Climate Action Plan Update

Sustainability and Infrastructure Commission
March 13, 2019

GHG Inventory Update – 2005 Baseline and 2017

Sector	2005 $MTCO_2e$	2017 $MTCO_2e$
On-road transportation	282,370	269,110
Commercial/industrial built environment	141,960	85,840
Residential built environment	136,690	97,730
Solid waste generation	29,550	23,680
Off-road equipment	55,780	45,030
Point sources	7,390	14,230
Rail	4,350	4,520
Water and wastewater	2,520	1,810
Total	**660,600**	**541,960**

2017: 18% below 2005 levels

GHG Forecast

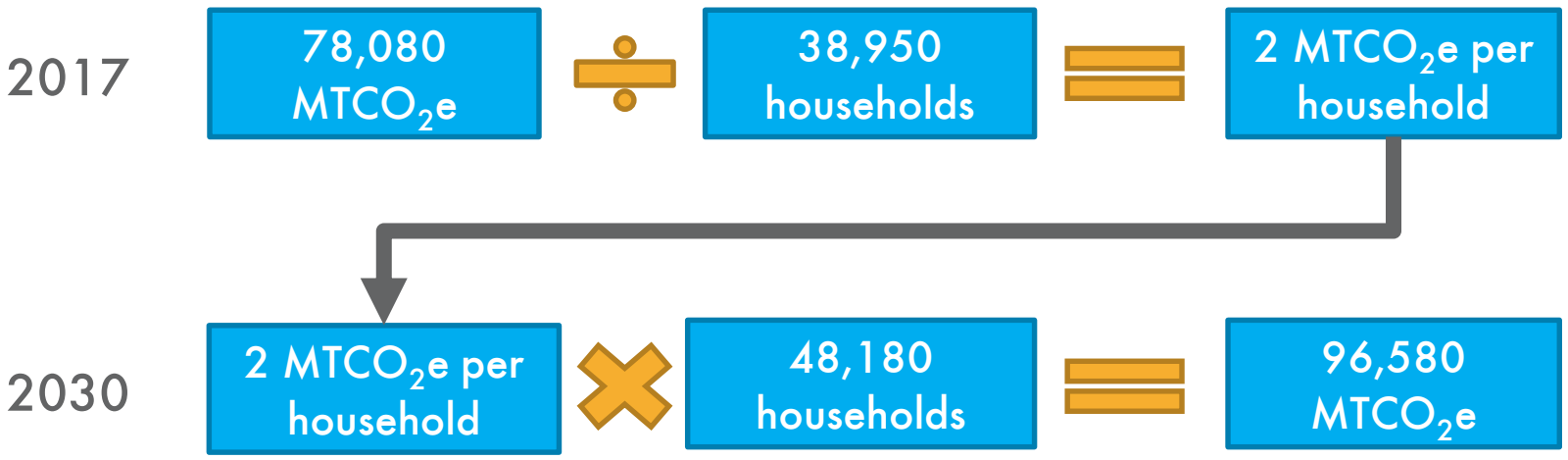
- Estimate of future GHG emissions.
  - Business as Usual (BAU) approach does not include benefits from existing and planned actions.
- Projects emissions for 2020, 2030, and 2050

GHG Forecast

- Uses population projections from ABAG.
- Assumes per-person emissions stay constant.
- Changes in demographics cause changes in emissions.

