



RICAPS

Regionally Integrated Climate Action Planning Suite

Multi-city Working Group
October 22, 2019

RICAPS technical assistance is available through the San Mateo County Energy Watch program, which is funded by California utility customers, administered by Pacific Gas and Electric Company (PG&E) under the auspices of the California Public Utilities Commission and with matching funds provided by C/CAG.



Welcome!

There are 6 questions around the room. While you're enjoying your lunch, please write your responses to each question on a post-it and stick it on. Please use a marker.

We will get started with the meeting at 12:55.

Agenda

- Introductions
- Consumption-based inventories
- Edible food recovery program
- Carbon sequestration
- Transportation innovations
- Adaptation and equity
- Decarbonizing existing buildings and transportation
- Final discussion



Introductions

What is the status of your city's CAP?



Bay Area Air Quality Management District

Bay Area Consumption-based Greenhouse Gas Emissions Inventory

Abby Young
October 15, 2019



What is a Consumption-based Inventory (CBEI)?

- Focuses on GHG emissions embedded in goods & services consumed by people rather than on economic output
- Attributes all emissions to the consumer, regardless of where goods & services are produced
- Includes full life-cycle emissions for each product or service:
 - Production: extraction, processing, production & shipping
 - Use
 - Disposal / recycling

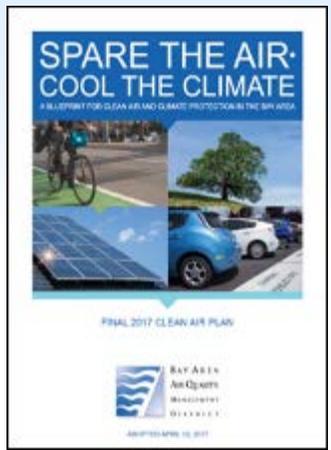


Why Develop a CBEI?

- Production-based inventory does not tell the whole story
- Major portion of goods & services are imported to region
- Quantify and account for (indirect) emissions that we generate beyond our boundaries
- Especially relevant in affluent areas:
 - High consumption of goods & services
 - Economic output is dominated by service & information sectors
 - Limited production of heavy-duty goods with high GHG content



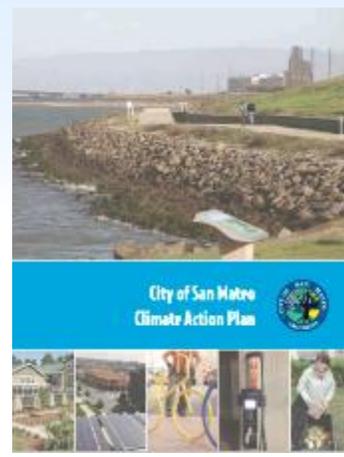
Air District's Motivation



Inform the 2017 Clean Air Plan



Help Bay Area residents reduce their GHG footprints



Support climate planning in local cities



Identify new GHG reduction policies



Methodology

- Collaboration with UC Berkeley Energy Resources Group
 - Cool Climate Network – Dr. Chris Jones <http://coolclimate.berkeley.edu/>
- Start at household level & scale up
- Develop expenditure profile for average household in each US Census Block Group in the Bay Area
- Apply life-cycle emissions factor for each type of good or service
 - Key source: *Comprehensive Environmental Data Archive*
 - Used Bay Area-specific data & emissions factors whenever available



Major Expenditure Categories

Transportation:

- Motor vehicle production
- Vehicle maintenance
- Motor vehicle fuel consumption
- Public transportation
- Air travel

Housing:

- Construction
- Maintenance
- Residential energy use
- Water
- Waste

Food:

- Grains & cereals
- Fruits & vegetables
- Dairy
- Meat
- Other

Goods:

- Clothing
- Furniture & appliances
- Personal care products
- Books, newspapers, CDs

Services:

- Health care
- Education
- Financial services
- Communication
- Entertainment



Example: Automobile

Upstream

Individual Parts
Production, including upstream emissions for each part

Vehicle Assembly

Shipping to Dealer

In-Use

Fuel Consumption

- Fuel economy
- Fuel type
- Driving conditions

Upstream emissions from refining gasoline

Vehicle Maintenance

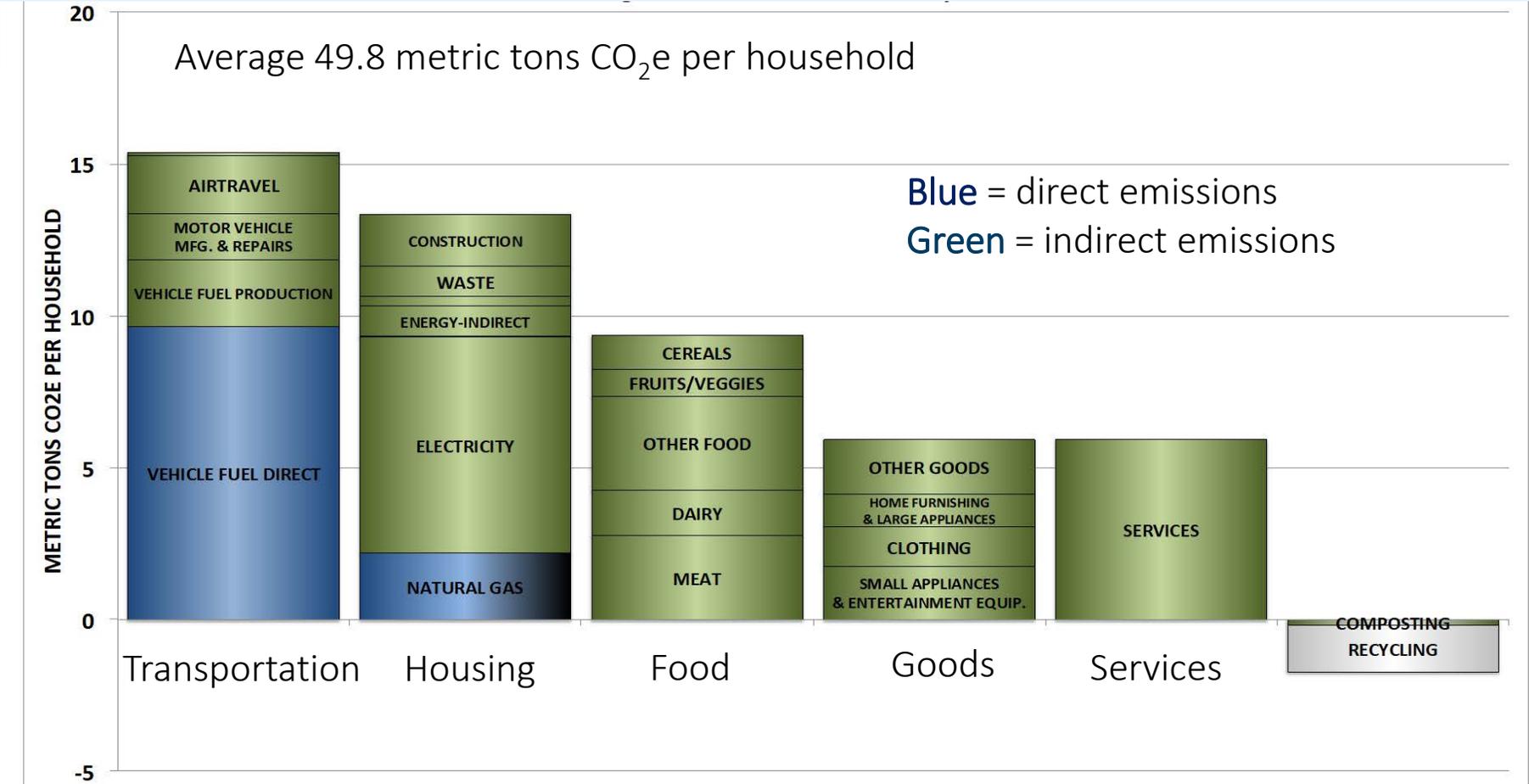
Downstream

Landfill

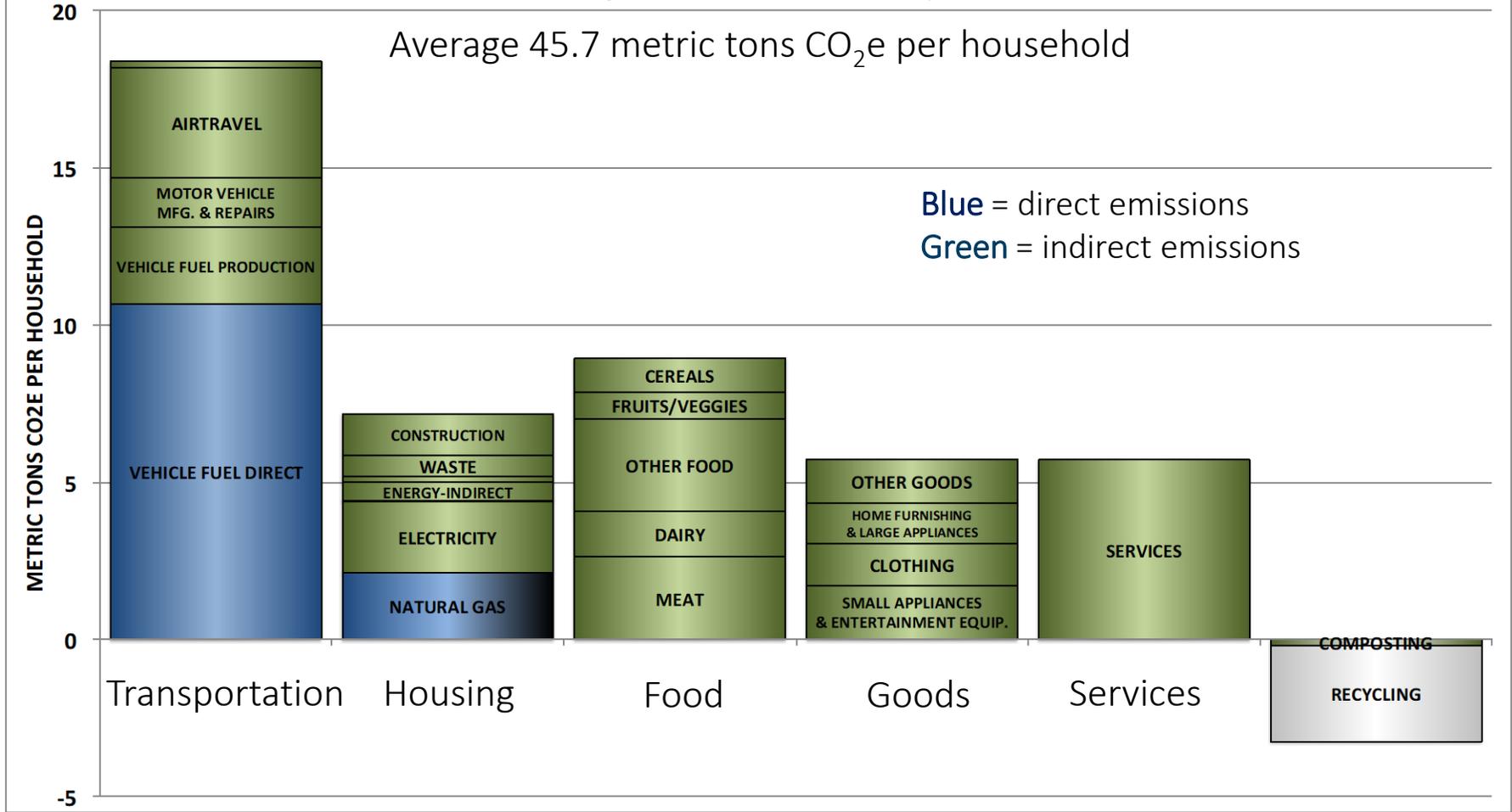
Recycling / re-use (credit)



