

Appendix A –

GHG Emissions Inventory and Forecasts Methodology

GHG INVENTORY AND FORECASTS

This appendix describes the process of calculating baseline greenhouse gas (GHG) emissions and their future forecasts for the Shasta Regional Climate Action Plan (RCAP).

The GHG Inventory and Forecasting Process

The purpose of GHG baseline inventory is to provide a snapshot of communitywide GHG emissions in a given year. Baseline emissions for 2008 were developed for Redding, Anderson, Shasta Lake and the unincorporated County separately. Countywide emissions were then calculated based on the sum of total emissions for each of the jurisdictions. The following sectors were quantified within this analysis.

- Energy consumption – GHG emissions from electricity production, and natural gas and propane combustion.
- Transportation – GHG emissions from vehicles traveling on highways and roads within the County, adjusted to deduct pass-through-trips (i.e. trips that did not start or finish within the County).
- Solid waste – GHG emissions related to current and past waste disposal at the landfills in the county.
- Water consumption – GHG emissions from pumping, treating and conveyance of portable water for residential and non-residential uses.
- Wastewater treatment – GHG emissions from secondary treatment of wastewater.
- Off-road vehicles and equipment – GHG emissions from vehicles and equipment used off-road such as light commercial equipment, lawn and garden equipment, construction and mining, and pick-up trucks.
- Recreation – GHG emissions from vehicles used for recreational purpose such as boats, watercrafts, and terrain vehicles.
- Agriculture - GHG emissions from agricultural operations (e.g., field equipment, irrigation pumps, livestock, soil amendments, pesticide application, rice straw decomposition).
- Forestry- GHG emissions from timberland management and logging operations.
- Stationary Sources – (e.g., cement plants, co-gen facilities, timber industries).

The purpose of GHG emission forecasts is to estimate future emission levels and provide insight regarding the scale of reductions necessary to achieve an emissions target. GHG emission forecasts were prepared for the County and the individual jurisdictions for 2020, 2035 and 2050, assuming that historic trends of energy and water consumption, waste generation, and land use and transportation pattern will remain similar in future with population growth. These business-as-usual scenario projections demonstrate emissions growth in the individual jurisdictions (Redding, Anderson and Shasta Lake and the unincorporated County) in the short-, mid- and long-term. The business-as-usual scenario does not include the emission reductions potential of State legislative and regulatory actions or the proposed emission reduction measures recommended in the RCAP.

Total versus Jurisdictional Emissions Inventories

With this document the *total* emissions inventory refers to all emissions that result from community (e.g., residential, business, municipal) activities. Certain types of these emissions cannot be controlled by a

jurisdiction due to a lack of local authority over the generating activity. The *jurisdictional* inventory refers to only those emissions that a jurisdiction has authority to influence. Per direction from the Shasta County Air District (District), AECOM removed the stationary source, forestry, and agriculture sectors from the jurisdictional inventories and they are not considered for emissions forecasts and reduction target setting. The County and the individual jurisdictions will rely on State mandates to regulate stationary sources (e.g., cement plants, lumber mills, biomass generation facilities). Already a number of state-directed programs are monitoring emissions and reduction strategies for large stationary source emitters. Similarly, emissions related to forestry have been removed from the GHG inventories since forestry activities are regulated directly by the State. Emissions related to agriculture were also removed from the inventory due to the fact that neither the County nor the District regulates agricultural activities.

It should be noted that total emissions (including the agriculture, forestry, and stationary sources sectors) are only discussed in the baseline inventories. The agriculture, forestry, and stationary sources sectors are not carried forward in the emissions projections, nor are they addressed within the target-setting and measure development portions of the RCAP.

Shasta Countywide Emissions

2008 Baseline GHG Emissions Inventory

The countywide GHG baseline emissions are the sum of individual city and unincorporated County emissions. In 2008, Shasta County jurisdictions generated a total of 4,476,587 metric tons of carbon dioxide equivalent emissions (MT CO₂e). As shown in Figure 1 and Table 1, stationary sources were the highest source of emissions countywide contributing approximately 54% of the total emissions. Transportation emissions were the second highest source of emissions at 19% of the total emissions, followed by energy-related emissions at 14% of the total emissions. When agriculture, forestry, and stationary source emissions are removed, the 2008 countywide jurisdictional inventory is reduced to 1,762,400 MT CO₂e. In the jurisdictional inventory, transportation emissions contribute 48% of total emissions and energy-related emissions make up 37% of total emissions.

Figure 1: 2008 Countywide Total GHG Emissions Inventory

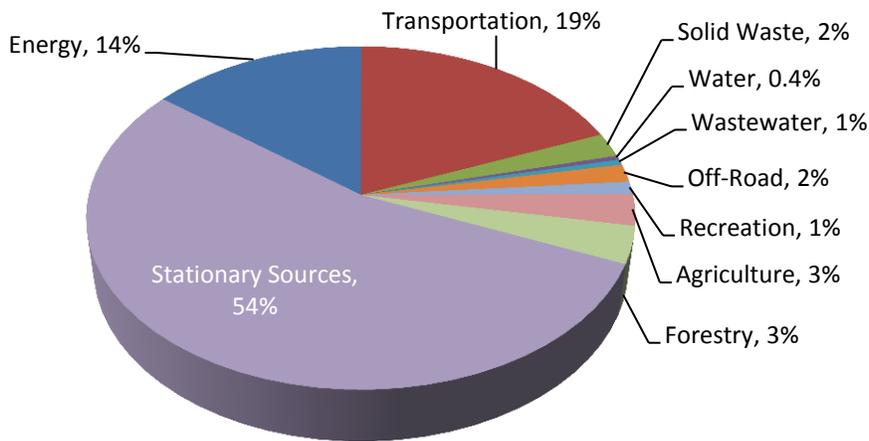
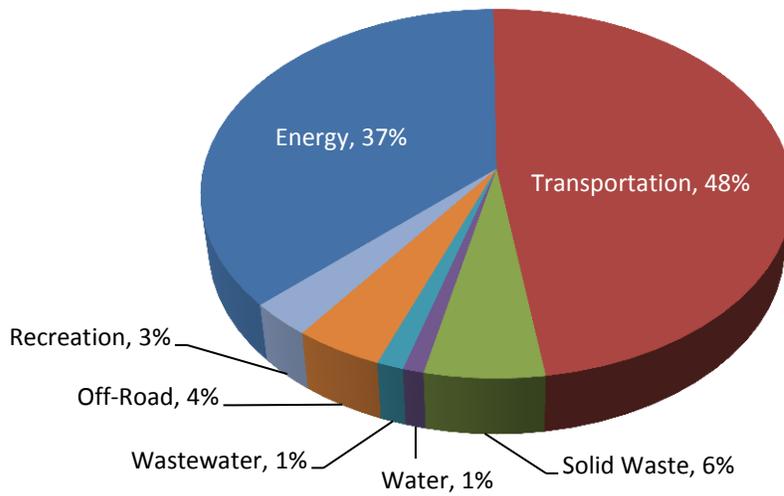


