



2017

ENERGY, MINERALS
AND NATURAL
RESOURCES
DEPARTMENT
ANNUAL REPORT

e m n r d



Ken McQueen
Cabinet Secretary

Matthias Sayer
Deputy Secretary

Bill Brancard
General Counsel

Beth Wojahn
Communications Director

Matthew Lovato, Director
Administrative Services Division

Amanda Muller, Administrator
Human Resources

Joe Montaña
Chief Information Officer

Louise Martinez, Director
Energy Conservation &
Management Division

Donald Griego, State Forester
Forestry Division

Fernando Martinez, Director
Mining and Minerals Division

Heather Riley, Director
Oil Conservation Division

Christy Tafoya, Director
State Parks Division

Edited by: Beth Wojahn
Designed by: Lauren Aguilar

Vision

A New Mexico where individuals, agencies and organizations work collaboratively on energy and natural resource management to ensure a sustainable environmental and economic future.

Mission

To position New Mexico as a national leader in energy and natural resources management.



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Message from Cabinet Secretary Ken McQueen

Energy, Minerals & Natural Resources Department

The Energy, Minerals and Natural Resources Department is charged with protecting and conserving New Mexico's natural resources while providing recreational opportunities throughout our extraordinary landscape, and 2017 was a remarkable year.

Below are a few Department highlights:



Cabinet Secretary
Ken McQueen



Governor
Susana Martinez

- The Energy, Conservation and Management Division (ECMD) completed the Energy Roadmap Project from a \$300,000 grant from DOE. This project is the first major step in implementing the Governor Susana Martinez's 2015 Energy Policy and Implementation Plan.
- New Mexico is home to the 6th largest geothermal resource in the US; ECMD spent 2017 developing a complete new set of geothermal rules. Public hearings were held during the first week of January.
- The oil and gas industry continues to recover from the 2014 price collapse. In October, New Mexico set an all-time oil production record at over one-half million barrels per day. New Mexico has also led the nation in the rate of recovery of drilling rigs since our low rig count back in 2015. During the past year, the Oil Conservation Division developed new rules related to horizontal drilling and releases. Those new rules will be heard by the Oil Conservation Commission later this year.
- The State Forestry Division is more proactive than ever in collaborating with local, state, federal and tribal partners to address not only wildfire, but forest and watershed health with 51 separate projects, targeting 27,607 acres of forest and woodlands, made possible in part by Governor Susana Martinez's establishment of the Watershed Restoration Initiative (WRI) in 2014.
- Forestry's Returning Heroes Wildland Firefighter Program (RHP) assists with many of those watershed and restoration projects and continues its success with the training of 69 veterans and 241 students from various sectors in 2017, including state and federal employees, fire department personnel, and seasonal wildland firefighters.
- The Rio Grande Trail Commission made a great deal of progress in 2017, approving both trail designation criteria and an approval process. The Commission also took a major first step in formal government-to-government consultation with potentially impacted tribes. The Rio Grande Trail Virtual Open House conducted by Alta Planning + Design had 993 participants.
- Visitation to State Parks was almost 5 million visitors last year!
- MMD's Excellence in Reclamation Award for 2017 was presented for a successful restoration project in Madrid in Santa Fe County. This project also earned the 2017 Abandoned Mine Land Reclamation Western Region Award from the federal Office of Surface Mining Reclamation and Enforcement.

I gratefully acknowledge the dedicated, hard-working employees within the Department and look forward to another productive year where our diligence positively impacts citizens of New Mexico now, and generations to come!

I am pleased to submit the Energy, Minerals and Natural Resources Department's Annual Report, which includes 2017 accomplishments, data and statistics.

EMNRD Organizational Chart



Ken McQueen
Cabinet Secretary



Matthias Sayer
Deputy Cabinet Secretary



Youth Conservation
Corps*

-
Wendy Kent
Division Director



Communications
Director

-
Beth Wojahn



General Counsel

-
Bill Brancard



Chief Information
Officer

-
Joe Montaño



Human Resources
Administrator

-
Amanda Muller



Department of Game
and Fish*

-
Alexandra Sandoval
Director



Administrative
Services Division

-
Matthew Lovato
Division Director



Energy Conservation &
Management Division

-
Louise Martinez
Division Director



Mining & Minerals
Division

-
Fernando Martinez
Division Director



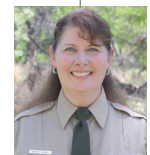
Oil Conservation
Division

-
Heather Riley
Division Director



State Forestry
Division

-
Donald Griego
State Forester



State Parks
Division

-
Christy Tafoya
Division Director

*Administratively Attached



Office of the Secretary

Office of the Secretary (OFS) provides leadership, strategic planning and policy direction, and establishes procedures for the Department and program performance. OFS oversees all divisions within the Department; it also houses the Office of Information Technology, Communications/Public Information Office, and Office of General Counsel, which provide administrative support functions—legal, human resources, fiscal and information technology.

OFS serves as the focal point for the Department's communications with the Governor, legislators and other state agencies. OFS establishes Department policies, and provides legal, programmatic, public outreach and marketing direction to the divisions.

New Mexico Energy Policy and Implementation Plan

The State Energy Policy & Implementation Plan, 'Seizing our Energy Potential: Creating a More Diverse Economy in New Mexico', was unveiled in 2015 and is New Mexico's first energy policy and plan in nearly 25 years. Expanding our nation's efforts to achieve energy independence is the cornerstone of the plan.

In 2017, the implementation phase of the Plan called the State Energy Roadmap project kicked-off in June to determine future scenarios of the state's energy landscape. Energy professionals and regulatory agency representatives gathered throughout the year and worked on goals and strategies to be carried out by energy stakeholders in 2018 and beyond.

Rio Grande Trail Commission

In 2017, the Rio Grande Trail Commission, led by the Energy, Minerals and Natural Resources Department and chaired by Secretary McQueen, met four times. The Commission, charged with developing a trail which will run the length of the state from Colorado to Texas, created and approved trail designation criteria in 2017.

Branding for the planning process was also approved and new promotional materials have been developed for the trail process.



The Rio Grande Trail corridor includes four national wildlife refuges, six national monuments, one national heritage area, and six state parks, touching nearly 10 counties and more than 22 cities or towns.

Four National Wildlife Refuges

Six National Monuments

One National Heritage Area

Six State Parks

Existing Rio Grande Trail Segments

Where do you want the Rio Grande Trail to take you? Use the map on the right to get to know the corridor.



This year the Commission hired Alta Planning + Design to lead the effort to create a master plan for the trail and to assist the state with efforts to make residents aware of the trail and how it will benefit the state.

This contract is managed by NM State Parks and all tasks associated with the \$500,000 contract are to be completed by October 2018. Tasks include: review of past planning for the Rio Grande Trail and proposed alignments, mapping and identification of new and existing alignments, recommendations regarding potential alignments, identification of cultural and natural resources that could be impacted, and creation of educational and outreach materials for the Rio Grande Trail. The contractor also conducted public outreach statewide to include stakeholder meetings as well as a virtual open house.

Multiple agency meetings were held to encourage trail designation and the Commission Chair and Vice Chair met with the Bureau of Land Management, the US International Boundary and Water Commission, the Middle Rio Grande Conservancy District, the City of Las Cruces, Taos Pueblo and the Whitfield Wildlife Center. In addition, multiple government-to-government tribal consultation meetings have been held with the pueblos and tribes along the Rio Grande corridor.

Communications / Public Information Office

The Communications/Public Information Office manages communications with the general public, media organizations and other inquiring entities. It coordinates and synthesizes information from the Department's divisions to write speeches, news releases and articles. The office works closely with all divisions and oversees marketing and public relations for the Department. It serves as project manager for Department-wide publications such as the annual report, strategic plan and other reports as needed. It coordinates and oversees the Department's internal

communications, including intranet, newsletters, memos, award ceremonies and other Department-wide events.

Office of General Counsel

The Office of General Counsel manages all legal affairs for the Department. This includes representation of the Department in administrative and judicial proceedings as well as drafting and analysis of proposed legislation and rules, assistance with human resources issues and review of contract documents.

Administrative Services

The Administrative Services Division (ASD) oversees the Department's finances and property. Specific functions include budget, procurement, accounting, payments, federal grant reporting and property and material management. Among ASD's duties are the processing of payment vouchers, travel documents, purchase orders and deposits, for the Department's daily operations. ASD also coordinates the annual financial audit and prepares the annual financial statement and related footnotes for governmental funds.

Information & Technology Office

The Information and Technology Office (ITO) is the central information technology and information systems provider for the Department's employees situated at 50+ separate facilities. It employs 21 technical positions that are responsible for maintaining and supporting the Department's computer systems, network telecommunications infrastructure and application development needs using the latest technology for Windows and Web applications on the intranet and internet.

Human Resources

The Human Resources Bureau (HRB), within the OFS, provides services and information for applicants, employees and employers throughout the state. HRB verifies that the Department follows all state and federal rules, regulation and laws governing employment; guides managers and supervisors through a variety of employment issues; and assists employees in understanding state and federal rules, regulations and laws. HRB helps employees with position classification, compensation and discipline. HRB also provides guidance on medical leave and workers' compensation.



Oil Conservation Division



New Mexico State Parks Division



New Mexico Forestry Division



Mining and Minerals Division



Energy Conservation and Management Division

The banner features a large, dark silhouette of an oil derrick against a dramatic, cloudy sky at dusk or dawn. The sky transitions from deep blue at the top to a mix of purple and orange near the horizon. The derrick is a complex lattice structure with various platforms and cables. Below the derrick, there are some smaller, less distinct structures.

Oil Conservation Division

Two smaller photographs are positioned to the right of the main title. The first photo shows a large, white, curved pipe or valve with various fittings and a small platform. The second photo shows several large, white, cylindrical storage tanks in an industrial setting, with a hillside in the background.

Heather Riley
Division Director



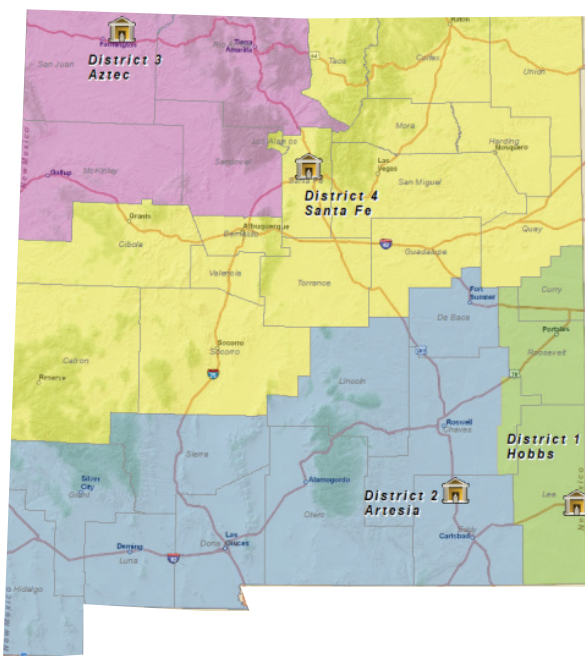
Oil Conservation

MISSION:

To ensure the protection, conservation, management, and responsible development of oil and gas through professional, dynamic regulation and advocacy for the ultimate benefit of New Mexico.

OVERVIEW:

The Oil Conservation Division (OCD) is organized into four district offices and four bureaus responsible for different aspects of regulating the oil and gas industry. The district offices issue drilling permits, inspect wells and associated facilities, respond to spills, investigate violations and institute enforcement actions.



The Four District Offices

Hobbs – District 1
Artesia – District 2
Aztec – District 3
Santa Fe – District 4

FOUR BUREAUS:

The **Engineering Bureau** processes administrative applications for exceptions to OCD rules, and the staff serves as Director-appointed hearing examiners for OCD hearings.

The **Environmental Bureau** enforces environmental rules and programs in the oil and gas industry for the protection of New Mexico's fresh water, public health, and the environment.

The **Administration and Compliance Bureau** ensures activities comply with regulations and do not result in the waste of oil and gas resources and to protect human health and the environment. The bureau works with operators to develop agreed compliance orders. The bureau tracks statistics and oversees the division's budget and procurement needs and provides administrative support, manages the plugging bond program and maintains records of cases and orders.

The **Field Operations Bureau** is responsible for overseeing the district offices and working with the district offices on compliance matters.

RULEMAKING

OCD works with representatives from diverse groups to identify areas where rules can be improved. OCD is actively involved in national, state, and industry organizations that share information on new technologies and discuss best practices on topical issues such as hydraulic fracturing, horizontal well drilling, produced water management and gas capture.

OIL CONSERVATION COMMISSION (OCC)

The three-member commission, chaired by the OCD Director, promulgates rules governing oil and gas production in New Mexico, conducts hearings on matters of significant interest, and hears appeals of Oil Conservation Division examiner decisions. The Commission emphasizes the commitment to promulgate regulations based on science by including university researchers in workgroups for rule development and amendment recommendation.



PERFORMANCE

Inspection & Plugging

In FY17, OCD inspected more than 37,000 oil and gas wells and facilities, as well as facilities regulated by the Underground Injection Control (UIC) program. Concerning the LFC Performance Measures, the OCD now reports the number of inspections and violations found which incentivizes inspectors to hold operators to the highest standards.

In addition, OCD plugged 34 wells in FY17, exceeding the performance target of 30 wells. Several compliance cases were brought to hearing in FY17. Currently, there are approximately 260 wells in queue for plugging with Oil Reclamation Fund monies, and OCD is bringing approximately 30 operators to hearing which will add up to 129 wells to the plugging list.

Applications for Permit to Drill (“APDs”)

In FY17, the OCD approved 96 percent of all APDs within 10 business days of receipt, exceeding the performance target of 85 percent. Approving APDs in a timely manner enables industry to plan and drill wells on schedule, thereby reducing down-time and rig expense. Timely turnaround also allows royalty and tax money to quickly flow to the state. OCD approved 1,071 APDs in FY17.

Engineering

The Engineering Bureau makes every effort to process administrative and hearing applications in a timely manner. Delays in the processing of these applications can result in delays in drilling and producing operations. In FY17, the Division processed 67 percent of all administrative applications within 30 days of their receipt. In addition, the overall average turnaround time for all administrative orders issued was 28 days.

Carlsbad Brine Well Remediation

Since 2009, the OCD has been involved in characterizing and monitoring a large and unstable brine well cavern which threatens a developed portion (~50 acres) within Carlsbad in Eddy County. Brine wells operate by injecting freshwater into subsurface salt formations to produce saturated brine. Using monies from the Reclamation Fund and the operator’s liquidated bankruptcy estate, OCD installed and maintains an automated ground movement monitoring system integrated directly into the local emergency response infrastructure. OCD also oversaw characterization of the cavity using state of the art geophysical techniques.



Significant efforts have been made to ensure emergency response groups are kept up to date so that their planned responses, if needed, can deal with a cavity collapse. In addition, OCD has attempted to involve the Environmental Protection Agency, the Federal Emergency Management Agency, the State’s congressional delegation in Washington, the New Mexico Legislature, and international experts in the field with hope of remediating the cavity before a major collapse occurs.

Upgrades to the monitoring system continue to be made, and all historic data has been independently reviewed. A feasibility study was completed in July 2014 providing possible solutions along with estimated costs for implementation. To date, state expenditures for outside services on the project exceed \$6 million, of which \$1.6 million was reimbursed by the bankruptcy estate. Recurring costs for continued monitoring, analysis, and system maintenance were approximately \$427,000 last calendar year. In addition to providing monitoring and data analysis, Division staff provide technical guidance to state and local entities involved in the project as well as providing regular updates to the executive and legislative branches. In the past year, surface features have appeared, which are indicative of a likely collapse.

During the 2017 legislative session, a remediation fund was established with \$250,000 from the general fund contingent upon contributions of \$125,000 each from the City of Carlsbad and Eddy County, totaling \$500,000.

The Carlsbad Brine Well Remediation Advisory Authority was also created, which has representation from the City of Carlsbad, Eddy County, the Carlsbad Irrigation District (owner of a major irrigation canal affected), the Attorney

General's Office, the Office of the State Engineer, the Department of Transportation, the Environment Department, as well as the Energy, Minerals and Natural Resources Department. The Authority's purpose is to advise OCD on efforts to resolve the situation. To utilize the funds provided by the Legislature, Carlsbad, and Eddy County, the State has issued a formal Request for Proposals to fully design an in-place backfilling of the underground cavity and thereby mitigate a catastrophic collapse. The selected engineering firm should be announced in January 2018 once a contract is in place. Nonetheless, funding for such a backfilling project still needs to be secured, and preliminary estimates range from \$24 million to \$43 million.

Re-use of Produced Water

The Energy, Minerals and Natural Resources Department Secretary and OCD Director support the growing interest in the re-use of produced water for oil and gas operations and other purposes. The OCD has partnered with the University of New Mexico to explore the reuse of produced water for other non-oil and gas beneficial purposes.

The OCD posted a Public Notice on the [website](#), under Announcements and Notifications on the Re-Use of Produced Water. No OCD permit or authorization is required for the re-use of produced water, drilling fluids or other oil field liquids as a drilling or completion fluid or other type of oil field fluid. This includes makeup water, fracturing fluid or drilling mud at a permitted drilling, production or plugging operation.

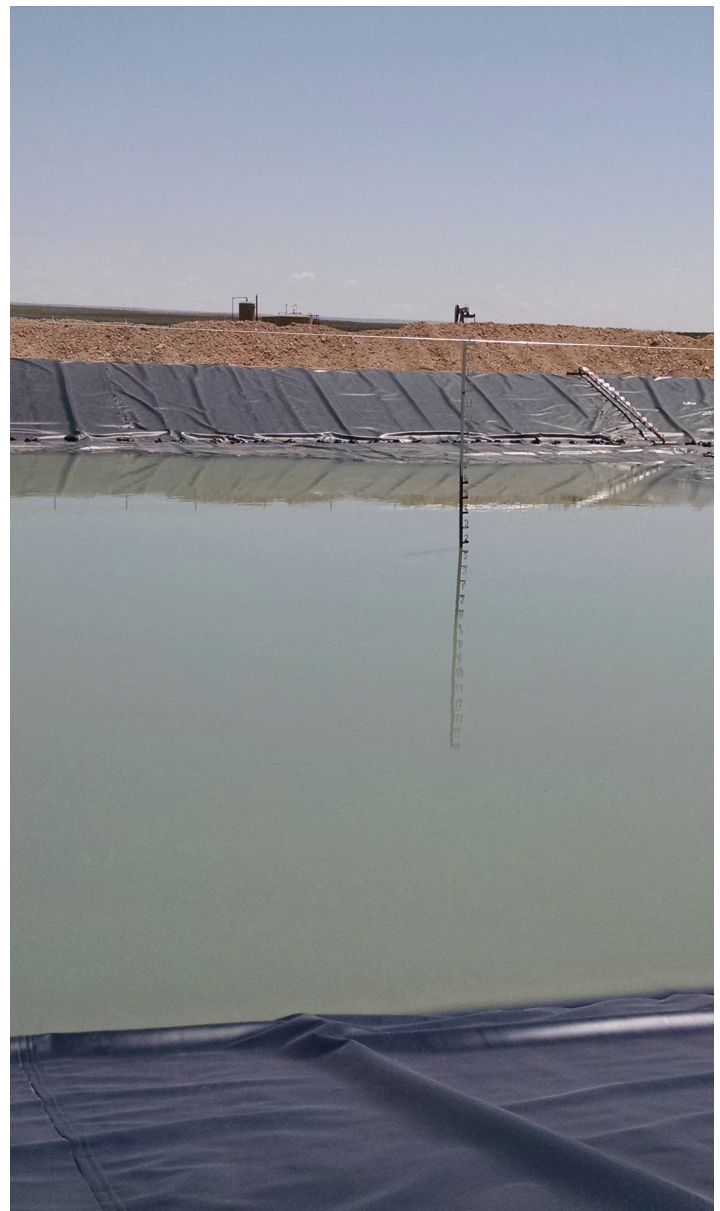
PARTNERSHIPS & COLLABORATION

STATE LAND OFFICE (SLO)

OCD works closely with the SLO. SLO has worked to develop a meaningful way to identify expired leases and provide the same to OCD which helps OCD field personnel conduct inspections of potentially problematic operators in a timelier manner.

BUREAU OF LAND MANAGEMENT (BLM)

OCD and BLM continue to meet quarterly both in the Southeast and Northwest portions of the State. Staff from both agencies discuss and analyze issues that need to be addressed in the field and at district offices. The quarterly meetings have given both agencies opportunities to work jointly on current issues. In addition, the OCD Division Director meets quarterly with the BLM State Director in Santa Fe to discuss policy issues that affect oil and gas operations statewide.

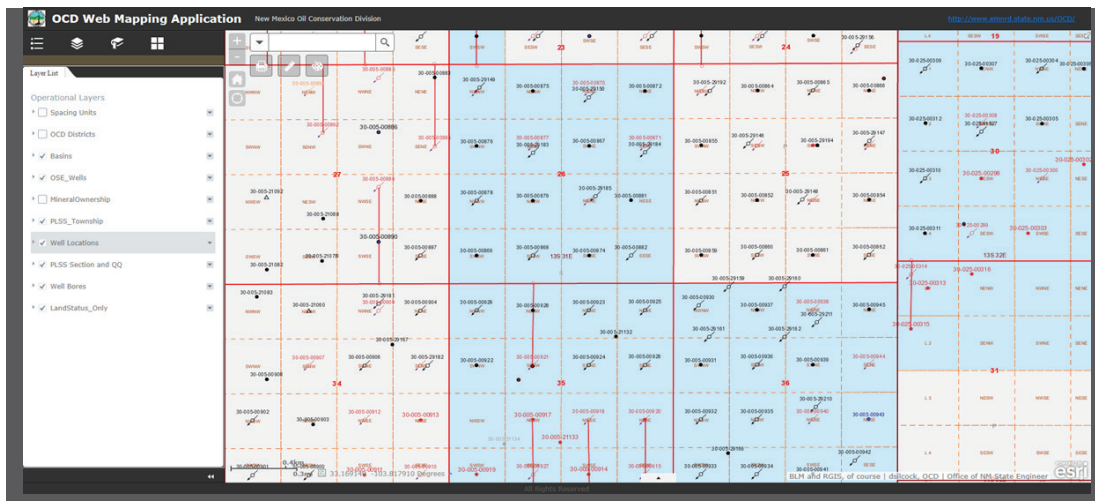


INDUSTRY ADVISORY GROUP

OCD formed an Industry Advisory Group (IAG) consisting of eight industry representatives. The IAG meets quarterly with the OCD Division Director. New Mexico Oil and Gas Association, Independent Petroleum Association of New Mexico and the Permian Basin Petroleum Association are represented in the group. The purpose of the IAG is to provide a forum for discussion of issues of mutual interest, including new industry technology and OCD rule changes.

ELECTRONIC SYSTEMS LEADERSHIP

The Division worked with the agency's IT Department to increase efficiency, transparency and availability of information to the public. The IT Department continues to develop a replacement to OCD's Risk-Based Data Management System which should be fully implemented in FY18.



GEOGRAPHIC INFORMATION SYSTEM (GIS):

- OCD has developed a GIS module
- GIS module is now publicly available on OCD Online
- Module contains a well layer linked to OCD Online, land ownership, and spacing unit layers
- Additional layers are being developed that will contain spills and other information

OCD RECENT ACTIONS

- Amended Monthly Reporting Rule to require operators to report production in a timelier manner
- Amended the rule pertaining to Log, Completion and Workover Reports to require operators to file FracFocus Chemical Disclosure reports
- Worked with operators to ensure vented and flared gas is properly reported
- Developed a system to verify all contact information for every operator in the state
- Identified land and working on a design for a new office building in Artesia
- Currently in the process of hiring additional staff in the district offices

POSSIBLE RULE CHANGES

Rule 19.15.16.15: Special Rules for Horizontal Wells

- Rule 19.15.16.15 was established in 2012
- Horizontal drilling techniques and operator business practices have greatly advanced since that time
- OCD needs to keep pace with changing technology
- The horizontal workgroup completed proposed revisions to the rule
- A rule change will be proposed at the OCC hearing on January 18, 2018

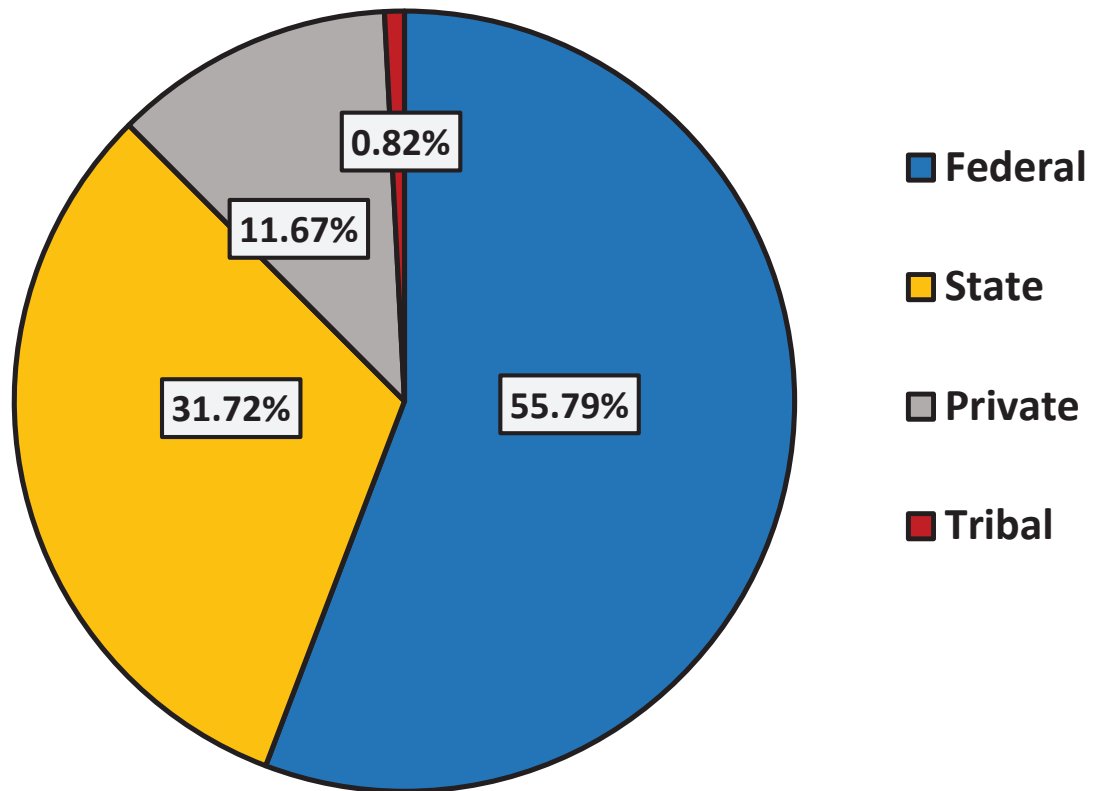
Rule 19.15.29 Release Notification

- Oilfield delineation, release and remediation standards are currently contained within OCD guideline document
- Developing new standards will achieve greater efficiencies and predictability
- Release workgroup currently working to develop a rule that contains standards to which companies must characterize and remediate leaks and spills
- A rule change will be proposed

OIL CONSERVATION DIVISION GOALS

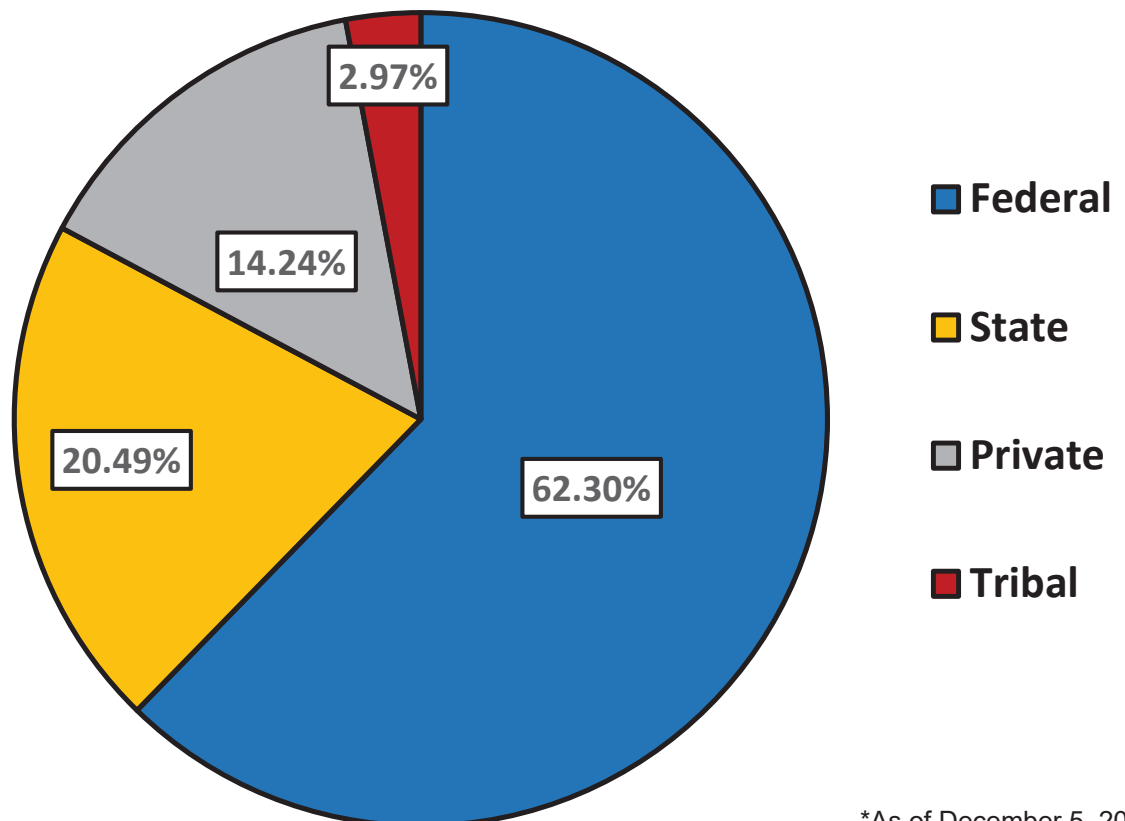
- To make balanced, consistent, fair and transparent decisions delivered in a timely and resourceful manner
- To provide efficient processes that support industry's needs while ensuring compliance with rule requirements
- To conduct transparent activities and provide public access to reports and information
- To strive for balance that supports the industry while protecting the environment, with decisions based on sound science and not politics
- To fill vacancies to enhance public service, well inspections and application processing
- To work collaboratively with other agencies, divisions and our constituents for the betterment of the division
- To maintain providing seamless production data to the Taxation and Revenue Department and the State Land Office for the efficient processing and disbursement of taxes and royalties due to the state of New Mexico

2017 Oil Production by Land Type



*As of December 5, 2017

2017 Gas Production by Land Type



*As of December 5, 2017

Oil Production by Calendar Year

Year	SE Crude	SE Condensate	NW Crude	NW Condensate	Total Oil
2013	96,559,163	2,653,059	2,124,107	1,452,666	102,788,995
2014	115,410,056	2,962,635	4,844,139	1,606,066	124,822,896
2015	134,693,073	3,794,171	7,169,954	1,992,296	147,649,494
2016	131,857,950	7,382,241	5,491,521	1,565,993	146,297,705
2017	147,338,245	14,863,251	6,241,153	1,509,459	169,952,108

Volumes are adjusted to reflect amended production reports filed with the Oil Conservation Division

Source: Oil Conservation Division as of February 19, 2018

Production is due 45 days after the close of the production month.