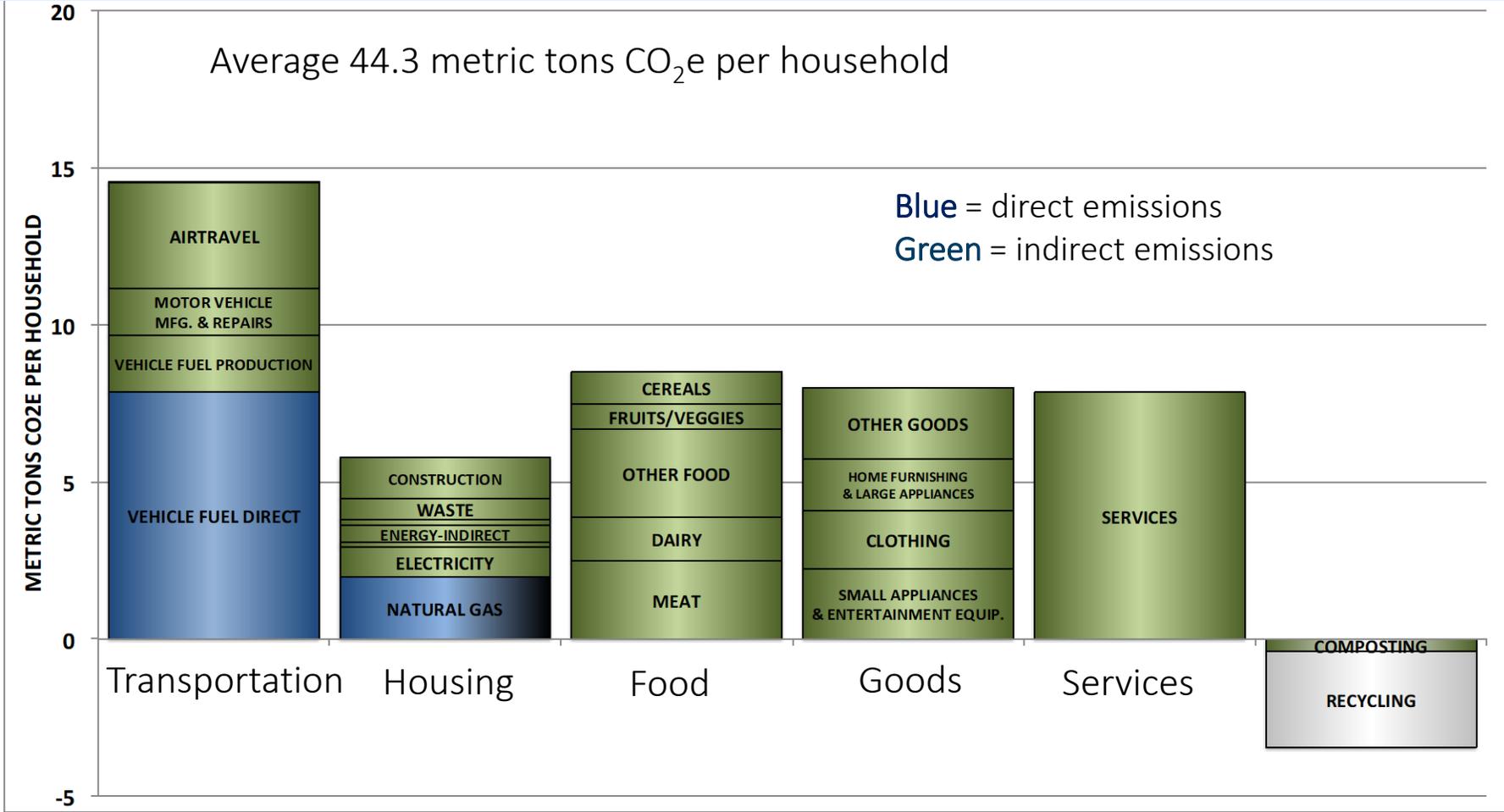
US Average Household GHG Footprint



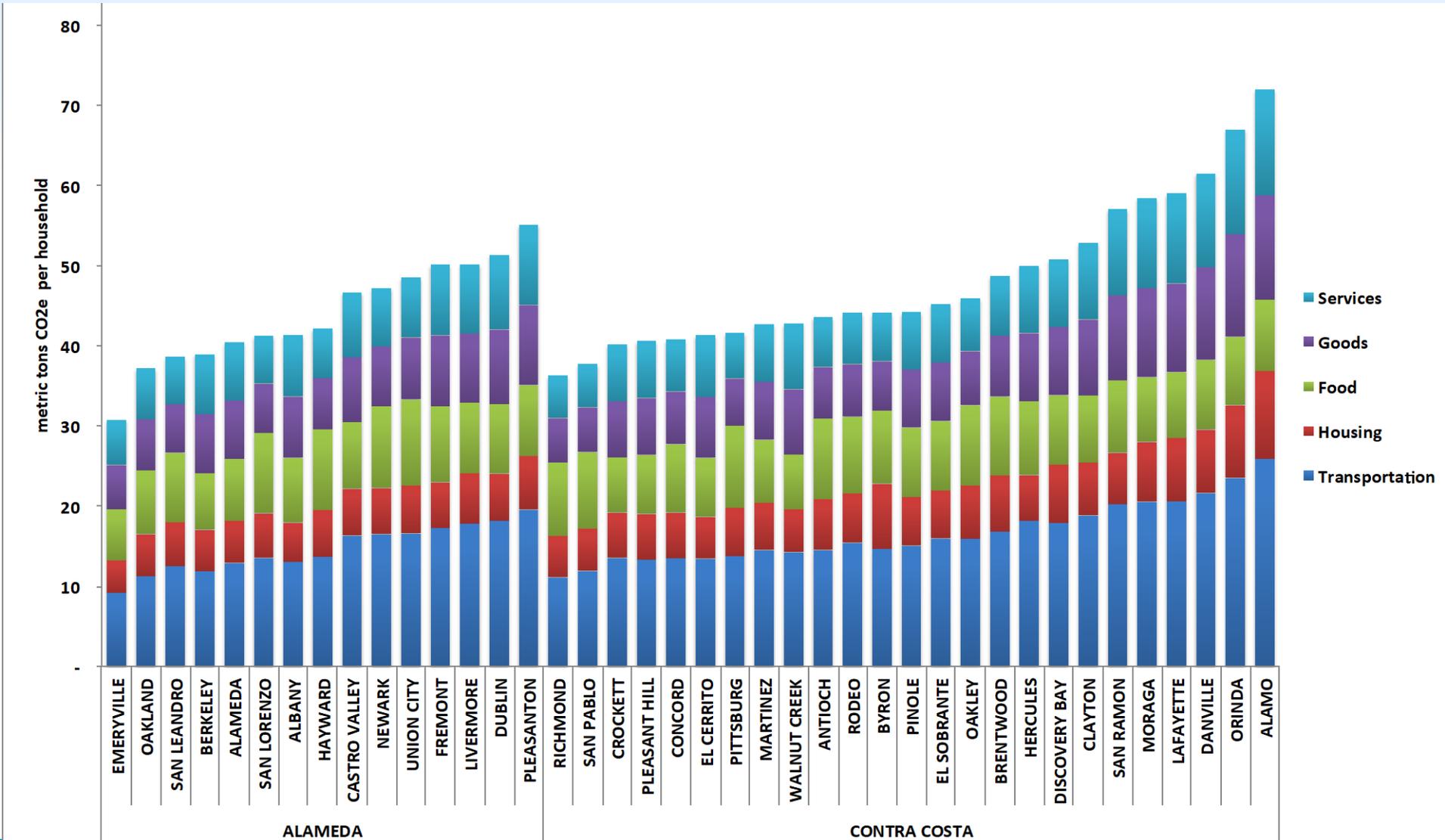
California Average Household GHG Footprint



SF Bay Area Average Household GHG Footprint



Average Carbon Footprint for Cities in Alameda & Contra Costa Counties





Key Points

- Consumption-based inventory *complements* production-based inventory
- Provides a more complete picture of our GHG impact
- GHG inventory is larger when analyzed from consumption perspective
- CBEI can inform climate planning at regional & local scale by identify most promising opportunities for GHG reduction
- CBEI findings may be most useful for public education



Discussion Questions

- How have you used the CBEI?
- How might you use the CBEI in the future?
- If the Air District were to revisit the CBEI, what would be useful to you?
- Which portions of the CBEI are of most interest to you?

Thank you!

Abby Young
ayoung@baaqmd.gov



Jack Johnson, County of San Mateo

Edible Food Recovery Program



Discussion

How do you want to address edible food waste
in your climate action plan?

SAN MATEO COUNTY, CA

CLIMATE

ACTION

PLAN



Background

- ~75% of SMC is open land, a significant portion of that is working land (crops or grazing)
- How does *this* fit into the climate action planning framework?
- Limitations of RICAPS framework



Working lands and climate action plans

- What is carbon farming & what do we stand to gain by planning for it
- Potential for carbon sequestration



Photo credit: SMC RCD



Photo credit: SMC RCD



Photo credit: SMC RCD

Working lands and climate action plans

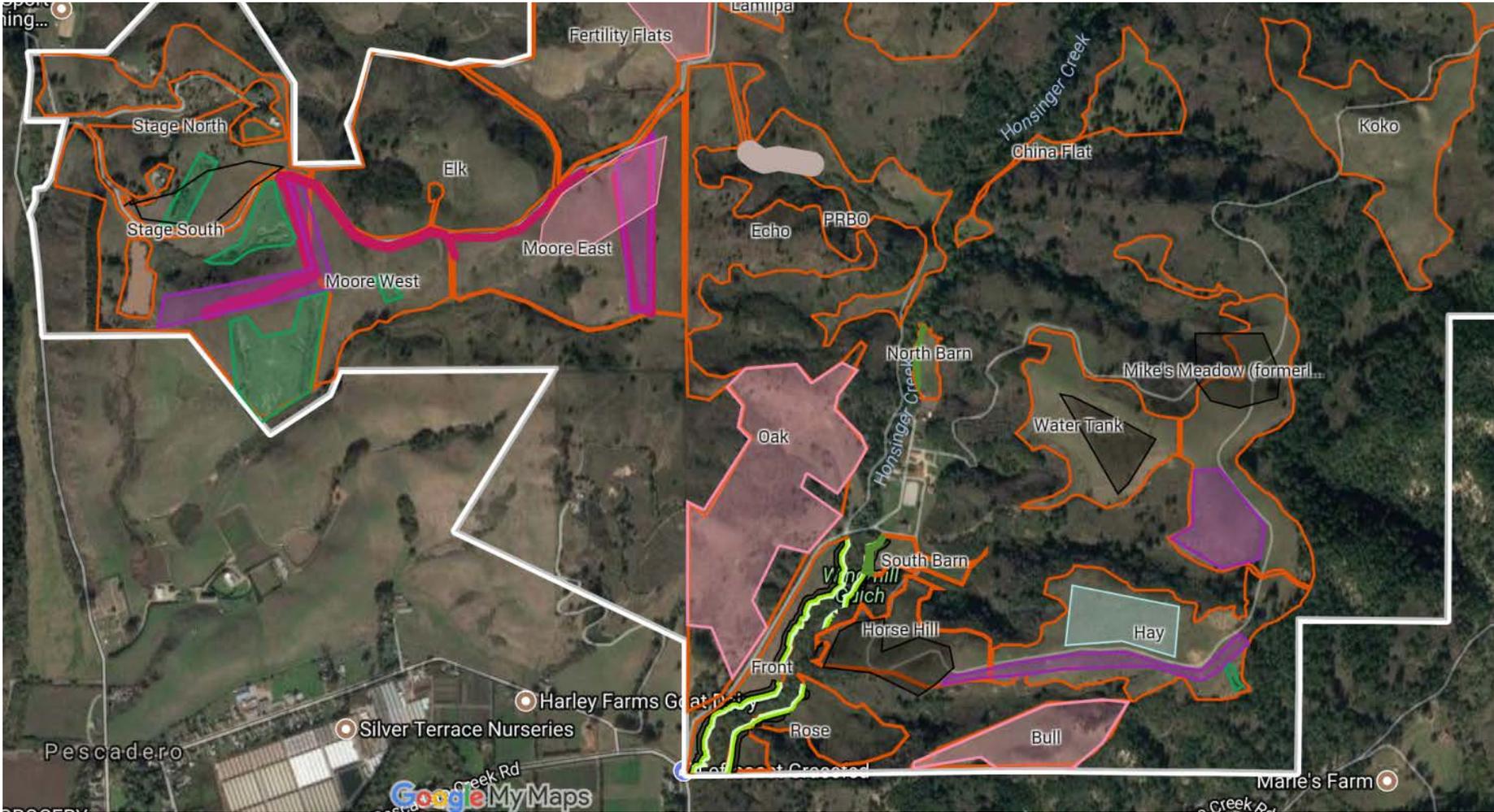
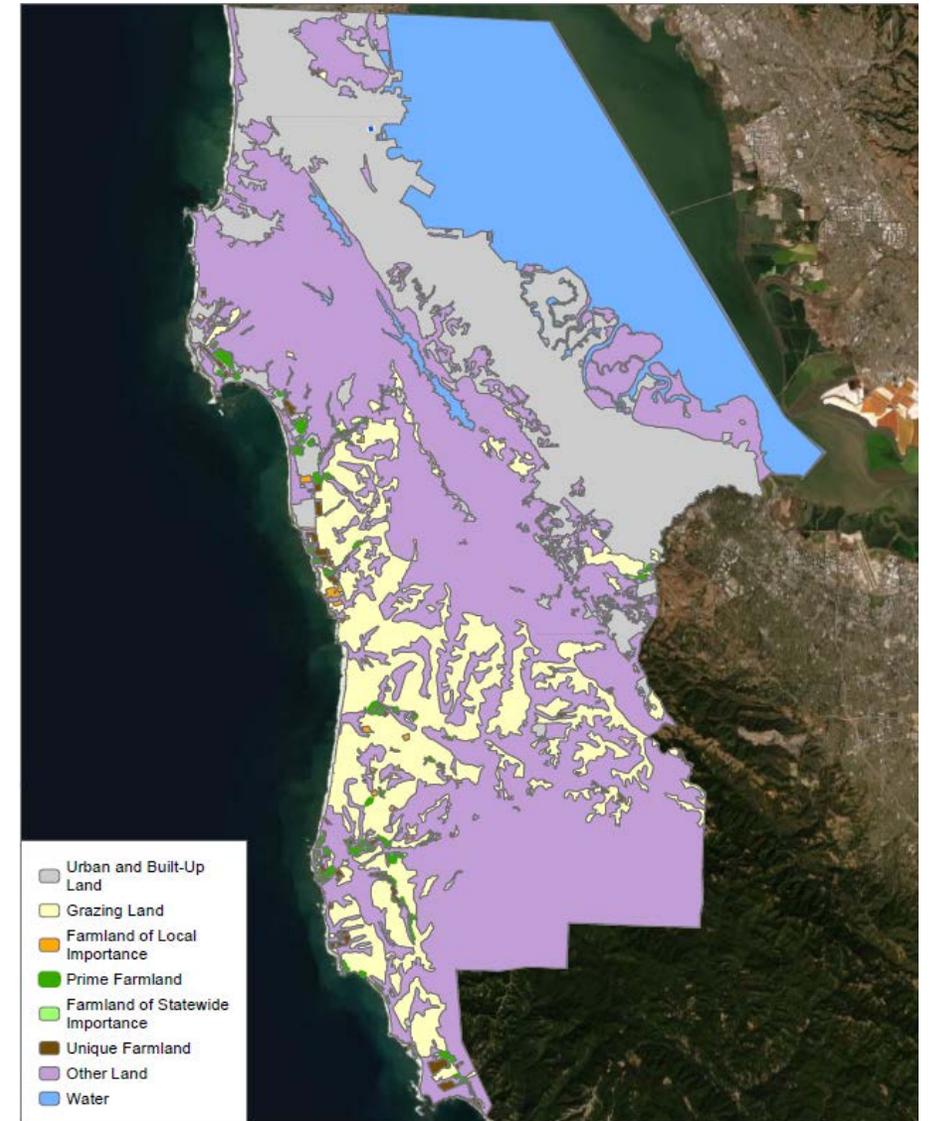


