



Air District Clean Air Plan: Areas for Future Focus

Advisory Council Meeting

October 3, 2016

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Clean Air Plan/Regional Climate Protection Strategy (CAP/RCPS)

The Clean Air Plan is required by the California Clean Air Act to identify potential rules, control measures, and strategies for the Air District to implement in order to meet state ambient air quality standards for ozone or “smog”.



Clean Air Plan/Regional Climate Protection Strategy (CAP/RCPS)

Multi-pollutant plan to update 2010 Clean Air Plan

- Reduce ozone precursor emissions
- Reduce PM and toxics in impacted communities
- Reduce GHGs toward long-range target
 - per Air District Board Climate Protection Resolution (2013)
 - reduce Bay Area GHG emissions 80% below 1990 levels by 2050
- Status: Draft, Fall 2016; Proposed Final Q1 2017; implementation ongoing

Multi-Pollutant, Multi-Sector Control Strategy

The Clean Air Plan/Regional Climate Protection Strategy focuses on multi-pollutant benefits and Air District strengths:

Grants

- Reduce ROG, NO_x, PM, black carbon & other GHGs

Research & Science

- Improve methane, BC inventory
- Methane monitoring
- Consumption-based inventory

Develop Rules

- Refinery carbon intensity limits
- Basin-wide methane strategy
- Basin-wide combustion strategy

Permits

- Limit GHG via New Source Review

Work w/ local gov'ts

- Improve building efficiency
- PACE, other financing
- Implement, track local Climate Plans
- Urban heat island mitigation

Plan & Collaborate

- Support strong Plan Bay Area
- Expand VMT reduction programs



Bay Area in 2050

- Plan control measures lay out near-term actions by the Air District to reduce GHGs and other pollutants
- Achieving long-term goals for healthy air and climate stabilization will require very ambitious programs
- Long-range vision charts a course for long-term actions for deeper reductions to 2050 goals
- Factors in closing the “gap”:
 - Technological advances
 - Policy interventions
 - Cultural and behavioral change
 - Investments and pricing
- Visioning the Bay Area in 2050:
 - What will our buildings be like?
 - What sources of energy will we use?
 - How will we travel?



Examples of a Vision 2050

What will the Bay Area look like in 2050 when we achieve our climate protection and clean air goals?

- Buildings are completely fossil fuel free
- 90% of the passenger vehicle fleet is zero-emission
- All organics are diverted from the waste stream and put to productive use
- A smart grid interconnects renewables to achieve nearly 100% renewable power for the Bay Area
- Oil companies/refineries transition to energy companies focusing on specialty fuels and renewable energy



Potential Areas of Future Focus

What topics may be appropriate for future rules, programs, research?

- Emerging technologies, e.g., autonomous vehicles, energy storage.
- Evolving understanding of health effects of air pollution, e.g., ultrafine PM.
- Effective & equitable pricing strategies and appropriate role for Air District.
- Appropriate role for the Air District to advance decarbonization strategies, particularly in energy and transportation sectors.
- Achieving significant reductions in vehicle miles travelled.
- How use consumption-based GHG inventory to inform, support programs?
- Carbon capture and storage, and appropriate role for the Air District.
- Other?

Slides 10-16 of the July 19, 2016 presentation were referenced during Item 6 at the October 3, 2016 meeting



BAY AREA
AIR QUALITY
MANAGEMENT
DISTRICT

2016 Clean Air Plan/Regional Climate Protection Strategy Update

Advisory Council Meeting

July 19, 2016

Henry Hilken
Director of Planning and Climate Protection
Bay Area Air Quality Management District

An aerial photograph of a city, likely San Francisco, taken from a high vantage point. The city is densely packed with buildings, and the background shows a hazy, sunset sky with soft orange and yellow tones. The title text is overlaid on the top half of the image.

