A photograph of the Golden Gate Bridge in San Francisco, California, viewed from a low angle looking across the water. The bridge's iconic orange-red towers and suspension cables are prominent against a blue sky with scattered white clouds. The water is a deep blue-grey, and the distant hills are visible in the background.

Local Climate Action Planning

Michael R. Boswell, Ph.D., AICP, Cal Poly SLO

Adrienne I. Greve, Ph.D., Cal Poly SLO

Tammy L. Seale, Principal, PMC

SPUR San Jose

Oct 15, 2012

Overview of Climate Action Planning

Greenhouse Gas Emissions Reduction

Climate Change Impacts and Adaptation

Implementing Climate Action Plans

OUTLINE

LOCAL CLIMATE ACTION PLANNING



MICHAEL R. BOSWELL, ADRIENNE I. GREVE,
AND TAMMY L. SEALE

Now is the time
to act.

Theme #1

Everyone has a
role to play.

Theme #2

Climate action
planning = good
community planning.

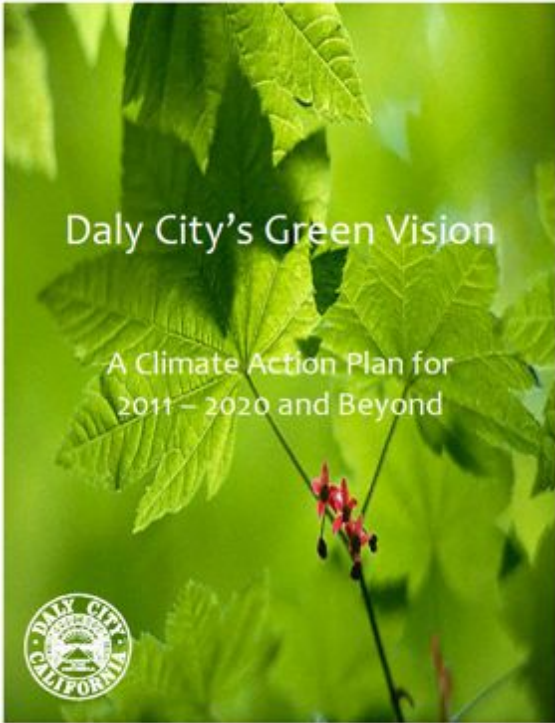
Theme #3



BENICIA CLIMATE ACTION PLAN



Community Goal: Reduce Emissions 10% Below 2000 Levels by 2020



Daly City's Green Vision

A Climate Action Plan for 2011 – 2020 and Beyond



OCTOBER 2009

City of San Carlos Climate Action Plan

Prepared by the City of San Carlos Planning Department and the General Plan Advisory Committee (GPAC) Climate Action Plan Subcommittee.



City of San Carlos Planning Department
600 Elm Street
San Carlos, CA 94070

2009

Climate Change Action Plan



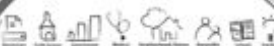
Welcome to the City of
NOVATO
California



Climate Change Action Plan
City of Novato
December 2009

1

Palo Alto Climate Protection Plan



CLIMATE PROTECTION PLAN

December 3, 2007



Warning of the climate system is unequivocal, as is now evident from observations of increases in global average air and ocean temperatures, widespread melting of snow and ice, and rising global average sea level.

City of Oakland Draft Energy and Climate Action Plan

March 1, 2011 Edition



What are climate action plans?

Strategic plans...



What are climate action plans?

Strategic plans...



San Mateo County Climate Action Plan

Climate Change
Vulnerability Assessment

Final

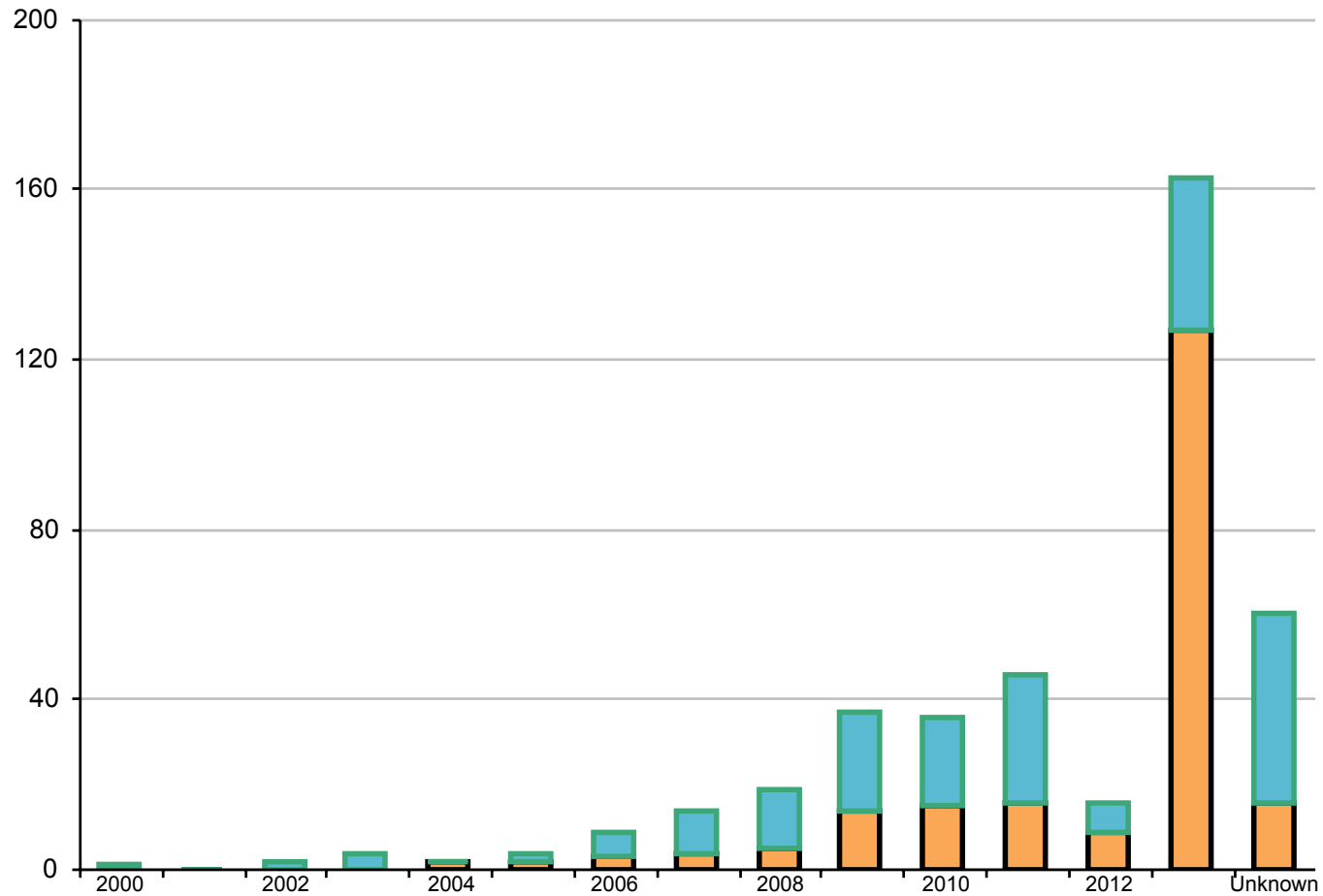
Prepared by ICLEI
For
San Mateo County
December 2011



Who has adopted CAPs?

