

2016 Annual Report

New Mexico Energy, Minerals & Natural Resources Department



Ken McQueen
Cabinet Secretary Designate

Matthias Sayer
Deputy Secretary

Bill Brancard
General Counsel

Beth Wojahn
Communications Director

Ron Cruz, Director
Administrative Services Division

Stephanie Griego, Director
Human Resources

Joe Montaña
Chief Information Officer

Louise Martinez, Director
Energy Conservation &
Management Division

Donald Griego, Acting Director
Forestry Division

Fernando Martinez, Director
Mining and Minerals Division

David Catanach, 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 the energy and natural resources areas for which the department is responsible.





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Cabinet Secretary
Designate
Ken McQueen



Governor
Susana Martinez

Message from Cabinet Secretary Designate Ken McQueen

Energy, Minerals & Natural Resources Department

Although I am new to the Energy, Minerals and Natural Resources Department (EMNRD), it is already evident to me we have dedicated state employees committed to our vision: a New Mexico where we work collaboratively on energy and natural resource management for a sustainable environmental and economic future.

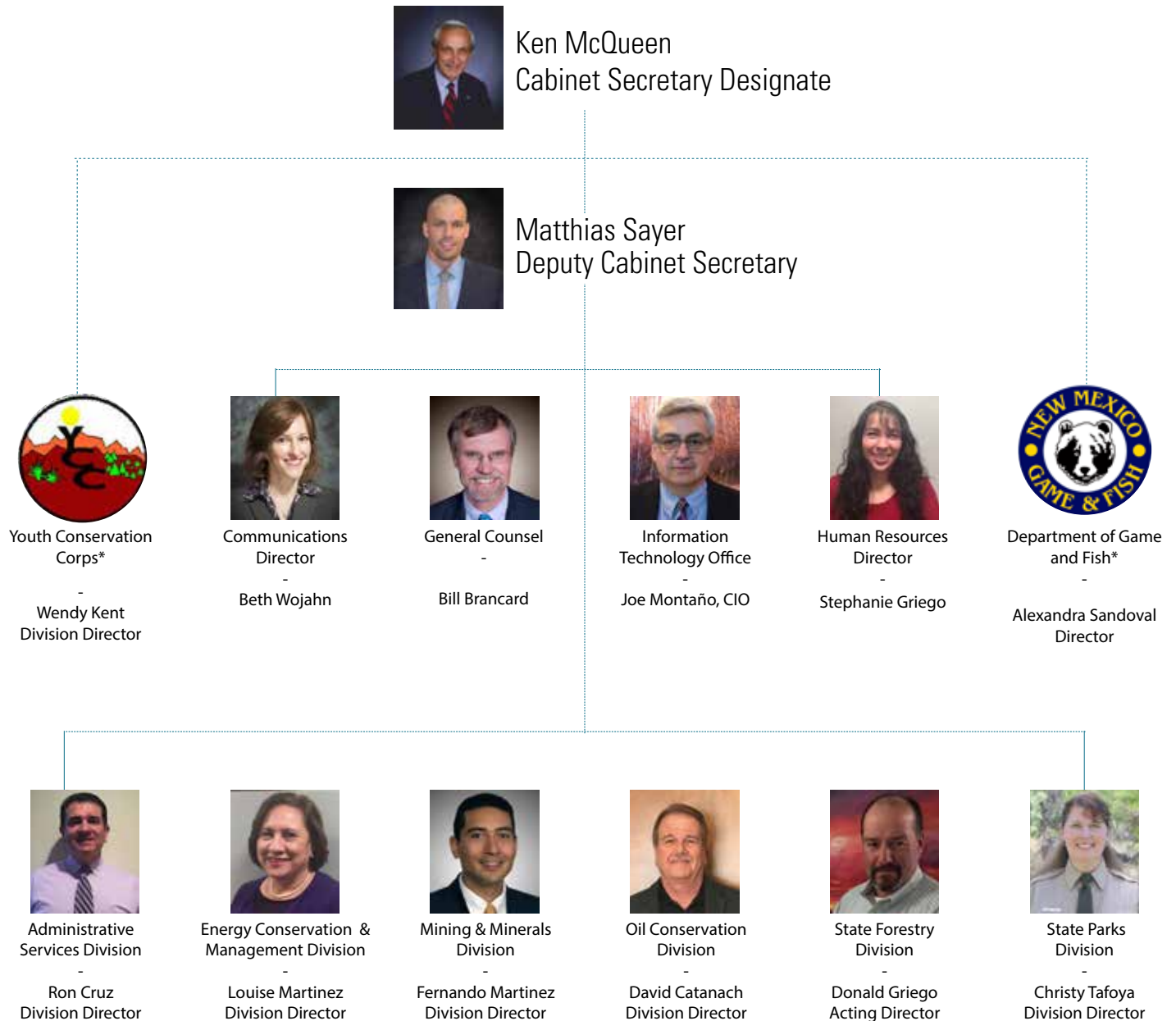
I am excited to lead a great team and look forward to the many effective initiatives we will accomplish together.

Below are a few Department highlights positively impacting the citizens of New Mexico:

- Through our Energy Conservation and Management Division, New Mexico was selected to receive a \$300,000 competitive grant from the US Department of Energy to implement the Energy Roadmap project. This project will initiate the implementation phase of New Mexico's Energy Policy and Implementation Plan, with the goal of bringing together energy stakeholders for informed discussion about New Mexico's energy production, distribution, efficiency and usage.
- The Oil Conservation Division (OCD) has instituted a program that will ensure wells are not plugged and abandoned prematurely. Operators can now apply to shut-in marginal producing wells for up to 4 years during times of low oil and gas prices. When prices recover, these wells will be available for production. Operators benefiting from this innovative program still must maintain well integrity on their shut-in wells and remain in compliance with all OCD laws and rules.
- The State Forestry Division, with the help of funding appropriated during Fiscal Year 2017, and in collaboration with federal partners and the Department of Game and Fish, have developed 20 projects statewide which will continue to improve forest health, protect communities at risk, improve wildlife habitat and enhance the quality of our precious watersheds.
- New Mexico State Parks saw a million more visitors in FY16 and finalized key capital projects that enhance visitors' experiences - a new visitor center at Navajo Lake State Park, a new campground and facilities at Oasis State Park near Portales, and improvements to the facilities and grounds at Vietnam Veterans Memorial State Park.
- From the Mining and Minerals Division, two significant uranium mine cleanup and safeguarding projects on Bureau of Land Management land near Grants were completed this year. The abandoned Mine Land Program completed its Grants Uranium Phase III project to consolidate uranium mine waste rock in the Poison Canyon area northwest of Grants into an onsite repository. The Spencer Uranium Mine near Grants was also reclaimed.

On behalf of my predecessors Dave Martin and Tony Delfin, I am pleased to present the 2016 Energy, Minerals and Natural Resources Annual Report which includes our latest available statistics and data.

EMNRD Organizational Chart



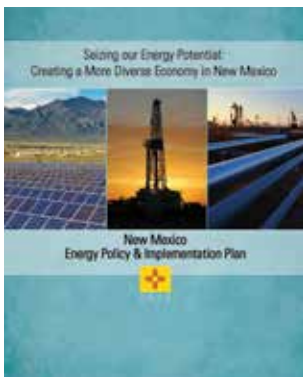
**Administratively Attached*



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 (including the Department of Game and Fish and the Youth Conservation Corps which are administratively attached to EMNRD). It establishes department policies and provides legal, programmatic, and public outreach and marketing direction to the divisions.



New Mexico Energy Policy and Implementation Plan:

Developed by Governor Martinez and Cabinet Secretary David Martin, the [State Energy Policy & Implementation Plan](#), 'Seizing our Energy Potential: Creating a More Diverse Economy in New Mexico', was unveiled in 2015. This is New Mexico's first comprehensive energy policy and plan in nearly 25 years.

It will ensure the state's expansion as an energy leader while continuing to promote production from all sources as a means of creating jobs, diversifying a key sector of our economy and supporting our nation's efforts to achieve energy independence.

In 2016, New Mexico was selected to receive a \$300,000 competitive grant from the US Department of Energy to implement the Energy Roadmap project, the implementation phase of the plan.

Rio Grande Trail Commission:

In 2016, the Rio Grande Trail Commission, led by the Energy, Minerals and Natural Resources Department (EMNRD), met four times, once each in Las Cruces, Socorro, Corrales and Santa Fe. The Commission is charged with developing a trail which will run the length of the state from Colorado to Texas - nearly 500 miles - minimizing environmental impacts and preserving sensitive habitat while providing visitors with unique recreational and viewing opportunities. The Commission makes recommendations



to the legislature as needed and reports annually to the governor and appropriate interim committees. State Parks Director Christy Tafoya served as Commission Chair after Secretary David Martin retired.

An additional 1.4 miles of Rio Grande Trail (RGT) was designated in 2016 by identifying the entire length of the La Llorona Trail near Las Cruces as a part of the RGT. The total length of designated trail is now nearly 26 miles. Finally, EMNRD, on behalf of the RGT Commission, was awarded \$427,000 in federal Recreational Trails Program funds that will be used to hire a contractor to prepare a statewide design and implementation plan for the trail over the next 1-2 years.

Communications/Public Information Office:

The Communications/Public Information Office manages the dissemination of information to the general public, media organizations and other inquiring entities. It coordinates and synthesizes information from EMNRD'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 EMNRD's internal communications, including intranet, newsletters, memos, award ceremonies, and other department-wide events.

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 order, and deposit, 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.

Office of General Counsel:

The Office of General Counsel manages all legal affairs for the EMNRD. 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 contract documents review.

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.

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 EMNRD's computer systems, network telecommunications infrastructure, and application development needs, using the latest technology for Windows and Web applications on the intranet and internet.



Oil Conservation Division



New Mexico State Parks Division



New Mexico Forestry Division



Mining and Minerals Division



Energy Conservation and Management Division

Oil Conservation Division



David Catanach
Division Director

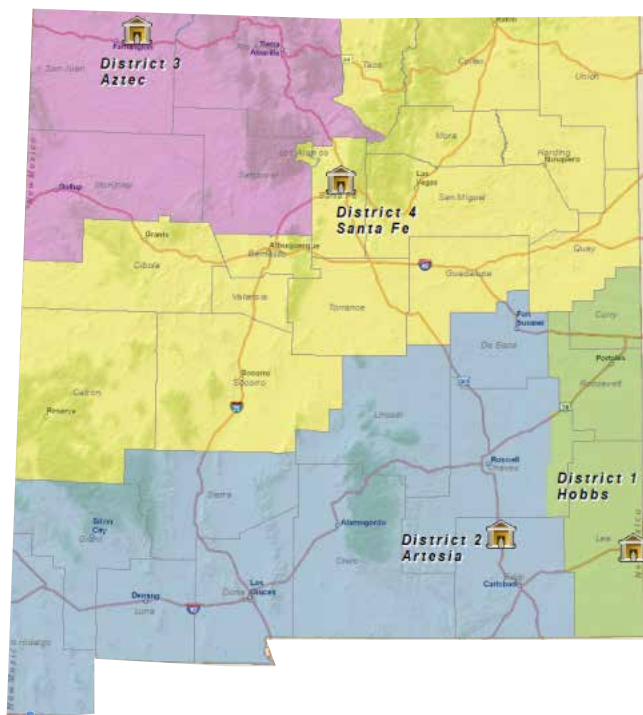
Oil Conservation Division



MISSION:

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

OVERVIEW: 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

FIVE 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 **Compliance Bureau** ensures that 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 **Administrative Bureau** is responsible for tracking statistics and oversees the division's budget and procurement needs. It provides administrative support, manages the plugging bond program, and maintains records of cases and orders.

RULEMAKING:

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

OIL CONSERVATION COMMISSION:

The commission has three members - a representative from the State Land Office, a commissioner designated by the EMNRD cabinet secretary, and the OCD Division Director serves as Chair. The commission promulgate rules governing oil and gas production in New Mexico, conducts hearings on matters of significant interest, and hears appeals of OCD examiners' decisions. The OCC emphasizes the commitment to promulgate regulations based on science by including university researchers in work groups for rule development and amendment recommendation.

PERFORMANCE:

Inspection & Plugging:

In FY16, OCD exceeded its performance target (39,000) for the number of inspections performed (49,624), and exceeded the FY15 inspection count (47,593) by 2,031. Moreover, many Underground Injection Control (UIC) inspections were conducted in the final quarter, meeting the goals set by the federal UIC program.

In addition, OCD plugged 36 wells in FY16, which was 20 percent above its performance target and an increase to the number of wells plugged in 2015 (31). Several compliance cases were brought to hearing in FY16. Currently, there is a waiting list of over 200 wells available for OCD to plug using Oil Reclamation Fund monies.

Applications for Permit to Drill (“APDs”):

In FY16, OCD approved 85 percent of all APDs within 10 business days of receipt. This greatly exceeded the performance target of approving 60 percent of APDs within the same timeline. Approving APDs in an efficient manner enables industry to plan and drill wells on schedule, thereby reducing additional rig expense and time spent while waiting on regulatory approval.

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 drilling and production stalls. In FY16, the Division processed 64 percent of all administrative applications within 30 days of their receipt. In addition, the overall average turnaround time for all administrative orders issued was 33 days.

Carlsbad Brine Well Cavern:

Brine wells are UIC Class III injection wells that operate by injecting freshwater into salt formations to produce saturated brine used for oil and gas operations. OCD has been involved in the characterization and monitoring of a large and unstable brine well cavern which has threatened a developed portion of southern Carlsbad since the spring of 2009. The responsible party in Carlsbad filed for bankruptcy shortly after the situation became known, and due to a lack of funds, failed to monitor or remediate the cavern. Using monies from the Reclamation Fund, OCD has installed an automated ground movement monitoring system which is integrated directly into the local emergency response infrastructure. OCD also oversaw an effort to characterize the cavern using state-of-the-art geophysical techniques.

Significant effort has been made to ensure emergency response groups maintain updated, planned responses to mitigate a cavern collapse. In addition, OCD has approached the Environmental Protection Agency with hope of remediating the cavern before a collapse occurs.

The brine well's monitoring system was upgraded and all historic data was independently reviewed. OCD installed a micro-seismic monitoring system and advanced multiple exploratory borings in the area. A feasibility study was completed in July 2014 providing possible solutions and estimated implementation. To date, state expenditures for outside services on the project exceed \$5.3 million, of which \$1.6 million was reimbursed by the bankruptcy estate. Recurring costs for continued monitoring, analysis and



Specialized drilling equipment being used to re-enter the I&W brine cavern in Carlsbad.

system maintenance are approximately \$360,000 per year. In addition to conducting data analysis and monitoring, Division staff provide technical guidance to state and local entities involved in the project as well as regular updates to New Mexico's executive and legislative branches.

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. OCD teamed up with the Los Alamos National Laboratory and other stakeholders to explore the reuse of produced water for other non-oil and gas beneficial purposes.

OCD posted a Public Notice on its 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. These include makeup water, fracturing fluid or drilling mud at a permitted drilling, production or plugging operation.



NM Produced Water Re-use Pit.

PARTNERSHIPS AND COLLABORATION:

STATE LAND OFFICE (SLO):

OCD and the SLO finalized a Memorandum of Understanding (MOU) for elimination or reduced right of entry; water well easements; and borrow dirt fees associated with the OCD's ongoing well plugging, reclamation and re-vegetation activities on State Trust Lands. The MOU expedites the OCD's ability to clean up well sites.



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, analyze and streamline issues that impact the field and district offices. The quarterly meetings have given both agencies opportunities to work jointly on current issues that need to be improved upon. 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 division to increase the efficiency, transparency and availability of public information. The division's microfilm store of historical case file documents, dating from 1930s to the present, were converted into PDF documents and made publicly available. An indexing search capability was added to the image search website, enabling the public to search the entire repository. Finally, the division retired the usage of an obsolete ONGARD mainframe system, thus improving data entry, validation, and efficiency.



NEW GIS (GEOGRAPHIC INFORMATION SYSTEM):

- OCD has developed a GIS module
- GIS module is now publicly available on OCD Online
- The module will contain a well layer linked to OCD Online, land ownership and spacing unit layers. Additional layers are in development.



OCD RECENT ACTIONS:

- Amended Financial Assurance Rule to allow operators to post a blanket financial assurance for wells held in Temporary Abandonment status
- Amended Rule 34 for Recycling of Produced Water-operators are now utilizing recycling facilities and containments
- Amended Rule 36 (Surface Waste Management Facility) to revise and streamline procedures for the submission and review of surface waste management facilities applications
- Established procedures within the Engineering Bureau to speed up the processing of administrative applications
- Amended Rule 5.9 to streamline compliance notification to operators
- Developed a bonding compliance report that led to the collection of more than \$700,000 in required bonding
- Identified land and began design development 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
- Since that time, horizontal drilling techniques and operator business practices have greatly advanced
- OCD needs to keep pace with changing technology
- Horizontal workgroup is currently working on revisions to the rule, anticipating a rule change proposal July 2017

Rule 19.15.29 Release Notification

Rule 19.15.30 Remediation

- Oilfield spill and leak delineation and remediation standards are currently contained within OCD guideline document
- Industry and the OCD both agree that for more efficiency and predictability, standards should be adopted by rule
- Spill and leak workgroup is developing a rule that contains standards to which companies must characterize and remediate leaks and spills, anticipating a rule change proposal by July 2017

Special Rules and Regulations for the Basin-Mancos Gas Pool: Order No. R-12984

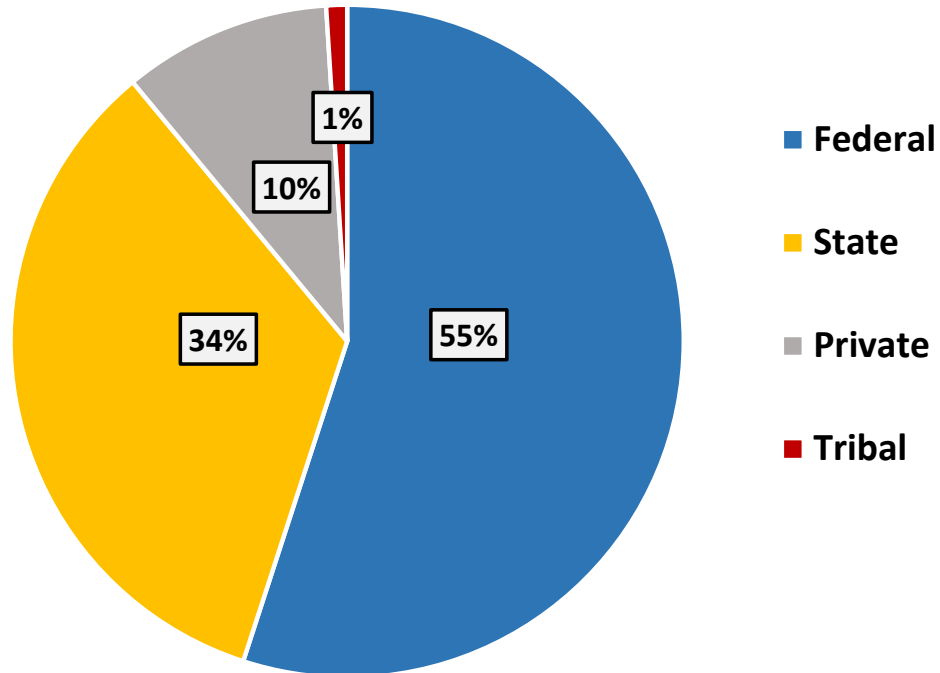
- The special rules for the Basin-Mancos Gas Pool were established in 2008 by Order R-12984
- Subsequent development indicates this pool, or a portion thereof, should be reclassified as an oil pool
- OCD/Industry workgroup met to discuss possible changes to the rule
- OCD circulated two possible draft rule revisions to industry and other stakeholders
- OCD is currently reviewing written comments to the draft rule revisions submitted by the industry, State Land Office and Bureau of Land Management