2016 Clean Air Plan/Regional Climate Protection Strategy

- Multi-pollutant plan: reduce ozone, fine PM, air toxics, GHGs
- Update 2010 Plan: achieve State ozone standard
- Reduce PM and toxics in impacted communities
- Reduce GHGs toward long-range targets



Planning Context

State of California:

- California Clean Air Act
- Global Warming Solutions Act of 2006 (AB 32)
- Statewide Scoping Plan
- 5 “Pillars” of climate action

Bay Area Regional Government:

- Regional Climate Protection Strategy
- Plan Bay Area (housing & transportation planning)
- Adapting to Rising Tides

City/County Governments:

- 65 local climate action plans



Overview of Climate Action

- 10-year Climate Protection Program draws on Air District's strengths:
 - Science & research
 - Regional planning: bridging state and local efforts
 - Implementation: grants, incentives & technical assistance
- 2013 Climate Protection Resolution reinvigorates program



Climate Protection Resolution

Air District Board Adopts Climate Protection Resolution (2013):

- Reduce Bay Area GHG emissions 80% below 1990 levels by 2050
- Develop a Regional Climate Protection Strategy to identify Air District actions to make progress toward long-term goal
- Develop near-term Work Program to make progress while strategy is in development

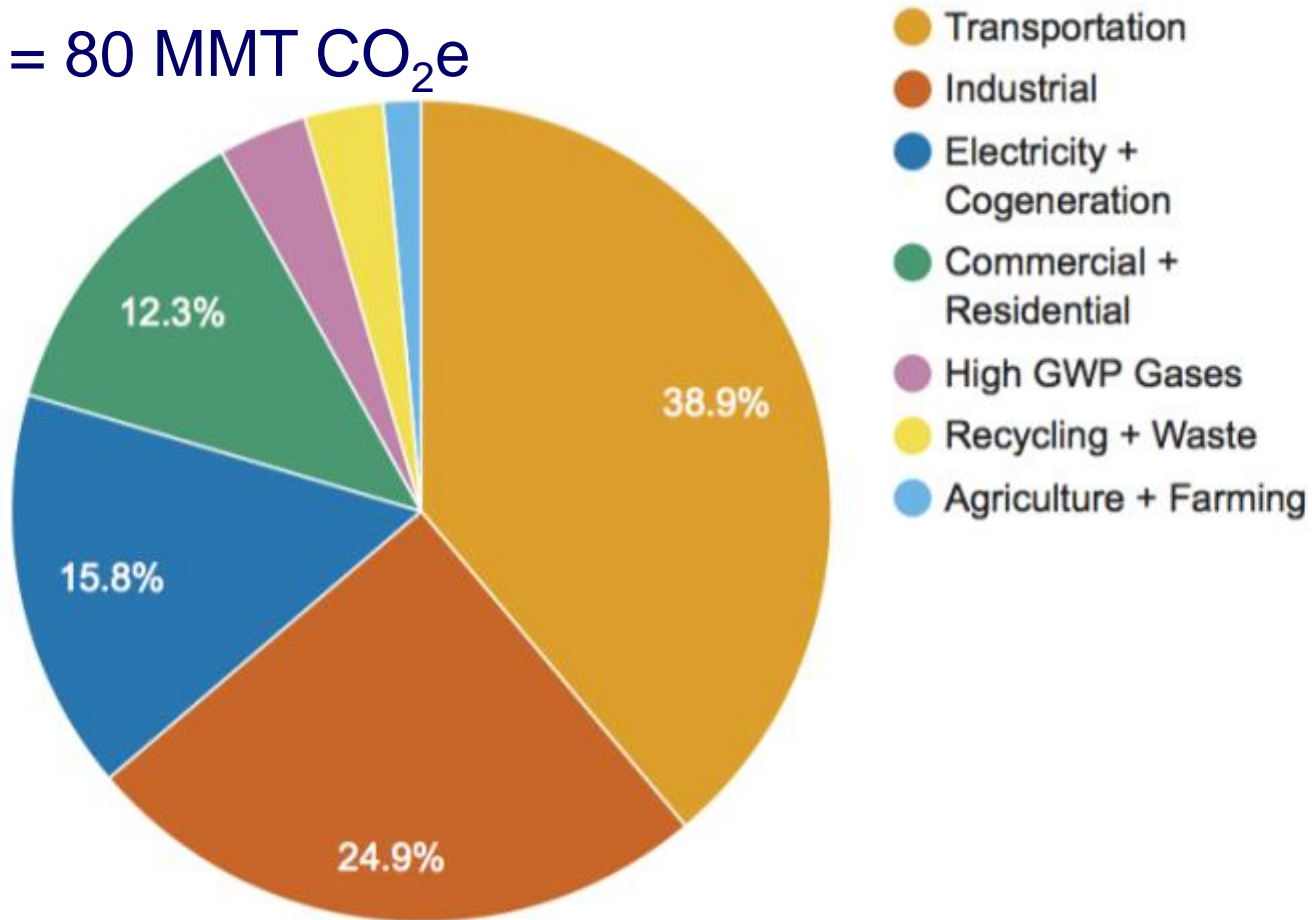


Bay Area GHG Emissions

2015 GHG Emissions by Sector

100-year global warming potentials (GWPs)

