

Water and Energy Conservation Plan

Approved by the Board of Public Utilities

19 February 2025

Mission: Provide safe and reliable utility services
in an economically and environmentally
sustainable fashion.

Acknowledgments

The 2022-2027 Water and Energy Conservation Plan was prepared by Abbey Hayward, Water and Energy Conservation Coordinator. The Los Alamos Department of Public Utilities appreciates the support and contributions of the following persons.

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Executive Summary

The 2022-2027 Water and Energy Conservation Plan focuses on goals and objectives, as ranked by the BPU. There is a noticeable need for conservation efforts from both sides of utility services – the supply (DPU) and the demand (Customers) – to achieve these strategic goals.

In 2013, the Board of Public Utilities (BPU) approved of six strategic goals to guide the Department of Public Utilities (DPU). The DPU Senior Management Team (SMT) then developed broad, long-term objectives detailing how the department would meet the strategic goals. Goals are reviewed annually by both BPU and DPU SMT and revised based on achievement(s) of objectives. The DPU strategic goals and objectives were most recently approved on September 4, 2024.

This plan primarily focuses on Goal 5.0 – Achieve Environmental Sustainability, and has a supporting focus on Goal 6.0 – Develop and Strengthen Partnerships with Stakeholders.

Fiscal-year deliverables are established in this plan to make progress toward objectives and overall strategic goals. Deliverables in this plan were developed with suggestions from various community committees, DPU staff, and the BPU.

Strategic objectives for Goal 5.0, in order of highest priority to lowest priority:

1. Promote electric efficiency through targeted electric conservation programs.
2. Be a net carbon neutral electric provider by 2040.
3. Support phase out of natural gas by 2070 with at least a 10% reduction in usage by 2030.
4. Reduce potable water use by 12% per capita per day to 126 gallons per capita per day by 2030.
5. Expand use of Class 1A effluent water.
6. Support customer electrification and other sustainability efforts with education and technical support.

Part I

Local Conditions

Water Resources

Electrical
Resources

Gas Resources

Supplier
Performance in
Each Utility

Part II

Carbon Neutral

Education

Class 1A Effluent

Natural Gas

Energy Efficiency

Potable Water

Partnerships

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Abbreviations

BPU	Board of Public Utilities
DPU	Department of Public Utilities
SMT	Senior Management Team
WECP	Water and Energy Conservation Plan
DOE	Department of Energy
WAPA	Western Area Power Administration
NMOSE	New Mexico Office of the State Engineer
LANL	Los Alamos National Laboratory
ECA	Electric Coordination Agreement
IRP	Integrated Resource Plan
PEEC	Pajarito Environmental Education Center
ESB	Environmental Sustainability Board
LARES	Los Alamos Resiliency, Energy, and Sustainability (Task Force)
USDM	US Drought Monitor
LRWS	Long-Range Water Supply
WWTP	Wastewater Treatment Plant
WRRF	Water Resource Reclamation Facility
PNM	Public Service Company of New Mexico
SAIDI	System Average Interruption Duration Index
GPCD	Gallons Per Capita Per Day
SFR	Single Family Residence
MFR	Multi-Family Residence
AWWA	American Water Works Association
SJGS	San Juan Generating Station
HDD	Heating Degree Day
UAMPS	Utah Associated Municipal Power Systems



Part I

Background Information and Data of Los Alamos County and Its Utilities

Introduction

Purpose

The Water and Energy Conservation Plan (WECP) exists to best identify and provide target measures for conservation of critical resources needed for a community to thrive in the high desert of New Mexico. In the face of a changing climate, there is increasing pressure for the Los Alamos DPU to provide reliable and efficient sources for its utilities. A hotter and drier climate will strain grid systems and water supplies. There is also increasing pressure on consumers to conserve and efficiently use these same resources to accommodate a growing community and to ensure resources will last.

The DPU is county-owned and has provided electric, gas, water, and wastewater services since 1968 to customers, under the establishment of Article 5 of the Charter for the Incorporated County of Los Alamos. DPU is under the jurisdiction of an appointed Board of Public Utilities (BPU).

This document serves as an evolving plan to meet the following objectives :

- Support DPU's mission, vision, and long-term strategic goals.
- Develop cost-effective conservation programs to move the community toward defined conservation goals.
- Establish consumption baselines for water, electricity, and gas representative of designated customer classes.
- Adopt appropriate and reasonable conservation goals representative of community desires.
- Develop an implementation plan and measurement metrics of conservation efforts.

The Water and Energy Conservation Plan focuses on the planning period of 2022-2027. However, this document will be reviewed and updated biennially to accommodate successes and unforeseen changes to DPU resource supply and consumer needs.

Applications of Plan

This plan is pertinent in meeting several requirements to utility operations. The first is to fulfill a federal regulatory requirement as part of Los Alamos County's section of the joint Integrated Resource Plan (IRP) with the Department of Energy (DOE). This requires the development and implementation of a water and energy conservation plan that addresses both the supply-side (DPU) and demand-side (customer) of water and energy conservation efforts, which is then submitted to the Western Area Power Administration (WAPA) annually. This plan is also filed with the New Mexico Office of the State Engineer (NMOSE) to support project development and to account for appropriate water use.

Partners

Los Alamos National Laboratory, Department of Energy

Conservation efforts in this plan are not directed toward the DOE or the Los Alamos National Laboratory (LANL). LANL is a facility that falls under the requirements of DOE, neither of which are under the jurisdiction of DPU. There is a contract to supply DOE with water for LANL and DPU is a partner with DOE in the Electric Coordination Agreement (ECA). Los Alamos County and DOE also have a joint IRP, which guides the ECA. LANL also has a site-wide Water Conservation Program Plan. DPU and LANL will coordinate and communicate conservation efforts and support long-term conservation goals.

Pajarito Environmental Education Center

DPU partners with Pajarito Environmental Education Center (PEEC) on educational outreach efforts in a contracted format. PEEC is very involved with the schools in the county, in addition to its own programming at the Nature Center. DPU and PEEC agree on annual task orders that promote evolving conservation foci for the schools and community members.

Los Alamos Environmental Sustainability Board

The Los Alamos Environmental Sustainability Board (ESB) updates the County's Environmental Sustainability Plan. While DPU and the ESB support one another's plans, this WECP focuses specifically on the commodities provided by DPU. The Environmental Sustainability Plan goes beyond water and energy usage by establishing goals in other areas crucial to creating a more sustainable community.

Los Alamos County Sustainability Manager

The Los Alamos County Sustainability Manager is tasked with implementing the Climate Action Plan (CAP). The CAP was drafted by Cascadia Consulting and approved by County Council in 2024. This plan was developed to "guide the collective [County] efforts to continue expanding renewable energy, improving energy efficiency in buildings, enhancing water conservation efforts, promoting sustainable transportation options and implementing adaptation strategies to make Los Alamos more resilient" (as taken from the CAP's Letter from the County Manager).

Public Input

The initial 2022 update to the WECP was centered around input and recommendations from the Conservation Plan Update Committee (formed by DPU in early 2020) and the Los Alamos Resiliency, Energy, and Sustainability (LARES) task force (formed by Los Alamos County Council in January 2021).

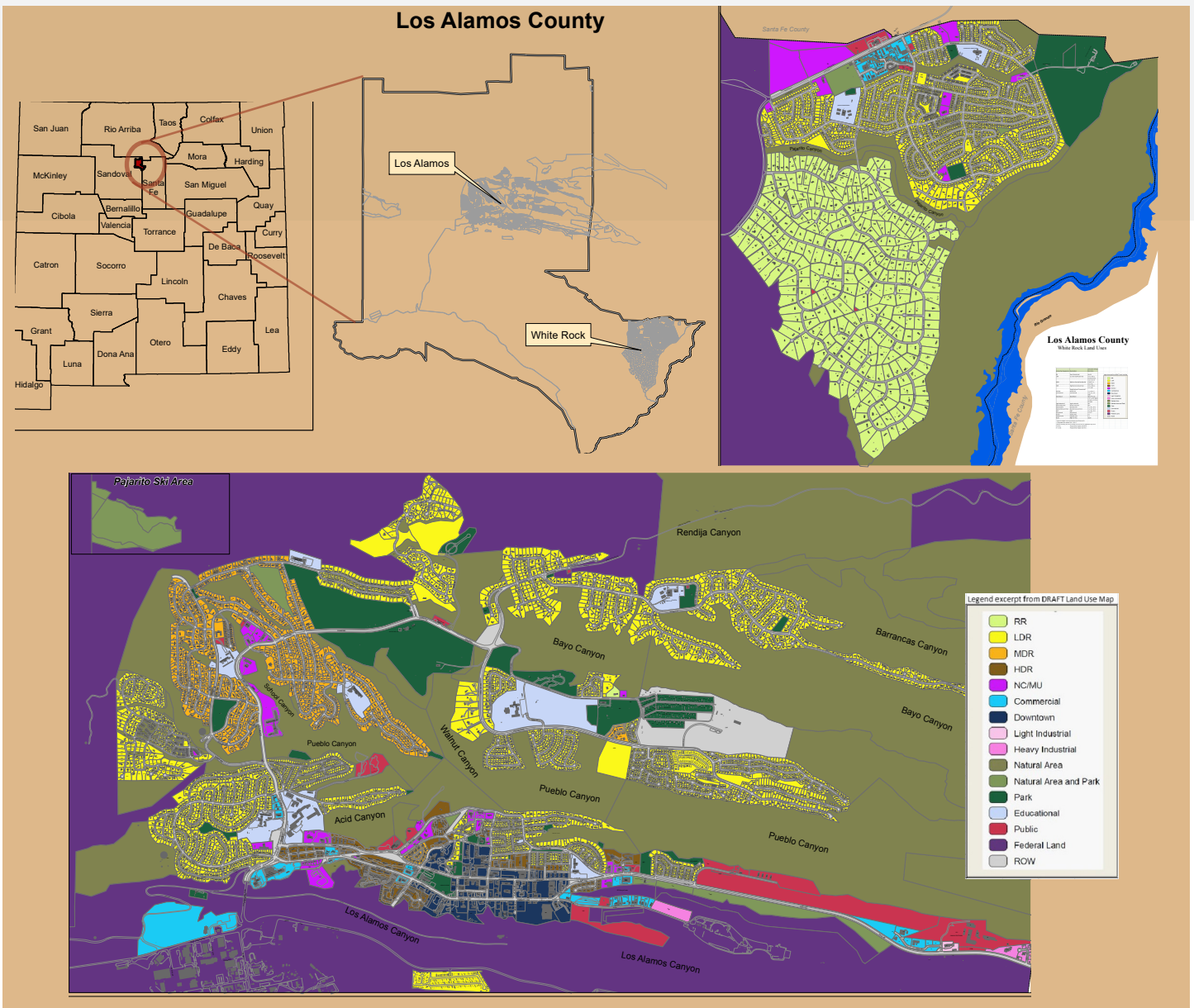
Additional updates to this plan will incorporate suggestions, pending BPU approval, stemming from the "Voice of the Customer" survey created by. This survey is an opportunity for DPU to better understand its customers' perceptions and wants of the DPU.

The 2024 update to the WECP includes public input taken from the Climate Action Plan (CAP) process, included in Appendix 1. In 2023, County Council directed the research, completion, and implementation of a CAP. The final CAP contains several implementation considerations that align with ongoing and future DPU actions. Thorough public education and outreach was conducted during 2024 for the CAP and the feedback is applicable to updates to this plan as well.

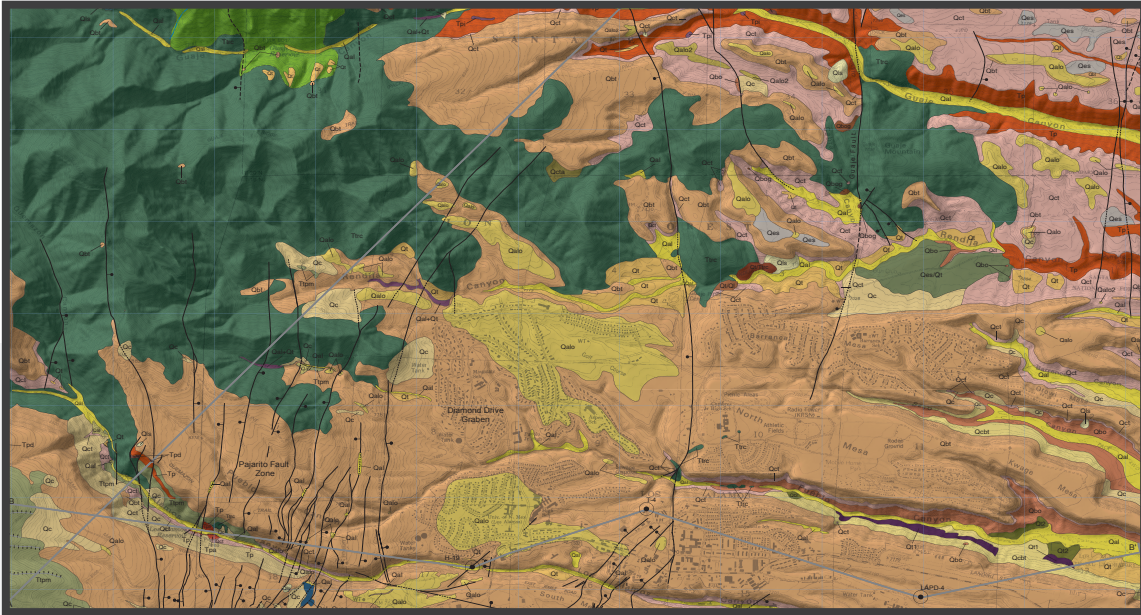
An independent, WECP-focused public engagement session will be conducted in 2026, in anticipation for the 5-year renewal of the WECP in 2027.

Local Conditions

Los Alamos County is located in northern New Mexico and comprises the communities of Los Alamos and White Rock. Nestled in a region known as the Pajarito Plateau, the service area ranges in elevation from 6,365 feet in White Rock up to 7,320 feet in the Los Alamos townsite. The population for the county was 19,419 per the 2020 Census. The County is surrounded by various Pueblos including San Ildefonso and Santa Clara, and by protected areas including the Santa Fe National Forest and Bandelier National Monument. Modern-day Los Alamos was incorporated in 1968, after two decades of existing as the Manhattan Project's Site Y. Prior to 1963, no land was privately owned and three federal agencies – the Atomic Energy Commission, the US Forest Service, and the National Park Service – owned and managed all land.



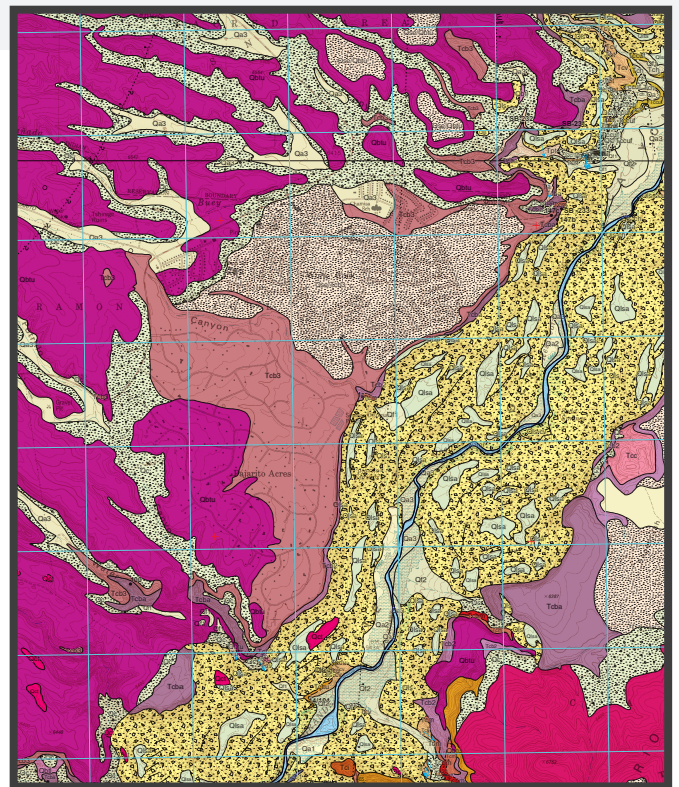
Geographical Considerations



Geologic Map of Los Alamos townsite. Basic interpretation: green designates rhyodacite lava flows; tan designates Bandelier Tuff; yellow, pink, and red designate sedimentary deposits.

Initially chosen for its relative inaccessibility, Los Alamos County is spread across several flat mesas separated by steep canyons. The geology is primarily volcanic, consisting of Upper Bandelier Tuff, basalts, and rhyodacite lava flows, with some areas of sedimentary deposits from alluvial flows and stream deposits as the Rio Grande and previous rivers transformed over time.

The geological deposits impact utility placement. For example, the basalts and certain areas of the Bandelier Tuff are very hard and restrict water well, pipeline (water, gas, or sewer), and buried electricity infrastructure placement. There is an area of White Rock that is unable to be connected to the municipal sewer and gas systems because the geology prevents the infrastructure. Other considerations include areas prone to rockfalls, such as with the rhyodacite (green) flow, and placing utility sources here (maintenance costs, reliability issues, etc.).



Geologic Map of White Rock. Basic interpretation: hot pink designates Bandelier Tuff; dusty pink designates basalts; dotted cream designates interspersed sedimentary deposits with basalts; most other classifications represent sedimentary deposits.

Local Conditions

Demographics and Projections

Population

According to the US Census, the population for Los Alamos County increased by nearly 1,500 people between 2010 and 2020. The current population estimate (as of July 2023) is 19,444 for the county. Because of the geographical limitations of Los Alamos County, population growth is constrained until new housing developments are constructed in White Rock, new apartment buildings are constructed where defunct buildings stand in Los Alamos, or unoccupied homes become available for occupancy (renovated or sold).

Los Alamos is a destination for tourists, and the popularity of vacation rentals, such as Airbnb and VRBO, increases the population of the county by an unknown number as these visitors utilize utility resources.

LANL is the largest employer in the county and in northern New Mexico. Total employment, including students and contract labor, was 17,438 at the end of fiscal year 2023. LANL is planning to hire an additional 1,700 employees in fiscal year 2024. Around 30% of these employees live in Los Alamos County.

Population estimates vary depending on the method and predictor. Los Alamos estimates can go off-track quickly depending on the employment goals of LANL. The table below shows population projections from the Geospatial and Population Studies Department at the University of New Mexico. These projections are based on 2010 Census data and migration trends and have not been updated to reflect 2020 Census data. Compare these estimates to the projections in the other table below.

July 2010	2020	2025	2030	2035	2040
17,950	19,418	19,857	20,439	20,791	20,883

Geospatial and Population Studies Department at the University of New Mexico population projections based on 2010 Census data and migration trends.

The Long-Range Water Supply Plan (LRWS Plan), updated in 2018, has two scenarios for projected water demand based on a different set of population projections. These low- and high-projection cases are based on population estimates prepared for the 2016 update to the State of New Mexico’s 16 regional water plans.

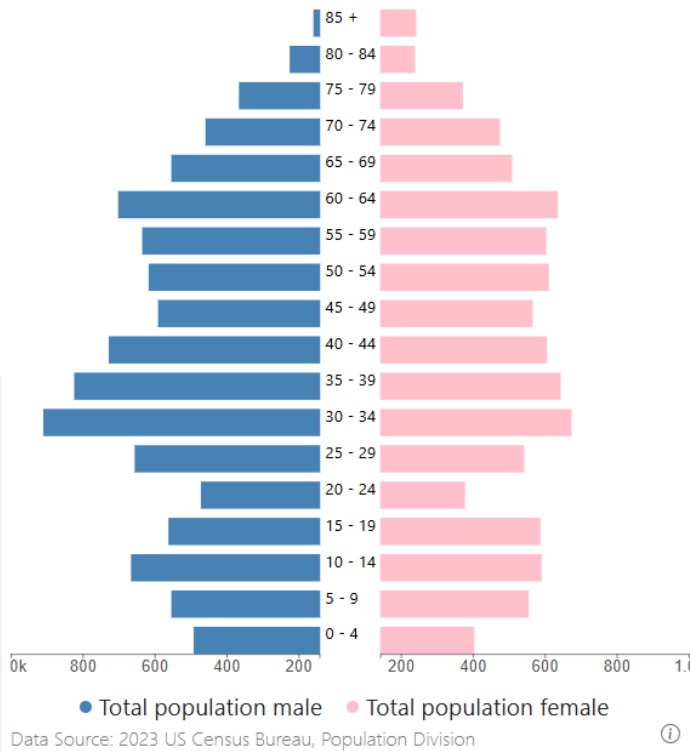
Population differences between Los Alamos townsite and White Rock show that Los Alamos is more than twice the size of White Rock. Per the 2020 Census, White Rock has a population of 5,852 while Los Alamos is 13,179.

Year	Population Projection	
	Low	High
2020	17,988	20,000
2030	17,789	20,812
2040	17,123	21,447
2050	16,480	21,874
2060	15,863	22,092

Population projections from LRWS Plan based on estimates for the 2016 version of the State of New Mexico’s 16 regional water plans.

Population Pyramid - 2023

Los Alamos County



Created by the University of New Mexico Bureau of Business & Economic Research, this "population pyramid" is based on 2020 Census Data. The simplest breakdown of this data indicates that Los Alamos County is 23% child-aged (0-19 years), 59% working-aged (20-64 years), and 18% senior-aged (65+ years).

The median household income, in 2023 dollars (from 2019-2023) for Los Alamos County is \$143,188. The percentage of persons in poverty is 3.8% for the county.

The primary language is English; however, nearly 14% of the population speaks another language (at least 20 different ones) including Spanish and several Asian and Pacific Island languages.

Housing

Most homes were built before the Energy Policy Act of 1992, which increased the energy efficiency of buildings including the required use of low-flow toilets, urinals, faucets, and shower heads as replacement installations and in new-builds.

US Census Bureau compiles housing data in its Table DP04: Selected Housing Characteristics. The latest dataset available for Los Alamos is the 2019: American Community Survey 5-Year Estimates.

It can be assumed from this information that around 7,000 homes in Los Alamos County were built prior to 1994, when enforcement of the Energy Policy Act of 1992 began. It is unknown how many of these 7,000 homes have done upgrades or retrofits. This provides a potentially large customer base to target with specific conservation efforts like improved appliance efficiency, insulation, and weather stripping.

