

Nevada City

2008 Government Operations

Greenhouse Gas Emissions Inventory



Narrative Report

Produced by Sierra Business Council
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ICLEI-Local Governments for Sustainability USA

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Table of Contents

Executive Summary	6
The Purpose of Conducting an Inventory	6
Inventory Results	6
Regional and Local Context	8
Climate Change Mitigation Activities in California	8
Pacific Gas and Electric Company-Sponsored Inventory Project	9
Climate Change Mitigation Activities in Nevada City.....	10
Introduction	12
Nevada City Profile	12
General Methodology	12
Local Government Operations Protocol.....	12
Greenhouse Gases and Carbon Dioxide Equivalent.....	12
Calculating Emissions.....	13
The Scopes Framework.....	13
Organizational Boundaries.....	14
Types of Emissions.....	15
Significance Thresholds.....	15
Information Items	15
Understanding Totals	16
Emissions Total	17
Buildings and Other Facilities	17
Streetlights, Traffic Signals, and Other Public Lighting	19
Water Delivery Facilities	21
Wastewater Treatment Facilities	22
Vehicle Fleet and Mobile Equipment	23
Government-Generated Solid Waste	25
Employee Commute	27
Inventory Methodologies	30
Buildings and Other Facilities	30
Streetlights, Traffic Signals, and Other Public Lighting	30
Water Transport Facilities	30
Wastewater Treatment Facilities	31
Vehicle Fleet and Mobile Equipment	31
Government-Generated Solid Waste	31
Employee Commute	31

Next Steps 33

ICLEI’s Five Milestone Process 33

Setting Emissions Reduction Targets 34

 The Long-Term Goal..... 34

 State of California Targets and Guidance 35

 Departmental Targets 35

Creating an Emissions Reduction Strategy 35

Improving Emissions Estimates 36

Project Resources 37

Works Cited..... 38

List of Tables and Figures

Figure 1: 2008 Government Operations CO ₂ e Emissions by Sector	7
Table 1: 2008 Government Operations CO ₂ e Emissions by Sector	7
Figure 2: 2008 Government Operations CO ₂ e Emissions by Source	8
Table 2: LGO Protocol Report - Overall Emissions by Scope.....	8
Table 3: Greenhouse Gases	13
Table 4: Basic Emissions Calculations.....	13
Table 5: Inventoried Emissions Sources by Scope.....	14
Figure 3: Buildings and Other Facilities Emissions by Department	18
Table 6: Top 5 Largest Contributors - Emissions from Buildings Sector	18
Figure 4: Buildings and Other Facilities Emissions by Source.....	19
Table 7: Buildings and Other Facilities Emissions by Source	19
Table 8: LGO Protocol Report - Buildings Sector Emissions by Scope and Emission Type	19
Figure 5: Public Lighting Emissions by Subsector	20
Table 9: Public Lighting Emissions by Subsector	20
Table 10: LGO Protocol Report – Public Lighting Emissions by Scope and Emission Type.....	21
Table 11: Water Delivery Facilities Emissions by Subsector	21
Table 12: LGO Protocol Report - Water Delivery Facilities Emissions by Scope and Emission Type	21
Figure 6: Wastewater Treatment Facilities Emissions by Subsector	22
Table 13: Wastewater Treatment Facilities Emissions by Subsector	23
Table 14: LGO Protocol Report - Wastewater Treatment Facilities Emissions by Scope and Emission Type	23
Figure 7: Vehicle Fleet Emissions by Source.....	24
Table 15: Vehicle Fleet Emissions by Source.....	24
Figure 8: Vehicle Fleet Emissions by Department	24
Table 16: LGO Protocol Report - Vehicle Fleet Emissions by Scope and Emission Type	25
Figure 9: Government Waste Emissions by Subsector.....	26
Table 17: Government Waste Emissions by Subsector.....	26
Table 18: LGO Protocol Report - Government Waste Emissions by Scope and Emission Type	26
Figure 10: Employee Commute Emissions by Vehicle Class	27
Table 19: Employee Commute Emissions by Vehicle Class.....	27
Table 20: LGO Protocol Report - Employee Commute Emissions by Scope and Emission Type	28
Table 21: Employee Commute - Reasons for Not Carpooling Data	28
Table 22: Employee Commute - Reasons for Not Taking Transit	28
Table 23: Employee Commute - Reasons for Not Walking/Biking.....	29
Table 24: Employee Commute - Travel Mode Data.....	29
Table 25: Employee Commute - Miles from Work Data.....	29
Table 26: Employee Commute - Time to Work Data	29
Figure 11: ICLEI's Five Milestones for Climate Mitigation.....	33

