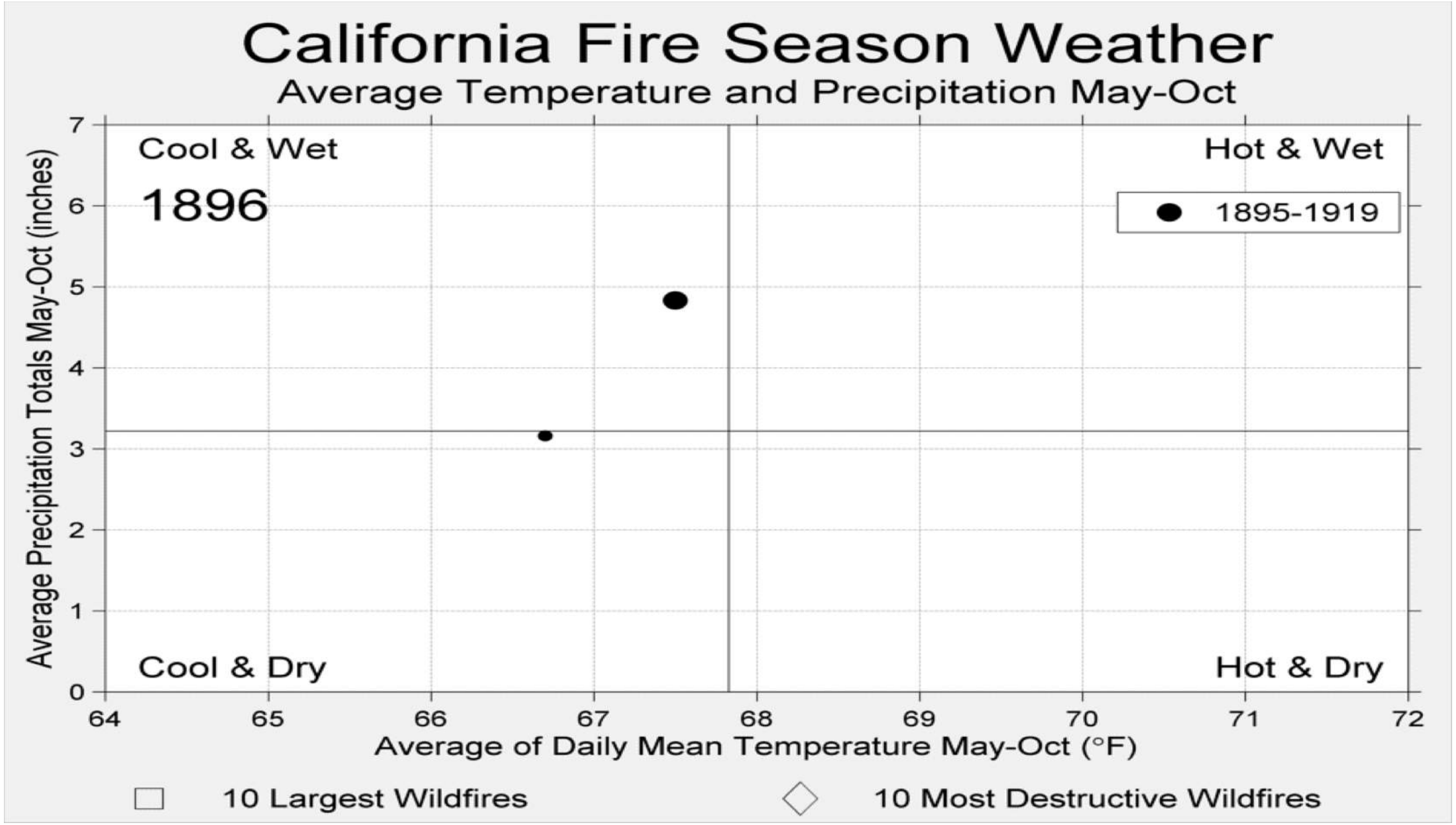
Impact	*Additional 0.5 Degrees*
Sea level rise by 2100	↑56cm (almost 2 feet)
Annual maximum daily temperature	↑2.6°C *(4.6 °F)*
Population facing >1 severe heatwave every 5 years	37% (> 3.7 billion people by 2050)
Frequency of rainfall extremes over land	↑36%
Population exposed to severe drought	↑194.5 million people
Average crop yield change by 2100	↓9%% (maize) ↓4% (wheat)
Global per capita GDP in 2100	↓13% (> half a trillion annually in US)
Suitability of drylands for malaria transmission	↑26%

Climate Change Risks in the Sacramento Valley

- Warming air and water temperatures
- More extreme heat-waves
- Drier landscapes
- Variable precipitation, seasonal shifts
- More intense droughts and floods with less predictability
- Higher Delta water levels
- Increased risk of wildfire
- Loss of ecosystem habitat
- Less snow

Heat check – Sacramento's climate will resemble Phoenix's today in the latter half of the century

Increasing from baseline ~4 days over 104 degrees F to > 40 days over 104 degrees F



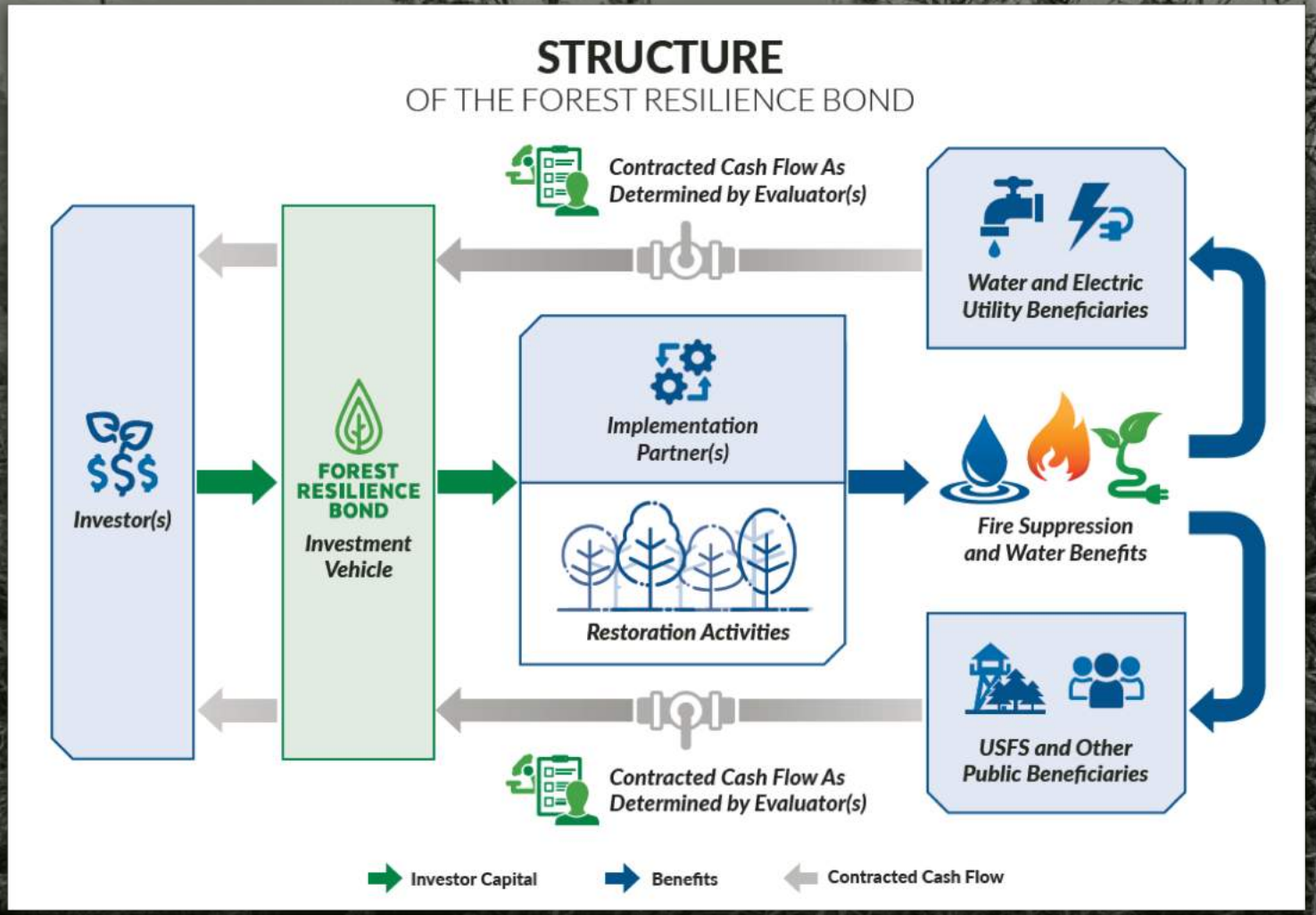
Source: Dr. Robert Rohde, Berkeley Earth, 2018

Sacramento Region is Positioned to lead in Climate Solutions

Climate solutions for Sacramento are both **feasible** and produce numerous **economic, social and environmental benefits** for the region's businesses, residents and communities

