

Roads

CENTENNIAL 1912-2012



NEW MEXICO
LAND OF ENCHANTMENT



La Bajada Hill (1920)

Source: NM Department of Transportation





Overview: Roads

There are 27,853 lane miles in the New Mexico State Highway System, including all paved Interstate, US, and NM designated routes and off-Interstate Business Loops.

This does not include unpaved routes, Frontage Roads or FR designated routes. The summary of roads in NM according to the functional classification is summarized in Table 1. Sixty-five percent of all the commodities delivered annually from sites in New Mexico

are transported by trucks on the state's highways. An additional 18% is delivered by parcel, U.S. Postal Service or courier, which use multiple modes, including highways.

The road system of NM is ranked based on the weighted average of capacity, condition, funding, future needs, operation & maintenance, public safety, and resilience. Findings for each category are summarized.

Table 1: Highway Statistics of New Mexico in 2009 (lane-miles)(1)

Rural								
Interstate	Freeways And	Principal	Minor	Major	Minor	Local 2/	Total	
	EXPRESSWAYS	ARTERIAL	ARTERIAL	COLLECTOR	COLLECTOR 2/			
3,386		5,550	4,075	7,889	6,300	97,442	124,642	
Urban								Total
Interstate	Freeways And	Principal	Minor	Major	Minor	Local 2/	Total	Lane
	EXPRESSWAYS	ARTERIAL	ARTERIAL	COLLECTOR	COLLECTOR			Miles
714	10	2,832	1,598	3,119		10,024	18,297	142,939



Capacity

New Mexico expects rapid population growth in the next twenty five years, especially in metropolitan areas. For example, the Albuquerque metropolitan area will reach 1 million people by 2025 and 1.3 million by 2035, with a population increase by more than 550,000 (3). New Mexico's population grew by 33% from 1990 to 2009.

The rapid increase in population creates high demand on road traffic systems. Vehicle travel on New Mexico's highways increased by 61% from 1990 to 2009 (higher than the 39% national average); as a result, 19% of New Mexico's major urban roads are congested.

The continued increase in traffic, especially in urban areas, is placing significant wear and tear on urban roads at a time when transportation funding is inadequate to keep pace with the rate of deterioration on the roads. Total vehicle travel in New Mexico increased by 66% from 1990 to 2007 and is anticipated to increase by another 60% by 2020. According

to the REASON report, 18.71% of New Mexico's urban interstate routes are congested in 2008, (ranked 9th in the nation). In addition, 5.09% of the rural roads in New Mexico have narrow lanes (do not meet the requirement), ranking 23rd in the nation in 2008.

Transportation agencies realized that adding roadway capacity alone will not be enough to match the amount of expansion on demand. For example, it was estimated that adding physical road capacity can only contribute 17% of the total effort in addressing the river crossing traffic demand in Albuquerque area.

Other measures will need to be used to solve the capacity issue including improving land use, vehicle occupancy, transit, and operational efficiency.

Considering the above factors, a grade of B (83) is given for this category. The capacity grade contributes 15% to the total grading of roads.



Condition

Twenty-two percent of New Mexico’s major roads are in poor or fair condition. Driving on rough roads costs New Mexico motorists \$397 million a year in extra vehicle repairs and operating costs – \$291 per motorist.

Urban roads in New Mexico are in very poor condition, in general. In 2009, Albuquerque’s major urban roadways were among the roughest in the nation, costing area drivers \$576 each year in extra vehicle operating costs.

According to TRIP and the American Association of State Highway Transportation Officials (AASHTO), 36% of major urban roads in Albuquerque are in poor condition, and an additional 27% are in mediocre condition. Table 2 summarizes the road condition in Albuquerque in 2011.

According to the REASON report, the overall highway performance of New Mexico’s state highway systems ranked 2nd in the nation for 2007 and 4th for 2008, and no rural and urban interstate roads were in poor condition for 2008 (4). Only 0.11% of New Mexico’s rural roads (other than principal arterial pavement) were in poor

condition, which ranked these roads 11th in the nation. In 2011, a total of 3,171 lane miles of the New Mexico State Highway System are considered to be in deficient condition. Figure 1 shows the change of percent of Good Condition of the NM State Highway System (Interstate Highways) and Figure 2 shows the change of lane-miles in deficient condition.

Based on the above facts, the weighted grade for roadway condition in New Mexico is B. It contributes 20% to the total grade of the road category. Previous reports are not cited directly but added to the Sources section.

