

2005 ANNUAL REPORT



ENERGY, MINERALS and NATURAL RESOURCES DEPARTMENT

Includes 2005 ACCOMPLISHMENTS REPORT

And 2004 DATA and STATISTICS



The New Mexico Energy, Minerals and Natural Resources Department is located in the Wendell Chino Building at 1220 South St. Francis Drive in Santa Fe. The Department's five divisions are located on the following floors:

- 1st Floor: Energy Conservation and Management Division (ECMD),
Administrative Services Division (ASD) and Forestry Division (SFD).
- 2nd Floor: State Parks Division (SPD)
- 3rd Floor: Office of the Secretary (OFS), Mining and Minerals Division
(MMD) and Oil Conservation Division (OCD).

In addition, the Youth Conservation Corps is located at 141 East DeVargas Street in Santa Fe, and various field offices are located throughout the state.

Division Contact Information:

ECMD: (505) 476-3310
MMD: (505) 476-3400
OFS: (505) 476-3220
OCD: (505) 476-3440
SFD: (505) 476-3325
SPD: (505) 476-3355 or 1-888-NMPARKS (667-2757)
YCC: (505) 827-1437
WIPP Transportation Safety Program: (505) 476-3224

Annual Report Editor: Wayne Lee

Graphic Design: Adverti-Zing, December 2005

Department Contributors:

ECMD: Harold Trujillo, Louise Martinez, Brian Johnson,
Michael McDiarmid, Dan Hagan

Forestry: Dan Ware, Kim Paul

MMD: John Pfeil, Susan A. Lucas Kamat

OCD: Ben Stone

Parks: Erica Asmus-Otero

WIPP: Anne deLain W. Clark

YCC: Wendy Kent, Darlene Valdez

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

NMSA 1978, Sections 69-5-7 (1933, as amended through 1989)

69-11-1 (1933, as amended through 1989)

69-11-2 (1933, as amended through 1989)

69-11-3 (1933, as amended through 1989)

69-25A-10 (1979)

69-26-1 (1933, as amended through 1989)

69-26-2 (1933, as amended through 1989)

69-26-3 (1933, as amended through 1989)

70-2-12 (1978, as amended through 1996)

Photos: Courtesy of the New Mexico Energy, Minerals and Natural Resources Department staff and files. Historical photos courtesy of the The Bureau of Geology and Mineral Resources Historical Photo Archive Collection. Cover photo by Kathy Clark.

Acknowledgements: Thanks to all the private and public organizations and individuals who contributed to this document, as well as to the many EMNRD contributors including Division Directors, Supervisors and Program and Project Managers.

Annual Report copies are available without charge from the New Mexico Energy, Minerals and Natural Resources Department, 1220 South St. Francis Dr, Santa Fe, NM 87505, telephone (505) 476-3200, fax (505) 476-3220, website www.emnrd.state.nm.us.



Cabinet Secretary Joanna Prukop

The New Mexico Energy, Minerals and Natural Resources Department protects and conserves the state's natural resources and provides recreational opportunities throughout New Mexico.

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

Our Mission is to position New Mexico as a national leader in energy (oil, gas, coal and renewable resources) and natural resource management (forests and state parks), and to ensure a sustainable environmental and economic future.

The department has four overriding Goals:

- Developing reliable supplies of energy and energy-efficient technologies and practices, with a balanced approach toward conserving both renewable and non-renewable resources;
- Ensuring the protection of the environment and responsible reclamation of land and resources affected by mineral extraction;
- Growing healthy, sustainable forests and managing them for a variety of users and ecologically sound uses; and
- Improving the state park system so that it protects New Mexico's natural, cultural and recreational resources for posterity and contributes to a sustainable statewide economy.

Created in 1987 through a merger between the Natural Resources and Energy and Minerals departments, the agency employs a staff of more than 500 professionals.

The Department is comprised of five programmatic divisions:

- Energy Conservation Management (ECMD)
- State Forestry (SFD)
- Mining and Minerals (MMD)
- Oil Conservation (OCD)
- State Parks (SPD)

In addition, the Administrative Services Division (ASD) provides Department-wide support, while the Office of the Secretary (OFS), headed

by Cabinet Secretary Joanna Prukop, is the Department's link to the Office of the Governor and provides agency-wide policy direction.

The OFS implements executive and legislative mandates and provides a point of contact for members of the public affected by EMNRD activities. Staff includes Deputy Secretary Tom Mills and the Office of General Counsel, headed by General Counsel Carol Leach.

The ASD provides the Department's infrastructure (budget, procurement, personnel development and information technology services) and operates EMNRD's data processing networks, which support electronic mail, voice mail and employee access to the World Wide Web.

The Department also includes two administratively attached programs: the Youth Conservation Corps (YCC), and the Waste Isolation Pilot Plant (WIPP) Transportation Safety Program.

The YCC, under Coordinator Wendy Kent, provides funding for the employment of New Mexicans between the ages of 14 and 25 to work on projects that will improve New Mexico's natural, cultural, historical and agricultural resources.

Secretary Prukop is the Chair of WIPP's Radioactive Waste Consultation Task Force. The group's Coordinator reports directly to the Deputy Secretary and acts as the primary liaison between the State of New Mexico and the Department of Energy on all issues concerning the safe transportation of transuranic waste through the state.

The Energy, Minerals and Natural Resources Department had an outstanding year in 2005. The Accomplishments Report outlines each Division's outstanding achievements throughout the year. The Data and Statistics Report provides the hard numbers from 2004 (the most recent figures available) and provides an array of charts, graphs and tables that depict resources, production, revenues, usage and other applicable figures.

2005 Accomplishments Report

Bill Richardson
Governor of New Mexico

Joanna Prukop
Cabinet Secretary
New Mexico Energy, Minerals and
Natural Resources Department

Energy, Minerals and Natural Resources Department

Table of Contents

Introduction	1
Organizational Chart	Inside Back Cover
Department Awards	3
Accomplishments Report	4-18
2004 Data and Statistics Section	
Table of Contents/Tables and Figures	20
Renewable and Secondary Energy Resources	21
Overview	22
Solar	22-23
Wind	24-25
Bioenergy	25
Geothermal	26-27
Hydropower	27
Electricity	28-29
Alcohol Fuels	30
Extractive Energy Resources	31
Oil and Natural Gas	32-35
Coal	36-37
Uranium	38
Extractive Non-Energy Resources	39
Overview	40-41
Copper	42-43
Gold and Silver	43
Molybdenum	44
Potash	44-45
Industrial Minerals	46-47
Natural Resources Map	48
Forest Resources	49-52
Recreational Resources, New Mexico State Parks	53-56
Youth Conservation Corps	57
Other Sources of Information	58

EMNRD Annual Award Winners

Secretary's Teamwork Award

District II Office (OCD)

Secretary's Award

Information Technology Office (ITO)

Medal of Valor

Jerry Tensfield (SPD)

Employee of the Year

Gail Macquesten (OCD)

Employee of the First Quarter

Jane Prouty (OCD)

Employee of the Second Quarter

Richard Chavez (Forestry)

Employee of the Third Quarter

Travis Reardon (SPD)

Employee of the Fourth Quarter

Gail Macquesten (OCD)

Certificate of Recognition

EMNRD from Department of Finance and Administration for meeting three of the six standards set forth in the state rule regulating responsibility for the accounting function.



Photo by Wayne Lee

Left to right: Artesia District Supervisor Tim Gum;
OCD Assistant General Counsel Gail Macquesten;
Cabinet Secretary Joanna Prukop;
SPD Ranger Jerry Tensfield ; ITO Manager Joe Montano

Agency Contacts

For more information on a particular topic, please contact the following EMNRD staff:

Contact Person	Division	Work Number	Report Section
Ben Stone	OCD	(505) 476-3474	Oil and Gas; Carbon Dioxide; Coalbed Methane
John Pfeil	MMD	(505) 476-3407	Coal and Humate; Uranium; Non-fuel Minerals
Harold Trujillo	ECMD	(505) 476-3318	Energy Efficiency
Louise Martinez	ECMD	(505) 476-3318	Transportation Efficiency
Brian Johnson	ECMD	(505) 476-3313	Solar; Geothermal
Michael McDiarmid	ECMD	(505) 476-3319	Electricity; Wind; Hydropower
Dan Hagan	ECMD	(505) 476-3320	Bioenergy; Alcohol Fuels
Kim Paul	FD	(505) 476-3343	Forestry Resources
Erica Asmus-Otero	SPD	(505) 827-1472	State Parks
Wendy Kent	YCC	(505) 827-1437	Youth Conservation Corps
Anne deLain W. Clark	WIPP	(505)476-3224	WIPP Program

Editor's Note: If you have any questions or comments regarding this document, please contact Editor Wayne Lee, EMNRD Public Information Officer, at:

Energy, Minerals and Natural Resources Department
1220 South St. Francis Drive • Santa Fe, NM 87505
EMNRD.OFS.PIO@state.nm.us • (505) 476-3226

ENERGY CONSERVATION AND MANAGEMENT



Louise Martinez, Acting Director

The ECMD oversees statewide energy efficiency, alternative transportation fuels and renewable energy programs. Program funding is provided primarily by the U.S. Department of Energy, enabling ECMD to deliver technical support and consultative services to New Mexico tribes, state agencies, schools and the general public.

Mission

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

Programs

ECMD operates four Renewable Energy Programs (solar, wind, geothermal, biomass); a comprehensive Energy Efficiency Program, which encompasses building energy codes and standards, sustainable “green” building, and energy performance contracting; and an Alternative Transportation Program that includes clean-burning fuels (ethanol, biodiesel, compressed natural gas, hydrogen).

In addition, the Division administers an overarching Clean Energy Grants Program that funds demonstration projects, feasibility studies, resource assessments, and educational outreach efforts proposed by public entities such as municipalities, counties, tribal governments, K-12 schools, colleges/ universities, and State agencies. (See page 25 for a listing of all projects funded to date.)

ECMD also is involved in regional activities, including issues pertaining to interstate electricity transmission, U.S.–Mexico border energy, and the Western Governors’ Association’s Clean and Diversified Energy for the West initiative.

Accomplishments

Renewable Energy: Much ECMD attention remained focused on renewable energy, especially given New Mexico’s world-class renewable resources and their potential to yield substantial economic and environmental benefits for our citizens. Governor Richardson again demonstrated his commitment to “leading by example” in renewable energy by requiring all State agencies to purchase at least 10 percent of their electricity from renewable sources. The Division facilitated these purchases and is monitoring compliance.

Solar: ECMD continued to implement major projects that use our extensive solar resource. Funding sources include the U.S. Department of Energy’s State Energy Program and our Clean Energy Grants Program. The Division also sponsored numerous public information and educational activities on solar energy at various conferences, workshops and other events, including the Taos Solar Festival, Expo New Mexico (State Fair), and the New Mexico Solar Energy Association’s Solar Fiesta. Two ongoing initiatives that are particularly noteworthy are the Concentrating Solar Power and Schools with Sol programs.



Diffusion furnace in Albuquerque. Source: Advent Solar

- **Concentrating Solar Power (CSP):** A comprehensive technical and economic feasibility study on developing a large (50 MW) CSP facility in New Mexico was completed under contract by Black and Veatch consultants in early 2005, with significant guidance and assistance from the Governor’s CSP Task Force. Several CSP business models identified in the study are being explored, as are incentives for commercial-scale project development.
- **Schools with Sol:** The Schools with Sol program installs full-scale solar energy systems in New Mexico’s public schools (K-12) for demonstration purposes, and assists with renewable energy education. The teachers in participating schools use the solar energy system on their campus to demonstrate first-hand how solar energy works and what the benefits are. System types featured in the program are solar photovoltaics, solar domestic hot water, and solar swimming pool heating systems. Governor Bill Richardson called for such solar energy systems to be installed at 10 schools each year through the end of his first term, for a total of 40 solar schools by December 2006.

Now in its third year, Schools with Sol has leveraged \$163,000 in State and Federal funding to complete installation of 12 systems—all of which are cutting utility bills and teaching New Mexico students about solar energy. Another 16 schools have been selected for funding sup-

port totaling \$330,000; and selection of the remaining 12 schools to meet the program goal (40) will be completed by early 2006. From Las Cruces to Chama and Bloomfield to Jal, the systems are being distributed to all areas of the state, both metropolitan and rural. See page 23 for a list of all Schools with Sol program participants to date, along with other relevant information on the installed systems.

Wind: ECMD's Wind Power Program performs a critical role in the development of wind power in New Mexico. With assistance from the U.S. Department of Energy's Wind Powering America initiative, we continue to convene and facilitate the activities of a NM Wind Energy Working Group. The Division also provides information, especially wind data, which has been extremely valuable to developers of utility-scale wind power plants. To date, ECMD has compiled and distributed three years of wind speed data collected at seven promising sites.

In 2005, ECMD installed a permanent, 100-meter-tall wind-monitoring tower to provide improved wind data for the industry. This project was motivated by the fact that modern turbines have rotors situated 100 meters or more off the ground. Also, a permanent installation will allow



A wind farm near House, NM. Source: PNM

future projects the opportunity to correlate their on-site data to ECMD's long-term data in real time, thus reducing the monitoring period required and improving accuracy. Finally, this permanent monitoring tower will reveal any trends due to climate change.

New Mexico now has a total of 407 megawatts (MW) of wind power capacity installed at four wind power plants. The first utility-scale wind power plant in New Mexico, southeast of Fort Sumner, was developed by FPL Energy and commenced operation in July 2003. Known as the New Mexico Wind Energy Center, it is 204 MW in capacity—the third-largest wind power plant in the world. All of its generated electricity is purchased by Public Service Company of New Mexico (PNM). The second utility-scale wind power plant was completed early in 2005. This 80 MW project, the Caprock Wind Ranch, is located south of San Jon in

Quay county and produces electricity for Southwestern Public Service Company (SPS)/Xcel. The third utility-scale wind power plant in New Mexico, the 120 MW San Juan Mesa Wind Project near Elida in Roosevelt County, became fully operational in late 2005, producing power also for SPS/Xcel. Another small wind power project (2.6 MW) near Clovis provides power for SPS/Xcel customers.

Geothermal: ECMD facilitates geothermal energy development for both electrical generation and direct-use thermal applications through various mechanisms such as policy analysis, educational outreach, and technical information exchanges. The Division participates in annual meetings of the U.S. Department of Energy's (DOE) GeoPowering the West program, and convenes and coordinates the activities of a diverse, multi-disciplinary NM Geothermal Energy Working Group, which holds annual meetings and assists in addressing geothermal issues.

The Working Group was instrumental as a networking forum that helped spark interest in a project now underway by the New Mexico Institute of Mining and Technology (NMIMT). This project—geothermal slim-hole exploratory drilling—resulted from a 2004 federal grant of \$628,965 awarded to NMIMT through DOE's Geothermal Resource and Exploration Definition (GRED) program.

The Division is using a \$100,000 competitive DOE grant secured in 2004 to evaluate and promote the potential of geothermal heating in Las Cruces and Albuquerque. A \$17,000 project also has been funded by DOE to develop case studies of ground-source heat pump systems in New Mexico.

A strategic plan was produced in 2005 to provide recommendations and promote action for future geothermal development in New Mexico. It presents extensive background information on geothermal efforts in New Mexico to date and provides recommended future actions in the direct use, power generation, and heat pump technology areas. The plan was prepared by New Mexico State University—Las Cruces, in collaboration with ECMD, DOE, Geothermal Heat Pump Consortium, and other Working Group members.

Biomass: ECMD's Bioenergy Program is focused on the increased development and use of biomass, including forest thinnings, dairy/live-stock manure, landfill gas, and other feedstock materials. The Division continues to convene and facilitate the activities of the NM Biomass Industry Development Working Group. Several biomass projects are currently underway, including those at Jemez Mountain Public School District northeast of Cuba in Rio Arriba County, at Ft. Bayard Medical Facility near Silver City in Grant County, and at Sierra Vista Growers southeast of Las Cruces in Dona Ana County.

- **Jemez Mountain School Biomass Heating Project:** This project, which commenced operation in January 2005, is the first large-scale, biomass-fired heating system utilizing wood chips from small-diameter tree thinnings in New Mexico. It is the result of successful collaboration between Federal and State governments, a non-profit organization, and the private sector.

Faced with soaring propane costs for heating, the rural Jemez Mountain School District secured a \$450,000 U.S. Forest Service-Economic Action Program grant in 2001 to design a biomass heating system for the campus. This funding was ultimately combined with \$63,000 from the non-profit La Jicarita Enterprise Community based in Mora; \$358,000 from Jemez Mountain; \$450,000 in capital outlay funds from ECMD; and \$542,000 in financing from Energy Control Inc., the Project Manager. The school will save approximately \$64,000 in propane, electricity and maintenance costs each year while meeting all U.S. Environmental Protection Agency air emission standards.

- **Ft. Bayard Medical Facility Biomass Heating Project:** This project is similar to the Jemez Mountain School project in that it will utilize small-diameter tree thinnings from the surrounding region in a wood-fired boiler to heat this State hospital run by the NM Department of Health. The Division is contributing \$750,000 in Capital Outlay funds it received in 2004 and has executed a Memorandum of Understanding with the NM General Services Department (GSD), which owns the facility, to accomplish the project. In mid-2005, GSD went out to bid for professional design/engineering services and a contractor has been selected. Construction should be initiated in mid-2006, with the biomass system operational by the winter heating season.
- **Dairy Biomass Electric Generation Project:** This biomass-to-energy project, which is a partnership among New Mexico State University, Gonzalez Dairy and Sierra Vista Growers, entails the design and construction of a two-phase, biofermentation system to convert carbon in dairy manure to methane, produce electricity for on-site use at the greenhouse operation, and interconnect with the local utility to sell excess power to the grid. The resulting solids will be used as a soil amendment for the greenhouse operation. After the project is underway, an energy and pollution assessment of the participants' commercial operations will be conducted to measure the energy conservation practices, costs and associated risks. At project completion, recommendations for improving the overall efficiency of the systems will be made, along with a calculation of a reduction of greenhouse gas emissions.

Energy Efficiency: Energy efficiency and conservation remains an area of intense focus by ECMD, owing to its significant potential to reduce energy consumption, improve the working environment, and save taxpayer dollars. Much progress was achieved by ECMD in facilitating efficiency improvements during 2005.

- **Building Energy Codes and Standards:** ECMD developed a New Mexico—specific version of the 2003 International Energy Conservation Code for commercial buildings and trained more than 250 people on the use of the energy code in 2005. Staff also provided one-on-one technical assistance on the codes to some 200 designers, builders and owner-builders. U.S. Department of Energy funding is used to update and maintain the energy-related components of the New Mexico commercial and residential building codes, with ECMD providing direct technical assistance to the NM

Construction Industries Commission and Construction Industries Division of the NM Regulation and Licensing Department.

- **Sustainable “Green” Building:** ECMD continued to expand and accelerate its efforts in green building, also known as “sustainable development.” The concept evolved from the realization that society is rapidly consuming finite resources in the deployment of standard building practices. Green building can involve everything from energy efficiency to water conservation to the use of environmentally friendly construction materials and techniques. To support the State’s efforts in this area, ECMD joined the U.S. Green Building Council



Dairy/livestock manure is a natural source of bioenergy. Photo by Wayne Lee

(USGBC)—the preeminent national organization leading the way in sustainable development—and actively participates in the activities of USGBC’s New Mexico Chapter.

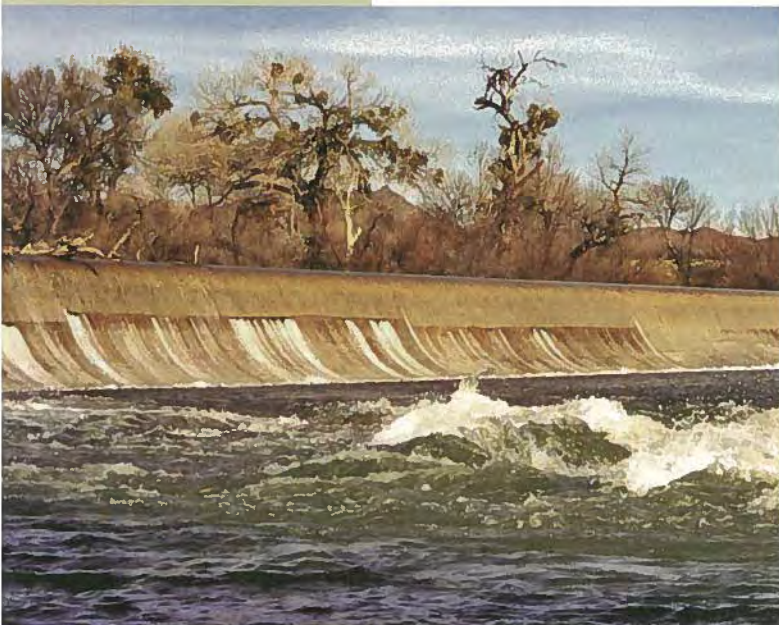
In 2005, ECMD worked with the State Parks Division to ensure the new Visitors Center at Eagle Nest Lake State Park is designed, built and certified as a green building under USGBC’s Leadership in Energy and Environmental Design (LEED) standard. Staff also provided technical assistance to the City of Santa Fe in its adoption of a resolution requiring the new Convention Center to achieve LEED certification with a 35-percent reduction in energy use.

The Division also worked with the Governor’s Office on a new Executive Order directing groundbreaking energy use and green building goals for State-owned buildings. In addition, ECMD is participating in the Governor’s Climate Change Action Council, making New Mexico one of the first states in the nation to address climate change at a policy level. The division also supports the goals of our state’s membership in the Chicago Climate Exchange, making New Mexico the first state in the country to join this organization.

- **New State-level Energy Efficiency Program and Incentives:** Two bills proposed by Gov. Richardson and passed by the NM Legislature in 2005 have created new opportunities for funding energy efficiency improvements in buildings. The Division provided technical testimony

on these bills in support of their passage and is now helping implement them. Through enactment of the Efficient Use of Energy Act, staff are working with investor-owned utilities to promote energy efficiency in both new and existing buildings. Similarly, adoption of the Energy Efficiency and Renewable Energy Bonding Act enables ECMD to work with the NM Finance Authority toward the issuance of revenue bonds whose sale will provide funding for efficiency improvements and the application of renewable energy technologies in State buildings and public schools. (See "Legislation" section next page for more detail.)

Alternative Fuels and Transportation: ECMD encourages and assists in the development of alternative transportation programs (ride-sharing, park-and-ride campaigns) as well as the acquisition and use of alternative fuel vehicles and infrastructure. The Division continued to provide 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.



New Mexico's waters have a 78.3 megawatt hydroelectric capacity. Source: EMNRD

- **Renewable Fuels:** In 2005, ECMD worked with the Governor's Office on Executive Order #2005-049 that requires State government fleets to increase their use of renewable fuels such as Ethanol (E-85) and Bio-diesel (B-20) to 15 percent by 2010. The use of renewable fuels for the transportation sector responds to energy demands and increased costs for conventional fuels.

The Division also promoted partnerships between public and private industry to develop bio-fuels infrastructure. As a result of these efforts, E-85 and B-20 fueling stations are now operating in both Albuquerque and Santa Fe. The Santa Fe Southern Railway supports this infrastructure development with its commitment to 100-percent use of B-20 in their locomotive. Additional stations are in the planning stages for Sandoval, Bernalillo and Santa Fe counties and will be brought to com-

pletion in 2006. Public information videos promoting the use of E-85 have been developed and are continuing to be distributed to fleet owners, automobile dealers and the general public through a contract with Vision Trust, Inc.

- **Hydrogen:** New Mexico continues to position itself as a leader in the hydrogen economy by planning for hydrogen demonstration projects in New Mexico. New Mexico is home to Los Alamos and Sandia National Laboratories that have many years of experience in research and development of fuel cells and advanced clean energy technologies. The state also has public-private collaborative organizations that are capable of coordinating hydrogen fuel activities.

Incentives: New Mexico continued to position itself as the "Clean Energy State," as declared in Gov. Richardson's Executive Order #2004-015, by adopting incentives that require or encourage individuals and businesses to deploy renewable energy and energy efficiency technologies. Such incentives include:

- **Renewable Portfolio Standard [Sections 62-16-1 to -10 NMSA 1978]**
Summary: Requires investor-owned utilities to have renewable energy comprise at least 5 percent of their total retail electricity sales by 2006, and at least 10 percent by 2011.
- **Compensating Tax Deductions for Biomass Materials and Equipment [Laws of 2005, Chapter 179; House Bill 995—2005 Session]**
Summary: Allows the value of certain biomass-related equipment and biomass materials to be deducted when computing a qualifying entity's tax liability under the state's Compensating Tax provisions.
- **Industrial Revenue Bond (IRB) Financing [Section 3-32-1 et seq. NMSA 1978; Section 4-59-1 et seq. NMSA 1978]**
Summary: Authorizes any county or municipality to issue bonds to finance various types of infrastructure projects, including electric generating plants powered by renewable energy sources.
- **Gross Receipts Tax Exemption for Wind Equipment [Section 7-9-54.3 NMSA 1978]**
Summary: Provides for an exemption from the Gross Receipts Tax for certain wind-powered electric generation equipment, provided the wind facility is financed with Industrial Revenue Bonds.
- **Net Metering of Customer-Owned Qualifying Facilities of 10 kw or Smaller [Title 17, Chapter 9, Part 571, NM Administrative Code]**
Summary: This rule requires public utilities to connect distributed energy facilities of 10 kilowatts or less to the grid. Any production in excess of a facility's consumption is credited to the entity at the retail electricity rate.
- **Renewable Energy Production Tax Credit [Section 7-2A-19 NMSA 1978]**
Summary: Provides a corporate income tax credit of one cent (\$0.01) per kilowatt-hour (kWh) for every kWh of renewable energy produced from wind, solar or biomass. A facility's capacity must be at least 10 megawatts.

Legislation

State Legislation: Several important “clean energy” bills were passed by the NM State Legislature and signed into law by Gov. Richardson during 2005. These include:

- **Energy Efficiency and Renewable Energy Bonding Act (HB 32, sponsored by Rep. Mimi Stewart:** authorizes the NM Finance Authority to issue up to \$20 million in bonds to fund energy efficiency and renewable energy renovations at existing state and public school (K-12) facilities. The resulting utility bill savings are used to pay the debt service on the bonds. New Mexico is the first state in the nation to approve this innovative funding mechanism.
- **Efficient Use of Energy Act (SB 644, sponsored by Sen. Carlos Cisneros):** authorizes and directs electric and gas utilities to implement cost-effective energy efficiency programs, reducing utility expenditures and keeping energy dollars in state. These programs, including incentives, should be available to utility customers during 2006.
- **Natural Resource Conservation Bids: Energy Performance Contracting (HB 720, sponsored by House Speaker Ben Lujan):** makes it easier and more cost-effective for public entities to upgrade their buildings in terms of energy efficiency, thereby creating a better working or learning environment while reducing energy consumption and expenditures.

