Sebastopol

Commitments to meeting community greenhouse gas reduction goals.

5.7 Sebastopol

This section presents the community greenhouse gas (GHG) emissions profile specific to Sebastopol and the measures that the City of Sebastopol will implement, with the support of the RCPA and other regional entities, as part of the regional approach to reducing GHG emissions.

5.7.1 Community Summary

Sebastopol has a unique and highly valued small-town character. Sebastopol is the hub of West Sonoma County. While the incorporated area is small, Sebastopol serves a much larger unincorporated area stretching to the Pacific Ocean and the Russian River. The City's "market area" comprises a population of approximately 30,000 to 50,000 people, who, to varying degrees, use Sebastopol as their "town" for goods, services, and recreational and cultural activities. Thus, the town has far more economic activity, traffic, and recreational and cultural services than would be apparent based simply on the incorporated population.

The City is surrounded by vineyards, orchards, rural residential, and wetlands, located minutes from the Sonoma Coast and the Russian River area, and just 52 miles north of San Francisco. Sebastopol is at the crossroads of two State Highways, Highways 116 and 12, and is just 8 miles from the county's largest city, Santa Rosa. Sebastopol has a typical Mediterranean climate, with summertime highs above 83 degrees and wintertime lows near 35 degrees.

Demographics

Sebastopol spans 1.9 square miles and has largely residential and commercial land uses. The City had a population of 7,379 as of the 2010 census. In 2020 the population of Sebastopol is expected to be 7,613, an increase of 3% over 2010. Employment in the area is expected to increase by 20%. Sebastopol's demographic composition in 2010 was 88% White, 1% African American, 0.8% Native American, 1.6% Asian, 0.3% Pacific Islander, 4% from other races, and 4% from two or more races. Persons of Hispanic or Latino origin were 12%.

As shown in Table 5.6-1, the City is expected to experience modest but steady growth in population, housing, and jobs in the future.

Table 5.6-1. Sebastopol Socioeconomic Data

	Actual					
	1990	2010	2015	2020	2040	
Population	7,004	7,379	7,497	7,613	8,188	8,608
Housing (# of Houses)	2,842	3,345	3,431	3,521	3,803	3,994
Employment	4,301	5,102	5,507	6,147	6,668	6,827

Socioeconomic data were derived from the SCTA travel demand model and incorporate input from the City based on its internal planning forecasts.

According to the 2010 Census data, Sebastopol is majority owner-occupied with 53% of all houses owner-occupied and 47% renter-occupied.

Energy and Water Use

Compared to households in the county as a whole, Sebastopol households use less electricity and water but more natural gas. They also use less electricity, natural gas, and water than households statewide.

Table 5.6-2. Sebastopol, County, and State 2010 Average Energy and Water Use (per household, per year)

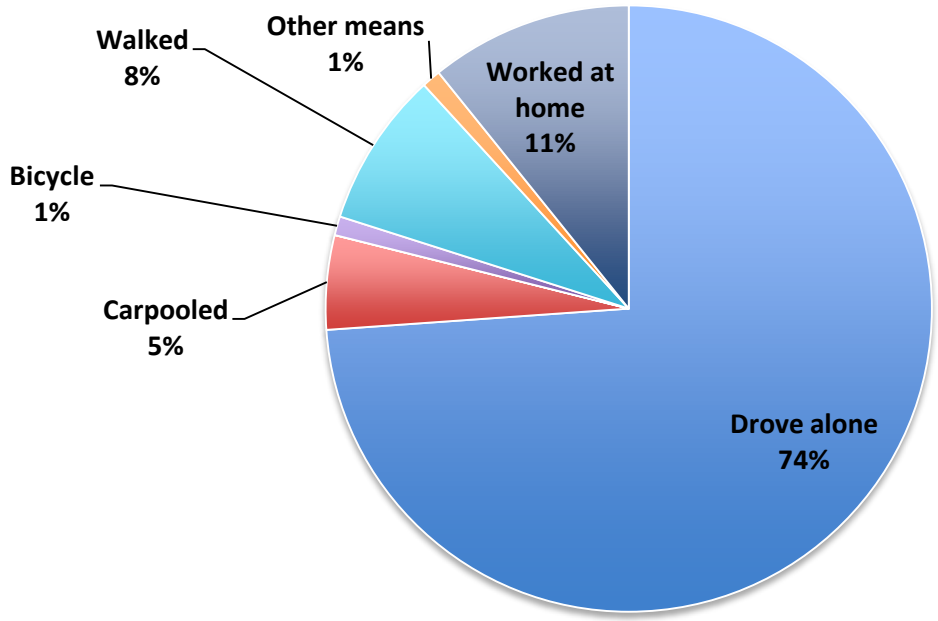
	Sebastopol	County	State
Electricity (kWh)	5,606	7,042	9,320
Natural Gas (Therms)	468	413	512
Water Use (Gallons)	64,833	75,810	107,869