Oil and condensate is reported in bbls.

Gas Production by Calendar Year 2013-2017

Year	SE Casinghead	SE Dry Gas	NW Casinghead	NW Dry Gas	NE Dry Gas	Total Gas
2013	335,824,588	130,837,811	13,641,837	722,696,545	25,397,912	1,228,398,693
2014	382,703,177	123,891,474	25,651,579	686,743,078	23,787,208	1,242,776,516
2015	444,506,705	116,048,871	43,828,377	645,265,136	22,448,308	1,272,097,397
2016	496,036,905	123,598,708	39,292,536	599,043,254	21,070,259	1,279,041,662
2017	510,188,814	163,948,506	36,863,089	528,475,685	19,530,551	1,259,006,645

Volumes are adjusted to reflect amended production reports filed with the Oil Conservation Division

Source: Oil Conservation Division as of February 19, 2018

Gas includes coalseam production and is reported in thousand cubic feet (Mcf)

Production is due 45 days after the close of the production month.

Gas in New Mexico is reported at a pressure base of 15.025 psia

Total Oil and Gas Production by Calendar Year¹

Year	Oil ²	Gas ³	BOE ⁴
2013	102,788,995	1,228,398,693	307,522,111
2014	124,822,896	1,242,776,516	331,952,315
2015	147,649,494	1,272,097,397	359,665,727
2016	146,297,705	1,279,041,662	359,471,315
2017	169,952,108	1,259,006,645	379,786,549

Volumes are adjusted to reflect amended production reports filed with the Oil Conservation Division

¹Source: Oil Conservation Division as of February 19, 2018

²Oil includes condensate and is reported in barrels (Bbls)

³Gas includes coalseam production and is reported in thousand cubic feet (Mcf)

⁴BOE converts gas to equivalents based on a 6 to 1 ratio and is expressed in Bbls

2017 Oil and Gas Production by County

Rank	Oil (Bbl)	Rank	Gas (Mcf)
1. Lea	94,140,679	1. Eddy	359,828,995
2. Eddy	66,815,842	2. San Juan	334,199,348
3. San Juan	4,987,912	3. Lea	298,692,720
4. Rio Arriba	1,388,754	4. Rio Arriba	218,945,171
5. Sandoval	1,361,498	5. Colfax	19,530,551
6. Chaves	1,004,737	6. Chaves	13,985,106
7. Roosevelt	240,238	7. Sandoval	12,086,407
8. McKinley	12,448	8. Roosevelt	1,630,499
		9. McKinley	107,848
Total	169,952,108		1,259,006,645

Source: Oil Conservation Division as of February 19, 2018

Production is due 45 days after the close of the production month.

Gas includes coalseam production and is reported in thousand cubic feet (Mcf)

Well Inspections by Fiscal Year 2012 -2017

	<u>2017</u>	<u>2016</u>	<u>2015</u>	<u>2014</u>	<u>2013</u>	<u>2012</u>
Quarter 1	9,805	12,431	15,420	8,782	8,235	8,005
Quarter 2	6,924	10,245	9,350	7,848	8,486	8,754
Quarter 3	10,885	13,379	9,477	8,327	8,597	8,804
Quarter 4	10,314	13,569	13,346	10,772	11,584	8,713
Total	37,928	49,624	47,593	35,729	36,902	34,276

The Oil Conservation Division performs well inspections throughout the year to ensure operators are in compliance. Report ran on December 14, 2017

Wells Drilled and Completed by Year & Well Type 2008 - 2017

Year	Gas	Oil	Other	Total
2008	1,234	1,123	115	2,472
2009	868	904	120	1,892
2010	518	1,207	118	1,843
2011	519	1,406	131	2,056
2012	390	1,388	92	1,870
2013	248	1,315	87	1,650
2014	102	1,312	71	1,485
2015	93	813	44	950
2016	78	425	20	523
2017	120	436	27	583

"Other" includes saltwater disposal wells, carbon dioxide, and injection wells. 2017 count as of 12/19/2017 - not complete for the year

Forestry Division

Donald Griego
State Forester





Forestry Division

MISSION: The New Mexico State Forestry Division (Forestry) retains lead responsibility for wildland fire management on non-federal, non-tribal, and non-municipal lands, maintaining fire suppression capacities and emphasizing public and firefighters' safety. Forestry promotes healthy, sustainable forests in New Mexico for the benefit of current and future generations.

Forestry is responsible for fire suppression on 43 million acres of non-municipal, non-federal, and non-tribal land across the state. Forestry also assists New Mexico's communities by evaluating those lands and forests most at risk to wildfire, disease, and insect infestation by developing appropriate land management and restoration programs, and implementing mitigation projects.

Forestry staff provides technical assistance to private landowners for developing sustainable forests that enhance quality of life by providing tree care training, distributing low-cost seedlings, developing Forest Stewardship plans, and delivering insect and disease identification assistance as well as forest health project funding.

PROGRAMS

Forestry's main priorities are technical assistance to landowners, wildfire management and mitigation, and the assistance in the continued development of the forest workers industry (e.g., timber harvesting, arboriculture, construction, woody biomass, forest thinning and wildfire mitigation treatments).

Forestry regulates the harvest of commercial forest species on private forestland and conducts habitat improvement projects by studying plant species' abundance, defining ecosystems, acquiring easements and purchasing key properties.

Landowners and communities receive assistance with fire prevention and preparedness planning, forest management and improvement, urban and community forest development and management, conservation easement and tax incentive programs and numerous related outreach presentations. Forestry works to implement projects and programs with a goal of improving overall forest and watershed health statewide.

Forestry utilizes the annual operating budget and capital appropriations authorized by the New Mexico Legislature to leverage and match federal dollars to meet its mission and goals. Collaboration with the US Forest Service (USFS), Bureau of Land Management (BLM), New Mexico Department of Game and Fish (G&F), and the State Land Office



Jicarita Peak, Pecos Wilderness, NM. Photo courtesy: Daniela Roth

(SLO) allows Forestry to greatly improve the health of our forests, develop protection for our valuable watersheds, assist communities at risk from wildland fires, and improve wildlife habitat.

ACCOMPLISHMENTS

OVERVIEW

The 2017 fire season in New Mexico had the potential to be extremely active, but moderate rainfall and increased awareness through fire prevention efforts helped reduce the incidence of human-caused wildfires. Despite a less intense fire season in New Mexico, the United States continued to face extreme fire danger. Numerous wildfires burned across the west in one of the most active and catastrophic fire seasons the region has seen in decades. Forestry mobilized fire equipment and dozens of firefighters to several western states to aid in their response to these fires.

Forestry continued to work with local, state, federal, and tribal partners on a wide range of projects and programs to address not only wildfire, but the state's overall forest and watershed health. Forestry's work with partner agencies, non-governmental organizations, and private landowners resulted in the treatment of thousands of acres of private, state, federal and tribal land during the calendar year.

While New Mexico experienced its first drought-free period in 18 years in 2017, the effects of long-term drought continued to impact our forests and watersheds. These lands will feel the detrimental effects of extended drought for many years in the form of disease, insect infestation and wildfire.



Governor Susana Martinez and EMNRD Cabinet Secretary Ken McQueen (center right) at the Cajete Fire, Santa Fe National Forest, June 2017.

CONSERVATION SEEDLING PROGRAM

Each year, tens of thousands of tree and shrub seedlings are planted on private and public lands across New Mexico through Forestry's Conservation Seedling Program. The program provides economically priced tree and shrub species to New Mexican landowners for: the establishment of windbreaks; erosion control; reforestation; crop and livestock protection; energy cost savings; and to improve or create wildlife habitat.

In FY17, the Conservation Seedling Program distributed 73,661 seedlings through sales during the New Mexico State Fair, educational donations and the spring and fall distribution cycles. Additionally, 5,047 seedlings were sold to the Los Alamos National Laboratory for forest restoration. Another 1,404 seedlings were sold to the Hermits Peak Watershed Alliance as part of the Gallinas River Restoration Project west of Las Vegas, New Mexico.

COOPERATIVE FOREST HEALTH PROGRAM

The Cooperative Forest Health Program (CFHP) works within Forestry to deliver technical and monetary assistance to landowners and managers of forested lands throughout New Mexico via education programs, trainings and field visits. CFHP's goal is to increase forest resiliency to harmful insects and diseases by increasing knowledge and improving management practices of state and private forests. The program provides federal dollars from the USFS for administering cost-share funds to private landowners in the state to reduce the risk of bark beetle attacks.

The Forest Health Specialist provided technical assistance to private landowners, land managers, and Forestry's district staff by fielding 74 assistance requests, conducting 10 site visits and identifying 14 insect and pathogen samples.

ENDANGERED PLANTS PROGRAM

Forestry's Endangered Plant Program (EPP) gathers information to develop conservation measures necessary for the survival of threatened and endangered species. EPP also promotes the conservation of listed endangered plant species through research, inventorying and monitoring, law enforcement, habitat maintenance, education and propagation. The EPP is primarily federally funded through Section 6 of the Endangered Species Act for endangered plant research and management. The BLM and the USFS provided additional funding in FY17.

In FY17, the EPP Manager coordinated efforts between agencies and stakeholders on initiatives such as the New Mexico Rare Plant Conservation Strategy (RPCS). The RPCS is focused on 235 rare and endangered plant species in New Mexico, including 109 species that only occur in New Mexico and nowhere else in the world.

The overall goal of the RPCS is to protect and conserve New Mexico's rare and endangered plant species and their habitats through collaborative partnerships between stakeholders interested parties to aid and improve the conservation and management of rare plant species and to avoid federal listing. This year, recurring endangered plant projects included population trend monitoring and status evaluations of the Santa Fe cholla, Pecos sunflower and Aztec gilia.



Las Vegas District Forester Carmen Austin examines the Pecos Sunflower at Blue Hole Cienega Nature preserve in Santa Rosa, NM after a prescribed fire in February 2017.



Aztec gilia, a state listed endangered plant endemic to the Bloomfield area.

FIRE MANAGEMENT

During FY17, 527 fires burned approximately 78,126 acres of state and private lands. Of these, approximately 43 percent were due to lightning and 56 percent were human-caused.

The most significant wildfire of 2017 was the multi-jurisdictional Tiffany Fire in Socorro county that burned approximately 9,200 acres in the Rio Grande Bosque. It was the largest wildfire in the Socorro Bosque in two decades. A lightning strike started the fire, which was then carried by stressed salt cedar that had been defoliated by the Salt Cedar Beetle. A diverse group of landowners were impacted by the Tiffany Fire with more than 50 percent of the fire affecting private lands and another 49 percent on federal land. As a result, the Socorro District is working closely with numerous state, local and federal stakeholders on a large-scale restoration project that includes establishing fuel breaks, establishing and enhancing native grasslands and riparian forests, and invasive species control. Human-caused wildfires also had a significant impact on state and private lands with nearly 300 fires recorded for FY17. Forestry continues to collaborate with local, state, federal and tribal fire agencies to educate New Mexicans about fire prevention and preparedness.

FIRE PLANNING TASK FORCE

The New Mexico Fire Planning Task Force (Task Force) is charged with identifying areas most vulnerable to wildfires. The Task Force also approves Community Wildfire Protection Plans (CWPPs), develops model ordinances and standards for building codes, and considers the benefits of thinning, prescribed burns, and defensible space to reduce the threat of wildfires to communities. Currently each CWPP must be updated within five years of its adoption by the Task Force.



Tiffany Fire, Rio Grande Bosque, Socorro County.



EMNRD Cabinet Secretary Ken McQueen with Smokey Bear for Wildfire Awareness Week, Rio Grande Nature Center State Park, Albuquerque.

CWPP participants receive update requirement notification letters from the Task Force. This year, the Task Force reviewed three plans and approved two. Additionally, 58 communities were added to the list of those at risk for wildfire, making a total of 746 such communities identified in 2017.

FIRE PREVENTION PROGRAMS

As the threat from wildfires expands across New Mexico and the rest of the western United States, the importance of educating residents and visitors also continues to grow.

Forestry helps facilitate various educational programs including “Ready, Set, Go!” “Fire Adapted Communities,” and “Firewise Communities USA”, the flagship of these educational endeavors. “Firewise Communities USA” is a mitigation recognition program based and operated within a community focusing on residents, businesses, and elected bodies working together to address the issue of wildfire on a building and landscape level. In 2017, New Mexico added one new Firewise community, bringing the statewide total to 28. Several additional communities are in the process of satisfying the requirements for Firewise recognition.

FOREST LEGACY PROGRAM

The Forest Legacy Program (FLP) is a federal partnership program that supports states’ efforts to protect privately owned, environmentally sensitive forest lands. FLP is an entirely voluntary program that helps New Mexico develop and carry out its forest conservation plans. It encourages and supports the acquisition of conservation easements that restrict development, require sustainable forestry practices and protect other values in perpetuity.

Landowners who own a minimum of 40 acres with at least 75 percent forested land can receive up to 75 percent of the appraised value with a 25 percent donation.

The FLP application to protect more than 3,600 acres, that includes the Brazos Cliffs in Chama, was funded by the 2017 Farm Bill for \$3,480,000 and the conservation easement should be closed by May 2018. A new FLP application was submitted to conserve the remaining 2,740 acres with 2018 funding.

FOREST & WATERSHED HEALTH OFFICE

The Division's Forest and Watershed Health Office (FWHO) concentrated on three key work areas in 2017: (1) collaborations that expand the State's capacity to get more forestry done on the ground; (2) implementing the National Cohesive Wildland Fire Management Strategy in New Mexico; and (3) policy and legislation to facilitate State Forestry's mission.

Since Governor Susana Martinez's establishment of the Watershed Restoration Initiative (WRI) in 2014, Forestry has been granted \$12.2 million in state funding allocated for watershed restoration on public lands in New Mexico. These WRI funds have been matched with an additional \$6.6 million in federal Pittman-Robertson funds made available to Forestry through the New Mexico Department of Game and Fish and have leveraged federal funds from other agencies as well.

These combined monies have funded 51 separate projects, targeting 27,607 acres of forest and woodland. Forestry has overseen treatments in 19 high-priority watersheds across the state. Work has been completed on 21,245 acres, or 77 percent of the targeted acres to date.

New Mexico's successful collaboration has increased the pace and scale of forest restoration and has attracted national attention. The Division was invited by the Council of Western State Foresters to share "lessons learned" with other states as part of its 'Power of Partnerships' campaign. State Forestry was also invited to present about New Mexico's experience using collaboration and applied science to achieve National Cohesive Wildland Fire Management Strategy goals at a nationwide workshop.

The Forestry Division provided technical, organizational and financial assistance to several collaborative groups that are using the Cohesive Strategy framework to create resilient landscapes, fire-adapted communities and improved wildfire



response. Examples include the Greater Santa Fe Fireshed Coalition (GSFFC) and the 2-3-2 Partnership in the north-central part of the state.

The GSFFC is a collaborative of stakeholder groups focused on a 107,000- acre landscape bordering New Mexico's capital city. So far, GSFFC's member organizations have completed 11 on-the-ground projects including 7 in the city's municipal watershed, with 9 additional projects either underway or planned. They use a combination of thinning and prescribed burning. All told, these projects will have treated 4,714 high-priority acres since 2015. At the same time, Coalition partners collaborate to get National Environmental Policy Act (NEPA) analysis completed in other critical areas inside the Fireshed so progress can continue.

The Forestry Division committed funding for projects that will make forests on land inside the Fireshed more resilient to fire. The Division received a grant to add nearly \$300,000 for Wildland Urban Interface (WUI) treatments to the \$305,000 awarded to the Santa Fe-Pojoaque Soil and Water Conservation District last year for cost-share programs. The additional funding will compound the effectiveness of Division-funded treatments in Hyde Memorial State Park and nearby public lands, help private landowners thin hundreds of acres and assist the Santa Fe Fire Department by expanding treatments in Aztec Springs.

Additional funding from other sources is being directed to work in the Fireshed by many project partners, including the US Forest Service, Pueblo of Tesuque, City of Santa Fe Fire Department, Santa Fe County Fire Department, City of Santa Fe Water Division, The Nature Conservancy, New Mexico Association of Counties, Forest Stewards Guild and others.

The 2-3-2 Cohesive Strategy landscape covers two mountain ranges - New Mexico's San Juan Mountains and Colorado's South San Juan Mountains; three rivers - San Juan, Chama, and Rio Grande; and two states - New Mexico and Colorado. The 2-3-2 is a partnership of collaborative groups who have come together to pool their resources to address issues that are best tackled on the landscape scale to achieve healthier, more resilient forest ecosystems. Close to \$8 million dollars have been dedicated to projects under the 2-3-2 umbrella to date.

The Forestry Division wrapped up a 5-year Financial Assistance Agreement with the Bureau of Land Management (BLM) in 2017. The Forestry Division and BLM have used the agreement to collaboratively plan, fund and implement projects that benefit both public and private lands. Projects focus on rare and endangered plant studies in Northwestern New Mexico and on treatments for reducing wildfire risk and improving forest health near Pinos Altos. The Division and BLM are negotiating a new agreement to continue this important work.

FWHO also manages a Cooperative Agreement between the Forestry Division and the Natural Resources Conservation Service (NRCS). Latest available statistics (through the end of 2016) show that the amount of forested land in New Mexico benefiting from this arrangement has grown significantly since we entered into this partnership in 2007, whether measured in terms of acres treated, contracts signed or dollars committed to improve forest management on the ground. *(See charts on pg 29)*



In cooperation with the New Mexico Corrections Department, each inmate crew comprises 8 to 12 minimum security inmates. The crews are transported from the Los Lunas Level 1 Minimum Security Prison Facility to project areas around the state. These inmates are supervised by Forestry Crew Supervisors and a Correctional Officer. The program can field up to six inmate crews per workday throughout the year.

In FY17, the program provided crews to work on eleven projects for nine different local, state and federal cooperators, performing 3,426 man-days of work and 29,121 man-hours of work. Crews were assigned to 17 wildland and prescribed fires, performing 108 crew-days of fire suppression.

LAND CONSERVATION TAX INCENTIVE ACT TAX CREDIT PROGRAM

Forestry oversees the Land Conservation Tax Credit Program. Charitable donations of land or an interest in land (conservation easement) for conservation purposes to a public or private conservation agency are eligible for a state tax credit. Land conservation tax credits must be approved by the Department's Cabinet Secretary in consultation with the Natural Lands Protection Committee.

The maximum tax credit is 50 percent of the appraised value of the donation, with a cap of \$250,000 per individual donor. A taxpayer has a maximum of 20 years to fully use the tax credit following the taxable year in which the donation was made, or the tax credit may be transferred (sold) to another taxpayer through a tax credit broker in minimum increments of \$10,000. In FY17, nine applicants obtained tax credits ranging from \$16,679 to \$250,000.



INMATE WORK CAMP PROGRAM

Forestry's Inmate Work Camp Program (IWC) was established in 1997 to conduct forest health and urban interface projects on public land in the state. The crews are trained as wildland firefighters and function as an efficient, cost-effective resource for New Mexico.

RESOURCE MANAGEMENT

Forestry works with private landowners as well as state and federal agencies to protect land from future development that could fragment the landscape. Through various incentive programs, landowners can place large tracts of land into conservation easements that allow them to retain ownership while protecting it.

Forestry prepared 22 new forest stewardship plans in FY17, for a total of 11,754 acres on private forested land in New Mexico, bringing the total acres in the state covered by stewardship plans to 525,033. Additionally, 419 landowners received technical assistance on their private forest lands with another 830 landowners participating in educational programs related to forest stewardship, fire prevention and forest management, surpassing 2016's achievement by acres.



Crews also worked on several watershed and forest projects. Currently, this includes a hazardous fuel reduction project with the New Mexico State Parks Division at [Hyde Memorial State Park](#). The program also collaborated with the Las Vegas District office and the New Mexico Department of Transportation on a hazardous fuel mitigation project in the I-25 median corridor. A total of 100 acres were completed for the project in Santa Fe and San Miguel counties. Several more forest and watershed restoration treatment projects are scheduled for the program in the coming year.



RETURNING HEROES WILDLAND FIREFIGHTER PROGRAM

The Returning Heroes Wildland Firefighters Program (RHP) provided crews and wildland engines to fight a total of 36 wildfires, spending 42,500 man-hours, over 140 days in New Mexico, Arizona, California, Colorado, Idaho, North Carolina, Oregon and Wyoming. The crews' involvements with these fires was featured through multiple local, regional and national media outlets as well as social media. This year RHP hired 75 seasonal firefighters for wildfire assignments, 14 of those were military veterans.

RHP provides essential firefighting training courses at its headquarters in Santa Fe. In FY17, the program trained 69 veterans and 241 students from various sectors including state and federal employees, fire department personnel, and seasonal wildland firefighters.

URBAN AND COMMUNITY FORESTRY PROGRAM

The Urban and Community Forestry Program (U&CF) works to empower New Mexico communities to develop and sustain healthy community forests for the benefit of current and future citizens of the state and the environment.

Community forests in New Mexico have significant, positive impacts on human and environmental health and community tourism and economics, but are challenged by drought, lack of management and planning. The program is guided by the Urban and Community Forestry Strategic Plan under the advisement of the New Mexico Urban Forest Council.

The U&CF Forestry Program continued to strengthen and maintain the number of communities managing or developing programs to plant, protect and maintain their urban and community trees and forests. In New Mexico, 66 percent of the population lives in a community either fully managing an urban/community forest program or developing one including having a tree ordinance, a local advocacy/advisory board, professional staff and a community forest management plan. Throughout the state 76 communities have active local advocacy/advisory organizations such as tree boards, commissions, or non-profit organizations that are formalized to advise and advocate for planting, protection and maintenance of urban and community trees and forests. Ten communities were recognized for the national Tree City USA program in FY17.



Urban and Community Forestry Program Manager Jennifer Dann hosts the "When We Each Plant a Tree" booth for National Public Gardens Day at the Albuquerque Bio Park.

A primary way that the U&CF program empowers New Mexico communities is by providing financial resources and technical assistance. In 2017, U&CF saw the issuance of \$60,000 of community forestry funds to: develop a statewide urban forest pest identification and management pocket guide; conduct hazardous tree pruning in Clovis; develop a community forest as part of a health campus in Albuquerque's South Valley; and conduct tree inventoring and management planning in Taos.