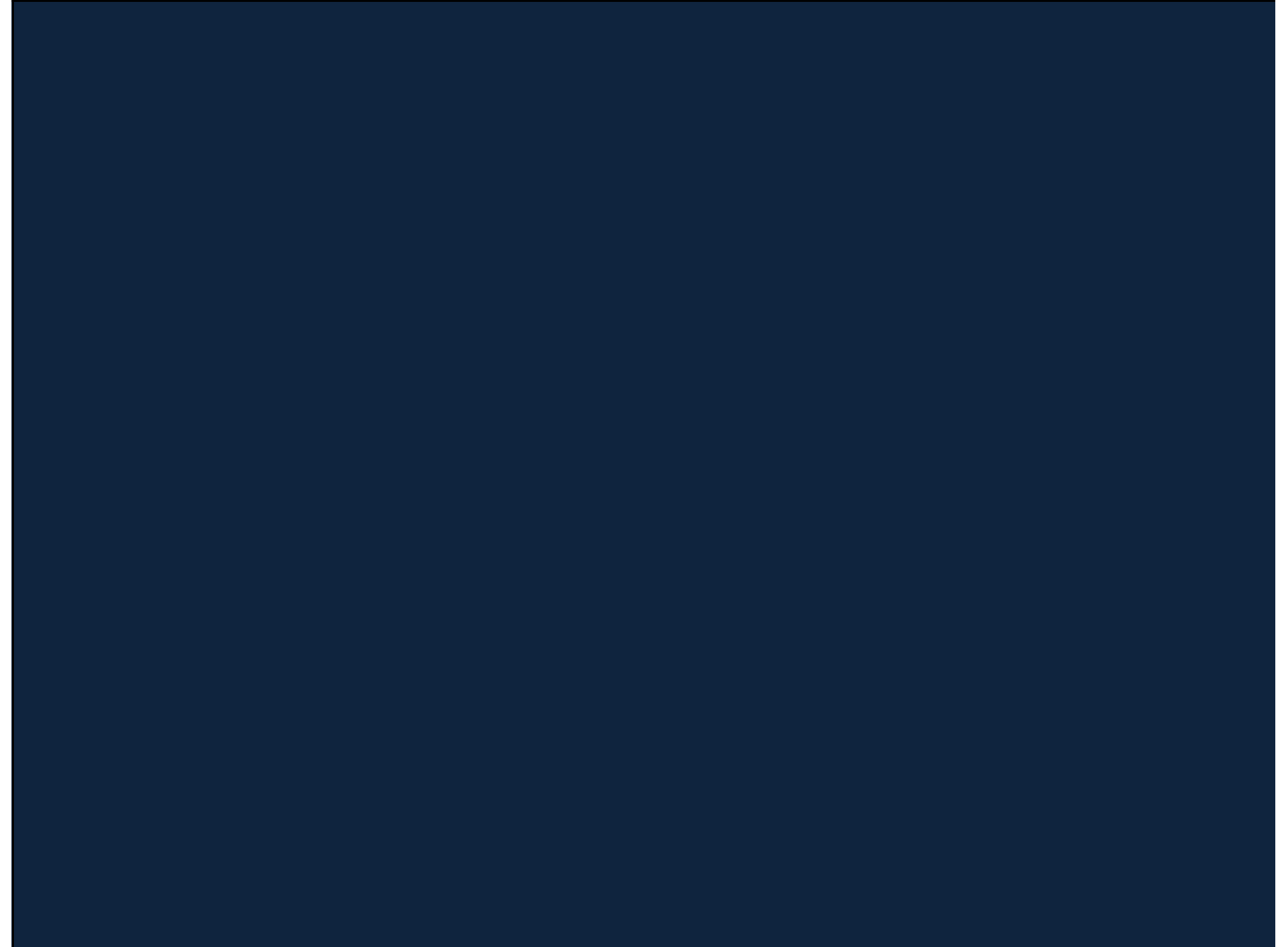


CAP Adoption Trends



Why do local climate planning?

- Cities consume 73% of the worlds energy and emit 80% of the greenhouse gases
- Technological innovation is not enough
- Impacts of climate change will be felt locally
- Reducing emissions can improve the quality of life in communities



GHG Reduction Strategy

- Conduct a baseline GHG emissions inventory and forecast
- Engage stakeholders
- Formulate plan vision and goals
- Identify a GHG emissions reduction target

GHG Reduction Strategy

- Develop and evaluate GHG emissions reduction measures
- Quantify GHG emissions reduction measures
- Prepare implementation program