Federal Legislation: The U.S. Congress passed, and President Bush signed into law on August 8, the Energy Policy Act of 2005 (HR 6/H. Rep. 109-190. (The full bill can be found at <http://energy.senate.gov/public/>.) Some “clean energy” highlights of the bill include:

- **Section 1301: Extension and Expansion of the Production Tax Credit for Renewable Energy:** The production tax credit for wind, closed-loop biomass, open-loop biomass, geothermal facilities, small irrigation power projects, landfill gas and trash combustion facilities is extended through December 31, 2007.
- **Section 1331: Energy-Efficient Buildings Deduction:** Commercial green buildings designed to use 50 percent less energy than that required under ASHRAE 90.1-2001 are eligible for a tax deduction of \$1.80/sq. ft. for 2006 and 2007.
- **Section 1332: Credit for Construction of New Energy-Efficient Homes:** Builders may receive up to a \$2,000 tax credit for a new home that would save at least half its energy compared to the 2004 International Energy Conservation Code; and up to \$1,000 for an ENERGY STAR manufactured home. The credits are available for 2006 and 2007.

- **Section 1333: Credit for Certain Non-Business Energy Property:** Homeowners may receive a 10-percent tax credit for the cost of building envelope improvement. The maximum credit is \$500, with windows receiving a maximum of \$200. The credit applies for 2006 and 2007.

- **Sections 1335-1337: Solar, Geothermal, and Fuel Cell Tax Credits:** A 30-percent income tax credit is established for residential solar photovoltaic (PV) and solar water heating systems, with a cap of \$2,000 per system. A 30-percent investment tax credit (ITC) is established for commercial solar PV, water heating and geothermal systems, with no



Forest thinnings are an important source of bioenergy. Photo by Larry Haley

cap. Businesses also can qualify for an ITC of 30 percent for stationary fuel cells, with a cap of \$500 per each 0.5 kilowatts. The credits are available for 2006 and 2007.

- **Section 1342: Clean Fuel Refueling Property:** A 30-percent credit is established for clean-fuel refueling property installed at a business or residence, with clean fuel defined as 85 percent ethanol, compressed/ liquefied natural gas (CNG/LNG), propane or hydrogen, and 20 percent bio-diesel.
- **Sections 1344-1346: Ethanol/Biodiesel Small Producer Credit:** A tax credit for small producers of bio-diesel and ethanol of 10 cents/gallon is established through 2008.

STATE FORESTRY



Arthur "Butch" Blazer, Director

Mission

The Division has lead responsibility for wild-land fire management on non-federal and non-municipal lands, maintaining fire suppression capacities and emphasizing firefighter and public safety. The Division pro-

motes healthy, sustainable forests in New Mexico for the benefit of current and future generations.

The Forestry Division assists New Mexico communities by evaluating those most at risk to wildfire and insect infestation by developing appropriate management programs and implementing mitigation projects. The Division assists in developing sustainable forestry that enhances quality of life by providing tree care training, distributing low-cost seedlings, developing resource management plans, and delivering forest health project funding.



SFD promotes healthy, sustainable forests—including grasses and flowers. Source: EMNRD

Programs

Forestry works to develop forest product industries (e.g., landscaping, construction, biomass) that use thinning by-products. In addition, the Division oversees two inmate work camps that utilize trained minimum-security inmate crews for work on conservation projects.

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

The Division assists landowners and communities with fire prevention planning; forest management; urban and community tree development

and management; low-cost seedlings for individuals; larger community projects through the Forest Re-Leaf and Tree New Mexico programs; conservation easements through the Forest Legacy Program; and numerous educational presentations on these topics.

Accomplishments

Forest and Watershed Health Plan: In 2005, Governor Bill Richardson signed the New Mexico Forest and Watershed Health Plan, making this landmark document state policy to guide implementation plans to improve forest and watershed health by government agencies and the private sector.

The Plan also contains recommendations that will help guide existing forest and watershed health projects, identify and remove project barriers, reduce the duplication of efforts by different agencies, and identify where resources are available and needed. The Plan is available at www.nmforestry.com.

Fire Planning Task Force: One of the Division's goals is to assist communities facing risk of wildfire. State Forestry has identified more than 220 New Mexico communities at risk from wildfire and is working with the New Mexico Fire Planning Task Force (NM-FPTF) to recommend and implement codes and ordinances to reduce structure ignitability and address fire management issues.

Fire Mitigation: The Division worked with communities at risk from wildfire to conduct assessment, protection, restoration and monitoring projects in cooperation with other agencies and groups. Forestry conducted fire mitigation activities in 56 of 220 communities at risk and continues to work on more than 100 fuels-treatment projects.

Fire Management: Wildland fire occurrence for 2005 was below average. In all, more than 576 fires resulted in more than 75,300 acres of state and private lands burned. The State of New Mexico had an emergency expenditure of more than \$4.3 million and more than \$1.5 million in emergency funds for pre-positioned resources.

Resource Rehabilitation and Protection: During 2005, the Division's Rare and Endangered Plant Program was able to purchase 116 acres of wetlands in Santa Rosa in order to dedicate a habitat home to the endangered Pecos Sunflower.

The Division also granted a total of \$38,872 through its Forest Re-Leaf program. The funds will assist six communities in tree planting and beautification. Funds granted through the program come solely from private and corporate donations.

In 2005, the Division also:

- Conducted 1.4 million acres of aerial survey to map insect and disease effects on state and private lands. An additional 4 million acres of piñon woodland was surveyed for bark beetle devastation. Piñon mortality for 2004 was estimated at 125,000 acres. Total devastation over the past few years is 825,000 acres.

- Provided wildland fire equipment for local government fire departments and trained more than 500 volunteer firefighters.
- Provided resource management technical assistance for more than 500 landowners and developed 49 Forest Stewardship plans on 38,900 acres to guide management and protection of forest resource.
- Provided federal grants for communities at risk from wildfire and thinned 2,500 acres of fuels to reduce fire danger.
- Distributed 195,000 seedlings for conservation.
- Supervised 8,000 person-days by Inmate Work Camp crews to complete conservation projects on public lands.

Raton, where large areas of coal mine waste were reclaimed and a stream channel was restored, to the Gold Hill project near Lordsburg where 35 abandoned mine openings were safeguarded.

Of particular note is the first phase of the Lake Valley project, located south of Hillsboro, where 82 mine openings were closed in an historic mining district that is open to the public. The project entailed a variety of innovative mine closures to allow bats and other wildlife to continue using the abandoned mines as habitat. For its work as the construction contractor at the Lake Valley project, St. Cloud Mining Company received an Excellence in Reclamation Award.

MINING AND MINERALS



Bill Brancard, Director

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 also

strives to make New Mexico a leader in responsible mine operation and reclamation. New Mexico remains a leading mining state with significant production of coal, copper, potash and molybdenum.

Programs

Four MMD programs implement state and federal laws that regulate the operation and reclamation of both coal and non-coal ("hard rock") mining facilities; support the reclamation of abandoned mine sites; and provide for the collection and dissemination of data on mining.

Accomplishments

Mine Reclamation: 2005 was a notable year for mine reclamation in New Mexico, with a number of significant reclamation projects occurring across the state. The Molycorp Questa Mine completed a large mitigation project at the Goathill North rockpile. Work began in 2003 when concerns about stability and potential failures were raised concerning the rockpile. Over a two-year period, Molycorp undertook an extensive study of the geotechnical stability, designed and implemented a mitigation plan, which involved a massive reshaping of the rockpile. The work was conducted within an ongoing framework of public and agency review and feedback. For its work, Molycorp received an Excellence in Reclamation Award from MMD.

MMD completed several major abandoned mine reclamation projects in 2005. These projects range from the Yankee-Vukonich project near



Molycorp, Inc.'s Questa Mine. Photo by Wayne Lee

The Abandoned Mine Land (AML) Program continues to seek innovative solutions to provide long-lasting reclamation. The ongoing waste pile reclamation project in Sugarite State Park, for example, is using straw bale terraces and other erosion-control techniques to provide for revegetation in a difficult environment.

Successful coal mine reclamation projects also were recognized in 2005. Five bond release applications were received by MMD, covering nearly 400 acres and allowing for the release of more than \$13 million in financial assurance.

Included in the bond release approvals is a final bond release for the Cimarron Mine at York Canyon, where MMD worked with the mine operator and the landowner to tailor the post-mining land use that best suited the current use of the land.

MMD continues to encourage operators to pursue innovative reclamation strategies. BHP Billiton, whose San Juan Mine received the highest national award for reclamation in 2004, continued its innovative regrading and channel design techniques at its nearby La Plata Mine.

Major reclamation projects that began in 2005 will continue in 2006. Phelps Dodge, which reclaimed several hundred acres of inactive tailings and mine waste piles in 2005, is planning to expand its reclamation work

at the Tyrone Mine and ultimately reclaim much of the inactive areas of the Chino Mine. Phelps Dodge also has completed reclamation at a number of smaller, closed facilities. Test plot construction began this year at both Chino and Tyrone Mines. The resulting data will help the company improve reclamation techniques at all its facilities in New Mexico.

Regulatory Issues: Several significant regulatory milestones were reached in 2005. The New Mexico Mining Act of 1993 required that all existing hard rock mines develop comprehensive reclamation ("close-out") plans and provide financial assurance adequate to cover the cost of final reclamation. These plans required years of work by the companies and agencies to reach agreements. In March 2005, the Phelps Dodge Continental Mine became the final major existing mine in the state to receive approval for its closeout plan. New Mexico now holds nearly \$1 billion in financial assurance for coal and hard rock mines.

MMD also approved several new mines and mine expansions in 2005. The proposed El Segundo coal mine located north of Grants received the first new coal mine permit since 1999. The mine, operated by Lee Ranch Coal Company, will cover 15,000 acres and is projected to produce

Decision Makers Tour covered mining issues in northern New Mexico and involved more than 30 legislators and state and federal officials in two days of site visits, lectures and lively discussions.

The 2005 Earth Science Achievement Awards honored the work of a public official, Sen. Carlos Cisneros, and a scientist, Dr. John Hawley.

OIL CONSERVATION

Mark Fesmire, Director



Photo by Monica Kuehling

Mission

The Oil Conservation Division administers policy 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 that include:

- Preventing waste of oil, gas and geothermal resources either underground or on the surface;
- Protecting correlative rights of mineral interest owners;
- Preventing loss or contamination of freshwater supplies and protection of human health and the environment during oil, gas or geothermal operations; and
- Collecting records and statistics on regulated operations.

Offices and Bureaus

The division is organized into four district offices and five bureaus responsible for different aspects of regulating the oil and gas industry.

The division's district offices issue drilling permits, inspect wells and associated facilities, respond to spills, investigate violations and institute enforcement actions.

As wells play out and become uneconomical to operate and produce, they must be plugged, primarily to protect underground sources of drinking water by preventing the migration of oil, gas and saltwater from the producing zones to shallower fresh water zones.

Occasionally, wells are left "orphaned" by a company that becomes insolvent. When that happens, plugging bond funds are not sufficient to plug the wells that are left behind. It then becomes the State's responsibility to have the inactive wells properly plugged.

The Engineering and Geological Services Bureau processes administrative applications for exceptions to OCD rules, and its staff serves as division-appointed Hearing Examiners for OCD hearings.



Phelps Dodge Hidalgo Smelter (now inactive) in Playas, NM. Source: MMD

more than 100 million tons of coal over 30 years. MMD also approved the Copper Mountain expansion of the Phelps Dodge Tyrone Mine. This approval is notable for the coordinated permitting process undertaken by MMD, the New Mexico Environment Department and the U.S. Bureau of Land Management.

Public Outreach: MMD continued to expand its public outreach efforts during 2005. Of particular note is the regular "publication" of an electronic newsletter, MMD Notes. The newsletter, which provides information on events involving MMD and mining activities in the state, is sent to a list of interested readers and is also available on MMD's newly redesigned website www.emnrd.state.nm.us/EMNRD/Mining/index.htm.

MMD also assisted the Bureau of Geology at New Mexico Tech in the development of a field conference and an awards ceremony. The 2005

The Environmental Bureau develops and enforces all of the environmental regulations and programs in the oil and gas industry for the prevention of ground water contamination.

The Legal Bureau assists the General Counsel in providing legal advice and support to the Energy, Minerals and Natural Resources Department, working principally with the Oil Conservation Division. It also advises OCD and the Oil Conservation Commission regarding legal and operations issues, and participates in the formulation of Division rules and proposed legislation.

The Automation and Records Bureau is responsible for collecting and dispersing monthly well production and injection data, plus information about wells, completions, spacing, pools, operators, inactive wells 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 OCD's budget and procurement needs.

The Administrative Bureau provides administrative support for the entire Division. The bureau is responsible for the clerical and secretarial duties required by the Division.

Accomplishments and Initiatives

The OCD has embarked on a massive effort to update and modernize some existing rules and promulgate new rules pertaining to compliance and enforcement efforts, surface waste management facilities and pits.

The division has implemented a new website boasting several improvements, including an updated version of the OCD Online permit applications. The site now has a more cohesive look and feel with more statistics, frequently asked questions, publications and even a very informative "Kids' Page."

In 2005, the OCD oversaw a \$2.5-million clean-up of a contamination site within the city limits of Eunice—the largest-ever such clean-up funded by the State. The funding was allocated from the reclamation fund to remediate an old, abandoned oil-treating facility. The project will be completed in spring 2007.

The OCD levied (as of mid-December) \$135,500 in fines for noncompliant operators in 2005. (This compares to \$135,500 collected in 2004, \$18,000 in 2003, \$12,500 in 2002, and \$2,000 in 2001.)

OCD provides an essential link between the oil and gas industry and state government.

STATE PARKS

Dave Simon, Director



Mission

Formed as the New Mexico State Parks Commission in 1933 through the work of the Civilian Conservation Corps, the New Mexico State Parks Division (SPD) has grown into a 33-park system that includes 21 lakes and



City of Rocks State Park. Photo by Erica Asmus-Otero

encompasses 182,978 acres of land. The Division's staff of 289 full-time employees strives toward the goal of protecting the state's precious natural and cultural resources while providing recreational and educational opportunities to the public. More than 4.2 million people visited at least one state park in Fiscal Year 2005, injecting more than \$200 million into the state's economy.

Accomplishments

Rising Above and Beyond Challenges; State Parks During a Drought:

The past year was one of progress and innovation for the New Mexico State Parks Department. The Division continued the steady work it has done best for 70 years—serving visitors—while launching new initiatives and accomplishing several important milestones and firsts. Throughout the year, SPD remained focused on its key goals: providing first-class recreation, protecting heritage resources and upgrading facilities, while focusing on access, education, partnerships and safety.

The best news overall was the return of precipitation to a parched state suffering from drought. A relatively wet winter of 2004-2005 meant ample spring runoff, filling lakes and a greener landscape. Much-

improved recreational conditions, combined with improved park facilities, additional programs and aggressive marketing by SPD meant that our parks had more to offer than ever.

And the public responded. Visitation in FY 2005 (July 2004-June 2005) was approximately 4.2 million, up 9 percent from FY 2004 and the highest visitation number in five years. The overall increase stopped a streak of seven straight years of declining visitation. Of the 32 State Parks operating in FY05 (the 33rd opened on November 11, in FY06), 22 parks (69 percent) showed visitation increases, some quite substantial. The Division's largest and most popular park, Elephant Butte Lake State Park, saw a 14-percent increase in visitation from FY04, partially recovering from visitation declines suffered during the previous three drought years and the lowered water levels that had resulted. Overall, SPD exceeded the FY05 performance measure for visitation set by the Legislature (4 million visitors) by 5 percent.

The State Parks efforts to welcome visitors back to the parks, and to attract new visitors from both inside and outside New Mexico, were enhanced by support from the Legislature for SPD marketing programs.



Heron Lake State Park. Photo by Wayne Lee

The Legislature earmarked \$50,000 in FY05 specifically for State Parks marketing—a first—allowing the Division to expand advertising and outreach. Those marketing funds increased to \$100,000 in FY06, which will spur even more activity and progress in this area during the current fiscal year.

SPD is an “enterprise agency” in state government, responsible for self-generating as much of its budget as possible, so revenue is a constant concern. SPD revenue is closely correlated with visitation and boating activity, and those numbers are dramatically affected by lake levels. The recent drought years have reduced revenue from park fees, boat registrations, boat excise taxes and other sources, creating real budget strain. Drought and the accompanying impacts on visitation also have negatively impacted many New Mexican communities intertwined with the State Parks.

Fortunately, with visitation growth, 2004-2005 also saw some welcome progress in the financial areas—revenue was up 16 percent in FY05 from FY04, with 27 parks (87 percent) recording revenue increases. These results also halted a string of years with declining revenue. Nonetheless, the significant fiscal problems persisted and SPD was forced to enact aggressive vacancy savings (delays in filling positions), spending restrictions and other efficiency steps in order to offset a total budget shortfall of \$1.5 million. As a result, the Division also met the FY05 performance measure for budget set by the Legislature by self-generating 66 percent of its budget.

Heritage Resource Protection:

State Parks protects outstanding, irreplaceable natural and cultural resources that are vital to preserving the heritage of New Mexico. Under the leadership of Governor Richardson and with the support of the Legislature, SPD has embarked on a program to acquire key lands to expand existing state parks and to establish several new state parks.

In July 2004, Eagle Nest Lake State Park was dedicated as New Mexico's 32nd state park. In its first full year of operation, Eagle Nest welcomed more than 70,000 visitors. The SPD has begun \$1.5 million worth of major park development projects.

After nearly two years of preparation, SPD dedicated Vietnam Veterans Memorial State Park in November 2005 as the 33rd state park. State Parks assumed ownership and management of the site, which was built in 1971 as the first Vietnam Veterans Memorial in the nation, as a donation from the David Westphall Veterans Foundation. This park is now the first and only state park expressly dedicated to the Vietnam Veterans theme in America. Major upgrades to the Memorial are planned over the next few years.

State Parks also broke ground on a 34th state park, the Mesilla Valley Bosque State Park near Las Cruces. Over the past year, SPD worked to place more than 300 acres in park management status, negotiating a lease with the International Boundary and Water Commission, a Joint Powers Agreement with the New Mexico Department of Game and Fish, and purchasing a conservation easement and fee title lands from a private land owner. The SPD finished the Master Plan for the park, began facility design and hired initial park staff. A park opening in early 2006 is planned.

In 2005, the Legislature also authorized establishment of and appropriated preliminary development funds for two other state parks: Shakespeare Ghost Town (in Lordsburg) and Cerrillos Hills (in the Galisteo Basin between Albuquerque and Santa Fe). State Parks continues to explore options for both projects.

During the year, SPD also completed acquisitions to expand Coyote Creek State Park (480 acres), Manzano Mountains State Park (20 acres), and City of Rocks State Park (550 acres). Other potential acquisitions are in the works for Living Desert Zoo and Gardens State Park, Sugarite Canyon State Park and Oliver Lee Memorial State Park.

In July 2005, State Parks completed a multi-year effort to dispose of 1,000 acres of property in Eddy County surplus to its needs. The outcome was beneficial in several ways. The NM Interstate Stream Commission obtained 700 acres, retiring the water rights on the property in order to help the state meet its water delivery obligations under the Pecos River Compact. Proceeds that SPD received from the sale will be reinvested into acquiring other park properties. Eddy County received the remaining 300 acres as a donation from SPD in order to create a public shooting range and recreation facility.

Also on the land protection front, in 2005 the Legislature enacted the State Park Land Protection Act, sponsored by Sen. Carlos Cisneros. The Act gives State Parks authority to act quickly and proactively to acquire land adjacent to existing state parks, and was one of the most significant and beneficial changes to State Park statutes in years.

Upgrading Park Facilities and Recreational Access: SPD continued to make progress in upgrading park facilities through its capital infrastructure program. The program is funded by a portion of Governmental Gross Receipts Tax that flows to SPD as well as various boating funds. Since 1995, this program has provided more than \$45 million for park improvements. In addition to major capital projects, the GGRT program funds regular, ongoing needs at parks such as picnic tables and shelters, education exhibits, and upgrades to electrical and water systems.

During 2004-2005, a few of the most significant projects included:

- Major upgrades to campgrounds at Navajo Lake State Park and Ute Lake State Park;
- Construction of a new visitor center and maintenance building at Sumner Lake State Park;
- Boat ramp extensions and access improvements at Elephant Butte Lake State Park;
- Improvements to picnic facilities at the Spring Canyon unit of Rockhound State Park;
- Completion of the first phase of park development at Eagle Nest Lake State Park;
- Construction at City of Rocks State Park of SPD's first astronomy observatory to support night-sky education programming;
- Groundbreaking and major progress on a new \$1.5 million visitors center/museum at Pancho Villa State Park, which is scheduled to open in March 2006.

In addition, cooperation between SPD and the New Mexico Department of Transportation continued to strengthen under a Memorandum of Understanding signed by both agencies. A signature success under this MOU was the complete reconstruction of the 2.3-mile road to Morphy Lake State Park, which was an historic

accomplishment that will dramatically improve visitor access. (The County of Mora also collaborated in this project.)

Trails also emerged as a major new focus for Governor Richardson and SPD in 2005. State Parks completed its second new mountain biking trail (the 3.1-mile "Skidmarks Trail" at Bottomless Lakes State Park) and announced a goal to build 100 miles of new trails by 2010. The Legislature also funded the Governor's requests for \$4 million in trails projects and to establish SPD's first-ever trails coordinator position. State Parks also distributed \$660,000 in Federal Highway Administration funds for other trails projects around the state.



Vietnam Veterans Memorial State Park. Photo by Janice Krish

Education—Parks as Classrooms: Education is a major part of SPD's mission. The Division continued to deliver on this mission in 2004/2005 and also laid the groundwork for a major expansion of its education program in future years.

The Legislature set a performance measure for SPD to conduct 1,800 education programs in FY05. SPD exceeded that target by 40 percent, conducting 2,571 programs. Among other successes, the Division took a major step toward expanding its "Reach for the Stars" night sky education initiative when the Legislature provided \$80,000 in new funding for this program, which has proven to be extremely popular and successful. As part of "Reach for the Stars," SPD accomplished another first: opening the Division's first astronomy observatory at City of Rocks State Park near Deming. A second observatory is under construction at Clayton Lake State Park, and others may follow.

The Division also released two major reports on the status and future of State Park education programs. The first report, *Nuestro Ninos y Nuestros Parques—Teaching Our Children in New Mexico State Parks* (January 2005), was a comprehensive review of SPD programs by a "blue ribbon" panel of 20 outdoor education experts. The report made numerous recommendations, which the Division began implementing.

Nuestro Ninos also led to the passage of Senate Joint Memorial 24 (sponsored by Sen. Cynthia Nava) during the 2005 legislative session, which called for a study of how State Parks and the NM Public Education Department (PED) could better collaborate. This subsequent report, *Making Schools Work Outdoors* (October 2005), called for a bold SPD-PED partnership to dramatically expand outdoor education in New Mexico.

The 2005 Legislature also took a historic step to assist SPD education efforts by passing the State Park Donation Act, sponsored by Sen. Phil Griego. The Act put State Parks on the state Personal Income Tax refund form, permitting taxpayers to voluntarily designate a portion of their state income tax refund for the "Kids in Parks" education program for children.

Partnerships and "Friend Raising": Partnerships of all kinds are essential to State Parks. More than ever, State Parks, communities and their citizens, other government agencies and the private sector need to work together—to improve public lands, better serve visitors, promote tourism, create economic opportunity, respond to changing environmental conditions (such as drought), and generally improve the quality of life in New Mexico.



Wetlands are an essential element of many State Parks. Photo by Eric Weisman

Volunteers contributed more than 120,000 hours to State Parks over the past year—the equivalent of over 60 extra employees and \$1 million in salaries—while adding new skills and talents to the Division. From campground hosts to interpretive guides, volunteers continued to play a vital role. In 2005, the Legislature gave SPD better tools to bolster the volunteer program by passing the State Park Volunteers Act, sponsored by Rep. Brian Moore.

State Parks also continued to expand partnership with "friends groups." There currently are 16 state park "friends groups," eight of which signed new, formal cooperative agreements with SPD over the past year. SPD staff continues to work with citizens in communities near state parks to reach the goal of establishing a friends group for every park. State Parks also assisted the Foundation for New Mexico State Parks with their efforts to raise funds to supplement the Division's budget.

In October 2005, SPD sponsored its first-ever "Partnership Conference," held in conjunction with the Division's annual staff training event. The conference was attended by nearly 100 partners of all types from across the state and was a big success.

SPD continued to show leadership within state government in another particular area related to partnerships: relationships with Native American tribes and pueblos. In February 2005, State Parks became the first state agency to finalize a formal tribal consultation policy and comply with Governor Richardson's Executive Order on this subject. The Division also signed a Memorandum of Agreement with the Navajo Nation to collaborate on park and recreation issues and increased dialogue over park development plans and other management actions taken by the Division.

Safety—Protecting Visitors: Nothing is more important to SPD than ensuring the safety of park visitors. Boating safety is a major emphasis, since under the New Mexico Boat Act, SPD has jurisdiction over recreational activities on the surface waters of the state. State Parks staff does extensive public education in the parks with boaters to promote safe practices, and rangers conduct safety and enforcement patrols on the state's lakes. In addition, SPD offers free boating safety classes to the public. In 2005, SPD attracted 44 percent more participants to its boating safety courses compared to 2004. Despite significant increases in visitation to the state's lake parks during the peak season (Memorial Day through Labor Day), there was only one drowning within the State Parks during 2005.

Nonetheless, SPD's goal is to have the best boating safety program in the nation, and this subject received increased attention from the Division. In its 2005 session, through Senate Joint Memorial 15, the Legislature requested that SPD study New Mexico's boating safety education system and to make recommendations on how to improve the program.

SPD released its report—*Improving Boating Safety in New Mexico*—in late 2005. Currently, New Mexico does not require operators of motorboats to have any safety training. The report found that 84 percent of boat operators involved in accidents from 2001-2005 had no formal boating safety training. Thirty-three other states do have some type of safety education requirement and some states that implemented a mandatory safety program saw boating fatalities reduced by anywhere from 22 to 61 percent. Consequently, SPD recommended that New Mexico enact a requirement for mandatory boating safety education, which could be phased in over a number years on an age basis.

In another step to bring advanced safety approaches to the State Parks, SPD obtained 33 Automated External Defibrillators (AED's). These devices can save lives in cardiac arrest situations, and SPD will install at least one AED in each state park.

SPD also experienced a first of another kind: the first officer-involved shooting incident in the Division's history. During a confrontation that escalated, an SPD ranger fatally shot a park visitor at Elephant Butte Lake State Park in August 2005. The outcome of the incident is still pending.

Conclusion

The 2004-2005 year was one of great accomplishment for SPD, even as the Division still struggled with the effects of drought. With increased snowpack and precipitation, the Division turned a corner on visitation and revenue, and moved into exciting new territory with expanded programs and new park projects.

For its outstanding overall performance under adverse circumstances, Caballo State Park was honored as the Division's "Park of the Year." Division employees Rick Grothe (Cimarron Canyon State Park), Paula Roybal (Santa Fe Office), and the three-person team of Michael McFadden, Kelly Richerson and Don Oliver (foreman of SPD's construction crew) won Division Director's Awards for special accomplishments. John Vigil, Park Superintendent at Ute Lake State Park, won the Secretary's Award for exemplary performance. Randy Trujillo, Park Technician at Fenton Lake State Park, won the Governor's Award—the Division's highest honor to an employee in the field.

WASTE ISOLATION PILOT PLANT TRANSPORTATION SAFETY PROGRAM



Photo by Anne deLain W. Clarke

Anne deLain W. Clark, Coordinator

Mission

The Waste Isolation Pilot Plant (WIPP) Transportation Safety Program is a cooperative effort among the shipment-corridor states, tribes, local officials and the U.S. Department of Energy. Its goal is the safe and uneventful transport of radioactive waste.