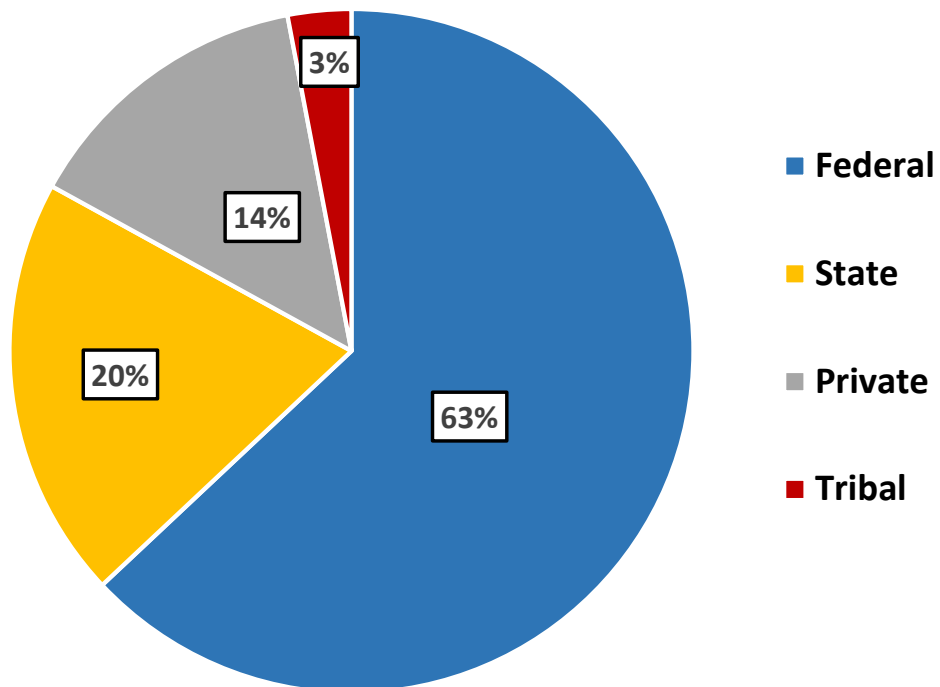
OIL CONSERVATION DIVISION GOALS:

- 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 apolitical decisions based on sound science
- 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 provide 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

2016 Oil Production by Land Type



2016 Gas Production by Land Type



Oil Production by Calendar Year 2012 - 2016

Year	SE Crude	SE Condensate	NW Crude	NW Condensate	Total Oil
2012	80,116,726	2,877,173	1,105,955	1,448,748	85,548,602
2013	96,267,363	2,557,735	2,075,850	1,501,077	102,402,025
2014	115,052,619	2,596,274	4,789,919	1,630,049	124,068,861
2015	135,035,552	3,191,406	7,152,372	2,015,996	147,395,326
2016	108,600,103	3,902,642	4,499,980	1,318,312	118,321,037

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

Source: Oil Conservation Division as of December 16, 2016

2016 Oil and condensate production on all tables is up to reporting period for October, 2016

Production is due 45 days after the close of the production month, so recent month(s) are not complete

Oil and condensate is reported in bbls

Gas Production by Calendar Year 2012-2016

Year	SE Casinghead	SE Dry Gas	NW Casinghead	NW Dry Gas	NE Dry Gas	Total Natural Gas
2012	281,806,792	152,365,956	10,760,635	780,920,013	27,012,215	1,252,865,611
2013	335,956,982	129,800,637	13,362,322	722,486,291	25,397,912	1,227,004,144
2014	386,094,802	120,302,775	25,453,629	686,172,402	23,787,208	1,241,810,816
2015	447,699,596	112,311,570	43,676,035	646,009,458	22,448,308	1,272,144,967
2016	454,705,154	103,533,104	35,843,561	549,714,918	19,339,639	1,163,136,376

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

Source: Oil Conservation Division as of December 16, 2016

Gas is reported in Mcf

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

Total Oil and Gas Production by Calendar Year¹

Year	Oil ²	Gas ³	BOE ⁴
2012	85,548,602	1,612,157,343	354,241,493
2013	102,402,025	1,550,816,143	360,871,382
2014	124,068,861	1,546,445,379	381,809,758
2015	147,395,326	1,553,595,445	406,327,900
2016	118,321,037	1,250,895,885	326,803,685

¹2016 does not include November or December Production - Source: OCD as of December 16, 2016

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

2016 Oil and Gas Production by County

Rank	Oil (Barrels)	Rank	Gas (MCF)
1. Lea	59,467,936	1. Eddy	264,179,442
2. Eddy	52,030,275	2. San Juan	248,602,962
3. San Juan	2,479,529	3. Lea	213,631,265
4. Rio Arriba	1,319,526	4. Rio Arriba	195,676,187
5. Sandoval	923,725	5. Colfax	14,082,997
6. Chaves	663,022	6. Chaves	11,476,505
7. Roosevelt	125,361	7. Sandoval	8,246,133
8. McKinley	9,629	8. Roosevelt	1,010,683

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

Source: Oil Conservation Division as of December 16, 2016

2016 Oil and condensate production is up to reporting period for November, 2016

Production is due 45 days after the close of the production month, so recent month(s) are not complete.

Oil is reported in bbls.

Gas is reported in Mcf

Well Inspections by Fiscal Year 2012 -2016

	<u>2016</u>	<u>2015</u>	<u>2014</u>	<u>2013</u>	<u>2012</u>
Quarter 1	12,431	15,420	8,782	8,235	8,005
Quarter 2	10,245	9,350	7,848	8,486	8,754
Quarter 3	13,379	9,477	8,327	8,597	8,804
Quarter 4	13,569	13,346	10,772	11,584	8,713
Total	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 16, 2016

Wells Drilled and Completed by Year & Well Type 2007 - 2016

Year	Gas	Oil	Other	Total
2007	1,497	856	59	2,412
2008	1,232	1,124	111	2,467
2009	870	904	119	1,893
2010	516	1,208	119	1,843
2011	514	1,411	131	2,056
2012	387	1,389	92	1,868
2013	244	1,314	85	1,643
2014	87	1,304	71	1,462
2015	82	815	42	939
2016	53	344	17	414

"Other" includes saltwater disposal wells, carbon dioxide, and injection wells. 2015 count as of 12/19/2016 - not complete for the year

Forestry Division



Donald Griego
Acting Director

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 and assists New Mexico's communities by evaluating those most at risk to wildfire, disease, and insect infestation by developing appropriate management programs and implementing mitigation projects.

Forestry staff provides technical assistance to landowners for developing sustainable forests that enhance quality of life by providing tree care training, distributing low-cost seedlings, developing resource management 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 mitigation, and the assistance in the continued development of the forest products industry (e.g., forest harvesting, landscaping, construction, woody biomass) that uses land treatment byproducts.

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 (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.



LEGISLATION:

During the 2016 Legislative Session, Governor Martinez signed Senate Bill 128 (Laws of 2016, Chapter 66), authorizing New Mexico to legally join and become a member state of the Great Plains Interstate Compact Agreement for the prevention and control of wildfires. Governor Martinez also signed Senate Bill 110 (Laws of 2016, Chapter 65), permitting the Energy, Minerals and Natural Resources Department (EMNRD) to use the Forest Land Protection Fund to deposit and voucher revenue collected from the management of forest and watershed projects, and to further enforce and administer the Forest Conservation Act.

ACCOMPLISHMENTS:

OVERVIEW:

The 2016 fire season in New Mexico had the potential to be extremely active, but moderate weather 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 fires burned along the west coast and in the southeast. Forestry provided mobilized fire equipment and dozens of firefighters to several states to aid in their responses 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 2016 will be recorded as having stable weather, New Mexico's period of extended drought continued to impact forests and watersheds. These lands will experience the detrimental effects of drought for many years in the form of disease, insect infestation, and wildfire.



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; reforestations; crop and livestock protection; energy cost savings; and to improve or create wildlife

habitat. In 2016, the Conservation Seedling Program distributed 82,799 seedlings through sales during the New Mexico State Fair, educational donations, and the spring and fall distribution cycles.

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 69 assistance requests, conducting 13 site visits, and identifying 17 insect and pathogen samples. The Forest Health Specialist also conducted three weeks of aerial detection survey (ADS) of state and private forested lands. Critically, the Forest Health Specialist also administers the Forest Health Initiative (FHI) Program. This year 12 new projects were batched, consisting of 11 thinning treatments totaling 158.5 acres and one management plan encompassing 766 acres.

ENDANGERED PLANTS PROGRAM:

Forestry's Endangered Plant Program (EPP) gathers information to develop conservation measures necessary for the species' survival. EPP also promotes the conservation of listed endangered plant species through research, inventorying and monitoring, law enforcement, habitat maintenance, education, and propagation. The Endangered Plant Program 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 2016.

In 2016, recurring endangered plant projects included population trend monitoring and status evaluations of Lee's pincushion cactus, Mancos milkvetch, Santa Fe cholla, Mesa Verde cactus, Knowlton's cactus, Pecos sunflower, and the Holy Ghost ipomopsis. Rare plant surveys were completed for Holy

Ghost ipomopsis in the Santa Fe and Carson National forests, concentrating on the Pecos Wilderness and areas burned during the 2013 Tres Lagunas Fire.

The EPP Manager completed a rare plant inventory on the 47,000-acre Ignacio Chavez Special Management Area for the BLM Rio Puerco District. The manager also coordinated efforts between agencies and stakeholders on initiatives such as the Santa Rosa wetlands' restoration and the New Mexico Rare Plant Conservation Strategy, which will be integral parts of the updated Forest Action Plan.



Pecos sunflower



Knowlton's cactus



Holy Ghost ipomopsis

FIRE MANAGEMENT:

During FY16, 463 fires burned approximately 78,582 acres of state and private lands. Of these, approximately 32 percent were due to lightning and 68 percent were human-caused. The most significant fire of 2016 was the multijurisdictional Dog Head Fire in Bernalillo and Tarrant counties that burned approximately 17,900 acres. Due to its severe impact on the area's communities, Governor Susana Martinez declared an official State of Emergency during the Dog Head Fire.

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. CWPP participants receive update requirement notification letters from the Task Force. This year, the Task Force reviewed and approved eight plans. Additionally, 11 communities were added to the list of those at risk to wildfire, making a total of 699 such communities identified in 2016.

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 "Ready, Set, Go!," "Fire Adapted Communities," and

“Firewise Communities USA,” the flagship of these educational endeavors. It is a mitigation recognition program based and operated within a community. Firewise Communities USA focuses on residents, businesses, and elected bodies working together to address the issue of wildfire on a building and landscape level. In 2016, New Mexico added one new Firewise community, bringing the statewide total to 27. 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.

Last year’s FLP application to protect more than 2,600 acres that include the Brazos Cliffs in Chama ranked 18 out of 34 national applications; the 2017 Farm Bill will determine the project’s funding. In 2016, the landowners purchased an estimated 3,700 acres to expand the parcel’s size. A new FLP application was submitted to conserve the approximately 6,300 total acres with 2018 funding.

In celebration of the Forest Legacy Program’s 25th anniversary, the USFS offered select states a \$10,000 grant. Using these funds, New Mexico partnered with Arizona to create a video that highlighted successful legacy projects in the southwest. This video is used to promote the program to the public.

FOREST AND WATERSHED HEALTH OFFICE:

The Forest and Watershed Health Office (FWHO) had another productive year in 2016. Long-term collaborations demonstrated their value as new, promising efforts began.

Since Governor 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. A portion of these funds represent match with an additional \$9.476 million in federal Pittman-Robertson funds made available to Forestry through the New Mexico Department of Game and Fish. These combined monies funded 38 separate projects covering 14,697 acres, or approximately 69 percent of the planned acreage. Forestry has overseen treatments in 19 high-priority watersheds to date. For the coming year, 19 more WRI projects are planned.



Forestry is a leading member of the Greater Santa Fe Fireshed Coalition. This collaboration includes state, federal, local, and tribal governments as well as representatives from private industries and non-governmental organizations. The Coalition has been cited as a model for collaboratives nationwide in demonstrating the three tenets of the National Cohesive Wildland Fire Management Strategy—resilient landscapes, fire-adapted communities, and effective response. The partners collaboratively develop science-based strategies and projects to protect forestlands in the southern Sangre de Cristo mountains, east of the greater Santa Fe municipal area. Termed “the Fireshed”, land within this area supplies critical water, home sites, and recreation for residents and visitors.

Forestry awarded \$300,000 to the Santa Fe County Fire Department to add 160 acres to fire resiliency treatments underway in Aztec Springs. The Division also provided \$305,000 to the Santa Fe-Pojoaque Soil and Water Conservation District for cost-share programs to assist private landowners’ thinning projects, and was recently awarded another \$293,000 federal competitive grant to continue that work. These projects expand Forestry’s treatments in Hyde Memorial State Park and nearby public and private lands

Additional funding from other sources were allocated for treatment and mitigation in the Fireshed by many project partners, including: the USFS, Pueblo of Tesuque, City of Santa Fe Fire Department, Santa Fe County Fire Department, City of Santa Fe Water Division, the Nature Conservancy, Forest Stewards Guild, and others.

FWHO manages Forestry’s Financial Assistance Agreement with the BLM. Since 2012, Forestry and BLM have used the agreement to collaboratively plan, fund, and implement projects that benefit both public and private lands. Current projects focus on rare and endangered plant studies in northwestern New Mexico, and on treatments for reducing wildfire risk and



improving forest health near Piños Altos. Additionally, FWHO manages a Cooperative Agreement between Forestry and the Natural Resources Conservation Service. Treatments, contracts, and funds committed to forest management improvements have increased significantly since the partnership's formation in 2007.

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.

In cooperation with the New Mexico Corrections Department, each inmate crew comprises eight 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 Corrections Officer. The program can field up to six crews per workday throughout the year. In 2016, the program provided crews to work on ten projects for nine different local, state and federal cooperators, performing 3,147 man-days of work and 26,750 man-hours of work. Crews were assigned to 29 wildland and prescribed fires, performing 109 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 EMNRD 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 2016, 15 applications were received and six applicants obtained tax credits.

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 13 new forest stewardship plans in 2016, for a total of 2,411 acres on private forested land in New Mexico. This brings the total acres in the state covered by stewardship plans to 513,279. Additionally, this year, 334 landowners received technical assistance on their private forest lands, with another 797 landowners participating in educational programs related to forest stewardship, fire prevention, and forest management. Forestry prepared fewer stewardship plans than in 2015, with this year's plans covering 20,349 fewer acres.

RETURNING HEROES WILDLAND FIREFIGHTERS PROGRAM:

The Returning Heroes Wildland Firefighters Program (RHP) provided crews and wildland engines to fight a total of 30 fires over 263 days in New Mexico, Arizona, California, Idaho, Montana, North Carolina Tennessee, Texas, and Virginia. The crews' involvements with these fires was featured through several local and regional media outlets. This year RHP hired 11 full-time staff for wildfire assignments as well as year-round forest and watershed restoration treatment projects. An additional 44 people, including, 14 veterans, were hired as seasonal firefighters.



RHP also provides essential firefighting training and courses at its headquarters in Santa Fe. In 2016, the program trained 45 veterans and 176 students from various sectors including state and federal employees, private citizens, fire departments' personnel, private contractors, and seasonal wildland firefighters.

Currently, RHP works with the New Mexico State Parks Division on a hazardous fuel reduction project within Hyde Memorial State Park. The program also collaborates 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 in Santa Fe and San Miguel counties. Several more forest and watershed restoration treatment projects are scheduled for the program in the coming year.

URBAN AND COMMUNITY FORESTRY PROGRAM:

The Urban and Community Forestry Program (U&CF) works to empower New Mexican communities to develop and sustain healthy community forests for the benefit of the environment and current and future citizens of the state. New Mexico's community forests have significant positive impacts on human and environmental health as well as community tourism and economics; however, they are challenged by a lack of management and planning as well as prolonged drought.

The Urban and Community Forestry Strategic Plan was finalized and published in early 2016. In alignment with the plan, Forestry's and the New Mexico Urban Forest Council's efforts focused on the expansion of local forests benefits to communities.

U&CF 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. Sixty percent of the state's population lives in a community either fully managing such programs or developing one. Components include tree ordinances, a local advocacy/advisory board, professional staff, and a community forest management plan. To date, 70 communities have active local organizations such as tree boards, commissions, or non-profit organizations that formally advise and advocate for planting, protection, and maintenance of community trees and forests. In 2016, 11 communities were recognized for the national Tree City USA program. New Mexico Junior College also began the application process to become the state's first Tree Campus USA.

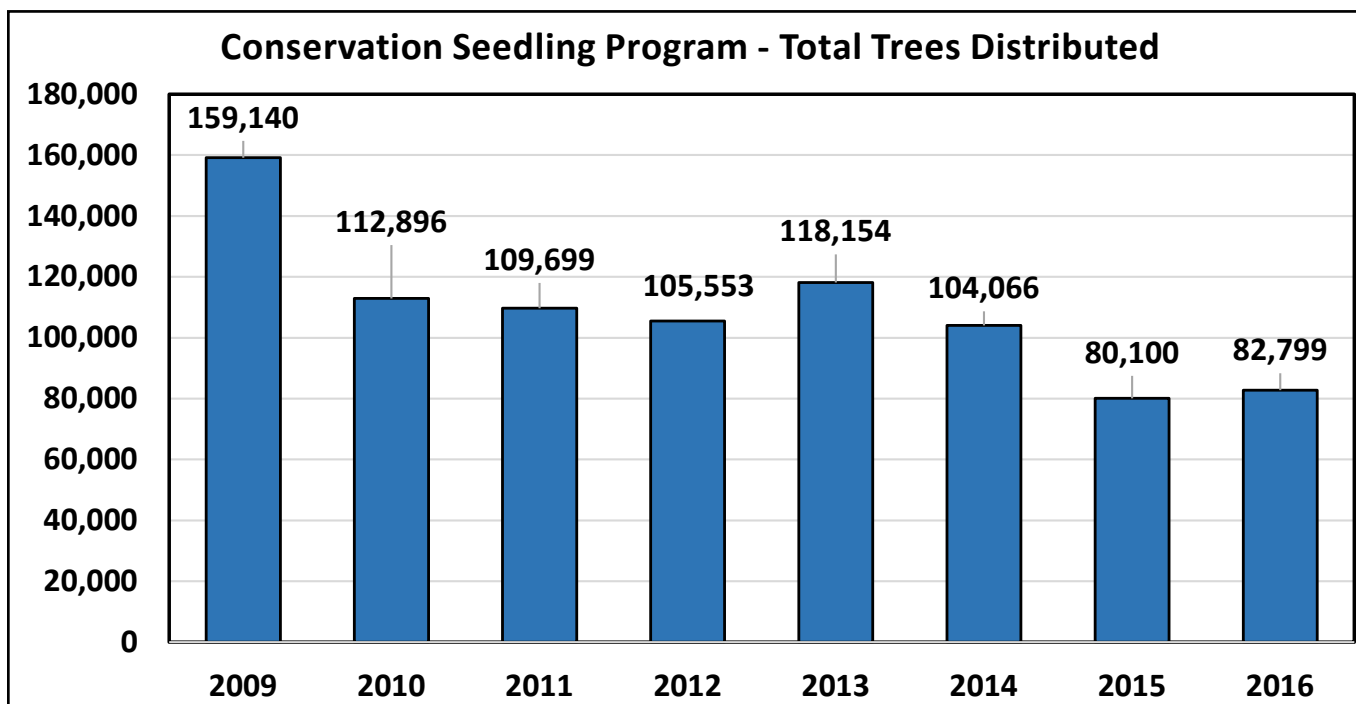
The program empowers New Mexican communities by providing financial resources and technical assistance. In 2016, over \$125,000 of community forestry assistance projects were completed that were issued funds in the previous fiscal year, including: a City of Las Cruces inventory of public trees; technical tree care and urban forestry training for City of Albuquerque and University of New Mexico staff; Las Vegas hazardous park tree mitigation; technical tree care training for City of Clovis staff; a tree inventory and management plan for the Town of Taos; a demonstration planting project at the Rodeo and Sports Complex in Socorro; a pollinator and education garden and forest in Gila; and education and outreach events in Silver City.

U&CF was awarded nearly \$300,000 from the highly competitive USFS Western Landscape Scale Restoration grant to help

improve the condition of community forests in historic areas throughout the state. The selected project will analyze forest health conditions and inventory trees in the 33 county seats' historic districts. It will also develop management plans for the transition of community forests to the next generation in these culturally and economically significant areas of the state. This year, Forestry made the decision to not issue funding for public tree planting projects under the New Mexico Forest Re-Leaf Program. This program is entirely funded by private donations, which have significantly declined. However, the gap was partially filled by coordinating participation in the USFS 25th Anniversary of Cooperative Forestry Celebration Facebook Challenge which provided \$20,000 to New Mexico's communities for local forestry projects.



