

New Mexico Energy, Minerals and Natural Resources Department

ANNUAL REPORT



2010

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Energy, Minerals and Natural Resources Department

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Youth Conservation Corps

V

ision:

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

M

ission:

To position New Mexico as a national leader in the energy and natural resources areas for which the department is responsible.

Natural

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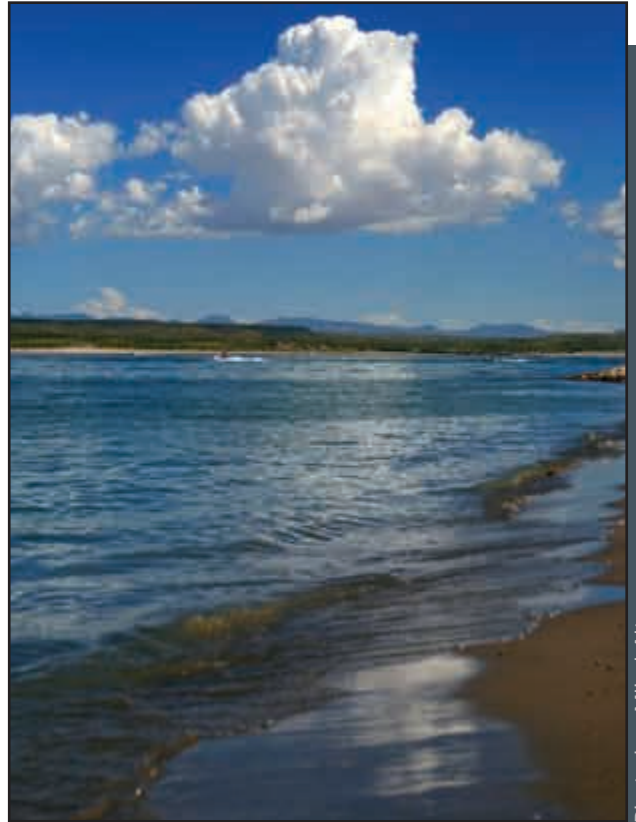
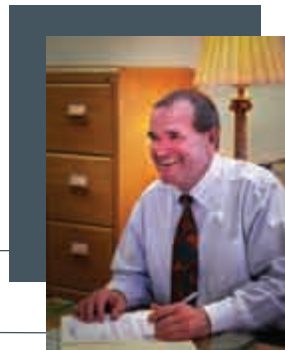


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Resources

Jim Noel

Cabinet Secretary



Energy, Minerals and Natural Resources Department

A Message from Cabinet Secretary Jim Noel

It is with pleasure that I share the 2010 Annual Report of the New Mexico Energy, Minerals and Natural Resources Department. This year's report includes a review of the department's efforts in 2010, but also contains a retrospective of the administration's successes of the past eight years.

During my tenure I have witnessed first-hand the hard work of EMNRD's employees to protect our natural resources. Their efforts are particularly noteworthy given the current economic and budget-constrained climate. EMNRD staff have faced the reality of doing more with less, and they have done so with increased commitment, dedication and creativity. It is only through their resourcefulness that this department has maintained state park operations, increased the amount of land under conservation easements, increased riparian restoration efforts, protected our natural lands from wild fires, and continued regulatory oversight of natural resource extraction.

Joanna Prukop, who served as Governor Richardson's first cabinet secretary in this department, deserves much credit for the successes of this department over the past eight years. Under her leadership, this department implemented the Governor's aggressive and progressive agenda concerning public lands management, the regulation of oil and gas exploration and development, and clean energy development. Secretary Prukop, along with the hard work of EMNRD staff, enhanced New Mexico's state parks, expanded land conservation and wildlife habitat protection initiatives, addressed forest and watershed health concerns, and required mining companies to provide financial assurance for the close-out and reclamation costs of their mining operations.

Theodore Roosevelt noted that "[o]f all the questions which can come before [us]..., there is none which compares in importance with the great central task of leaving this land even a better land for our descendants than it is for us..."

I am proud to have had the opportunity to serve this administration and the people of this state. I am also proud to have had the honor of serving with such dedicated civil servants as I have seen at EMNRD. They embrace the principles Roosevelt put forth a century ago - principles that are even more crucial today than when first conceived by Roosevelt, to ensure a sustainable environmental and economic future for our beloved state of New Mexico.



Governor Bill Richardson

Organization

Charts

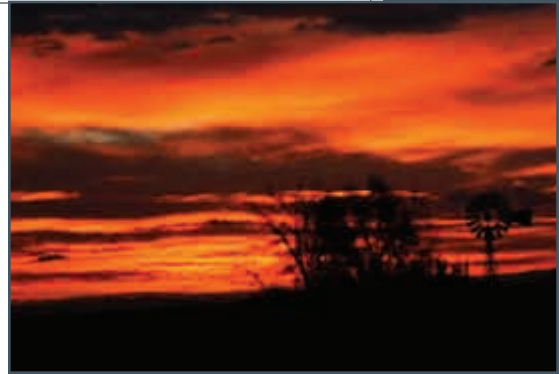
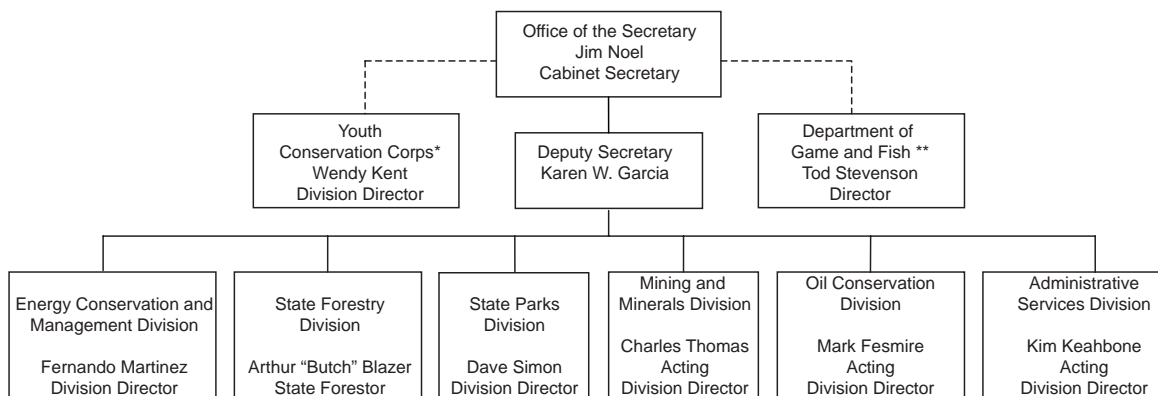


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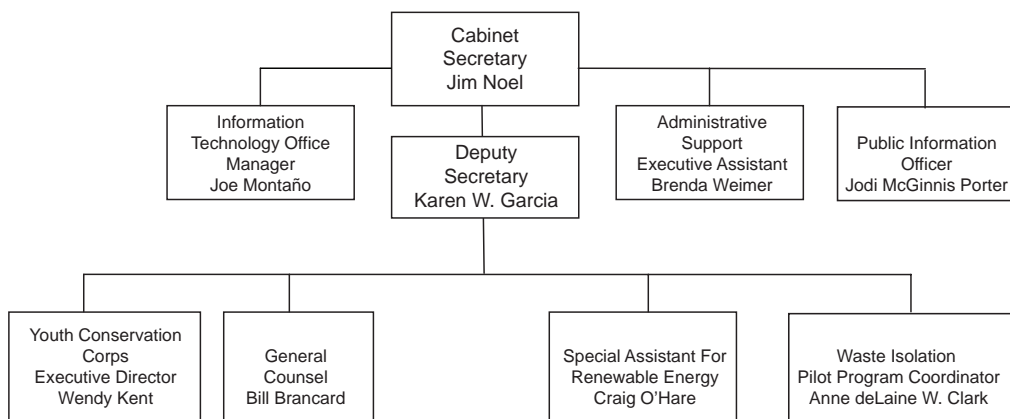
Energy, Minerals and Natural Resources Department



*Administratively attached.

** Administratively attached. No direct budget support from EMNRD

Office of the Secretary



Office of the Secretary

The Office of the Secretary (OFS) provides leadership, strategic planning, policy direction, and establishes procedures for the department and program performance. OFS oversees all divisions within the department; it also houses the Human Resources, Financial Services Bureau (FSB), Offices of Information Technology, Public Information and General Counsel. OFS also administers the Waste Isolation Pilot Project Transportation Safety Program and Youth Conservation Corps.

OFS serves as the focal point for the department's communications with the Governor, other state agencies (including the Department of Game and Fish, which is administratively attached to EMNRD), and legislators. It establishes department policies and provides legal, programmatic, and public outreach direction to the divisions.

Conservation Coordination Initiatives

After passage of the Natural Heritage Conservation Act by the legislature in 2010, EMNRD moved forward with a rulemaking for implementation of the Act. Rulemaking included engaging in a state-wide public outreach effort to gather input from the public as well as other agencies in development of the implementing rules. The rules were adopted effective July 30, 2010, to set the stage for selecting projects for future use of the Natural Heritage Conservation Fund created by the Act. There were no funds appropriated to the Natural Heritage Conservation Act in the 2010 legislative session; however, a special appropriation from severance tax bonds (HB5) was provided to EMNRD for restoration and conservation easements to be divided between EMNRD and the New Mexico Environment Department (NMED).

Major effort from November 2008-November 2010 was directed toward land conservation, habitat corridors, and wildlife adaptation, overseen by EMNRD working in concert with other state land, water, and wildlife resource agencies. A significant focus of this work was identifying ways that information and priorities from 12 state and regional conservation plans, strategies, and initiatives can be integrated for more ecologically advised and cost-effective implementation. Emphasis was placed on integration of:

- State Comprehensive Outdoor Recreation Plan
- Water Quality Management Plan
- Nonpoint Source Management Program
- State Water Plan
- Forest and Watershed Health Plan
- Non-native Phreatophyte/Watershed Management Plan
- Comprehensive Wildlife Conservation Strategy for New Mexico
- River Ecosystem Restoration Initiative
- Outstanding National Resource Waters
- Western Governors' Association Wildlife Corridors Initiative
- Aquatic Invasive Species Management Plan
- Statewide Natural Resources Assessment

Working collaboratively with the NMED, an RFP was distributed to identify restoration projects through the ongoing River Ecosystem Restoration Initiative led by NMED. A separate Request for Applications managed by EMNRD identified seven conservation easement projects to conserve about 9,520 acres of agricultural and habitat

values on forested, rangeland, and aquatic areas statewide. All project selections were made by the EMNRD Cabinet Secretary in early September 2010. Preparation of necessary agreements and contracts is underway to accomplish these conservation endeavors well in advance of the June 2014 reversion date of the appropriated funds.

Financial Services Bureau

A main purpose of the FSB is to assure fiscal accountability for the agency. It oversees all accounting and financial transactions in the department to ensure compliance with state laws and regulations. The bureau also compiles annual budget requests and department operating budgets.

Public Information Office

The 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 or opinion pieces. It serves as project manager for department-wide publications such as the annual report, strategic plan, tribal collaboration report, performance and accountability, and other reports as needed. It coordinates and oversees EMNRD's internal communications, including Internet and Intranet, newsletters, memos, award ceremonies and other department-wide events. The office works closely with all divisions housed within EMNRD providing guidance on marketing and public relations issues.

The office is also responsible for collecting and sending all publications to the state depository program. The state library collects materials which are meant for the public such as this annual report, guides, newsletters, books, brochures and final reports.

The office recently developed and launched the "New Mexico Energy Solutions" campaign that included a website www.energysolutions4nm.org, television and radio advertising, brochures, educational materials, and the distribution of 10,000 CFL light bulbs to low income families.

Prior to 2006, the department's annual report was outsourced to a private designer at an annual cost of \$6,000 dollars per year. The report was redesigned and is now produced and developed in house and made available electronically at a significant cost savings to the state. Reports are available at www.emnrd.state.nm.us/main/Publications.htm.

Information and Technology Office

The Information and Technology Office (ITO) is the central information technology and information systems provider for the department's 510 employees and 54 remote sites. It employs 16 technical positions that are responsible for maintaining and supporting computer systems, network-telecommunications infrastructure and application development needs of the department, using the latest technology for Windows and Web applications on the Intranet and Internet.

ITO supports approximately 700 computers/laptops, 315 printers, 65 scanners and many other computer peripherals and devices such as Blackberries, Smart phones, digital cameras, and GPS units. In addition to Microsoft Windows and Microsoft Office, ITO supports approximately 50 approved software packages such as Adobe, ESRI, Symantec, Autodesk, Trimble, Kofax and many other proprietary products. ITO maintains 2,858 IT hardware items and 1,900 software licenses. The basic setup for one computer previously took an entire day; technological advances have whittled that time down to 30 minutes per computer.

Additionally, ITO provides the focus for the development of information technology and information systems strategy and policy for EMNRD. The infrastructure equipment administered includes 20 production and 10 development servers, 16 routers, 56 switches, 30 servers, a firewall, 35 terabytes (TB) of data storage and a 700-TB tape backup archive. ITO supports and maintains the network and Internet access of 54 remote sites connected via six different technologies: T1, DSL, Microwave, Satellite, Cellular and dialup.

EMNRD has approximately 395 handheld radios, 262 mobile (vehicle) radios and 57 base station radios. ITO has provided or enhanced the broadband connections for 52 of the 54 remote EMNRD sites. ITO has reduced costs by implementing server virtualization in both our development and production environments, and our physical server count has been reduced from 31 to 10 (seven for production, three for development) with a total of 146 databases (76 for production, 70 for development). This year alone, ITO has detected, blocked and/or eliminated 48,000 external network attacks and 21,000 virus/worm attacks.

ITO administers and supports 20 IIS websites, as well as website domain licensing and renewals, website log/hit analysis, website link validation reporting, IIS server administration and web training.

In addition, ITO maintains approximately 25 separate laptop database servers provided with replication data synchronization for use with the RBDMS application. ITO maintains a production catalog of 56 custom applications (batch, command line, Web, Windows) covering a wide spectrum of functionality.

ITO has stayed on top of ever-changing technology with regard to desktop hardware and software. Within the last eight years ITO has supported four major releases of Microsoft PC operating systems at the enterprise level (Win NT, Win 2000, Win XP and Windows 7) and has maintained a regular field visit schedule to support an increasing number of remote offices. ITO also supports a variety of hardware ranging from desktops, laptops, printers and scanners to GPS receivers and Smart phones (Figure 1).

To maintain consistency and maximize utilization of limited Information Technology (IT) resources, ITO has instituted standardized suites of software and hardware, created purchasing procedures, promulgated maintenance schedules, and implemented usage and license tracking. Key changes include the adoption of regular equipment replacement cycles to ensure equipment performance and reliability, and the use of Symantec's Ghost technology to install preconfigured packages of computer operating systems and application software. The use of Ghost alone has reduced the basic computer setup time by over 80 percent.

ITO has also implemented numerous division-specific IT projects in support of EMNRD's business processes, such as PUMA digital voice recording systems for State Parks law enforcement officers, the Kofax Scan Stations used by

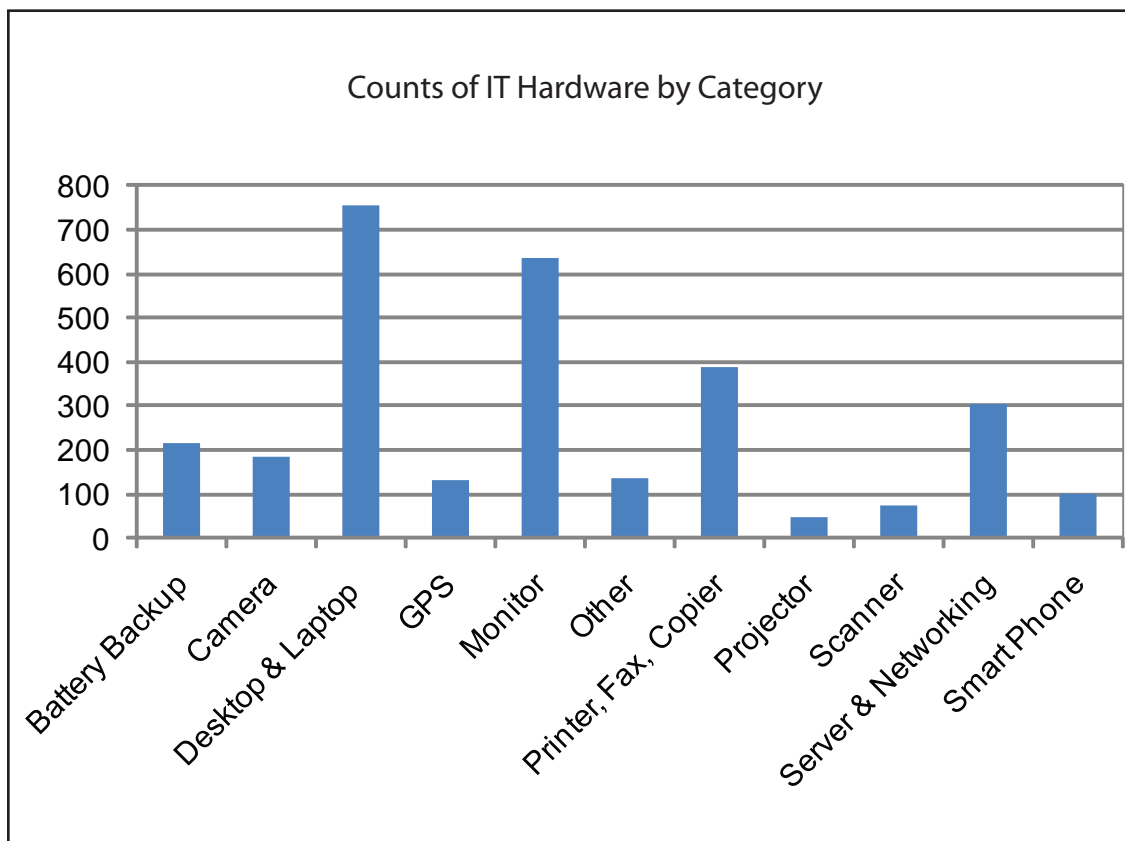


Figure 1

the Oil Conservation Division to digitize documents that are available on the website, and an aerial digital sketch mapping system for State Forestry for airborne mapping of fires, forest health, insect and disease control.

SUPPORT AND TRAINING: ITO implemented and managed an enterprise-level helpdesk system to log and keep track of all IT-related technical issues and projects. This EMNRD ITO HelpDesk supports the main Santa Fe office as well as all of EMNRD's 54 remote sites. From 2003 to 2010, ITO has resolved over 50,000 HelpDesk cases. Figure 2 on the next page illustrates HelpDesk cases resolved per division since November 2002.

ITO has created training materials, conducted frequent training sessions for EMNRD employees on a variety of topics, and advised them on available training resources. To maintain a high level of technical proficiency and keep current with IT technology, ITO staff regularly attends training courses and obtains industry standard certifications including A+, MCSE, MCSA, MCP, Network+, Security+, CISSP and GISP.

INFRASTRUCTURE: ITO implemented server virtualization in 2009. Server virtualization is a technology that separates a server operating system from the physical hardware it runs on, creating something called a virtual server. Instead of having one physical server for one server process, ITO can create one physical server for many server processes (up to a ten-fold increase). Virtualization results in reduced hardware maintenance, power and

Counts of HelpDesk Cases Resolved per Division from 11/2002

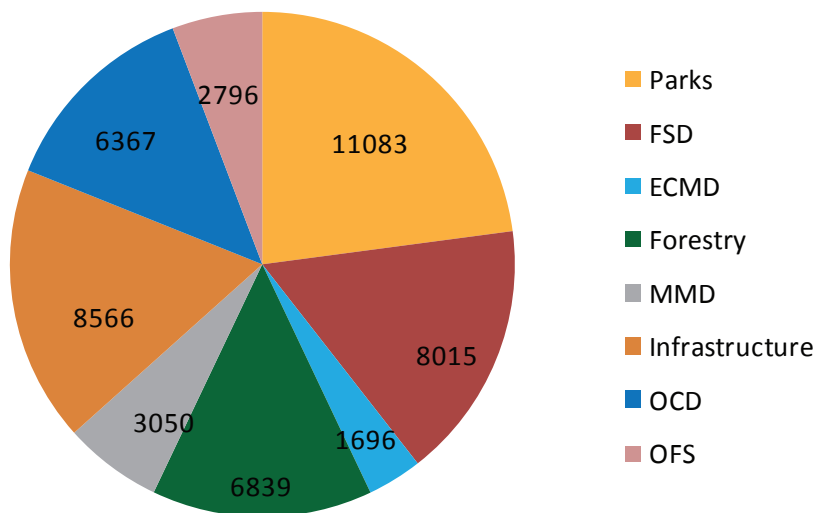


Figure 2

cooling savings and the reduction of EMNRD's physical server count from 31 to 10. ITO is continuing to expand its use of virtualization into the production environment.

EMNRD field office employees have benefitted from ITO's deployment of faster broadband connections (1Mb/sec or better) for 49 of 54 remote EMNRD offices. Although five offices remain on dial-up internet service due to their extremely remote locations, ITO has received approval from DoIT for new 1.5Mb satellite service for those remaining locations. ITO is constantly researching new options for Internet providers for all the remote offices and upgrading the connections as service becomes available. Figure 3 maps EMNRD office locations and their relative network speeds and connectivity types.

APPLICATIONS: Over the past eight years ITO has greatly expanded the number and quality of the custom software applications that support the divisions and business processes. There are now 56 custom applications supporting our agency. The focus of application development has been to streamline and automate manual business processes to reduce paperwork and increase efficiency; to provide improved public access to information and services; and to make available extensive and detailed information pertaining to the department, its programs and documents.

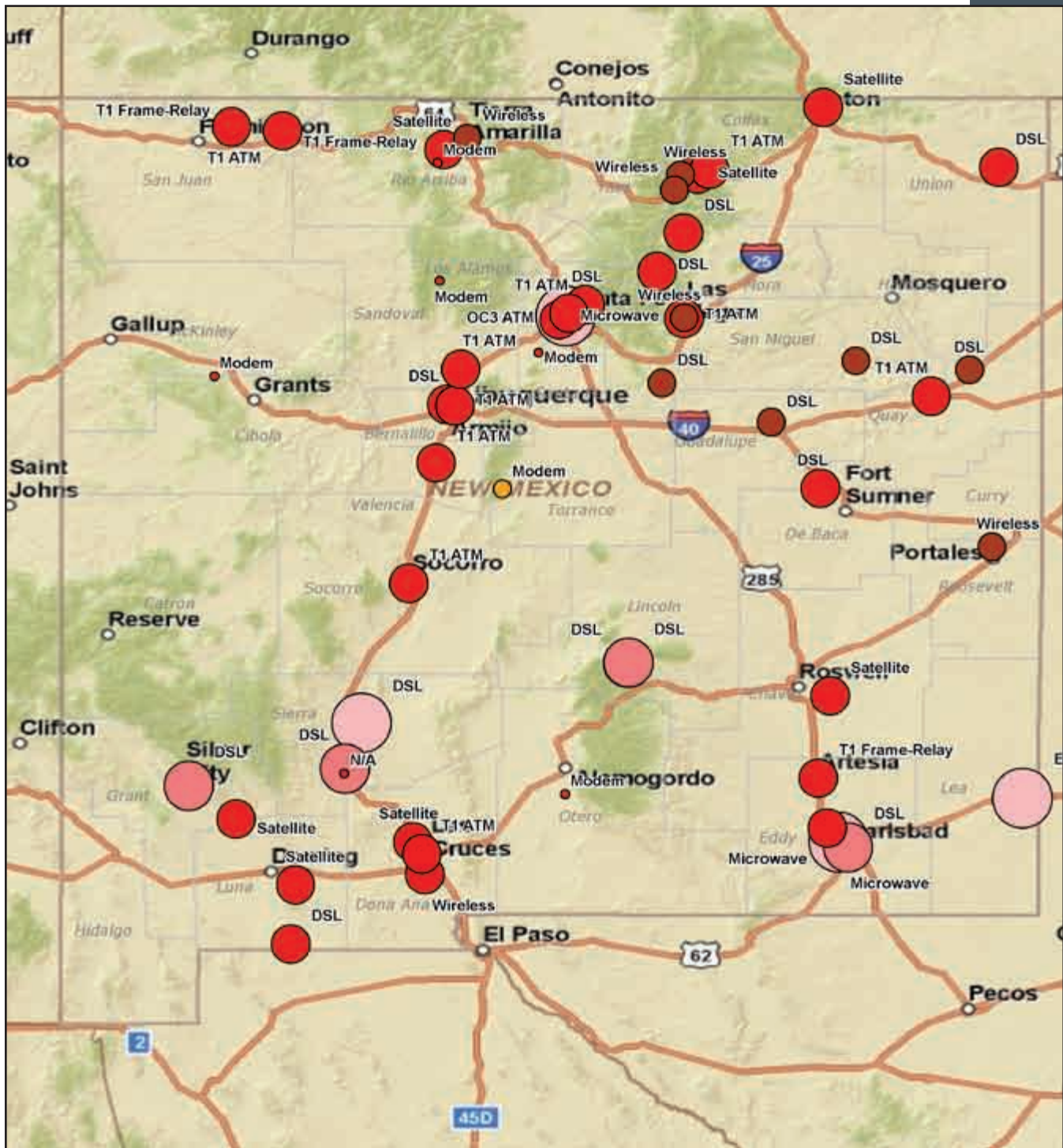


Figure 3

ITO GEOGRAPHIC INFORMATION SYSTEM (GIS): ITO GIS supports almost 80 ArcGIS Desktop users, about 60 mobile GIS users and nearly 150 GPS devices, distributed among the 55 department locations. A major accomplishment was implementing enterprise-level geospatial technologies to supplant the relatively inefficient methodologies used previously. This includes the development of an enterprise geo-database, combining 120+ datasets, from many agencies and the Resource GIS Clearinghouse located at the University of New Mexico, into a centrally-located, consistent, data repository. In order to maintain consistency, provide easier access to data, and reduce costs, ITO GIS has included plans for geospatial activities as part of EMNRD's IT plan.

ITO GIS has also developed and supported numerous GIS applications, both internal and public-facing. These include tools like Legislative Web Map, Get-A-Map, Land Status, as well as internal division GIS applications. Figure 4 is an example of GIS analysis for conservation easement building suitability.

ITO offers assistance in the development of geo-databases, map authoring, Webmap implementation, roll-outs of software updates and new software releases. ITO has been at the forefront of geospatial collaborative efforts not only in New Mexico but also nationally. An ITO representative serves on the New Mexico Geospatial Advisory Committee, the New Mexico Geographic Information Council, Inc., the Western Governors' Association Geographic Information Council, the New Mexico Geospatial Data Acquisition Coordination Committee, the House Joint Memorial 81 Geospatial Task Force, and plays a key role in formulating the State of New Mexico Geospatial Strategic Plan.

INFORMATION TECHNOLOGY SECURITY: A security assessment this year showed that EMNRD has one of the most secure networks in New Mexico state government. ITO continuously assesses EMNRD's environment to maintain our excellent security status. A major accomplishment was the implementation of policies and procedures that have been successful in limiting internal and external threats to IT resources.

COLLABORATION: ITO has partnered with numerous organizations to share its expertise and provide input on a variety of topics such as IT Consolidation, centralized state email systems, and Information Technology Services Management. Recently, ITO hosted a four-day IT security training session for employees of other state agencies.

ITO participates in several data-sharing initiatives with other state agencies. ITO supports the Oil Conservation Division to participate in the administration of the Oil and Gas Accounting Revenue Database (ONGARD) mainframe system along with the Taxation and Revenue Department (TRD) and the State Land Office. ITO also works with TRD to maintain an automated process for boating registration information that is provided to State Parks Division; this data is used in an Intranet application for the Parks Division's law enforcement personnel to interactively validate boat registrations.

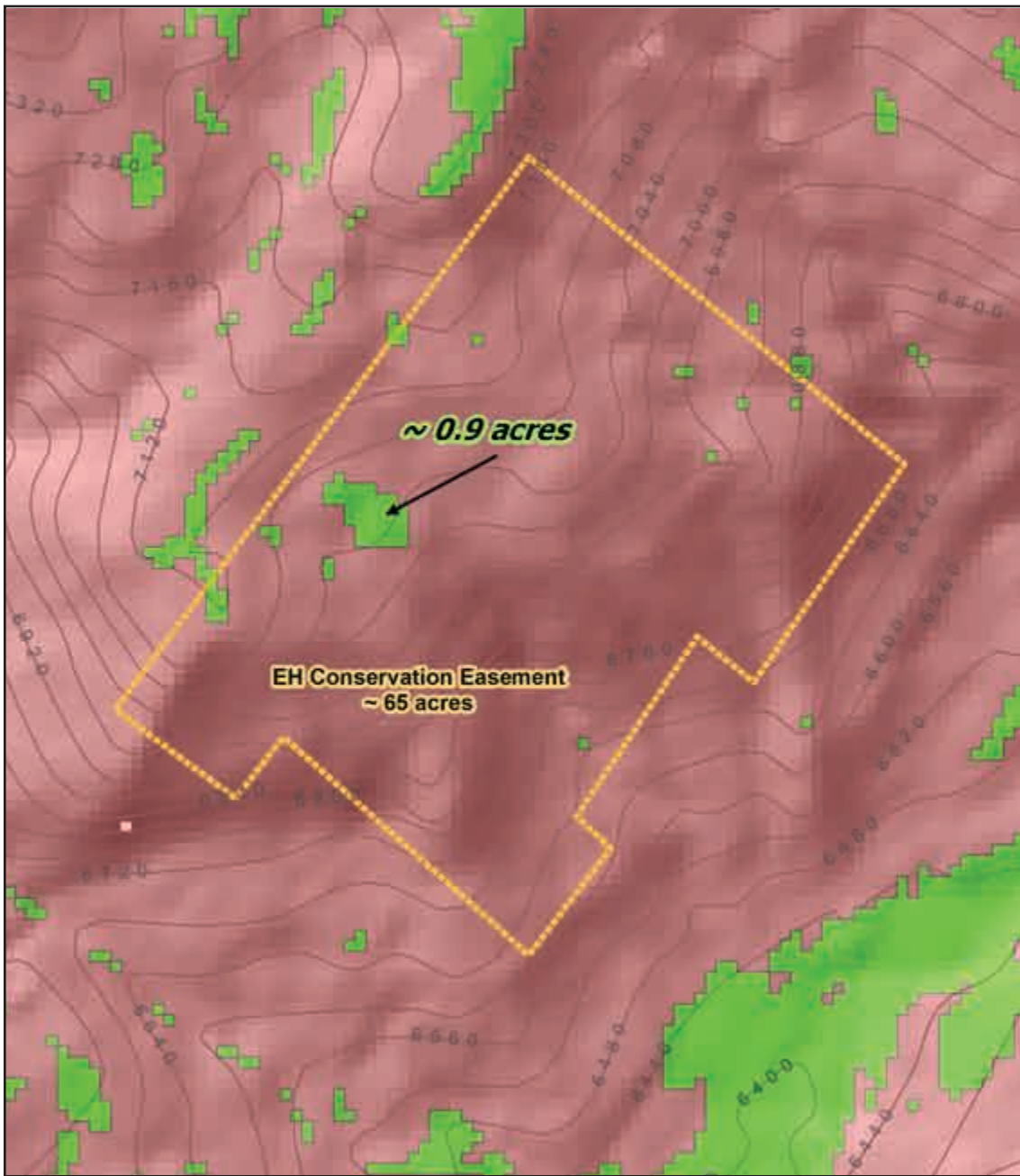


Figure 4

New Mexico Radioactive Waste Consultation Task Force - WIPP Transportation Safety Program

MISSION: To represent the interests of the State of New Mexico regarding the safe and uneventful transportation of nuclear waste through the state.

PROGRAMS: Under EMNRD's leadership, and through the New Mexico Radioactive Waste Consultation Task Force, six other state agencies collaborate on the Waste Isolation Pilot Project (WIPP) Transportation Safety Program: Department of Public Safety, Department of Homeland Security and Emergency Management, Department of Health, Environment Department, Department of Transportation, and State Fire Marshal's Office.

The task force coordinator, through the WIPP Working Group, manages and implements the WIPP Transportation Safety Program. The WIPP Working Group comprises operations management staff in each of the participating agencies. The program includes the setting and updating of policies and operating procedures; training and equipping emergency responders along all of New Mexico's WIPP shipping routes; keeping the public informed on radioactive materials issues; monitoring and maintaining highway safety; and inspecting all WIPP shipments at their points of origin or at the New Mexico ports of entry.

Accomplishments

In fiscal year 2010, the WIPP Transportation Safety Program:

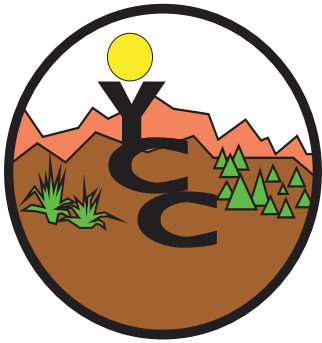
- Maintained 17 joint powers agreements with city and county fire departments along WIPP routes to support ongoing training and equipment maintenance related to radioactive and hazardous materials emergency response;
- Continued to provide new and recalibrated radiological emergency response equipment to 34 New Mexico communities;
- Trained more than 500 emergency responders in 29 New Mexico communities; and
- Inspected (from July 1, 2009, through June 30, 2010) 1,133 radioactive waste shipments heading for WIPP, sixty-four percent of those shipments received Commercial Vehicle Safety Alliance Level VI inspections. Radiological surveys were performed on 100 percent of those shipments.

Since federal fiscal year 2004, the WIPP Transportation Safety Program:

- Facilitated the approval by the New Mexico Transportation Commission of an emergency route change for WIPP shipments entering the state on US 285 from the south;
- Initiated the 17 joint powers agreements with city and county fire departments along WIPP routes to support ongoing training and equipment maintenance related to radioactive and hazardous materials emergency response;
- Installed a total of three portal radiation monitors, one each at the ports of entry at Raton, San Jon, and Gallup;
- Instituted six Memoranda of Understanding between state jurisdictions and tribal entities to receive radiation

monitoring and emergency response equipment through the Homeland Defense Equipment Reuse Program;
In 2005, provided emergency response equipment and manpower for Hurricane Katrina relief in Louisiana;
Inspected 6,459 radioactive waste shipments heading for WIPP. sixty-two percent of those shipments received Commercial Vehicle Safety Alliance Level VI inspections;
Performed radiological surveys on 100 percent of those shipments;
Maintained training for over 1,100 law enforcement personnel in the National Incident Management System requirements;
Annually, trained more than 500 emergency responders representing 29 New Mexico communities.

Youth Conservation Corps



The Youth Conservation Corps (YCC) Commission believes the YCC Act, the program's vision, mission, goals and policies provide the "best practices" for organizing youth corps. New Mexico has a diverse culture and the YCC program provides the flexibility to allow each community to design projects that meet specific community needs. The YCC Commission and staff are committed to providing the highest degree of customer service to our Corps members and project sponsors.

THE PURPOSE OF YCC: The YCC Act [9-5B-1 to 9-5B-11 NMSA 1978] provides a process to employ young persons in public projects that conserve New Mexico's natural resources and provide community benefits of lasting value. New Mexico will benefit by having its natural and urban environments improved and enhanced and its youth instilled with an appreciation of natural resources, cooperation, hard work and accomplishment.

VISION: YCC members contribute to the quality of life for all people of New Mexico.

MISSION: Promote the education, success and well-being of the youth in our communities and provide community benefits of lasting value through the conservation and enhancement of New Mexico's natural resources.

GOALS: Together we strive for healthy natural resources and lasting community benefits; instilling values of hard work and accomplishments; and promotion of education and training.

VALUES: We strive to be responsible stewards of the state's resources and positive role models for New Mexico's youth.

ACCOMPLISHMENTS: The YCC Commission has worked diligently to provide positive, exciting employment opportunities to the youth of New Mexico. Youth from across the state have been employed in projects that have enhanced New Mexico's natural, cultural and recreational resources. YCC members receive competitive

wages; and supplies for projects that are purchased locally, providing economic stimulus to those communities. The YCC program provides young people with opportunities to learn valuable job skills. Developing a skilled workforce through YCC employment has enhanced communities throughout the state.

The YCC program is funded through revenue from New Mexico Governmental Gross Receipts Tax (GGRT). The Commission and staff are committed to managing the YCC program efficiently resulting in a cost-effective program, documented by YCC's annual budget. At least 90 percent of the program's budget goes to fund projects around the state.

During the last eight years, the Commission has implemented four special initiatives inspired by Governor Bill Richardson. In 2005, the Governor's Piñon Initiative, in partnership with YCC, awarded \$100,000 to address forest health issues brought on by drought and bark beetle infestation. Rocky Mountain Youth Corps was awarded the grant and, in partnership with public land management agencies, worked to improve forest health with the removal of dead or infected piñon. In May 2006, the Governor's Office of Workforce Training and Development invited a number of New Mexico state agency representatives, youth development organizations and youth employment specialists to a meeting in Santa Fe to develop a Summer Youth Employment Initiative. YCC expended \$83,297.35 to employ 24 youths in four New Mexico state parks. An average of \$2,148.07 was earned per crewmember. In 2007 and 2008, the Commission awarded \$300,000 to EMNRD, New Mexico State Parks, Elephant Butte Lake State Park to construct the first section of trail in the Rio Grande Trail System. In 2008, severe flooding hit Lincoln and Otero Counties; YCC recognized the need and through, an RFP, awarded \$236,000 to assist in infrastructure restoration.

The Commission and staff strive for excellence and will continue to foster and promote partnerships with all organizations for the benefit of New Mexico's youth. Through all of our efforts, our young people will have opportunities to develop attitudes and skills that will enable them to be successful in their personal and professional lives. At the same time, these future leaders will understand the importance of protecting and enhancing New Mexico's natural, historical and recreational resources.

GRANT AWARD PROCESS AND HISTORY OF FUNDING: The nine-member Commission has a legislative responsibility to provide a process to employ young people in public projects that conserve New Mexico's natural resources and provide community benefits of lasting value. Funding for YCC comes from 10 percent of the revenue obtained through the GGRT collections.

Over 700 requests for proposals RFP's are sent to local government agencies, school districts, federal agencies, state agencies, Native American tribes and non-profit organizations. In addition, at least ten legal advertisements requesting proposals are published in various newspapers around the state. To be more equitable, applications are placed in two categories: urban and rural. The YCC Commission identifies each category based on the Department of Economic Development's determination of Metropolitan Statistical Areas (MSAs). Rural communities compete against each other and the same holds true for the urban communities.