Programs

As the host state for WIPP, New Mexico's role in the program is pivotal. Under the Energy, Minerals and Natural Resources Department's leadership, and through the New Mexico Radioactive Waste Consultation Task Force, six state agencies collaborate to ensure that radioactive waste traveling into or through New Mexico does so safely.

The WIPP Working Group manages and implements the WIPP Transportation Safety Program. The program includes the setting and updating of policies and operating procedures; training and equipping emergency responders along all 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 point of origin or at the New Mexico ports of entry.

Accomplishments

In 2005, the WIPP Coordinator successfully represented the interests of New Mexico and the member states of the Western Interstate Energy Board on how funding authorized by the Nuclear Waste policy Act will be allocated and spent nationwide. Other WIPP Transportation Safety Program accomplishments:



WIPP trains and equips emergency responders and ensures the safe transportation of radioactive waste.

- Instituted six Memoranda of Understanding (MOUs) between the state and jurisdictions/tribal entities to receive radiation monitoring and emergency response equipment through the Homeland Defense Equipment Reuse Program;
- Instituted 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;
- Provided emergency response equipment and manpower for Hurricane Katrina relief in Louisiana;
- Provided new and recalibrated emergency response equipment to 18 New Mexico communities; and
- Trained more than 150 emergency responders in eight New Mexico communities.

YOUTH CONSERVATION CORPS

Wendy Kent, Executive Director



Mission

Promote the education, success and well being of the youth of New Mexico through the conservation and enhancement of the state's natural and community resources.

Goals: Together We Strive For:

- Healthy natural resources and lasting community benefits,
- Instilling values of hard work and accomplishment, and
- Promotion of education and training.

The Youth Conservation Corps accomplishments were many and varied for FY 2005. Corps members...



Jemez State Monument (top) and Cuba Independent Schools projects. Photos by Darlene Valdez

- Beautified our communities and made them safer;
- Helped protect our natural resources by installing erosion control structures in streambeds and on hillsides;
- Strengthened our tourism and recreation industries by constructing new camping sites at our State Parks;
- Improved our workforce by learning new job skills and building a stronger work ethic; and
- Completed many other important projects that benefited the quality of life for New Mexicans.

The YCC Commission continues to improve program services. A web-based Request for Proposal (RFP) process was developed and tested in readiness for implementation in the next grant cycle. The RFP is just part of a larger plan to streamline administrative requirements. The result will be less time spent on administrative duties and more time spent where it should be—on the Corps members.

Other Commission Accomplishments included:

- Providing more than 15 workshops and presentations to project sponsors and the general public;
- Developing a user-friendly, web-based reporting system for our project sponsors;
- Designing and constructing a web-based database to be used by project sponsors in reporting deliverables;
- Touring the Silver City area to gather information from constituents to improve customer service;
- Providing a positive, varied, work environment to New Mexico Fellow Caroline Killian; and
- Bringing the Corps member database up-to-date.

The Commission awarded a total of \$2,663,824.17 in grants in FY 2005 (see Data and Statistics section, p. 57.) The Commission met in October 2005 to review and award more than \$2.9 million in grants for the next cycle of projects. These projects will be completed in FY2006.

Educational Opportunities: The Corps provided a total of 27 scholarships totaling \$25,517 in FY2005.

The Commission believes that providing quality educational opportunities to Corps members is imperative in developing employability skills so that our youth can enter the regular work force and be successful in finding employment.

To that end, the Commission ensures that each project sponsor incorporates educational opportunities into its project. Of the 222,797 employment hours logged in FY2005, 18 percent (approximately 40,103 hours) were spent in classroom educational activities and on-the-job training. Each project sponsor identifies the needs of the populations it serves and designs the educational program for Corps members around those needs.

Examples of educational experiences include:

- CPR and first aid certification
- wildland fire fighter certification
- workplace safety
- anger management
- parenting skills
- teamwork
- GED
- carpentry
- masonry
- environmental studies, and
- trail construction

YCC staff and project sponsors work with local school districts, vocational/technical institutions and community colleges to develop programs so that Corps members can earn credit hours for participating in a YCC project, either at a secondary school or at a post-secondary institution. Corps members earned approximately 70 credits to use toward graduation.



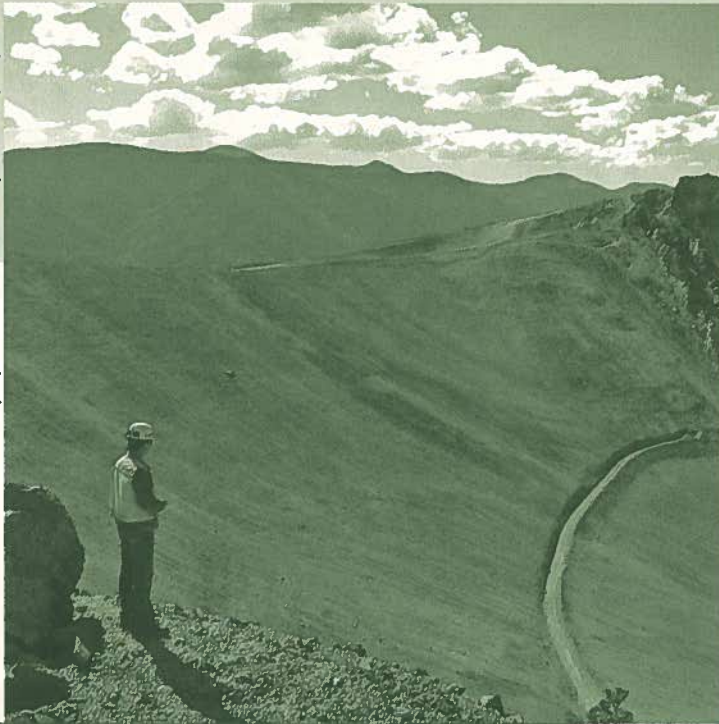
Santa Fe Children's Museum project. Photo by Darlene Valdez



EMNRD protects and conserves New Mexico's natural resources and provides recreational opportunities throughout the state. Photo by Wayne Lee

2004 DATA and STATISTICS

Molycorp, Inc.'s Goshute North Rockpile. Photo by Wayne Lee



Pecos sunflowers. Photo by Janice Krish



Bill Richardson
Governor of New Mexico

Joanna Prukop
Cabinet Secretary
New Mexico Energy, Minerals and
Natural Resources Department



January 2006

Table of Contents

Renewable and Secondary Energy Resources

Overview	22
Solar	22-23
Wind	24-25
Bioenergy	25
Geothermal	26-27
Hydropower	27
Electricity	28-29
Alcohol Fuels	30

Extractive Energy Resources

Oil and Natural Gas	32-35
Coal	36-37
Uranium	38

Extractive Non-Energy Resources

Overview	40-41
Copper	42-43
Gold and Silver	43
Molybdenum	44
Potash	44-45
Industrial Minerals	46-47

Forest Resources

Recreational Resources, New Mexico State Parks

Youth Conservation Corps

Other Sources of Information

Tables and Figures

Renewable and Secondary Energy Resources

Solar Insolation Annual Average	22
Schools with Sol Solar Demonstration Program: Funded Projects 2004	23
Wind Power Export—AC Only	24
Clean Energy Grants Program—Funded Projects Through 2005	25
New Mexico Geothermal Resources	26
New Mexico Geothermal Applications	27
Hydroelectric Plants in NM-by Capacity and Owner	27
Figure 1. Total New Mexico Electric Generation	28
Figure 2. Makeup of Customers	28
Figure 3. Number of Customers	29
Figure 4. Revenues, Thousands of Dollars	29
Figure 5. Electricity Prices	29

Extractive Energy Resources: Oil, Natural Gas, Coal and Uranium

Oil Production by County	32
Gas Production by County	32
Production by Land Type	32
Oil and Gas Industry Contributions to NM, FY 2004-05	33
State Revenues from Oil and Gas Production	33
FY 2005 State Revenue from Oil and Gas Sales	34
Oil Production	34
Natural Gas Production by year	34
Wells Drilled and Completed by Year by Well Type	34
Oil and Gas Prices vs. Rig Count	35
2004 Oil Production by Land Type	35
2004 Gas Production by Land Type	35
Table A. Coal Production (short tons) by Mine, 2000-2004	36
Figure A. Coal Production and Value, 1995-2004	36
Figure B. Coal Payroll and Employment, 1995-2004	37

Extractive Non-Energy Resources: Copper, Gold & Silver, Molybdenum, Potash, Industrial Minerals

Figure C. Percentage of Production Value, Employment, Payroll and Revenue by Commodity, 2004	40
--	----

Figure D. Mineral Production Value and Revenue, 1995-2004	40
Table B. New Mexico Summary of Commodity Production, Production Value, Employment, Payroll, Revenue and Ranking, 2004	41
Figure E. Mineral Payroll and Employment, 1995-2004	41
Figure F. Copper Production and Production Values, 1995-2004	42
Figure G. Copper Payroll and Employment, 1995-2004	43
Figure H. Average Yearly Molybdenum Price, 1995-2005	44
Figure I. Potash Production and Production Values, 1995-2004	45
Figure J. Potash Payroll and Employment, 1995-2004	45
Table C. Production Rank, Locations and Employment for Selected Industrial Mineral Commodities, 2004	46
Table D. Aggregate & Stone Production and Sales Value, 2004	46
Figure K. Percentage of Production Value by Total Aggregate and Stone Commodity, 2004	47
Figure L. Percentage of Total Aggregate and Stone Production by Commodity, 2004	47
New Mexico Petroleum Regions & Mineral Resources, Oil Conservation Division District Offices, Forestry Division Offices, and State Parks	48

Forest Resources

Fires in New Mexico—Calendar Year 2005 by Size Class	50
New Mexico State Forestry Seedling Program— Total Trees Planted, 1996-2005	51
New Mexico Forest Re-Leaf 2005/2006 Grant cycle Funded Project Proposals	51
Data and Statistics	52

Recreational Resources: New Mexico State Parks

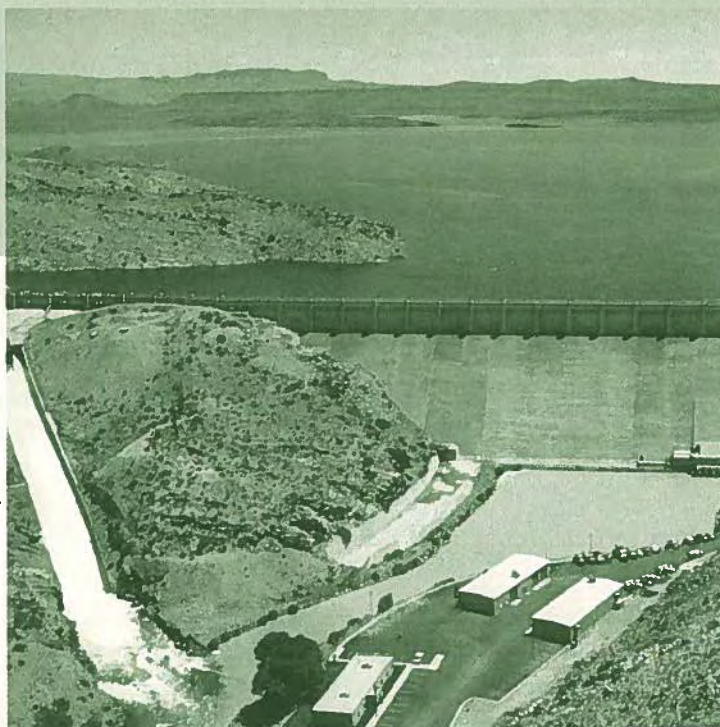
New Mexico State Parks: Visitations & Revenues, FY 2001-2005	54
New Mexico State Parks: Visitations & Revenues by Park, FY 2001-2005	55
New Mexico State Parks: Visitations & Revenues by Year, FY 2001-2005	55
New Mexico State Parks: Self-Generated Revenues, FY 2001-2005	56

Youth Conservation Corps

YCC Projects 2004	57
-------------------------	----

Renewable and Secondary Energy Resources

Elephant Butte Dam and Power Plant. Source: U.S. Bureau of Reclamation



A wind farm near House, NM. Source: PNM



Solar
Wind
BioEnergy
Geothermal
Hydropower

Electricity
Alcohol Fuels

Overview

Total New Mexico annual energy consumption was 679.2 trillion BTU (tBTU) during 2001 (according to the latest data available from the U.S. Department of Energy). Most of the energy consumed in the state came from coal (297.1 tBTU), natural gas (262.1 tBTU), and petroleum (251.0 tBTU) resources. Since 2003, however, renewable energy (solar, wind, biomass and geothermal) has contributed an increasing percentage of New Mexico's total energy consumption.

New Mexico's transportation sector consumed the most energy in 2001 (230.1 tBTU, or 34 percent), followed by the industrial sector (219.5 tBTU, 32 percent), the commercial sector (122.4 tBTU, 18 percent) and the residential sector, (107.1 tBTU, 16 percent). New Mexico's residential and industrial sectors consume less energy per capita than the national average, while our transportation sector consumes more than average.

The electric power sector in New Mexico consumed 346.4 tBTU of energy, with coal accounting for 85 percent (295.2 tBTU) and natural gas 14 percent (48.1 tBTU). About 60 percent of the NM electric power sector's total consumption (346.4 tBTU) took place in-state (207.8 tBTU), with some 40 percent (138.6 tBTU) out-of-state.

Total New Mexico renewable energy consumption was 8.3 tBTU as of January 1, 2002 (latest data available). Of that amount, wood and wood waste in the residential sector accounted for 37 percent (3.1 tBTU) and hydropower used 29 percent (2.4 tBTU). Beginning in 2004, wind energy contributed an increasing percentage of total renewable energy consumption in the state.

Our state is about average in energy consumption compared to the rest. On a per capita basis, New Mexico ranks 20th in per capita energy consumption, and 37th nationally in terms of total energy consumption across all sectors.

Renewable energy production has continued to increase in New Mexico, totaling more

than 8 tBTU as of January 1, 2002 (latest data available), worth some \$57.5 million. Both renewable energy production and its value are projected to increase significantly in New Mexico over the next few decades. Indeed, wind energy production in 2004 is estimated at 2 tBTU or about 625 million kilowatt-hours, with a value of \$46 million.

Solar

Energy from the sun is an enormous energy source. Solar energy resources are available at high levels uniformly throughout New Mexico, where the sun shines more than 3,200 hours per year. An annual average of up to 1,900 BTUs per square foot (6 kilowatt-hours [kWh] per square meter) per day is available in New Mexico. The map at the bottom of this page presents the average solar radiation for selected New Mexico communities.

Most businesses marketing solar technologies are members of the New Mexico Solar Energy Association (NMSEA) and/or the Renewable Energy Industries Association of New Mexico (REIA-NM). The solar industry is comprised of manufacturers, equipment suppliers, greenhouse and glazing suppliers, passive solar builders, installers and service companies. The NMSEA maintains a Directory of Solar Professionals. A wide range of solar energy research and development projects is conducted at Sandia National Laboratories (SNL) and the Southwest Region Experiment Station at New Mexico State University.

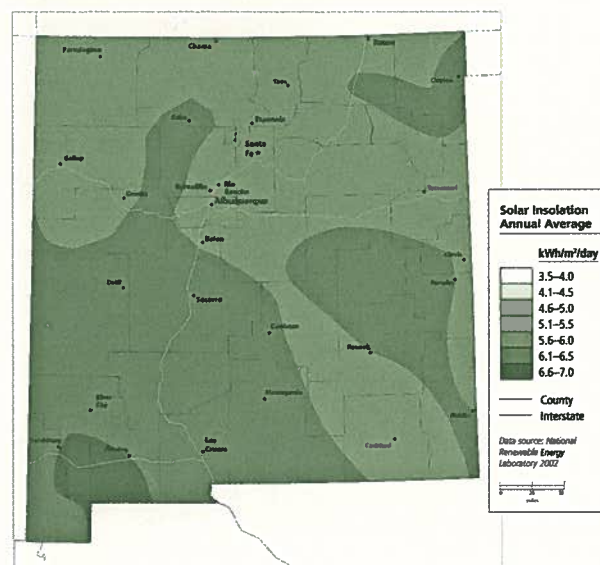
The Solar Rights Act of 1978 allows property owners to create solar easements to protect and maintain proper access to sunlight. It also includes provisions allowing local governments to create

their own ordinances or zoning rules pertaining to protection of solar rights.

Direct use of the sun's light and thermal energy has occurred for centuries in New Mexico. There are now thousands of solar thermal and photovoltaic (PV) systems operating on New Mexico's residential, commercial, industrial and agricultural facilities. The largest PV system is the 10-kW array at the Indian Pueblo Cultural Center in Albuquerque. Interconnected to the utility grid, it saves \$3,400 per year in electricity costs. The largest solar thermal system outside of SNL's research facility is the 15,000-square-foot flat-plate collector system at Southern New Mexico Correctional Facility near Las Cruces.

Another type of solar energy production, passive solar design, is commonly provided in New Mexico through innovative building design and construction. Strategic placement of windows, sunspaces, thermal storage walls and mass, as well as appropriate orientation and insulation, can let the

Solar Insolation Annual Average 2004



Schools with Sol Solar Demonstration Program: Funded Projects

School District	School/Organization	System Type	System Size	Funding
Installation Completed				
Alamogordo Public Schools	High Rolls Elementary School	SDHW	1 collector	\$12,032.44
Albuquerque Public Schools	Rio Grande High School	PV fixed	0.8 kW AC	\$3,509.00
Albuquerque Public Schools	Sandia Mountain Natural History Center	PV fixed	2.1 kW AC	\$3,225.00
Grady Municipal Schools	Grady High School	SDHW	2 collectors	\$14,376.04
Questa Independent Schools	Rio Costilla Elementary School	SDHW	1 collector	\$10,604.99
Roy Municipal Schools	Roy High School	SDHW	1 collector	\$11,628.63
Santa Fe Public Schools	Academy for Technology and the Classi	PV tracking	0.7 kW AC	\$15,956.98
Albuquerque Public Schools	Inez Elementary School	PV tracking	0.7 kW AC	\$16,811.00
Albuquerque Public Schools	Cleveland Middle School	PV tracking	0.7 kW AC	\$16,811.00
Albuquerque Public Schools	Eldorado High School	PV tracking	0.7 kW AC	\$16,877.00
Mountainair Public Schools	Mountainair High School	PV tracking	1.1 kW AC	\$23,652.00
Raton Public Schools	Raton High School	PV tracking	0.7 kW AC	\$18,232.06
COMPLETED Subtotal				\$163,716.14
Additional Schools Selected				
Jal Public Schools	Jal High School	SSPH	60 collectors	
Bloomfield Public Schools	Bloomfield Recreation Center	SDHW	3 collectors	
Clayton Municipal Schools	Clayton Municipal Schools	SDHW	1 collector	
Reserve Independent Schools	Reserve High School	SDHW	2 collectors	
Gallup-McKinley County Schoo	Crownpoint High School	PV Tracking	0.7 kW AC	
Las Cruces Public Schools	Sunrise Elementary School	PV tracking	0.7 kW AC	
Mosquero Municipal Schools	Mosquero Elementary School	PV fixed	0.7 kW AC	
Tor C Municipal Schools	Hot Springs High School	PV tracking	0.7 kW AC	
Lake Arthur Municipal Schools	Lake Arthur Municipal Schools	PV tracking	0.7 kW AC	
Chama Valley	Chama Middle School	SDHW	1 collector	
Carlsbad Municipal Schools	Early Childhood Education Center	PV tracking	0.7 kW AC	
Las Vegas City Schools	Memorial Middle School	SDHW	2 collectors	
Alamogordo Public Schools	Yucca Elementary School	PV tracking	0.7 kW AC	
Albuquerque Public Schools	Comanche Elementary School	PV tracking	0.7 kW AC	
Bloomfield Public Schools	Bloomfield High School	PV tracking	0.7 kW AC	
Santa Fe Public Schools	Monte del Sol Charter School	SDHW	1 collector	
BUDGETED Subtotal				\$329,576.00
Future Selections				
8 applicants		SDHW		
3 applicant		PV		
1 applicant		SSPH		
PLANNED Subtotal				\$191,070.00
PROGRAM TOTAL				\$684,362.14
Notes: PV—Solar Photovoltaics SDHW—Solar Domestic Hot Water SSPH—Solar Swimming Pool Heating				

sun provide up to 80 percent of a home's annual space heating needs—without compromising cooling needs. The sun also can be used to integrate daylighting (use of natural light), thereby offsetting electricity costs associated with lighting.

Integrated passive solar design, solar water heating and PV in residential home design can greatly reduce or eliminate the need for conventional electricity, heating and cooling energy sources. Many success stories exist in New Mexico of living "off-grid."

Wind

Wind is a proven, cost effective and environmentally attractive source of power. Recent technological innovations in wind turbine design have resulted in increased effectiveness and reduced cost. The cost of electricity from wind power plants has dropped to below 3 cents per kilowatt-hour—very close to the cost of power from fossil fuel sources. Public utilities across the country and around the world are beginning to include wind in their mix of energy sources.

New Mexico has a total of 407 megawatts (MW) of wind power capacity installed at four wind power plants. This ranks the state 5th in total installed wind capacity in the United States as of year-end 2005. Our total capacity is comprised of:

- FPL Energy's New Mexico Wind Energy Center (204 MW), located southeast of Ft. Sumner in DeBaca and Quay Counties;
- Caprock Wind Ranch (80 MW), located south of San Jon in Quay County;
- San Juan Mesa Wind Project (120 MW) near Elida in Roosevelt County; and
- Llano Estacado Wind Ranch (2.6 MW), located near Texico in Curry County.

Economic benefits—jobs and revenues—are a big reason New Mexico is aggressively pursuing wind energy development. As an example, the New Mexico Wind Energy Center will bring more than \$40 million into rural DeBaca and Quay counties over 25 years. This includes \$450,000 per year in payments in lieu of taxes to be made to the affected county governments and school districts; about \$550,000 per year in lease payments to landowners; and an estimated \$500,000 in salaries for the permanent jobs created.

The Energy Conservation and Management Division (ECMD), through its Wind Power Program, has performed a critical role in the development of wind power in the state. The

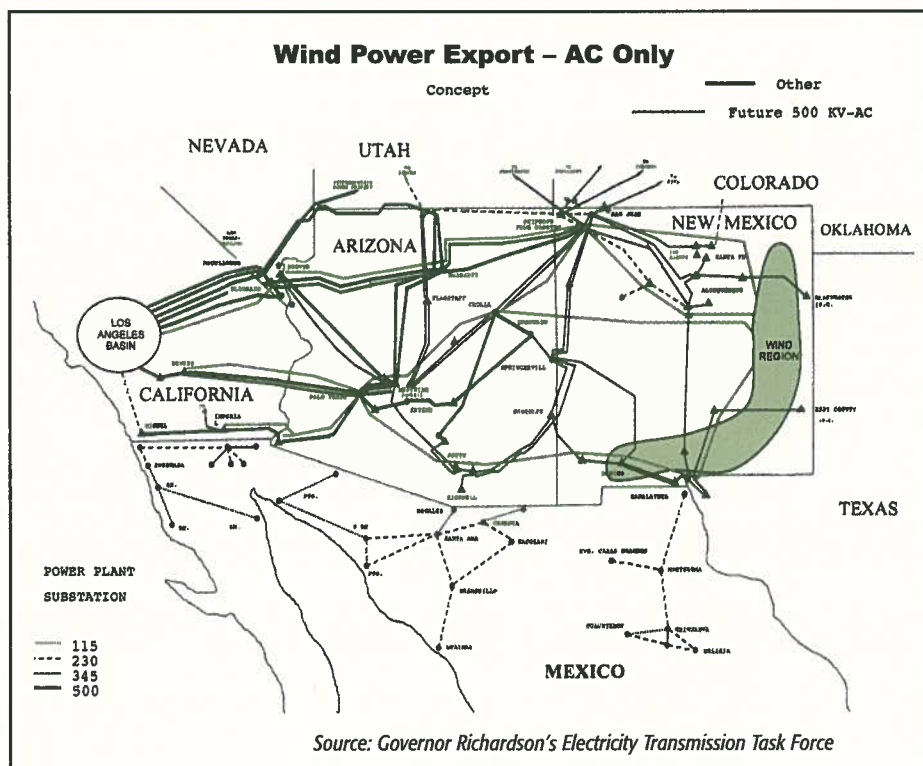
Program has provided detailed, state-wide wind resource assessments and wind data to more than 40 wind power developers, Public Service Company of New Mexico (PNM), landowners and other groups. The Division has provided three years of wind speed data collected at seven promising sites and is continuing detailed wind energy resource assessment through a newly installed, permanent "tall" (100-meter) meteorological tower to promote further commercial development.

In partnership with the National Renewable Energy Laboratory, ECMD contracted to have TrueWind Solutions, LLC produce a high-resolution wind map of the state using the latest techniques. The map is interactive with many GIS layers, with data available on wind speeds at heights of 30, 50, 70 and 100 meters. (Data on wind power at 50 meters also is available.)

The Wind Power Program has provided studies and reports of the potential economic benefits of wind power to five counties: Eddy, Otero, Quay, Lea and Colfax. The program also has provided the following products:

- New Mexico Wind Power Plant Site Screening Model;
- Guidelines for Developers and Investors Interested in Wind Power in New Mexico;
- New Mexico Wind Development Handbook; and
- Mesa Redonda Case Study Report. This study includes environmental, archaeological, cost-estimating, transmission, permitting, geotechnical, micro-siting, production and visual-impact issues.

The potential for electricity generation from wind is enormous in some areas of New Mexico, especially on the eastern plains. New Mexico ranks 12th nationally in wind electric potential and is among a dozen states in the midsection of the country that, together, have 90 percent of the total commercial wind electric potential in the contiguous United States. The annual wind energy potential of New Mexico has been estimated to be 435 billion kWh—enough to produce many times its own electrical consumption—which puts it in a position to export wind electric power.



Development of New Mexico's renewable energy resources is a high priority of Governor Bill Richardson. He has appointed a task force to investigate ways of developing new electric transmission capacity to export large volumes of renewable energy to market. Such a development has the potential to vastly increase wind power development in the state. The map on page 24 shows possible renewable energy corridors that could be used to export wind power and other renewable energy to Southern California.

BioEnergy

New Mexico offers an abundance of bio-based resources that may be used to create energy. Bioenergy feedstock may include, but is not limited to, agricultural or animal waste, wood wastes from construction, forest thinnings, and anaerobically digested waste. Bioenergy feedstock may be produced or harvested explicitly for such use (energy crops) or may be a waste stream from agricultural, municipal or industrial sources.

Access to and transportation of bioenergy feedstocks are critical to the economical use of the energy they can produce. For this reason, the creation of energy is often near the feedstock resource. For example, approximately 50 percent of the wood residues from the wood products industry are used for the production of heat and/or electrical power on-site. The total potential for energy production in this sector is large, at 35 trillion BTU per year.

Several factors have recently contributed to the consideration of bioenergy uses in New Mexico. Our state's Renewable Portfolio Standard gives two-for-one credits for this use (i.e., 2 kWh of credit for each 1 kWh of electricity produced from qualifying biomass resources). Numerous forest-thinning projects throughout the state, implemented to reduce the risk of catastrophic fires and promote forest health, might make available economically viable amounts of small-diameter wood feedstock.