Landscape preferences vary throughout the county, from extensive lawns to complete xeriscaped yards. Precise numbers of each are unknown but increased water usage during the summer months is indicative of landscape maintenance.

Total Housing Units: 8,061



Pre-1939:
24



1940-1949:
621



1950-1959:
1360



1960-1969:
1570



1970-1979:
1875



1980-1989:
1039



1990-1999:
708



2000-2009:
1064



After 2010:
123

Local Conditions

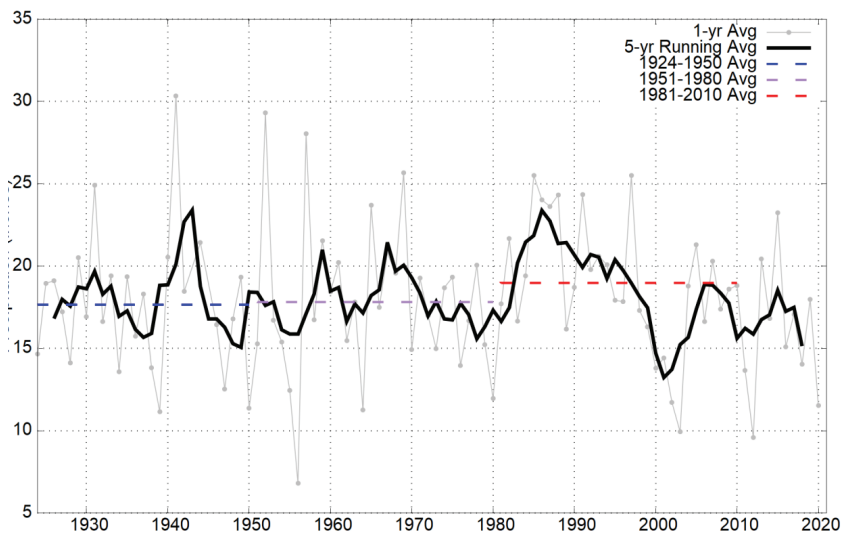
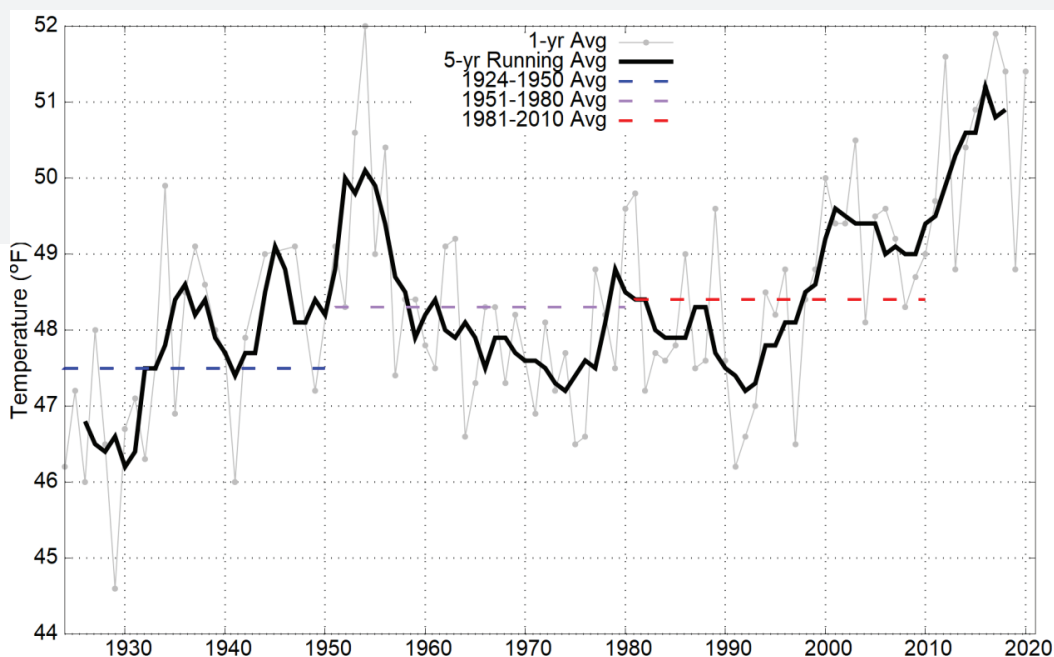
Climate Trends

All weather data comes from the LANL Weather Machine, which maintains many weather stations around Los Alamos County. LANL's meteorologists on staff provided data in the following charts. These charts reveal that Los Alamos and White Rock have their own distinct climate systems.

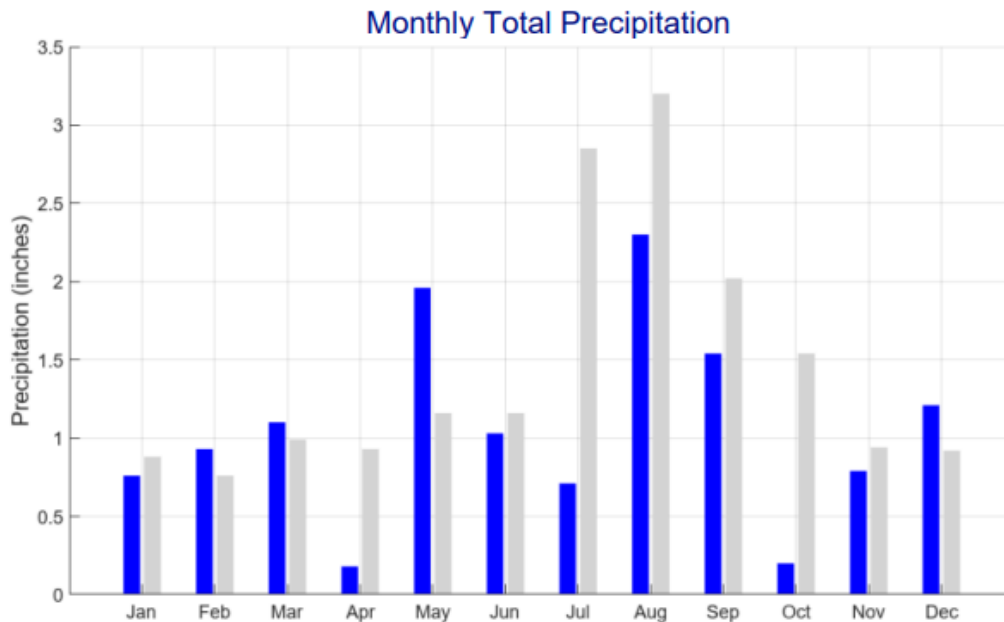
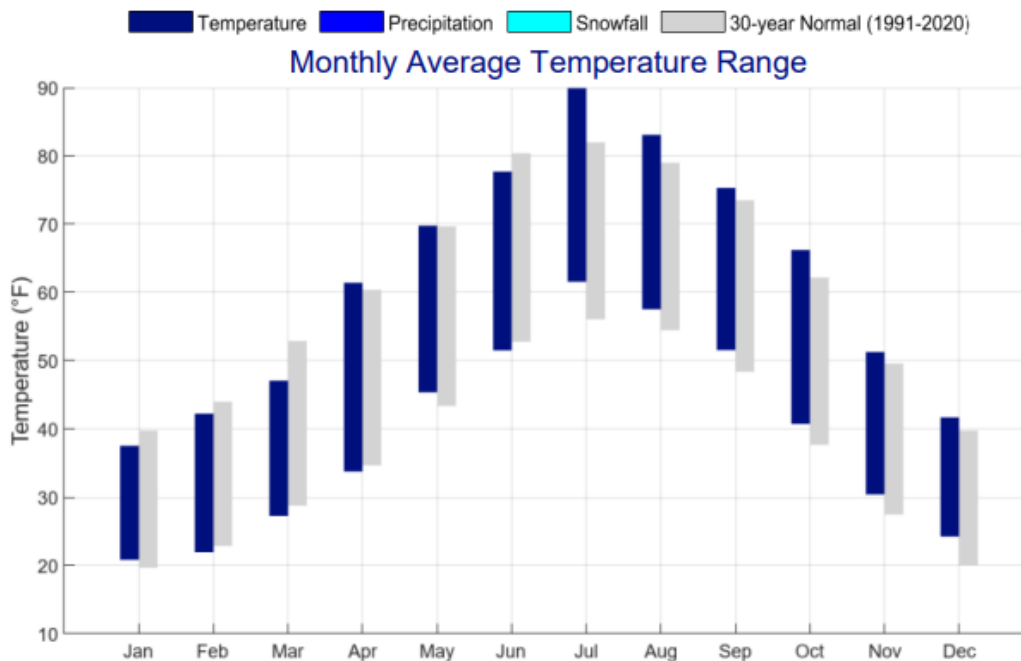
Los Alamos is at a higher elevation – around 1000 feet higher – and closer to the Jemez Mountains than White Rock. Therefore, Los Alamos has a wetter, cooler climate overall. LANL meteorologists recently released the “Los Alamos Climatology 2021 Update,” which provides climate statistics for the 30-year, 1991-2020 averaging period. More in-depth information regarding the climate of Los Alamos County can be found in their report.

Right: Temperature history for Los Alamos (1924-2020) taken from the LANL Climatology 2021 Update, Figure 29.

Below: Precipitation history for Los Alamos County (1924-2020) taken from the LANL Climatology 2021 Update, Figure 34.



Prior to 2015, more regular cycles of precipitation associated with the monsoon season (July – September) are visible. After 2015, the precipitation cycle appears more erratic for both Los Alamos and White Rock. The area seems to be experiencing longer periods of no precipitation with intense bursts of heavy precipitation.



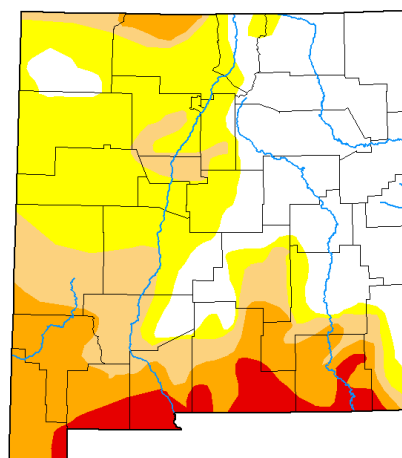
Regarding average monthly temperature, an important note is that the maximum summer temperatures for both communities are creeping toward an average of 90°F for a couple of months, when historically only a few days of the year would reach this temperature. And, although Los Alamos is at a higher altitude, White Rock has lower minimum temperatures when the cold air drains off the Jemez Mountains at night.

The US Drought Monitor (USDM) releases drought maps every Thursday. These maps are based on several numeric inputs, index readings, and satellite-based assessments. It's important to remember that the USDM is not a forecast, but it is a tool to use to trigger drought responses and emphasize the need for conservation efforts.

Above: 2023 Annual Summary provided by Los Alamos National Laboratories Weather Machine, Annual Reports.

Right: An example of a USDM Map released January 30, 2025 with a data valid date of January 28, 2025.

U.S. Drought Monitor New Mexico



January 28, 2025
(Released Thursday, Jan. 30, 2025)
Valid 7 a.m. EST

	Drought Conditions (Percent Area)					
	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	34.50	65.50	36.00	20.58	5.37	0.00
Last Week 01-21-2025	35.21	64.79	35.86	19.69	5.37	0.00
3 Months Ago 10-28-2024	21.33	78.67	33.32	19.61	6.52	0.00
Start of Calendar Year 01-01-2025	43.30	56.70	35.22	19.69	5.37	0.00
Start of Water Year 10-01-2024	28.35	71.65	34.73	17.54	2.80	0.00
One Year Ago 01-30-2024	1.23	98.77	91.38	69.44	28.86	5.53

Intensity

- None
- D0 Abnormally Dry
- D1 Moderate Drought
- D2 Severe Drought
- D3 Extreme Drought
- D4 Exceptional Drought

The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. For more information on the Drought Monitor, go to <https://droughtmonitor.unl.edu/About.aspx>

Author:
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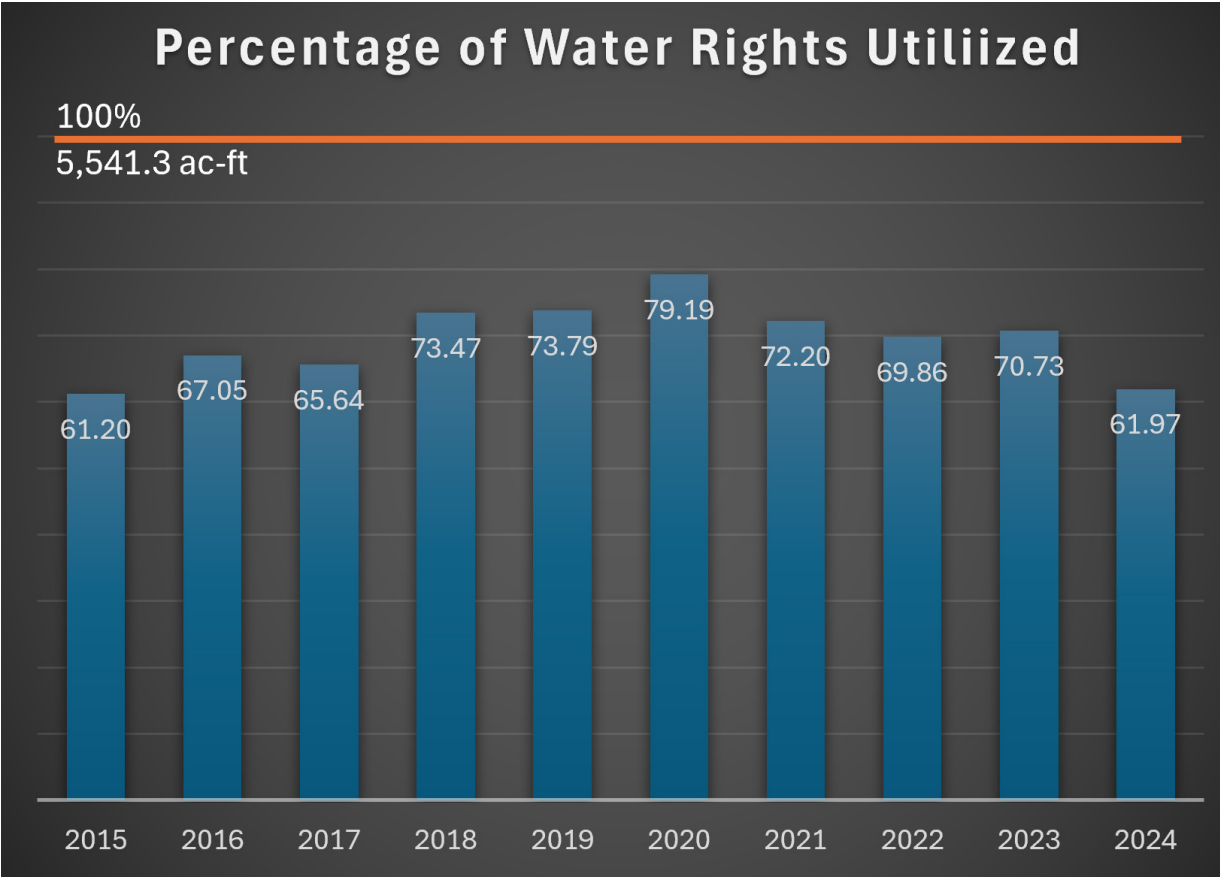
droughtmonitor.unl.edu

Water Resources and Supply Overview

Water Rights

The DPU provides water service to the users in Los Alamos County, at LANL, and to Bandelier National Monument. DPU began operating the water system in 1998; however, it wasn't until 2001 that ownership and most of the water rights (70%) were transferred from the DOE. The DPU leases the remaining water rights owned by DOE (30%). This agreement was renewed for an additional 10 years in Fiscal Year 2021. There is no stipulation that either entity must use within their leased amount; however, total water consumption must stay within the water right allotment. LANL maintains a separate site-wide Water Conservation Program Plan.

Water rights in use for Los Alamos County total 5,541.3 acre-feet per year and are comprised of a combined right of groundwater and surface water. From the 1960s to the present, total water consumption hovers between 4,000 and 5,000 acre-feet per year.



Water rights usage data is tabulated from each water production well meter.

Demand Projections

Daniel B. Stephens and Associates, Inc., completed an update to the Long-Range Water Supply (LRWS) Plan and it was approved by the BPU in January 2018. The LRWS Plan focuses on long-term water planning, and projects two possible outcomes as part of its demand forecast. This table shows the projected demands with and without LANL usage based on low (decreasing population) and high (increasing population) estimates.

Year	Population Projection		Projected Demand (ac-ft/yr)		Total Projected Demand- includes LANL (ac-ft/yr)	
	Low	High	Low	High	Low	High
2020	17,988	20,000	2,716	3,020	3,634	3,938
2030	17,789	20,812	2,686	3,143	4,191	4,648
2040	17,123	21,447	2,586	3,239	4,091	4,744
2050	16,480	21,874	2,488	3,303	3,993	4,808
2060	15,863	22,092	2,395	3,336	3,900	4,841

Potential Concerns

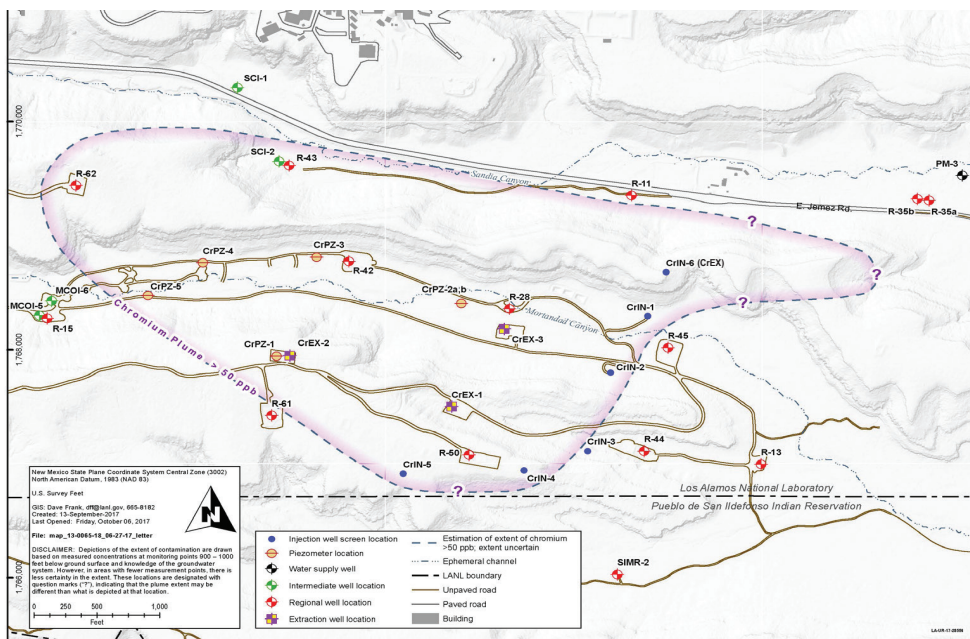
Los Alamos County's water rights are junior to several downstream senior water rights holders. With additional growth (population, tourists, and work force) in Los Alamos County and other areas and requirements to sustain endangered species and wetland habitats, there is the potential that protection of the senior water rights could impact long-term allocation of Los Alamos County's water rights, even over the next 40 years. Additional water rights concerns include Rio Grande Offset Requirements and the difficulty in finding willing sellers of water rights, and the potential impact of the Navajo Water Rights Settlement provisions on the San Juan-Chama Project water rights.

The risk of contamination of the current and/or future groundwater supply for Los Alamos County and its service members should be acknowledged. The DPU protects drinking water sources with sound well placement and construction as well as maintaining top-performing system operations

and management. The DOE is currently assessing the extent of and remediation measures for a hexavalent chromium plume that is present in the regional aquifer.

The impacts of a changing climate are one of the biggest factors out of the control of DPU and DOE. Increasing temperatures and decreasing precipitation totals will strain existing water resources. Evaporation of surface water sources and lower recharge rates of groundwater resources need to be realized as possible threats to water availability for Los Alamos County.

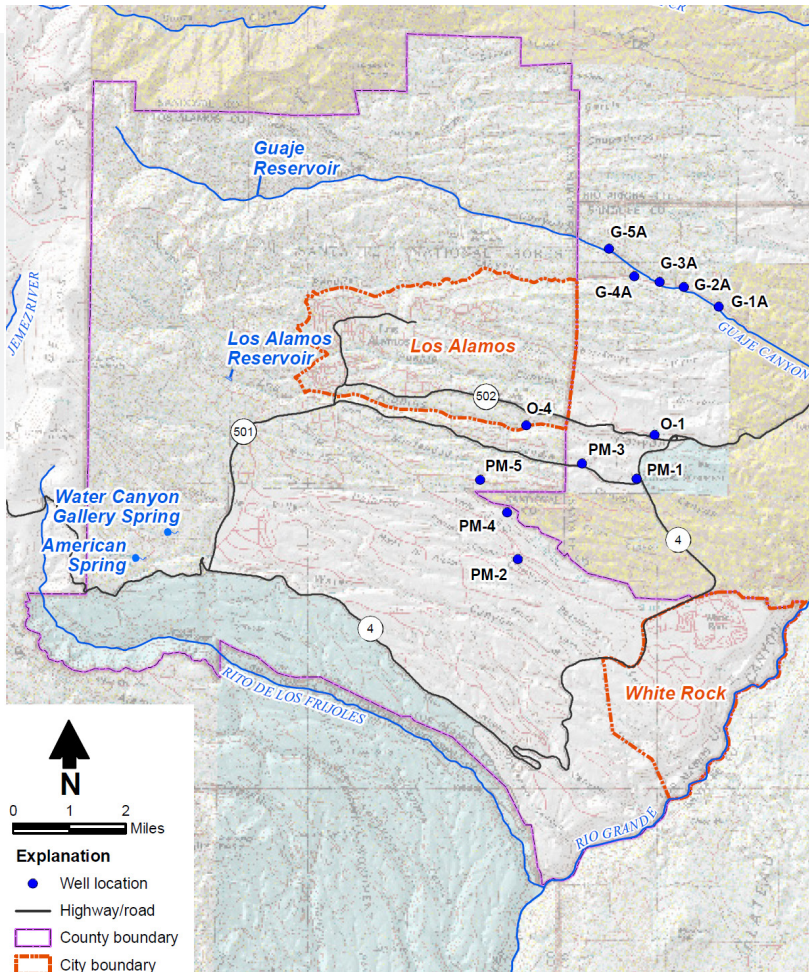
Approximate location of chromium plume. Located southeast of Los Alamos townsite and northwest of White Rock.