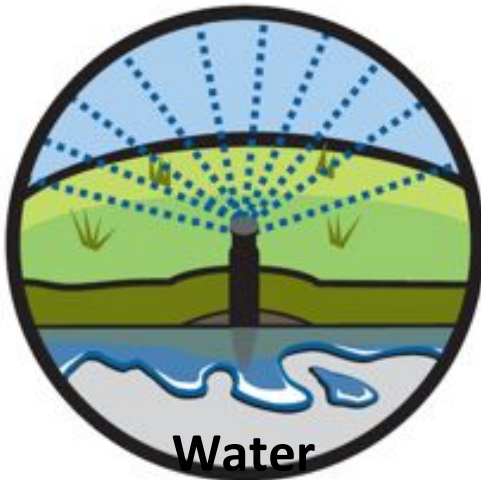
GHG Emission Sources



Transportation



Energy



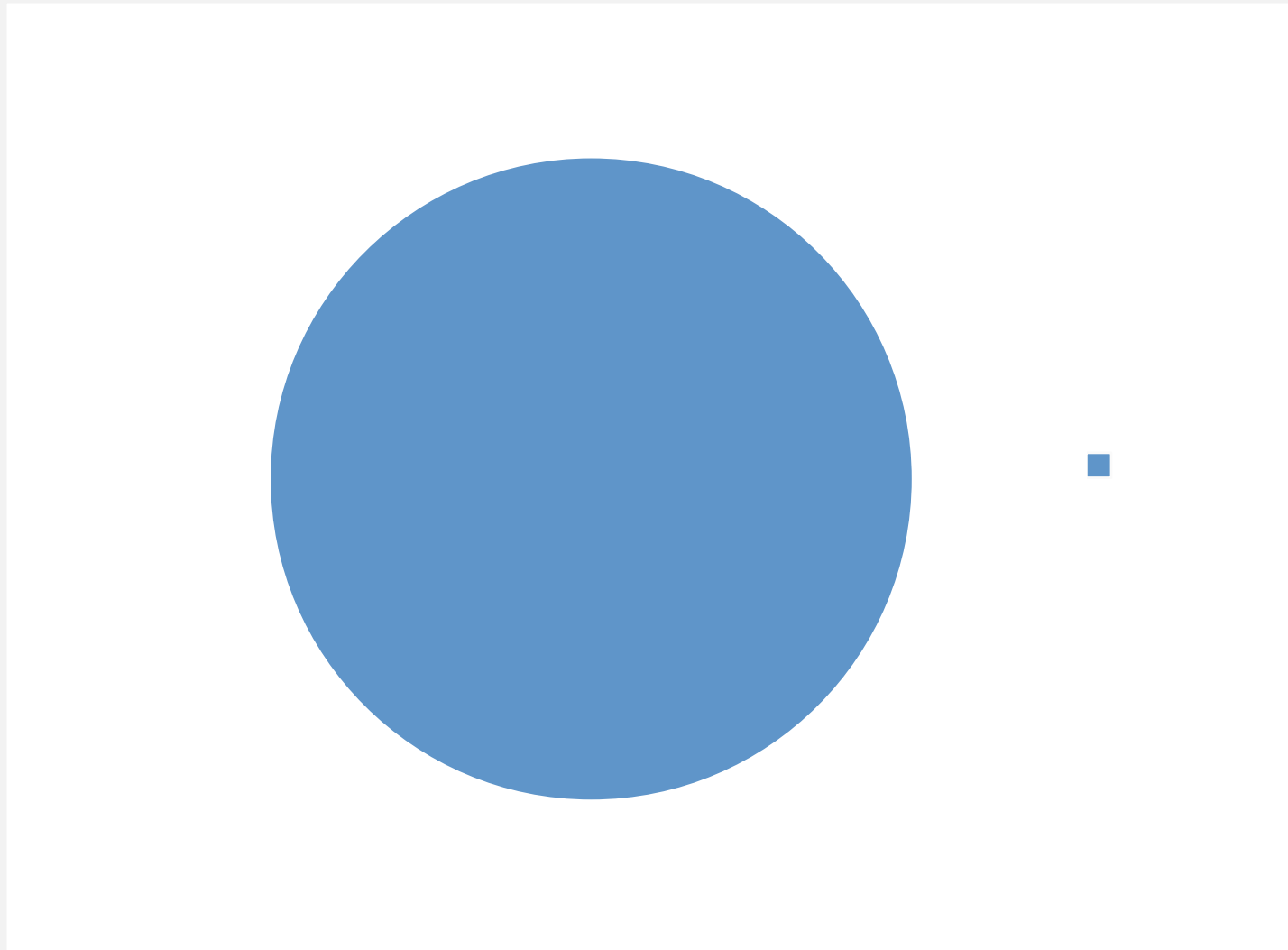
Water

Agriculture

Solid Waste

Source: PMC

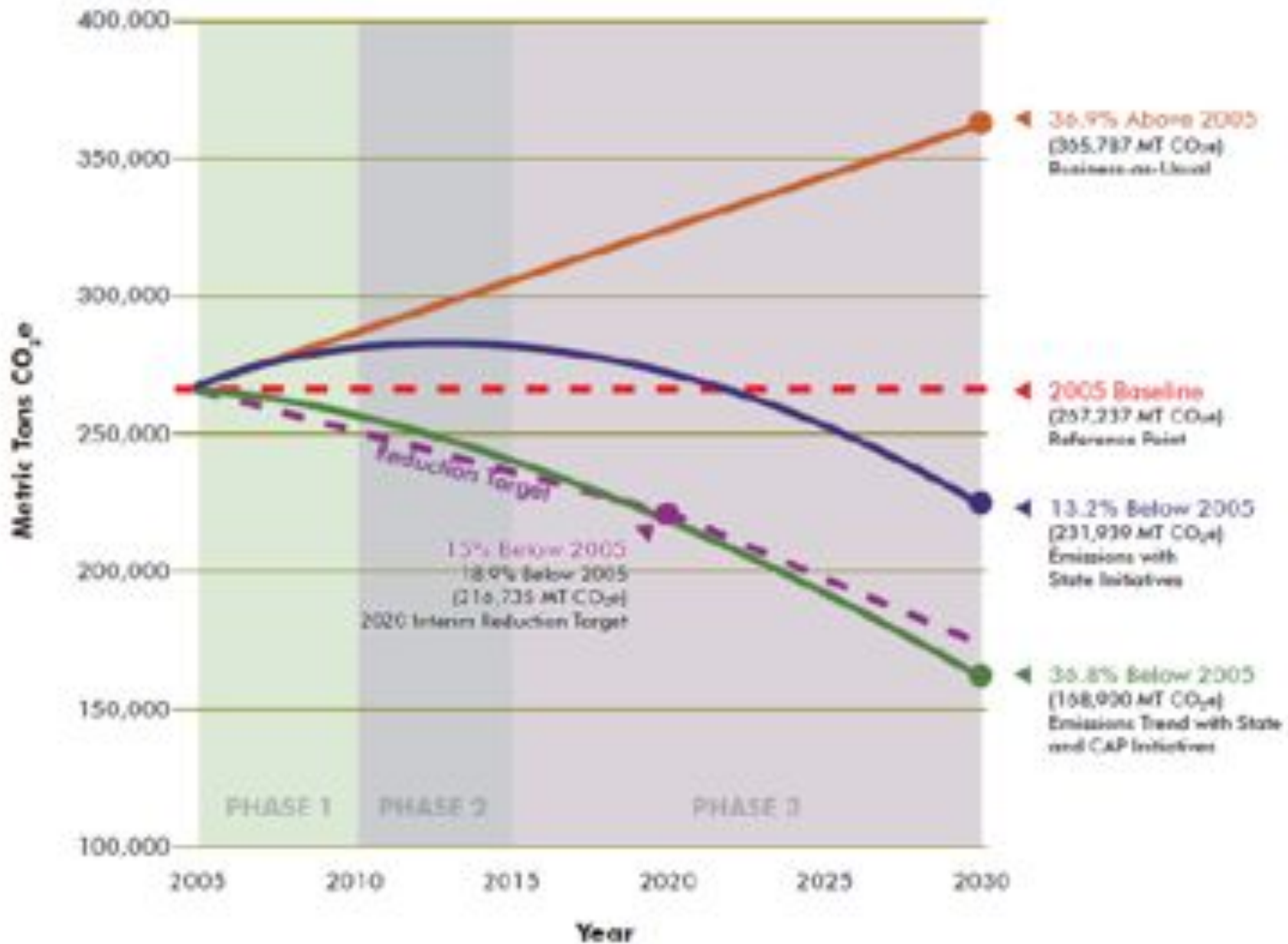
GHG Emissions Inventory



Energy Use

metric
(CO₂e)

2030 Emission Reduction Scenarios in San Carlos



Source: City of San Carlos

Areas of Climate Action



Baseline GHG Emissions

Energy – Electricity and natural gas consumed by the residents of Bradbury.

Street Lighting and Water Pumping – Electricity used by streetlights and water pumps within the city but not owned by the City.

On-Road Transportation – Vehicle miles traveled (VMT) in, to, and from the city.