The New Mexico dairy industry has experienced dramatic growth with 170 dairies throughout the state, and the average dairy herd size is the largest in the nation. The 300,000 dairy cows produce some 1.1 million dry tons of manure each year, while manure from cattle feedlots adds another 118,000 tons.

The City of Albuquerque uses anaerobic digestion of municipal wastewater sludge at its Southside Water Reclamation Plant to create methane gas that is then used to produce electricity and heat to power the wastewater facility. This system can generate about 2 MW of electricity.

CLEAN ENERGY GRANTS PROGRAM: Funded Projects Through 2005

Funding Source: HB 2—2004

Contractor	Starting Date	Ending Date	Contract Amount
Alamogordo Public Schools	2/5/05	6/30/05	\$65,000
University of NM/EMNRD	8/4/05	6/30/05	\$38,950
City of Albuquerque	2/5/05	6/30/05	\$100,000
Laguna Pueblo	1/5/05	6/30/05	\$190,370
Mora Public Schools	2/5/05	6/30/05	\$50,000
West Las Vegas	3/5/05	6/30/05	\$5,942
NM Department of Transportation	1/5/05	6/30/05	\$42,500
San Juan College	2/5/05	6/30/05	\$31,388
Santo Domingo Pueblo	2/5/05	6/30/05	\$25,331
Taos Municipal Schools	2/5/05	6/30/05	\$16,000
Village of Corrales	1/5/05	6/30/05	\$25,852
Zuni Public Schools	2/5/05	6/30/05	\$55,000
Clean Energy Program Subtotal:			\$646,333

Funding Source: HB 293—2004

Contractor	Starting Date	Ending Date	Contract Amount
Santa Clara Pueblo	3/5/05	6/30/06	\$40,000
Santa Ana Pueblo	3/5/05	6/30/06	\$10,000
Zia Pueblo	3/5/05	6/30/06	\$10,000
Zuni Pueblo	3/5/05	6/30/06	\$10,000
City of Alamogordo	3/5/05	6/30/06	\$75,000
City of Rio Rancho	3/5/05	6/30/06	\$44,114
Department of Cultural Affairs	3/5/05	6/30/06	\$70,000
Eastern Plains Council of Governments	1/5/05	6/30/06	\$59,190
Laguna Pueblo	1/5/05	6/30/06	\$18,560
Los Lunas Public Schools (Public Education Dept.)	2/5/05	5/31/05	\$39,000
Mid-Region Council of Governments	2/5/05	5/31/05	\$70,000
West Las Vegas	3/5/05	6/30/06	\$23,560
New Mexico Junior College	3/5/05	6/30/06	\$50,000
Taos Municipal Schools	3/5/05	6/30/09	\$31,964
Village of Angel Fire	3/5/05	6/30/09	\$99,411
Moriarty Municipal. Schools	3/5/05	6/30/06	\$29,500
PSFA - Las Cruces Public Schools	8/5/05	6/30/06	\$17,163
PSFA - Albuquerque Public Schools	8/5/05	6/30/06	\$50,000
PSFA - Farmington Public Schools	8/5/05	6/30/06	\$50,000
PSFA - Espanola Public Schools	8/5/05	6/30/06	\$63,000
PSFA - West Las Vegas Public Schools	8/5/05	6/30/06	\$68,837
PSFA - Dexter Public Schools	8/5/05	6/30/06	\$65,000
Jemez Mountain School District	8/4/04	6/30/05	\$450,000
Ft. Bayard Medical Center (MOU with GSD)	1/5/05	12/31/09	\$750,000
Eagle Nest Lake State Park	9/4/04	6/30/06	\$50,000
Hydrogen Fuel Cell Project - Albuquerque Airport	9/4/04	6/30/06	\$100,000
Energy Efficiency & Clean Energy Subtotal:			\$2,344,299

Capital Projects Total:

\$2,990,632

Geothermal

New Mexico has significant low-temperature geothermal resources—less than 90 degrees Celsius or 194 degrees Fahrenheit—along its western border and in close proximity to the Rio Grande from north to south. Common low-temperature applications are space heating and water heating. Our state also is blessed with considerable moderate-temperature resources—90 to 180 degrees C (194 to 356 degrees F)—including those in the Rincon area of Dona Ana County and near Cotton City in Hidalgo County. The table at the bottom of this page provides a summary of geothermal sites in New Mexico.

Geothermal resources in New Mexico have been used directly for more than 20 years. In the 1980s, the New Mexico State Legislature funded a number of geothermal research and development projects, a number of which resulted in collaborations between EMNRD and New Mexico State University. The University constructed a geothermal greenhouse research and business incubator facility, as well as a geothermal aquaculture facility. As a direct result of these efforts, one of the nation's largest geothermal aquaculture facilities and more than 50 acres of commercial greenhouses have been established in southern New Mexico. The table at the top of page 27 provides information on the various direct-use geothermal applications in New Mexico, totaling more than 400,000 million BTUs of heat per year.

Large, commercial-scale power plants of 1 MW or greater can generate electricity using high-temperature geothermal resources—greater than 180 degrees C (356 degrees F), but to date these have not been constructed in the state. With geothermal binary power plants now able to use moderate-temperature resources, electricity generation in the small, commercial-scale range of 100 kilowatt (kW) to 1 MW is becoming cost-effective. Binary power plants are emissions-free in converting the geothermally heated water to electricity; one plant has operated in southern New Mexico on a limited basis.



Jemez Mountain School biomass heating project boiler. Photo by Harold Trujillo

New Mexico Geothermal Resources				
Site	Temperature (degrees F)	Flow (gal. per minute)	No. of Wells	Depth (feet)
Dona Ana County:				
Las Cruces	157	3	9	2,572
Radium Springs	170	NA	8	121
Grant County:				
Faywood	127	3	1	NA
Hurley	144	NA	1	522
San Juan/ Sherman	138	3	8	NA
Hidalgo County:				
Cotton City	225	200	13	439
McKinley County:				
Ft. Wingate	131	23	1	1,942
Rio Arriba County:				
Ojo Caliente/Gallegos	132	NA	2	88
San Miguel County:				
Las Vegas	131	NA	2	NA
Sandoval County:				
Jemez/San Ysidro	136	150	1	239
Jemez Springs	164	52	6	NA
Valencia County:				
Valencia	176	Na	1	721

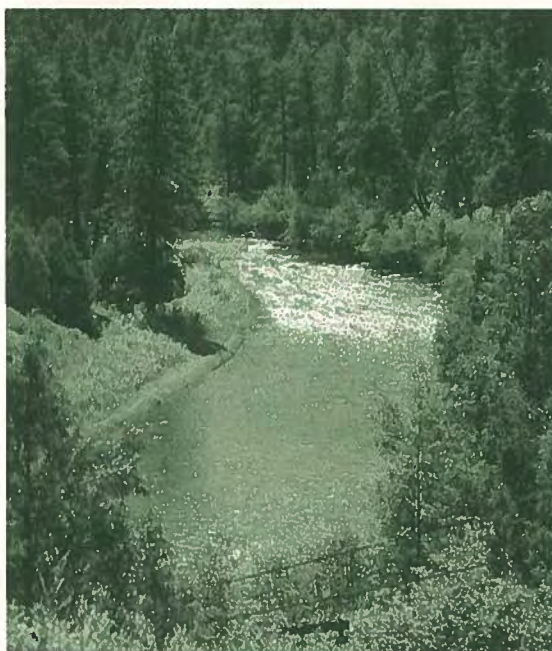
Source: Witcher, J.C., 1995b. A Geothermal Resource Database, New Mexico; Southwest Technology Development Institute, New Mexico State University, Technical Report to Oregon Institute of Technology, Geo-Heat Center, 32 p. NA = Not Available.

New Mexico Geothermal Applications				
Source: Geothermal Energy Association geo@geo-energy.org				
SITE	T (°F)	FLOW (GPM)	ENERGY 10 ⁹ BTUs/YR	APPLICATION
Catron County	NA	NA	NA	Resort & Spas—Bubbles Hot Springs
Dona Ana County:	142	417	45.9	District Heating (NMSU)
Las Cruces area	148	50	1.8	Greenhouse—SWTDI (NMSU)
	148	700	27.6	Greenhouse—J & K Growers
Radium Springs	160	2600	119	Greenhouse—2 nd largest nationally Masson Farm
Hidalgo County:	245	2000	209	Greenhouse—Largest nationally Burgett Floral
Cotton City	185	NA	0.7	Greenhouses/Aquaculture—McCants/AmeriCulture
Rio Arriba County	115	60	2	Resorts & Spas—Ojo Caliente
Sandoval County	NA	NA	NA	Resorts & Spas—McCauley Hot Springs, Jemez Springs Bathhouse
	165	40	1.3	Space Heating—Jemez Springs Fire Department
Sierra County	113	NA	NA	Resorts & Spas—Truth or Consequences
Total			407.3	

Hydropower

New Mexico's hydroelectric capacity is about 78.3 MW from five plants, shown in the table below.

Hydropower does not make up a large portion of New Mexico's total generating capacity. Although small hydropower sites at rivers and existing dams exist in New Mexico, the state's arid climate and prevailing environmental concerns greatly limit potential future development. Other constraints include financing, multiple-use issues, regulatory barriers, economic issues and environmental impacts. In addition, significant evaporative water losses occur from hydropower projects that include storage reservoirs. Moreover, drought has an adverse impact on reservoir water levels and hydro plant output.



New Mexico's waters drive five hydroelectric plants. Source: EMNRD

Hydroelectric Plants in NM—by Capacity and Owner

PLANT	CAPACITY - MW	OWNER
Navajo Reservoir	30.0	City of Farmington
Elephant Butte	24.3	U.S. Bureau of Reclamation
Abiquiu	15.0	County of Los Alamos
El Vado	8.8	County of Los Alamos
Farmington	0.2	City of Farmington

Secondary Energy Resources

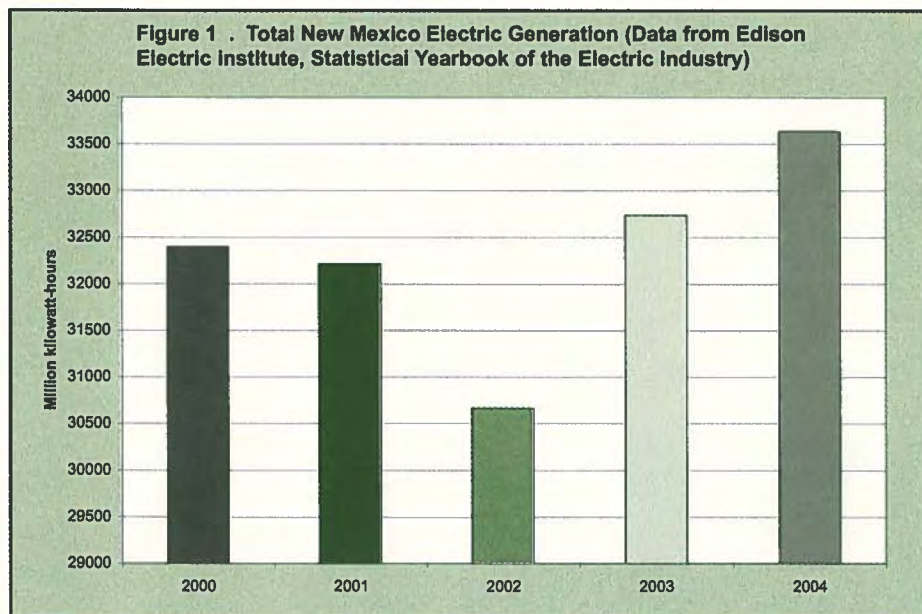
Electricity

Electricity is important to New Mexico because it affects economic growth in both the energy and non-energy sectors of the state's economy. Electric utilities also consume substantial amounts of natural gas

More than 87 percent of the state's electrical generation comes from coal, compared to about 50 percent nationwide. The rest of the country relies much more heavily than New Mexico on nuclear and hydropower generation.

In 2004, for the first time, wind energy became a significant source of electricity in New Mexico, contributing 1.5 percent of total generation. There are four investor-owned utilities in New Mexico, serving approximately 70 percent of the customers (see Figure 2). The 20 rural electric cooperatives serve about 21 percent of the customers, although their service territories cover about 85 percent of the state's land area. Tri-State Generation and Transmission Association (Tri-State) is a wholesale supplier of 13 member cooperatives. Seven municipal electric utilities serve the remaining 9 percent of the state's electric customers.

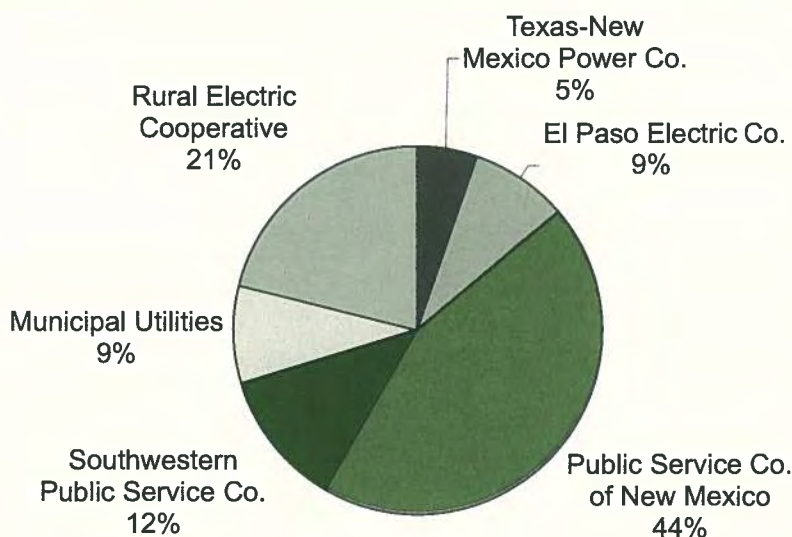
The number of ultimate customers buying New Mexico electricity has increased every year over the past four years (see Figure 3, page 29). The number of customers in-state increased by 8 percent during that time, compared to the residential population increase of 7.7 percent.



and coal resources extracted in the state, generating considerable revenues in the process. New Mexico's power plants have a total capacity of almost 6,800 MW, more than 70 percent of which is located at the Four Corners and San Juan generating stations, two coal-fired plants near Farmington. California and Arizona utilities own some 68 percent of these two plants. About half of the electricity generated in New Mexico is consumed in other states. Total electrical generation for the past several years is shown in Figure 1. Electricity generated in 2004 was 2.7 percent higher than in 2003.

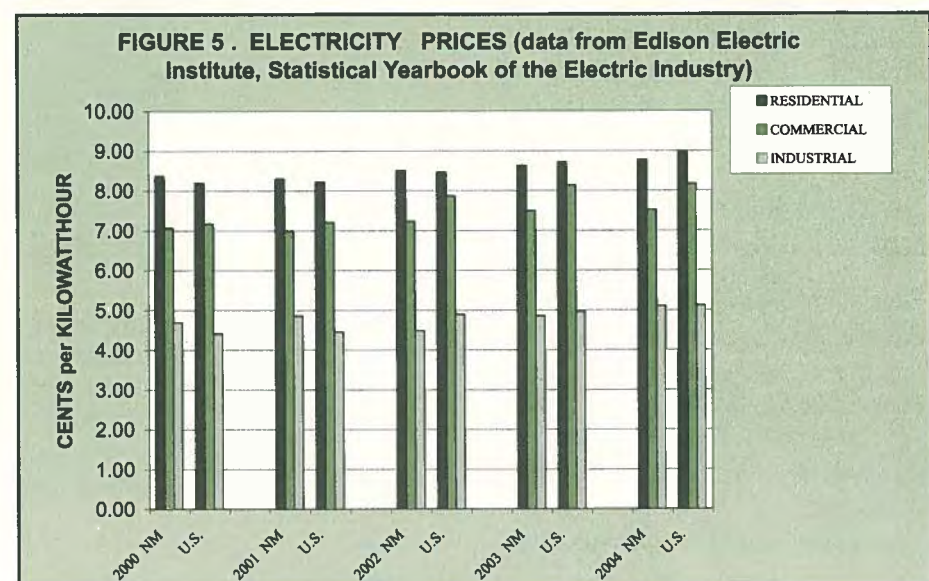
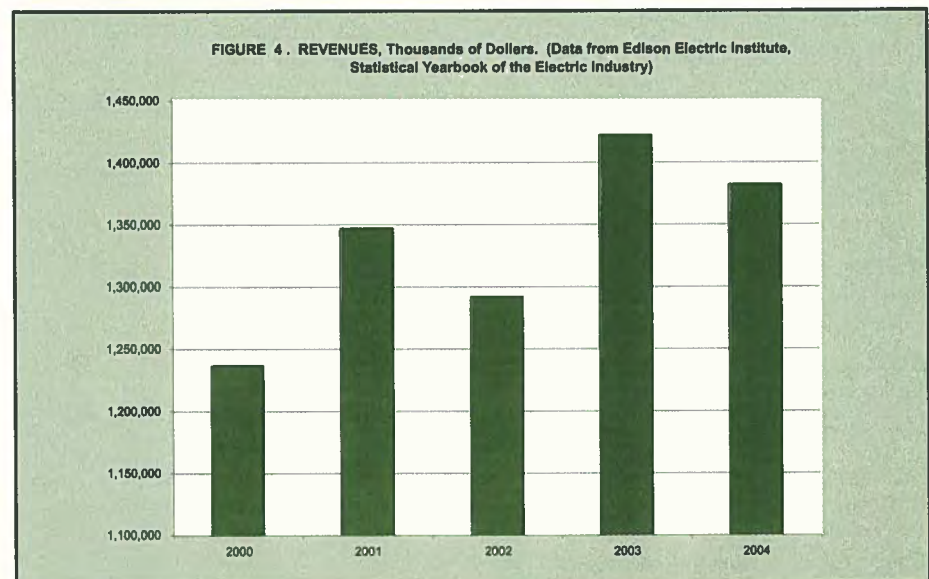
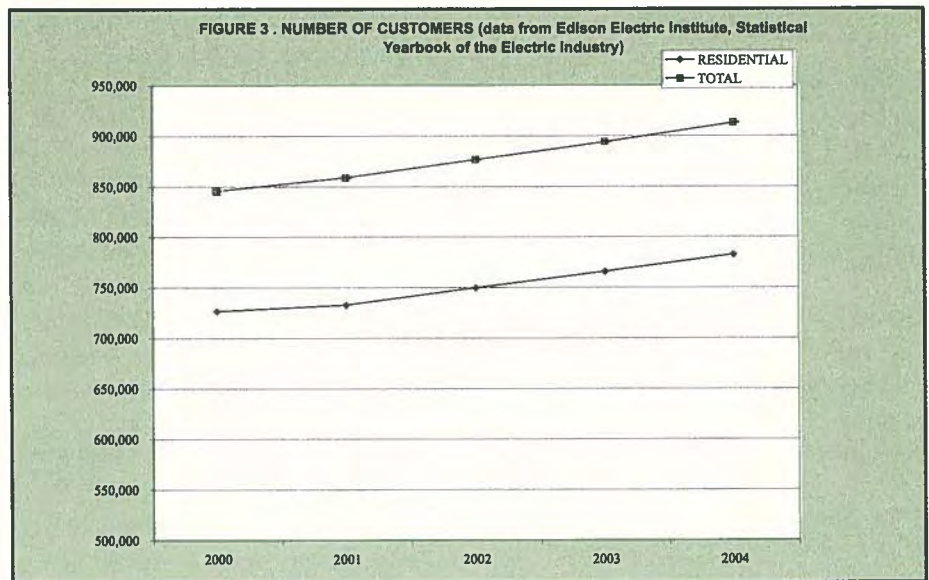
Total electric generation capacity in New Mexico was 6,786 megawatts (MW) as of January 1, 2005. Of that total capacity, coal comprised 4,382 MW (65 percent); natural gas, 2,110 MW (31 percent); and renewables, 295 MW (4 percent). An additional 200 MW of wind electricity capacity was scheduled to be on line by the end of 2005.

FIGURE 2. MAKEUP OF CUSTOMERS
(data from USDOE, Energy Information Administration)



New Mexico's electricity consumption per customer decreased 4 percent over the past two years. Average sales per residential customer increased 2.6 percent from 6,988 kWh to 7,172 kWh. Total revenues from sales of electricity in New Mexico in 2004 were \$1.38 billion. (See Figure 4).

Figure 5 shows the price paid per kWh in New Mexico and the United States from 2000-2004 in the residential, commercial and industrial sectors. (Price per kWh is derived by dividing revenue by sales.) The price paid in New Mexico increased 5 percent in the residential sector, 6 percent in the commercial sector and 9 percent in the industrial sector over this four-year period. In 2004, New Mexico's prices compared to U.S. prices were 1.8 percent lower in the residential sector, 8 percent lower in the commercial sector and 0.2 percent lower in the industrial sector.



Secondary Energy Resources

Alcohol Fuels

Alcohol has recently seen an increase in use as a motor fuel. The most common alcohol used for this purpose is ethanol, which can be used as both an additive to reduce the pollution-producing characteristics of gasoline fuel and as a substitute for gasoline.

Ethanol is commonly referred to as a renewable source of energy, as it is made from predominantly agricultural plants containing sugar. Regionally grown grain milo is normally used as feedstock in New Mexico.

The ethanol motor fuel production industry in New Mexico was spurred by State excise tax credits in the mid-1980s. During that period, two larger and 13 smaller production facilities were built in eastern New Mexico. By the late 1980s, the state excise tax credits had expired and all the plants were eventually closed. Production resumed at the largest facility in Portales in early 1998. Improved operation efficiencies, new enzymes and yeasts helped increase production at the facility from 10 to 15 million gallons per year. Currently, capital improvements at the facility are underway to increase capacity to 30 million gallons per year. Abengoa Bioenergy, owner of the Portales plant since 2002, currently employs more than 40 people.

When ethanol is blended with gasoline, the result is a cleaner-burning fuel for areas with air pollution concerns. This "oxygenated" fuel is mandated in Bernalillo County during four months each winter. Gasoline-based fuel may comprise up to 10 percent ethanol by volume in New Mexico without being labeled as an ethanol blend; this fuel is referred to as E-10.

Higher percentages of ethanol are used as a substitute for gasoline. The most common such blend contains up to 85 percent ethanol, called E-85. Three public stations currently sell E-85 located in Albuquerque and Santa Fe. Federal fleets located in Albuquerque and Los Alamos also have access to E-85 at their facilities. Many stan-

dard-ordered new vehicles are marked as E-85 compatible as delivered from the factory.

More than 8 percent of New Mexico's gasoline motor fuel, and 13 percent of the nation's fuel, now is blended with ethanol. During the four-month winter oxygenation period, about 19 percent of New Mexico's motor fuel is blended with ethanol, and 60 percent of the state's ethanol consumption occurs then. Total production closely matches total consumption in New Mexico, but the in-state consumption rate varies at different times of the year. Therefore, much of the New Mexico production is sold over a wider geographic region. Banning of the predominant oxygenate additives—MTBE (methyl tertiary butyl ether)—throughout much of the country has increased national demand for ethanol. As a result, most of New Mexico's ethanol production is shipped to larger markets out of state.



Photo by Wayne Lee

Cabinet Secretary Joanna Prukop and Texas State Land Commissioner Jerry Patterson demonstrate the new biofuel pumps at the Conoco Amigo Mart in Santa Fe. The October 14 event was part of a nationwide commemoration of the "billionth gallon saved" through the Clean Cities Program.

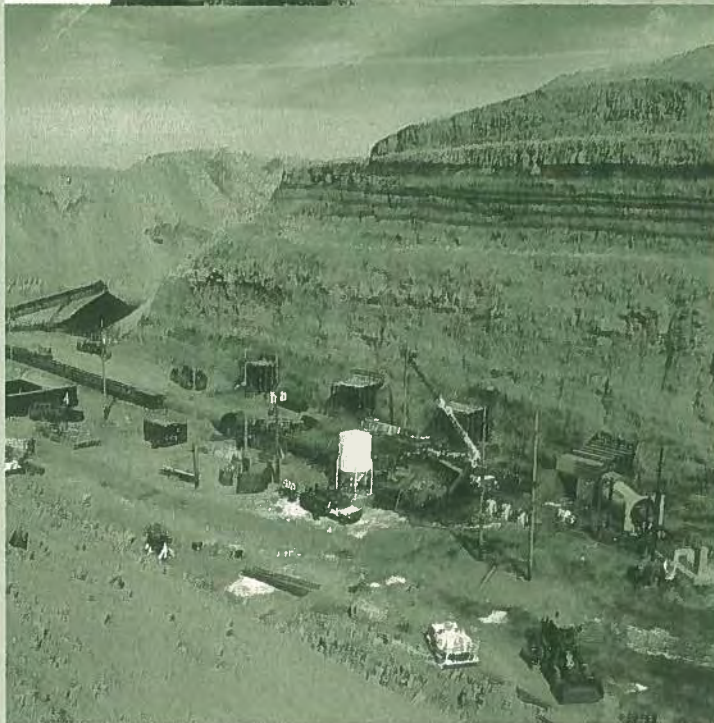
Extractive Energy Resources

A drilling rig in northwest New Mexico. Photo by Monica Kuehling



Oil and Gas
Coal
Uranium

San Juan underground mine. Source: San Juan Coal Company



Extractive Energy Resources

Oil and Natural Gas

Community Involvement

For more than 70 years, oil and gas has played an important part in shaping New Mexico's economy. It has been an industry on which thousands of New Mexicans have built their lives and, in return, it has provided for their families.

In the Thirties, Forties and Fifties, the substantial income stream gushing from the oil fields of New Mexico filled state coffers with more than 80 percent of the state's total revenue. The stability has helped keep New Mexico an attractive state for businesses and families to locate.

In the Eighties, more than 18,000 people were employed in oil- and gas-related jobs. Their combined income injected an additional \$600 million into the communities of Hobbs, Artesia, Roswell, Carlsbad, Farmington and numerous smaller communities such as Eunice, Jal, Aztec and Loco Hills.

The presence of oil company offices in these cities and towns has been invaluable. Many oil and gas companies have partnered with communities to improve the local quality of life. These corporate good neighbors have contributed or assisted with dozens of city parks and sports fields, as well as museums, junior college and other school facilities, town gazebos, historic walkways and other cultural and recreational amenities.

OCD will continue to propose and support legislation designed to make New Mexico an attractive and affordable state for oil and gas business to thrive and improve the economy while preventing future environmental contamination.

Protecting the Environment

The Oil Conservation Division is committed to being responsible stewards of New Mexico's precious land and water. To that end, oil and gas operators have over the past decade stepped up to meet our state's environmental challenges. The OCD

and other regulatory agencies are working in partnership with the industry to clean up many of the adverse impacts of previous exploration and production activities and techniques. Examples of that clean-up include plugging old wells and remediating old facilities such as pits and tank batteries.

As we enter 2006, environmentally sensitive areas such as Otero Mesa in the south-central part of the state and the Valle Vidal area in the north central area have come under scrutiny for possible gas exploration and production.

Valle Vidal is a mountainous area with pristine vistas that provides a haven and habitat for wildlife, along with outstanding opportunities for outdoor adventure and recreation.

Otero Mesa and related areas of the Chihuahuan Desert in Otero and Sierra Counties were in the spotlight in 2004. New rules were promulgated in 2005 to regulate industry activity in areas.

The OCD will meet the Governor's challenge of protecting the environment—including the Valle Vidal and Otero Mesa—while maximizing the benefit from all its natural resources.