Table 1: Countywide 2008 Baseline GHG Inventory (Total and Jurisdictional)

Emissions Sector	Total		Jurisdictional	
	MT CO ₂ -e	%	MT CO ₂ -e	%
Energy Consumption	647,618	14%	647,618	37%
Transportation	843,649	19%	843,649	48%
Solid Waste	102,083	2%	102,083	6%
Water Consumption	17,817	0.4%	17,817	1%
Wastewater Treatment	22,898	1%	22,898	1%
Off-Road Vehicles and Equipment	75,330	2%	75,330	4%
Recreation	53,005	1%	53,005	3%
Agriculture	132,234	3%		
Forestry	156,538	3%		
Stationary Sources	2,425,415	54%		
Total	4,476,587	100%	1,762,400	100%

Note: The GHG emissions for agriculture, forestry, and stationary sources related activities have only been reported in the inventory, and will not be considered for emissions projection, target-setting and measure development in the RCAP.

Figure 2: 2008 Countywide Jurisdictional GHG Emissions Inventory



Jurisdictional Emission Forecasts

The countywide jurisdictional GHG emissions are projected to be 2,008,921 MT CO₂e in 2020, 2,411,347 MT CO₂e in 2035, and 2,843,100 MT CO₂e in 2050 which correspond to 14%, 37%, 61% growth in emissions in the short-, mid- and long-term respectively from the 2008 baseline emissions. The chart below demonstrates that, transportation sector are expected remain the highest source of emissions countywide. Under business-as-usual scenario, transportation emissions show a growth of 19% by 2020, 46% by 2035, and 74% by 2050 from the 2008 level. Energy-related emissions are projected to increase in the short-, mid- and long-term in line with the utilities' energy demand forecasts.

Table 2: Shasta Countywide GHG Emissions Forecasts (Total and Jurisdictional)

Total Shasta Countywide Emissions Forecasts								
	2008		2020		2035		2050	
Emissions Sector	MT CO2-e	%						
Energy Consumption	647,618	14%	709,844	15%	842,476	16%	995,450	18%
Transportation	843,649	19%	1,003,335	21%	1,232,219	24%	1,469,928	26%
Solid Waste	102,083	2%	111,748	2%	126,852	2%	142,344	3%
Water Consumption	17,817	0%	19,443	0%	22,146	0%	24,848	0%
Wastewater Treatment	22,898	1%	25,100	1%	28,408	1%	31,875	1%
Off-Road Vehicles and Equipment	75,330	2%	82,275	2%	93,559	2%	104,976	2%
Recreation	53,005	1%	57,175	1%	65,688	1%	73,680	1%
Agriculture	132,234	3%	132,234	3%	132,234	3%	132,234	2%
Forestry	156,538	3%	156,538	3%	156,538	3%	156,538	3%
Stationary Sources	2,425,415	54%	2,425,415	51%	2,425,415	47%	2,425,415	44%
Total	4,476,587	100%	4,723,107	100%	5,125,534	100%	5,557,287	100%

Jurisdictional Shasta Countywide Emissions Forecasts								
	2008		2020		2035		2050	
Emissions Sector	MT CO2-e	%						
Energy Consumption	647,618	37%	709,844	35%	842,476	35%	995,450	35%
Transportation	843,649	48%	1,003,335	50%	1,232,219	51%	1,469,928	52%
Solid Waste	102,083	6%	111,748	6%	126,852	5%	142,344	5%
Water Consumption	17,817	1%	19,443	1%	22,146	1%	24,848	1%
Wastewater Treatment	22,898	1%	25,100	1%	28,408	1%	31,875	1%
Off-Road Vehicles and Equipment	75,330	4%	82,275	4%	93,559	4%	104,976	4%
Recreation	53,005	3%	57,175	3%	65,688	3%	73,680	3%
Total	1,762,400	100%	2,008,920	100%	2,411,348	100%	2,843,101	100%

Unincorporated Shasta County Emissions

GHG Emissions Inventory

In 2008, the unincorporated areas of Shasta County generated a total of 3,131,054 MT CO₂e, with the stationary sources being the largest source of emissions at 72% of total emissions. Transportation generated 8%, energy consumption generated 7%, forestry 5%, and agriculture 4%. When the agriculture, forestry, and stationary source sectors are removed in the jurisdictional inventory, baseline emissions drop considerably to 571,255 MT CO₂e. In the jurisdictional inventory the transportation and energy sectors are the largest emissions sources at 43% and 36% respectively.