The funding is equally distributed between the two categories: Urban projects are located in Bernalillo, Sandoval, Valencia, Doña Ana, Los Alamos, Santa Fe, and San Juan counties and rural projects are located in all other counties.

The Commission reviews the applications, scores and ranks them, then awards grants based on the criteria set forth in the RFP.



Photo by: Wendy Kent

Corps members take a rest during trail construction in the Ft. Stanton Cave near Alto

Grants are awarded until the contractual line item budget has been depleted. The Commission believes this process results in the most equitable distribution of funds to New Mexico communities. The RFP process has been established by the legislature and the Department of Finance and Administration and has been accepted by the public as a fair means to distribute tax dollars.

The program is very competitive and there is a great demand for YCC grants. Every year, there are more grant applications submitted than can be funded (Figures 1 and 2). From 1992 to 2010, \$35 million has been distributed throughout New Mexico. The Commission met in October 2010 and awarded 42 grants, making the total after 2011 approximately \$40 million.

CORPS MEMBER EMPLOYMENT: The purpose of the YCC Program is to employ New Mexico's youth in projects that are of lasting value and have a permanent benefit to these young peoples' communities. The YCC Act has four requirements for employment:

- New Mexico resident (at least six months in New Mexico before being hired);
- Between the ages of 14 and 25;
- Unemployed at the time of hire; and
- Corps members may be in school or out of school.

From fiscal year 1992 to 2010, more than 8,900 New Mexico youth have been employed in YCC (Figure 3).

EDUCATION AND YCC: Education is an important part of every YCC project. Project sponsors are encouraged to create a training plan that is specific to the needs of the young people in the community. It is hard to categorize educational experiences but, in relation to YCC, the Commission identifies three. One category



Photo by: Wendy Kent

Corps members install a tile mosaic on the wall of the City of Albuquerque Convention Center.

is life skills. Topics covered are healthy life-styles, conflict resolution, sexual harassment and drug use prevention, parenting classes, and financial readiness.

Second general category is on-the-job training. Training includes teamwork, work ethic and safety, job preparedness, tool use, trail construction, building construction, public speaking, landscaping, public art and other skills related to work projects.

The third category is for more formal education such as CPR/First Aid certification, CDL licensure, for-credit classes such as construction, environmental science, STEM (science, technology, engineering and math) classes and other for-credit classes. Partnerships are developed with local school districts and colleges so that curriculum (based on New Mexico Public

Education Department's Benchmarks and Standards) can be developed. YCC is assisting our Corps members in furthering their education by encouraging project sponsors to provide credit hours for participating in the project. In 2010, 49 individuals earned 29.5 credit hours toward high school diplomas while 36 Corps members received 95.5 credit hours toward college degrees. The Town of Bernalillo provided the opportunity for two young men to earn their GEDs.

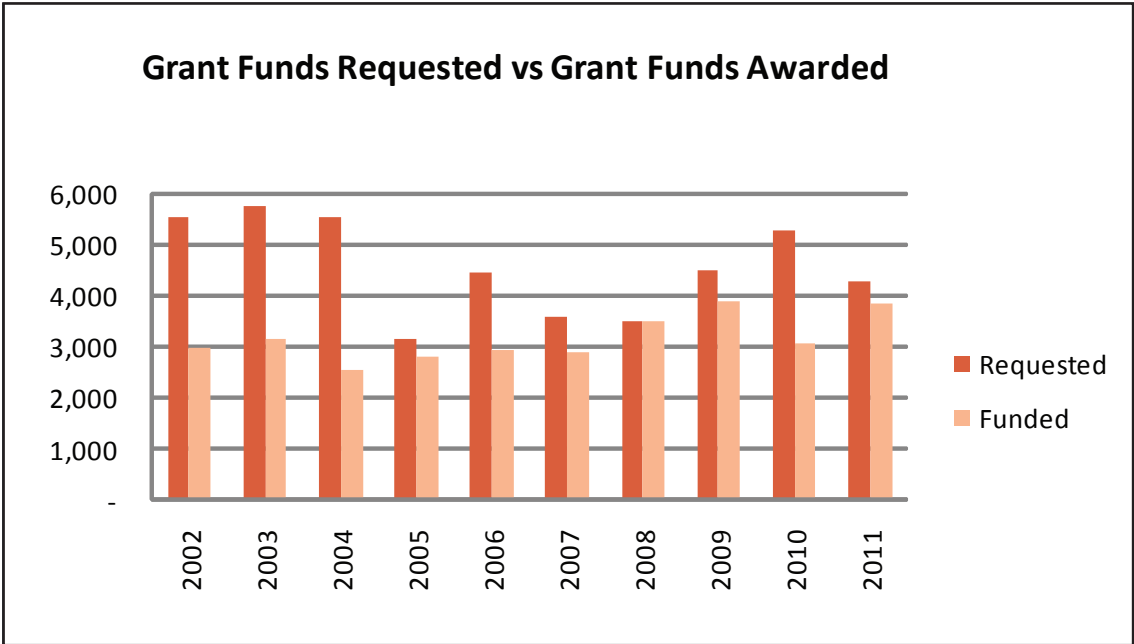


Figure 1

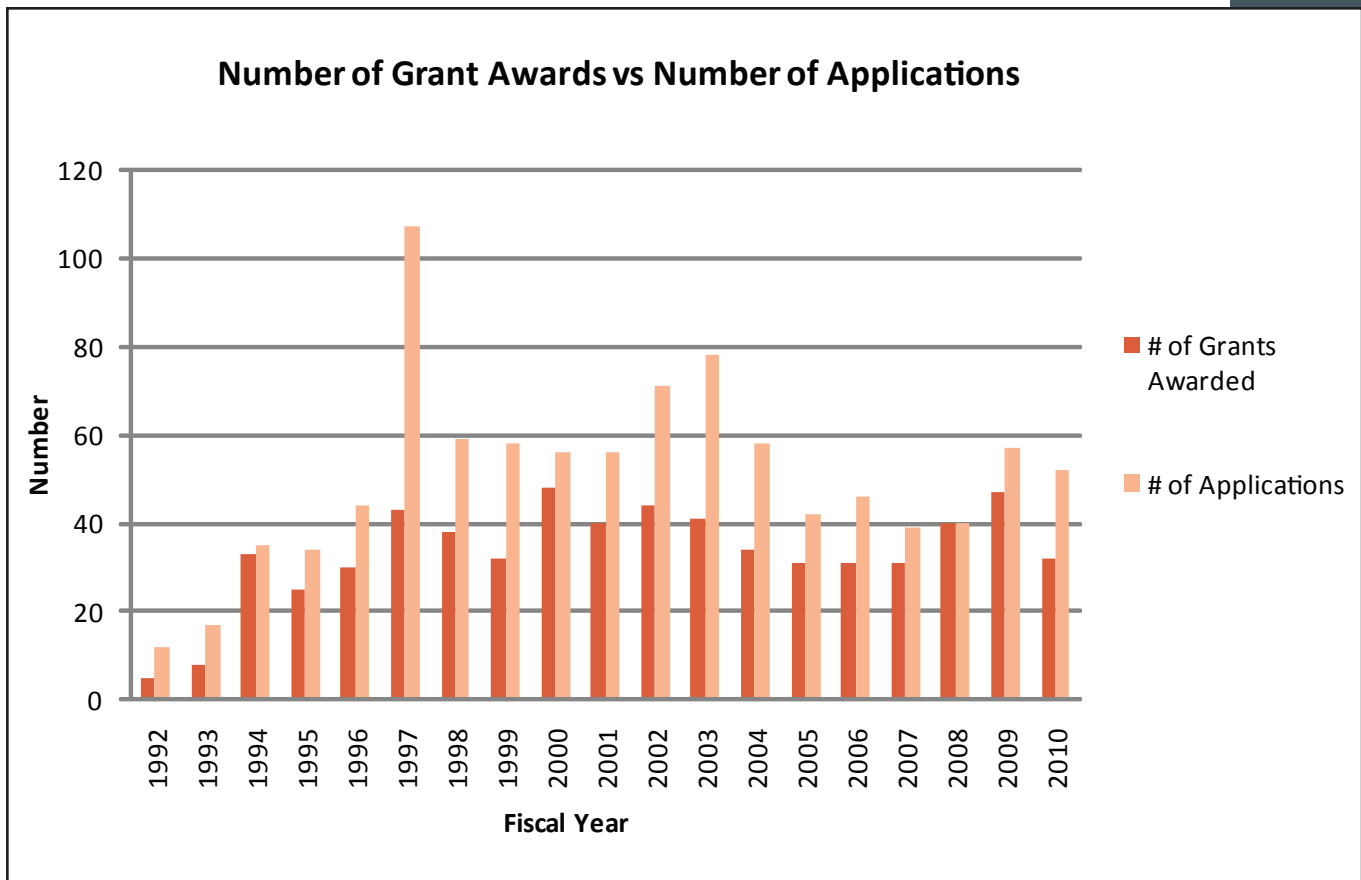


Figure 2

CASH BONUSES AND TUITION VOUCHERS: The YCC Act provides a \$500 cash bonus or a \$1,500 tuition voucher to Corps members who have served in YCC for 12 months in a 48-month period so long as they have satisfactory employment evaluations. From 1995 to June 2010, \$182,977.76 was distributed to 219 Corps members (Figure 6). The educational tuition voucher is valid for two years and may be used at any New Mexico institution of higher education. It is determined that the Corps member's employment was completed in less than 12 months due to circumstances beyond their control, the Corps member may be authorized a partial cash bonus or tuition voucher.

History of Corps Member Employment

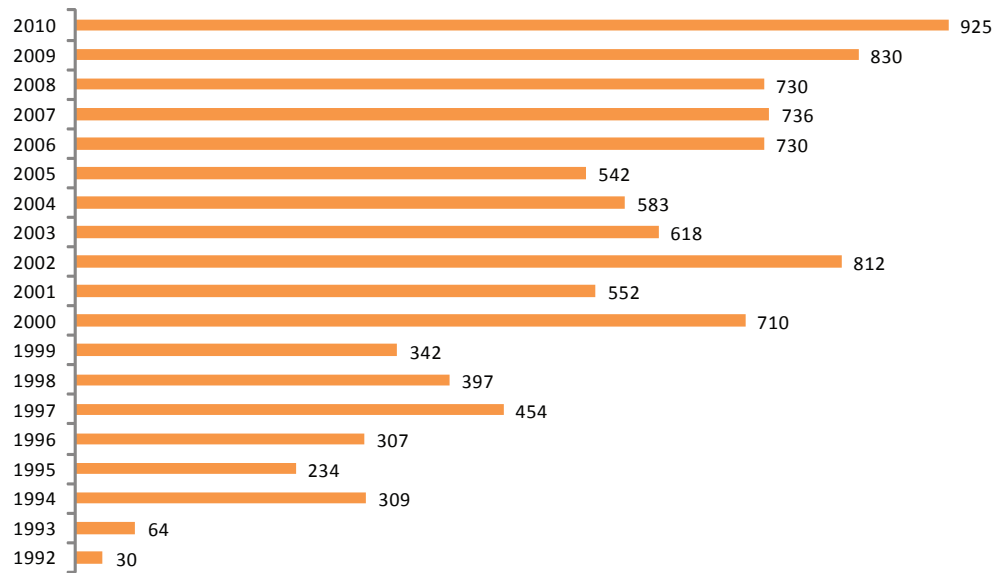


Figure 3

Training and Work Hours by Fiscal Year

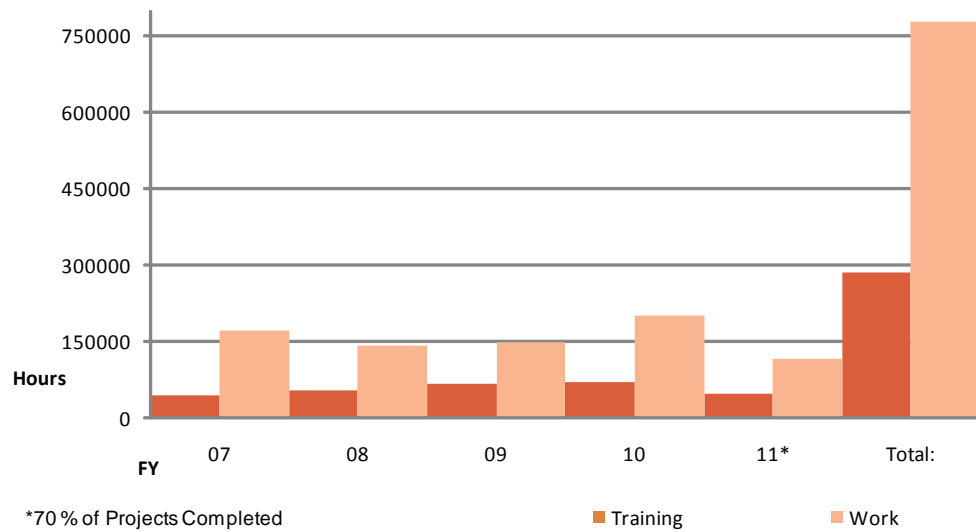


Figure 4

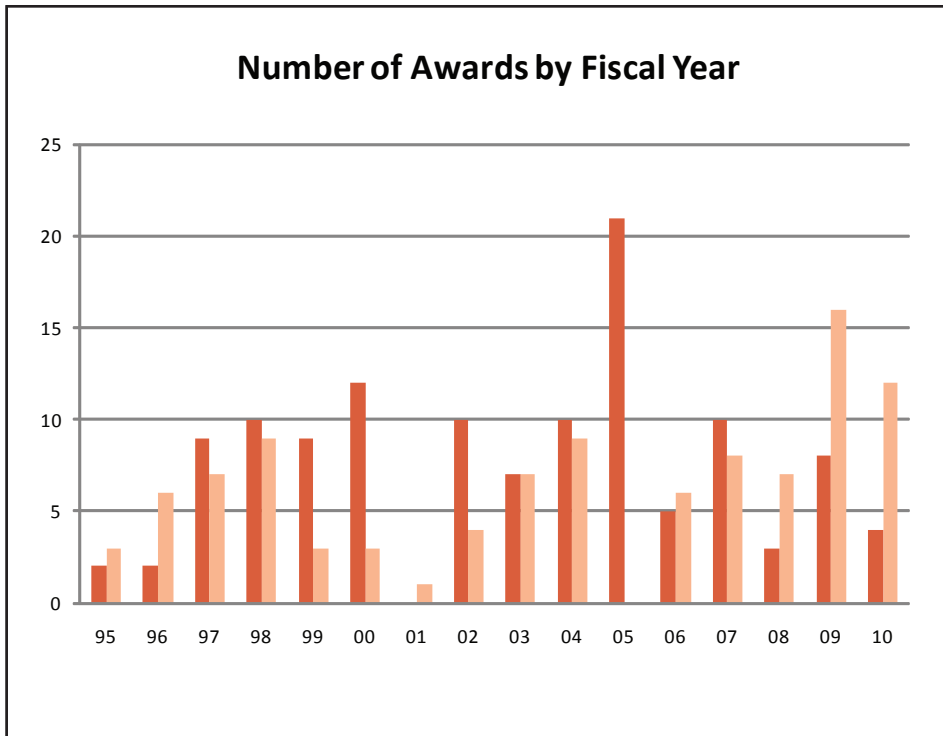


Figure 5

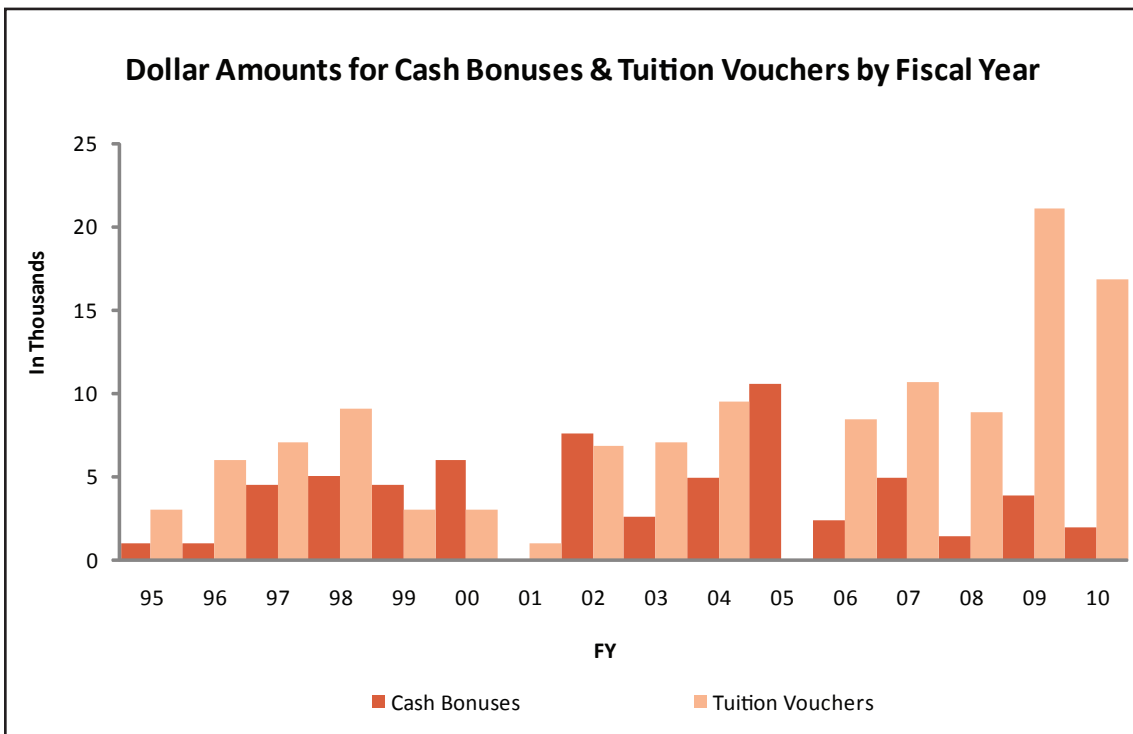


Figure 6

Projects Completed in 2009
Performance Measures for FY10

Project Sponsor	Grant Expended	% Expended in Wages	In-Kind Expended	# of Youth Employed
Alamo Navajo School Board, Inc.	\$ 90,003.45	75%	\$ 44,763.67	25
Aldo Leopold High School	\$ 51,952.85	80%	\$ 21,519.22	44
Aldo Leopold High School	\$ 21,599.60	73%	\$ 17,480.23	31
Angel Fire, Village of	\$ 30,197.05	73%	\$ 31,432.56	8
Aztec, City of	\$ 37,791.48	94%	\$ 27,899.21	12
Bernalillo, Town of	\$ 131,009.49	65%	\$ 36,208.99	16
Chimayo Youth Conservation Corps	\$ 140,363.50	74%	\$ 17,763.07	44
Cimarron, Village of	\$ 31,487.64	74%	\$ 38,233.91	8
Clovis, City of	\$ 48,967.26	73%	\$ 18,257.92	10
Colonias Dev. Council	\$ 86,096.10	75%	\$ 32,357.67	15
Cuba Independent Schools	\$ 53,310.03	96%	\$ 37,221.71	15
Bosque Redondo State Monument	\$ 26,175.71	69%	\$ 2,801.63	8
Earth Works Institute	\$ 94,157.14	67%	\$ 43,358.86	15
EcoServants	\$ 126,239.26	67%	\$ 41,622.90	32
EcoServants (special)	\$ 64,755.70	78%	\$ 24,288.33	12
EMNRD, Pancho Villa State Park	\$ 32,461.16	95%	\$ 24,224.64	12
Family YMCA, The	\$ 68,673.52	72%	\$ 22,635.43	24
Farmington Municipal Schools	\$ 135,091.32	76%	\$ 73,610.80	40
Forest Guild	\$ 143,182.81	71%	\$ 159,991.45	48
Future Foundations Family Center	\$ 30,861.55	79%	\$ 48,081.00	8
Gallup, City of	\$ 144,985.45	89%	\$ 158,677.07	50
Harwood Art Center of Escuela del Sol Montessori	\$ 36,465.21	81%	\$ 105,157.57	12
La Clinica del Pueblo de Rio Arriba	\$ 29,331.64	80%	\$ 10,396.10	10
Luciente, Inc.	\$ 31,644.71	75%	\$ 7,775.17	8
Mescalero Apache Tribe	\$ 36,908.98	91%	\$ 107,538.08	17
Mescalero Apache Tribe (special)	\$ 34,159.63	76%	\$ -	22
Mountainair Public Schools	\$ 41,695.35	97%	\$ 46,634.47	13
New Mexico Wildlife Association	\$ 123,910.59	73%	\$ 124,360.20	35
Rio Grande Community Development Corp.	\$ 111,348.47	74%	\$ 27,630.03	30
Rocky Mountain Youth Corps	\$ 120,917.93	73%	\$ 38,621.87	30
Roswell, City of	\$ 35,002.61	80%	\$ 9,407.29	4
Santa Clara Pueblo	\$ 43,839.78	93%	\$ 9,576.10	20
Santa Fe Children's Museum	\$ 61,506.86	74%	\$ 32,493.67	16
Santo Domingo Tribe	\$ 53,773.70	76%	\$ 74,429.87	9
Silver City, Town of	\$ 86,194.22	82%	\$ 38,247.95	16
Springer, Town of	\$ 32,679.00	77%	\$ 19,367.91	8
Southwest Conservation Corps	\$ 113,764.25	91%	\$ 30,240.77	43
Town of Bernalillo	\$ 158,899.61	96%	\$ 94,430.88	20
Tucumcari, City of	\$ 31,314.16	70%	\$ 28,493.91	6
United South Broadway Corporation	\$ 100,329.93	68%	\$ 47,668.94	33
Wagon Mound Public Schools	\$ 20,234.59	62%	\$ 7,620.48	8
Wellness Coalition, The	\$ 95,531.43	64%	\$ 27,798.04	22
YouthWorks	\$ 145,250.16	74%	\$ 241,146.85	66
Total	\$ 3,134,064.89		\$ 2,051,466.42	925
23 Counties Served		Total Value of Projects \$ 5,185,531.31		

Table 1

**Projects to Begin in 2011
Performance Measures for FY12**

Organization	Amount Awarded	% in Wages	In-Kind Contribution	Youth	County
Town of Estancia	\$ 93,578.01	74	\$ 25,330.77	14	Torrance
Future Foundations Family Center	\$ 39,905.12	72	\$ 41,316.72	8	Cibola
Mountainair Public Schools	\$ 43,254.80	92	\$ 66,802.02	11	Torrance
SW Conservation Corps	\$ 145,789.39	87	\$ 41,796.02	43	Cibola
City of Gallup	\$ 150,000.00	91	\$ 161,382.64	44	McKinley
Forest Guild	\$ 149,994.12	72	\$ 128,719.99	36	McKinley, Mora, Rio Arriba, San Miguel, Sandoval, Santa Fe, Taos, Torrance
NM State Monuments, Bosque Redondo	\$ 68,244.06	70	\$ 24,829.11	7	De Baca
Pueblo of Santa Clara	\$ 70,732.63	85	\$ 19,346.97	20	Los Alamos, Rio Arriba, Sandoval
Rocky Mountain Youth Corps (Taos Area)	\$ 147,438.58	70	\$ 55,867.57	32	Taos
Rocky Mountain Youth Corps (Satellite)	\$ 119,367.75	72	\$ 42,376.58	24	Colfax, Rio Arriba
La Clinica del Pueblo de Rio Arriba	\$ 46,420.10	71	\$ 12,054.54	9	Rio Arriba
Village of Cimarron	\$ 39,154.22	70	\$ 32,464.98	8	Colfax
Alamo Navajo School Board, Inc.	\$ 70,405.53	70	\$ 46,592.24	15	Socorro
The Wellness Coalition	\$ 121,885.25	75	\$ 22,111.56	10	Catron, Grant
The Wellness Coalition	\$ 53,000.84	75	\$ 6,981.96	12	Catron
Aldo Leopold High School (Spring)	\$ 67,772.80	76	\$ 24,514.96	60	Grant
Aldo Leopold High School (Fall)	\$ 30,624.96	71	\$ 16,852.36	27	Grant
Town of Silver City	\$ 117,858.11	86	\$ 52,916.08	16	Grant
Curry County	\$ 22,405.89	71	\$ 3,200.00	9	Curry
City of Clovis	\$ 32,956.31	70	\$ 4,170.39	7	Curry
City of Roswell	\$ 49,249.70	74	\$ 35,646.66	4	Chavez
EcoServants	\$ 138,315.02	74	\$ 48,742.20	21	Lincoln, Otero
City of Tucumcari	\$ 38,370.29	70	\$ 27,429.86	7	Quay
Logan Municipal Schools	\$ 80,406.08	71	\$ 28,050.13	14	Quay
Town of Bernalillo (1/2011 to 7/2011)	\$ 145,508.35	100	\$ 94,205.38	14	Sandoval
Town of Bernalillo (8/1/2011 to 1/2012)	\$ 145,508.35	100	\$ 130,125.03	15	Sandoval
New Mexico Wildlife Association	\$ 136,196.82	70	\$ 132,032.32	18	Santa Fe
Village of Corrales	\$ 70,053.30	71	\$ 27,187.69	6	Sandoval
Harwood Art Center	\$ 49,934.16	79	\$ 102,746.73	14	Bernalillo
Sawmill Advisory Council	\$ 59,207.10		\$ 38,812.32	10	Bernalillo
Robert F. Kennedy Charter High School	\$ 106,614.04	80	\$ 59,691.12	24	Bernalillo
Farmington Municipal Schools	\$ 147,953.99	70	\$ 60,049.83	31	San Juan
City of Aztec	\$ 86,230.79	93	\$ 74,651.87	18	San Juan
City of Santa Fe Fire Dept.	\$ 150,000.00	83	\$ 72,412.46	10	Santa Fe
Santa Fe Children's Museum	\$ 61,942.01	84	\$ 28,215.84	8	Santa Fe
YouthWorks	\$ 149,999.71	81	\$ 150,984.73	17	Santa Fe
Pueblo of Pojoaque	\$ 104,517.17	73	\$ 26,281.04	20	Santa Fe
Santa Fe Community College	\$ 138,476.16	73	\$ 40,930.28	24	Santa Fe
Santa Fe County Fire Dept.	\$ 145,504.16	82	\$ 44,934.70	10	Santa Fe
Hands Across Cultures	\$ 34,457.20	70	\$ 13,988.07	6	Rio Arriba, Santa Fe
The Family YMCA	\$ 123,153.88	71	\$ 16,841.51	18	Los Alamos, Rio Arriba
Families and Youth, Inc.	\$ 65,581.60	71	\$ 28,934.53	17	Dona Ana
Total	\$ 3,857,968.35		\$ 2,112,521.76	738	23 Counties

Table 2

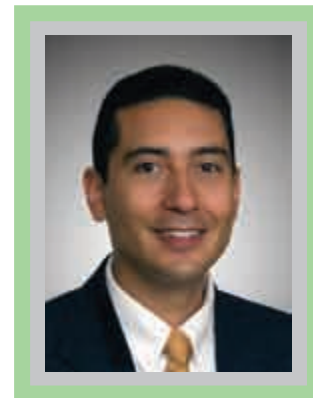


Energy Conservation and Management Division



Fernando Martinez

Division Director



Energy Conservation and Management Division

A Message from Division Director Fernando Martinez

The programs administered by the Energy Conservation and Management Division received executive and legislative support of the highest order over the past eight years of Governor Bill Richardson's administration. From the Governor declaring New Mexico the Clean Energy State in 2004 – and enacting legislation and issuing executive orders to help the state live up to the name – to the state's jump in its energy efficiency ranking from 2009 to 2010, the programs put into practice and overseen by this division have helped the citizens of New Mexico enjoy the benefits of clean and renewable energy in their daily lives.

Our programs of renewable energy, energy efficiency and conservation, and efficient transportation and clean fuels support measures to reduce electricity costs and consumption, reduce greenhouse gas emissions and air pollutants, decrease water usage in power generation, and promote new ways to make conventional energy sources cleaner. Successful implementation of these programs provides the tangible benefits of the protection and conservation of our state's natural resources and environment as well as making New Mexico cost-competitive with other states.

Our division is also managing \$43 million of American Recovery and Reinvestment Act (ARRA) funds across four grants involving more than 70 contractors. We are using those ARRA dollars to eliminate barriers to energy efficiency and renewable energy. This increases demand for services that create and retain jobs, reduce energy use, and increase energy efficiency and renewable energy production to improve the reliability of electricity, fuel supply and delivery of energy services. Evidence of the successful implementation of ARRA projects across the state is already being tracked and reported.

This report offers a look back at the previous eight years' legislation, initiatives and projects that have given our state greater energy security and increased conservation and efficiency across all sectors of our economy. By virtue of the legislation and programs that were put in place with great foresight, we can look forward to continued energy savings and efficiencies and the thoughtful development of programs that best make use of New Mexico's abundant natural energy resources to provide greater energy security and economic development.

As we work toward more reliable supplies of energy and energy efficient technologies and practices that will lead to greater economic and environmental sustainability for New Mexico, we invite you to join us in these efforts. Each of us can and must help make a difference in our energy future. Visit our website at CleanEnergyNM.org for complete information or call us for assistance.



Energy Conservation and Management Division

MISSION: The Energy Conservation and Management Division (ECMD) develops and implements effective clean energy programs - renewable energy, energy efficiency and conservation, clean fuels and efficient transportation- to promote environmental and economic sustainability for New Mexico and its citizens.

ECMD's major initiatives relate to statutory requirements for the implementation of clean energy and renewable energy programs.

Accomplishments

The **Renewable Energy Program** supports utility-scale and distributed-generation-scale (e.g., roof-top) solar, wind, geothermal, and biomass technology applications, and other distributed energy technologies such as hydrogen fuel cells and district heating systems.

New Mexico enjoys a wealth of renewable energy resources and ECMD works to facilitate the conscientious development of our solar, wind, geothermal and biomass resources. The Renewable Energy Production Tax Credit has helped make hundreds of megawatts (MW) of clean energy available to New Mexico and out-of-state consumers. State and federal incentives are making solar and geothermal energy systems affordable for homeowners and businessowners and creating ever-increasing energy and cost savings. ECMD's meteorological wind tower collects wind resource data, provided freely to the public, that helps spur the development of New Mexico wind farms. With the help of ECMD-provided funding, even the waste from the largest dairy herd in the nation is being put to use to solve environmental problems for one of the state's biggest industries.

The **Energy Efficiency and Conservation Program** addresses building and technology applications such as energy control systems, efficient lighting, motors and appliances, as well as behavioral practices that reduce energy use and costs in buildings and the transportation sector. Green building, residential/commercial building energy codes and standards; and co-generation (combined heat and power) are approaches that produce significant energy and dollar savings across New Mexico.

Knowing that the cleanest and cheapest energy is the energy we don't use, finding ways to conserve energy and being more efficient when we do use it are win-win options for everyone. Implementing energy efficient building codes has raised the quality of home and commercial building construction in our state (with proven results that the new codes are both pro-homebuyer and pro-homebuilder). These building codes reduce energy expenditures and keep

more energy dollars in our state thereby making more money available for local businesses. Incentives to energy efficient homebuilders and homebuyers have created a demand for green homes, even in this economic downturn. In addition to helping the building industry in difficult times, again, the dollars saved from all the energy savings go back into the local communities. At the end of the day, energy efficiency and conservation projects are providing jobs throughout New Mexico and building owners reap the ongoing benefits of lower utility bills.

The **Clean Fuels and Efficient Transportation Program** supports projects such as ridesharing/carpooling, park-and-ride, and vehicles and infrastructure for use of clean-burning fuels such as New Mexico-produced compressed natural gas (CNG), propane, ethanol, and biodiesel to help New Mexicans save money and reduce our dependence on imported fossil fuels.

Transportation is the second largest energy use sector and a major source of air pollution in New Mexico. To address these concerns, ECMD facilitates compliance with state and federal mandates for acquisition of alternative and fuel efficient vehicles. For state government, policies that promote fuel conservation, teleconferencing, carpooling, and fuel efficiency have resulted in a 48 percent reduction in fuel use by executive branch agencies over a five-year period, from an annual 322 gallons per employee to an annual 167 gallons per employee in 2010.

This program assists and encourages the development of infrastructure for use of cleaner-burning fuels such as CNG which will benefit New Mexico by increasing severance tax revenues and helping create jobs in natural gas production and CNG vehicle maintenance and repair.

Other important accomplishments include the division's help in enacting a hybrid-electric vehicles excise tax exemption that saved New Mexicans \$600 to \$900 on the purchase of gasoline-electric hybrids. Before its expiration in 2009, this incentive was instrumental in the sales of hundreds of hybrid vehicles. ECMD also facilitated the installation of the nation's first multiple biofuels station in Santa Fe.

The **American Recovery and Reinvestment Act of 2009 (ARRA)** programs funded by the U.S. Department of Energy (DOE) and managed by ECMD are in full swing. All of these programs, State Energy Program, Energy Efficiency and Conservation Block Grant, Energy Efficient Appliance Rebate, and Energy Assurance and Smart Grid Resiliency Planning will help our state increase energy efficiency and renewable energy generation. These programs reduce energy costs and consumption for consumers, businesses, and government (saving taxpayer dollars); reduce reliance on imported energy; improve the reliability of electricity and fuel supplies and the delivery of energy services; and reduce the impact on the environment of energy production and usage. The results are long-

lasting, allowing for those dollar savings to be reinvested in our communities and local businesses. New Mexico also made a commitment to strengthen energy efficiency programs statewide by adopting the 2009 International Energy Conservation Code and decoupling utilities' energy efficiency program revenue from energy retail sales revenue (see Efficient Use of Energy Act on page 37).

ECMD's **Outreach and Education Program** continued its efforts in support of all these programs and initiatives and in helping to educate the public and local governments through print media, speaking engagements and hosting displays at events around the state. In collaboration with staff, an award-winning contractor spearheaded other outreach projects, including print ads and articles, public service announcements, new energy efficiency brochures, and new displays and educational materials for the State Fair. Our website – www.CleanEnergyNM.org – serves as a major avenue for outreach and education and is always available.

Programs

RENEWABLE ENERGY PROGRAM: This program promotes the development and production of utility-scale and distributed-generation-scale (e.g., roof-top) solar, wind, geothermal, and biomass technology applications; and other distributed energy technologies such as hydrogen fuel cells and district heating systems. As a whole, the various components of this program provide incentives to advance the use of New Mexico's renewable resources. Combined with data collection, studies and research, they all play pivotal roles in demonstrating the viability of renewable energy.

SOLAR: Blessed with an abundance of sunshine, New Mexico ranks second in the nation in solar energy production potential. New Mexico has a long history of using solar resources to produce clean energy, starting in modern times with pioneering efforts in passive solar design in the 1970s. Numerous programs have now established solar demonstration projects, driven private sector demand, reduced utility bills, and spurred high-tech economic development in New Mexico. Due to the past eight years of state government's efforts, a wide range of solar technologies are now highly visible throughout our state at schools, government facilities, and in our communities, with the combined support of state and federal incentives, state and federal grants, utilities' programs, and private investment.

One of the first efforts was ECMD's "Schools with Sol" program that resulted in 40 small systems, both photovoltaics (PV) and solar thermal, installed at public schools throughout the state. At that time in 2003, as an indicator of solar technology's maturity, the largest PV system in the state was 10 kilowatts (kW). With the help of several key policies, incentives, and programs created since then, New Mexico now boasts a 30-MW solar power plant; more than 20 commercial-scale PV systems at public schools and state/local government buildings in the 50- to 150-kW range; innovative solar combined heating and cooling systems; and the introduction of solar dish Stirling engine systems for electricity. Many of these projects have also strengthened New Mexico's economic development by utilizing in-state suppliers that have emerged to support the solar industry.

Solar Market Development Tax Credit (STC) [NMSA 1978, §7-2-18.14]: Inadequate federal action was addressed when the state stepped in with key incentives to assist homeowners in solar deployment starting in 2006. With net-metering and the Solar Rights Act already in place, the Solar Market Development Tax Credit (STC) was implemented, followed by the Solar Gross Receipts Tax Exemption. Combined with healthier federal incentives that have since been adopted, it is possible for a homeowner to get reimbursed for almost half the upfront cost of a residential solar system. Programs buying Renewable Energy Certificates from PV system owners have become available in the service territories of investor-owned utilities, which pay off after installation by crediting customers' utility billings. Over 1,000 New Mexico taxpayers have leveraged their own investment in PV systems with these state, federal, and utility incentives, while another 450 have done the same with solar thermal systems (see Figures 1 and 2). These systems in total size are providing 2 MW of clean electricity and 30 million British Thermal Units (BTU) per day of clean heating. The STC's popularity has increased every year and is in place through 2016.

On the utility-scale side, New Mexico's Renewable Energy Production Tax Credit (PTC) was amended to incentivize solar projects down to 1 MW in size and help utilities meet requirements under the Renewable Portfolio Standard.