GHG Forecast

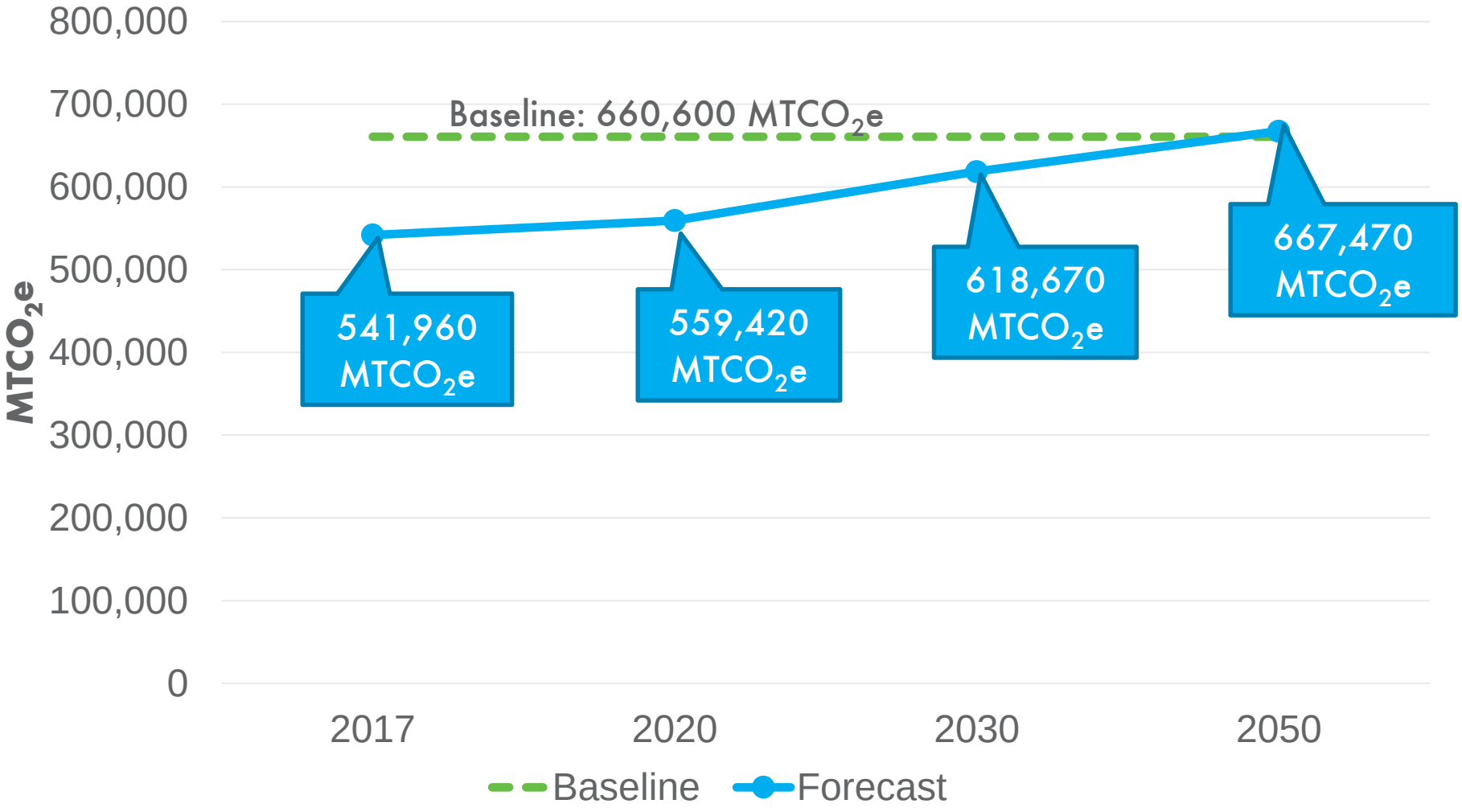
» Example: Emissions from residential natural gas use



Demographic Indicators

Indicator	2017	2020	2030	2050
Population	103,470	109,670	123,200	143,600
Households	38,950	43,040	48,180	53,630
Jobs	63,200	62,570	66,510	69,540
Service population	166,670	172,240	189,710	213,140

GHG Forecast Results



GHG Forecast Results

Sector	2020 $MTCO_2e$	2030 $MTCO_2e$	2050 $MTCO_2e$
On-road transportation	295,560	329,970	366,190
Commercial/ industrial built environment	80,420	85,050	88,610
Residential built environment	101,270	113,360	126,190
Solid waste generation	23,950	24,830	25,880
Off-road equipment	37,470	44,100	38,420
Point sources	14,230	14,230	14,230
Rail	4,660	5,080	5,650
Water and wastewater	1,860	2,050	2,300
Total	**559,420**	**618,670**	**667,470**
Percent Change from 2017	**3%**	**15%**	**23%**

Identifying GHG Reductions

- Two ways to reduce GHG emissions.
  - Decrease the amount of an activity that generates GHG emissions.
  - Decrease the carbon intensity (emissions per unit of activity) of an activity that generates GHG emissions.
- City may only have ability to influence one of these factors.