Waste – Methane emissions from waste (municipal solid waste), and green waste (alternative daily cover) sent to landfills and regional incinerators (also known as transformation facilities) from the city.

Water and Wastewater – Energy required to extract, filter, deliver, and treat the water used and wastewater disposed by the community. Also, the direct emissions from residential septic systems.

Off-Road Equipment – Emissions from construction as well as lawn and garden equipment operated within the city.

Additional Benefits

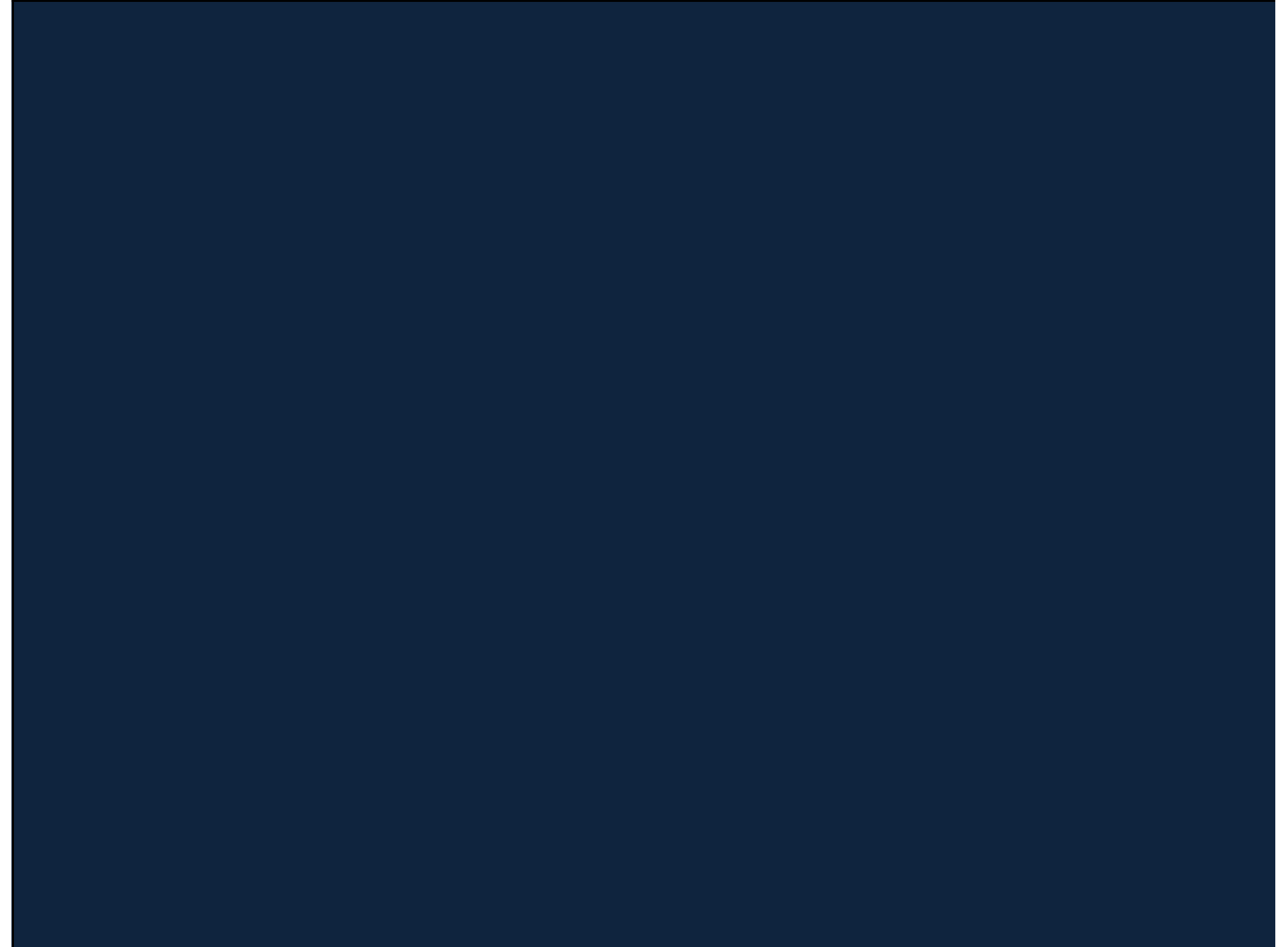
In addition to reducing greenhouse gases, many strategies provide additional health, economic, or educational benefits when implemented. These tags can be found throughout the document.