Table 2: Condition of Roads in Albuquerque in 2011 (Albuquerque Roads Survey)

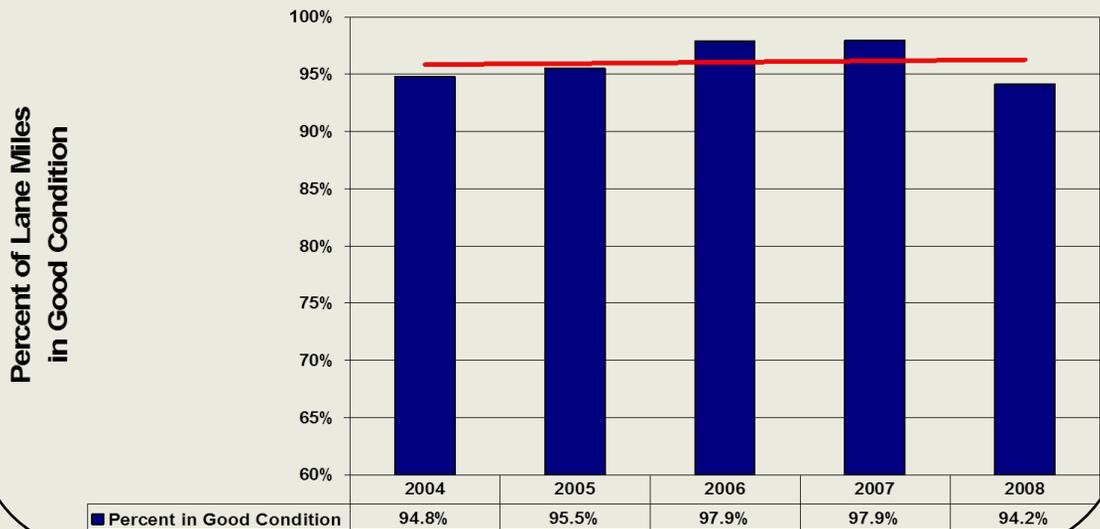
Very Good	Good	Fair	Poor	Very Poor
14.3%	27.8%	31.2%	19.5%	7.3%



Condition (cont'd)

Percent of New Mexico Interstate Highway Road Surface Miles Rated Good

(Total of 4,089 Lane Miles of Interstate Highways in the New Mexico State Highway System)



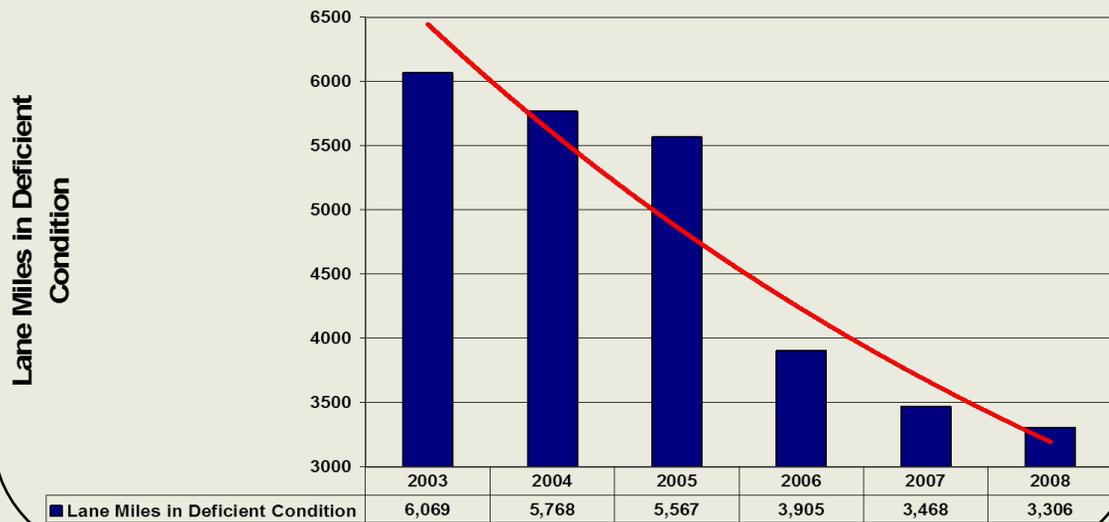
Good to Great Strategic Plan Condition of the NMI State Highway System (Interstate Highways) (4)



Condition (cont'd)

Number of System-Wide State Highway Infrastructure Miles in Deficient Condition

(Total of 26,688 Paved Lane Miles of Highways in New Mexico State Highway System)



Good to Great Strategic Plan Condition of the NM State Highway System Non-Interstate Highways) (4)



Funding

The DOT's Construction program has been historically funded with Federal Aid Funds via the Federal Highway Administration. New Mexico has received approximately \$350 million annually as part of the most recent Federal funding authorization act.

