

**The Department of Public Utilities
Los Alamos County**

**Water and Energy Conservation Plan
2009-2020**

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**Los Alamos County Demand Side Portion
For the
Los Alamos National Laboratory**

**FY 2006 Integrated Resource Plan
1 October 2006**

Conservation Mission Statement

It is our goal to support supply and demand-side conservation of water and energy in order to meet our current and future needs as well as maintain, enhance, and promote the overall quality of life, comfort and to achieve the highest level of customer satisfaction.

I. Executive Summary

The Department of Public Utilities (DPU) water and energy conservation plan is designed meet the mission, vision and long term strategic goals of the Board of Public Utilities and to provide support to the County's Comprehensive Plan and Sustainability initiatives. The conservation plan also proposes to support county growth projections through 2020 as established by the "Long-Range Water Supply Plan; Los Alamos County" that was prepared and submitted by Daniel B. Stephens and Associates, Inc. for the DPU in August 2006.

To date the DPU has promoted conservation through various educational and training methods, including Waterwise Gardening brochures delivered to our customers in their monthly utility bills and customer workshops presented in cooperation with the New Mexico State Cooperative Extension Service. An analysis of total water deliveries from year 2000 through 2007 suggest that these programs have resulted in the overall reduction in consumption by 5 percent, with most savings the result of a decrease in seasonal irrigation use.

The DPU's conservation plan recommends that the reductions occur in both the supply and demand side sectors for all utilities. Conservation goals for water consumption are

established at an additional 12 percent, 10 percent for electric consumption, and 10 percent for natural gas. In order to achieve the conservation goals, the DPU will implement a series of programs that can be itemized into three main categories; Regulatory Measures, Rebates/Incentives and Recognition, and Training and Education programs.

The policy premise for the conservation plan proposes that it maintain a proactive, active and responsive approach to our customer's needs, comforts, capabilities and limitations. In addition, the program aims to identify and promote conservation as a customer service component and implementation through voluntary compliance. The DPU will provide annual updates and policy revision to promote program successes and address changes where needed.

II. Department of Public Utilities' Mission/Vision Statement

Mission:

Provide safe, adequate, and reliable utility services at reasonable rates to support the community now and enable diversified choices for our community's future.

Vision:

Construct, operate and maintain sustainable utility systems to meet the needs and exceed the expectations of our community.

The following strategic goals for the Department of Public Utilities fall under the Council's strategic goals of, 1. Maintain quality essential routine services, and 2. Maintain environmental quality.

1. Provide for sustainable energy and water resources anticipating changing supply options and community usage.
 - a. Develop the San Juan Chama water resource
 - b. Pursue renewable energy resources that are reasonably priced and at least environmentally neutral.
 - c. Promote conservation in both energy and water
2. Improve reliability and safety and minimize environmental impact of utility services.
 - a. Develop an asset management system
 - b. Meet or exceed reliability standards including, but not limited to, the Electric System Average Interruptible Duration Index (SAIDI) and the System Average Interruption Frequency Index (SAIFI).
3. Continue to provide utilities at reasonable cost.

- a. Develop a culture of continuous improvement
 - b. Partner with NNSA/LANL and neighboring utilities
 - c. Improve metering accuracy
4. Improve customer service and satisfaction.
 - a. Investigate advanced meter infrastructure
 - b. Provide excellent 311 customer service.

Section III. Introduction

The Department of Public Utilities (DPU) currently operates the county-owned electric, gas, water and wastewater systems servicing the residents, businesses, schools and government facilities for Los Alamos and White Rock. The DPU also has a contract to supply DOE water required by the Los Alamos National Laboratory (LANL) with no limitations.

The purpose of the conservation plan is to establish conservation goals for all utility services (Water, Electric and Natural Gas,) for the period of 2009 through 2020. The plan will provide specific information on demand forecasting, consumption profiles for user groups and account classes, the conservation implementation plan and program lists, monitoring arrangements, revision and amendment processes, and reporting methods.

Section IV. Why a Conservation Plan Is Needed

Water - The current County water supply is clean, safe and plentiful, but presently only one source is available, providing water to all of Los Alamos town site, White Rock and the LANL. There are many factors that could affect the supply of this one resource. It is imperative to our community that we do not assume that this supply is infinite, and necessary that we acknowledge that our water supply can be impacted by regional water issues, future development, and contamination. Water conservation's benefits to Los Alamos include, but are not limited to, the following:

- For any water rights permitting change that requires the Office of the State Engineer (OSE) approval, such as change in point of diversion or place of use, the OSE will consider conservation. This requirement is part of an overall strategy by the State to ensure that water is being used wisely before additional diversions are permitted (Stephens', pg. 109).
- The New Mexico 40-year water planning statute, as well as Section 72-14-3.2 of NMSA 1978, calls for conservation planning as a prerequisite for funding from key state funding agencies (Stephens', pg. 109).
- Water conservation can also prevent or delay the need for expensive capital expenditures for developing new water supplies and acquiring additional water rights in order to meet future growth projections water needs (Stephens', pg. 109).
- The Bureau of Reclamation (BOR) requires a conservation plan to divert San Juan-Chama river water (Stephens', pg. 109).