Solar Market Development Tax Credit: Photovoltaics

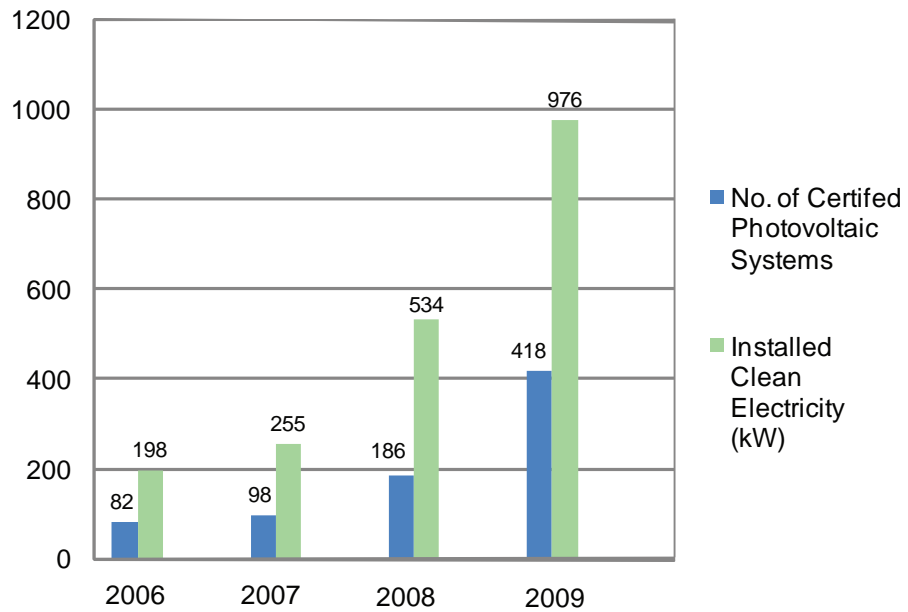


Figure 1

Solar Market Development Tax Credit: Solar Thermal

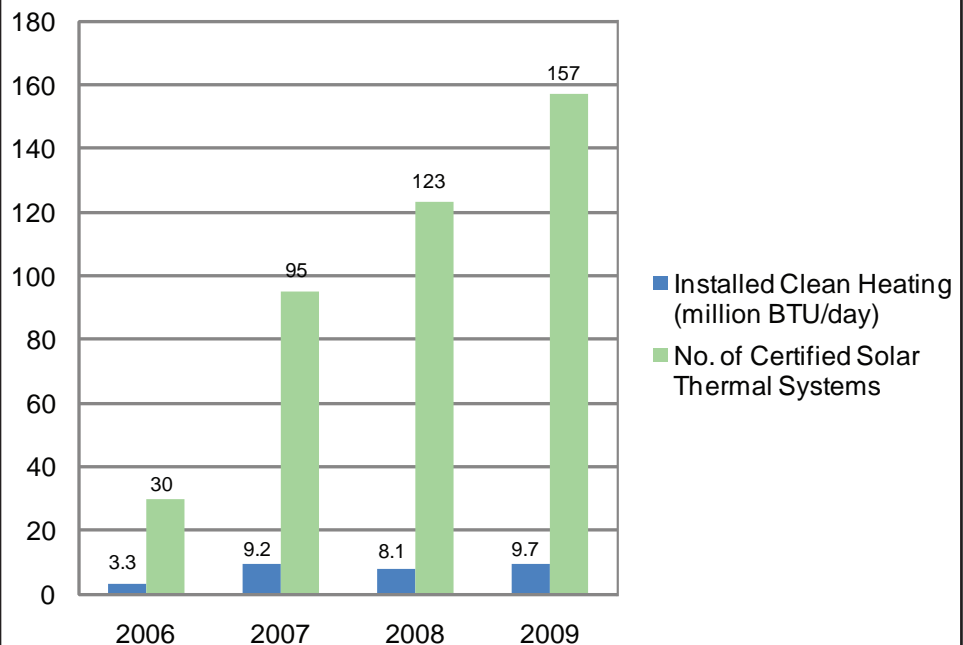


Figure 2

(Read more about the PTC and the Renewable Portfolio Standard on page 34.) The 30-MW solar power plant is now under construction in northern New Mexico, near Raton, and will generate 65,000 megawatt-hours (MWh) of electricity per year using thin-film PV technology. Other utility-scale solar projects are nearing construction or are in development that may use the PTC. State-funded solar demonstrations are now operating through ECMD's Clean Energy Projects program, including the City of Albuquerque's electric vehicle charging station at the Sunport; an 18-kW PV parking structure for New Mexico State University's (NMSU) Student Health Center; a 6-kW PV rooftop system at Oliver Lee State Park; solar heating and cooling for the Los Alamos County Eco Station; and an 8-kW PV system at the Alamogordo-White Sands Regional Airport. Newer federally-funded ARRA projects featuring solar systems are now being implemented, including PV systems for Rail Runner stations; solar thermal heating at Magdalena and Silver City schools; solar PV for the City of Las Cruces, Village of Grady, and Town of Taos; a 6-kW PV system to support the Outdoor Center at San Juan College; and commercial-scale solar thermal heating and cooling at UNM.

The State of New Mexico has positioned itself to be a global leader in solar energy and technology development. The regulations and policies that have been adopted over the past eight years have produced a thriving solar industry that now comprises 130 solar businesses, including 16 solar manufacturers.

Installing photovoltaic panels at the South Capitol Rail Runner Station



Photo by: Jeremy Lewis

Solar Gross Receipts Tax (GRT) Exemption [NMSA 1978, § 7-9-112]: In effect since 2007, reduces taxes on businesses while also making solar systems more affordable for New Mexico's citizens. Solar contractors can apply to the Taxation and Revenue Department to be exempt from GRT in the purchase of equipment or materials, and for their labor in the installation, servicing, or training for a solar system. These savings in the cost of doing business can be passed on to the consumer. ECMD developed guidelines in support of the Taxation and Revenue Department to describe the anticipated solar equipment, materials, and services that would be eligible for the GRT exemption. ECMD monitors the charging of GRT in the system certification process for the STC.

WIND: New Mexico now has a total of 698 MW of installed wind capacity at seven active wind power plants. The first commercial wind power plant, the New Mexico Wind Energy Center, was constructed in 2003 and, at that time, it was the third largest in the world.

ECMD has supported wind energy development since 1998 through an active outreach program, wind resource data collection, and data dissemination. Since 2002, ECMD has administered the PTC program, which has proven a significant incentive to spur project development. The latest wind project, Red Mesa Wind Energy Center, was built in Cibola County on private ranch land. It became operational in December 2010, with 102.4 MW of power production capacity produced by 70 wind turbines, each with a nominal 1.5 MW capacity.

New Mexico's total installed wind capacity is generated at the following wind farms:

New Mexico Wind Energy Center (204 MW), De Baca and Quay counties

Red Mesa Wind Energy Center (102 MW), Cibola County

High Lonesome Mesa Wind Project (100 MW), Torrance County

Caprock Wind Ranch (80 MW), Quay County

San Juan Mesa Wind Project (120 MW), Roosevelt County

Aragonne Mesa Wind Project (90 MW), Guadalupe County

Llano Estacado Wind Ranch (2 MW), Curry County.

The New Mexico Wind Energy Working Group met once this year in Santa Fe and discussed the promotion of small wind turbines and possible new initiatives to advance wind power development. Participants in the Working Group are stakeholders in New Mexico wind power, such as local, state, and federal agencies, utilities, cooperatives, developers, grass-roots and non-profit organizations, land owner associations, farmers, ranchers, and tribal and environmental organizations. The group's objectives are to promote environmental protection, boost economic development within the state through the use of wind energy, and foster the increased use of wind-generated electricity by the energy generators and consumers of New Mexico. Additional outreach actions by ECMD staff included speaking events and numerous interviews with media outlets.

ECMD operates a 100-meter-tall meteorological tower on New Mexico's eastern plains to collect wind resource data. This long-term wind speed data, provided freely to the public, helps spur the development of New Mexico wind farms.

BIOMASS: Agricultural waste, forest thinnings and algae have the potential to provide affordable renewable energy while reducing environmental hazards and taking advantage of New Mexico's unique landscape.

Agricultural Biomass Tax Credit [NMSA 1978, § 7-2-18.26]: Passed in the 2010 New Mexico legislative session, the law provides a \$5 per ton tax credit for dairy or feedlot manure delivered to an energy production facility that converts the waste into electricity, biocrude, or gaseous fuel for commercial use thus reducing waste, avoiding groundwater contamination and mitigating greenhouse gas emissions. New Mexico is the seventh largest milk



Photo by: Michael McDiarmid

Nacelle – housing all of the generating components – of American-made 2.5 megawatt Clipper wind turbine at High Lonesome Mesa wind project.

producer and first in the nation in its dairy herd size. The environmental management of 1.3 million tons of dairy waste annually coupled with strict requirements to protect groundwater presents a huge challenge to this \$1 billion industry. Generating energy from manure will help solve the environmental problems while providing needed jobs and revenue. Rules for the tax credit are being drafted for implementation by mid-2011. The tax incentive expires January 2020.

Photo by: Jeremy Lewis



Energy from manure, produced as methane gas, could power an engine/generator or be blended with pipeline natural gas. In 2003, NMSU received an Energy Innovation Fund grant to research a dairy manure anaerobic digester technology that provided valuable information regarding feedstock collection, conditioning, and gas production. In 2006, ECMD provided funding to the Pecos Valley Biomass Cooperative to conduct a feasibility study and business plan to identify energy products from dairy biomass including ethanol and methane gas. In 2010, two dairy clusters, Pecos Valley Biomass Cooperative and Doña Ana County dairies, combined resources to collect and manage dairy waste efficiently to maximize its energy value. Dairymen are also looking to the digested manure solids as an environmentally-benign, nutrient-rich alternative to fossil fuel-based fertilizer that will help reduce air and water pollution associated with dairy waste, as well as reduce feed crop costs, resulting in “low-carbon milk.”

Taos Pueblo green house heated with biomass boiler

Another biomass resource, forest thinnings, reduces wildfire danger and promotes healthy forests, while also providing a fuel resource for biomass boilers and creating local jobs. In 2003, EMNRD formed a Biomass Industry Development Working Group to encourage, assist, and develop a sustainable biomass industry in New Mexico. This effort paralleled New Mexico Forestry Division's Statewide Watershed Strategic Plan. The efforts of the Working Group were supported in 2005 by Governor Richardson's Clean Energy State Executive Order 2004-015 and subsequent legislation that provided an assortment of incentives to stimulate renewable energy production, including biomass-to-energy. Between 2004 and 2009, ECMD and New Mexico Forestry Division worked with the General Services Department and the Department of Health to construct a biomass boiler system at the Ft. Bayard Medical Center, which is now operating reliably and efficiently. The 150-horsepower solid-fuel boiler system is fueled by renewable and sustainable woody biomass residuals (screened wood chips) from forest restoration and community fire protection projects. The biomass boiler steam heat supports the existing veterans' hospital and will be tied in to the newly constructed hospital opening in early 2011. This effort ensures employment for forest industry workers and helps mitigate catastrophic wild fires in the Gila National Forest region.

GEOTHERMAL: New Mexico's geothermal resources have been used commercially for decades, originally in spas and resorts. However, in the last 25 years, geothermal applications have been utilized for a broader range of direct use developments for water and space heating. As a direct result of collaborative efforts between ECMD and NMSU, New Mexico leads the nation with more than 50 acres of geothermally-heated commercial greenhouses and also has one of the largest geothermal aquaculture facilities. The Energy Information Administration reports that,

in 2008 (latest available data), total geothermal energy consumed in New Mexico equaled 348 billion BTU. The majority of this consumption is from direct use within the industrial sector.

Another project is under development in the southwestern portion of the state where drilling has identified an electric power production geothermal resource. The plant will produce 10 MW to start – enough renewable electric power for at least 8,000 average households – and could be expanded eventually to 20 MW or more.

In 2008, the United States Geological Survey published a report for Enhanced Geothermal Systems technology for western states' electricity production. For New Mexico, the potential for resources being developed in the near term with existing technology is about 75 percent of the potential in Hawaii, Idaho, Alaska, and Oregon. This makes New Mexico a very attractive state for geothermal power development. For New Mexico, a realistic power generation potential that is available for short term development with existing technology is estimated at 2,000 MW.

In 2009, Governor Richardson signed into law corporate and personal income tax credits for ground coupled heat pump systems in New Mexico. The statute required that EMNRD adopt two rules, completed in September 2010, to establish procedures to provide certification of these systems. The Geothermal Ground Coupled Heat Pump Tax Credit was made retroactive for systems installed as early as January 1, 2010, and will be available through 2020. The tax credit may be issued for up to 30 percent of system costs, but not to exceed \$9,000. ECMD is now administering the rules to certify the systems for tax credit eligibility.

ECMD has been working to update and further expand the geothermal energy resource assessment information available to develop geothermal projects. In collaboration with DOE, annual meetings have been held in New Mexico to collect stakeholder input for moving geothermal electricity and direct use projects forward. From these meetings, industry and other stakeholders have identified the need for an updated statewide geothermal resource assessment to promote geothermal industry projects.

In 2009, Governor Richardson's Green Jobs Cabinet issued a report with recommendations for further developing the geothermal industry in New Mexico. Based on these recommendations, Governor Richardson signed Executive Order 2010-001 in 2010, with directives for EMNRD and New Mexico Institute of Mining and Technology (NM Tech). Later in 2010, EMNRD and NM Tech entered into a contractual agreement for the development of a statewide geothermal energy resource assessment. The resource assessment is scheduled for completion by the end of 2011.

Renewable Energy Development

Green Jobs and Economic Development Activities: On an ongoing basis, ECMD works closely with the Economic Development Department, the New Mexico Economic Partnership, and local economic development agencies to attract and assist clean energy-related companies interested in locating in New Mexico. ECMD also serves on and provides staff support to the Governor's "Green Jobs Cabinet" and the State Workforce Development Board's "Green

Industry Council” subcommittee. The Green Industry Council was established in response to a U.S. Department of Labor “State Energy Partnership Grant” awarded to the Workforce Development Board. The grant’s four areas of focus are solar, wind, biofuels, and green construction/energy efficiency.

New Mexico Renewable Energy Transmission Authority (RETA) Act [NMSA 1978, § 62-16A]: Focuses on developing new transmission projects to promote renewable energy and position New Mexico to become extremely competitive in all aspects of solar and wind energy development, including exporting clean energy to other states. The EMNRD Cabinet Secretary serves on RETA’s board as an ex-officio member. As needed, ECMD staff provides technical support to the Secretary related to RETA activities. In the summer and fall of 2010, ECMD staff significantly contributed to the efforts of a “Task Force on Statewide Electricity Planning” comprising a host of different stakeholders and interest groups. The Task Force prepared a report on developing transmission infrastructure in the state designed to enable thousands of MW of renewable energy economic development to occur. In November 2010, RETA issued its first \$50 million worth of bonds to upgrade New Mexico’s transmission system and foster clean energy growth.

Renewable Energy Financing Districts (REFD) [NMSA 1978, § 5-18]: Enacted in 2009, offers an alternative path for financing renewable energy systems for residences and commercial buildings. REFDs allow counties or cities to issue bonds whose proceeds can be used to fund residential and commercial renewable energy systems. Roof-top solar owners pay off their share of the debt service on the bonds via a special assessment on their property taxes. Nationally, these types of programs are referred to as “Property Assessed Clean Energy” (PACE) financing. Financing of solar, wind, geothermal, and biomass systems that reduce utility bills can reduce or eliminate the burden of their high up-front costs. Counties and cities must take the initiative to establish and administer financing districts for their constituents. ECMD is supporting the counties with outreach, training, and distribution of a manual explaining the details of coordinating a PACE program. Santa Fe County has served as a pilot financing district.

Renewable Energy Production Tax Credit (PTC) [NMSA 1978, § 7-2A-19]: Is a significant incentive for economic development in New Mexico, attracting utility-scale renewable energy developers to the state and assisting utilities in meeting state Renewable Portfolio Standard (RPS) requirements. For wind and biomass projects it offers a one cent per kilowatt-hour (kWh) tax credit and for solar it averages 2.7 cents per kWh. EMNRD administers this incentive and developed the rule which has been instrumental in the development of all seven wind power plants in the state to date, providing almost 700 MW peak capacity of clean electricity. It is also being used for two solar power plants currently in development.

The statewide limit for wind/biomass credits is fully allocated at this time, but the credits for solar are just starting to be tapped and are currently available to support more projects. More credits for wind/biomass will become available soon after 2013, when some of the aforementioned wind projects will reach the end of their ten-year terms. Proposed wind projects are currently in the queue to claim those tax credits at that future time.

The PTC rule (3.13.19 NMAC) has been revised periodically with public input to reflect amendments to the statutes and developments in the industry. The more notable amendments (2003 HB 146, 2005 HB 950, 2007 SB

463) to the statutes have been the reduction of the minimum plant size to 1 MW, adding biomass as an eligible resource, adding a tax credit dedicated solely to solar, and making the credit refundable. Many other details have been fine-tuned to improve the PTC program's effectiveness. The rule is now under consideration for further changes due to the most recent amendments to the statute; however, this does not impede the PTC application review process or applicants obtaining approval for tax credits. The tax incentive expires at the end of December 2018.

Renewable Energy Act (REA) [NMSA 1978, § 62-16]: Established the state's Renewable Portfolio Standard (RPS) requiring that independently-owned utilities (IOUs) have 15 percent renewable energy in their portfolios by 2015 and 20 percent by 2020. The IOUs are required to file "Renewable Energy Plans" annually to convey how they intend to meet the RPS requirements. The Rural Electric Cooperatives' requirement, beginning in 2015, is five percent by 2015 and 10 percent by 2020. To date, the REA has been responsible for the development of over 600 MW of wind farm development and over 100 MW of utility-scale solar power, representing over \$1.5 billion of in-state capital investment.

ENERGY EFFICIENCY AND CONSERVATION PROGRAM: In these challenging economic times, energy efficiency is the win-win option for everyone. Energy efficiency takes stock of the current energy consumption and determines the measures that will reduce it. These measures may include no-cost behavioral changes such as turning off lights and setting PCs to power-saver mode; low-cost actions such as weather-stripping doors and windows and changing to compact fluorescent light bulbs; and more comprehensive actions that add insulation, upgrade heating and cooling systems, and integrate automated control systems. These may be applied to residential buildings as well as commercial. New construction provides the most opportunities to incorporate cost-effective energy efficiency measures, while renovations greatly extend the productive life of existing buildings. Energy efficiency projects are providing jobs throughout New Mexico and, at the end of the day, the building owner reaps the benefits of lower utility bills.

Energy Efficiency and Conservation Development

Sustainable Building Tax Credit (SBTC) [NMSA 1978, § 7-2A-21]: Has benefitted New Mexicans in 29 counties by incentivizing builders to build highly energy-efficient and healthy, comfortable homes. Initiated in late 2007, the number of residential tax credits grew from 2 to over 100 in 2008, then increased to almost triple that in 2009; applications submitted in 2010 will surpass 2009's total. Although the residential building industry has dramatically slowed in this economic downturn, the demand for green homes has had a significant positive effect. Homeowners who live in these homes are saving up to 40 percent on their utility bills and reducing the state's energy consumption by almost eight billion BTU annually. The commercial tax credit has generated even larger savings of over 56 billion BTU in a total of 625,000 square feet of building space. In addition to helping the building industry in difficult times, the dollars saved from all the energy savings is money that goes back into the local communities. The energy saved is enough to power over 650 typical homes a year. Contrary to the perceptions of some, energy efficient green building is not just the domain of luxury homes but, importantly, is very affordable for "middle class" home construction as well. This is confirmed by the large number of modestly-sized new homes that have qualified for the SBTC. The tax incentive expires in December 2013.

New Mexico Building Energy Conservation Code 2009: New Mexico's adoption of the 2009 International Energy Conservation Code, which will go into effect on July 1, 2011, was a condition required for New Mexico to receive \$31.8 million of ARRA funding. In the most recent code adoption process, ECMD invested significant effort in collaboration with the Construction Industries Division of the Regulation and Licensing Department to help assure that the aggressive building codes being proposed would result in the most cost-effective measures possible. As a result of these efforts, the New Mexico Construction Industries Commission recently adopted this new building energy code for New Mexico. ARRA funding is currently being used to provide training on the new code. During the fall of 2010, ECMD trained over 70 building code enforcement officials on the latest green building technology. For spring 2011, training plans are being developed for more than 300 design professionals, contractors and real estate appraisers.

New Mexico has long been a leader in adopting and implementing energy efficient building codes that continue to raise the quality of home and commercial building construction in our state. While the new residential energy efficiency codes slightly increase the price of a new home and, therefore, the amount of the monthly mortgage payment, the code's energy utility bill reductions more than offset this increase. An engineering analysis of the effects on the combined monthly mortgage and utility bill payments concluded that the homeowner would enjoy a net savings of \$14 each month – proof that the new codes are both pro-homebuyer and pro-homebuilder. Energy-efficient building codes reduce energy expenditures and keep more energy dollars in state, thereby making more money available for local businesses.

State-Funded Public Buildings Energy Efficiency Requirements [NMSA 1978, § 15-3-36]: Requires that ECMD review certain state-funded building projects to ensure that the projects qualify for an ENERGY STAR rating from the United States Environmental Protection Agency (EPA). In order for the standards to apply, the projects must be funded by legislative appropriations or by the proceeds of severance tax bonds, supplemental severance tax bonds, or general obligation bonds. The projects must be either new buildings of 3,000 square feet or more; building additions that increase the square footage of the original building by 3,000 square feet or more; or building renovations that entail the upgrade or replacement of at least two of the following: (1) HVAC system, (2) an electrical system, or (3) components that separate the interior and exterior environments, protect the interior environment and facilitate climate control.

Geothermal Ground-Coupled Heat Pump (GCHP) Tax Credit [NMSA 1978, § 7-2A-24]: Provides corporate and personal income tax credits for geothermal GCHP systems in New Mexico. The statute requires that EMNRD-ECMD adopt two rules – one for residential, one for commercial – to establish procedures for certification of these systems, which were completed in September. The geothermal GCHP tax credit is retroactive for systems installed as early as January 1, 2010, and will be available until expiration in December 2020. The tax credit may be issued for up to 30 percent of system costs, but not to exceed \$9,000. ECMD administers the system certification program to determine eligibility for the tax credit and answers questions and provides information to the public about the program.

Energy Efficiency and Renewable Energy Bonding Act [NMSA 1978, § 6-21D]: Commonly known as the Clean Energy Revenue Bond (CERB), establishes an innovative financing mechanism for state agencies, universities, and public schools to fund and implement energy efficiency and renewable energy renovations at existing facilities. The

CERB program is jointly administered by ECMD and the New Mexico Finance Authority (NMFA). ECMD is responsible for providing energy audit funding, reviewing the projects, calculating the estimated energy cost savings and making certification to the NMFA for sale of revenue bonds. Currently, energy audits are under review for the New Mexico Department of Transportation for installation of a large photovoltaic array at its Santa Fe location and for nine school districts located in eastern New Mexico. The energy audits' review will ensure that the reports provide sufficiently-detailed information for certification to NMFA.

Public Facility Energy Efficiency and Water Conservation Act [NMSA 1978, § 6-23]: Permits governmental units such as public schools, universities, municipalities and state agencies to enter into long-term installment payment contracts and lease-purchase agreements of up to 25 years for the evaluation, recommendation, purchase and installation of energy efficiency, renewable energy and water conservation measures. ECMD reviews the energy studies developed for these projects to determine if the contractor is qualified and if the energy conservation measures proposed are accurately estimated and reasonable. Since the law was passed, public schools, local governments and universities have invested \$30 million to realize guaranteed savings of \$43 million in utility costs. These cost savings were generated by reductions of 29 million kWh of electricity and 864,000 therms of natural gas. In addition, millions of gallons of water are saved annually by the reduced energy usage.

Efficient Use of Energy Act (EUEA) [NMSA 1978, § 62-17]: Requires that utilities "acquire" energy efficiency into their resource mix. The EUEA requires both electric and natural gas utilities to "acquire all cost-effective and achievable energy efficiency." "Cost effective" essentially means funding and implementing all energy efficiency measures that are less expensive than the alternative of building and operating a power plant. As a minimum, however, the EUEA states that the electric utilities' requirement "...shall not be less than savings of 5 percent of 2005 retail... sales ...in calendar year 2014 and 10 percent in 2020." Utilities are required to file energy efficiency plans annually.

The cost-effective energy efficiency approach embodied in the EUEA is also referred to as "decoupling." Energy efficiency programs are to be decoupled from energy retail sales; utilities may request rate adjustments to pay for the programs. Energy efficiency measures cost approximately two to five cents per kWh to implement, whereas new electric power plants are expected to run in excess of 10 cents per kWh. Thus, the long-term savings to the customers of incorporating energy efficiency measures and delaying the need to build and operate a new power plant can be enormous.

Public Regulation Commission (PRC) Activities: EMNRD-ECMD is heavily involved in PRC proceedings, primarily as they relate to the Renewable Energy Act and the above-described EUEA. New Mexico has also made a commitment to DOE to achieve decoupling of efficiency from rates in exchange for receiving \$31.8 million of ARRA funding. Under both statutes, the state's three IOUs, Public Service Company of New Mexico (PNM), El Paso Electric Company, and Southwestern Public Service Company (SPS), are required to make annual program plan filings to the PRC. Since the PRC is quasi-adjudicative in nature, these filings are addressed via a quasi-judicial process involving a hearing examiner, formal testimony and rebuttal. In addition, utilities' periodic rate case filings often have renewable energy and/or energy efficiency provisions in them that EMNRD-ECMD addresses in its participation.

CLEAN FUELS AND EFFICIENT TRANSPORTATION PROGRAM:

Transportation is the second largest energy use sector and a major source of air pollution in New Mexico. This program helps New Mexicans save money by promoting public transportation and domestically-produced fuels such as New Mexico-produced natural gas, liquefied petroleum gas, and biodiesel to help reduce our reliance on imported fossil fuels. The program also supports ride-sharing and multi-modal transportation programs, as well as the implementation and use of renewable fuels such as biofuel, and electric and compressed natural gas (CNG) vehicles.

Clean Fuels and Efficient Transportation Development

Energy Policy Act (EPACT) and Alternative Fuel Acquisition Act [NMSA 1978, § 13-1B-1 et seq.]: Requires ECMD to provide annual reports to DOE to demonstrate compliance with EPACT 1992. This federal law requires that 75 percent of state vehicle fleets be alternative fuel vehicles (AFV). In addition, ECMD compiles and submits an annual report to the governor and the legislature evaluating the status and the effectiveness of the New Mexico Alternative Fuel Acquisition Act that requires the procurement of AFVs by state agencies and public educational institutions. The following must be reported annually: fleet vehicles procured weighing less than 8,500 pounds that (1) meet or exceed federal Corporate Average Fuel Economy standards; (2) are hybrid vehicles; (3) have alternative fuel capability (i.e., natural gas vehicles); or (4) are plug-in electric vehicles.

The Clean Fuels and Efficient Transportation program assists and encourages the development of infrastructure for use of cleaner-burning fuels such as CNG, propane, biodiesel, ethanol, and solar charging stations for electric vehicles. The program supports CNG fueling stations in New Mexico, including Las Cruces, Las Vegas, Socorro, Santa Fe, and Albuquerque. Through Clean Energy Project funds, the program supported the procurement and repowering of CNG school and transit buses in New Mexico.

Natural gas is a domestically-produced fuel that is a superior motor fuel for all sorts and sizes of vehicles. CNG has been used successfully in vehicle fleets for decades. It is cheaper and cleaner than gasoline and diesel. Plus, the price of natural gas is expected to remain stable and decoupled from the price volatility of crude oil. The increased use of CNG as a transportation fuel will benefit New Mexico by increasing severance tax revenues and providing jobs in natural gas production and CNG vehicle maintenance and repair. Increased use of natural gas as a transportation fuel increases gross receipts tax revenues, benefitting the General Fund as well as Severance Tax Bonding and Land Grant Permanent Fund royalties.

ECMD has supported initiatives to reduce vehicle miles travelled (VMT) in New Mexico resulting in a decrease in petroleum fuel consumption and traffic congestion, improved air quality, and saving New Mexicans money. ECMD provides support and funding to develop rideshare programs that encourage commuters to use carpools, vanpools, public transportation, and park-and-ride systems to get to their destinations. Over a five-year period, executive branch agencies established policies to reduce VMT and to promote fuel conservation, teleconferencing, carpooling, and fuel efficiency. Through these efforts, executive agencies reduced fuel use by 48 percent – from 322 gallons per employee in 2005 to 167 gallons per employee in 2010.

In 2004, ECMD facilitated the installation of the nation's first multiple biofuels station in Santa Fe. The station dispenses B20 bio-diesel (diesel blended with 20 percent biodiesel) and two blends of ethanol (E10, E85). Also in 2004, ECMD helped enact a five-year Motor Vehicle Excise Tax exemption for hybrid-electric vehicles, thereby saving New Mexicans \$600 to \$900 on the purchase of a gasoline-electric hybrid.

Over the past eight years, ECMD provided financial support to and worked closely with the Land of Enchantment Clean Cities Coalition which, as part of the national organization, helped achieve a remarkable milestone in 2005: displacement of more than one billion gallons of gasoline since inception of the program. Our program works closely with Land of Enchantment Clean Cities Coalition to promote efficient transportation, advanced power-train technologies and cleaner-burning alternative and renewable fuels.

In 2008, ECMD provided funds for the City of Santa Fe Parking Division to purchase two electric vehicles for use in daily parking enforcement patrols. A photovoltaic solar project funded by ECMD at Albuquerque Sunport produces power for electric vehicles used at the airport.

The Energy Innovation Fund has provided over \$2 million to the City of Carlsbad, partnered with the Center of Excellence for Hazardous Materials Management, for a project to introduce microalgae into test ponds. This project will determine the potential of microalgae reproduction for biodiesel oil production and test the quality of the oil in order to meet motor fuel standards. The project plans to assess the availability of this natural resource and the feasibility of an algae biodiesel industry in New Mexico.

CLEAN ENERGY PROJECTS PROGRAM: The Clean Energy Projects (CEP) program was established pursuant to legislation passed in 2004 and has since provided \$5 million in state funding for capital projects on a competitive basis to public entities. Recipients include municipalities, counties, state agencies, colleges and universities, tribal and pueblo governments, and public schools (K-12). Clean energy projects include those related to renewable energy (solar, wind, geothermal, biomass), energy efficiency in transportation or in governmental buildings, and clean burning transportation fuels such as CNG, ethanol, and biodiesel. Scores of demonstration projects of clean energy technologies have been funded using commercially-available technology.

The CEP program offers a variety of benefits to participating public entities, starting with reducing existing energy usage in a facility or fleet by an average of 15 percent. Solar systems for schools throughout the state are reducing utility bills, as well as providing new resources for teachers and educational opportunities for our children. The Village of Angel Fire installed a biodiesel production facility, using restaurant grease waste, as a local fuel source for its municipal fleet. The Department of Transportation initiated a traffic signal retrofit that positioned the state for quick takeoff with the federal stimulus funding, expanding the project tenfold. The City of Santa Fe analyzed its waste at the wastewater treatment plant and found that gas byproducts could be used to fire its process heating needs. The City of Belen utilized concentrating solar technology with two small Stirling dish engine units to provide most of its City Hall's electricity needs. Las Cruces Public Schools incorporated a geothermal heat pump system into a new school design to reduce heating, cooling, and electricity needs.

These projects and others have provided many opportunities for the local contractors serving these public entities to develop clean energy expertise. The activities of the contractors generate income to state government in the form of gross receipts taxes. The CEP program also serves to demonstrate the benefits of clean energy technology to our communities and the private sector throughout the state. Annual savings of at least one million kWh in electricity, 70,000 therms in heating, and \$135,000 in utility bills are now realized through implementation of CEP projects.

Visit our website at www.CleanEnergyNM.org to view information on these projects; click on Clean Energy Incentives and then on Clean Energy Projects.

ENERGY INNOVATION FUND PROGRAM: Proposed by Governor Richardson and established by the 2007 legislature, the purpose of the Energy Innovation Fund (EIF) program is to accelerate innovation of clean energy technologies and encourage their development in New Mexico. A total of almost \$3 million in state funding has supported EIF public-private partnerships, with an equal match provided by private companies. The focus areas have been new clean fuels and solar technologies.

As previously mentioned and of special note, the City of Carlsbad and its partner, Center for Excellence in Hazardous Materials Management (CEHMM), was awarded funding for an algal biomass-to-oil project. New Mexico's open spaces, abundant sunshine and marginal water resources offer an excellent setting for developing an algae-to-energy industry, especially in the southern half of the state.

Another important area of clean energy technology development supported by the EIF is concentrating solar power (CSP). Using the research facilities of Sandia National Laboratories, the partnership of University of New Mexico Inc., and SkyFuels, Inc., developed a more efficient parabolic trough collector which focuses solar energy to heat fluid flowing through a tube. The performance of the prototype collector was verified and is lighter, larger, and easier to assemble. It is intended for use in the field arrays of utility-scale solar power plants. In a different type of CSP application, NMSU partnered with Heliodynamics, Inc., and City of Albuquerque to install and test a commercial-scale solar thermal system at the Albuquerque Sunport that produces both heating and cooling. Heat is generated in a similar manner as the collector above and can be used for space heating in colder months and domestic hot water needs. Cooling is also produced by delivering the heat to an absorption chiller during hotter months, when less space heating is needed. This system demonstrates how solar can be used to reduce or eliminate the water consumption and peak electricity demand associated with conventional cooling systems (e.g., evaporative cooling, refrigerated air conditioning).

Visit our website at www.CleanEnergyNM.org to view information on these projects; click on Clean Energy Incentives and then on Energy Innovation Fund.

AMERICAN RECOVERY AND REINVESTMENT ACT (ARRA):

ECMD is managing \$43.7 million of ARRA funds for clean energy projects across four grants involving more than 70 contractors. These stimulus-funded projects are generating a total of \$1 million or more in gross receipts tax revenue for state government during the current implementation phase. The same projects, when completed, will avoid utility bill costs of state, local, and tribal governments of at least \$2 million every year. Several “shovel ready” projects now completed are already saving energy and utility costs throughout New Mexico.

ECMD is designated as the State Energy Office for the State of New Mexico and is eligible to apply for and receive federal funding. A major initiative for ECMD is managing the ARRA programs administered by DOE. ECMD is concentrating on meeting the ARRA timelines and funding requirements for the deployment of federal funds to communities, school districts, universities, tribal governments, and state agencies on a statewide basis, specifically for the State Energy Program (SEP, \$31.8 million), Energy Efficiency and Conservation Block Grant (EECBG, \$9.6 million), Appliance Rebate (\$1.9 million), and Energy Assurance and Smart Grid Resiliency Plan (\$382,070). New Mexico's receipt of \$31.8 million of that funding for the State Energy Program grant was contingent upon certifying that the state would adopt the 2009 International Energy Conservation Code and decouple utilities' energy efficiency program revenue from energy retail sales revenue (see Efficient Use of Energy Act on page 37).

ARRA State Energy Program: SEP is a longstanding DOE program managed by ECMD that received \$31.8 million in ARRA funding. Eligible entities received awards for projects that will achieve the following goals: increase energy efficiency to reduce energy costs and consumption for consumers, businesses and government; reduce reliance on imported energy; improve the reliability of electricity and fuel supply and the delivery of energy services; and reduce the impact of energy production and usage on the environment. DOE's energy savings goal for ARRA SEP is 10 million BTU for every \$1,000 invested. Table 1 (next page) summarizes the ARRA SEP projects.

Photo by: Ken Hughes



Some of the 533 solar photovoltaic modules installed atop the Wendell Chino building in Santa Fe. Panels were installed for less than \$4 per watt and are expected to generate 234,000 kWh of electricity annually.

ARRA Funds at Work
- Installing energy efficient LED parking lot lights at the State Fair

Photo by: Jeremy Lewis



Table 1. ARRA State Energy Program – Clean Energy Projects				
Award Winner	City/Town	County	Project	Award
University of NM	Albuquerque	Bernalillo	Energy efficient lighting	\$230,000
NMSU – Grants	Grants	Cibola	Energy upgrades	\$491,557
Fort Sumner Municipal Schools	Fort Sumner	De Baca	Energy efficient lighting and HVAC	\$500,000
Lordsburg Municipal Schools	Lordsburg	Hidalgo	Lighting replacements at five school buildings	\$171,500
Lovington Municipal Schools	Lovington	Lea	Energy efficient lighting	\$116,000
Jemez Pueblo	Jemez	Sandoval	Biomass heating system for Walatowa Visitor Center	\$99,990
Institute of American Indian Arts	Santa Fe	Santa Fe	Insulation upgrades	\$434,660
Magdalena Municipal School District	Magdalena	Socorro	Solar thermal collector and storage systems	\$119,800
Rio Metro Regional Transit District	Belen	Valencia	Solar-powered shade parking structures, bike lockers	\$492,600
Dexter Consolidated Schools	Dexter	Chaves	Energy efficient lighting in four school districts	\$499,999
Silver City Consolidated School District	Silver City	Grant	Insulated roofs, solar hot water, and energy management system	\$357,500
Clovis Municipal Schools	Clovis	Curry	LED office lighting	\$76,925
Clovis Community College	Clovis	Curry	Lighting and cooling system replacement	\$119,104
Jicarilla Apache Nation	Dulce	Rio Arriba	Geothermal heating and cooling, solar array, waste-oil burner	\$350,000
Northern NM College	El Rito	Rio Arriba	Heating system replacement	\$495,500
Northern NM College	Espanola	Rio Arriba	Repair existing solar systems	\$456,775
San Juan College	Farmington	San Juan	Solar power system, energy efficiency replacements, workforce/wind generation training, community education	\$475,000
Roy Municipal Schools	Roy	Harding	Energy efficiency measures	\$177,000
State Fair Commission	Albuquerque	Bernalillo	Expo NM parking lot LED lighting and Tingley Coliseum lighting upgrade	\$337,815
University of NM	Albuquerque	Bernalillo	Solar system upgrades	\$128,000
Cloudcroft Schools	Cloudcroft	Otero	Energy efficient lighting	\$143,093
NM School for the Blind and Visually Impaired	Alamogordo	Otero	HVAC, energy efficient lighting and building envelope improvements	\$235,000
NM Department of Cultural Affairs	Santa Fe	Santa Fe	HVAC replacement for Museum of International Folk Art	\$500,000
NM Department of Information Technology	Statewide	Statewide	Reduce state employee travel through web-based collaboration technologies	\$230,000
NM General Services Department	Statewide	Statewide	Lighting, insulation, solar, HVAC upgrades	\$12,000,000
NM Department of Transportation	Statewide	Statewide	LED traffic signal lighting replacement project	\$2,010,000
NM Association of Counties	Statewide	Statewide	Renewables financing districts training	\$33,000
NM Regulation and Licensing Department	Statewide	Statewide	Building energy code training	\$430,000
NM Tech	Socorro	Socorro	Geothermal resource assessment	\$200,000
NM Renewable Energy Transmission Authority	Los Alamos	Los Alamos	Transmission Study	\$45,000
Global Energy Partners, Inc.	Walnut Creek, CA		Energy Efficiency Potential Study	\$700,000
Class One Technical Services	Albuquerque	Bernalillo	Wind monitoring	\$22,000
NM Highlands University	Las Vegas	San Miguel	Install energy efficient windows, lights and create recycling program	\$500,000
NM Public Education Department	Rio Rancho, Carrizozo, Gallup, Los Lunas, Belen, Elida, Penasco, Corona, Dulce, Portales, Ruidoso, Hatch, Taos, Los Alamos, Moriarty		50-kW solar photovoltaic systems at 15 school districts	\$4,500,000
Vision Trust, Inc.	Albuquerque	Statewide	Public Outreach	\$200,000
				\$27,877,818

Table 2. ARRA Energy Efficiency and Conservation Block Grant – Clean Energy Projects			
Award Winner	City/County	Project	Award
Bernalillo County	Bernalillo	Energy efficiency education, audit training and improvements	\$500,000
Bloomfield	San Juan	City hall and ball field lighting improvements	\$397,000
Clayton	Union	Town and school energy efficiency project	\$434,600
Clovis	Curry	Civic center 55 kW PV solar system	\$500,000
Deming	Luna	Solar street lamps	\$50,000
Edgewood	Santa Fe	100 kW wind project	\$430,000
NM Environment Department Solid Waste Bureau	Raton, Gallup, T or C	State government management of recycling projects in 3 underserved rural areas	\$47,784
City of Gallup	McKinley	Recycling project	\$150,000
Truth or Consequences	Sierra	Recycling project	\$150,000
City of Raton	Colfax	Recycling project	\$150,000
Española	Rio Arriba	Geothermal heating system	\$451,680
Grady	Curry	50 kW wind, PV solar, and senior center roof modification	\$431,908
Hidalgo County	Hidalgo	Energy outreach and retrofit project	\$424,422
Las Cruces	Doña Ana	Convention Center renewable energy project	\$495,330
Lordsburg	Hidalgo	Civic Center efficiency project	\$186,834
Los Alamos County	Los Alamos	Rooftop solar thermal project	\$103,000
Mora County	Mora	County Courthouse energy efficiency project	\$500,000
Quay County	Quay	County Courthouse energy efficiency project	\$347,320
City of Santa Fe	Santa Fe	Efficiency upgrades for city buildings	\$500,000
Santa Fe County	Santa Fe	Building, vehicle and street lighting upgrades	\$475,520
Silver City	Grant	Sustainability Program	\$341,298
Taos	Taos	PV solar system, energy efficiency measures, education program	\$490,490
Tucumcari	Quay	City Hall lighting upgrade	\$52,000
Union County	Union	County Courthouse energy efficiency	\$500,000
eSolved Inc.	Various	Building energy codes training	\$200,000
Carrizozo	Lincoln	Community outreach	\$56,690
Deming	Luna		\$56,690
Quay County	Quay		\$56,690
Truth or Consequences	Sierra		\$56,690
Northwest COG - Milan	Cibola		\$56,690
Mid-Region COG - Moriarty	Torrance		\$56,690
North Central COG - Wagon Mound	Mora		\$56,690
			\$8,706,016

ARRA Energy Efficiency and Conservation Block Grant Program:

With \$9.6 million under ECMD oversight, the ARRA EECBG program aims to help local governments implement strategies to reduce fossil fuel emissions and total energy use. The program emphasizes a community-based approach to help meet energy and climate protection goals. Table 2 summarizes the ARRA EECBG projects.

