



RESOLUTION 35, 2009

ADOPTING A CLIMATE ACTION PLAN FOR CLALLAM COUNTY

THE BOARD OF CLALLAM COUNTY COMMISSIONERS finds as follows:

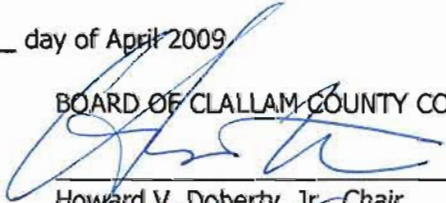
1. In early March 2008, County Administrator Jim Jones, Jr. asked for employee volunteers to serve on a Climate Advisory Group whose purpose would be to address County practices that can positively affect the environment and reduce the County's carbon footprint.
2. The first meeting was convened by John Miller, Director of the Department of Community Development on March 26, 2008 with representatives of several departments in attendance.
3. The group was tasked with developing recommendations to the Board of Commissioners and on June 10, 2008 the Board provided a letter outlining their recommendations.
4. Resolution 77, adopted August 5, 2008 (included herein by reference), formally established the Climate Action Group as an ad hoc committee, and tasked them to perform specific activities.
5. Monthly meetings were held and the Group:
 - Completed an inventory of greenhouse gas emissions using 2006 as the inventory year and utilized International Council for Local Environmental Initiatives (ICLEI) software
 - Conducted a commuter survey
 - Drafted a Climate Action Plan prioritized by the emissions inventory recommending a baseline data year, interim emissions reduction targets, and emissions reduction measures
 - Initiated an intra-county office recycling program
 - Collaborated with Clallam Transit on a subsidized bus pass program for County employees
 - Conducted presentations for interested departments on the County's Climate Action program

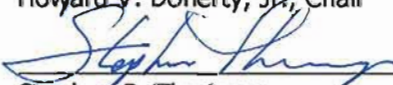
NOW, THEREFORE, BE IT RESOLVED by the Board of Clallam County Commissioners, in consideration of the above findings of fact:

1. Adopts the attached Climate Action Plan.

PASSED AND ADOPTED this twenty-first day of April 2009

BOARD OF CLALLAM COUNTY COMMISSIONERS


Howard V. Doherty, Jr., Chair


Stephen P. Tharinger


Michael C. Chapman

ATTEST:


Trish Holden, CMC, Clerk of the Board

CLALLAM COUNTY CLIMATE ACTION PLAN



Prepared by

The Climate Action Group

Submitted to

Clallam County Board of Commissioners

April 21, 2009

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EXECUTIVE SUMMARY

The Clallam County Climate Action Plan is based upon an inventory of energy usage and greenhouse gas (GHG) emissions compiled in 2008 by the Climate Action Group (CAG) under the authority of the Board of Commissioners. Data on energy usage in base year 2006 was collected for County government operations (Appendix C). Energy use and emissions were categorized into buildings, transportation (including the County fleet and the 2007 employee commute) and other (sewer provision, streetlights, and solid waste). The Clean Air and Climate Protection (CACP) software provided by ICLEI converted the energy-usage data into units of MMBtu and calculated CO₂e (equivalents of CO₂ released) in tons (one ton equals 2,000 pounds), which allows the comparison of disparate activities via a common variable.

The *Buildings* category accounts for 46 percent of the CO₂e generated by the County (Table 1, Figure 1). The Courthouse complex, including the Jail, is responsible for approximately 29 percent of the total CO₂e generated by the County. The CAG utilized a regional energy mix coefficient in the inventory to enable the comparison of County emissions to external jurisdictions (Appendix A). This regional mix utilized a higher percentage of coal than the County's electricity providers, so this adoption skews the County's emissions inventory in the interest of future market entry.

The *Transportation* category accounts for approximately 51 percent of the CO₂e generated by the County (Table 1, Figure 1). The County's fleet, including Road Division equipment and Sheriff's Department patrol cars, contributes 30 percent of the CO₂e generated by the County; employee commuting in 2007 accounts for 21 percent.

The *Other* category accounts for less than 2 percent of the CO₂e generated in the County, of which 1.9 percent is the Clallam Bay/Seki wastewater treatment facility (Table 1). The remaining 0.1 percent can be attributed to the methane produced by the decomposition of waste hauled from County facilities. Solid waste materials, however, have a significant embedded energy whose CO₂e contribution is attributed at the point of manufacture, not at the point of consumption or disposal, thus waste reduction activities are still important.