- Less draw down on the water supply decrease the likelihood of drawing contaminants toward the water production wells.
- Decrease impact on local water supplies resulting from a regional drought.
- Economic development can be promoted and sustained.
- Conservation slows the depletion of existing ground water resources.

Electric – The County of Los Alamos and the Department of Energy (DOE) entered into an Electric Coordination Agreement (ECA) in 1985 that pooled their electric resources, with county consumption at 20 percent of the total compared to 80 percent for the DOE. The county currently provides electrical energy to the grid via production from the Abiquiu and El Vado hydro-electric plants, 7.2 percent of the San Juan coal-fired plant, including supplemental electricity provided from a variety of long term contracts. Electricity consumed in excess of the county’s production capacities require energy purchases from the spot market and are subject to the volatility of market forces causing an increase in prices. Electric conservation for Los Alamos will have many benefits that include, but are not limited to, the following:

- In order to receive federally allocated hydro-electric power, the DPU must submit to the DOE’s Western Area Power Administration (WAPA) an Integrated Resource Plan (IRP) that details supply and demand-side conservation efforts.
- Conservation can impact peak load demand lessening the need to purchase power from the spot market reducing costs enabling the DPU to provide increased pricing reliability.
- Economic development can be promoted and sustained.
- A reduction in the county’s common carbon footprint.
- A decrease in operational and maintenance costs.
- Improvement in quality of life.

Natural Gas – The DPU currently provides natural gas services to over 7,500 residential, commercial, municipal and educational customers. Approximately 117 miles of distribution lines within Los Alamos and White Rock are owned and operated by the DPU. The DPU purchases natural gas based on San Juan price indexes and “nominates” its purchase amounts based on historical consumption requirements. The conservation of natural gas will have many benefits that include, but are not limited to, the following:

Section V. Future Growth and Demand Projections

The conservation plan has taken into account future growth and demand projections based on statistics presented in Stephens’ “Long Range Water Supply Plan for Los Alamos County.” The Stephens’ report developed two projections for future demand for the county, a **low** scenario, and a potential **high** estimate. Both projections are based on the growth scenario identified in the August 2004 New Mexico First Town Hall (Fruth, 2004). Under this scenario, referred to as the full build-out, the population would increase to 25,086 by 2020, with a commercial retail space increase of 365,000 square feet, and 2,500 new high-wage jobs with an additional 875,000 square feet of office space. The growth and demand projections that the water supply report identified were copied to the

DPU’s electric and natural gas projections for continuity. However, LANL’s consumption is not included in the electric and natural gas projections because the DPU currently delivers only water services to their facilities.

Water Demand Projections

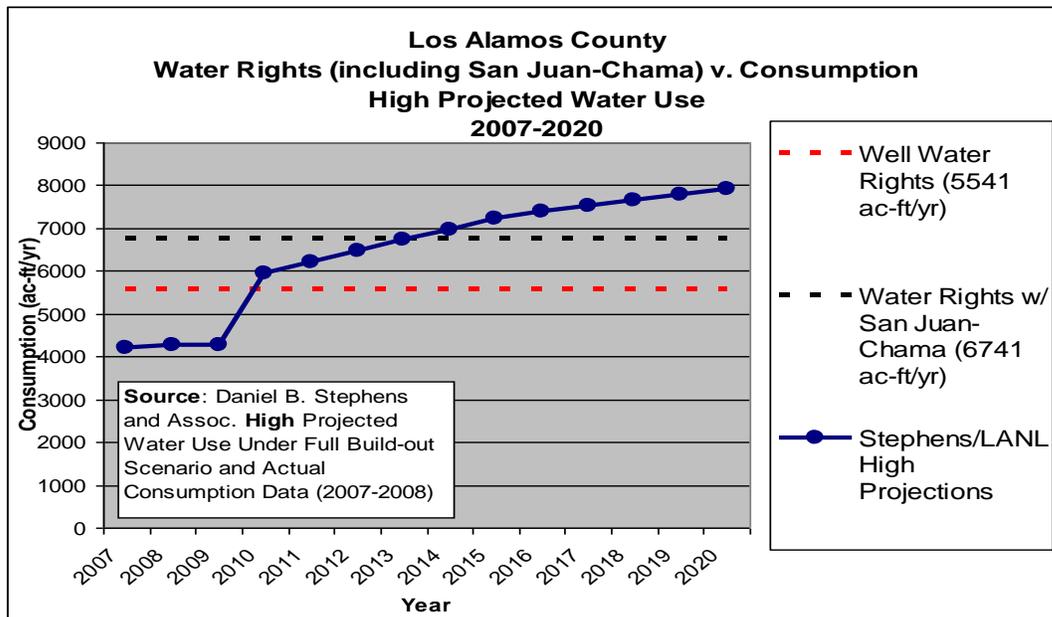


Figure 1.