Projects for the SEP and EECBG programs were selected through a competitive Request for Application process. There are more than 80 SEP and EECBG projects in various stages of implementation that, upon project completion, will require 12 months of monitoring and verification of energy savings or renewable energy generated for reporting to DOE. As projects are completed

and enter the monitoring phase, substantial energy and cost savings are expected. In fact, the \$2 million traffic signal lighting project funded for the Department of Transportation is already reporting savings of an estimated total of four million kWh and \$400,000 per year in communities throughout New Mexico, equivalent to the average electricity usage of more than 500 homes in New Mexico.

ARRA Energy Efficient Appliance Rebate Program: New Mexico's Appliance Rebate Program was a resounding success, with 94 percent of the total funds spent to date and 8,575 consumer rebates issued. Rebates in the amount of \$200 were provided to New Mexicans purchasing ENERGY STAR refrigerators, clothes washers and gas furnaces. This program promoted New Mexico retailers' appliance sales of over \$8 million, generated \$400,000 in

gross receipts taxes for the state, and saved New Mexican consumers over \$1.7 million on appliance purchase prices. Lifetime benefits from this program include an estimated 9.9 million kWh in energy use reduction, over 310 million gallons of water conserved, and reducing the state's carbon footprint by over 15 million pounds of CO₂-equivalent. Program announcements were delivered by direct mail in English and Spanish to 239,521 low-income households, in a magazine article to 127,713 members of New Mexico's rural electric cooperatives, and in ads in various newspapers and magazines. These publicity efforts encouraged participation from every county across the state. Additional leveraged, non-federal support and "in kind" contributions include nearly \$530,000 from PNM; \$18,000 from New Mexico Human Services Department; and nearly \$3,000 from the New Mexico Rural Electric Association.

ARRA Energy Assurance and Smart Grid Resiliency Plan: With ARRA funding of \$382,070 for this program, ECMD contracted with Burcham and Associates in Albuquerque to increase New Mexico's capacity to respond to energy emergencies and update the state's Energy Emergency Plan. The Energy Assurance and Smart Grid Resiliency Plan will incorporate emerging energy efficiency and renewable energy technologies, including digital "smart grid" technology for electricity supply systems. The plan will also result in increased reliability within New Mexico of energy supply sources, such as for gasoline and diesel fuel.

Regional Program Development

Western Governors' Association (WGA): ECMD is involved in renewable and alternative energy projects with the WGA's "Clean and Diversified Energy for the West Initiative," as well as issues such as interstate electricity transmission, transportation fuels and joint United States-Mexico border energy programs. ECMD participates in WGA's "Wildlife Corridors Initiative" and the Energy Working Group that worked on WGA's policy resolution (07-01), "Protecting Wildlife Migration Corridors and Crucial Wildlife Habitat in the West," which initiated this effort. The Energy Working Group is tasked with making policy recommendations, with the ultimate goal of long-lasting protection for the region's wildlife and lands that provide crucial habitat, as the region moves to a new energy economy focused on increased use of renewable and clean energy sources. In addition, ECMD participates with other western states in developing strategies for the WGA Transportation Fuels Council's "Transportation Fuels for the Future Initiative."

Border Governors Conference: ECMD participates in the Border Governors Conference on cross border inter-relationships on energy and environmental initiatives and issues, projects, funding, and accomplishments. The Border Governors Conference works to promote collaborative partnerships, information exchanges engaging federal cooperation, further developing a border energy program, assessing needs and financing gaps, and identifying projects.

CLEAN ENERGY ECONOMY-RELATED LEGISLATION: Effective clean energy programs are vital in the worldwide progression toward greater energy security and increased conservation and efficiency across all sectors of our economy. Over the past eight years, nearly 40 pieces of legislation advancing clean energy initiatives have been passed by the New Mexico legislature and signed into law. Our division played, and continues to play, a key role in those legislative efforts and in implementing the statutorily-authorized programs that help stimulate clean energy and renewable energy development in our state. These programs and legislation support

renewable energy and energy efficiency measures to reduce electricity costs and greenhouse gas emissions, while conserving water; and they bring economic growth and diversification that protect and conserve all of New Mexico's natural resources for generations to come.

For complete lists of legislation, visit our website at www.CleanEnergyNM.org and click on the Laws and Regulations link.



Photo by: Ken Hughes

UNM Solar Mirror



Data and Statistics

ENERGY CONSUMPTION: Total New Mexico energy consumption was 827.9 trillion BTU (tBTU) in 2008. Most of the energy consumed in the state came from coal (284.3 tBTU), followed by petroleum (263.8 tBTU) and natural gas (250.9 tBTU) resources. In 2008, renewables contributed 3.5 percent or 28.9 tBTU. Wind energy provided more than half of total renewable energy due to significant growth in wind farm developments since 2003. Net energy consumption for in-state needs was actually 663 tBTU after subtracting the energy used for exported electricity (Figure 3).

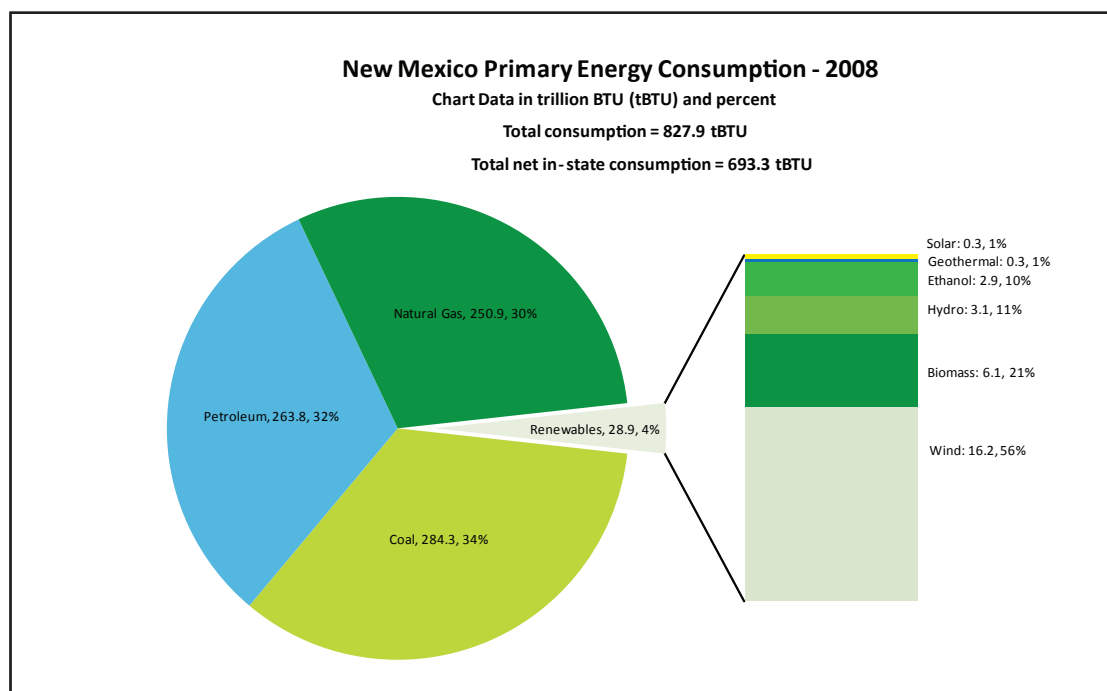


Figure 3

Of New Mexico's net energy consumption in 2008, the industrial sector consumed the most energy at 35.3 percent (244.7 tBTU), followed by the transportation sector 29.9 percent (207.4 tBTU), the commercial sector 18.3 percent (126.6 tBTU) and the residential sector 16.5 percent (114.5 tBTU). New Mexico's residential sector consumed less energy out of total consumption compared to the nation, the commercial sector consumed about the same energy as national percentages and the transportation and industrial sectors consumed more (Figure 4).

ELECTRICITY: Electricity supply affects industrial growth in both the energy and non-energy sectors of the state's economy. Electric utilities consume substantial amounts of natural gas and coal resources extracted in the state, generating considerable revenues in the process. New Mexico's power plants have a total capacity of more than 6,000 MW, about 60 percent of which is located at two coal-fired plants near Farmington: the Four Corners and San Juan Generating stations. California and Arizona utilities own approximately 68 percent of these two plants. Ownership and electricity generation of the Four Corners plant may change in coming years based on an Arizona utility's announcement in late 2010.

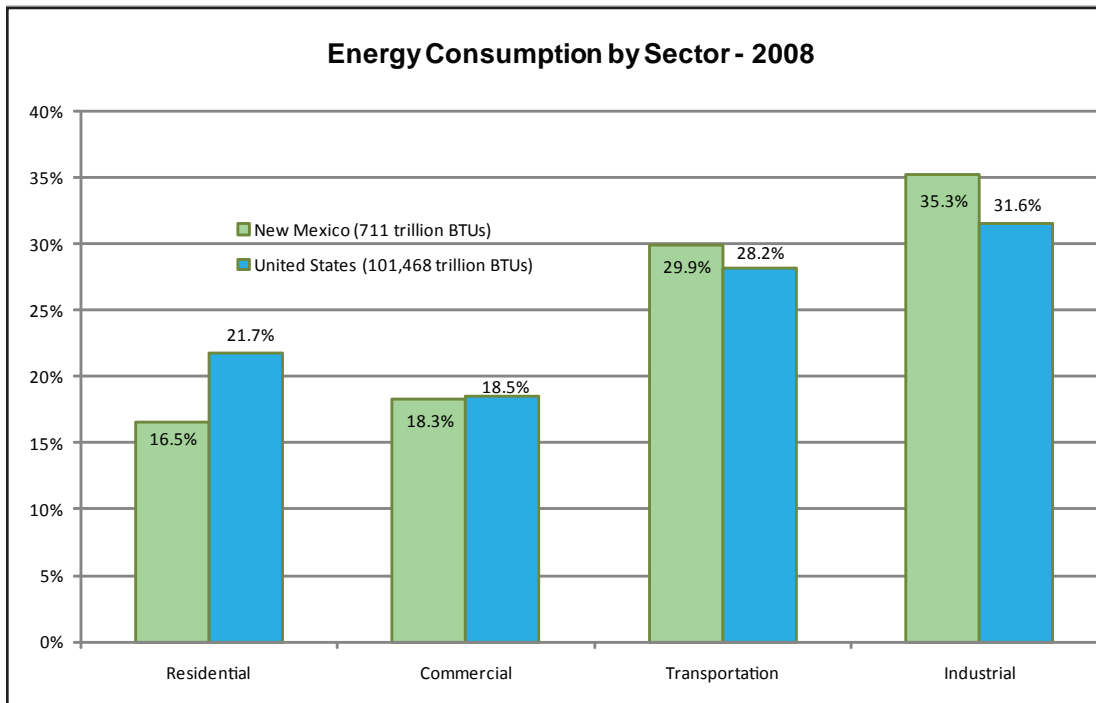


Figure 4

Approximately one-third of the electricity generated by New Mexico power plants is consumed in other states. Total electricity generation for the past several years is shown in Figure 5. Electricity generated in 2008 was 2.9 percent more than in 2007, but 0.7 percent less than the 2006 peak. In 2008, electricity generation in New Mexico was 73 percent from coal, 21.5 percent from natural gas, 4.5 percent from wind, and 0.8 percent from hydropower.

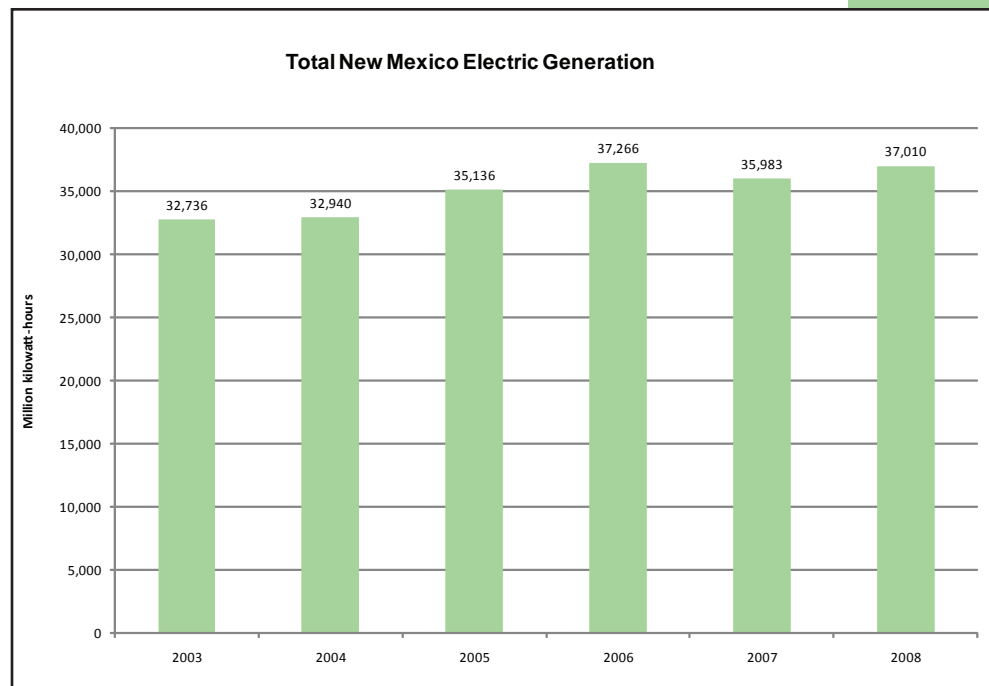
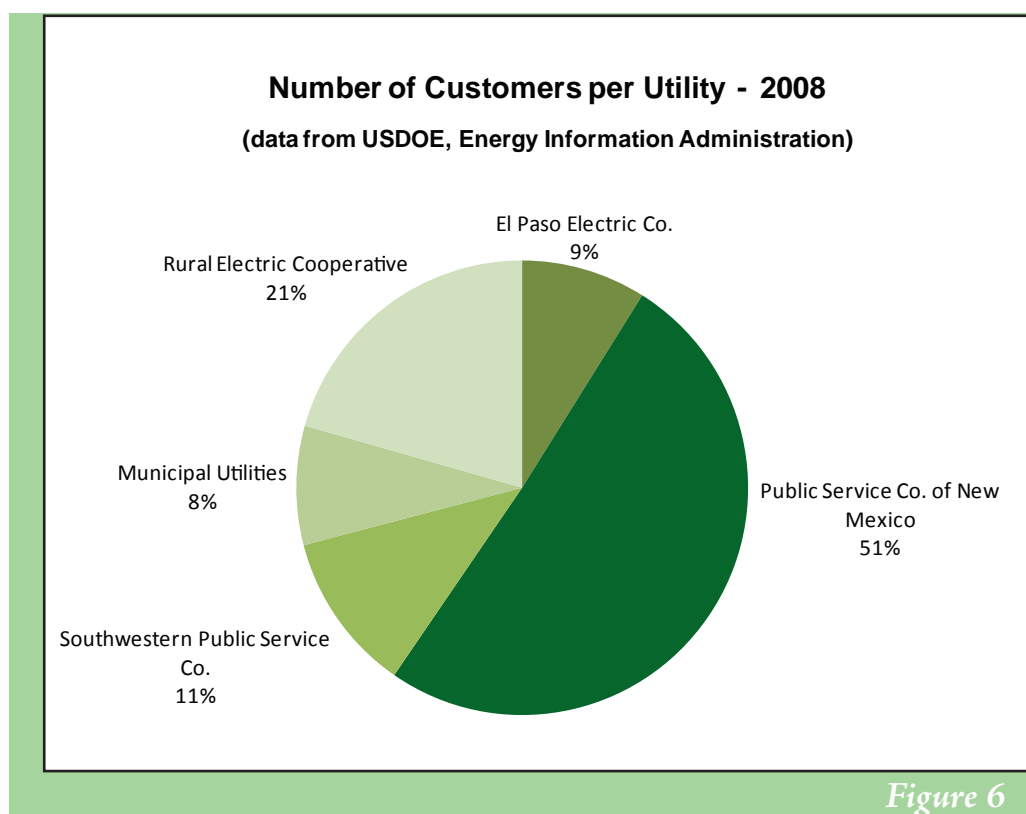


Figure 5

RENEWABLE ENERGY CONSUMPTION: Total New Mexico renewable energy consumption was 30.2 tBTU in 2008. This has increased steadily from 8.2 tBTU in 2002. Of the current renewable energy consumption, wind accounted for 53.6 percent (16.2 tBTU), biomass 34.1 percent (10.3 tBTU), hydroelectric 10.3 percent (3.1 tBTU), solar 1.0 percent (0.3 tBTU) and geothermal 1.0 percent (0.3) (Figure 3). Wind energy development has been the major reason for growth in renewable energy consumption in the state since 2003. Nationally, wind is the third largest renewable resource after biomass and hydropower.

Investor-owned utilities in New Mexico serve approximately 71 percent of the customers (Figure 6). The 20 rural electric cooperatives serve about 21 percent of the customers, although they service about 85 percent of the state's land area. Tri-State Generation and Transmission Association is a wholesale supplier of 13 member cooperatives. There are seven municipal electric utilities serving the remaining 8 percent of the state's electric customers.



As of 2008, the number of New Mexico customers buying electricity and the price paid per kWh has been on an increasing trend for many years, but New Mexico's prices still remain low compared to the rest of the U.S. The price paid in New Mexico increased 14 percent in the residential sector, 15 percent in the commercial sector, and 25 percent in the industrial sector over the four-year period of 2004 through 2008. As of 2008, New Mexico's prices compared to average U.S. prices were 11 percent lower in the residential sector, 16 percent lower in the commercial sector, and 7 percent lower in the industrial sector.

CARBON DIOXIDE EMISSIONS: Carbon dioxide emissions from the consumption of energy sources amounted to 58 million metric tons in 2008 (one percent of U.S. total emissions). Emissions from coal were 47 percent (27 million metric tons), petroleum 31 percent (18 million metric tons) and natural gas 22 percent (13 million metric tons). Almost all of the coal consumed generated electricity.

ENERGY EXPENDITURES: New Mexico's 2008 primary source energy expenditures were \$8.9 billion. Most expenditures were for petroleum at \$6.3 billion (71 percent). Natural gas expenditures were \$1.3 billion (15 percent), coal \$567 million (6.4 percent) and renewable energy \$33 million (0.4 percent, all biomass). For other renewable energy forms – wind, solar, hydroelectric and geothermal – there were no fuel expenditures. Of the coal-fired power generation, electricity valued at \$1.1 billion was exported, while in-state retail electricity sales were \$1.8 billion.



Forestry Division



Arthur “Butch” Blazer

State Forester



Forestry Division

A Message from New Mexico State Forester Arthur “Butch” Blazer

As State Forester I am pleased to oversee the collaborative work the New Mexico Forestry Division (Forestry) has accomplished with our partner agencies to address the critical issues that face our forests and watersheds.

I’m especially proud of the many forward thinking plans that Forestry worked on to protect our forests and watersheds, two in particular are worthy of special mention:

The New Mexico Forest and Watershed Health Plan enhances the coordination of efforts between state, federal agencies, tribes, local governments, research and non-governmental organizations, businesses, and the public to address the health needs of our ecosystems and improve forest and watershed health conditions in New Mexico. It has resulted in a more efficient use of resources among these entities, joining forces to increase effectiveness, and eliminating wasteful duplication.

The Statewide Natural Resource Assessment and Strategy Plan advances Forestry’s work throughout New Mexico to address wildfire prevention and preparedness and restore ecosystem health.

Wildfire prevention and preparedness are essential to the success of protecting our forests. Since 2003, we’ve identified 599 communities at risk to wildfire. In that time, more than 1.7 million acres of forested and grass lands have burned. Humans continue to be the leading cause of wildfires. Forestry has helped establish 57 Community Wildfire Protection Plans that are individually crafted to meet the needs of a county and the cities and towns within it to reduce fire risks and increase awareness.

Major challenges facing forests in the Western United States are destructive insect and disease epidemics, drought, continued expansion of the wildland urban interface and the threat from catastrophic wildfire. An all-lands perspective that looks at health on the entire landscape is the best approach for our forests and watersheds.

Reflecting on the last eight years, I’m proud of my staff and the job they do to help New Mexicans with forest management, wildfire suppression on 43 million acres of state and private land, and being a community partner to address forest and watershed health needs.

We invite you to visit our website www.nmforestry.com for more information about our many important programs.



Forestry Division

MISSION: The Forestry Division (Forestry) retains lead responsibility for wildland fire management on non-federal and non-municipal lands, maintaining fire suppression capacities and emphasizing firefighter and public 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 communities by evaluating those most at risk to wildfire and insect infestation by developing appropriate management programs and implementing mitigation projects.

Forestry staff members provide 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 forest health project funding.

PROGRAMS: One of Forestry's priorities is to assist in the continued development of the forest products industry (e.g., landscaping, construction, woody biomass) that uses land treatment byproducts. In addition, Forestry oversees an inmate work camp, which utilizes trained minimum-security inmate crews for work on conservation projects and wildland fire suppression.

Fire crews dig line and look for hotspots caused by the Trestle Fire near Chama, New Mexico.



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

Forestry operates the New Mexico Forest and Watershed Health Office (FWHO), which implements the New Mexico Forest and Watershed Health Plan and acts as a clearinghouse of information related to the overall improvement of forest and watershed health in New Mexico. The FWHO serves as a centralized contact point for local, state, federal and tribal activities that work toward a common goal of improved forest and watershed health, including enhanced wildlife habitat, reduced susceptibility to pathogens and wildfire, improved water quality and reduced wildfire risk to communities.

Landowners and communities receive assistance with fire prevention planning; forest management; urban and community tree development and management; low-cost seedlings for individuals, larger community projects through the New Mexico Forest Re-Leaf and other urban forestry programs; conservation easements through the Forest Legacy Program; and numerous educational presentations on these topics.

Accomplishments

The last eight years have been an important time for forest and watershed health in New Mexico, because prolonged drought and a changing climate have created critical health conditions for the diverse ecosystems that make up New Mexico's natural landscape. Forestry has been in the forefront of addressing these critical issues, both with private landowners, small business owners and with local, state, federal and tribal agencies.

In 2003, Forestry was tasked with creating an overreaching document to address barriers that stood in the way of addressing forest and watershed health issues. The State Forester convened a large working group to create the New Mexico Forest and Watershed Health Plan (Plan), which subsequently led to collaborative on-the-ground efforts, resulting in better awareness and identifying steps toward restoring healthy ecosystems.

Following Governor Richardson's signature on the plan in 2005, Forestry created a special office tasked with coordinating information and on-the-ground forest and watershed health projects. This has led to unique partnerships with federal agencies, tribal governments and community working groups.

In 2009, Forestry initiated work on the Statewide Assessment, Strategy and Response Plans (Assessment) which identifies natural resource conditions, needs and opportunities for all land ownerships across New Mexico. This document also helps identify priority at-risk landscapes for restoration and resource management.

The Assessment, completed in June 2010, was developed through a partnership among Forestry, the Nature Conservancy, the Forest Guild and nearly 100 stakeholders and other partners who provided the resource information, advice and insight.

In 2003, Forestry was directed by the Governor to create a working group made up of agencies to address critical wildfire protection issues in New Mexico. The New Mexico Fire Planning Taskforce (NMFPT) meets quarterly to address current and future wildfire protection and prevention needs for all jurisdictional levels.

The NMFPT oversees the creation and approval of Community Wildfire Protection Plans (CWPPs) across the state. These plans, created by communities with the assistance of Forestry and local firefighting agencies, are custom documents that address unique wildfire protection issues. In the last eight years, the NMFPT has approved 57 CWPPs developed on a county and community-wide basis.

The main component of these plans is their community at risk ratings. These ratings evaluate a community's risk from wildfire. In the last eight years, 599 communities have been assessed for their risk from wildfire.

Regarding wildfire protection, Forestry also oversees:

- County and municipal joint powers agreements (JPA): The JPAs provide policy and guidelines for wildland fire initial attack and the reimbursement of funds for equipment used for fire suppression;

- Shared initial attack zones with federal agencies: These zones provide for efficient initial attack response on private, state or federally owned land;

- Funding for wildland fire engines and equipment.

During the past eight years, the Division has facilitated the disbursement of approximately \$10 million for the purchase of new wildland fire engines and equipment for rural and volunteer fire departments; annual wildland fire training for volunteer, county and municipal fire departments; annual training over the last eight years for 7,476 new and returning firefighters to build capacity and provide for efficient and professional wildland fire response.

To address critical forest and watershed health and wildfire issues, Forestry works collaboratively with private landowners and other government agencies to develop management and treatment plans for forested land. In the last eight years, Forestry has reported:

- 19,719 forested acres treated (through mechanical thinning, prescribed fire, etc...) in the wildland urban interface (WUI);

- 165,343 acres restored in New Mexico Forest and Watershed areas; acres restored include mechanical treatments in non-WUI areas, forest harvests completed under Forestry's harvest rules and wildfires managed under a landowner fire management plan.

To further address forest and watershed health, Forestry coordinates programs that place private land under conservation easements, which protect valuable ecological and cultural resources.

In the last eight years, Forestry's Legacy Program has placed 24,977 acres of private land under conservation easement. This program assists the landowner in maintaining ownership and management of the property, while retiring development rights. The program helps ecosystems by preventing fragmentation of critical watershed areas.

Forestry's Land Conservation Incentives Act Program offers landowners tax incentives for charitable donations of land or an interest in land (conservation easement) to public or private conservation agencies. Landowners wishing to participate in the program are eligible for a state tax credit through the New Mexico Land Conservation Incentives Act. The maximum tax credit is 50 percent of the appraised value of the donation and a maximum of \$250,000 per individual donor.

Forestry received and processed 29 assessment applications for the Land Conservation Incentive Act Tax Credit Program; 24 applications were approved by the Natural Lands Protection Committee moving them to the application certification phase, and five were rejected. Currently, nine applications are with the New Mexico Department of Taxation and Revenue's Property Appraisal Review Division awaiting final certification for a tax credit. To date, ten applications were approved and certification letters were issued to those applicants awarding more than \$2.12 million in tax credits on a total appraised land value of over \$8.53 million for 6,482 acres. Since the program was created in 2004, 86 landowners have donated 20,825 acres of land and have received \$9,765,127 in tax credits.



Photo by: Dan Ware

In 2005, Forestry entered into a unique partnership with the City of Santa Rosa, the New Mexico Department of Transportation and the U.S. Fish and Wildlife Service, to purchase an area of endangered wetlands in Santa Rosa. One of the last true wetlands in New Mexico, the Blue Hole Cienega purchase also protected three endangered plant species: the Pecos sunflower, the lady tresses orchid and the Wright's marsh thistle.

In an effort to promote the planting of trees and native vegetation for large landowners, Forestry oversees the State Conservation Seedling Program. This program sells and distributes tree and shrub seedlings to landowners to protect crops and livestock, prevent erosion, create diverse forested acres and repopulate forested land affected by wildfire, disease or insect infestation. Since 2003, more than one million tree seedlings have been distributed to New Mexico landowners.

Forestry's Urban and Community Forestry Program works to address the needs of cities and towns across New Mexico in recognizing the benefits of developing and maintaining health urban forest programs. Since 2005 this program has leveraged state and federal funding resources that have increased federal funding allocation 33 percent above traditional base funding levels.

In 2009, Forestry published a "Plan Smart, Rethinking Green" tool kit to help aid communities in developing urban forestry programs and maintaining the health of their forested areas such as parks, playgrounds and open space properties. The tool kit helps elected officials and community leaders maximize the benefits that healthy urban forests offer.

To further address the needs of creating healthy urban forest settings, Forestry oversees the New Mexico Forest Re-Leaf Program. The program awards annual grants to government agencies and public school systems to plant

Forestry uses tools like the "Rolling River" to teach young and old how watersheds work in relation to the forest and urban landscapes.

trees to promote environmental education, enhance existing landscape, restore forested acres and beautify publicly owned land. Relying completely on private and corporate donations, the Re-Leaf Program has granted \$284,829.29 in funding.

In 2009, Forestry received just over \$15 million in funds from the federal American Recovery and Reinvestment Act. These funds are being used to facilitate numerous forest and watershed health restoration projects on land across the state. Projects include hazardous fuels mitigation treatments on state, federal and tribal lands and a forest inventory and analysis on private, state, federal and tribal lands. By the end of 2010, more than 1,319 acres have already been treated on ten separate projects.

FOREST AND WATERSHED HEALTH: Forestry's district offices, IWC program and Forest and Watershed Health Office (FWHO) continued addressing issues that have traditionally been a barrier proper treatment and land management on private and non-federal public lands in New Mexico through the implementation of the New Mexico Forest and Watershed Health Plan. This implementation occurs through support for local on-the-ground efforts, state-level strategic planning and coordination, and state-level management and administration.

Forestry's FWHO organized and co-sponsored the 2010 New Mexico Watershed Forum in conjunction with four other state agencies. Attendees represented community and watershed groups across New Mexico, including community leaders, landowners and volunteers; natural resource professionals from the public and private sectors, and high school and college students.

FWHO, in coordination with the New Mexico Forest and Watershed Restoration Institute (NMFWR), developed a clearinghouse for information on forest and watershed health in New Mexico and the southwest. The allaboutwatersheds.org portal features a virtual library, shared workspace for watershed groups, resources for practitioners and educators, and news and announcements.

Campers at the Annual Forestry Camp in the Jemez Mountains give a presentation on watersheds.



In partnership with the New Mexico Departments of Transportation, Environment and Game and Fish, along with the NMFWR, FWHO completed its "Know Your Watershed" campaign, designed to promote better understanding of watershed health and garner public support for conservation and restoration efforts.

Forestry staff assisted community groups and non-governmental organizations in

drafting land management plans, project design and funding for restoration/management projects as well as outreach and education activities.

Forestry concluded the first year of its two-year Cooperative Agreement with USDA Natural Resources Conservation Staff (NRCS) with joint forestry training for division and NRCS field staff. Both agencies are employing the tools, protocols and curriculum developed for that training to conduct additional workshops.

NEW MEXICO STATEWIDE ASSESSMENT, STRATEGY AND RESPONSE PLAN: In 2010, Forestry completed and published its Statewide Assessment, Strategy and Response Plans which identify natural resource conditions, needs and opportunities across all land ownerships in the state.

The assessment is based on available statewide geospatial resource data and identifies priority landscapes for restoration and resource management. The assessment will help resource planners, managers and the public identify and develop cross-jurisdictional collaborative projects that improve watershed conditions throughout New Mexico. The information will be used to help Forestry identify priorities and allocate resources and will also assist partners and cooperators articulate the need for resources and help entities work on multi-jurisdictional projects and initiatives.

URBAN AND COMMUNITY FORESTRY PROGRAM: Forestry's Urban and Community Forestry Program works to empower New Mexico communities to recognize and maximize the benefits from their community forests. Through technical assistance and funding support, this program provides our communities with resources to build programs and initiatives that better the lives of New Mexicans through: increased economic development, decreased energy use, improved societal benefits (decreased crime and increased civic engagement), and enhanced environmental benefits (storm water control, improved air and water quality, decreased summer temperatures). In 2010 this program has leveraged state and federal funding resources that are:

Increasing funding support and technical resources available to communities; and

Leveraging programs and strengthening partnerships to better serve our communities, including new and enhanced programs and partnerships with: New Mexico Clean & Beautiful, Keep New Mexico Beautiful, New Mexico Municipal League's "Municipal Officials Leadership Institute," U.S. Environmental Protection Agency, and New Mexico Environment Department.

BIOMASS UTILIZATION: Forestry partnered with the EMNRD Energy Conservation and Management Division to coordinate the installation of a woody biomass boiler system at the Ft. Bayard Medical Center in Ft. Bayard in 2009. The 8-MMBTU/hr boiler system is fueled by woody biomass residuals (screened wood chips) from forest restoration and community fire protection projects, demonstrating the use of wood as a sustainable fuel source to provide heat for large facilities such as the hospital. The project supports hazardous fuels removal from New Mexico forests and watersheds and promotes commercial use of woody biomass material.

On a much smaller scale, cordwood boiler installations are increasingly popular for heating small buildings and greenhouses throughout the state because of the technology's simplicity and greater economics.

Forestry, along with the State of Arizona, administers the Southwest Sustainable Forest Partnership (SWSFP). The SWSFP was created to develop value-added products from underutilized coniferous species in New Mexico and Arizona. Traditionally, these species were characterized as being of a lower grade than other forest resources and as having little economic value. The SWSFP's goal is to develop an environmentally and economically sustainable forest and wood products industry utilizing small diameter materials removed during forest thinning and restoration treatments. The SWSFP is dedicated to addressing the ecological, economic and social effects of creating sustainable community and tribal-based forest and wood products enterprises in the Southwest.

FIRE PLANNING TASK FORCE: The Forestry-led New Mexico Fire Planning Task Force (Task Force) facilitates the creation and implementation of Community Wildfire Protection Plans (CWPPs). CWPPs act as guides for wildfire prevention and preparedness for a single community or even an entire county. The plans identify hazardous fuels treatment areas and recommend measures to improve building codes for protection against wildfire and are developed collaboratively among community residents, community leaders and government agencies.

Forestry provides consultation and follow-up training for the community leaders generating the plans. The Communities at Risk Assessment Plan identifies areas most vulnerable to wildfire. During 2010, the SWSFP added 43 new communities to the list bringing the total number of at risk communities to 600. Two hundred and eighty-one (281) communities are rated at high risk, 214 at moderate risk and 105 at low risk of wildland fire. There are now 57 completed CWPPs statewide.

FIRE MANAGEMENT: 2010 was a relatively mild year for wildland fire across much of the state. Thanks to plentiful winter and spring moisture, the number of wildfires and the subsequent acreage burned was down considerably from previous years. However, a lighter than usual return of monsoonal, or seasonal rainfall left the state with high fire danger for the fall and winter.

For calendar year 2010, 411 fires burned approximately 55,868 acres on state and private land. By way of comparison, during calendar year 2009, 735 fires burned approximately 373,372 acres. In fiscal year 2011, which began since July 1, 2010, there have been 176 fires that burned 12,129 acres. Wildland fire incidents are reflected by the location map in the Data and Statistics section of this report.

RESOURCE REHABILITATION AND PROTECTION: Forestry works with private landowners, and state and federal agencies to protect land from future development that could harm 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.

The New Mexico Forest Legacy Program, a federally funded program, acquired one perpetual conservation easement on 2,880 acres of private forested land in Catron County. This conservation easement was purchased through a combination of \$192,770 in state funding and \$600,000 in federal grants.

Forestry and the New Mexico Taxation and Revenue Department jointly conducted a workshop on conservation easement appraisals, which gave continuing education credit to general appraisers.

INMATE WORK PROGRAM: Forestry's Inmate Work Camp Program was established in 1997 for the purpose of conducting forest health/urban interface projects on public land in New Mexico. The crews are also trained to conduct wildfire suppression activities and function as an efficient, cost effective resource for New Mexico.

In cooperation with the New Mexico Corrections Department, the inmate crews consist of 10-12 minimum security inmates transported to project areas and supervised by one Forestry Division Crew Supervisor. The current program has the ability to field seven crews per workday year-round and is based in Los Lunas at the state's minimum security prison facility.

Crews from the Los Lunas Inmate Work Camp worked on 15 projects for eight different local, state, federal and private cooperators, performing 5,170 man-days of work. Crews were assigned to 10 wildfires, performing 1,116 man-days of work. Additionally, their training in land management and treatment became vital in the rehabilitation of land affected by the wildfires that devastated thousands of forested acres in the Manzano Mountains.



Photo Courtesy Forestry IWC

Firefighters from Forestry's Inmate Work Camp battle the Horseshoe Fire near Cimarron, New Mexico.

FORESTRY CONSERVATION SEEDLING PROGRAM: This is an effective tool to help preserve and protect New Mexico's natural landscape. For well over 40 years, Forestry has offered low cost seedlings to landowners for reforestation, erosion control, windbreak construction and even Christmas tree farms. Since 1960, over four million trees purchased through the Forestry Seedling Program have been planted throughout New Mexico. Reforestation projects are important in restoring wildland areas or landscapes affected by fire, disease or insect attack.