Figure 3: 2008 Unincorporated County Total GHG Emissions Inventory

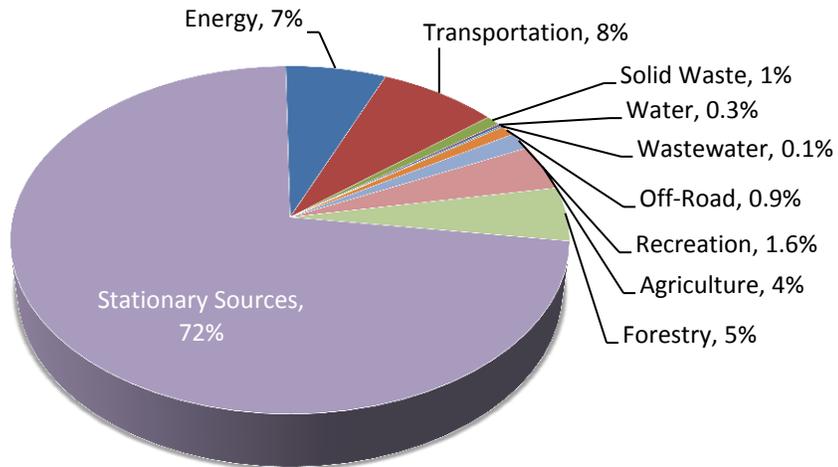
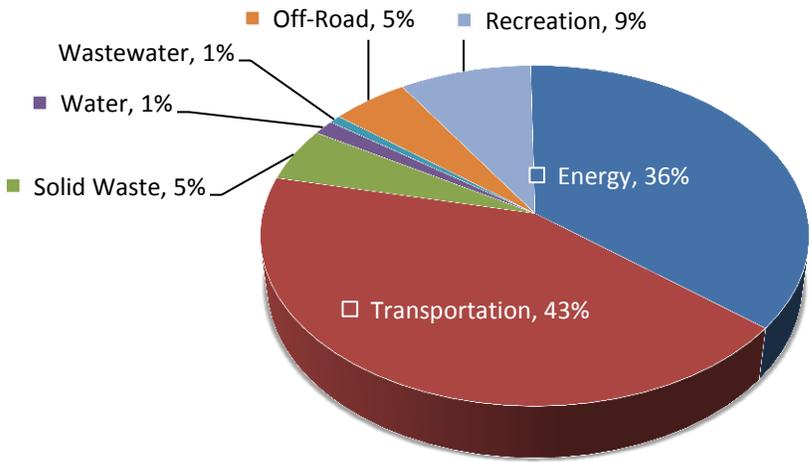


Table 3: Unincorporated County 2008 Baseline GHG Inventory (Total and Jurisdictional)

Emissions Sector	Total		Jurisdictional	
	MT CO ₂ -e	%	MT CO ₂ -e	%
Energy Consumption	206,309	7%	206,309	36%
Transportation	243,668	8%	243,668	43%
Solid Waste	29,233	1%	29,233	5%
Water Consumption	8,001	0.3%	8,001	1%
Wastewater Treatment	4,340	0.1%	4,340	1%
Off-Road Vehicles and Equipment	29,302	1%	29,302	5%
Recreation	50,401	2%	50,401	9%
Agriculture	132,234	4%		
Forestry	156,538	5%		
Stationary Sources	2,271,027	73%		
Total	3,131,054	100%	571,255	100%

Note: The GHG emissions for agriculture, forestry, and stationary sources related activities have only been reported in the Total inventory, and will not be considered for emissions projection, target-setting and measure development in the RCAP.

Figure 4: 2008 Unincorporated County Jurisdictional GHG Emissions Inventory



Jurisdictional Emission Forecasts

The GHG emissions in the unincorporated County were projected to be 632,133 MT CO₂e in 2020, 754,190 MT CO₂e in 2035, and 882,757 MT CO₂e in 2050 which correspond to 11%, 32%, 55% growth from the 2008 baseline emissions in the short-, mid- and long-term. The chart below demonstrates that the transportation sector will remain the highest source of emissions, increasing by 13% in 2020, 38% in 2035, and 63% in 2050 from the base 2008 level. Under a business-as-usual scenario, GHG emissions related to the energy sector is also projected to increase by 10%, 30% and 54% in the short-, mid- and long-term. Another notably large source of emissions in the unincorporated County is recreation uses including watercraft and off-highway vehicles.