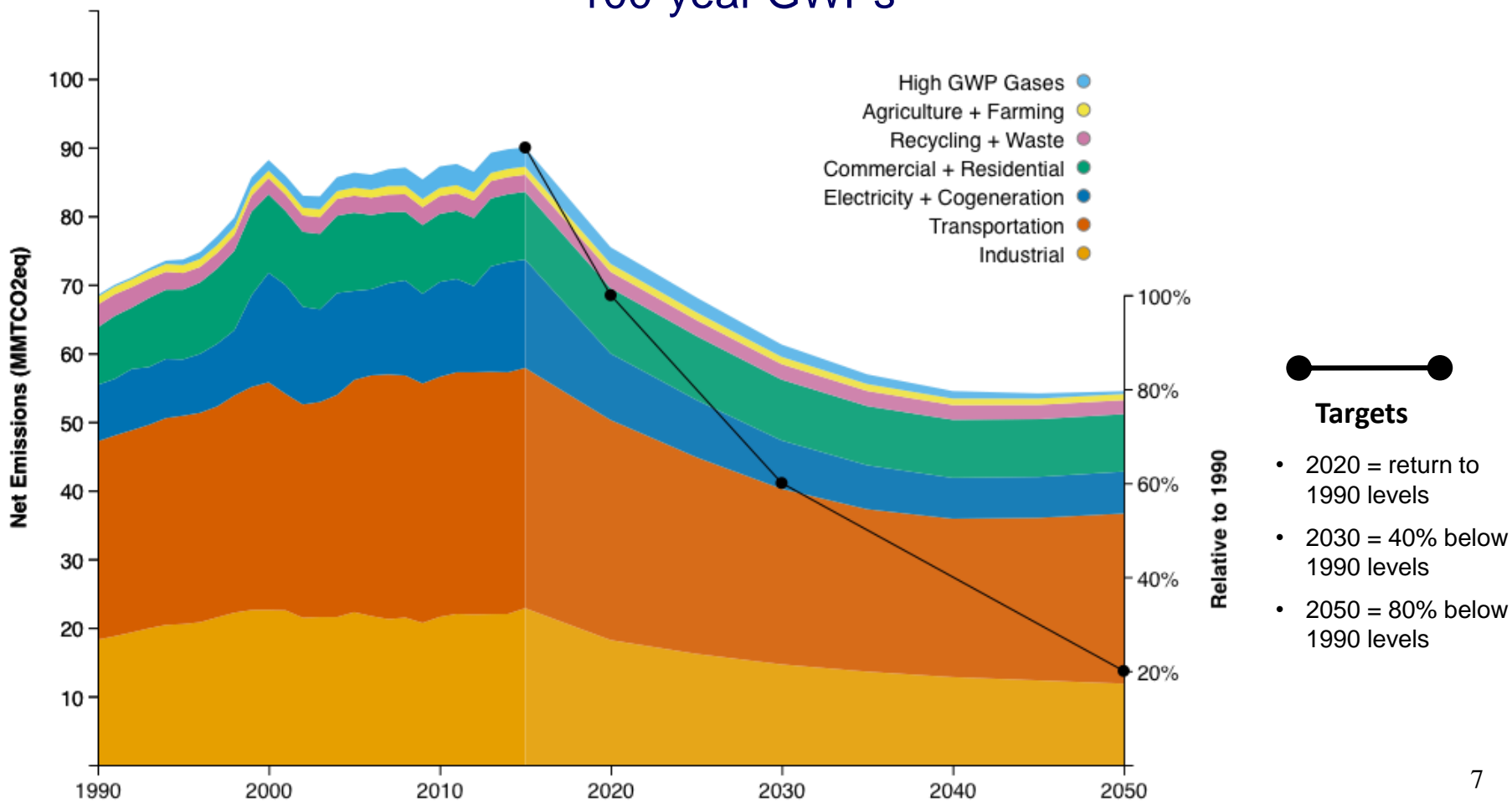
Total = 80 MMT CO₂e





Bay Area GHG Projection to 2050 with Key State Programs

Committed and Expected Policies 100-year GWPs





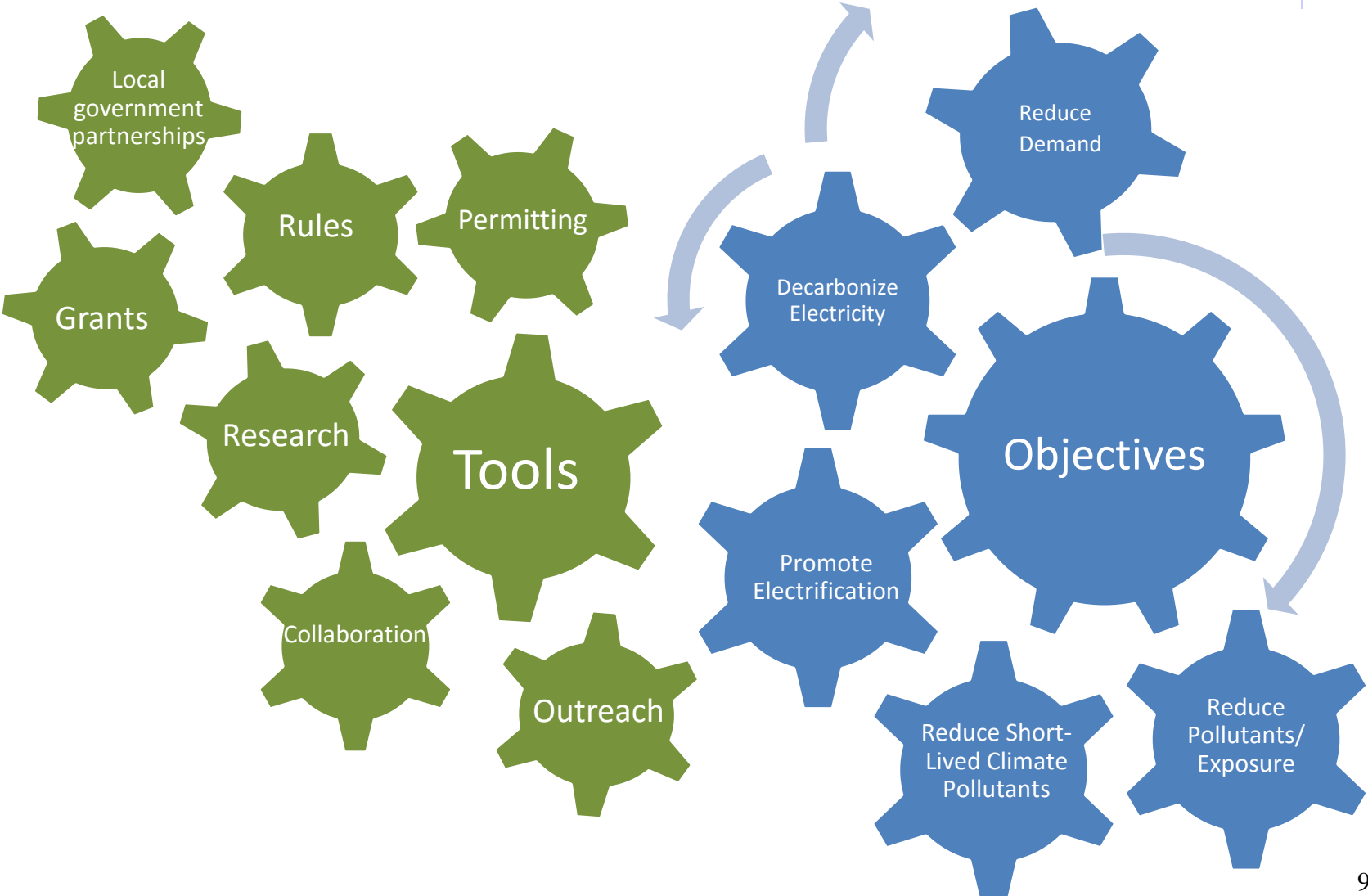
Economic Sector Analysis

Identify Air District actions that complement aggressive State programs in all economic sectors

- Transportation
- Energy
- Agriculture
- Water
- Waste
- Buildings
- Stationary Sources
- Short-lived Climate Pollutants
- Natural & Working Lands



Tools & Objectives