Tree seedling programs help to restore wildlife habitat, prevent erosion and add beauty to private and public lands. Windbreak construction protects crops, livestock and structures while adding species diversity to landscapes with few or no trees.

Seedlings are available to landowners who own at least one acre of land in New Mexico and who agree to use the trees for conservation purposes. Approximately 45 species of tree and shrubs are available, including Colorado blue spruce, Douglas-fir, Scotch pine, piñon, Afghanistan pine, Arizona ash, chokecherry, serviceberry, native plum, winterfat, skunkbush sumac and many others. Many species sold are native to New Mexico.

Seedling Specifics: Seedlings are sold in several sizes, from bare root stock to two-year-growth seedlings. Purchase requirements are as follows (subject to change without notice): bare root: minimum 50 plants; one season growth: minimum 49 plants; two season growth: minimum 20 plants.

Distribution: Spring ordering starts the first Monday in December and continues through mid-April; distribution is March through mid-April. Fall ordering begins the first week of July; distribution is mid-September through mid-October.

Current price information can be obtained by contacting your local State Forestry office or logging onto www.nmforestry.com.

HIGHLIGHTS FROM THE DIVISION'S DISTRICT OFFICES

BERNALILLO DISTRICT

– Cibola, McKinley, Valencia, Bernalillo, Sandoval, Torrance, Los Alamos and Santa Fe counties: The Bernalillo District covers 6.6 million acres comprising 160,000 acres of commercial forest, 1.54 million acres of piñon-juniper and Bosque woodland, and 4.9 million acres of non-forested watershed.

In 2010, the Bernalillo District assisted landowners and fire departments by providing field visits, written forest management plans, design- and cost-sharing of forest conservation practices such as thinning and tree planting



Photo by: Dan Ware

The 2010 Stable Fire burns through Bosque south of Belen, New Mexico

projects, workshops on forest and watershed health, and fire training. This district also reviews commercial harvesting activity on private lands to assure compliance with state harvesting regulations. In 2010, more than 117 wildland fires that burned approximately 3,148 acres occurred on state protected and private lands within the district. The Bernalillo District is home to the New Mexico Forest and Watershed Health Office in Albuquerque and Forestry's Inmate Work Camp in Los Lunas.

CAPITAN DISTRICT – Chaves, De Baca, Eddy, Lea, Lincoln, Otero and Roosevelt counties: The Capitan District (district) encompasses 8,591,874 acres of state and private land.

The district experienced a slower fire season this year with 223 reported incidents that involved 44,514 acres. Capitan District leads the Pecos Zone Type III Incident Management Team, which was dispatched to suppress three fires all partially on state and private lands.

Type III teams manage extended attack wildfires efficiently without the need to escalate them to larger Type I or Type II incidents.

District staff continued working with interagency partners and local forest industry to promote woody biomass utilization that will eventually lead to future renewable energy projects for Lincoln and Otero counties. Approximately \$1.7 million of federal grant funding was used for defensible space and hazardous fuels treatment around multiple communities at risk within Lincoln and Otero counties.

The district is home to the Smokey Bear Historical Park, which celebrates the life and legacy of Smokey Bear. Smokey was born in the mountains just outside Capitan and became the living symbol of wildfire prevention after fire crews found him clinging to a tree following a devastating wildfire. Following his recovery from burns sustained in the fire, Smokey was flown to Washington, DC, where he spent his life as one of the most popular residents of the National Zoo. Following his death in 1976, Smokey was returned to Capitan and for burial at the historical park.

The park boasts a visitor's center with exhibits about forest health, wildfires, wildland/urban interface issues and fire ecology. An outdoor exhibit features six of the vegetative life zones found in New Mexico, and an outdoor amphitheater used for educational programs for school groups.

CHAMA DISTRICT – Rio Arriba, San Juan and western Taos counties: The Chama District encompasses 357,000 acres of private commercial forestland and 88,000 acres of state and private noncommercial forestland.

The Chama District's primary focus is working with landowners to help them responsibly manage their forest resources and protect them from wildfire. The district also works on many cross-border projects with state and

federal agencies in Colorado that impact forest and watershed health in both states.

In 2010 the district received approximately \$7.4 million in American Recovery and Reinvestment Act funds. \$1.4 million were granted to the San Juan and Upper Chama Soil and Water Conservation Districts for reducing hazardous fuel buildup in the forest; \$6 million was granted to the Santa Clara Pueblo on the southern edge of the district to help them maintain their thinning crews and focus on restoring acres of overgrown forests and riparian habitat that has been an integral part of their native traditions.

The district continues to work on building partnerships with neighboring agencies in order to connect projects for landscape management and resource benefit.

CIMARRON DISTRICT - Colfax, eastern Taos, and Union counties: The Cimarron District encompasses 5.6 million acres of land, 60 percent either state- or privately-owned.

The district staff works with many large landowners on building stewardship plans to address forest overcrowding and how to dispose of or utilize the large volume of woody biomass created by land treatment such as harvesting or thinning. The district also works on many shared, cross-border issues with the state of Colorado.

During 2010, the district focused on distribution of federal grant funding and the implementation of projects to address the increasing threat of wildfire to communities and surrounding forest and watershed areas.

LAS VEGAS DISTRICT – Curry, Guadalupe, Harding, Mora, San Miguel and Quay counties: The Las Vegas District encompasses 10.2 million acres, 685,000 of which is forested land.

In 2010, the district continued work with the Las Vegas Wildland Urban Interface Working Group comprising non-government organizations, local residents, and local, state and federal agencies. The working group identifies at-risk values and resources, taking into consideration such factors as public safety, local economics, real estate, aesthetics and wildlife habitat.

Additionally, the working group acts as a forum to share information regarding public awareness of fire risk and proper land care for forest health and fire management. The collaborative efforts within the working group have resulted in receipt of several Wildland Urban Interface and Hazardous Fuels Reduction grants. Forestry is also working with counties within the district to create better community wildfire evacuation plans. Additional collaboration with area soil and water conservation districts continues to achieve the treatment of hundreds of acres through thinning and harvesting.

SOCORRO DISTRICT – Catron, Doña Ana, Grant, Hidalgo, Luna, Sierra and Socorro counties: The Socorro District encompasses 8,784,232 acres of state and private lands in southwest New Mexico. Vegetation types and topography are as diverse as anywhere in the state. The district staff works with a multitude of landowners, community organizations and other local, state and federal agencies to deliver Forestry’s program of work in an effective manner to its partners and customers.

The district has been a primary player in the “Save Our Bosque Taskforce” since its incorporation in 1994. This grass roots organization has worked to protect, restore and enhance the Rio Grande Bosque outside of the two area National Wildlife Refuges. This has resulted in the creation of 17 Rio Grande riverside parks, the Socorro Nature Area, multiple landowner assistance projects totaling over 500 acres including fuel breaks, and invasive species control projects.

Currently, the district has more than \$2.5 million committed to soil and water conservation districts, county governments, and other partners that help work with landowners and agencies to complete large scale projects.

An example of this collaborative approach is the Unit 16 E Project that will match various sources of funds to restore state, private and BLM lands within the New Mexico Game & Fish hunting unit 16E. To date, over 28,000 acres have been treated among the three land jurisdictions using prescribed fire, prescribed natural fire and mechanical methods.



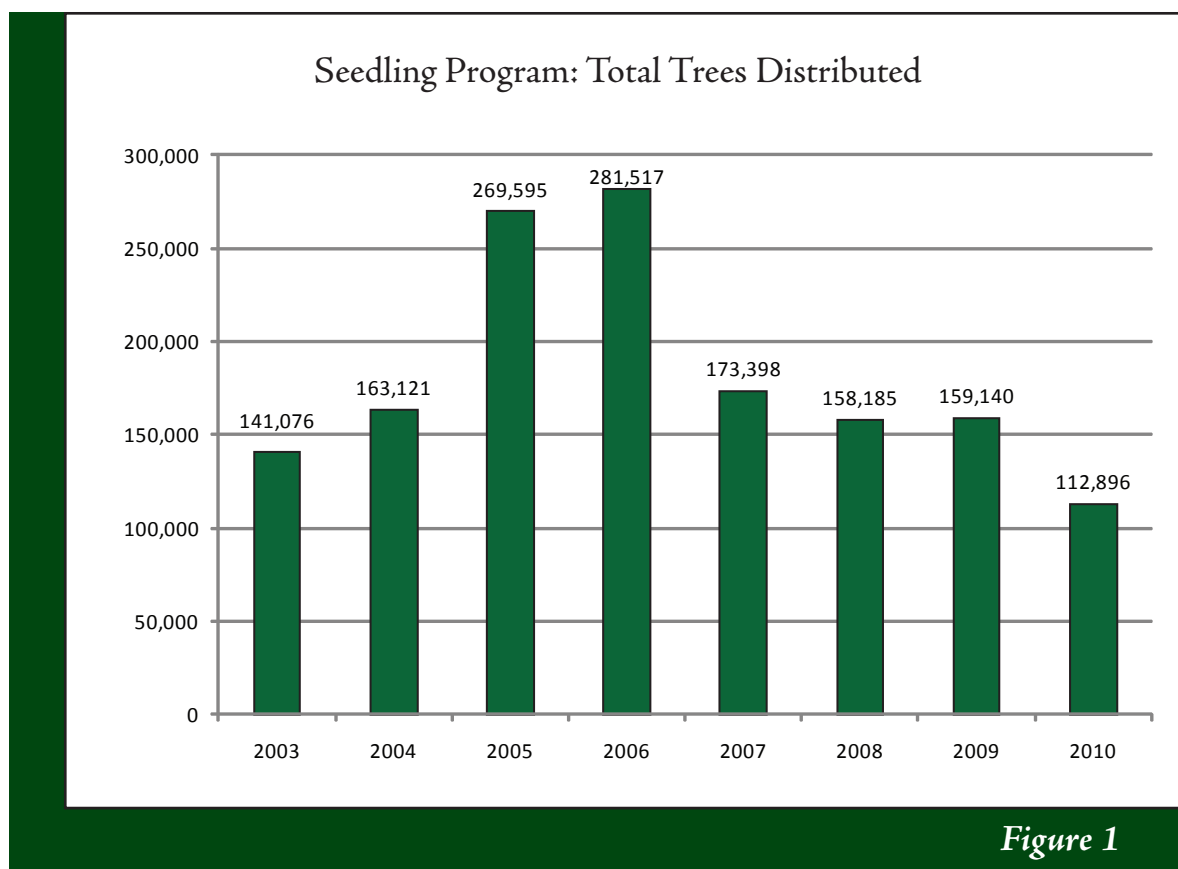
A fire crew battles the Stable Fire.



Data and Statistics

2010 FIRE MAP: While the overall incidence of wildfire in New Mexico was lower in 2010, the fact that wildfire can happen anywhere at any time during the year depending on the weather and fuel conditions held true. Forestry continues to work collaboratively with local, state, federal and tribal fire agencies to educate New Mexicans about fire prevention and preparedness.

2010/2011 SEEDLING CHART: Forestry's Conservation Seedling Program continued to provide landowners the ability to take advantage of fall and spring planting seasons with two distribution periods. With the combined distribution periods, 112,896 tree seedlings were distributed through the program sale, annual sales at the New Mexico State Fair and educational donations.

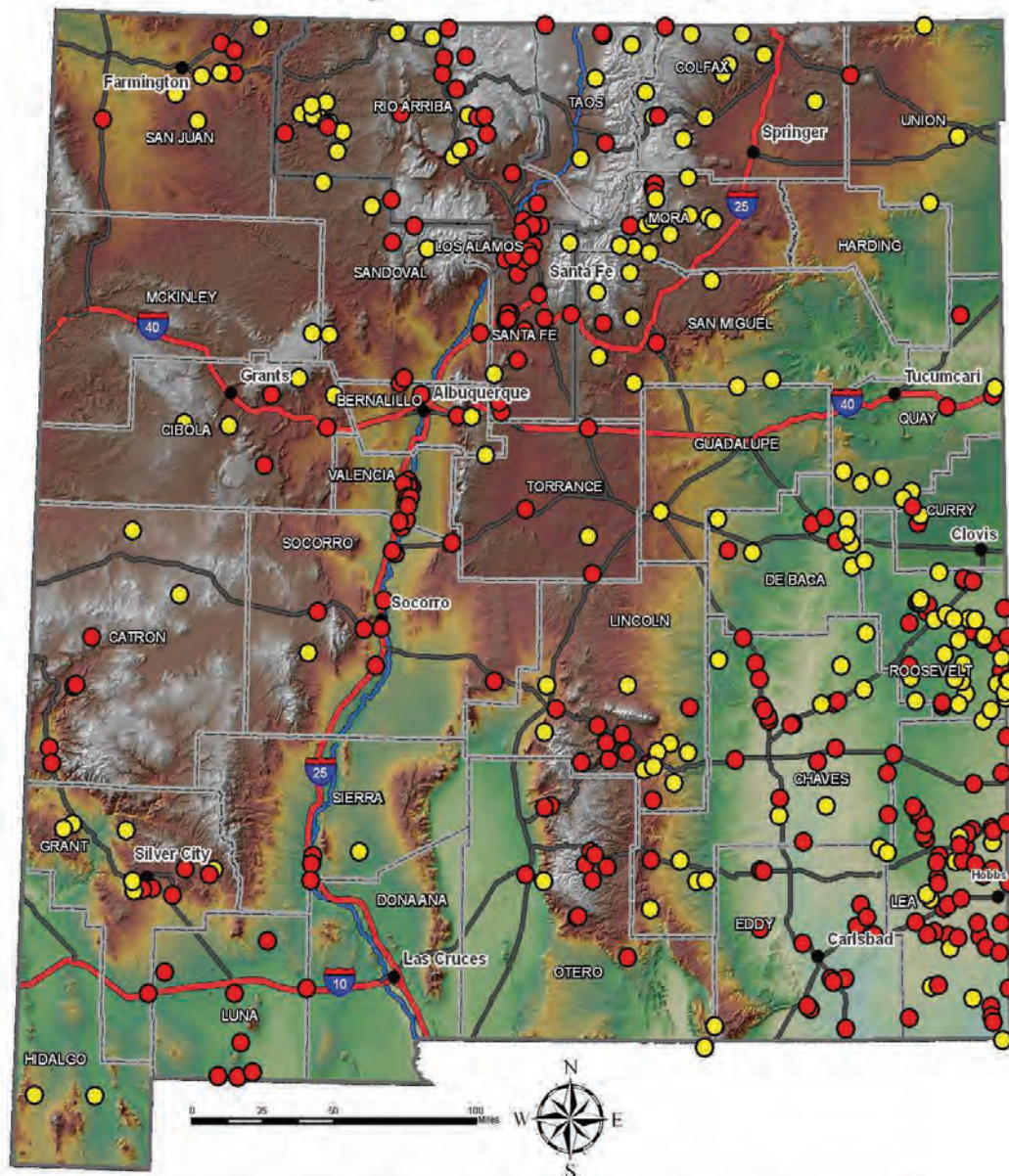




New Mexico Statistical Fires

Lightning & Human-Caused Fires
on State and Private Lands

January 1 - November 15, 2010



Cause	# Fires	Acres Burned
● Lightning	167	28,176
● Human-Caused	244	27,692
411 – TOTAL		55,868

T. Götlin - Fire Stat
11.16.2010

Figure 2

2010/2011 RE-LEAF GRANTS: Forestry's New Mexico Forest Re-Leaf Program awarded over \$25,305 in grant funding to the communities of Albuquerque, Mountainair and Rio Rancho as well as San Juan Community College in Farmington and the Taos Charter School.

The program aids communities by providing funds for tree planting for conservation purposes, educational outreach, windbreak establishment and general beautification. Re-Leaf grants are funded completely through donations from corporate and private donors. Since 1990, more than \$528,300 has been distributed to New Mexico communities for tree planting.

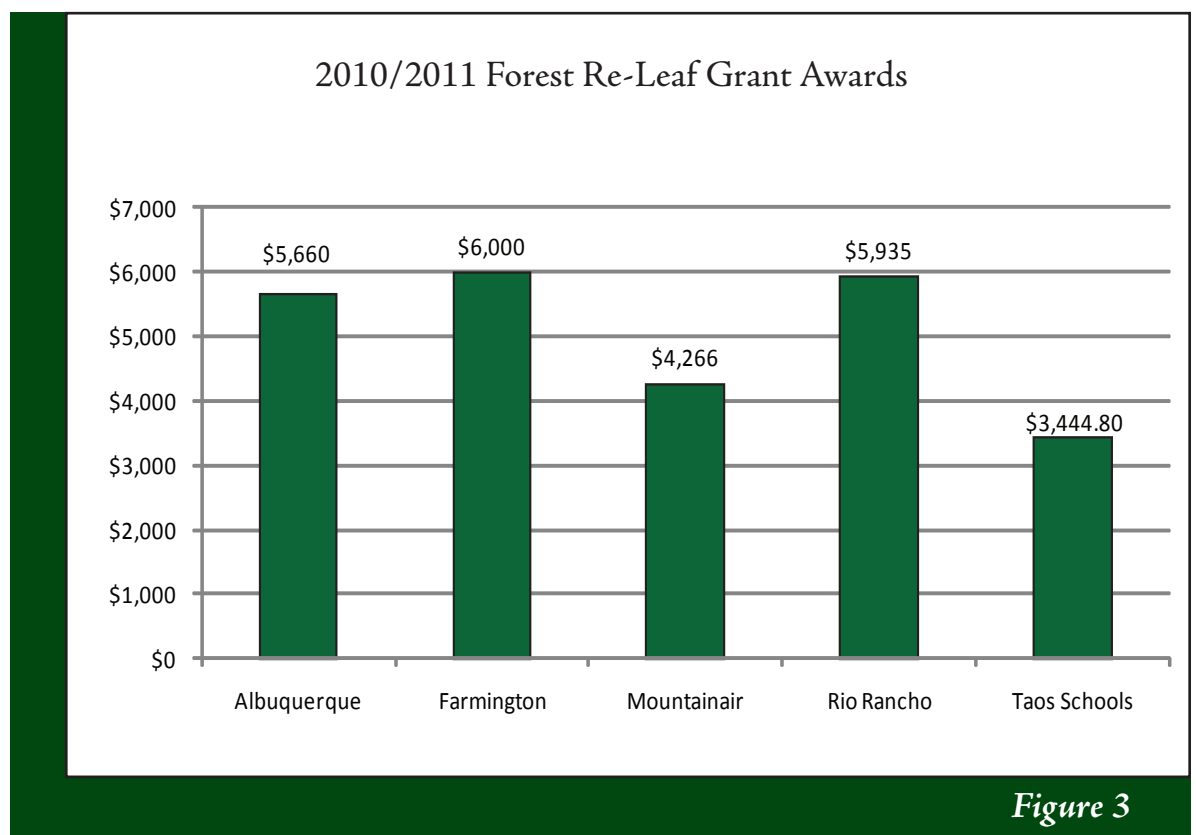




Photo by: Carmen Austin

Forestry promotes the use of woody biomass as a clean burning alternative energy.



Photo by: Carmen Austin

Wood chip fired boilers like this one at Ft. Bayard can supply heat to large buildings like hospitals and schools.



Mining and Minerals Division



Charles Thomas

Acting Division Director



Mining and Minerals Division

A Message from Acting Division Director Charles Thomas

The Mining and Minerals Division (MMD) seeks to serve the public by ensuring the responsible use and reclamation of land impacted by mining. We also encourage innovative approaches to mine reclamation and strive to ensure the involvement of the public in all mining related activity.

Through the last eight years, MMD has been committed to increasing opportunities for public access to agency documents and services. Advancing GIS (geographic information systems) capabilities resulted in more public access to maps and data. Increased public notice requirements within our coal regulations now allow for more meaningful public participation in agency actions.

MMD is currently in the process of reviewing permit applications for two new large-scale uranium mines. The permit applications bring a unique set of challenges not only in acknowledging the nature of the ore to be extracted, but also in the proximity of the proposed mines to the Mt. Taylor Traditional Cultural Property, a sacred area to many of New Mexico's Pueblo Indian Tribes and the Navajo Nation. The continued interest in uranium has also returned the spotlight to the previous cycle of uranium mining in New Mexico during the mid-twentieth century, which left a legacy of abandoned uranium mines, most of which were never reclaimed.

Over the past eight years, by pursuing a strategy to increase the involvement of both private consulting firms and the appropriate federal government agencies, MMD has been able to dramatically increase the amount of resources applied to abandoned mine sites, resulting in hundreds of additional sites being reclaimed and safeguarded in every corner of the state. As one example of this, using a combination of funds made available from the Abandoned Mine Lands Reclamation Program and funding from the Bureau of Land Management, MMD was able to finalize a project initiated in 2006 to conduct field assessments of the known legacy abandoned uranium mines throughout New Mexico.

This year MMD made significant progress in an on-going investigation into the practice of using Coal Combustion By-Products (CCB) or "coal ash" as part of mine fill at coal mines. MMD, in cooperation with the U.S. Geological Survey and the University of New Mexico, initiated a multi-year hydrologic investigation to evaluate the potential impacts of coal ash to groundwater at the San Juan Coal Mine.

Without the dedicated and resourceful efforts of the MMD staff, little of this would be possible. Their hard work and creative solutions have made New Mexico a leader in the field of mine reclamation. I hope you enjoy reviewing further information on our initiatives, accomplishments and mineral statistics.



Mining and 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.

PROGRAMS: New Mexico remains a leading mining state with significant production of coal, copper, potash and molybdenum. MMD personnel utilize state and federal laws that regulate the registration, operation and reclamation of active coal and non-coal “hard rock” mining facilities and provide for the dissemination of valuable data regarding the economic impact of mining activities in New Mexico. MMD also provides services to safeguard inactive mine sites and reclaim abandoned mine sites to ensure that they are not a hazard to the public.

The Abandoned Mine Land Program works across the state to identify dangerous abandoned mine areas and to abate the hazards. MMD estimates there are more than 10,000 hazardous mine openings scattered throughout New Mexico that remain un-reclaimed. MMD has safeguarded about 2,150 dangerous abandoned mine openings and hazardous mine structures in over 200 construction projects and reclaimed about 100 eroding or burning coal mine waste piles, on both private and public lands.

Coal has a long history in New Mexico, having been mined since the mid-1800s as a source of heat and energy, and it remains a leading mineral commodity in New Mexico. The demonstrated coal reserve base in New Mexico is 4.65 billion tons, or about one percent of the national reserves. The Coal Mine Reclamation Program oversees 86,000 acres of permitted mine lands and over \$293 million in financial assurance.

Gold, silver, copper, molybdenum, perlite, humate and uranium comprise the majority of the minerals covered by the New Mexico Mining Act of 1993, which provides for the reclamation of all exploration and extraction activities conducted at non-coal mines, except potash and aggregates. The Mining Act Reclamation Program oversees almost 400 mining and exploration projects and over \$602 million in financial assurance.

In these increasingly uncertain economic times, decision-makers throughout New Mexico benefit from the valuable statistical and trend information on the mineral industry and mineral resources in New Mexico compiled and disseminated through the Mine Registration, Reporting and Safeguarding Program. This program provides comprehensive public outreach not only on the mineral resources but also on mining and reclamation activities, legislation, and MMD activities related to the mineral extraction industry.

INTERA Incorporated was awarded the 2010 Excellence in Reclamation Award for designing an innovative hardscaping technique to reclaim vent shafts at a legacy uranium mine, mitigating impacts to people and the environment.



Photo by: INTERA Incorporated

ACCOMPLISHMENTS

ADVANCES IN MINE RECLAMATION: One of the continuing goals of MMD is to focus on making New Mexico a leader in mine land reclamation. Over the past eight years, MMD has achieved success in advancing reclamation through partnering with industry, technical experts, environmental groups and others.

Promoting a progressive approach to reclamation has consistently resulted in high quality reclamation projects over many years. Even as far back as 2004, the BHP San Juan Mine received the U.S. Department of the Interior's "Best of the Best" national award for innovative regrading and channel design techniques. This was the first major application of a new reclamation technique known as "geomorphic reclamation." Geomorphic reclamation is, quite simply, re-establishing land slopes with the same characteristics as the undisturbed lands. This new reclamation technique replaces the old terrace and down-drain style of slope construction. The geomorphic technique has so far proven to require less maintenance than the old style and creates a more diverse and natural looking wildlife habitat.

Using a design process based on fluvial geomorphic principles, the reclaimed topography is more stable, diverse and resistant to damage from flash flooding than traditional reclaimed land in this arid environment. Techniques that help minimize erosion include a combination of highly scalloped slopes which create drainage density, sinuous drainages which reduce gradient and concave slope shapes which slow the water velocity near the bottom of slopes. All these practices mimic the shapes that nature creates in hill slopes that are lacking bedrock control.

BHP followed the success at the San Juan Mine with a more comprehensive reclamation plan at the La Plata Mine using these techniques. This new reclamation grading practice passed a significant early test when the mine received over two inches of rainfall within a two-hour period in 2006. This is equivalent to a storm with an approximate recurrence interval of 200 years! Much of the reclamation was new and had no vegetation, but because of the innovative reclamation techniques used, there was astonishingly little erosion.

Today, the 1,700 acres of coal pits are gone. In their place rest rolling hills and valleys with native vegetation grown tall enough to touch the knees of passers-by. With native vegetation growing strong, the simulated topography also has helped reduce erosion of the reshaped land. Although wildlife habitat rehabilitation often is a slow process, the site has begun attracting deer, elk, bobcats and a variety of raptors back to the area. The U.S. Department of the Interior recognized BHP Billiton with the 2009 Excellence in Surface Mining Reclamation Award for its geomorphic reclamation efforts at the La Plata Mine.

One of the challenges of reclamation is matching the existing undisturbed landscape. INTERA Inc., was presented with the 2010 Excellence in Reclamation award for its work at the JJ No. 1 Mine. A number of the vent shafts in the mine area were not located on terrain that allowed for blending the vent shaft closures into the existing topography without requiring excessive fill or steep slopes. The closure method, termed "hardscaping," involved placing natural rock from the mine area over the vent shaft concrete slabs to simulate natural rock outcrops in the surrounding landscape.

Another technique pioneered in New Mexico is the innovative new toroid tire plug closure technique for shafts, adits and open stopes. One of the engineering challenges of abandoned mine land (AML) reclamation is the fact the ground around a mine opening is often unstable and can cause further cave-ins, even after work to reclaim it has been completed. Permanently sealing these troublesome openings requires a dynamic, expandable, flexible plug that expands to fill the hole, even if a minor amount of movement continues to occur or material sloughs away from the opening sides after the plug is in place.

Toroid tire plugs put a waste product (large-diameter spent tires from earthmoving equipment) to beneficial use. The tires are either stacked or placed vertically adjacent to each other to plug horizontal, vertical or declined mine openings. Although this technique was developed in British Columbia, Canada, the Lake Valley Project in New Mexico was the first use of tire plugs in the United States. MMD has gone on to successfully use toroid tire plugs in numerous abandoned mine openings across the state.

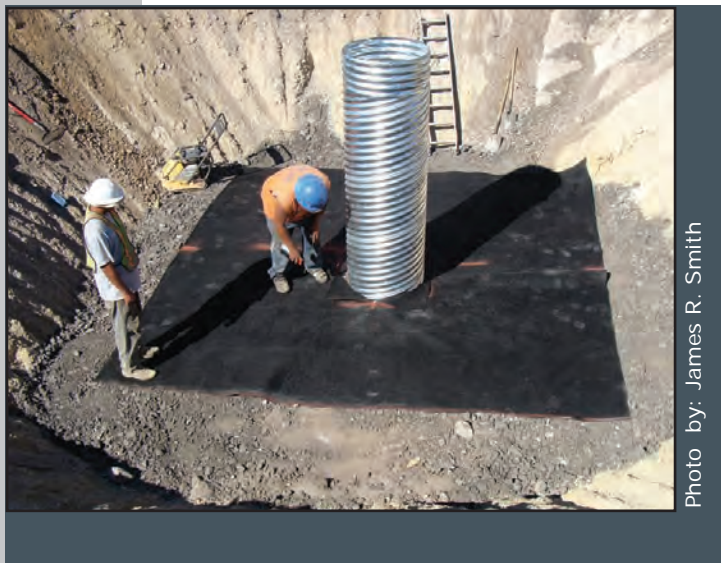


Photo by: James R. Smith

MMD is always looking for the next new technique to improve reclamation, such as the recently developed Geosynthetically Confined Soil (GCS®) concept. The GCS® plug consists of geotextile panels placed between eight-inch lifts of compacted granular material that are placed above a polyurethane foam plug to provide the additional structural strength necessary to support the fill above the shaft. This method is currently being used at another abandoned mine in New Mexico, the Strieby Shaft at the Lake Valley Mine Safeguard Project.

Although New Mexico has received numerous awards for reclamation work performed, the most important aspect is receiving confirmation from leaders in the industry that the

reclamation work being completed in New Mexico is of the highest quality.

PUBLIC OUTREACH: The reclamation of mined lands, whether a historic abandoned mine or under a current permitting action, often goes unnoticed in the general press and can be easily misunderstood due to the complex nature of the work to be performed or merely by the sheer size of some of the larger projects. Many times, concerned citizens or even mine operators are not sure what may be required of a mining operation or even what operations are active near them. In recognition of this, MMD has expanded its outreach to the public and mine operators.

Beginning in 2004, MMD redesigned its webpage to provide more information on abandoned mine safeguarding projects and on current and proposed mining operations, as well as publishing an electronic newsletter, "MMD Notes," to inform the public and industry about events involving MMD and mining activities in the state. The

Installation of a geosynthetically confined soil (GCS®) plug at the Strieby Shaft at the Lake Valley Mine Safeguard Project Phase IV. The vertical culvert provides air flow for bat habitat in the mine workings below.

webpage continuously improved based on feedback, and it is now possible to track projects by their status or county and to download project documents.

MMD has also assisted the Bureau of Geology at New Mexico Tech in the development of a field conference and an awards ceremony. Beginning in 2001, the Decision Makers Conference covers mining related issues throughout New Mexico. These field-oriented conferences are designed to address a wide range of geologic, hydrologic, natural resource, and environmental issues affecting the future of New Mexico and its citizens. Specifically targeted for a mix of national, state, and local political leaders, agency heads, industry leaders, environmental leaders, and other decision makers, the conferences provide an opportunity to learn first-hand about natural resource problems, opportunities, and potential solutions from some of the top experts in the field. The Earth Science Achievement Awards are presented annually to individuals who advance the role of earth sciences in public policy, education or industry in New Mexico.

Expanding into more modern avenues of communication, MMD has taken advantage of video and multi-media to provide other tools for outreach and education. In 2007, MMD created a 30-minute video on the dangers of abandoned mines for use in public presentations and in schools. "Hidden Dangers: The Legacy of New Mexico's Abandoned Mines" also highlights New Mexico mining history and the types of closures MMD uses to safeguard mines. We have since augmented this with shorter videos that can be found on YouTube, in an attempt to widen the outreach to a larger audience.

MMD stresses the importance of a clear understanding of the permitting process for mining activities. Initially developed in the mid-1990s, MMD updated the *Permit Requirements Guidebook* in 2008. The guidebook summarizes permits issued by the State of New Mexico that are required for energy and mineral resource exploration, development, production, and reclamation. MMD has also updated guidance documents that provide details about the permitting process, such as the Environmental Evaluation Guidance Document for Part 6 New Mining Operations. The purpose of this guidance is to provide a framework for compliance with the New Mexico Mining Act Rules regarding the Environmental Evaluation (EE) required in 19.10.6 NMAC (Part 6).

Since the late 1980s, the New Mexico Coal Mine Reclamation Program has required coal mine permittees to survey raptor distribution and productivity as part of the conditions of their coal mine permits. These biological surveys provide a unique long-term data set on raptor nesting habitats. The recently published *Raptors of New Mexico* offers a comprehensive treatment of all raptors that breed, winter or migrate in New Mexico. Raptor survey data collected for the McKinley, San Juan and Navajo coal mine permits were referenced in this new book. At the McKinley Mine, near Gallup, raptors are monitored within the mine lease area and a two-mile buffer zone outside the mine lease. In Farmington, yearly raptor distribution surveys are conducted at the San Juan Coal Mine. Summer and winter wildlife surveys are also conducted to monitor wildlife use of reclaimed areas. Raptor surveys are also conducted at the BHP Billiton Navajo Mine, which is regulated by the Office of Surface Mining. Raptor species found on New Mexico and Navajo Nation coal mine sites include: Golden Eagle, Northern Harrier, Red-tailed Hawk, Prairie Falcon, Peregrine Falcon, American Kestrel, Great Horned Owl and Burrowing Owl.

MMD is very proud of the outreach efforts we have completed, including the 2008 launch of Online Mines, Mills and Quarries (MMQ) at www.emnrd.state.nm.us/MMD/MRRS/MinesMillsQuarriesWebMap.htm. Historically, MMQ was a printed directory of active mining, milling and smelting operations in the state, published every five years. With Online MMQ, the mine information is now combined with interactive maps in a GIS application. Data in this map are dynamically pulled from the Mine Registration database. The map features selectable layers with population, transportation, hydrology, surface and mineral ownership and mining district data.

In May 2009, MMD launched the Abandoned Mine Land Program Construction Projects Map at www.emnrd.state.nm.us/mmd/aml/maps/amlconstructionprojectsmmap.htm. The interactive map provides details of current and past AML construction projects.

PARTNERSHIPS: The drop in state revenue has led all agencies, including MMD, to find ways to save money. Although not always possible, our goal is to ensure that those cost cutting measures do not impact services to the public and the regulated community. Fortunately, MMD has been pursuing a strategy to increase the involvement of private consulting firms, the appropriate federal government agencies and others over the past eight years, which has allowed MMD to leverage resources applied to mine reclamation throughout the state.

One area of partnership involving MMD for several years is addressing the legacy of uranium mining. Beginning in 2006, MMD held a number of meetings with Navajo and Hopi officials to provide and receive training on radiological assessments and to coordinate efforts for uranium mine reclamation. Currently, MMD is working with U.S. Forest Service, U.S. Bureau of Land Management (BLM), Navajo Nation Environmental Protection Agency and New Mexico Environment Department in the development of new criteria to address the reclamation of uranium exploration and mine sites. The criteria will include radiological standards that will be met at final reclamation and surface reclamation techniques that will reduce the erosion rates at reclaimed mine uranium mines, limiting the possibility of re-exposure of radiological materials.

Using a combination of federal and state funding, MMD recently completed a detailed physical inventory of 54 abandoned uranium mines that had no previous record of reclamation work, this allowing these sites to be prioritized for reclamation. Mitigation strategies and preliminary designs for reclamation have been completed at the Poison Canyon Complex for a series of seven abandoned uranium mines.

Another project completed in 2010 with a BLM grant is the Carbonate Hill Mine Safeguard Project. The Carbonate Hill Project safeguarded 21 abandoned mine openings. The project included eight bat-compatible cupola, gates and grate structures that allow bats and owls to continue to access their underground mine habitats while protecting them from human disturbance.

The opportunity to leverage resources can also be seen in a project involving the San Juan Coal Mine. At the San Juan Mine, the Piñon and Juniper pits are being reclaimed by filling the pits with coal combustion by-products

(CCBs) inter-layered with previously removed overburden. Due to concerns regarding the potential to impact groundwater resources, MMD has initiated two separate studies. The first study is a multi-year study developed with the U.S. Geological Survey New Mexico Water Science Center to model the groundwater recharge of the area to determine the potential for metals that may be leached from CCBs in the reclaimed mine pits to be transported by groundwater to wells or streams. The second is a two-year study to be conducted by the University of New Mexico to determine the potential for leachates from CCB disposal at the San Juan Mine to contaminate ground water. The study will analyze and interpret leachate data collected to date, conduct additional leach tests to enable quantitative prediction of contaminant release kinetics, develop a one-dimensional unsaturated water flow model that can be used for estimating vertical contaminant transport, and develop recommendations for improved ash disposal to assure protection of ground water resources. Combined with ongoing monitoring of the ground water resources at and around the San Juan Mine, MMD will have the information needed to accurately and effectively protect groundwater resources for future generations.

RESTORATION OF MINED LANDS: Although the previous information provides insight into the many accomplishments that MMD has been a part of, it is important to supplement this with details specific to MMD's ultimate goal: ensuring the restoration of lands used for mining. Perhaps the clearest way to demonstrate the successes over the majority of the last decade is in the number of projects completed and the amount of land restored under the stewardship of MMD. Between the coal and non-coal mines, over 10,000 acres have been reclaimed to pre-mining conditions. In our Abandoned Mine Lands Program, over 2,150 dangerous abandoned mine openings and hazardous mine structures have been safeguarded and about 100 eroding or burning coal mine waste piles have been reclaimed. Some significant individual accomplishments are listed below.

In 2005, MMD approved the final reclamation and returned the bond for the Cimarron Underground Coal Mine. The mine was part of Pittsburg & Midway Coal Company's York Canyon Complex. Reclamation of the mine included the regrading of slopes to their original contours, placement of topsoil, and seeding with native vegetation to create stable ground cover and prevent erosion. The mine was located in Colfax County, approximately 33 miles west of Raton, on Highway 555. Coal mining operations began at the mine in 1986 and ceased in 1995. A total of 54 acres of private fee lands were disturbed and then reclaimed.

In 2007, the U.S. Department of the Interior Office of Surface Mining (OSM) selected New Mexico to receive the 2007 National Award for Excellence in Abandoned Mine Land Reclamation, its highest award for abandoned mine reclamation, for outstanding performance and exemplary abandoned mine land reclamation at the Real de Dolores Mine Safeguard Project. The project is located roughly halfway between Santa Fe and Albuquerque in the Ortiz Mountains Educational Preserve, managed by the Santa Fe County Open Space and Trails Program. The reclamation effort focused on safeguarding 14 hazardous mine openings while preserving historic cultural resources, the historic mining landscape and biological resources. The award for the project recognized the use of innovative mine closure techniques. The Real de Dolores project was the first use of polyurethane foam plugs to seal large mine shafts in New Mexico. Bat cupolas were constructed at two sites to preserve bat colonies that use the underground mine workings as habitat. These accomplishments, and the collaboration with preservation groups, mining companies, and others, were major factors in winning the national award.