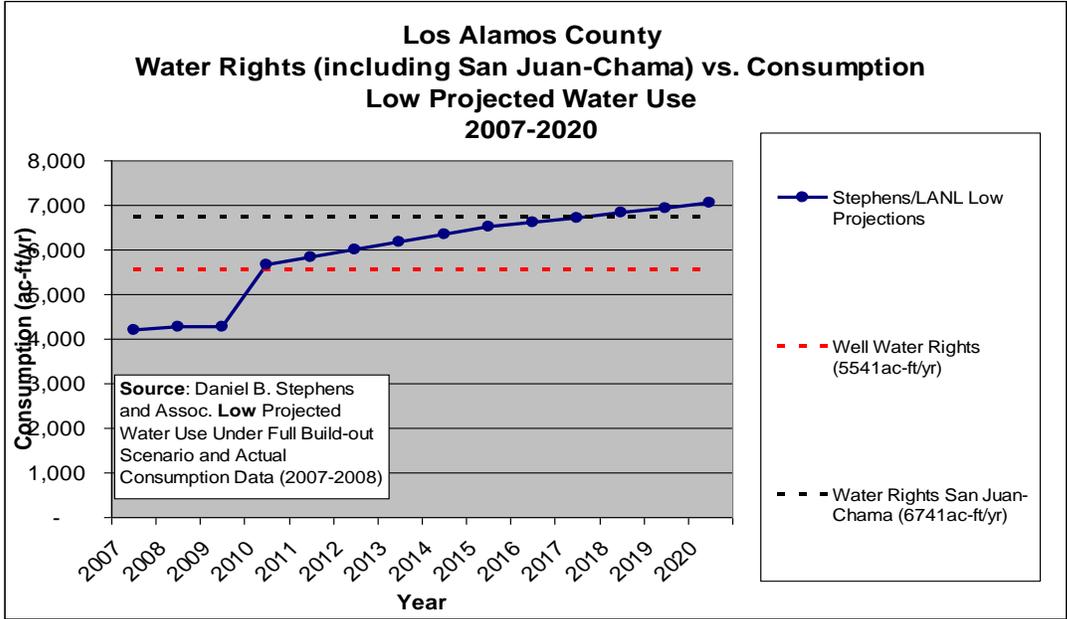


Figure 2.

Electric Demand Projections

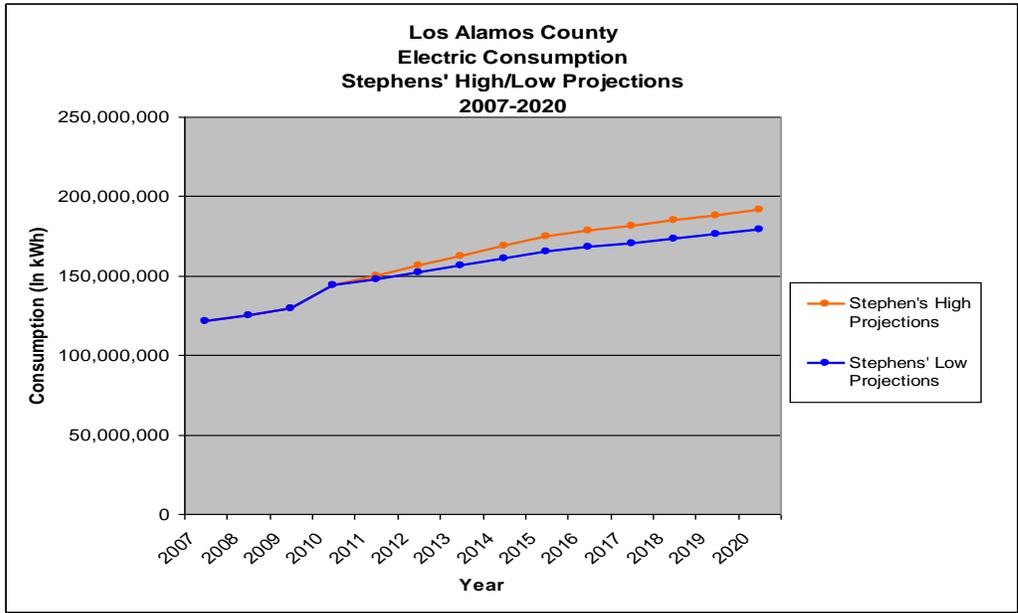


Figure 3.