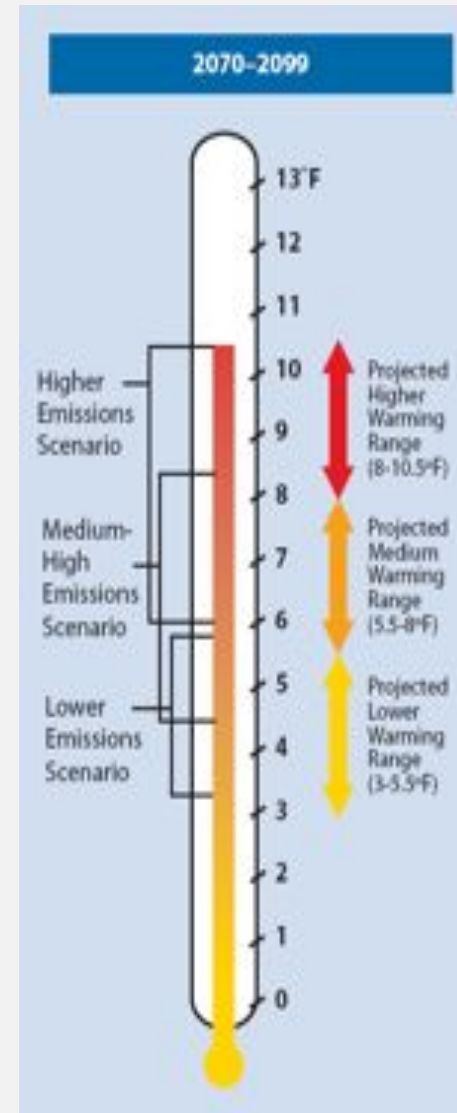
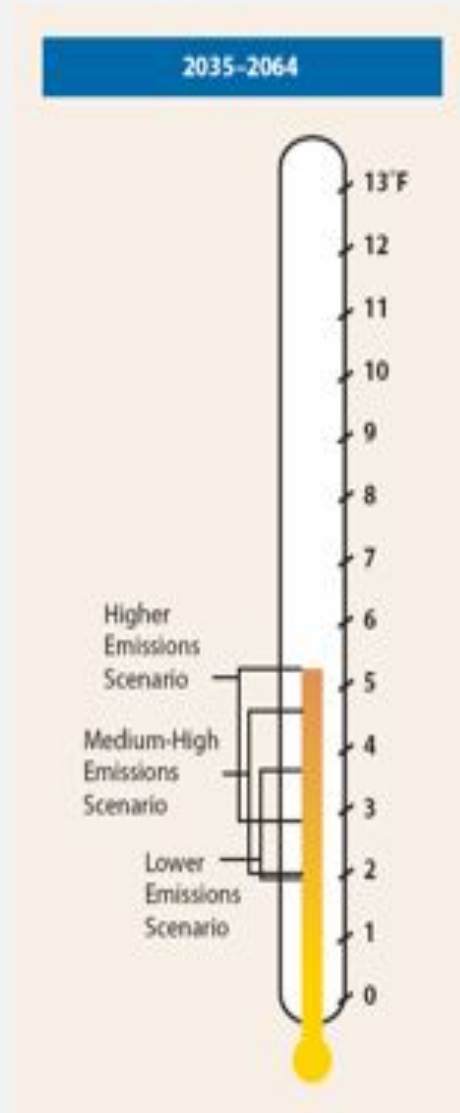
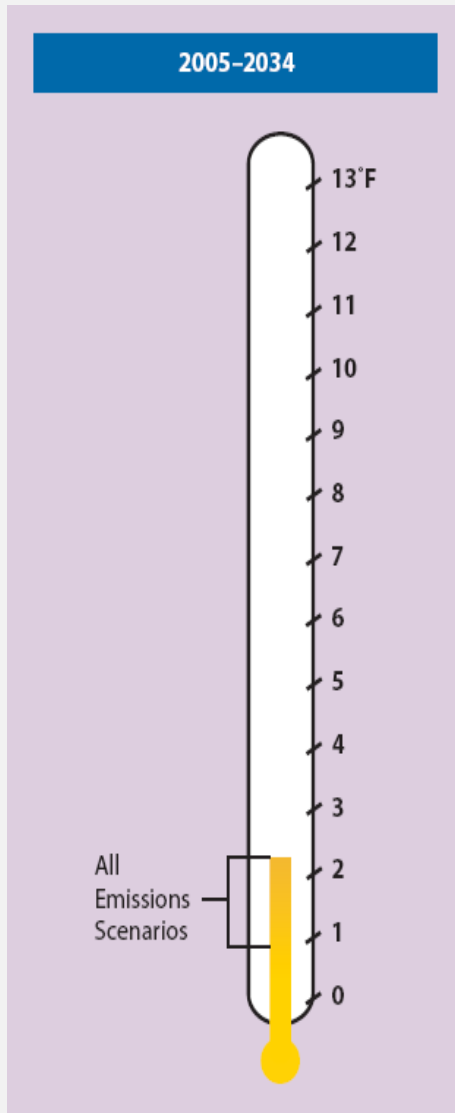
Source: City of San Luis Obispo

Community Engagement

Source: PMC (modified)



Climate Change in California



Climate Adaptation & GHG Reduction



Bicycle
Infrastructure



Green Building



Cooling Centers

Adaptation & Local Jurisdictions

- Setting
- Jurisdiction Control
- Scale (impacts & solutions)
- Uncertainty
- Cross sector impacts & solutions