Table 1
Clallam County Government Emissions in 2006

Category	CO2 Equivalent (tons CO₂e)	Percentage of County Emissions
Buildings	2,580	46
Courthouse	1,629	29
Juvenile Services	334	6
Transportation	2,849	51
Fleet	1,660	30
Commuters	1,189	21
Other	177	>3
CB/S Sewer System	107	1.9
Solid Waste	?	Negligible
Total	6,459	100

Comparison of ***Energy Intensities*** for different stationary sources is essentially complete. Energy intensity is a more specific measurement than energy efficiency, as it takes into account types of use, hours of operation, and number of people served as a reflection of the square footage of the building. The Clallam County Courthouse, which includes the Jail, and the Juvenile Services complex are the most energy intensive buildings in the County.

Limitations

Several assumptions were made to complete and interpret the Employee Commute Data (Appendix B). The data available for 2006 was chosen as it was the earliest year that offered accessible electronic records. Precise calculations could be made based upon actual 1990 energy consumption levels if staff time becomes available to acquire and resolve the data. After extensive CAG discussion, including contact with ICLEI, Clallam County has chosen to adopt their inventory year as their baseline year. The baseline year is a clean dataset and the consensus was that an inexact backcast would not yield results that would justify the effort. It is more important to begin reduction measures in pursuit of our overarching goal of an 80 percent reduction in emissions by 2050. The following interim emissions reduction targets will help the County meet this goal: 10 percent by 2012, 20 percent by 2015, and 50 percent by 2030. These targets reflect a feasible ramp-up in reduction measures for the County that will provide exemplary public service and meet public mandates while benefiting from maturing technologies and carbon reduction exchange markets.

Conclusion

The Clallam County Climate Action Plan provides the policy framework, goals, and strategies to support the reduction of the County's GHG emissions while maintaining an exemplary level of service. The Action Plan contains the same categories used in the inventory and consists of parallel yet prioritized employee education and technical solutions. Several pilot projects are clearly identified to enable short term action in pursuit of long term reduction goals. Many local, regional, state, national, and international partners exist and by taking this path, the County is well positioned to join the discussion and offer practiced insight to future rural government participants. The GHG Inventory serves as a foundation for understanding the County's use of energy and the sources of greenhouse gas emissions. It offers a baseline from which to estimate historic 1990 levels and to make projections. It establishes targets for reduction of emissions and sets priorities for taking action to reach Clallam County government's long-term goal of reducing our GHG emissions to levels 80 percent lower than 2006 levels by 2050. In summary, this Plan and Inventory is an early step on a long journey.

Acknowledgements

Many people deserve recognition for their efforts on this project during 2008. The support of Community Development Director John Miller and Commissioner Mike Doherty provided the space for the CAG to form. All the members of the CAG deserve recognition of their efforts; in particular Dan Flynn, Trish Holden, Heather Catuzo, Ross Tyler, and Starla Jodoin were committed participants. KC Carmean, Galin Downing, and Jean Anderson provided crucial data support during the inventory process. The support of their staff time by Public Works Director Craig Jacobs, Parks Manager Joel Winborn, and County Auditor Patty Rosand is greatly appreciated. The members of the Clallam County Energy Team provided key insights on existing County practices and helped judge the efficacy of potential reduction measures. Joanna Loehr of the Port Townsend Climate Action Committee (CAC) provided invaluable technical assistance and templates for our efforts, and the CAC's support of our efforts heralds productive future partnerships. Amy Shatzkin from ICLEI provided timely input throughout and Alexia Kelley-Schwarz from The Climate Trust helped provide structure to the Action Plan. To adapt the CAG motto: Together we can indeed make a difference!

ACTION PLAN

The *Clallam County Climate Action Plan* is organized by staffing and categories (buildings, fleet, commute, other) with subsidiary organizing themes to guide future reduction measures. Four Pilot Projects were identified during the inventory process and offer opportunities for highly visible initial reduction measures that will have a measurable impact on the County's emissions footprint. Green practices that do not immediately reduce the County's emissions yet provide positive environmental outcomes are listed in conclusion.

This plan is not meant to be prescriptive; rather it focuses on policy statements, goals, and examples to assist future County energy usage decisions. This prioritized Action Plan is based on a GHG Inventory conducted in accordance with the protocol of ICLEI, an established non-profit organization that assists local governments to meet sustainability goals. It positions the County to engage in future carbon emissions reduction markets and seek external sources to solve the funding gap for infrastructure replacement. This Plan establishes Clallam County as a leader in climate change issues among rural counties in Washington and positions us well for future funding opportunities.

STAFFING

The Climate Action Group recommends a dedicated employee to coordinate energy efficiency efforts across Departments and represent the County as opportunities to engage with external partners expand. This position could be a partial re-allocation of existing staffing hours across affected departments; i.e. Community Development, Public Works, Sheriff.