Natural Gas Projections

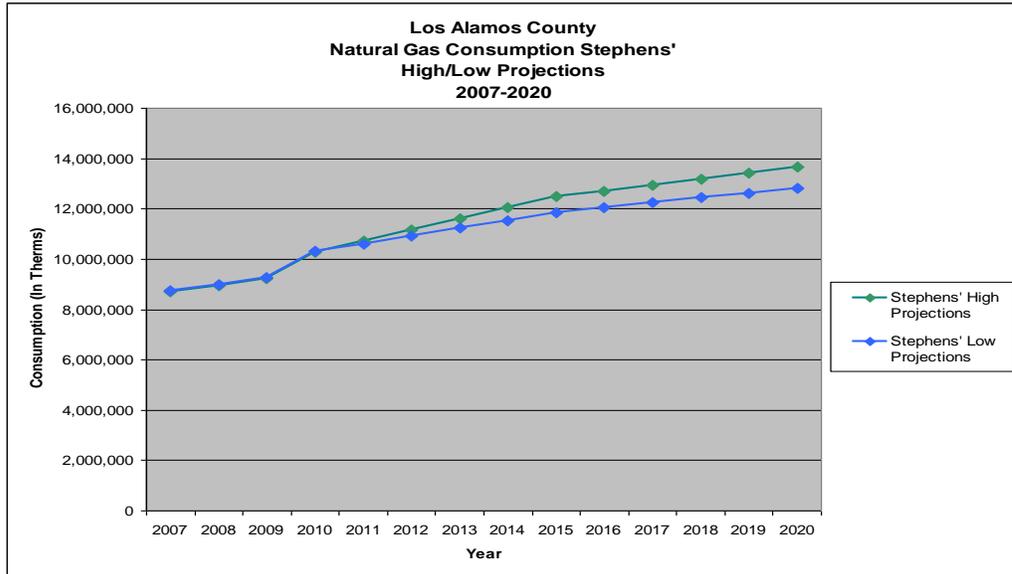


Figure 4.

Section VI. Water, Electric and Natural Gas Consumption Profile

Water Consumption Profile

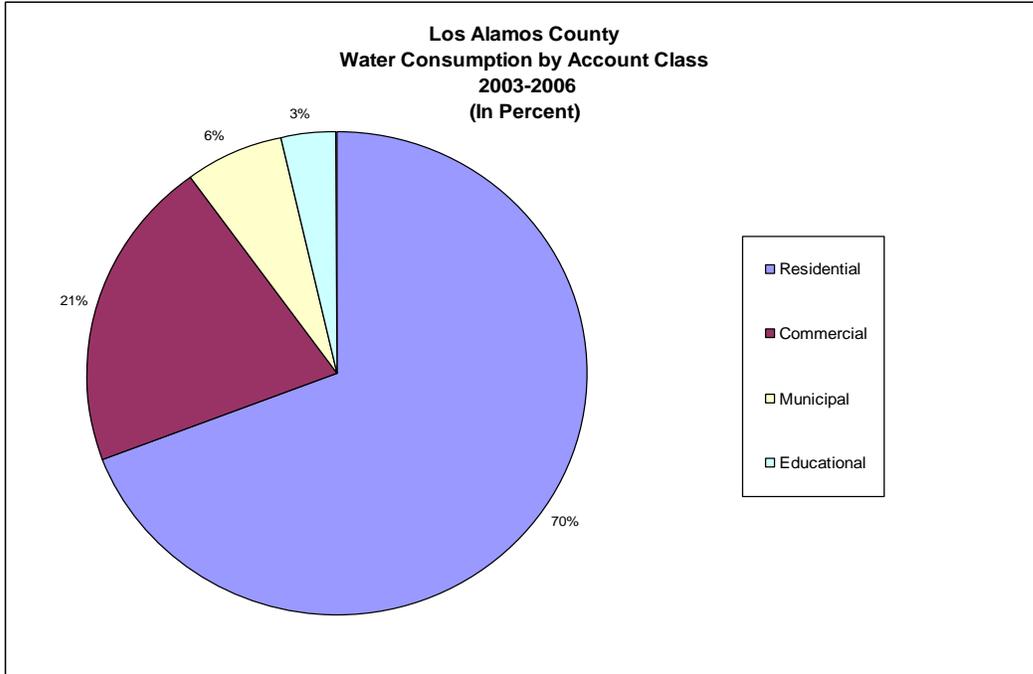


Figure 5.