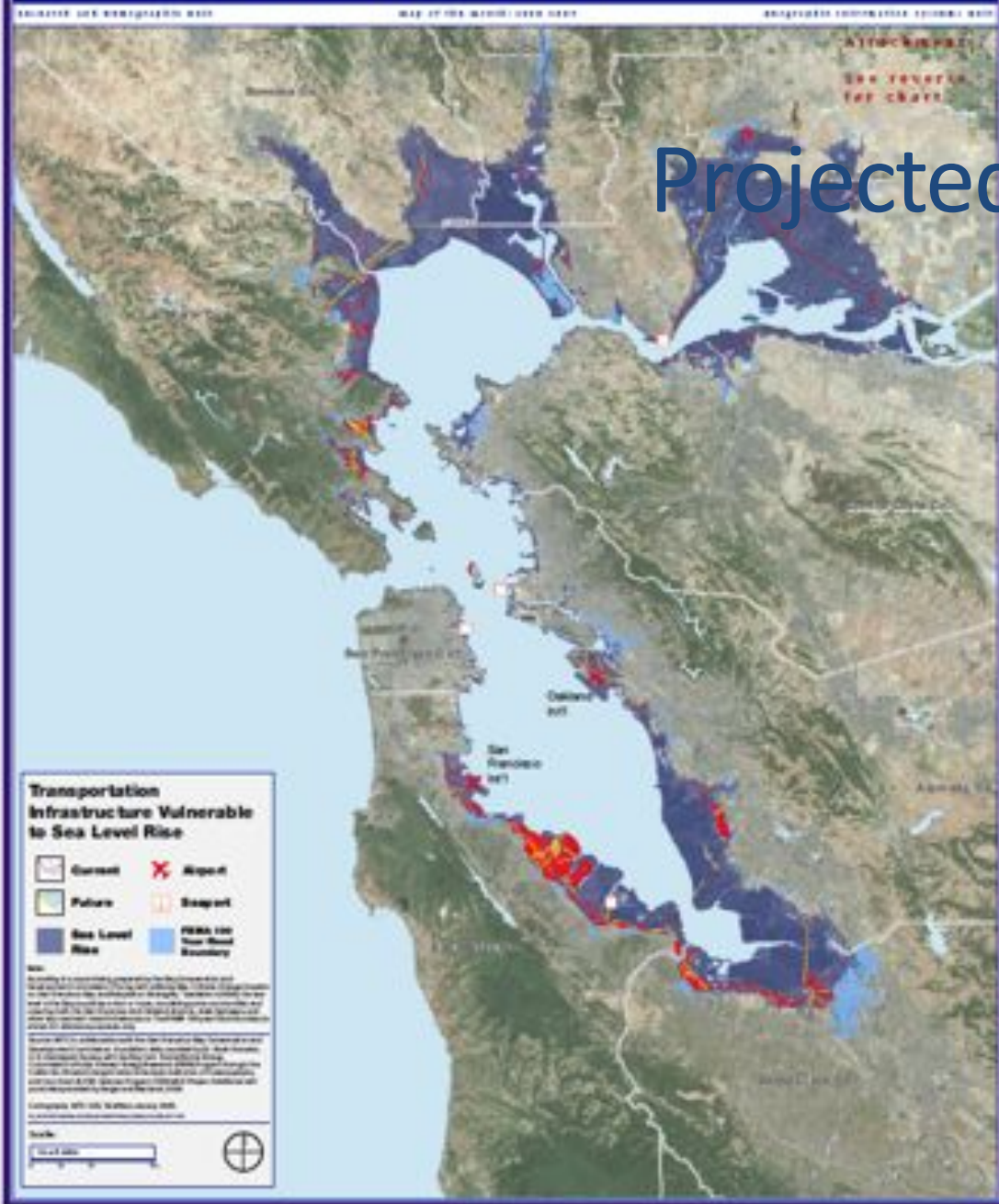


Adaptation Strategy Development



Shoreline Areas Vulnerable to Sea Level Rise: 2040-2060

Metropolitan Transportation Commission
Planning, Modeling and Distribution
Interpretation for the non-technical
San Francisco Bay Area



Exposure Projected climate impacts

- Difference from current conditions
- Speed of onset
- Spatial variation
- Extent of impact
- Certainty

Exposure

DIRECT IMPACTS

- Sea Level Rise
- Changed precipitation
 - Less snow
 - Flooding
 - Drought
 - Intense Rainfall events
- Changed temperature
 - Extreme heat
 - Shift in seasons
- Wind
- Ocean Acidification

INDIRECT IMPACTS

- Wildfire
- Landslide
- Species migration
- Erosion
- Human health
- Economy
- Safety
- Infrastructure
- Ecosystem health

Sensitivity



Function
s



Structures



Population
s

Potential Impact

For each point of sensitivity identify:

- Temporal extent
- Spatial extent
- Permanence
- Endangers local population
- Level of disruption to normal community function



Metropolitan Transportation Commission 2008

HIGH

MEDIUM

LOW

Adaptive Capacity

Plans

- General Plan
- Climate Action Plan
- Climate Adaptation Plan
- Area and Specific Plans
- Local Hazard Mitigation Plans
- Local Coastal Plans
- Urban Water Management Plan
- Downtown Plan
- Transit Plan
- Sustainable Community Plans
- Regional Transportation Plans

Standards, Ordinance, & Programs

- Capitol Improvement Program
- Zoning Code
- Building Code
- Fire Code
- Tree Ordinance
- Floodplain Ordinance
- Stormwater Management