The Climate Action Group will continue to facilitate emissions reductions efforts and organize other green practices that do not immediately reduce the County's emissions but provide positive environmental outcomes. Efforts could include fostering sustainable behavior, waste reduction strategies, and expediting the review of green building efforts.

BUILDINGS

GOAL: Conserve

STRATEGY: Reduce electricity and fossil heating fuel consumption through educational outreach and technological improvements.

GOAL: Collaborate

STRATEGY: Prioritize and seek external support and partners for retrofitting buildings to consume less electricity and heating fuels.

GOAL: Offset

STRATEGY: Explore methods to offset the impact of electricity consumption through establishing carbon-trading markets.

FLEET

GOAL: Conserve

STRATEGY: Document existing policies that encourage conservation during fleet use, with attention to seasonal differences and service provision obligations. Provide clear information to operators on how to strategically conserve fuel.

GOAL: Collaborate

STRATEGY: Increase the legibility of and utilization of coordinated equipment policies and fuel sharing opportunities with regional partners.

GOAL: Offset

STRATEGY: Explore methods for meeting the challenge of the additional cost to use biodiesel across the fleet.

COMMUTE

GOAL: Collaborate

STRATEGY: Explore methods to encourage commuting and alternative transportation through innovative uses of the parking lot. Partner with Clallam Transit to coordinate timely bus service and vanpool offers for County staff.

GOAL: Provide Incentives

STRATEGY: Explore means of supporting and rewarding staff that use alternative means to commute to work, including examples expressed in the commuter survey.

PILOT PROJECTS

Fairgrounds

GOAL: Conserve

STRATEGY: Explore where electricity is consumed and waste is created in Fairground operations. Identify local partners to help move the Fair toward a minimal-waste event.

GOAL: Collaborate

STRATEGY: Initiate an energy audit of electricity consumption and identify local partners to help move the fairgrounds to a net energy producer.

GOAL: Promote

STRATEGY: Promote the efforts and utilize the fairgrounds as a central gathering place for similar efforts on the Peninsula.

Parks Department

GOAL: Conserve

STRATEGY: Conduct an energy audit on structures and prioritize retrofits. Document current conservation efforts and areas of potential improvement, including equipment sharing and vehicle use policies.

GOAL: Collaborate

STRATEGY: Identify all external lighting that could be powered by SV panels. Identify external partners to support prioritized structural energy efficiency alterations. Explore potential partners for solar/wind installations for campgrounds and summer use areas.

GOAL: Promote

STRATEGY: Promote a "Green Parks" program and use parks as a platform to promote conservation efforts.

Courthouse Complex

GOAL: Conserve

STRATEGY: Explore opportunities to refine electricity consumption data. Provide educational material to staff to promote electricity consumption best practices.

GOAL: Collaborate

STRATEGY: Work with external partners to promote and enhance County Courthouse operations that reduce impact of operations.

GOAL: Offset

STRATEGY: Explore external funding mechanisms to replace mechanical and electrical systems and install new technologies that reduce impacts.

Clallam Bay Sekiu Wastewater Treatment Plant

GOAL: Conserve

STRATEGY: Look at Plant operations and vehicles, including fuel type, to assess if energy efficiency measures could be implemented by combining operations with regional institutional partners, such as the Clallam Bay prison.

GOAL: Offset

STRATEGY: Explore external partnerships to shift Plant electricity demand to on-site renewables and co-generation from waste by products.

GREEN PRACTICES

Foster Sustainable Behavior

- Inform staff how to lessen the impact of workplace practices.
- Recognize participants who lead by example as Climate Champions within participating departments.
- Partner with public health and Transit providers on programs that promote practices that reduce the impact of County staff on the environment.

Waste Reduction

- Implement an enhanced internal recycling program and explore the provision and maintenance of recycling facilities to the public.
- Promote electronic document circulation and duplex printing on predominately post-consumer recycled paper where feasible.

- Investigate the archival challenges of using post-consumer recycled paper or going “paperless” for internal and external communication purposes.

Expedite “Green” Permit Reviewing

- Provide clear participation guidelines to local contractors.
- Adjust fee structure and permit prioritization process to encourage developers to “build green”.
- Promote low impact development and green building practices.

Partner with External Local Sustainability Practitioner’s

- Develop a program to formally acknowledge County residents and businesses that foster sustainable behavior.
- Partner with regional governments, organizations, and individuals on sustainability projects. Examples include the Olympic National Park, the North Olympic Peninsula Resource Conservation and Development Council, and Jefferson County.

