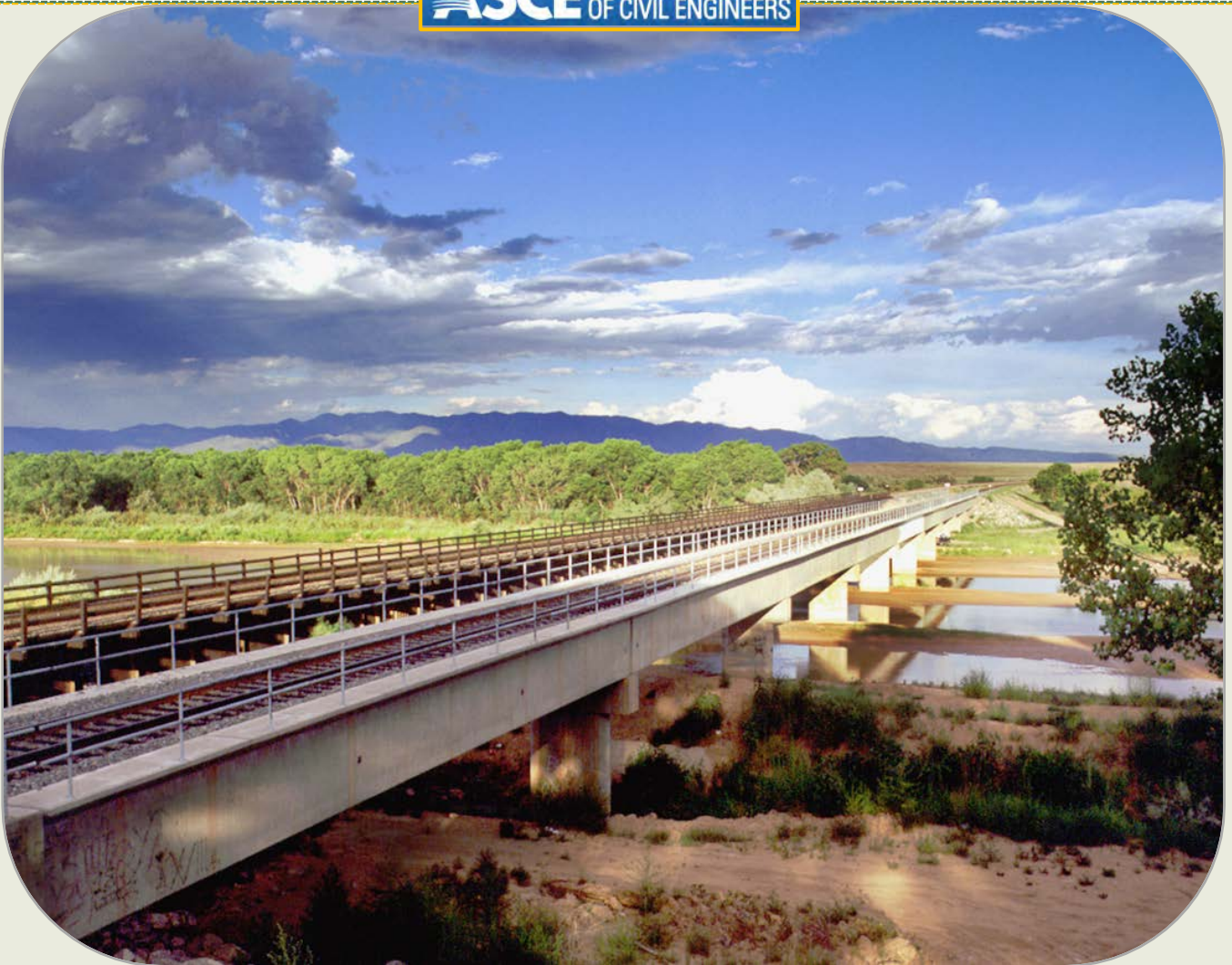


ASCE State of New Mexico Section



Infrastructure Report Card





NM Infrastructure Report Card 2012



AVIATION
BRIDGES
DRINKING WATER
FLOOD CONTROL
RAIL
ROADS
SCHOOLS
SOLID WASTE
TRANSIT
WASTE WATER

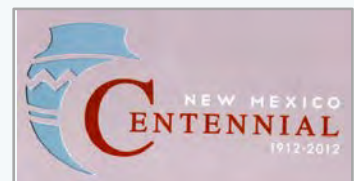


Table of Contents



Executive Summary	4
Recommended Actions	8
Methodology	11
Report Card Committee Members	13
Aviation	14
Bridges	34
Drinking Water	45
Flood Control	59
Rail	68
Roads	87
Schools	100
Solid Waste Management	110
Transit	122
Waste Water	131
Information Sources	145
Appendices	150

Executive Summary



The New Mexico Section of the American Society of Civil Engineers (ASCE) is pleased to present the results of our New Mexico 2012 Infrastructure Report Card. It is through the hard work of the report card committee chairs, their team, and the agencies that oversee the respective infrastructure categories that the New Mexico general public and legislators may understand the state of our infrastructure.

From the time we wake up, until we go to sleep, we depend on our infrastructure as a functional system designed to do the job we think it should do, such as delivering our drinking water and disposing waste water, taking us to work, or providing viable schools for our children. We depend on a reliable infrastructure to enjoy a vibrant workforce, a clean environment, and a good, safe quality of life.

The New Mexico Section of ASCE has more than 760 members. One of our key goals is to promote knowledge of the profession and practice of civil engineering to the citizens of New Mexico. Therefore, providing an assessment of the infrastructure is inherent in our responsibilities.