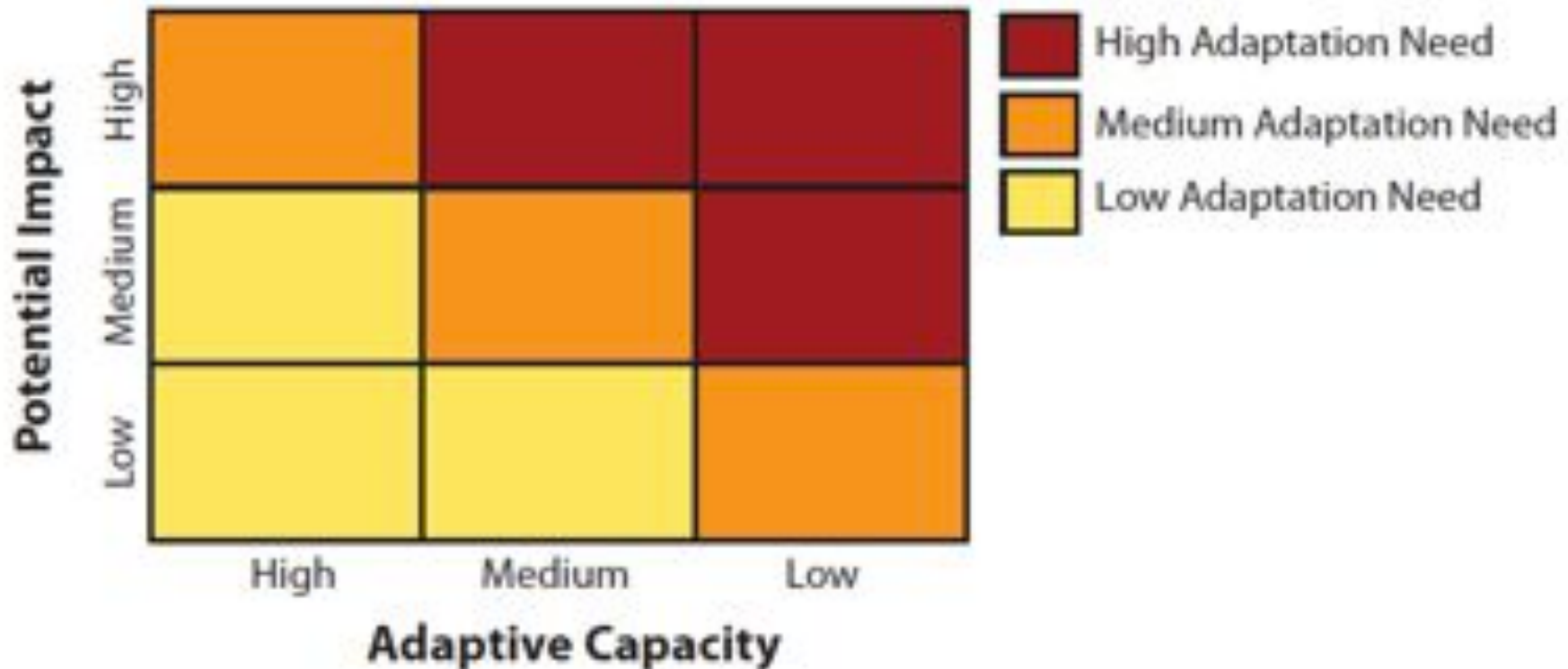
HIGH

MEDIUM

LOW

Prioritizing Adaptive Needs

Planning in the Face of Uncertainty



Santa Cruz, CA



Kern County, CA

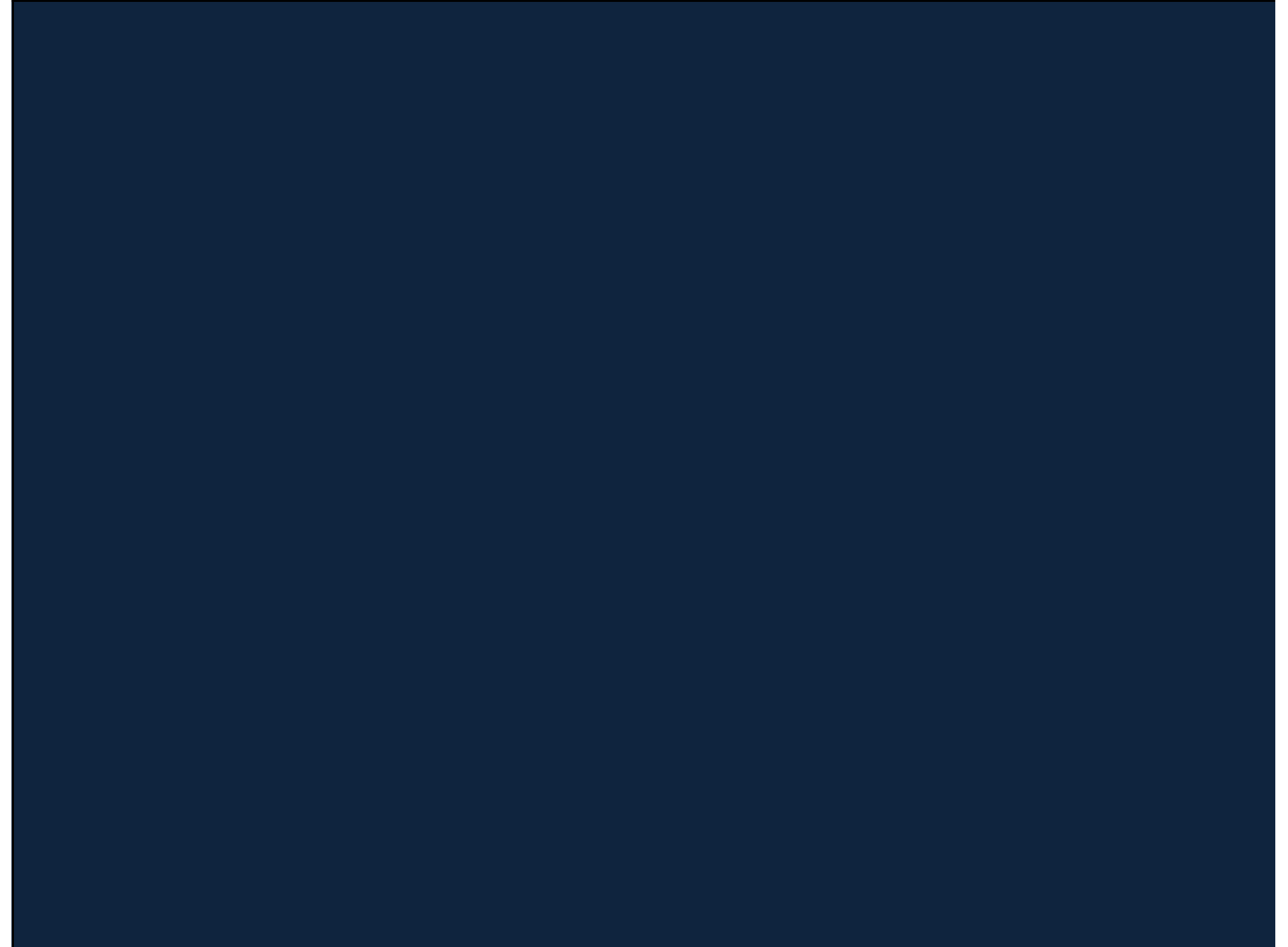


San Clemente, CA

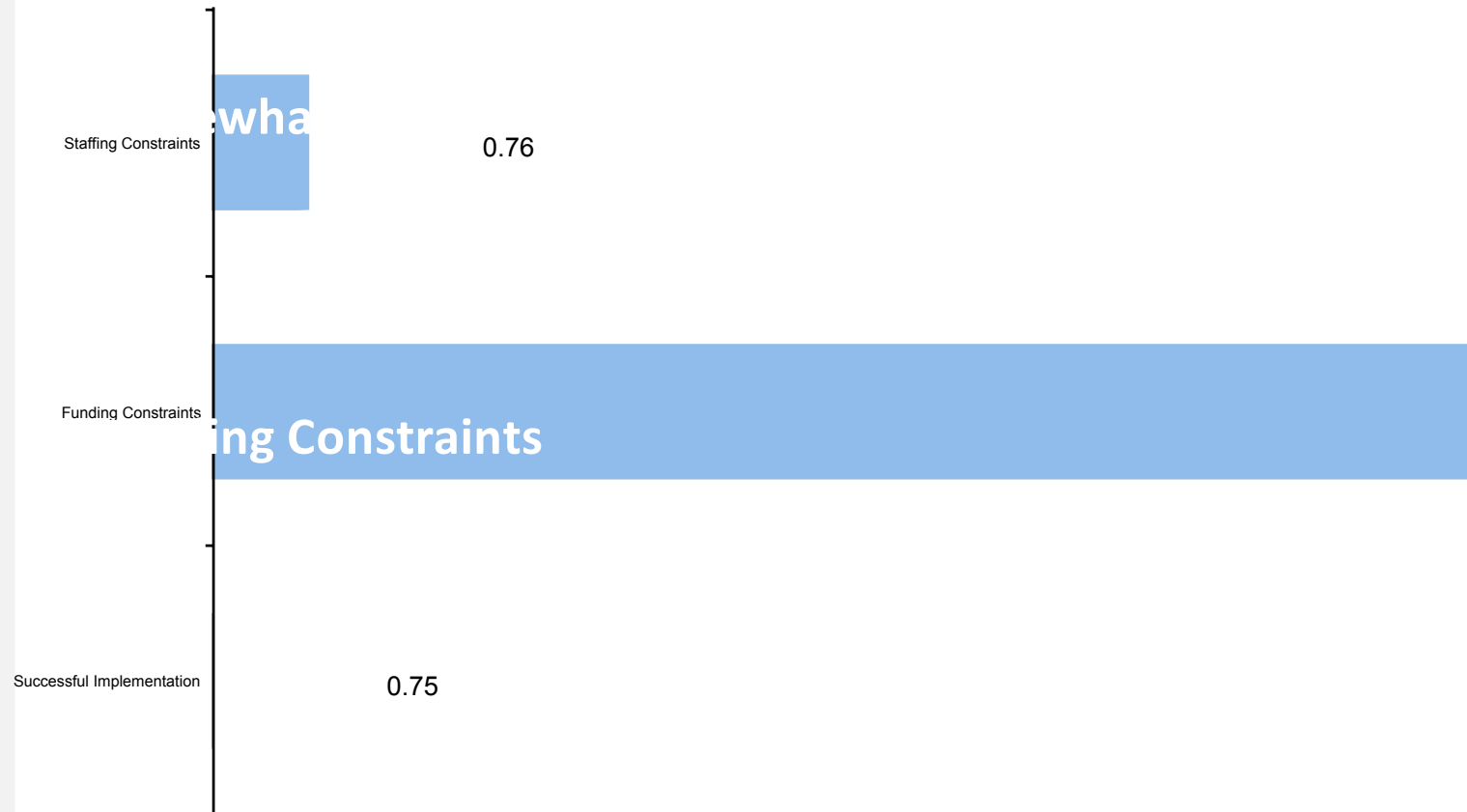


Arcata, CA





The Early Trends in Implementation



Keys to Successful Implementation

Administration

- Institutionalize action (“green team”)
- Allocate staff time
- Allocate general fund revenue

Engagement

- Support climate champions
- Engage the public