Appendix A

Energy Mix and Coefficient Rationale from ICLEI

Electricity is often the single greatest source of end-use energy consumed by local governments. Electricity generation facilities run on a variety of energy sources including coal, natural gas, geothermal, hydroelectric and nuclear. Each of these energy sources produces a different amount of carbon dioxide, which is reflected by the carbon emission factor (also referred to as a coefficient). The carbon emissions factor provides information about how much carbon dioxide is emitted per kWh of electricity consumed. For example, hydroelectric power produces virtually no carbon dioxide emissions and thus has a very low carbon emissions factor, while coal which is very carbon intensive, produces a very high carbon emissions factor.

Average emission factors for the regional electricity grid are recommended for use in both developing the emissions inventory and quantifying emission reductions from electricity efficiency measures. Despite the fact that most regional utilities can provide specific carbon emissions factors or fuel mix data for energy supply, the average grid electricity factors are recommended for use for the following reasons:

1. Average grid electricity emission factors provide a more accurate picture of electricity consumption. Average grid electricity emissions are generated for each kilowatt-hour over an entire year, and take into account both the fuels used and the generation and emission control technologies used in each plant.
2. Average grid electricity also shows more accurately how electricity is bought and sold across the grid. The emissions generated from electricity vary by season, day of the week and even by time of day. This variation is due to the fact that different electricity generating plants come on-line to meet whatever the demand for electricity is at any given time.
3. It is impossible to obtain consistent, accurate, utility-specific carbon coefficients across the state or region. Most utilities in Washington cannot provide carbon emission factors for the electricity that is actually delivered to consumers. All utilities in the state report annually to the State Department of Community, Trade and Economic Development's (CTED) Energy Policy Division the total volume of electricity produced and the particular fuel mix used to produce this electricity. However, this information does not reflect the degree to which electricity was bought or sold across the grid. Additionally, this data cannot provide carbon emissions factors as there is no information about the efficiency of electricity production (evidenced by power generation method) or emissions control technologies.

It's not prudent to use utility-specific coefficients unless an electric utility reported their emissions using the California Climate Action Registry's Power Utility Protocol, which requires accurate, verifiable accounting of the impacts of purchased and sold electricity. In the Puget Sound, Seattle City Light is a member of this registry, and the emissions factors they supply should be used. As noted above, fuel mix data that utilities report typically does not correctly account for the impact of buying and selling electricity, and should not be used.

Recommendations for Carbon Emissions Coefficients

The current recommendation of the Local Government GHG Protocol for government operations recommends the use of either a regional coefficient from eGRID or a verified utility specific coefficient. The Protocol allows a third, alternative method (i.e. not recommended or verifiable but still acceptable for ICLEI members) which is a utility specific protocol determined by using the methodology in the California Climate Action Registry power and utility protocol without verification.

Sent via email on 10/8/08 from Amy Shatzkin, Program Manager ICLEI-Local Governments for Sustainability Pacific Northwest Regional Capacity Center to Sam Fox, Chair, Clallam County Climate Action Group.

Since you have an existing target and no 'official' baseline, the simplest thing to do is simply use the inventory year – 2006 – as your baseline year. There is no compelling reason to use 1990, and backcasting is difficult and inexact. We can certainly help you if the County insists on using 1990, but we don't recommend it.

Sent via email on 3/5/09 from Justus Stewart, Program Associate, ICLEI-Local Governments for Sustainability Inc. to Sam Fox, Chair, Clallam County Climate Action Group.

Appendix B

Employee Commute Calculation Notes, Survey Templates, and Responses

An Internet-based employee commuter survey was conducted over the month of August 2008. A total of 156 employees responded – 37 percent of the total number of 422 benefited employees. Using an on-line sample size calculator, the results of the survey are within 6 percent of the average response to the question with a 95 percent confidence¹. In other words, the number of responses supports extrapolation within reason for the purposes of this inventory. Less than 10 respondents exclusively used bicycles, buses, or walking for commuting purposes, thus their impact was not considered in the following calculations.

The first assumption of the survey calculations was that current commuting habits would not have changed significantly from 2006 to 2008. There were 250 workdays in the 2006 baseline year. The second assumption was that the average employee would have taken all 12 accrued days of vacation and further utilized 3 sick leave days, resulting in an average number of 235 days of work.

Employees were asked to provide their commute distance one way and to identify the primary vehicle and fuel type used in their commute. All passenger cars that used unleaded fuel were assumed to be mid-sized, all passenger cars that used diesel fuel were assumed to be full size, and all trucks were assumed to be light trucks upon entry into the CACP software.