Sources:
City Data: provided by PG&E (energy) and by the City of Sebastopol (water).
County Data: provided by PG&E (energy) and the cities or their Urban Water Management Plans (water).
State Data: U.S. Energy Information Administration 2009, U.S. Geological Survey 2014, California Department of Finance 2015.
kWh = kilowatt hours

Transportation Commute Modes

In the inventory year 2010, most Sebastopol residents (74%) drove to work alone, with about 5% carpooling. It takes a Sebastopol resident on average 24 minutes to get to work (U.S. Census Bureau 2014).

Figure 5.6-1. Modes to Work in Sebastopol in 2010



Source: U.S. Census Bureau 2014: American Community Survey 2006–2010

5.7.2 Sebastopol's Existing Actions to Reduce GHG Emissions

Sebastopol has already taken a number of steps to reduce energy use, promote renewable energy use, and other actions that have been helping to reduce GHG emissions. The City has adopted the following ordinances and General Plan policies that help to reduce GHG emissions and will support the implementation of the formal GHG reduction measures in this CAP.

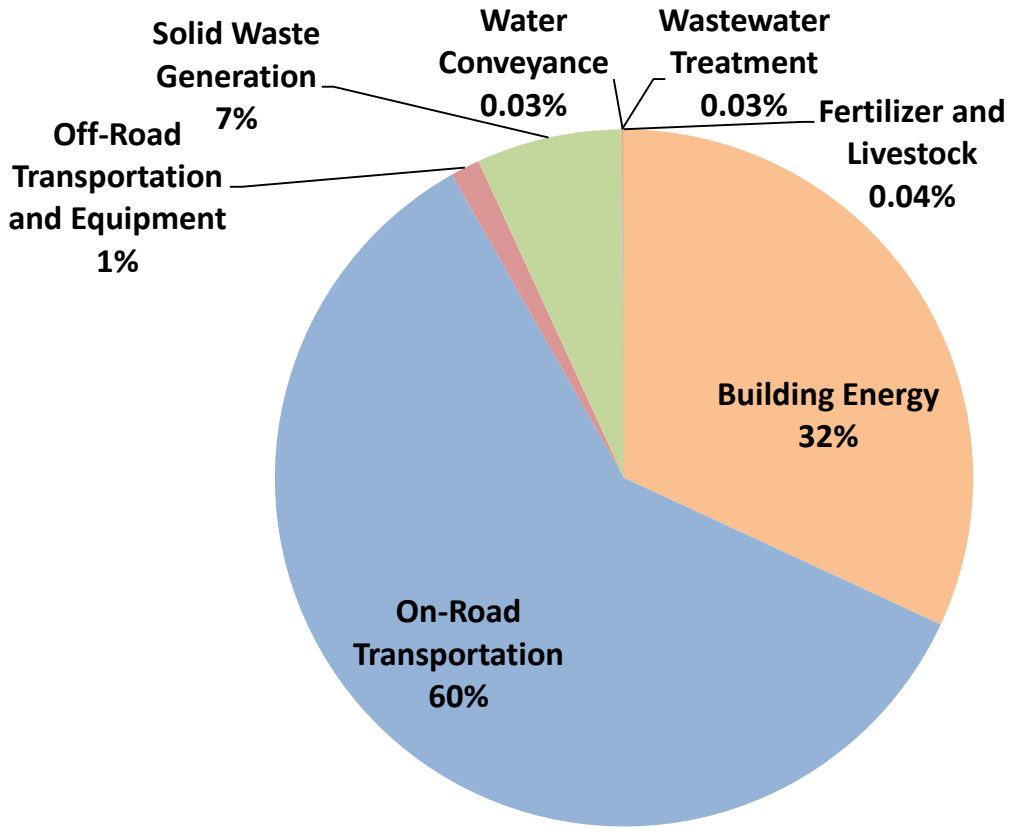
- Building Energy
    - Residential Retrofits: Energy Upgrade California in Sonoma County – Whole House Upgrade Program.
    - Residential Appliance Upgrades: Programs through PG&E and other agencies.
    - Solar Installations at Residences: Energy Upgrade California in Sonoma County – Whole House Upgrade Program.
    - Solar Action Alliance/Solar Sonoma County program (Resolution No. 5696).
    - LED Light Bulbs program (Resolution No. 5816).
    - Green Building Ordinance: Adoption of Tier 1 Voluntary measures for residential and non-residential structures adopted as mandatory requirements (Municipal Code Chapter 15.04.140).
- Land Use and Transportation
    - Bicycle and Pedestrian Master Plan.