Identifying GHG Reductions

778,164,650 VMT × 0.000380 $MTCO_2e$/VMT = 295,560 $MTCO_2e$

Reducing emissions by decreasing activity by 10 percent

700,348,190 VMT × 0.000380 $MTCO_2e$/VMT = 266,000 $MTCO_2e$

Reducing emissions by decreasing carbon intensity by 10 percent

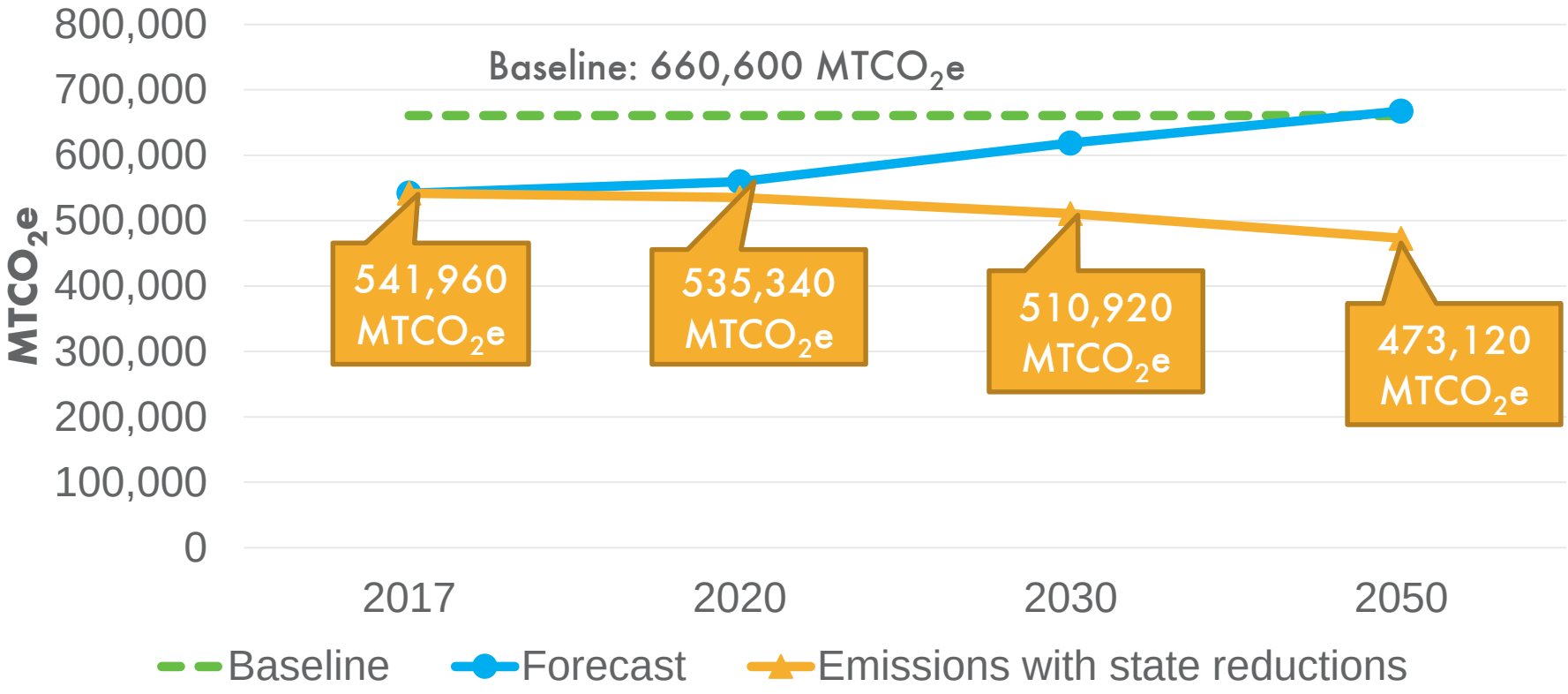
778,164,650 VMT × 0.000342 $MTCO_2e$/VMT = 266,000 $MTCO_2e$

* Numbers are rounded

State GHG Reductions

- Existing or planned actions carried out by state agencies
  - Renewables Portfolio Standards
  - Title 24 energy efficiency standards
  - Clear Car Standards
  - Low Carbon Fuel Standards

State GHG Reductions



State GHG Reductions

Sector	2017 $MTCO_2e$	2020 $MTCO_2e$	2030 $MTCO_2e$	2050 $MTCO_2e$
On-road transportation	269,110	275,510	238,120	235,660
Commercial/ industrial built environment	85,840	80,140	80,850	61,090
Residential built environment	97,730	100,290	105,190	93,810
Solid waste generation	23,680	23,950	24,830	25,880
Off-road equipment	45,030	34,700	40,840	35,570
Point sources	14,230	14,230	14,230	14,230
Rail	4,520	4,660	5,080	5,650
Water and wastewater	1,810	1,860	1,780	1,230
Total	**541,960**	**535,340**	**510,920**	**473,120**