The one-way distances were totaled by vehicle and fuel type, which resulted in an estimated distance of commute per day by vehicle and fuel type for the entire County. These one-way totals were doubled, to create a round trip distance, and then multiplied by the estimated 235 workdays for 2006. The total was then divided by 0.37 to result in miles per year for all employees for the base year of 2006.

The text of the Clallam County Employee Commuter Survey is shown below.

Thank you for participating in this survey on Clallam County employees' commuter experience. Carbon dioxide is the major gas emitted from the burning of fuel. Through the greenhouse effect, carbon dioxide is implicated in global warming and climate change. The Clallam County Climate Action Group has been authorized by the Clallam County BOCC to develop a baseline emissions inventory and a concurrent action plan for "cutting greenhouse gas emissions to levels 80% lower than 1990 levels by 2050." The answers provided by you and your peers will help the Climate Action Group generate this baseline report and potentially bolster support for administrative policies that support increased commuter options. Participation is voluntary and anonymous and only totals and averages will be shared. This survey is for **ALL** county employees, not just those who work at the courthouse. Thank you for your time!

1. Miles traveled commuting to work (one way)

¹ <http://www.surveysystem.com/sscalc.htm>

2. How many days a week do you commute via:
 - Private Auto
 - Motorcycle
 - Carpool
 - Vanpool
 - Use Transit
 - Bike
 - Walk
3. Vehicle type most often used while commuting:
 - Passenger car
 - Motorcycle
 - SUV, van, or pickup
 - Hybrid car
 - Other
4. Fuel used during commute:
 - Gasoline
 - Diesel
 - Biodiesel
 - Other
5. What (if any) are the obstacles that prevent you from riding the bus? (check all that apply)
 - Inconvenient work schedule
 - Incompatible personal schedule
 - Inconvenient route or bus stop location
 - Hazardous road crossing to bus stop location
 - Childcare restrictions
 - Limited bus bicycle rack capacity
 - Don't know where to get information
 - Insufficient Park & Ride parking
 - Other
6. What (if any) are the obstacles that prevent you from riding a bicycle or walking to work? (check all that apply)
 - Walking alone
 - Too much motor vehicle traffic on cycling/walking route
 - A lack of secure and covered storage for my bike

The challenge of meeting the county's dress code after walking or biking to work

Weather (too hot, cold, wet, windy, dark)

Physical challenge of walking or biking (distance, hills, etc.)

Transporting and storing my personal belongings without a vehicle

External before/after work restrictions (additional errands, passengers, etc.)

Other

7. What affects your commuting choice?

Cost of fuel

Safety issues (no sidewalks or trails, poor visibility, bad weather)

Time (other commuter options require long bus waits, too much walking or riding time required)

Schedule (after-work activities, kids' carpool obligations)

Other

8. What incentives would encourage you to commute via alternate transportation?

9. Would you consider carpooling or vanpooling if one existed that fit your route and schedule? (N/A if you already carpool)

Yes

No

N/A

10. Would you consider part-time telecommuting if it were a feasible option for your current job duties?

Yes

No

11. If you were able to have a flex schedule or a 4-day workweek, would you be more likely or less likely to use alternative commuter transportation options?

More likely

Less likely

Flex schedule wouldn't matter

12. If you would like more information about commuter alternatives (carpools, bus, walking groups, etc.), please complete to contact information below.

Name

Email address

Phone number

Departure point

13. What other thoughts or ideas do you have to share with the Climate Advisory Group?

The following is the edited summary of survey responses sent to all County Staff:

The Commuter survey had over 140 respondents at the close of the survey on September 15, 2008. The County has ~ 425 full time employees, which makes the survey results statistically significant with an 8 percent range in answers.

The average commute distance for respondents was 10.25 miles. (Range is 0.25 to 66 mi.)

92 percent commute by private auto; the remainder were split evenly between all other options.

54 percent of commutes are by single occupancy vehicle and 46 percent by a combination of other means. Respondents tended to exclusively use one method (i.e. drive or ride the bus).

65 percent of the vehicles used were passenger cars and 28 percent were SUVs or pickups.

The main obstacles preventing respondents from riding the bus were an inconvenient bus route or stop location, an inconvenient work schedule, or an incompatible personal schedule.

The main obstacles preventing respondents from riding their bike or walking were external before/after work restrictions, the physical challenge of walking/biking, or the variability of the weather. Another obstacle was the challenge of safely storing equipment and belongings.

The main factors affecting respondents' choice of commute method were time constraints and personal schedules. The cost of fuel was an important factor for 1/3 of the respondents.