Governor Susana Martinez with Smokey Bear for Wildfire Awareness Week



2016 CONSERVATION SEEDLING CHART: Forestry's Conservation Seedling Program has two distribution periods. Tree seedlings were distributed through the program's annual sales, educational donations, and sales at the New Mexico State Fair. Additionally, more than 3,300 seedlings were sold as part of a mine rehabilitation project near Socorro.

COOPERATIVE FOREST HEALTH

Summary of technical assistance given in 2016 (SV = site visit)

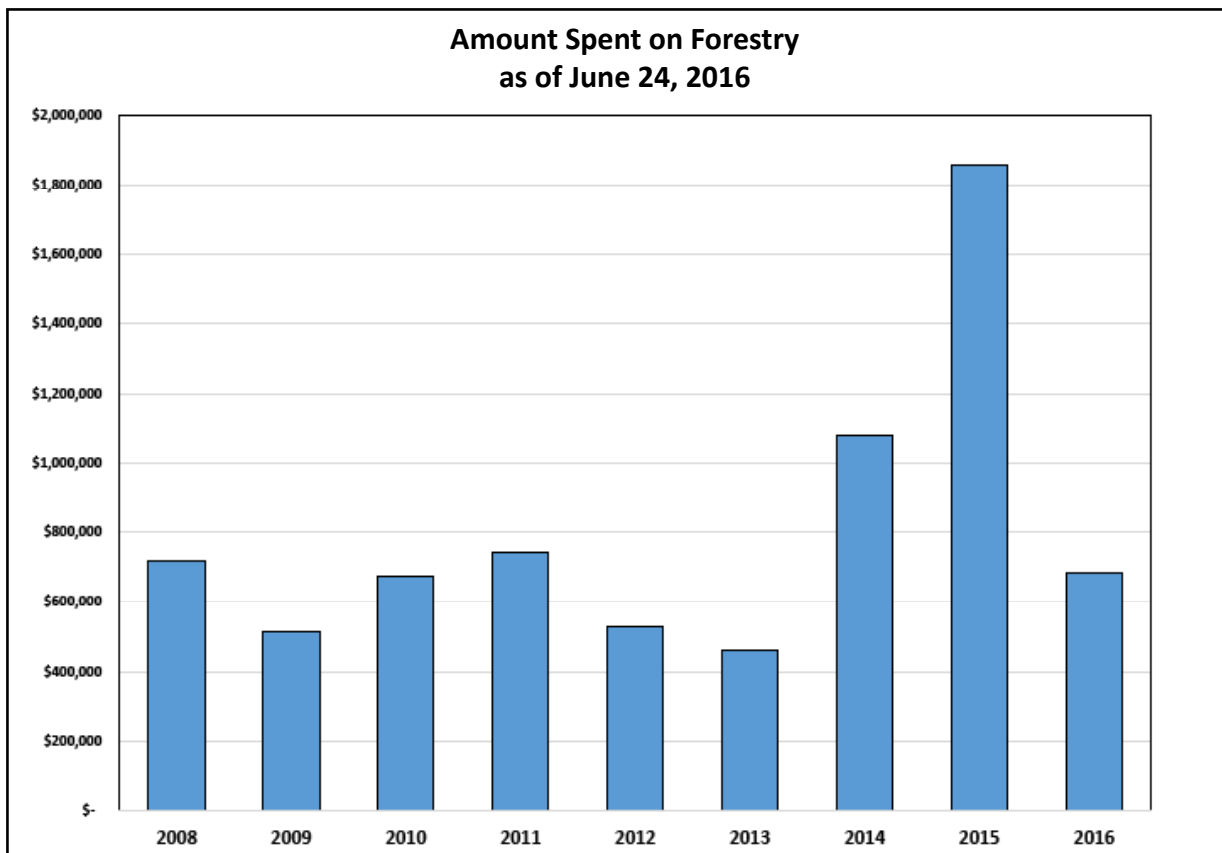
Issue	#	%	SV (#)	Confirmed insects and pathogens
Request (identification)	17	25	1	varroa mite, black-horned juniper borer, dog vomit slime mold
Request (info)	14	20	0	.
Dieback (conifer)	8	12	4	pine engraver, juniper twig pruner, bark moth
Mortality (conifer)	8	12	0	piñon ips, cedar bark beetle
Defoliation (hardwood)	7	10	3	western tent caterpillar, tamarisk leaf beetle, elm leaf beetle
Defoliation (conifer)	6	9	1	Doug-fir tussock moth, sawfly, tiger moth
Mortality (hardwood)	6	9	3	European elm scale, black canker
Dieback (hardwood)	3	4	1	Drummond's blue buprestid
total	69		13	

2016 FOREST HEALTH INITIATIVE BATCH BY FORESTRY DISTRICT

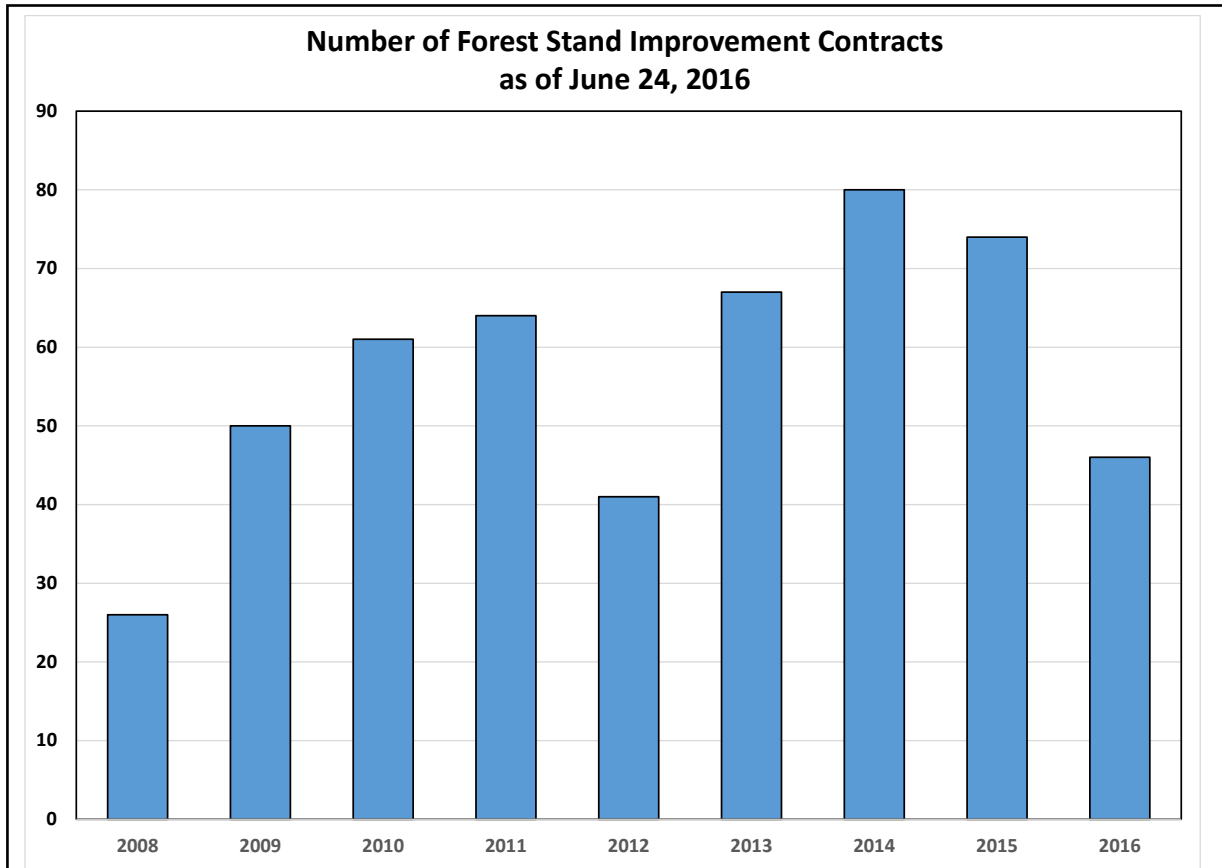
District	Plan (ac)	Thin (ac)	Program (\$)	Expected match (\$)
Chama			0	0
Cimarron		1.0	525	225
Bernalillo		34.5	20,816	8,921
Las Vegas	766	85.0	69,060	29,597
Socorro		38.0	16,065	6,885
Capitan			0	0
Total	766	158.5	106,466	45,628

2016 FOREST HEALTH INITIATIVE PAYMENTS

Invoice #	Project	District	Plan (ac)	Project (ac)	Payment (\$)	Match (\$)
122015	Ortiz	Bernalillo		5.0	2,363	6,710
	Henniger	Chama		1.0	564	243
012016	Bartley	Las Vegas		7.0	3,945	2,586
022016	Bartley	Las Vegas	4,000		5,005	2,145
032016	Vigil	Las Vegas		17.0	17,850	8,767
	Bartley	Las Vegas		13.0	7,326	2,499
042016	Ford	Las Vegas		10.0	4,025	1,725
052016	Weisz	Bernalillo		3.0	2,048	2,212
	Zillhart	Bernalillo		15.0	8,138	8,406
062016	fees only				0	0
072016	fees only				0	0
082016	Jones	Chama		39.1	28,739	12,317
	Halifax	Chama		13.5	9,240	13,215
092016	Jones	Chama		22.9	15,457	6,624
	Jones	Chama		17.2	11,167	5,114
	Ward	Chama		7.0	3,308	2,766
Total			4,000	140.7	89,446	54,878

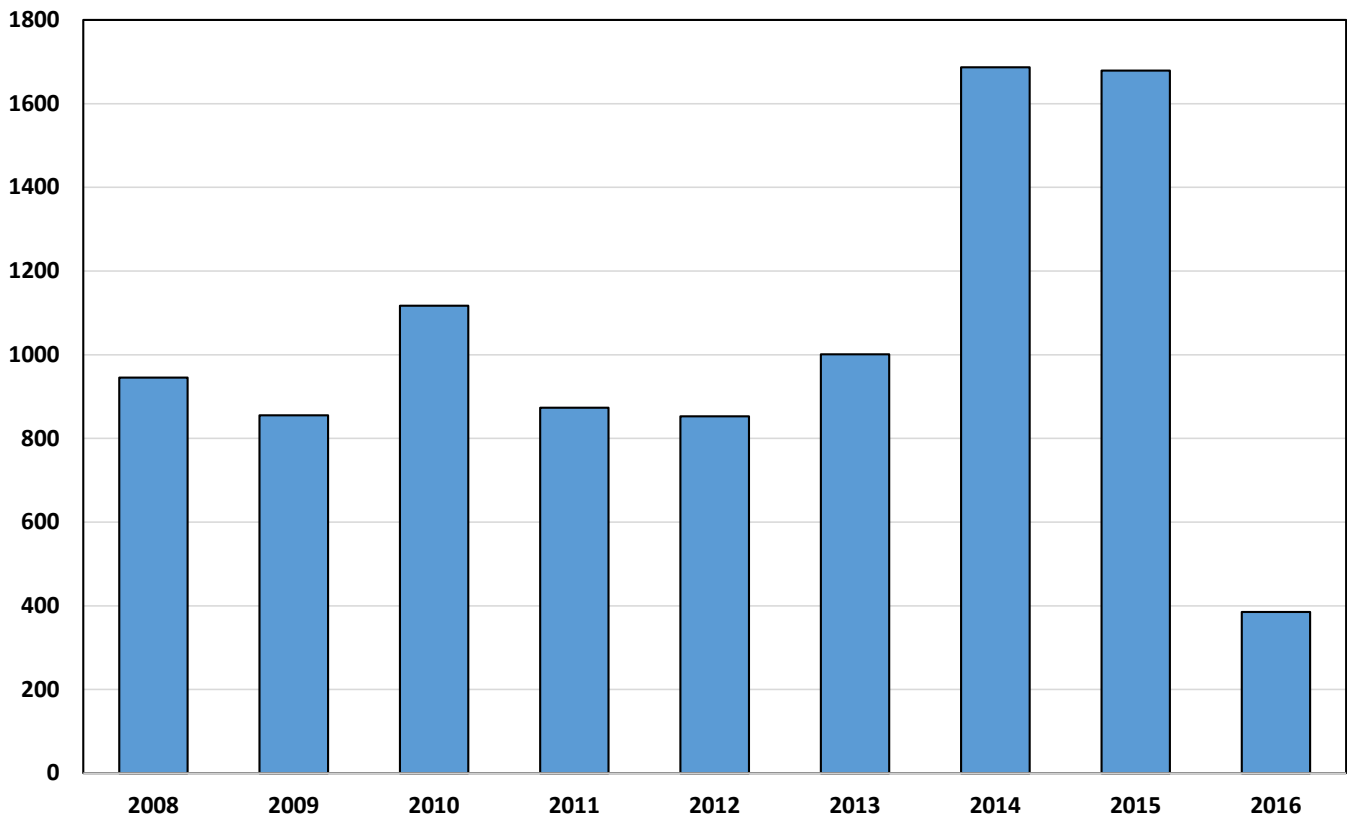


Dollars spent on Forest Stand Improvement and Woody Residue Treatment
by NRCS New Mexico through EQIP, WHIP and RCPP programs



Number of EQIP Contracts by NRCS New Mexico for Forest Stand
Improvement projects

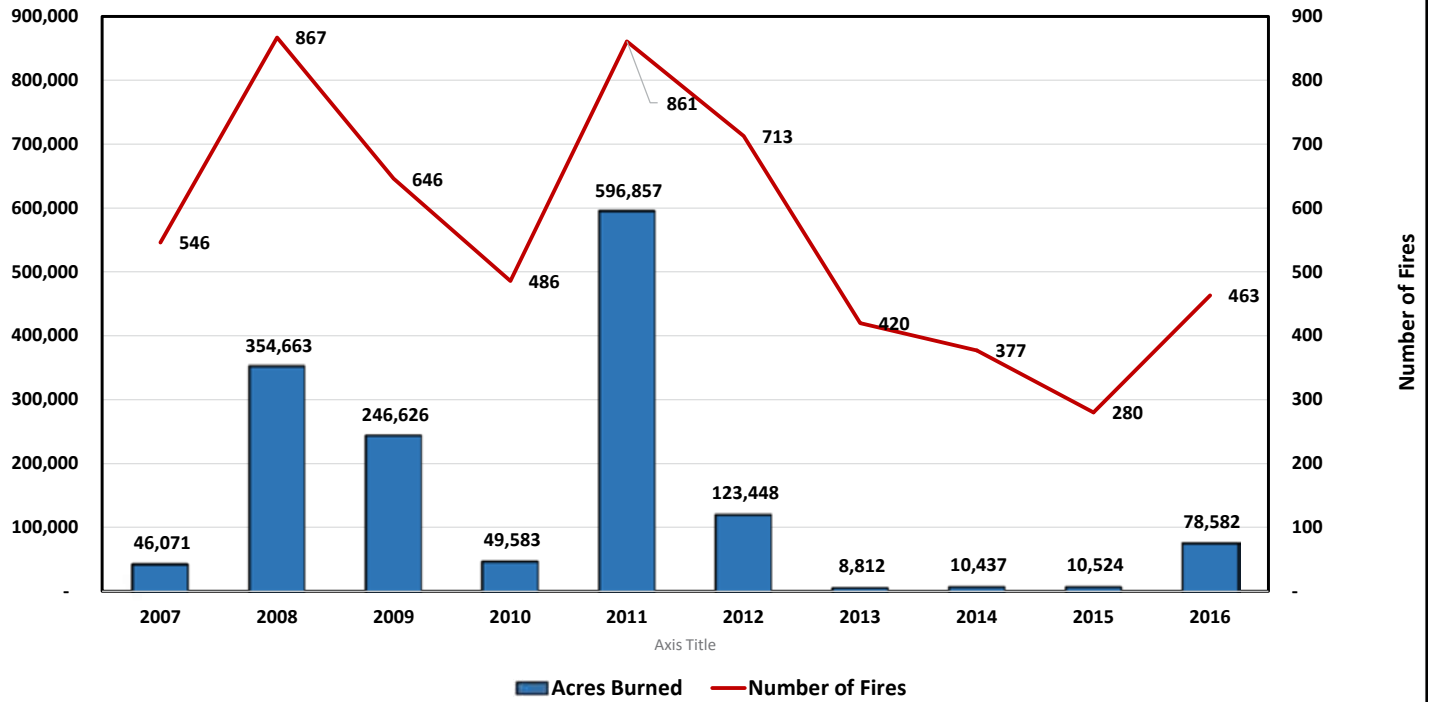
**Acres of Forest Stand Improvement Treatments
as of June 24, 2016**



LAND CONSERVATION

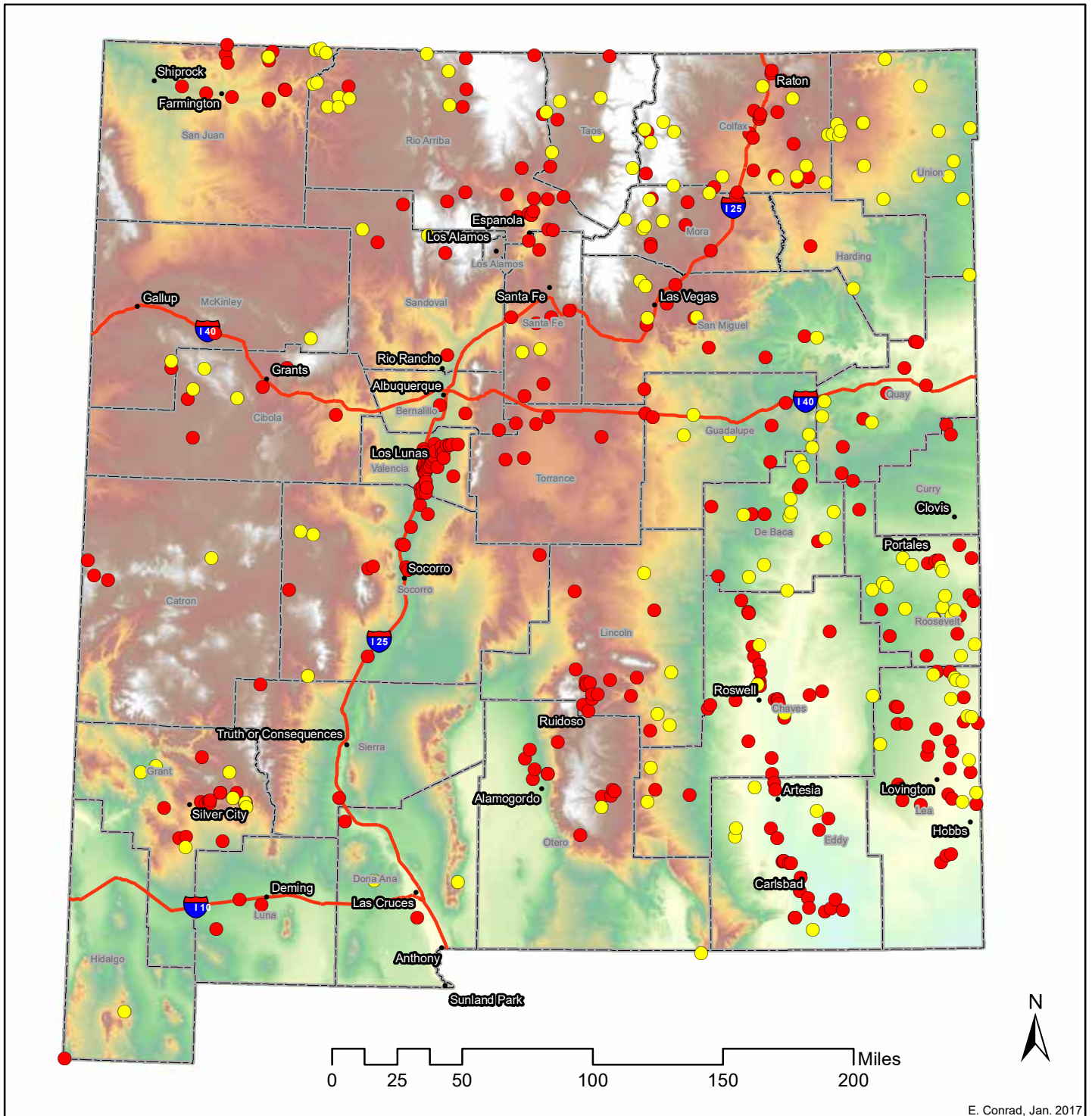
2016		Total 2004 to Present	
Acres Conserved	10,521	Acres Conserved	117,867
Appraised Value	\$ 4,410,496	Appraised Value	\$ 74,501,144
Tax Credits Paid	\$ 1,234,500	Tax Credits Paid	\$ 23,228,265