Photo credit: SMC RCD

Department of Conservation Grant: Integrating Agriculture into Climate Mitigation

- **Purpose:** work regionally to facilitate widespread adoption of agricultural practices that increase carbon sequestration
- **Partners:** Santa Clara County Planning Department, San Mateo Resource Conservation District, Loma Prieta and Guadalupe Coyote Conservation Districts, Carbon Cycle Institute
- **Deliverables:** *(by August, 2020)*
 - Sequestration potential analysis
 - Community engagement (RCDs)
 - Integration of analysis into policy documents in both Counties



SOURCE: CA Department of Conservation 2016

DUDEK 0 11,500 23,000 Feet

FIGURE

Working Land in San Mateo County

WLRCP Grant - San Mateo and Santa Clara Counties

Working lands and climate action plans

- Integrate our efforts
- Attend to social and economic context



Farmers and workers, Swanton Berry Farm

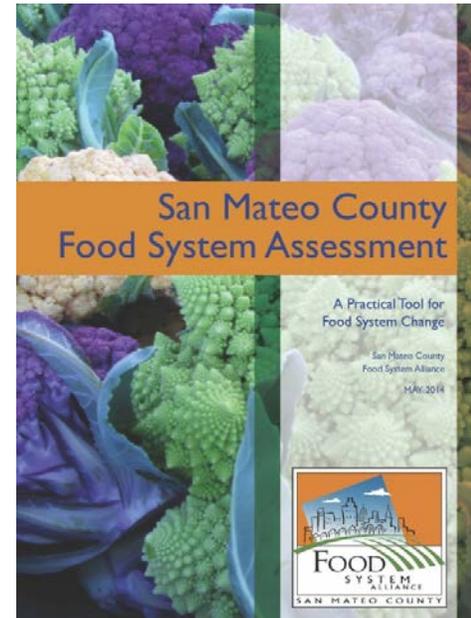
Photo credit: SMC Food System Assessment, SMC Food System Alliance



Vision for a San Mateo County Food and Farm Bill

Recommendations for the San Mateo County Food Systems Alliance

Prepared for San Mateo County Health
by Sustainable Agriculture Education (SAGE)
August 2017



Aggregating, Distributing, and Marketing Local Foods in San Mateo County, California

Analysis and Recommendations for Enhancing a Local Food Economy

Report for:
San Mateo County Food System Alliance
Report by:
Community Alliance with Family Farmers

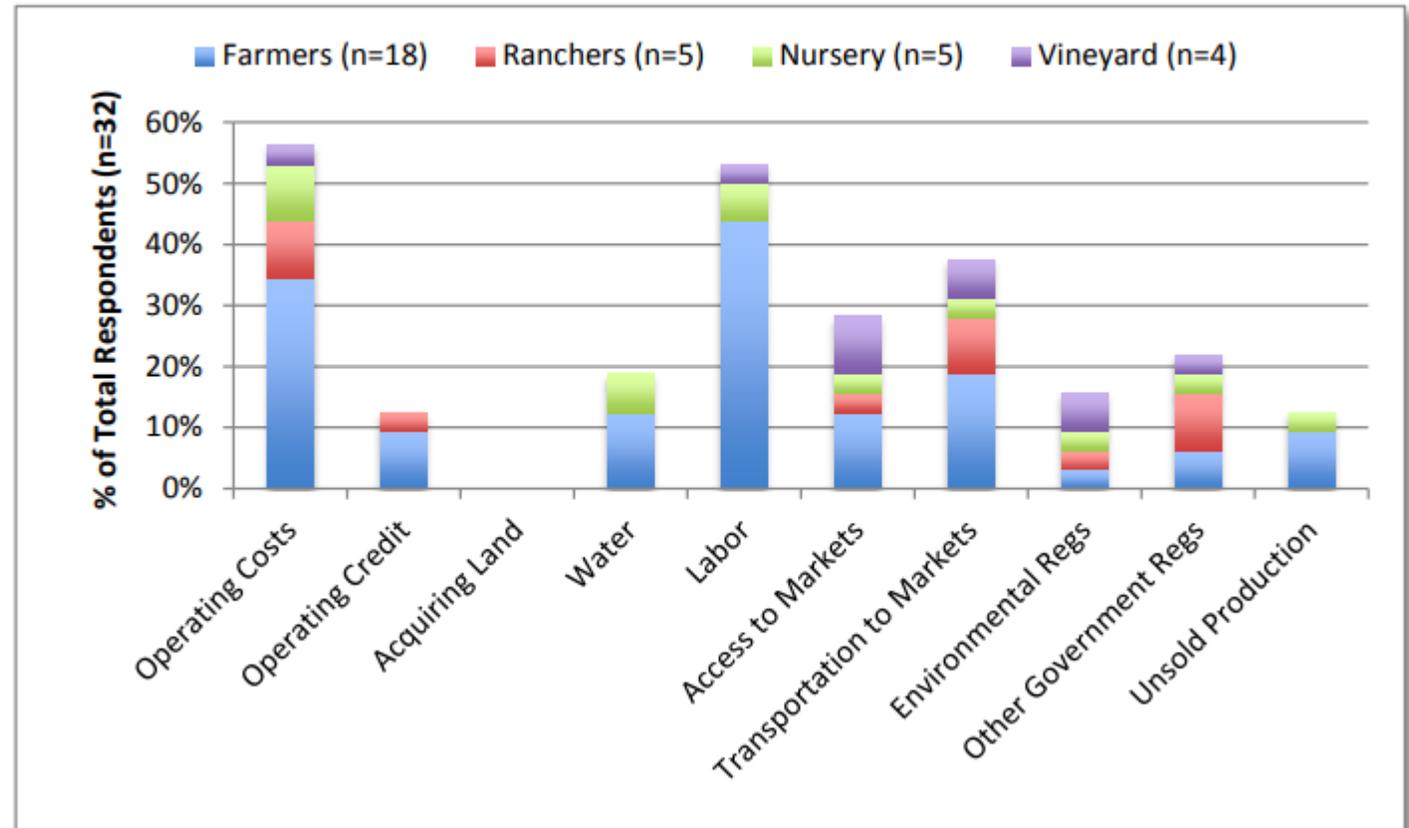


Photo Sources: Source: San Mateo County
Newsroom; Wikimedia Commons

The food system & cities

- Institutional buying
- Marketing
- Housing
- Transportation

FIGURE 8. PRODUCERS' BARRIERS TO NEW MARKETS



Credit: SMC Food System Assessment, SMC Food System Alliance

Questions & Discussion

- Questions?
- How does the food system and/or carbon sequestration fit within your work? (climate action plans or otherwise)
- Do you think the cities and the County should do more to facilitate regenerative agriculture? If so, how?



Ariel, Fifth Crow Farm



Transportation, Electrification & Climate Action

Amelia Timbers, Principal Planner Sustainability

timbersa@samtrans.com

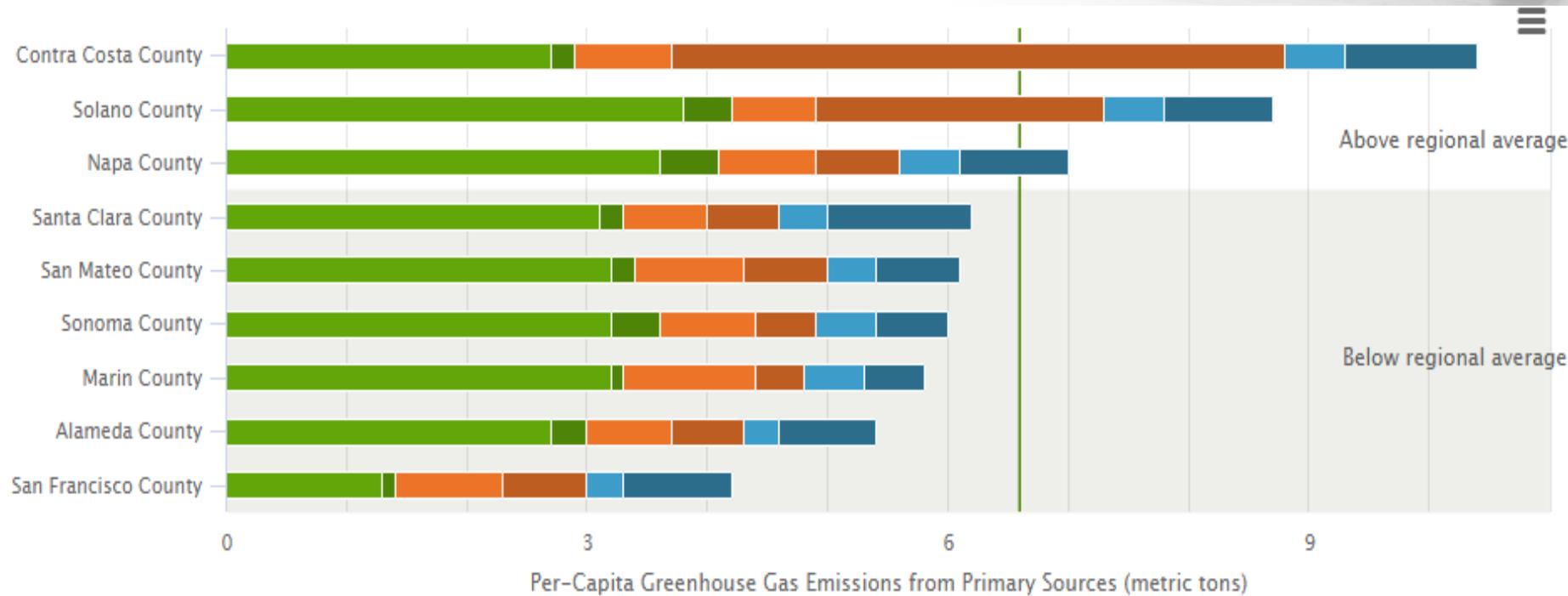
Overview

1. Introduction
2. SMC Transportation Flows & GHG Impacts
3. Caltrain Business Plan
4. SamTrans Bus Electrification
5. Express Bus
6. Relmagine SamTrans
7. Working with the District