New Mexico Oil and Gas Facts

- Oil and gas revenues, in the form of severance taxes and public land royalties, have bolstered New Mexico's General Fund since the 1930's. Gross revenues have contributed as much as 87 percent of the fund during boom times and some 25 percent in recent years. Due to the

increase in production value, 2005 may approach one-third funding for total general fund revenues.

- New Mexico is ranked third in natural gas production (behind Texas and Oklahoma) and third in proven gas reserves among all producing states in the U.S. A portion of the gas is coalbed methane, in which New Mexico is first in production and reserves.
- New Mexico also is ranked fifth in crude oil production and fourth in proven oil reserves.
- New Mexico is a national leader in both production and reserves of carbon dioxide (CO₂).

OIL PRODUCTION BY COUNTY

	Total Oil	Rank
Lea	36,902,946	1
Eddy	24,058,985	2
Rio Arriba	1,288,366	3
San Juan	1,284,939	4
Chaves	507,426	5
Roosevelt	368,331	6
Sandoval	72,933	7
McKinley	43,012	8
Santa Fe	2	9
Total	64,526,940	

GAS PRODUCTION BY COUNTY

	Total Gas	Rank
San Juan	643,217,796	1
Rio Arriba	379,463,808	2
Eddy	293,307,198	3
Lea	241,075,755	4
Chaves	33,001,979	5
Colfax	19,510,108	6
Roosevelt	1,963,790	7
Sandoval	1,260,652	8
McKinley	38,577	9
	1,612,839,663	

Chart source: OCD

PRODUCTION BY LAND TYPE

Chart source: OCD

	2004 Oil	2004 Gas
Federal	29,178,688	1,029,508,003
Private	11,883,911	242,154,033
State	22,914,060	286,710,422
Indian	550,281	54,467,205
TOTAL	64,526,940	1,612,839,663
	2004 Oil	2004 Gas

- As of December 1, 2005, active wells in New Mexico numbered 21,009 oil producing wells, 24,853 gas producing wells, 431 CO₂ wells, 3,429 enhanced recovery injection wells, and 583 salt water disposal wells. Additionally, there are more than 2,300 inactive, non-plugged oil and gas wells that could potentially be returned to production.
- At the end of 2004, New Mexico had more than 750 oil and gas industry-related companies operating in the state. Along with companies that specialize in directly servicing oil and gas operations, and government regulatory personnel, the industry employs more than 23,000 people statewide.
- Helium is once again becoming of economic interest in New Mexico. Specific data is not yet available but, at more than \$60 per Mcf, production of this rare gas will increase in the coming years.

Production and Production Value

As in the past, most of today's oil production occurs in the New Mexico portion of the Permian Basin in southeast New Mexico, and most of the natural gas production occurs in the New Mexico portion of the San Juan Basin in northwest New

Mexico. The Oil Conservation Division maintains District Offices in Hobbs, Artesia and Aztec to regulate the oil and gas producers in those areas.

After reasonably stable activity in 2003 and 2004, record prices for both oil and natural gas boosted exploration and drilling in the state in 2005. Good prices in the mid-\$30's per barrel in 2003 and 2004 rose dramatically to more than \$60 per barrel for much of 2005. As of December 1, 2005, West Texas Intermediate Crude oil prices were \$58.25 per barrel and gas prices averaged nearly \$11.69 per MMBtu (Million British Thermal Units) Henry Hub, and they peaked three times during the year at over \$14. (By way of comparison, prices closed in December 2004 at \$41 per barrel and at \$6.72 per MMBtu.)

Total New Mexico crude oil production (including condensate) in 2004 was 64.9 million barrels. New Mexico natural gas production in 2004 was 1,724 billion cubic feet (BCF).

Taxation and Revenue

The oil and gas industry continued to be a major contributor to the state coffers of New Mexico. As of November 2005, the following data was available for fiscal years ending June 30, 2004 and June 30, 2005:

Oil and Gas Industry Contributions to NM, FY 2004-05

General Fund Contributions	\$1,213,800,000
Royalties from State Lands	\$320,800,000
Severance Tax Proceeds	\$384,600,000
Earnings on Permanent Funds	\$467,900,000
Total Contribution	\$2,387,100,000

Chart source: NMTRD

The table below shows the breakdown of types of taxes and amounts for fiscal years 2001 through 2005. (Source: New Mexico Department of Taxation and Revenue.)

State Revenues from Oil and Gas Production

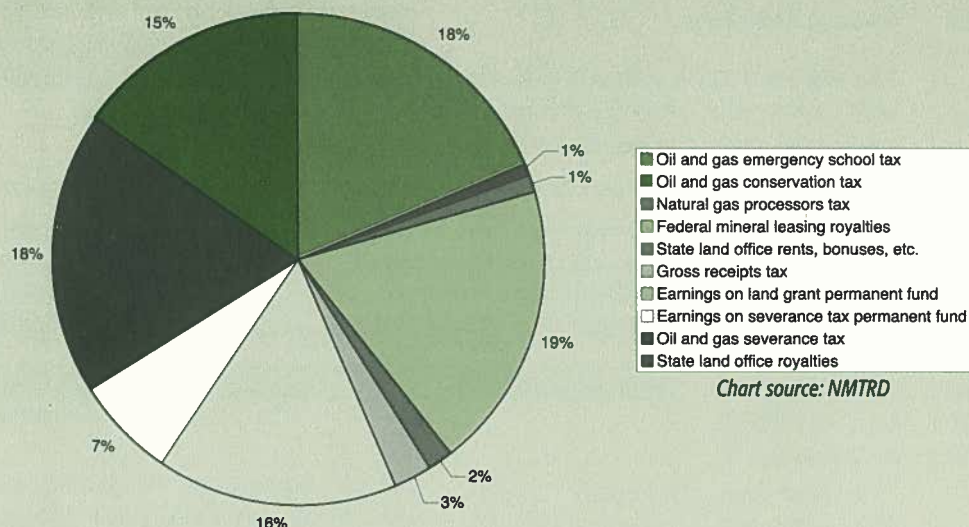
Amounts in Millions of Dollars

(Source: New Mexico Dept. of Taxation & Revenue)	FY01	FY02	FY03	FY04	FY05
Oil and gas emergency school tax	\$ 329.0	\$ 205.1	\$ 229.6	\$ 297.1	\$ 386.8
Oil and gas conservation tax	16.6	10.3	10.9	14.1	19.5
Natural gas processors tax	12.1	20.3	21.1	63.4	24.3
Federal mineral leasing rents and royalties	369.0	221.3	258.4	321.6	391
State land office rents, bonuses, etc.	24.0	13.3	18.7	23.9	336.4
Earnings on land grant permanent fund	220.2	242.6	259.1	291.2	329.3
Earnings on severance tax permanent fund	115.7	127.3	136.7	172.8	138.6
Gross receipts tax	32.4	25.3	30.0	42.94	55.9
Subtotal-Revenue to state general fund	\$ 1,119	\$ 866	\$ 964	\$ 1,227	\$ 1,682
Severance tax bonding fund:					
Oil and gas severance tax	\$ 315.6	\$ 200.7	\$ 221.4	\$ 293.1	\$ 384.6
Permanent fund:					
State land office royalties	\$ 285.5	\$ 197.7	\$ 220.0	\$ 292.2	\$ 320.8
Grand Total All Funds	\$ 1,720	\$ 1,264	\$ 1,406	\$ 1,812	\$ 2,387

Chart source: NMTRD

Extractive Energy Resources

FY 2005 State Revenue from Oil and Gas Sales



OIL PRODUCTION *

	SE Crude	SE Condensate	NW Crude	NW Condensate	Total Oil
1999	57,555,201	4,973,744	1,520,145	1,747,264	65,796,354
2000	59,861,557	5,687,881	1,545,217	1,758,542	68,853,197
2001	59,302,219	6,726,056	1,410,869	1,748,847	69,187,991
2002	57,054,851	7,547,773	1,265,112	1,697,981	67,565,717
2003	56,172,378	7,556,704	1,164,058	1,667,134	66,560,274
2004	55,808,074	6,029,614	1,069,023	1,620,227	64,526,938

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

Chart source: OCD

NATURAL GAS PRODUCTION *

	SE Casinghead	SE Dry Gas	NW Casinghead	NW Dry Gas	Total Natural Gas (Includes NE) **	Coalseam Gas (Included in Total)
1999	203,896,193	324,039,017	17,148,451	1,123,349,922	1,668,556,124	611,709,106
2000	209,009,079	345,333,910	16,536,552	1,107,199,347	1,679,210,343	584,720,809
2001	210,472,588	388,933,255	15,423,113	1,063,590,224	1,683,933,482	539,265,992
2002	206,062,028	381,062,457	14,926,704	1,015,220,222	1,627,521,091	496,652,539
2003	209,485,133	363,341,721	15,185,524	992,689,564	1,595,562,460	479,734,181
2004	228,334,397	341,014,325	13,371,689	1,010,609,144	1,612,839,663	504,819,675

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

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

Chart source: OCD

WELLS DRILLED AND COMPLETED BY YEAR BY WELL TYPE

Chart source: OCD

First reported completion per well

	Gas	Oil	Other	Total
1999	646	317	15	978
2000	999	578	37	1,614
2001	969	468	35	1,472
2002	826	312	42	1,180
2003	1118	641	83	1,842
2004	1,192	499	51	1,742

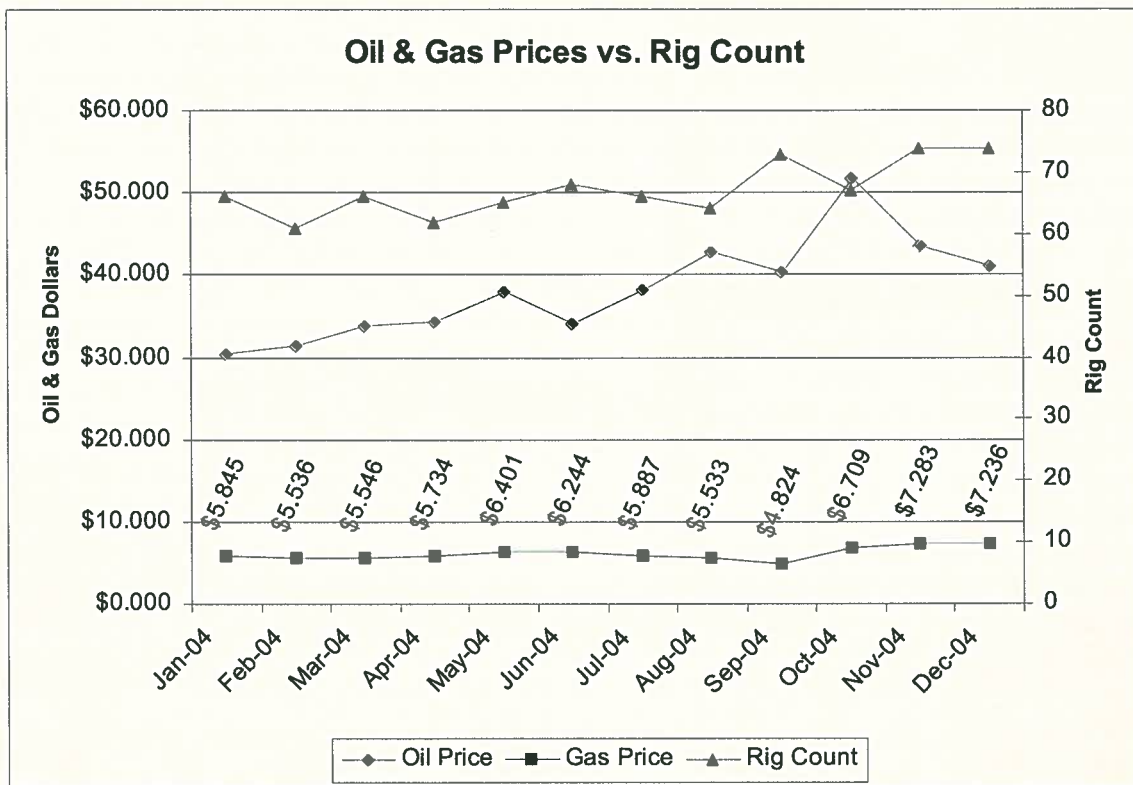


Chart source: New Mexico Tech and Baker Hughes, Inc.

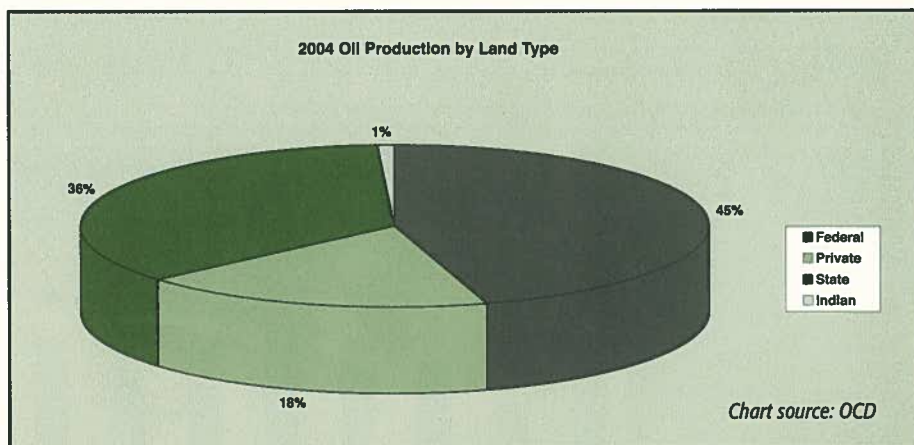


Chart source: OCD

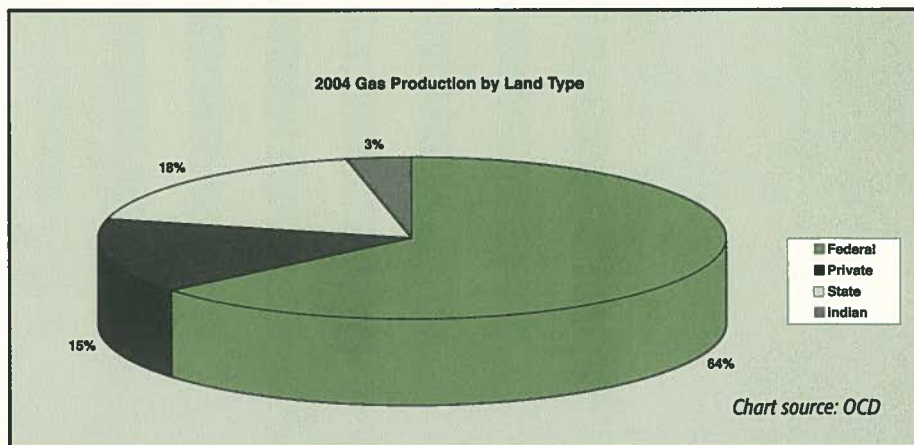


Chart source: OCD

Extractive Energy Resources

Coal

Coal remains New Mexico's most significant mineral commodity. It leads all other commodities in production value, employment and payroll. It dominates all other non-fuel commodities by providing well over 80 percent of all revenues generated.

The majority of the New Mexico's coal is located in the San Juan Basin (San Juan, McKinley and Cibola counties) and the Raton Basin (Colfax County). Smaller coalfields are dispersed throughout the central part of the state. Coal produced in New Mexico, which typically is half bituminous and half sub-bituminous, fuels electrical generating plants in New Mexico and Arizona.

During 2004, five mines produced coal in New Mexico. Four surface coal mines were active: BHP's Navajo mine, Pittsburg & Midway's (P&M) McKinley North and South mines, and Peabody Natural Resources' Lee Ranch Mine. One underground mine was active: BHP's San Juan Mine. San Juan was the fifth-highest producing underground mine in 2004. Annual production information, broken down by mine, is provided in Table A.

After extensive review, New Mexico approved its first new permit since 1996 for a coal operation. The permit for El Segundo Surface Coal Mine was issued in September 2005 to Lee Ranch Coal Company, a subsidiary of Peabody Natural Resources Company. The permit area, located 35 miles north of Milan in McKinley County, comprises an area of 15,540 acres. The mine is forecast to produce 102 million short tons of coal over an operation lifetime of 30 years, with approximately 7,862 acres of disturbance. El Segundo will feature contemporaneous mining and reclamation; therefore, no more than 2,000 acres will remain disturbed in any given year. The mine site will be returned to rangeland grazing once mining is complete.

Table A. Coal Production (short tons) by Mine, 2000 - 2004

County	Mine	Operator	2000	2001	2002	2003	2004
Colfax	York Canyon Complex	Pittsburg & Midway Coal Company	1,137,181	1,200,000	677,238	-	-
McKinley	Lee Ranch	Lee Ranch Coal Company	5,080,835	6,041,279	6,388,726	6,904,804	5,775,776
McKinley	McKinley (North & South)	Pittsburg & Midway Coal Company	5,247,623	6,915,848	5,792,041	4,590,288	5,800,127
San Juan	La Plata	San Juan Coal Company	4,757,674	4,817,409	4,023,725	-	-
San Juan	Navajo	BHP World Minerals	8,489,100	8,020,447	8,099,000	8,937,385	8,014,000
San Juan	San Juan	San Juan Coal Company	2,625,419	3,530,418	3,521,501	5,890,246	7,819,917
TOTAL			27,337,832	30,525,401	28,502,231	26,322,723	27,409,820

Note: Production for the York Canyon Complex are tons remaining after washing.

Figure A. Coal Production and Value, 1995-2004

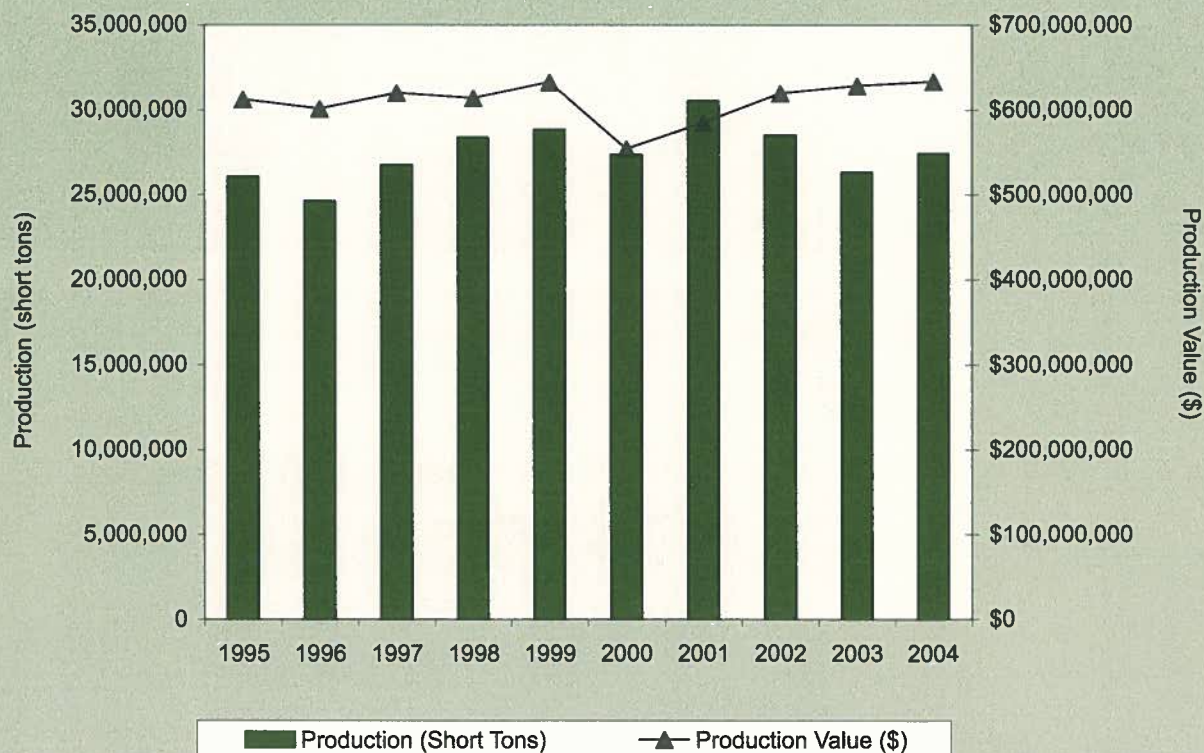
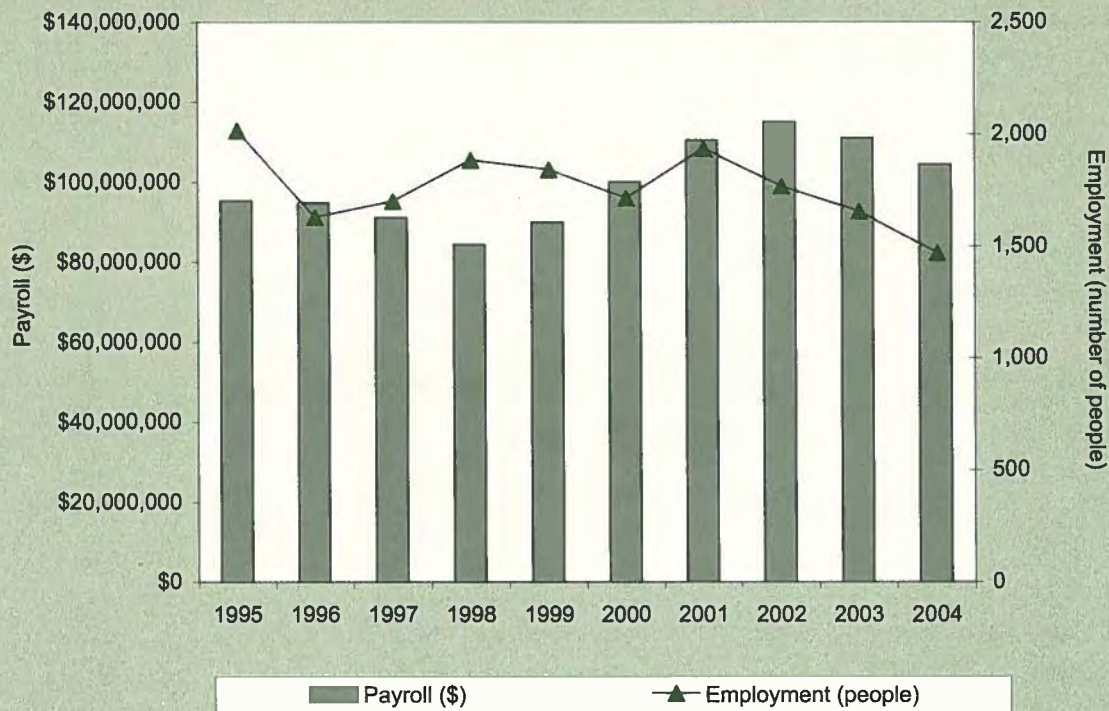


Figure B. Coal Payroll and Employment, 1995-2004



Coal production in New Mexico increased by 4.1 percent from 2003 to 2004, consistent with national and Western mining trends. Figure A provides coal production and value over the past decade. Although the state reached an all-time high in production in 2001, production and value generally have fluctuated within a narrow range over the past decade. Figure B provides employment and payroll information and indicates that jobs are at a 10-year low while payroll is at a 10-year high. It appears the state's coal industry is providing fewer but higher-paying jobs.

According to USGS, national coal production increases can be attributed to increases in coal consumption by the U.S. electric power generation industry, with 92 percent of the coal consumed used to generate electricity in the nation. Coal-fired plants accounted for 51 percent of U.S. electricity power generation in 2003. Coal stocks declined as electric generators used their stockpiles to supplement production to meet increased demands and missed shipments caused by hurricanes and flooding. Coal demand is expected to continue to grow as existing

coal-fired plants are used more intensively and new coal-fired plants are added, with the majority of new plants being located in the western U.S. Coal production increases also can be attributed to the increasing exportation of coal to China and other Asian countries to fuel their economic expansion.

The Coal Mine Reclamation Program of the Mining and Minerals Division focuses on promoting successful and innovative approaches to reclaiming areas disturbed by coal mining. Approval of final reclamation is a difficult achievement but, within the past two years, five coal mines have successfully met their final reclamation criteria and attained final bond release. In addition, the program has encouraged progressive reclamation strategies by the operators. One example is the BHP San Juan Mine, where innovative regrading and channel design techniques resulted in the mine receiving the U.S. Department of the Interior's "Best of the Best" national award for reclamation in 2004.



Sugarite reclamation site. Photo by John Kretzmann

Extractive Energy Resources

Uranium

Uranium mining, a major producer in the mid-Twentieth Century that has been largely dormant for 25 years, is showing a few signs that it may spring back in the future. Interest in uranium production is returning because inventories have been depleted and market prices are rising. The price of U_3O_8 (yellow cake) has risen from \$6.50/pound in fall 2000 to \$32/pound in fall 2005. According to DOE's Energy Information Administration, activities in all sectors (exploration, mining, milling and reclamation) increased for the first time since 1998: total employment increased 31 percent from 2003, while reclamation employment increased 3 percent.

Uranium is used as a fuel for nuclear reactors and has limited industrial applications as a heavy metal. The Grants Uranium Belt, the most prolific producer of uranium in the United States, started production in the late 1940s. The boom years in the Belt were 1953-1980, when approximately 350 million pounds of yellow cake were produced. Uranium recovery operations declined dramatically after 1980, when the liquidation of large government Cold War military stockpiles depressed the uranium market.

New Mexico ranks second behind Wyoming in uranium reserves. From 1998-2002, only one company in New Mexico, Rio Algom Mining LLC, produced uranium from waters recovered from inactive underground operations at Ambrosia Lake Mill in Grants. All uranium recovery in the state ceased in December 2002 and operations in the state now are focused on reclamation. Rio Algom plans to have the Ambrosia Lake Mill reclamation completed in 2007. The United Nuclear Corporation Mill in Church Rock and the Homestake Mill in Milan also are undergoing reclamation.

Rio Grande Resources Company is maintaining the closed facilities at the flooded Mt. Taylor underground mine in Cibola County. Hydro Resources, Inc. (HRI) continues to pursue licensing from the Nuclear Regulatory

Commission (NRC) to mine uranium by in-situ leaching at Church Rock and Crownpoint. HRI has additional leases for properties near Crownpoint from New Mexico and Arizona Land Company LLC (formerly NZU) and owns the Santa Fe Railroad properties in the Ambrosia Lake subdistrict.

Strathmore Minerals Corporation announced in September 2005 it had commissioned a cultural resources clearance survey for their Church Rock properties, the first step in the NRC licensing process for an in-situ leach facility. According to the State Land Office, Strathmore holds 13 state uranium leases in the Grants Uranium District (as of September 2005). The company now owns or leases uranium properties in Ray Claims, Church Rock, Roco Honda and Noserock. Anaconda Uranium wrote off the La Jara Mesa uranium development in 2001; the deposits now are in the process of being acquired by Laramide Resources, Ltd.