- We have the right ***policy environment*** to enact the change needed to support smart, commercially-viable, and equitable climate mitigation and adaptation solutions
- We are home to an ***innovation ecosystem*** that supports the businesses, technologies, and breakthroughs that will produce the economic incentives required to take climate action to the next level
- We are already feeling the localized impacts of climate change today, providing the necessary ***incentives*** for policy and local decisionmakers to take steps to curb the worst impacts of climate change

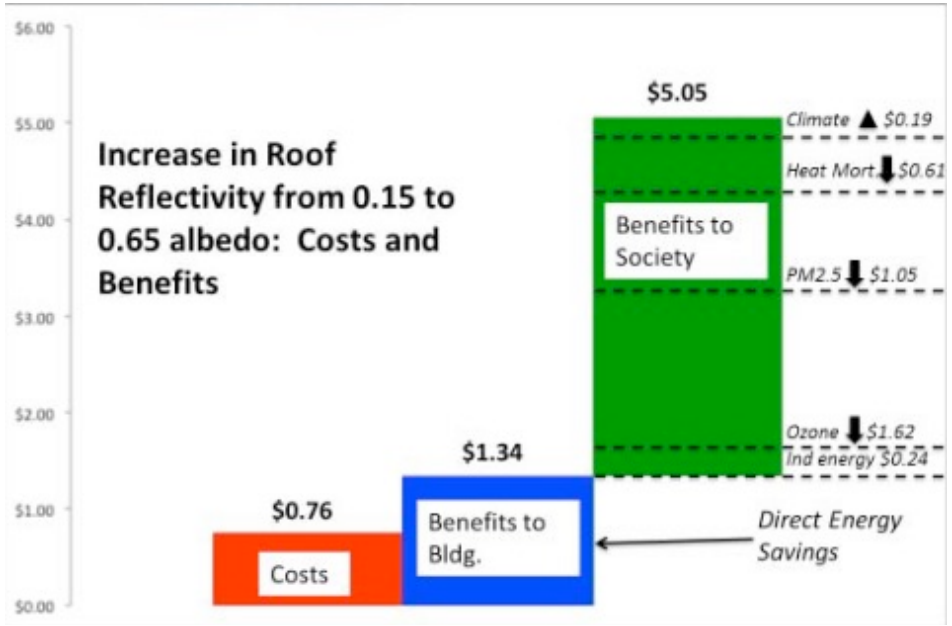
Case 1. Forest management and public-private partnerships



Case 2. Reflective and green roofs

Table D. Benefit-to-Cost Ratio summary for each solution

SOLUTION	BENEFIT-TO-COST RATIO		
	Washington, D.C.	Philadelphia	El Paso
Cool Roofs	8.29	7.40	4.23
Green Roofs	1.99	0.39	0.19
PV (Direct Purchase)	1.83	1.94	1.72
PV (PPA)	Very high	Very high	Very high
Reflective Pavements	2.57	3.03	2.50
Urban Trees	3.39	1.34	0.66



Case 3. Benefits of a low-carbon economy

Low-carbon energy generates public health savings in California

Christina B. Zapata[1], Chris Yang[2], Sonia Yeh[2], Joan Ogden[2], and Michael J. Kleeman[1]
[1]Department of Civil and Environmental Engineering, University of California – Davis, Davis, California, USA
[2]Institute of Transportation Studies, University of California – Davis, Davis, California, USA

"Total air pollution deaths in California decreased from 6400 to 10 600 per year in the 2050 BAU scenario to 4800–7900 per year in the GHG-Step scenario (i.e., 80% of 1990 GHG emissions by 2050). These avoided deaths have a value of USD 12.2–20.5 billion yr−1 using a value of a statistical life equal to USD 7.6 million yr−1."

How can UC Davis, other academic institutions help?

California Collaborative for Climate Change Solutions

C4S's goal is to accelerate carbon reductions through high-impact projects that can rapidly scale to the state, national and global level. Links UC, CSU, National Labs, Stanford, Caltech and USC.

OneClimate

UC **Davis' OneClimate initiative is a dedicated to creating a sustainable, just and habitable planet and the pathways to get there. Connects experts from all Colleges and Professional Schools in local to global climate solutions.**

Vision: Let's make Sacramento and West Sacramento the Silicon Valley of Climate Change Solutions

"It was surprising that the number of individuals necessary for triggering a wave is actually quite low," says Farkas. "It was on the order of 20, 30 or 35 people."