Executive Summary

The Purpose of Conducting an Inventory

Each day, local governments operate buildings, vehicle fleets, street lights, traffic signals, water systems, and wastewater plants; local government employees consume resources commuting to work and generate solid waste which is sent for disposal. All of these activities directly or indirectly cause the release of carbon dioxide and other greenhouse gases into the atmosphere. This report presents the findings and methodology of a local government operations (LGO) greenhouse gas emissions inventory for Nevada City. The inventory measures the greenhouse gas emissions resulting specifically from Nevada City's government operations, arranged by sector to facilitate detailed analysis of emissions sources. The inventory addresses where and what quantity of emissions are generated through various local government activities. Through analysis of a local government's emissions profile, Nevada City can tailor strategies to achieve the most effective greenhouse gas emission reductions.

Strategies by which local governments can significantly reduce emissions from their operations include increasing energy efficiency in facilities and vehicle fleets, utilizing renewable energy sources, reducing waste, and supporting alternative modes of transportation for employees. The benefits of these actions include lower energy bills, improved air quality, and more efficient government operations, in addition to the mitigation of local and global climate change impacts. By striving to save taxpayer money through efficient government operations, Nevada City is working to improve government services in a smart and targeted way that will benefit all of the City's residents.

Nevada City recognizes that climate change resulting from the greenhouse gas emissions of human activities is a reality. Global average surface temperatures are rising due to intensification of activities that release carbon dioxide and other greenhouse gases into the atmosphere. Potential impacts of climate change to Nevada County include reduced snow pack, delayed snow accumulation and earlier snow melting, loss of critical habitat and ecosystems, shortages in runoff and water supply, increase in forest pests and diseases, and related decreases in tourism.

By conducting this inventory, Nevada City is acting now to limit future impacts that threaten the lives and property of its residents and businesses, make government operations more efficient, and improve the level of service it offers to the residents of Nevada City.

Inventory Results

The following figures summarize the results of the LGO greenhouse gas emissions inventory for Nevada City, by sector and source. As shown in Figure 1, the three sectors responsible for the greatest percentage of emissions were the wastewater treatment facility (34%), followed by buildings and facilities (22%), and vehicle fleet (20%). Figure 2 illustrates that the greatest source of emissions was electricity (31%), followed by a split between natural gas (22%) and

gasoline (22%). Table 1 is broken down by sector, and demonstrates total greenhouse gas emissions for Nevada City operations in 2008 (730 metric tons CO₂e). Table 2 delineates the greenhouse gas components (CO₂, CH₄, N₂O, etc.), which are assigned a standard metric of carbon dioxide equivalent (CO₂e) then combined to describe total emissions.