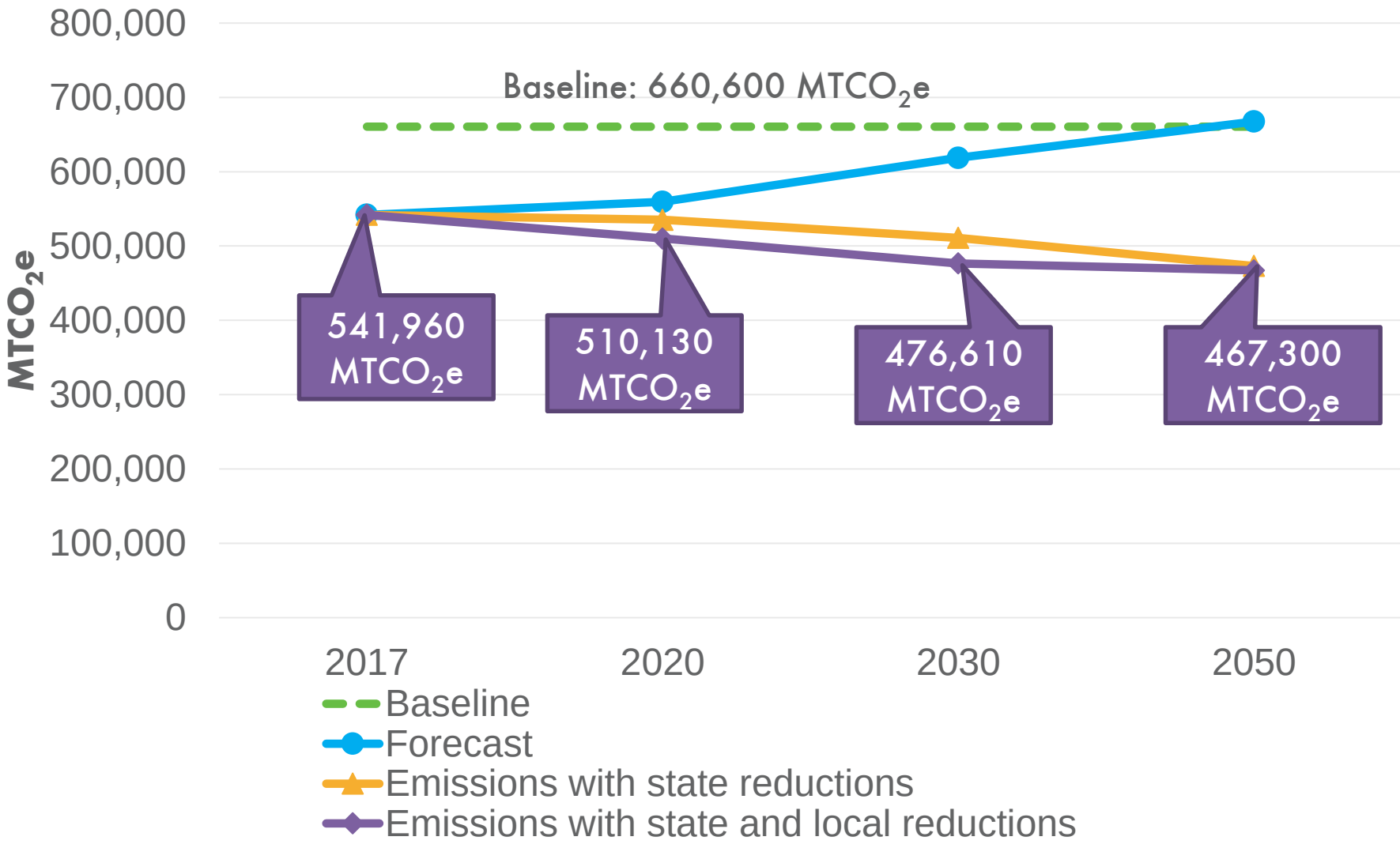
Local GHG Reductions

- Existing or planned actions carried out by the City or regional agencies.
- Includes progress on implementing CAP measures.
- Can measure GHG reductions from actions since 2017.
  - More renewable/carbon-free power from Peninsula Clean Energy
  - Increased EV adoption
  - Composting
  - Caltrain electrification (post-2020)
  - Multiple other actions