Commuter Patterns

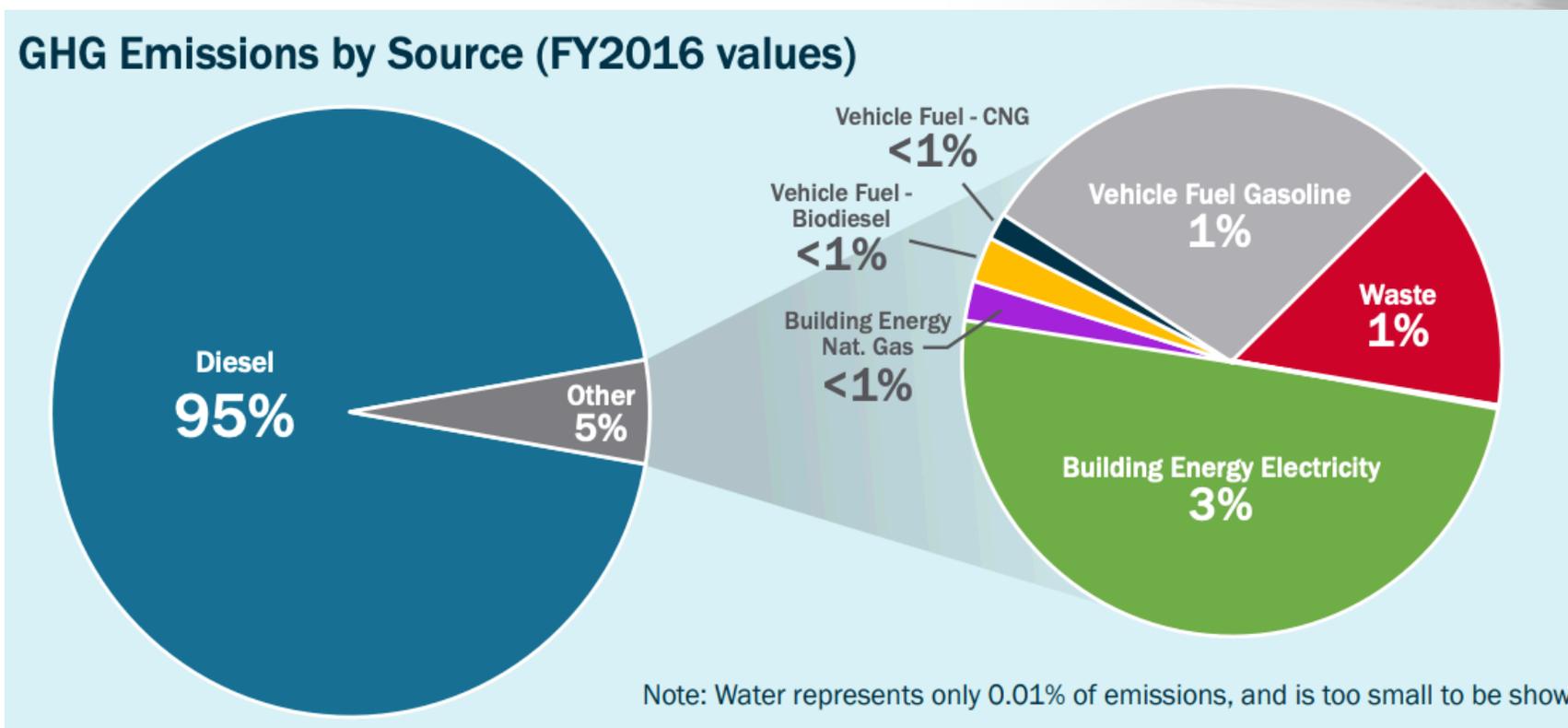


Per-Capita GHG Emissions (2015)



- Surface Transportation - Gasoline
- Surface Transportation - Diesel
- Natural Gas Consumption - Residential
- Natural Gas Consumption - Non-Residential
- Electricity Consumption - Residential
- Electricity Consumption - Non-Residential

SMCTD GHG Emissions

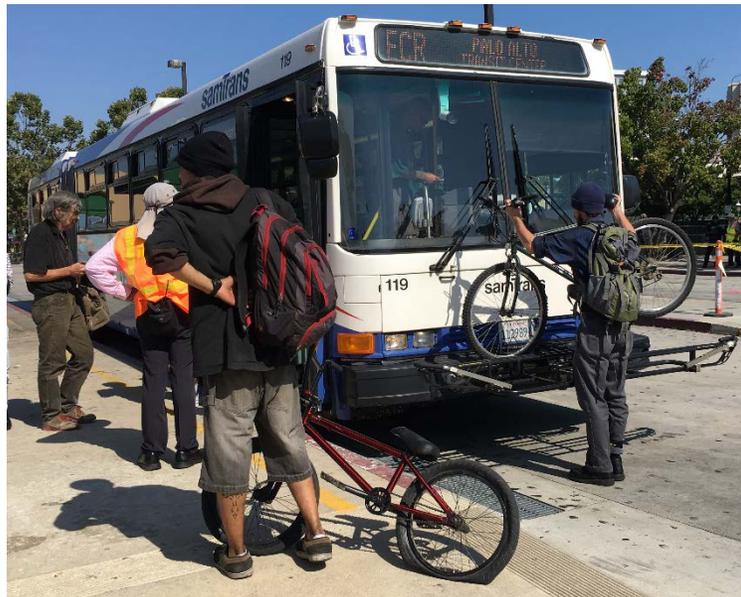


Caltrain Electrification



Station Access

- Multimodal last mile
- Bicycle access
- Transit-oriented development



Bus Electrification

- California Air Resources Board passed regulation requiring 100% zero-emission bus fleet by 2040
- In 2018 SamTrans purchased 10 battery electric buses

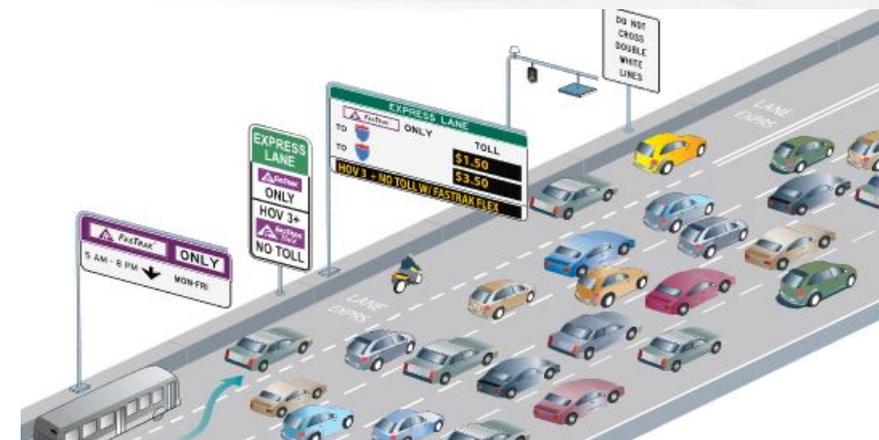


Bus Electrification



Express Bus

- Express Lane
- Limited stops
- Wifi
- Low cost



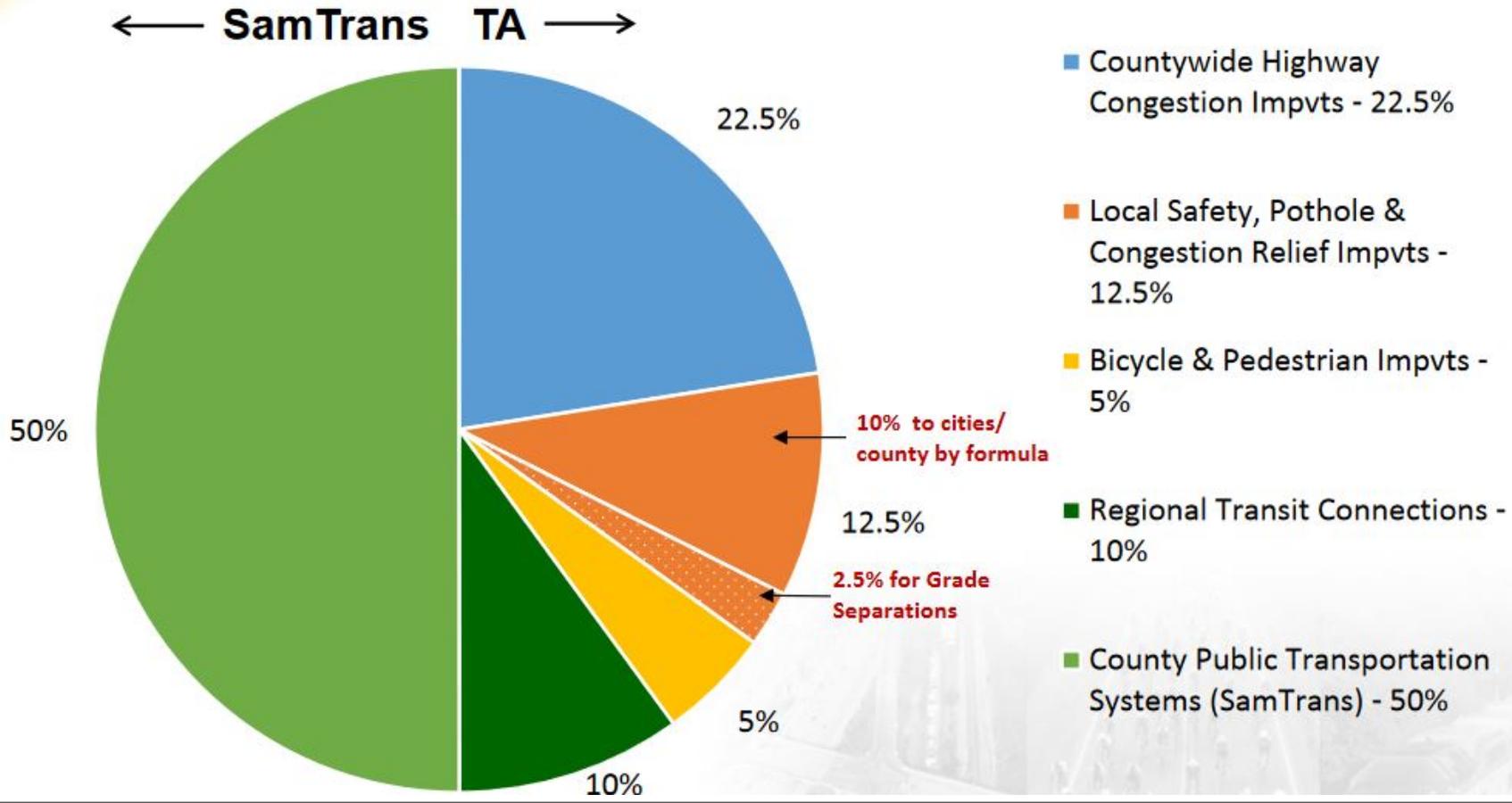
Reimagine SamTrans

- **Comprehensive Operational Analysis**
 - Understand existing operational and ridership conditions
 - Understand the market- traditional & non-traditional bus riders
 - Recommend route, network & vehicle size changes
- **Participation opportunities**

Payment Convenience



Measure W – Program Categories



Collaborate

- **Idea/ need/ regulation → study → public engagement → board review**
- **Participate & provide feedback**
 - Attend public meetings
 - Attend board meetings
 - Participate in outreach events
 - Connections to NGOs
 - Surveys
- **Partner on a study/ survey/ grant**

Collaborate

- Mode Shift
- Partnerships on your city's CAP or General Plan transportation element
- Station/ bus stop interface
- Last mile connections
- Join committees (CAC, BAC, etc.)
- What do you need?



Questions?