2005 EXCELLENCE IN RECLAMATION AWARDS

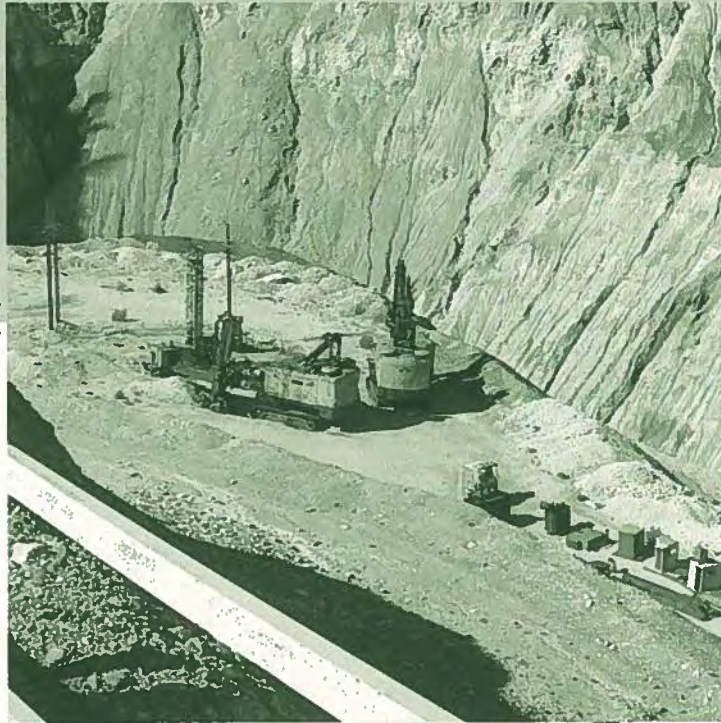
ST. CLOUD MINING COMPANY

for its Lake Valley Phase 1 Mine Safeguard Project.

MOLYCORP, INC.

for mitigation work on its Goathill North Rockpile.

MolyCorp, Inc.'s Questa Mine. Photo by Wayne Lee



El Cajete Pumice Mine, Jemez Mountains. Source: MMD



Copper
Gold and Silver
Molybdenum
Potash
Industrial Minerals

Extractive Non-Energy Resources

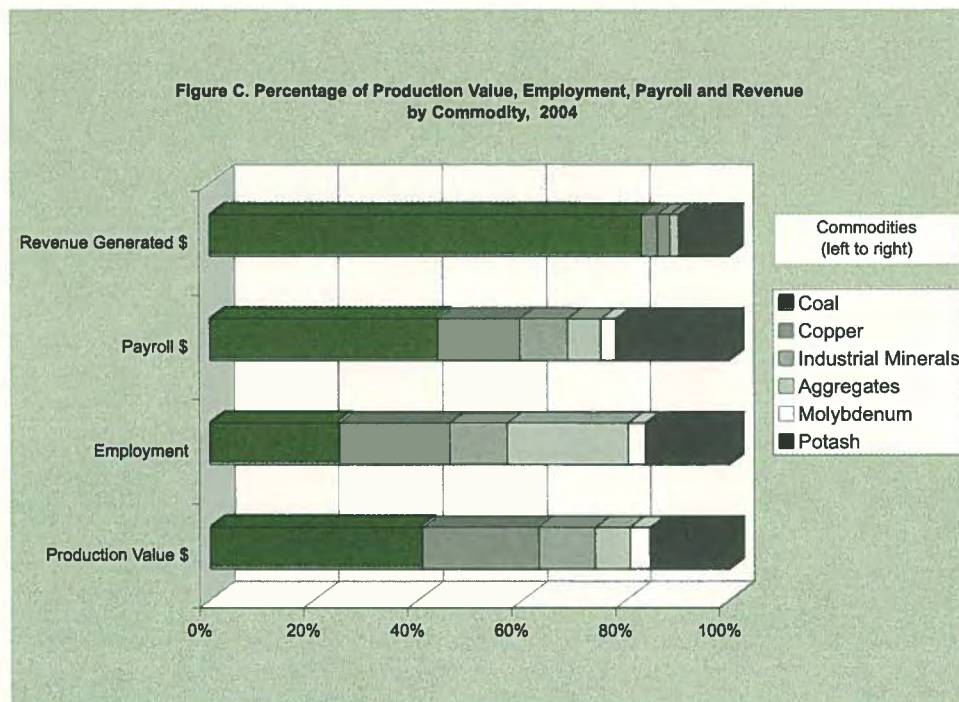
Overview

Table B (page 41) provides summary information on all mineral commodities produced in the New Mexico in 2004. Coal and uranium, while energy resources, are included for comparison and to provide a comprehensive list of all minerals produced in the state. The related figures (Figures C-E) are developed from Table B and show the importance of different mineral commodities to the state, along with their relative importance to each other. For simplicity, less-significant mineral commodities (gold, silver, uranium and magnetite) were not included in Figure C.

In 2004, the overall value of mineral production for all commodities listed in Table B increased by 26 percent over 2003. Employment was up more than 12 percent, and payroll rose 5 percent. This increase was largely due to significantly higher commodity prices for copper, molybdenum and potash. Based on early reports for 2005 and beyond, this growth trend will continue.

If coal and uranium were eliminated from Table B, the production value for all non-energy minerals in 2004 was nearly \$925 million, up sharply from \$607 million in 2003.

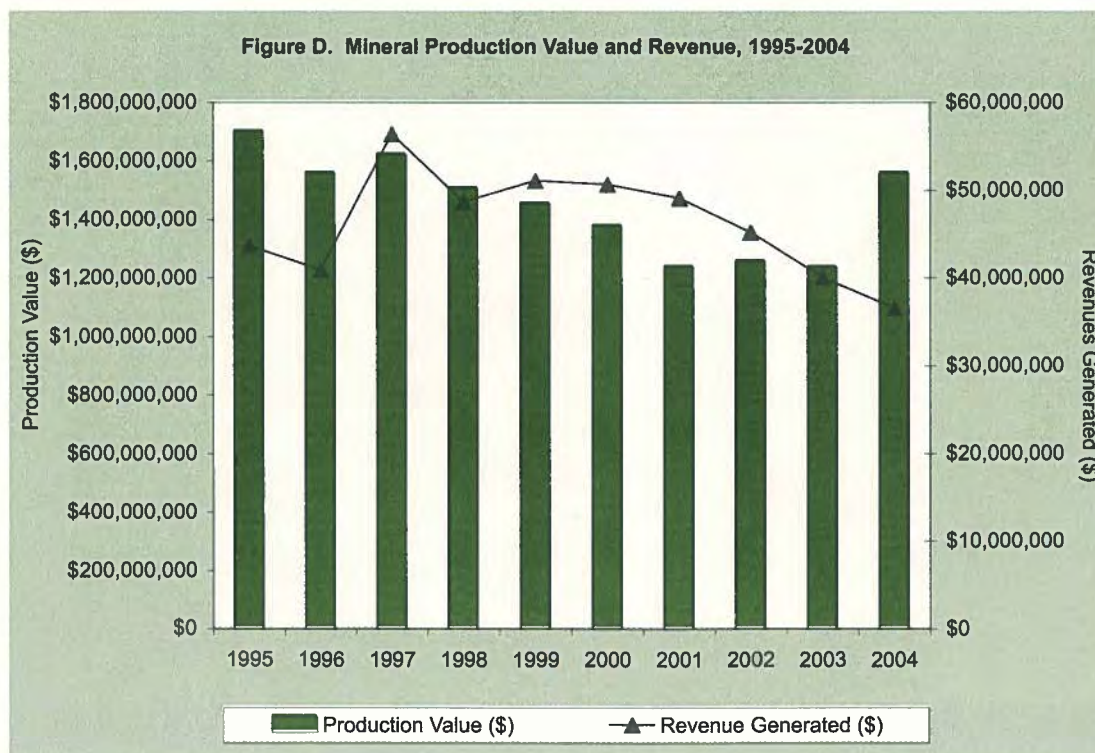
There have been an average of 225 registered active mining operations in the State of New Mexico in recent years. During 2004, active operations included four coal mines, three potash mines and mills, one molybdenum mine, two major copper mines, 43 industrial mineral operations (mines and mills) and 192 aggregate operations. (Operations located on Indian Lands are not included in these numbers, although Indian Lands hold one of the largest coal mines in the state, some industrial mineral mines and many aggregate operations.) Since 1998, the number of regis-



tered mining operations in New Mexico has increased by about 60, almost all in the industrial mineral and aggregate categories.

According to U.S. Geological Survey (USGS), New Mexico is 25th (2003 data) when ranking states by the production value of non-energy minerals. Our state produces 1.44 percent of the U.S. total non-energy

minerals, with the principal minerals (in descending order of value) being potash, copper, construction sand and gravel, portland cement and crushed stone. New Mexico's national rank jumps to 7th for per capita production value, with nearly \$300 worth of minerals produced annually for every New Mexican during recent years.



Extractive Non-Energy Resources

Table B. New Mexico Summary of Commodity Production, Production Value, Employment, Payroll, Revenue and Ranking, 2004

Mineral	Production ¹	Production Rank ²	Reserve Rank ³	Production Value \$	Employment ⁴	Payroll \$	Revenue Generated \$ ⁵	
							State	Federal
Coal	27,409,820	12	3	633,411,910	1,466	104,382,598	24,023,677	6,302,401
Copper	269,574,632	3	3	347,747,576	1,245	37,750,161	1,127,012	-
Gold	7,443	10	-	3,046,145	-	-	23,698	-
Industrial Minerals ⁶	2,379,183	-	-	168,557,974	652	21,930,790	872,771	-
Aggregates ⁷	34,547,746	25	-	103,810,297	1,371	15,200,557	632,338	-
Molybdenum	3,734,659	5	-	60,924,912	197	7,000,000	-	-
Magnetite	38,141	-	-	455,645	8	424,959	-	-
Potash ⁸	1,069,265	1	3	237,819,345	954	52,220,636	1,714,026	1,835,339
Silver	162,512	10	-	1,146,078	-	-	5,837	-
Uranium ⁹	-	-	2	-	39	1,800,000	-	-
TOTAL				1,556,919,881	5,932	240,709,701	28,399,359	8,137,740

¹ Production for coal, industrial minerals, potash, magnetite and aggregates is reported in short-tons; copper, molybdenum and uranium in pounds; and gold and silver in troy ounces.

² Production rank is based on quantity produced in relation to other U.S. states. Coal rank is based on calendar year 2004; all other ranks on calendar year 2003. Sources: Metals, industrial minerals & aggregates, U.S.G.S. Mineral Resources Program (<http://minerals.er.usgs.gov/>); Coal, DOE's Energy Information Administration (www.eia.doe.gov).

³ Sources: Metals, industrial minerals & aggregates, U.S. Geological Survey Mineral Resources Program (<http://minerals.er.usgs.gov/>); Coal and uranium, DOE's Energy Information Administration (www.eia.doe.gov).

⁴ Category includes direct and contract employees. Gold and silver are co-products of copper production; employment and payroll for these commodities are reported in the copper numbers.

⁵ State revenue includes royalties/rentals from state trust land mineral leases and severance, resources excise and energy conservation tax revenues. Federal revenue (FY2004) includes 50% state share of federal royalties (Onshore Collections in CY 2004). State data from N.M. Tax and Revenue Department and the State Land Office; Federal data from Minerals Management Service.

⁶ Category includes gypsum, perlite, salt, limestone, calcite, dimension stone, silica flux, clay, humate, scoria, pumice, mica and zeolites.

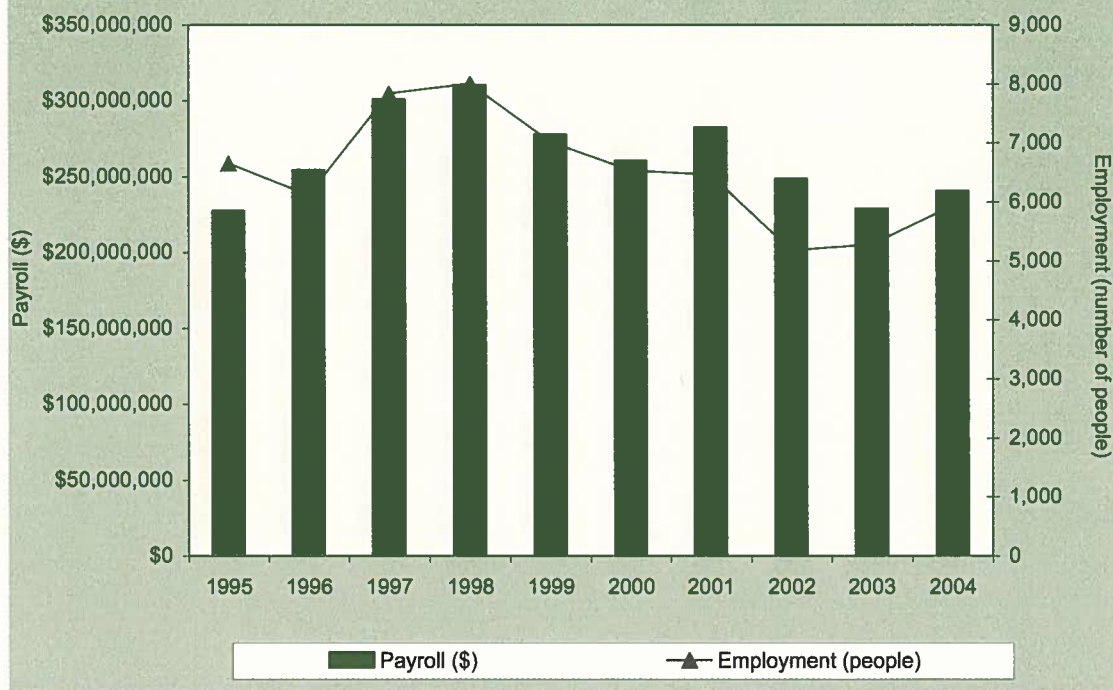
⁷ Category includes base course, caliche, clay and shale, crushed rock, dimension flagstone, fill dirt, gravel, limestone, red dog, rip-rap, sand, scoria, topsoil, travertine and other.

⁸ Production is K₂O mill production.

⁹ Employment and payroll numbers are for reclamation activity at Ambrosia Lake.

Source: New Mexico Energy, Minerals and Natural Resources Department, Mining and Minerals Division, unless otherwise noted.

Figure E. Mineral Payroll and Employment, 1995-2004



Extractive Non-Energy Resources

Copper

Copper production and employment bounced back in 2004 as higher prices allowed the reactivation of some inactive operations. Copper production increased by nearly 40 percent from 2003, while production value more than doubled (see Figure F). This trend is likely to continue in 2005 as USGS estimates increases of more than 10 percent, while Phelps Dodge (PD)-New Mexico Operations reported in November that copper prices were at historically high levels—over \$1.80/pound.

New Mexico ranks third nationally in copper production after Arizona and Utah. The three states combined accounted for 99 percent of U.S. production. New Mexico copper is used chiefly in the manufacture of electrical wire.

PD, the world's second-largest copper producer, produces copper and base metals

principally in Grant County in southwest New Mexico. Base metals are byproducts of copper production and include gold, silver and molybdenum. The two active PD operations in New Mexico are the Chino and Tyrone Mines.

In 2004, PD's Chino Mines Company (Chino) reactivated the Ivanhoe Concentrator that was in care and maintenance since 2001. Chino reactivated mining in the Santa Rita Open Pit in 2003, after mining operations were idled in 2001. Production has continued at the Chino solution extraction/electrowinning (SXEW) plant throughout these periods.

In addition to producing copper, PD began accelerated reclamation for portions of the Tyrone Mine property in 2004 and will continue into 2009. In October 2005, there were a total of 75 reclamation employees working around-the-clock, five days a week, on Tyrone reclamation.

Other PD operations include the Continental Mine operated by Cobre Mining Company. The Continental Mine is not currently producing copper and remains under care and maintenance. The mine includes a 20-acre tailing pond, which contains magnetite that was recovered by previous operators during the milling process ending in 1980. Cobre has been reducing the pond volume by selling magnetite to offsite buyers. In 2006, plans include closing more than 50 historic mine openings in the Continental Mine area and the Hanover-Empire Zinc historic mine disturbance.

The Hidalgo smelter, closed in 1999 and not actively in production, continues to refine copper, gold and silver from scrap. More than \$1 million in production value during 2004 was derived from refined copper scrap. Twelve employees with a payroll over \$600,000 can be attributed to the smelter.

Figure F. Copper Production and Production Values, 1995-2004

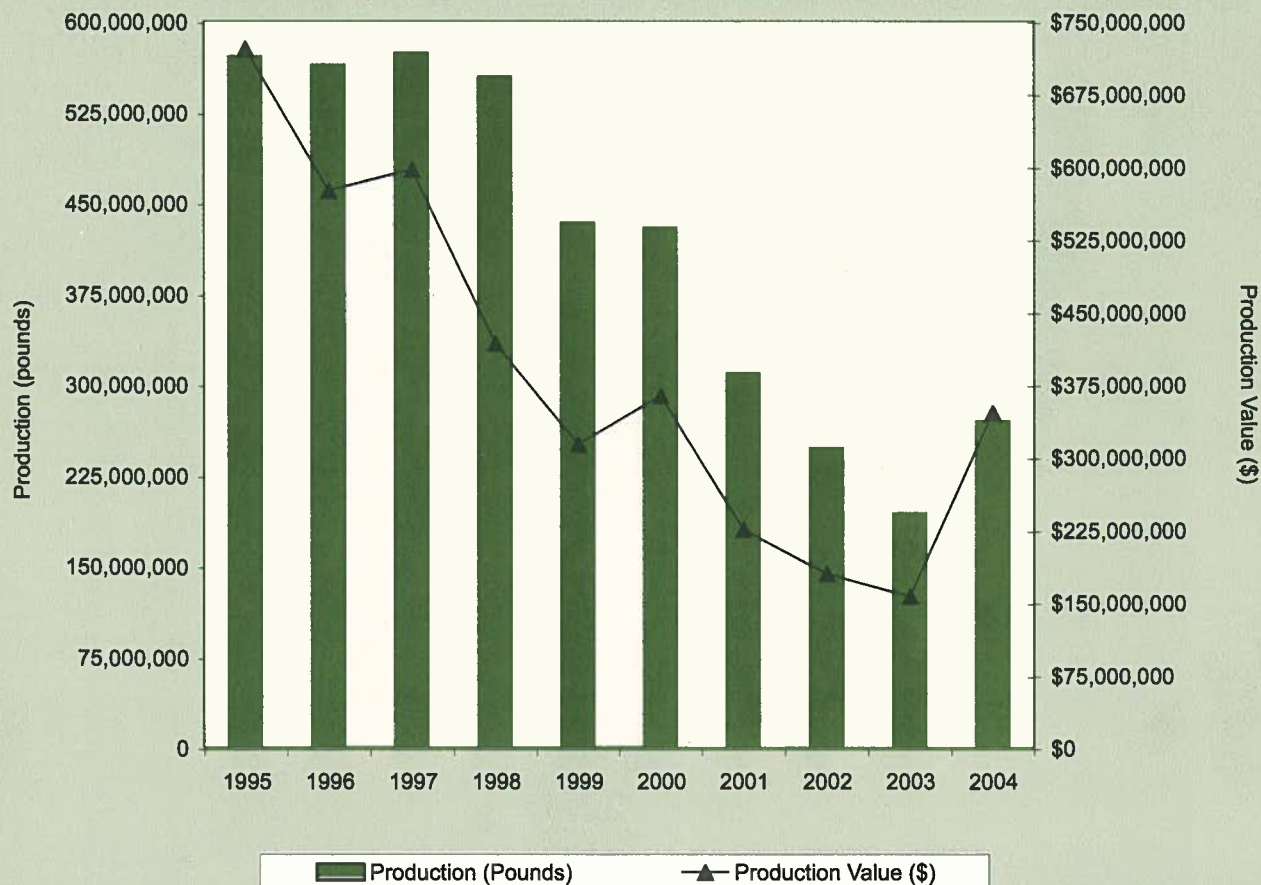
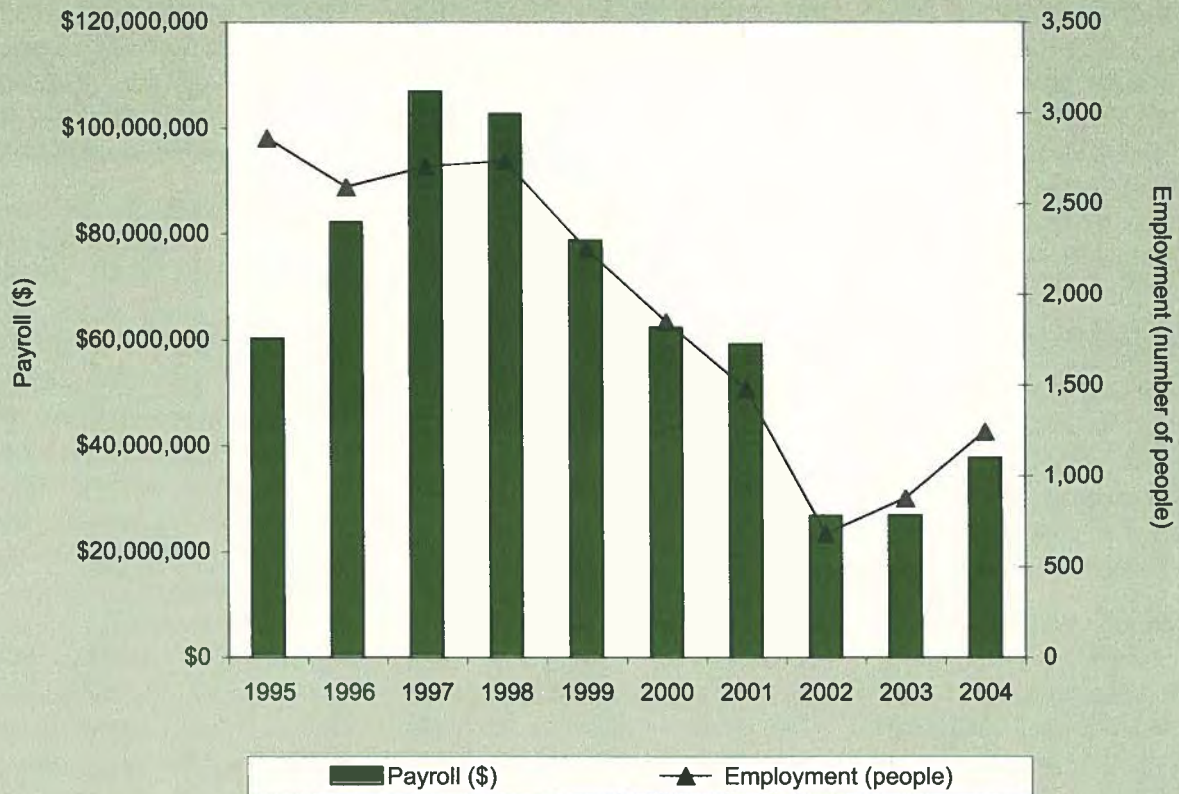


Figure G. Copper Payroll and Employment, 1995-2004



The company announced in October that the Chino smelter in Hurley, closed since 2002, will not be reopened and will be dismantled and salvaged over an 18-month period. Chino's copper concentrate production is being sent to PD's smelter in Miami, Arizona. In 2006, PD will begin construction of the world's first commercial-scale concentrate leaching plant in Morenci, Arizona. This plant will reduce PD's need for smelter capacity.

Sulfuric acid is an important reagent used in copper mining to leach copper ore and in the SXEW process that produces cathode (99.99 percent) copper. The closure of domestic copper smelters, which produce sulfuric acid as a by-product of the smelting process, has created a shortfall of acid supply and has raised acid prices and the cost to produce cathode copper.

Gold and Silver

According to USGS, the U.S. is the second-largest gold-producing nation after South Africa. Domestic mine output continued to be dominated by Nevada, whose production accounted for more than 85 percent of the U.S. total. In 2004, Alaska replaced Nevada as the leading U.S. silver producer.

In New Mexico, gold and silver are produced only as byproducts of copper processing from Phelps Dodge copper operations in Grant County. Production of these commodities was highest in the late 1980s and has generally declined since. No byproduct gold or silver was produced in the state during 2002 or 2003. With rising metal prices and the reactivation of the Ivanhoe Concentrator, however, byproduct production resumed in 2004.



Abandoned mine land exhibit at Expo New Mexico. Photo by Wayne Lee

Extractive Non-Energy Resources

Molybdenum

New Mexico remains a major producer of molybdenum, which is used primarily in the production of steel. The state's primary molybdenum producer is Molycorp, Inc.'s Questa Mine and Mill in Taos County. The Questa mine has operated sporadically since the early 1900s. The Questa operation produces molybdenite (MoS_2) concentrate that is shipped offsite in 4,000-pound sacks placed on pallets for shipment to customers on flatbed trailers pulled by semi-trucks. According to the USGS, the Questa operation is one of three primary producing molybdenum mines in the U.S.; the others are located in Colorado and Idaho. Molybdenum is also produced as a byproduct of copper production at Phelps Dodge operations in Grant County.

Even though molybdenum production was up only slightly in 2004 over 2003, sharp increases in the price (see Figure H) resulted in a nearly four-fold increase in the production value in 2004. Employment levels also increased. Molycorp has committed to maintaining a fairly stable workforce level in Questa by moving employees from mining to reclamation and remediation projects when molybdenum prices drop. Molycorp anticipates continuing operations into the foreseeable future. Future plans include planning for closure, including a reclamation plan required under the New Mexico Mining Act.

According to USGS, China continued its high level of steel production and consumption in 2005, thus providing a stable demand for molybdenum. Strong copper prices and a deficit of refined copper allowed New Mexico mines to increase byproduct molybdenum production. Additionally, because the price of nickel-bearing stainless steel remains high, consumers increasingly use duplex stainless steel, which has a higher molybdenum content than conventional stainless steel.

Potash

New Mexico is first in the nation in potash production. Nationally, more than 85 percent of all potash produced, and more than 70 percent of all potash sold, comes from the Carlsbad potash district in southeastern New Mexico. Increasing potash prices over the past several years have resulted in significant 2004 increases, particularly in production value and employment, when compared to 2003. While production increased only slightly, production value in 2004 was up more than 17 percent, employment up nearly 16 percent and payroll up more than 10 percent (see Figures I and J, respectively). At least 130 employees were added to the potash payroll in 2004.

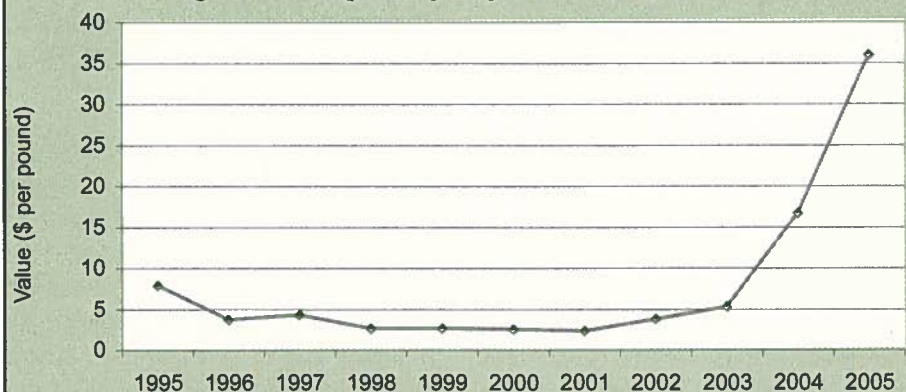
Potash is a mined salt containing water-soluble potassium. Potassium chloride (sylvite) and potassium/magnesium sulfate (langbeinite) are mined by underground methods in Eddy and Lea Counties. New Mexico potash is used primarily as an agricultural fertilizer, with most sold to Texas, Oklahoma, Kansas and Nebraska.