10 Year Statistical Data Private and State Lands in New Mexico Fiscal Years 2007-2016 Number of Fires and Acres



New Mexico Statistical Fires 2016

Fires on State & Private Lands
July 1, 2015 - June 30, 2016



E. Conrad, Jan. 2017

Statistical Fires for FY 2016

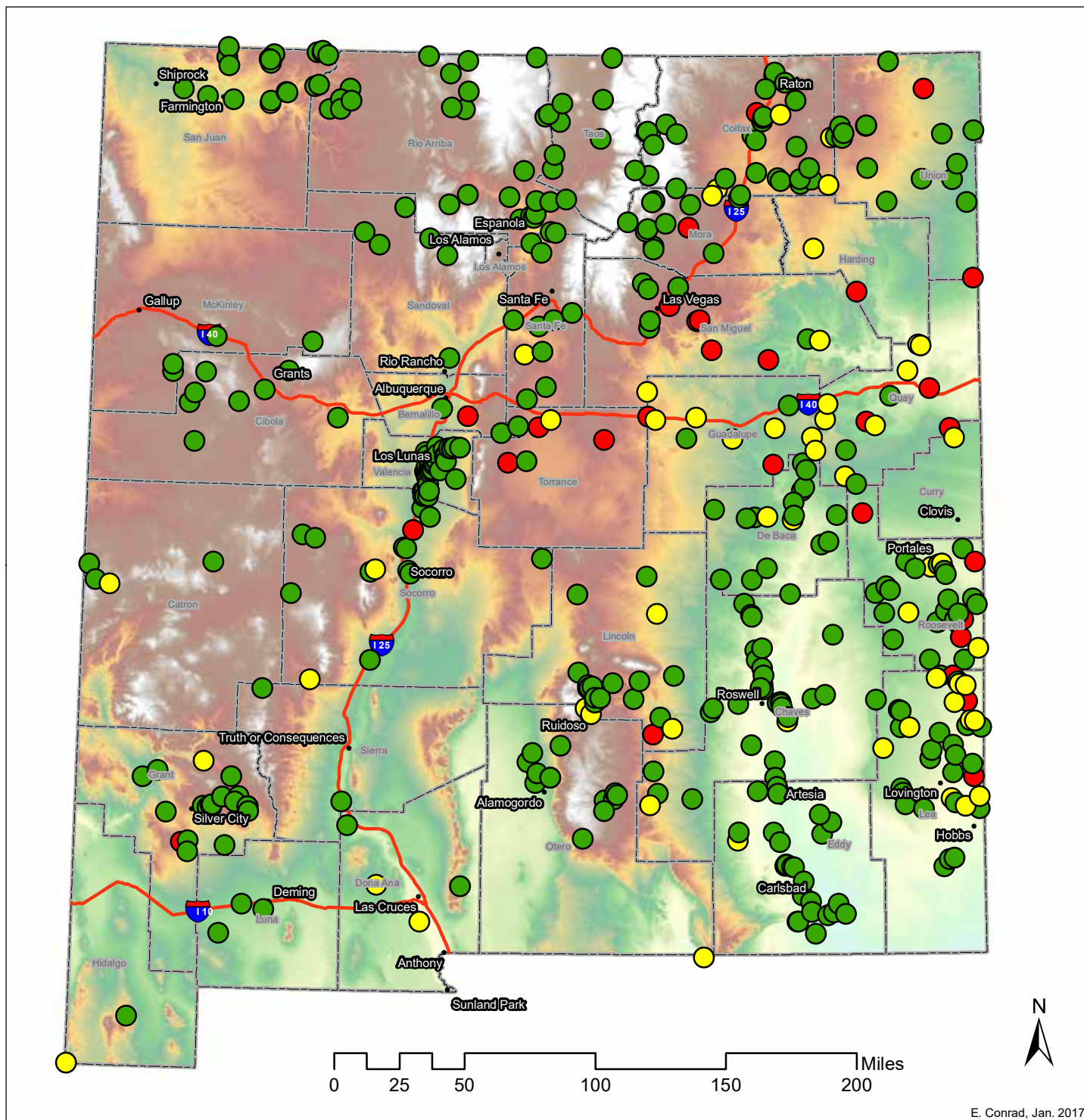


Cause	# Fires	Acres Burned
Human Caused	314	72,318
Lightning	149	6,263
Total	463	78,582

New Mexico Statistical Fires 2016

Fires on State & Private Lands

July 1, 2015 - June 30, 2016



E. Conrad, Jan. 2017

Statistical Fires for FY 2016

- 0 - 25 acres
- 26 - 250 acres
- 251 - 18,500 acres

Fires on State
and Private Lands

TOTAL

Fires

463

Acres Burned

78,582

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 AND ACCOMPLISHMENTS:

MINING ACT RECLAMATION PROGRAM (MARF):

MARP regulates, inspects and enforces on all hard rock or mineral mines on federal, state and private lands within New Mexico. MARP oversees the reclamation of all exploration and extraction activities conducted at all mines and mills, excluding coal, potash and aggregate mines. MARP has permitted approximately 605 mining and exploration projects encompassing over \$691.9 million in financial assurance. The overall disturbed acreage under permit with MARP is 26,251 acres as of the end of 2015 (latest available data). The total number of acres reclaimed since 1994, when the program started, is 7,002.5 acres.

In early 2016, the New Mexico Mining Commission approved Petition 15-02, which allows the expansion of minimal impact mining operations for extracting dolomite, garnet, humate, perlite and zeolite from ten (10) to forty (40) acres in all areas of New Mexico except Bernalillo County, Dona Ana County, and Santa Fe County.

Reclamation and remediation continued at the permanently closed Questa Mine in Taos County, a Superfund site. Chevron Mining Inc., 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 includes further 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 a number of 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 Environmental Protection Agency) are working with Chevron to develop reclamation plans and agreements following the federal CERCLA (Comprehensive Environmental Response, Compensation, and Liability Act) process.

Permitting of revised closeout plans and expansions at the state's four largest copper mines in Grant County continue. A number of major permitting actions were initiated in 2016 and more will come in 2017. Freeport McMoRan is expanding at three of its New Mexico operations. All permitting actions at three of the mines—Little Rock, Chino, and Continental, have to do with expanding the mining operations. As these existing mines expand, they must comply with new regulatory standards designed to address new mining impacts. 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. Freeport McMoRan has struggled to meet the financial soundness tests related to maintaining third party guarantees. Maintaining adequate financial assurance is an essential component of the Mining Act Reclamation Program.



Slope undergoing reclamation on a waste rock pile at the Chino Mine, Grant County, NM (2015)

Also in 2016, MARP staff continued the review process of two large-scale, Part 6 (New Mining Operations) permit applications – one uranium mine: the Roca Honda; and one copper mine: the Copper Flat Mine. As interest in uranium mining has tapered off, permitting actions related to earlier applications also have tapered off. 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.

COAL MINE RECLAMATION PROGRAM:

The Coal Program regulates, inspects and enforces on all coal mines on federal, state and private lands within New Mexico, with the exception of Indian lands. The program oversees more than 80,000 acres of permitted mine lands and over \$300 million in financial assurance.

Evaluation of bond release applications continues to be a significant part of the workload for the Coal Program.

San Juan Coal Company received Phase II bond release on a portion of the La Plata Mine upon successful revegetation for 992 acres and for full bond release for portions of San Juan Mine for industrial use totaling 1,193 acres.

Applications for partial bond releases have been received and have been inspected for Phase I of 2,621 acres and Phase II of 1,130 acres at Lee Ranch Mine; for Phase I of 1,411 acres at El Segundo Mine; for Phase I of 1,504 acres at McKinley Mine; for Phase I of 329 acres at San Juan Mine; for Phase III of 21 acres at York Canyon Surface Mine and for Phase III of 79 acres at the Ancho-Gachupin Mine.

Chevron Mining replaced \$28 million in self-bonds with surety bonds. New Mexico coal mines now have \$181 million in self-bonds with the two Peabody mines.

BHP Billiton sold San Juan Coal Company to Westmoreland Coal Company, headquartered in Denver. Peabody Energy did not sell the Lee Ranch and El Segundo surface mines to Bowie Resource Partners of Louisville, Kentucky.

Peabody Energy and all subsidiaries filed Chapter 11 Bankruptcy protection in April. As a result of the filing, the Coal Program meets quarterly to discuss the company's progress. Peabody has increased reclamation work in order to reduce financial assurance liability. Peabody plans to exit bankruptcy protection in early 2017.

Peabody Energy and all subsidiaries filed Chapter 11 Bankruptcy protection in April. As a result of the filing, the Coal Program meets quarterly to discuss the company's progress and has seen Peabody increase the amount of reclamation. Peabody plans to exit bankruptcy protection in early 2017.

MINE REGISTRATION, REPORTING AND SAFEGUARDING PROGRAM:

This program 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 2014 is provided in the Mineral Resources section of this report.

To facilitate information dissemination and outreach, the [MMD Online Mine Registrations and Permits](#) web application provides data for all New Mexico mines. Users can search by multiple different parameters, or a multitude of combinations of parameters, including mine name, operator, commodity, location and dates. (By statute, confidential production information is not made public.) All real-time 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. Additional web applications are linked from the GIS, Maps and Mine Data page including Active Mines Web Map and a [Map Gallery](#). Other pages of MMD's website, www.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 performed outstanding reclamation in New Mexico. Annually, a nomination period is announced, then MMD staff selects worthy recipients for the [Excellence in Reclamation Award](#) which is presented at the New Mexico Mining Association's convention. Read about 2016's awards in the Abandoned Mine Land Program section of this report.

ABANDONED MINE LAND (AML) PROGRAM:

The AML Program 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. AML'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 2016, AML completed two coal construction projects and several non-coal projects at abandoned mine sites in New Mexico. The primary coal project for the year was the emergency backfill in February of a large subsidence hole (measuring 90 feet long by 40 feet wide and at least 20 feet deep) that opened in the back yards of two adjacent properties in August 2015 in the unincorporated community of Allison, just west of Gallup. The apparent cause was the collapse of abandoned underground coal mine workings. Since February of this year, additional subsidence holes and large tension cracks have opened nearby, indicating continued mine instability. The area of new subsidence features was fenced in September as a temporary public safety measure. AML is currently seeking emergency professional services to further assess geotechnical conditions at the site and to obtain recommendations and support for future construction. It also plans to contract for construction services to stabilize both the



Backfilling the original subsidence hole in Allison



Backfilling the original subsidence hole in Allison, and a more recent subsidence (MMD photos)

underground mine workings near homes and a stormwater drainage channel that traverses the subsidence area. A second coal project, completed in May, involved raising a low, dry stacked rock wall in Madrid to improve diversion of stormwater flows around the top of a reclaimed gob pile above the Old Coal Town Museum. This was the last phase of construction of a longer-term project to improve drainage conditions and remediate gob piles above the Museum and adjacent area, which were hit particularly hard by gob pile washout in heavy rainstorms in September 2013.

The Grants Uranium - Spencer Mine Safeguard and Reclamation Project safeguarded several ventilation shafts and the main shaft opening, which had captured flows on an alluvial fan, leading to significant gulying and headcutting and to the collapse of the steel headframe. In addition, radioactive mine waste material was buried in an onsite repository and the area was carefully graded to restore the alluvial fan with rock sills placed on contour for grade control. Construction began in September 2015 and was substantially completed in February 2016. In May, disturbed areas were seeded and mulched. Much of the project development, clearances, and construction costs were covered using BLM funds. In September, the Mining and Minerals Division presented Excellence in Reclamation Awards to the project's engineer, Oxbow Ecological Engineering, LLC, and construction contractor, Duran Bokich Enterprises, LLC, for innovative landforming design, and for meeting high standards of construction excellence. Additional information on this and other award-winning projects can be found at: <http://www.emnrd.state.nm.us/mmd/ExcellenceReclamation.html>.



Gulying and collapsed headframe at the Spencer Mine Shaft before construction (note the mine waste pile in mid-background), and construction of a concrete plug at the shaft (MMD photos)



Google Maps image of completed earthwork and rock sills to recreate and stabilize the alluvial fan

In addition to the Spencer project, several other non-coal projects were completed in conjunction with BLM in 2016. In most cases, AML provided some of or all the project development and environmental and cultural resource clearances for the project while BLM handled construction of closures.

In September 2016, BLM crews filled recent subsidence at a previously backfilled open stope at the Saddler Mine north of Deming. Since AML's initial Fluorite Ridge Mine Safeguarding project in 1998, it had conducted maintenance projects in 2000,

2005, and 2009 to remedy ongoing subsidence of the backfill material at several large and deep mining features. The BLM conducted further mine inventory of the Fluorite Ridge area in 2015, noting several dozen additional dangerous mine features.

The AML Program used OSMRE funds to complete photogrammetry and cultural and environmental clearances necessary to begin mine closures in the Victorio Mining District (Gage) west of Deming. Through BLM's contract with Bat Conservation International (BCI), MineGates Environmental won a bid in July 2016 to close 67 mine openings as part of the Gage Mine Safeguard Project – Phase II. In September and October, MineGates backfilled 32 mine openings with associated waste rock piles and built 35 wildlife compatible closures to protect bats and owls. Work included the installation of prefabricated steel bat gates brought in by helicopter. In addition, BLM crews backfilled 20 mine features during October that were not included in the BCI bid package.

In October, AML safeguarded two shafts in the Florida Mountains at the Bradley Mine Group Frederick Mine Safeguard Project using OSMRE funds.

At the Cookes Peak Mining District northeast of Deming, where recreational use of public lands is increasing, the AML Program used both OSMRE and BLM funds to complete photogrammetry

and cultural resource and environmental clearance necessary to begin mine closures. Approximately 300 mine features require remediation, which AML and BLM are planning to address in multiple construction phases. In addition to the mine closures AML completed in 2015 and 2016 at Cookes Peak, BLM closed 20 mine openings in September through November. These closures included backfilling, as well as four structural closures for wildlife habitat (two horizontal bat gates and two mesh closures for owl use).

Southeast of Deming in the Florida Mountains Mining District, the AML Program used both OSMRE and BLM funds to complete photogrammetry and cultural resource and environmental clearance necessary to begin multiple mine safeguarding projects. In addition to the 31 mine features AML safeguarded between 2013 and 2016, BLM crews completed more than 15 closures in the spring and fall of 2016 and have plans to safeguard several additional mine features in 2017. The AML Program and BLM are currently working to complete additional cultural resource and environmental work necessary to safeguard more than 100 hazardous mine features remaining in the district.

The AML Program used OSMRE funds to complete a portion of the BLM Carrizalillo project west of Columbus. In September and October, BLM completed 12 mine closures, including both backfills and structural closures for wildlife habitat and closure of a shaft where a person was seriously injured several years ago.

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

The AML Program continues to develop projects in areas of New Mexico impacted by historic mining including Cookes Peak, Florida Mountains, Gallup, Hansonburg, Lemitar, Madrid, Silver City, Tierra Amarilla, and White Signal.



Prefabricated bat gate installed over shaft at Gage Phase II, and high-strength steel mesh installation at a shaft at the Bradley Frederick Mine (before trimming of rock bolts) (MMD photos)

MINERAL RESOURCES CY2015: Employment, Production and Value:

Following three years of consecutively higher mineral production value, operators reported mineral production value of slightly more than \$2.5 billion extracted from New Mexico mining operations in calendar year 2015, almost 19 percent less than 2014's all-time high of \$3.1 billion (Table 1 and Figure 1). Operator-reported potash production value decreased 10 percent from 2014; and, although copper production increased, lower prices in 2015 led to a 7 percent decline in production value.

TABLE 1 New Mexico Summary of Commodity Production, Production Value, Employment, Payroll, Revenue and Ranking: 2015

Mineral	Production ¹	Production Rank ²	Production Value \$	Employment ³	Reclamation Employment	Payroll \$ ⁴	Revenue Generated \$ ⁵	
							State	Federal
Coal	19,676,277	12	\$691,047,434.00	1,341	118	\$133,473,803.00	\$17,656,313.00	\$10,243,850.00
Copper	397,441,145	2	\$996,838,033.00	1,878	4	\$104,517,880.00	\$8,086,903.00	\$0.00
Gold ⁶	20,438	-	\$23,708,980.00	-	-	-	\$191,947.00	\$0.00
Industrial Minerals ⁷	1,411,731	-	\$87,305,356.00	413	11	\$14,598,867.00	\$269,261.00	\$213,816.00
Aggregates ⁸	8,169,753	-	\$62,625,896.00	837	53	\$15,588,526.00	\$3,092,285.00	\$0.00
Other Metals	18,358	-	\$165,223.00	18	-	\$1,139,227.00	\$761,027.00	\$0.00
Molybdenum	-	-	-	-	-	-	\$0.00	\$0.00
Potash	1,433,245	1	\$659,505,518.00	1,194	12	\$95,877,575.00	\$6,542,580.00	\$8,133,012.00
Silver	56,983	-	\$895,610.00	-	-	\$0.00	\$9,737.00	\$0.00
Uranium ⁹	-	-	\$0.00	11	11	\$433,131.00	\$ -	\$0.00
TOTAL			\$ 2,522,092,050	5,692	209	\$ 365,629,009	\$ 36,610,053	\$18,590,678

Source: Mining and Minerals Division, unless otherwise noted

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

² Production rank, where available, is based on 2015 production value (except coal is based on 2014 production value, latest information at publication date) in relation to other states.

Sources:

Copper and potash: Mineral Resources Program, United States Geological Survey (minerals.er.usgs.gov/minerals/pubs/commodity/)

Coal: Energy Information Administration, United States Department of Energy (www.eia.gov/coal/data.cfm#summary); rank is for CY2014, latest data

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.