BUILDING A CLIMATE READY COMMUNITY

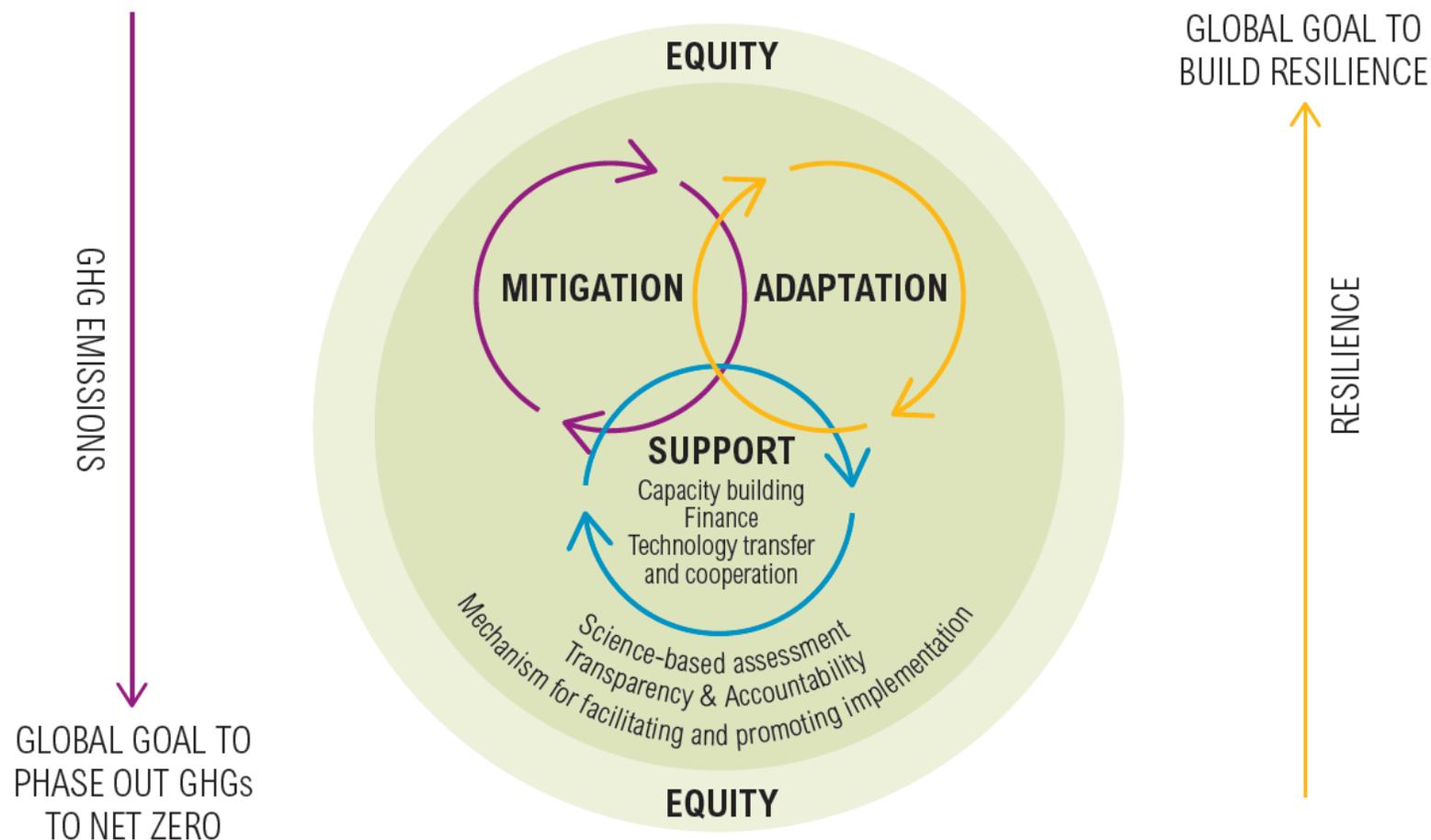


RICAPS ADAPTATION AND EQUITY // **October 22, 2019**



Paris Agreement Framework

Core Components of the 2015 Paris Agreement: Driving Continuous Improvement Toward Long-Term Goals



STATE POLICY DRIVERS



LOCAL HAZARD MITIGATION PLAN

- Multijurisdictional plan across 18 cities
- Identified high level impacts of climate change to hazards
- Identified early climate adaptation actions
- SB 379 requires climate vulnerability assessment and adaptation strategies in next revision



San Mateo County

HAZARD MITIGATION PLAN

July 2016



SB 1000: PLANNING FOR HEALTHY COMMUNITIES ACT

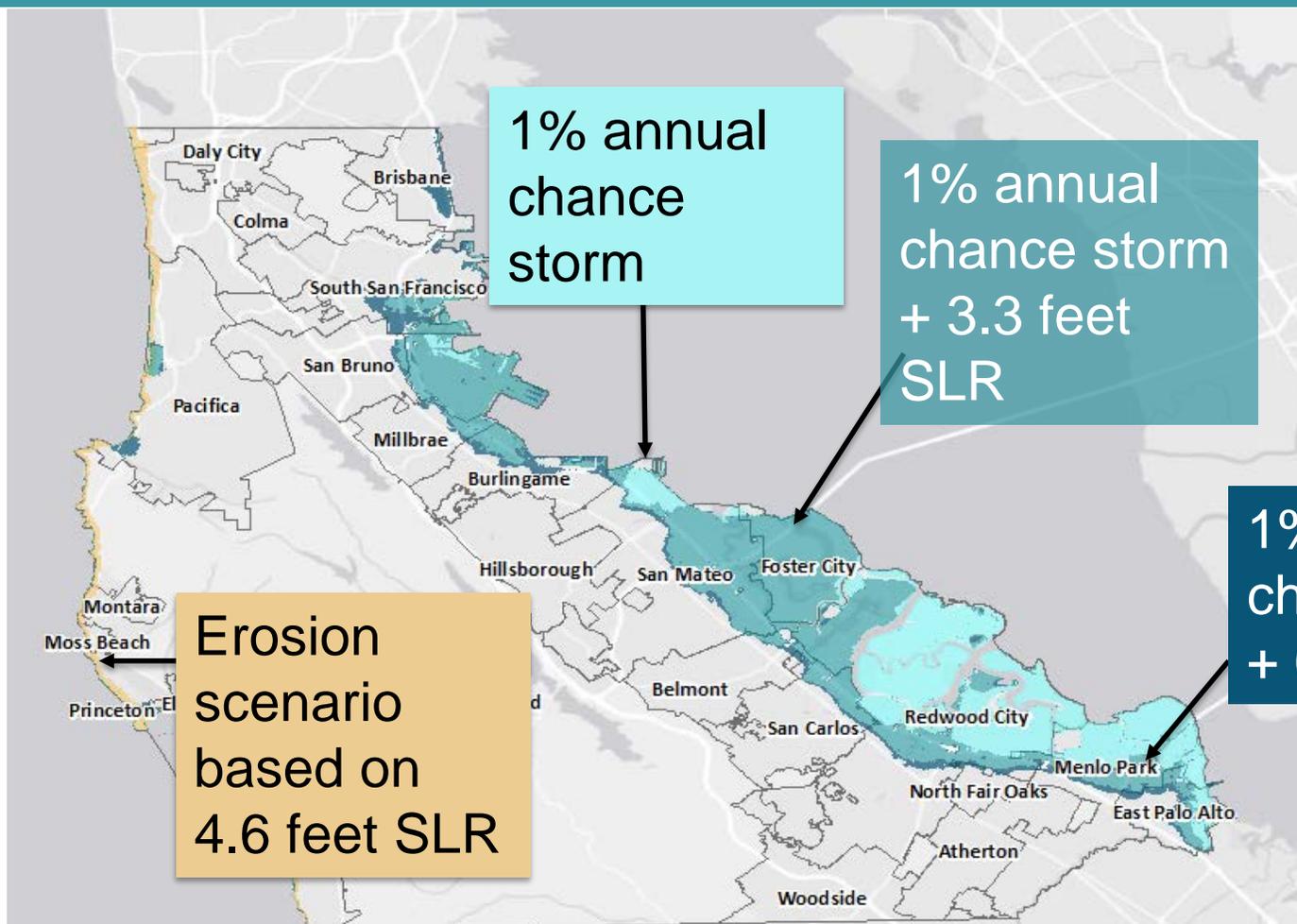
- Requires an Environmental Justice Element when Housing Element is updated
- Identification of disadvantaged communities
- Identify objectives and policies to reduce the health risks in these communities,
- Promote civil engagement in the public decision-making process.



DATA AND VULNERABILITY



SEA LEVEL RISE ASSESSMENT



1% annual chance storm

1% annual chance storm + 3.3 feet SLR

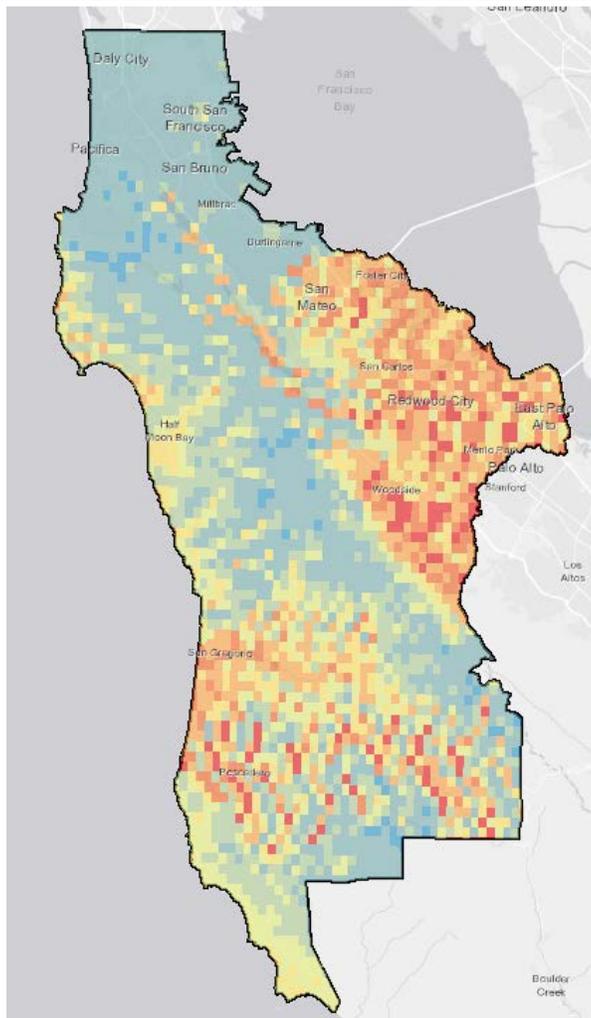
1% annual chance storm + 6.6 feet SLR

Erosion scenario based on 4.6 feet SLR

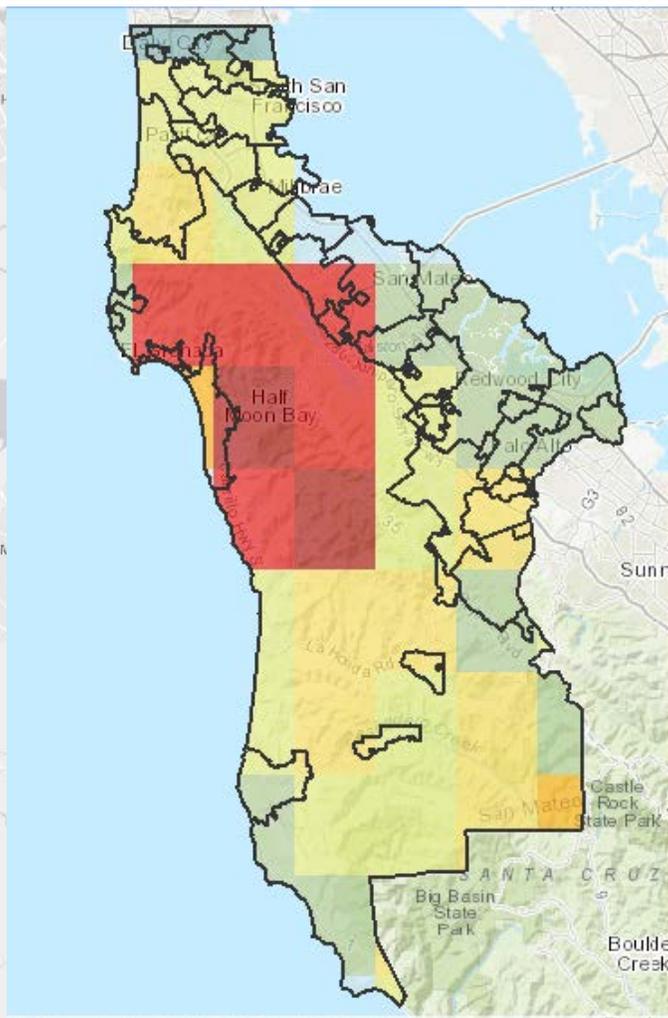
SLR = Sea Level Rise



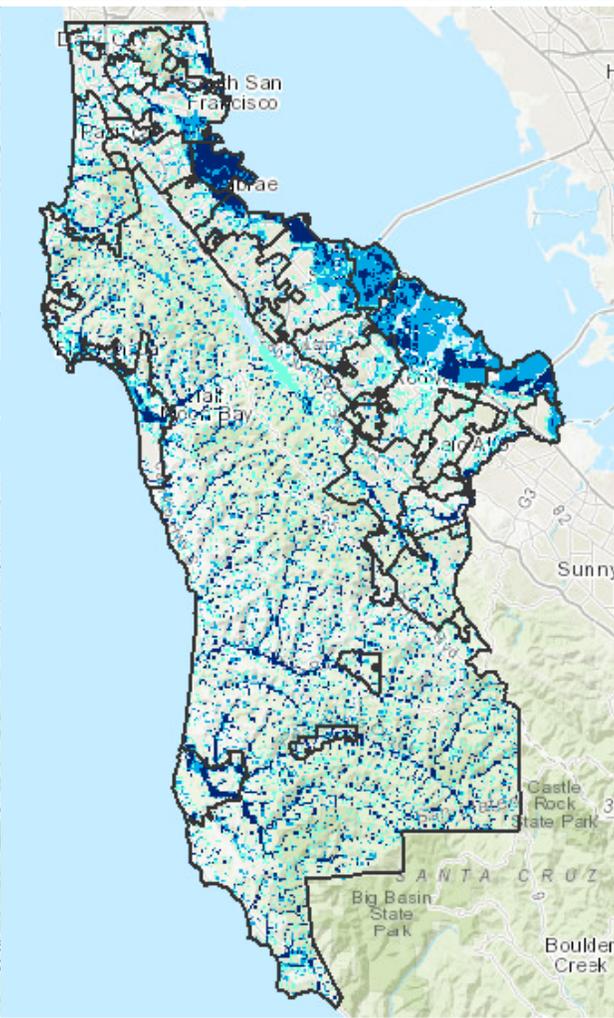
MODELING CLIMATE RISKS



Maximum Temperatures



Wildfire Areas



Inland Flooding



FRONTLINE COMMUNITIES INDICATORS MATRIX

- 21 Total Indicators
- Sources
 - US Census
 - Cal EPA
 - San Mateo County
 - Association of Bay Area Governments
- Phases of Disaster
- Climate Hazards