"An application for permit to change an existing water right was filed jointly by DOE and the LACWU [DPU] in May 2016, in support of the chromium interim measure project that will run through December 2023...The application requests a change in purpose of use for groundwater to add groundwater remediation and additional groundwater points of diversion to be used for control and future characterization of hexavalent chromium-contaminated groundwater...The projections assume that the water supply remains available in terms of water rights and contamination, and do not take into account the possibility of treating and using contaminated groundwater." -LRWS Plan

Water Resources and Supply Overview

Water Sources



Los Alamos County is currently supplied by 13 active wells that range in depth from 1,519 feet to 3,092 feet. All water is drawn from the regional aquifer beneath the Pajarito Plateau. Currently, groundwater supplies potable water from the Guaje, Pajarito, and Otowi well fields. An additional well drilled in the Otowi well field and completed in 2023. This well, Otowi 2, reaches a depth of 2,520 feet and will be one of DPU's largest water-producing wells, pumping between 1,200-1,300 gallons per minute.

While the County's water rights of 5,541.3 acre-feet include both surface water and groundwater, the DPU supplies its potable water for customers solely from groundwater sources. Surface water sources are primarily used for irrigation purposes and as emergency supplies for wildfires. Surface water sources include: Water Canyon Gallery Spring, Los Alamos Reservoir, Guaje Reservoir, Camp May, and the unused contracted rights in the San Juan-Chama Project.

Points of water diversion, taken from Figure 2-1 in the LRWS Plan.

Los Alamos Reservoir Repair

The Los Alamos Reservoir was severely damaged after the Cerro Grande Fire in 2000 and again by the Las Conchas Fire in 2011. The reservoir has been impacted by siltation and transmission pipeline breaks because of intense and catastrophic flooding events ever since. DPU has been awarded a grant from the River Stewardship Program to help address the erosion in this watershed impacting the stream and reservoir quality and to stabilize the access pipeline and roadway. The project will clear debris and use natural channel design to restore the water channel and floodplain above and below the reservoir. **This project was completed during the summer of 2024.**

San Juan-Chama Project

The San Juan-Chama Project, in the Colorado River Basin, is geographically separate from the current regional aquifer DPU utilizes for potable water. Should DPU decide to implement access to this project, this source water would help to diversify Los Alamos County's water supply. The County is contracted for 1,200 acre-feet of the San Juan-Chama Project with the US Department of the Interior Bureau of Reclamation. More information about the development of this water right can be found in Section 4.2.1 of the LRWS Plan.

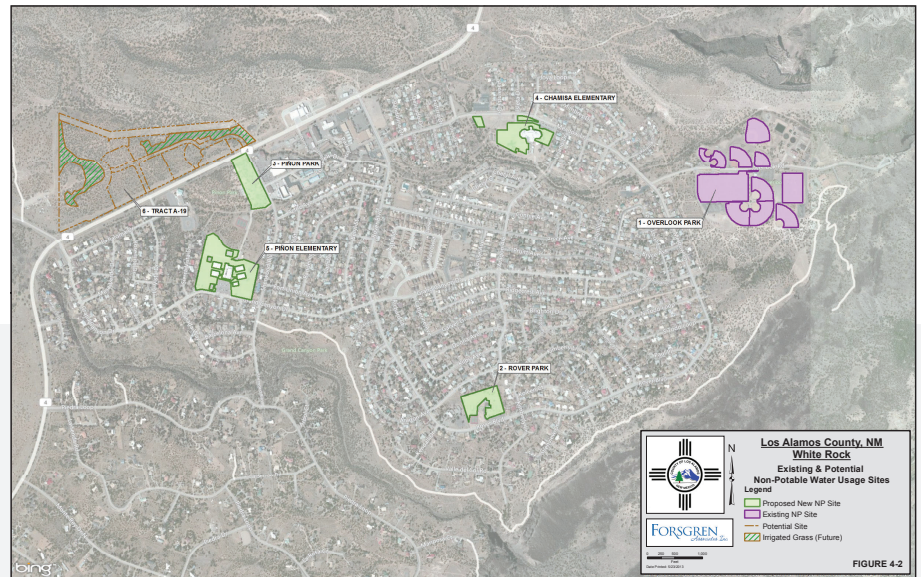
Reclaimed Water

Wastewater is currently treated at the Los Alamos Wastewater Treatment Plant (WWTP) and the effluent is used to maintain a wetland downstream of the WWTP and to irrigate four different sites in Los Alamos: North Mesa Soccer Field, North Mesa Ball Fields, Los Alamos Middle School and Los Alamos County Golf Course. Effluent from the White Rock Water Resource Reclamation Facility (WRRF) is used to irrigate Overlook Park. Per the DPU Quarter 4, Fiscal Year 2024 Report, 93 million gallons of reclaimed water was used to irrigate green spaces throughout the county.

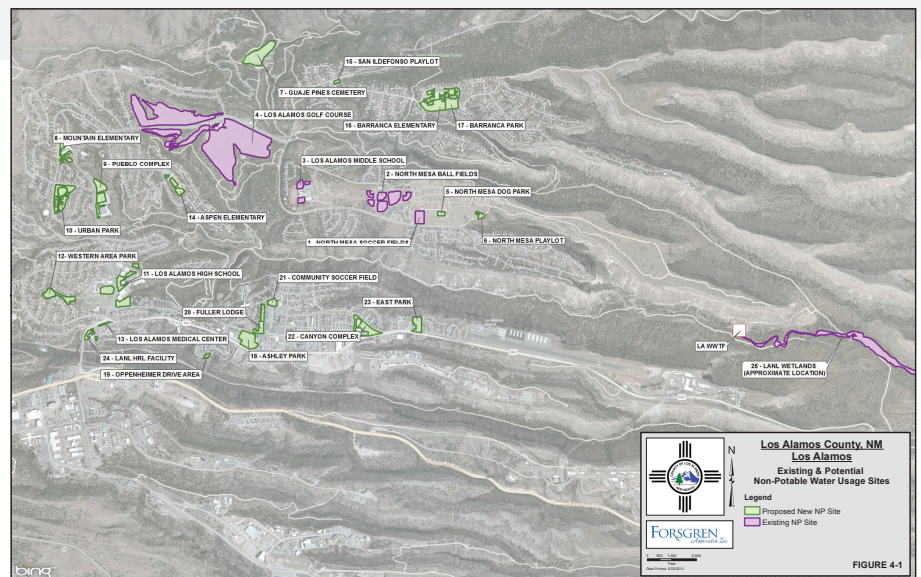
Los Alamos' original golf course began using reclaimed water in 1945 (one of the first in the nation to do so) and White Rock began irrigating Overlook Park with reclaimed water in 1985. DPU continues to evaluate the expansion of reclaimed water use per the guidance of the Los Alamos County Non-Potable Water System Master Plan, last updated in 2013.

The Non-Potable Water System Master Plan was prepared to optimize the use of effluent and surface water for irrigation purposes. This master plan helps DPU review existing infrastructure, evaluate existing and potential future irrigated sites, develop a realistic demand for system build-out, and recommend system improvements. This resource continues to serve as a planning tool for non-potable projects, and, as such, there is no timeline to update the Non-Potable Water System document.

Expansion of the non-potable system is supported by loan/grant funding from the New Mexico Finance Authority Water Trust Board, which is applied for annually.



Locations of non-potable/reclaimed water irrigation sites in White Rock (top) and Los Alamos townsite (bottom). Figures taken from the Non-Potable Water System Master Plan.

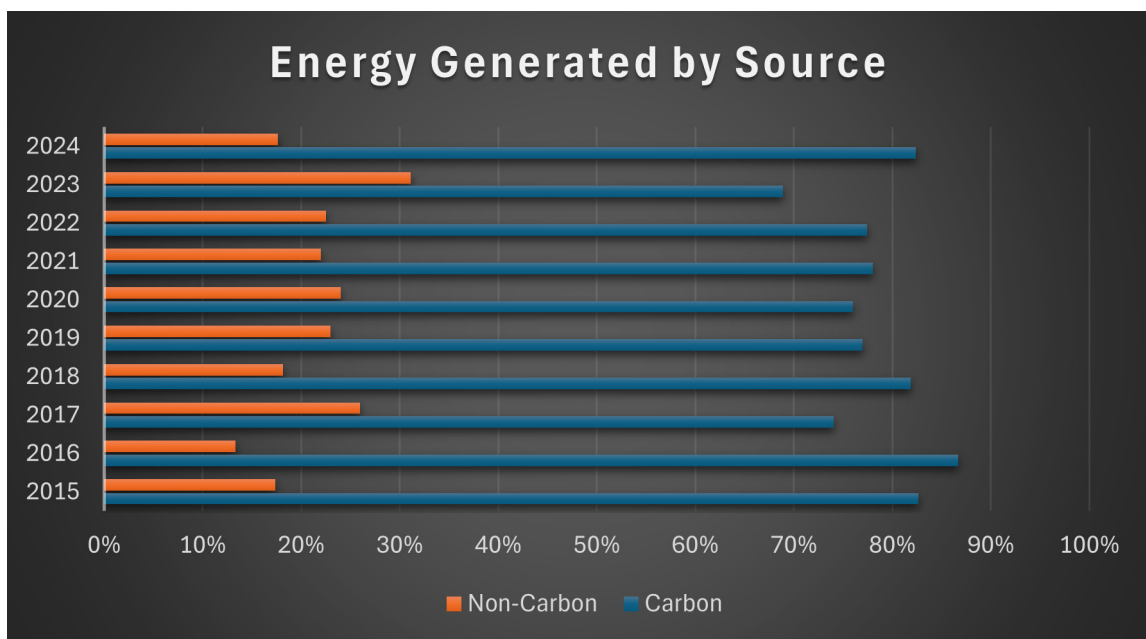


Electrical Resources and Supply Overview

System Components

The DPU and the DOE are joined in an Electric Coordination Agreement (ECA) which allows each entity to combine resources for the Los Alamos Power Pool. The Power Pool purchases, sells, and schedules the power requirements for Los Alamos County customers and LANL. The current ECA expires in 2025 and both parties are working on negotiations for a post-2025 ECA.

Los Alamos County owns and operates the electric distribution system in Los Alamos and White Rock, and manages the Power Pool resources 24 hours a day, 365 days a year. However, the County does not own any transmission systems to get the electricity to its customers. The Public Service Company of New Mexico (PNM) provides the transmission service into Los Alamos County. DOE owns the transmission system within the county that serves both LANL and Los Alamos County. The Power Pool utilizes PNM's network to bring energy to the DOE system, and then the DOE's system feeds the County's switching stations, which distribute power to DPU customers.



County assets of the Power Pool:

- Laramie River Station entitlement (coal, 10 megawatts)
- El Vado hydroelectric facility (hydropower, 8 megawatts)
- Abiquiu hydroelectric facility (hydropower, 17 megawatts)
- Los Alamos Western Area Power Administration entitlement (hydropower, 1 megawatt)
- Mercuria (economy purchases)
- County transmission agreements
- County purchased power contracts

Demand Projections

The Los Alamos County distribution system consists of the townsite substations, which provide power to approximately 7,507 customers and LANL in Los Alamos, and the White Rock substation, which provides power to approximately 2,815 customers.

The IRP provides load forecasts and demand projections based on several inputs of the ECA partners. This plan recognizes that Los Alamos County load and demand projections are driven by population growth and commercial activity. The LANL load is driven by mission change and pace of operation.

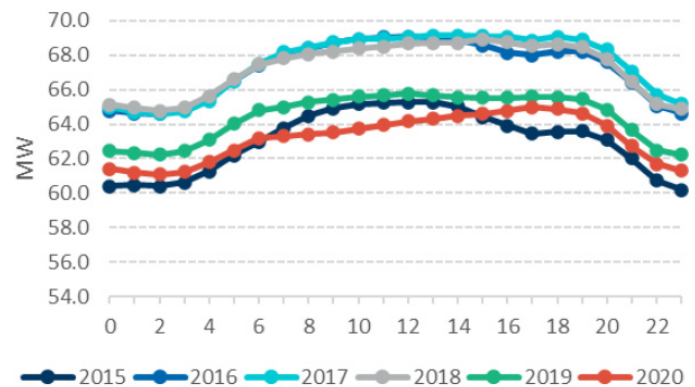
The Power Pool will also need to accommodate additional electrical needs for new housing units in White Rock and apartment complexes in Los Alamos townsite. The pace of electrical vehicle adoption and additional electrification as people switch away from natural gas also need to be considered.

Potential Concerns

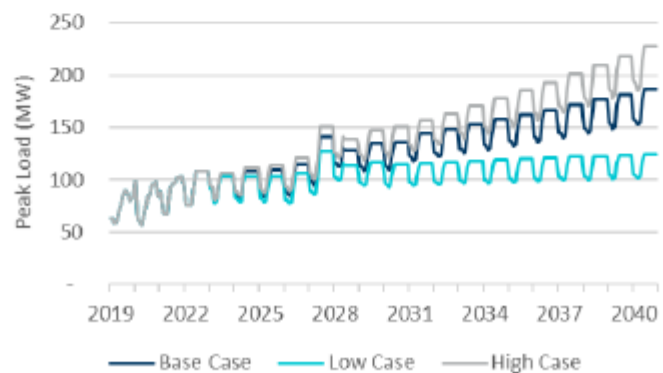
Providing a reliable source of electricity is the overarching concern for both electrical production and electrical distribution. As more and more electrical providers switch to renewable sources, there may be periods where there aren't enough renewable sources to match load. This issue is exacerbated by the slow construction of renewable sources because of material availability and required labor needs. Going forward, production sources need to be balanced: bringing renewable sources online as fossil fuel sources are phased out.

Transmission line concerns affect both production and distribution. Existing transmission lines can only carry so much electricity. As conversions from gas to electric continue, the demand for more electricity will increase, putting strain on existing lines and forcing the need for additional transmission lines from electrical production resources. Sourcing transformers is a concern on the distribution-side of transmission lines. DPU is in the process of replacing transformers and, like most supply-demand issues currently, is having to delay the progress of this project because of the slow pace of the manufacture of transformers.

Another potential concern that can be alleviated with planning is the maintenance, both planned and unforeseen, that takes power production sources offline for a given period of time. While the DPU has a goal response time of 60 minutes, known as SAIDI (System Average Interruption Duration Index), the occasional issue can take longer to resolve.



Los Alamos Power Pool Hourly Demand Summary, 2015-2020.
Taken from the 2022 IRP, Exhibit 48.



Los Alamos Power Pool Peak Load Forecast.
Taken from the 2022 IRP, Exhibit 57.

Electrical Resources and Supply Overview

Renewables

One of the strategic objectives approved by the BPU is for the DPU to become a carbon neutral electric provider by 2040.

Current electric resources utilized by the DPU for the Power Pool and considered renewable/clean energy are the El Vado and Abiquiu hydroelectric facilities, the hydropower provided from the WAPA entitlement, and the East Jemez Landfill photovoltaic array. The energy supplied to Los Alamos County that comes from non-carbon renewable resources hovers around 20% annually.

Recently, the DPU entered into two power purchase agreements with Uniper Global Commodities to bring solar and wind energy to Los Alamos County until June 2025. The first began delivering energy in January 2022. [However, this contract was terminated after the German government pulled out of all U.S. Uniper assets by July 2022 in response to the Russian gas crisis.](#)

WAPA contracted resources are subject to having an updated conservation plan as well as a current IRP agreement. The IRP agreement, a planning tool to guide the ECA in providing for future resources, was negotiated and extended until the year 2057.

An additional Power Pool resource being pursued:

- Carbon Free Power Project (CFPP): [UPDATE This project was canceled by UAMPS and NuScale in November 2023.](#)
- Foxtail Flats Solar Power and Battery Storage: This agreement will bring 170 MW of solar power and 80 MW of batter storage from the Four Corners Area, near Farmington. This project is anticipated to be online by 2026-2027.

Non-Renewables

With the goal to become a carbon-neutral provider, the DPU is beginning to phase out its coal-powered resources.

The DPU is a partial owner in the San Juan Generating Station 4 near Farmington, NM. This station was planned to sunset at the end of June 2022. However, with the unavoidable delay in getting replacement renewable resources online and the timing of a power purchase agreement gap, the BPU proposed to extend the San Juan agreement through the end of September 2022. [UPDATE: This generation station is closed and is in the decommissioning phase.](#)

The DPU has a life-of-plant entitlement with the Laramie River Station in Wheatland, WY, with plant closure slated for 2040-2042. Opportunities continue to be sought for the DPU to capitalize on its long-term agreement by potentially swapping for renewable resources. In parallel, a negotiation for a hard exit, if an option exists, will be pursued in accordance with the BPU adopted goal.

Gas Resources and Supply Overview

The DPU owns and operates its natural gas distribution system. The regional transmission pipelines are owned and operated by New Mexico Gas Company. There are two sources of supply available for Los Alamos County. From these regional lines, two stations supply Los Alamos townsite and one station supplies White Rock.

Fiscal year 2024 has an average customer base of 7,148 residential units and 430 commercial, municipal, or educational units. These numbers fluctuate for any number of reasons, including households moving, seasonal residents, and businesses changing spaces.

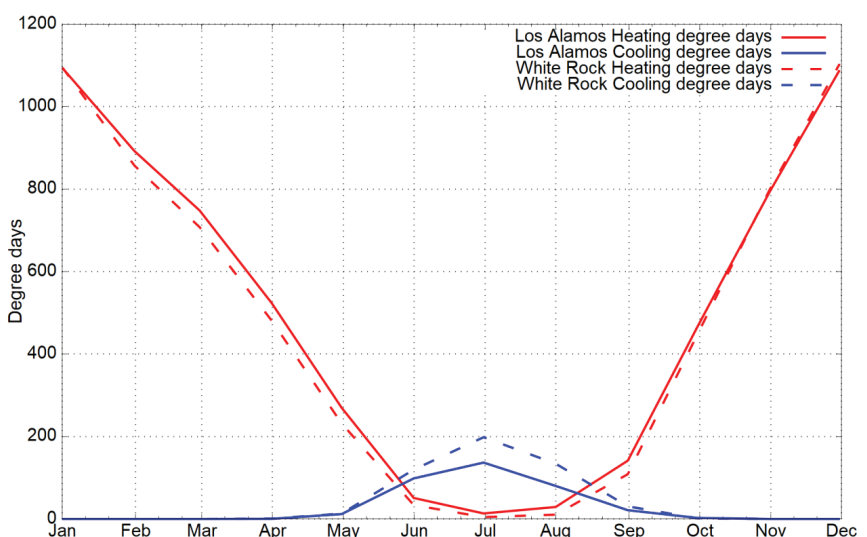
Demand Projections

The DPU has an ultimate goal of eliminating natural gas use by 2070. Demand projections include the reduction of natural gas usage each year. While simple in concept, achieving these reduced projections in practice may be far more challenging. Gas consumption is only predictable at a base level—the amount customers might use to heat water and run appliances. Other uses, primarily heating buildings, are dependent on weather patterns and much less predictable. What may look like a solid success in one year could be followed by failure to meet the reduction in the next due to uncontrollable weather-related circumstances.

Potential Concerns

There are few concerns with the gas supply specifically. Locally, freezing isn't an issue, and the risk of earthquakes damaging pipes is of low concern. However, supply issues from regional sources and systems can impact the Los Alamos system. For example, the failure of gas operations during the deep freeze in Texas in February 2021 caused a regional rate spike.

Another concern is related to the long-term elimination goal. As customers phase out natural gas usage in their homes, eventually gas rates will need to increase significantly for those still using natural gas to cover the DPU's cost of gas. This won't be obvious in the beginning, but it will cost the same to operate the natural gas system for 400 customers as it does 8000 customers. The DPU will need to plan for this transition.



Monthly average heating and cooling degree day (1991-2020).
Taken from the LANL Climatology 2021 Update, Figure 5.

Assessing Supplier Performance: Water

Water demand and consumption is tracked using a variety of metrics. All of the metrics rely on the base data pulled from the utility billing system, Munis.

Leak Detection Surveys

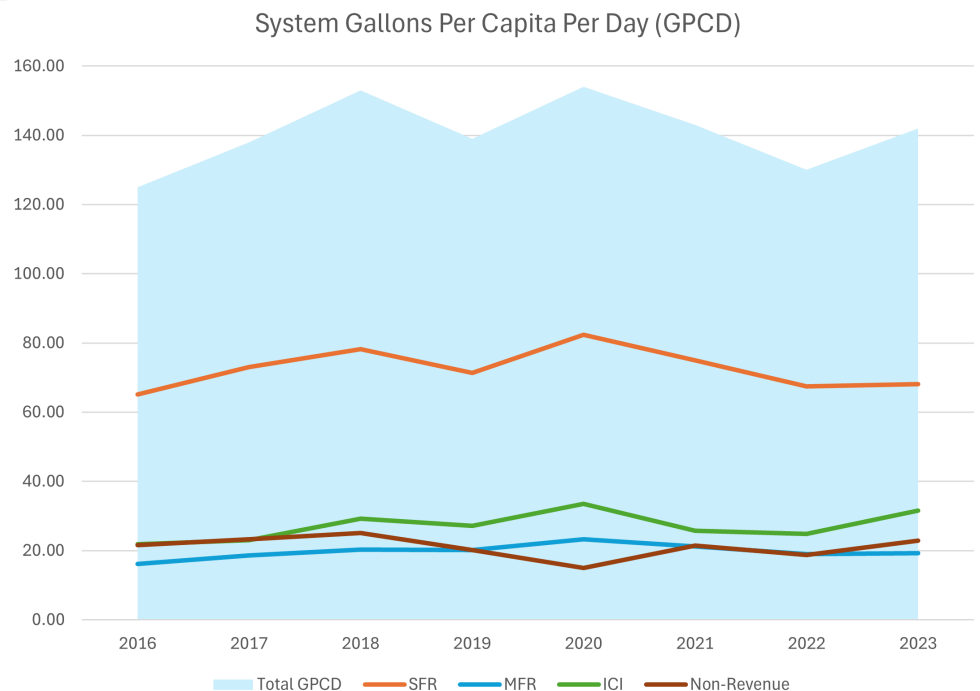
A system leak detection survey is conducted on a 5-year cycle. 20% of the total system is targeted annually. Each year a different part of the system is surveyed, and the leaks are classified into three categories: Class 1-3. Class 1 leaks are deemed hazardous and could result in damage to the utilities. Class 2 leaks display water losses significant enough to be monitored on a regular repair schedule. Class 1 and 2 leaks are repaired immediately. Class 3 leaks are relatively small and are repaired as workloads permit.