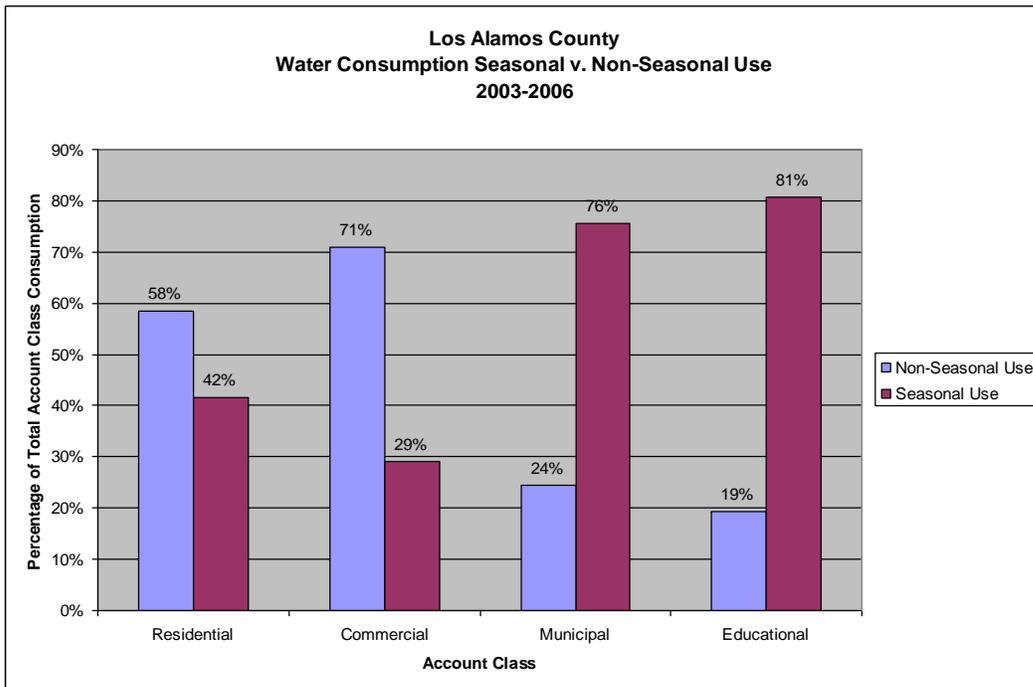


Figure 6.

Electric Consumption Profile

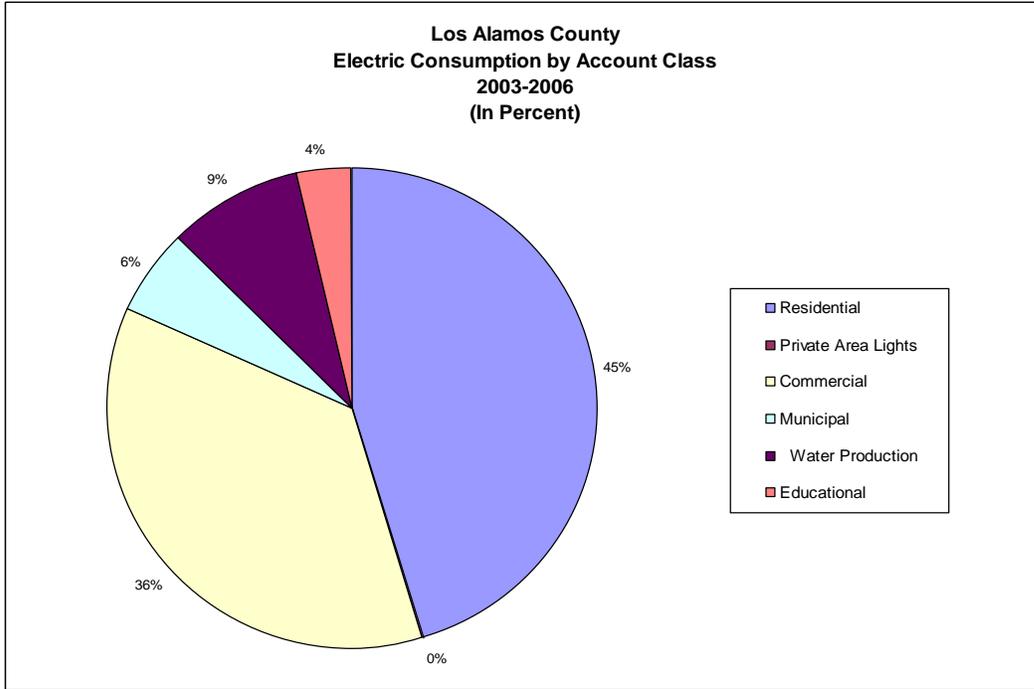


Figure 7.