- Urban Growth Boundary: General Plan Policy – Chapter 1: Goal 2: P.9.
- Measure O: Urban Growth Boundary Initiative.
- Zero Emission Dedicated Electric Vehicles Program (Resolution No. 5729).
- Plug-In Electric Vehicles or Hybrids – Plug In Partners (Resolution 5674).
- Promote measures to reduce travel demand: General Plan Policy – Chapter 2: Goal 10: P.27 Continue to implement the Trip Reduction Ordinance.
- Encourage transit use: General Plan Policy – Chapter 2: Goal 6: P.19 Continue to support and expand the Sebastopol Transit Service.
- Reduce regional traffic growth: General Plan Policy – Chapter 2: Goal 1: P.2 Coordinate with the Sonoma County Congestion Management Plan.
- Support regional alternatives to single-occupant vehicle: General Plan Policy – Chapter 2: Goal 1: P.3 Support policies and programs which increase the use of transit, carpools, bicycles, etc.

- Water and Wastewater Efficiency
  - Grey Water: two multifamily developments have installed systems.
  - Water and Sewerage System Conservation Requirements: Municipal Code Chapter 13.04.
  - Urban Runoff Reduction Requirements: Municipal Code Chapter 15.77.
  - Water Fixture Retrofits Water Conservation Rebate Program: Resolution No. 5621 Resolution to amend incentives for water conservation.
  - Water and Energy Conservation Requirements: Municipal Code Chapter 15.74.
  - Water Efficient Landscaping Requirements: Municipal Code Chapter 15.36.
- Urban Forestry and Natural Areas
  - Open Space Conservation Tree Planting: planted thousands of trees in Laguna de Santa Rosa Wetlands Preserve.
  - Street Tree Program.
  - Adopt a Landscape Program.
  - Tree Protection Ordinance: Municipal Code Chapter 8.12.
- Waste Minimization and Recycling
  - Food Waste: Sebastopol residents may put all vegetative food waste in their yard debris.

5.7.3 Greenhouse Gas Inventory and Forecast

Figure 5.6-2. Sebastopol 2010 Community GHG Inventory by Sector



Sebastopol's inventory is similar to other cities in the county and state. The majority of the emissions are from the on-road transportation sector due to fossil fuel combustion in personal and light-duty vehicles. The next largest sector is building energy, which includes emissions related to energy used to heat the homes, and business in Sebastopol. Residential uses account for most (52%) of the building energy emissions in Sebastopol. Commercial uses account for 48% of building energy emissions. The other categories of emissions are much smaller in comparison to building energy and on-road transportation.