Figure 5: Unincorporated County Jurisdictional GHG Emissions Forecasts

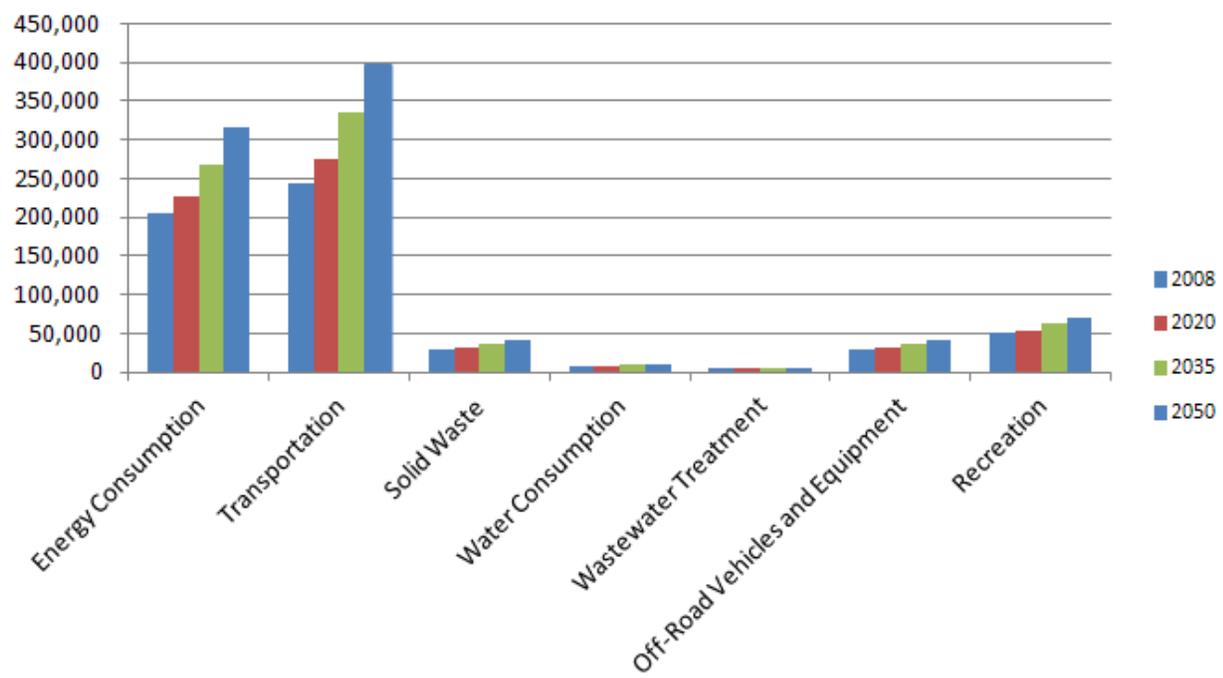


Table 4: Unincorporated County GHG Emissions Forecasts (Total and Jurisdictional)

Emissions Sector	2008		2020		2035		2050	
	MT CO ₂ -e	%						
Energy Consumption	206,309	7%	226,132	7%	268,384	8%	317,117	9%
Transportation	243,668	8%	275,326	9%	335,539	10%	397,095	12%
Solid Waste	29,233	1%	31,498	1%	36,221	1%	40,627	1%
Water Consumption	8,001	0%	8,621	0%	9,914	0%	11,120	0%
Wastewater Treatment	4,340	0%	4,677	0%	5,378	0%	6,032	0%
Off-Road Vehicles and Equipment	29,302	1%	31,572	1%	36,306	1%	40,723	1%
Recreation	50,401	2%	54,305	2%	62,448	2%	70,044	2%
Agriculture	132,234	4%	132,234	4%	132,234	4%	132,234	4%
Forestry	156,538	5%	156,538	5%	156,538	5%	156,538	5%
Stationary Sources	2,271,027	73%	2,271,027	71%	2,271,027	69%	2,271,027	66%
Total	3,131,054	100%	3,191,931	100%	3,313,989	100%	3,442,556	100%

Emissions Sector	2008		2020		2035		2050	
	MT CO ₂ -e	%						
Energy Consumption	206,309	36%	226,132	36%	268,384	36%	317,117	36%
Transportation	243,668	43%	275,326	44%	335,539	44%	397,095	45%
Solid Waste	29,233	5%	31,498	5%	36,221	5%	40,627	5%
Water Consumption	8,001	1%	8,621	1%	9,914	1%	11,120	1%
Wastewater Treatment	4,340	1%	4,677	1%	5,378	1%	6,032	1%
Off-Road Vehicles and Equipment	29,302	5%	31,572	5%	36,306	5%	40,723	5%
Recreation	50,401	9%	54,305	9%	62,448	8%	70,044	8%
Total	571,255	100%	632,133	100%	754,190	100%	882,757	100%

City of Redding

GHG Emissions Inventory

The 2008 baseline emissions inventory identified total citywide emissions of 1,040,919 MT CO₂e. As shown in Figure 6 and Table 5, transportation emissions were the highest source at 48% of the total emissions in 2008, followed by energy consumption at 32% of the total emissions. Stationary sources make up only 8% of the city's total emissions. There are no agriculture or forestry emissions generated inside the City. After the removal of the stationary source emissions, the City's jurisdictional inventory consists of 958,570 MT CO₂e. Within the jurisdictional inventory, the transportation sector makes up 52% of the total and the energy sector makes up 35% of the total.

Figure 6: 2008 City of Redding Total GHG Emissions Inventory

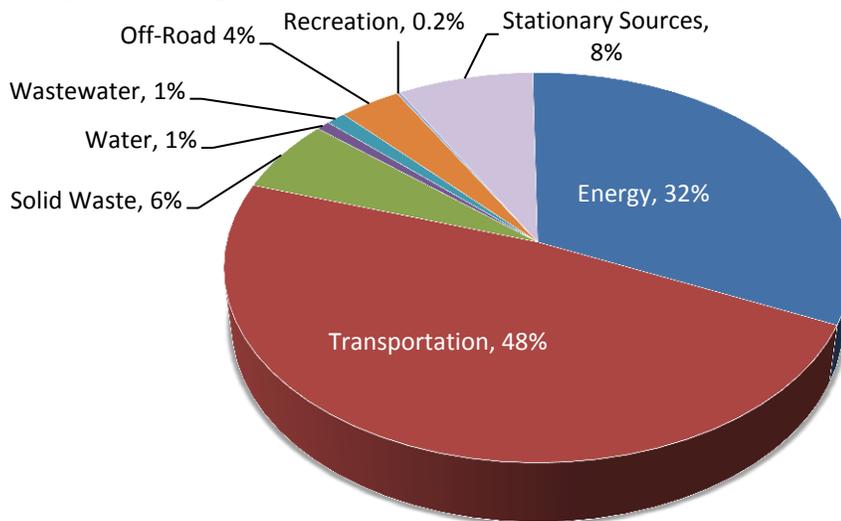
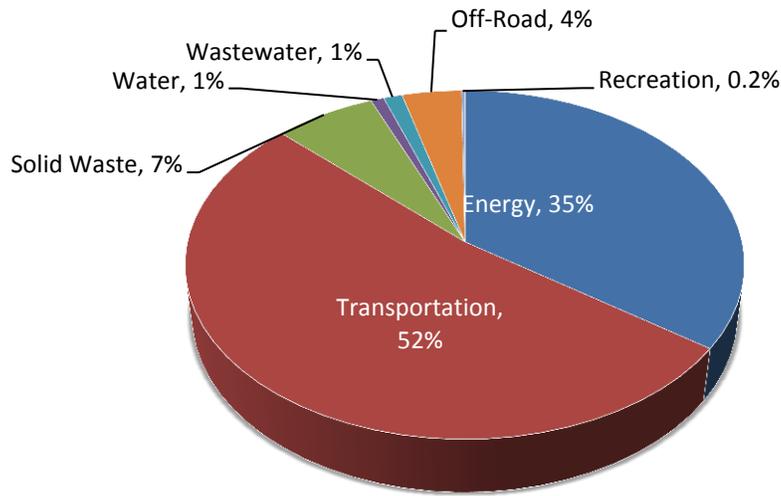