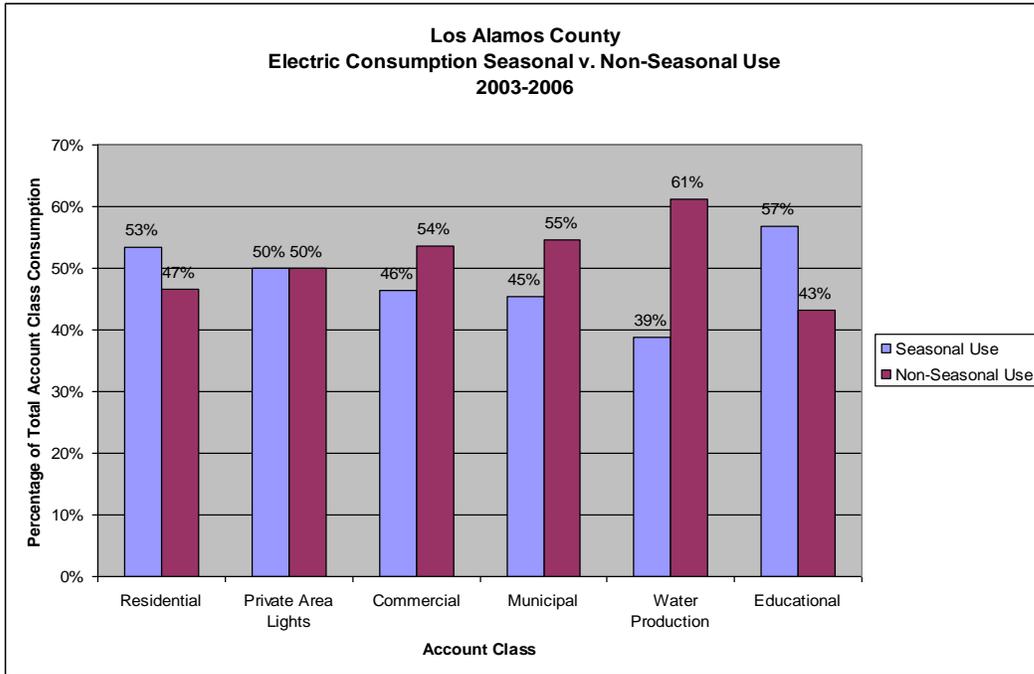


Figure 8.

Natural Gas Consumption Profile

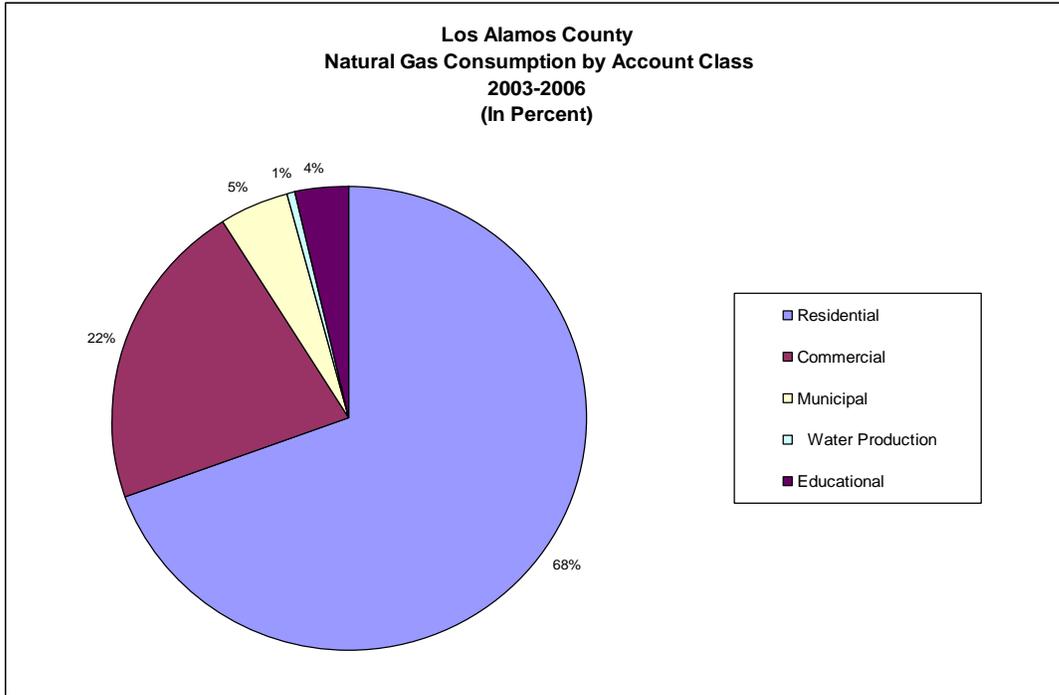


Figure 9.

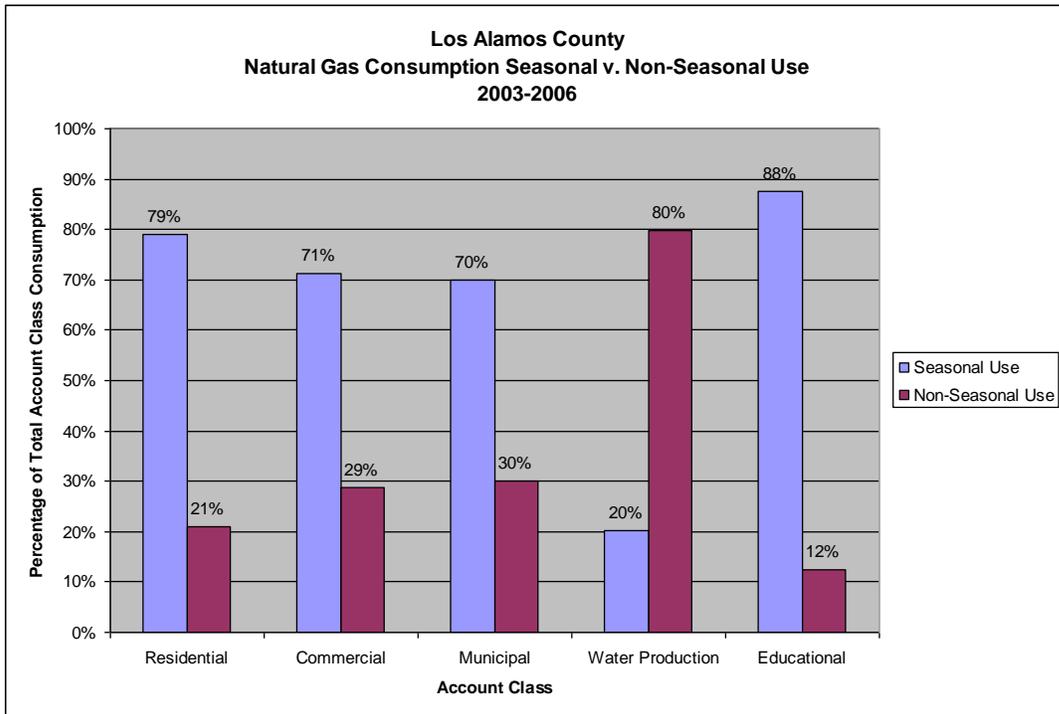


Figure 10.