In Sebastopol, total GHG emissions generated by community activities in 2010 were 76,330 $MTCO_2e$, which is approximately 3% of countywide GHG emissions in the same year. This is a 4% increase from estimated 1990 emissions, which were 73,230 $MTCO_2e$. Table 5.6-3 shows the 1990 backcast, the 2010 inventory and business-as-usual (BAU) forecasts for 2015, 2020, 2040 and 2050 for the City of Sebastopol.

Table 5.6-3. Sebastopol Community GHG Backcast, Inventory, and Forecasts

Sector	1990 Backcast		2010 Inventory		2015 Forecast		2020 Forecast		2040 Forecast		2050 Forecast	
Building Energy	21,840	30%	24,370	32%	26,980	32%	28,930	31%	31,320	32%	32,450	33%
On-road Transportation	42,030	57%	45,730	60%	51,540	60%	56,550	61%	55,800	58%	54,990	57%
Off-road Transportation and Equipment	970	1%	1,040	1%	1,260	1%	1,570	2%	2,930	3%	3,020	3%
Solid Waste Generation	8,010	11%	5,150	7%	5,450	6%	5,900	6%	6,380	7%	6,590	7%
Wastewater Treatment	20	0%	20	0.0%	20	0%	20	0%	20	0%	20	0%
Water Conveyance	370	1%	30	0.0%	30	0%	30	0%	30	0%	30	0%
Total	**73,230**	**100%**	**76,330**	**100%**	**85,280**	**100%**	**92,990**	**100%**	**96,480**	**100%**	**97,100**	**100%**
Per-Capita Emissions	**10.5**		**10.3**		**11.4**		**12.2**		**11.8**		**11.3**	

5.7.4 Greenhouse Gas Reduction Goal and Measures

The City of Sebastopol joins other Sonoma County communities to support the regional GHG emissions reduction target of 25% below 1990 countywide emissions by 2020 through adoption of 27 local GHG reduction measures. The City's GHG emissions under 2020 BAU conditions (in absence of state, regional, and local reduction measures) would be approximately 92,990 $MTCO_2e$. The City's local GHG reduction measures, in combination with state and regional measures, would reduce the City's GHG emissions in 2020 to 62,770 $MTCO_2e$, which would be a reduction of approximately 32% compared to 2020 BAU conditions. The City will achieve these reductions through reduction measures that are technologically feasible and cost-effective per AB 32 through a combination of state (62%), regional (25%), and local (12%) efforts. With the reduction measures in CA2020, per-capita emissions in Sebastopol will be 8.2 MTCO2e per person, a 22% reduction in per capita emissions compared to 1990.