Historically approximately \$280 million was used for construction projects. However only \$140-\$150 million remains for construction projects due to NMDOT's requirement to service its outstanding bonding debt, which is only 50% of the federal funding. According to the Reason report, New Mexico's maintenance disbursements per mile in 2008 ranked the 22nd in the nation.

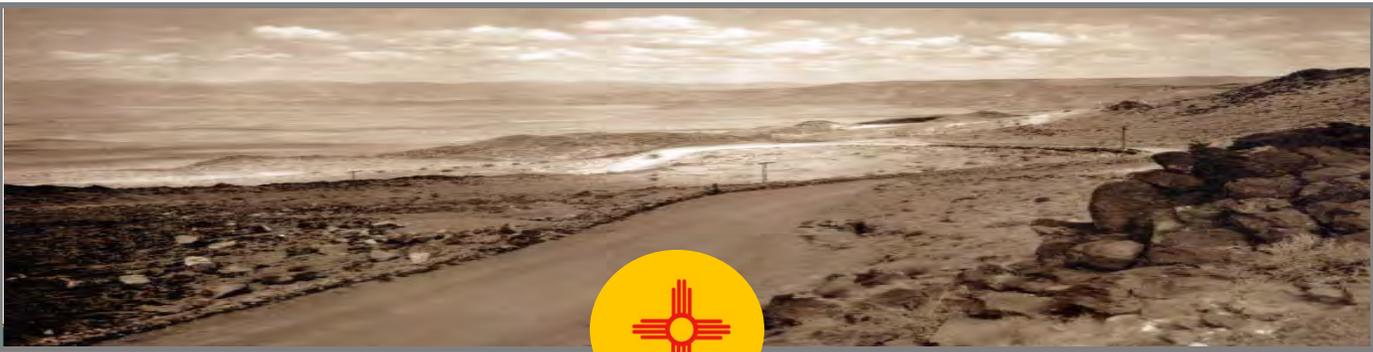
The NMDOT's 20-year long-range plan identifies an infrastructure need of \$16 billion. Its current annual need is approximately \$450 million for highway construction and does not include any mega high profile type projects. The need for bridge construction is an additional \$150 million annually. NMDOT's total budget is \$800 million a year; of which about half comes from federal highway

funds. NMDOT estimates that its current level of funding is only enough to address about 20% of its projected needs.

The funding was \$9,000,000 in 2010 for Albuquerque, as compared to \$18,000,000 in 2008. The need is \$20,000,000 per year to keep up with repairs and fuel cost.

Due to the economic recession, automobile travel fell about 3.5% during 2008 from 2007 levels nationwide, which helped relieve road deterioration to some degree. Also, beginning in late 2008 and continuing into 2009 and 2010, federal stimulus funding contributed an additional 31.7% to New Mexico resources. The ARRA funds for New Mexico were \$796.3 million in 2008. These events have eased New Mexico in addressing some long-needed construction projects. But looking forward, the funding will be much below the need for road construction and maintenance.

Considering the above facts, a grade of D is given to this category, which contributes 15% to the total grade.



Planning

Considerable population growth is forecasted in New Mexico and the growth is not evenly distributed over the whole state. Metropolitan areas will expect a much higher population increase than other areas. For example, Albuquerque experienced extensive growth between 2000 and 2008, and the metropolitan area of Albuquerque is expected to add over 550,000 residents between 2008 and 2035, an increase of 74%. According to historic data, the percent increase of Vehicle Miles Traveled (VMT) has been rising at more than three times the percent of population increase. The increase in VMT is expected to continue; for example, there were 6.2 million miles of daily travel in Doña Ana County in 2011.

By 2015 that number could increase to between 6.6 and 6.9 million miles. The rapid increase of traffic will result in increased congestion and immense burdens placed on existing infrastructure.

The New Mexico Department of Transportation (NMDOT) currently designs pavement sections for a specific design life: 5 years for pavement preservation activities, 10 years for rehabilitation projects, and 20 years for new construction and reconstruction projects. Most of the road sections have approached their design lives. The total maintenance needs for state highways include \$135M for 2011; \$128M for 2012; \$143M for 2013; and \$107M for 2014, respectively. Albuquerque has 1,170 lane miles in poor and very poor condition, which would take \$240 million to mill and inlay.

Due to funding constraints, only minimum maintenance can be conducted. The investment cannot meet the rapid increase of demand; this category is graded as D resultantly, which contributes 10% to the total rate.



Operation and Maintenance

The NMDOT uses a strategy of using pavement preservation treatments on roadways that greatly improves the efficiency of road maintenance. NMDOT and most city and county agencies have a sound plan that schedules road maintenance and rehabilitation/reconstruction in an orderly, programmatic manner.