"Social behaviour: Mexican waves in an excitable medium," Nature, 2002

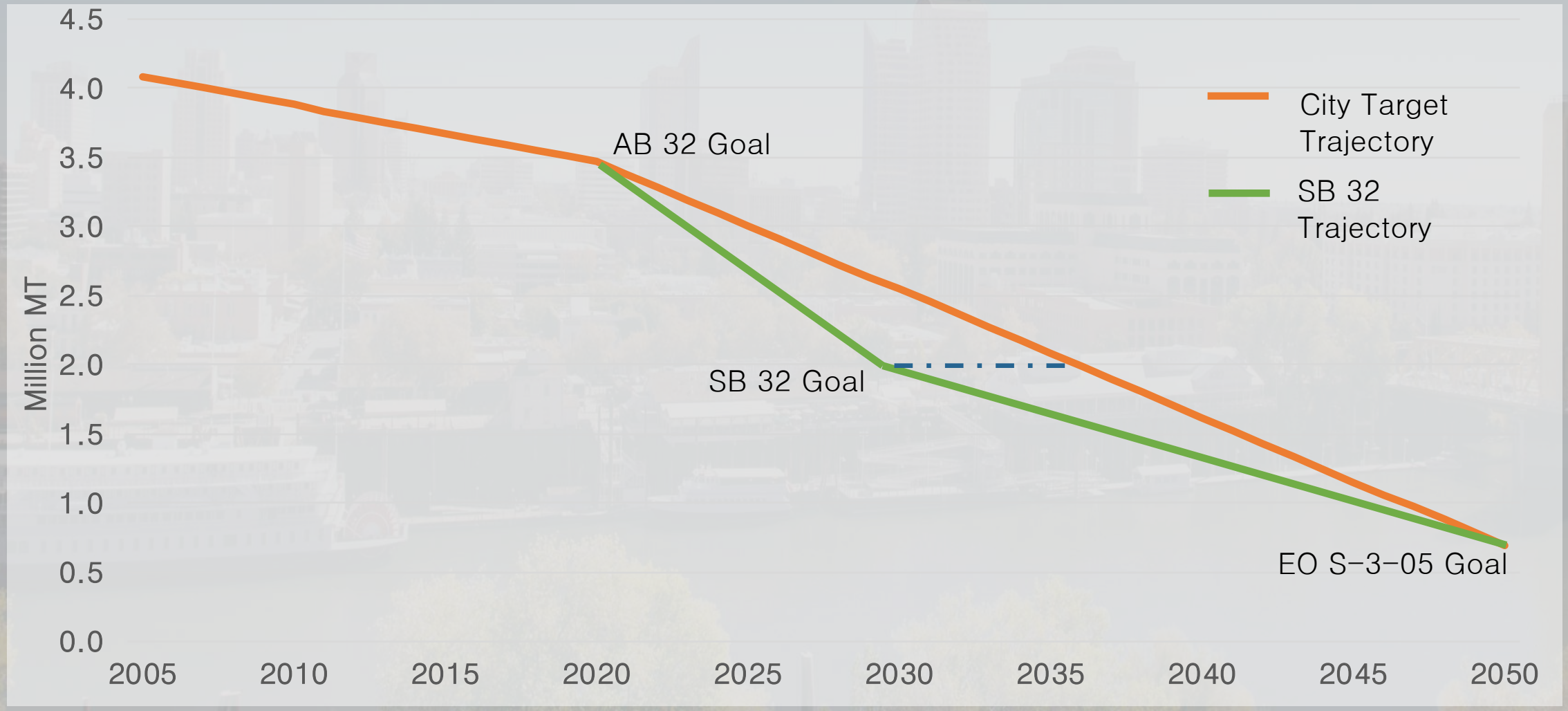
rincon

Mayors' Commission on Climate Change

November 26th Meeting

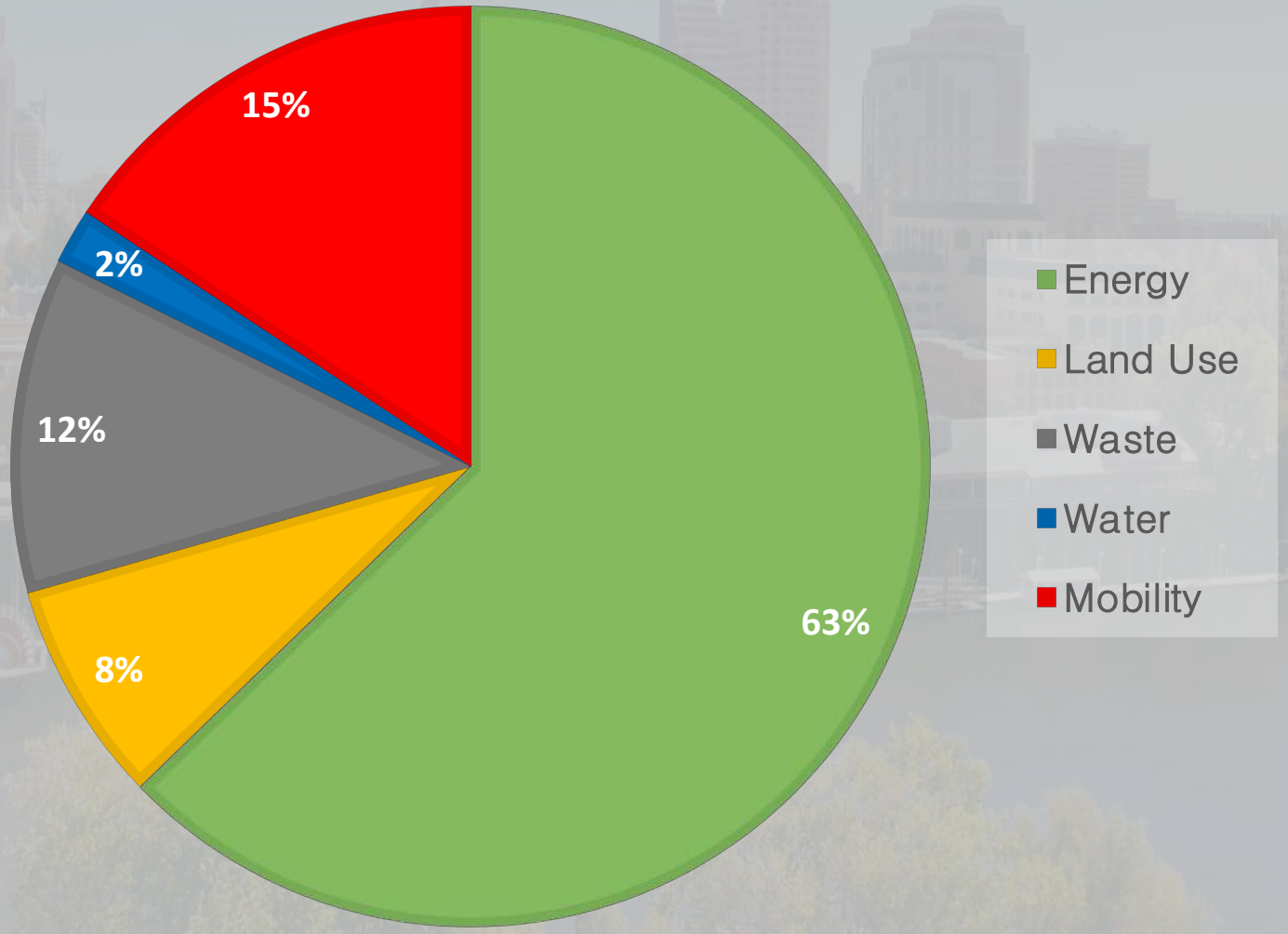
Climate Policy Timeline

Reduction Target and State Goals



Current Strategies

Projected Emission Reductions for the 2020 Goal by Sector



Primary Measures to Achieve Goals

General Plan Policy	Strategy	2020 Emissions Reduction (MT CO_2e/year)
Policy U 5.1.1	Waste Reduction	102,313
Program 26	SMUD Residential & Commercial Green Energy	97,159
Policy U 6.1.15, Program 26	SMUD Smart Grid	54,993
Policy M 3.1.2, Program 14	Public Transportation Improvements	43,658
Policy M 5.1.1, Program 11	Bicycle Facilities	26,195
Program 27	Commercial PACE Program	18,225
Land Use & Urban Design Implementation Program 5, CAP Consistency Checklist	Reduce Energy Consumption in New Residential Development	13,400
N/A	State Title 24 Standards and State RPS	148,541

Measure Progress

Adaptation Progress

1. Adopted 200-year floodplain ordinance to implement SB 5
2. City Council accepted SAFCA's Urban Level of Flood Protection Adequate Progress Annual Report
    - Continued monthly coordination meetings with SAFCA
3. Completed 72.9% of the Accelerated Water Meter Program
4. Completed the Groundwater Master Plan
5. Groundwater Rehabilitation Program
6. Amended the Outdoor Water Conservation section of City Code

Primary Measures Not Implemented

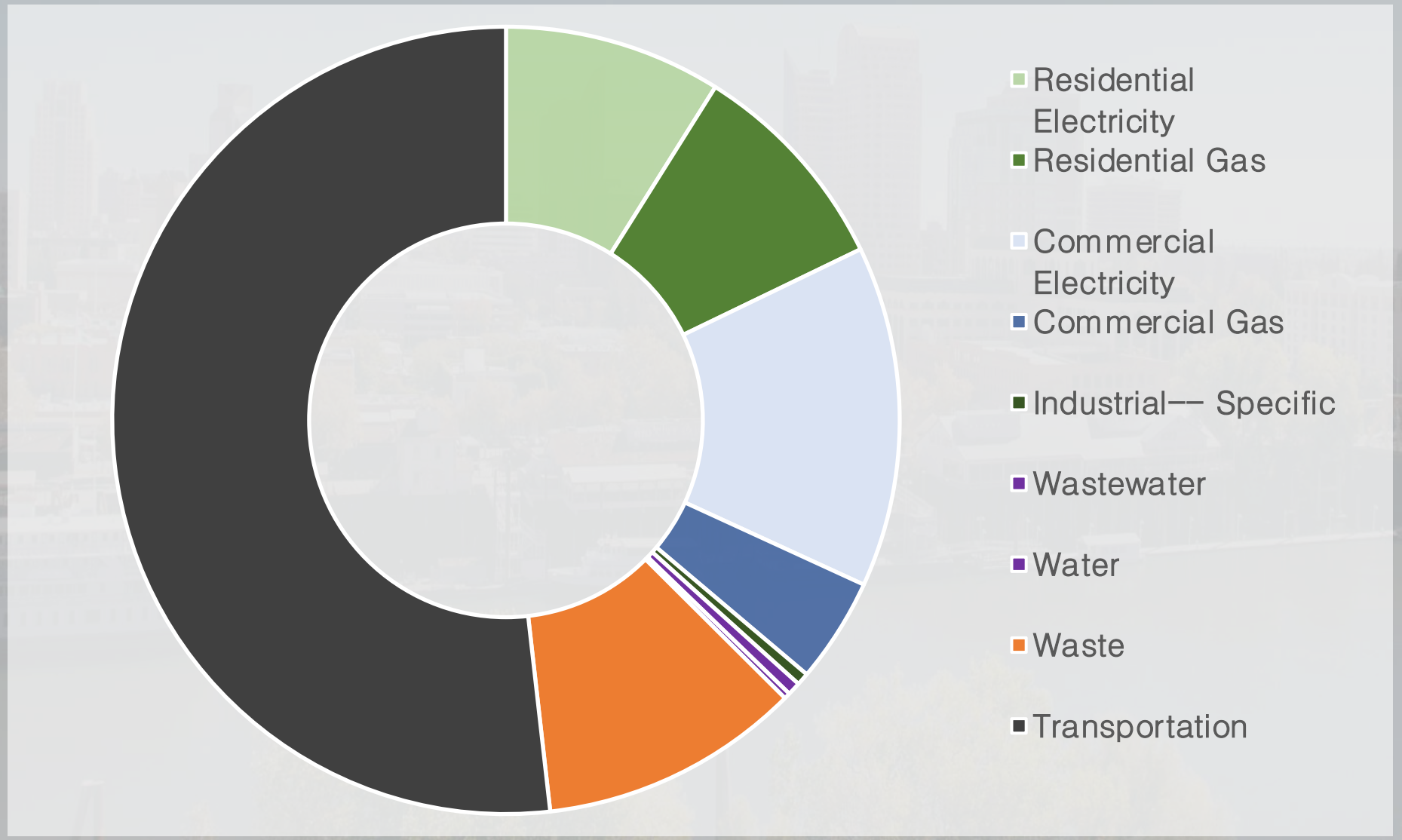
Measure:

- Commercial Energy Conservation Ordinance (CECO)
- Rental Housing Energy and Water Efficiency Program: Voluntary, never implemented by Rental Housing Association
- Residential Energy Conservation Ordinance: Eliminated from 2035 General Plan
- VMT Performance Standard