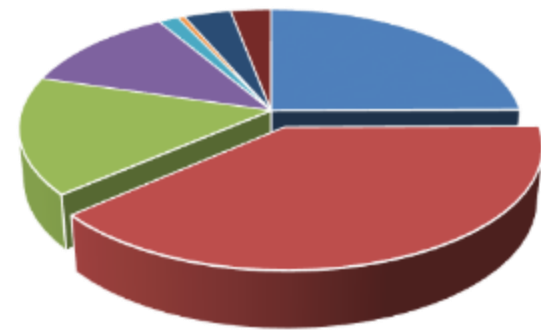
Transportation

Promote Electrification

- Fund electric vehicles (EVs) & charging stations
- Promote EV readiness in new development
- Fund low-carbon freight movement
 - hybrid drive trains for trucks
 - electric shore power for ships
- Electrify Caltrain regional commuter rail

Reduce Travel Demand & Promote Efficiency

- Fund and promote public transit
- Expand ride-sharing, car-sharing, bike-sharing
- Require large employers to offer “commuter benefits”
- Fund bicycle and pedestrian facilities
- Fund Safe Routes to Schools and Safe Routes to Transit
- Promote parking and pricing strategies that reduce travel demand
- Direct future development to “Priority Development Areas”



39%



Stationary Sources

Reduce GHGs via Permitting (*New Source Review*)

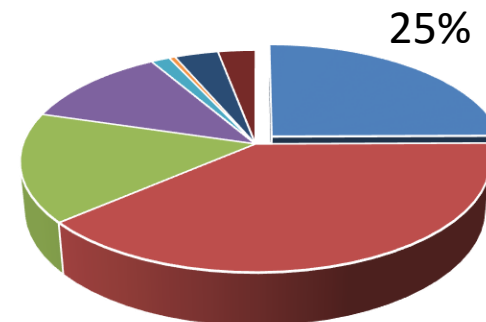
- Limit GHG emissions in permits

Reduce GHG Emissions from Oil Refineries

- Complement State Cap & Trade regulation for large sources
- Investigate options to achieve GHG reductions from refineries
- Adopt source specific rules