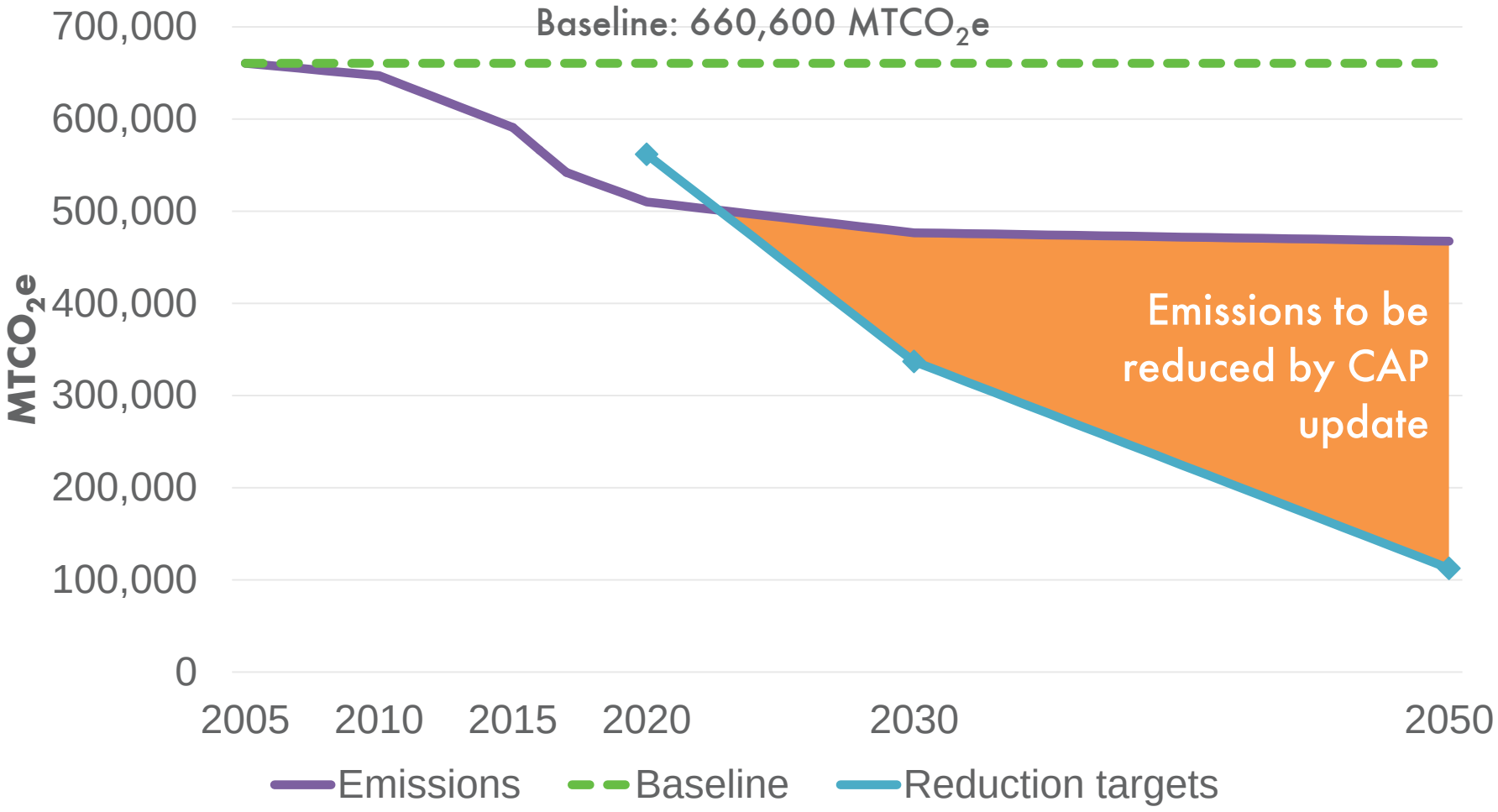
Local GHG Reductions

- Reductions from local actions are only those that go beyond state efforts.
  - Example: PCE has no savings in 2050 because the State mandates carbon-free electricity.
  - PCE does not exceed the state effort in 2050.
- Avoids double counting.