In 2008, Chevron Mining Inc., terminated coal mining operations at the McKinley Mine. The McKinley Mine is located northwest of Gallup and was New Mexico's first large-scale surface coal strip mine. The mine produced approximately 175 million tons of coal since operations began in 1962. The mine operated under MMD jurisdiction on private, state and allotment lands, and under OSM jurisdiction within the boundaries of the Navajo Nation. Approximately 5,600 acres of land were disturbed and reclaimed on the portions of the mine regulated by MMD. Post-mining land use of the mine site is grazing and wildlife habitat. The company was recognized for the development and implementation of a state-of-the-art post-mining geomorphic topography creating superior landscape stability and vegetative diversity.

Over this past decade, MMD has worked extensively with Phelps Dodge, Inc., initially, followed by Freeport-McMoRan Copper and Gold, Inc., (formally, Phelps Dodge, Inc.) on reclamation of two of the state's largest mines, the Tyrone and Chino copper mines. Although both are currently active mines, their large sizes allow reclamation to occur concurrently. During this timeframe, approximately 2,000 acres have been reclaimed; requiring four million cubic yards of material to be regraded and over 13 million cubic yards of cover material to be put in place. This has allowed MMD to reduce the bonding liability for these mines by over \$80 million.

In 2010, MMD and Samcon, Inc., finished the multiple-year Sugarite Gob Reclamation Project in Sugarite Canyon State Park, located near Raton in Colfax County. Coal mining had impacted 22 acres in the park and, in several places the waste reaches the Chicorica Creek in the canyon floor. Slopes on the rapidly eroding gob piles were extremely steep and gullied. MMD's objectives for the Sugarite gob reclamation were three-fold: to improve water quality in Chicorica Creek; to preserve historic mining structures and reclaim the gob piles in-place; and to improve park visitor safety.

Samcon installed erosion and sedimentation control structures, amended the poor soils and planted seedlings for revegetation. This was a Herculean effort due to the great volume of waste material, difficult access and the historic landscape value. The coal waste piles have been reclaimed in place, with minimal regrading. This required that almost all of the work be done by hand. The workers carried not only all the straw bales, but all the amendment materials and seedlings. The total weight of materials carried in by hand was over 250 tons.

Over 65,000 native seedlings, provided by New Mexico State Forestry, were planted at Sugarite. A decade after initial reclamation construction began, the stage has been set for continued increases in vegetative cover. Trees and shrubs that were just a few inches high when planted are now visible from a distance on the gob piles. Prior to the start of reclamation work, areas of the creek were clogged with fine, black sediment deposits. Today the creek bottom is largely free of black deposits and a cobble bottom predominates. Increased vegetation has made the gob slopes safer for the park visitors who walk on them.

Occasionally, mitigation of mine hazards through reclamation can occur at large operations as well. MolyCorp, Inc., won a 2005 award for mitigation work on its Goathill North Rockpile. The massive rockpile, located at the Questa molybdenum mine in Taos County, contains more than 3 million cubic yards of rock placed there from 1964 to 1974. The foundation of the pile started slumping in the 1970s and, in 2003, it was identified as having the potential to

Prior to reclamation this was the site of the CR Minerals Mill.

create a public hazard due to possible failure of the rockpile and its proximity to populated areas. Molycorp immediately began the mitigation work in an effort to create a more stable rockpile configuration and to alleviate any potential future public hazards. Over two years, the company studied the geotechnical stability of the pile, conducted an extensive public involvement process and regraded more than a million cubic yards of unstable material.

MMD has also been involved in promoting alternate uses of reclaimed lands. In 2008, MMD released the CR Minerals Mill from the New Mexico Mining Act and released the final financial assurance back to CR Minerals Company, LLC. The approved post mining land-use for the six-acre site is commercial/residential. Reclamation included removal of the mill equipment, buildings, and stockpiles; regrading the property; and installing storm water controls. The mill was built in the 1950s and, at that time, was beyond the Santa Fe city limits. At the time of release, the mill site was within the Santa Fe city limits and was immediately converted to the Zia Rail Runner Station.

Lastly, in February of 2010, Chevron Mining Inc., initiated a project to build a 1-megawatt concentrating photovoltaic solar facility on the tailing site of the Questa molybdenum mine. The demonstration project will be the largest concentrating solar photovoltaic installation in the U.S. The facility will include approximately 175 solar panels on about twenty acres of land. Construction began in summer 2010, and the plant should be completed by the summer of 2011. The electricity generated by the solar installation will be sold to the Kit Carson Electric Cooperative under a power purchase agreement. It will be enough electricity to power the village of Questa during the day when the sun is shining.



Photo by: David Othori



Photo by: David Othori

Zia Rail Runner station being constructed on reclaimed CR Minerals Mill property in Santa Fe.



Data and Statistics

MINERAL RESOURCES OVERVIEW: Over \$1.7 billion worth of minerals were extracted in New Mexico during 2009, a 34.3 percent decrease from the 2008 record high (Table 1 and Figure 1). In response to the economic downturn, the quantity of minerals produced decreased from 2008 levels for all commodities. Production quantity is expected to decrease further in 2010 and early 2011 in response to the decreased mineral commodity demand and financial market instability.

Mineral	Production ¹	Production Rank ²	Production Value \$	Employment ³	Reclamation Employment ⁴	Payroll \$ ⁵	Revenue Generated \$ ⁶	
							State	Federal
Coal	23,952,661	12	\$ 735,930,737	1,471	136	\$ 103,442,528	\$ 38,047,817	\$ 6,978,269
Copper	121,212,422	3	\$ 289,638,095	813	98	\$ 39,583,105	\$ 2,367,623	-
Gold	465	-	\$ 452,195	54	2	\$ 1,692,321	\$ 3,509	-
Industrial Minerals ⁷	1,566,111	-	\$ 124,402,302	446	17	\$ 15,524,080	\$ 890,259	\$ 150,274
Aggregates ⁸	13,537,659	-	\$ 110,879,335	901	61	\$ 16,906,799	\$ 1,487,533	\$ -
Other Metals	28,661	-	\$ 458,188	0	0	\$ -	-	-
Molybdenum	269,302	6	\$ 3,762,149	194	8	\$ 13,907,000	-	-
Potash ⁹	602,231	1	\$ 491,276,710	1,227	28	\$ 93,757,945	\$ 3,813,265	\$ 16,780,493
Silver ¹⁰	-	-	\$ -	0	0	\$ -	\$ 76	-
Uranium ¹¹	-	-	\$ -	54	45	\$ 2,483,283	\$ 80,547	-
			\$1,756,799,711	5,160	395	\$ 287,297,061	\$ 46,690,629	\$23,909,036

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

² Production rank is based on 2009 production value in relation to other U.S. states.

Sources: Metals, potash, industrial minerals and aggregates, Mineral Resources Program, United States Geological Survey (minerals.er.usgs.gov)

Coal, Energy Information Administration, United States Department of Energy (www.eia.doe.gov)

³ Employment category includes direct and contract employees.

Gold employment and payroll is for reclamation activities at closed mines and development of a new mine and mill.

⁴ Reclamation employment is included in total employment numbers.

⁵ Payroll is for direct employees and does not include contract employees. Payroll does not include benefits.

⁶ 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, the New Mexico Taxation and Revenue Department (www.state.nm.us/tax) and the New Mexico State Land Office (www.nmstatelands.org)

Federal data, Bureau of Ocean Energy Management, Regulation and Enforcement (www.boemre.gov)

⁷ Category includes brick clay, calcite, dimension stone, gypsum, humate, perlite, Portland cement, pumice, salt, 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 Potash production is K₂O mill production.

¹⁰ Silver production data is not available for calendar year 2009.

¹¹ Employment and payroll numbers are for licensing and permitting at proposed uranium mines, and reclamation activities and maintenance at closed mines and mills.

Table 1

New Mexico remains a leading United States mineral producer, ranking first in potash, perlite and zeolite; third in copper; sixth in molybdenum; and twelfth in coal production. The principal minerals, in descending order of value, are coal, potash and copper. According to the U.S. Geological Survey, New Mexico ranked twentieth in 2009 when ranking states by the production value of non-energy minerals. Our state produces 1.7 percent of the total U.S. non-energy minerals production value.

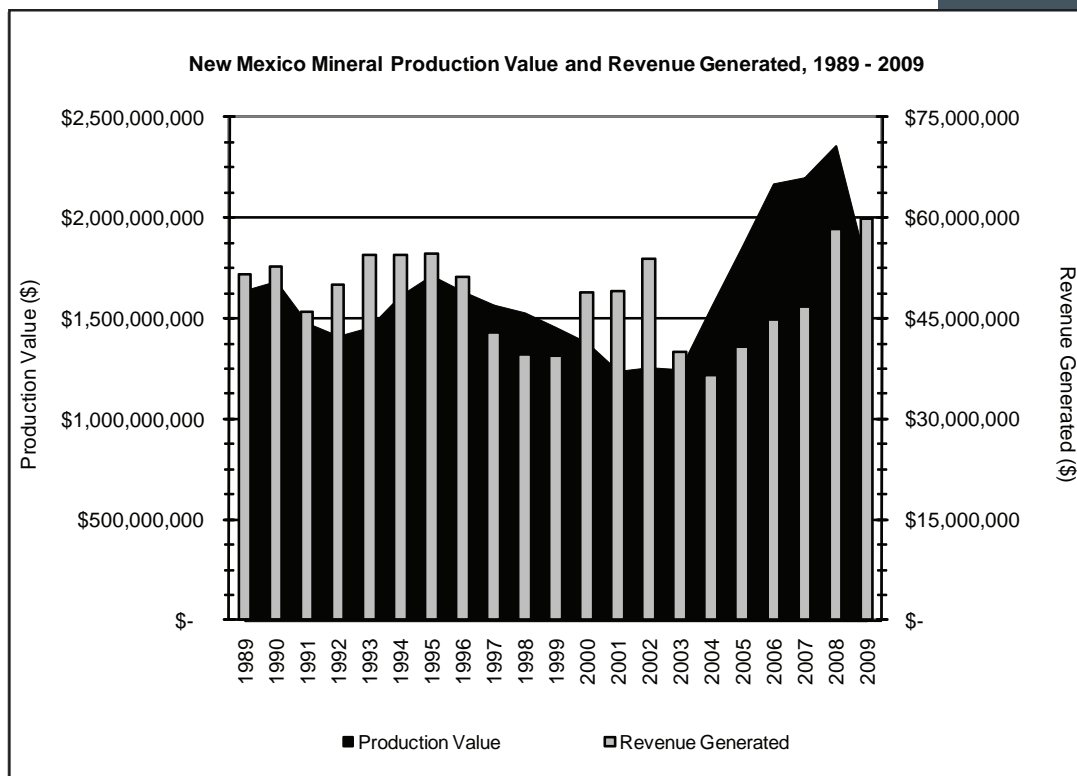


Figure 1

In 2009 coal reclaimed the top spot for production value and remained the leading commodity for revenue generation and payroll (Figure 2). Total revenues generated by mineral production in New Mexico reached an all time high of \$70.9 million in 2009. The record revenue can be attributed to increased state revenues from new potash leases in Lea County.

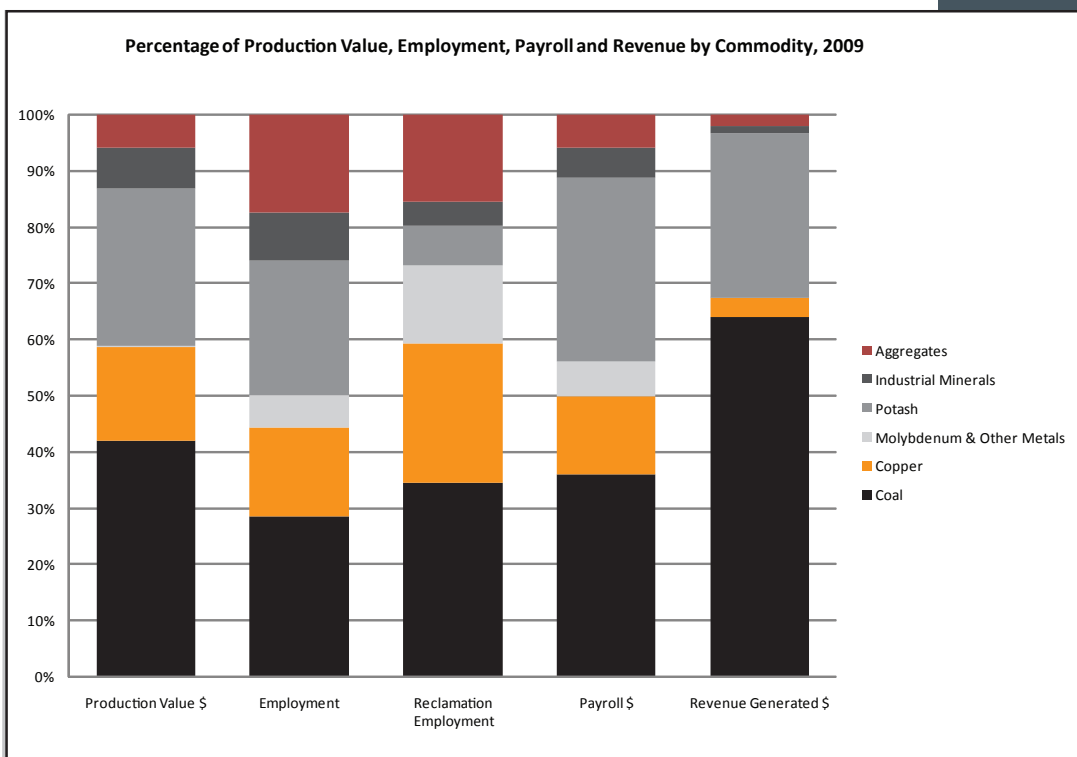


Figure 2

Mining sector employment and payroll figures decreased in 2009. Mineral industry payroll exceeded \$287.2 million, a 17.6 percent decrease from 2008 (Figure 3). Coal was the largest employer in New Mexico's mining industry, followed by potash and aggregates. Many mining companies suspended contract workers and reduced the number of direct employees in early 2009 in response to plummeting commodity prices. The total number of employees in the mining industry in 2009 was 5,160, a 38.5 percent drop. Direct employment decreased 27.3 percent to

4,469 employees. Reclamation employment decreased 48.1 percent to 395 workers. Contract employment was cut in half to 691 workers (Figure 4). While commodity prices had rebounded by December 2009, many mines remained on reduced production schedules that required fewer workers.

Capital improvement expenditures remained stable between 2008 and 2009. New Mexico mining companies spent \$197.2 million on capital improvements and equipment in 2009.

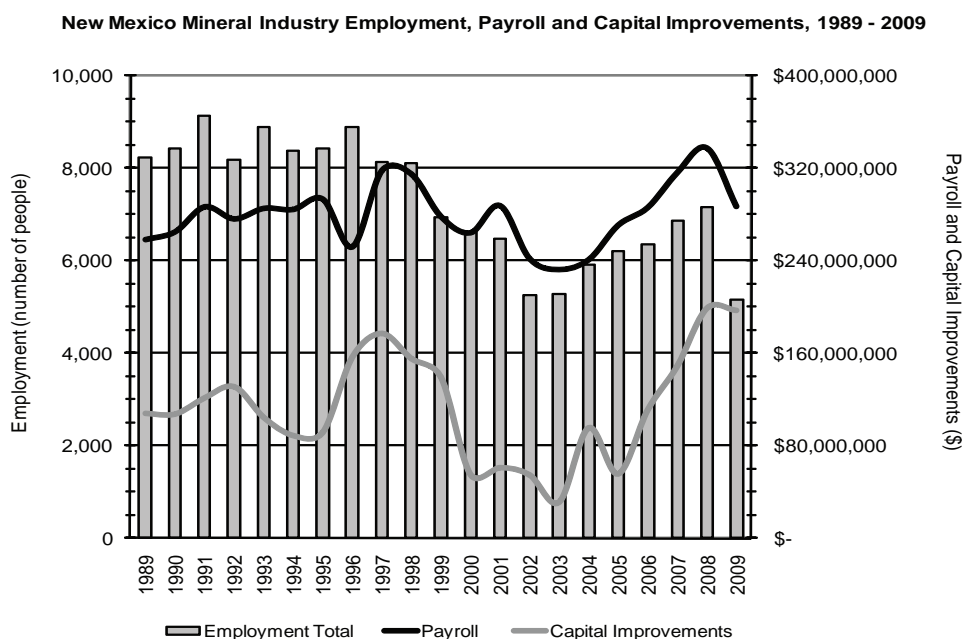


Figure 3

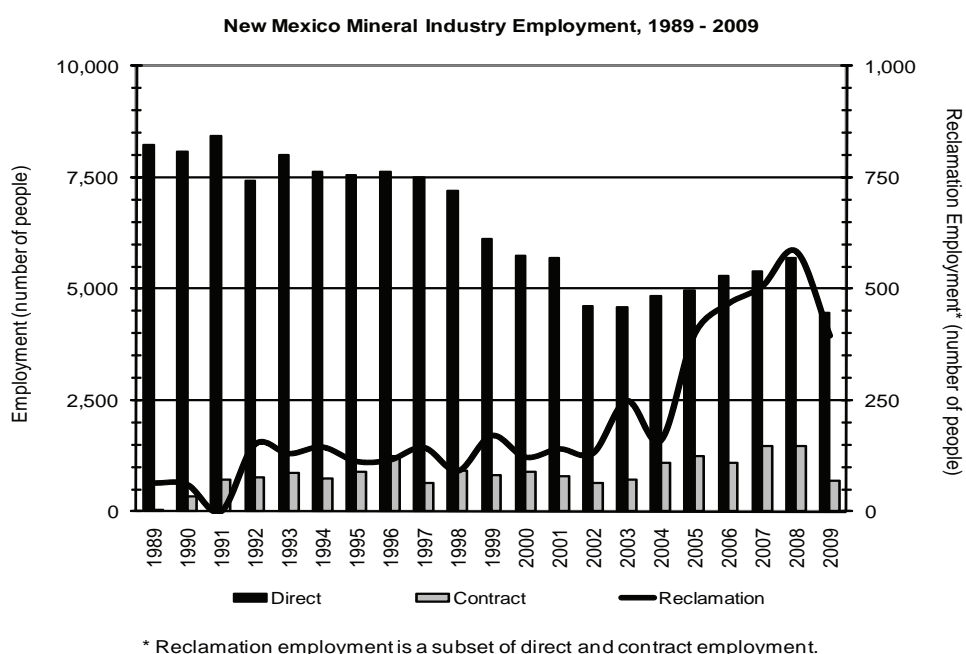
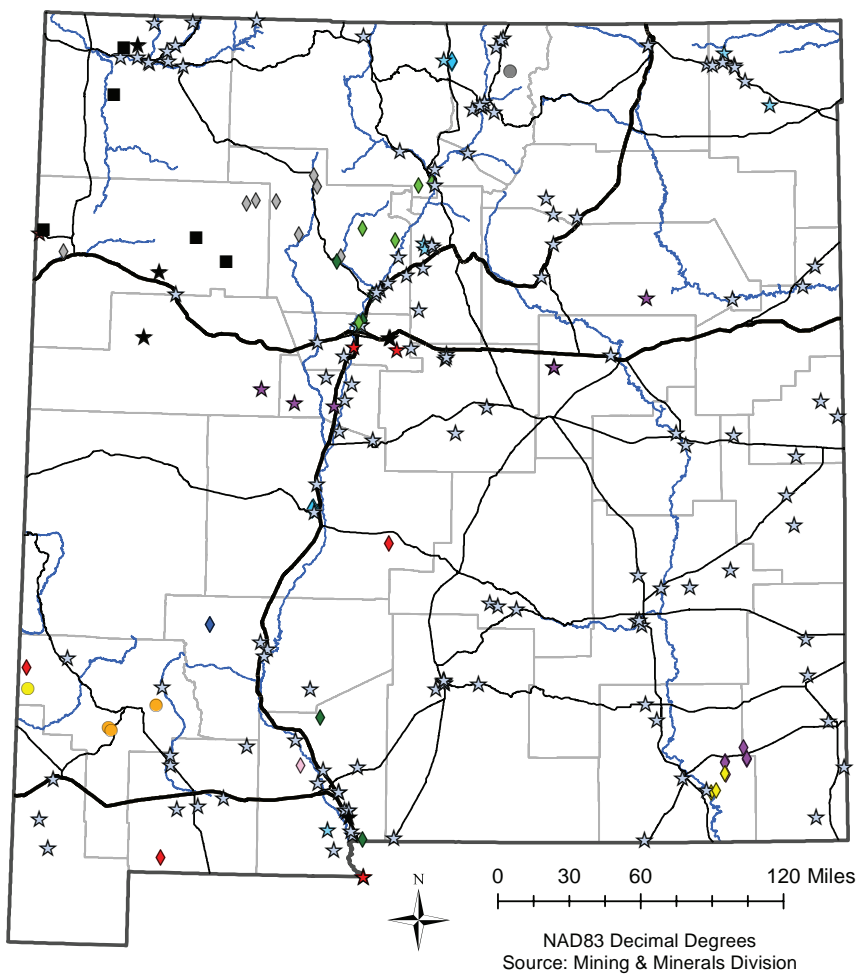


Figure 4

There were 207 registered active mining operations in New Mexico in 2009. These operations included five coal mines; three potash mines, five potash refineries and one potash compaction plant; one molybdenum mine and one molybdenum mill; one copper mine and two solvent extraction/electro-winning (SX/EW) plants; 17 industrial mineral mines and 16 industrial mineral mills; and 154 stone and aggregate operations (Figure 5).

Active Mines in New Mexico in 2009



Commodity

- Coal
 Copper
 Gold
 Molybdenum
 Calcite
 Gemstone
 Gypsum
 Humate
 Perlite
 Potash
 Pumice
 Salt
 Zeolites
 Aggregate
 Clay & Shale
 Dimension & Flagstone
 Limestone
 Red Dog
 Scoria

Figure 5

COAL: Coal production value set a new state record in 2009, topping \$735.9 million. Although New Mexico coal production value increased, coal production decreased 7.0 percent to 23.9 million short tons in 2009. New Mexico coal production reached an all-time high in 2001; production has fluctuated within a narrow range over the past 20 years (Figure 6).

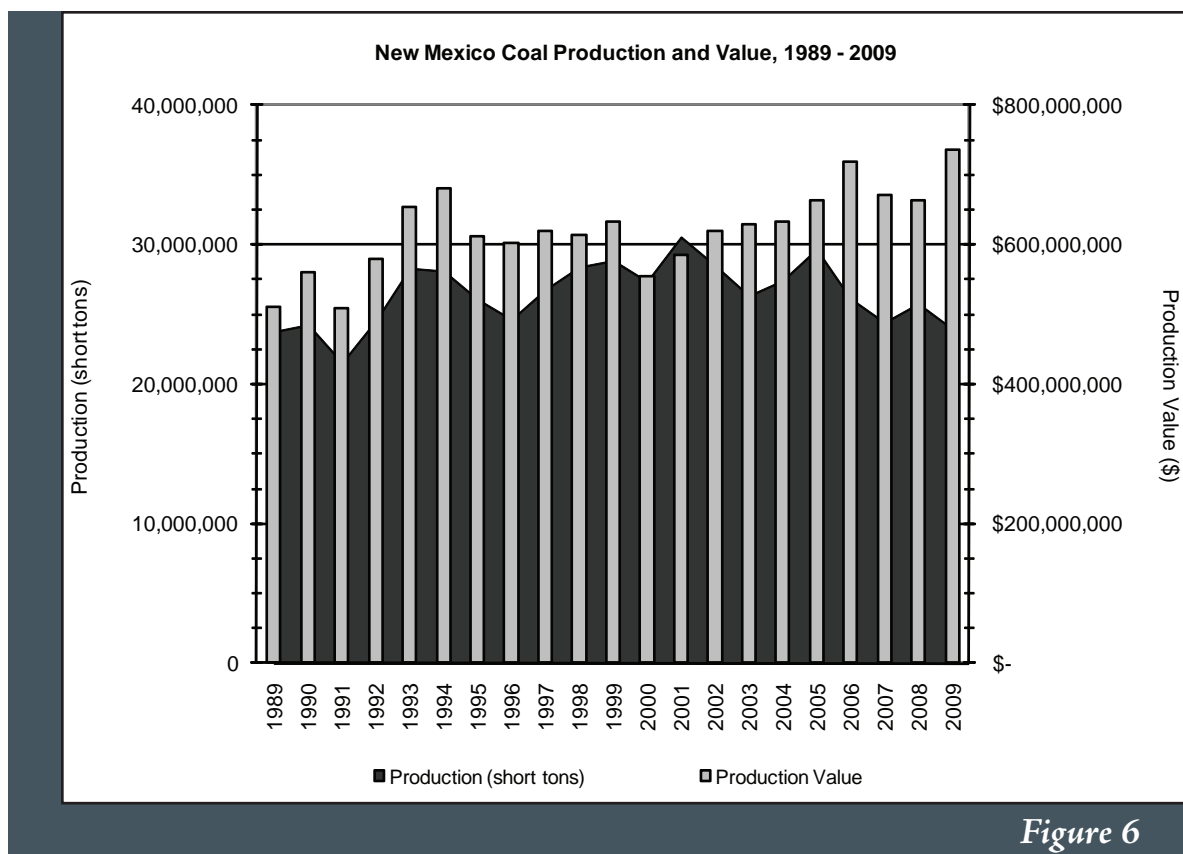


Figure 6

New Mexico's main coal reserves are located in the San Juan Basin (San Juan, McKinley and Cibola counties) and the Raton Basin (Colfax County). Five mines in the San Juan basin produced coal during calendar year 2009. Four surface coal mines were active: BHP Billiton's Navajo, Chevron Mining's McKinley North and Peabody Natural Resources' Lee Ranch and El Segundo mines. BHP Billiton's San Juan Mine, a single longwall operation, is the only underground coal mine active in the state.

The 33,000-acre McKinley Mine ceased mining operations in December 2009. An additional 80,000 tons of coal were under contract to be delivered in 2010. Over 179 million tons of coal was mined at the site since 1962. McKinley operated under two mining permits: a federal permit for the North area from the Office of Surface Mining and a state permit for the South area through MMD. The North permit area is on the Navajo Nation; the South permit area includes Navajo allotment, federal, state and private lands. The workforce was reduced by a third in late December 2009 as work shifted from mining to reclamation. Approximately 100 employees remain at the mine to focus solely on reclamation activities.

Due to the closure of the McKinley Mine and completion of reclamation activities at La Plata Mine, coal employment and payroll decreased in 2009. Direct coal employment decreased 11.1 percent to 1,324 workers. The number of contract employees decreased 38.8 percent to 147 workers. Payroll decreased 11.1 percent to \$103.4 million. Coal reclamation activities involved 105 employees (direct and contract).

The primary customers for New Mexico's coal are coal-fired power plants in the Four Corners region. Both BHP operations provide coal to "mine-mouth" power plants: the San Juan Mine feeds PNM's San Juan Generating Station in Waterflow, and the Navajo Mine feeds Arizona Public Service Company's Four Corners Generating Plant in Fruitland. A mine-mouth power plant is a power plant located in close proximity to the mine that provides the coal. Coal from the McKinley Mine was shipped via rail to Arizona Public Service Company's Cholla Power Plant in Joseph City, Arizona. Lee Ranch and El Segundo mines provide coal to Tri-State Generation & Transmission Association's Escalante Generating Station in Prewitt, New Mexico. Lee Ranch and El Segundo also ship coal to the Cholla Power Plant, replacing the former supply from the McKinley Mine.

In November 2010, Arizona Public Service Company announced plans to close part of the Four Corners Power Plant and seek majority ownership of the plant's remaining two generating units from Southern California Edison. The decision is being driven by new federal proposals aimed at lowering emissions and California laws prohibiting utilities from investing in coal-fired power plants. Arizona Public Service Company projects that coal sales will decrease by 30 percent at the adjacent Navajo Mine.

The proposed 1,500-megawatt Desert Rock Generating Plant, located on the Navajo Nation near Farmington, currently has no final permits in place. The draft Desert Rock Environmental Impact Statement was completed in 2007, and the final air permit was issued in July 2008 by the U.S. Environmental Protection Agency (USEPA). However, in 2009 the USEPA withdrew the air permit for the proposed plant because the plant plans did not address carbon dioxide emissions limitations and did not include best available pollution control systems. Desert Rock developers also failed to complete a required consultation with the U.S. Fish and Wildlife Service regarding two endangered fish. The Bureau of Indian Affairs withdrew its biological opinion in support of the plant acknowledging significant concerns about the impact of the plant's potential mercury and selenium discharges on San Juan River fish.

The Coal Mine Reclamation Program focuses on promoting successful and innovative approaches to reclaiming areas disturbed by coal mining. Geomorphic reclamation projects are also ongoing at the McKinley and San Juan mines. Chevron continues to perform maintenance projects at the York Canyon mines in Colfax County.



Photo by: James O'Hara

The geomorphic reclamation at La Plata mine was nationally recognized with a 2009 Excellence in Surface Coal Mining Reclamation Award. The reclaimed area underwent a Phase I bond release in 2010.

COPPER: The copper mining sector in New Mexico continued to experience a decrease in production quantity and value in 2009. In 2009 copper production decreased 46.5 percent to 121.2 million pounds (Figure 7). Copper production value fell to \$289.6 million, a 58.6 percent decrease from 2008 levels. New Mexico ranks third in domestic copper production after Arizona and Utah. New Mexico-produced copper is used in the manufacture of electrical components.

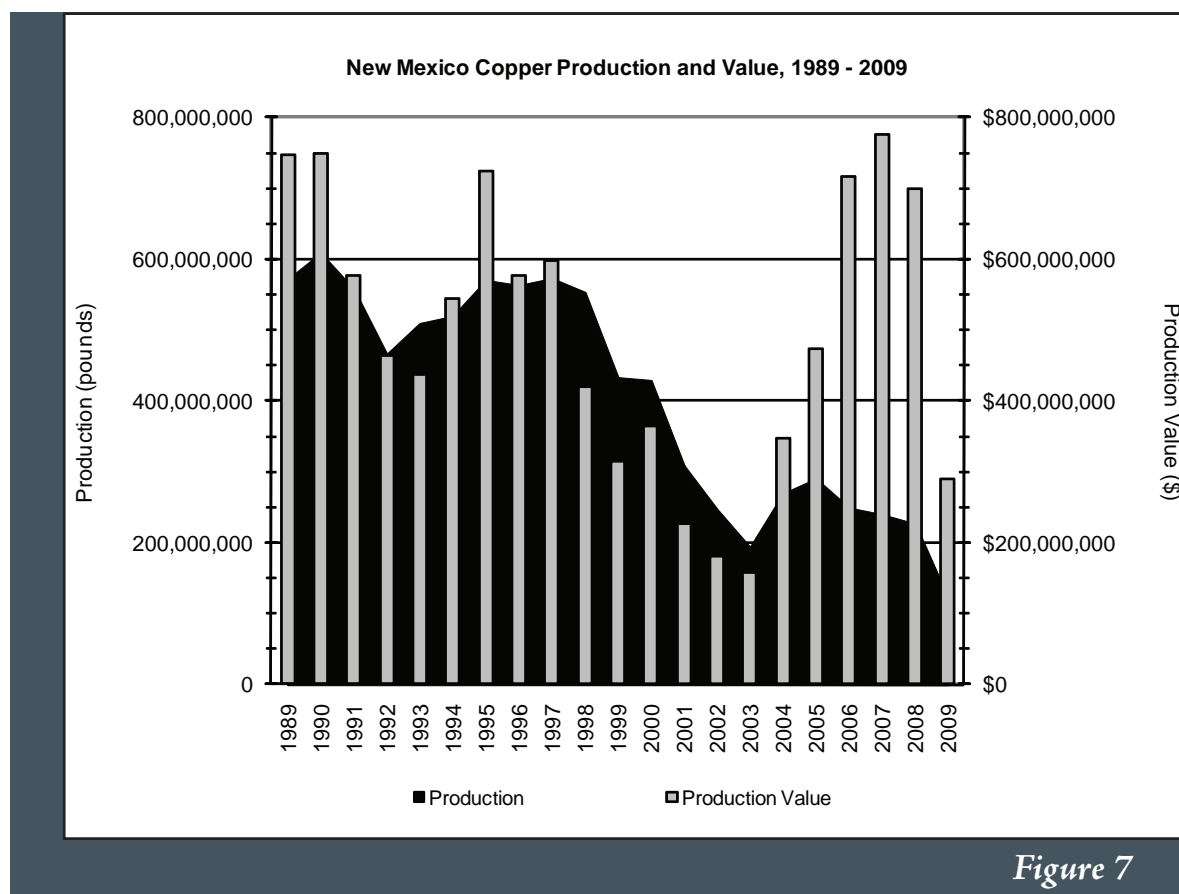


Figure 7

Freeport-McMoRan Copper and Gold Inc., subsidiaries produce copper and byproduct metals at two mines in Grant County in southwest New Mexico: the Chino and Tyrone mines. The Chino Mine consists of the Santa Rita open pit, the 43,000 ton per day Ivanhoe Concentrator and a 150 million ton per day solvent extraction/electro winning (SX/EW) plant. Freeport is working on permitting a new 35-acre waste rock pile to facilitate future pit mining at Chino. The Tyrone Mine consists of a SX/EW plant and large open pit operations.

The two other Freeport copper operations in New Mexico are both on standby status. The Continental Mine includes a 20-acre tailings pond that contains magnetite recovered by previous operators during the milling process. Freeport has been reducing the pond volume by selling magnetite to offsite buyers. Freeport-McMoRan submitted an application in spring 2010 to return its fourth New Mexico property, the Little Rock Mine, to operating status. Freeport is currently working on updating the Little Rock Closure/Closeout Plan and financial assurance.

Copper employment decreased 58.7 percent to 813 workers and payroll decreased 41.4 percent to \$39.5 million. The decrease in copper employment and payroll can be attributed to the declining copper spot prices and resulting mine layoffs. Copper spot prices tumbled from \$3.63 per pound in September 2008 to \$1.49 in December 2008. Freeport-McMoRan announced in December 2008 it would suspend open pit mining and concentrator activities at Chino, while continuing copper production from its SX/EW plant. The Chino mining suspension resulted in the layoff of approximately 600 workers in February 2009. Freeport also reduced mining at Tyrone by 50 percent in early 2009. The last layoff of this magnitude at New Mexican copper operations occurred in 2001-2002.

Because of world-wide mine suspensions and closures, international copper supplies decreased as production stalled. The copper market tightened and prices began to recover in 2009, rising to \$2.75 per pound in fall 2009 and \$3.33 per pound in December 2009. By the end of 2009, Tyrone was operating at 80 percent of capacity. Because of improved market conditions, Freeport plans to restart mining operations at Chino in early 2011.

Reclamation activities have continued at the copper mines during the economic downturn. Despite ongoing reclamation projects at Tyrone, Chino and Continental, reclamation employment in the copper sector decreased 59.8 percent to 98 workers. Freeport-McMoRan completed engineering designs and work plans for the reclamation of the majority of the inactive tailings impoundments at the Chino Mine. Reclamation of the tailings is scheduled to be completed in the summer of 2011. Freeport has been approved to extend the Groundhog No. 5 Stockpile reclamation completion date from 2009 to 2011. Reclamation activities at Tyrone have focused on the grading, cover and drainage reclamation work at the tailing impoundments.

In 2009 there were two copper exploration projects permitted by the Mining Act Reclamation Program in Grant County: Galway Resources' Lone Mountain Project and New Mexico General Minerals' Gold Lake Project. New Mexico Copper Company was granted an exploration permit for the Copper Flat Project in Sierra County in November 2009. In September 2010, New Mexico Copper initiated the new mine permitting process with the submission of a Sampling and Analysis Plan for the Copper Flat Mine.

MOLYBDENUM: New Mexico remains a major producer of molybdenum, ranking sixth in domestic molybdenum production. The state's primary molybdenum producer is Chevron Mining Company's Questa Mine and Mill in Taos County. The Questa operation, an underground gravity block cave mine, produces molybdenite concentrate (MoS_2) and is one of three primary-producing molybdenum mines in the U.S. Molybdenum is also produced as a by-product of copper production at Freeport-McMoRan operations.



Photo by: Freeport-McMoRan Gold and Copper, Inc.

Over 4,000 acres have been reclaimed at Tyrone since reclamation activities started in 2003.



Photo by: Joe Vinson

Recent reclamation efforts at the Questa mine have focused on the long-term stabilization of the several hundred million tons of waste rock in nine rock piles at the site.

New Mexico molybdenum production decreased 93.8 percent to 0.2 million pounds and production value dropped to \$3.7 million, a 96.7 percent decrease from 2008 levels. Molybdenum is used as an alloying element in construction and stainless steel. The 2009 decrease in production quantity and value can be attributed to plummeting molybdenum prices and demand. Molybdenum prices averaged a record high of \$33 per pound until September 2008. Prices dropped rapidly to a low of \$9 per pound in December 2008. The price of molybdenum rebounded to \$13.95 a pound in fall 2009.

Due to declining molybdenum prices, Chevron Mining announced in February 2009 that it had let go of all contract workers and that it would lay off half of the Questa workforce. Molybdenum-related employment decreased 63.3 percent to 194, payroll decreased 38.3 percent to \$13.9 million, and reclamation employment decreased 60.0 percent to 8 employees in 2009. The 90-year-old mine did not close and has continued operations with approximately 190 employees.

Chevron is currently revising the Questa Mine Closeout Plan, a particularly involved process because of the need to coordinate reclamation plans with the U.S. Environmental Protection Agency Remedial Investigation and Feasibility Study, conducted under the Comprehensive Environmental Response,

Compensation, and Liability Act (CERCLA). Submittal of the Revised Closeout/Closure Plan for the Questa Mine will be finalized after the issuance of USEPA Record of Decision (ROD), regarding the remediation steps to be taken at the site. The ROD is due to be issued in late 2010 or early 2011.

In February 2010, Chevron announced the planned construction of a one megawatt concentrating photovoltaic solar facility on 20 acres of inactive tailings at the Questa Mine. The demonstration project will be the largest concentrating solar photovoltaic installation in the U.S. The project will be implemented in conjunction with an evaluation of various soil depths for closure of the tailing facility at the end of mining operations.

In 2009 there was one other company interested in molybdenum, Galway Resources, which had an active molybdenum exploration project at Victorio Mountain in Luna County.

URANIUM: According to the Energy Information Administration, New Mexico ranks second, behind Wyoming, in domestic uranium reserves with 179 million pounds of U_3O_8 at \$50 per pound, and 390 million pounds at \$100 per pound. Rising market prices have led to renewed interest in uranium production. Spot prices rose from a low of \$6.50 per pound in 2000 to \$60.50 per pound in December 2010.