Table 5: City of Redding 2008 Baseline GHG Inventory (Total and Jurisdictional)

Emissions Sector	Total		Jurisdictional	
	MT CO ₂ -e	%	MT CO ₂ -e	%
Energy Consumption	333,253	32%	333,253	35%
Transportation	502,196	48%	502,196	52%
Solid Waste	63,653	6%	63,653	7%
Water Consumption	8,208	1%	8,208	1%
Wastewater Treatment	11,735	1%	11,735	1%
Off-Road Vehicles and Equipment	37,407	4%	37,407	4%
Recreation	2,117	0.2%	2,117	0.2%
Stationary Sources	82,350	8%		
Total	1,040,919	100%	958,570	100%

Note: The GHG emissions for stationary sources related activities have only been reported in the total inventory, and will not be considered for emissions projection, target-setting and measure development in the RCAP.

Figure 7: 2008 City of Redding Jurisdictional GHG Emissions Inventory



Jurisdictional Emission Forecasts

The City of Redding’s emissions are projected to be 1,115,897 MT CO₂e in 2020, 1,331,537 MT CO₂e in 2035, and 1,559,340 MT CO₂e in 2050 which correspond to 16%, 39%, 63% growth in emissions in the short-, mid- and long-term respectively from the 2008 baseline emissions. If current land use planning and transportation trends continue, transportation sector will remain the highest source of emissions in the Redding, increasing by 61% in 2050 from 2008 levels. The chart below shows that emissions related to the energy sector is also projected to grow in the short-, mid- and long-term by 10%, 30% and 54% respectively from 2008 levels. Other sources of GHG emissions increase will be solid waste, and off-road vehicles and equipment sectors.

Figure 9: City of Redding Jurisdictional GHG Emissions Forecasts

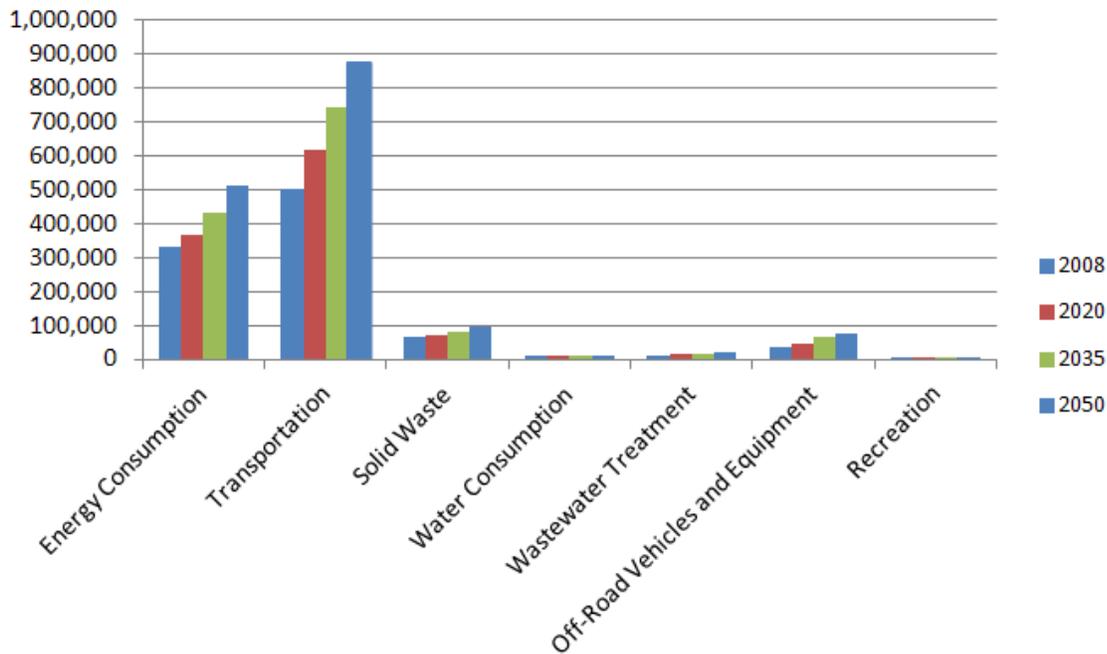


Table 6: City of Redding GHG Emissions Forecasts (Total and Jurisdictional)

Total City of Redding Emissions Forecasts								
	2008		2020		2035		2050	
Emissions Sector	MT CO ₂ -e	%						
Energy Consumption	333,253	32%	365,273	30%	433,524	31%	512,241	31%
Transportation	502,196	48%	614,881	51%	744,531	53%	874,830	53%
Solid Waste	63,653	6%	70,179	6%	79,350	6%	89,063	5%
Water Consumption	8,208	1%	9,050	1%	10,232	1%	11,485	1%
Wastewater Treatment	11,735	1%	12,939	1%	14,629	1%	16,420	1%
Off-Road Vehicles and Equipment	37,407	4%	41,242	3%	46,631	3%	52,339	3%
Recreation	2,117	0%	2,334	0%	2,639	0%	2,962	0%
Agriculture	0	0%	0	0%	0	0%	0	0%
Forestry	0	0%	0	0%	0	0%	0	0%
Stationary Sources	82,350	8%	82,350	7%	82,350	6%	82,350	5%
Total	1,040,919	100%	1,198,246	100%	1,413,887	100%	1,641,690	100%
Jurisdictional City of Redding Emissions Forecasts								
	2008		2020		2035		2050	
Emissions Sector	MT CO ₂ -e	%						
Energy Consumption	333,253	35%	365,273	33%	433,524	33%	512,241	33%
Transportation	502,196	52%	614,881	55%	744,531	56%	874,830	56%
Solid Waste	63,653	7%	70,179	6%	79,350	6%	89,063	6%
Water Consumption	8,208	1%	9,050	1%	10,232	1%	11,485	1%
Wastewater Treatment	11,735	1%	12,939	1%	14,629	1%	16,420	1%
Off-Road Vehicles and Equipment	37,407	4%	41,242	4%	46,631	4%	52,339	3%
Recreation	2,117	0%	2,334	0%	2,639	0%	2,962	0%
Total	958,570	100%	1,115,897	100%	1,331,537	100%	1,559,340	100%