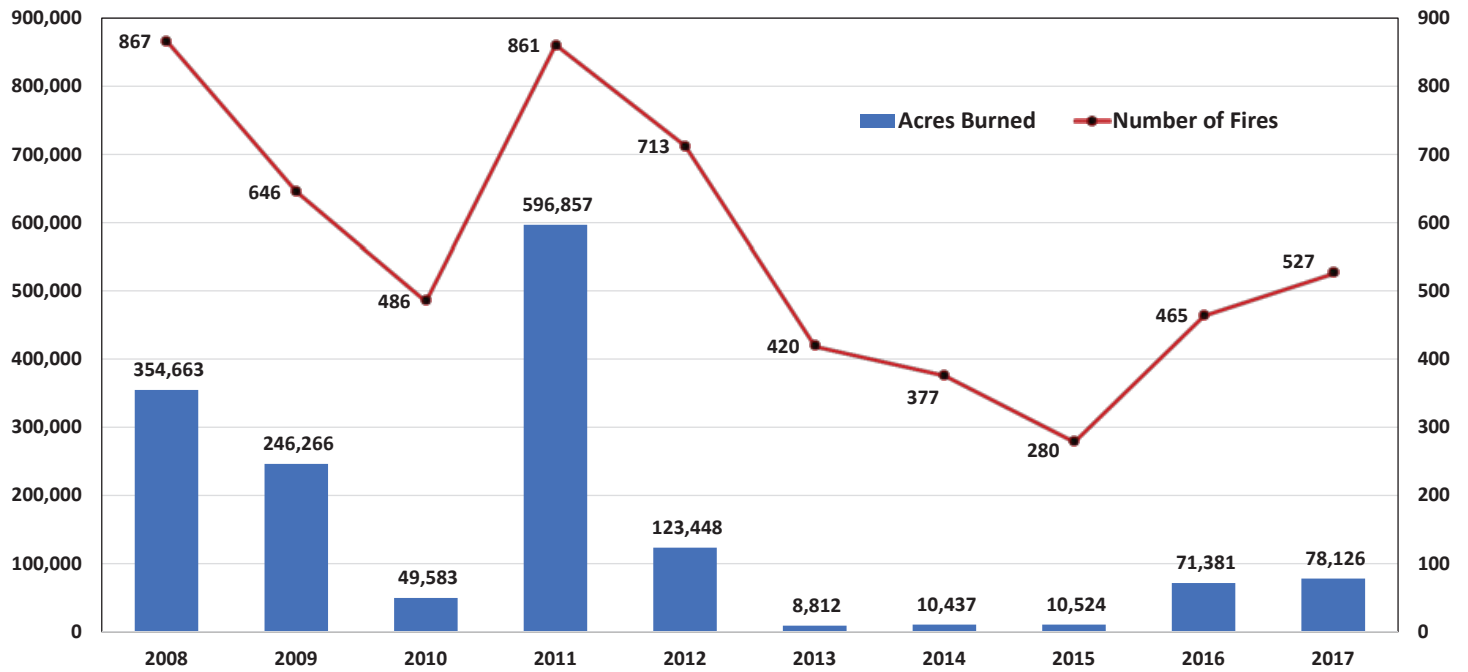
The program provided additional support through Tree New Mexico, a non-profit community forest organization, which helped to launch the Albuquerque NeighborWoods program, a street-tree planting program that engages community members through education and outreach.

U&CF was awarded close to \$300,000 in 2016 under the highly competitive USFS Western Landscape Scale Restoration grant to help improve the condition of community forests in historic areas throughout the state. In FY17, the project began by completing tree inventories and providing arboriculture training to municipal staff in 24 of the 33 county seats. The inventories will provide analysis of the forest health conditions in these historic locations and develop management plans to help transition to the next generation of community forest in these culturally and economically significant areas of the state.

The Division made the decision to not issue funding in FY17 under the New Mexico Forest Re-Leaf Program. This program funds tree planting projects on public lands and is funded entirely by private donations, which have declined. The program did receive a significant contribution in 2017 from the National Association of Zoos and Aquariums during its mid- year meeting in Albuquerque. The \$1,115 gathered from attendees will go toward planting trees to offset the carbon footprint left behind from their travels to the meeting.

Outreach on benefits and care of the urban forest is an on-going, important effort in the Urban and Community Forest Program. Statewide, more than 3,000 volunteer hours were logged in support of urban forestry initiatives in 2017.

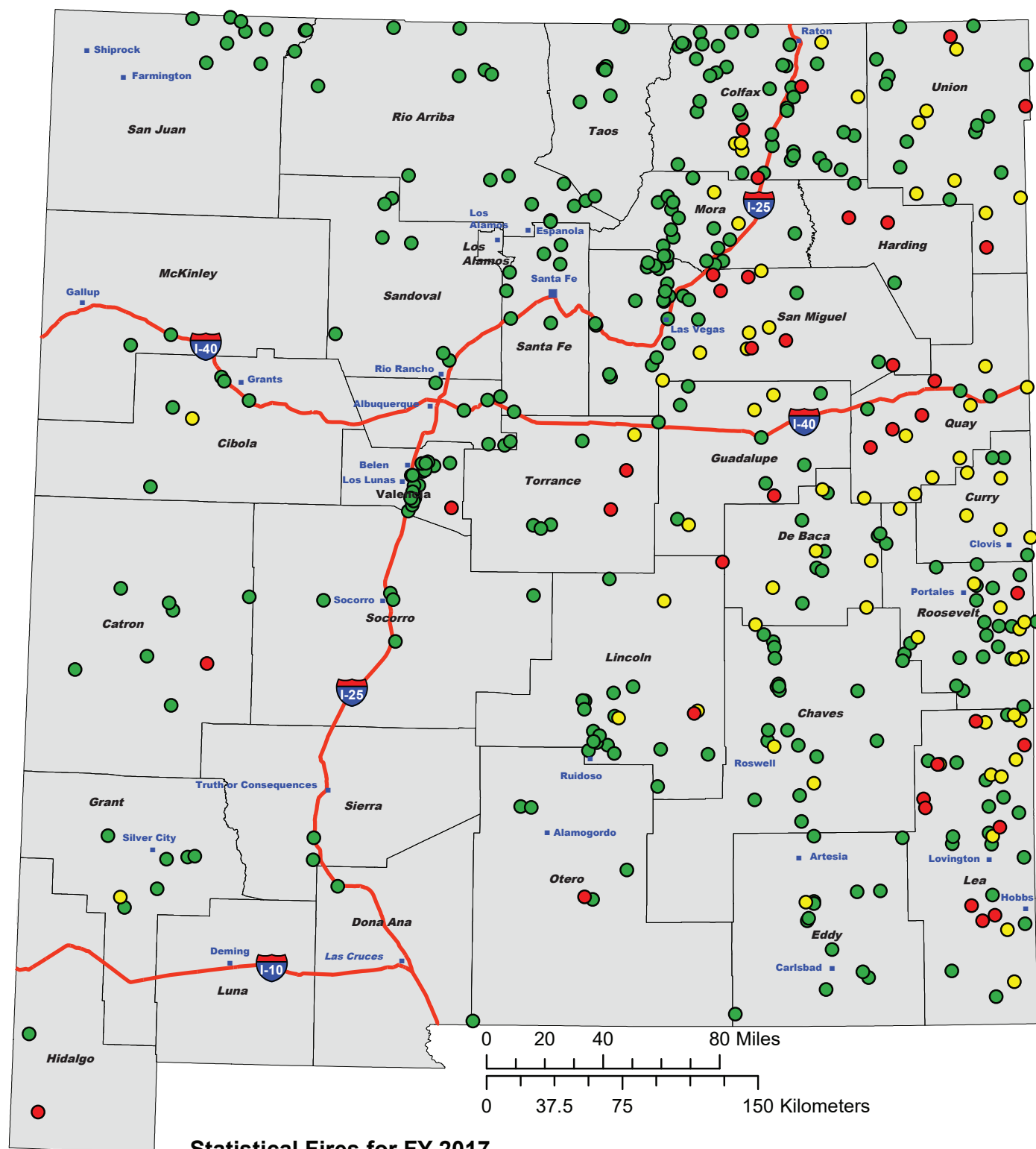
10 Year Statistical Data
Private and State Lands in New Mexico
Fiscal Years 2008-2017
Number of Fires and Acres



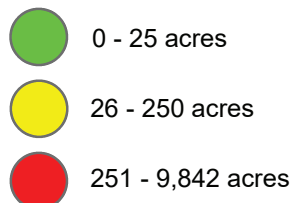
New Mexico Statistical Fires FY17

Fires on State & Private Lands

July 1, 2016 - June 30, 2017



Statistical Fires for FY 2017



Fires on State
and Private Lands

TOTAL

Fires

526

Acres Burned

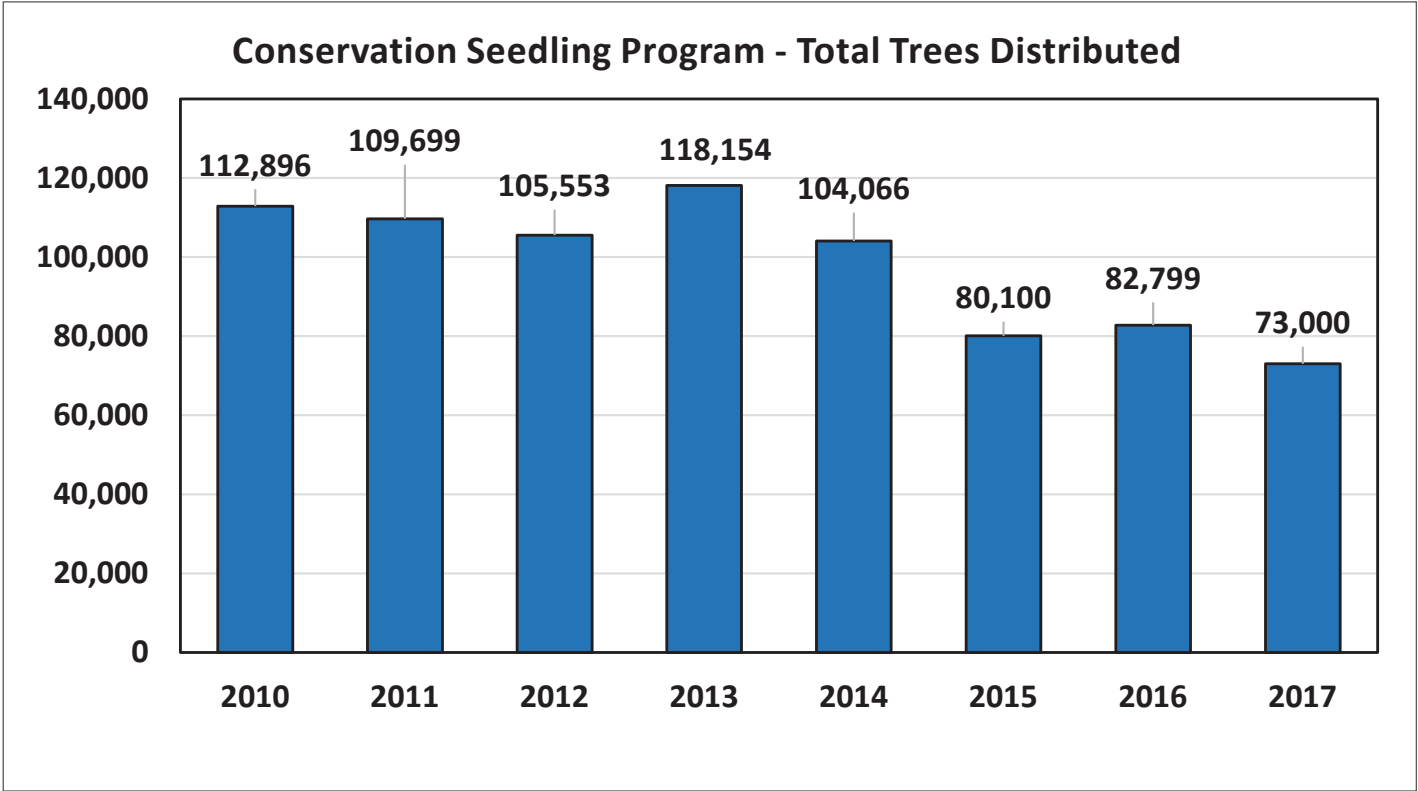
78,134



Fires on State & Private Lands
July 1, 2016 - June 30, 2017

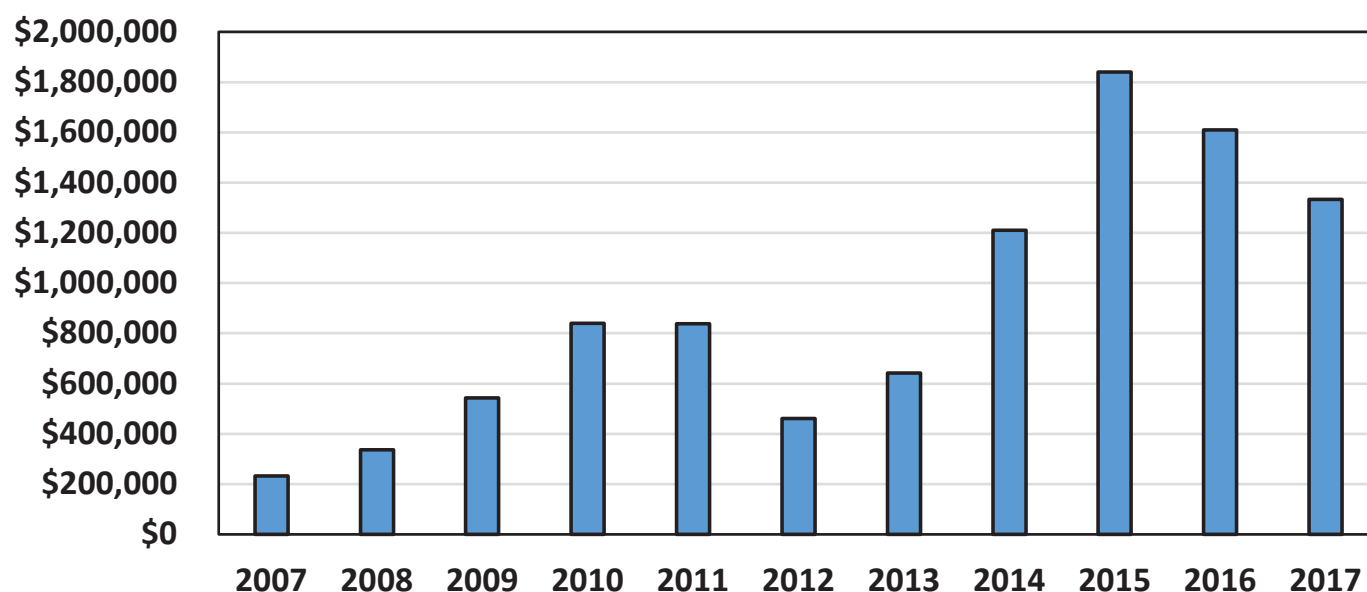
J Formby, Nov. 2017

FY17 CONSERVATION SEEDLING CHART: Forestry's Conservation Seedling Program has two distribution periods. Tree and shrub seedlings were distributed through the program's annual sales, educational donations, and individual sales at the New Mexico State Fair. Additionally, 5,047 seedlings were sold to the Los Alamos National Laboratory for forest restoration.



COOPERATIVE FOREST HEALTH PROGRAM				
Summary of technical assistance given in FY17. SV = site visit.				
Issue	#	%	SV (#)	Confirmed damage agents
request (info)	22	30	2	cedar-apple rust
defoliation (conifer)	15	20	4	Douglas-fir tussock moth, piñon needle scale, <i>Lophodermella</i> sp.
request (identification)	14	19	1	pine sawfly, New Mexico lo moth, <i>Battarrea phalloides</i>
mortality (conifer)	8	11	1	piñon ips, bark moth, frost
dieback (conifer)	6	8	1	mechanical damage, lightning
defoliation (hardwood)	5	7	1	European elm flea weevil, tamarisk leaf beetle, black leaf spot
mortality (hardwood)	3	4	0	honeylocust agrilus, locust borer
dieback (hardwood)	1	1	0	drought
total	74	100	10	

Amount Spent on Forestry as of December 1, 2017

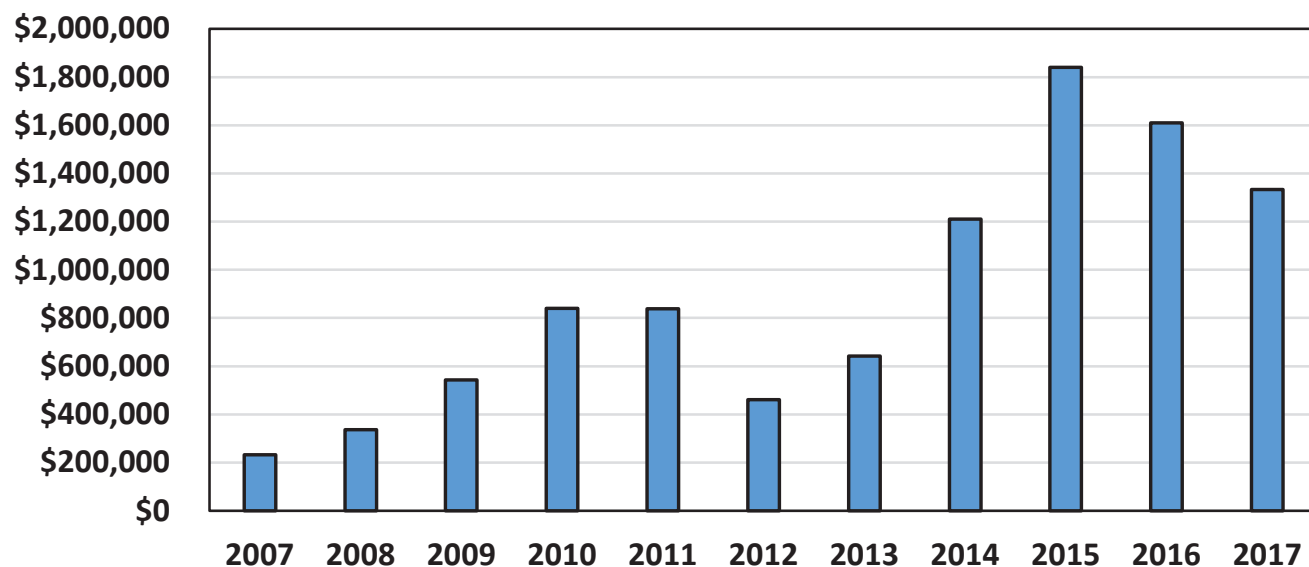


Dollars spent on Forest Stand Improvement, Fuel Break and Woody Residue Treatment by NRCS New Mexico through EQIP, WHIP and RCPP programs

- NRCS – Natural Resources Conservation Service
- RCPP – Regional Conservation Partnership Program
- WHIP – Wildlife Habitat Incentives Program
- EQIP – Environmental Quality Incentive Program

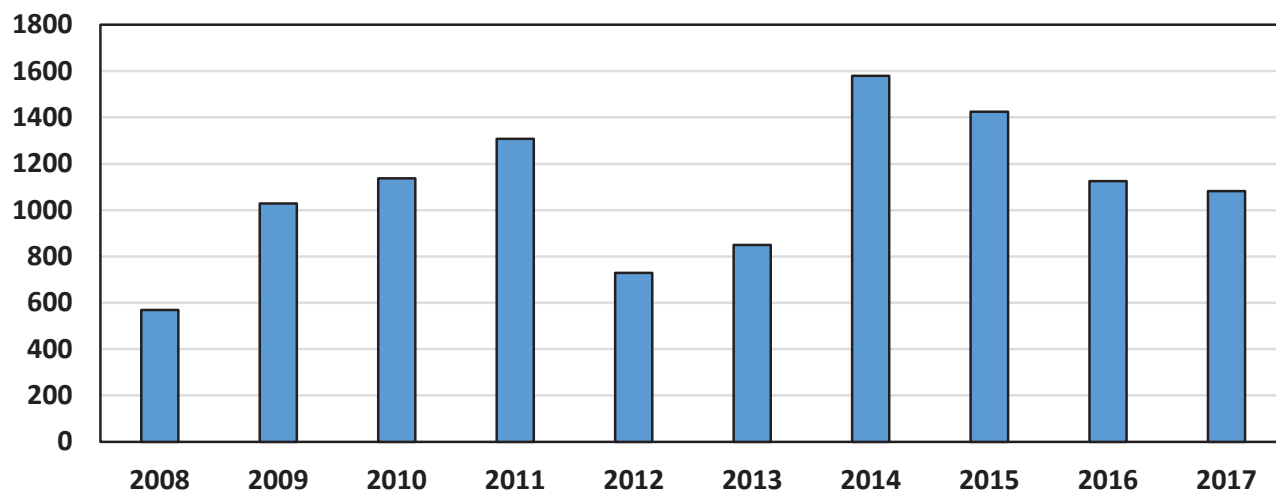
2017 FOREST HEALTH INITIATIVE BATCH BY FORESTRY DISTRICT					
District	County	Plan (ac)	Project (ac)	Program (\$)	Match (\$)
Bernalillo	McKinley		19.5	10,579	6,014
Cimarron	Colfax		1	525	1,315
Las Vegas	Mora		12	2,100	1,433
	San Miguel		2	1,029	441
	San Miguel	766		1,842	790
Socorro	Catron		10	6,825	7,519
	Catron		10	6,825	2,921
TOTALS		766	54.5	29,725	20,433

Amount Spent on Forestry as of December 1, 2017



Dollars spent on Forest Stand Improvement, Fuel Break and Woody Residue Treatment by NRCS New Mexico through EQIP, WHIP and RCPP programs.

Acres of Forest Stand Improvement and Fuel Break Treatments as of December 1, 2017



Acres of Forest Stand Improvement and Fuel Break treated through EQIP, RCPP and WHIP contracts by NRCS New Mexico.

LAND CONSERVATION

2017		Total 2004 to Present	
Acres Conserved	963	Acres Conserved	123,652
Appraised Value	\$ 2,997,000	Appraised Value	\$ 78,893,644
Tax Credits Paid	\$ 1,322,272	Tax Credits Paid	\$ 25,210,537

Forest Stand Improvement, Fuel Break and Woody Residue Treatment			
Data as of December 1, 2017			
EQIP, RCPP, WHIP			
YEAR	CONTRACTS	ACRES	DOLLARS
2007	23	481	\$232,772
2008	22	569	\$336,003
2009	43	1028	\$543,507
2010	63	1,138	\$840,316
2011	93	1302	\$837,708
2012	38	730	\$460,714
2013	61	850	\$642,103
2014	70	1580	\$1,211,033
2015	71	1424	\$1,840,033
2016	112	1125	\$1,610,141
2017	107	1082	\$1,333,950

NRCS: Natural Resources Conservation Service

EQIP: Environmental Quality Incentives Program (part of NRCS) WHIP: Wildlife Habitat Incentive Program (NRCS)

RCPP: Regional Conservation Partnership Program (NRCS)

New Mexico State Parks

Christy Tafoya
Director





New Mexico State Parks

MISSION: Protect and enhance natural and cultural resources, provide first-class recreational and education facilities and opportunities, and promote public safety to benefit and enrich the lives of visitors.

State Parks is committed to this mission, employing professional, dedicated staff to ensure that parks are cared for and preserved to the highest professional standards. State park programs provide safe, fun and educational experiences – and a visit to a state park is a true value. Outdoor recreation is a driving force in New Mexico's economy and State Parks is a key player. Connected to communities statewide, state parks are often economic drivers for local businesses, towns and cities. Many rural communities rely upon a state park as a major source of economic development.

OVERVIEW

The State Parks Division (State Parks) oversees New Mexico's 34 parks which offer diversity of natural and cultural resources and providing recreational and educational opportunities for nearly 5 million visitors in FY17.

HISTORY

State Parks was founded in 1933 in conjunction with the Civilian Conservation Corps efforts during the Great Depression. The State Parks system began with four parks, and today there are 34 parks encompassing 19 lakes and 191,617 acres of land and water.

VISITATION & REVENUE

A total of 75 percent of State Parks' budget is supported by self-generated revenue and 25 percent is general fund. Visitation in FY17 totaled 4,890,428 and the numbers of passes for non-residents, veterans and disabled individuals all increased from the previous fiscal year. Revenue for FY17 was \$4.89 million. Due to great water levels, exceptional programming and increased marketing efforts, visitation and revenue have been on the rise at many State

2017 CAPITAL PROJECTS

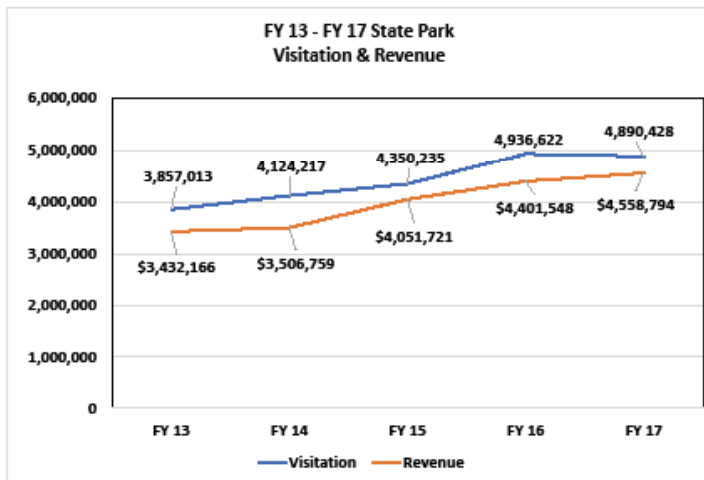
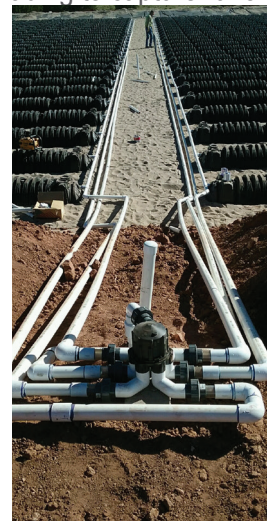


Bluewater Lake State Park:

Major improvements were undertaken at this park in 2017, including construction of a new visitor center with a comfort station and landscaping, renovation of an additional restroom building, construction of a new, state-of-the-art wastewater treatment system, construction of a new RV dump station, rehabilitation of the well and addition of a chlorination system, and paving of the main Stoneridge camp loop. All of the capital improvements at Bluewater amounted to just over \$2 million, half of which was provided by a federal Land and Water Conservation Fund grant.

The visitor center/comfort station has office space for park staff, an area for interpretive exhibits, storage, as well as bathrooms and showers. The building was designed to be energy efficient and the landscape will conserve water with the use of drip irrigation and careful grading to capture runoff and reduce the potential for erosion.

The wastewater treatment system will handle all wastewater from the Stoneridge facilities, including the comfort station and staff residences, as well as the RV dump station. It has been designed to handle the wastewater from 3-4 volunteer sites as well. The system will serve as a prototype for several other wastewater treatment systems needed elsewhere in the State.



*See page 39 for larger graph



Navajo Lake State Park

Four new universally accessible campsites were constructed at Cottonwood Campground and one at Cedar Loop. The sites have water and electric hookups, as well as a shelter and picnic table. The site at Cedar Loop also has a sewer hookup with a holding tank. Two of the five sites can be used for camp hosts, which will provide valuable support to park staff during the busy season. The cost of developing all five sites was \$219,300, half of which was provided by the Bureau of Reclamation Title 28 grant and half by state capital funds.



Living Desert Zoo and Gardens State Park

The aviary exhibit roof renovation will provide a secure bird habitat for many years to come. The roof grating on the aviary was completely replaced and the structural beams were shored up. The total cost of the work

was \$145,000, of which \$45,000 was provided by a local benefactor through the Friends of Living Desert Zoo and Gardens.

Santa Rosa Lake State Park

Major electrical upgrades were completed in Loop A of Rocky Point Campground. All electric lines were replaced and electric pedestals were upgraded to accommodate larger RVs. The cost of the upgrade was \$125,000.



Elephant Butte Lake State Park

A critical project at Lions Beach was undertaken to upgrade the septic system and to complete the replacement of the leach field. The old leach lines were completely removed and replaced with new perforated pipe and infiltrators (seen at right before being backfilled). The cost of the replacement system was \$70,000 and included some rehabilitation work on the distribution piping and lift station. Half of the funds were provided by the Bureau of Reclamation Title 28 grant, with the remainder from State capital improvement funds.



Hyde Memorial State Park

Another major infrastructure improvement in 2017 consisted of replacing nearly 2 miles of primary underground electric cable serving Hyde Memorial State Park, at a cost of \$115,000. The work required excavating and boring under Hyde Park Road in several locations during the winter, which presented a number of difficult challenges.

Rio Grande Nature Center State Park

A new wildlife viewing platform and landscaping project was completed and a ribbon-cutting ceremony was conducted in October 2017. This coincided with the 35th anniversary of the Rio Grande Nature Center State Park.