Uranium recovery in New Mexico ceased in December 2002. Currently, uranium activity in New Mexico has been focused on exploration and the reclamation of the mines and mills left over from the boom years. Rio Algom's Ambrosia Lake Mill, United Nuclear Corporation's Church Rock Mill and Homestake Mining's Milan Mill are all undergoing reclamation.

There are four inactive uranium mine operations in New Mexico currently permitted by MMD: Rio Grande Resources' Mt. Taylor Mine, United Nuclear Corporation's Section 27 Mine, Rio Tinto's JJ No. 1 Mine and Rio Algom's Old Stope mining properties. The Mt. Taylor Mine, a flooded underground mine that has been inactive since January 1990, remains on standby status and must revise its permits with MMD and New Mexico Environment Department before mining can commence. Rio Grande Resources filed an application in summer 2010 to renew the mine's standby status; standby status was originally approved in 1999, and renewed in 2005.

The Section 27, JJ No. 1 and Old Stope mines are closed and undergoing reclamation. Rio Algom finished reclamation at the Old Stope leach properties and is awaiting the twelve-year final bond release. In October 2009, both United Nuclear and Rio Tinto received final reclamation permit approval for the Section 27 and the Sohio JJ No. 1 mines. Both companies provided financial assurance to the state for the cost of the reclamation. Rio Tinto began reclamation at the JJ No. 1 site during the fall of 2009. Final reclamation of the JJ No. 1 was completed in summer 2010 and involved the closure of 11 vent shafts, regrading, topsoil application and revegetation. Reclamation of the shafts, vents and rock piles was completed in August 2010 at the Section 27 Mine. Reclamation work included sealing the shafts and vent holes, encapsulating non-economic ore piles, regrading and covering old rock piles, revegetation with native plants and addressing radiation hazards at the mine site. United Nuclear Corporation continues work toward approval of closeout and reclamation plans, as required by the New Mexico Mining Act, for the St. Anthony Mine. Reclamation activity at the Northeast Church Rock Mine continues under the jurisdiction of the Navajo Nation and U.S. Environmental Protection Agency.

Since January 2006, 31 uranium exploration applications have been submitted to MMD. As of November 2010, 12 applications have been approved, five are pending, one is on hold and 13 have been denied or withdrawn (Table 2).

Uranium Permit Applications, 2006 - 2010 *				
Approved Exploration Applications				
Project Name	Operator	Surface Ownership	Number of Holes	Drilling Completion
Ambrosia Lake	Neutron Energy		6	summer 2007
Armijo	Grants Ridge Joint Venture	Private	60	winter & spring 2010
Elizabeth	Neutron Energy, Inc.	Private	28	planned 2011
F-33	Grants Ridge Joint Venture	Bureau of Land Management	18	winter 2010
La Jara Mesa	Laramide Resources	U.S. Forest Service	10	fall 2006, winter 2007
Lily	Uranium Company of New Mexico	Bureau of Land Management	10	fall 2007
Marquez Canyon	Neutron Energy	Private	44	planned 2011
Riley	Max Resources	U.S. Forest Service	14	spring 2007
Riley No. 2	Max Resources	U.S. Forest Service, Private	5	summer 2008
Roca Honda	Strathmore Mineral Resources	State	4	summer & fall 2007, spring 2008
Section 13 ISR	Uranium Resources, Inc.	Private	3	fall 2010
Treeline	Western Energy Development	Private	6	summer 2006
Pending Exploration Applications				
Project Name	Operator	Surface Ownership	Number of Holes	
Baca	Red Basin LLC	U.S. Forest Service	25	
Cebolleta Exploration Project	Neutron Energy	Private	84	
Rio Puerco	Uranium Company of New Mexico	Bureau of Land Management	20	
White Mesa	Red Basin LLC	U.S. Forest Service	25	
Pending Mine Applications				
Project Name	Operator	Surface Ownership	Acres	
La Jara Mesa Mine	Laramide Resources	U.S. Forest Service	77	
Roca Honda Mine	Roca Honda Resources	U.S. Forest Service, State Land Office	183	
* Status current as of November 15, 2010				

Table 2



Photo by: James Hollen

Two new conventional uranium mines are being proposed in New Mexico: Roca Honda Resources' Roca Honda Mine and Laramide Resources' La Jara Mesa Mine. The proposed Roca Honda Mine is located in McKinley County on Cibola National Forest and state trust lands. Roca Honda has submitted both the Sampling and Analysis Plan and the Permit Application Package to MMD. The Roca Honda application indicates that the mine site and surface facilities will consist of approximately 183 acres of surface disturbance. Roca Honda Resources has also submitted a Mining Plan of Operations to the U.S. Forest Service, which is being reviewed through a Forest Service National Environmental Policy Act (NEPA) Environmental Impact Statement (EIS).

MMD has seen the number of exploration permit applications increase in the past eight years.

The proposed La Jara Mesa Mine is located in Cibola County on Cibola National Forest land on the edge of the Mt. Taylor Traditional Cultural Property. Laramide Resources has submitted a permit application to the U.S. Forest Service for the proposed mine, which will be handled through the Forest Service EIS process. Laramide Resources has also initiated the permitting process with MMD by submitting a Sampling and Analysis Plan. The La Jara Mesa Mine application proposes a total of about 16 acres of surface disturbance.

While uranium mining companies are eager to move forward, several significant challenges lay in the path of large-scale uranium development in the near future. First, all of New Mexico's uranium mills have been demolished and new milling infrastructure is needed. Second, the Navajo Nation, which overlays a major portion of the Grants Mineral Belt uranium deposits in New Mexico, declared a moratorium on uranium production in Navajo Indian Country in April 2005. Third, the New Mexico Cultural Properties Review Committee listed Mt. Taylor on the State Historic Registry as a Traditional Cultural Property in June 2009. The U.S. Forest Service determined that the Mt. Taylor Traditional Cultural property was eligible for listing on the National Register of Historic Places. The protected area includes approximately 344,000 acres.

HRI Energy continues to pursue permitting and licensing from the Nuclear Regulatory Commission (NRC) and the New Mexico Environment Department to mine uranium by in-situ leach at locations in Church Rock and Crownpoint. These permits were the subject of lengthy litigation in federal courts. The Tenth Circuit Court of Appeals upheld the NRC license and determined that a portion of the mine site was not Indian Country and therefore subject to State of New Mexico jurisdiction. The U.S. Supreme Court refused to hear further appeal of the NRC license in fall 2010.

GOLD, SILVER AND OTHER METALS: New Mexico production of gold and silver peaked in the 1980s and has steadily declined since that time. In 2009 the only gold and silver produced in New Mexico was a byproduct of copper processing at Freeport-McMoRan operations in Grant County. Due to suspension of

copper mining in 2009, gold and silver production plummeted. Gold production decreased to 465 troy ounces and production value decreased to \$0.4 million. Silver production data for 2009 was not reported.

Gold employment and payroll is for reclamation activities at closed mines and development of a new mine and mill. LAC Minerals continues to perform reclamation and groundwater remediation work at the closed Cunningham Hill Gold Mine, located in the Ortiz Mountains in Santa Fe County.

Lordsburg Mining Company, a wholly-owned subsidiary of Santa Fe Gold Corporation, focused its 2009 activities on the construction of the Summit Mine in Grant County and the Banner Mill in Hidalgo County. The underground Summit Gold Mine began ore production in February 2009, but has not yet produced any reportable gold. Underground mine development and stockpiling of ore is ongoing, and it is expected that the mine will reach full production during the first half of 2011. The Banner Mill, built to process the Summit ores, is the only lined tailing facility currently operating in the state. Construction of the crushing and screening plant, a ball mill, a 400 ton per day flotation plant and tailings disposal impoundment at the Banner Mill was completed in late 2009. Processing operations at the mill commenced in March 2010 and the first gold concentrate shipped from the mill facility in fall 2010.

Two new minimal impact gold and silver mine permits in Grant County were approved in 2009: the Groom and Billali mines. An additional new minimal impact gold mine permit for the Orogrande Placer Gold Mine in Otero County was approved in late 2010. Production has not started at these mines.

Exploration for gold, silver and other precious metals continues in New Mexico. From 2009 to 2010 there were ten active Mining Act Reclamation Program permits for precious and base metal exploration projects in Catron, Grant, Hidalgo and Socorro counties. In addition, one bertrandite exploration permit and one goethite/hematite exploration project was active in Socorro County in 2010.

Maintenance work at the abandoned Ortiz Gold Mine in the Santa Fe Botanical Garden included the construction of a native stone retaining wall and bench for bat flight observations.



Photo by: Zoe Isaacson

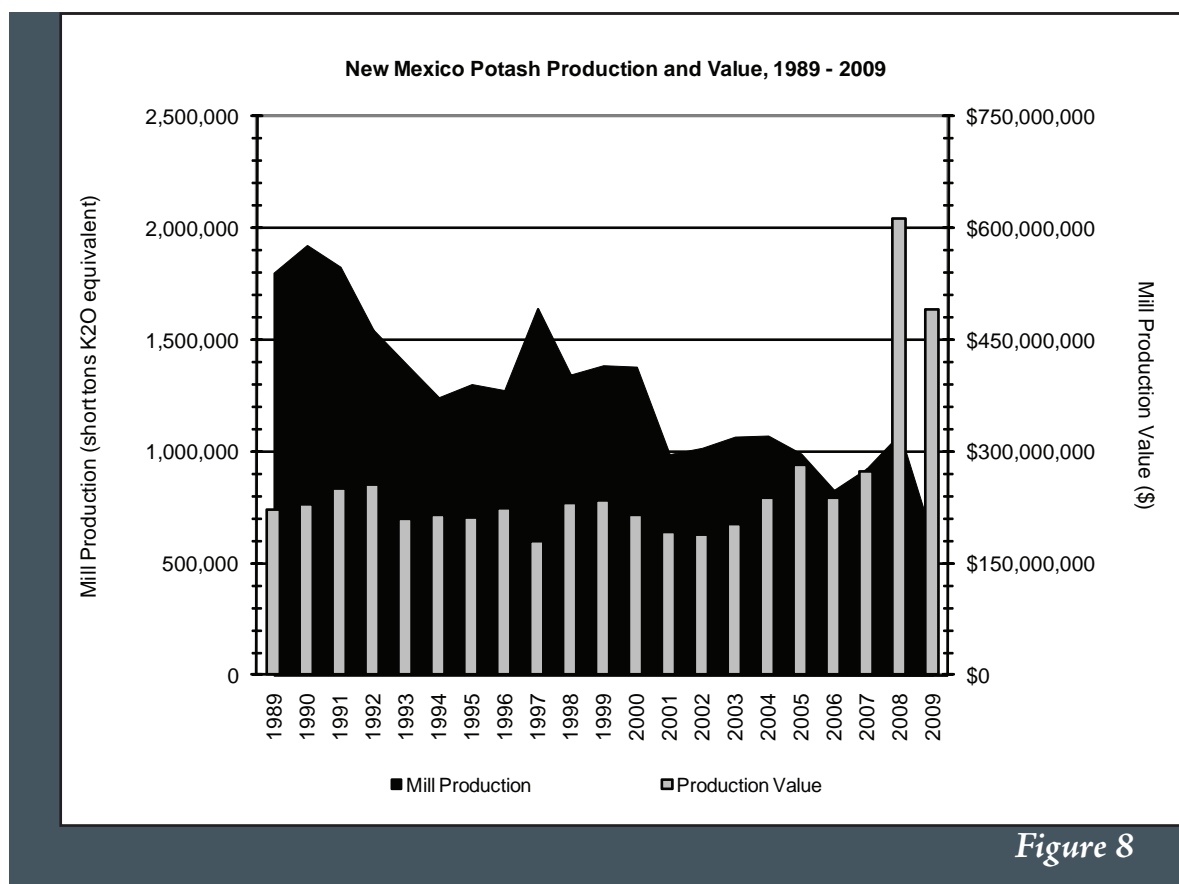


Photo by: John A. Kretzmann, P.E.

Toroid tire plugs were used to safeguard the old silver mine workings at the Lake Valley ghost town.

POTASH: Potash is a mined salt containing water-soluble potassium. The Carlsbad potash district represents 2 percent of worldwide potash production and more than three-quarters of all domestic potash production. Both sylvite (KCl) and langbeinite ($K_2Mg_4(SO_4)_4$) are mined by underground methods near Carlsbad. New Mexico-produced sylvite is used primarily as an agricultural fertilizer, animal feed supplement, drilling mud additive, de-icing ingredient and water softener regenerant. Potassium helps regulate plants' physiological functions and protects crops from drought, disease, parasites and cold weather. Langbeinite products have a high potassium, magnesium and sulfur content and are marketed as a special-use fertilizer to chloride sensitive crops such as tobacco, citrus fruits, vegetables and palm trees. Farmers in nearby states use most of the New Mexico-produced potash; approximately a quarter is exported to Central and South America, the Caribbean and Asia.

New Mexico ranks first in the nation in potash production. The 2009 production value decreased to \$491.2 million, a 19.2 percent drop from the 2008 record high (Figure 8). Potash mill production increased 44.0 percent to 0.6 million pounds K_2O equivalent. Potash production and value increased as a result of rising consumption and pricing.



Two companies operate three mines, five refineries and two compaction plants in Eddy and Lea counties in southeastern New Mexico. Intrepid Potash, Inc., operates the Intrepid East, Intrepid West and Intrepid North facilities. The East facility consists of an underground mine, a sylvite/langbeinite refinery and a compaction plant. The West facility includes an underground mine and a sylvite refinery. The North facility houses a compaction plant. Intrepid held an initial public offering of common stock on April 25, 2008. The second New Mexico potash producer, Mosaic Potash Carlsbad, Inc., operates an underground mine, a sylvite refinery, a langbeinite refinery and a compaction plant.

Potash demand and prices fell at the end of 2008 and continued to decrease through 2009. Beginning in the third quarter of 2008, the global financial crisis resulted in rapid declines in the price of corn and several other crops. Lower agricultural commodity prices, volatile material costs and the uncertainty of agricultural revenue potential due to the economy caused farmers to delay their fertilization decisions heading into the 2009 planting season. This uncertainty led to a declining demand for all fertilizers as farmers waited to see how the commodity markets would unfold prior to making their 2009 planting decisions. Many farmers delayed fertilized delivery into spring 2009, leading to high potash inventory at the mines in spring 2009.

As a result of high inventories, Intrepid and Mosaic reduced operations in 2009. Potash employment was 1,227 workers in a 2009, a 2.2 percent decrease from 2008. Payroll decreased 10.3 percent to \$93.7 million. Reclamation employment in the potash sector reached a record high of 28 employees due to the reclamation of the old U.S. Potash property by Mosaic Potash Carlsbad and demolition of part of the Eddy Potash facility by Intrepid Potash.

Intrepid Potash is working on opening parts of the old Eddy Potash Mine as a solution mine. Intrepid projects the HB Solar Solution Mine project will annually produce 150,000 to 200,000 tons of potash over a 28-year mine life. The reopened mine is projected to add 44 full-time jobs. In January 2009 the BLM determined that an EIS will be required to evaluate the environmental impacts of the proposed solution mine; it is expected to take two years to complete the EIS. Potash production should start approximately one year after regulatory approvals are obtained from the BLM and New Mexico Environment Department. Intrepid estimates that the total costs of designing, permitting and constructing the solution mine will total approximately \$95 to \$115 million. Intrepid Potash, Inc., is also preparing a feasibility and design study for reopening the North mine, idle since 1982.

Intercontinental Potash Corporation, of Toronto, Canada, has started development work on a potash mine on state and federal lands in Lea County. This proposed mine, the Ochoa Sulphate of Potash Project, consists of over 100,000 acres of federal subsurface potassium prospecting permits and State of New Mexico potassium mining leases. Exploratory drilling work was completed in 2009 and 2010. Intercontinental expects production to commence in 2014. The mine and processing facilities are projected to employ 450 workers.

INDUSTRIAL MINERALS: Industrial mineral resources are widely dispersed across the state. In New Mexico, the more commonly mined industrial mineral resources include gypsum, perlite, salt, limestone, dimension stone, humate, pumice and zeolite. In 2009, there were 17 mines and 16 mills producing industrial minerals in the state. Table 3 details location, employment and the production rank for industrial mineral commodities in the state.

Industrial mineral production value fell 21.1 percent to \$124.4 million in 2009 (Figure 9). Industrial mineral production decreased 25.7 percent to 1.5 million short tons, employment decreased 11.8 percent to 446 workers and payroll decreased 24.6 percent at \$15.5 million. Reclamation employment dropped to 77 workers. The decrease in production value is related to decreased demand for construction-related materials like gypsum wallboard, Portland cement and scoria/pumice masonry blocks.

Industrial Minerals Production Rank, Location and Employment, 2009

Commodity	Production Rank ¹	County	Employment ²	Reclamation Employment ³
Clay ⁴	-	Bernalillo, Doña Ana	3	0
Dimension Stone ⁴	-	Valencia	23	0
Gypsum	7	Bernalillo, Doña Ana, Sandoval	100	2
Humate	-	Sandoval, San Juan, McKinley	31	2
Limestone/Portland cement ⁴	-	Bernalillo	100	0
Perlite	1	Socorro, Taos	69	6
Pumice	4	Bernalillo, Sandoval, Santa Fe, Rio Arriba	13	4
Salt	11	Eddy	83	0
Silica	-	Grant, Santa Fe	1	1
Zeolite	1	Sierra	23	2
TOTAL			446	17

¹ Source: USGS 2009 Ranking

² Includes both direct and contract employees.

³ Reclamation employment is included in the employment number.

⁴ Location and employment is for mill only. Mine employment included in aggregates.

Table 3

New Mexico Industrial Mineral Production and Value, 1989 - 2009

Industrial minerals include the commodities gypsum, perlite, salt, limestone, calcite, dimension stone, clay, humate, scoria, pumice and zeolite.

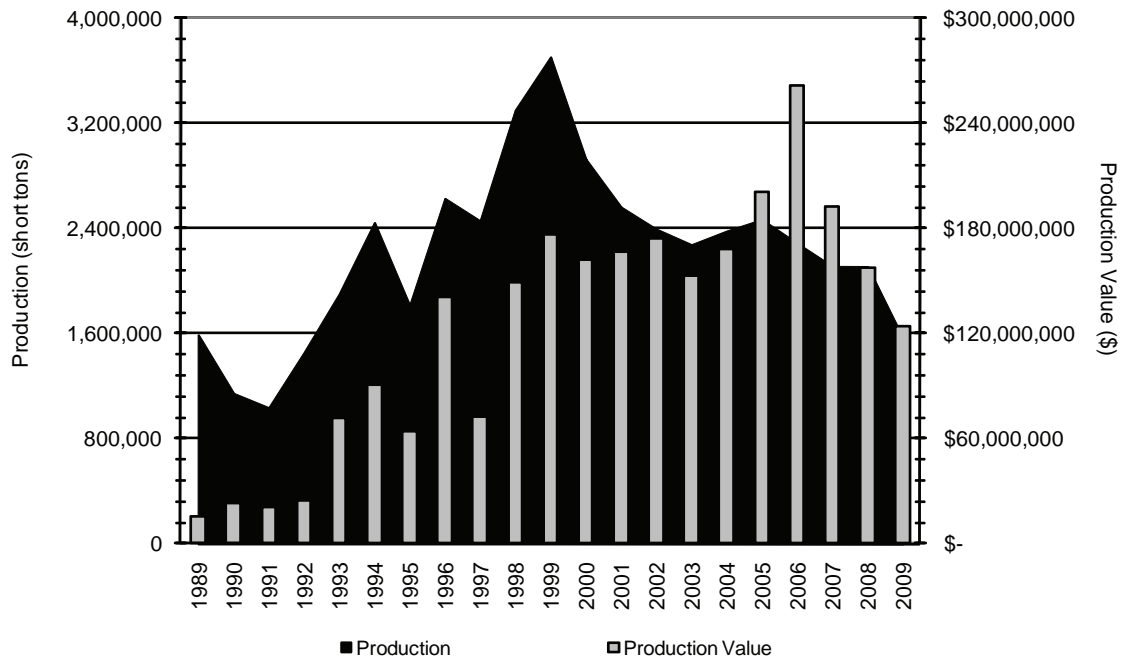


Figure 9

Copar Pumice Company ceased pumice production at the El Cajete Mine in late 2007 upon expiration of its mining permit with the U.S. Forest Service. The mine is currently in the process of being reclaimed. Pumice processing at Copar's Española and San Ysidro plants was also halted.

In response to a lower demand for cement, GCC Rio Grande suspended operations at its limestone quarry and Portland Cement plant in Tijeras for over a month in summer 2009.

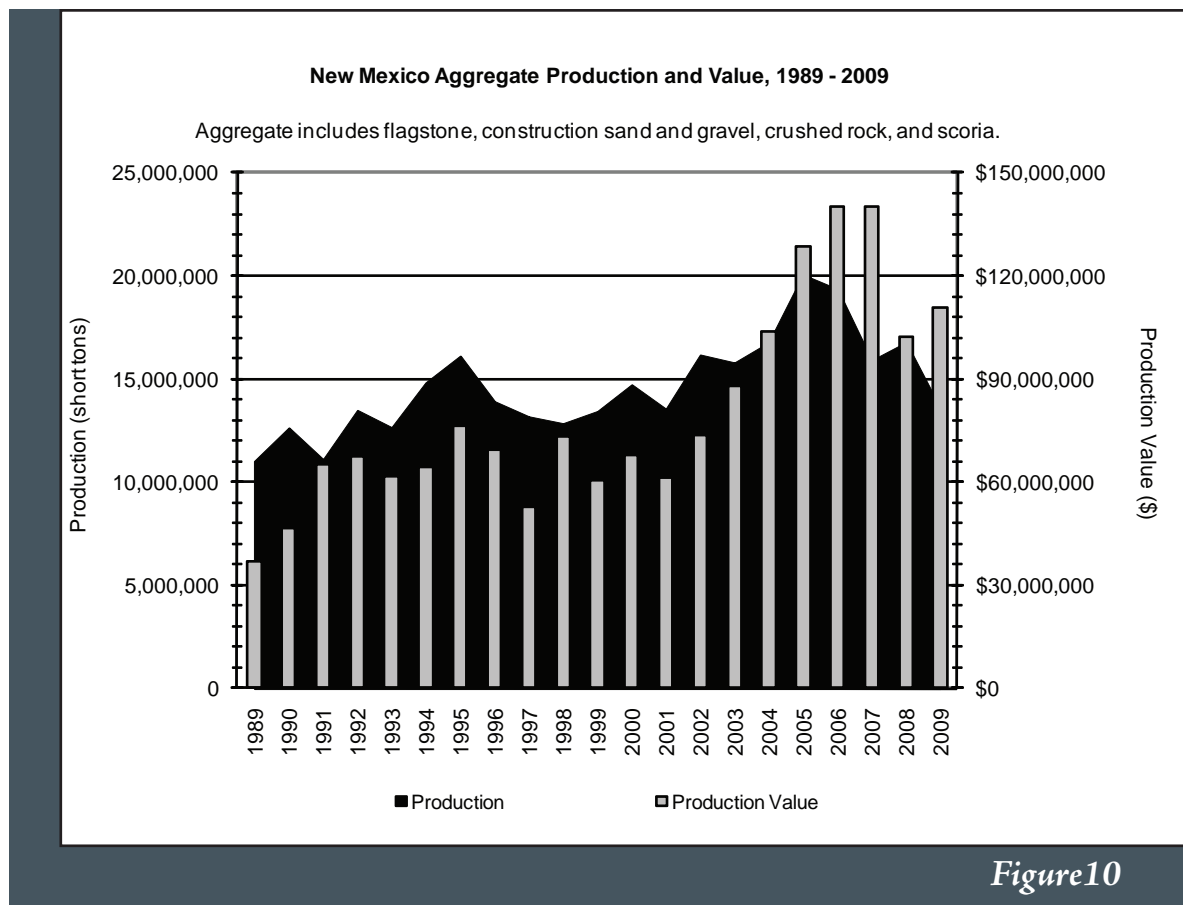
In February 2010, American Gypsum suspended operations at the Bernalillo wallboard plant due to a reduction in demand for wallboard. Of the Bernalillo plant's 70 employees, 46 have been transferred to the Albuquerque plant; a skeleton staff remains at Bernalillo to maintain the equipment.

New Mexico remains the leading state for the production of perlite and zeolite and is one of the main producers of pumice. Zeolite is produced at St. Cloud's Zeolite Mine and Mill in Sierra County. Active perlite operations include Dicaperl Minerals' Socorro property and Harborlite's No Agua facilities. Pumice operations include CR Minerals' Rocky Mountain Mine and Ohkay Owingeh Mill; Urban Trucking and Excavating's Cochiti Pumice Pit; and Utility Block's U.S. Forest Service Mine. Humate properties include Rammsco's Eagle Mesa Mine; Horizon Ag-Products' San Luis Mine and Cuba Mill; Mesa Verde Resources' Star Lake Mine and San Ysidro Mill; Menefee Mining's Star Lake Mine and Menefee Mill; and U-Mate International's U-Mate Mine. Active salt operations include United Salt's Lake Mine and Carlsbad Plant; and New Mexico Salt & Minerals' Carlsbad operations. Brick and masonry block are produced at American Eagle Brick Company's Eagle Mill; Crego Block's Albuquerque block plant; Hoffman Enterprises' Kinney Brick Mill; and Utility Block's Albuquerque Mill. Gypsum mines and processing facilities include Eagle Materials' White Mesa Mine and Albuquerque and Bernalillo wallboard plants; Alley Mining's Alley mine; and Schneider Welding's Keystone No. 1 Mine. Other major industrial mineral properties in New Mexico include: GCC Rio Grande's Tijeras cement plant; New Mexico Travertine's Belen plant; and Preece Enterprises' Rainbow calcite mine.

During 2009 and 2010, the Mining Act Reclamation Program oversaw one exploration permit for specimen fluorspar in Socorro County, one exploration permit for turquoise in Grant County and three exploration permits for humate in McKinley County.

STONE AND AGGREGATE: Stone and aggregate, which includes construction sand and gravel, is a subset of industrial minerals. Construction sand and gravel is one of the most accessible natural resources and a major basic raw material. The number of active aggregate and stone mines remained constant in 2009 with 154 active operations. The number of stone and aggregate mines on standby status also remained steady at 40 operations.

Stone and aggregate production value increased 8.4 percent to \$110.8 million in 2009. Production quantity dropped to 13.5 million short tons, a 19.1 percent decrease (Figure 10). Employment decreased 6.1 percent to 901 workers and payroll decreased 39.5 percent to \$16.9 million in 2009. Reclamation employment decreased to 61 workers. Table 4 details the production and production value of the different stone and aggregate commodities produced in the state.



New Mexico Aggregate and Stone Production, 2009

Commodity	Production (short tons)	Value (\$)
Base Course	2,169,682	\$ 17,921,675.35
Caliche	141,707	\$ 393,651.04
Clay & Shale	withheld	withheld
Crushed Rock	3,490,858	\$ 38,645,270.32
Fill Dirt	717,039	\$ 1,519,707.48
Flag & Dimension Stone	2,989	\$ 518,933.81
Gemstone	withheld	withheld
Gravel	3,868,016	\$ 24,919,355.51
Limestone	1,007,787	\$ 6,888,156.35
Other	711,394	\$ 5,028,816.76
Red Dog	withheld	withheld
Riprap	204,549	\$ 3,566,359.22
Sand	970,145	\$ 9,735,332.77
Scoria	232,375	\$ 1,655,902.05
Top Soil	6,736	\$ 39,488.77
TOTAL	13,537,659	\$ 110,879,335.03

Table 4

Aggregates are a high volume/low unit price commodity and track the local economy – they are not tied to the global markets. Despite the low unit value of its products, the construction sand and gravel industry is a major contributor to, and an indicator of, economic well-being and growth. New Mexico aggregate production began to decline in 2006. Aggregate production and consumption for residential and commercial construction decreased in 2008 and 2009 as the number of building permits decreased and the credit market to fund construction tightened. 2009 is projected to be the bottom of the aggregate production cycle. With funding shortfalls for highways and road construction, the infrastructure sector is expected to experience decreased demand for aggregates in the next several years. Aggregate demand is expected to remain depressed through 2013.

Increased rail traffic and the construction of dual rail lines in southern New Mexico by Union Pacific Railroad has led to increased demand for railroad ballast and rail bed materials. The start of Spaceport America construction in 2009 has increased aggregate demand in Sierra County. Infrastructure and road projects funded by the American Recovery and Reinvestment Act of 2009 may bolster aggregate demand.

The aggregate industry continues to move operations and place new operations away from densely populated centers, where zoning, environmental and land development regulations discourage sand and gravel operations. Consequently, shortages of construction sand and gravel in urban and industrialized areas are expected to increase, as are transportation costs associated with sand and gravel commodities. Increasingly, sand and gravel operations are being included in master zoning and planning documents for regional areas.



**Oil
Conservation
Division**



Mark Fesmire, PE

Acting Division Director



Oil Conservation Division

A Message from Acting Division Director Mark Fesmire

In addition to its traditional regulatory activities associated with preventing the waste of New Mexico's oil and gas resources and protecting the correlative rights of mineral owners, the Oil Conservation Division (OCD) is committed to the protection of human health and the environment, prevention of future contamination of New Mexico's water and soil from oil and gas operations and to the identification and remediation of historical contamination that has damaged our state's environment or resources.

To accomplish these objectives, OCD manages permits for drilling and operational activities, collects data on operations, conducts hearings to resolve disputes among stakeholders, prosecutes enforcement actions and inspects wells and associated facilities and operations. We also identify and remediate historical conditions and improperly plugged or abandoned wells.

Over the last eight years, OCD has proposed, advocated for and promulgated rules that expand public participation and openness in the rulemaking process, provide enforcement capability to the division to pursue violators, provide regulatory oversight in oilfield waste disposal and increase the protection of water resources during the use of oilfield pits, sumps and below-grade tanks.

The most prominent of these actions is the "Pit Rule" which became law on June 16, 2008. This rule requires proper management of oil and gas waste to protect groundwater which is 90 percent of New Mexico's drinking water. Prior to the enactment of this rule, oil and gas operators self-reported 421 cases of ground water contamination caused by pits. Since this rule became effective over two and a half years ago, there has not been a single case of ground water contamination reported to OCD.

OCD makes every effort to be proactive when it comes to human health and safety as well as protecting the environment. OCD performed an assessment of the state's brine wells because of recent brine well collapses in southern New Mexico and Texas. Findings from the assessment identified a brine well in a commercial, transportation and residential area of the City of Carlsbad as a candidate for imminent catastrophic collapse. OCD immediately engaged in a cooperative approach to help mitigate or eliminate the hazard by working closely with the City of Carlsbad, the owner of the well and other state and local government entities. We continue to participate in the joint effort to protect the public and to monitor the well with an early warning detection system until a successful resolution is achieved.

The dedicated staff in OCD will move proudly forward, protecting our precious water resources and leaving a natural resource heritage for the benefit of all New Mexicans.



Oil Conservation Division

MISSION: The Oil Conservation Division (OCD) administers laws and regulations relating to the oil, gas and geothermal industry of New Mexico. The Oil and Gas Act, the Water Quality Act and the Geothermal Resources Conservation Act authorize the division to enforce primary statutory mandates.

PROGRAMS: OCD is organized into four district offices and five 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 Engineering and Geological Services Bureau processes administrative applications for exceptions to OCD rules and the staff serves as division-appointed hearing examiners for OCD hearings. The Environmental Bureau develops and enforces environmental regulations and programs in the oil and gas industry for the protection of New Mexico's environment. The Legal Bureau provides legal advice and support, works with well operators to implement and manage Agreed Compliance Orders and participates in the formulation of OCD rules and proposed legislation. The Automation and Records Bureau is responsible for collecting and dispersing monthly well production and injection data, and information about wells including completions, spacing, pools, operators, and inactive and orphan wells. It also manages data systems including OCD Online Electronic Permitting and OCD Online Imaging as well as the OCD website. This bureau also tracks statistics and oversees the division's budget and procurement needs. The Administrative Bureau provides administrative support for the division, manages the plugging bond program, manages the hearing process and maintains records of cases and orders. The Oil Conservation Commission is a three-member commission that makes rules governing oil and gas production in New Mexico.

Infill drilling project north of Loco Hills. A new 6,000' well is being drilled at the site of the tall, tan drilling rig left of center. The turquoise pumping unit for an existing well feeds the three tan storage tanks. In the foreground is a red pumping unit wellhead with a polish rod at the top; its pumping unit is not in this picture. At the far right is a tan drilling fluid cleaner.



Photo by: Tim Gum

OCD works with representatives from diverse groups to consistently enforce its regulations and identify areas where regulations can be improved. OCD is actively involved in nationwide federal, state and industry organizations that share information on new technologies and discuss best practices and success stories in areas such as web-based deliverables, carbon sequestration, beneficial uses of produced water and the protection of ground water.

OCD employees also participate in and lead committees involved in the development of municipal oil and gas regulations, oil and gas workplace safety programs, youth seminars and emergency response planning.

Accomplishments

BRINE WELL MANAGEMENT: Two brine well collapses in recent years caused OCD to formally evaluate all remaining brine wells in the state. This evaluation identified one brine well in a commercial, transportation and residential area that was at risk for a catastrophic collapse. The division continues to work with the owner, the city, contractors and other governmental agencies to manage this risk and to prevent harm to humans and the environment.

RULE ENHANCEMENT: New rules on rulemaking were adopted in 2005 which shortened the time necessary to promulgate rules while at the same time opening the process to more stakeholders and more members of the regulated community. These rules were then used to update the division's rules on enforcement and compliance that document what a well operator needs to do to be in compliance in areas such as inactive well management, registration and financial assurance. Effective management of these issues reduces the risk of contamination to the state's soil and water.

In 2007, the rules governing surface waste management facilities were implemented. These rules required facilities to be designed to eliminate any deliberate release of contaminants to the environment. Facilities that comply with the new rules provide safe, well-designed and well-regulated sites for the disposal or remediation of oil field water and allow oil and gas operators to minimize the risk of residual future liability from waste that they have generated.



Photo by: Jim Griswold

Re-entry procedure at a brine well in Carlsbad using a coiled tubing drilling system.

The Surface Owners' Protection Act was adopted in 2007. Under the act:

Surface owners who do not own the mineral rights below their property must be notified 30 days prior to beginning any drilling-related operations.

Surface owners must receive a description of proposed oil and gas operations so they can evaluate the potential impacts to their property.

Oil and gas operators must compensate landowners for the use of their property, and pay for any damages caused by activities like drilling and road building.

The act also requires oil and gas operators to clean up after themselves when they are finished.

Previous law required no prior notice of operations to the surface owner. By passing the Surface Owners' Protection Act, New Mexico became the only state to require companies to provide landowners with extensive information about pending oil and gas drilling. New Mexico also became the only state to mandate compensation for such a broad range of damages and use, including loss of agricultural production and income, reduced land value, lost use, and access to the surface owner's land. Combined with the duty to reclaim the land once oil and gas operations have ceased, this is the most complete set of surface owner protections in the country. This act made the responsibilities of land owners and of the oil and gas well operators more clear and provided a vehicle for more effective communication.

OCD's Environmental Bureau led a task force of members from the industry, the public, other government entities and other interested parties to create a rule to replace the existing pit rule. Pits are used to contain fluids resulting from drilling and other oil and gas operations to prevent those fluids from contaminating ground water or harming wildlife. Topics considered included standards for pit installations and closures, the lining of pits, soil testing, fencing and netting, and best practices. This rule became effective in 2008. The division conducted training sessions throughout the state. Later the pit rule was revised to grandfather in certain types of tanks to minimize conversion costs to the industry.

In 2008, OCD and the Oil Conservation Commission restructured and revised their rules to make them easier to read and to use. The changes included restructuring the rules under 33 headings accurately reflecting the subject matter, adopting consistent use of terms throughout the rules, changing rules related to OCD forms to reflect current requirements and practices and corrections to information that had become inconsistent due to updates over the years.

Last, a rule to protect the unique nature of the Galisteo Basin was adopted by the Oil Conservation Commission.

ENFORCEMENT: The division refined its enforcement rules with changes that went into effect over several years. These rules provide a means for well operators and OCD to consistently determine whether an operator is compliant or non-compliant with division rules in the areas of well inactivity, financial assurance, operatorship and meeting the requirements of division orders. Information that determines current and future non-compliance is displayed on OCD's web site and updated daily to allow all parties to take early action and to provide assurance that enforcement is equitable.

The division implemented Agreed Compliance Orders which involves working with well operators to negotiate a plan to bring their violations into compliance, drafting enforceable documents to memorialize the agreements and enforcement of the agreements in the case of failure. OCD's enforcement staff also works with well operators to ensure compliance through inspections, meetings and hearings.

The enforcement team identified ten common compliance issues and published a list of basic requirements for well operators in New Mexico. These requirements are reviewed with each new well operator as they register to operate wells. Acknowledgment of the ten basic requirements is also part of the process of transferring wells between operators.

INACTIVE WELL MANAGEMENT: OCD created a web application that shows each operator's inactive wells and allows the operator to project future inactive wells. If an operator has a certain number of inactive wells, based on the total number of wells that the operator operates, some activities may or must be denied. A well can be removed from the inactive well list by producing or injecting, by being plugged, properly temporarily abandoned, or placed on an Agreed Compliance Order which provides a schedule for reduction of the number of inactive wells.

FINANCIAL ASSURANCE: The enforcement rules adopted in 2005 formalized the need for additional financial assurance for wells that meet certain criteria for inactivity. These inactive well financial assurances and the blanket plugging bonds are forfeited by the well operator if the well must be plugged by the state due to the operator no longer being financially viable. The amount of the financial assurance is based on the depth and location of the well. Operators can use the Internet to see when additional financial assurance might be or already is required for each well. OCD currently manages over \$31 million in inactive well financial assurances.



Photo by: Darold Gray

Drilling activity on a salt lake near the potash mines east of Loving, New Mexico. "Offshore drilling" in New Mexico!

CARBON SEQUESTRATION: OCD has been active among other states in research of statutory and regulatory requirements to accomplish geologic sequestration of carbon dioxide to significantly reduce anthropogenic emissions of the greenhouse gas carbon dioxide (CO₂) over long-time scales.

GEOTHERMAL ENERGY: Hearings took place to permit the first geothermal power plant in the state.

PARTNERSHIP WITH NEW MEXICO INSTITUTE OF MINING AND TECHNOLOGY: New Mexico Tech and OCD continue to partner on a project to streamline the gathering of information supporting the location of new pits in areas that will not impact the state's ground water. Tech has been a valued partner to OCD for 14 years by delivering some of the division's data to the Internet.