Figure 1: 2008 Government Operations CO₂e Emissions by Sector

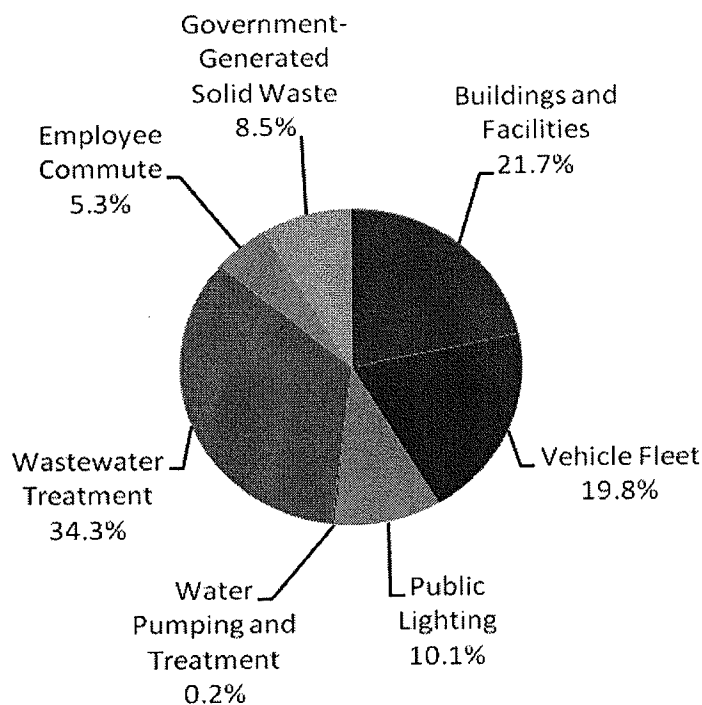


Table 1: 2008 Government Operations CO₂e Emissions by Sector

Sector	Metric Tons CO ₂ e
Buildings and Facilities	158.53
Vehicle Fleet	144.74
Public Lighting	73.82
Water Pumping and Treatment	1.64
Wastewater Treatment	250.31
Employee Commute	38.57
Government-Generated Solid Waste	62.19
Totals	729.80

Figure 2: 2008 Government Operations CO₂e Emissions by Source

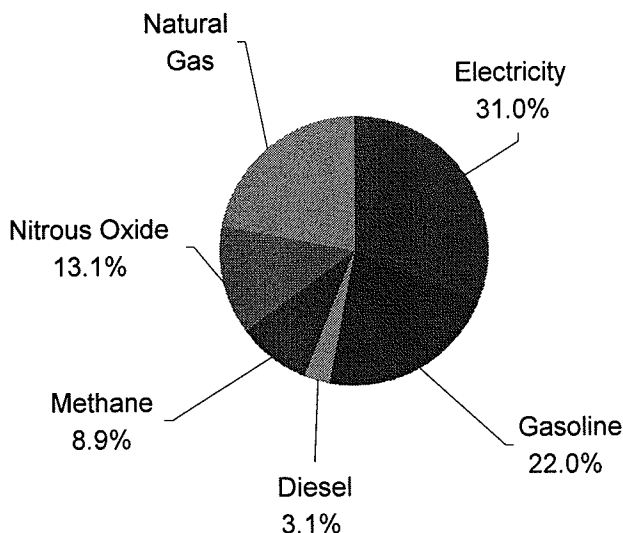


Table 2: LGO Protocol Report - Overall Emissions by Scope

	Total Emissions			
	CO ₂ e	CO ₂	CH ₄	N ₂ O
Scope 1	402.49	299.18	0.16	0.32
Scope 2	226.55	224.69	0.01	0.01
Scope 3	100.75	37.74	2.96	0.00
Information Items	20.37	20.21	0.0012	0.0005

For more detail on the concepts of scopes, sources, and sectors, and to review more granular data produced through the inventory study, please refer to the full report on the following pages.

Regional and Local Context

Climate Change Mitigation Activities in California

Since 2005, the State of California has responded to growing concerns over the effects of climate change by adopting a comprehensive approach to addressing emissions in the public and private sectors. This approach was officially initiated with the passage of the Global Warming Solutions Act of 2006 (AB 32), which requires the state to reduce its greenhouse gas emissions to 1990 levels by 2020. The AB 32 Scoping Plan was developed to identify strategies for meeting the AB 32 goal, and was adopted by the California Air Resources Board (ARB) in December 2008. Among many other strategies, it encourages local governments to reduce emissions in their jurisdictions by 15 percent below current levels by 2020. In addition, it identifies the following strategies that will impact local governance:

- Develop a California cap-and-trade program
- Expand energy efficiency programs
- Establish and seek to achieve reduction targets for transportation-related GHG emissions

- Expand the use of green building practices
- Increase waste diversion, composting, and commercial recycling toward zero-waste
- Continue water efficiency programs and use cleaner energy sources to move and treat water
- Reduce methane emissions at landfills
- Preserve forests that sequester carbon dioxide

Other measures taken by the state include mandating stronger vehicle emissions standards (AB 1493, 2002), establishing a low-carbon fuel standard (EO # S-01-07, 2007), mandating a climate adaptation plan for the state (S-EO # 13-08, 2008), establishing a Green Collar Job Council, and establishing a renewable energy portfolio standard for power generation or purchase in the state. The state also has made a number of legislative and regulatory changes that have significant implications for local governments:

- SB 97 (2007) required the Office of Planning and Research to create greenhouse gas planning guidelines for the California Environmental Quality Act (CEQA). In addition, ARB is tasked with creating energy-use and transportation thresholds in CEQA reviews, which may require local governments to account for greenhouse gas emissions when reviewing project applications.
- AB 811 (2007) authorizes all local governments in California to establish special districts that can be used to finance solar or other renewable energy improvements to homes and businesses in their jurisdiction.
- SB 375 (2008) revises the process of regional transportation planning by metropolitan planning organizations (MPOs), which are governed by elected officials from local jurisdictions. The statute calls on ARB to establish regional transportation-related greenhouse gas targets and requires the large MPOs to develop regional “Sustainable Communities Strategies” of land use, housing and transportation policies that will move the region towards its GHG target. The statute stipulates that transportation investments must be consistent with the Sustainable Communities Strategy and provides CEQA streamlining for local development projects that are consistent with the Strategy.

Pacific Gas and Electric Company-Sponsored Inventory Project

With funding from California utility customers under the auspices of the California Public Utilities Commission, and administrative duties generously provided by the Pacific Gas and Electric Company (PG&E), ICLEI - Local Governments for Sustainability was contracted to work with Sierra Business Council (SBC) to assist in the quantification of greenhouse gas emissions in Nevada City and the following other participating jurisdictions: the cities of Ione, Jackson, Loomis, Plymouth, Sutter Creek, Placerville, Amador, Auburn, Lincoln, and Grass Valley and the counties of Alpine, Nevada, Plumas, Placer, and Sierra. ICLEI is a nonprofit association of local governments that provides information, delivers training resources, organizes conferences, facilitates networking and city-to-city exchanges, carries out research and pilot projects, and offers technical services and consultancy related to climate planning. Throughout

2010, ICLEI provided training and technical assistance to participating regional organizations, interns, and local government staff and facilitated the completion of this report.

Climate Change Mitigation Activities in Nevada City

Nevada City has also been dedicated to reducing their carbon footprint and creating a more sustainable future for its residents. In 2008 the City installed solar panels atop City Hall in Nevada City, the latest sign of Nevada County's position at the forefront of alternative energy efforts in the state. "The system installed will generate nine kilowatts of electricity, providing about 18 percent of the electrical power needs of the building," current City Councilwoman Reinette Senum said. Power generated this way reduces the need for electricity from power plants. **(Kleist, 2008)**

"Nevada City now has three solar systems — others are at the city pool at Pioneer Park and the maintenance yard — that together generate about 23 kilowatts of electricity," Pacific Gas and Electric Company (PG&E) spokesman Brian Swanson said. "That's about 30 percent of the power they require, saving the city about \$6,900 yearly, at current rates," Senum added. **(Kleist, 2008)**

"The city systems will reduce carbon dioxide emissions by 18,000 pounds each year. This equates to planting about 1,500 trees each year or not driving an average sedan 65,000 miles," said Kelly Casterson of PowerUp-NC, the Nevada City nonprofit she co-founded with Senum that partnered with the City, PG&E and Plan It Solar of Penn Valley, which installed the system. "Including the municipal systems, there is now a total of 63,380 watts of commercial solar energy (generated) inside the Nevada City limits," Power-UpNC said in a written statement. "We are quickly climbing the ladder to being the City with the most solar electricity per capita in California." **(Kleist, 2008)**

On October 22, 2008, the City Council of Nevada City, California adopted Resolution 2008-58 "in support of a community Energy Solutions Task Force". The all volunteer Task Force, modeled after a handful of similar task forces from around the world, was given two tasks:

1. Assess Nevada City's specific vulnerabilities to more expensive and less available energy, especially liquid fuels for transportation.
2. Recommend actions that the City could take to reduce these vulnerabilities and to prepare for their effects.

A report titled, "Nevada City Energy Solutions Task Force" was the product of this Resolution. This is yet another example of just how proactive and dedicated Nevada City is in mitigating their effect on climate change. **(APPLE)**