Sources:

State data: New Mexico Taxation and Revenue Department (www.state.nm.us/tax), New Mexico State Land Office (www.nmstatelands.org)

Federal data: Office of Natural Resources Revenue (www.onnr.gov)

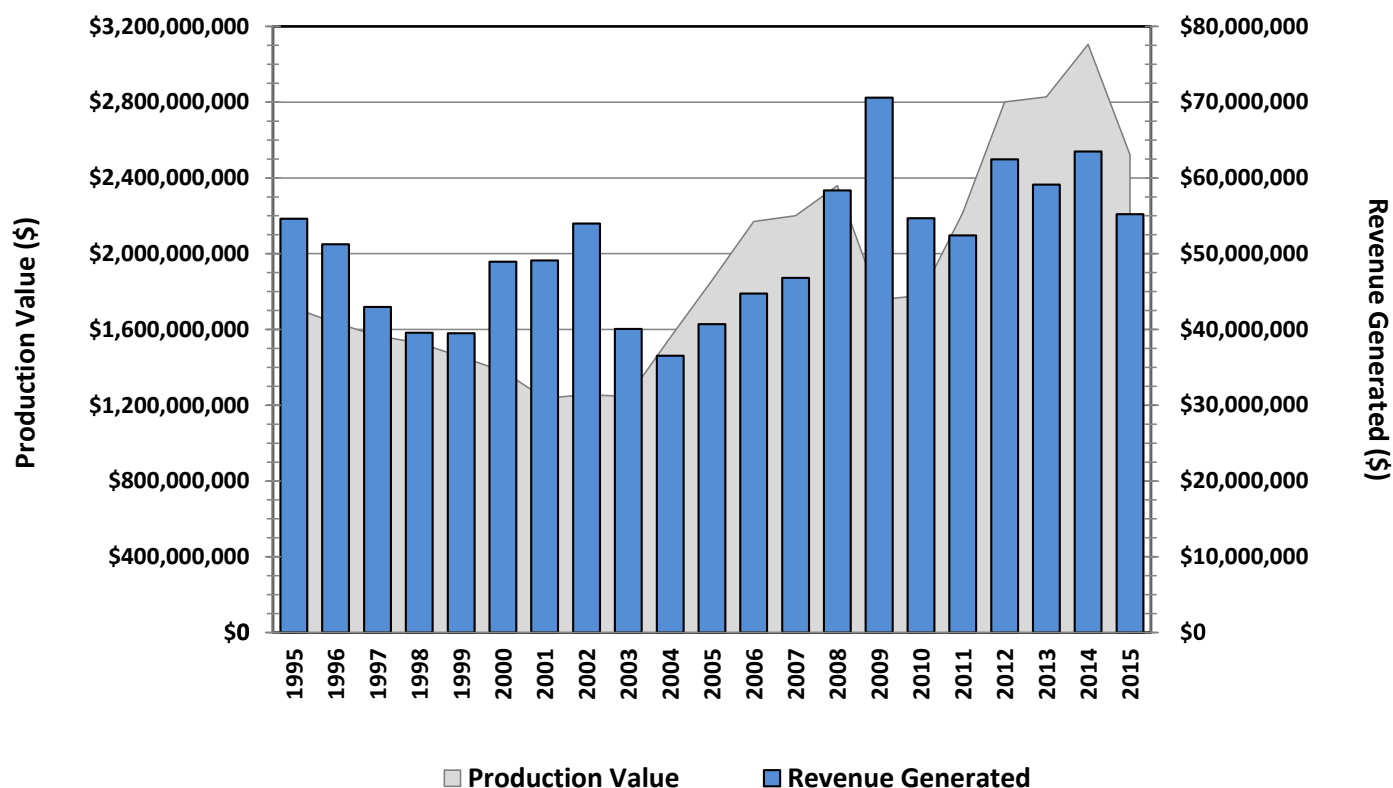
⁶ Gold, silver and molybdenum are by-products of copper production. Employment/payroll for gold/silver included in copper.

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.

FIGURE 1 New Mexico Mineral Production Value and Revenue Generated: 1995-2015



New Mexico remains a leading United States mineral producer with 2015 rankings of first in potash, perlite and zeolite as reported by the U.S. Geological Survey (“USGS”); second in copper (up from a third place ranking for several years), as reported by USGS; and twelfth in coal (2014, latest available information), as reported by the U.S. Energy Information Administration. The principal minerals, in descending order of 2015 production value, were copper, coal and potash. According to USGS, for 2015, New Mexico ranked fifteenth (falling from thirteenth in 2014) when ranking states by the production value of non-energy minerals, producing 2.25 percent of the total U.S. production value of non-energy minerals (versus 2.40 percent in 2014).

Despite an overall employment decrease in 2015, reported industry payroll (excluding benefits) increased by 8 percent from 2014 to just under \$370 million (Figure 3). Total mining sector direct and contract employment decreased by 7 percent from 2014 (6,145) to 2015 (5,698): direct employment decreased from 5,055 to 5,047 employees; contract employment decreased from 1,090 workers to 651; reclamation employment decreased from 324 workers to 209 (Figure 4).

Total 2015 revenues generated by mineral production in New Mexico declined 13 percent from 2014 levels to \$55.2 million (Figure 1). 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 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 potash operations (Figure 2).

FIGURE 2 Percentage of Production Value, Employment, Payroll and Revenue by Commodity: 2015

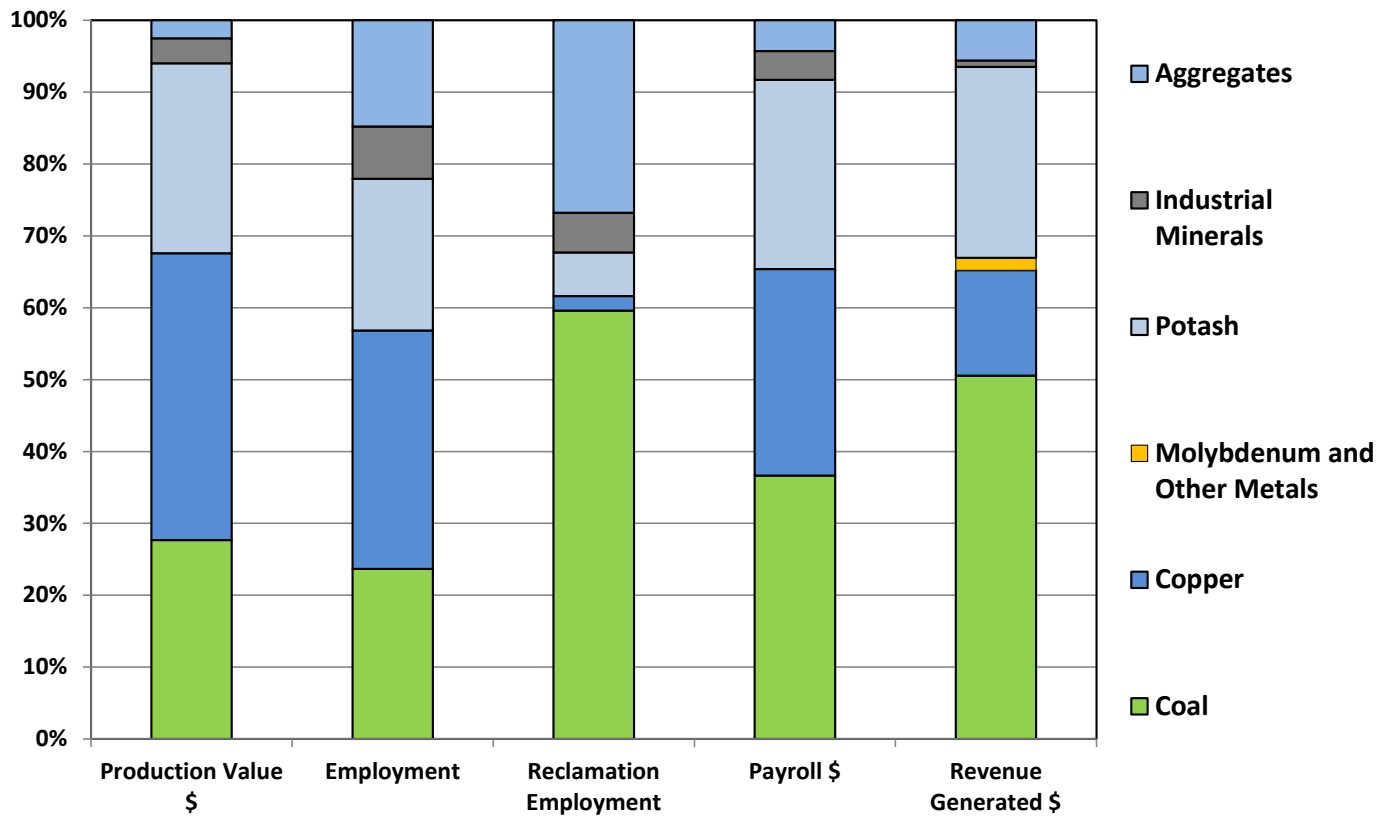


FIGURE 3 New Mexico Mineral Industry Employment, Payroll and Capital Improvements: 1995-2015

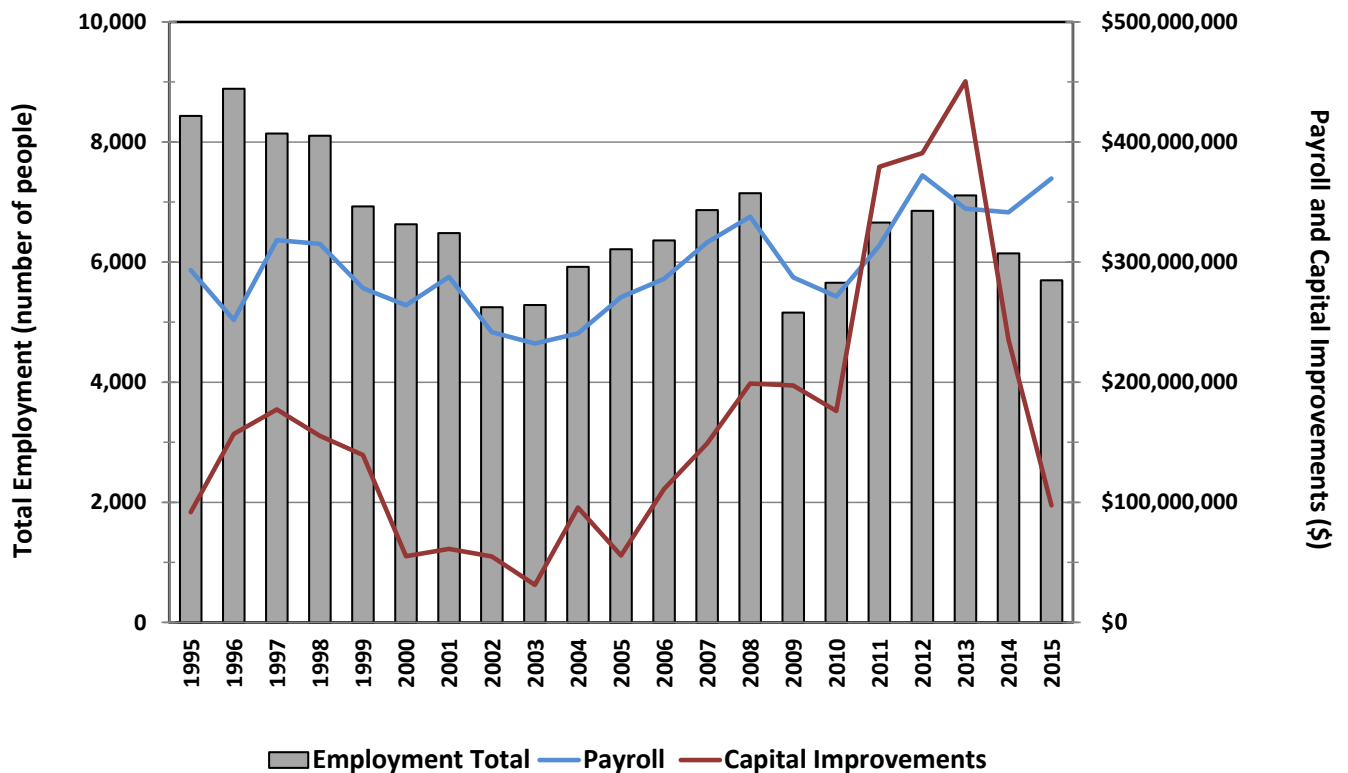
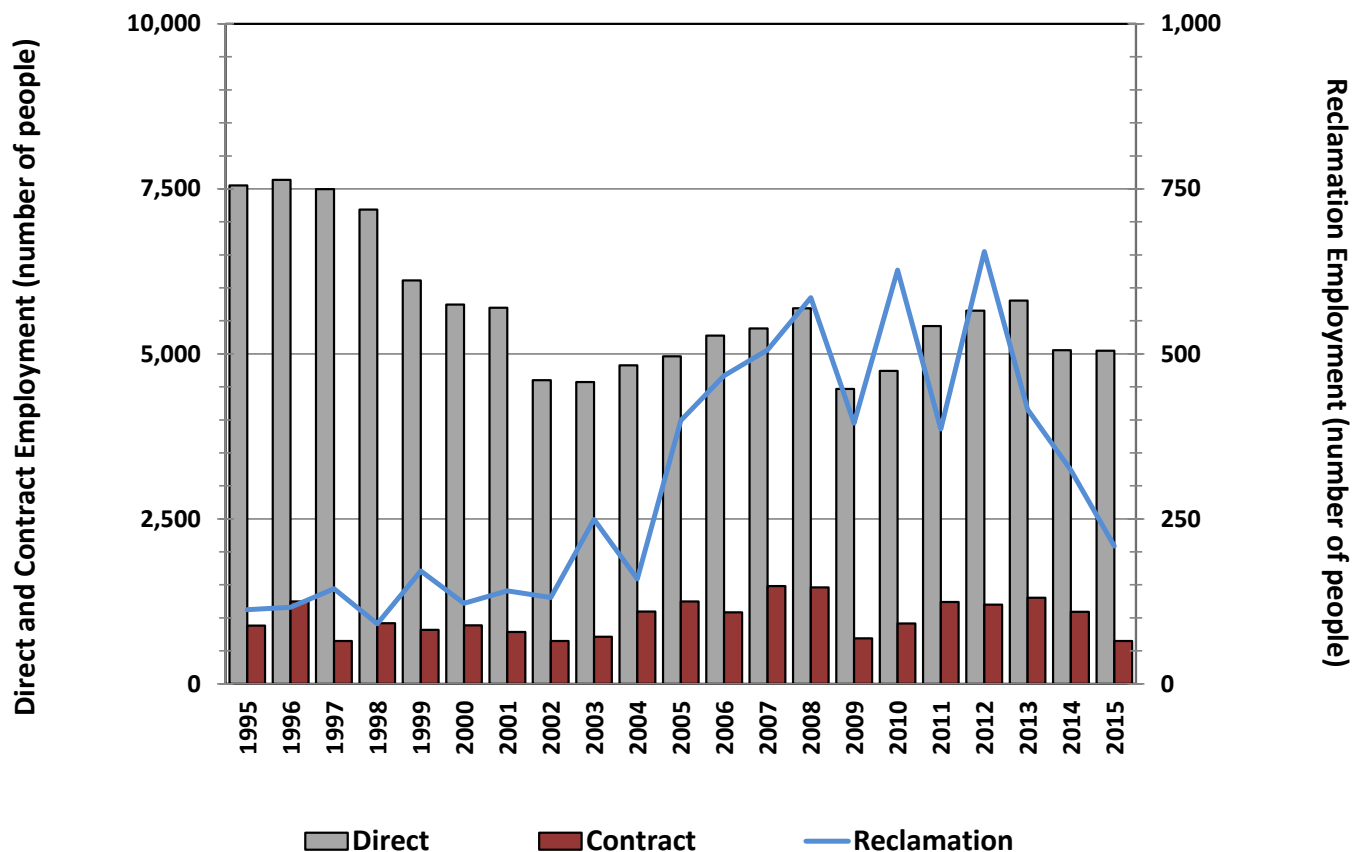


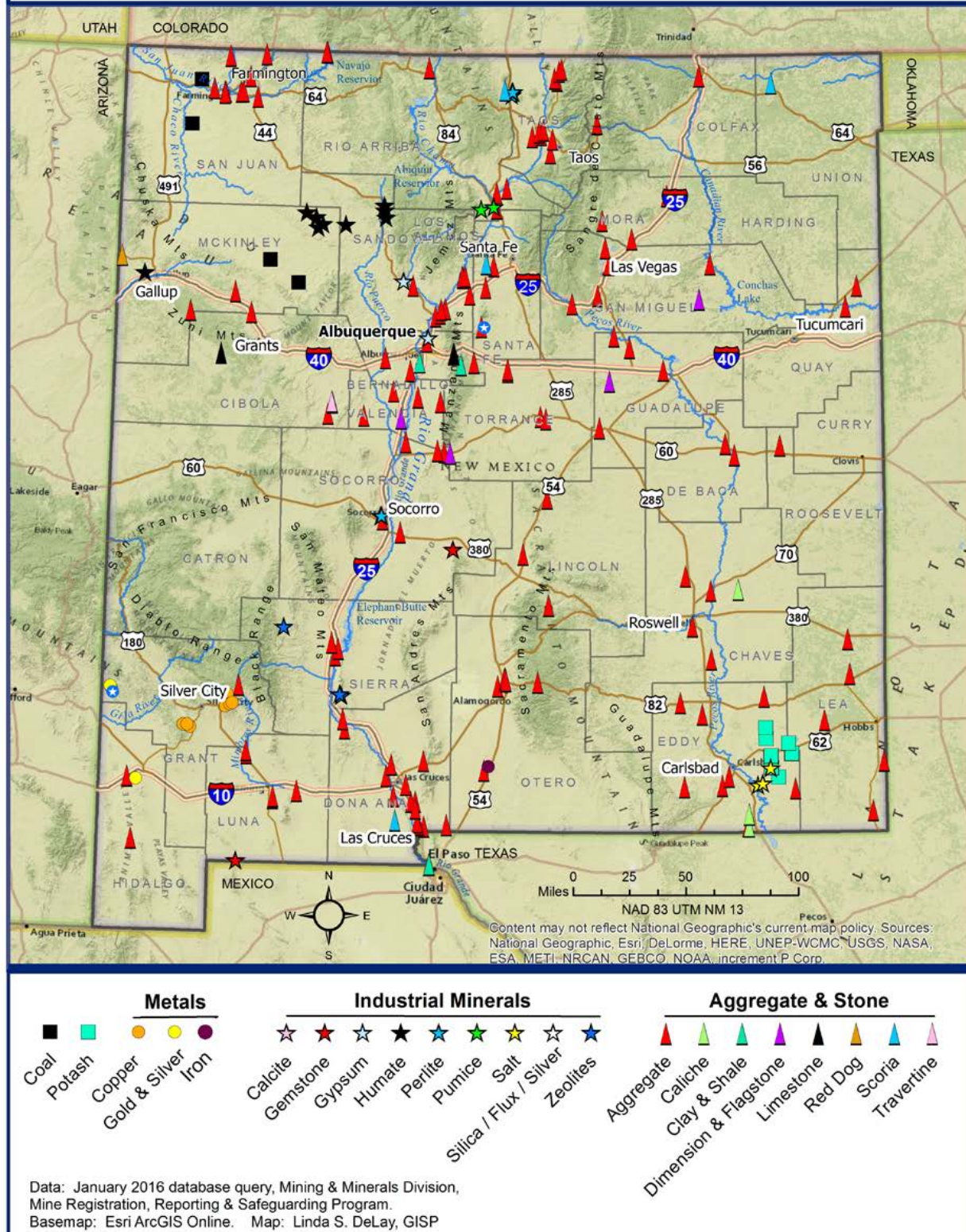
FIGURE 4 New Mexico Mineral Industry Employment: 1995-2015



Economic downturns also affected operator-reported capital improvement expenditures in 2015. New Mexico mining companies reported investments of just under \$98 million in capital improvements and equipment in 2015 (Figure 3) – less than half of 2014's reported expenditures.

Registered active mining operations in New Mexico in 2015 numbered 228: 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 173 stone and aggregate operations.