ELECTRONIC SYSTEMS LEADERSHIP: OCD's web-based systems continue to be a critical resource to the well operators, other government agencies and to the public. The imaging system delivers over eight million pages of permits, orders, maps, tests, charts, diagrams, photographs and supporting information via the web. The electronic permitting system allows well operators to create, validate and submit applications for permits to drill, plats, sundry notices, tax incentives, operator change requests, operator name changes, drilling reports, and production reports. The system has boosted OCD's productivity because the majority of information on the permits is now pre-validated, cannot be submitted if incomplete and does not require further keying of information into the division's systems.

In addition to the images, OCD delivers all information about wells, well production and injection, orders, financial assurance, well completions, perforations and violations through easy to use web-based applications updated instantly or daily.

WELL COMPLETIONS: A well completion is a producing or injecting zone attached to a well. The number of non-plugged well completions is a good indicator of the amount of permit activity in the division because each well completion requires review of the well's spacing, construction, logs, surveys, drilling activity and operatorship. In 2002 there were 50,235 well completions; this number has grown steadily each year and as of this writing there are 56,722 well completions.



Data and Statistics

OVERVIEW: As of November 2010, there were 25,761 oil wells, 29,934 gas wells, 645 CO₂ wells, 3,794 enhanced recovery injection wells and 765 salt water disposal wells. Between 2002 and 2009, a total of 6,471 wells were plugged and the sites were remediated by either the well operators or through the Oil and Gas Reclamation Fund.

Oil prices rose significantly throughout 2009 until April, 2010; as of November 17, 2010, oil prices are slightly below that April level with the New Mexico Intermediate Crude oil price of \$77.25 per barrel. Gas prices rose slightly from the beginning of 2009 to the end of the year; the gas price is now \$4.03 per MMBtu (Million British Thermal Units) Henry Hub.

Total New Mexico oil production in 2009, including condensate, was 61.2 million barrels, an increase of over one million barrels over 2008's volume, which was an increase of nearly one million barrels over 2007. New Mexico natural gas production in 2009 was 1,397 BCF (billion cubic feet).

New Mexico State Revenues from Oil and Gas Production

	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010
State General Fund:					
Oil and Gas Emergency School Tax ¹	\$483,240,216	\$420,254,277	\$557,668,091	\$370,353,954	\$314,564,062
Oil and Gas Conservation Tax ¹	22,564,448	21,204,165	29,115,356	18,916,799	16,742,023
Natural Gas Processors Tax ¹	26,841,174	35,627,328	30,617,748	40,341,003	40,436,731
Federal Mineral Leasing Royalties ¹	556,540,613	501,123,515	564,181,538	507,228,551	352,380,652
State Land Office Rents, Bonuses, etc. ²	52,695,563	50,409,672	46,084,845	36,442,282	62,923,624
Total -- General Fund Revenue	1,141,882,014	1,028,618,957	1,227,667,578	973,282,589	787,047,092
Severance Tax Permanent and Bonding Fund:					
Oil and Gas Severance Tax ¹	488,952,323	425,403,323	567,447,973	378,141,950	327,573,047
Land Grant Permanent Fund:					
State Land Office Royalties ²	405,343,063	390,449,484	395,929,247	406,008,901	316,466,037
Grand Total of All Funds	2,036,177,400	1,844,471,764	2,191,044,798	1,757,433,440	1,431,086,176

(1) Source: New Mexico Taxation and Revenue Department: Tax Analysis, Research and Statistics Office.

Note: For FY 2004 - 2009, the data reported are actual audited figures that were distributed to the General Fund. FY 2010 data are preliminary, unaudited numbers.

(2) Source: State Land Office

Table 1

Oil Production by Year

	SE Crude	SE Condensate	NW Crude	NW Condensate	Total Oil
2005	52,733,234	5,586,118	1,045,051	1,561,595	60,925,998
2006	51,766,526	5,050,342	1,006,921	1,622,638	59,446,427
2007	52,054,286	4,600,859	1,001,856	1,527,913	59,184,914
2008	53,577,929	3,997,574	1,000,685	1,545,327	60,121,515
2009	54,878,578	3,824,308	970,264	1,525,164	61,198,314

Source: Oil Conservation Division as of October 31, 2010

Table 2

Natural Gas Production by Year

	SE Casinghead	SE Dry Gas	NW Casinghead	NW Dry Gas	Total Natural Gas * (Includes NE)	Coalseam Gas (Included in Total)
2005	225,695,753	325,666,272	12,580,044	1,003,156,000	1,591,851,526	519,712,686
2006	225,160,330	316,897,376	12,611,116	1,007,290,514	1,588,358,310	524,883,192
2007	216,124,130	303,902,784	11,787,373	977,922,441	1,535,731,061	507,683,092
2008	203,229,715	292,357,522	11,460,308	939,780,447	1,473,080,712	476,542,639
2009	208,458,437	246,689,872	10,870,881	905,123,935	1,397,254,881	449,692,068

*Totals include gas produced in northeast New Mexico, which is not displayed in a separate column

Source: Oil Conservation Division as of October 31, 2010

Table 3

FY 2010 State General Fund Revenue from Oil and Gas Sales

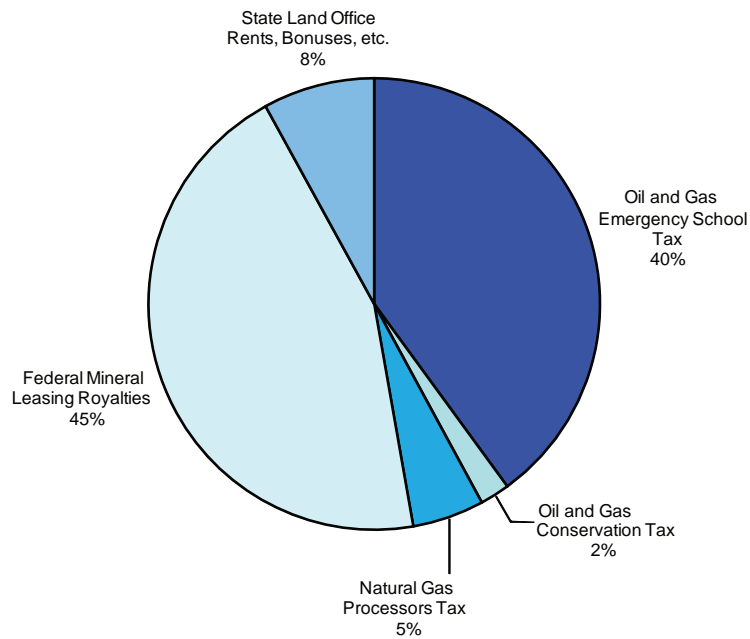


Figure 1

Oil and Gas Prices vs. Rig Count

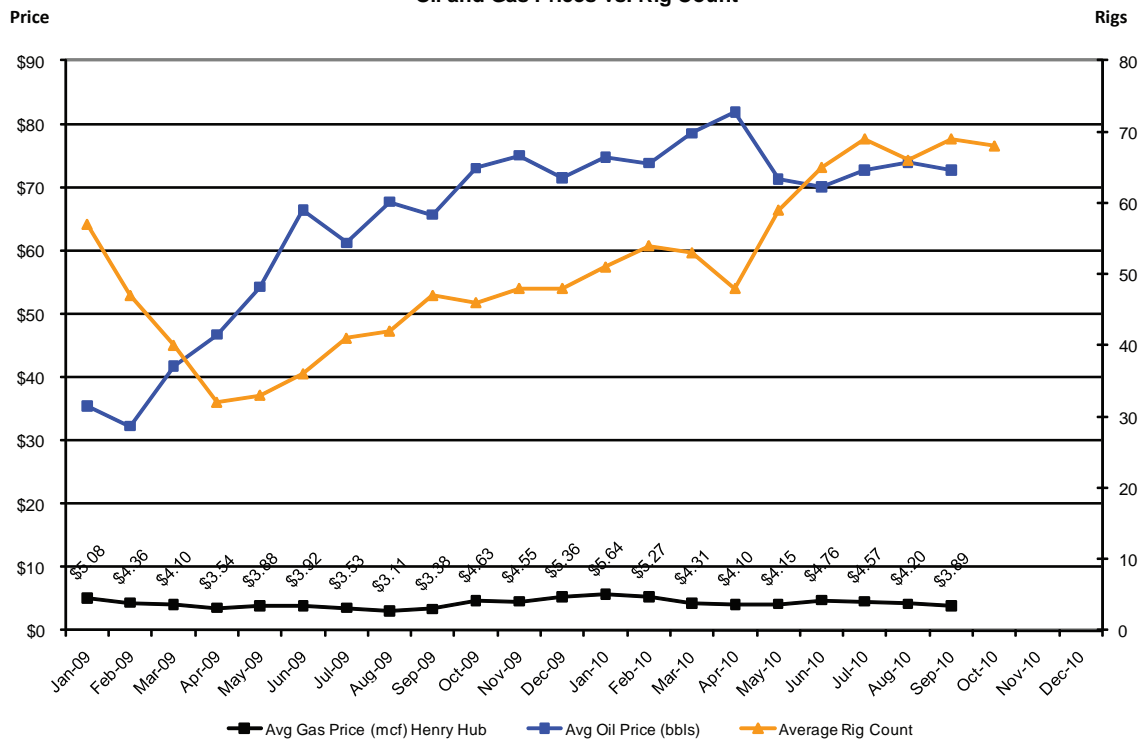


Figure 2

2009 Oil and Gas Production by County

Rank	Oil (Barrels)	Rank	Gas (Thousand Cubic Feet, MCF)
1 Lea	32,966,378	1 San Juan	549,672,095
2 Eddy	24,433,566	2 Rio Arriba	364,999,420
3 Rio Arriba	1,215,284	3 Eddy	223,082,275
4 San Juan	1,127,644	4 Lea	202,616,260
5 Chaves	1,068,122	5 Chaves	27,411,753
6 Roosevelt	233,991	6 Colfax	26,124,386
7 Sandoval	115,961	7 Roosevelt	2,119,410
8 McKinley	36,539	8 Sandoval	1,249,423
		9 McKinley	73,878
Total	61,197,485		1,397,348,900

Source: Oil Conservation Division as of November 14, 2010

Table 4

Wells Drilled and Completed by Year by Well Type

	Gas	Oil	Other	Total
2005	1,298	617	78	1,993
2006	1,267	790	73	2,130
2007	1,036	638	38	1,712
2008	855	858	72	1,785
2009	450	712	72	1,234

First Reported Completion per Well
Source: Oil Conservation Division

Table 5

2009 Oil Production by Land Type

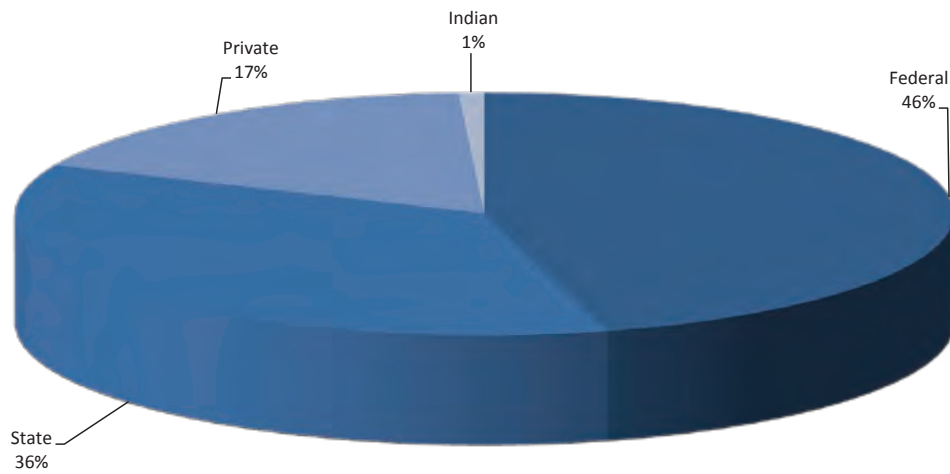


Figure 3

2009 Gas Production by Land Type

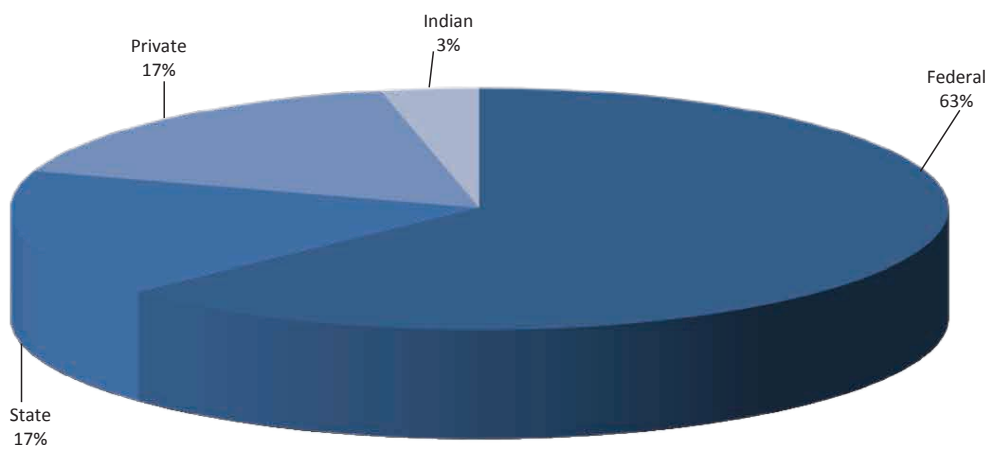


Figure 4



State Parks Division



David J. Simon

Division Director



State Parks Division

A Message from State Parks Division Director Dave Simon

New Mexico State Parks provide outstanding settings for recreation and places where visitors can develop understanding and respect for nature and culture. Looking back at 2010—and the eight years of the Richardson administration—State Parks saw considerable achievement in these efforts, despite challenges posed by prolonged drought and the national/state economic situation.

New Mexico State Parks are the best recreation value, close to home. Since 2003 New Mexico added four new state parks and expanded seven parks, protecting over 9,600 acres. In 2010, the 35 state parks attracted over 4.7 million visitors, a 23 percent increase in visitation over the past eight years. With a 95 percent satisfaction rate, State Parks deliver excellent visitor services.

New Mexico has invested nearly \$40 million in park facilities since 2003, completing numerous basic infrastructure, visitor service, habitat restoration, and renewable energy projects statewide. New Mexico has dramatically strengthened boating laws and safety education efforts. State Parks constructed over 50 miles of new trails and launched the visionary Rio Grande Trail Project. The Outdoor Classroom Program reached over 85,000 students in 55 school districts and has earned “A” grades from teachers.

Along with these many successes State Parks still faces many challenges. Tragedy, in the form of drowning, still strikes too often. Meanwhile, State Parks has doubled efforts to increase boating safety awareness and, New Mexico is bracing for the expected arrival of aquatic invasive species (AIS) in our lakes. State Parks is working closely with Department of Game & Fish on AIS education and prevention.

Regardless of the challenges, the beauty, value, and inspiration of New Mexico State Parks are on full display 365 days of the year. State Parks celebrated its 75th anniversary in 2008 and took center stage nationally in 2010, by hosting the state park directors’ annual conference. One state park director said after her visit: “Thank you to your outstanding staff for organizing and presenting a memorable and informative conference for the directors of America’s State Parks. I returned home with renewed energy and enthusiasm for our mission and with the knowledge that we are truly part of a state park family nationwide of dedicated and talented professionals, who share a tireless commitment so that the next generation of Americans will have access to clean air, clean water and unspoiled, healthy landscapes.” Another said: “Words will not do justice to my experience in New Mexico, but let me try...Amazing! Awesome! Rewarding! And perfect come to mind.”

In the parks profession, these are words that warm one’s heart, and make it all worthwhile. Indeed, words can’t do justice to the New Mexico State Parks and its dedicated employees. New Mexico State Parks are definitely worthwhile and merit absolutely everything we



State Parks Division

MISSION: To protect and enhance natural and cultural resources, provide recreational facilities and opportunities, and promote public safety and education to benefit and enrich the lives of our visitors.

HISTORY: New Mexico State Parks (Parks) was founded in 1933 in conjunction with the Civilian Conservation Corps efforts during the Great Depression. Today, there are 35 parks encompassing 19 lakes and 184,094 acres of land.

Accomplishments

State Parks has achieved significant progress in its priority areas: protecting New Mexico's heritage, upgrading visitor facilities and services, strengthening safety and education programs, expanding partnerships and volunteerism, and improving government performance.

State Park visitation expanded from 3.8 million in 2004 to 4.7 million in 2010 (a 23 percent increase), reversing steady visitation declines in previous years. State Parks strengthened its position as New Mexico's "Best Recreation Value, Close to Home" and provided more low-cost, high-value, family-friendly recreation opportunities than ever before.

4th of July fireworks at State Parks lakes are among many special events.

Photo by: New Mexico State Parks Division



State Parks brought back the popular annual camping pass, improved the value of the annual day-use pass, launched a "Signature Event" program to establish major annual events in state parks, expanded creative marketing efforts, set up a collaborative marketing program with the New Mexico Tourism Department, and pursued new partnerships with the private sector to promote state parks. In 2008, State Parks celebrated its 75th anniversary with a year-long program of special events and activities. In 2010, New Mexico hosted the National Association of State Park Directors annual conference. Throughout all the increased visitation, activity and responsibilities, the dedicated and talented staff delivered incredible service, earning visitor satisfaction ratings of over 95 percent and consistently meeting or exceeding all performance measures set by the legislature.

More New Mexico communities sought the benefits of state parks and partnerships with the State Park Division. Governor Richardson and the legislature responded and New Mexico made history by opening four new superlative state parks: Eagle Nest Lake, Vietnam Veterans Memorial, Mesilla Valley Bosque, and Cerrillos Hills. These new parks increased the State Park System from 31 to 35 units. A fifth new state park, Pecos Canyon, was authorized, but has not yet been formally opened. Responding to other community requests for assistance, State Parks also completed feasibility studies for several other potential new state parks: Shakespeare Ghost Town, Mimbres Culture Sites, Shiprock, and Blackwater Draw. Several of these sites are outstanding resources, and should be considered further for new state parks.

State Parks also made land acquisitions at six existing parks, protecting important resources and adding over 9,600 new acres into the state park system. In a historic step, the legislature changed state law to give State Parks more flexibility to proactively acquire important lands.

State Parks invested \$40 million to enhance visitor facilities and improve park operations. Improvements included campground upgrades, new visitor centers, boat ramp extensions and boat access improvements, interpretive exhibits, water/waste water system improvements, and the first-in-the-nation state park astronomy observatories. Some of the most significant investment projects included: a major new museum/visitor center at Pancho Villa, a host of improvements at Elephant Butte Lake (new South Monticello campground/boat ramp, renovation of the Dam Site historic area, new main entrance facilities, and main boat ramp extensions), development of Eagle Nest Lake facilities, major water/wastewater infrastructure upgrades at Navajo Lake, a two-phase renovation of the Vietnam Veterans Memorial, construction of a new learning center at Rio Grande Nature Center, and numerous other large and small maintenance projects at parks across the state. State Parks secured new funding from diverse sources, including \$1 million from the U.S. Bureau of Reclamation, the first major federal funding for New Mexico State Parks in years.

State Parks continued to be a leader in sustainability efforts within state government. State Parks opened green park visitor centers at Mesilla Valley Bosque and Eagle Nest Lake, installed over 150kW of photovoltaic (solar) energy projects, contracted for wind power purchases, invested in energy conservation throughout its facilities, increased fleet fuel efficiency with hybrids, flex-fuels and other vehicles, and launched new recycling pilot projects.

State Parks put new emphasis into natural and cultural resource conservation efforts, completing five major projects to restore wetlands and native habitat, including a \$1.5 million project with the U.S. Army Corps of Engineers along the Pecos River at Bottomless Lakes, restoring historic structures in several parks, and stabilizing nationally significant archeological sites in Manuelito Canyon. State Parks took historic steps to protect endangered species, establishing a captive breeding program at Living Desert Zoo and Gardens State Park for the endangered Bolson's Tortoise (only the second place in the U.S. with a captive breeding program) and upgrading facilities at Living Desert so that the zoo is now eligible to host breeding pairs of endangered Mexican Wolves. Living Desert maintained its national accreditation from the Association of Zoos and Aquariums, making it one of only two facilities in New Mexico to achieve that distinction.

State Parks successfully pushed for amendments that strengthened the New Mexico Night Sky Protection Act and, launched the innovative State Parks *Reach for the Stars Program*, which promotes dark night sky protection and astronomy education. The program won the Nebula Award from the New Mexico Historic Preservation Alliance. Clayton Lake State Park received a prestigious designation as an “International Dark Sky Park” (only the fourth such park in the U.S.).

State Parks completed two revisions of the New Mexico Statewide Comprehensive Outdoor Recreation Plan (SCORP). One policy initiative that arose from the SCORP was State Park’s launch of major new efforts to expand trails throughout New Mexico—which the public considers a high priority. State Parks established the first full-time trails coordinator position, organized the first statewide trails conference in New Mexico in over 15 years, distributed nearly \$5 million in trails grants, built over 50 miles of new trail within state parks, signed the first-ever Memorandum of Agreement between the International Mountain Biking Association and a state park agency, launched a vision for a great Rio Grande Trail stretching the length of the entire state, and provided key support to the Continental Divide Trail project which put New Mexico on track to be the first state to complete its section of the Continental Divide Trail.

State Parks put “safety first” for visitors and staff and achieved historic milestones in this regard. State Parks successfully pushed to strengthen the Boating under the Influence statute and amend the New Mexico Boat Act to require safety education for motorboat operators and mandatory lifejacket wear for children. The National Transportation Safety Board recognized New Mexico State Parks for these accomplishments. State Parks increased the budget and professionalism of its law enforcement and boating programs, installed Automatic External Defibrillators in all state parks, and established a full-time safety coordinator position that brought workplace accidents and claims down. State Parks revamped its heavy equipment inspection and maintenance program to

improve employee safety and take better care of assets.

State Parks significantly increased the number and quality of park education and interpretation programs, setting records for the number of interpretive programs and visitors served through such programs. State Parks trained thirty staff as Certified Interpretive Guides and three staff achieved Certified Interpretive Trainer accreditation through the National Association for Interpretation, elevating the professional standards of state park programs.

New Mexico took a national leadership role in efforts to Leave No Child Inside

State Parks promotes boating safety.

Photo by: New Mexico State Parks Division



and combat the growing disconnect between Americans and the natural world. State Parks launched an innovative Outdoor Classroom Program in cooperation with the Public Education Department, which reached 55 public school districts and served over 85,000 kids in a three-year period, earning “A” grades from teachers. The State Parks Division completed five standards-based curriculum guides for outdoor classrooms in state parks and trained 350 teachers in their use.

Over the past eight years, State Parks expanded partnerships and successfully leveraged valuable resources. Total volunteer hours tripled, to over 300,000 hours annually, which now equates to almost 150 full-time staff and \$5 million in labor cost savings. The number of state park “friends” and support groups grew from 11 in 2003 to 21 at the end of 2010 and the New Mexico State Park Foundation increased its special role in support of the agency. State Parks secured its first AmeriCorps grant, and strengthened partnerships with other key federal agencies such as the National Park Service, U.S. Fish & Wildlife Service, Bureau of Land Management, Bureau of Reclamation, and U.S. Army Corps of Engineers. State Parks improved collaboration with other state agencies, expanding interagency cooperation with the Tourism Department, Department of Game & Fish, Public Education Department, Interstate Stream Commission, Department of Transportation, Department of Veterans Services, State Land Office, Motor Vehicle Division, Department of Cultural Affairs, and the Aging and Long Term Services Department. An agency commitment to respect tribal sovereignty and government-to-government relationships resulted in State Parks adopting the first formal tribal consultation policy of any state agency, signing a historic Memorandum of Understanding with the Navajo Nation, maintaining a record number of Native Americans on the State Park Advisory Board, and completing numerous successful projects and consultations with New Mexico’s tribes and pueblos.

The past eight years also saw important investments in the most important agency resources —our employees—and long-overdue attention to basic agency needs and process improvements. Advancements in information technology were employed across all state parks including upgraded internet access. State Parks invested in critically needed equipment, significantly expanded staff training programs, revamped and improved park management plans and park planning processes, revised numerous policies, and expanded the awards program to recognize outstanding employees and State Park partners.

The fiscal fortunes of State Parks have risen and fallen the past eight years. The agency increased self-generated revenues consistently from 2005 – 2010, reversing the previous eight-year decline in both categories. This was accomplished while doing only one relatively minor fee increase to day-use fees. State Parks grew concessions-related revenue and laid the groundwork for new revenue sources, such as cabin rentals, before the recession forced retrenchment and unfortunately erased those gains. During 2009-2010, the State Parks budget was cut by \$3 million and staff worked creatively to manage a high vacancy rate while maintaining efforts and programs to avoid reductions in visitor services.

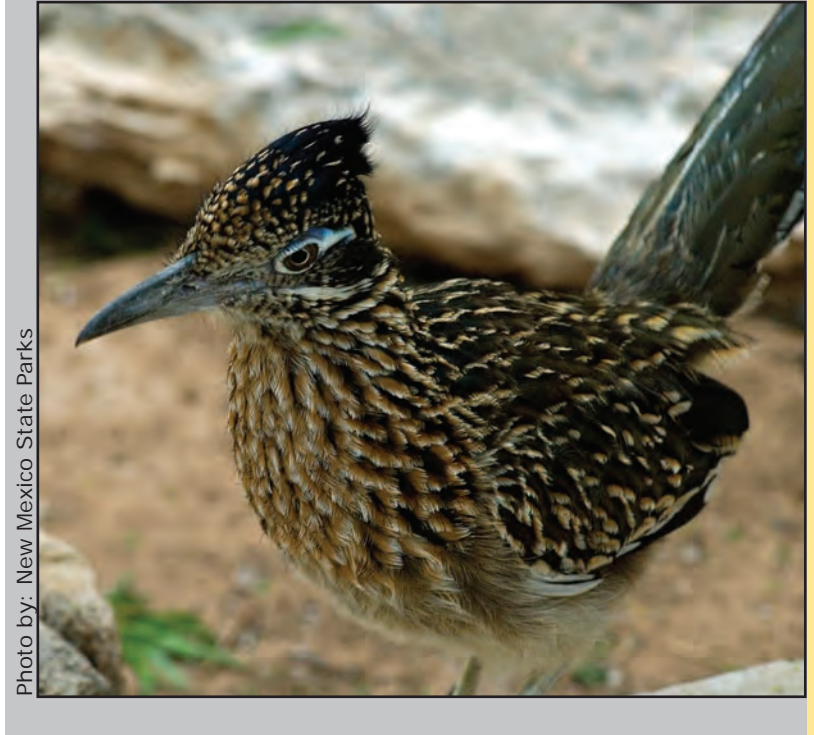


Photo by: New Mexico State Parks

A roadrunner at the Living Desert Zoo and Gardens State Park.

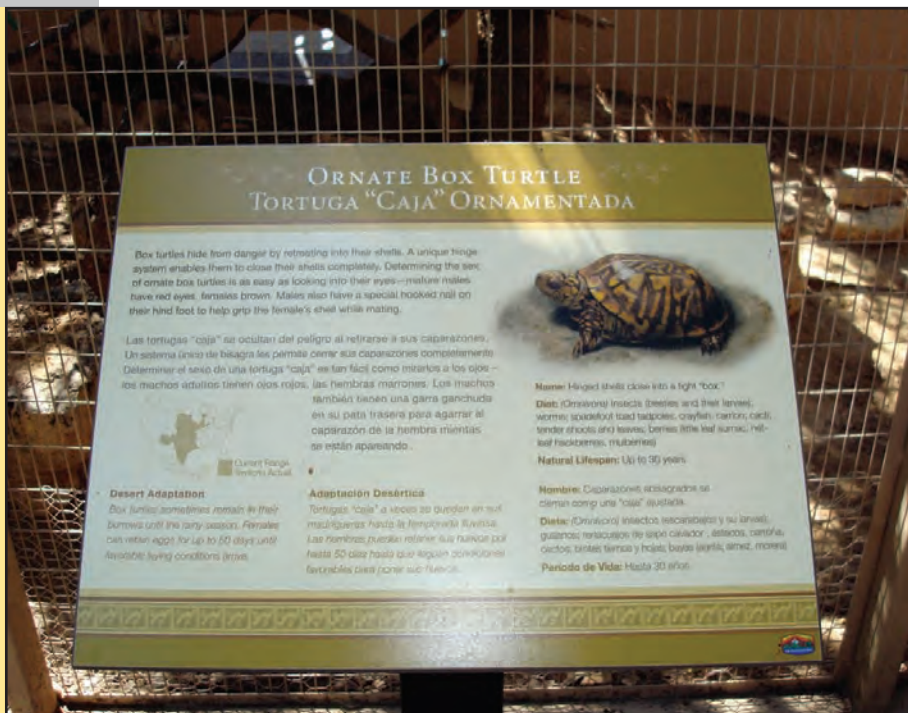
Programs

VISITATION, REVENUE, AND MAINTAINING VALUE FOR PARK VISITORS:

State Parks continue to demonstrate strong appeal. Our 35 state parks attracted over 4.7 million visitors, which was five percent higher than the preceding year and the sixth straight year that visitation has held steady or increased. Self-generated revenue from entrance and camping fees totaled over \$4.1 million – an increase of five percent in revenue over 2009. State Park entrance, camping and boating fees remained stable throughout 2010. Camping fees have not changed since 1998 and boat registration fees have not increased since 1984.

A large interpretive trail sign project at Living Desert Zoo and Gardens State Park won a second place award in a national competition.

Photo by: New Mexico State Parks Division



State Parks continued its advertising campaign of “Short Trips...

Long Memories,” adding dynamic weekly e-card mailings. State Park marketing joined the high definition era of television with its advertising production in collaboration with the Tourism Department. More than 90 park events included star parties, festivals, guided walks, live concerts, triathlons, boat races and fishing derbies across the state. Among many milestones and events, Sugarite Canyon State Park celebrated its 25th birthday.

New Mexico State Parks and the New Mexico State Parks Foundation hosted the annual conference of the National Association of State Park Directors (NASPD) in September,

with 221 attendees from 44 states and four Canadian provinces. *From Ancient Roots the Future Springs* showcased the unique cultural and natural heritage of New Mexico and highlighted sustainability concepts in parks. NASPD recognized New Mexico State Parks for hosting one of the most memorable conferences in the history of the organization.

BOATING SAFETY AND EDUCATION: State Parks manages the Recreational Boating Safety and Education Program on navigable waters across the state in accordance with the New Mexico Boat Act. The program’s goal is to minimize boating-related accidents and to have zero boating-related fatalities. State law requires all motorboat operators who were not 18 as of January 1, 2007 to take a boating safety education class and State Parks has been ramping up educational efforts to reach more boaters. Our boating safety program served 1,209 students in 2010 and continues to grow each year through multi-channel delivery of education—both through

instructor-led and on-line courses.

Unfortunately, tragedy in the form of drowning in state park lakes, struck too often in 2010; seven boating-related fatalities and two swimming fatalities occurred within state parks. Only one of these fatalities, however, was related to a boat accident; most victims were engaged in swimming and paddle craft activities and took unnecessary risks. A common denominator in virtually all of the deaths was the failure of the victim to wear a lifejacket—a simple step that can prevent tragedy. Experiences in 2010 underscore the need for more safety efforts, especially to encourage lifejacket wear and paddle sport safety.

New Mexico also continues to brace for the expected arrival of zebra and/or quagga mussels in our lakes, two AIS that can wreak havoc on ecosystems, recreation, and infrastructure. State Parks and the New Mexico Department of Game & Fish, along with federal agency partners, are working to prevent the introduction and spread of AIS. Agencies are conducting ecosystem monitoring, education, and watercraft inspection and decontamination.

Wind surfers at Storrie Lake State Park.

Photo by: New Mexico State Parks Division



Photo by: New Mexico State Parks Division



The new patio at the Hyde Memorial State Park Lodge.

FACILITY IMPROVEMENTS: State Parks strives to improve park infrastructure to offer better visitor facilities and services, streamline park operations, and save money. Steady efforts are required to upgrade campgrounds, repair water/wastewater systems, maintain park buildings, repave roads, renovate historic structures, address safety issues, expand boat and angling access, improve access for disabled visitors, and enhance interpretive exhibits. State Parks completed numerous projects in 2010.

At Hyde Memorial State Park, New Mexico's first state park, State Parks installed a new patio at the historic lodge. The old patio had deteriorated severely from snow and ice and was a serious safety issue for visitors. This project allows the lodge to continue as one of the more popular locations in Santa Fe County for weddings and other group events. The new patio also will reduce maintenance requirements for snow and ice removal during the busy winter sledding season.

At Oliver Lee Memorial State Park, the historic ranch house got a much-needed renovation. The roof was completely replaced to address a serious concern about the building's condition. Roofs at the park visitor center and at a comfort station were also replaced, projects that included new green features for solar hot water and photovoltaic energy generation. Similar photovoltaic projects went up in several other parks across the state, which will provide clean, renewable energy for years to come.

Eagle Nest Lake State Park benefitted from a substantial landscaping project as well as park-wide road improvements that paved the visitor center/north boat ramp parking lot, the main access road and the south parking lot.

Improvements to the Elephant Butte Lake State Park main entrance area include a new office, maintenance facility and entrance station. The new maintenance facility consolidates park and regional maintenance operations into one building. The new entrance station has three lanes to handle high traffic volumes. State Parks renovated the historic Dam Site restaurant, installing of a new foam roof, air conditioning and heating equipment, and new primary power and electrical panels.

Construction began in September on the long-awaited Rio Grande Nature Center State Park learning center, which will have classrooms and lecture/presentation space, work areas for volunteer docents and park interpretive staff, and new restroom facilities. Extensive native landscaping, rainwater harvesting, and a 12-kilowatt grid-tied photovoltaic system, are green building components. The construction will be completed by spring 2011. State Parks also began construction on a visitor center/maintenance complex at Cerrillos Hills State Park.

EDUCATION AND RESOURCE PROTECTION: State Parks was busy in 2010 with programs to protect natural and cultural resources and help connect people to nature. The Outdoor Classroom Program (OCP), a partnership with the Public Education Department, other state agencies, and numerous non-profit organizations entered its third year. The OCP aims to increase outdoor education and connect New Mexico children with the outdoors and was funded by legislative appropriations, the New Mexico State Park Foundation,

Photo by: New Mexico State Parks



State Parks replaced the roof of the historic Ranch House at Oliver Lee Memorial State Park to preserve the structure.

Photo by: New Mexico State Parks



The landscaping project at the Eagle Nest Visitor Center was completed to stabilize soils and conserve water.

Photo by: New Mexico State Parks



The new main entrance station at Elephant Butte Lake State Park.



Summer fun at Elephant Butte Lake State Park.

and funds from the “Kids to Parks” transportation program (a voluntary check-off option on the New Mexico Personal Income Tax form).

State Parks worked with diverse partners on the four main components of the OCP: teacher training/curriculum development, transportation grants, educational materials for students, and service learning. In addition to teacher training, State Parks staff taught an extremely successful course that certified 32 new Interpretive Guides that included staff from the division and other local, state, and tribal agencies. State Parks completed two years of independent evaluation of the OCP. On a 10-point scale, teachers gave the OCP a 9.7 rating

for improved academic achievement and a 9.5 rating for meeting state standards.

The education program completed significant signage and exhibit projects. State Parks completed the first phase of a large interpretive trail signage project at Living Desert Zoo and Gardens State Park, with 72 interpretive signs installed along the animal exhibits trail. The project received an award for outstanding wayside exhibits from the National Association for Interpretation. State Park staff designed and installed new exhibits for Vietnam Veterans Memorial State Park; designed and installed interpretive trail signs at Fenton Lake State Park and; green energy interpretive signs at Mesilla Valley Bosque State Park and Pancho Villa State Park.

State Parks was honored by the International Dark Sky Association, which designated Clayton Lake State Park as an “International Dark Sky Park” (only the 4th such designation in the U.S.).

State Parks completed cultural and natural resource evaluations for nearly 100 projects, ensuring compliance with environmental protection laws. State Parks also established its first-ever formal natural resources policy to provide protection and management strategies for park resources. The cultural resources program provided training for the Statewide Sitewatch Program, cultivating volunteers to monitor significant cultural resources in state parks.

The resources program developed important partnerships and received assistance from other agencies and volunteers. For example, State Parks signed an agreement with the U.S. Fish and Wildlife Service and received full-time assistance from a federal staff person to complete resource protection projects along the lower Rio Grande. Natural

resource partnerships resulted in \$267,000 in grants for restoration along the lower Rio Grande and at Eagle Nest Lake State Park.

RECREATIONAL TRAILS: Trails remain a top priority for New Mexicans—both in parks and throughout the state’s communities. The Recreational Trails Program awarded seven trail project grants in 2010 to various organizations, totaling \$870,000. The funding supports development of 19.5 miles of new trail and maintenance or restoration of four miles of existing trails. Projects include creation of 10 miles of trail near Gallup for use by motorized vehicle enthusiasts and 1.7 miles of pedestrian trail and a performance pavilion in Bloomfield along the San Juan River.

Another visionary trail project is the Rio Grande Trail. Parks completed a two-mile section of the trail at Leasburg Dam State Park and intends to complete another four-mile section of the trail in Elephant Butte Lake State Park in 2011.

DEDICATED STAFF, INCREDIBLE FRIENDS: State Parks built a partnership between the National AmeriCorps Corporation and the State Parks Volunteer Program to expand outdoor education efforts. This will fulfill some of the unmet educational needs in park communities and augment park staffing by helping them grow their volunteer programs. State Parks worked to establish additional volunteer camp host sites to accommodate the increasing number of volunteer applications, which average about 250 annually, and provide more volunteer assistance in parks at a time of growing staff vacancies. State Parks continue to nurture and grow relationships with citizen “friends groups” and will soon have twenty-one separate park support groups.

Staff development remains an essential function, both to ensure staff retains professional certifications and to increase skills so that State Parks can work smarter during times of limited resources. During the year, 256 employees received training benefits. State Parks also held the first-ever Leadership Academy, which gave 26 key managers an intensive, 40-hour training focused on improving human capital management.

The dedicated efforts of state park staff were recognized year-round by sky-high visitor satisfaction rates, and other indicators of service excellence. At the State Parks annual awards ceremony, Heron Lake State Park was recognized as the “Exemplary Park of the Year.”



Energy, Minerals and Natural Resources

Department



Photo by: Mikal Altomare

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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)

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