- Cultivate partnerships (esp. utilities)

Leadership

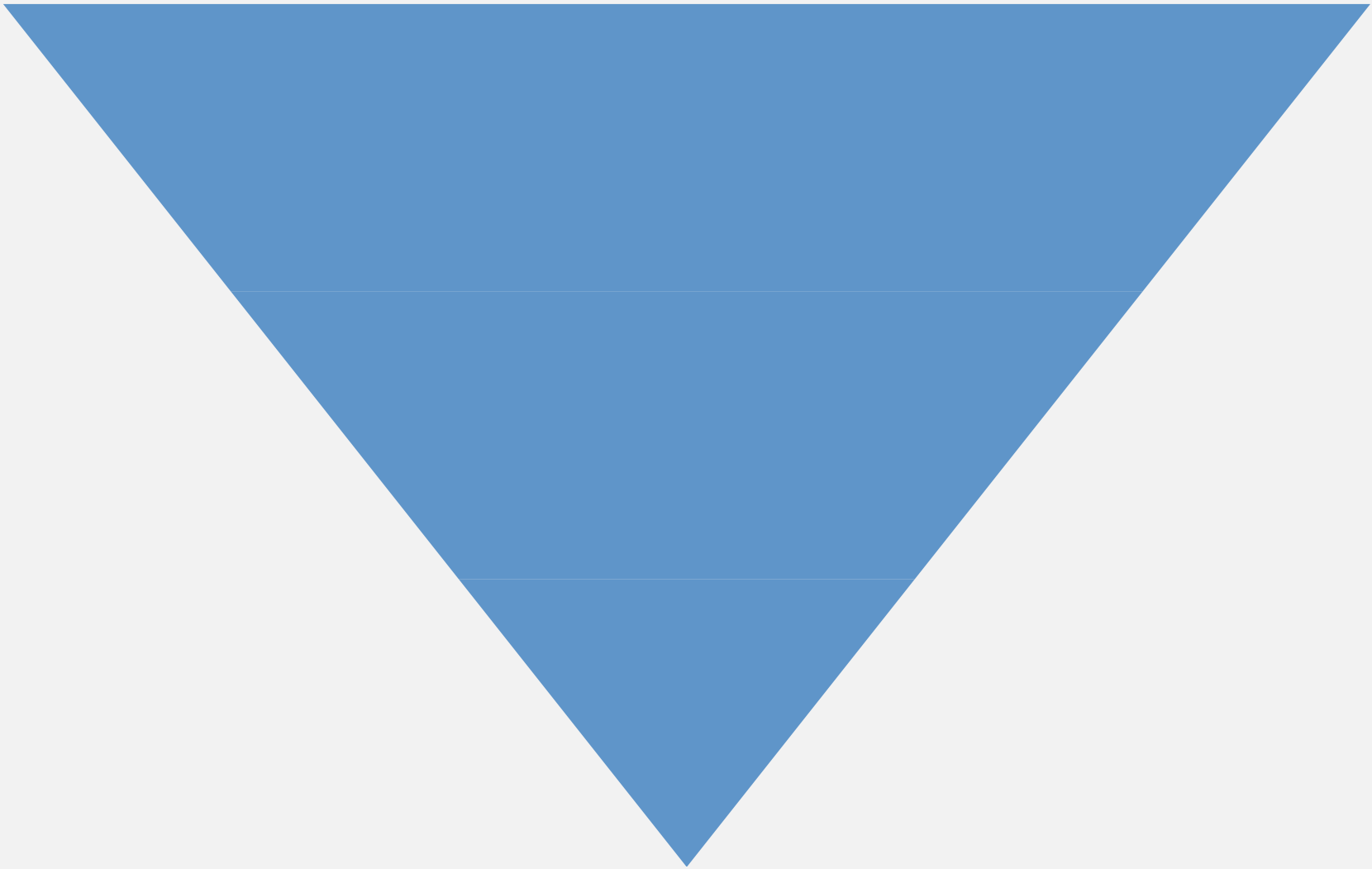
- Communicate co-benefits
- Lead by example
- De-politicize the plan

Importance of Funding Source

1. General fund revenue
2. Grants
3. Non-governmental organization donations or in-kind services
4. ~~Impact/development fees~~
5. Bonds
6. Special, climate/energy-related tax or fee
7. Carbon offset fees



Hierarchy of Implementation Progress



Thank You!

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