Active Mines in New Mexico, December 2015



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 6 New Mexico Coal Production and Value: 1995-2015

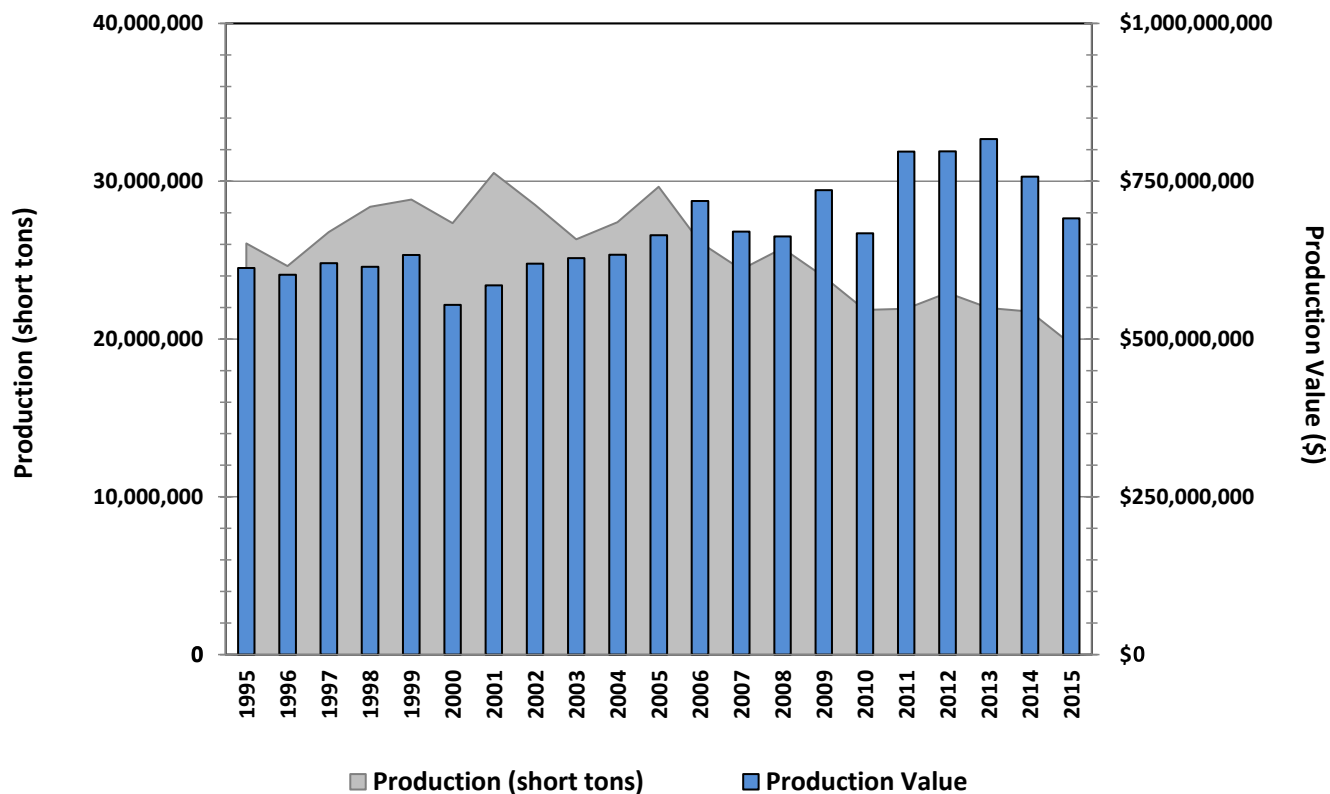


FIGURE 7 New Mexico Copper Production and Value: 1995-2015

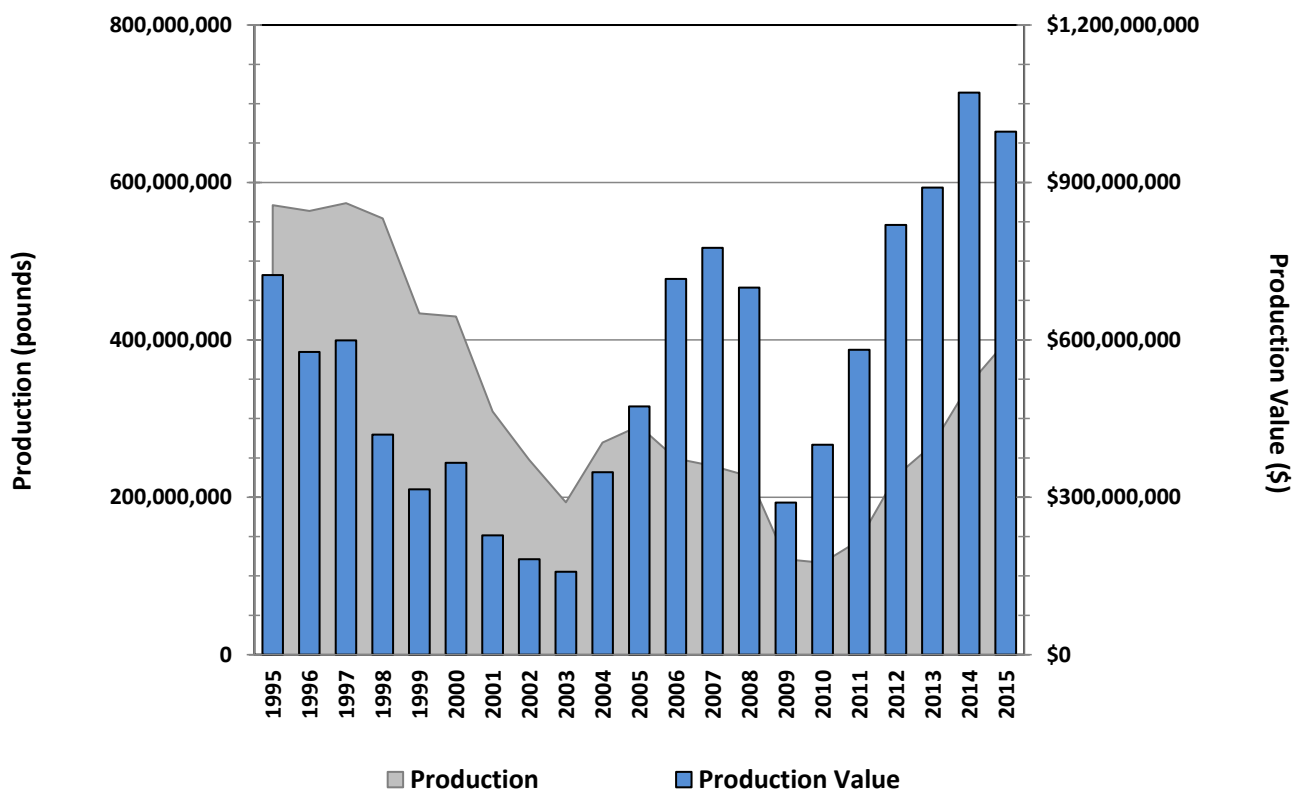


FIGURE 8 New Mexico Potash Production and Value: 1995-2015

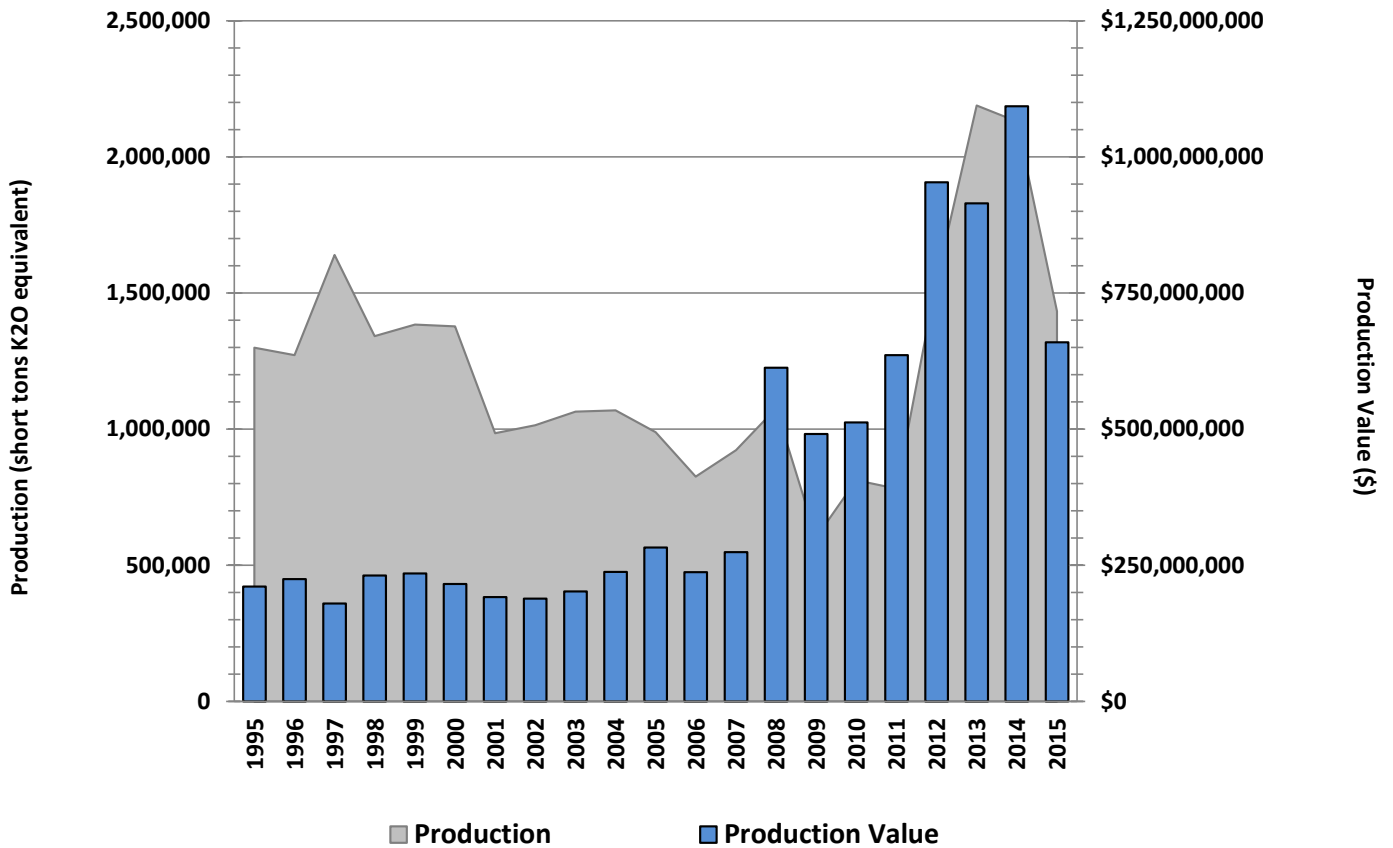


FIGURE 9 New Mexico Aggregate Production and Value: 1995-2015

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

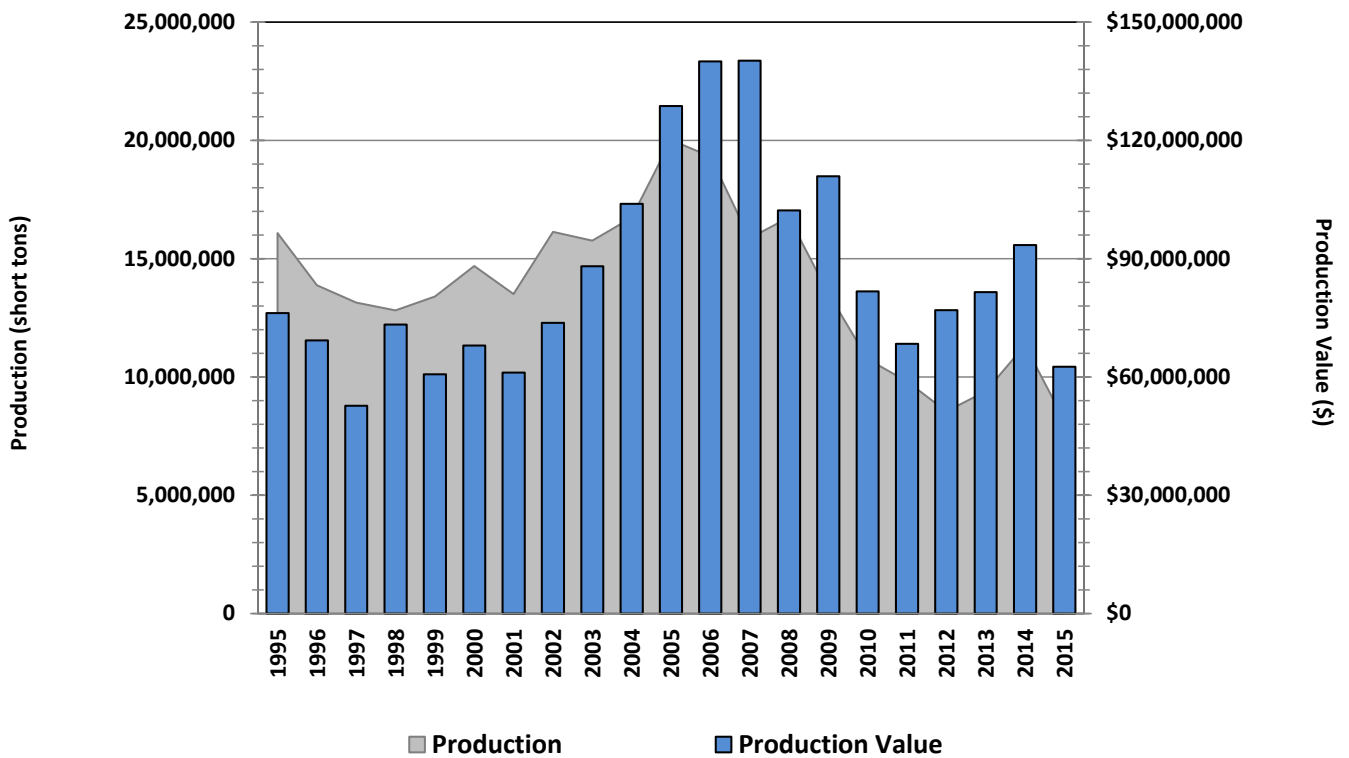
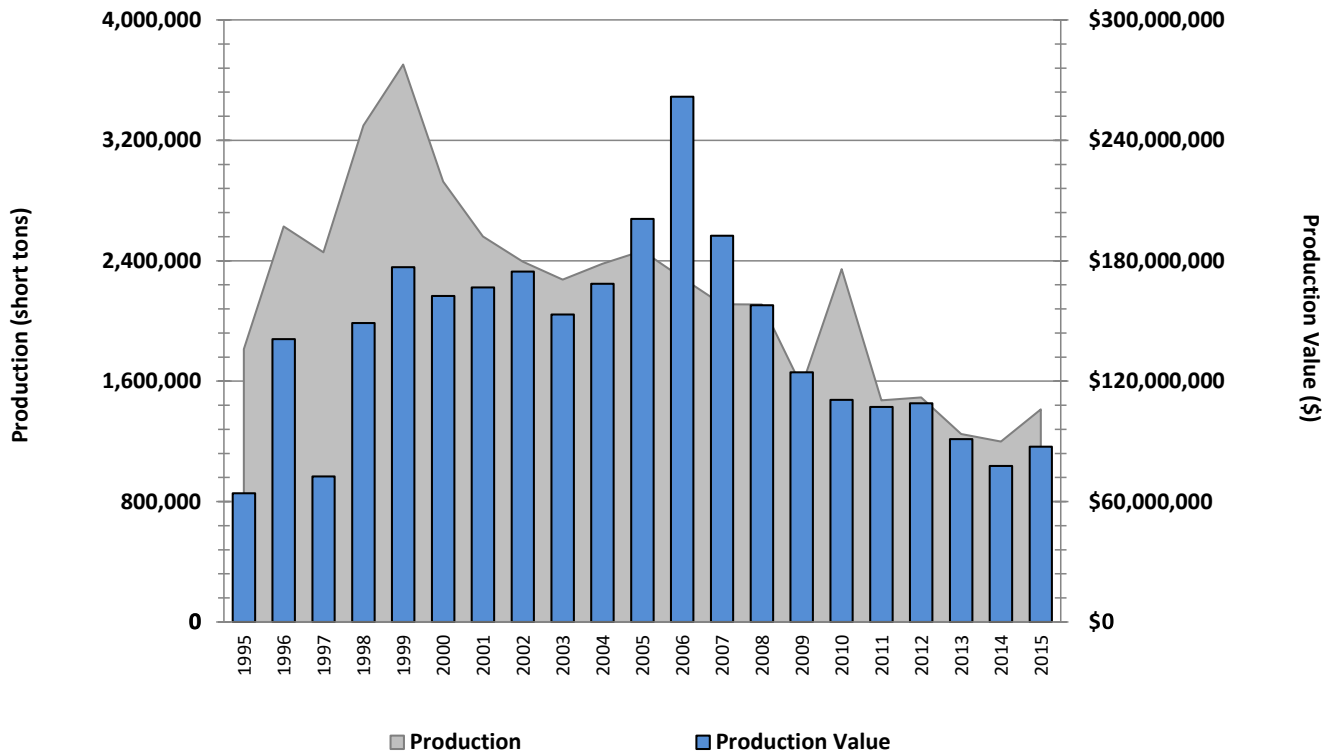


FIGURE 10 New Mexico Industrial Mineral Production and Value: 1995-2015
 Industrial minerals include brick clay, calcite, dimension stone, gypsum, humate, perlite,



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:

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, 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. This year, 2016, marked the ending of this important program that helps reduce energy costs and provides 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. This is the fifth year the program was fully subscribed.

In the 6-month period through June 2016, based on solar tax credit applications received by ECMD, solar development by homeowners occurred in 27 of 33 counties. A total of 1,112 system certification applications were received, reviewed, and processed (1,088 PV and 24 solar thermal). Most 2016 PV installations were located in Bernalillo (441), Santa Fe (172), Sandoval (156), Doña Ana (150), Otero (30), Grant (27), Valencia (26), Taos (23), Rio Arriba (10) and San Juan (8) counties. All combined, this year's PV systems account for 6.6 megawatts (MW) of new electricity capacity. These distributed solar systems help utility companies and cooperatives meet the State Renewable Portfolio Standard, avoid fossil fuel generation costs, emissions, and fuel charges, and lower system owners' utility bills. During the last 12 months, a total of \$3.1 million was approved for state tax credits to homeowners who paid \$6.9 million in labor charges to install their solar systems.



Over the eight years that the Solar Market Development Tax Credit has been provided, there have been 7,107 applicants for a PV tax credit that helped install 40 MW of solar PV systems in the State of New Mexico. These systems have provided 146 gigawatt hours of electricity to their owners and represents roughly \$15 million in avoided energy costs to date.

New Mexico's solar resource, with the high elevation and clear skies, is one of the best in the United States. By generating electricity with the sun, less coal and natural gas are burned. Solar panels also reduce the risk of higher electricity costs on New Mexico citizens due to volatile fossil fuel prices and cost of pollution controls.

Sustainable Building Tax Credit:

The Sustainable Building Tax Credit incentivizes private sector design and construction of energy efficient, sustainable buildings for commercial and residential use. A new ten-year Sustainable Building Tax Credit program, in effect from 2017 through 2026, became open to commercial and multifamily developers in 2016. In the 12-month period through October 2015, ECMD received, reviewed, and processed 470 multifamily housing units of 461,419 square feet. ECMD anticipates hundreds of home buyers and most homebuilders to submit applications for their homes as the program re-opens for them in 2017. The construction of these new homes and commercial buildings 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 Sustainable Building Tax Credit has proved itself to help builders and homebuyers alike meet their objectives, while at the same time spurring economic growth, creating jobs and improving the quality of housing across the state.



PV Solar Array, Santa Fe

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, helping to offset 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 precious water resources in buildings and in power generation
- Places New Mexico as a leader in green building with its unique tax credit program

place in the counties of Doña Ana (178 systems), Otero (6), Luna (4), Sierra (3), Bernalillo (2), Roosevelt (1), Sandoval (1), and Curry (1). The \$1,620,856 in tax credit support of this technology has created construction activity of more than \$5.8 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



LEED Platinum Apartments in Albuquerque

Geothermal Ground-Coupled Heat Pump Tax Credit:

The Geothermal Ground-Coupled Heat Pump Tax Credit, in effect since 2010, helps make this system type more affordable for homeowners and commercial building owners. In the 12-month period through December 2016, there were a total of 196 applications received, reviewed, and processed. This activity took

Energy Efficiency Working Group:

The Energy Efficiency Working Group provides a forum to exchange ideas on the latest in policies, technologies and financing that advance clean energy applications. Topics covered during seven meetings hosted by ECMD throughout 2016 include new energy efficient housing developments in Albuquerque; new Sustainable Building Tax Credit Program; aerial perspectives on concentrated solar; envisioning a carbon free transportation system; US-China Climate-Smart/Low-Carbon Cities Summit; downtown Albuquerque's newest development; and Solar in Your Community Challenge.

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.

Participants include representatives from the private and non-profit sectors, higher education, government (federal, state and tribal), electric utilities and cooperatives.

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 our electric system, examined the energy storage items within the Governor's 2015 energy policy, and heard from the developer team aiming to install a large-scale energy storage with solar PV system in Valencia County.

In 2016, the group considered residential energy storage from the installer, utility and industry perspectives.

The Energy Conservation and Management Division also created and launched a summer 2016 internship program with Sandia National Laboratories energy storage team; three undergraduate students researched energy storage opportunities in New Mexico's rural electric cooperative territories.

Biomass:

Wood Education and Resource Center – ECMD is assembling a Statewide Wood Energy Enterprise Team (SWEET) that will be a highly qualified group of individuals representing agencies and organizations with the expertise necessary for successful wood energy enterprises. The team will work within New Mexico's diverse cultural landscapes comprised of federal, state, private, land grants, and tribal forests.

Funded by the U.S. Forest Service Grant-USDA, the SWEET Team will 1.) form a core team dedicated to promotion and development of wood energy 2.) identify and address key constraints and opportunities, 3) Connect woody biomass feedstock supplies to wood energy producers and 4.) design projects that are sustainable and 5.) leverage funding for projects.