But the shortage of road maintenance fund limits the maintenance at a relatively lower standard. The DOT's Operational and Maintenance programs are funded with revenues to the State Road Fund.

This Fund is used primarily to fund routine maintenance functions across each District. The State Road Funds are also used to provide the required match for use of Federal Aid Funds at a prorated amount, on the average of 15%.

The State Road Fund, however, is not used to fund construction projects. The State Road Fund receives approximately \$400 million annually from receipts of Gas

Tax, Special Fuels Tax, Vehicle Registration and Weight Distance Tax from truckers. The State Road Fund receives no General Funds.

The DOT's basic need for maintenance could sustain an additional \$200 million annually to support basic maintenance operations and very basic pavement preservation.

The need for bridge maintenance and rehabilitation type work is as much as \$50 million annually. The DOT also is responsible for maintaining its Fleet equipment of over 6,400 units used to maintain its infrastructure. The total asset value is approximately \$250 million. The current deficient replacement costs are \$140 million, and service life is currently in excess of what is recommended.

This category is given a grade of B; contributing 10% to the total rate.



Public Safety

According to national statistics, approximately one-third of traffic fatalities are due to roadway deficiencies.

There were 361 traffic fatalities in 2009 in New Mexico. A total of 2,112 people died on New Mexico's highways from 2005 through 2009. New Mexico's traffic fatality rate was 1.39 per 100 million vehicle miles of travel, which is higher than the national average of 1.14 .

The fatalities per 100 million vehicle miles of New Mexico were ranked the 32nd in the nation in 2008. Table 3 gives the fatality rates in New Mexico, with comparison with the national average and the best state rates in the nation.

A rate of D is given for this category, contributing 20% to the total rate.

Resilience

New Mexico has contingency plans in the event of a natural or man-made disaster. NMDOT has measures designed to reduce the severity of damage by natural or man-made disasters in all plans for future highway and bridge construction projects.

There are relatively fewer national disasters in NM compared to other states. It is difficult to find a detour when a road section is closed due to dust storms or other incidents because of the widely separated road network.

A grade of B is assigned to this category, which contributes 10% to the total grade.



Public Safety

Accidents

Year		Fatalities	Total Vehicle Miles Traveled (Millions)	Fatalities Per 100 Million Vehicle Miles Traveled	Total Population	Fatalities Per 100,000 Population
2006	New Mexico	486	25,787	1.88	1,962,137	24.67
	US	42,780	3,014,371	1.42	298,379,912	14.3
	Best State*			0.78		6.48
2007	New Mexico	413	26,850	1.54	1,990,070	13.70
	US	41,259	3,031,124	1.36	301,231,207	14.3
	Best State*			0.79		6.53
2008	New Mexico	366	26,279	1.39	2,010,662	18.20
	US	37,423	2,976,528	1.26	304,093,966	12.31
	Best State*			0.67		5.63
2009	New Mexico	361	26,013	1.39	2,036,802	17.72
	US	33,883	2,956,764	1.15	306,771,529	11.05
	Best State*			0.62		4.90
2010	New Mexico	346	25,325	1.37	2,065,932	16.75
	US	32,885	2,966,506	1.11	309,349,689	10.63
	Best State*			0.58		3.97

*State (or States) With Lowest Rates: Lowest VMT and Population Rates Could be in Different States.

Source: United States Department of Transportation website.



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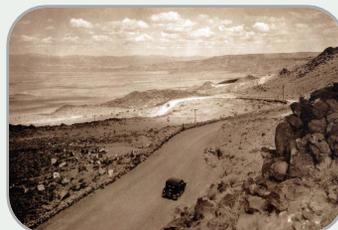
The final grade is a C.

Summary NM Roads 2012:



Category	Grade
Capacity	B
Condition	B
Funding	D
Future Needs	D
Operations and Maintenance	B
Public Safety	D
Resilience	B

Roads Final Grade = C (75.0)





Recommendations



The main difficulty New Mexico faces is the shortage of funding: New Mexico must find more resources for its road improvement and maintenance. A long-term and comprehensive solution is needed, not merely a one-time measure. Some specific recommendations are listed below:

Look for stable funding sources through legislative and other innovative programs. For example, New Mexico is now using a flat fuel tax rate for road maintenance funding. We may work with legislators (state and federal) to index the gas tax to the price of gas.

Use life-cycle integrated and innovative design methods, and high performance materials to improve life expectancy of the road system.

Use comprehensive approach to reduce highway traffic. Encourage the use of high-volume traffic mode, car-pool, and optimal land use; and improve the efficiency of transit.

Reduce accident severity by more stringent DWI, vehicle condition inspection and enforcement; and

Adopt new technology to improve the design and maintenance approaches.