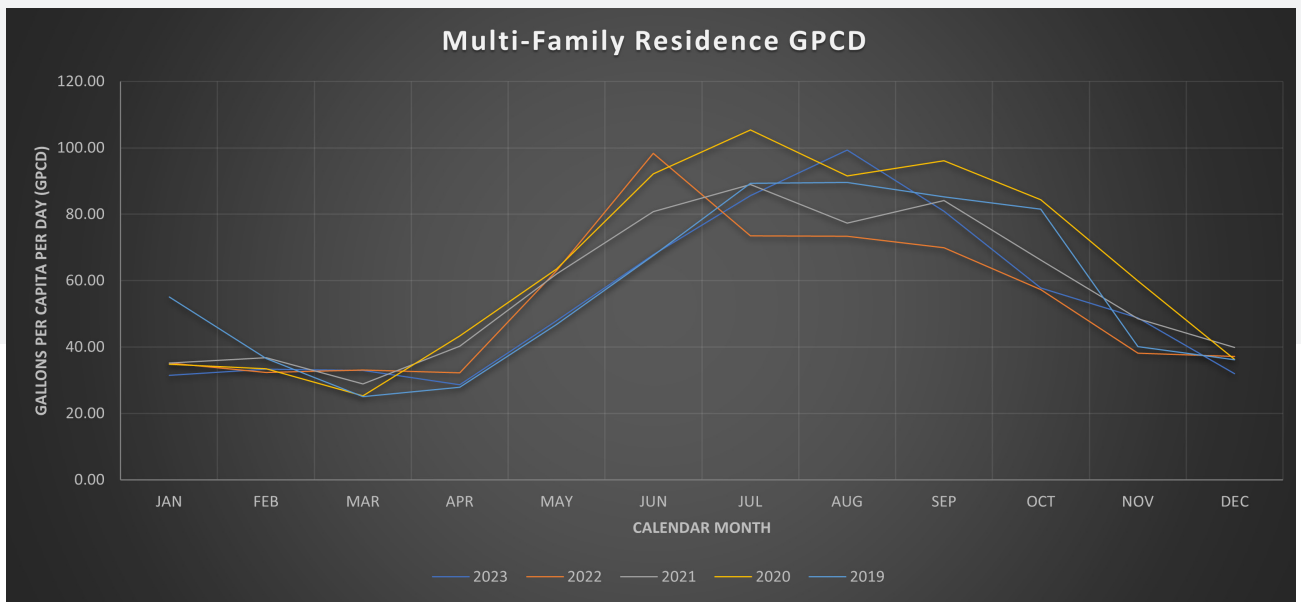
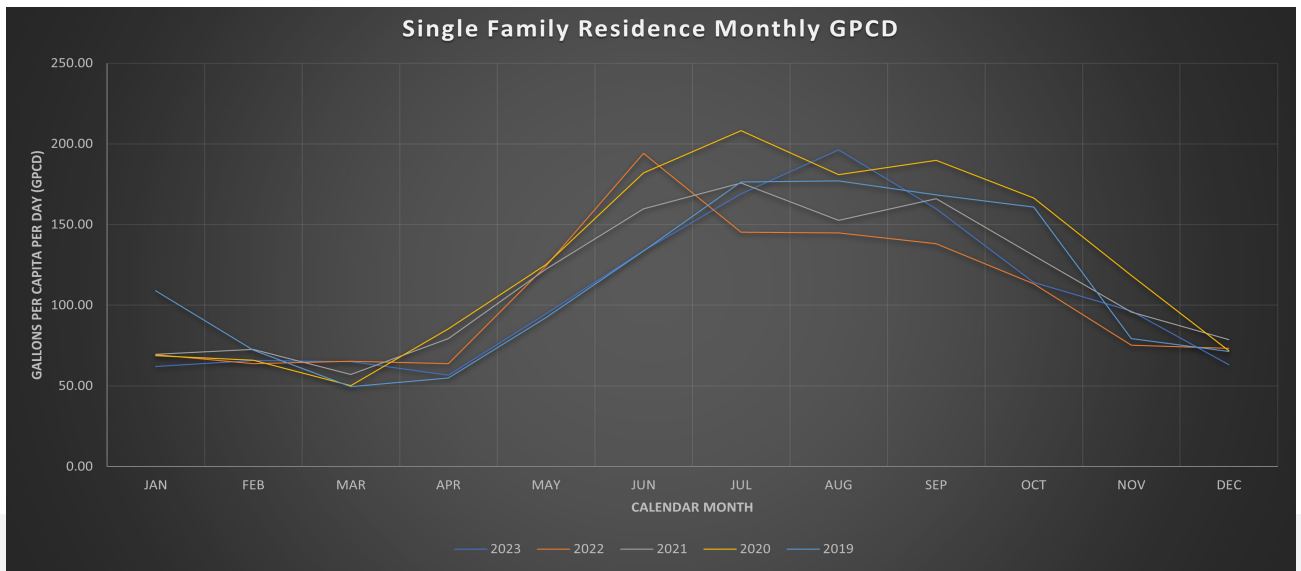
Gallons Per Capita Per Day

The NMOSE's Gallons Per Capita Per Day (GPCD) is a spreadsheet calculator completed and submitted annually to the NMOSE as a compliance piece for Los Alamos County water rights. This spreadsheet will be used to compare the County's water consumption with other communities in the southwest to help develop water conservation goals.

The GPCD charts in this plan report on the years 2019 to 2023. Household data is pulled from the 2010 Census (for years 2018—

2021) and 2020 Census data for the remaining years. Average household size for the reporting period is determined, by Census data, to be 2.33 persons. The populations for Single Family Residence (SFR) and Multi-Family Residence (MFR) are calculated using average household size multiplied by the number of connections associated with each customer category. GPCD for each category is formulated by dividing class consumption by class population. All values are auto-calculated in the NMOSE GPCD spreadsheet.

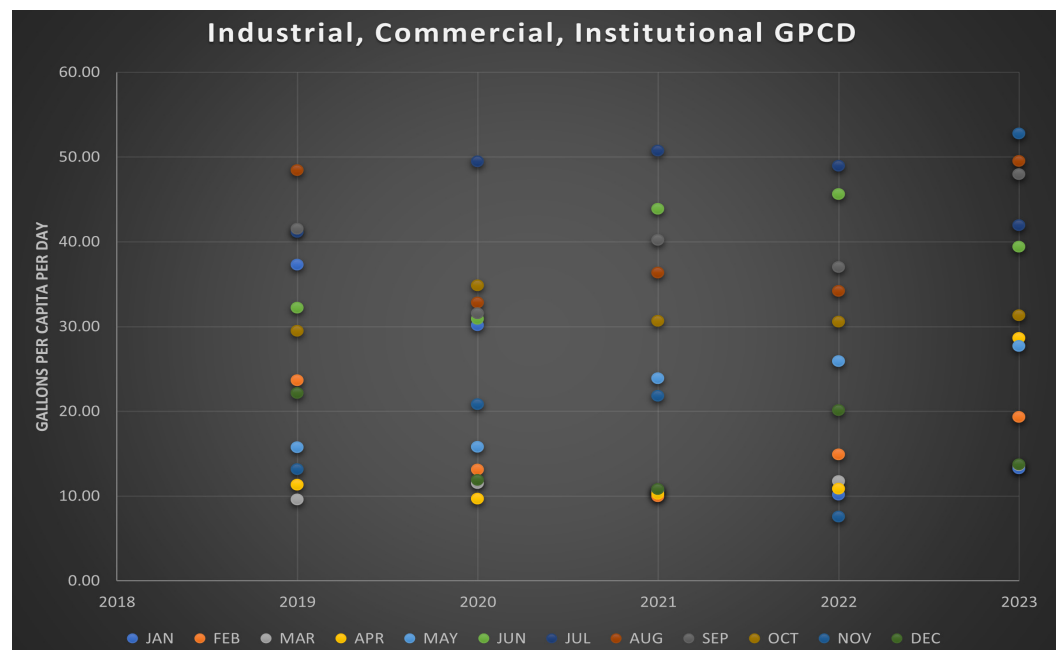




Previous Page: Los Alamos County total system annual Gallons Per Capita Per Day broken down into customer class and Non-Revenue water.

This page: Charts compiled from the NMOSE GPCD calculator. The top chart graphs the GPCD of Single Family Residences while the middle graphs the GPCD of Multi-Family Residences. The bottom chart graphs all commercial, municipal, and educational facility (referred to as "Industrial, Commercial, Institutional by the calculator) GPCD.

These values are for all of Los Alamos County and are not broken into community.



Assessing Supplier Performance: Water

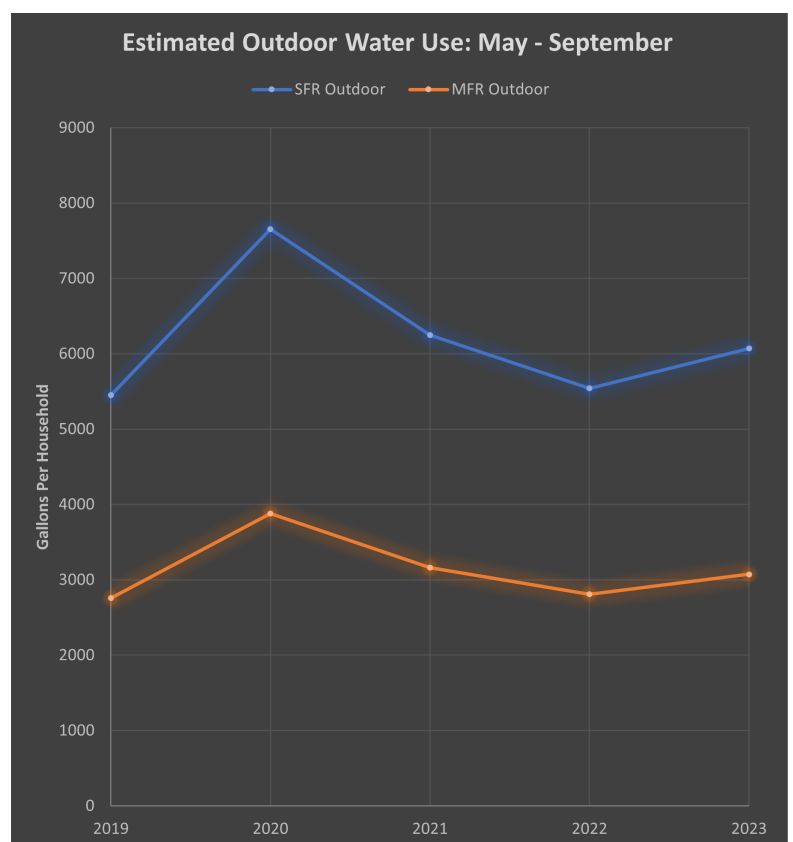
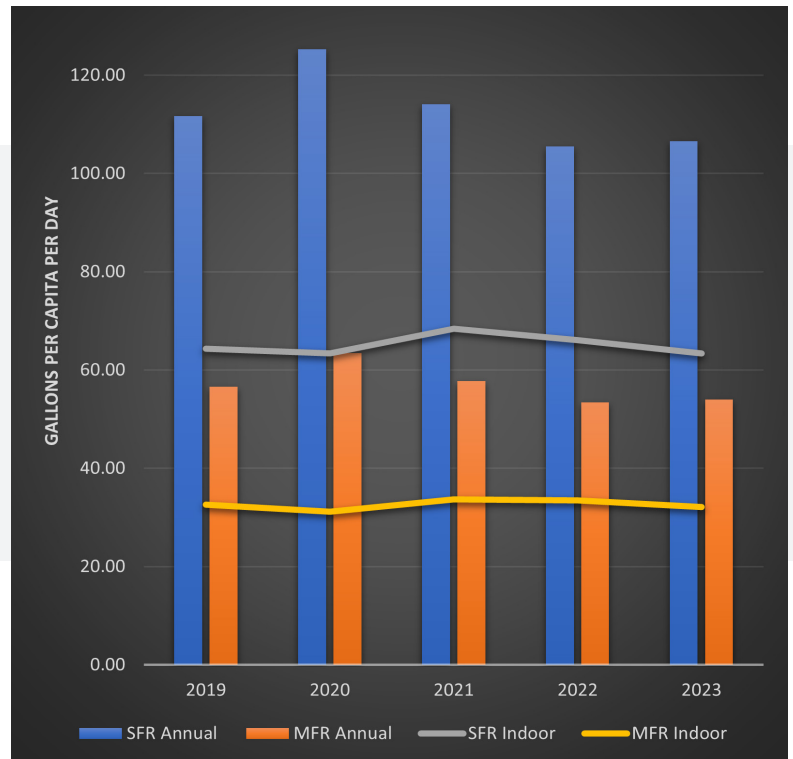
Indoor GPCD

Using the GPCD calculator, indoor and outdoor water usage can be estimated. Indoor water consumption is calculated by averaging the three months - of the four winter months between December and March - with the lowest water use. Indoor GPCD is graphed with the annual GPCD for these two customer classes.

Outdoor GPCD

While reducing indoor water use is a common water conservation strategy, outdoor water use is a significant percentage of total water usage. This is expanded more in Part II, Goal 5 of the conservation program. Outdoor GPCD is calculated by subtracting the average monthly indoor GPCD from the total monthly GPCD. The charts below provide a detailed monthly breakdown of GPCD during peak water-use months (May to September). It is important to notice the difference in scales between these two charts.

Alternatively this line graph displays outdoor water usage in gallons per household instead of GPCD because outdoor water usage is irrelevant of the number of household occupants.



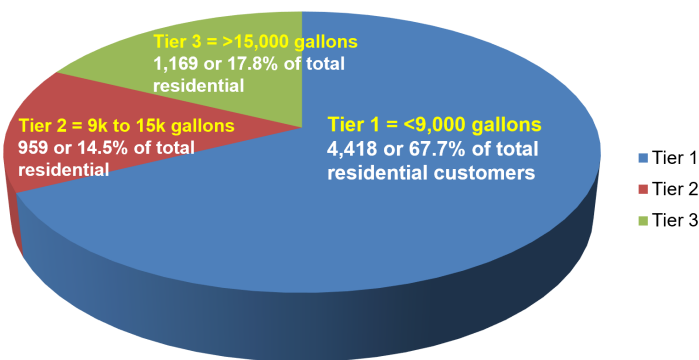
Outdoor Water Usage

	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN
Los Alamos	8,167	7,138	8,227	7,362	4,963	3,815	4,285	3,833	2,861	3,575	5,914	8,534
White Rock	10,182	13,189	12,246	11,332	6,447	4,410	5,014	2,954	3,565	4,378	8,252	11,078

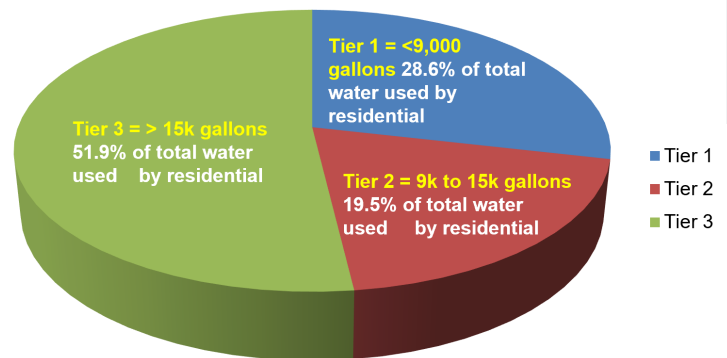
FY2019-FY2021 average monthly water consumption per household, in gallons, for residential customer class. Note the significant increase of water usage for White Rock during peak water months (May through September).

All customer classes can take advantage of outdoor conservation measures. However, the “residential” customer class is likely to see significant benefits, especially when it comes to outdoor water use. Because there is typically only one meter servicing a household unit, outdoor water use can only be estimated and assumed. The following pie charts are 2019-2021 averages of Residential Water Usage. Peak season is May through September. Non-peak season in October through April. The DPU has a tiered water rate and there is a significant shift in usage between peak and non-peak seasons.

Customer Count - Peak

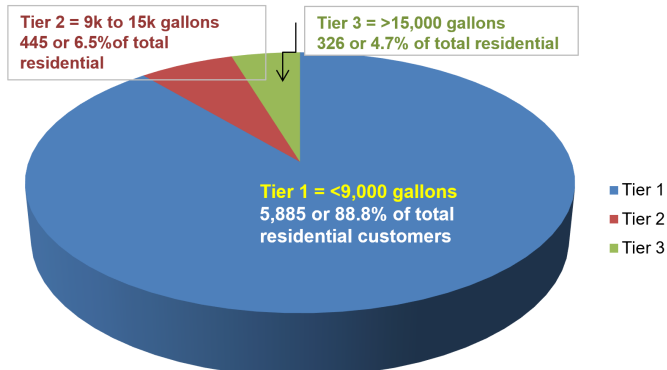


Gallons - Peak

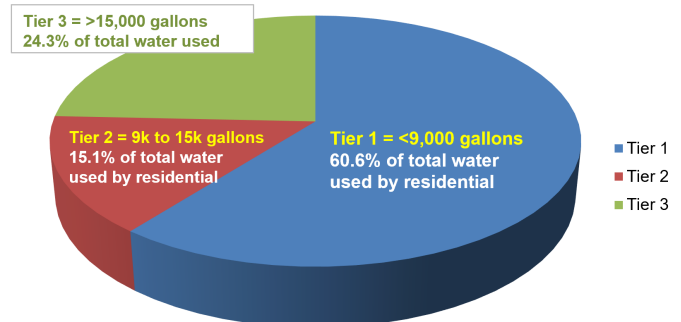


In this dataset, Tier 3 consumers represent 18% of households using 52% of the total water during peak season compared to Tier 3 representing 5% of households using 24% of total water during the non-peak season. Outdoor spaces like lawns and gardens use a lot of water and is a priority target area for reducing potable water consumption.

Customer Count Non-Peak



Gallons Non-Peak



Assessing Supplier Performance: Water

Utilities Water Audit

The American Water Works Association (AWWA) Water Audit is a requirement of the NMOSE to standardize a method of auditing water utilities when calculating the percentage of non-revenue water. The AWWA Water Audit tracks water from the point of withdrawal, or treatment, all the way through to the point of delivery to the customer.

Two of the important figures this audit helps to identify, which the DPU can then work to reduce, are apparent losses and real losses. Apparent losses include all types of inaccuracies associated with metering, data handling errors, and theft of water. Real losses are breaks or leaks in the water system on the supplier side on to the point of customer consumption. The Water Audit Data Validity Score is a measure of the reliability of available data provided in the audit.

AWWA Free Water Audit Software:
System Attributes and Performance Indicators

WAS v5.0
 American Water Works Association
 Copyright © 2014, All Rights Reserved.

Water Audit Report for: **Los Alamos County (NM3500115)**

Reporting Year: **2023** 1/2023 - 12/2023

*** YOUR WATER AUDIT DATA VALIDITY SCORE IS: 72 out of 100 ***

System Attributes:

Apparent Losses:	20.681	MG/Yr	
+	Real Losses:	121.647	MG/Yr
=	Water Losses:	142.328	MG/Yr

☐ Unavoidable Annual Real Losses (UARL): 46.47 MG/Yr

Annual cost of Apparent Losses: \$134,424

Annual cost of Real Losses: \$790,705 Valued at **Customer Retail Unit Cost**
Return to Reporting Worksheet to change this assumption

Performance Indicators:

Financial:	Non-revenue water as percent by volume of Water Supplied:	16.2%	Real Losses valued at Customer Retail Unit Cost
	Non-revenue water as percent by cost of operating system:	2.5%	

Operational Efficiency:	Apparent Losses per service connection per day:	7.89	gallons/connection/day
	Real Losses per service connection per day:	46.43	gallons/connection/day
	Real Losses per length of main per day*:	N/A	
	Real Losses per service connection per day per psi pressure:	0.71	gallons/connection/day/psi

From Above, Real Losses = Current Annual Real Losses (CARL): 121.65 million gallons/year

☐ Infrastructure Leakage Index (ILI) [CARL/UARL]: 2.62

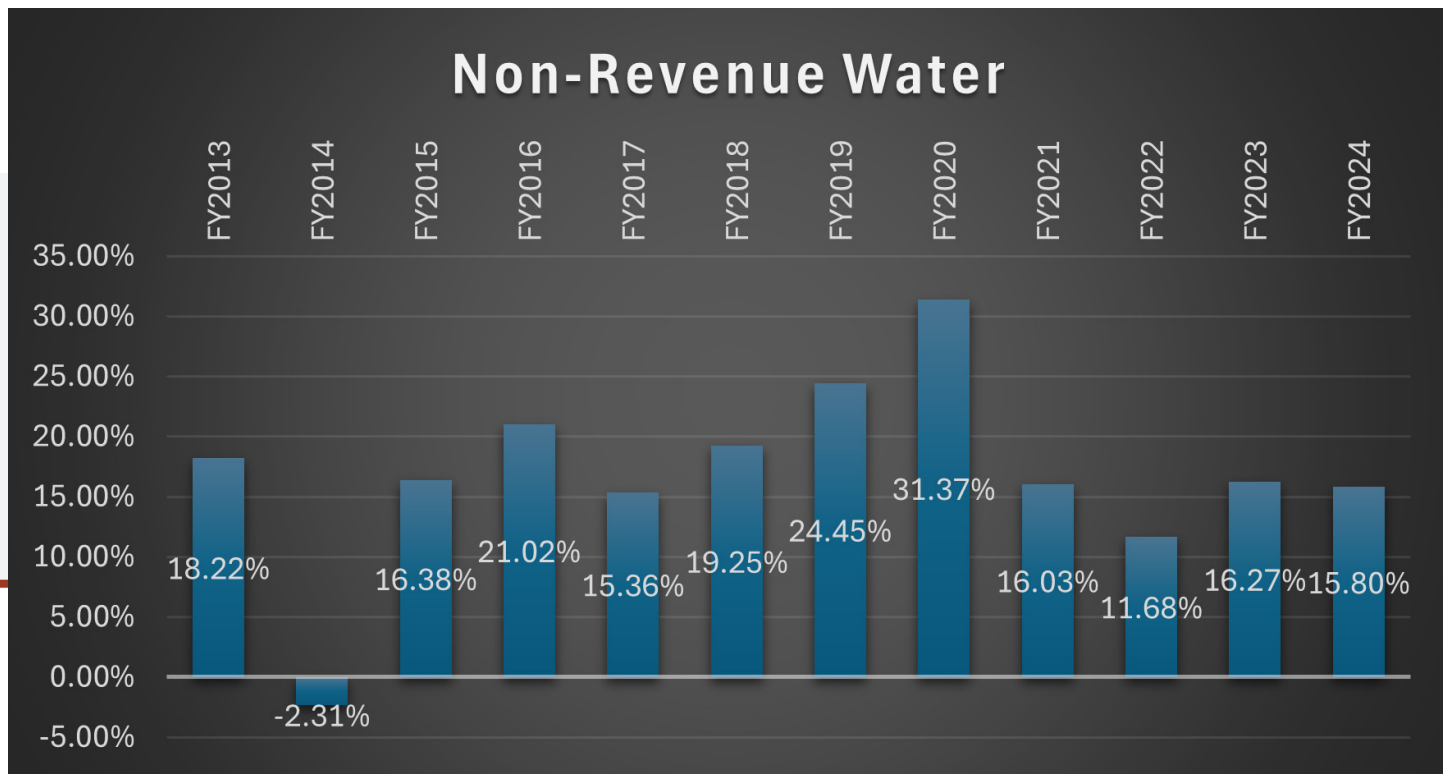
* This performance indicator applies for systems with a low service connection density of less than 32 service connections/mile of pipeline

Additional guidance is provided within the AWWA Water Audit to decrease the DPU's non-revenue water and subsequent cost to the system, presented in the table below.