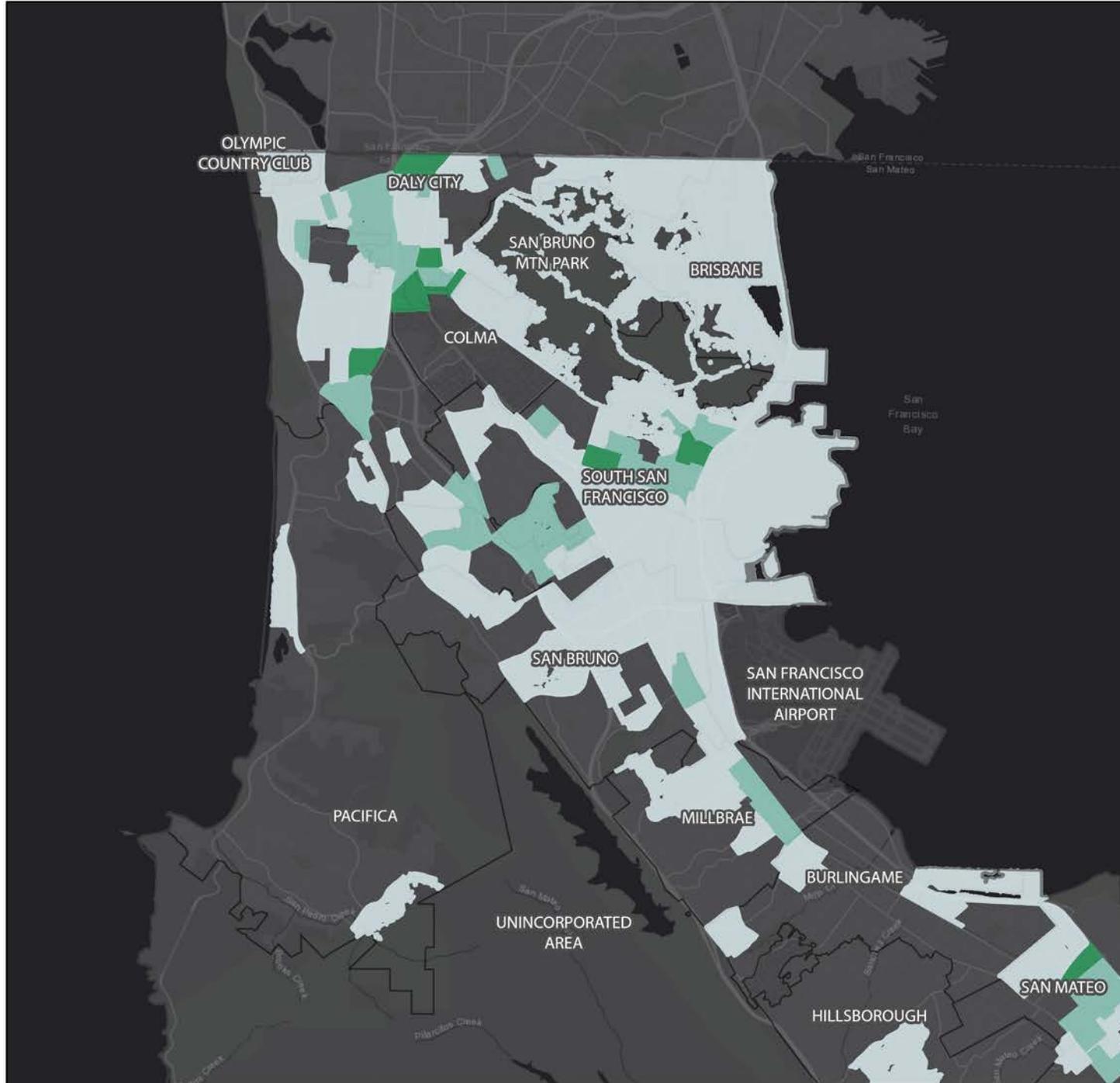
FRONTLINE COMMUNITY INDICATORS MATRIX

Frontline Community Indicators	Phase of Disaster			Climate Hazards		
	Pre-Disaster	During Disaster	Post-Disaster	Flooding and Sea Level Rise	Extreme Heat and Rising Temperatures	Wildfire
Mobility						
Vehicle Ownership. More than 10% of households do not have a vehicle	X	X				
Economic						
Income. More than 30% of households earn less than 50% of the area median income			X	X	X	X
Housing Burden						
Cost of Living. More than 15% of the population spends more than 50% of gross monthly income on housing			X	X	X	X
Demographic						
Age. More than 15% of the population is 75+ years old	X	X	X	X	X	X
Public Health						
Language. More than 20% of households include no members older than 15 years who speaks English well	X	X			X	



**Frontline
Communities
in
San Mateo County**

South San Francisco Area



Indicators Present

- < 2
- 3 - 4
- 5 - 6
- 7 +
- San Mateo County Municipality
- County Boundary



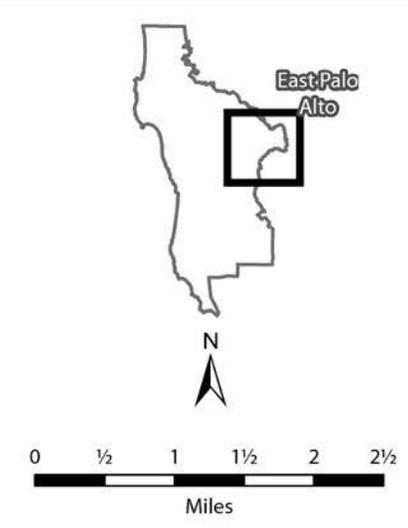


**Frontline
Communities
in
San Mateo County**

East Palo Alto Area

Indicators Present

-  < 2
-  3 - 4
-  5 - 6
-  7 +
-  San Mateo County Municipality
-  County Boundary



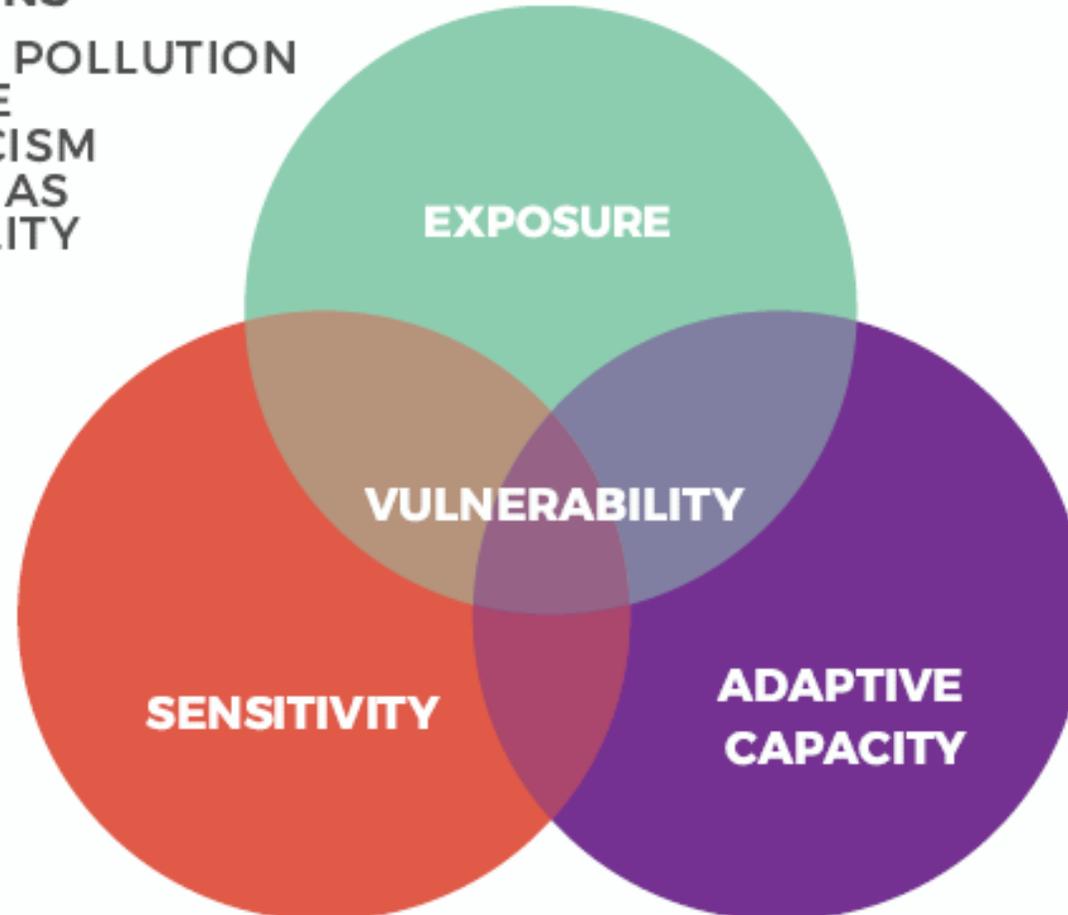
COMMUNITY BUILDING AND EQUITY



BREAKING DOWN BARRIERS

EXISTING CONDITIONS

- ENVIRONMENTAL POLLUTION
- SOCIAL INJUSTICE
- STRUCTURAL RACISM
- INSTITUTIONAL BIAS
- INCOME INEQUALITY



CAPACITY BUILDING

Community Adaptation Planning Pilots



Anamatangi
Polynesian
Voices



YOUTH LEADERSHIP INSTITUTE

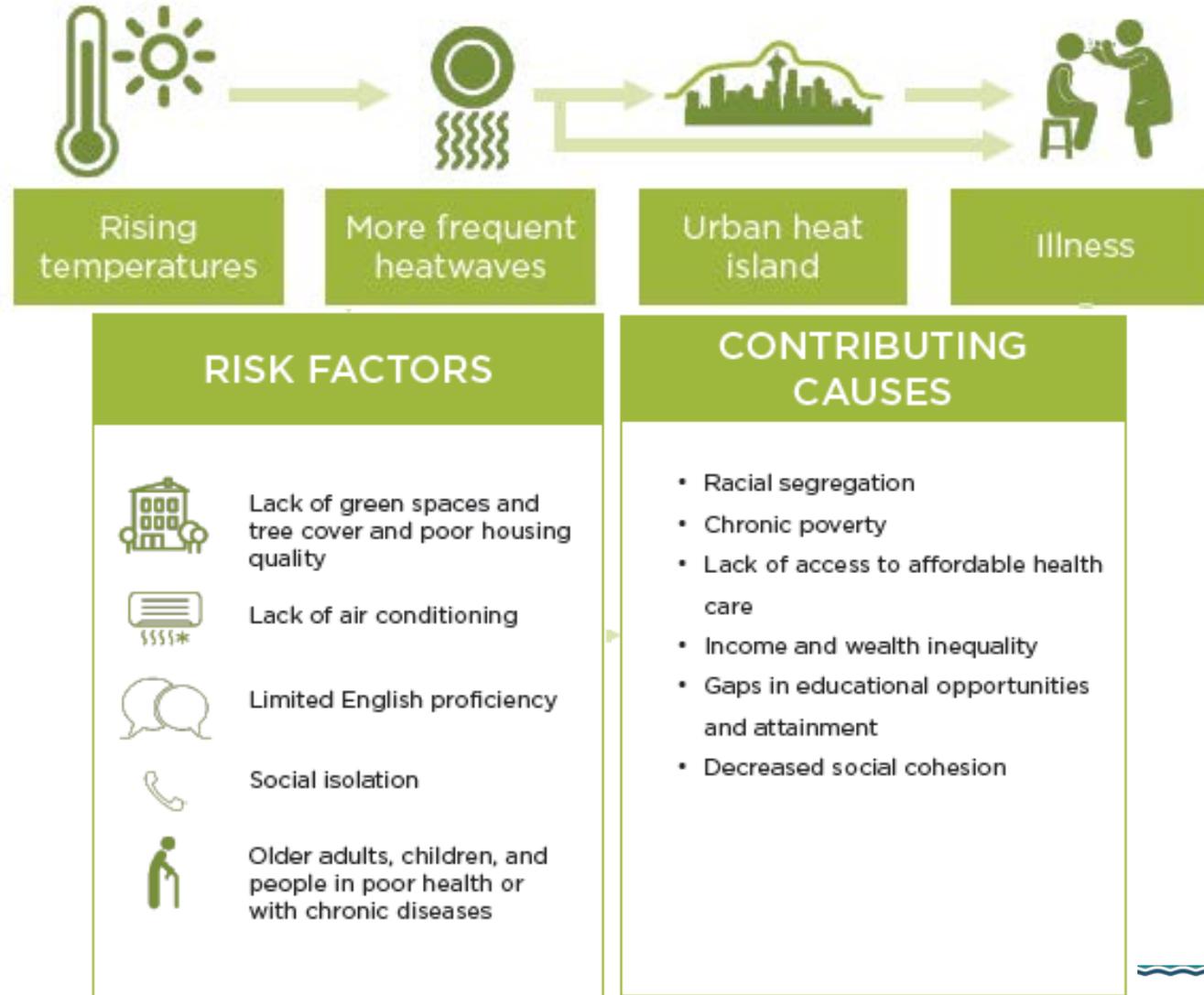
YUCA Youth United for Community Action



STRATEGY DEVELOPMENT EXAMPLE



URBAN HEAT AND EQUITY



CLIMATE ACTION AND ADAPTATION PLAN EXAMPLES



CITY OF ALBANY

Action	Investment	Benefits
Approach: Increase the resilience of public projects and facilities.		
4.2.1	<p>Prioritize adaptation and resilience in discretionary Capital Improvement Program (CIP) projects. This action would include ensuring that the infrastructure being developed will be designed with forecasted changes in climate (precipitation, temperature, wildfire, sea level rise) in mind.</p>	 
4.2.2	<p>Work with EBCE to assess and improve energy resilience at critical facilities. On-site PV and energy storage systems at appropriate scales would support the continued operation of critical services such as fire and police during a power outage. The City will work with EBCE to determine a funding strategy to prioritize and finance projects.</p>	 