Reduce GHG Emissions from Other Sources

- Natural gas and crude oil wells
- Natural gas transmission and distribution
- Residential space and water heating
- Emergency back up generators



Energy

Promote Energy Efficiency & Conservation

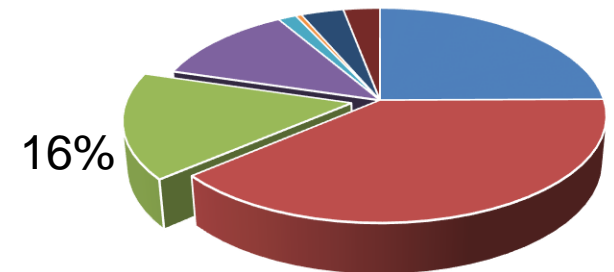
- Increase consumer awareness about energy efficiency through education and outreach
- Promote best practices, model ordinances

Decarbonize Electricity Production

- Collaborate with community choice aggregation programs and public utilities to expand renewable energy portfolio
- Collaborate with energy providers to increase use of low carbon alternatives and combined heat and power
- Identify funding opportunities for new technologies and applications

Expand Electrification

- Electrify motor vehicle fleet
- Electrify space heating and water heating in buildings





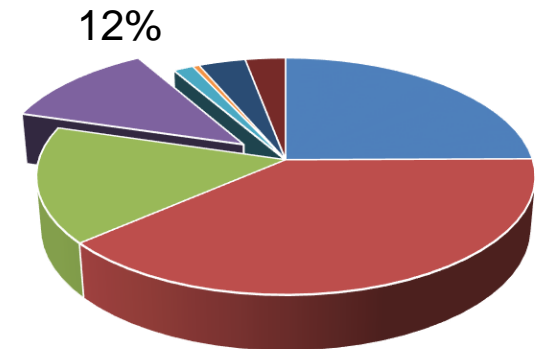
Buildings

Increase Energy Efficiency in Buildings

- Develop model ordinances requiring energy assessments and/or upgrades at time of sale
- Help local governments and school districts obtain funding for energy efficiency programs
- Help property owners identify funding for efficiency upgrades
- Promote measures such as cool roofs, cool parking, and shade trees to reduce urban heat island effects

Decarbonize Building Energy Use

- Provide best practices, model ordinances, and incentives to promote low carbon technologies such as rooftop solar, solar water heating, and electric heat pumps
- Facilitate on-site renewable energy at schools





Waste & Water

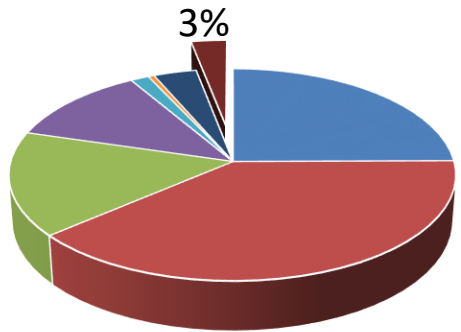
Waste

Decrease Emissions from Landfills/Composting

- Develop rule to reduce methane from composting facilities
- Revise existing landfill rule to tighten standards for gas collection and fugitive leaks

Divert Waste and Recycle

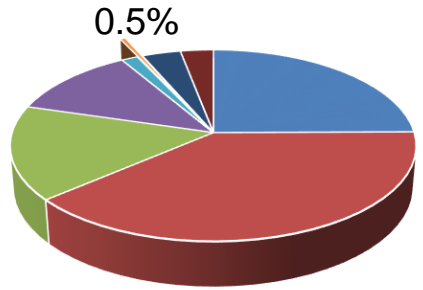
- Develop model ordinances/best practices on zero waste and diversion