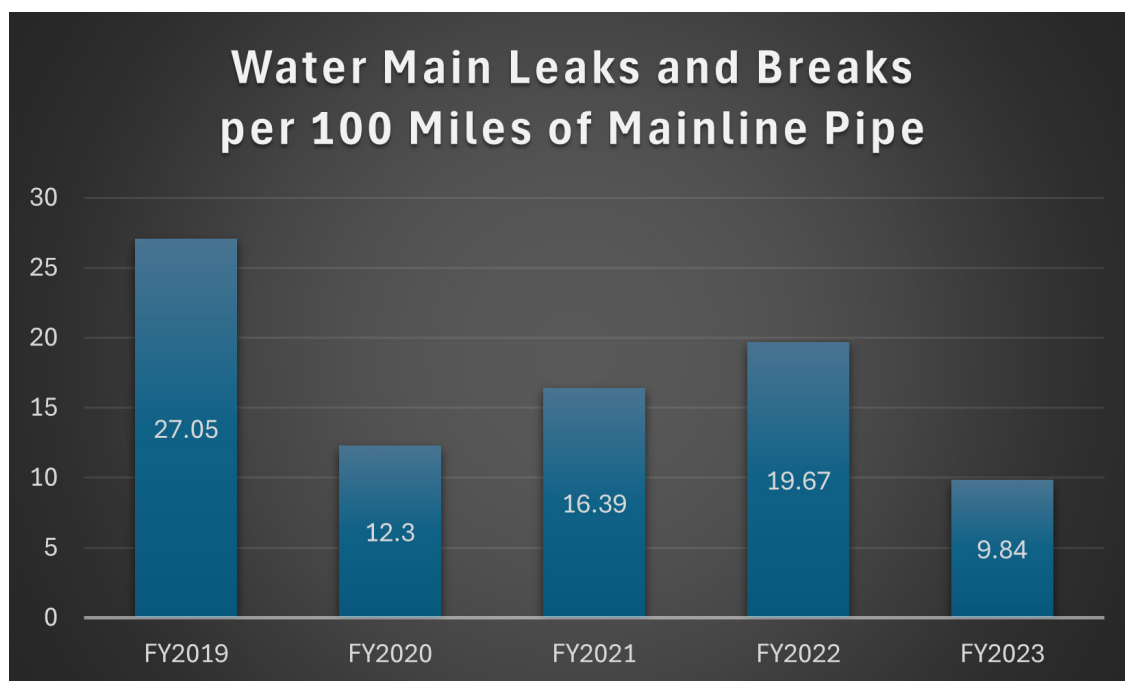
Audit data collection	Short-term loss control	Long-term loss control	Target-setting	Benchmarking
Refine data collection practices and establish as routine business process	Refine, enhance, or expand ongoing programs based upon economic justification	Conduct detailed planning, budgeting, and launch of comprehensive improvements for metering, billing, or infrastructure management	Establish mid-range (5 year horizon) apparent and real loss reduction goals	Performance Benchmarking -Infrastructure Leak Index is meaningful in comparing real loss standing

Tracking Non-Revenue Water

Below are graphs used to track water in the DPU Annual Report. Note, these dashboards are tracked per fiscal year, while the AWWA audit is tracked per calendar year. The top graph charts Non-Revenue Water as reported in the monthly consumption reports. The bottom chart displays water main leaks and breaks per 100 miles of mainline pipe. The system graphs are percentages within 100 miles of pipeline and should not be taken to add up to the non-revenue water percentage.



The majority of non-revenue water comes from water main breaks. Because of the geography of the county, water mains are under higher pressure. When a break occurs on a mainline, the extreme water pressure creates a much larger leak than a similar duration leak would create in a lower-pressured system.



Assessing Supplier Performance: Electric

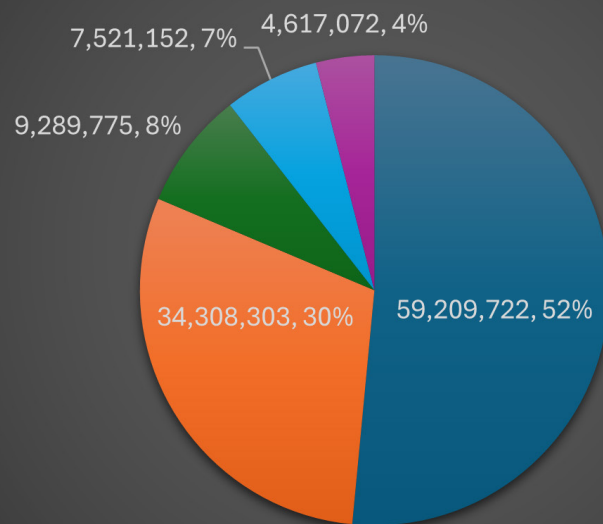
Electrical performance is tracked differently for power supply and electric distribution.

Power supply uses internal spreadsheets that calculate demand and losses. Losses are handled financially.

Electric distribution is tracked primarily through Munis and the consumption reports created using its data.

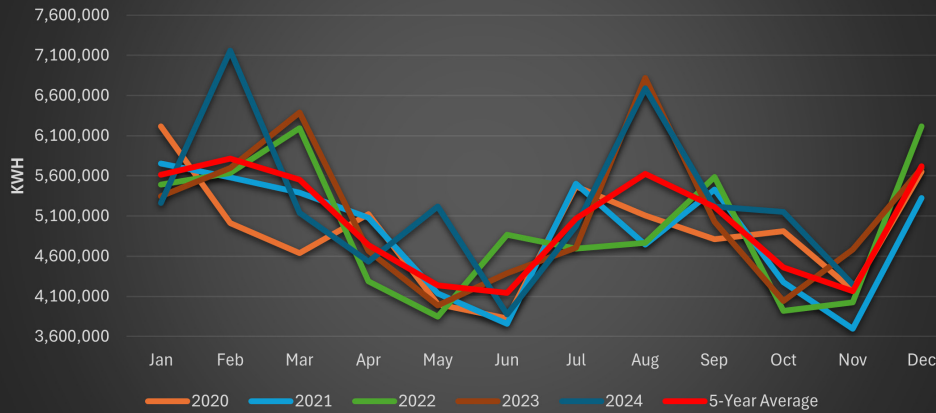
Below is a pie chart showing the 5-year (2020-2024) average of electrical consumption by customer class. This is an example of one of the consumption charts created through Munis.

**Electric Consumption by Customer Class,
2020-2024 Average in KWH and Percent**



■ Residential ■ Commercial ■ Municipal ■ Water Production ■ Educational

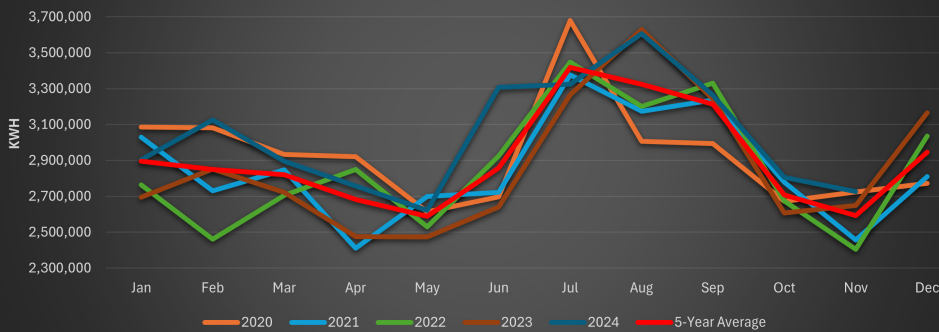
Residential Electric Consumption



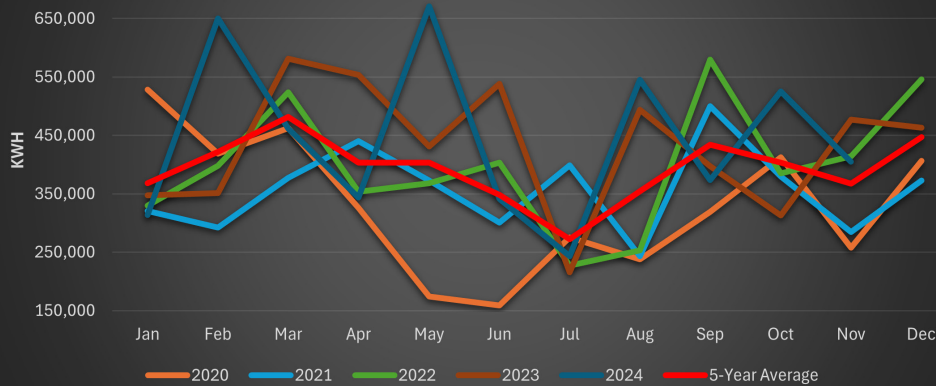
Listed are the consumption charts for each customer class for the last 5 years.

No data collection, tracking, and reporting method is without flaws, but by knowing and understanding the general usage of each customer type, outliers can be identified and determined if it was indeed a change in usage or an issue with data collection and metering.

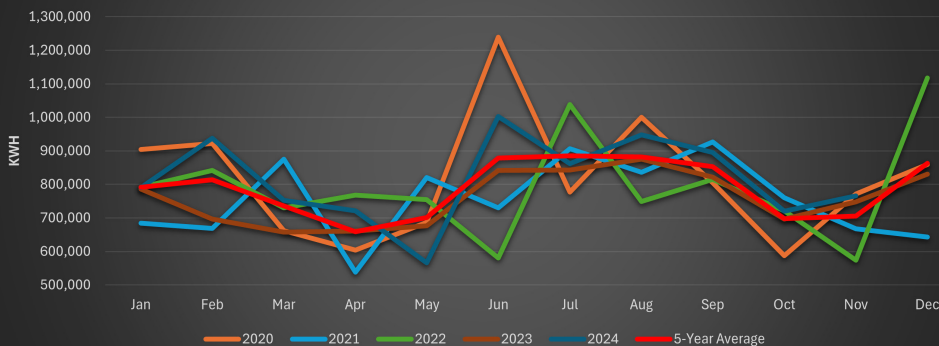
Commercial Electric Consumption



Education Electric Consumption



Municipal Electric Consumption

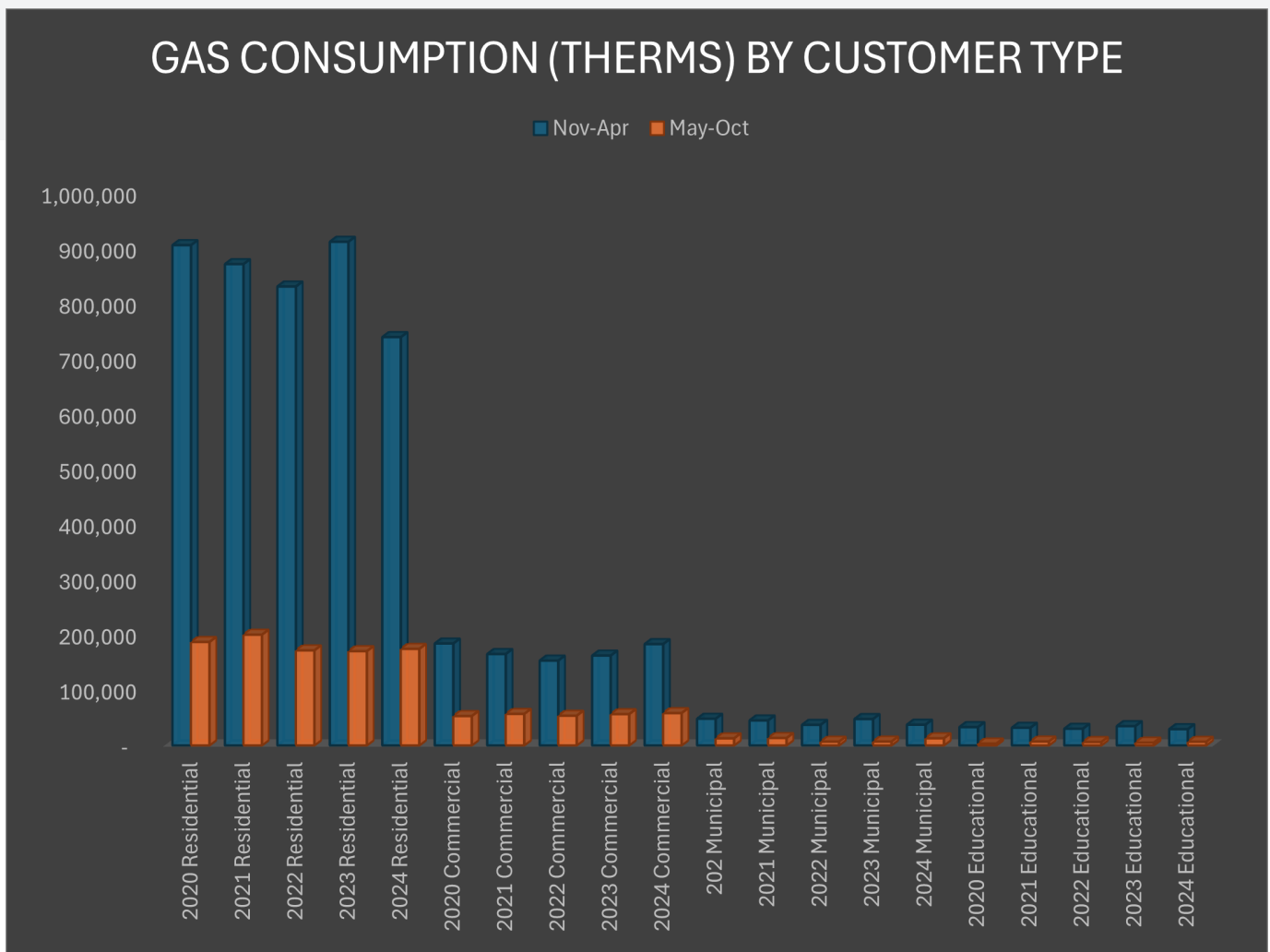


Assessing Supplier Performance: Gas

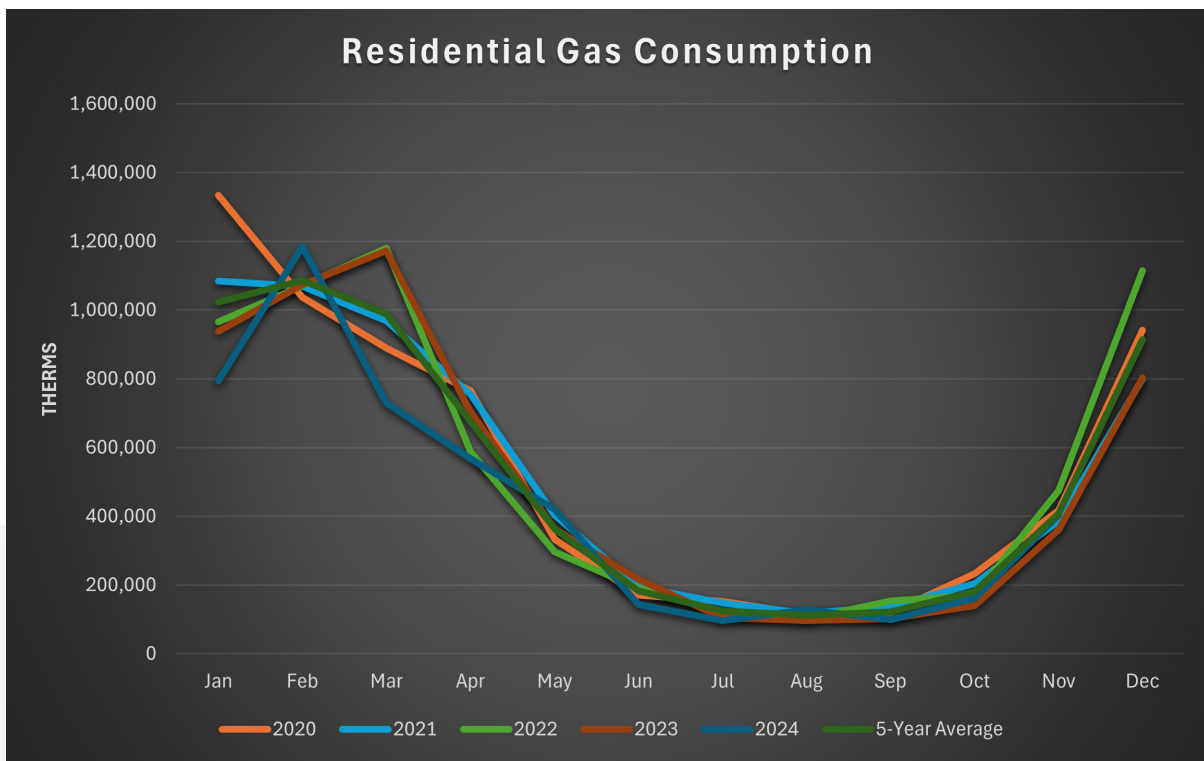
Gas performance metrics are tracked in the DPU's Gas, Water, Sewer internal gas dashboard in addition to the customer consumption monitored through Munis.

The gas industry requires extensive monitoring and reporting. Some examples include:

- An annual gas report submitted to the US Department of Transportation, which discusses pipe material and length as well as damage to and leaks in the natural gas delivery system.
- An annual greenhouse gas report submitted to the US EPA covering emissions relating to natural gas consumption.

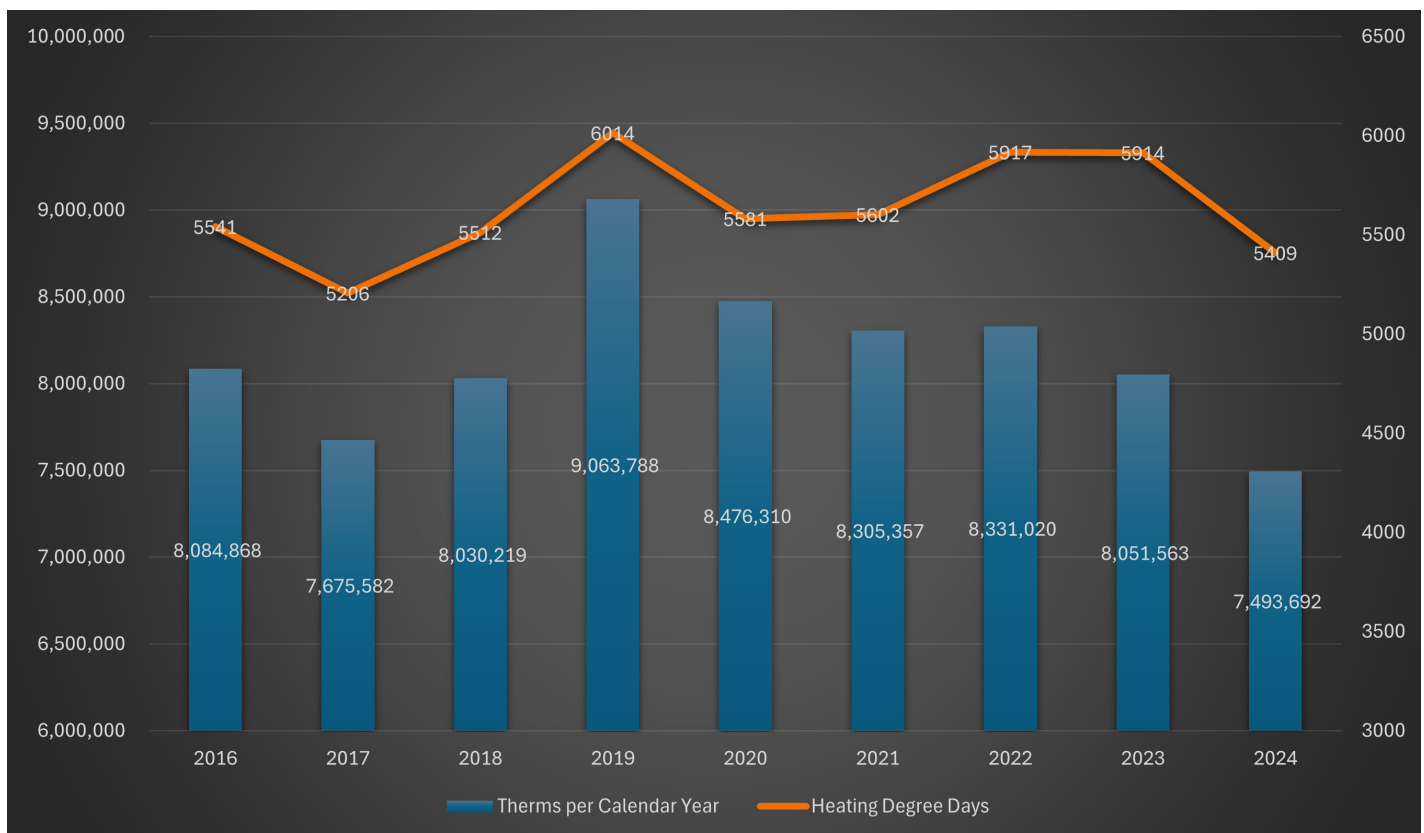


Natural gas consumption by customer class and grouped into months typically needing a heating source (Nov-Apr) and months typically needing low or no heating (May-Oct).