City of Shasta Lake

GHG Emissions Inventory

In 2008, Shasta Lake generated a total of 215,988 MT CO₂e, with energy-related emissions being the largest source. The stationary source sector is the second largest source of emissions at 33% of total emissions, followed by transportation emission at 22% of the total. There are no agriculture or forestry emissions generated inside the city. With the removal the stationary source emissions, the City's 2008 jurisdictional emissions are 143,950 MT CO₂e. Within the jurisdictional inventory energy-related emissions contribute 58% of total emissions. Transportation emissions are the third largest source of emissions at 22% of the total emissions.

Figure 8: 2008 City of Shasta Lake Total GHG Emissions Inventory

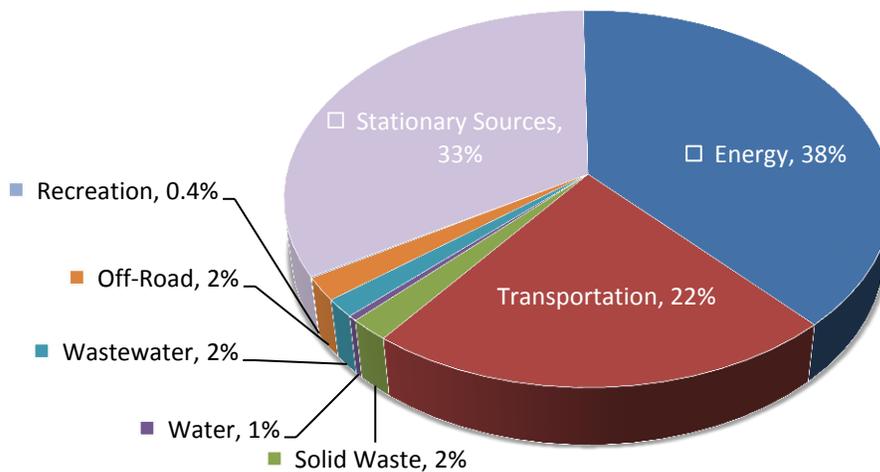
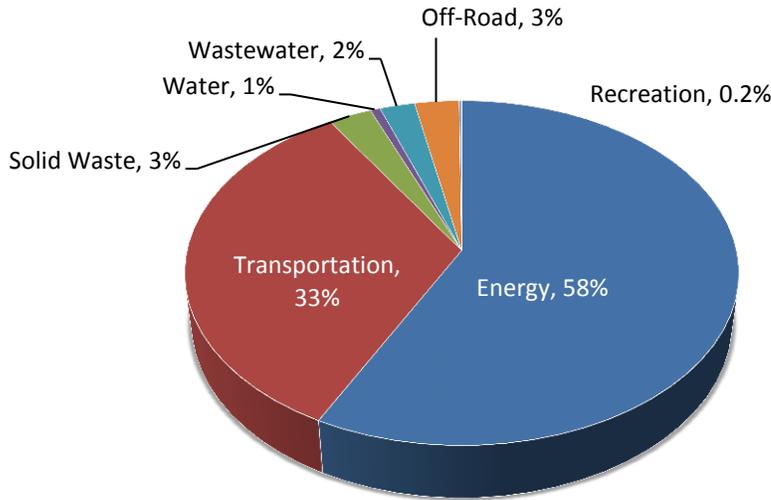


Table 7: City of Shasta Lake 2008 Baseline GHG Inventory (Total and Jurisdictional)

Emissions Sector	Total		Jurisdictional	
	MT CO ₂ -e	%	MT CO ₂ -e	%
Energy Consumption	82,943	38%	82,943	58%
Transportation	48,106	22%	48,106	33%
Solid Waste	4,139	2%	4,139	3%
Water Consumption	946	0.4%	946	1%
Wastewater Treatment	3,327	2%	3,327	2%
Off-Road Vehicles and Equipment	4,249	2%	4,249	3%
Recreation	240	0.1%	240	0.2%
Stationary Sources	72,038	33%		
Total	215,988	100%	143,950	100%

Note: The GHG emissions for stationary sources related activities have only been reported in the total inventory, and will not be considered for emissions projection, target-setting and measure development in the RCAP.

Figure 9: 2008 City of Shasta Lake Jurisdictional GHG Emissions Inventory



Jurisdictional Emission Forecasts

The City of Shasta Lake’s emissions are projected to be 162,037 MT CO₂e in 2020, 202,829 MT CO₂e in 2035, and 250,700 MT CO₂e in 2050 which correspond to 13%, 41%, 74% growth in emissions in the short-, mid- and long-term respectively from the 2008 baseline emissions.

The chart below shows that emissions related to the energy sector is projected to continue to be the largest source of emissions in Shasta Lake if energy practices and energy demand growth rates continues as anticipated. Emissions related to the energy sector are projected to grow by 90,912 MT CO₂e in 2020, 107,899 MT CO₂e in 2035 and 127,491 MT CO₂e in 2050. Transportation sector shows the most dramatic rate of growth, increasing by almost 63% in 2035 from 2008 transportation emission levels. By 2050, emissions from the transportation sector are anticipated to increase by 117% from the 2008 levels.