Some potash company restructuring occurred in 2004. Mosaic Potash Carlsbad, Inc., the largest potash producer in the world, was created in October 2004 when IMC and

Cargill Crop Nutrition merged to form the Mosaic Company. Mosaic manages the Carlsbad facilities. In March 2004, Intrepid Mining LLC (Intrepid) completed the acquisition of four potash properties from Mississippi Potash, Inc. after its parent company filed for bankruptcy in 2003. Intrepid is the largest domestic potash producer.

New developments in the New Mexico potash industry during 2005 included the completion in the fall of a new langbeinite processing plant by Intrepid at its East facility. Langbeinite is a unique form of potash found only in New Mexico. Intrepid markets langbeinite as Magma-K®; Mosaic as K-Mag®. The product has a high potassium, magnesium and sulfur content and is being marketed for use as a fertilizer to chloride-sensitive crops such as citrus fruits and vegetables. Intrepid also is working on reopening the Eddy Potash Mine as a solution-mining operation. Intrepid will flood the mine with non-potable water, allow the water to become saturated, and then pump the solution into four 400-acre "solar ponds." The solution's water evaporates in the sun, leaving behind the potash, which is then collected.

Figure H. Average Yearly Molybdenum Price, 1995-2005



Source: USGS Mineral Resources Program (www.minerals.usgs.gov)

Note: The 2005 value is the average monthly price as of the August 2005 USGS Molybdenum Mineral Industry Survey.

Increasing prices and production are likely to continue in the near future. According to USGS, there have been significant increases in world potash production and consumption over the past several years. Also, according to Mosaic, China has played the leading role in the tightening of the global potash market. China has drawn down its large grain stocks and has begun to focus resources on boosting grain output, meaning more fertilizer and potash use. China's potash imports jumped 19 percent in 2004 with an anticipated 16-percent increase in 2005.

Figure I. Potash Production and Production Values, 1995-2004

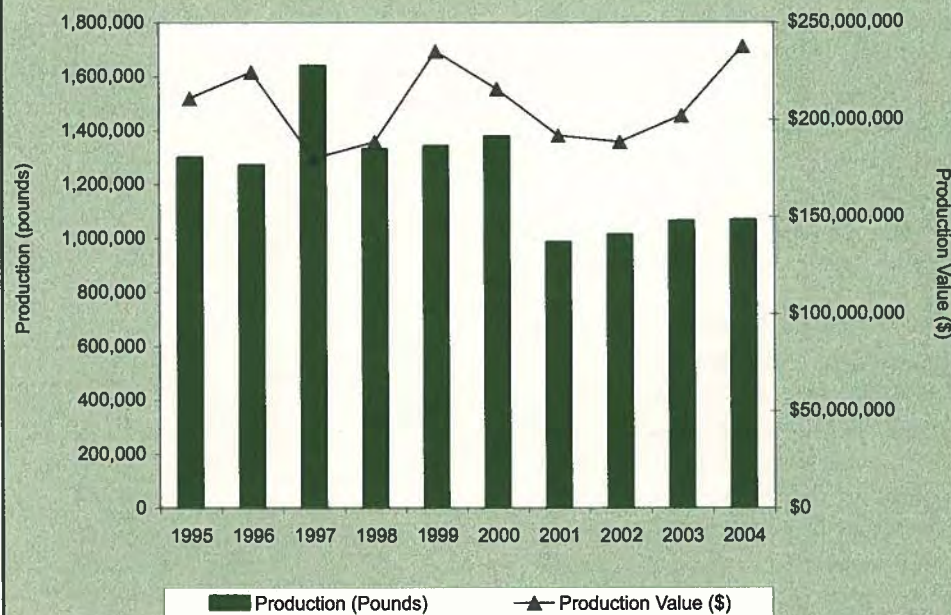
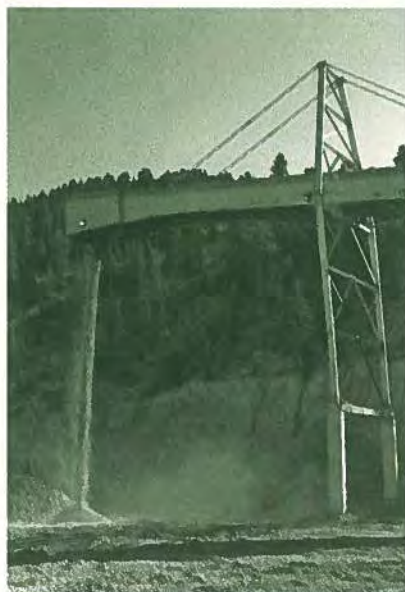
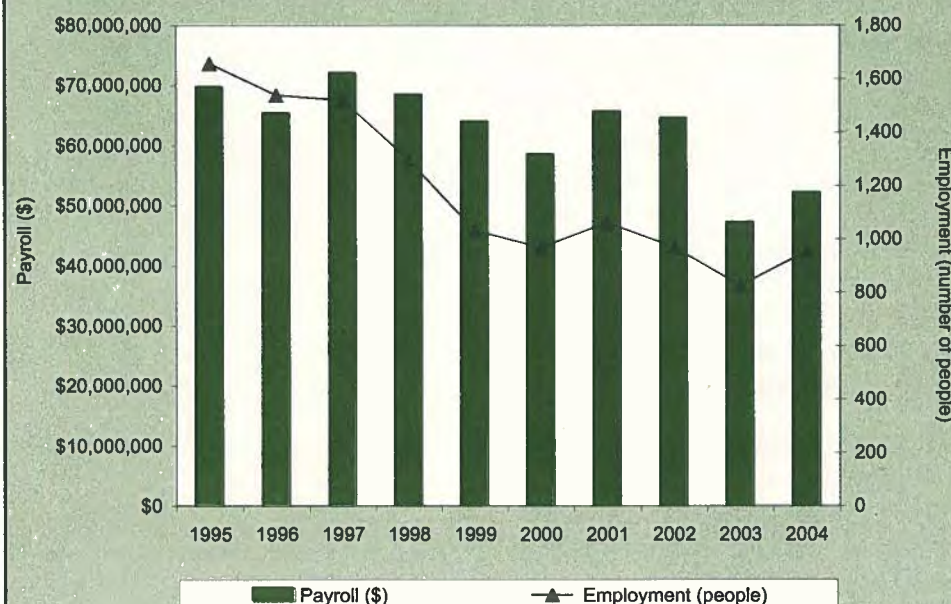


Figure J. Potash Payroll and Employment, 1995-2004



Molycorp, Inc.'s Questa Mine. Photo by Wayne Lee

Extractive Non-Energy Resources

Industrial Minerals

Industrial minerals include a wide variety of mineral resources dispersed across the state. In New Mexico, the most-important industrial mineral resources include gypsum, perlite, salt, limestone, dimension stone, silica flux, clay, humate, scoria, pumice, mica and zeolites. In 2004, there were 43 industrial mineral operations registered in the state. Of the 43 registered mines, three were new mines under development for the mineral commodities humate, garnet and perlite; eight had no production. Table C details the mine locations and employment figures for selected industrial mineral commodities in the state. Industrial mineral production increased slightly in 2004, while production value increased 10 percent from 2003.

Stone and aggregate, which includes sand and gravel, is a subset of industrial minerals. Construction sand and gravel, one of the most accessible natural resources and a major basic raw material, is used mostly by the construction industry. 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. According to the USGS, New Mexico is a significant producer of construction sand, gravel and dimension stone.

There were 192 stone and aggregate operations registered in New Mexico in 2004, a 9-percent increase from 2003. Production increased substantially from 2003, production value was up 33 percent and employment jumped 30 percent. The higher figures can be attributed to increased demand for construction aggregates by the road and home building industries. Aggregate consumption is expected to continue to grow in response to outlays for roads and other construction.

The sand and gravel industry continues to move operations and place new operations away from densely populated centers, where local zoning, environmental and land-development regulations discourage sand and gravel operations. Consequently, shortages

of construction sand and gravel in urban and industrialized areas also 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.

Table C. Production Rank, Locations and Employment for Selected Industrial Mineral Commodities, 2004

Commodity	Production Rank ¹	County	Employees ²
Clay	-	Bernalillo, Dona Ana	2
Dimension & Flagstone	-	Valencia	25
Gypsum	13	Bernalillo, Dona Ana, Sandoval	222
Humate	-	Sandoval, San Juan, McKinley	13
Limestone	-	Bernalillo	100
Mica	2	Rio Arriba, Taos	26
Perlite	1	Socorro, Taos	67
Pumice	3	Sandoval, Santa Fe, Rio Arriba	46
Salt	11	Eddy	68
Sand	-	Santa Fe	3
Scoria	-	Santa Fe	33
Silica / Flux	-	Grant, Hidalgo	2
Zeolites	1	Sierra	45

TOTAL

652

¹ Source: USGS 2003 Ranking

² Includes both direct and contract employees.

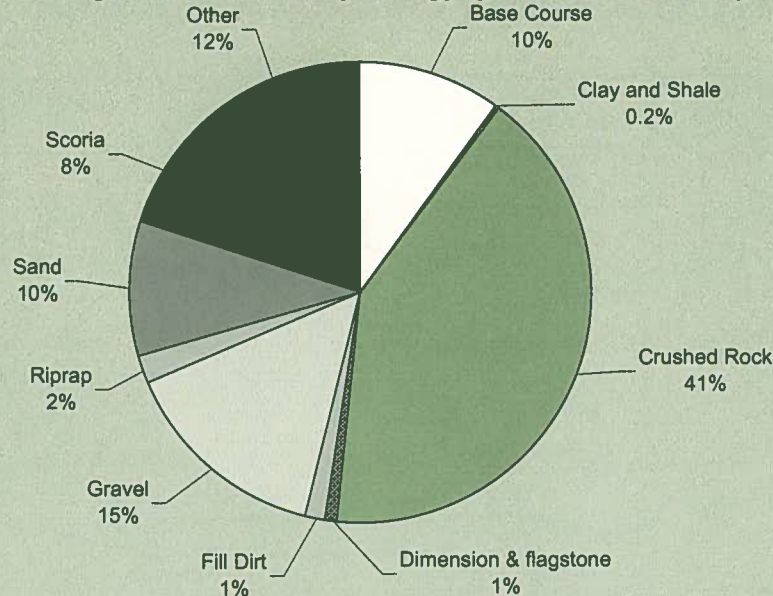
Note: Some industrial mineral operations are included with aggregate/stone.

Table D. Aggregate & Stone Production and Sales Value, 2004

Commodity	Quantity (short tons)	Sales Value (\$)
Base Course	2,074,538	10,499,792
Caliche	137,254	12,055
Clay and Shale	48,706	163,386
Crushed Rock	5,472,374	42,921,278
Dimension & flagstone	274,477	982,034
Fill Dirt	585,937	1,226,901
Gemstones	1	W
Gravel	20,318,596	15,391,851
Limestone	750,389	W
Red dog	5,235	W
Riprap	196,350	1,961,429
Sand	1,359,931	9,926,323
Scoria	523,747	7,852,832
Top soil	6,742	50,944
Travertine	70	W
Other	2,793,399	12,726,974
Total	34,547,746	103,810,297

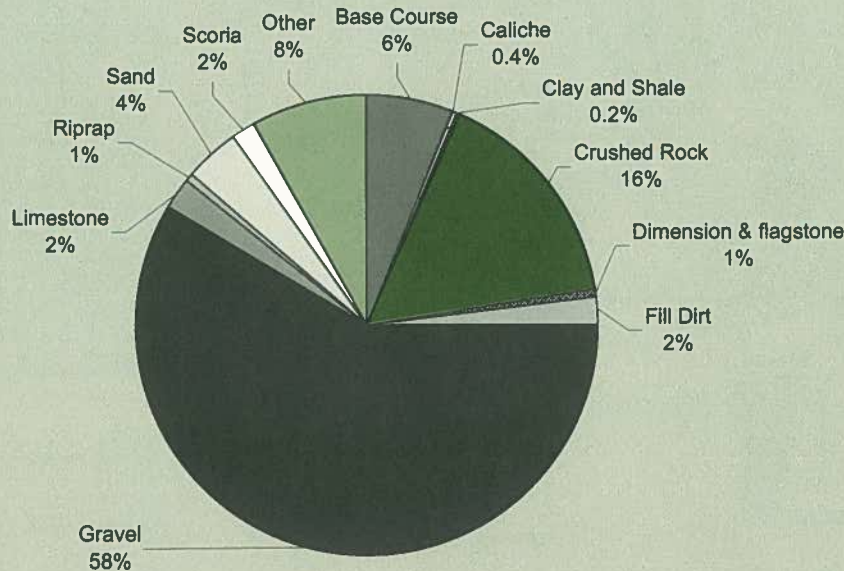
NOTE: W = confidential information withheld. Confidential data was included in totals.

Figure K. Percentage of Production Value by Total Aggregate and Stone Commodity, 2004



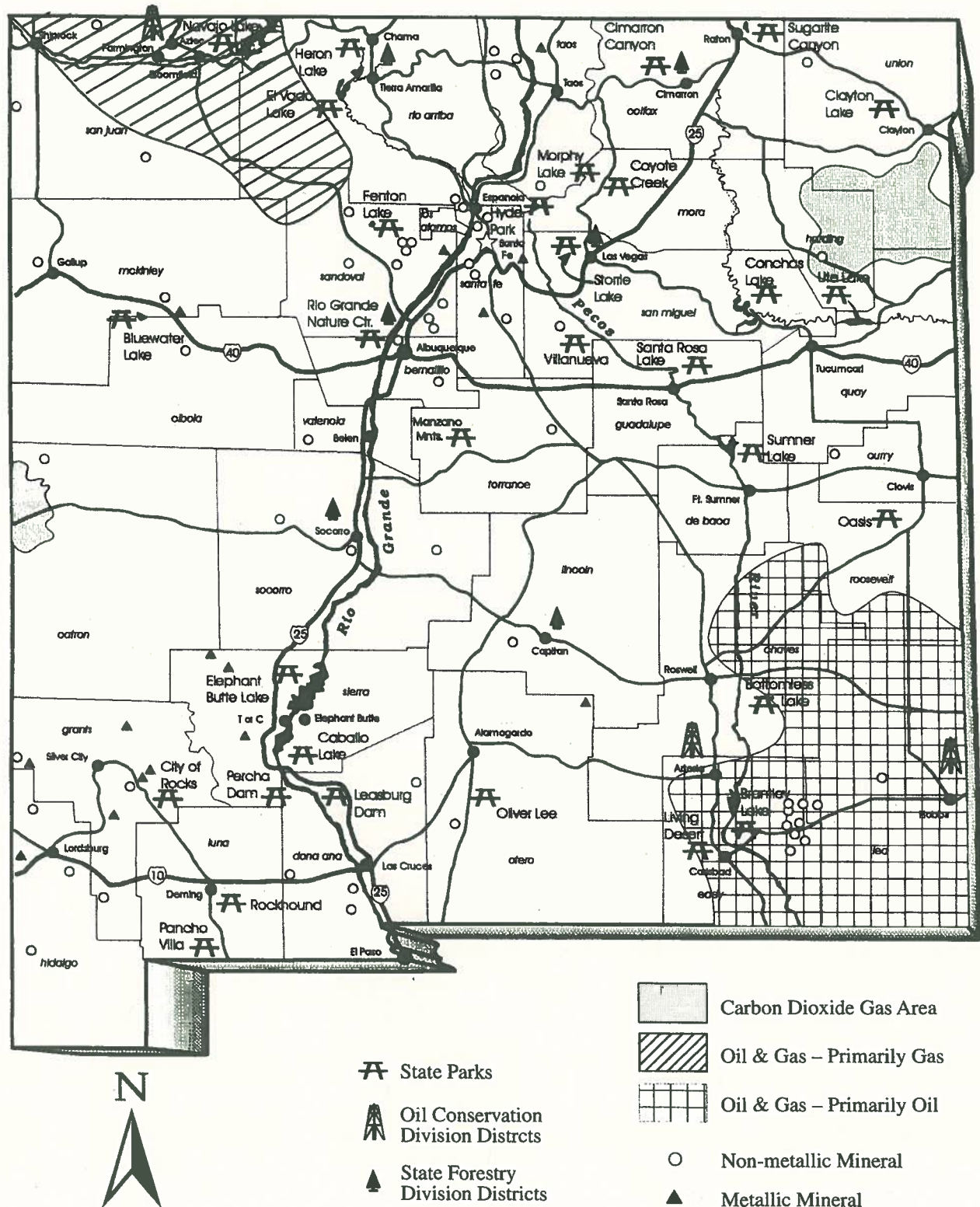
NOTE: The commodities caliche, gemstones, limestone, red dog, top soil and travertine are less than 0.2% of the total 2004 production value and were left off the chart for clarity.

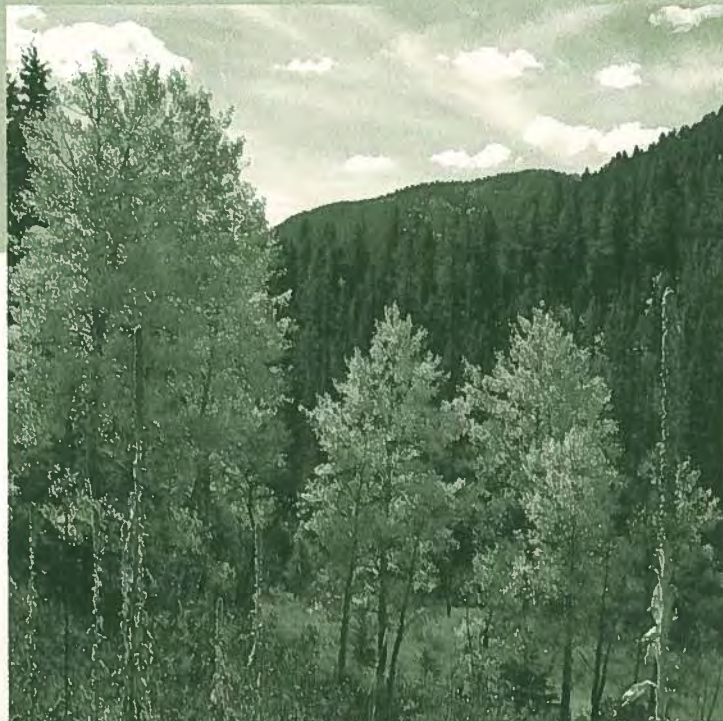
Figure L. Percentage of Total Aggregate and Stone Production by Commodity, 2004



NOTE: The commodities clay and shale, gemstones, limestone, red dog, top soil and travertine are less than 0.2% of the total 2004 production and were left off the chart for clarity.

New Mexico Petroleum Regions & Mineral Resources, Oil Conservation Division District Offices, Forestry Division Offices, and State Parks

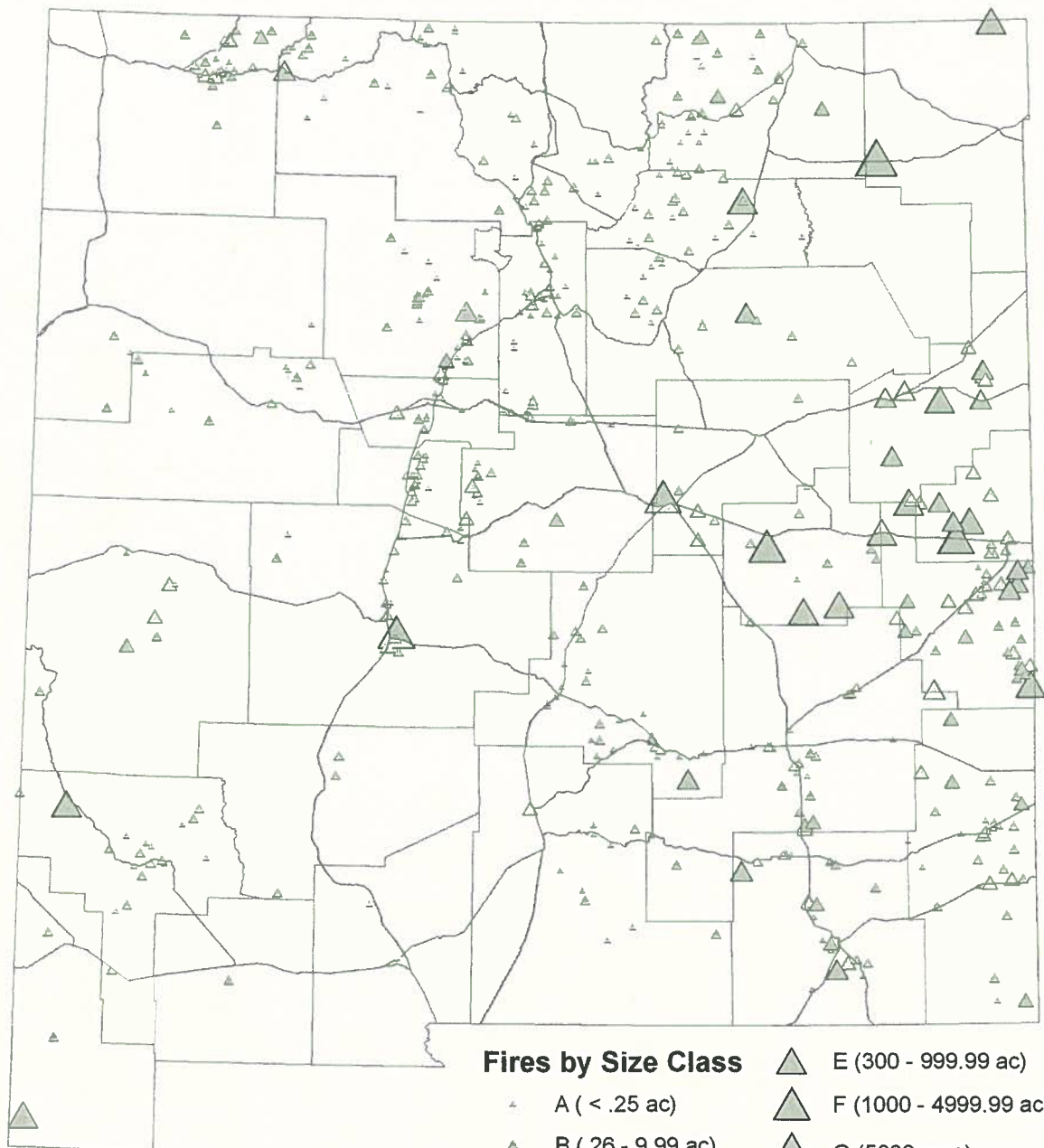




Pecos Canyon and Santa Fe National Forest. Photos by Wayne Lee



FIRES IN NEW MEXICO ~ CALENDAR YEAR 2005 BY SIZE CLASS



Fires by Size Class

- △ A (< .25 ac)
- △ B (.26 - 9.99 ac)
- △ C (10 - 99.99 ac)
- △ D (100 - 299.99 ac)
- △ E (300 - 999.99 ac)
- △ F (1000 - 4999.99 ac)
- △ G (5000 ac +)
- Counties
- Highways

0 15 30 60 90 120 Miles



Datum: NAD83 Projection: UTM Zone 13N
No warranties are made regarding the accuracy of this data.
Produced by NM EMNRD Forestry Division GIS 11/21/2005

Forest Resources

New Mexico State Forestry is responsible for wildfire suppression on state and private lands and works in conjunction with federal, municipal and tribal entities to maximize resources to fight fires across the state.

In addition, State Forestry:

- Provides technical advice on forest and resources management to private landowners;
- Distributes federal and state funds for land management projects;
- Coordinates tree planting activities and grants for local, state and federal agencies, school districts and other public lands; and
- Provides low-cost seedlings for conservation, education and beautification projects.

In 2005, there were 548 fires in New Mexico affecting state and private land. The 10-year average is 778 fires. Those fires burned 30,551 acres, down considerably from the 10-year average of 116,819 acres. Human-caused fires accounted for 34 percent (186 fires), 61 percent in 2004. The 10-year average is 67 percent.

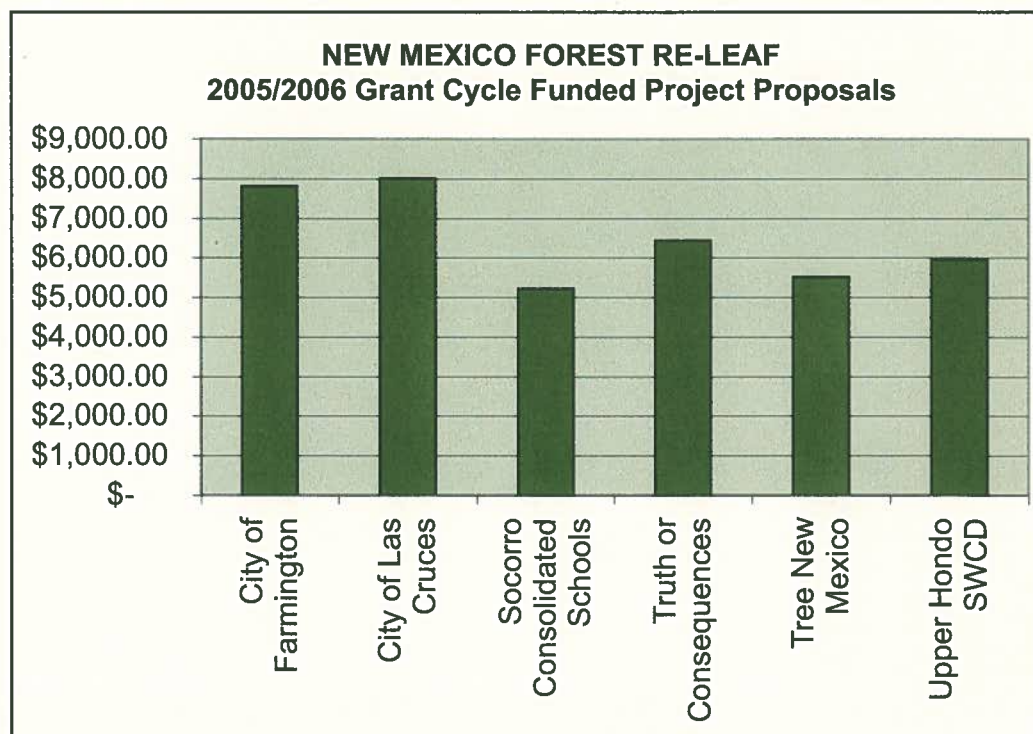
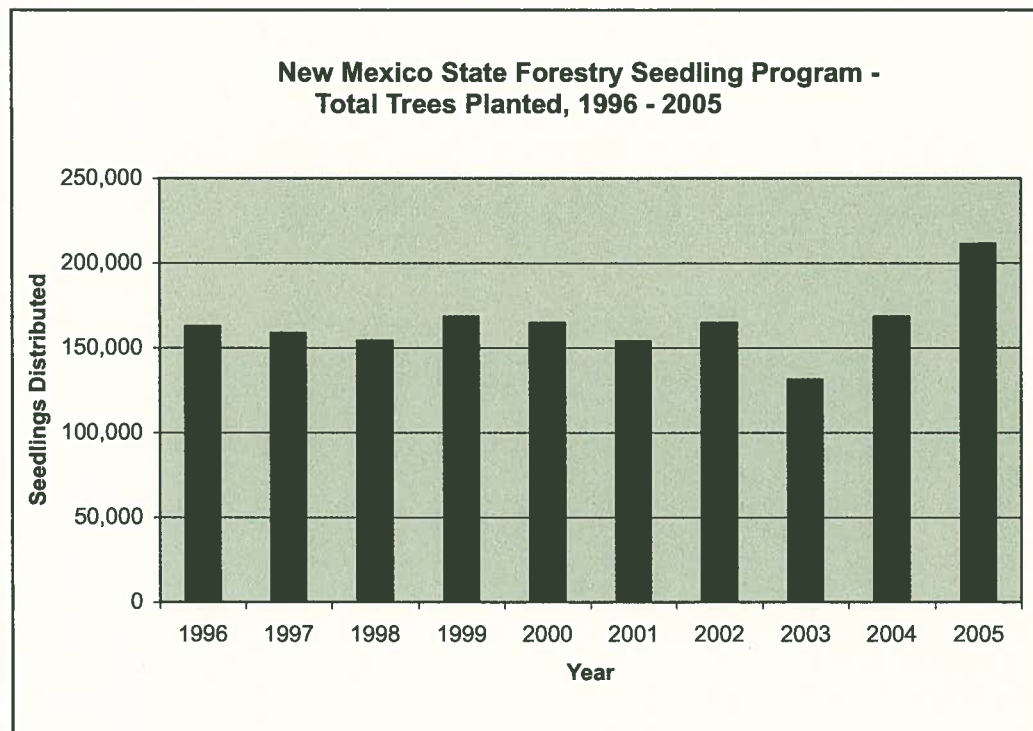
Increased public awareness of human-caused fires, along with a significant increase in wet weather and a drop in the number of lightening-producing severe weather events probably contributed to the dramatic decrease in the number of fires during the year. The map on page 50 identifies the location and size of fires for the 2005 fire season.