The above graph shows natural gas consumption for the residential customer class tracked within Munis. This customer class is the largest consumer of natural gas and is taken as an example to focus in on the large difference between months typically needing heat (November-April versus warmer months (June-September)). This is a good indicator that a significant number of furnaces within Los Alamos remain natural gas fueled.

The chart below shows the total therms delivered each calendar year. This chart helps to show that natural gas fluctuates with Heating Degree Days (HDD).





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Part II

Water and Energy Conservation Program

Water and Energy Conservation Program

Overview

The DPU Water and Energy Conservation Program (WEC Program) is facilitated by a full-time staff member, the Conservation Coordinator, who is responsible for implementing and tracking progress (success/failure) of the components of the WEC Program. The Conservation Coordinator will partner where and when appropriate. This revision focuses on updates — failures and successes — to conservation goals over the planning period 2022-2027.

Prioritizing Goals

The priorities of the WEC Program are organized and outlined in this conservation plan, which is a dynamic document driven by the DPU strategic goals and influenced by public input, whether through committees, surveys, or comments from a variety of channels. The BPU reviews strategic goals annually and revises objectives based on emerging technologies, community priorities, and progress within each objective. Because the DPU provides all utilities to Los Alamos County, the WEC Program is slightly different from other conservation plans in that it's broader than a typical water conservation plan or an energy efficiency plan. The BPU decides on five or six utility-specific conservation objectives instead of overexerting resources by choosing too many objectives for each of the provided utilities.

For Los Alamos County to achieve the maximum conservation of utilities, efforts need to come from both the supplier (DPU) and the demand-side (Customer). The following pages focus on each of the strategic goals, ranked from highest to lowest priority, as determined by the BPU. Within each section, projects, programs, and best management practices will be discussed as pertaining to the DPU and to the Customer.

Fiscal Year 2026 strategic goals and objectives were approved by BPU on September 4, 2024.

The strategic objectives (primarily from Goal 5.0 – Achieve Environmental Sustainability) in order of highest priority to lowest priority, as determined by the BPU, are as follows:

1. Promote utility efficiency through targeted conservation programs.
2. Be a net carbon neutral electric provider by 2040.
3. Support phase out of natural gas service by 2070 with at least a 10% reduction in usage by 2030 as measured by annual therms per heating degree day compared to a 2016 - 2020 average.
4. Reduce potable water use by 12% from 143 gallons per capita per day (2020 calendar baseline) to 126 gallons per capita per day by 2030.
5. Expand use of Class 1A effluent water.
6. Support customer electrification and other sustainability efforts with education and technical support.

Actions within each goal have been prioritized based on feedback from an update committee formed in 2020 as well as implementation ability (feasibility and readiness).

Previous Conservation Program

The previous conservation program provided conservation goals for the planning period 2015-2019. Shortly after the plan was adopted, the position of Conservation Coordinator became vacant. The DPU fulfilled much of the conservation initiatives with the education and outreach contract with PEEC. Summaries of utility-specific conservation practices of this previous program will be discussed in each subsequent section.

Current Program Goal Support

Goals within each utility are additionally supported by the following plans, studies, and committees:

Water

Jemez y Sangre Regional Water Plan, 2016 (see updates to selected projects in Appendix 6)

Los Alamos County Long-Range Water Supply Plan, 2018

Los Alamos County Non-Potable Master Plan, 2013

Los Alamos County Comprehensive Plan, 2016

Electric

Electric Reliability Plan, 2021

Integrated Resource Plan, 2022

Gas

Environmental Sustainability Plan, 2017

The 2025 update of the WECF includes implementation recommendations from the CAP that align with DPU goals.

Evaluation

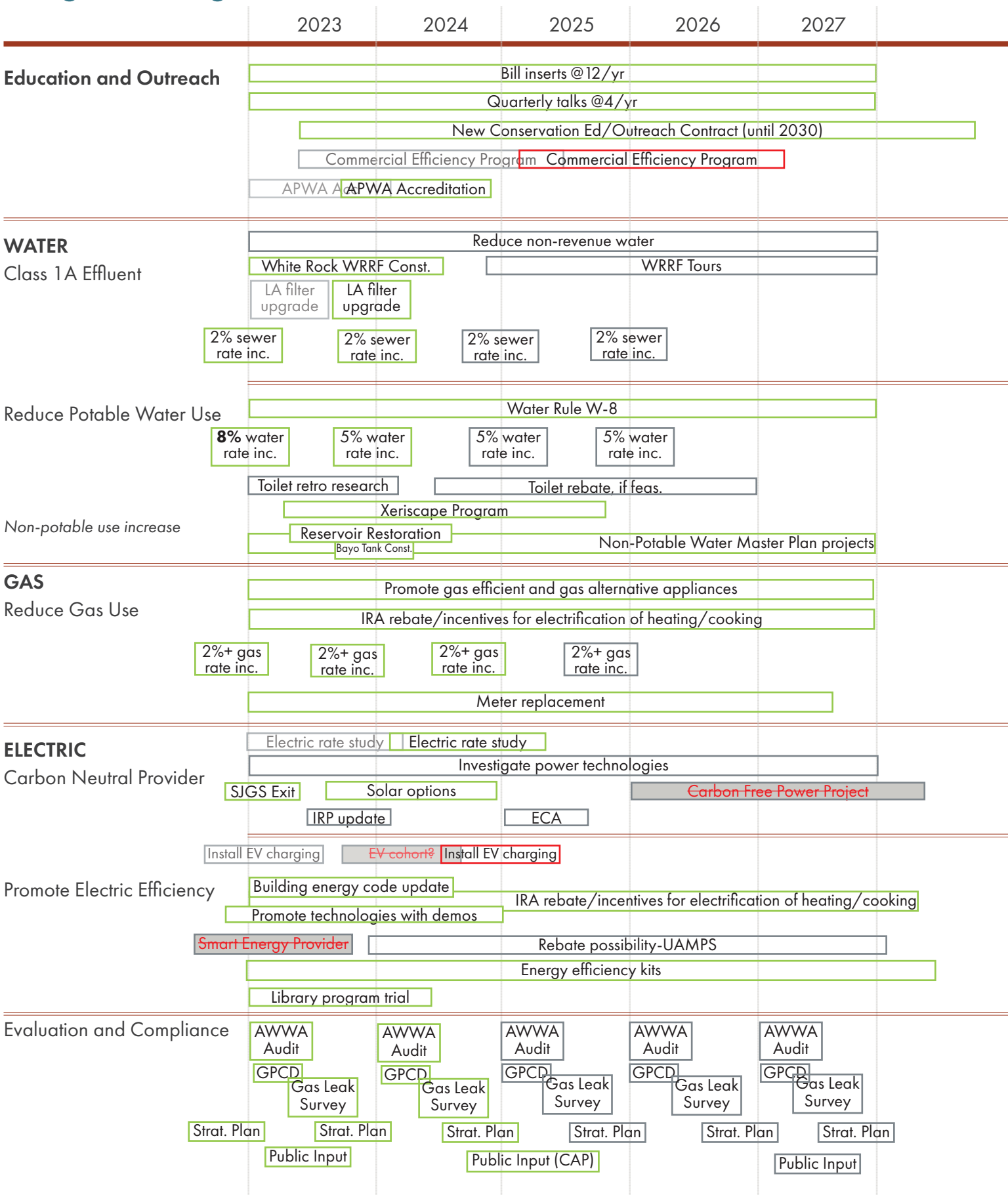
Measures of success are evaluated annually by the BPU to determine changes in goals. These include:

- compliance pieces (AWWA audit, GPCD spreadsheet, unaccounted for gas, greenhouse emissions)
- cost effective returns (is induction program encouraging changes)
- ability (for example, DPU cannot currently provide rebates/incentives directly)
- budget
- priorities (is there an emerging issue to address sooner)

Quarterly and annual reports are produced to convey projects, programs, etc. to customers.

Note: The WEC Program promotes conservation to the customer primarily through voluntary compliance. There is currently no regulatory enforcement of any practices, aside from rate changes.

Program Targets



Education and Outreach

Overview

Education and outreach are critical components in promoting conservation. Many educational campaigns happened as opportunities present themselves. A list of education and outreach events can be found in Appendix 4. DPU’s Conservation Education and Outreach contract expired in February 2023. A new contract was advertised and secured in February 2023 by the existing contract partner.

Public Information

Audience: DPU Customers, 9000
Target timeline: Monthly

Each month, the DPU includes information with the mailed utility bill. Sometimes these are seasonal topics (e.g., gas safety as winter sets in, saving water in the summer months, etc.) and sometimes they are programmatic in nature (enrolling in the new Automated Metering Self Service portal). The Conservation Coordinator has a goal to include a conservation-themed insert each month. Close to 9,000 customers receive a paper bill, and thus, the inserts. All bill inserts are also placed on the DPU’s website for easy viewing and for those that receive electronic billing statements. A social media campaign for Facebook and Twitter is coordinated with each insert topic to provide additional information to our customers. See examples in Appendix 5.

Outreach Events

Audience: Public, 1000/year
Target timeline: Quarterly

The DPU will enhance its presence in the community by attending different events that occur throughout the year to promote relevant programming and outreach efforts. Such events include:

- Earth Day: once a year, April
- Farmer’s Market: every Thursday, May – October
- ChamberFest: once a year, June
- ScienceFest: once a year, July
- Los Alamos Fair and Rodeo: once a year, September
- WinterFest: once a year, December
- Meetings can include Rotary Club, Kiwanis, Lunch with a Leader, etc.

	Attendance	Program Spending
2024	7000*	\$48,000*
2023	7340	\$43,343
2022	6369	\$24,655
2021	6150	\$34,574
2020	4829	\$37,205

PEEC programming outcomes
*Dec. 2024 not reported as of update

School Programs

Audience: Youth, 4000/year
Target timeline: School year with some summer activity

Currently, the DPU has a contract with Pajarito Environmental Education Center (PEEC) to do educational programs both in school settings and for the public. PEEC does an excellent job of gearing school programs to current DPU projects. The Conservation Coordinator will also engage in the classroom to enhance promoting conservation in the schools.

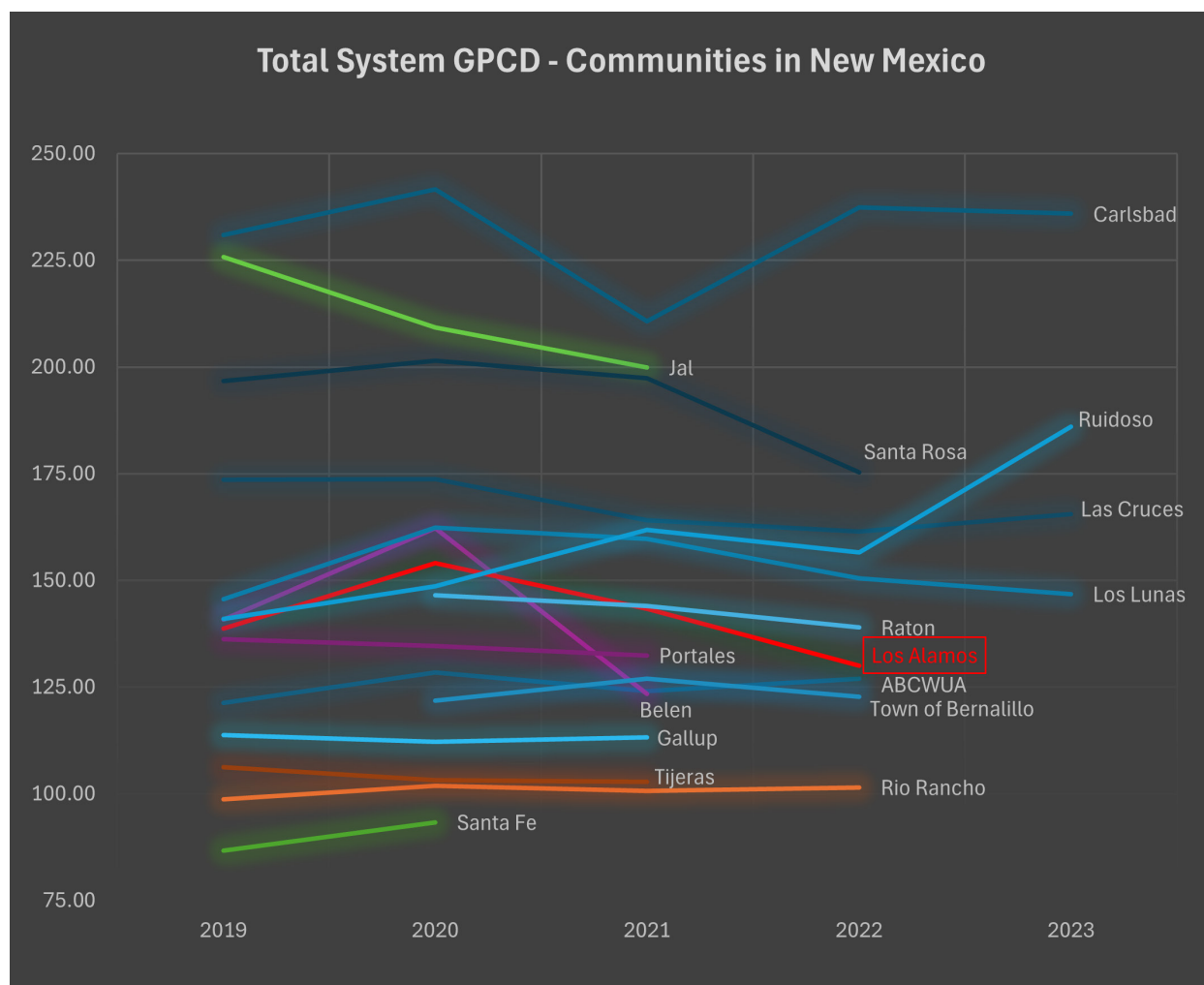
Program topics include: The Water Cycle, Water-Wise Gardening, Water Infrastructure, Electricity and Magnetism, Energy Sources, and the Water Festival, among many others.

Water

Overview

The 2022-2027 conservation program focuses on the following water-centered goals:

1. Reduce potable water use by 12% from 143 gallons per capita per day (2020 calendar baseline) to 126 gallons per capita per day by 2030.
2. Expand use of Class 1 A effluent water.



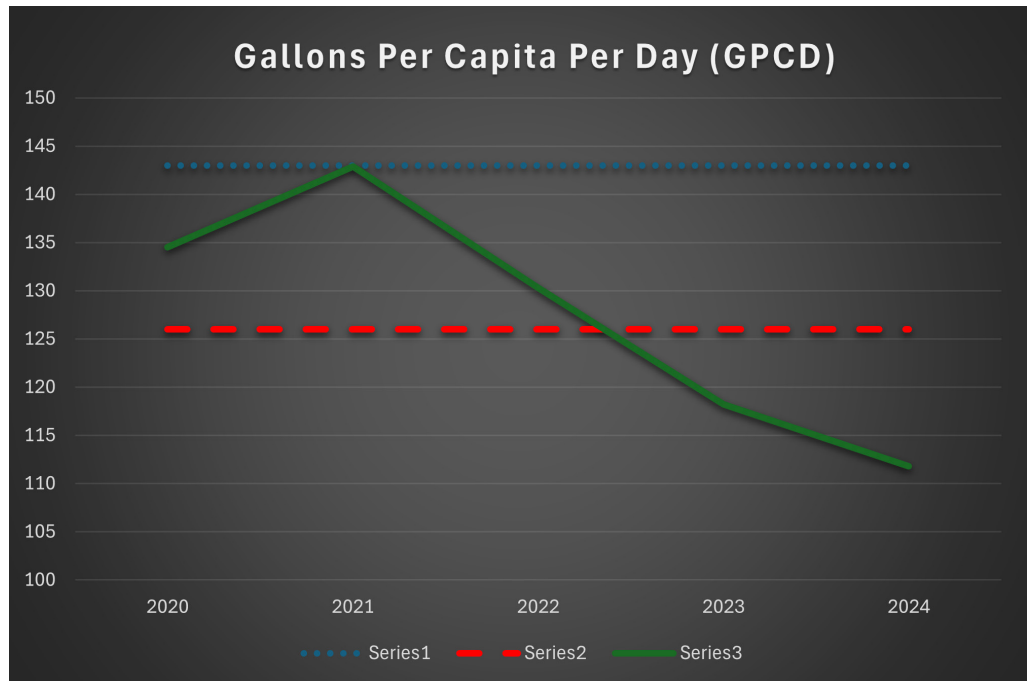
The Los Alamos Climate Action Plan, adopted by Los Alamos County Council in 2024, contains dozens of strategic implementation actions to reduce greenhouse gas emissions. The following strategies align with the goals in this plan and are being introduced in this 2025. The 2027 revision of the Water and Energy Plan will include initiatives and actions that can help achieve the BPU goals and the CAP strategies.

- *NS2.2 Develop a water security strategy:* Align with the The Los Alamos Long Range Water Supply Plan (2018) and Source Water Protection Plan (2003) to develop a water security strategy and drought preparedness plan
- *NS2.3 Encourage sustainable landscaping and water conservation:* Reduce water consumption from landscaping by planting native and climate appropriate plants.
- *NS2.4 Provide greywater reuse education:* Promote greywater systems for residents, including providing free rain barrels to homeowners to capture and reuse rainwater.

Goal 1: Reduce Potable Water Use to 126 GPCD

The full objective is to reduce potable water use by 12% from 143 gallons per capita per day (2020 calendar baseline) to 126 gallons per capita per day by 2030. The DPU Update Committee of 2020 recommended “reducing water use by at least a third.”

The Jemez y Sangre Basin Regional Water Plan identifies Los Alamos as having a GPCD between 200-300 and assumes a future GPCD reduction to 150 gpcd. The DPU GPCD calculations reflect values much lower and the BPU strives to meet the 12% reduction (adapted to the changing population) as recommended in the Long-Range Water Supply Plan to ensure accommodating future demands.



The chart above shows total GPCD (green line) for the Los Alamos County water system per fiscal year. The 2020 baseline GPCD (blue dotted line) is 143. The target reduction goal (red dashed line) is set to 126 GPCD. Based on fiscal year water finance data, the 2030 goal was achieved between FY2022 and FY 2023. However, per the GPCD Calculator submitted to the Office of the State Engineer, found in 2, the GPCD goal has not yet been achieved. The submitted GPCD Calculator is based on calendar year. DPU will be evaluating these two datasets and this water reduction goal to determine the best fit moving forward.

The table below lists achievable benchmarks for each year.

The figure below is from the study completed for the Long-Range Water Supply Plan. The conservation savings are from the 2016 GPCD baseline and population predictions. While a little out of date, with the LRWS plan last updated in 2018, the figure provides a good picture of the differences in savings between GPCDs.

Per Capita Water Use (gpcd)	Reduction from 2014 Per Capita Use (%)	Annual Conservation Savings	
		Low Population Projection (acre-feet) a	High Population Projection (acre-feet) a
130	4	89	124
120	11	267	371
110	19	444	619
100	26	622	866
90 ^b	33	800	1,114

^a Annual water conservation savings that would be achieved based on reductions from the 2014 per capita value of 135 gallons per day in 2060.

^b This value is equivalent to the City of Santa Fe's per capita demand in 2015.

LRWS Plan projections of potential water conservation savings
(taken from Table 5-10, LRWS Plan).

BASELINE GPCD: 143.00		Total Savings (Gal/Yr) from 2020
2021	141.28	11,850,353
2022	139.57	23,700,706
2023	137.85	35,551,058
2024	136.14	47,401,411
2025	134.42	59,251,764
2026	132.70	71,102,117
2027	130.99	82,952,470
2028	129.27	94,802,822
2029	127.56	106,653,175
2030	125.84	118,503,528

Reduce Potable Water Use

Promoting Conservation of Water Estimated savings from current GPCD to reach 2030 goal:
11,850,000 gallons a year.

Water Rate Increase

Audience: all DPU water customers
Target timeline: Oct. 2022 — Sept. 2025

Recent inflation and supply chain issues have necessitated rate increases for water. These rates will help ensure that there is sufficient water to meet customer water demand. This demand includes the increasing load at LANL and new housing developments throughout the county. The rates also contribute to repair and replacement of aging infrastructure to reduce leaks and main breaks, ensure appropriate infrastructure to support fire suppression, and maintain safe, quality drinking water that meets all standards.

Consumption May - September (Peak Season) Commodity Rate per 1,000 Gallons			
Monthly Consumption		9,000 gal or less	over 9,000 gal to 15,000 gal
Single Family Residential	Current	\$6.02	\$6.40
	After 10/31/2022	\$6.50	\$7.15
	After 09/30/2023	\$6.83	\$7.51
	After 09/30/2024	\$7.17	\$7.89
	After 09/30/2025	\$7.53	\$8.28
Multi Family Residential	Current	\$6.02	\$6.33
	After 10/31/2022	\$6.50	\$6.50
	After 09/30/2023	\$6.83	\$6.83
	After 09/30/2024	\$7.17	\$7.17
	After 09/30/2025	\$7.53	\$7.53

This rate increase includes cost-of-service adjustments. Specifically, rates will increase after each “peak” season (end of September). DPU’s tiered water rate structure encourages water conservation during the peak season by increasing the water rate for usage above 9,000 gallons for single-family residences, the class using the largest amount of water at this Tier 2 rate in peak season.

2025 UPDATE: Water rate increases are ongoing.

Promote Xeriscaping

Audience: primarily SFR homeowners
Target timeline: Spring 2023
Saving potential: 1.2-2.5 million gal/yr

Outdoor water usage is discussed on pages 026-027 of this plan. There are an estimated 5,369 single-family homes (per GPCD calculator). The graph to the right shows the change in GPCD if both front and back yards (complete), or just one yard (half), are converted to Xeriscapes/native-scapes.

This program would be partnered with the Los Alamos Master Gardeners and their Demonstration Garden and with PEEC and their garden space at the Nature Center. Additional partners could include the local nursery and landscaping companies. A webpage and resources will be available for homeowners.

2025 UPDATE: DPU partnered with the Los Alamos Master Gardeners and the NMSU Extension Office to create a Sustainable Landscape Design Series. This series focused on seven topics necessary to transitioning to a more semi-arid supportive landscape, with experts presenting one topic each week. All sessions were recorded and can be found @PublicUtilities on YouTube.