Half of respondents indicated they would use a van or carpool if one fit their schedule.

86 percent of respondents were in favor of telecommuting if it fit their job duties.

Respondents were split on the impact of a four-day work week/flex schedule on their commute options, with roughly half saying that a flex schedule would make them more likely to use alternative transportation and half saying that it would have no impact on their commute choice.

There are many good comments and suggestions in the survey data which warrant review by everyone in the CAG and forwarding to decision-makers. The anonymous responses, organized by theme, are available through the CAG Intranet website.

Appendix C

Greenhouse Gas Inventory Datasheets

A template from the Jefferson County Climate Action Committee was adapted to Clallam County's inventory. The inventory was conducted from July through November 2008 using digital 2006 database year data from fleet and facility managers, utility providers, and waste disposal contractors. The draft Inventory was presented to the Board of Commissioners on Monday October 27, 2008 during work session and was not substantively revised for this final edition.

**CLALLAM COUNTY GOVERNMENT WORKSHEETS
EMISSIONS INVENTORY COMPARISON**

Jefferson County Inventory Results – 2005 Baseline

CATEGORY	CO ₂ EQUIVALENT %
Building	38
Transportation	
Fleet	32
Commute	18
PUD Water Supply	10
Streetlights	1
Waste	neg.

Clallam County Draft Results – 2006 Baseline

CATEGORY	CO ₂ EQUIVALENT %
Building	46
Transportation	
Fleet	30
Commute	21
Sewer	2
Streetlights	0.1
Waste	neg.

State of Washington's Inventory Results – 2000 Baseline

CATEGORY	CO ₂ EQUIVALENT %
Developed Areas	46
Transportation	46
Waste Management	2
Agriculture	7

CLALLAM COUNTY GOVERNMENT WORKSHEETS
ENERGY INTENSITY FOR BUILDINGS FOR BASE YEAR 2006

DEPARTMENT	BUILDING	ELECTRICITY (kWh)	PROPANE (gallon)	FUEL OIL (gallon)	AREA (sf)	ENERGY INTENSITY (kWh/sf)
Parks, Fair & Facilities (PF&F)	Courthouse	3,392,400		5,043	134,818	25
Sheriff	Juvenile/Family Services	720,720			30,000	24
PF&F	Clallam Bay (total)	26,208			1,296	20
PF&F	Dungeness (total)	78,588			4,100	19
Sheriff	Old Juvenile Facility	104,480			6,565	16
PF&F	Dungeness Boat Launch/Landing	5,389			345	16
PF&F	Salt Creek	92,653			6,335	15
PF&F	Clallam Bay	5,472			384	14
Roads	Lake Creek Shop	122,560			8,840	14
PF&F	Camp David Jr.	119,440			13,525	9
Roads	Sequim Shop	76,760			8,990	9
Roads	Courthouse	364,320			66,032	6
PF&F	Freshwater Bay	1,525			384	4
PF&F	Robin Hill Farm (total)	11,838			3,330	4
PF&F	Fairgrounds	206,288			68,900	3
Sheriff	Frontier Street	19,448				
Sheriff	Bank Pump	11,061				
Sheriff	Bedrock Road	2,164				
Sheriff	Slip Point	233				
PF&F	3rd Street	216				
PF&F	Veteran's Center/Annex	6,524				
Courts	Clallam Public Defender	11,650				
Courts	Clallam County Prosecuting	11,523				
Health & Human Services	West End	14,728				
PF&F	Lake Pleasant (light pole)	15				
PF&F	Cline Spit	0 (SV light)				

CLALLAM COUNTY GOVERNMENT WORKSHEETS
ENERGY USAGE FOR BUILDINGS FOR BASE YEAR 2006

DEPARTMENT	BUILDING	ELECTRICITY (kWh)	PROPANE (gallon)	FUEL OIL (gallon)	EQUIVALENT CO ₂	EQUIVALENT CO ₂ %
Parks, Fair, and Facilities	Courthouse	3,392,400		5,043	1,629	29.1
	Juvenile & Family Services	720,720			334	6
	Old Juvenile Facility	104,480			48	0.9
	Veteran's Center/Annex	6,524			18	0.3
	Camp David Jr.	119,440			55	1
	Dungeness Recreation Area (total)	78,588			36	0.7
	Salt Creek Recreation Area (total)	92,653			28	0.5
	Robin Hill Farm (total)	11,838			5	0.1
	Clallam Bay	5,472			3	0
	Dungeness Landing	5,389			2	0
	Freshwater Bay	1,525			1	0
	Lake Pleasant (light pole)	15			0	0
	Cline Spit	0 (SV light)			0	0
	Fairgrounds	206,288			96	1.7
	Sheriff	Frontier Street	19,448			9
Bank Pump		11,061			5	0.1
Bedrock Road		2,164			1	0
Slip Point		233			0	0
3 rd Street		216			0	0
Courts	Public Defender	11,650			5	0.1
	Prosecuting	11,523			5	0.1
Roads	Port Angeles Shop	364,320			169	3
	Lake Creek Shop	122,560			57	1
	Sequim Shop	76,760			53	1
	Clallam Bay Shop	26,208			12	0.2
Health & Human Services	Forks	14,728			7	0.1
TOTAL		5,406,203			2,578	46.1