CITY OF SANTA MONICA

RESILIENCE THROUGH LOCAL FOOD

LCFE1: Promote Low Carbon, Low Waste Lifestyles

Promote more sustainable food and drink options through campaigns, outreach events and community resources. Include all five pillars of the City's Sustainable Food Commitment: 1) reduce meat and dairy, 2) avoid processed foods, 3) eat organic, 4) eat local, and 5) reduce waste. Develop incentives and rewards programs to support the local food system and low carbon foods. Promote sustainable pet food through outreach and education.

Carbon Reduction
Potential



Cost
to City

\$\$

Community
Benefits



EXISTING BUILDING EFFICIENCY

ZNC6: Implement a Resilient Building Retrofit Accelerator Program

Develop an accelerator program to streamline the delivery of energy retrofit services and technologies for public and private buildings. Reduce capital costs for property owners by offering financing options and bulk-purchasing of technologies and services. Create partnerships to increase the speed and scale of energy-retrofit measures across the city. Prioritize assistance to owners with fewer resources and less technical ability, including smaller buildings and nonprofits.

Carbon Reduction
Potential



Cost
to City

\$\$

Community
Benefits



QUESTIONS

- How are you considering adaptation and equity in your City?
- What information would you like to see to do more?





THANK YOU!



Visit our website to learn more:
<https://www.smcsustainability.org/climate-change/>



A large, stylized lightbulb graphic on the left side of the slide. The bulb is light green and contains a blue checkmark. The base of the bulb is also light green and has several horizontal lines representing the screw threads.

RICAPS PCE Community Programs Roadmap Review

Oct. 22, 2019

Thank you!

THE DAILY JOURNAL
The Peninsula's home page

San Mateo adopts new green building codes

Building and electric vehicle requirements aimed at reducing greenhouse gas

By Anna Schuessler Daily Journal staff Aug 24, 2019 0

The Mercury News

Natural gas soon to be outlawed in almost all new Menlo Park buildings

By Jan. 1, 2020, heating systems in all new homes and buildings in the city must run on electricity

18 municipalities exploring across San Mateo County!

KQED SCIENCE

SCIENCE

San Francisco Proposes Natural Gas Ban, Following Other Bay Area Cities



The Press Democrat

Santa Rosa and other cities consider natural gas bans as way spur transition to all-electric homes

San Luis Obispo, Calif.—The San Luis Obispo City Council has approved an updated building code that will slash climate pollution from new construction in the city and deliver significant health benefits to residents.

UTILITY DIVE

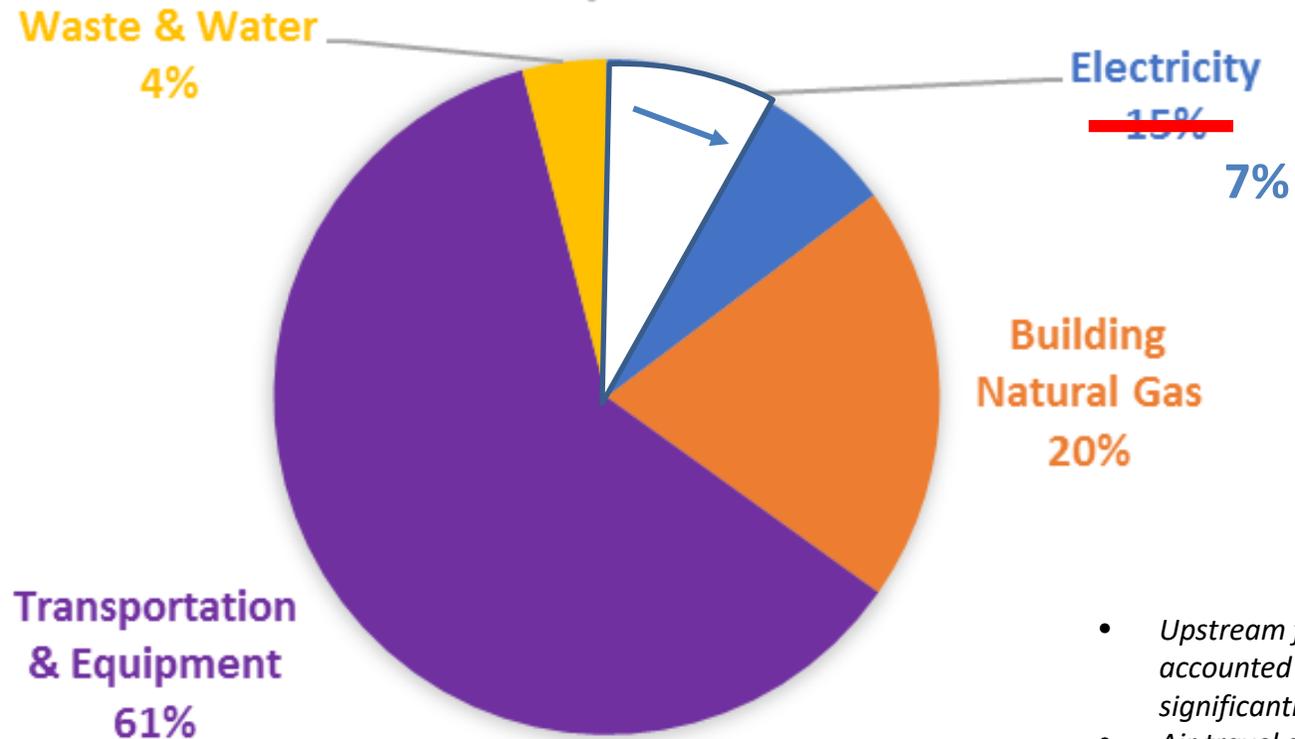
BRIEF

San Jose becomes largest city requiring all-electric buildings, as local climate actions rise