Toilet Retrofits

Audience: pre-1994 constructed homes
Target timeline: Summer 2023 — 2025
Saving potential: 1.4 million gal/yr

Taking the housing information provided on page 013 of this plan, it is unknown how many of the estimated 7,000 homes have a water-efficient toilet. Calculations above show GPCD reductions based on a percentage of the pre-1994 homes. A toilet retrofit program would be explored in phases.

- Phase 1: research/estimate retrofit potential by surveying pre-1994 homeowners
- Phase 2: explore grants to provide rebate options
- Phase 3: implement program and incorporate Fix-A-Leak educational materials

2025 UPDATE: This program target has not been pursued. An informal survey was published but not heavily promoted. Finding funding toward supporting toilet replacements is proving challenging.

Reduce Potable Water Use

Tools and Incentives to Conserve Water

Water Rule W-8



Audience: DPU customers, primarily homeowners
Target timeline: ongoing

The Water Rule W-8 is a voluntary program that encourages customers to conserve outdoor water use by implementing the following best management practices:

- Between May and September, odd and even addresses can use irrigation water on designated days of the week before 10am and after 5pm.
- Water waste and irrigation water runoff should be eliminated.
- Sources of water leaks should be repaired.

2025 UPDATE: Water Rule W-8 is ongoing. Data analysis is underway to evaluate the impact and effectiveness of the Water Rule W-8 program.

Water Audits: Residential and Commercial

Audience: DPU customers, 25/yr
Target timeline: mid-2023 — 2024

Water audits look at consumption data from utility bills, leaks from faucets and toilets, and water use habits. The DPU formerly completed commercial water conservation audits and irrigation audits for utility customers. It was determined not to be an efficient use of the coordinator's time at that period. Customers are encouraged to enroll in the new Automated Metering Infrastructure (AMI) Self Service portal as an excellent way to self-audit. This program will send alerts when water consumption is above normal usage levels.

Commercial customers can also access the Automated Metering Self Service Portal. Additional efforts are planned to target non-residential customer classes as part of a Commercial Efficiency Program. This set of workshops will provide these customers information and resources to reduce consumption and increase efficiency of their properties.

An evaluation process is under way to partner with the Parks department to assess the irrigation of public parks and open spaces. This will allow the County to lead by example when encouraging other customers to reevaluate their own water and irrigation needs.

2025 UPDATE: A "10 Minute Water Leak Detection and Measurement Kit" was created for residential customers as a DIY Self-Audit for water use. Conversations are ongoing with the Los Alamos Chamber of Commerce and the Los Alamos Commerce and Development Corporation to build out a Sustainable Business Certification-type program. This program would have four areas, one of which would be water conservation. The AMI portal has 1460 users, which is about a 20% registration rate of all water customers.

Water Efficiency Kits



Audience: 500 households
Target timeline: ongoing

Water Efficiency Kits are advertised to new residents. The items inside this kit are a small sampling of conservation tools that can go a long way in saving water and money in homes and small businesses. These kits are free and contain such items as a low-flow faucet adapter, a water leak detector, a toilet tank saver, and a drip calculator.

2025 UPDATE: No update. Kit distribution is ongoing.

Direct Rebates

Audience: all DPU customers
Target timeline: TBD

The DPU, as a public entity, cannot currently offer any direct rebates on water conservation efforts that will reduce a customer's usage. This is subject to change with the recent NM constitutional amendment and customers will be notified of any rebates. Until then, the DPU shares federal rebate programs and will seek offering rebates as grant funds allow.

2025 UPDATE: No update.

Goal 2: Expand Use of Class 1A Effluent Water

Class 1A Effluent is the highest classification of wastewater/reclaimed water.

Per a strategy identified in the Jemez y Sangre Basin Regional Water Plan, Los Alamos County is upgrading its two wastewater treatment plants to operate at the highest classification currently available. This will help protect our existing water sources by more efficiently processing wastewater and reducing trace contaminants from effluent. Because effluent from both plants is used as reclaimed irrigation water, upgrading the filtration and treatment systems would allow flexibility in irrigation schedules and more efficient use of the reclaimed water.

Upgrade Los Alamos Wastewater Treatment Plant



Audience: DPU
Target timeline: 2023
Funding: \$3.5 million
Water Trust Board Funding, Capital Budget

Tertiary filtration equipment is being added to the Los Alamos Wastewater Treatment Plant (WWTP), which will upgrade its effluent classification from 1B to 1A. This project is moving along with the hindrance of increased cost of work impacting wastewater's budget.

2025 UPDATE: The Los Alamos Wastewater Treatment Plant filtration project was completed in July 2024 and this plant now produces Class 1A effluent. Additional maintenance and overhaul projects are scheduled to continue performance.

White Rock Water Resource Reclamation Facility



Audience: DPU
Target timeline: 2023
Funding: \$30 million
Clean Water State Revolving Loan

The existing wastewater treatment plant in White Rock was built in the 1960s and is reaching the end of its lifespan. A new Water Resource Reclamation Facility (WRRF) is in the process of being constructed. This new facility was designed in-house to best serve the White Rock system needs.

2025 UPDATE: The WRRF came online in August 2024 after overcoming many obstacles. The ribbon cutting was commemorated on November 6, 2024. Tours of the facility will begin in March 2025.

Sewer Rate Increase



Audience: all DPU sewer customers
Target timeline: Oct. 2022 — Oct. 2025
10-year investments in wastewater infrastructure: \$49,106,584

	Monthly Bill Based on	
Community	6000 gal	14,000 gal
LA FY23	\$58.21	\$58.21
LA FY24	\$59.37	\$59.37
LA FY25	\$60.56	\$60.56
LA FY26	\$61.77	\$61.77
Ruidoso	\$79.71	\$111.95
Angel Fire	\$113.29	\$206.01
Santa Fe City	\$44.56	\$90.72

Sewer rate increases are necessary to build cash reserves in the wastewater fund to ensure the department's ability to meet operational needs, handle system retirement obligations, and meet debt service requirements, and in preparation for unanticipated system failures or external disruptions. The topography of Los Alamos requires a complex wastewater system of pipes, pumps, and 27 lift stations. Santa Fe, comparatively, has four lift stations. See the table to the left for other community rates.

A new sewer rate was approved in February 2022. The rate increase will be at 2% per year for four years affecting the monthly service fee, the flat rate charge for residential customers, and the variable rates for commercial and non-residential customers. This was approved by both BPU and County Council and went into effect on October 1, 2022.

2025 UPDATE: Sewer rate increases are ongoing as planned.

Expand Use of Effluent Water

Increasing Non-Potable Water

Estimated expansion of non-potable water: ~9 million gallons.

Non-Potable Water Master Plan

Audience: DPU

Current non-residential irrigated acres: 200

Target timeline: 2013 — ongoing

The Non-Potable Water System Master Plan was prepared in 2013 to optimize the use of effluent and surface water for non-residential irrigation purposes. This Master Plan helps DPU review existing infrastructure, evaluate existing and potential future irrigated sites, develop a realistic demand for system build-out, and recommend system improvements. DPU has been and continues to reference the Master Plan for non-potable projects. Increasing the availability of non-potable, reclaimed water will decrease potable water use in non-residential irrigation, a large source of water consumption.

Los Alamos Canyon Restoration



Water supply potential: 8 million gallons

Target timeline: Summer 2023

Cost: \$800,000

River Stewardship Program, Capital Budget

The Los Alamos Reservoir was formerly a source of irrigation water and reserve water in the event of wildfire. Coincidentally, this water source and its transmission lines were severely damaged by major flooding events and siltation following the build-up of hydrophobic soils resulting from two wildfires in 2000 and 2011.

A recommendation of the LRWSP is to bring this reservoir back online to protect groundwater supplies in times of extreme drought. This project is also listed as a strategy in the Jemez y Sangre Regional Water Plan.

2025 UPDATE: The Los Alamos Canyon watershed stabilization project was completed in July 2024. Funding, permissions/clearance/permitting, and observances for species pushed the project back a year. Keystone Restorative Ecology restored the watershed using bio-engineering techniques within budget. This grand re-opening was celebrated on October 9, 2024.

Non-Potable Water Tank Storage



Water supply potential: 1 million gallons

Target timeline: Fall 2023

Cost: \$2,929,880

Water Trust Board, Clean Water State Revolving Fund

One of the upcoming capital projects in the Non-Potable Master Plan is the Bayo Tank Project which will construct an additional storage tank and make improvements to the existing tank. Storage will increase from 190,000 gallons to 1,000,000 gallons. This will allow a full day's discharge to be captured from the WWTP, increasing the amount of water that can be delivered to the community for irrigation.

2025 UPDATE: The Bayo Tank was completed in early 2024. DPU can now store just over a million gallons of reclaimed water. The next phase of the Bayo Non-Potable Project is to rehabilitate the booster station, which has been in service since 1995. This phase is anticipated to be complete by summer of 2025.

Non-Revenue Water



Target timeline: 2030

Water supply potential: reduce non-revenue water by half of EPA National Standard (16.00%)

Per the AWWA audit results discussed on page 029, the DPU will work with the offered guidance to reduce its non-revenue water by half by 2030. This starts with an audit of the automated data collection system and works up through an Infrastructure Leak Index.

2025 UPDATE: DPU completes the AWWA audit annually, with the most recent included in Appendix 3.

Electricity

Overview

The 2022-2027 conservation program focuses on the following electricity-centered goals:

1. Promote electrical efficiency through targeted conservation programs.
2. Be a carbon neutral electric provider by 2040.

The Los Alamos Climate Action Plan, adopted by Los Alamos County Council in 2024, contains dozens of strategic implementation actions to reduce greenhouse gas emissions. The following strategies align with the goals in this plan and are being introduced in this 2025. The 2027 revision of the Water and Energy Plan will include initiatives and actions that can help achieve the BPU goals and the CAP strategies.

- *BE1.1 Establish an energy benchmarking program for commercial buildings:* Establish benchmarking criteria to track building energy and water performance in commercial buildings.
- *BE1.2 Establish an energy benchmarking program for County-owned buildings:* Establish benchmarking criteria to track building energy and water performance in County-owned and -operated buildings
- *BE1.3 Encourage energy efficiency and electrification retrofits:* Develop a community-wide energy efficiency and electrification outreach and educational campaign
- *BE1.5 Develop a training program:* Identify, support, and/or develop free training programs and resources ...to learn green building skills such as electrification, energy efficiency, and water efficiency retrofits,
- *BE2.1 Promote renewable energy:* Support local and statewide standards for sourcing renewable energy generation and grid modernization.
- *BE2.2 Expand electric energy resiliency:* Continue to expand electric energy resiliency by investing in a diverse set of renewable energy sources such as wind, solar, geothermal, and nuclear, as well as energy storage
- *T1.1 Promote EV adoption:* Encourage EV network expansion by educating the community on available tax incentives and rebates for EV purchases.
- *T1.2 Develop EV infrastructure plan:* Develop and implement an EV infrastructure plan that prepares the County and community for the transition to EVs by mapping infrastructure needs
- *T1.3 Promote EV readiness:* Incentivize and educate about EV readiness for new and redeveloped single family homes. Encourage a certain number of EV chargers in multi-family housing, commercial developments, and community gathering spaces
- *CC1.1 Develop a sustainable business certification:* Collaborate with local businesses and partners to develop and promote a certification program or labeling system that recognizes businesses that adopt sustainability measures such as energy efficiency, waste diversion, sustainable landscaping, and sustainable product sourcing.

Electric Consumption by KWH Sold, all Customer Classes



Goal 1: Promote Electrical Efficiency through Targeted Conservation Programs

The Water and Energy Conservation Coordinator will be responsible for the targeted conservation program.

Initiatives

Promote Energy Efficient Technologies with Demonstrations



Audience: all DPU customers

Target timeline: 2023-2025

The technologies being promoted as replacements to natural gas appliances are also highly energy efficient in comparison to conventional appliances. Other efficient technologies could include solar power and battery storage, lighting improvements, and programmable thermostats and controllers.

The DPU is discussing different options to best demonstrate some of these technologies with a debut by 2023.

2025 UPDATE: In July 2022, the Induction Cooktop Borrowing Program debuted with 5 cooktops. Over 100 people participated in the first year. In 2023, DPU partnered with the Public Library by adding two induction cooktops and several Kil-O-Watt Power Meters into the Library of Things.

In fall of 2023, the thermal camera borrowing program premiered with the Ghost Hunt, a partnership with the Public Library and the Los Alamos Little Theater group. The Library of Things efficiency items have nearly 150 circulations in the community.

Utility Bill inserts often include energy efficient technologies, tips, and tricks.

EV Charging



Audience: DPU, visitors

Target timeline: Spring 2023

Cost: \$286,000, capital project

The DPU is currently mid-project of installing two DC fast chargers in county-owned parking lots.

An application has been submitted to be a part of a working Clean Energy to Communities peer-learning pilot cohort. This cohort will explore “accelerating the deployment of equitable, grid-friendly EV charging infrastructure” with other neighborhoods across the country.

2025 UPDATE: County staff participated in the 6-month Clean Energy To Communities (C2C) Cohort mentioned above.

Supply chain delays for parts meant the two fast chargers did not become operational until summer 2024. The Municipal Building fast charger was celebrated with an award-winning “Back To The Future” ribbon cutting event complete with a DeLorean. The County is actively siting 15 additional chargers, some public-facing and some for County Fleet. An EV charging study is also underway to best place future chargers based on needs and demands.

Commercial Efficiency Series

Audience: all non-residential customers, ~800 meters

Target timeline: starting 2023

Because residential customers make up the majority of DPU’s customer base, a lot of programming is targeted at this class. However, in reviewing the 5-year average electrical consumption by class (see page 030), residential customers are a small percentage of the consumers. A program is in development for the commercial, education, and other classes. Many of the buildings these customers occupy are older and could potentially have outdated and unmaintained fixtures and appliances.

2025 UPDATE: Conversations are ongoing with the Los Alamos Chamber of Commerce and the Los Alamos Commerce and Development Corporation to build out a Sustainable Business Certification-type program. This program would have four areas, one of which would be energy efficiency.

Electrical Efficiency in Targeted Conservation Programs

Tools and Incentives to Promote Efficiency

Rebates and Incentives



Audience: all utility users

Target timeline: ongoing — Dec. 1, 2032

The DPU cannot directly offer rebates, but customers can take advantage of the following:

Inflation Reduction Act (HR 5376)

2022-2032

This act will encourage the adoption of EVs and solar generation, as well as updating or converting appliances, supporting weatherization, rewiring structures, and updating electrical panels to help with electrification. Extensive programming around the IRA will happen in early 2023 to assist customers in taking full advantage of the incentives.

UAMPS

A possible rebate program is being investigated with UAMPS, which would provide rebates for appliances with improved efficiency.

2025 UPDATE: IRA programming began prior to the release of the tax credits at the beginning of 2023. Information on the then-upcoming credits and rebates was distributed in bill inserts, on the DPU website, and at events around the community. Rebates were rolled out through state programs. New Mexico has been deploying rebates in stages since the fall of 2024. Information continues to be shared with DPU customers as the rebate program grows. Several attempts were made to connect with UAMPS's rebate program. After little response, it was decided that the program didn't meet the needs of DPU's customers.

Updated Building Energy Codes



Audience: builders and renovators

Target timeline: ongoing

Adopted in August 2020 by the State of New Mexico's Regulation and Licensing Department, the 2018 iteration of the International Energy Conservation Code (IECC) will reduce emissions from and increase efficiency of residential and commercial buildings.

The 2021 IECC has been released and could be adopted by the state in early 2023. Estimated total energy cost savings for the 2021 IECC compared to the 2018 IECC for this climate zone are 12.6%.

2025 UPDATE: Los Alamos County adopted the 2021 IECC, as amended by the State of New Mexico, for updated building codes in July 2024.

Efficiency Kits and Audits



Audience: DPU electricity customers

Target timeline: ongoing, 500 kits

Free Energy Efficiency Kits are available from the DPU and contain a small sampling of conservation tools that can go a long way in saving energy and money in homes.

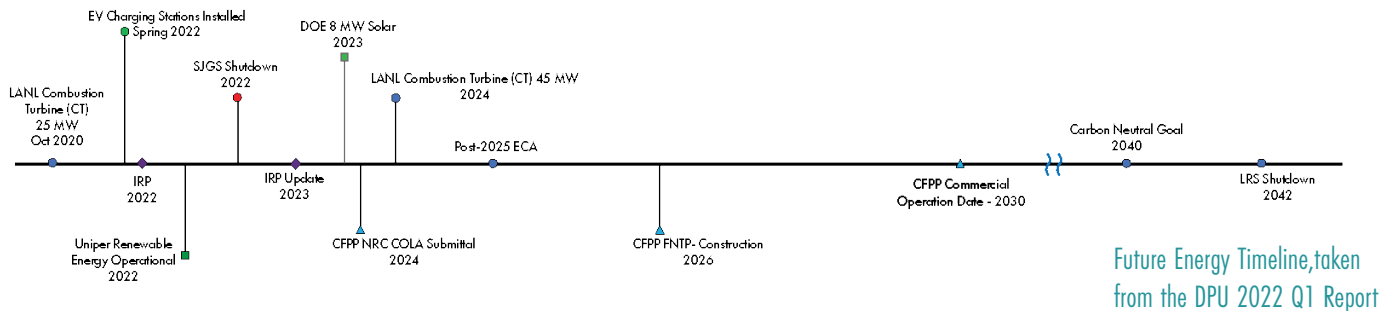
Until efficiency audits become available, customers are encouraged to do DIY audits using any one of the online calculators and tools.

2025 UPDATE: Efficiency Kits are promoted at various events, including mostly recently at ChamberFest accompanied by a Utilities Primer for new residents. In an effort to alleviate the lack of auditors servicing the area, a DIY energy assessment was created. This checklist can be paired with the thermal cameras available through the Library of Things program.

Several options were explored for a workforce development and/or training program for energy assessors/auditors that have gone nowhere. The Santa Fe Community College has a promising program that rolled out in late 2024 and opportunities might arise to support that program.

Goal 2: Be a Carbon Neutral Electric Provider by 2040

A “Carbon Neutral Electric Provider” means the DPU will be matching the electricity demand with a carbon free supply on an annual basis. This goal is predominately DPU-supplier focused.



Balancing Resources

Carbon resources: ~46 megawatts

Oncoming renewables and carbon-neutral: ~27-39 megawatts

Exit the Coal-Powered Generating Stations



Audience: DPU
Target timeline: Sept. 30, 2022; 2042
Megawatts provided: 46, fossil fuel energy

The San Juan Generating Station (SJGS) is a coal-powered facility located in Farmington, NM. The DPU is a partial owner in the SJGS #4 and receives a significant portion of its electrical needs from this resource. An amendment was approved to extend the agreement beyond the original closing date of June 30, 2022, to fill an energy gap created by the delay of new generation resources throughout the west. The new closing date is September 30, 2022. The DPU is working to replace this resource with the clean energy sources listed in this section.

The other coal-sourced generation station is the Laramie River Station in Wyoming. It is slated for closure 2040-2042. The DPU power production team is beginning discussions to trade or possibly exit this agreement early.

2025 UPDATE: The San Juan Generation Station closed on time and has entered the decommissioning and remediation phase.

The Laramie River Station continues to be a source of power for Los Alamos County as the power production team evaluates the ever-changing power alternatives.

Carbon Free Power Project



Audience: DPU
Target timeline: online by 2030
Megawatts provided: 6.0-8.3, carbon-free energy

The Carbon Free Power Project (CFPP) is a NuScale Power small modular reactor plant being constructed at the Idaho National Laboratory. CFPP is being spearheaded by Utah Associated Municipal Power Systems (UAMPS), of which the DPU is a member. The DPU is currently subscribed for 2 MW based on a money threshold of \$1.2 million. The amount subscribed changes with market fluctuation and could be supplied with 8.3 MW when fully subscribed. This project is the first of its kind in the United States.

2025 UPDATE: The CFPP was terminated in November 2023 due to a lack of subscriptions to continue deployment of the small-scale modular reactor. DPU continues to explore carbon free power options and opportunities to meet the carbon neutral provider goal.

Be a Carbon Neutral Electric Provider

Tools and Incentives to Achieve Neutrality

Legislation

Audience: DPU

Target timeline: as-needed

Energy Transition Act (SB 489)

The Energy Transition Act, passed in March 2019, is New Mexico legislation that will make New Mexico a leader in renewable energy. The Energy Transition Act “sets a statewide renewable energy standard of 50 percent by 2030 for New Mexico investor-owned utilities and rural electric cooperatives and a goal of 80 percent by 2040, in addition to setting zero-carbon resources standards for investor-owned utilities by 2045 and rural electric cooperatives by 2050.” As SB 489 currently stands, this does not apply, but the DPU was one of the first in New Mexico to set a carbon neutral goal.

Industrial Revenue Bond Act (HB50)

Passed in 2020, this legislation makes transmission line projects eligible for Industrial Revenue Bonds available through cities and municipalities. The bond act will jump start critical transmission line construction, unlocking access to additional renewable energy resources.

Energy Grid Modernization Roadmap (HB233)

This piece of legislation, passed in 2020, directs the New Mexico Energy, Minerals, and Natural Resources Department to develop a strategic plan for energy grid modernization and to create competitive grant programs to implement such projects. This bill will ultimately encourage utilities to propose grid improvements for reliable and up-to-date systems to meet growing renewable energy demands.

The DPU’s Electric Production team contributed to the advisory group in 2020 for this legislation and continues to participate in New Mexico Public Regulation Commission’s grid modernization webinars.

Smart Energy Provider



Audience: DPU

Target timeline: Dec 2022 — Nov 2023

The DPU will be reviewing the application requirements for designation as a “Smart Energy Provider” from the American Public Power Association. A Smart Energy Provider is a designation “for utilities that show commitment to and proficiency in energy efficiency, distributed generation, renewable energy, and environmental initiatives.”

2025 UPDATE: The Smart Energy Provider application was evaluated and it was determined that DPU’s energy management software and billing mechanisms are not advanced enough to support this accreditation. However, DPU did pursue a successful accreditation through the American Public Works Association. Other energy accreditations will be evaluated.