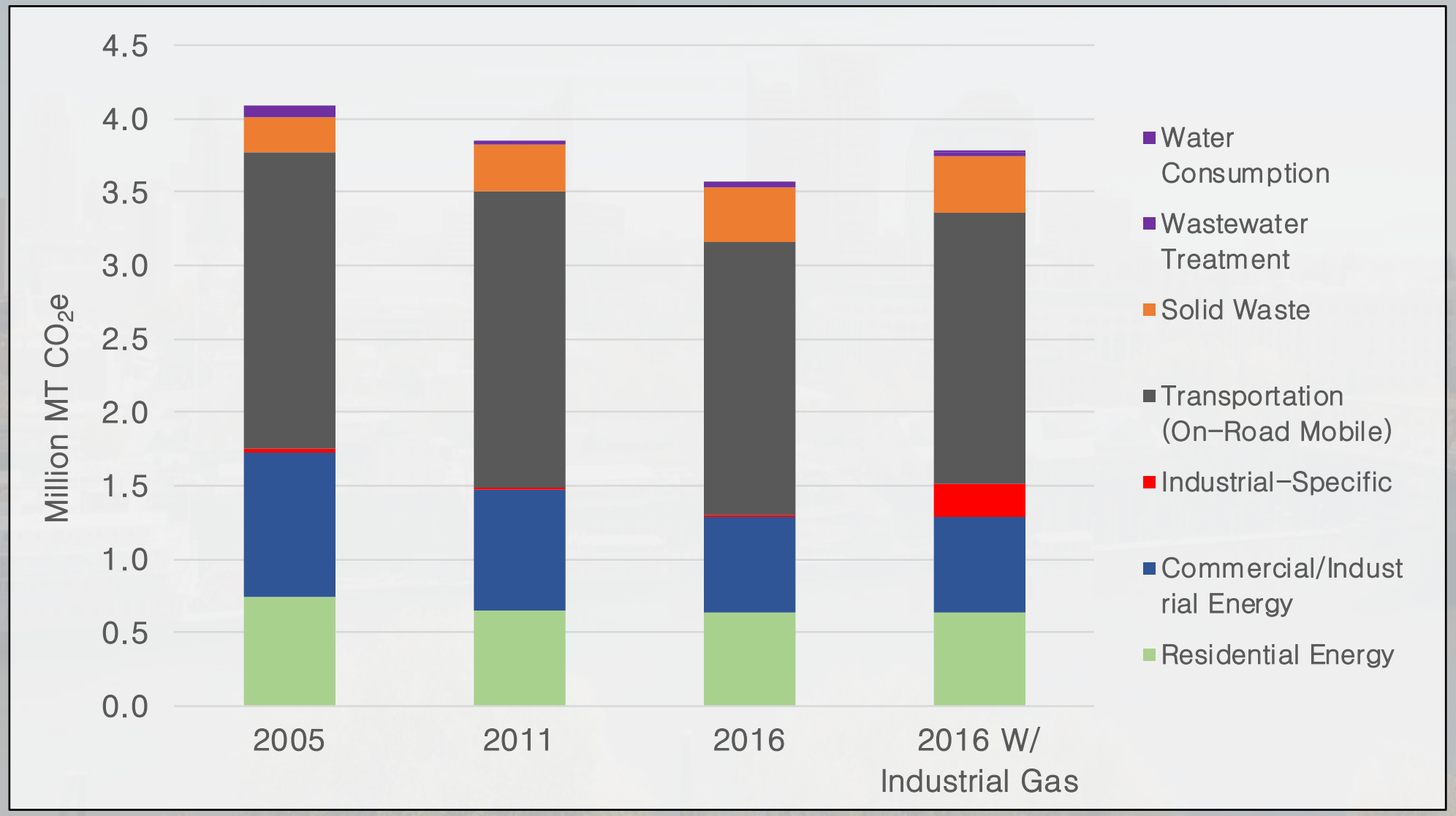
Reasons:

- Lack of staff capacity or of funding to hire staff
- Implementation of measures required a new ordinance which lacked political support
- Measure was voluntary and not implemented by responsible party
- Measure was later determined to create a policy conflict with 2035 General Plan

2016 GHG Inventory

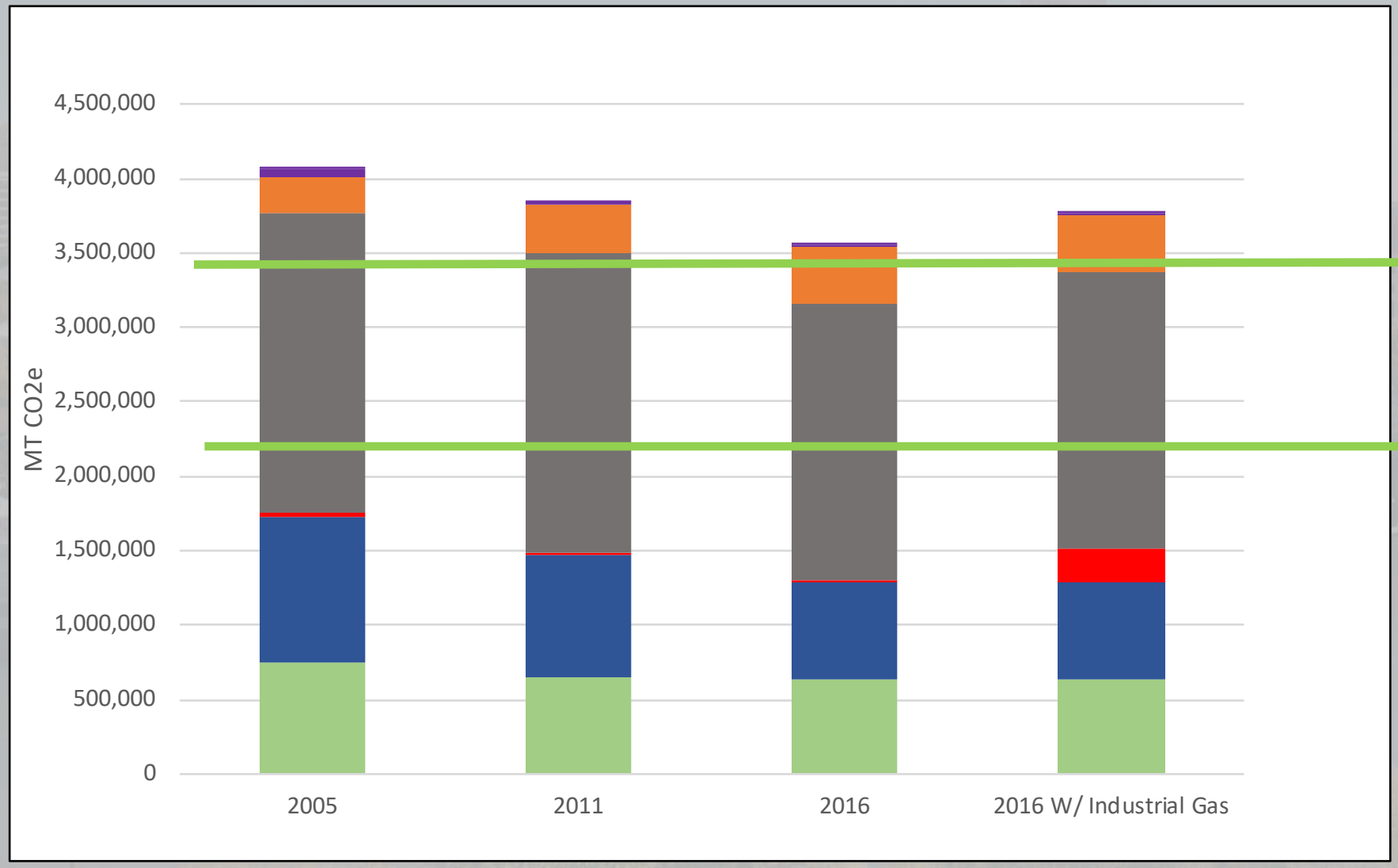


Change in Emissions from 2005 to 2016



Progress Toward 2020 Goal

Percent Reduction



Steps in the Climate Action Plan Update Process

1. Kickoff with City staff
2. Inventory, baseline, forecast and goals
3. Community engagement
4. Measure development & funding
5. CEQA documentation
6. Final report and presentation

CAPDash

www.rinconconsultants/capdash

Recommendations for the Commission

1. High level policy direction
2. Political, interest groups, community support especially at time of measure adoption and implementation
3. Regional perspective and coalition building
4. Technical Information from the TACs

Questions?