Water

Reduce Water Use

- Disseminate best practices for water recycling in new and existing buildings
- Work with local governments to develop water conservation ordinances



Reduce Emissions from Water Treatment Plants

- Consider new rule to reduce GHG emissions from waste water treatment plants

Agriculture & Natural & Working Lands

Increase Carbon Sequestration

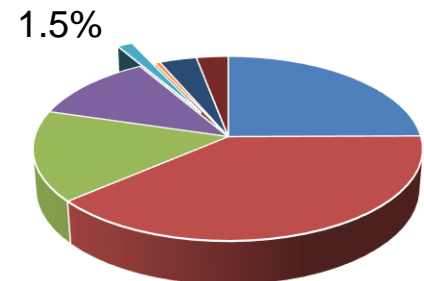
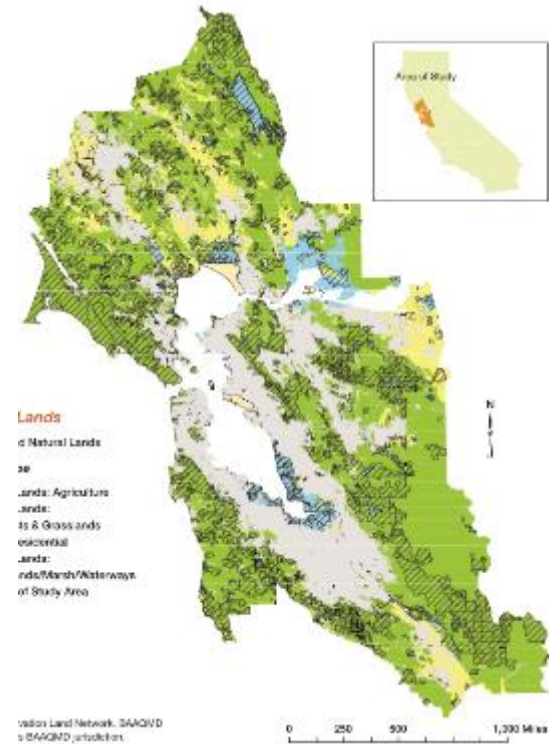
- Develop best practices on low carbon soil management
- Work with local farms/ranches, resource conservation districts and others to apply compost on rangelands

Reduce Emissions from Agriculture Waste

- Support biogas recovery/anaerobic digester systems
- Disseminate best practices for dairy digesters and animal dietary changes

Plant Trees

- Support local government efforts to expand tree canopy





Short-lived Climate Pollutants

Reduce Methane

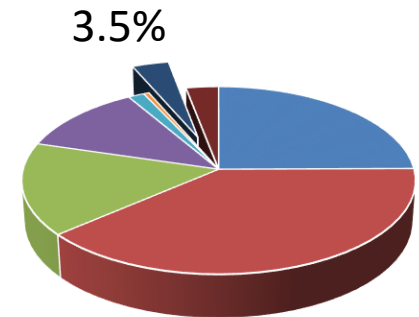
- Measures in the stationary source, agriculture and waste sectors
 - leaks at oil refineries and natural gas distribution system
 - landfill gas collection control requirements
 - waste diversion
 - biogas recovery

Reduce Black Carbon

- Measures in the stationary source and transportation sectors
 - residential wood burning
 - cleaner engines to reduce diesel emissions
 - back-up generators

Reduce Hydrofluorocarbons (HFCs)

- Enforce regulations on leaks from refrigerants systems
- Enforce regulations on the servicing of auto air conditioning units
- Support more stringent HFC standards





Key Questions

How Do We Determine Progress?

- What quantitative and/or qualitative metrics should we use to track progress towards 2030 and 2050 goals?
- How do tracked metrics reconcile with projected emissions trends over time?

How Do We Maximize the Impact of Bay Area Leadership?

- How might we identify and prioritize programs outlined in the climate strategy that show the most promise for affecting other regions and states?

Other Key Questions?