Local GHG Reductions

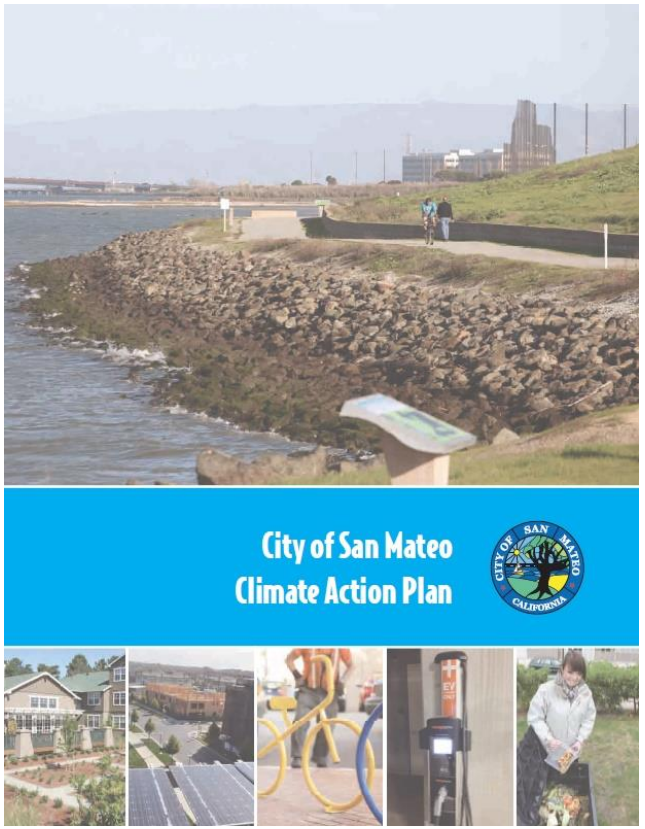


GHG Emissions and Reduction Targets



Measure Update

- Continue effective existing measures.
  - Update the existing measures as needed.
- Remove existing measures that are complete or no longer viable.
- New measures will be discussed at future meetings.



Measure Update Recommendations

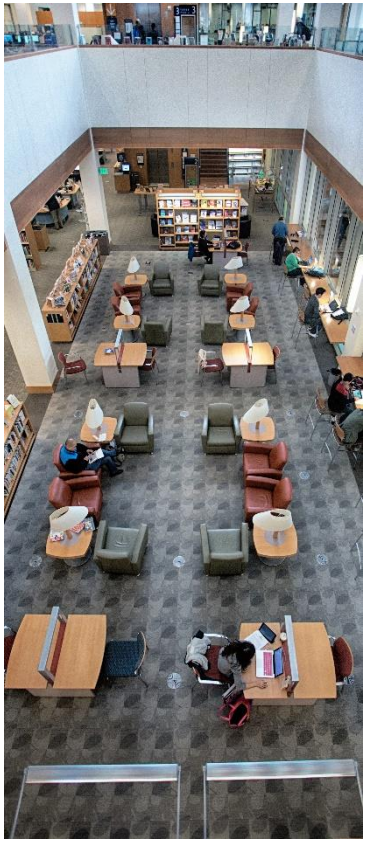
Category	Update	Remove	Total
Renewable energy (RE)	4	3	7
Energy efficiency and conservation (EE)	3	3	6
Municipal energy efficiency and conservation (ME)	2	0	2
Alternative fuels (AF)	2	0	2
Alternative transportation (AT)	4	1	5
Solid waste (SW)	1	0	1
Water and wastewater (WW)	1	2	3
Off-road equipment (OR)	1	1	2
Total	**18**	**10**	**28**

Measure Update Discussion

- Key strategies:
  - AF-2: Electric vehicle adoption
  - AT-2: Transportation Demand Management program
  - AT-4: Increases in bike mode share
  - SW-1: Expanded composting programs
- Future meetings will discuss revisions to existing renewable energy and energy efficiency measures.

Next Steps

- Continue to revise existing GHG reduction strategies.
- Develop new GHG reduction strategies as needed.
- Engage community.



Next Meetings

Date	Topics
April 10 or May 8	Continue discussion of GHG reduction measures.
July 10	Present updates on community engagement, and finalize GHG reduction measures and implementation program.
October 19	Review draft CAP and issue recommendation to City Council.

Questions?