VOLUNTEER PROGRAM

Volunteers are a vital part of the State Parks team. In 2017, State Parks benefited from the work of more than 500 volunteers who contributed thousands of hours of service to park operations. The value of these hours translates to an equivalent of dozens of full-time employees, contributing to significant labor cost savings. Park volunteers include camp hosts and day volunteers who assist with operational needs, staffing visitor centers, gardening and trimming vegetation, trail maintenance, cleaning camp sites, trash pick-up, assisting campers, gift shop sales and other critical needs.



Happy volunteers at the Rio Grande Nature Center State Park

State Park volunteers are a highly dedicated group of people from around the country and fifteen received recognition from the Division for outstanding service during the year.

In addition, State Parks also received tremendous support from 22 local Friends groups throughout the year. In fact, three volunteers were recognized for achieving 20 years of service to State Parks. Friends Group active memberships include over 500 people who dedicate their time and talents to support their respective park. They hosted events in the park and raised and contributed funds to the parks to complete park projects. These ongoing efforts offset budget and staff shortfalls.

This year, three new Friends groups were established at Bluewater Lake, City of Rocks and Conchas Lake State Parks. State Parks also received assistance from New Mexico Volunteers for the Outdoors (NMVFO) who aided parks in trail restoration, providing visitors with an improved hiking experience.

RESOURCE PROTECTION PROGRAM

As part of its mission, State Parks documents and preserves the unique cultural and natural resources within its system. In 2017, much of the focus was on a series of maintenance and repair projects, and State Park staff reviewed 55 park projects, which often required records review, inventory, research, reporting, and agency, State Historic Preservation Office (SHPO), and tribal consultation. Resource staff successfully coordinated with partner and regulatory agencies that were critical to the compliance process. Major compliance efforts were accomplished in support of critical infrastructure and maintenance projects at City of Rocks, Coyote Creek, Eagle Nest, Fenton Lake, Hyde Memorial,

Navajo Lake, Oasis, Rockhound, and Ute Lake State Parks. Other projects included cooperative agency research, vandalism assessments, and records reviews for Brantley Lake, Caballo Lake, Cerrillos Hills, City of Rocks, and Elephant Butte Lake State Parks.

In addition to legal compliance, State Parks continued important resource protection partnerships with the New Mexico Department of Game and Fish, New Mexico Interstate Stream Commission, New Mexico Department of Transportation, Bureau of Reclamation, Bureau of Land Management, U.S. Army Corps of Engineers, U.S. Fish and Wildlife Service (USFWS), and state and local entities.

For example, State Parks worked with the New Mexico Department of Transportation on their Manuelito Canyon bridge replacement project on Interstate 40 west of Gallup; much of their project area occurs on State Park-owned land. Additional projects included coordinating with the City of Las Vegas Utilities Department for repairs to their buried water pipeline that crosses Storrie Lake State Park and with the USFWS on a wetland restoration project at City of Rocks State Park. State Parks performed the cultural and natural resource assessments and agency consultations for these projects.



Wetland Restoration at City of Rocks State Park



State Park Marine Enforcement at Navajo Lake State Park

LAW ENFORCEMENT & BOATING SAFETY PROGRAMS

State Parks is dedicated to achieving compliance with parks and recreation management laws. Law Enforcement and Boating Safety programs provide responsive visitor services, resolution of conflicts within park jurisdictions, and promotion of cultural and natural resource protection. State Parks currently has 79 park law enforcement officer positions. These officers partner with local communities, visitors, and other agencies to develop and sustain the diverse environments in New Mexico's state parks while balancing the demand for recreation.

State Parks constantly faces new challenges including: resource threats, new laws to administer and enforce, new professional standards to follow, or other public service/safety issues. In order to meet these challenges, park officers receive the most current, professional training while striving to improve cooperation with the public, coworkers and other agencies.

In FY17, State Parks continued to partner with federal, state, county, and local entities to provide all state park rangers with accredited advanced law enforcement training. These partnerships allow State Parks to leverage and effectively manage a modest law enforcement program budget while supporting officers' ongoing professional development recreational boating opportunities.

State Parks' primary goal is zero boating-related injuries and fatalities each year while ensuring safe and memorable experiences for boaters. Statistically, New Mexico is below the average of other states in boating-related deaths per year. This can be attributed to the dedicated efforts of boaters being more safety-minded, and park officers

and other partners who provide educational programs regarding operator and equipment requirements, navigation, and boating hazards. Park officers and staff stress the importance of wearing life jackets, operating safely in inclement weather, and not operating under the influence of alcohol or drugs. Boating safety classes are provided throughout the state in person and via the Internet, and many school-aged children receive boating and water safety instruction.

In FY17, 1068 students successfully passed a boating safety course. This is an increase of 191 students who successfully passed a boating safety course from FY16. Partnerships with volunteers, non-profits, local, county, state, regional, and federal agencies are critical to fulfilling the boating safety mission. State Parks receives support from the U.S. Coast Guard Auxiliary. For example, SPD partnered with the Auxiliary this year to conduct National Safe Boating Council boater surveys to gain perspectives regarding their experiences and knowledge of boating in the state. The partnership also enhances the ability of emergency response agencies to communicate and work with each other, and to improve search and rescue skills to better serve the recreational boating public on New Mexico's lakes.



Navajo Lake Marina

BUSINESS ENTERPRISE

State Parks relies heavily on relationships with concessionaires and businesses to provide services in state parks. In doing so, these businesses generate additional revenue for the park system. State Parks manages 16 concessions throughout its system, which include marinas, fishing outfitters, a horseback riding concession, stores, food trucks and gift shops. Total revenue collected from these concessions in FY17 was \$1,249,645. That represents an 11 percent increase over FY16.

In May 2017, Navajo Dam Enterprises, Inc. completed a major renovation and expansion of their marina facilities including more boat slips, a new store, new restaurant and additional fueling facilities. A total of approximately \$3 million dollars was invested in marina improvements over the last two years. Higher water levels at all lake parks have resulted in improved business conditions.

State Parks had another successful year with the ReserveAmerica (RA) online reservation system for reserving park campsites, with a 3.3 percent increase in the number of visitors using RA to make reservations. Almost 73 percent of those reservations were made by New Mexico residents. There was a 9.78 percent increase in revenue generated through RA between FY16 and FY17. State Parks also has a donations feature on RA website and collected \$7,501, an increase of 28 percent from FY16.

The top five parks in total nights booked on RA and in revenue generated were, in descending order, Navajo Lake, Elephant Butte Lake, Brantley Lake, Bottomless Lakes State Park and Santa Rosa Lake State Parks.

SPD has been evaluating the benefits of placing more reservation sites on RA during the off-season to allow winter travelers to reserve campsites. As a result of our strong marketing message encouraging people to “book now,” we are hopeful that the added convenience of reserving campsites throughout the year will drive more people to the parks.



Lt. Governor John Sanchez presents Gabe Medrano with his Governor's Award

EMPLOYEE RECOGNITION

State Parks and Marketing were responsible for the Employee Recognition Program honoring outstanding state park employees by coordinating the annual Award Ceremony at the African American Performing Arts Center in Albuquerque.

The Governor's Award was given to Manager Gabe Medrano from City of Rocks State Park. Marina Requejo from Caballo Lake State Park received the Secretary's Award. The Exemplary Park Award went to Conchas Lake State Park. The 2017 Governor's Award went to Gabe Medrano, park manager from City of Rocks State Park; Marina Requejo, park administrator at Caballo Lake State Park won the Secretary's Award; and four people won the Director's Award: Christopher Smith, Alex Mares, Billy Velasquez and Anthony Marquez. The Ranger of the Year was Mark Brown from Bluewater Lake State Park. In addition, multiple customer service, lifesaving, partnership and volunteer awards were given as well as the spouse award.

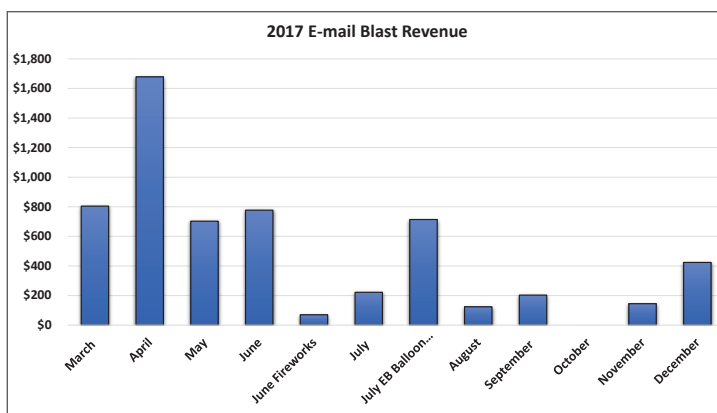
Thanks to the Friends Groups who supported the dinner at the Rio Grande Nature Center State Park and to the great work of the Marketing Team for coordinating the event.

MARKETING PROGRAM

In 2017, the Communications and Marketing Team had a remarkable year. The team concentrated on promoting State Parks' special events and distinctive campaigns using digital and social media, effective media buys, consistent positive public relations and outreach, and through solid partnerships with other state agencies, organizations and communities throughout New Mexico.

Solid Partnerships

ReserveAmerica is the online campsite reservation system State Parks uses and this year, the marketing team worked closely with ReserveAmerica to design compelling monthly email blasts to all who access and book campsites through the reservation system. New this year, marketing created a baseline in March to measure reservation revenue based on specific marketing email blasts and campaigns.





New Mexico Magazine

State Parks engaged in a partnership with New Mexico Magazine's annual photo contest. State Parks was featured with its own special category entitled, "Enchanted Adventures". Fabulous prizes were awarded for the top 3 photos submitted. State Parks was exposed to 150,000 monthly readers during this photo contest.

The National Association of State Parks Directors (NASPD) and State Parks teamed up with REI for the second year in a row to **Opt Outside** - an initiative to get people outdoors and in state parks on Black Friday. The promotion was well received on Instagram, Facebook was featured in the local media. #OptOutside will continue to gain momentum as State Parks offer free guided hikes and other activities that day.

First Day Hikes is another national initiative of the NASPD, and in 2017, State Parks hosted guided hikes at 13 State Parks on New Year's Day. These hikes provide a means for individuals and families to welcome the new year in the outdoors, exercising and connecting with nature. Public outreach opportunities included television and radio appearances and social media posts. More than 153 visitors hiked a total of 497.2 miles.



Highlighted State Park Programs

It's been more than three decades since the total eclipse of the Sun was visible from the United States (excluding Alaska and Hawaii). This was the First Total Solar Eclipse in the US since 1979. New Mexico State Parks was at the forefront of this event as people witnessed one of nature's most awe-inspiring sights - by viewing the eclipse safely with the free eclipse glasses provided by Amgios de Cerrillos. Watching the partially eclipsed Sun was a fantastic sight.

Ready, Set, Glow! at New Mexico State Parks

Whether you enjoy bird-watching, hiking, or star gazing, State Parks is your official sponsor of holiday adventure! New Mexico culture is rich with celebrations during December and State Parks host numerous holiday season events to enjoy the warm glow of traditional luminarias throughout the state.

Social Media Marketing

Along with engaging in a new marketing plan for promoting the latest and greatest assets State Parks offers, the marketing team produces daily content of the most compelling, engaging and current events. Marketing loves to find and repost visitors' amazing images via Facebook, Twitter and Instagram. Display ads and social media promotions such as 'New Mexico State Parks – Official Sponsor of Adventure', 'Boat Safe, Boat Smart', 'Hug a Volunteer for National Volunteer Month', 'Work Hard - Play Hard Labor Day', and 'Ready, Set, Glow', indicate that social media is a positive influence on the demographics that State Park seeks - people of all ages.



Consistent Public Relations and Outreach

State Parks proudly introduced an Emoji set! Now, along with your favorite NM sayings as emojis, everyone can send a helpful NM State Park Ranger that winks and says, "Nature's Calling," a sticker of the Official Sponsor of Adventure or a fun NM camping tent. Millennials we are reaching you!

Through public outreach, State Parks participated in RV shows, the Department of Game and Fish Hunting and Fishing Expo, Santa Fe's Bike & Brew, Natural Sciences Day at the Roundhouse during the 2017 Legislative Session all to promote State Parks. Participation in the New Mexico State Fair was a huge success! On NM





True Day, Marketing gave an Annual Camping Pass to one lucky fair-goer and participated in outdoor booths during Main Street Days.

Promoted key events included: First Day Hikes on New Year's Day, egg hunts, earth day, star parties, fishing derbies and tournaments, Memorial Day, 4th of July events, plant sales and programs, history and music events, marathons, holiday events, National Hunting and Fishing Day and car shows.

Effective Media Buys

This year, the marketing team worked with Local Digital Reach, a digital advertising company out of Albuquerque, NM., to promote state parks' signature events, special promotions and camping opportunities on the internet. Using geographic and behavioral targeting, more than 1.3 million people in New Mexico, Texas and Arizona have seen State Parks' digital advertising. More than 17,000 of those impressions have been re-targeted and served the advertisement again to the potential customer. More importantly, this digital advertising brought nearly 21,000 people to the nmparks.com. Nearly 10,000 either booked camping reservations or explored individual parks under "Find a Park."



Marketing has another effective media buy with the Albuquerque Journal. On a monthly basis State Parks create print and digital ads to create top of the mind awareness. In addition, the collaboration with the New Mexico Broadcasters Association (NMBA) allowed State Parks to leverage funds by streamlining radio buys promoting Parks in smaller, rural markets throughout the state for the Division's "Spring Push." State Parks was well represented in Northern New Mexico by Hutton Broadcasting promoting, "Summer Will Soon Be Here," and State Parks also has radio media buy with Que Suave to sponsor the Great Outdoor New Mexico Show. A "Park of the Week" is featured throughout the year, as are special events. For the Safety Campaign, the media buy with KOAT-TV which included commercials, digital creative and station promotion, provided a clear return on investment for State Parks.

HYDE MEMORIAL STATE PARK PRESENTS

MUSIC IN THE MOUNTAINS

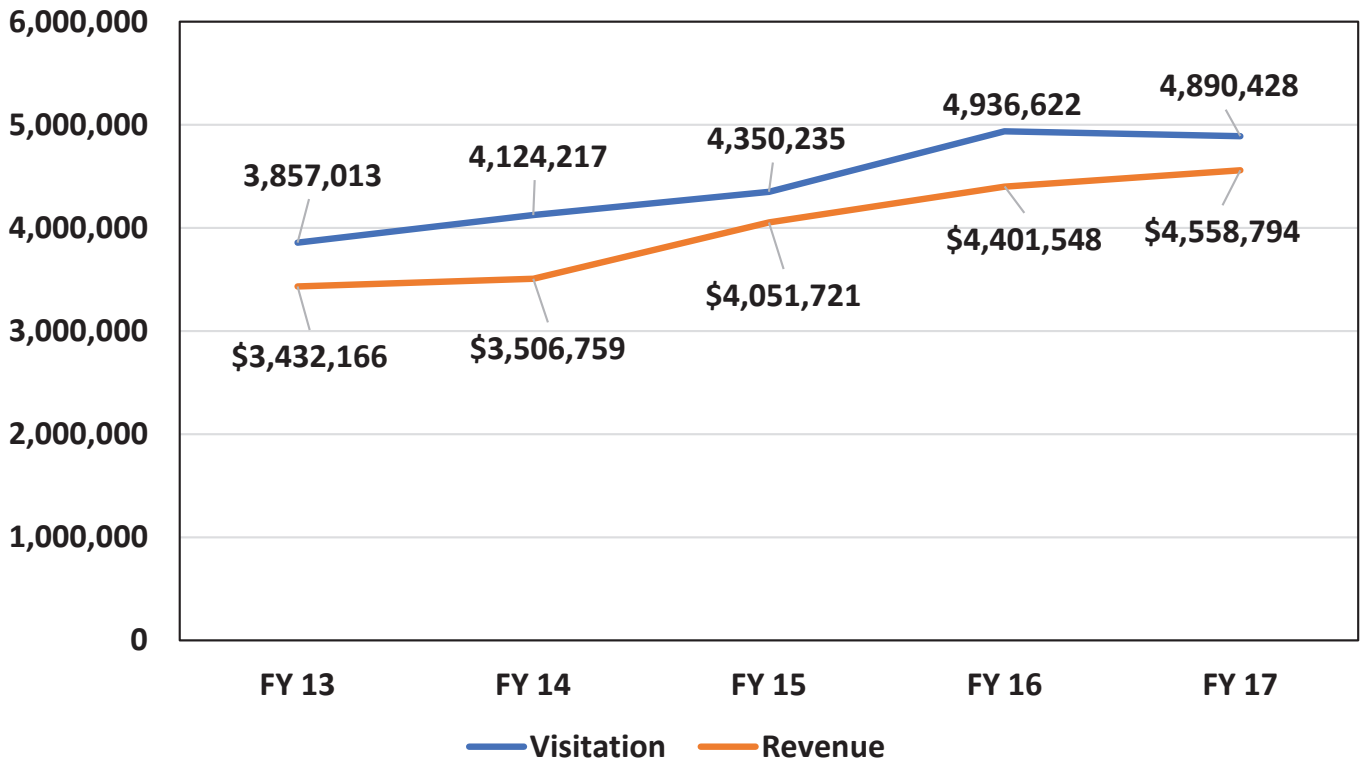
HISTORIC HYDE LODGE // AUG 12 & 13 // 4-6 pm

Nowhere Band	The Banded Geckos	Benzo III
<small>The Beatles Tribute</small>	<small>Acoustic Folk & Swing</small>	<small>Hip-Hop / Funk</small>
<small>5-6 Sat</small>	<small>5-6 Sun</small>	<small>4-4:45 Sat & Sun</small>

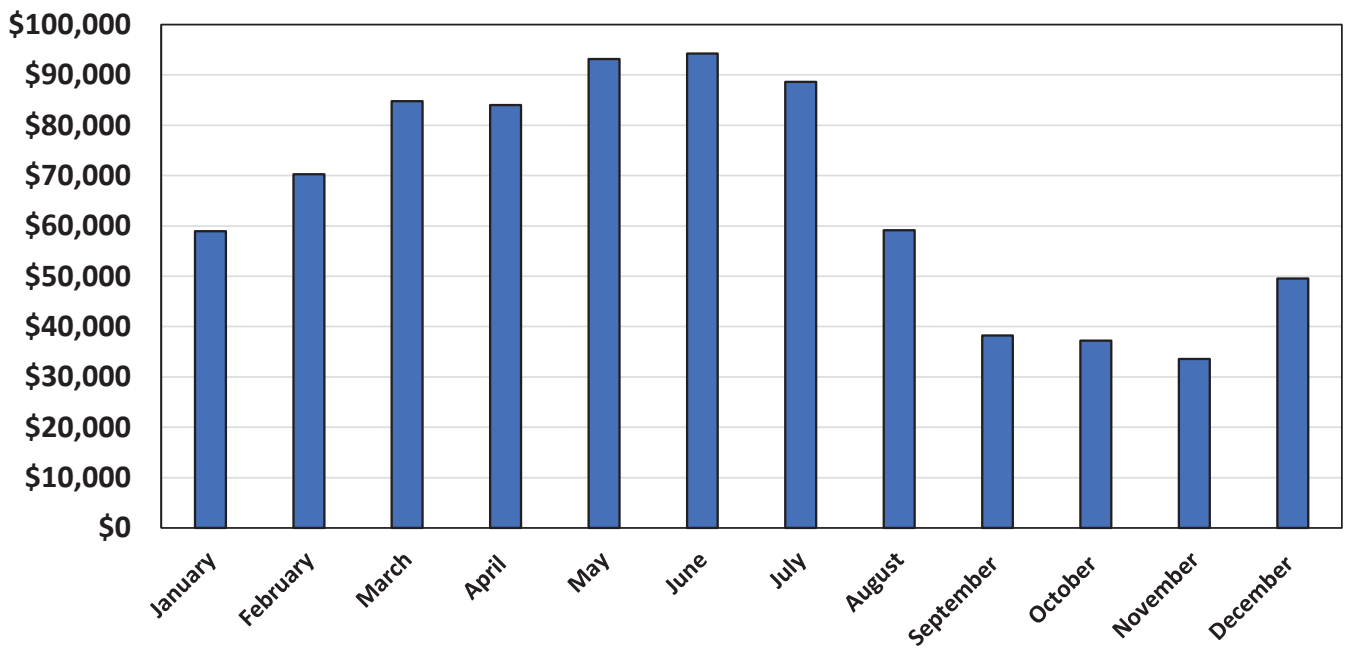
Kids' Fishing Derby at Clayton Lake State Park!

June 10th - 11th [CLICK HERE TO LEARN MORE](#)

FY 13 - FY 17 State Park Visitation & Revenue



Reserve America Online Reservation Per Month 2017



Mining & Minerals Division

Fernando Martinez
Division Director



Mining & Minerals Division

MISSION: The Mining and Minerals Division (MMD) seeks to promote the public trust by ensuring the responsible utilization, conservation, reclamation and safeguarding of land and resources affected by mining. MMD strives to make New Mexico a leader in responsible mine operation and reclamation. By statute, MMD enforces and administers laws and regulations relating to mine safety, coal surface mine reclamation and abandoned mine lands reclamation, and annually collects statistical information from operators.

PROGRAMS & ACCOMPLISHMENTS

COAL MINE RECLAMATION PROGRAM

The Coal Program regulates, inspects and enforces on all coal mines on federal, state and private lands within New Mexico, excluding Indian lands. The program oversees more than 80,000 acres of permitted mine lands and over \$280 million in financial assurance.

Peabody Energy replaced \$140 million in self-bonds with surety bonds when the company exited bankruptcy in April 2017. New Mexico now has 100 percent third party surety bonds for all permitted coal mines.

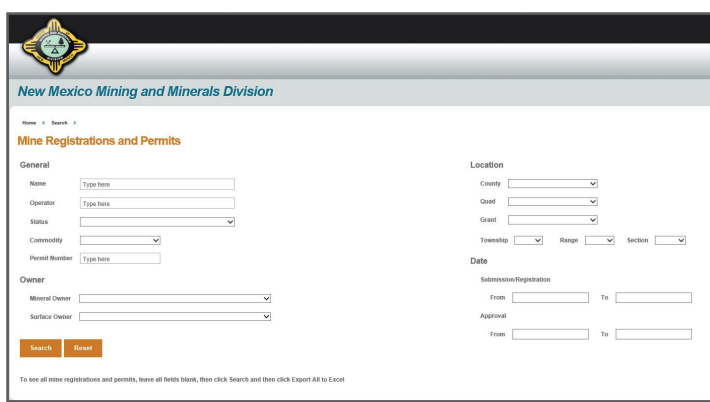
Evaluation of bond release applications continues to be a significant part of the workload for the Coal Program. All current bond release applications get posted on MMD's website and the documents are available to the public. Applications for partial bond releases were received and inspected for: Lee Ranch Mine, Phase I of 414 acres, Phase II of 2,133 acres, and Phase III of 318 acres; El Segundo Mine, Phase I of 322 acres, and Phase II of 712 acres; York Canyon Surface Mine, Phase III of 60 acres; and York Canyon Underground Mine, Phase III of 332 acres.

A court-ordered Environmental Impact Statement is now underway for the San Juan Mine near Farmington. This resulted from a 2009 lawsuit that the federal Office of Surface Mining agreed to settle by redoing the environmental investigation.

MINE REGISTRATION, REPORTING & SAFEGUARDING PROGRAM (MRRS)

MRRS provides comprehensive information on mineral resources, mine registration, reclamation and safeguarding efforts, legislation, and other MMD activities related to New Mexico's mineral extraction industry and mineral resources. Decision-makers throughout New Mexico benefit from the valuable information compiled and disseminated through this program. Mining sector information reported by operators for calendar year 2016 is provided in the Mineral Resources section of this report.

To enhance information dissemination and outreach, the [MMD Online](#) Mine Registrations and Permits web application provides data that updates daily for all New Mexico mines. Users can search by individual parameters, or a multitude of combinations. (By statute, confidential production information is kept confidential.) All query results are exportable to Excel spreadsheets containing as many as 30 fields of information, or to KML (Keyhole Markup Language) to display geographic data in an Earth browser.



MMD Online – a searchable web application updated daily from the mines database

Additional web applications are linked from the GIS, Maps and Mine Data page including Active Mines Web Map and a Map Gallery: <http://www.emnrd.state.nm.us/MMD/gismapminedata.html>. Other MMD website pages, [NMMines.com](#), provide information about abandoned mine safeguarding projects, and current and proposed mining operations. Projects can be tracked by status or county, and project documents are downloadable from various pages within the website.

Another public outreach component celebrates operators who perform outstanding reclamation in New Mexico. Annually, a nomination period is announced, then MMD staff select worthy recipients for the Excellence in Reclamation Award which is presented at the New Mexico Mining Association's convention. Read about 2017's awards in the Abandoned Mine Land Program section of this report.

MINING ACT RECLAMATION PROGRAM (MARP)

MARP regulates, inspects and enforces all hard rock or mineral mines on federal, state and private lands within New Mexico. MARP oversees reclamation of all exploration and extraction activities conducted at all mines and mills, excluding coal, potash and aggregate mines. MARP has permitted approximately 633 mining and exploration projects encompassing over \$683.2 million in financial assurance. The overall disturbed acreage under permit with MARP is 26,354 acres as of the end of 2016 (latest available data). The total number of acres reclaimed since 1994, when the program started, is 7,044.5 acres.

In early 2016, the New Mexico Mining Commission approved Petition 15-02, which proposed the expansion of minimal impact mining operations from 10 to 40 acres for non-energy fuel minerals that lack the potential for significant acid drainage in all areas of New Mexico except Bernalillo County, Doña Ana County, and Santa Fe County. An amendment modified the petition to include only those minimal impact mining operations extracting dolomite, garnet, humate, perlite and zeolite.

Reclamation and remediation continued at the permanently closed Questa Mine in Taos County, a Superfund site. Chevron Mining Inc., (CMI) initiated reclamation of the Questa Mine in late 2014 with the partial demolition of the mill area and closure of the underground mine. Reclamation and remediation work has included demolition of the mill area, construction of a water treatment plant, removal and disposal of old tailings, and remediation of Eagle Rock Lake. Reclamation will continue for several years as plans are approved and then implemented to reclaim the tailings area and the mine/mill area. Three agencies (MMD, New Mexico Environment Department and the U.S. Environmental Protection Agency (EPA)) are working with CMI to develop reclamation plans and agreements that follow the federal CERCLA (Comprehensive Environmental Response, Compensation, and Liability Act) process. In August 2016, the U.S. Department of Justice, the EPA and the State of New Mexico announced a settlement with CMI; a Partial Consent Decree was signed and approved in May 2017. As part of the settlement, CMI will finance \$143 million in cleanup work at the Chevron Questa Mine Superfund site. Additionally, the company will perform a pilot project to cover about 275 acres of the facility where mine waste, or “tailings,” are stored, operate a water treatment plant, and install groundwater extraction systems. CMI will also pay over \$5.2 million to reimburse EPA’s past costs for overseeing cleanup work at the site.

Permitting of revised closeout plans and expansions at the state’s four largest copper mines in Grant County continue. Several major permitting actions were initiated in 2017 and more will follow in 2018. Even with cutbacks and layoffs, Freeport-McMoRan Inc. (FMI), is expanding at three of its New Mexico operations. All permitting actions at three of the mines, Little Rock, Chino, and Continental, concern expanding the mining operations. As these existing mines expand, they must comply with new regulatory standards designed to address new mining impacts. The Cobre-to-Chino Haul Road Revision received approval in November 2016, and the Cobre Coming off Standby Revision was approved in November 2017.