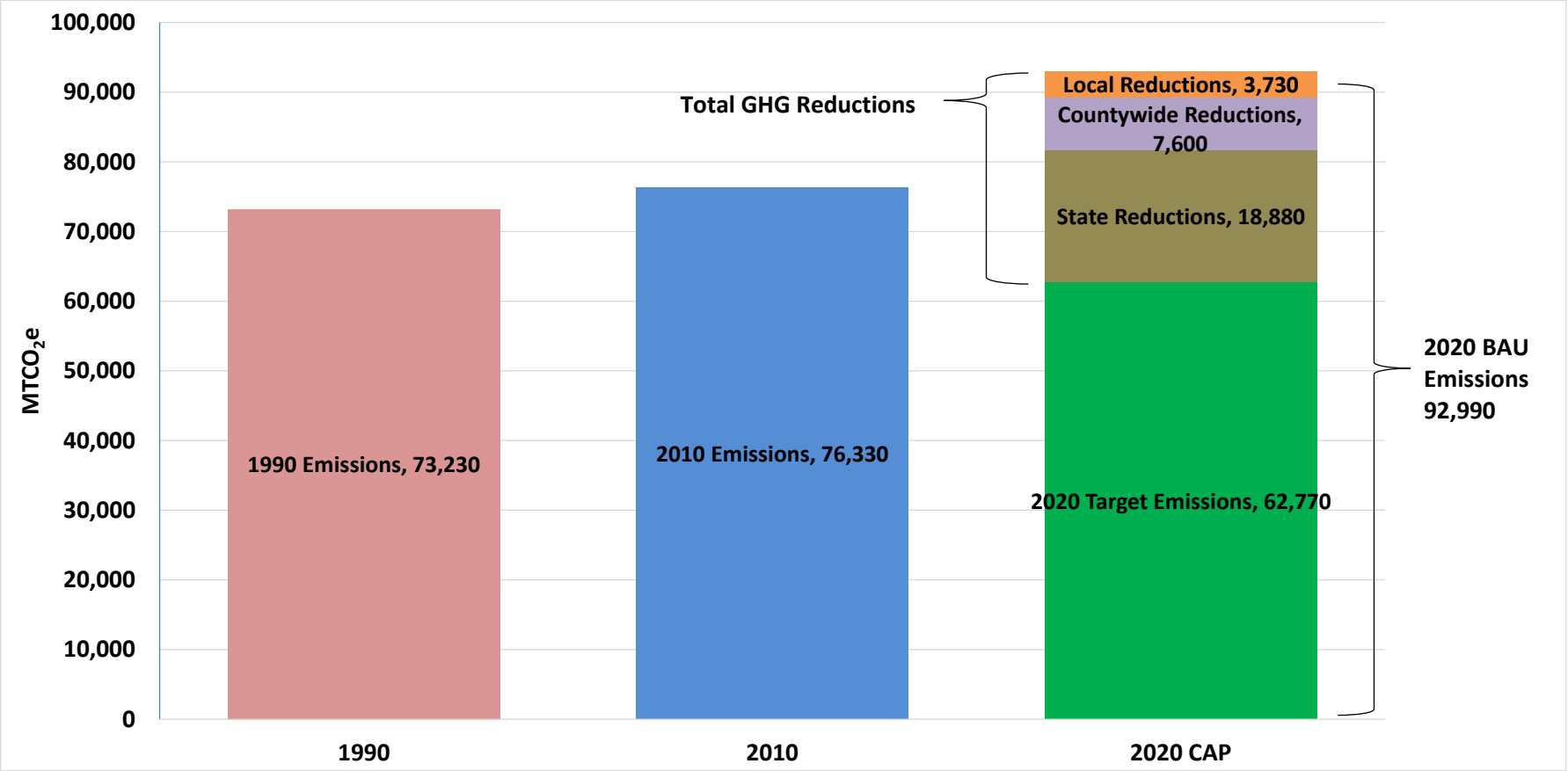
Table 5.6-4. Sebastopol 2020 GHG Emissions Reductions by Sector

Building Energy	28,930	6,780	1,800	2,380	10,960	17,970	38%
On-Road Transportation	56,550	11,970	1,360	1,280	14,610	41,940	26%
Off-Road Transportation and Equipment	1,570	140	-	50	190	1,380	12%
Solid Waste Generation	5,900	-	4,430	-	4,430	1,470	75%
Water Conveyance	30	-	10	10	20	10	67%
Wastewater Treatment	20	-	-	10	10	10	50%

Values may not sum due to rounding.

Figure 5.6-3 shows Sebastopol's 1990 and 2010 GHG emissions total, 2020 BAU emissions forecast total, and the total emissions remaining after implementation of the City's reduction measures. The contribution of state, regional, and local reductions are overlaid on the 2020 BAU emissions forecast total, representing the total emissions reductions achieved in 2020. Like the other communities, Sebastopol benefits greatly from the work the state and regional entities are committed to implementing on climate action. See Chapter 4 for more information on state and regional actions.

Figure 5.6-3. Sebastopol 1990, 2010, and 2020 GHG Emissions; 2020 State and Local Reductions



Greenhouse Gas Reduction Measures

As shown in Table 5.6-5, the City of Sebastopol will achieve its reduction goal through a combination of state, regional, and local measures. State reduction measures are implemented through state law, including some that require action by the City to comply with state mandates (e.g., Title 24 energy efficiency measures). State measure reductions total 18,880 $MTCO_2e$, which include the Pavley vehicle fuel efficiency standards, Title 24 building standards, the state's low carbon fuel standard, and the RPS, which will reduce GHG emissions in Sebastopol's on-road, off-road, and building energy sectors in 2020.