50+ cities exploring across the state

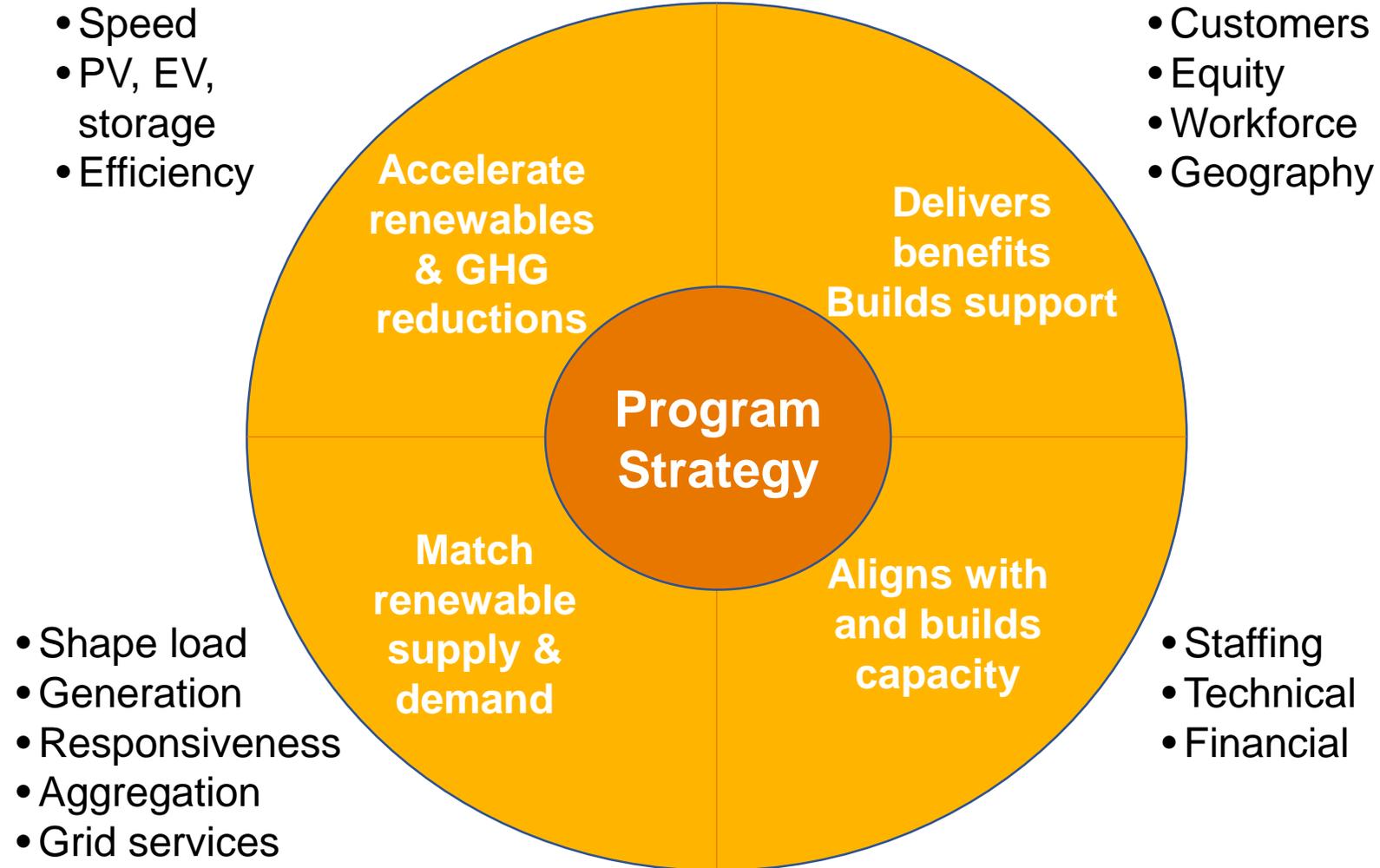
San Mateo County Emissions

~~2015~~ RICAPS EMISSIONS INVENTORY 2018 "Back of Envelope" Calculation

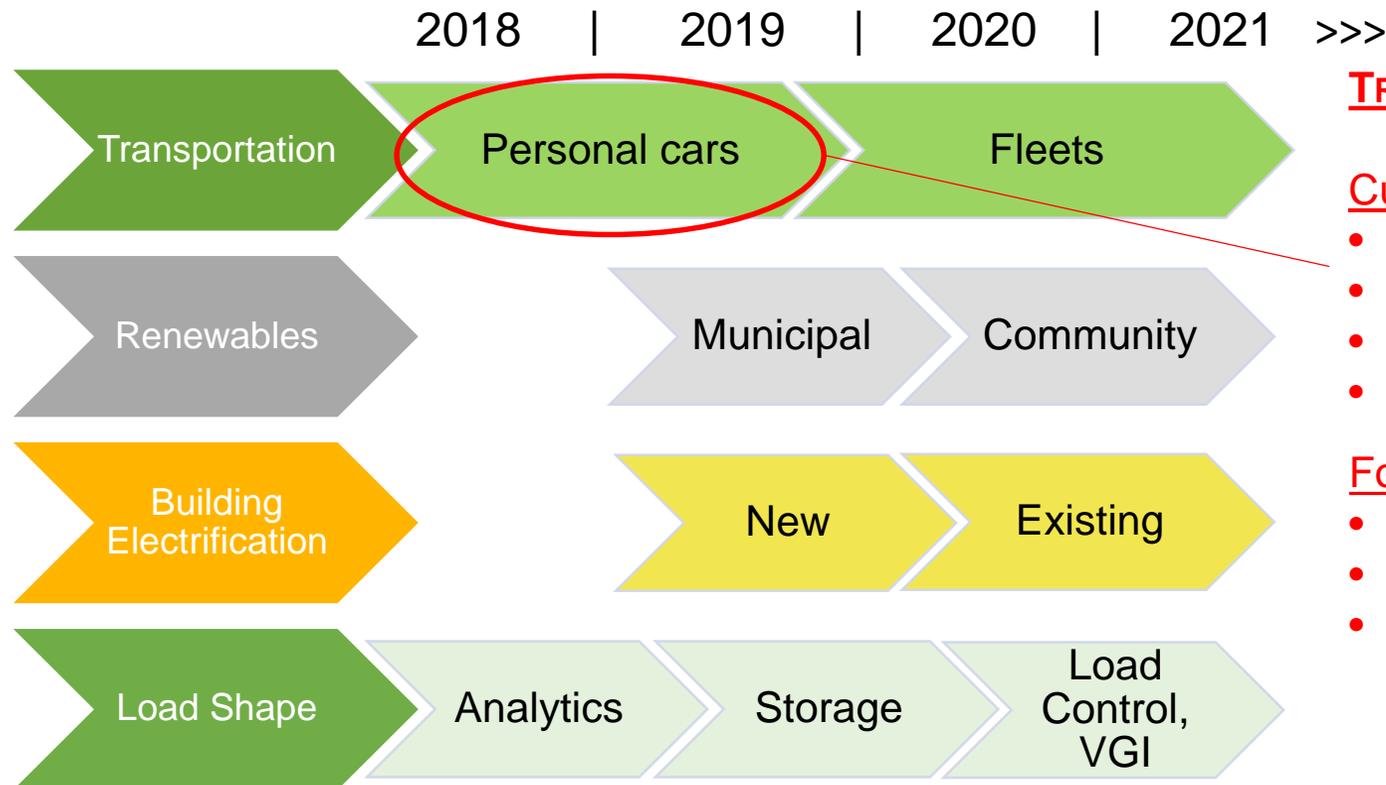


- *Upstream fugitive emissions are not accounted for so NG impact is likely significantly higher.*
- *Air travel and embedded carbon of products not included*

Program Objectives



High-Level Roadmap



TRANSPORTATION ELECTRIFICATION

Current

- EV Ride & Drive Campaign
- New EV Dealer Incentive Program
- DriveForward Electric (Low Income EV Program)
- EV Charging Infrastructure Program (in development)

Forthcoming

- Municipal Fleets
- Transportation Network Companies
- Curbside charging

EV Ride & Drive Campaign

Program

- Test drives for “conversion”
- Started in 2018, through end 2021
- Goal: 10-20 events per year

City Partnerships

- Community events
- Communications



New EV Dealer Incentive Program

Program

- New EVs point of sale rebates and negotiated dealer discounts
- County-wide marketing for awareness and adoption
- Available Q4 each year
- Started in 2018, through end 2021

City Partnerships

- Communications



DriveForward Electric

Program

- Low- and moderate-income used EV rebates
- \$2,000 when stacked with other programs (BAAQMD Clean Cars for All, Clean Vehicle Assistance Program) or 4,000 standalone
- Partner with Peninsula Family Service DriveForward Vehicle Loan Program
 - Education, financing & vehicle loans



City Partnerships

- Communications

EV Charging Infrastructure Incentive Program

Program

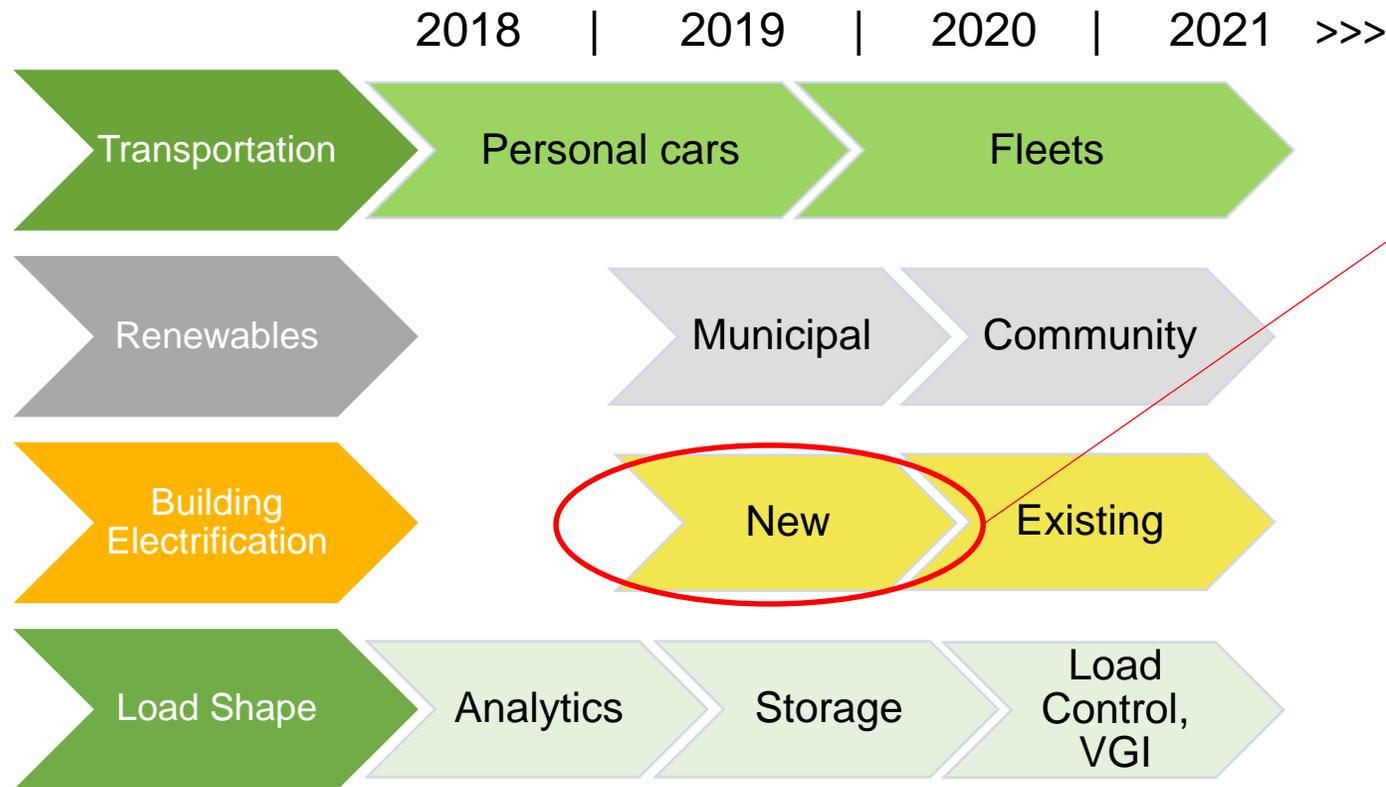
- Target the needs of residents without charging access
- Infrastructure at multi-unit dwellings, workplace, fleets, and public fast charging
- Goal: 3,500 charging ports
- Four-year program 2020-2024
 - Rebates: \$24M, including CEC funds
 - Technical assistance
 - Workforce training
- Under development: target launch Q1/Q2



City Partnerships

- Deployment
- Permitting

High-Level Roadmap



BUILDINGS ELECTRIFICATION

Current

- Reach Codes

Forthcoming

- New Construction Support

Current Building Program: Reach Codes

Program

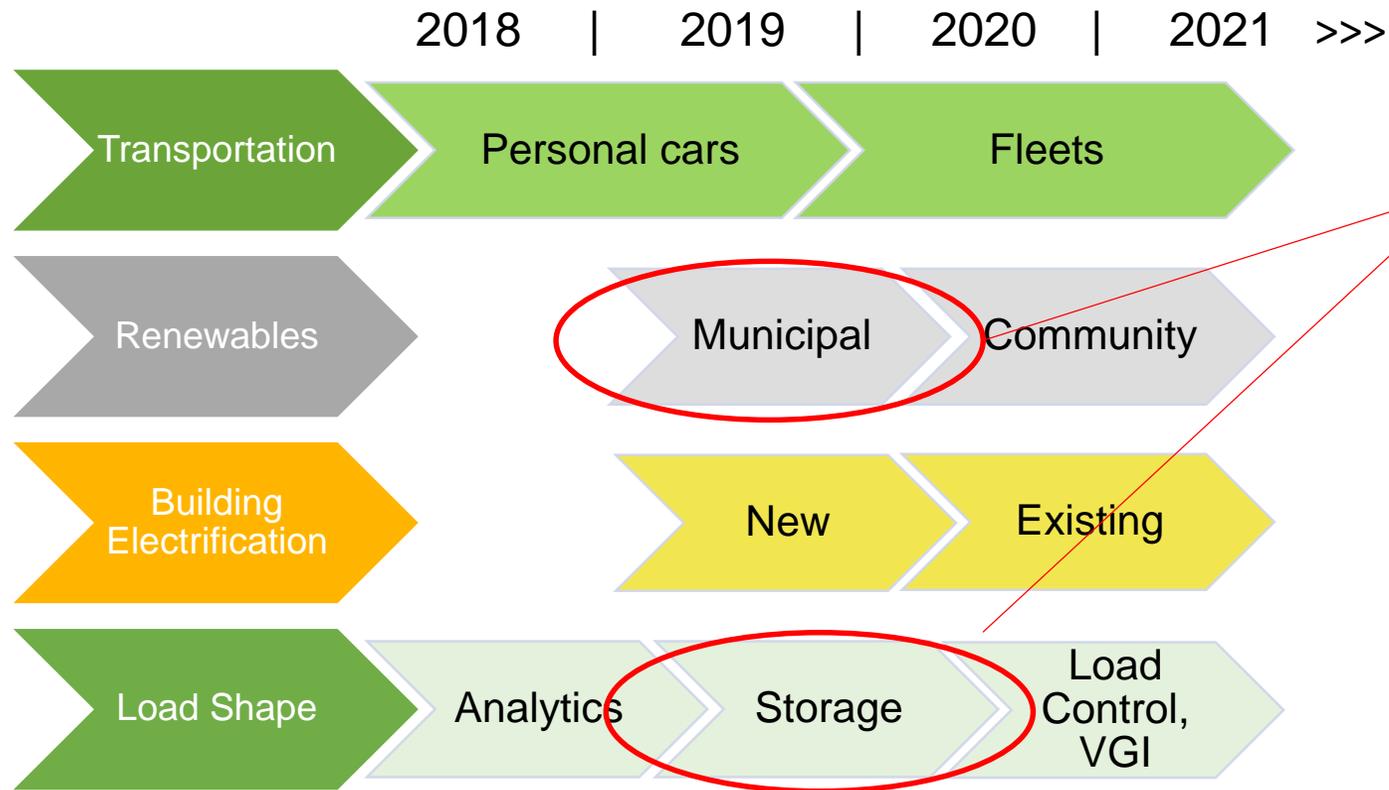
- Support the adoption of building “reach codes” that support low-carbon electric and EV-ready codes
 - Encourage all-electric
 - “Plug & play” EV ready
- City assistance: \$10k grant, model codes, adoption and implementation tools
- Details: www.PeninsulaReachCodes.org

City Partnerships

- Training
- Strengthen current cycle
- Next code cycle



High-Level Roadmap



RENEWABLES & STORAGE

Current

- Muni Critical Facilities

Forthcoming

- Medical Baseline Resilience
- Solar + storage systems (resi, muni, comm)

Resilient Solar Project

Program

- Joint project with East Bay Community Energy 2019 - 2020
- Scoping municipal critical facilities for solar + storage microgrids
- Develop a financial model to enable affordable and widespread deployment
- Initiate a procurement for facilities

City Partnerships

- Provide site information
- Input on procurement approach
- Participate in procurement and deployment



Near-Term Future Programs

Transportation

- a. EV Charging Incentives
- b. Municipal Fleets
- c. Transportation Network Companies
- d. Curbside charging

Also

Innovation & Pilots

Building Electrification

- a. New Construction Support

Renewables & Load Shaping

- a. Medical Baseline Resilience
- b. Solar + storage systems (resi, muni, comm)



Final Discussion

What's next?

How should we incorporate stakeholder engagement in the CAP template development process?

Coming Up...

Energy Efficiency Consultations

Please contact John Allan or Susan Wright to schedule a session with your facilities team. We will go over benchmarking data and identify more savings.

RICAPS Webinar

Tuesday, November 26, 1:30-3pm

THANK YOU!

Questions?

Susan Wright, swright@smcgov.org

John Allan, jallan@smcgov.org

Kim Springer, kspringer@smcgov.org



OFFICE OF
SUSTAINABILITY

COUNTY OF SAN MATEO