Section VII. Conservation Implementation Plan

Water Conservation

It is the goal of the Department of Public Utilities' Water Conservation Program to promote the long-term efficient use of Los Alamos County's water resources – Groundwater (Pajarito Plateau Aquifer) that is currently in use; and surface water (San Juan-Chama river water and Los Alamos Reservoir Water) that is currently inaccessible. The Utilities has established a goal to reduce the overall per capita water consumption by a minimum of 12 percent by 2020 through a combination of water conservation measures, infrastructure maintenance, and maximizing reuse water of wastewater treatment plant effluent.

Long-Range Water Supply Plan

In 2005, the Department of Public Utilities contracted with Daniel B. Stephens and Associates to prepare a long range water supply plan assessing the current and future demand needs for the County of Los Alamos. The plan determined available resources and the expected longevity of such resources to meet future demands while minimizing the environmental impact. The plan also reviewed the vulnerability of the water supply to environmental contaminants. A 40-year planning horizon was used to address water service needs and to balance the uses of available and untapped water resources.

According to the plan, it is recommended that Los Alamos conserve its current water supply by 12 percent and develop the San Juan-Chama river water as a deliverable water source. The combination of these activities will ensure a sufficient water supply to the County of Los Alamos until 2050 without exceeding its current allocated water rights. The recommendation takes into account future water needs based on estimated population growth and a projected increase in economic development within the county; including the recent land parcels transferred from the Department of Energy.

Los Alamos County currently relies on existing Rio Grande Surface and Ground Water Rights of 5,541ac-ft/yr (1,805,541,391gls/yr) to supply its customer's water needs. In addition, Los Alamos County has a service contract for 1,200ac-ft/yr (391,021,200gls/yr) of San Juan-Chama Project surface water.

Primary Components

Secondary Components

Additional Information

Energy Conservation

Electric Conservation

Electric Conservation Goals

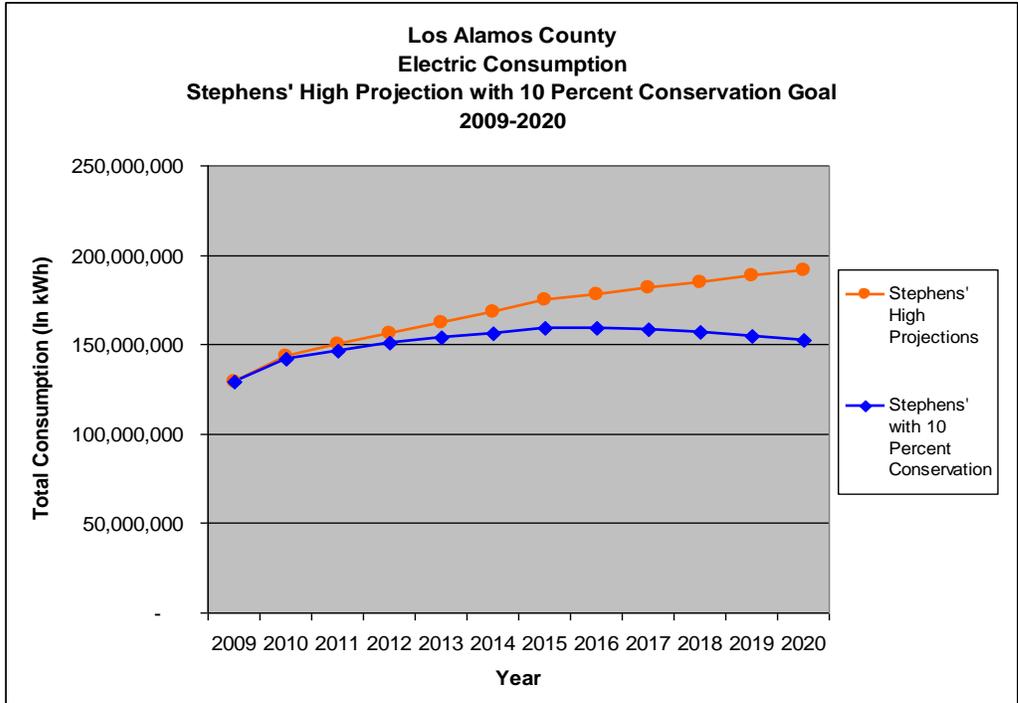


Figure 11.