Investigate Emergent Power Technologies



Audience: DPU

Target timeline: 2022-2027+

Megawatts provided: 15-25, renewable

The DPU will investigate power options as resources and technologies develop. As resources and demands evolve, keeping a diverse energy portfolio is important as is providing a reasonable rate to customers.

2025 UPDATE: DPU continues investigating diverse power technologies.

Solar Resources

Photovoltaics/ Distributed Generation



Audience: DPU and Customers
Target timeline: 2040
Megawatts provided: 6 (initial goal)

Per the Fiscal Year 2021 DPU final report, there are approximately 3 megawatts of solar power installed on customers' roofs. The DPU will work with customers to promote education about and installation of additional solar panels while balancing this power load to the Power Pool grid. Distributed generation is programmed to supply 30% of the County's peak daily load locally.

The DPU is also interested in having a Hosting Capacity Analysis completed to understand the potential of distributed generation on the existing system and what upgrades would be required.

2025 UPDATE: DPU updated Rule E-5 regarding solar interconnections and rate structures. DPU continues to upgrade infrastructure where possible to accommodate additional distributed power opportunities to customers. Education moving forward will incorporate battery storage considerations. There are 533 solar customers contributing 3.7MW as of FY2025 quarter one.

Legislation

Audience: all utility users
Target timeline: ongoing — 2027

Solar Market Development Income Tax Credit (Senate Bill 29)

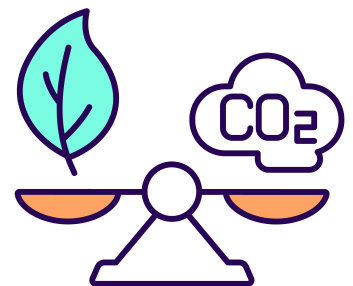
2020-2027

Enacted on March 1, 2020, this piece of legislation provides a tax credit of 10% for small solar systems, including on-grid and off-grid PV systems and solar thermal systems. There is an annual funding cap of \$8 million issued on a first-come first-served basis. Customers are encouraged to submit an application to the NM Energy, Minerals, and Natural Resources Department as soon as their system is fully connected and operational.

Community Solar Act (SB0084)

2022-2024

This program supports the development of community solar facilities which allows "equal access to the economic and environmental benefits of solar energy generation regardless of the physical attributes or ownership of an individual's home or business" and ensures that at least 30% of projects be allocated for low-income subscribers. DPU has evaluated this, but the DPU can acquire utility-scale resources directly and community solar as an additional utility service isn't being pursued currently.



Transformer Upgrades



Audience: DPU
Target timeline: ongoing
Cost: \$45,000/refurbished transformer

As Los Alamos County electrifies and works to provide more carbon-free power sources, the grid system will need to be updated. Larger commercial transformers are specified and evaluated to run with minimal power loss over the life of the transformer. The replacement program is an ongoing effort to replace dangerous live-front transformers with safer dead-front versions. The original goal was to replace 1000 transformers by 2025-2030. However, supply chain issues have essentially halted this project. Transformers have increased in cost significantly and a small stock is kept on hand to immediately replace failed transformers instead of targeting aged ones on a list. The DPU will also need to prioritize transformer upgrades to accommodate the increasing electrical loading.

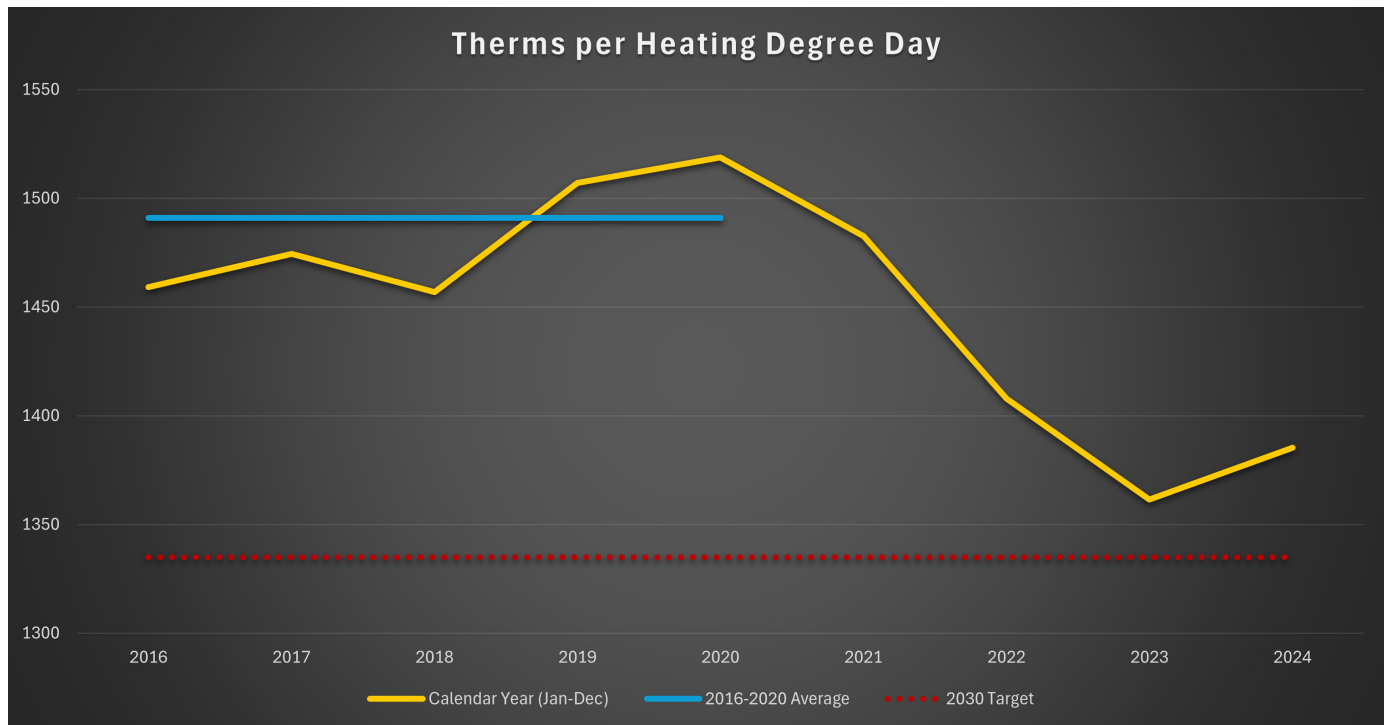
2025 UPDATE: Transformer upgrades are ongoing.

Gas

Overview

The 2022-2027 conservation program focuses on the following gas-centered goal:

1. Support phase out of natural gas service by 2070 with at least a 10% reduction in usage by 2030 as measured by annual therms per heating degree day compared to a 2016 — 2020 average.



Graph charting Los Alamos County therms per heating degree day. A **“degree day”** is based on the assumption that when the temperature outside is 65°F, heating or cooling is not needed inside to be comfortable. Degree days are the difference between the daily temperature mean +/- 65. For example, if the high is 60°F and the low is 38°F, the mean temperature is 49°F. 65°F-49°F = 16 heating degree days (HDD). HDDs can be used to track energy use. A residence’s therms per heating degree day can be calculated for the periods before and after increasing insulation, for example.

The Los Alamos Climate Action Plan, adopted by Los Alamos County Council in 2024, contains dozens of strategic implementation actions to reduce greenhouse gas emissions. The following strategies align with the goals in this plan and are being introduced in this 2025. The 2027 revision of the Water and Energy Plan will include initiatives and actions that can help achieve the BPU goals and the CAP strategies.

- **BE1.4 Adopt green building standards:** Promote fossil fuel infrastructure reduction in new residential, commercial, and municipal construction by adopting a green building performance standard
- **BE1.6 Require electric equipment replacement at burnout for County:** Develop policies and programs that will result in replacement of fossil fuel appliances and equipment at the end of their useful life in County-owned and -operated buildings.
- **BE1.7 Encourage electric equipment replacement at burnout for community:** Encourage replacement of natural gas appliances with electric before or as they approach the end of their useful life. Educate community members on how to prepare for replacement

Goal 1: Reduce Natural Gas Usage by 10% by 2030 and Support Elimination by 2070

The full objective is to “Support phase out of natural gas service by 2070 with at least a 10% reduction in usage by 2030 as measured by annual therms per heating degree day compared to a 2016 — 2020 average.”

Planning for Cost Adjustments

Audience: DPU

Cost: TBD

Target timeline: Ongoing, 2070 DEADLINE

As customers are encouraged to switch, the DPU will need to develop a plan to offset the cost for the remaining customers and determine a phase-out course of action. The overall cost of operating the gas delivery system will remain the same, no matter the number of customers; however, the total cost divided among 4,000 customers will be noticeable versus the cost divided among the current approximate 8,000 customers.

Reducing Unaccounted-for Gas

Replace Meters For Accuracy



Audience: DPU

Benefits: DPU Customer

Target timeline: Ongoing, 375/year

The DPU will continue replacing gas meters to provide more accurate readings. Meter technology is continually evolving, and the newest meters are very accurate but have shorter battery spans. A new meter change-out goal will be revised for Fiscal Year 2023, increasing the number of meter change outs to 375 per year. All isolated gas risers were replaced between Fiscal Year 2010 and Fiscal Year 2016.

2025 UPDATE: Replacement program is on going as planned.

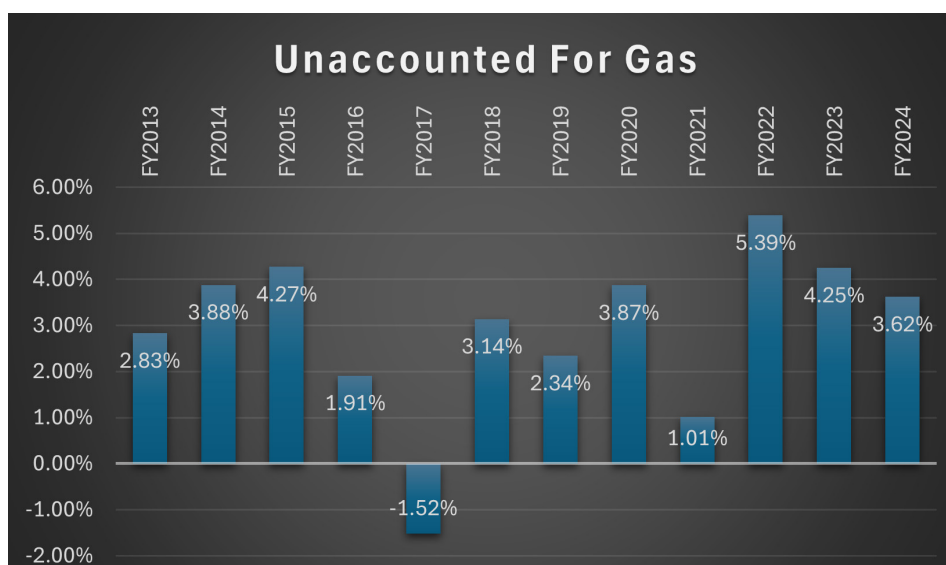
Leaks and Lost Gas

Audience: DPU

Target timeline: Ongoing

Per compliance, gas leaks are addressed and fixed as found and are reported annually to the Pipeline and Hazardous Materials Safety Administration, known as PHMSA. The report includes size, material, age, and mileage of pipes as well as services, leaks, and causes occurring in the fiscal year.

Unaccounted for gas is reported on the PHMSA report and is also tracked on an internal dashboard.



Unaccounted For Gas Loss, based on monthly consumption reports.

Reduce Natural Gas Usage and Support Elimination

Promote Alternatives to Gas



Funding for new technology demonstrations is provided by the "LA Green" program funds. This is a funding source that customers can opt-in on their utility bill to ensure that DPU is providing some electricity from green sources. This fund is no longer needed because DPU has reliable sources of clean energy. The BPU approved using the remaining money in this fund on projects contributing toward DPU conservation objectives.

In addition to demonstration units, resources will be published in monthly bill inserts, social media, and as a webpage. Talks will be organized when possible.

Induction Cooktop Technology

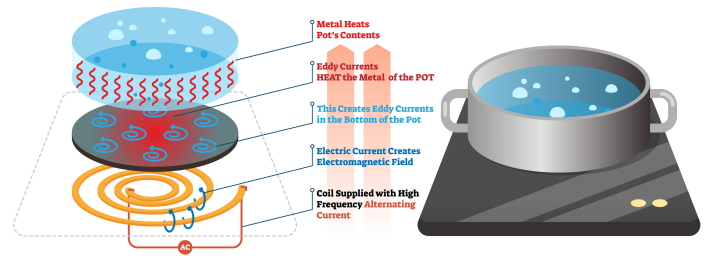
The DPU has two projects under way to provide customers the opportunity to try induction cooking technology before committing to full units. Induction cooking technology uses electromagnets to heat an induction-compliant cooking vessel. These units heat cookware faster than conventional electric cooktops. They also eliminate the indoor air pollution and open flame danger of gas stoves.

The first project is a loaner program with portable induction cooktops. These single burner units will be available to residents of Los Alamos County for a period of two weeks and will include instructions and cookware..

The second project is to install a full induction stove unit at the White Rock Municipal Complex.

Audience: DPU Customers
Target timeline: 2022-2025+

INDUCTION



Audience: DPU Customers, goal of 1000
Final Cost: \$2550 (loaners); \$1300 (stove)
Target timeline: July 2022+

2025 UPDATE: In July 2022, the Induction Cooktop Borrowing Program debuted with 5 cooktops. Over 100 people participated in the first year. In 2023, DPU partnered with the Public Library by adding two induction cooktops and several Kil-O-Watt Power Meters into the Library of Things. The Library of Things efficiency items have nearly 150 circulations in the community.

An Induction Cooking Panel was held at PEEC in October 2022. 15 people attended. The full induction range was installed in March 2023. A beneficial program to promote the appliance has not been created yet. In October 2023, an induction cooktop borrowing kit was loaned to Los Alamos Social Services to use at their discretion.

Heat Pumps

The DPU is actively working to find locations to demonstrate a heat pump dryer, a heat pump hot water heater, and other heat pump-driven technology.

The desired locations will be similar to the location for the induction stove: accessible and interactive (where appropriate) by the public. The DPU wants to provide opportunities for public interaction to best encourage adoption of heat pump technologies.



Audience: DPU Customers, goal of 500
Est. Cost: \$5000-\$7000
Target timeline: 2023

2025 UPDATE: The Conservation Coordinator reviewed a dozen possible public locations to install heat pump-based appliances and found none that would not place additional burden on building staff or access. Alternatively, heat pump information is available on the DPU website. A heat pump panel discussion (for heating and cooling) was held in October 2024 and was very well attended. Heat pump water heater technology is not quite ready at the altitude of Los Alamos County and has not been promoted.

Reduce Natural Gas Usage and Support Elimination

Tools and Incentives to Conserve Gas

Energy Audits



Audience: DPU Customers
Target timeline: 2022 — 2025+

Energy audits allow customers to see consumption history and sources of energy leaks within their home. These audits result in recommendations for conservation practices to reduce energy loss and consumption. Currently, the DPU is not offering comprehensive energy audits as it was determined to be an inefficient use of the previous coordinator's time. Resources on weatherization and DIY audits, such as the ENERGY STAR Home Energy Yardstick, are available for customers. Customers are also encouraged to access Automated Metering Self Service Portal to see nearly real-time consumption data and self-audit.

2025 UPDATE: In an effort to alleviate the lack of auditors servicing the area, a DIY energy assessment was created. This checklist can be paired with the thermal cameras available through the Library of Things program.

Several options were explored for a workforce development and/or training program for energy assessors/auditors that have gone nowhere. The Santa Fe Community College has a promising program that rolled out in late 2024 and opportunities might arise to support that program.

1460 customers are enrolled in the AMI portal.

Gas Rate Increase



Audience: all DPU gas customers
Target timeline: Oct. 2022 — Oct. 2025

Large increases to costs due to inflation and supply chain shortages have negatively impacted current gas fund balances. The proposed adjustments are intended to generate revenues needed not only for current operations but also to build cash reserves necessary for future infrastructure needs. Gas rates will increase every year for four years, unless deemed not needed. This rate is a "pass-through" rate structure and includes the monthly service fee and the consumption rate. The consumption rate is complex, but more simply put DPU's actual cost to purchase the natural gas commodity is passed directly to the customer in the variable portion of the commodity rate, which is calculated monthly. Large meters and large gas consumers are going to see this gas rate increase the most. Customers are provided with conservation measures to reduce gas consumption and help lower their bills.

2025 UPDATE: Gas rate increases are ongoing as planned.

Rebates

Audience: all DPU gas customers
Target timeline: 2023 — 2033

The DPU, as a public entity, cannot currently offer any direct rebates on gas conservation efforts that will reduce a customer's usage. This is subject to change with the recent NM constitutional amendment. The Inflation Reduction Act is promising some extensive rebates and incentives to encourage customers to electrify their systems over the next 10 years.

2025 UPDATE: IRA programming began prior to the release of the tax credits at the beginning of 2023. Information on the then-upcoming credits and rebates was distributed in bill inserts, on the DPU website, and at events around the community. Rebates were rolled out through state programs. New Mexico has been deploying rebates in stages since the fall of 2024. Information continues to be shared with DPU customers as the rebate program grows. Several attempts were made to connect with UAMPS's rebate program. After little response, it was decided that the program didn't meet the needs of DPU's customers.

Additional Goal: Develop and Strengthen Partnerships with Stakeholders

DOE/LANL



The DPU and the DOE are joined in an ECA which allows each entity to combine resources for the Los Alamos Power Pool. The Power Pool purchases, sells, and schedules the power required for Los Alamos County customers and LANL. The current ECA expires in 2025 and both parties are working on negotiations for a post-2025 ECA.

2025 UPDATE: Outside of the ECA, the LANL water conservation team and DPU have been doing paralleled education campaigns as a pilot. For example both partners released separate information during Source Water Protection Week.

Sustainability Manager



The County recently hired a sustainability manager, per a recommendation of the LARES Task Force. The first task for this position will be to manage a contract for the greenhouse gas study and subsequent climate action plan. A partnership with the sustainability manager will guide the DPU in implementing LARES recommendations that the BPU have found in-line with DPU goals.

The LARES Task Force, appointed in 2021 by Los Alamos County Council to create recommendations to reduce carbon footprints and enhance sustainability, released a final report in 2022.

An additional and tied partnership will be with the ESB. The ESB was established to advise the County Council on environmental sustainability issues and related policies, programs, and services.

2025 UPDATE: As a result of the LARES recommendations, the Los Alamos Climate Action Plan was drafted by a consultant and approved by Council in 2024. DPU will continue to work closely with the Sustainability Manager on programming that aligns with both CAP recommendations and BPU goals.

Reclaim Water Users

The DPU will continue to work with the current users of reclaimed water for irrigation to ensure this valuable resource is not being wasted by broken or misaligned sprinklers, or by over watering. The primary consumers of this water source are the County Parks Division and Golf Course. The public schools and LANL are additional, large-scale potential users as the reclaimed/non-potable water system is expanded. The pipeline network is not in place to accommodate residential users of the county system.

Library of Things



In November of 2022, the DPU agreed to a trial period of loaner items through the public library. This program will begin with loaning two of the very popular induction cooktop units and four of the new Kill A Watt power meters with instructions on interpreting the meter results. The library is working on expanding by loaning items beyond media (books, CDs, etc.) and the DPU can reach out to additional audiences.

2025 UPDATE: The Library of Things has been a very successful program. Efficiency tools are available to a wider audience and outside of DPU business hours. The Library of Things contains the following at each branch: induction cooktops, power meters, and thermal cameras. Future items to be considered for release include appliance cleaning brushes and gas detection meters. Several items have been kicked off with unique events: an interactive BINGO game for the induction cooktop and a ghost hunt for the cameras.

Partnerships with Stakeholders

Memberships

Alliance for Water Efficiency

In July 2008, the DPU became a charter member of the Alliance for Water Efficiency (AWE), which provides comprehensive information about water efficient products, practices, and programs. Additional services include the development of conservation codes and standards, coordination with green building initiatives, training for conservation professionals, and general water use education.

New Mexico Water Conservation Alliance

The DPU continues to be a member of the New Mexico Water Conservation Alliance (NMWCA), a non-profit dedicated to water conservation issues. Many communities from around the state meet regularly to discuss issues, exchange information, provide education, and work toward a water-secure future for New Mexico.

WateReuse

In April 2021, the DPU joined the New Mexico chapter of WateReuse. The WateReuse Association is solely dedicated to advancing laws, policy, funding, and public acceptance of recycled water. WateReuse is focused on “aiding and accelerating the natural process of cleaning the water to make it suitable for its intended purpose, from irrigation to industrial uses to drinking.”

Energy Star Promotional Partner

The DPU became a promotional partner with the Environmental Protection Agency’s Energy Star Program in 2008. This partnership provides a unique opportunity to leverage ENERGY STAR™ and receive free energy efficiency updates designed for customer education.

Alliance to Save Energy Member

In 2008, the DPU became a member of the Alliance to Save Energy, which is well known for its national Energy Hog campaign. The bipartisan non-profit is a coalition of business, government, environmental, and consumer leaders advocating to advance federal energy efficiency policy.

Voice of Customer Survey Feedback

*Audience: DPU Customers
Target timeline: Dec 2022 — Nov 2023*

The “Voice of the Customer Survey” is specifically designed to help the DPU understand the customer perception of the utility and the services provided.

2025 UPDATE: Following the 2024 survey, DPU was presented with a Customer Satisfaction bronze-level award by the American Public Power Association thanks to an 80% approval rating from customers. The 2025 survey runs from January 13 through February 6.

Appendix 1

Public Input: Comments from Climate Action Plan Public Feedback Period

Appendix 2

New Mexico Office of the State Engineer (NMOSE)
GPCD Calculator, submitted annually.

Appendix 3

AWWA Audit, submitted annually to NMOSE

Appendix 4

FY2024 Education and Outreach

Appendix 5

Example Bill Inserts

Appendix 6

Jemez y Sangre Regional Water Plan Project Updates

Reference Appendix 8-A of the Regional plan, pages 1 and 2 for correlated project worksheets.

Appendix 7

Los Alamos County Energy Conservation Policy

Appendix 8

Sources Referenced



Los Alamos Department of Public Utilities
2022-2027 Update

Approved by BPU on 17 August 2022

Addendum revisions (pages: 28-29, 35-57; Appendices 5-7) approved by BPU on 7 December 2022

Biennial update to plan (most graphs; updates to project in Part II) approved by BPU on 19 February 2025