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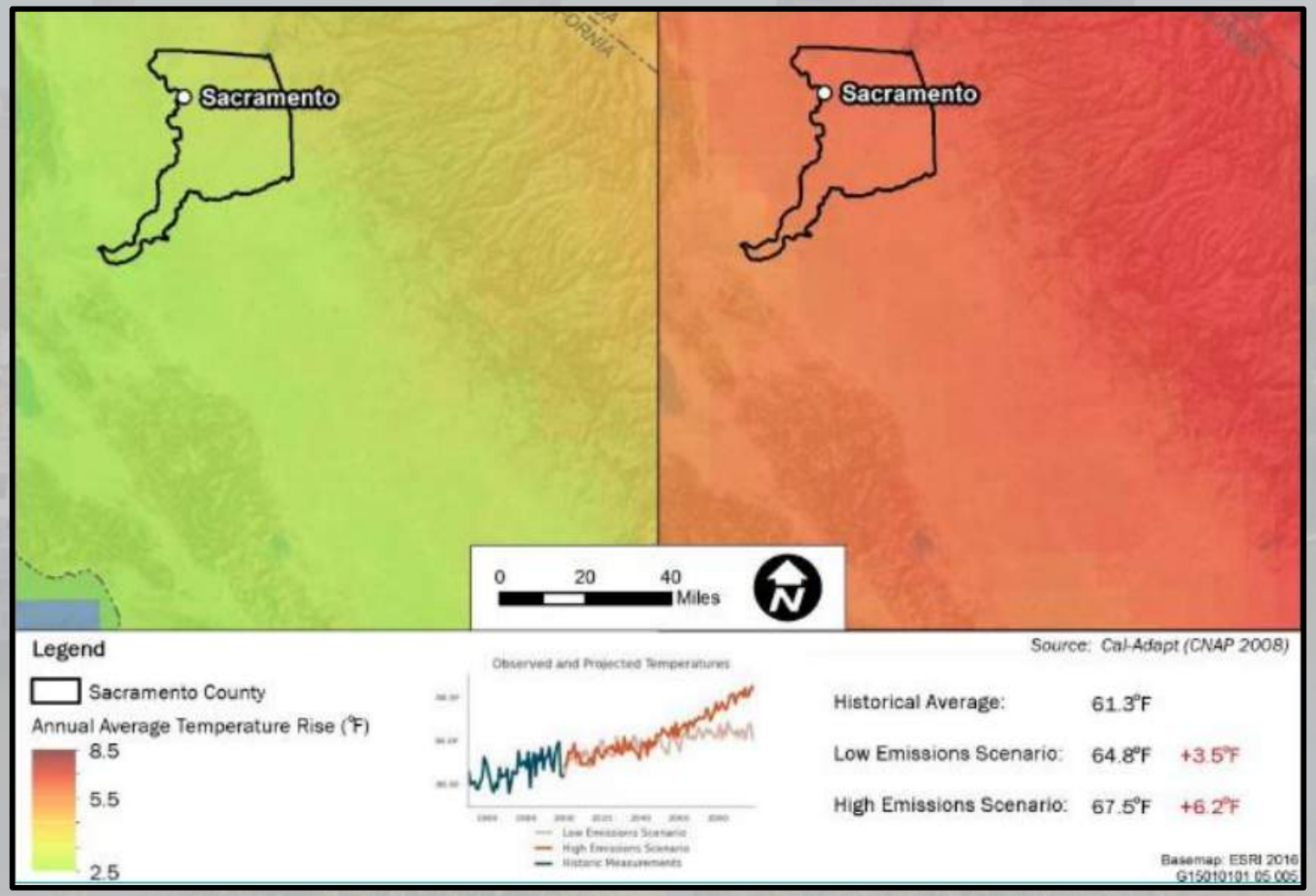
Appendix:
Expected Climate Change Impacts to Sacramento

Expected Climate Change Impacts

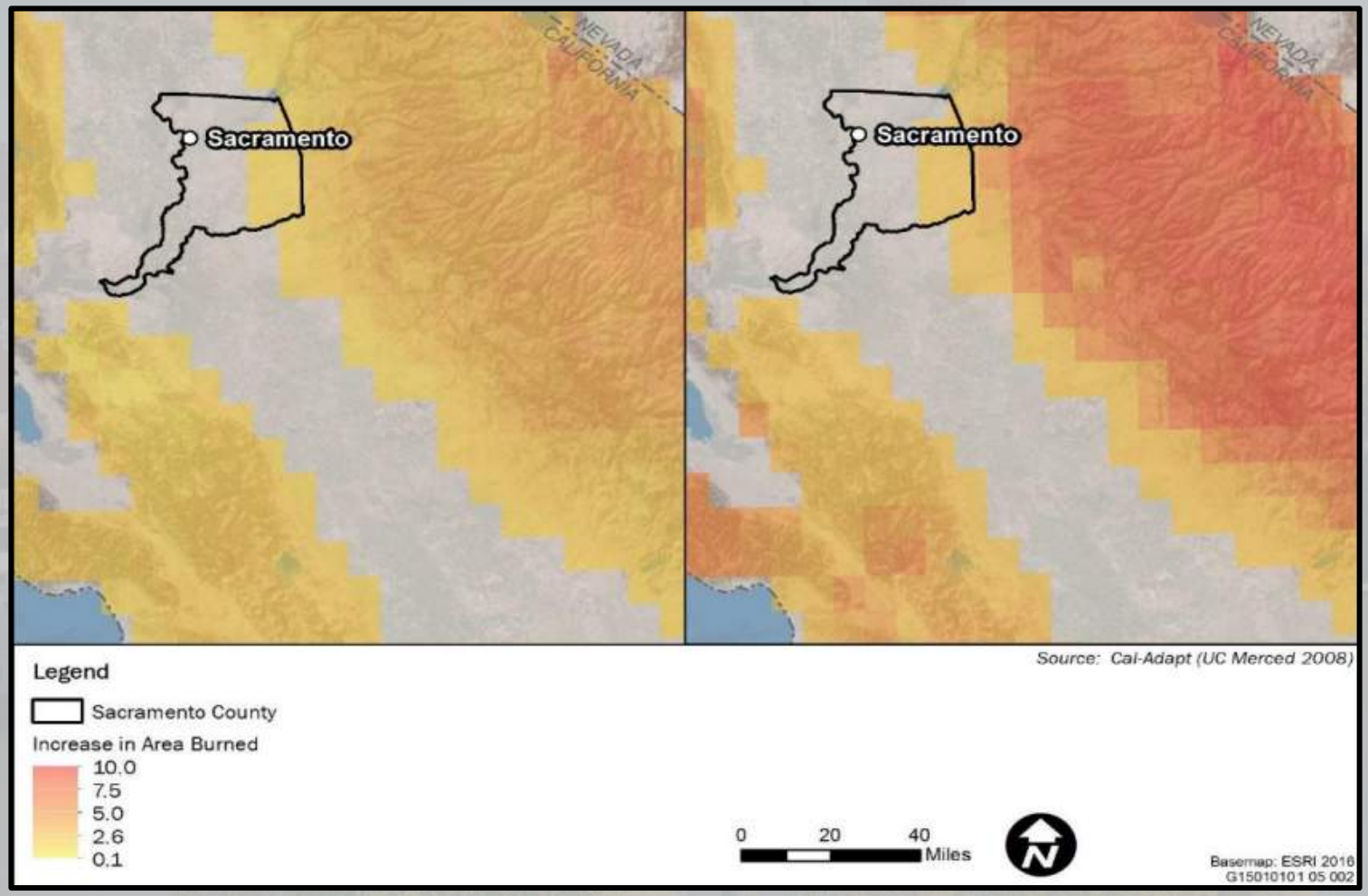
Sacramento County Vulnerability Assessment