Notes:

1. Fuel oil amounts obtained from Pettit Oil, Port Angeles, and Carl Rushton, Clallam County Public Works Department
2. Costs and electricity consumption (kWh) obtained from Larry Dunbar, City of Port Angeles, and PUD 1 in August 2008
3. Building square footage obtained from Gailin Downing and Carl Rushton, Clallam County Public Works Department

CLALLAM COUNTY GOVERNMENT WORKSHEETS
VEHICLE FUEL USAGE FOR BASE YEAR 2006

DEPARTMENT	CATEGORY	QUANTITY	UNLEADED (gallon)	DIESEL (gallon)	EQUIVALENT CO ₂	EQUIVALENT CO ₂ %
Sheriff	Total – Unleaded	58	39,174		406	7.2
	Total – Diesel	3		2,242	24	0.4
	Automobile					
	Full Size	35	26,637.8			
	Midsize	2	377.25			
	Compact	1	15.1			
	Van (Chain Gang)	3		2,241.85		
	Light Truck					
	SUV	7	6,651.35			
	Pickup	2	862.85			
Van	6	4,398.65				
Heavy Truck	5	230.45				
Public Works	Total – Unleaded	97	4,449		47	0.8
	Total – Diesel	129		90,179	963	17.2
	Heavy Truck – Unleaded	82	796.6			
	Heavy Truck – Diesel	95		72,924.78		
	Dump 10 cu yd	13		29,699.7		
	1-T Patch	8		5,458.35		
	Loaders	6		5,433.8		
	Mowers, reach	10		5,094.8		
	Pickup broom	4		3,885.55		
	Sweeper	4		3,253.75		
	5 th wheel tractor	2		3,097.55		
	Grader	6		2,953.45		
	Distributor, bituminous	3		2,800.35		
	Shovels, crane	3		2,298.23		
	Miscellaneous Equipment	36		9,949.25		
	Light Truck	34		17,253.95		
	SUV	1		779.15		
	Light Truck	7	1,438.3			
	Van	3	1,041.35			
	Automobile					
Full Size	2	794.6				
Compact	3	377.75				

CLALLAM COUNTY GOVERNMENT WORKSHEETS
VEHICLE FUEL USAGE FOR BASE YEAR 2006 (continued)

DEPARTMENT	CATEGORY	QUANTITY	UNLEADED (gallon)	DIESEL (gallon)	EQUIVALENT CO ₂	EQUIVALENT CO ₂ %
Assessor	Automobile – Compact	7	840.35			
	Light Truck – Pickup	2	218.5			
	Total	9	1,059		11	0.2
Commissioners	Automobile – Compact (Hybrid)	1	173.4		2	0
Environmental Health	Pickup	4	1,118.05			
	SUV	2	1,339.85			
	Total	6	2,457.9		25	0.5
Juvenile & Family Services	Automobile – Full Size	3	1,180.9			
	Light Truck – SUV	1	471.85			
	Van	1	284.1			
	Total	5	1,937		20	0.4
Community Development	Light Truck – SUV	4	4,336			
	Automobile – Full Size	1	456			
	Total	5	4,792		50	0.9
WSU Extension	Light Truck – Pickup	1	165.05			
	Light Truck – SUV	1	898.8			
	Van	1	739.4			
	Total	3	1,803		19	0.3
Clallam Bay/Sekiu	Heavy Truck	1	276.9			
	Light Truck – Pickup	1	631.15			
	Total	2	908		9	0.2
Parks	Heavy Truck	7		1,606.1	17	0.3
	Heavy Truck	7	941.9			
	Light Truck	14	5,714.8			
	Total – Unleaded	21	6,657		69	1.2