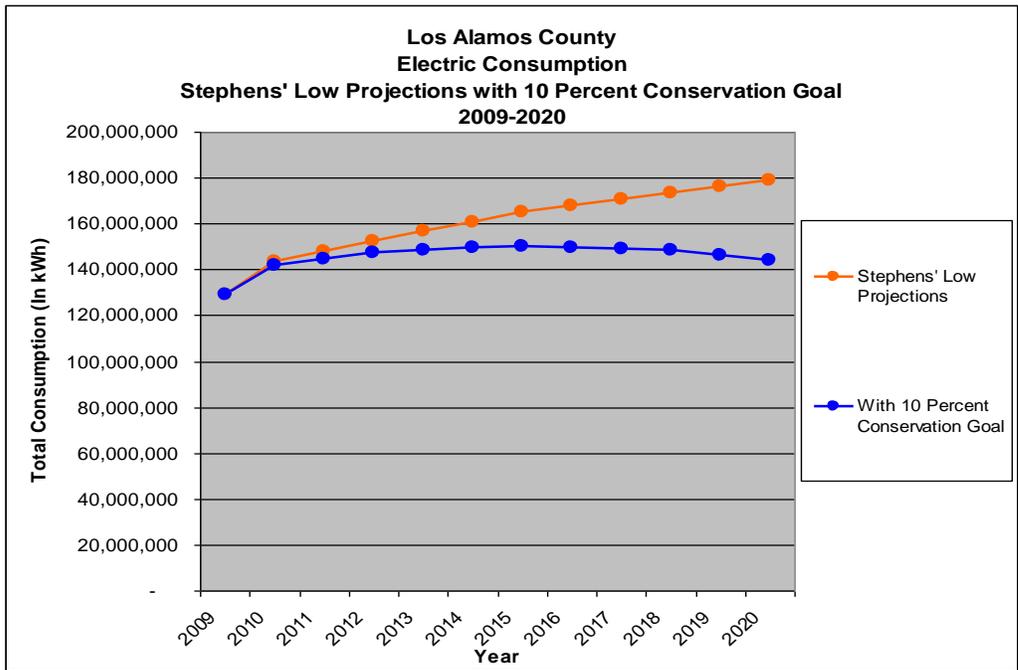


Figure 12.

Electric Conservation Implementation Plan

Current Programs

1. Energy Conservation Contract with the Pajarito Environmental Educational Center

In August 2008, the DPU entered into a contractual agreement with the Pajarito Environmental and Education Center (PEEC) to provide energy conservation services to the

Part 1 – LA Green Membership Campaign

The first part of the Community Energy Conservation service will consist of an outreach plan designed to increase community participation in the LA Green program of all customer classes, with a heavy emphasis on increased commercial participation. The Contractor shall provide information to Utilities Department customers in regards to the costs and benefits of participation in the program. The Utility will pay the Contractor a set fee for each new LA Green application that would be based on customer account status. The Contractor may not include existing LA Green participants as new applicants.

Part 2 – CFL Light Bulb Exchange

The second part of the Community Energy Conservation service shall include the CFL light bulb exchange program. The Contractor shall offer CFL light bulbs, to be provided by the Utilities Department, in exchange for 60watts or greater incandescent light bulbs to customers with an active Utilities Department account. Safety features associated with the CFL bulbs presented by the EPA Energy Star Program shall be provided in addition to the costs and benefits of the CFL light bulb exchange.

Part 3 – Los Alamos/White Rock Residential Home Modeling for Energy Conservation

The third part of the Community Conservation Program shall include the development of customer friendly Best Energy Management Practices model for the different era homes in Los Alamos County. The model should offer utility customers cost/benefit information on how to best retrofit and upgrade their homes to increase energy efficiency. Promotional materials shall be approved by Public Affairs staff at the Utilities Department prior to distribution to the general public.

Part 4 – Project Development and Project Implementation as proposed by the Contractor and approved by the Utilities Department.

2. Energy Star Portfolio Manager for County and Commercial Facilities

Portfolio Manager is an interactive energy management tool that allows you to track and assess energy and water consumption across your entire portfolio of buildings in a secure online environment. Whether you own, manage, or hold properties for investment, Portfolio Manager can help you set investment priorities, identify under-performing buildings, verify efficiency improvements, and receive EPA recognition for superior energy performance.

Primary Components
Secondary Components
Additional Information

Natural Gas Conservation
Natural Gas Conservation Goals
Natural Gas Conservation Implementation Plan
Primary Components
Secondary Components
Additional Information

Section VIII. Conservation Monitoring Plan (Tracking Methods and Metrics)

A significant aspect of the Department of Public Utilities Water and Energy Conservation Program includes the monitoring plan. Measurement and verification of the various programs are to be conducted on an annual basis and will include evaluations using multiple methods. The DPU currently collects and reports data using the Cayenta billing system. The conservation officer will need to work in cooperation with other DPU staff to develop the means for measurement and verification functions.

Section IX. Water and Energy Conservation Plan Evaluation and Revision Process

Section X. Reporting Process

Section XI. Conclusion