Permitting of these three large mines also included the adjustment of the third-party guarantee, used for a portion of the financial assurance, at the three sites. Maintaining adequate financial assurance is an essential component of the Mining Act Reclamation Program. Permitting has also included the approval of large areas of the Chino site where test plots of different covers and seed mix applications are being evaluated, along with the associated reclamation success. Also in 2017, MARP staff continued the review process of two large-scale, Part 6 (New Mining Operations) permit applications – one uranium mine: Roca Honda; and one copper mine: Copper Flat. The Roca Honda project remains in the early stages of permit development. An Environmental Impact Statement (EIS) evaluation is being conducted by the federal government and state permits are under review.



Slope undergoing reclamation on a waste rock pile at the Chino Mine, Grant County, NM (2016)

The Copper Flat Mine, a new mine, with some pre-existing mine disturbance, is in the later stages of permit development. A federal EIS is also being conducted, and state permits are moving toward technically complete status.



Existing disturbance at the Copper Flat Mine, pit and pit lake, Sierra County, NM (2017)

As interest in uranium mining has tapered off, permitting actions related to earlier applications have followed suit. However, the Mt. Taylor Mine, an existing uranium mine in Cibola County, has been on standby status since the inception of the Mining Act in 1993, but recently applied to come off standby. Some of the local non-governmental organizations have opposed any permitting action for the Mt. Taylor Mine, other than reclamation.

ABANDONED MINE LAND PROGRAM (AMLP)

AMLP works to identify and abate dangerous abandoned mine areas across the state. MMD estimates that more than 15,000 hazardous mine openings remain un-reclaimed throughout New Mexico. AMLP's primary source of funding is the U.S. Department of the Interior, Office of Surface Mining Reclamation and Enforcement (OSMRE) through the Surface Mining Control and Reclamation Act and, secondarily, the U.S. Bureau of Land Management (BLM).

In October, AMLP completed a coal maintenance project in Dutchman Canyon on Vermejo Park Ranch, west of Raton, in Colfax County. Earthen berms were built to better contain flows in a constructed wetland that is treating drainage from collapsed coal mine entries. Repairs were also made to a rock rundown that handles wetland and storm flows. In December 2017, AMLP began construction on a project to stabilize collapsing underground coal mine workings using grout injection in the unincorporated community of Allison, just west of Gallup. Two large subsidence holes and large tension cracks have opened recently in close proximity to residences, indicating mine instability. AMLP also plans to contract for construction services to stabilize both the



Seeding and mulching the new wetland berms in Dutchman Canyon

underground mine workings near homes and a drainage channel that traverses the subsidence area.

Near Rogersville in Santa Fe County, a coal mine waste pile was reclaimed in December. The steep-sided, bare and eroding pile was graded to flatter slopes, covered with suitable soil, seeded, and mulched.

AMLP completed several non-coal projects to safeguard hazardous mine openings in 2017. In April, a contractor completed construction of closures at 55 shafts, three adits, and one pit, 36 of which are constructed to allow bats to continue to use the underground mine workings, on the west slope of the Cookes Range in northern Luna County, northeast of Deming. A total of 300 mine features have required or will require remediation in the area, which AMLP and BLM are addressing in multiple construction phases. In November 2017, seven mine shafts and adits were safeguarded east of Lemitar in Socorro County and, in December, a deep shaft was backfilled near White Signal in Grant County.



Bat compatible closure at shaft opening in the Cookes Range



Constructing a bat compatible closure at a shaft near Lemitar

The Excellence in Reclamation Award for 2017 was presented for a project in the town of Madrid in Santa Fe County. Madrid's proud history includes its status as having the oldest producing coal mine west of the Mississippi, beginning as early as 1835; production of both bituminous and anthracite coal from the same bedding planes; the first lighted baseball field west of the Mississippi, home of the Madrid Miners, a Double-A Minor League team; and brightly lit Christmas displays that are said to have been Walt Disney's inspiration for Disneyland.

After the demise of mining in 1954, numerous dangerous mine portals, shafts, and hazardous structures remained, along with gob (coal waste) piles that were delivering significant amounts of storm runoff and sediment that repeatedly clogged the town's rudimentary drainage infrastructure. In 2013, several days of intense rain led to extreme storm runoff and flooding of historic buildings and State Road 14. Despite these issues, it was important to many residents that any reclamation projects allowed Madrid's historic landscape to retain its industrial character, particularly the highly visible gob piles in and above the town. These remnants of an industrial past both connect the townspeople to local history and define the town as a unique place.

Rangeland Hands, Inc., of Santa Fe, and Riverbend Engineering, LLC, of Albuquerque, worked with AMLP to design and install innovative, effective, and locally sustainable stormwater infrastructure and erosion control measures that rehabilitated degraded land, and minimized visual impacts to the historic landscape such that the work is barely noticeable.

Not only did this project receive MMD's reclamation award, it also received the 2017 Abandoned Mine Land Reclamation Western Region Award from the federal Office of Surface Mining Reclamation and Enforcement for successfully addressing 180-year-old coal mining-related impacts to people and the environment in this historic town.



Jones Tipple for bituminous coal, Madrid, ca. 1930



Jones Tipple for Debris flow from a gob blowout across the driveway, onto Madrid Mining Museum property and into its buildings coal, Madrid, ca. 1930



Precast architectural blocks now provide stormwater control

BLM remains a strong programmatic partner with the Mining and Minerals Division, providing funding for abandoned hard rock mine reclamation project development and construction that supplements AMLP's annual OSMRE grants.

AMLP continues to develop projects in areas of New Mexico impacted by historic mining including Gallup, San Pedro Mountains, Hansonburg, Madrid, Silver City, Cookes Peak, and Vermejo Park Ranch.

MINERAL RESOURCES CY2016: EMPLOYMENT, PRODUCTION & VALUE

Operators reported mineral production value of slightly more than \$1.7 billion extracted from New Mexico mining operations in calendar year 2016, 30 percent less than 2015 (Table 1 and Figure 1). As expected, the largest declines were in the coal and potash sectors. A decreased demand for coal-produced energy is a contributing factor to decreased coal production. For potash, the worldwide price dropped

significantly (from \$570/thousand metric tons in 2015 to \$360 in 2016), and worldwide demand was weak, causing the oversupply that led to lower prices. Specific to New Mexico, the closure of one underground mine and changes in production at two other mines greatly decreased potash production in 2016, and sales value accordingly.

TABLE 1 New Mexico Summary of Commodity Production, Production Value, Employment, Payroll, Revenue and Ranking: 2016

Mineral	Production ¹	Production Rank ²	Production Value \$	Employment ³	Reclamation Employment	Payroll \$ ⁴	Revenue Generated \$ ⁵	
							State	Federal
Coal [*]	14,681,937	11	\$ 392,338,603	1,088	90	\$ 92,627,343	\$ 13,642,134	\$ 7,189,610
Copper	383,618,474	2	\$ 842,913,365	1,630	8	\$ 99,303,546	\$ 6,820,883	\$ -
Gold ⁶	22,142	-	\$ 27,641,699	-	-	-	\$ 230,525	\$ -
Industrial Minerals ⁷	1,288,684	-	\$ 114,996,639	463	7	\$ 25,294,441	\$ 225,813	\$ 368,877
Aggregates ⁸	10,833,266	-	\$ 84,059,547	950	94	\$ 24,182,684	\$ 2,105,478	\$ -
Other Metals	24,702	-	\$ 222,317	20	-	\$ 758,750	\$ 1,083,176	\$ -
Molybdenum	-	-	-	-	-	-	\$ -	\$ -
Potash	631,154	1	\$ 268,838,554	772	19	\$ 88,569,818	\$ 4,267,331	\$ 5,247,792
Silver	293,070	-	\$ 5,025,050	-	-	\$ -	\$ 24,217	\$ -
Uranium ⁹	-	-	\$ -	20	12	\$ 792,103	\$ -	\$ -
TOTAL			\$ 1,736,035,774	4,943	230	\$ 331,528,685	\$ 28,399,557	\$12,806,279

Source: Mining and Minerals Division, unless otherwise noted * Estimated production value; one operator withheld the information.

¹ Production is in short tons for coal, industrial minerals, aggregates, other metals and potash; in pounds for copper; and in troy ounces for gold and silver.

² Production rank, where available, is based on 2016 production value in relation to other states.

Sources: Copper and potash: Mineral Resources Program, United States Geological Survey

Coal: Energy Information Administration, United States Department of Energy; rank is for CY2015, latest data available

³ Employment category includes direct and contract employees.

⁴ Payroll does not include benefits.

⁵ State revenue includes state trust land mineral lease royalties, rentals and bonuses; and severance, resource excise and conservation tax revenues.

Federal revenue includes 50% state share of federal royalties.

Federal data: Office of Natural Resources Revenue

⁶ Gold and silver are by-products of copper production. Employment/payroll for gold/silver included in copper.

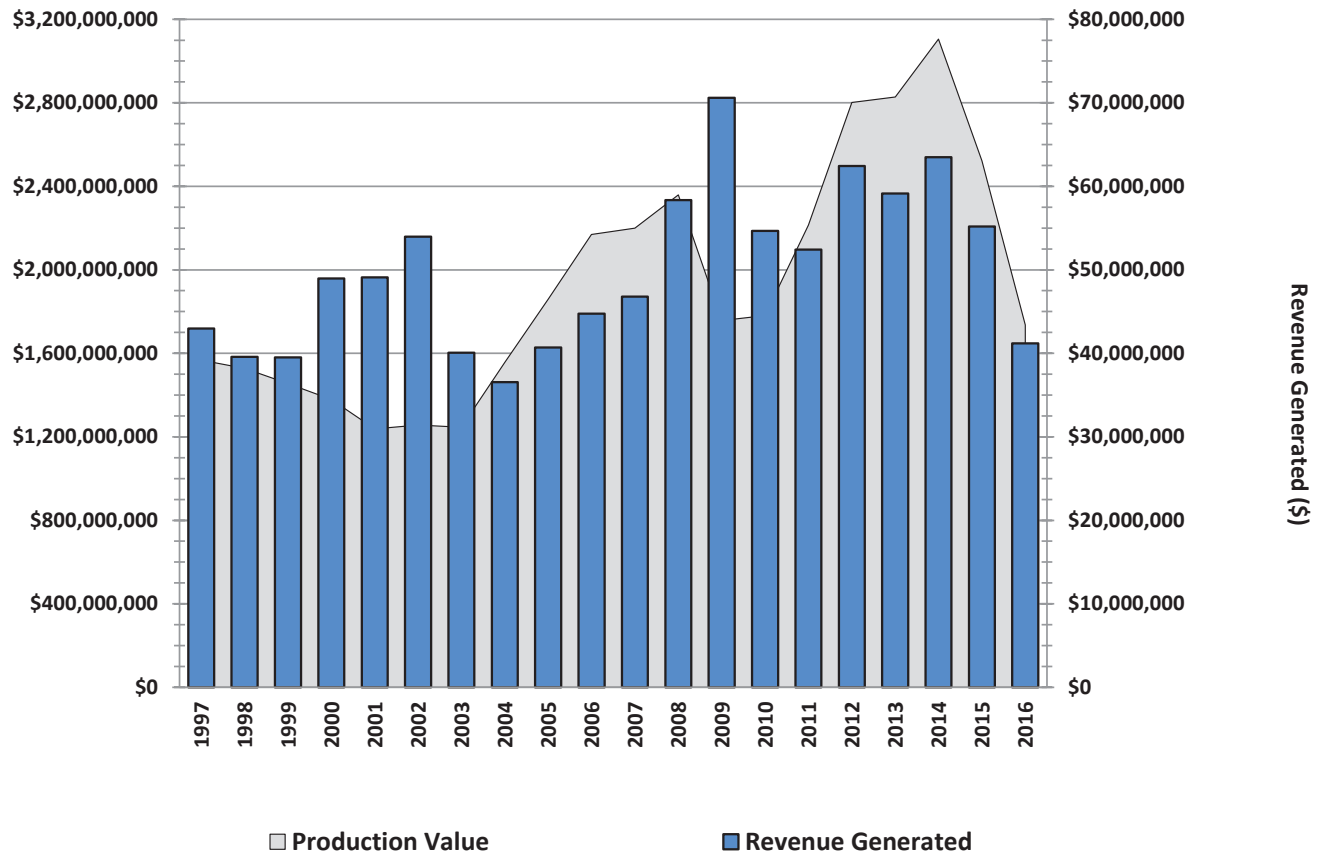
⁷ Category includes brick clay, calcite, dimension stone, gypsum, humate, perlite, Portland cement, pumice, salt, silica, and zeolite.

⁸ Category includes base course, caliche, clay and shale, crushed rock, flagstone, fill dirt, gravel, limestone, red dog, rip-rap, sand, scoria and topsoil.

⁹ Employment/payroll numbers are for licensing/permitting at proposed uranium mines, and reclamation activities/maintenance at closed mines and mills.

Sources: State data: New Mexico Taxation and Revenue Department, New Mexico State Land Office

FIGURE 1 New Mexico Mineral Production Value and Revenue Generated: 1997-2016



Despite those declines, New Mexico remains a leading United States mineral producer with 2016 rankings of first in potash, perlite and zeolite, as reported by the U.S. Geological Survey (USGS); second in copper for the second consecutive year (USGS); and eleventh in coal, as reported by the U.S. Energy Information Administration. The principal minerals, in descending order of 2016 production value, were copper, coal and potash. According to USGS, for 2016, New Mexico ranked twentieth (falling from fifteenth in 2015) when ranking states by the production value of non-energy minerals, producing 1.95 percent of the total U.S. production value of non-energy minerals. USGS reports New Mexico's principal non-energy minerals, in order of value, were copper, potash, sand and gravel, cement, and crushed stone.

is provided by the Department of Interior's Office of Natural Resources Revenue and includes a 50 percent state share of federal royalties. In any production year, these revenues only accrue if the lessee is mining and producing commodities on federal or state land.

Copper was the largest employer in New Mexico's mining industry, followed by coal and sand and gravel operations (Figure 2). Overall employment decreased in 2016, and reported industry payroll (excluding benefits) decreased 10 percent from 2015 to just over \$331 million (Figure 3). Direct employment decreased from 5,047 to 4,338 employees; contract employment decreased from 651 to 587; and reclamation employment increased from 209 to 230 employees (Figure 4).

Total 2016 revenues generated by mineral production in New Mexico declined 25 percent from 2015 levels to \$41.2 million (Figure 1), again affected on the state and federal levels by the decline in coal and potash production. State revenue information is provided by the Taxation and Revenue Department and the State Land Office and includes state trust land mineral lease royalties, rentals and bonuses and associated taxes. Federal revenue information

FIGURE 2 Percentage of Production Value, Employment, Payroll and Revenue by Commodity: 2016

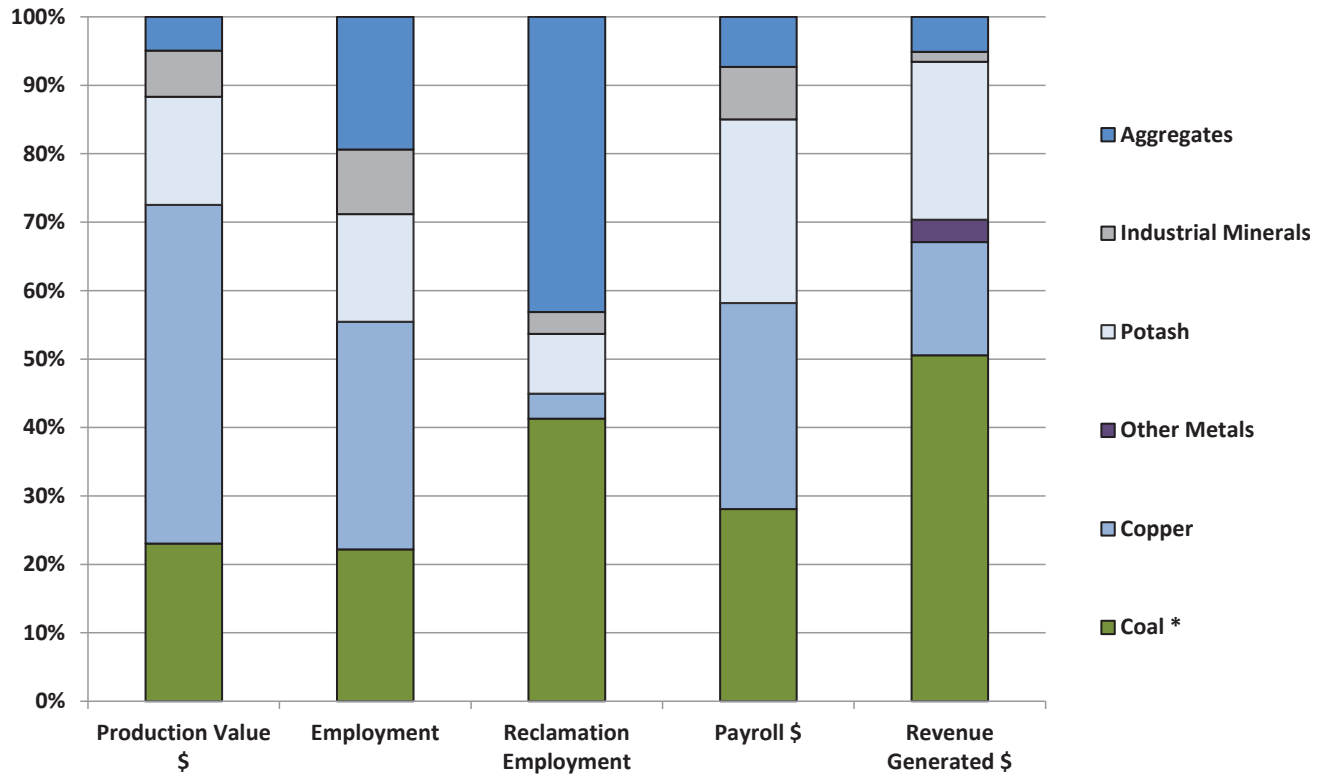


FIGURE 3 New Mexico Mineral Industry Employment, Payroll and Capital Improvements: 1997-2016

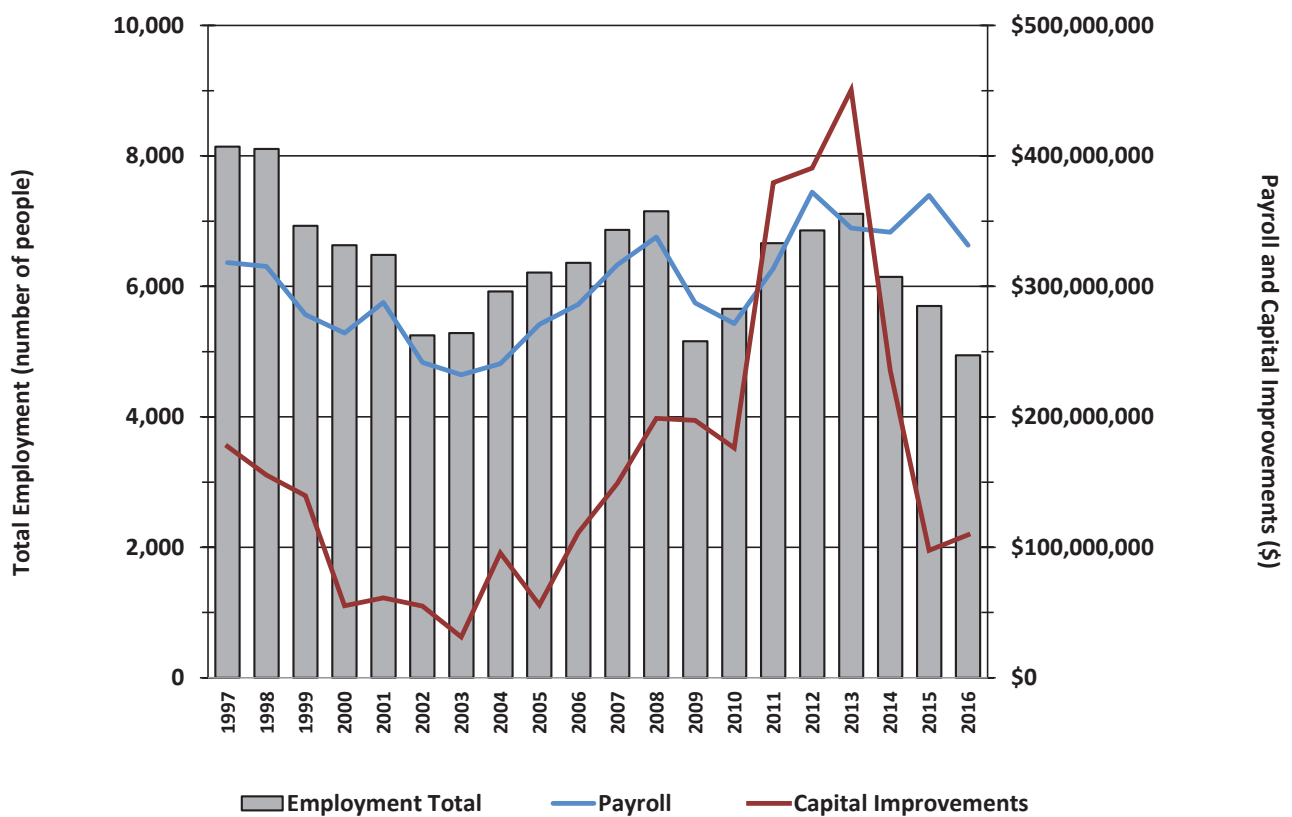
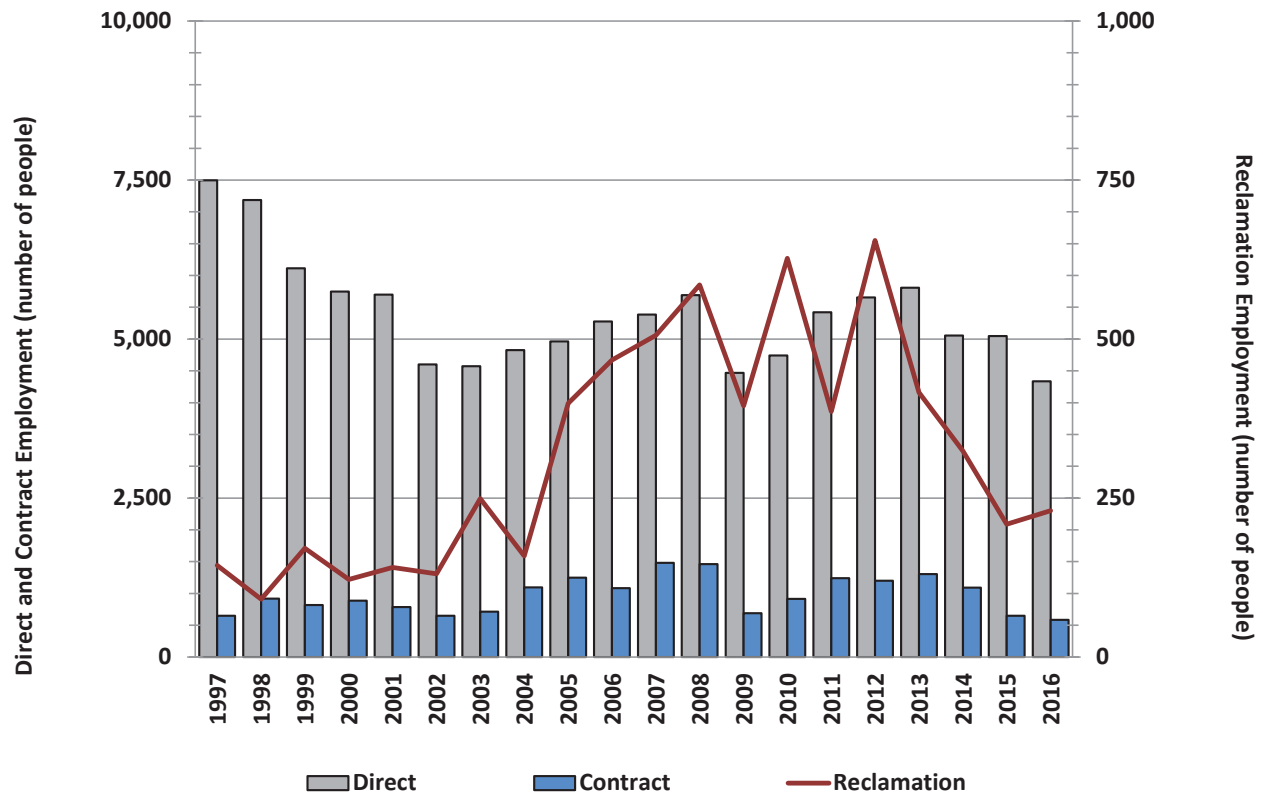


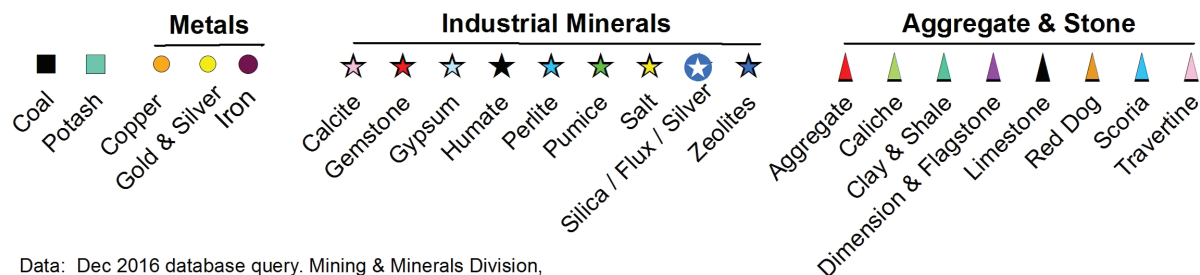
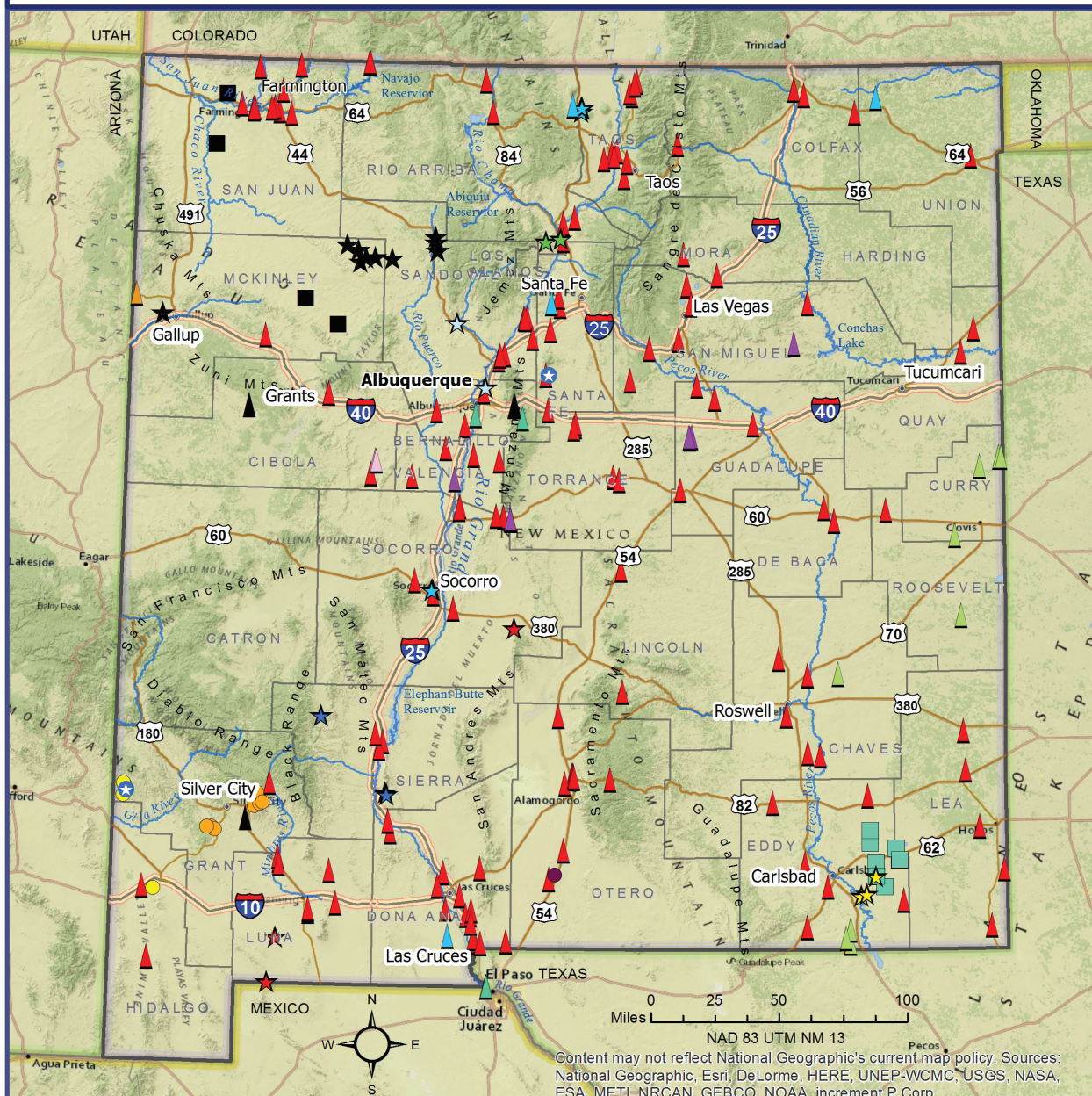
FIGURE 4 New Mexico Mineral Industry Employment: 1997-2016



Operators' capital improvement expenditures showed a 12 percent gain over 2015. New Mexico mining companies reported investments of just under \$110 million in capital improvements and equipment in 2016 (Figure 3), up from \$97 million in 2015.