Energy Efficiency:

Energy Efficiency - New Mexico ranked 35th in the 2016 American Council for an Energy Efficient Economy State Energy Efficiency Scorecard down from 31st in 2015 and down from 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 focusing on energy efficiency, and outdated building energy code. However, the state anticipates higher energy savings in 2017 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 Roadmap Project:

In December 2016 ECMD received a U.S. DOE grant award to begin work on a state energy roadmap project. The project objective is to develop a New Mexico State Energy Roadmap (Roadmap) that outlines planning strategies for the future of energy production, distribution and usage in New Mexico and achieve a low carbon energy, economically viable future. The Roadmap Project implements portions of New Mexico's 2015 *Energy Policy and Implementation Plan*.

To develop the Roadmap, the ECMD will:

- Convene a stakeholder effort to support development of the roadmap;
- Use scenario-planning to inform the Roadmap priorities;
- Outline the steps needed to move to a low carbon standard for energy production upon expiration of the state's existing Renewable Portfolio Standard (RPS); and
- Identify implementation strategies across all energy sectors and teams to support adoption of final strategies.

The Roadmap will build on the 2015 New Mexico Energy Policy and Implementation Plan:

Since taking over the Geothermal power program from the Oil Conservation Division on July 1, 2016, ECMD has been drafting 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 are to be completed by the end of 2016 with formal public notification and hearings to follow in early 2017.

To support the Governor's Energy Policy a program was institutionalized for energy performance in public buildings to track energy usage and to establish a benchmark. Data was collected to capture three years of energy consumption and to monitor performance targets for EMNRD's State Parks, State Forestry and Oil Conservation Divisions. The EPA Portfolio Manager tool is used for data entry, storage, reporting and analysis of EMNRD's utility bills. Currently there are 51 accounts with 407 meters that are updated monthly. State Forestry has 37 meters – electric 22, solar energy 2, propane 5, natural gas 8. State Parks has 367 meters – electric 259, solar energy 15, propane 88, natural gas 5. Oil Conservation has 3 meters – electric 3.

In 2016, ECMD was awarded DOE funding to provide extensive energy audits and create energy conservation plans for five wastewater treatment facilities. The program, called Waste Not, provides the 5 local governments help to collect, track, report and analyze energy usage data for their facilities. Helping these communities achieve lower costs of operation through more efficient use of energy is the goal.

Whole-building Investment for Sustainable Efficiency:

The Whole-building Investment for Sustainable Efficiency (WISE)

Program was started to provide strategic planning support via the WISE Team of EMNRD, GSD, and New Mexico Finance Authority (NMFA). The WISE Team is charged with establishing a 20 percent energy reduction in state government facilities by 2020 compared to a 2011 baseline energy usage.

Funded by the U.S. Department of Energy (DoE), the WISE Team has used the Investment Grade Audit (IGA) of Santa Fe's South Capitol complex buildings to justify design work and funding of \$2.1 million for the EEMs. Implementation of all the measures has been completed. Heating, cooling, and control system EEMs, including new air- and water-side economizers to improve efficiency of cooling at the State Data Center, were the first to be finished. EEMs of the IGA accepted for implementation by the WISE Team were projected to achieve a 20 percent energy reduction of 1.8 million kWh and 11,900 therms, for energy cost savings to the state government of \$160,000 per year. The data after all EEM implementation shows a reduction in energy usage of 19.88 percent, savings 2.3 million kWh and 10,950 therms. The next step for the WISE Team is to work with GSD and a Tenant-Agency of GSD to set up an Energy Savings Performance Contract (ESPC) utilizing an Energy Service Company (ESCO).

To continue the momentum and successes of the WISE Program and to implement the State Energy Policy, a plan will be developed in collaboration with stakeholders to reduce energy use by state agencies. A major tool for the WISE Team will be ESPCs, utilizing statewide price agreements established for ESCOs. With the help of these companies, the WISE Team can work with state agencies, whether tenants of GSD or not, to implement energy efficiency projects without the agency having to request funding to complete those projects. In order to ease the use of these ESCOs, the WISE Team has developed both a Standard Operating Procedure (SOP) for using an ESCo as a tenant of GSD and Standard Operating Guidelines for using an ESCo for higher education facilities, local governments, and for state agencies that are not tenants of GSD. Technical assistance and third party review of energy assessments will now be available to local governments, public schools, higher education, and state government in all energy - related ESCO and Clean Energy Revenue Bond (CERB) projects through the Third- Party Review process established by ECMD.

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 can finance energy-saving facility improvements using future energy savings created by energy efficiency measures.

New Mexico has implemented ESPC throughout the state since 2009 that equates to over \$85 million in energy retrofits and renewable energy generation. EMNRD just concluded a three-year partnership with the Department of Energy and the ESPC Accelerator program. A handful of states and a couple of cities



committed to completing a specific amount of ESPC projects. NM made a \$50 million commitment and surpassed that commitment by over 20 million, thus far. Currently, there over 15 projects in various stages from interest to measurement and verification in NM. EMNRD 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 this program is to provide energy efficiency and conservation projects with third party technical assistance and oversight. ECMD has have four local government partners in this program: 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. This project contained \$2.4 million in energy upgrades and has realized over \$333,000/yr in energy savings. Forty-four buildings were included in this audit. The hope is to realize the same wonderful results from the other three partners. The City of Las Cruces and Bernalillo County are wrapping up their audits and should be completed with all upgrades by the end of 2017. The city of Santa Fe is still in the process of getting an audit contract approved.

Originally, LEEP included four local governments, because of its success it has ballooned to a total 10 active projects examining, managing and saving energy in public buildings.

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. This project installed approximately one megawatt of solar panels.

Clean Fuels & Efficient Transportation:

The State of New Mexico joined the Department of Energy's (DOE) Workplace Charging Challenge in January of 2016. The first electric vehicle (EV) charging station was installed in June of 2016 in the parking lot at the Wendell Chino building in Santa Fe, New Mexico. The Wendell Chino building houses the Energy Conservation and Management Division. The charging station is a Level 2 EV Charge Point station with two charging cables. At present, there are very few electric vehicles owned by state employees at the state-owned complexes, but the state is hoping to change this by focusing not only on the installation of EV charging infrastructure, but also on the acquisition of electric vehicles for those campuses that have EV charging available. The Energy Conservation and Management Division plans to purchase a 2017 Chevy Bolt to accompany the EV charging station located at the Wendell Chino building once the vehicle becomes available for purchase.

New Mexico Natural Gas Fueling Stations



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, three new stations are in development in Albuquerque, Farmington and Lordsburg.

A Natural Gas Vehicle Report (NGV Report) was developed and finalized in November 2016 in response to 2016 House Joint Memorial (HJM) 5. HJM 5 directed that the natural gas vehicle (NGV) market potential in New Mexico be studied and a subsequent report be developed by the State of New Mexico Energy Minerals and Natural Resources, Economic Development, and General Services Departments. The NGV Report summarizes

natural gas for transportation and NGV use on a national and state level, current NGV programs in surrounding states and potential federal funding opportunities. The NGV Report concludes with recommendations as to how New Mexico can benefit from transportation fuel diversity.

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 52 electric vehicle charging stations open to the public. During 2016, many charging stations were installed at businesses, public parking areas and fueling stations -- including the first Electric Dual Charging Station on state-owned property at the home of ECMD, the Wendell Chino Building.

These stations are as follows:

Electric Charging Stations in Albuquerque Metropolitan Area - Public

- Dave and Buster's, Winrock Mall - 2100 Louisiana Blvd. NE
- Firehouse Subs, Montgomery Plaza - 4411 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 - 9901 Coors Blvd. NW
- Freddy's Frozen Custard & Steakhburgers, 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

Electric Charging Stations in Santa Fe – Public:

- Sprouts, San Isidro Shopping Plaza - 3201 Zafarano Dr.
- Lowes, San Isidro Shopping Plaza – 3462 Zafarano Dr.
- City of Santa Fe - Railyard Parking Garage - 503 Camino de la Familia
- City of Santa Fe, Convention Center – 201 W. Marcy St.
- 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 Loreta – Tesla – 211 Old Santa Fe Trail
- Don Gaspar Inn – Tesla – 623 Don Gaspar Ave.
- Four Seasons Resort Rancho Encantado – Tesla - 198 State Rd. 592

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
- Horace Nissan – 4300 E. Main 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 – 803 E. Route 66 Blvd., 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
- Bender Nissan – 3000 Mabry Dr., Clovis
- Permian Nissan – 3600 N. Grimes St., Hobbs
- Roswell Nissan – 2111 W. 2nd St., Roswell



WIPP full scale exercise

Waste Isolation Pilot Plant:

EMNRD 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. EMNRD 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.

EMNRD has worked in collaboration with DOE, Carlsbad Field Office (DOE-CFO) and the Carlsbad region to provide a mechanism for funding as required under the Settlement Agreement due to the accident findings. EMNRD and the New Mexico Environment Department (NMED) are working closely with DOE-CBFO to ensure that the WIPP meets the requirements of several Compliance Orders issued by NMED.

In October, 2016, the WIPP working group partnered with Santa Fe County and conducted a full-scale exercise involving a WIPP transportation vehicle. The exercise spanned three days and provided a training to over 100 responders and partners. The After-Action Report (AAR) conference will take place in February, 2017, at which time an Improvement Plan will be developed.

ENERGY CONSUMPTION BY SOURCE:

In 2014, 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, for the first time since 1981,

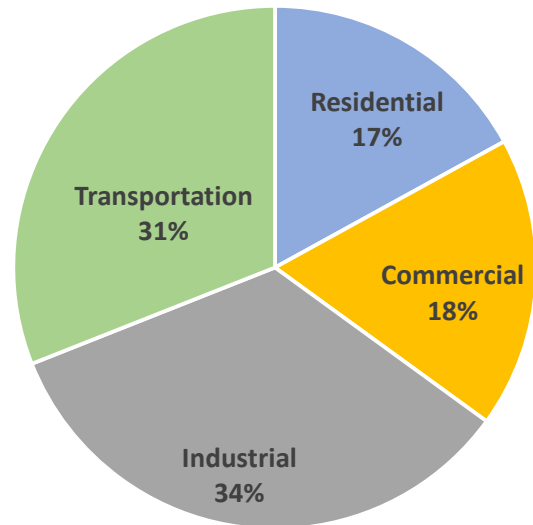


Valves, Raton Power Plant

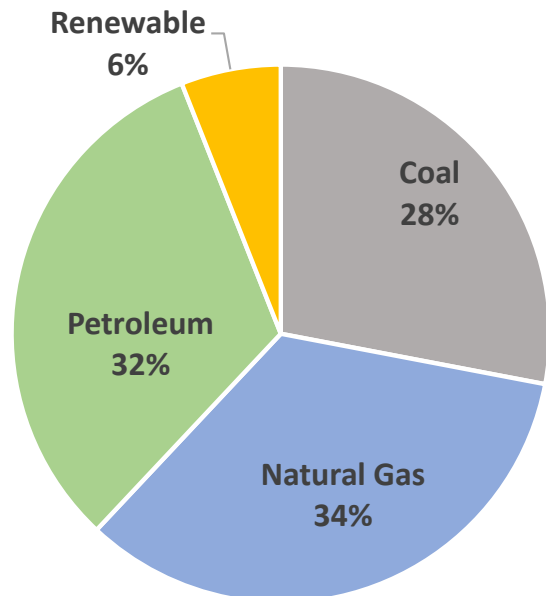
coal consumption fell from first place to third place behind both natural gas and petroleum products as the primary source of total energy consumption in New Mexico. The majority of oil is used in the transportation sector, while coal is dedicated to electricity generation. Natural gas is used both for heating and in an increasing proportion of the state's electricity generation. Renewable energy contributed 6.2 percent or approximately 46.8 tBTU of New Mexico's energy consumption and it is primarily used in the transportation (fuel ethanol) and electricity sectors. Although renewable energy's percentage of the total pie is relatively small, wind and solar energies have seen significant growth, with renewable energy electric generation increasing over 900 percent in New Mexico over the last decade.

ENERGY CONSUMPTION BY SECTOR:

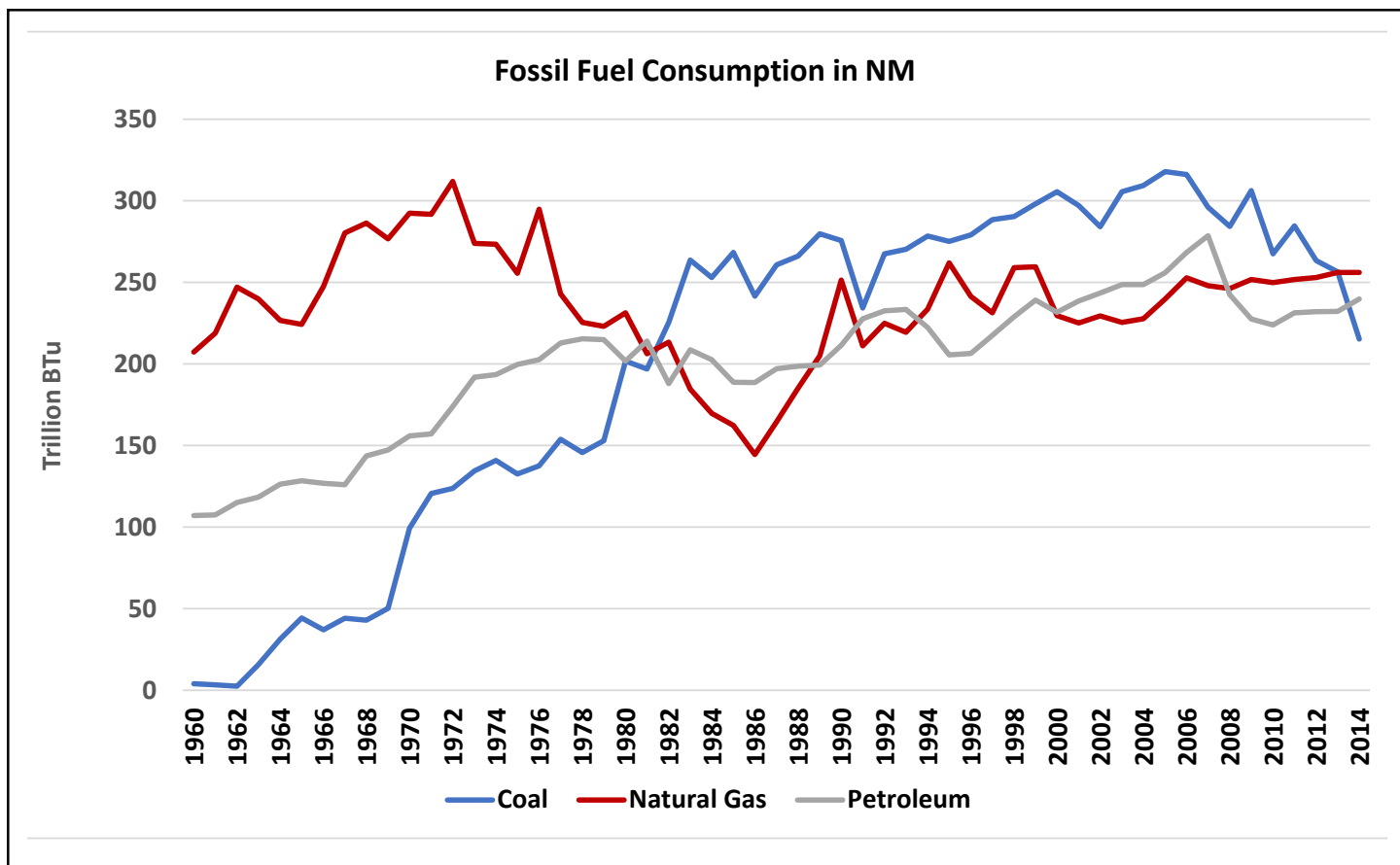
Net energy consumption for in-state needs was actually 679.1 tBTU, after subtracting the fuels consumed in-state for exported electricity generation, which was at its lowest level since 1969. When looked at by end-user, the industrial and transportation sectors consume the most energy in New Mexico, followed by the commercial and residential sectors. Only the transportation sector saw an increase in energy consumption from 2013 values. 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.



2014 New Mexico energy consumption by sector (total = 679.1 trillion BTU)
[Source: DOE Energy Information Administration]

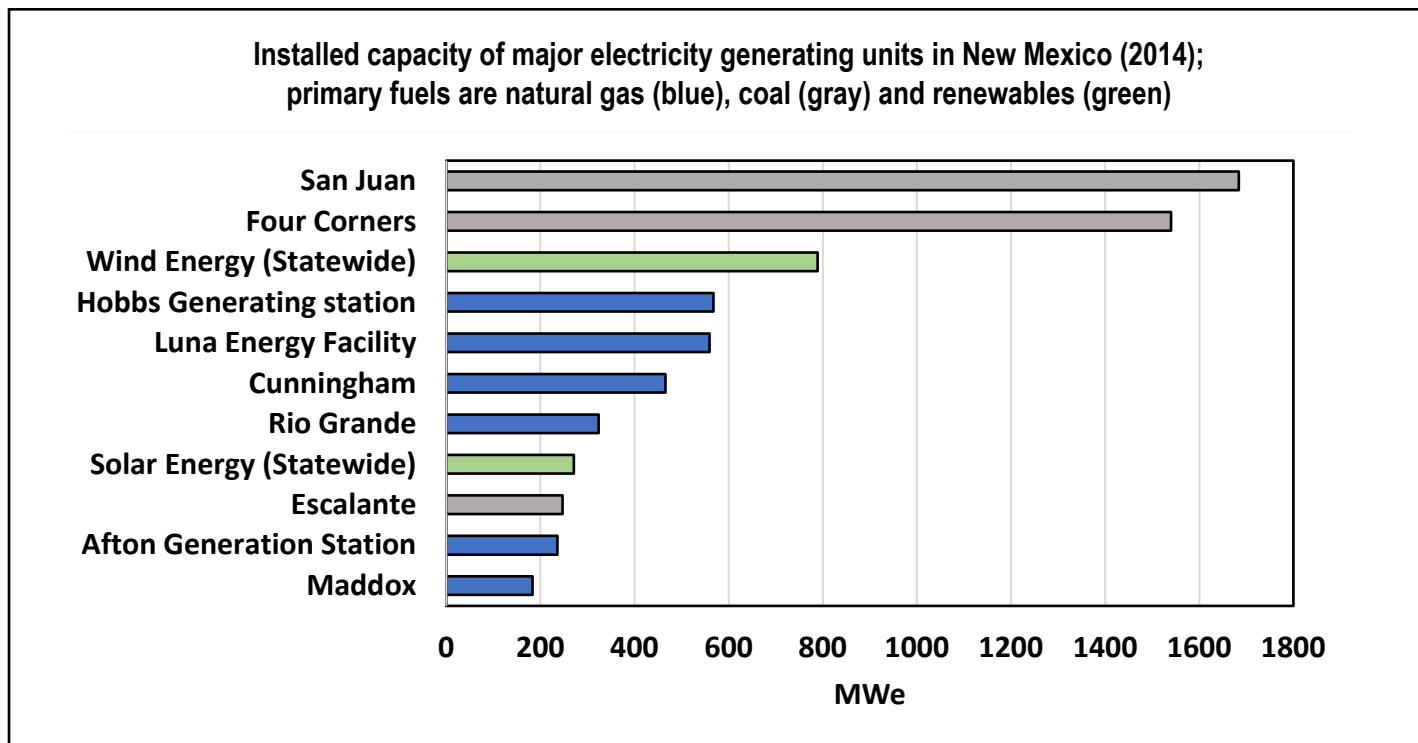


2014 New Mexico energy consumption by source, including fuels consumed in-state for electricity exports (total = 758 trillion BTU)
[Source: DOE Energy Information Administration]



Energy Consumption per Capita	New Mexico (million Btu)	National Average (million Btu)	Difference from National Average	National Rank
Residential	56.3	67.5	-17%	47
Commercial	60	56.9	+5%	25
Industrial	109.6	99.3	+10%	20
Transportation	99.7	84.8	+18%	13
Total Consumption	325.6	308.5	+6%	22

ELECTRICITY PRODUCTION: The figure below depicts the largest electricity generating units in New Mexico and wind and solar energy total installed capacity as of 2014. In 2014, electricity generation in New Mexico was 66 percent coal, 25 percent natural gas, and 8 percent renewable energy [Source: DOE Energy Information Administration]



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RENEWABLE ENERGY:

Of the total electricity produced in 2014, 7 percent was from wind, 1.6 percent was from solar, and 0.3 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 ranked sixth in the nation in utility-scale electricity generation from solar energy in 2014. All utility-scale renewable energy.