The State Forestry Seedling Program saw record sales in the 2004-2005 sales cycle. The final numbers show that 211,213 seedlings were distributed (see

chart below), an increase of 42,892 over the previous year. The increase is due in part to enhanced public awareness of the program through outreach campaigns around New Mexico.

Many landowners continue to replace thousands of piñon trees across the state due to

the Ips bark beetle devastation. Landowners have been planting seedlings purchased through State Forestry to replace their dead trees, help control erosion and protect crops and livestock. Since 1990, New Mexico Forest Re-Leaf (see chart at bottom of page) has distributed \$441,103 in grant funding for the planting of trees and shrubs around New



Forest Resources

Mexico. During the 2004-2005 grant cycle, \$38,872 was distributed for 7 projects.

Re-Leaf grants fund projects on public lands owned by local, state and federal governments, as well as those owned by school districts and soil and water conservation districts. The projects generally are used as educational tools or for land conservation. Re-Leaf subsists solely on private donations from New Mexico residents and corporations. No taxpayer funds are used for the grants.



SFD exhibit at Expo New Mexico. Photo by Wayne Lee

Data and Statistics*

- Estimated 1,401 acres of piñon mortality in 2005, down from 122,387 in 2004.
- 15 Commercial Harvest Permits issued on 10,119 acres in accordance with State Forest Regulations for a total of 101 permits on the books covering 87,649 acres.
- 254 million board feet of timber volume was removed from 1266 acres, providing work and income in several communities.
- 15 units covering 1,756 acres were completed and closed under the Regulations.
- 27 Forest Stewardship Management Plans impacting 71,430 acres were written for landowners to help them achieve their resource goals and objectives.
- 92 basic woodland management plans, hazard mitigation or defensible space plans were written affecting management on 73,555 acres.
- 449 landowners received technical assistance at least once.
- Wildland Urban Interface projects thinned 2,552 acres.
- 211,213 seedlings distributed to NM landowners.
- There were 548 fires affecting state and private land; 10-year avg. is 778 (see map).
- Those fires burned 30,551 acres; 10-year avg. is 116,819 acres.
- Human caused fires accounted for 34% (186), down from 2002 (61%) and 10-year avg. of 67%.

Inmate Work Camp crews worked on municipal and federal lands completing fuel breaks, fire restoration activities in the Bosque, improving acequia delivery systems, reducing hazardous fuels, and improving wildlife habitat totaling 4,692 man days.

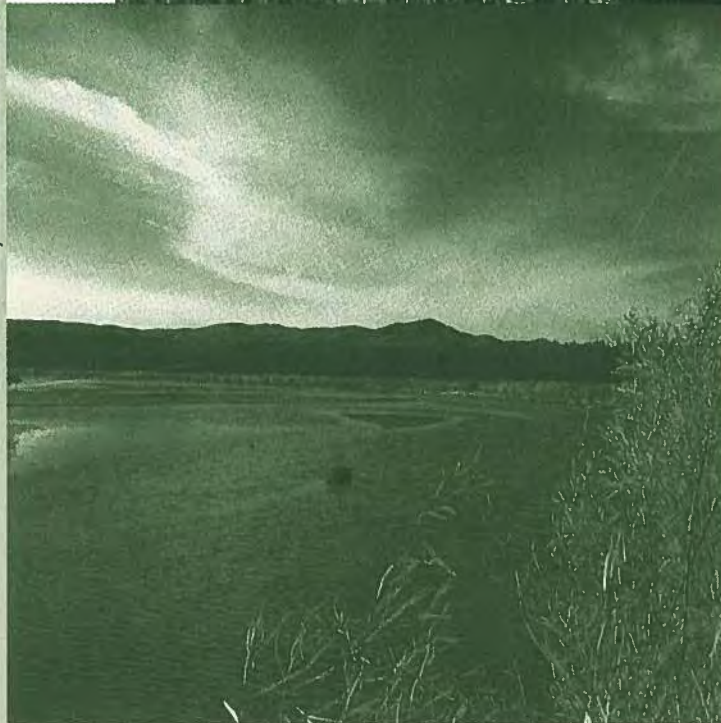
*(*As of November 21, 2005)*

Recreational Resources: New Mexico State Parks

Elephant Butte State Park. Source: by NMSPD



Brandley Lake State Park. Source: NMSPD



Recreational Resources

Recreational Resources, New Mexico State Parks

Visitation in FY 2005 (July 2004-June 2005) was approximately 4.2 million, up 9 percent from FY 2004 and the highest visitation number in five years. The overall increase stopped a streak of seven straight years of declining visitation. Of the 32 State Parks operating in FY05 (the 33rd opened on November 11, in FY06), 22 parks (69 percent) showed visitation increases, some quite substantial. The Division's largest and most popular park, Elephant Butte Lake State Park, saw a 14-percent increase in visitation from FY04, partially recovering from visitation declines suffered during the previous three drought years and the lowered water levels that had resulted. Overall, SPD exceeded the FY05 performance

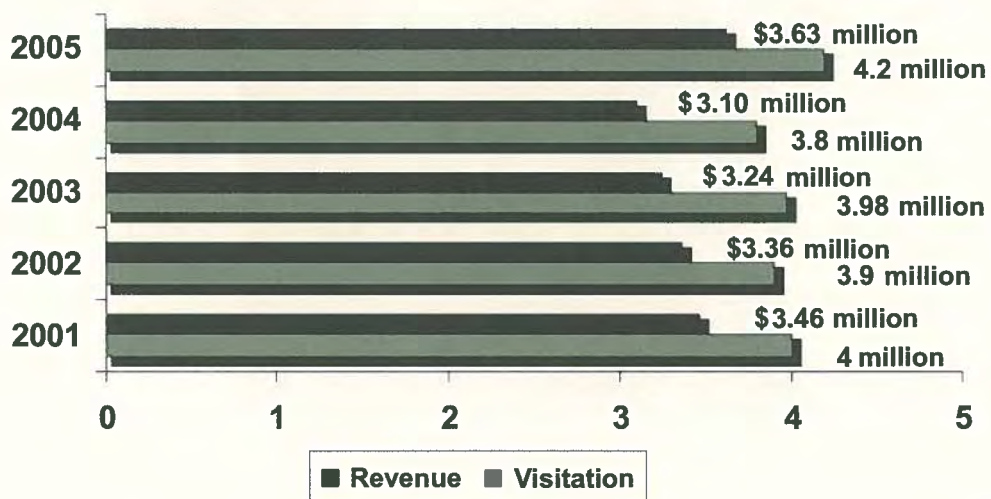
measure for visitation set by the Legislature (4 million visitors) by 5 percent.

Fortunately, with visitation growth, 2004-2005 also saw some welcome progress in the financial areas—revenue was up 16 percent in FY05 from FY04, with 27 parks (87 percent) recording revenue increases. These results also halted a string of years with declining revenue. Nonetheless, the significant fiscal problems persisted and SPD was forced to enact aggressive vacancy savings (delays in filling positions), spending restrictions and other efficiency steps in order to offset a total budget shortfall of \$1.5 million. As a result, the Division also met the FY05 performance measure for budget set by the Legislature by self-generating 66 percent of its budget.



Group shelter, Brantley Lake State Park. Photo by Erica Asmus-Otero

New Mexico State Parks: Visitations & Revenues, FY 2001-2005



New Mexico State Parks: Visitations & Revenues by Park, FY 2001-2005

Park	Traffic Cnt FY 04	Traffic Cnt FY 05	Difference	% Diff	Rev FY 04	Rev FY 05	Difference	% Diff
Bluewater	48,460	46,340	(2,120)	-4%	\$ 79,349	\$ 84,225	\$4,876	6%
Bottomless Lake	109,269	111,630	2,361	2%	\$ 122,579	\$ 130,789	\$8,210	7%
Brantley	69,971	71,549	1,578	2%	\$ 91,194	\$ 92,710	\$1,516	2%
Caballo Lake	187,501	192,617	5,116	3%	\$ 161,084	\$ 200,042	\$38,958	24%
Cimarron Canyon	42,643	38,285	(4,358)	-10%	\$ 76,991	\$ 73,476	(\$3,515)	-5%
City Of Rocks	54,018	120,797	66,779	124%	\$ 72,353	\$ 81,357	\$9,004	12%
Clayton Lake	56,962	61,038	4,076	7%	\$ 29,268	\$ 35,466	\$6,198	21%
Conchas Lake	156,793	134,035	(22,758)	-15%	\$ 107,637	\$ 129,719	\$22,082	21%
Coyote Creek	54,201	63,521	9,320	17%	\$ 42,083	\$ 42,485	\$402	1%
Eagle Nest	-	70,071	70,071	#DIV/0!	\$ -	\$ 27,917	\$27,917	#DIV/0!
El Vado	47,985	45,372	(2,613)	-5%	\$ 38,942	\$ 36,631	(\$2,311)	-6%
Elephant Butte Lake	1,065,006	1,215,558	150,552	14%	\$ 542,949	\$ 709,014	\$166,065	31%
Fenton Lake	65,088	72,523	7,435	11%	\$ 73,096	\$ 78,502	\$5,406	7%
Heron	113,220	118,798	5,578	5%	\$ 106,865	\$ 104,764	(\$2,101)	-2%
Hyde Park	32,340	30,324	(2,016)	-6%	\$ 90,631	\$ 98,609	\$7,978	9%
Leasburg	74,412	87,734	13,322	18%	\$ 56,553	\$ 69,328	\$12,775	23%
Living Desert	48,422	48,525	103	0%	\$ 120,814	\$ 146,966	\$26,152	22%
Manzano	17,490	9,119	(8,371)	-48%	\$ 16,063	\$ 18,680	\$2,617	16%
Morphy Lake	30,065	25,670	(4,395)	-15%	\$ 13,980	\$ 13,112	(\$868)	-6%
Navajo Lake	512,800	460,983	(51,817)	-10%	\$ 472,551	\$ 520,378	\$47,827	10%
Oasis	36,256	37,967	1,711	5%	\$ 38,181	\$ 46,550	\$8,369	22%
Oliver Lee	38,977	40,562	1,585	4%	\$ 59,561	\$ 58,543	(\$1,018)	-2%
Pancho Villa	89,400	95,516	6,116	7%	\$ 93,955	\$ 99,424	\$5,469	6%
Percha Dam	38,961	44,945	5,984	15%	\$ 16,946	\$ 21,983	\$5,037	30%
Rio Grande Nature Center	159,356	129,869	(29,487)	-19%	\$ 38,732	\$ 64,852	\$26,120	67%
Rockhound	34,154	43,692	9,538	28%	\$ 65,063	\$ 71,993	\$6,930	11%
Rockhound Springs	8,255	8,222	(33)	0%	\$ 1,920	\$ 2,294	\$374	19%
Santa Fe Office	-	-	-	-	\$ 4,230	\$ 24,745	\$20,515	485%
Santa Rosa Lake	61,931	89,260	27,329	44%	\$ 51,408	\$ 64,297	\$12,889	25%
Storrie Lake	152,531	171,080	18,549	12%	\$ 67,967	\$ 99,249	\$31,282	46%
Sugarite Canyon	81,216	122,312	41,096	51%	\$ 71,343	\$ 71,312	(\$31)	0%
Sumner Lake	20,613	30,870	10,257	50%	\$ 33,063	\$ 45,634	\$12,571	38%
Ute	266,188	296,715	30,527	11%	\$ 214,083	\$ 212,590	(\$1,493)	-1%
Villanueva	65,750	67,401	1,651	3%	\$ 45,028	\$ 49,195	\$4,167	9%
Totals:	3,840,234	4,202,900	362,666	9%	\$ 3,116,462	\$ 3,626,831	\$510,369	16%

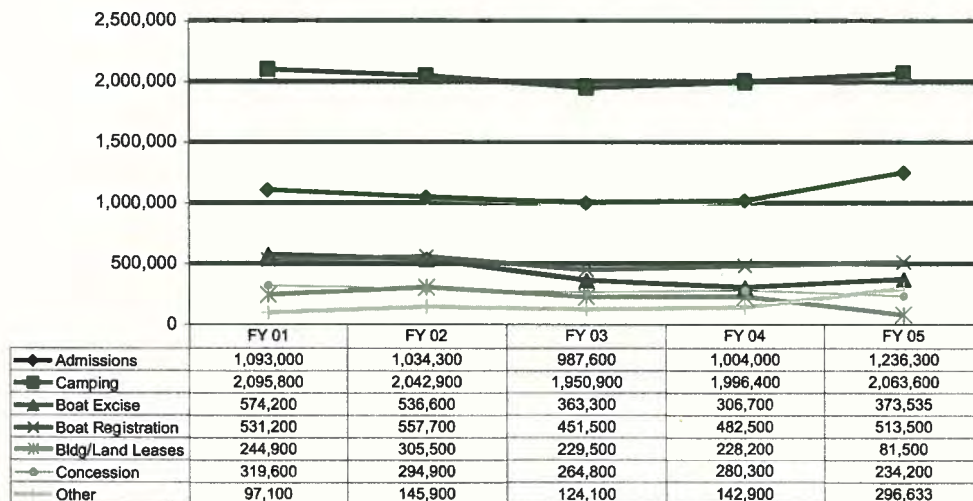
Annual Permits Sold

	Annual Day	2nd Vehicle	Annual Camp	Vet Pass
FY04	10,908	3,123	1,906	440
FY05	10,206	2,854	2,250	539
Difference	(702)	(269)	344	99

New Mexico State Parks: Visitations & Revenues by Year, FY 2001-2005

Year	Visitation	Revenue
2005	4.2 million	\$3.63 million
2004	3.8 million	\$3.1 million
2003	3.98 million	\$3.24 million
2002	3.9 million	\$3.36 million
2001	4 million	\$3.46 million

New Mexico State Parks: Self-Generated Revenues FY 2001-2005



Rocky Mountain elk, Sims Mesa, Navajo Lake State Park. Photo by Eddie Moon

Youth Conservation Corps

The Youth Conservation Corps funded and completed 35 Projects in 2004, employing 583 youth in 18 counties. Those projects ranged from building an interactive animal mural at a zoo, to building trails in Albuquerque's Rio Grande Bosque to erosion control on public lands.

One of those projects, the Governor's Special Pilot Project- Piñon Initiative, was implemented in northern New Mexico as a response to the environmental damage caused by the piñon Ips beetle. The \$100,000 grant enabled the Rocky Mountain Youth Corps to employ 10 Corps members to remove dead and dying piñon pine from 440 acres of National Forest land.



Rocky Mountain Youth Corps project. Photo by Darlene Valdez

YCC Projects, 2004

	Project Sponsor	County	# of Youth	Amount Awarded
1	National Hispanic Cultural Center	Bernalillo	19	\$ 97,776.44
2	Rio Grande Educational Collaborative	Bernalillo	36	\$ 103,185.26
3	SER de New Mexico	Bernalillo	9	\$ 14,787.00
4	Talking Talons Youth Leadership Program	Bernalillo	20	\$ 160,305.04
5	United South Broadway	Bernalillo	25	\$ 100,341.00
6	Catron County Citizens Groups	Catron	17	\$ 78,134.00
7	Roswell - Spring River Zoo, City of	Chaves	3	\$ 37,004.00
8	Southwest Environmental Center	Dona Ana	16	\$ 83,081.00
9	EMNRD - City of Rocks State Park	Grant	13	\$ 93,038.00
10	Silver City, Town of	Grant	25	\$ 145,756.00
11	Silver Consolidated Schools	Grant	8	\$ 11,201.00
12	EMNRD - Pancho Villa State Park	Luna	5	\$ 42,457.38
13	Gallup, City of	McKinley	56	\$ 174,004.00
14	Tucumcari, City of	Quay	5	\$ 23,734.00
15	Chimayo Youth Conservation Corps	Rio Arriba	19	\$ 73,177.40
16	Espanola Public Schools	Rio Arriba	19	\$ 89,029.00
17	Hands Across Cultures	Rio Arriba	14	\$ 56,985.10
18	Mesa Vista Consolidated School District	Rio Arriba	12	\$ 34,439.00
19	Rio Arriba County	Rio Arriba	13	\$ 73,766.00
20	Aztec, City of	San Juan	27	\$ 130,964.25
21	Farmington Municipal Schools	San Juan	40	\$ 132,887.20
22	Navajo Prep School, Inc.	San Juan	9	\$ 74,388.50
23	Cuba Independent Schools	Sandoval	10	\$ 28,737.00
24	Jemez State Monument	Sandoval	9	\$ 36,555.00
25	Jemez, Pueblo of	Sandoval	9	\$ 23,022.40
26	Santa Fe Children's Museum	Santa Fe	8	\$ 30,731.00
27	YouthWorks	Santa Fe	25	\$ 188,762.00
28	EMNRD - Caballo State Park	Sierra	6	\$ 36,710.00
29	Truth or Consequences, City of	Sierra	6	\$ 48,291.00
30	EMNRD - Socorro Forestry Division	Socorro	6	\$ 32,490.00
31	Rocky Mountain Youth Corps	Taos	9	\$ 100,000.00
32	Encino, Village of	Torrance	5	\$ 6,772.00
33	Estancia, Town of	Torrance	11	\$ 49,479.00
34	Mountainair Public Schools	Torrance	12	\$ 57,876.20
35	Forest Trust	Various	56	\$ 193,958.00
	TOTAL		583	\$ 2,663,824.17
	Governor's Piñon Initiative			
	Rocky Mountain Youth Corps	Taos	9	\$100,000.00

Grants: The YCC Commission awarded a total of \$2,663,824.17 in grants in FY 2005. The Commission met in October 2005 to review and award more than \$2.9 million in grants for the next cycle of projects. These projects will be completed in FY2006.

Other Sources of Information

Renewable and Secondary Energy Resources

New Mexico Energy Conservation and Management Division
www.emnrd.state.nm.us/ecmd/

U.S. Department of Energy
Energy Information Administration
<http://eia.doe.gov/indexnjava.html>

New Mexico Solar Energy Association
www.nmsea.org/

Renewable Energy Policy Project
Center for Renewable Energy and Sustainable Technology
www.crest.org/

National Renewable Energy Laboratory
www.publiclands.org

Sandia National Laboratory
Photovoltaic Systems Research and Development
www.sandia.gov/pv/

PNM New Mexico Wind Energy Center
www.pnm.com/systems/nmwec.htm

Extractive Energy Resources

New Mexico Oil Conservation Division
www.emnrd.state.nm.us/ocd/

New Mexico Mining and Minerals Division
Coal Mine Reclamation Program
www.emnrd.state.nm.us/Mining/cmrrp/default.htm

U. S. Department of Energy
Energy Information Administration
<http://eia.doe.gov/indexnjava.html>

New Mexico Tech
Petroleum Recovery Research Center
<http://baervan.nmt.edu/>

New Mexico Bureau of Geology and Mineral Resources
Oil and Gas Program
<http://geoinfo.nmt.edu/resources/petroleum/home.html>

New Mexico Bureau of Geology and Mineral Resources - Coal Program
<http://geoinfo.nmt.edu/resources/coal/home.html>

Extractive Non-Energy Resources

New Mexico Mining and Minerals Division
www.emnrd.state.nm.us/Mining/

New Mexico Bureau of Geology and Mineral Resources - Mineral Resources
<http://geoinfo.nmt.edu/resources/minerals/home.html>

New Mexico State Land Office
Minerals Program
www.nmstatelands.org/GetPage.aspx?sectionID=36andPagID=134

U.S. Geological Service
Minerals Commodity Information
<http://minerals.er.usgs.gov/minerals/pubs/commodity/>

U.S. Department of the Interior
Mineral Management Service
www.mms.gov/

National Association of Abandoned Mine Land Programs
www.onenet.net/~naamlp/

Forest Resources

New Mexico State Forestry
www.emnrd.state.nm.us/forestry/index.cfm

U.S. Forestry Service
Southwestern Region
www.fs.fed.us/r3/

Southwest Coordination Center
<http://gacc.nifc.gov/swcc/>

Tree New Mexico
www.treenm.com/

U.S. Department of Agriculture
Natural Resources Conservation Service
www.nrcs.usda.gov/about/history/

International Society of Arboriculture
Trees Are Good
www.treesaregood.com/

Recreational Resources

New Mexico State Parks
www.emnrd.state.nm.us/nmparks/

New Mexico Game and Fish
www.wildlife.state.nm.us/

U.S. Department of the Interior
National Park Service
www.nps.gov/

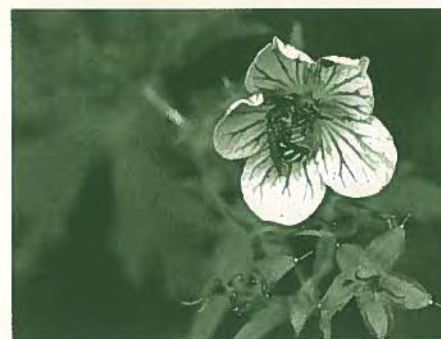
Public Lands Information Center
www.publiclands.org

U.S. Army Corps of Engineers
Recreation Services
<http://corpslakes.usace.army.mil/visitors/states.cfm?state=NM>

U. S. Department of Transportation
Scenic Byways
www.byways.org/browse/states/NM/

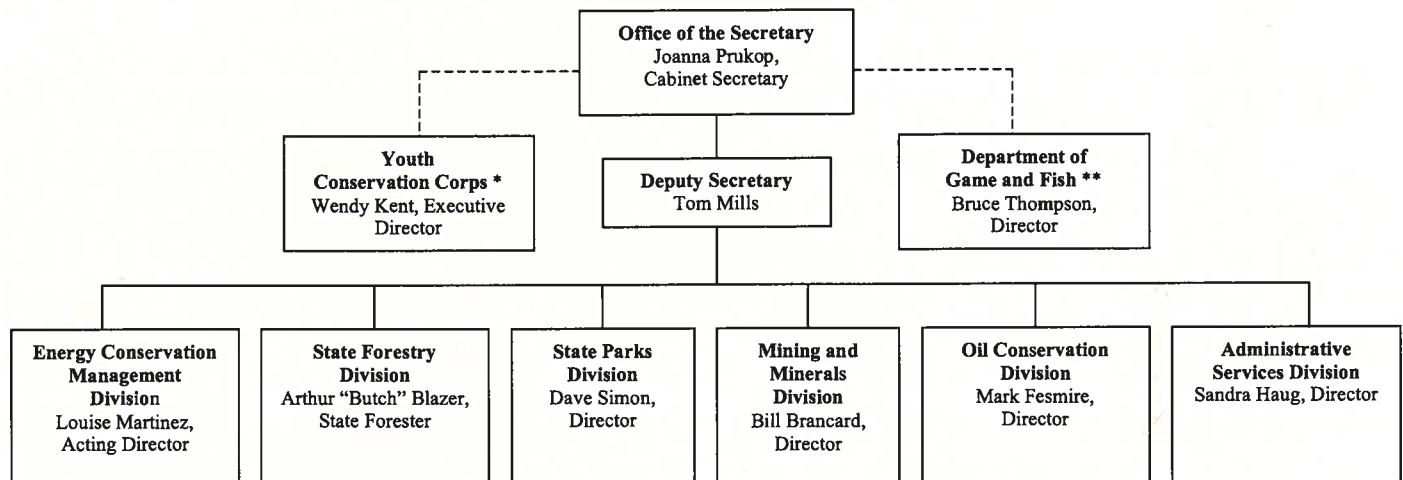


Source: NMSPD



Source: NMSPD

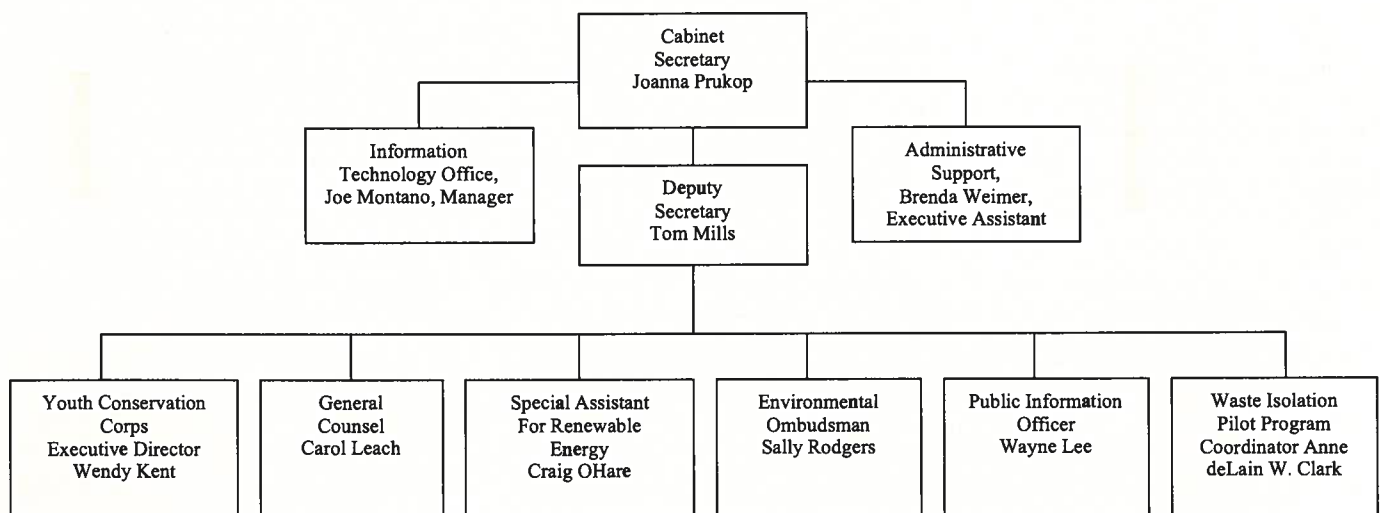
Energy, Minerals and Natural Resources Department



* Administratively Attached

** Administratively Attached. No direct budget support from EMNRD.

Office of the Secretary



ENERGY, MINERALS and NATURAL RESOURCES DEPARTMENT

1220 South St. Francis Dr.
Santa Fe, New Mexico 87505
www.emnrd.state.nm.us