Figure 10: City of Shasta Lake Jurisdictional GHG Emissions Forecasts

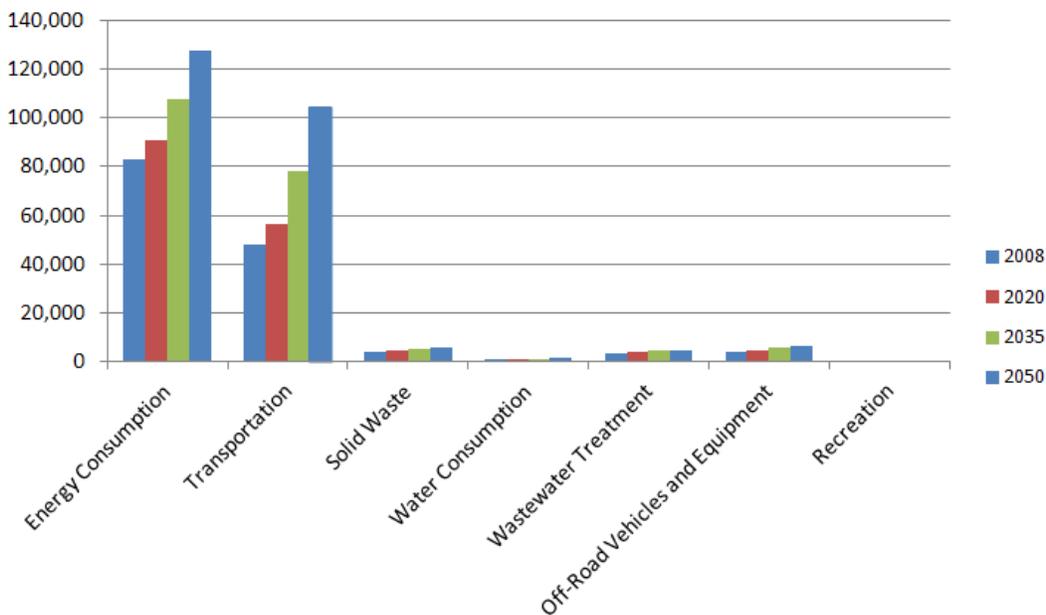


Table 8: City of Shasta Lake GHG Emissions Forecasts (Total and Jurisdictional)

Total City of Shasta Lake Emissions Forecasts								
	2008		2020		2035		2050	
Emissions Sector	MT CO ₂ -e	%						
Energy Consumption	82,943	38%	90,912	39%	107,899	39%	127,491	40%
Transportation	48,106	22%	56,608	24%	78,196	28%	104,443	32%
Solid Waste	4,139	2%	4,658	2%	5,369	2%	6,021	2%
Water Consumption	946	0%	1,065	0%	1,227	0%	1,376	0%
Wastewater Treatment	3,327	2%	3,744	2%	4,316	2%	4,840	1%
Off-Road Vehicles and Equipment	4,249	2%	4,780	2%	5,511	2%	6,180	2%
Recreation	240	0%	271	0%	312	0%	350	0%
Agriculture	0	0%	0	0%	0	0%	0	0%
Forestry	0	0%	0	0%	0	0%	0	0%
Stationary Sources	72,038	33%	72,038	31%	72,038	26%	72,038	22%
Total	215,988	100%	234,075	100%	274,867	100%	322,739	100%

Jurisdictional City of Shasta Lake Emissions Forecasts								
	2008		2020		2035		2050	
Emissions Sector	MT CO ₂ -e	%						
Energy Consumption	82,943	58%	90,912	56%	107,899	53%	127,491	51%
Transportation	48,106	33%	56,608	35%	78,196	39%	104,443	42%
Solid Waste	4,139	3%	4,658	3%	5,369	3%	6,021	2%
Water Consumption	946	1%	1,065	1%	1,227	1%	1,376	1%
Wastewater Treatment	3,327	2%	3,744	2%	4,316	2%	4,840	2%
Off-Road Vehicles and Equipment	4,249	3%	4,780	3%	5,511	3%	6,180	2%
Recreation	240	0%	271	0%	312	0%	350	0%
Total	143,950	100%	162,037	100%	202,829	100%	250,700	100%

City of Anderson

GHG Emissions Inventory

The 2008 baseline emissions inventory identified total citywide emissions of 88,625 MT CO₂e. As shown in Figure 11 and Table 9, transportation emissions were the largest in Anderson generating 56% of the total emissions in 2008, followed by energy-related emissions at 28% of the total emissions. There are no agriculture, forestry, and stationary source emissions generated in the city, so the total and jurisdictional inventory are identical.

Figure 11: 2008 City of Anderson Total and Jurisdictional GHG Emissions Inventory

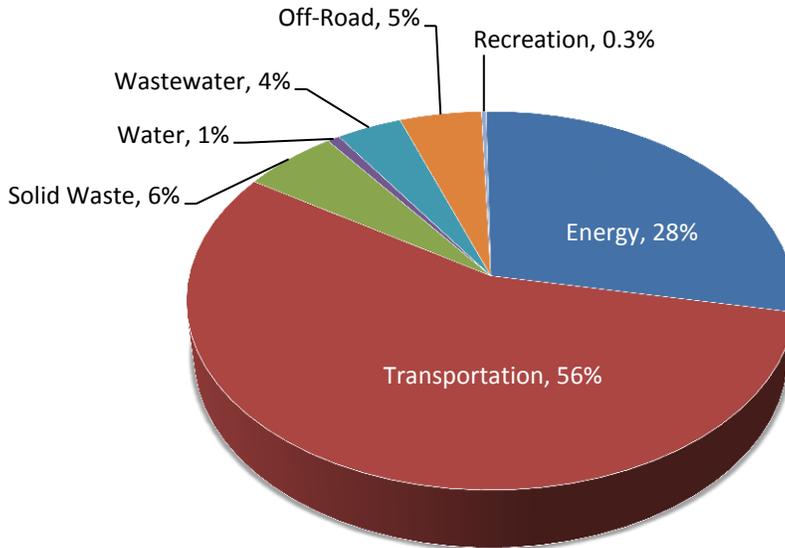


Table 9: City of Anderson 2008 Baseline GHG Inventory (Total and Jurisdictional)

Emissions Sector	Total		Jurisdictional	
	MT CO ₂ -e	%	MT CO ₂ -e	%
Energy Consumption	25,113	28%	25,113	28%
Transportation	49,679	56%	49,679	56%
Solid Waste	5,057	6%	5,057	6%
Water Consumption	661	1%	661	1%
Wastewater Treatment	3,495	4%	3,495	4%
Off-Road Vehicles and Equipment	4,372	5%	4,372	5%
Recreation	247	0.3%	247	0.3%
Stationary Sources	0	0%		
Total	88,625	100%	88,625	100%

Note: The GHG emissions for stationary sources related activities have only been reported in the total inventory, and will not be considered for emissions projection, target-setting and measure development in the RCAP.