Change in Average Annual Temperature, 2010 to 2090



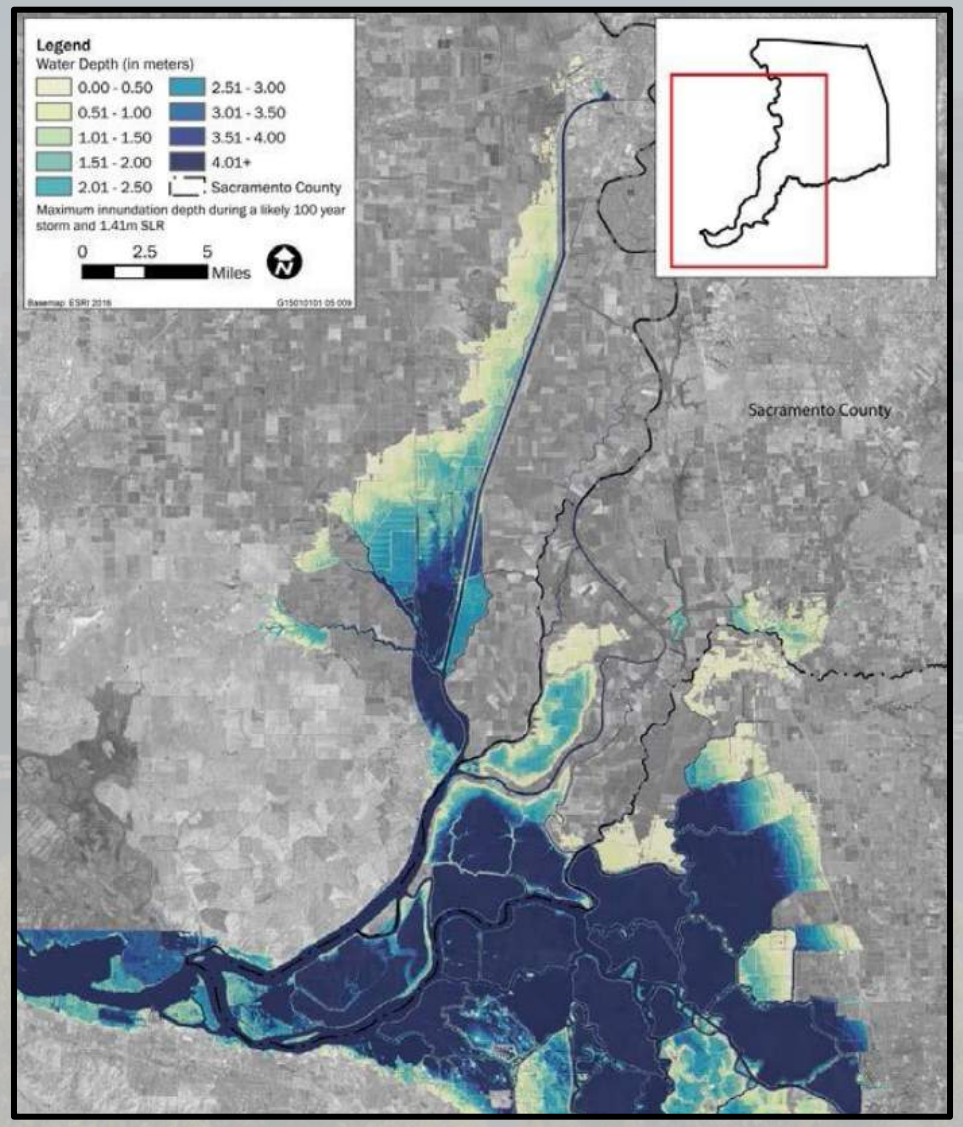
Expected Climate Change Impacts

Change in Fire Frequency, 2010 to 2090



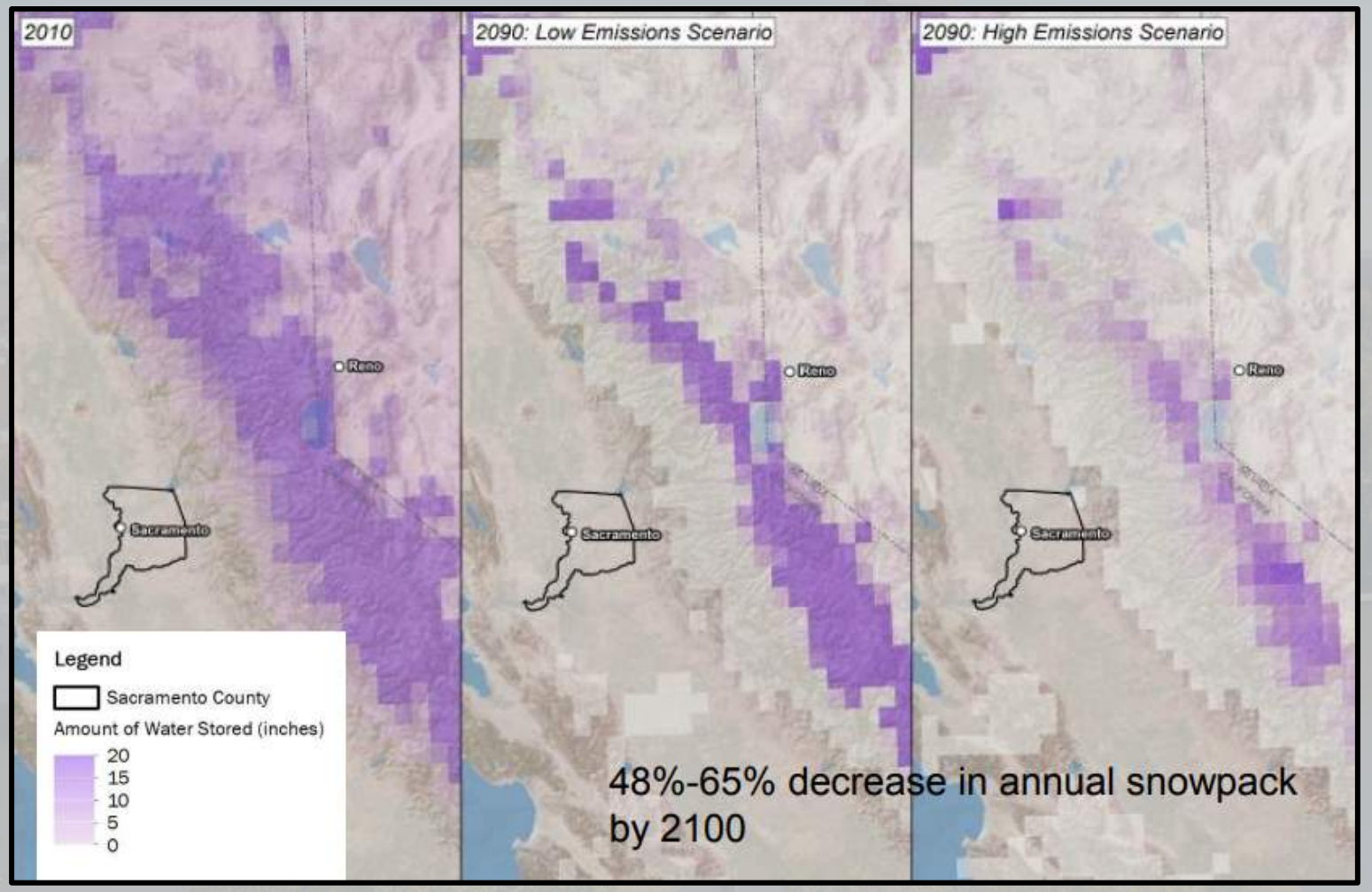
Expected Climate Change Impacts

Flooding and Sea Level Rise Hazard



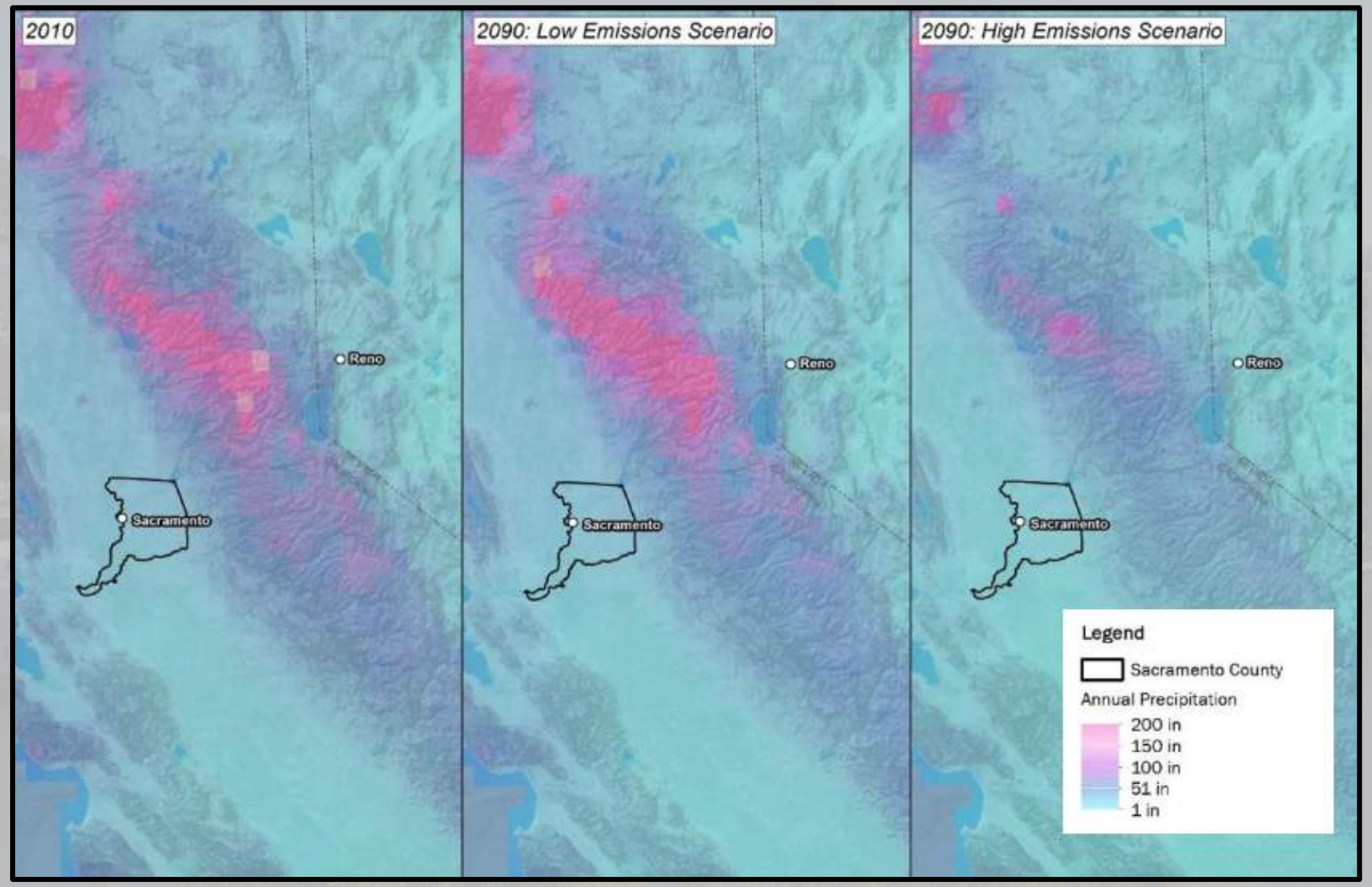