Sustainable Sebastopol

Sebastopol has committed to a diverse range of programs and policies that reduce the emissions of GHGs. The City maintains a list of the programs, policies, and resolutions that it has adopted, and tips for members of the community to take on the City website. One of these resolutions, adopted in 2002, establishes the City's official support for the use of alternatively fueled vehicles for the City's municipal fleet.

Regional measures will reduce emissions by 7,600 $MTCO_2e$ and will be implemented by regional entities, including the Regional Climate Protection Authority (RCPA), Sonoma County Water Agency (SCWA), County of Sonoma Energy Independence Office (ESD), Sonoma County Transportation Authority (SCTA), and Sonoma Clean Power (SCP).

An additional reduction of 3,730 $MTCO_2e$ will be achieved through measures the City of Sebastopol has chosen. The locally adopted measures, although not as high-achieving of GHG reductions as the state and regional measures, are important because they represent the actions that local communities can take directly. The communities have local control over their infrastructure and policies and have selected the local measures that best suit the needs of their community.

The three measures that will have the greatest impact in Sebastopol are, in order of importance, Measure 2-L4 (Solar in Existing Non-Residential Buildings), Measure 8-L1 (Idling Ordinance), and Measure 11-L1 (Senate Bill SB X7-7 - Water Conservation Act of 2009). These three measures, in addition to reducing GHG emissions, will save energy, improve air quality and public health in the City, and conserve water and other natural resources. As the county and state continue to experience a historic drought, water conservation will remain an especially important co-benefit.

On the state level, the RPS and the Pavley measures have the greatest potential to reduce emissions in the City. Of the regional measures, the measures with the greatest impact are the CCA measure, the waste-to-energy measure, and the waste diversion measure.

Table 5.6-5 presents the individual GHG reduction measures that Sebastopol has selected for the CAP. For more information on the specifics of each measure, see Appendix C.

Table 5.6-5. Sebastopol 2020 GHG Emissions Reductions by Measure

	2020 GHG Reductions
Measure 1-S1: Title 24 Standards for Commercial and Residential Buildings	531
Measure 1-S2: Lighting Efficiency and Toxics Reduction Act (AB 1109)	603
Measure 1-S3: Industrial Boiler Efficiency	NA
Measure 1-R1: Community Energy Efficiency Retrofits for Existing Buildings	69
Measure 1-R2: Expand the Community Energy Efficiency Retrofits Program	335
Measure 1-L2: Outdoor Lighting ✓	29
Measure 1-L3: Shade Tree Planting ✓	4
Goal 2: Increase Renewable Energy Use	**8,718**
Measure 2-S1: Renewables Portfolio Standard	5,619
Measure 2-S2: Solar Water Heaters	23
Measure 2-R1: Community Choice Aggregation	1,364
Measure 2-L1: Solar in New Residential Development ✓	26
Measure 2-L2: Solar in Existing Residential Building ✓	248
Measure 2-L3: Solar in New Non-Residential Developments ✓	221
Measure 2-L4: Solar in Existing Non-Residential Buildings ✓	1,217
Goal 3: Switch Equipment from Fossil Fuel to Electricity	**119**
Measure 3-L1: Convert to Electric Water Heating ✓	119
Goal 4: Reduce Travel Demand Through Focused Growth	**245**
Measure 4-L1: Mixed-Use Development in City Centers and Along Transit Corridors ✓	208
Measure 4-L2: Increase Transit Accessibility ✓	24
Measure 4-L3: Supporting Land Use Measures ✓	NQ
Measure 4-L4: Affordable Housing Linked to Transit ✓	13
Goal 5: Encourage a Shift Toward Low-Carbon Transportation Options	**1,448**
Measure 5-R1: Improve and Increase Transit Service	13
Measure 5-R2: Supporting Transit Measures	NQ
Measure 5-R3: Sonoma-Marin Area Rail Transit	NQ
Measure 5-R4: Trip Reduction Ordinance	195
Measure 5-R5: Supporting Measures for the Transportation Demand Management Program	NQ