Jurisdictional Emission Projections

The City of Anderson’s emissions were projected to be 98,854 MT CO₂e in 2020, 122790 MT CO₂e in 2035, and 150302 MT CO₂e in 2050 which correspond to 12%, 39%, 70% growth in emissions in the short-, mid- and long-term respectively from the 2008 baseline emissions.

Transportation sector shows a growth trend under the business-as-usual scenario, increasing by 14% in 2020, 49% in 2035, and 88% in 2050 from 2008 levels. Energy emissions will also continue to grow as the city grows in population in the short-, mid- and long-term and if energy practices and consumption rates continue in the same manner as 2008.

Figure 12: City of Anderson GHG Emissions Forecasts

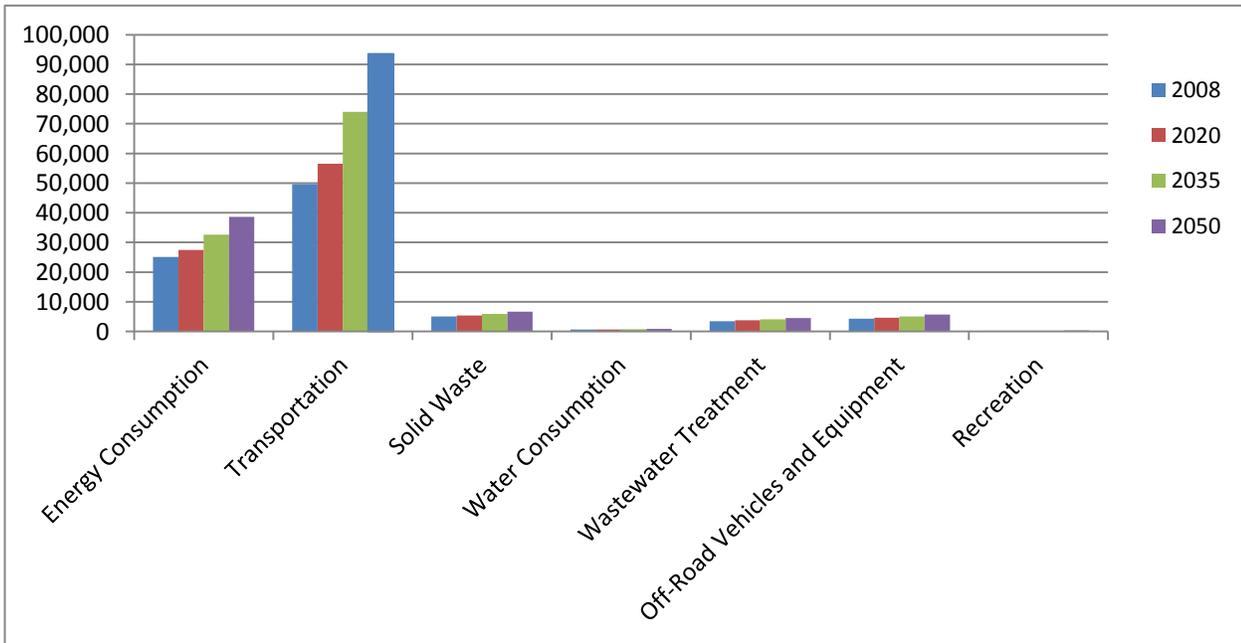


Table 10: City of Anderson GHG Emissions Forecasts (Total and Jurisdictional)

Emissions Sector	2008		2020		2035		2050	
	MT CO2-e	%	MT CO2-e	%	MT CO2-e	%	MT CO2-e	%
Energy Consumption	25,113	28%	27,526	28%	32,669	27%	38,601	26%
Transportation	49,679	56%	56,520	57%	73,953	60%	93,560	62%
Solid Waste	5,057	6%	5,414	5%	5,911	5%	6,632	4%
Water Consumption	661	1%	708	1%	773	1%	867	1%
Wastewater Treatment	3,495	4%	3,741	4%	4,085	3%	4,583	3%
Off-Road Vehicles and Equipment	4,372	5%	4,680	5%	5,110	4%	5,734	4%
Recreation	247	0%	265	0%	289	0%	324	0%
Agriculture	0	0%	0	0%	0	0%	0	0%
Forestry	0	0%	0	0%	0	0%	0	0%
Stationary Sources	0	0%	0	0%	0	0%	0	0%
Total	88,625	100%	98,854	100%	122,790	100%	150,302	100%

Jurisdictional City of Anderson Emissions Forecasts								
Emissions Sector	2008		2020		2035		2050	
	MT CO2-e	%	MT CO2-e	%	MT CO2-e	%	MT CO2-e	%
Energy Consumption	25,113	28%	27,526	28%	32,669	27%	38,601	26%
Transportation	49,679	56%	56,520	57%	73,953	60%	93,560	62%
Solid Waste	5,057	6%	5,414	5%	5,911	5%	6,632	4%
Water Consumption	661	1%	708	1%	773	1%	867	1%
Wastewater Treatment	3,495	4%	3,741	4%	4,085	3%	4,583	3%
Off-Road Vehicles and Equipment	4,372	5%	4,680	5%	5,110	4%	5,734	4%
Recreation	247	0%	265	0%	289	0%	324	0%
Total	88,625	100%	98,854	100%	122,790	100%	150,302	100%