Name	Type	Capacity (MW)	Commenced Operation	County
New Mexico Wind Energy Center	Wind	204	2003	De Baca, Quay
San Juan Mesa Wind Project	Wind	120	2005	Roosevelt
Red Mesa Wind Energy Center	Wind	102	2010	Cibola
High Lonesome Mesa Wind Ranch	Wind	100	2009	Torrance
Aragonne Wind Facility	Wind	90	2006	Guadalupe
Caprock Wind Ranch	Wind	80	2004	Quay
Macho Springs Wind Power	Wind	50	2011	Luna
Wildcat Wind	Wind	27	2012	Lea
Broadview Energy Prime 1 and 2	Wind	20	2014	Curry
Anderson Wind I & II	Wind	15	2014	Chaves
Llano Estacado (Texico) Wind Ranch	Wind	2	1999	Curry
Mesalands Community College	Wind	1.5	2008	Quay
Roosevelt Wind	Wind	250	2015	Roosevelt
Navajo Dam	Hydro	30	1983	San Juan, Rio Arriba
Elephant Butte	Hydro	28	1940	Sierra
Abiquiu Dam	Hydro	18	1990	Rio Arriba
El Vado Dam	Hydro	8	1990	Rio Arriba
Macho Springs Solar	PV	52	2014	Luna
SPS 1–5 Solar Facilities	PV	50	2011	Lea, Eddy
Cimarron Solar Facility	PV	30	2010	Colfax
SunEdison EPE 1–2	PV	23	2012	Doña Ana
Solar Roadrunner	PV	20	2011	Doña Ana
Manzano Solar	PV	8	2013	Valencia
Otero Solar	PV	7.5	2013	Otero
Los Lunas Solar Energy Center	PV	7	2011	Valencia
Sandoval Solar Energy Center	PV	6	2014	Sandoval
Las Vegas Solar Energy Center	PV	5	2012	San Miguel
Alamogordo Solar Energy Center	PV	5	2011	Otero
Hatch Solar Energy Center	PV	5	2011	Doña Ana
Deming Solar Energy Center	PV	9	2011	Luna
Meadow Lake Solar Energy Center	PV	9.1	2014	Valencia
Cibola Solar Energy Center	PV	7.6	2014	Cibola
TOTAL		1389.7		

Utility-scale (>5 MW) renewable energy facilities in New Mexico (2015) [Source: DOE Energy Information Administration and ECMD PTC files]



New construction represents an over three megawatt additional generating capacity at the Lightning Dock Geothermal power plant in Hidalgo County. July 2016. Photo by Daren Zigich

ELECTRICITY & 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.

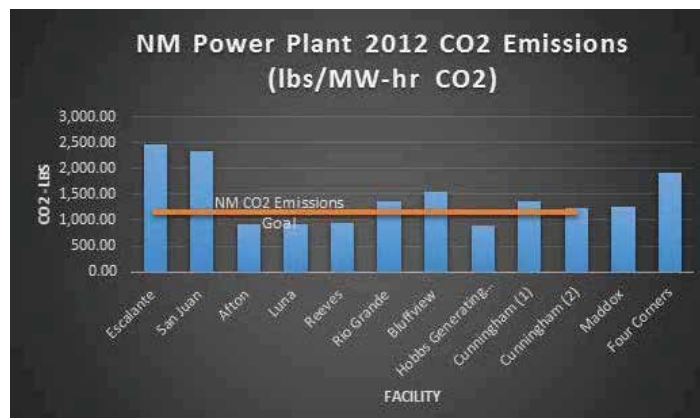
While most solar and all current wind technologies do not require any water for operation, other traditional power generating facilities (e.g., coal, gas, biomass or nuclear), geothermal and concentrated solar facilities that generate power by producing steam to turn a steam turbine generator use water 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 gallons 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 August 2015, the U.S. Environmental Protection Agency (EPA) released a final rule for regulating carbon dioxide (CO₂) emissions from existing electricity generation facilities. On February 9, 2016, the Supreme Court stayed implementation of the Clean Power Plan pending judicial review.

If the Clean Power Plan is upheld by the Supreme Court, states would be required to develop a Clean Power Plan (CPP). The rule allows states to choose from many options to determine the best plan for the states and their citizens while protecting electric service and controlling costs for bill payers.

New Mexico has two coal plants (Escalante, San Juan) that would be included in the plan, four oil or gas steam electric generators (Cunningham, Maddox, Reeves, Rio Grande), and four natural gas combustion turbines (Afton, Luna, Bluffview, Hobbs) that would also be included in New Mexico's CPP. The Clean Power Plan rule requires these facilities to reduce their 2012 carbon emissions by 36 percent by 2030, or from an average emissions rate of 1,798 pounds of CO₂ per MWh (lbs CO₂/MWh) to 1,146 lbs CO₂/MWh. Coal-fired power is the primary CO₂ emitter in the electricity sector in New Mexico.



Largest CO₂-emitting power plants in New Mexico (2012) that will be included in New Mexico's CPP (except for Four Corners, which is located on the Navajo Nation) with their 2012 carbon dioxide emissions per megawatt hour compared to the EPA-determined mass goal for New Mexico's fleet of generators. [Source: New Mexico Environment Department]

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 35 parks that offer a great diversity of natural and cultural resources, providing recreational and educational opportunities for 5.2 million visitors in FY16, nearly 1 million more visitors in FY15.

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 35 parks encompassing 19 lakes and 191,617 acres of land and water.

VISITATION & REVENUE: A total of 70 percent of State Parks' budget is supported by self-generated revenue and 30 percent is general fund. Visitation in FY16 totaled 5,265,716 and the numbers of passes for non-residents, veterans and disabled individuals all increased from the previous fiscal year. Revenue for FY16 was \$4.9 million.

2016 Capital Projects:

New Mexico State Parks completed many key projects in 2016. The following are examples of the excellent work of staff and contractors who have helped to better park infrastructure statewide.

Oasis State Park: Renovation of the old comfort station serving the lake area was completed in 2016. The work consisted of replacement of old fixtures, plumbing, and lighting. The project was funded with Federal Land and Water Conservation Funds and State Capital Appropriation funds amounting to a total of \$285,000.



Sugarite Canyon State Park: The Opportunity Trail was rehabilitated to reduce the slope of the trail in an effort to curb erosion on the hillside. In addition, a connector trail between Lake Maloya and Lake Alice was completed, including placement of a pedestrian bridge across Chicorica Creek.

The completion of the connector trail provides a continuous pedestrian route from the visitor center to Lake Maloya. Funding was provided for the project from the Federal Highway Administration's Recreational Trails Program (80 percent) and State funds (20 percent), with a total cost of about \$100,000.

Rio Grande Nature Center State Park: A new bird viewing platform was completed at the park to provide an ADA accessible point in the park from which to view the sand hill cranes in the Candelaria Farms fields. The adjacent parking lot was also improved to provide ADA accessible parking and proper drainage. The project, costing approximately \$180,000, was funded by donations from two local benefactors. Also, at the Nature Center's visitor center, new energy efficient lighting was installed to reduce the load on the electrical system, resulting in significant savings on electric bills. The project cost was nearly \$60,000.





Navajo Lake Visitor Center: The historic Mission 66 visitor center at Navajo Pine was totally renovated at a cost of \$1.3 million, with funding from the U.S. Bureau of Recreation matched 50 percent by State funds. The renovations included a new roof, windows, electrical and heating, as well as an enlarged patio and a new classroom. The restrooms were also made fully ADA accessible, and the main entrance station was replaced.



Hyde Memorial State Park: Three new yurts were constructed in an existing camp loop, complete with heating and picnic sites, as well as a new vault toilet. One of the yurts and the vault toilet are ADA accessible. Funding in the amount of \$300,000 was provided by the Federal Land and Water Conservation and State Governmental Gross Receipts Tax funds.



Leasburg Dam State Park: A new developed camping loop was constructed to accommodate large RVs, complete with water and electric, as well as shelters and grills. The project, costing approximately \$160,000, was funded 50 percent by US Bureau of Reclamation funds and 50 percent State Governmental Gross Receipts Tax funds.

Brantley Lake State Park: The main electric line serving the park was completely replaced at a cost of nearly \$500,000. The old underground line was more than 30 years old and was irreparable. The renovation project included a new transformer and was funded by the US Bureau of Reclamation.



City of Rocks State Park: Two Federal Recreational Trails Program projects were completed in the park in 2016. The trail to Table Mountain was improved by reducing the grade and repairing several eroded sections, as well as adding benches at key locations. A new trail was constructed to a cienega in the park, providing access to a wetland and wildlife viewing area. The project cost amounted to approximately \$80,000, 80 percent of which were federal funds and 20 percent, state.



Heron Lake State Park: The Heron Lake visitor center was re-roofed and re-stuccoed after 20 years in service. The total cost of the project amounted to approximately \$72,000. Additional work at the park included replacement of the septic tank at the visitor center (\$10,000), repair and re-coating of the Willow Creek Water Tank (\$45,000), and replacement of major components of the water treatment system (\$30,000).



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 projects at: Bottomless Lakes, City of Rocks, Elephant Butte Lake, Leasburg Dam, Navajo Lake, Santa Fe River State Park, and Sugarite Canyon 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, Bureau of Reclamation, Bureau of Land Management, U.S. Army Corps of Engineers, U.S. Fish and Wildlife Service and other entities. For example, State Parks partnered with the Bureau of Reclamation, US Fish and Wildlife Service, and Farmington Electric Utility System to install osprey nest poles at Navajo Lake State Park to draw osprey away from building nests on live power poles; and with the New Mexico State Forestry Division to continue a forest health project on 35 additional acres at Hyde Memorial State Park. The tree thinning project will improve forest health by restoring forest density back to a more natural state and will decrease the risk of catastrophic fire.



OUTDOOR EDUCATION PROGRAM:

State Parks provides quality interpretive experiences and educational programming for visitors. In 2016, a total of 1,259 interpretive and educational programs were delivered to 27,468 people visiting our parks. Our program types range from Ranger-led talks about the ecology and history of the park to more formal programs that extend classroom learning to the outdoors.

The Statewide Outdoor Classroom Program provides students with hands-on, curriculum-based outdoor experiences. One of the program's most successful components is the Transportation Grant program that provides funding to schools to help pay for the cost of buses to get students to a state park where they experience outdoor education programming. The program is heavily funded by taxpayers through the Kids 'n Parks Personal Income Tax Check-off. Since 2007, State Parks has provided outdoor classroom experiences for more than 170,000 kids statewide. In 2016, \$10,889 was awarded to 30 different schools resulting in 1686 students visiting the parks and receiving outdoor education programming. Overall, more than 13,000 students visited New Mexico State Parks in 2016 for outdoor education programming.



RESOURCE PROTECTION PROGRAM:

As part of its mission, State Parks documents and preserves the unique cultural and natural resources within its system. In 2016, much of the focus was on a series of maintenance and repair projects, and State Park staff reviewed more than 50 park projects, which often required inventory, research, and reporting.

New to the Outdoor Education Program in 2016 was the inaugural Learn to Camp program. State Parks partnered with the New Mexico Children, Youth and Families Department and their PullTogether initiative to host six foster or adoptive families at three different parks and teach them the fundamentals of outdoor camping. Through a generous donation from the Coleman Company, State Parks provided all of the necessary camping equipment for each family including tents, lanterns, stoves and sleeping bags. We hope that with this experience participants will be inspired to use their new-found skills and make outdoor recreation a part of their lifestyle.



BUSINESS ENTERPRISE:

State Parks relies heavily upon our relationships with concessionaires and private businesses operating within the parks to provide services and generate revenue. State Parks manages 17 different concessions throughout its system and values the visitor services that they offer. Current concessions found in our parks include marinas, fishing guides and outfitters, a horseback riding concession, general stores, food trucks and gift shops. State Parks also leased space for the operation of small concessions. In addition, at Living Desert Zoo & Gardens State Park space was leased on a digital communications tower. From January thru October 2016, State Parks collected \$336,158 in revenue from our current array of concessions.

Keeping the contracts associated with concessions up-to date is a significant responsibility, and in 2016, State Parks negotiated three critical contracts: the State Parks online reservation system; the Navajo Lake Marina; and the ski shop at Hyde Memorial State Park. As a result of our successful negotiations with Navajo Dam Marina, the concessionaire has initiated plans to improve the marina by increasing the number of slips, building a new store and restaurant, and improving the fueling facilities.



State Parks continues to benefit from a relationship with Active Network, an online reservation system

concessionaire. The system they provide allows visitors to make reservations online and provides State Parks with accurate and informative reporting about our visitors. They continue to

increase the functionality of their software and they will soon be providing our park staff with the ability to access the software (ReserveAmerica) from each park and make updates to the system in a more timely manner.

Nearly 73 percent of our customers making online reservations are from New Mexico. Parks experienced a 15.5 percent year-over-year increase in revenue generated through ReserveAmerica in 2016. State Parks also collected \$5,853 in online donations in 2016 through the reservation system.

The Business Enterprise Program also partnered with the UNM Anderson School of Management to develop an economic and outreach analysis for State Parks. The results of that analysis will be used to better inform decision making related to developing a broader visitor base, especially among Millennials.



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 employs 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 2016, 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.

State Parks operates and manages the majority of the state's



recreational boating opportunities. The 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 FY16, 877 students successfully passed a boating safety course. 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 (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 with the Auxiliary 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.

MARKETING PROGRAM:

In 2016, the Communications and Marketing Team had remarkable year, concentrating 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:



University of New Mexico:

Through the Marketing Team, State Parks received a Small Business Scholarship from the University of New Mexico's Anderson School of Management for Fall 2016.

State Parks' benefited from an economic outreach analysis. Marketing specifically had four groups take on NM State Parks as their class project and presented marketing plans for the yurts at Hyde Memorial State Park as well as a plan for signature events

to connect millennials to State Parks.

Another team within the Master's Program presented a marketing plan for signature park events such as a Tree-Athlon in Sugarite Canyon State Park, a Selfie Scavenger Hunt at Living Desert Zoo and Gardens State Park, and Movies and Foodies. All presentations provided a SWOT (Strengths, Weaknesses, Opportunities, Threats) Analysis and the students focused on Market Analysis, Marketing Objectives, Strategy and Action Plans.



National Association of State Parks Directors (NASPD):

The NASPD and NMSP teamed up with the REI retail chain's initiative to get people outdoors the day after Thanksgiving for free. The promotion was well received on Instagram, Facebook and NMSP was featured in the local media. #OptOutside will continue to gain momentum as more state parks offer guided hikes and other activities.



Cerrillos Hills State Park 2016 First Day Hike

First Day Hikes is another national initiative of the NASPD, and in 2016, New Mexico State Parks hosted guided hikes at 14 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. The total number of participants were 456 and the total number of miles hiked by participants was 1,150.45.



*Find Your NM True Park Grand Prize Winner -Reed Weimer
Fireworks over Eagle Nest Lake State Park*

Find Your NM True Park:

In June, the Marketing team partnered once again with the New Mexico Tourism Department, NM Department of Cultural Affairs, and the National Park Service to promote Find Your NM True Park Photo Contest 2.0. This year's grand-prize winner was a phenomenal photo of the 4th of July Extravaganza at Eagle Nest Lake State Park in northeast NM! The contest proved to be very successful as many New Mexicans submitted captivating photos of the Parks—photos that will be used in future marketing promotions.



Park Manager John Read and State Parks Director Christy Tafoya with Steven Clay of the 16th Infantry Regiment Association at the dedication ceremony marking the centennial of the Punitive Expedition

Highlighted State Park Programs:

The Centennial Celebration of **Camp Furlong**, and Pancho Villa's Raid in Columbus, NM in March at Pancho Villa State Park was well-attended and successful. The day began with the unveiling and dedication of a plaque detailing the Punitive Expedition from the 16th Infantry Regiment Association in the Park's museum.

The park and partners coordinated historical presentations and educational activities were highlighted at Pancho Villa State Park, the Village of Columbus Plaza and the Columbus Train Depot Museum on that day.

Two very distinguished guests attended the day-long event - Francisco Antonio Villa Alcazar, the great-great grandson of Pancho Villa, and Ms. Helen Patton, the granddaughter of General George S. Patton, Jr.



Francisco Antonio Villa Alcazar and Ms. Helen Patton greet one another at Camp Furlong

State Parks and Marketing were responsible for the Employee Recognition Program honoring outstanding state park employees by coordinating Award Ceremonies throughout all five regions. The Marketing team prepared award plaques, certificates, scripts and worked with staff and volunteers to coordinate luncheons to honor our service employees and retirees. The team also promoted the moral-building ceremonies through pictures, press and promotion statewide.



The 2016 Governor's Award went to Shank Cribbs from Santa Rosa Lake State Park; Chris Vigil, park manager at Coyote Creek and Morphy Lake State Parks won the Secretary's Award; and four people won the Director's Award: Robert Stokes, Frank Suazo, Alfred Spinney and Shanna Reed Parsons.

Digital and 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 routinely shares pictures people post on Facebook, Twitter and Instagram via mobile devices, desktops and tablets, to promote all 35 state parks.



Display ads and social media promotions such as 'New Mexico State Parks – Official Sponsor of Adventure', 'Find Your New Mexico True Park', 'Boat Safe Boat Smart', 'We Salute Veterans', 'Work Hard - Play Hard Labor Day' and 'Tis the Season', 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 participated in RV shows, the Department of Game and Fish Hunting and Fishing Expo, Santa Fe's Big Toys for Big Boys Expo, an Isotopes Baseball game, Natural Sciences Day at the Roundhouse during the 2016 Legislative Session all to promote state parks. Participation in the New Mexico State Fair was a huge success! This year, NM State Parks participated in outdoor booths during Main Street Days.



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



Governor Susana Martinez at Capital Campout Press Conference at the Rio Grande Nature Center State Park



Effective Media Buys:

State Parks' digital reach buy with Local Digital Reach has been exceptional in 2016, creating top of the mind awareness for signature events, special promotions and camping opportunities within New

Mexico State Parks. Using geographic and behavioral targeting, more than 600 thousand people in New Mexico and Texas have seen State Parks' digital advertising. More than 16 thousand of those impressions have been re-marketed, or served the advertisement again to the potential customer. More importantly, this brought nearly 10 thousand visits to the State Parks website. Of those 10 thousand people, 2,656 visitors either clicked on another specific State Park or made reservations to stay in State Parks.

Marketing has another effective media buy for small businesses with the Albuquerque Publishing Company who publishes the Albuquerque Journal.

NMSP ads in the Journal have created top of the mind awareness about State Parks and Signature Events.



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". Many new contacts and partners were gained through NMBA links.

State Parks was well represented in Northern New Mexico last Spring by Hutton Broadcasting promoting "Summer Will Soon Be Here" and NMSP also has radio media buy with Que Suave (99.9 FM and 810 AM) to sponsor the Great Outdoor New Mexico Show. A "Park of the Week" is featured throughout the year, as are special events.

For the Find Your New Mexico True Park photo contest, the media buy with KOAT-TV (Hearst) which included commercials, digital creative and station promotion, provided a clear return on investment for New Mexico State Parks and the Division will benefit from pictures for years to come.



In 2016, State Parks enjoyed increased visitation. In fact, overall visitation at most parks increased from last year with more than 5.2 million visitors! Climate, water levels, efforts of park staff, partners and volunteers were contributing factors. Through effective media buys, working with all parks to market special events, and continuing to foster beneficial partnerships, the Communications and Marketing Team was also a major contributor to a successful year.

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)

For more information on the Energy, Minerals & Natural Resources Department visit:
www.emnrd.state.nm.us

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Editor's Note: If you have any questions or comments regarding this document, please contact:

Beth Wojahn
Communications Director
Energy, Minerals & Natural Resources Department
1220 South St. Francis Drive
Santa Fe, NM 87505