Registered active mining operations in New Mexico in 2016 numbered 232: four coal mines; eight potash operations (includes mines, refineries and compaction plants); 11 metal mine, mill and SX/EW operations; 32 industrial mineral mines and mills, and smelters; and 177 stone and aggregate operations (Figure 5).

Active Mines in New Mexico, December 2016



Data: Dec 2016 database query. Mining & Minerals Division,
 Mine Registration, Reporting & Safeguarding Program.
 Basemap: Esri ArcGIS Online. Map: Linda S. DeLay, GISP

Figures 6 through 10 provide multi-year production amounts and dollar values for coal, copper, potash, aggregate (base course, caliche, clay and shale, crushed rock, flagstone, fill dirt, gravel, limestone, red dog, rip-rap, sand, scoria and topsoil), and industrial minerals (brick clay, calcite, dimension stone, gypsum, humate, perlite, Portland cement, pumice, salt, silica, and zeolite), respectively.

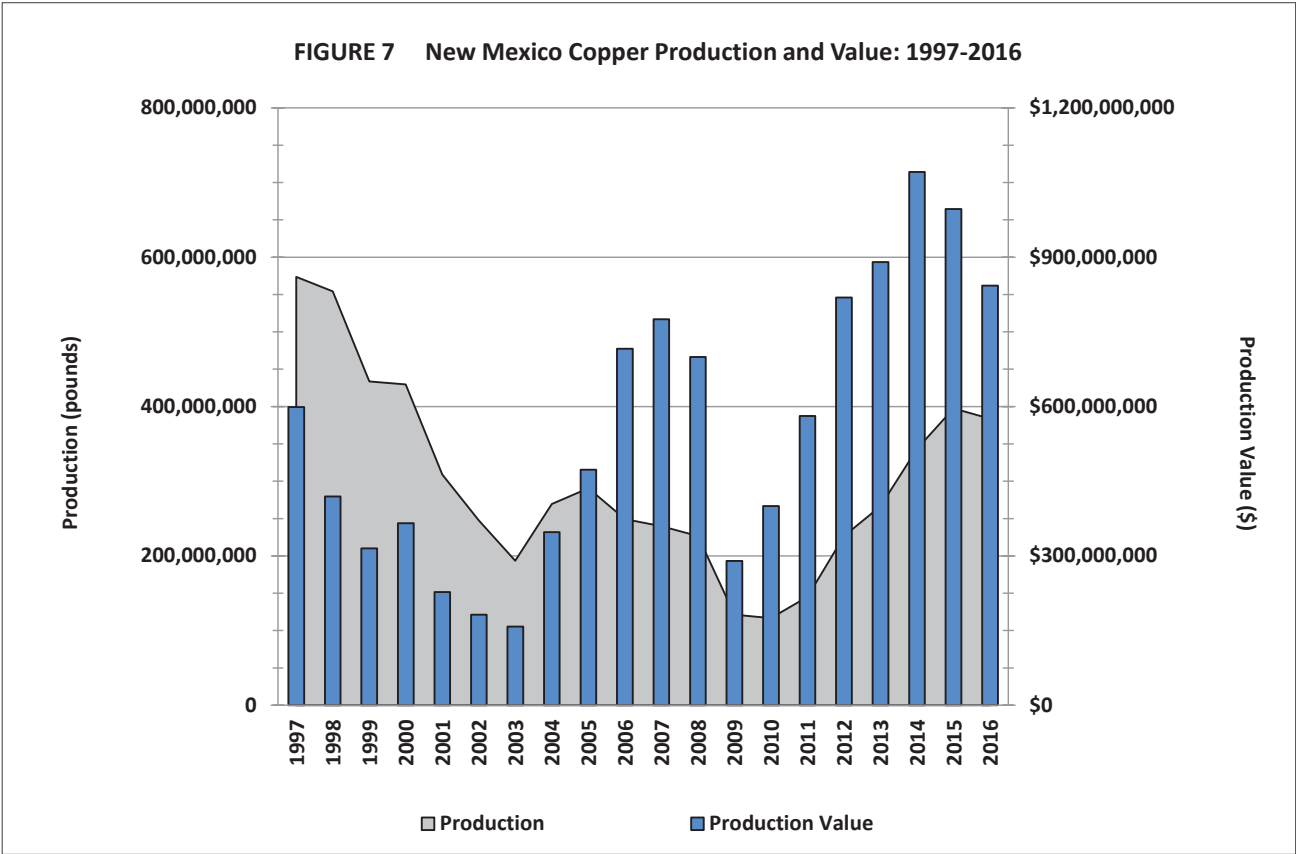
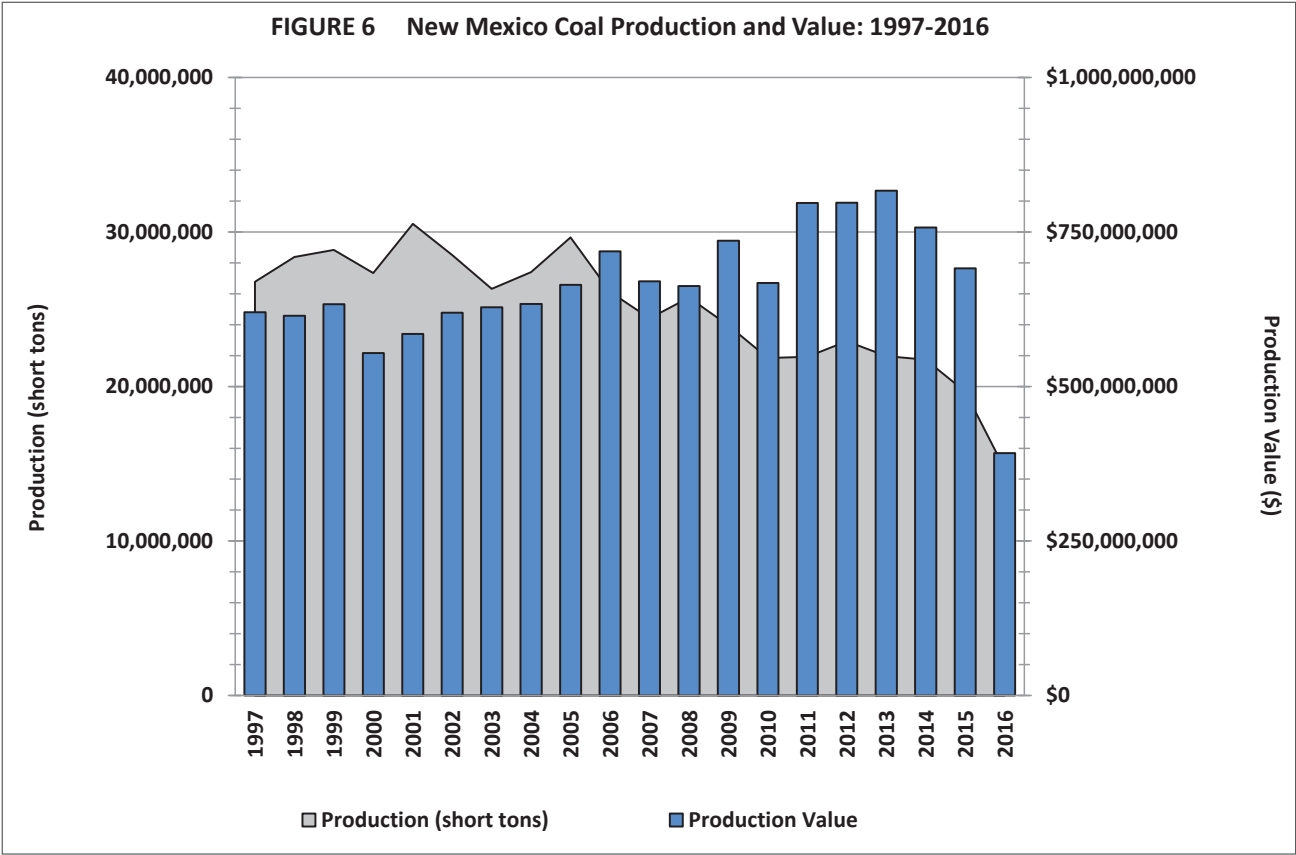


FIGURE 8 New Mexico Potash Production and Value: 1997-2016

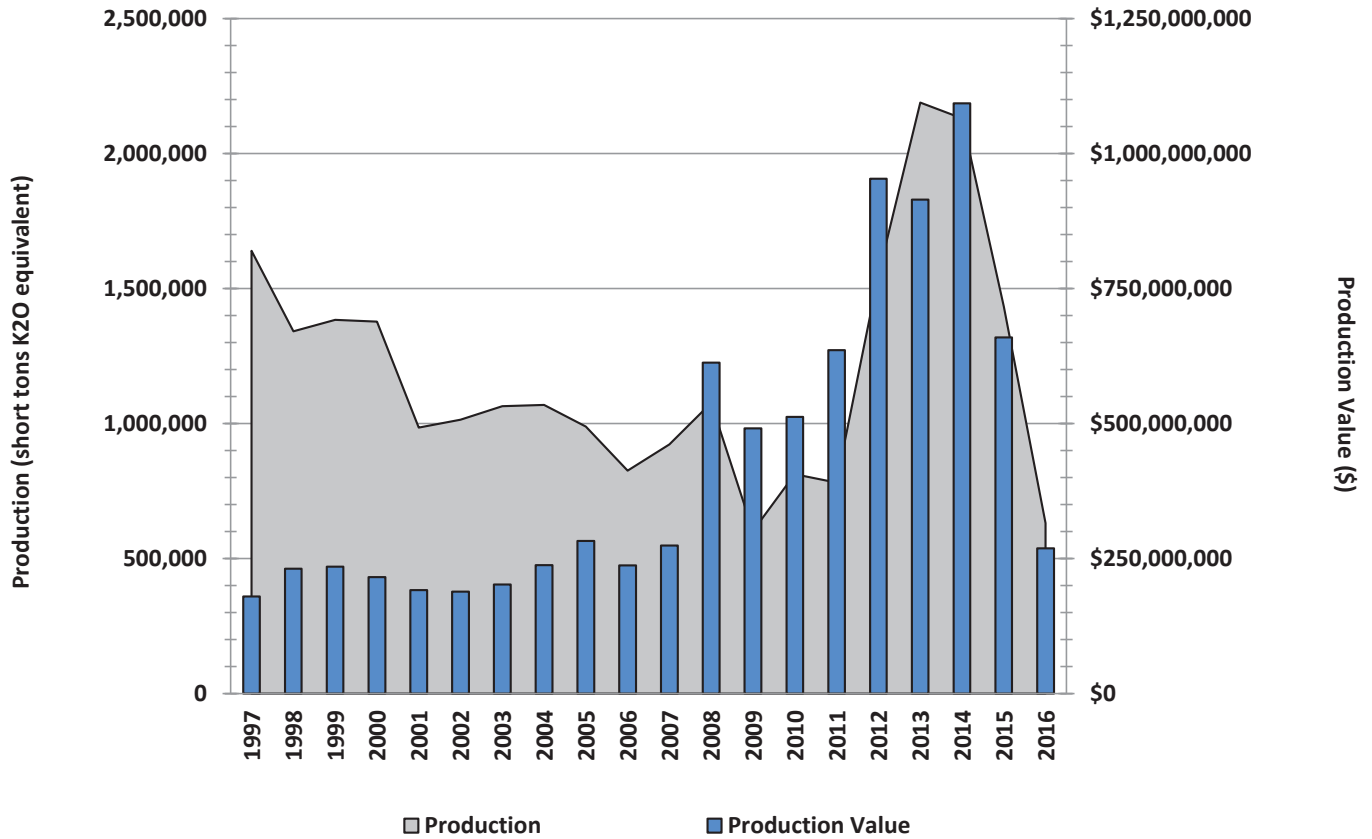


FIGURE 9 New Mexico Aggregate Production and Value: 1997-2016

Aggregate includes base course, caliche, clay and shale, crushed rock, flagstone, fill dirt, gravel, limestone, red dog, rip-rap, sand, scoria and topsoil

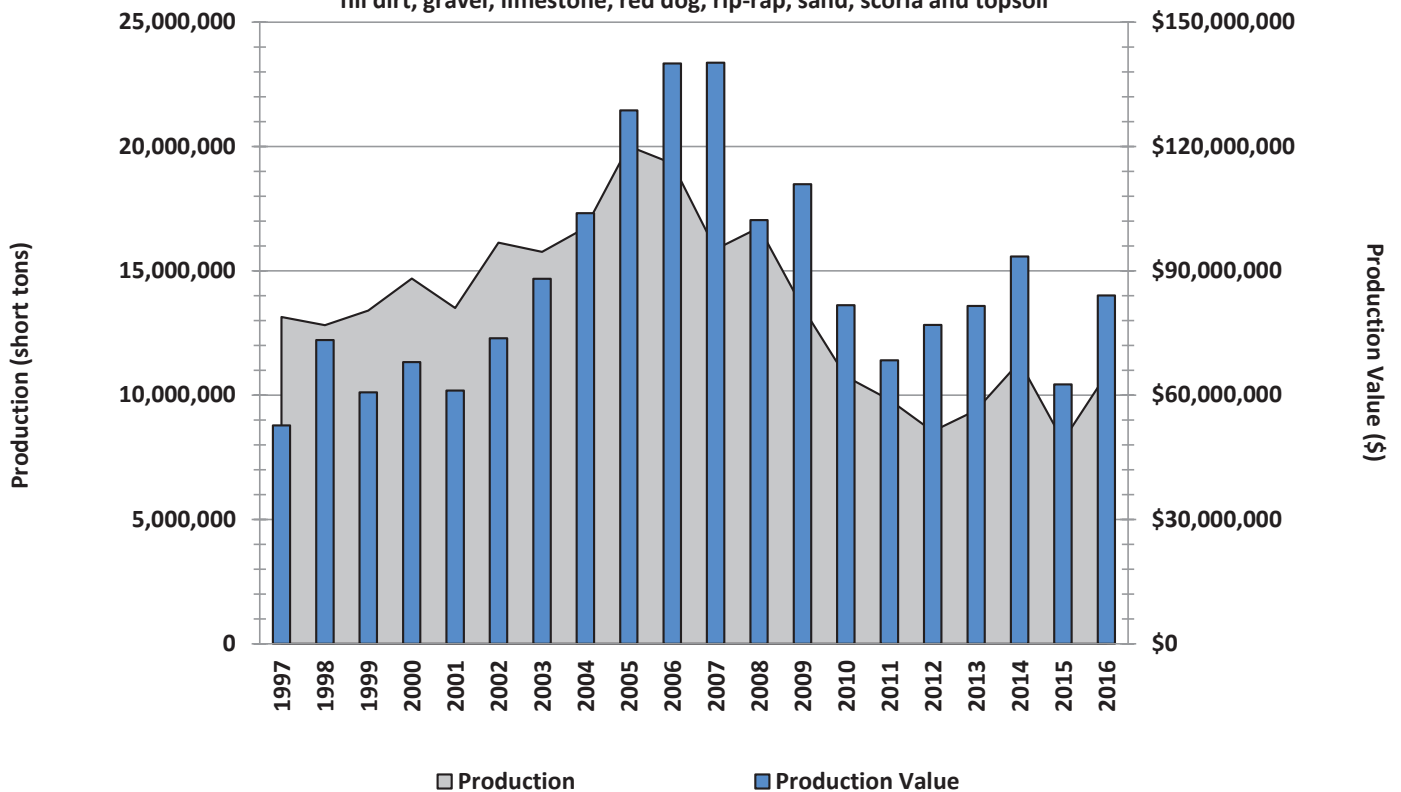
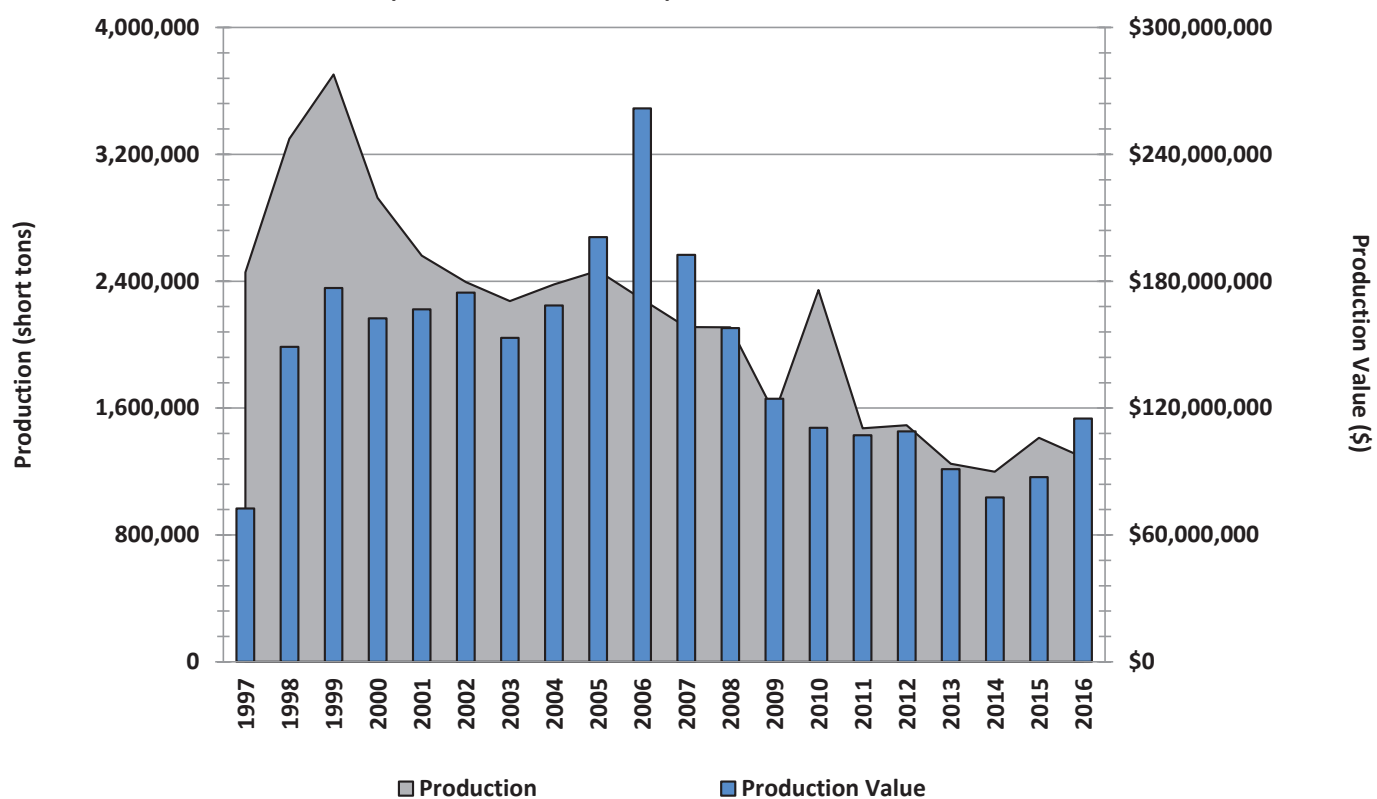


FIGURE 10 New Mexico Industrial Mineral Production and Value: 1997-2016

Industrial minerals include brick clay, calcite, dimension stone, gypsum, humate, perlite, Portland cement, pumice, salt, silica, and zeolite





Energy Conservation & Management Division



Louise Martinez
Division Director



Energy Conservation & Management Division

Mission: The Energy Conservation and Management Division (ECMD) develops and implements effective clean energy programs - renewable energy, energy efficiency, alternative fuels, and safe transportation of radioactive waste - to promote economic growth, environmental sustainability, and wise stewardship of our natural resources while protecting public health and safety for New Mexico and its citizens.

Programs:

ECMD programs are implemented through a combination of system certifications, clean energy projects, and public outreach. Diverse stakeholders participate in focused working groups to address rapidly changing themes in clean energy. Through these efforts, ECMD encourages public and private organizations to use energy more efficiently, more economically, and with less dependence on foreign sources. Benefits to New Mexico include economic development, modern infrastructure, and strength through diversity and job creation.

Accomplishments:

Solar Market Development Tax Credit

The Solar Market Development Tax Credit program was designed to help New Mexicans purchase solar photovoltaic (PV) and solar thermal systems for their residences or small businesses. 2016 marked the end of the program that helped to reduce energy costs and provided stimulus to the solar energy industry in the state. In 2016, PV tax credits were fully subscribed to the level of \$3 million of benefits to the residents of the state.

Throughout the eight years that the Solar Market Development Tax Credit was provided, there have been 7,107 applicants for a PV tax credit, which helped install 40 MW of solar PV systems in the State of New Mexico. These systems have provided 190 gigawatt hours of electricity to their owners and represents roughly \$19.5 million in avoided energy costs to date. The ECMD continues to support the residential solar industry with installation data, consumer outreach and training, and business contacts.

Renewable Energy Production Tax Credit

The Renewable Energy Production Tax Credit (REPTC) supports utility-scale wind, biomass, and solar projects that, in turn, assist utility companies in meeting the Renewable Portfolio Standard. Through the REPTC program, there are currently 1,387 MW of wind and 380 MW of solar-generating electricity in New Mexico, which have created approximately \$2 billion in construction activity within the last 10 years. While the allocation of the available tax credits



PV Solar Array, Santa Fe

(each tax credit lasting 10 years) was reached in 2012, no applications for solar power plants or wind turbine facilities were received by ECMD in 2017. Projects on the REPTC waiting list represent potential new development of 745 MW in wind and 927 MW in solar power, representing over \$3 billion in construction activity for rural communities.

Although most renewable energy projects take advantage of the REPTC ten years, these utility scale projects provide a steady source of revenue for the next 30 years to the New Mexico State Land Trust. The direct revenue supports the trust beneficiaries and education in New Mexico through the leasing of public lands for wind, solar, geothermal power plants, and electric transmission infrastructure. Private landowners also realize significant revenues from the lease of their lands. The REPTC incentive expired on January 1, 2018

Sustainable Building Tax Credit

The New Sustainable Building Tax Credit program incentivizes private sector design and construction of energy efficient, sustainable buildings for commercial and residential use. In the 12-month period through December 2017, ECMD received, reviewed, and processed 1,187 housing unit applications totaling 2,463,052 square feet, with a cumulative tax credit value of \$7,459,795. The construction and siting of these new homes and multi-family apartment complexes that meet green building standards have provided jobs in all parts of New Mexico.

Minimization of building energy use is a major factor in the design of sustainable buildings. The New Sustainable Building Tax Credit has helped builders and home-buyers alike meet their objectives, while spurring economic growth, creating jobs and improving the quality of housing across the state. Other benefits of the tax credit program:

- Creates a green building infrastructure, generating expertise and green-collar jobs, ultimately reducing the cost of green products and technologies
- Reduces energy consumption, offsetting the impact of energy prices
- Reduces New Mexico's greenhouse gas emissions and delays the need to build costly new electric power plants
- Provides healthy and comfortable buildings that improve quality of life for the occupants
- Benefits lower-income New Mexicans by creating high quality, affordable, energy efficient homes that reduce utility bills
- Conserves water resources in buildings and in power generation
- Places New Mexico as a leader in green building with



Glen Rio Apartments, Albuquerque

Geothermal Ground-Coupled Heat Pump Tax Credit

The Geothermal Ground-Coupled Heat Pump Tax Credit, in effect since 2010, helps make the system-type more affordable for homeowners and commercial building owners. In the 12-month period through December 2017, there were 102 applications received, reviewed, and processed in the counties of Dona Ana (86 systems), Otero (11), Sierra (1), Quay (1), Curry (1), Santa Fe (1), and Lincoln (1). The \$869,861 in tax credit support of this technology has created construction activity of more than \$3.04 million in the past year. Additional incentives are available for customers of Roosevelt County Electric Cooperative through its Thermal Energy Service Program.



ECMD summer intern Brandon Lujan measures static pressure on the suction side of the air handler that is part of a residential geothermal ground coupled heat pump in Las Cruces. July 2016. Photo by Daren Zigich

Renewable Energy Storage Working Group

The Renewable Energy Storage Working Group combines diverse stakeholders to investigate energy storage technologies, policies, planning and practices for application in New Mexico. Formed in 2013, the group identifies options for New Mexico to encourage energy storage. The group provided a written report containing eight options to the New Mexico Legislature and continues to investigate the topic of energy storage.

- In 2015, participants explored energy storage values to the state's electric system and examined the energy storage items within the Governor's 2015 energy policy,
- In 2016, the group considered residential energy storage from the installer, utility and industry perspectives. The ECMD launched a summer 2016 internship program with Sandia National Laboratories energy storage team. The program helped generate a proposal for Jemez Mountain Electric cooperative for a pumped hydro storage system to improve the Jemez coop grid performance.
- In 2017, members of the working group participated in the PNM IRP process by discussing storage options in the PNM system and the value of storage in the Energy Roadmap meetings. In late 2017, PNM released a RFP for 436 MW of capacity additions, which also included the request for storage systems.

ECMD staff requested that the General Services Department include storage and energy management systems as part of their broad request for proposals for PV systems for state buildings and infrastructure. The GSD RFP was released in late November.

Biomass

In 2017, ECMD funded work through the US Forest Service Grant-USDA (USFS-USDA) to conduct a feasibility analysis on the dismantling and relocation of the current Hurst Scotch Marine Package Fire tube woody biomass boiler that is located at the Ft. Bayard Medical Center to another potential location within the state. The analysis was completed in September 2017 and provided several potential locations where the boiler could be utilized. The Bayard Medical Center discontinued using the boiler due to a decrease in natural gas prices and does not plan to operate the boiler in the future. From this analysis, ECMD is hopeful that the boiler can be relocated to a site where it can be utilized.