Expected Climate Change Impacts

Change in Snowpack, 2010 to 2090



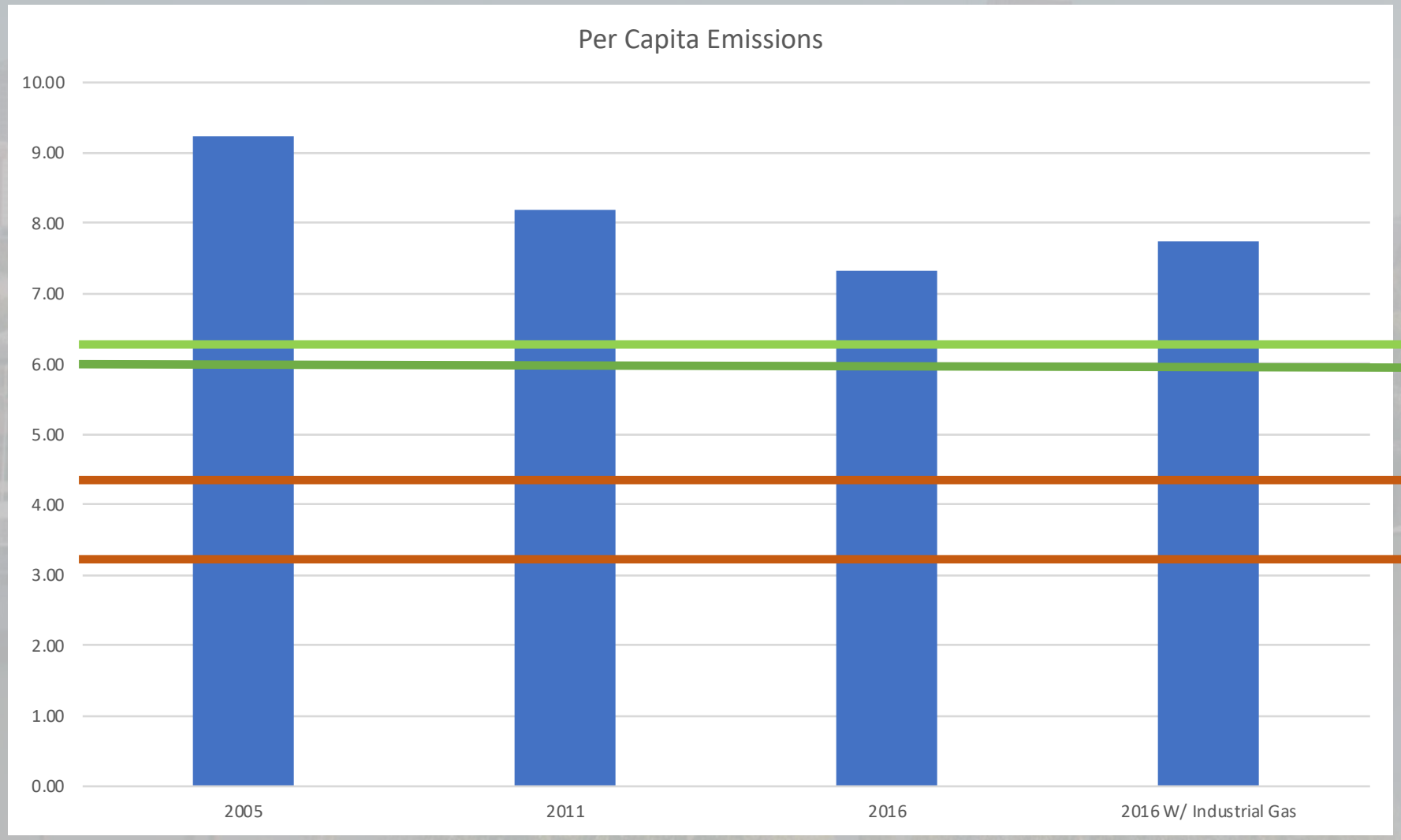
Expected Climate Change Impacts

Change in Precipitation, 2010 to 2090

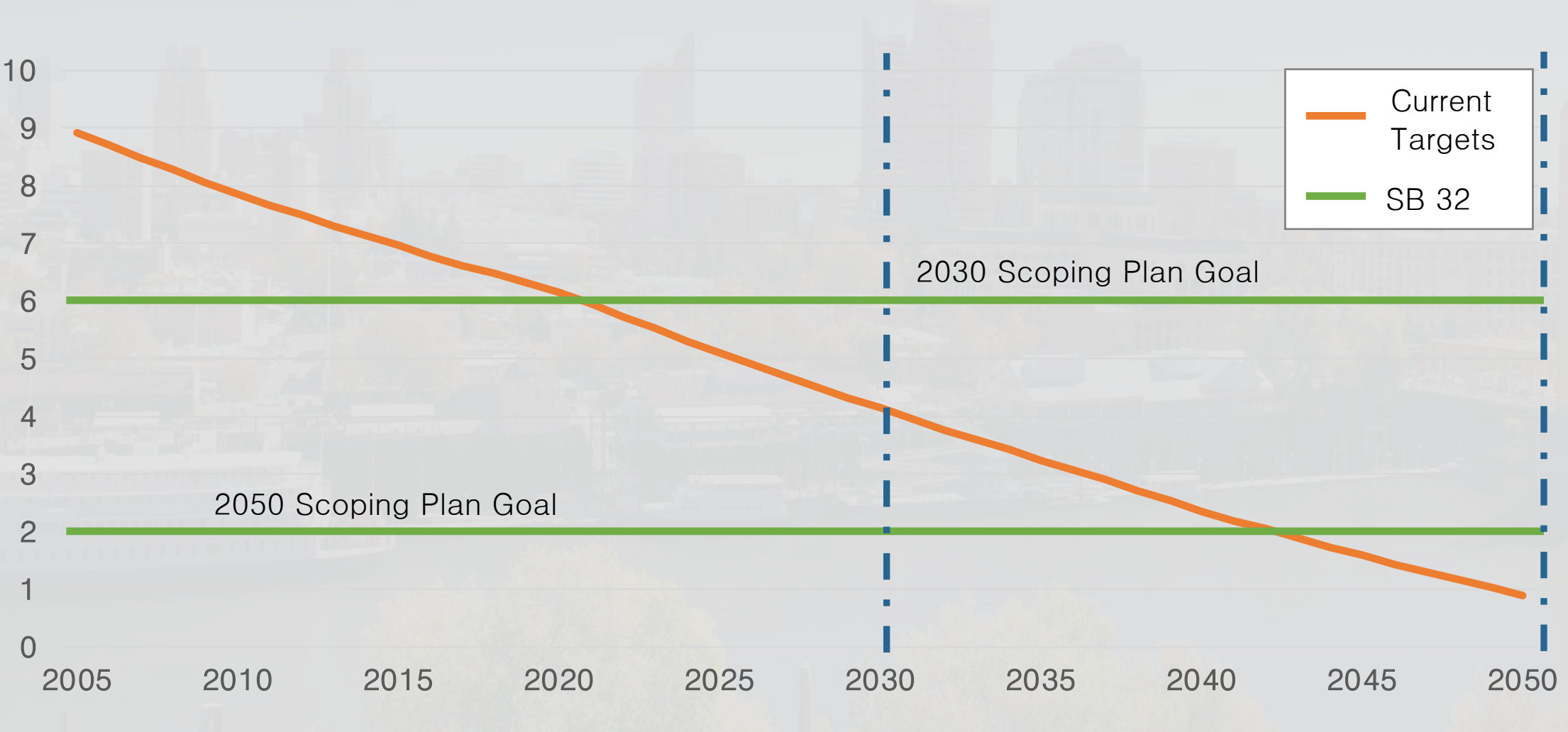


Progress Toward 2020 Goal

Per Person



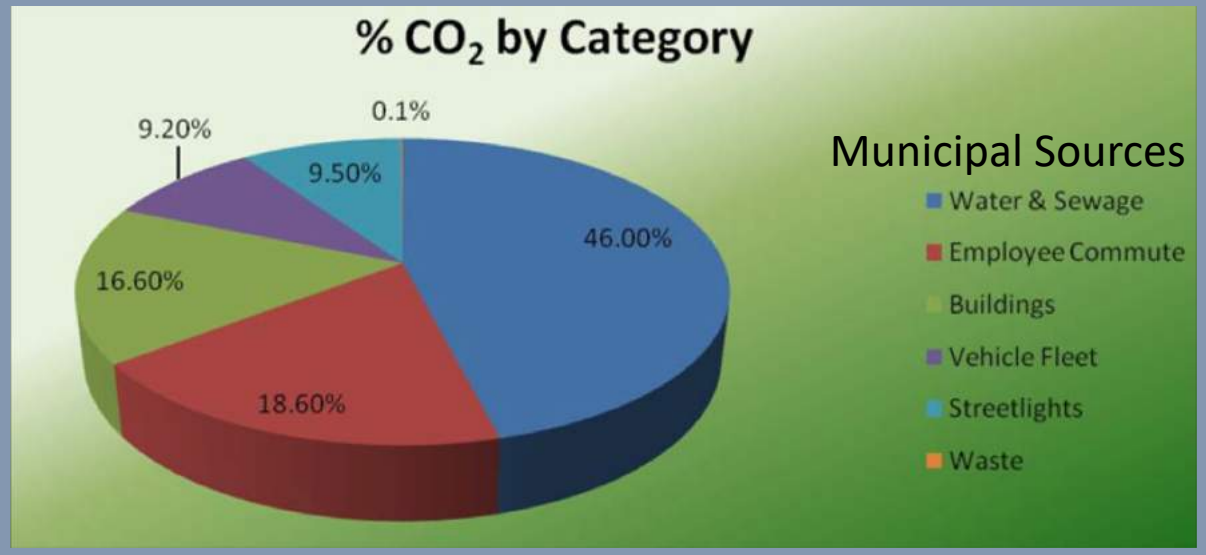
Per Person Reduction Targets and State Goals

