• 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
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
2015 GHG Emissions by Sector
100-year global warming potentials (GWPs)
Total = 80 MMT CO$_2$e
Bay Area GHG Projection to 2050 with Key State Programs

Committed and Expected Policies
100-year GWPs

- 2020 = return to 1990 levels
- 2030 = 40% below 1990 levels
- 2050 = 80% below 1990 levels

Targets
- 2020 = return to 1990 levels
- 2030 = 40% below 1990 levels
- 2050 = 80% below 1990 levels
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

Objectives
- Reduce Demand
- Decarbonize Electricity
- Promote Electrification
- Reduce Pollutants/Exposure
- Reduce Short-Lived Climate Pollutants

Tools
- Tools
- Outreach
- Collaboration
- Research
- Permits
- Rules
- Grants
- Local government partnerships

Collaboration

Outreach

Rules

Permits

Grants

Local government partnerships
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”
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

25%
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
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

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
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
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 refrigerant systems
- Enforce regulations on the servicing of auto air conditioning units
- Support more stringent HFC standards
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?