Data obtained from KC Carmean, Clallam County Public Works Department

CLALLAM COUNTY GOVERNMENT WORKSHEETS
EMPLOYEE COMMUTE FOR BASE YEAR 2006

VEHICLE TYPE	NUMBER OF EMPLOYEES	MILES/YEAR ROUNDTRIP ¹	TOTAL MILES/ALL EMPLOYEES ²
Passenger Car (unleaded)	86	456,840	1,234,703
Passenger Car (diesel)	2	12,220	33,027
Compact or Hybrid	0	0	0
Light Truck, Van, SUV (unleaded)	48	223,720	604,649
Light Truck, Van, SUV (diesel)	4	8,930	24,135
Motorcycle (unleaded)	6	24,910	67,324
TOTALS	146	726,620	1,963,838

¹ Number of one-way miles x 2 x 235 working days in 2006

² Number of miles per year/0.37 of employees that responded to survey

<u>TOTAL BY FUEL TYPE</u>	<u>TOTAL MILES</u>	<u>CO₂ EQUIVALENT</u>	<u>EQUIVALENT CO₂ %</u>
Unleaded	1,906,676	1,154	20.6
Diesel	57,162	34	0.6

UNLEADED

<u>VEHICLE TYPE</u>	<u>MILES ONE-WAY/DAY</u>	<u>TOTAL MILES/YEAR</u>	<u>MILES PER YEAR ALL EMPLOYEES</u>
Passenger Car (86)	972	456,840	1,234,703
Light Truck, Van, SUV (48)	476	223,720	604,649
Motorcycle (6)	53	24,910	67,324

DIESEL

<u>VEHICLE TYPE</u>	<u>MILES ONE-WAY/DAY</u>	<u>TOTAL MILES/YEAR</u>	<u>MILES PER YEAR ALL EMPLOYEES</u>
Passenger Car (2)	26	12,220	33,027
Light Truck, Van, SUV (4)	19	8,930	24,135

Survey Data:

128 electronic surveys were submitted and 28 written for a total of 156 or 37 percent (156/422)

Commute data was based on 250 workdays in 2006 less 12 accrued days of vacation and 3 sick leave days = 235 workdays

Unleaded passenger cars were assumed to be mid-size; diesel passenger cars assumed to be full-size

All trucks were assumed to be light trucks

Less than 10 respondents indicated Transit, walking, or biking as their primary use and were excluded from analysis

CLALLAM COUNTY GOVERNMENT WORKSHEETS
WASTE VOLUME FOR BUILDINGS FOR BASE YEAR 2006 CALCULATED IN TONS

DEPARTMENT	BUILDING	CITY OF PORT ANGELES	MURREY'S	WEST WASTE
Treasurer	Courthouse	3.2		
Parks, Fair & Facilities	Courthouse	35.9		
	Fairgrounds		12.63	
	Salt Creek Recreation Area		23.4	
	Cline Spit		10.8	
	Dungeness Recreation Area		13.2	
	Pillar Point			1.95
	Lake Pleasant			1.8
	Clallam Bay			3.45
	Camp David Jr.			6.3
Public Works – Roads	Sequim Shop		14.4	
	West End			5.4
	Lake Creek			2.1
Health & Human Services	Forks Office			3.3
Sheriff	City of Port Angeles Direct Drop	0.2		
	Slip Point			5.4
Clallam Bay/Seki	Sewerage Treatment Plant			0.9
REET?		3.4		
TOTAL		42.7	74.43	30.6

TOTAL WASTE = 147.73 tons

Data provided by solid waste service provider
Containers for Murrey's Disposal and West Waste were estimated as half empty

CLALLAM BAY/SEKIU WASTEWATER TREATMENT PLANT WORKSHEET
ENERGY USAGE FOR BASE YEAR 2006

ACCOUNT	NAME	SERVICE ADDRESS	DEPARTMENT	ELECTRICITY (kWh)	CO ₂ EQUIVALENT	CO ₂ EQUIVALENT %
	Clallam Bay STP	410 Frontier Street	Public Works	9,1720	42	0.8
23007	Sekiu STP	176 Front Street	Public Works	8,5180	39	0.7
23193	Pump Station	Hwy 112 Snob Hill	Public Works	17,199	8	0.1
22991	Mid Pt Pump	Middle Pt on Beach Side	Public Works	13,466	6	0.1
23045	Olson's Outfall	W Front Street	Public Works	8,373	4	0.1
23040	Olson Pump	End of Front Street	Public Works	8,364	4	0.1
23221	West End Pump	12901 Hwy 112 Snob Hill	Public Works	7,140	3	0.1
23008	Sekiu Building	176 Front Street	Public Works	357	0	0
TOTAL				231,799	106	2

Data supplied by Clallam County PUD 1 and collected and organized by Sam Fox, Clallam County Department of Community Development