✓ = Local Measure (otherwise State or Regional)	2020 GHG Reductions
Measure 5-R6: Reduced Transit Passes	181
Measure 5-R7: Alternative Travel Marketing & Optimize Online Service	144
Measure 5-R8: Safe Routes to School	444
Measure 5-R9: Car-sharing Program	NQ
Measure 5-R10: Bike Sharing Program	NQ
Measure 5-L1: Local Transportation Demand Management Program ✓	144
Measure 5-L2: Carpool-Incentives & Ride-Sharing Program ✓	282
Measure 5-L3: Guaranteed Ride Home ✓	NQ
Measure 5-L4: Supporting Bicycle/Pedestrian Measures ✓	NQ
Measure 5-L5: Traffic Calming ✓	45
Measure 5-L7: Supporting Parking Policy Measures ✓	NQ
Goal 6: Increase Vehicle and Equipment Fuel Efficiency	**11,969**
Measure 6-S1: Pavley Emissions Standards for Passenger Vehicles and the Low Carbon Fuel Standard	11,074
Measure 6-S2: Advanced Clean Cars	298
Measure 6-S3: Assembly Bill 32 Vehicle Efficiency Measures	597
Goal 7: Encourage a Shift Toward Low-Carbon Fuels in Vehicles and Equipment	**567**
Measure 7-S1: Low Carbon Fuel Standard: Off-Road	139
Measure 7-R1: Shift Sonoma County (Electric Vehicles)	386
Measure 7-L1: Electric Vehicle Charging Station Program ✓	3
Measure 7-L2: Electrify Construction Equipment ✓	38
Measure 7-L3: Reduce Fossil Fuel Use in Equipment through Efficiency or Fuel Switching ✓	NQ
Goal 8: Reduce Idling	**576**
Measure 8-L1: Idling Ordinance ✓	562
Measure 8-L2: Idling Ordinance for Construction Equipment ✓	14
Goal 9: Increase Solid Waste Diversion	**1,722**
Measure 9-R1: Waste Diversion Goal	1,722
Measure 9-L1: Create Construction and Demolition Reuse and Recycling Ordinance ✓	<1
Goal 10: Increase Capture and Use of Methane from Landfills	**2,725**
Measure 10-R1: Increase Landfill Methane Capture and Use for Energy	2,725

✓ = Local Measure (otherwise State or Regional)	2020 GHG Reductions
Goal 11: Reduce Water Consumption	**533**
Measure 11-R1: Countywide Water Conservation Support and Incentives	NQ
Measure 11-L1: Senate Bill SB X7-7 - Water Conservation Act of 2009* ✓	418
Measure 11-L2: Water Conservation for New Construction* ✓	5
Measure 11-L3: Water Conservation for Existing Buildings* ✓	110
Goal 12: Increase Recycled Water and Greywater Use	**3**
Measure 12-R1: Recycled Water*	<1
Measure 12-L1: Greywater Use* ✓	3
Goal 13: Increase Water and Wastewater Infrastructure Efficiency	**21**
Measure 13-R1: Infrastructure and Water Supply Improvement	7
Measure 13-R2: Wastewater Treatment Equipment Efficiency*	14
Total State Measures	**18,880**
Total County Measures	**7,600**
Total Local Measures	**3,730**
Grand Total Emissions	**30,220**

*Measures reduce emissions in multiple sectors (i.e. water and energy)
NQ = not quantified

5.7.5 Municipal Greenhouse Gas Reduction Measures

Like the other cities and the county, Sebastopol has recognized the need to reduce GHG emissions from municipal operations. The City has existing programs in place for green municipal buildings and alternative fuels for its municipal fleet. Although municipal GHG reduction measures are not part of this countywide plan, the efforts of local communities are important and will continue in the future. Descriptions of potential municipal GHG reduction measures are provided in Appendix E as an informational resource.