Assembling a Statewide Wood Energy Enterprise Team (SWEET) is underway from USFS-USDA funding that will bring together individuals representing agencies and organizations with the expertise necessary for successful wood energy enterprises. The team will work within New Mexico's landscapes comprised of federal, state, private, land grants and tribal forests. The team's purpose is to provide coordination between projects within and around New Mexico, improving communication and outreach statewide to advance the use of wood biomass energy.

Geothermal Power

Since the 2016 passage of the Geothermal Resources Development Act which moved resource development and regulation implementation from the Department's Oil Conservation Division to ECMD, the Division has drafted new regulations that meet the legislative goals of streamlining and targeting the rules to better meet the needs of the industry. Drafting of these rules was completed in late summer of 2017 and were placed on public notice on November 14, 2017. The public hearing for the new rules took place January 3, 2018.

Energy Efficiency

New Mexico again ranked 35th in the 2017 American Council for an Energy Efficient Economy, State Energy Efficiency Scorecard, which is the same score as in 2016 but down from 31st in 2015 and 25th in 2014. The lower ranking is due to several factors including the state not having an active Property Assessed Clean Energy Financing (PACE) program, no disclosure policy for building energy consumption, no public research center that focus on energy efficiency, and not setting appliance standards beyond those required by the federal government. In addition, the ranking decline is also attributable to the need for policies to encourage combined heat and power production, use of

efficient transportation systems, energy efficiency resource standards for natural gas utilities and the update of the building energy code. However, raising our ranking is a consensus goal of the New Mexico Energy Roadmap. The state anticipates higher energy savings in 2018 from greater levels of investment in energy efficiency measures by utility programs, as well as greater use of performance contracting by state and local governments.

State Energy Policy & Implementation Plan

In 2017, ECMD began working with the Natural Gas Vehicle Association (NGVA), the New Mexico Gas Co./Emera and Land of Enchantment Clean Cities Coalition (LOECCC) to seek funding for a grant program to assist fleets in the border region of the state to convert from diesel trucking fleets to compressed natural gas (CNG). The working group is currently collaborating with the New Mexico Economic Development Department to try to acquire funding for this program. This grant program was initially part of the 2016 House Joint Memorial 5: Natural Gas Vehicle Report.

State Energy Roadmap Project

The New Mexico Energy Roadmap Project kicked-off on June 14, 2017, with the first of four energy stakeholder meetings. The first meeting gathered New Mexico energy professionals and regulatory agency representatives together to determine the future scenarios of New Mexico's energy landscape that would provide guidance to developing substantive portions of the energy roadmap.

The purpose of the second meeting, held August 10, 2017 was to develop preliminary goals for strengthening and diversifying New Mexico's energy economy. Four hypothetical scenarios developed during June's kick-off meeting informed the goals. The third meeting on October 19, 2017 further developed the goals and created strategies required to meeting those goals. The fourth meeting was held for December 7, 2017, to finalize the goals and strategies and assign timelines and volunteer implementers for each strategy.

The Energy Roadmap development phase will complete in January 2018 with the release of the final document. Implementation of the Roadmap's Goals and Strategies will be carried out by energy stakeholders during 2018 and throughout the next decade.

The Energy Roadmap is built upon the work done in the development of the 2015 New Mexico Energy Policy and Implementation Plan.

New Mexico Energy Roadmap



To support the Governor's Energy Policy and Implementation Plan, a program was developed to track energy performance and usage in public buildings. Data was collected to capture three years of energy consumption and to monitor performance targets for the Department's State Parks, State Forestry and Oil Conservation Divisions, and a benchmark was established.

ECMD was awarded DOE funding in 2016 to provide extensive energy audits and create energy conservation plans for five wastewater treatment facilities. In 2017, ECMD continued the Waste Not program, which assisted five local governments with collecting, tracking, reporting and analyzing energy usage data for the facilities. The goal: help communities achieve lower costs of operation through more efficient energy use.

Whole-building Investment for Sustainable Efficiency

The Whole-building Investment for Sustainable Efficiency (WISE) Program's purpose is to achieve energy savings in public buildings. The program was seeded through a U.S. Department of Energy (DOE) federal competitive grant that provided for strategic planning support via the WISE Team of EMNRD, General Services Department (GSD), and New Mexico Finance Authority (NMFA). The joint effort established an energy efficiency process focused on a whole-building evaluation approach. The goal: a 20 percent reduction in state government facilities by 2020 compared to a 2011 baseline energy usage.

The evaluation began with the GSD-owned buildings inventory development. GSD owns 6.5 million square feet of public buildings floor area and manages buildings on behalf of other state government agencies in the Executive Branch. The initial project funded by WISE included the development of an Investment Grade Audit (IGA) of Santa

Fe's South Capitol complex buildings to justify design work and funding of \$2.1 million for the Energy Efficiency Measures (EEMs). All implementation measures are complete, including the State Data Center's air-and water-side economizers to improve efficiency. EEMs of the IGA accepted for implementation achieved a reduction of 19.88 percent energy savings (2.3 million kWh and 10,950 therms) well within the 20 percent target.

Since this initial project and completion of the federal grant project scope, work has continued to promote energy efficiency and to identify financing mechanisms that can support improvement of public facility inventories. The WISE program's sustainability is supported by two state statutes that allow financing of public buildings retrofits based on future energy savings and with the goals of the New Mexico Energy Policy and Implementation Plan.

Utilizing Energy Service Performance Contracts

(ESPCs), or statewide price agreements established by the Department and GSD for Energy Service Companies, is a major tool for public entities to implement energy efficiency projects. This way, the entity does not have to request capital funding to complete those projects. To facilitate this process, standard operating procedures and sample forms were developed and are available on the Cleanenergy.com website. Guidelines are available to support facility improvements by the higher education, local governments, and for state agencies that are not tenants of GSD. In addition, a technical assistance and third-party review process is available for energy assessments submitted to ECMD from local governments, public schools, higher education, and state government in all energy - related ESCO and Clean Energy Revenue Bond (CERB) projects

Energy Savings Performance Contracting

Energy Savings Performance Contracting (ESPC) has been available to New Mexico's governmental agencies since 1993 through the Public Facility Energy Efficiency & Water Conservation Act [NMSA 1978, 6-23]. New Mexico's governmental agencies may finance energy-saving facility improvements using future energy savings created by energy efficiency measures. New Mexico has implemented ESPC throughout the state since 2009 equating to more than \$100 million in energy retrofits and renewable energy generation. In 2017 alone, ECMD oversaw the completion of \$26.7 million of energy performance contracts making infrastructure improvements and saved more than \$38.6 million in utility costs throughout the life of these projects. The Department committed to completing a specific amount

of ESPC projects in partnership with the Department of Energy and the ESPC Accelerator Program. Originally New Mexico made a \$50 million commitment and has realized that commitment twice over, thus far. Currently, these are about 15 projects in various stages from interest to measurement and verification in NM. The Department has won several DOE competitive grants to implement programs that support this process and provide quality projects.

The Local Energy Efficiency Performance (LEEP) Program is a DOE grant competitively awarded to ECMD in 2014. The goal of the program is to provide energy efficiency and conservation projects with third party technical assistance and oversight. ECMD worked with four local government partners: McKinley County, City of Santa Fe, City of Las Cruces, and Bernalillo County.

The McKinley county project was awarded the Large Energy Project of the Year by the New Mexico Association of Energy Engineers for 2016. The project contained \$2.4 million in energy upgrades and has realized \$333,000 a year in energy savings. The audit included 44 buildings. ECMD expects to realize similar results from the other partners. The City of Las Cruces, the City of Santa Fe and Bernalillo County are wrapping up their audits and projects should be completed with all upgrades by the end of 2018. Due to the overwhelming success of the LEEP program there are now more than 10 local government projects in various stages in the process.

New Mexico and ECMD's commitment to Energy Savings Performance Contracting was recognized in both 2016 and 2017 by the National Energy Services Coalition as being an Energy Stewardship Champion.

WasteNot Program

A wastewater treatment efficiency program (Waste Not) was proposed to the US DOE in late 2015 and was awarded to ECMD in mid-2016. The Waste Not program supports partnerships with local governments to incentivize and remove barriers to energy efficiency and renewable energy investments in wastewater facilities. ECMD is assisting four communities in New Mexico to implement energy efficiency and renewable energy solutions that reduce costs of operating wastewater facilities. Each partner community will prioritize the findings from an energy audit of its wastewater facility and seek financing to implement their primary needs. These efforts will inform development of a "how-to" guide for other local governments in New Mexico to engage in similar energy reduction and renewable energy activities

at wastewater treatment facilities. Ultimately, this will build experience and capacity in managing and reducing costs to operate wastewater facilities at the local government level and encourage additional rural communities to undertake energy efficiency and renewable energy projects.

In 2017, the energy audits were started for the following communities; Española, Raton, Taos, and Tucumcari. The draft audits have been completed for these communities and the audit reviews will be completed soon. It is significant that three of the communities have reasonably efficient wastewater treatment operations. One plant has several opportunities to save on energy costs.

Clean Energy Revenue Bond

Clean Energy Revenue Bond (CERB), Qualified Energy Conservation Bonds (QECB), and Qualified School Construction Bonds (QSCB) can all be part of the financing of an energy project. The CERB is a financing mechanism while the other two are utilized for interest rate buy-downs. Established in 2005, the Energy Efficiency & Renewable Energy Bonding Act [NMSA 1978, 6-21D] has \$20 million in low-interest bonding available for state agencies and public schools. Santa Fe Public Schools was the first public school to utilize the CERB for renewable energy generation. The project installed approximately one megawatt of solar panels. The project cost was \$2.96 million. After nearly one year of operation, the school has seen approximately \$193,000 in electricity and electrical demand savings.



Electric Bus Rapid Transit System being installed in along Central Avenue in Albuquerque.

Clean Fuels & Efficient Transportation

ECMD purchased a Chevy Bolt through a federal grant in 2017. This is the first all-electric passenger vehicle to be

acquired for the state's vehicle fleet. The first electric vehicle (EV) charging station on state property was installed in June of 2016 in the parking lot of the Wendell Chino building in Santa Fe, New Mexico, which houses the Energy Conservation and Management Division. The charging station is a Level 2 EV Charge Point station with two charging cables and was installed in response to the State of New Mexico joining the Department of Energy's (DOE) Workplace Charging Challenge in January of 2016.

At present, there are very few electric vehicles owned by state employees at the state-owned complexes. The state is focusing on the installation of EV charging infrastructure and the acquisition of electric vehicles for campuses with EV charging available.

To further assist in the installation of EV charging stations at state complexes in Santa Fe, PNM has requested funding through the Volkswagen (VW) air quality violation mitigation settlement to purchase and install ten (10) Level 2 EV charging stations. VW has committed in the air quality mitigation settlement to provide \$2 billion for the installation of charging or fueling infrastructure for zero-emission vehicles. PNM will partner with the Energy Conservation and Management Division for the placement and installation of the EV charging stations, if funded.

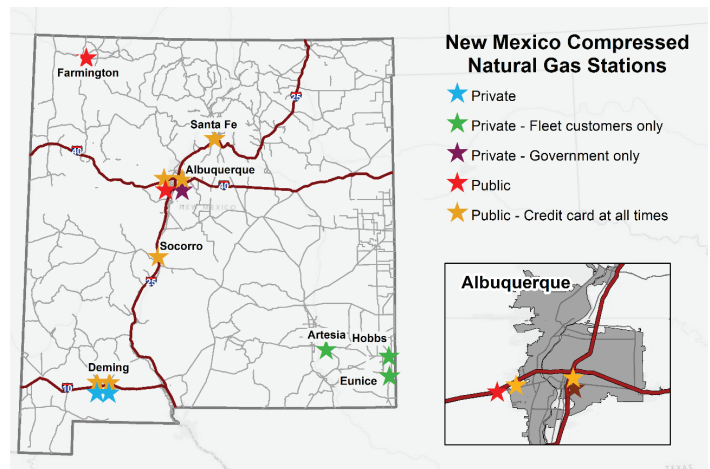
In October of 2017, the Governor Martinez signed a regional memorandum of understanding (MOU) with seven (7) of the inter-mountain west states to commit to placing EV charging infrastructure along the three (3) major interstate corridors, I-10, I-25, and I-40, in New Mexico.

The other states and their corridors included in the MOU are:

- Colorado: Interstates 25, 70 & 76
- Arizona: Interstates 8, 10, 15, 17, 19 & 40
- Utah: Interstates 15, 70, 80 & 84
- Nevada: Interstates 15 & 80
- Idaho: Interstates 15, 84, 86 & 90
- Wyoming: Interstates 25, 80 & 90
- Montana: Interstates 15, 90 & 94

Natural Gas Transportation Fuel Infrastructure

Currently, 14 compressed natural gas (CNG) stations operate in New Mexico – six are private and eight are public access. One station includes liquefied natural gas (LNG). These stations are listed below. In addition, one new station is in development in Albuquerque.



Source: Data from DOE Alternative Fuels Data Center. Map from EMNRD

Compressed Natural Gas Fueling Stations - Public

- Clean Energy, University of New Mexico – 1140 University Blvd. NE, Albuquerque
- LCNG Clean Energy, Pilot/Flying J – 9911 Avalon Road. NW, Albuquerque
- City of Deming – 116 N 8th St., Deming
- City of Deming – 1315 W Pine St., Deming
- Clean Energy, Santa Fe Trails Transit – 2931 Rufina St, Santa Fe
- City of Socorro – 3000 Old US Highway 85, Socorro
- Bubble City Truck Stop – 3125 Bloomfield Hwy., Farmington
- Love's Travel Stop – 12605 Central Ave. NW, Albuquerque

Compressed Natural Gas Fueling Stations – Private or Fleet Only

- Clean Energy – ABQ Ride, 601 Yale St, Albuquerque
- Apache Artesia – 1945 Bluestem Road., Artesia
- Apache Eunice – 31 S NM Highway 207, Eunice
- Apache Hobbs – 2350 W Marland Blvd, Hobbs
- City of Deming, Construction Shop – 1401 Santa Clara St., Deming
- City of Deming, Transfer Station – 5470 New Mexico 549 SE, Deming

Electric Vehicle Charging Infrastructure

Throughout New Mexico there are 51 electric vehicle charging stations open to the public. During 2017, many charging stations were installed at businesses, public parking areas and fueling stations. These stations are as follows:

Electric Charging Stations in Albuquerque Metropolitan Area - Public

- Dave & Buster's, Winrock Mall - 2100 Louisiana Blvd. NE
- Montgomery Plaza - 4575 San Mateo Blvd. NE
- O'Neill's Pub, 4310 Central Ave.
- BMW Sandia - 6001 Pan American Fwy.
- City of Albuquerque Department of Municipal Development Parking Facility - 201 Marquette Ave. NW
- City of Albuquerque - Department of Municipal Development Parking Facility - 400-498 3rd St NW
- Melloy Nissan - 7707 Lomas Blvd.
- Reliable Nissan - 9951 Coors Blvd. NW

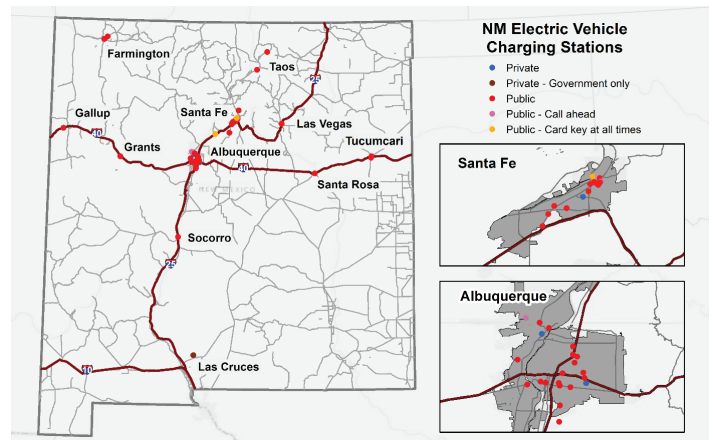
- Freddy's Frozen Custard & Steakburgers, Corrales Center - 10701 Corrales Rd. NW
- Latitudes - 2401 Highway 528, Rio Rancho
- Sandia Peak Inn – 4614 Central Ave. SW
- University of New Mexico – 2401 Redondo S. Dr.
- University of New Mexico – 1913 Las Lomas Dr. NE
- Fidelity Investments – 5401 Watson Dr. SE
- Don Chalmers Ford – 2500 Rio Rancho Dr. SE
- Applebee's – Tesla – 2600 Menaul Blvd. NE
- Sheraton ABQ Uptown – Tesla – 2600 Louisiana NE
- Bella Roma Bed and Breakfast – Tesla – 1211 Roma Ave. NW
- Cutter Aviation – Tesla – 2502 Clark Carr Loop SE
- Petroglyph National Monument – 6501 Unser Blvd. NW
- Breve Crepes and Coffee – 6001 Osuna Rd. NE
- Winrock Garage – 100 Sun Ave. NE

Electric Charging Stations in Santa Fe – Public:

- Sprouts, San Isidro Shopping Plaza - 3201 Zafarano Dr.
- City of Santa Fe - Railyard Parking Garage - 503 Camino de la Familia
- City of Santa Fe – Genoveva Chavez Community Center – 3221 W. Rodeo Rd.
- Inn at Santa Fe - 8376 Cerrillos Rd.
- Santa Fe Convention Center - 120 S Federal Place
- CG Higgins - 847 Ninita St.
- Fiesta Nissan - 2005 Saint Michaels Dr.
- The Inn of the Five Graces – 150 E De Vargas St.
- Naturally Durable PRC – Certified Hardwood Products – 219 West Manhattan Ave.
- Luna Santa Fe – 505 Cerrillos Rd.
- Santa Fe BMW – 2578 Camino Entrada
- Wendell Chino Building – 1220 S. St. Francis Dr.
- Rancho Gallina – Tesla – 31 Bonanza Creek Rd.
- The Inn and Spa at Loretta – Tesla – 211 Old Santa Fe Trail
- Don Gaspar Inn – Tesla – 623 Don Gaspar Ave.
- Four Seasons Resort Rancho Encantado – Tesla - 198 State Rd. 592
- De Vargas Center – 564 N Guadalupe St.

Electric Charging Stations Outside Santa Fe and Albuquerque - Public:

- Grants KOA - 26 Cibola Sands Loop, Grants
- Hampton Inn – Tesla - 111 Twin Buttes Rd, Gallup, NM
- Marriott Towneplace Suites - Tesla - 4200 Sierra Vista Dr. Farmington
- Casa Blanca Inn – Tesla – 505 E. La Plata St., Farmington
- Comfort Inn – Tesla - 2500 N Grand Ave, Las Vegas
- Holiday Inn Express – Tesla - 2516 Historic Route 66, Santa Rosa
- Holiday Inn Express – Tesla - 2624 S Adams St, Tucumcari
- The Blue Swallow Motel – Tesla – 815 E. Route 66 Blvd., Tucumcari
- White Sands Test Facility – 12600 Nasa Rd, Las Cruces
- Best Western Socorro Hotel and Suites – Tesla – 1100 N. California St., Socorro
- Blake Hotel – 106 Sutton Pl., Taos Ski Valley
- Taos Mesa Brewery Taproom, 10 Thunderbird Rd., Taos Ski Valley
- Adobe & Pines Inn – Tesla – 4107 State Rd. 68, Ranchos de Taos
- Kewa Gas Station – Interstate 25, Exit 259, Kewa Pueblo



Source: Data from DOE Alternative Fuels Data Center. Map from EMNRD.

Waste Isolation Pilot Plant

The Department has oversight of the Cooperative Agreement and annual funding for the state Waste Isolation Pilot Plant (WIPP) program provided by DOE. The agreement is a partnership between DOE, EMNRD, and six state agencies charged with ensuring the safe and uneventful transportation of transuranic (TRU) waste in New Mexico. The Department and five agencies make up the working group and provide the following:

- The Department of Homeland Security and Emergency Management (DHSEM) provides equipment training to volunteer fire services and emergency managers along the WIPP route as well as ensuring equipment is calibrated;
- The Department of Public Safety (DPS) provides point of origin inspections for all shipments, Level VI inspections for TRU waste entering the state, training of emergency response officers (ERO) for hazmat situations, and management of the state dosimetry program;
- The Department of Health provides donning and doffing of hazmat suits, and decontamination of radiation training to hospitals and clinics along the WIPP route;
- The New Mexico Environment Department provides sampling data along the WIPP route and assists the DOH in training hospitals and clinics;
- The State Fire Marshal's Office provides training to fire services in hazmat awareness and operations along the WIPP route; and
- The Department of Transportation (unfunded in the Cooperative Agreement) provides oversight on roadway safety and manages funding provided directly to the department for road repair.

In April 2017, the DOE restarted shipments to the WIPP. The Department continues to monitor the shipments,

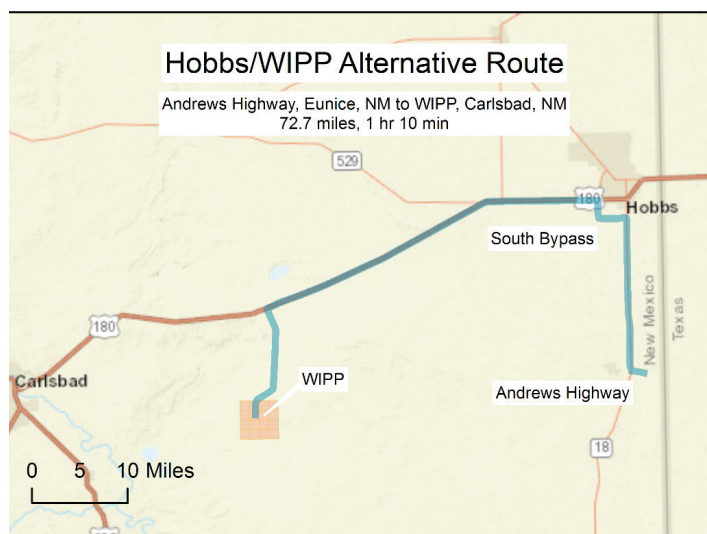
ensuring each one is tracked in real-time. Currently, the projected weekly shipments will range between 5-7, not to exceed 10. The DOE has completed 12,000 shipments to the WIPP, which speaks to the hard work and contributions from each state in the success of the WIPP Transportation Safety Program. The DOE could not have accomplished this without collaboration and partnerships with the States.

The Department is working with the Roswell/Chavez County and Lea County Emergency Managers to plan the next two WIPP Transportation Exercises (WIPPTREX). The purpose of each exercise is to ensure that training and response funded under the Cooperative Agreement meet the goals and objectives of the WIPP Transportation Safety Plan Implementation Guide.

The Department is working with the DOE-CBFO and the NM Department of Transportation (DOT) to change the primary and alternate designated routes to the WIPP for the National TRU Program Southern Transportation Corridor. Currently shipments from Savannah River Site and Oak Ridge National Laboratories utilize the designated primary Southern Corridor approach entering New Mexico on US 285 from Pecos, Texas, through Carlsbad to the WIPP site.

Due to various construction issues on US 285 and the brine well cavity at the intersection of US 285 and US 62/180, an alternate route to the WIPP site was established. Changing the primary Southern approach into NM on SR 176, north on SR 18, around the City of Hobbs, and onto the US 62/180 to the North Access Road to the WIPP may provide a safer route for shipments and reduce total miles driven.

Western Interstate Energy Board Radioactive



Source: EMNRD

High-Level Waste Committee:

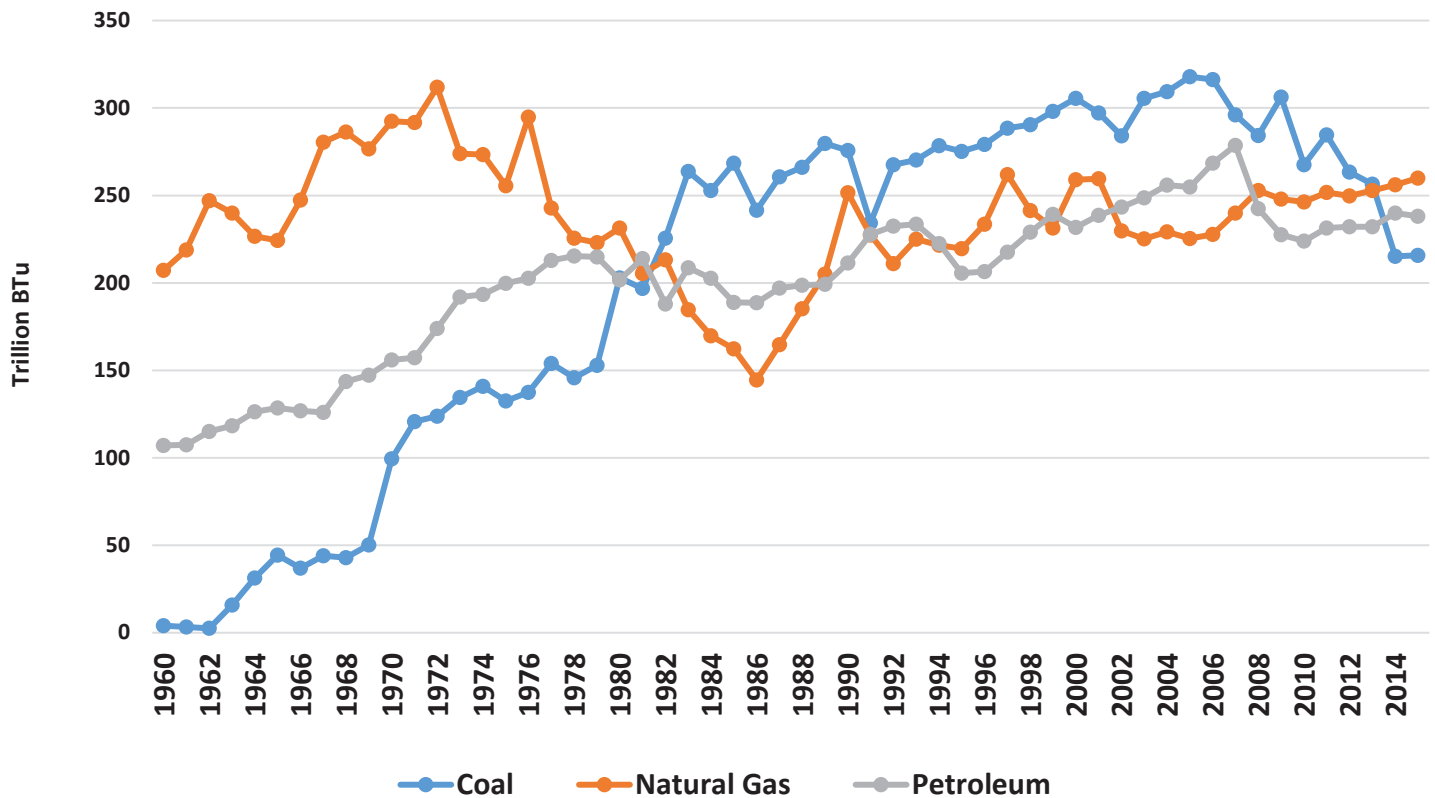
Currently, New Mexico is not represented on the Western Interstate Energy Board (WIEB); however, the Department does participate in committee meetings concerning radioactive materials storage and transportation. The Department has participated in various meetings of the WIEB Radioactive High-Level Waste Committee (RHLW) to assist the DOE in the development of a Spent Nuclear Fuel (SNF) transportation program. The WIEB RHLW committee is in the process of developing Policy and Recommendations to the DOE regarding the shipment and interim storage of SNF. Three states (NM, TX, WY) have entities that have expressed interest in becoming interim storage sites for SNF. Currently, only NM has a private entity (Eddy Lea Energy Alliance, LLC) with an application submitted to the Nuclear Regulatory Commission (NRC) to store spent nuclear fuel.