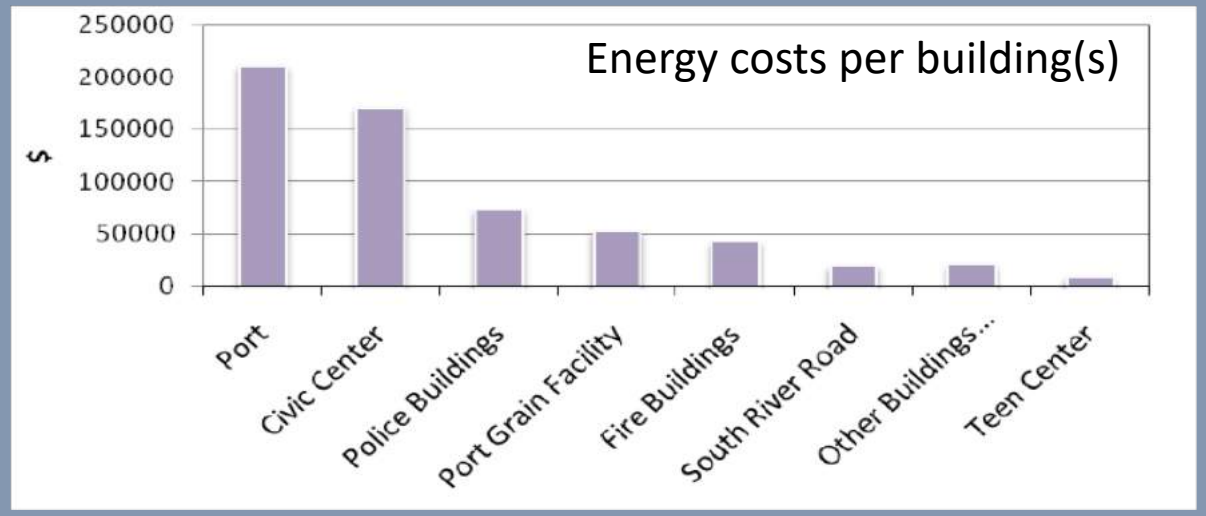


CITY OF WEST SACRAMENTO

MAYORS' COMMISSION ON CLIMATE CHANGE

November 26, 2018





FINDINGS:

- Water and Sewer largest municipal source of CO_2
- Transportation largest community source of GHG Emissions

CAP update is scheduled for mid-2019

Climate Action Plan 2010: Actions to Address Climate Change

HIGHLIGHTS:

- Municipal operations measures
- Community-scale measures
- General Plan 2035

LU-1.1 Sustainable Development

The City shall encourage compact development patterns and higher-development intensities that use land efficiently; preserve open space; support transit, bicycle, and pedestrian mobility; increase housing diversity; and provide for strong neighborhood commercial retail viability. *(RDR)*

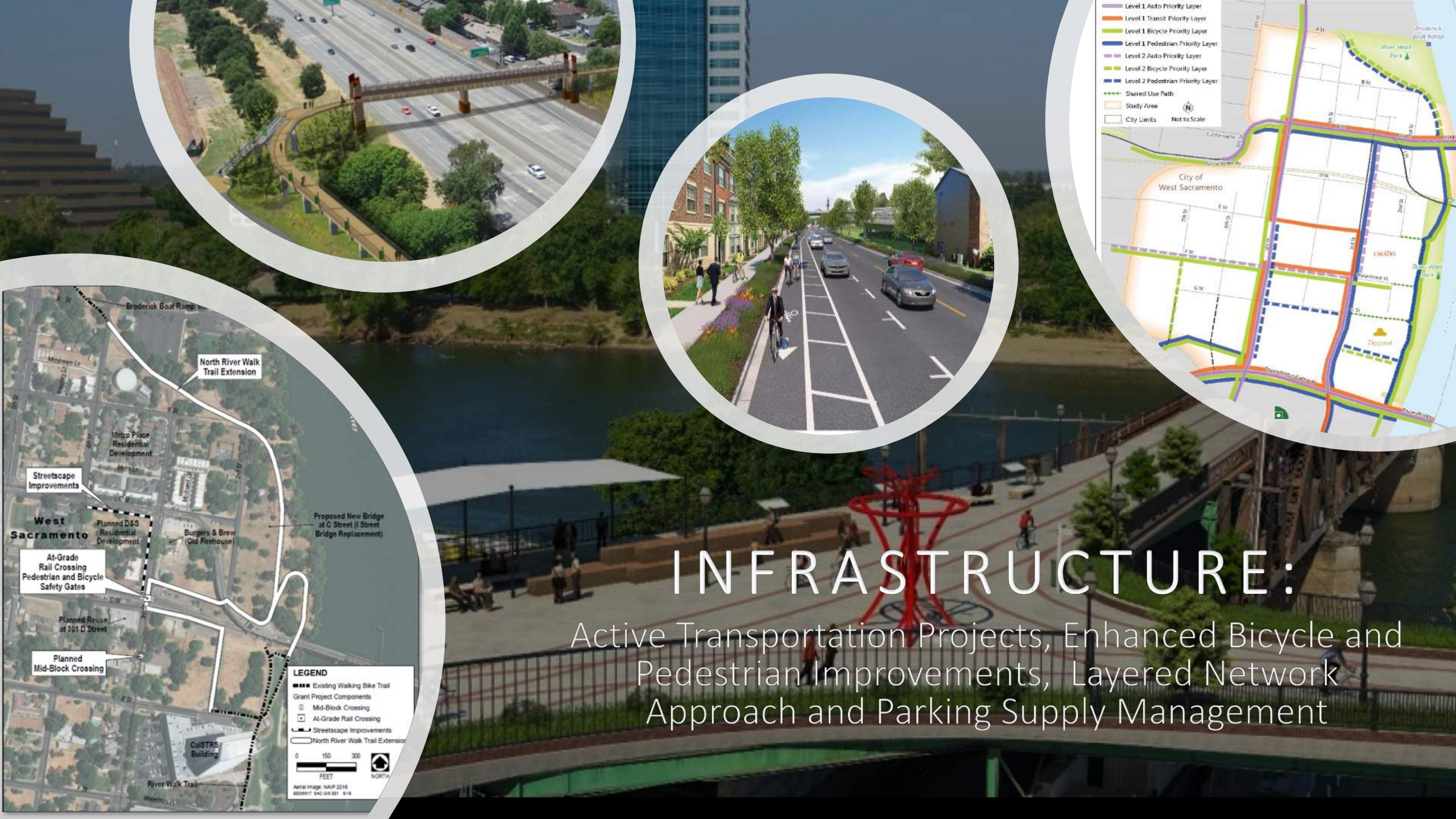
CAP UPDATE CHALLENGES

CLIMATE CHANGE RESILIENCY:

POLICIES, CAPITAL PROJECTS, AND PROGRAMS

LAND USE:

High Density Residential, Mixed-Use Development, Economic Gardening of Target Industries, Green Buildings, and Affordable Housing

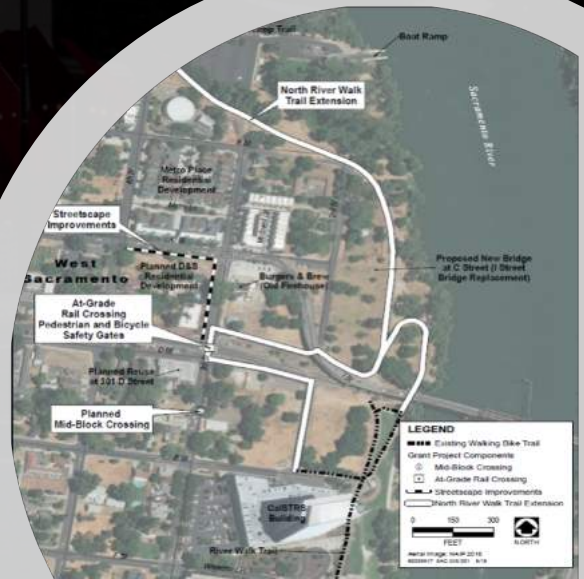


INFRASTRUCTURE:

Active Transportation Projects, Enhanced Bicycle and Pedestrian Improvements, Layered Network Approach and Parking Supply Management

TRANSPORTATION CHOICES:

Streetcar, Mircomobility, YoloBus Streamlining, Mobility Action Plan, and Mobility Hub Implementation



CLIMATE CHANGE RESILIENCY: DAY TO DAY PRACTICES

- Policy Mining
  - Sacramento Riverfront Master Plan (2003) ➡ Sacramento River Crossing Alternatives Study (2011) ➡ Broadway Bridge Feasibility Study (2015)
- Obligation to collaborate
  - Everything has to be multi-purpose
  - No silos
- Investment Practices
  - Council's Strategic Plan
  - CIP/Budget Process
  - Community Investments Funds
  - Equity Considerations

CITY OF WEST SACRAMENTO

Q&A

Contact:
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Mayors' Commission on Climate Change

Discussion

City of SACRAMENTO

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Mayors' Commission on Climate Change

Public Comments

City of SACRAMENTO

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Thank you!

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