Data & Statistics:

Energy Consumption by Source - In 2015, the latest data available, total New Mexico energy consumption was 758 trillion BTU (tBTU). Most of the energy consumed in the state came from coal, petroleum and natural gas, each of the three fuels making up about 30 percent of total energy consumption. However, as reported in last year's report using 2014 data, coal remained in third place behind both natural gas and petroleum products as the primary source of total energy consumption in New Mexico. The majority of oil is used in the transportation sector, while coal is dedicated to electricity generation. Natural gas is used both for heating and in an increasing proportion of the state's electricity generation. Renewable energy contributed 6 percent or approximately 44.2 tBTU of New Mexico's energy consumption and it is primarily used in the transportation (fuel ethanol) and electricity sectors.

In support of the Energy Roadmap Project's baselining efforts, Lawrence Livermore National Laboratory created a Sankey diagram that displays the flow of energy in New Mexico during 2015. The [Sankey Diagram](#) can be found on the ECMD website.

Fossil Fuel Consumption in NM 1960-2015



1960-2015 New Mexico energy consumption by fuel type [Source: DOE Energy Information Administration]

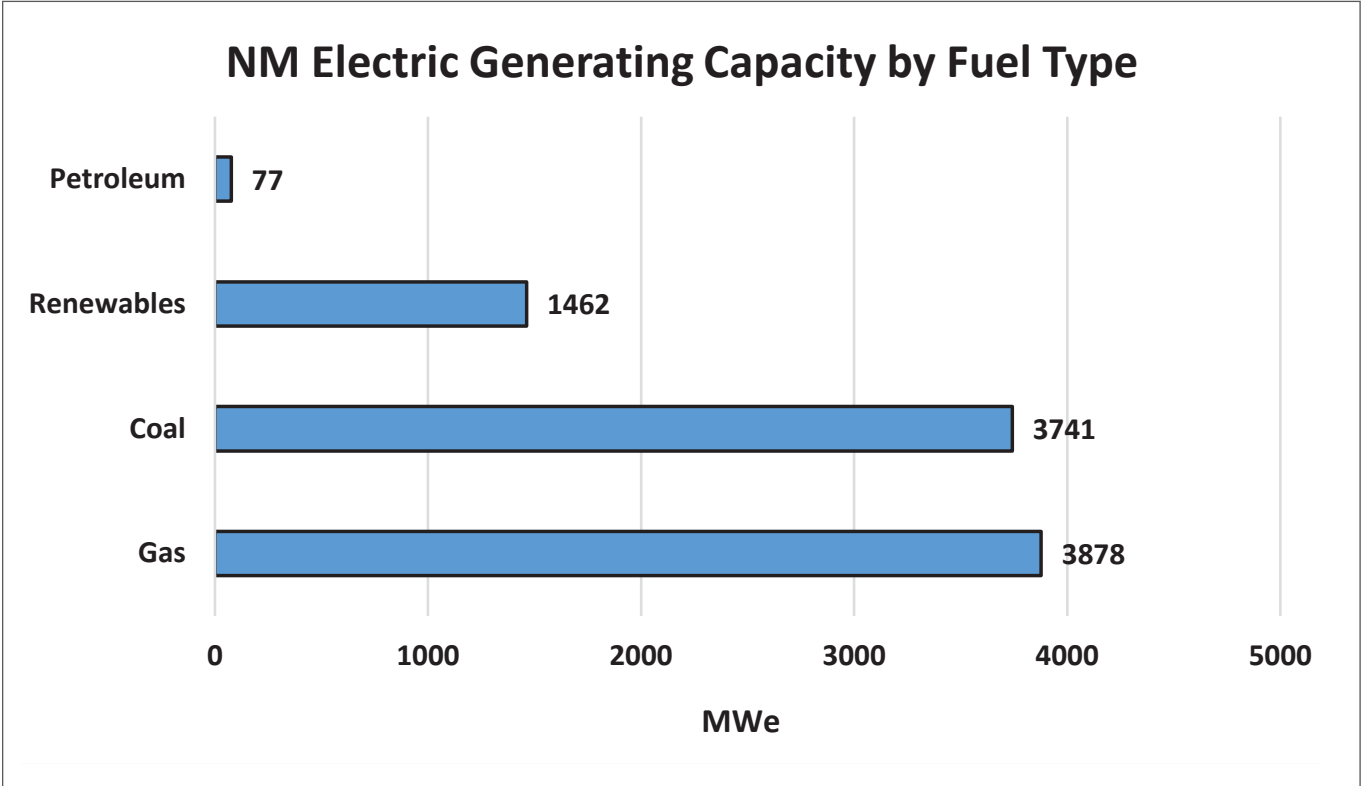
Energy Consumption by Sector: Net energy consumption for in-state needs was 675.5 tBTU, after subtracting the fuels consumed in-state for exported electricity generation, which for the second year in a row has remained below 1970 levels. When looked at by end-user, the industrial and transportation sectors consume the most energy in New Mexico, followed by the commercial and residential sectors. Again, only the transportation sector saw an increase in energy consumption from the previous year. Compared to national averages, residential users in New Mexico use less energy per capita, and all other sectors in New Mexico use more energy per capita, particularly the transportation sector.

Energy consumption per capita	New Mexico (million Btu)	National Average (million Btu)	Difference from National Average	National Rank*
Residential	55.1	63.8	-14%	47
Commercial	60.0	56.4	+6%	25
Industrial	108.0	97.8	+10%	21
Transportation	101.7	84.9	+20%	13
Total consumption	324.8	302.9	+7%	20

2015 energy consumption per capita by sector, compared to national averages [Source: DOE Energy Information Administration]

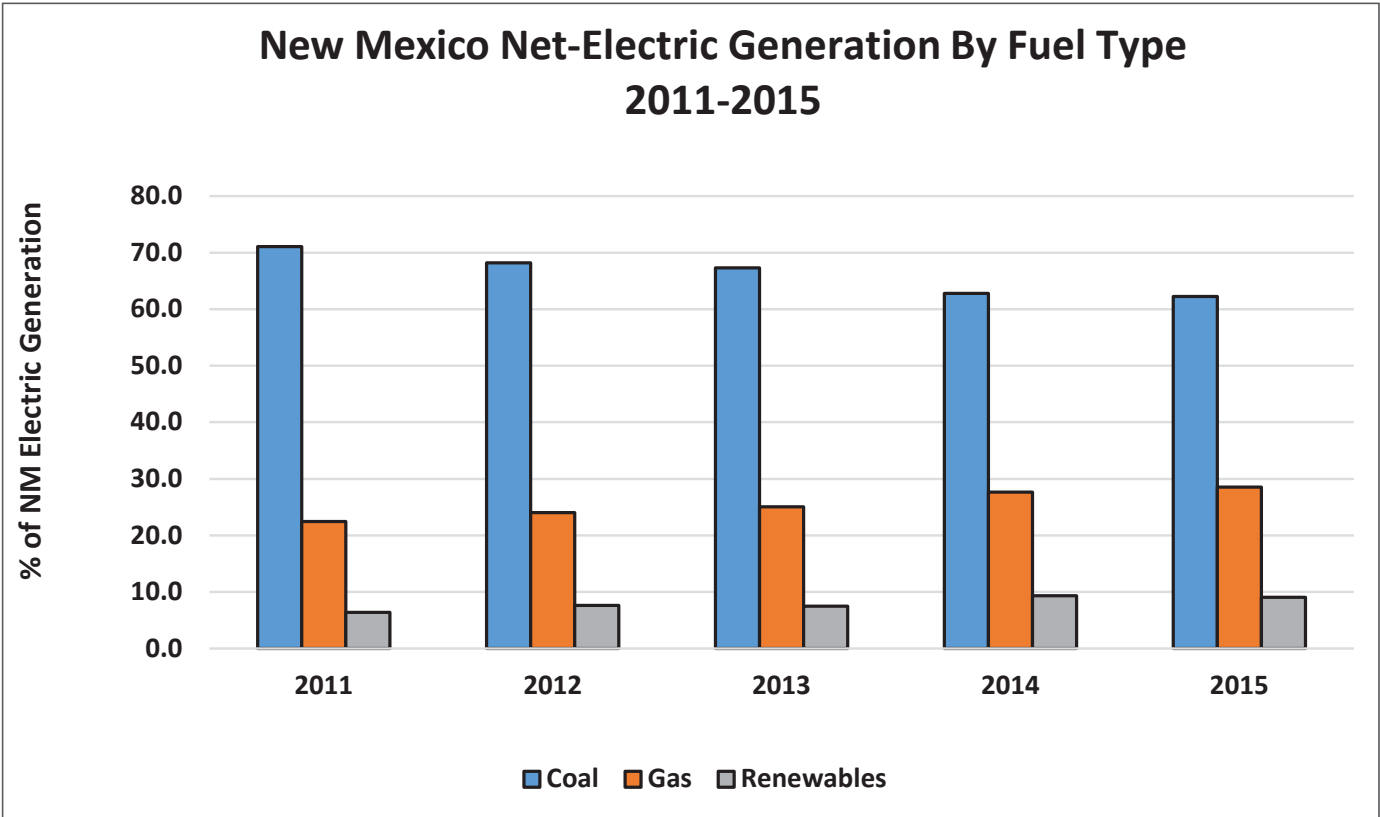
*For the national rank category, number 1 uses the most energy per capita (number 51 would be the lowest per capita energy user, as rankings include the District of Columbia).

Energy Production - The figure below depicts the New Mexico electric generating capacity by fuel type as of 2015. Renewable resources are further broken out in the following section.



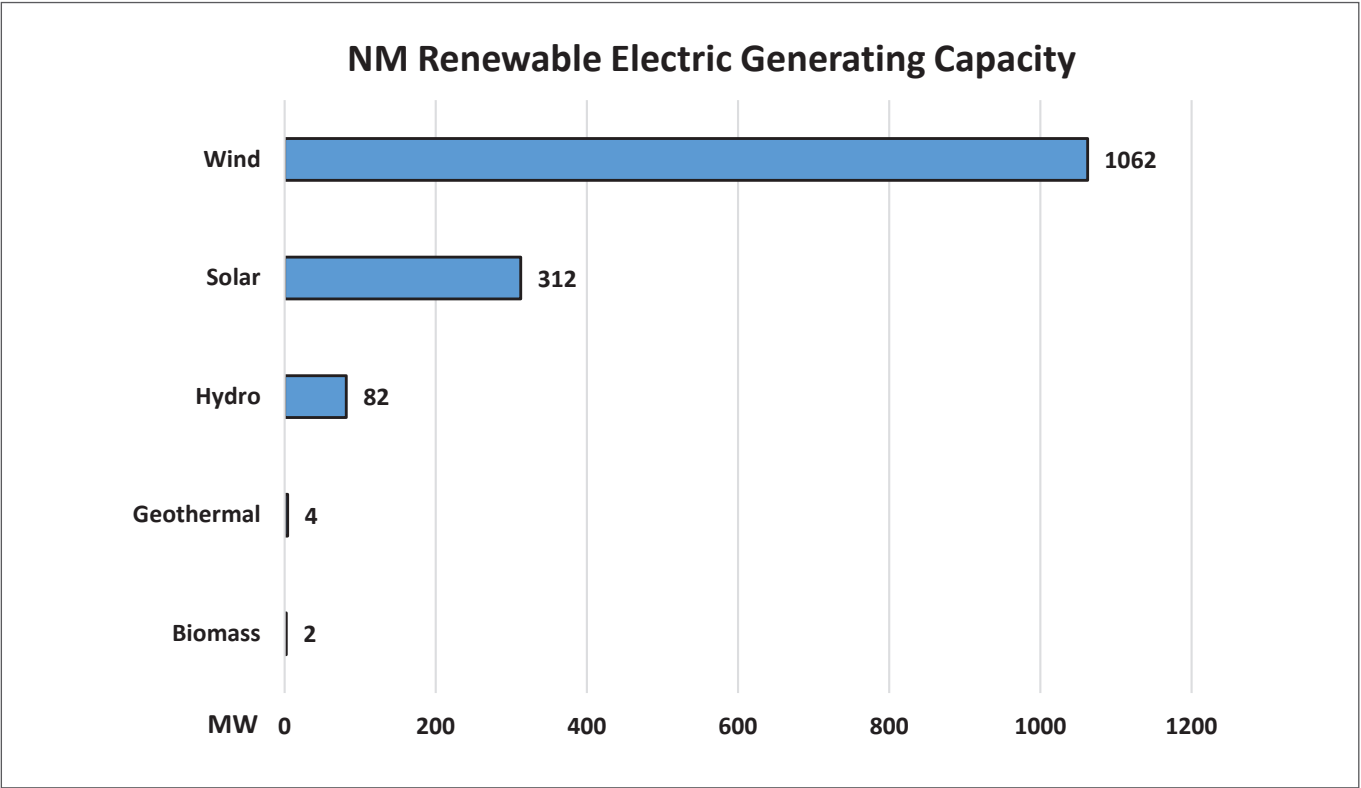
Installed nameplate capacity of electric generation in New Mexico by primary fuel type (2015). [Source: DOE Energy Information Administration]

The following figure shows the change in energy source consumption (i.e. fuel mix) that has occurred in the electric power sector over the past five years. In 2015, net electric generation in New Mexico from each major fuel type was 62 percent coal, 29 percent natural gas, and 9 percent renewable energy.



Renewable Energy

Of the total renewable electricity produced in 2015, 73 percent was from wind, 21 percent was from solar, and 6 percent was from hydroelectric power. In 2014, the first commercial geothermal electricity facility opened near Lordsburg in the state’s boot heel, adding 4 MW of baseload geothermal capacity to the state’s renewable electricity mix, with another 6 MW planned. According to the U.S. Energy Information Administration, New Mexico, in 2015, ranked 43rd in the nation in total renewable energy production, while maintaining its 6th place ranking in utility-scale electricity generation from solar energy.



Installed nameplate capacity of renewable electric generation in New Mexico by primary source type (2015).
[Source: DOE Energy Information Administration]

According to Lawrence Berkeley National Laboratory, New Mexico utilities met their overall Renewable Portfolio Standard (RPS) in 2015. The 2015 RPS for Investor Owned Utilities requires that 15 percent of all non-exempt retail electricity sales be generated from renewable sources. The requirement for Rural Electric Cooperatives is 5 percent and Municipal Utilities are exempt from the RPS requirements. However, the RPS regulations include a diversity targets which, outside of the 30 percent wind energy target, was not met in 2015. The table below shows RPS compliance data for the last five years of available data

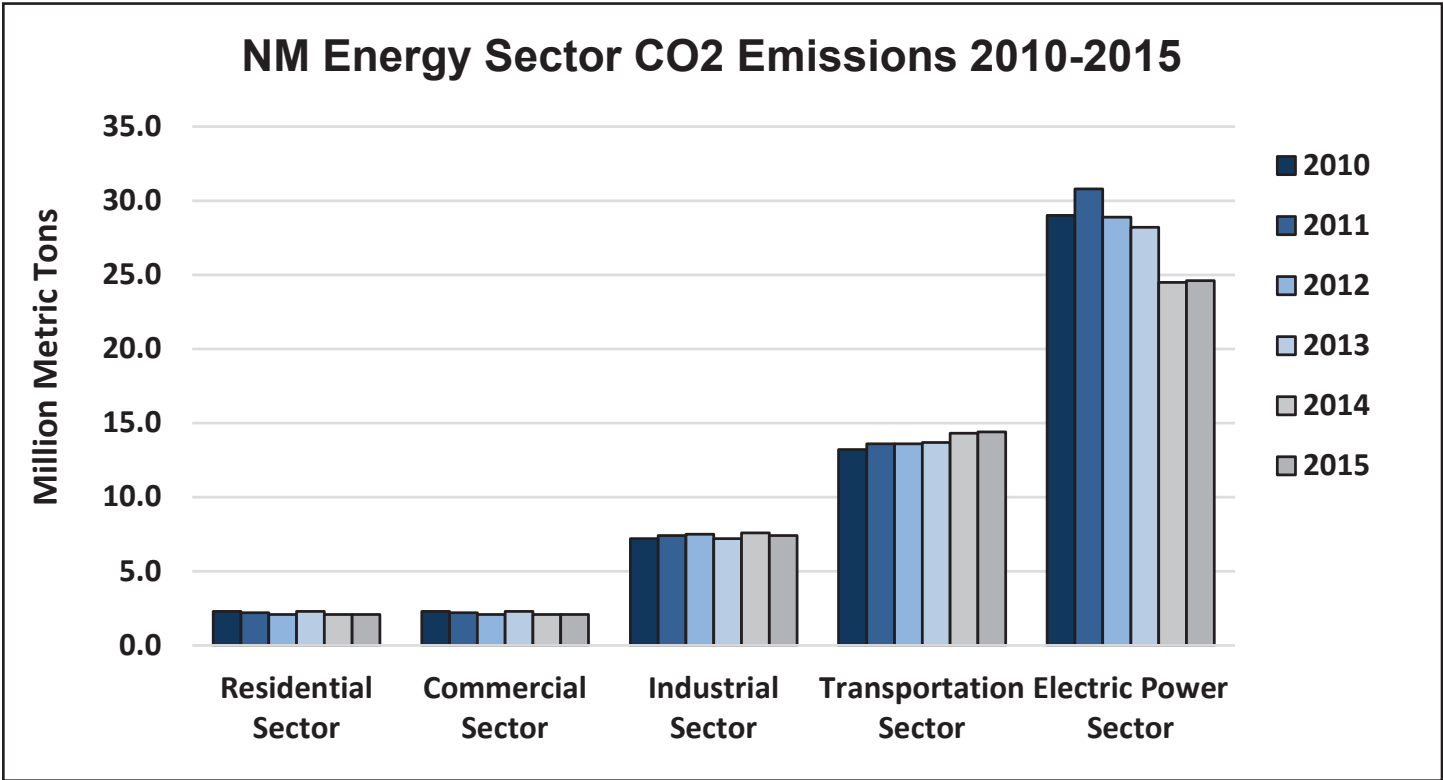
	Reported RPS Obligation (MWh)				
	2011	2012	2013	2014	2015
Total RPS	1,424,826	1,505,981	1,504,299	1,492,148	1,886,581
Wind Carve-Out (30%)	284,965	434,788	451,290	447,644	565,974
Solar Carve-Out (20%)	284,965	301,197	300,860	298,430	377,316
Biomass/Other Carve Out (5%)	142,483	83,802	75,215	74,607	94,329
Distributed Generation Carve Out	21,392	22,590	22,564	22,382	56,597
RPS Achievement (% of RPS Obligations)					
Total RPS	84%	90%	89%	92%	100%
Wind	100%	100%	100%	100%	100%
Solar	50%	67%	77%	100%	99%
Biomass/Other	7%	20%	0%	15%	17%
DG	84%	90%	89%	92%	93%

RPS Compliance Summary for New Mexico [Source: Lawrence Berkeley National Laboratory]

Electricity and Water Use - The electricity sector uses large quantities of water for cooling of thermal (coal and natural gas) and nuclear generation facilities. While there are no nuclear generating facilities in New Mexico, Public Service Company of New Mexico and El Paso Electric own and purchase power from Palo Verde, a nuclear generating station in Arizona.

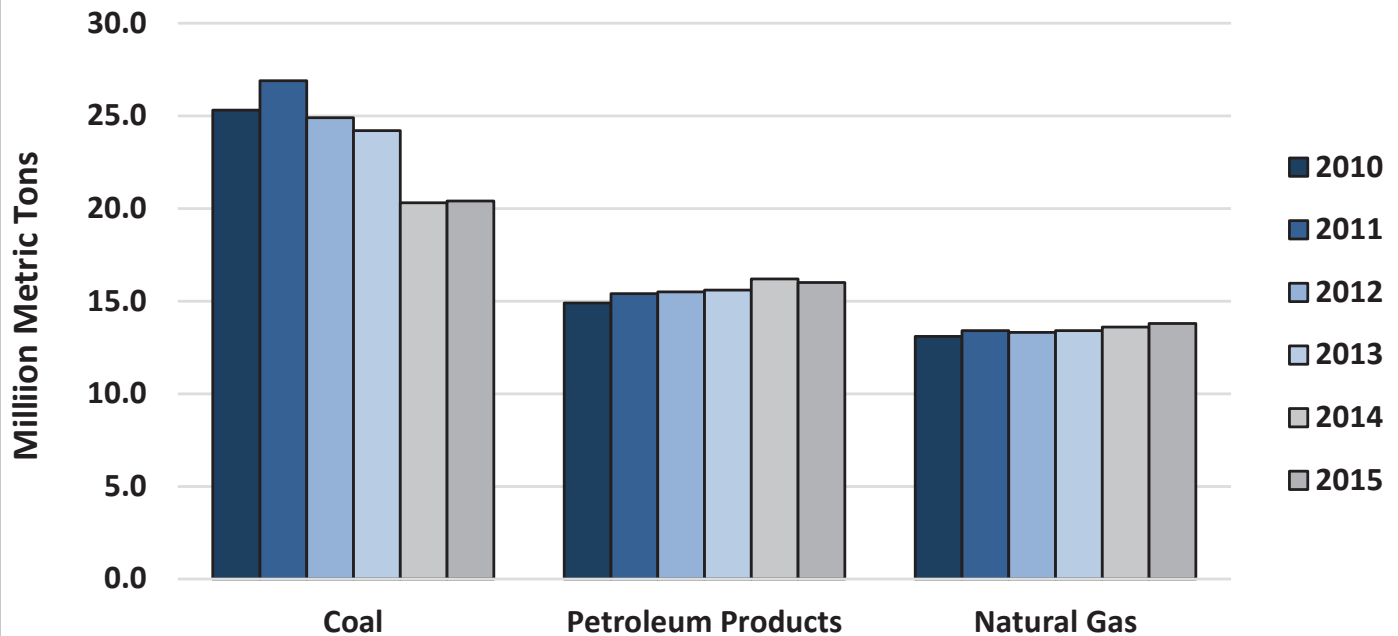
Electricity and Water Use - The electricity sector uses large quantities of water for cooling of thermal (coal and natural gas) and nuclear generation facilities. While there are no nuclear generating facilities in New Mexico, Public Service Company of New Mexico and El Paso Electric own and purchase power from Palo Verde, a nuclear generating station in Arizona. While most solar and all current wind technologies do not require any water for operation, other traditional power generating facilities (e.g., coal, gas, biomass or nuclear), geothermal and concentrated solar facilities that generate power by producing steam to turn a steam turbine generator use water at varying rates. The bulk of a steam plant's water consumption is used to condense the steam in the steam cycle and to cool mechanical and electrical equipment. The rate of water usage, on a gallon per megawatt-hour basis, depends on many variables including available water quality, water treatment systems and environmental discharge limits where applicable. Peaking plants that operate only gas/oil turbine engines to generate power directly through the mechanical motion of the engine consume less water due to the absence of the steam cycle. In addition, facilities (steam cycle or no steam cycle) equipped with "dry cooling" or hybrid cooling use the least water of all, but these systems can compromise plant efficiency.

Carbon Dioxide Emissions - In October of 2017, the U.S. Environmental Protection Agency (EPA) signed a measure to repeal the Clean Power Plan. Despite the repeal of the Clean Power plan, carbon dioxide (CO2) emissions related to energy production have fallen since 2013. The chart below shows the CO2 emissions for the state. As the chart below shows, CO2 emissions have increased slightly or stayed relatively the same for all sectors except for electric power.



Source: DOE Energy Information Administration

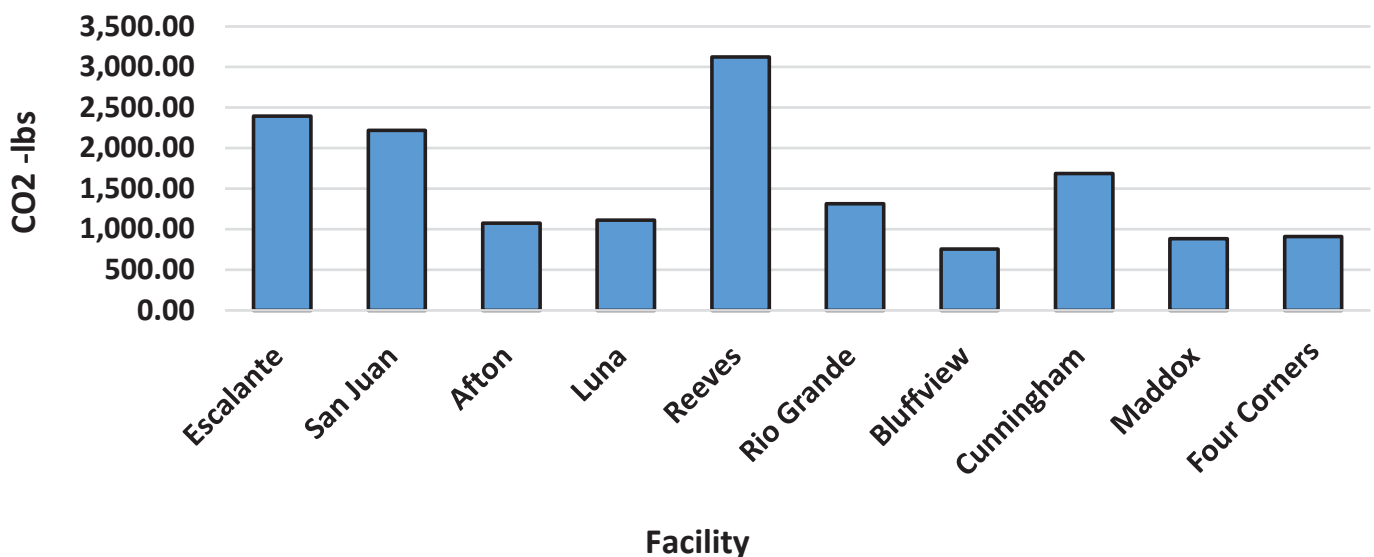
NM Fuel Sector CO2 Emissions 2010-2015



Source: DOE Energy Information Administration

New Mexico has three coal-fired power plants and 18 natural gas-fired power plants. Of the two fuel types, the state has seen some reduction in CO2 emissions from the coal-fired power plants over the last five (5) years and relatively little change in CO2 emissions for the natural gas facilities. The two charts below show a comparison of the CO2 emissions from 2010-2015 for coal and natural gas and the 2016 CO2 emissions from the 11 highest CO2 emitting power plants in the state. The emissions for the coal-fired power plants are shown in orange and the natural-gas power plants are in blue.

NM Generating Facilities Emissions (lbs/MW-hr CO2)



Source: EPA Facility Level Information on Greenhouse Gases Tool (flight)

Energy, Minerals & Natural Resources Department

Data and Statistics: Collected and published pursuant to the authority of the
New Mexico Energy, Minerals and Natural Resources Department:
NMSA 1978, Sections:

69-5-7 (1933, as amended through 2007)
69-11-1 (1933, as amended through 1989)
69-11-2 (1933, as amended through 1989)
69-11-3 (1933, as amended through 1989)
69-25A-10 (1979)
69-26-1 (1933, as amended through 1989)
69-26-2 (1933, as amended through 1989)
69-26-3 (1933, as amended through 1989)
70-2-12 (1978, as amended through 2004)

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Acknowledgments:

Teams make it happen at EMNRD—thank you to Lauren Aguilar, Graphic Designer; Division authors and editors Scott Dawson, Jane Tabor, Christina Cordova, Gail Cooke and Wendy Mason; and to the private and public organizations and individuals who contributed to this document.

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