In 2005 the New Mexico Section of ASCE issued its first Infrastructure Report Card for New Mexico. For the 2005 Report Card seven infrastructure categories were evaluated including: aviation, rail, roads, solid waste, schools, transit and flood control. The composite grade for these seven categories in 2005 was a C. The ASCE NM Section's assessment of the condition of New Mexico's infrastructure for 2012 also resulted in a composite grade of C.

NM Infrastructure Report Card 2012



Executive Summary



In addition to the seven categories evaluated in 2005, three new categories were evaluated including bridges, drinking water and waste water. Although a direct comparison of the composite grades of the two report cards cannot be made due to the addition of the three new categories, the individual category grades compare as follows:

Category	US 2009 Grade	NM 2012 Grade	NM 2005 Grade
Aviation	D	D+	C-
Flood Control	--	D+	D+
Drinking Water	D-	C-	--
Bridges	C	C-	--
Rail	C-	C	B
Roads	D-	C	B-
Solid Waste	C+	C	C
Waste Water	D-	C	--
Transit	D	C+	C
Schools	D	B-	C-
Composite	D	C	C

This report illustrates that the citizens and legislators of New Mexico must improve our efforts to prioritize infrastructure improvements. We must set our goals on sustainable infrastructure practices, supporting infrastructure legislation at all levels of government, and moving forward with the community involvement and leadership required to raise these grades. Much like a student's report card that contains a grade based on past performance, the ASCE NM Section's infrastructure report card is a snapshot of past performance. It is also an indication of future capabilities. There is hard work to follow, to maintain or achieve good grades. The report that follows identifies the challenges associated with our infrastructure needs, and provides recommended actions.



Executive Summary

Category	Grade	Description	Page Start
Aviation	D+	New Mexico Airports serve a critical role in the State's economic development. A 2009 New Mexico Airport System Plan study showed that aviation in New Mexico supports 48,795 jobs, generates \$1.3 billion in payroll annually, and is responsible for contributing \$3.1 billion annually to the economy. However, with only 66% of needed funding available, our aviation infrastructure components are experiencing a steady decline.	14
Bridges	C-	New Mexico has a large number of bridges reaching the end of their design life and a bleak funding outlook which resulted in a rating that is lower than is indicated by condition alone. Cost estimates to repair or replace bridges in New Mexico is currently \$178 million; this number will grow rapidly as each additional design life is exceeded.	34
Drinking Water	C-	Many of New Mexico's potable water systems are deteriorating at an ever-increasing rate due to the age of the systems. The systems have been serving their communities very well over the years with safe reliable water, but routine maintenance and rehabilitation must be increased for there to be any chance of keeping up with the sustainability goal for future generations.	45
Flood Control	D+	The condition of flood control infrastructure in New Mexico varies widely, with larger municipalities having more effective facilities than rural areas. On balance, 73% of all jurisdictional dams and 77% of jurisdictional flood control dams are considered deficient or not in satisfactory condition. Ongoing work should improve on the 16% of jurisdictional dams classified as high or significant hazard potential. However, there are significant shortcomings in the state's flood control infrastructure that are expected to worsen over time.	59
Rail	C	Railroads play a major role in New Mexico's economy providing for the movement of natural resources, freight and people. The primary problem with the Burlington Northern (BNSF) Santa Fe and Union Pacific Railroad (UPRR) corridors is capacity. The State, Federal and local governments should pass economic stimulus bills to encourage the development of these rail corridors. The short line railroads are the primary movers of the State's natural resources (coal, potash, copper, etc.) and the Short Line Credit Extension federal legislation should be extended to support this important rail connectors. Finally, New Mexico has a unique passenger rail system in the Rail Runner that provides rail passenger service between Belen and Santa Fe. The State should recognize the transit / tourism benefits and the local governments should promote transit oriented facilities.	68



Executive Summary

Category	Grade	Description	Page Start
Roads	C	The capacity and condition of New Mexico's roads are above the national average, which is partially a result of the relatively lower statewide population and traffic volume. However, New Mexico's urban roads are among the roughest in the nation. Vehicular travel on New Mexico's roads has been increasing at a rate of about double the national average; increasing high traffic and a shortage of funding have made New Mexico's road serviceability decline over time.	87
Schools	B-	New Mexico's student population increased 3.5% to 337,000 since the last Infrastructure Report Card in 2005. New Mexico public schools utilize over 100 million square feet of building space. The New Mexico Facilities Condition Index (NMCI-needed repairs of a school building divided by its replacement value) improved by 46% since 2003 but the rate of improvement has slowed, and in 2010 began to reverse due to funding constraints. The NMCI enables the comparison of all the public schools in the state to determine greatest need for funds that are available for the correction of school deficiencies. Current unfunded public school facilities needs total \$4.05 billion.	100
Solid Waste Management	C	The condition of the State of New Mexico's solid waste infrastructure is good. Solid Waste collection at the curb is provided to more than 60% of the population, disposal capacity exceeds 60 years, recycling services are provided in each of the state's 102 municipalities, and there are drop-off locations for solid waste and recyclables in all 33 counties. The state must focus on continued support of the solid waste system through adequate funding, training, and public education and awareness of the value of a strong solid waste system.	110
Transit	C+	Transit is maintaining a level of service that is currently meeting most of the public's needs. However, in order to provide for increasing ridership, create a competitive alternative to other modes of transportation, and play a role in the solution to increasing roadway congestion, additional funding and a higher placed priority on new program initiatives are required.	122
Waste Water	C	Historically, the cost of waste water treatment in New Mexico has been low in many locations, because treating waste water was not a priority. So, those costs added to any new water conservation measures such as reuse and grey water has made the need for rehabilitating treatment systems slow to be realized. This has led to there being little opportunity or perceived need for new plants, improved system operations or even rehabilitating plants that already exist.	131

Recommended Actions



(1) Preserve the value of our infrastructure assets through new funding mechanisms.

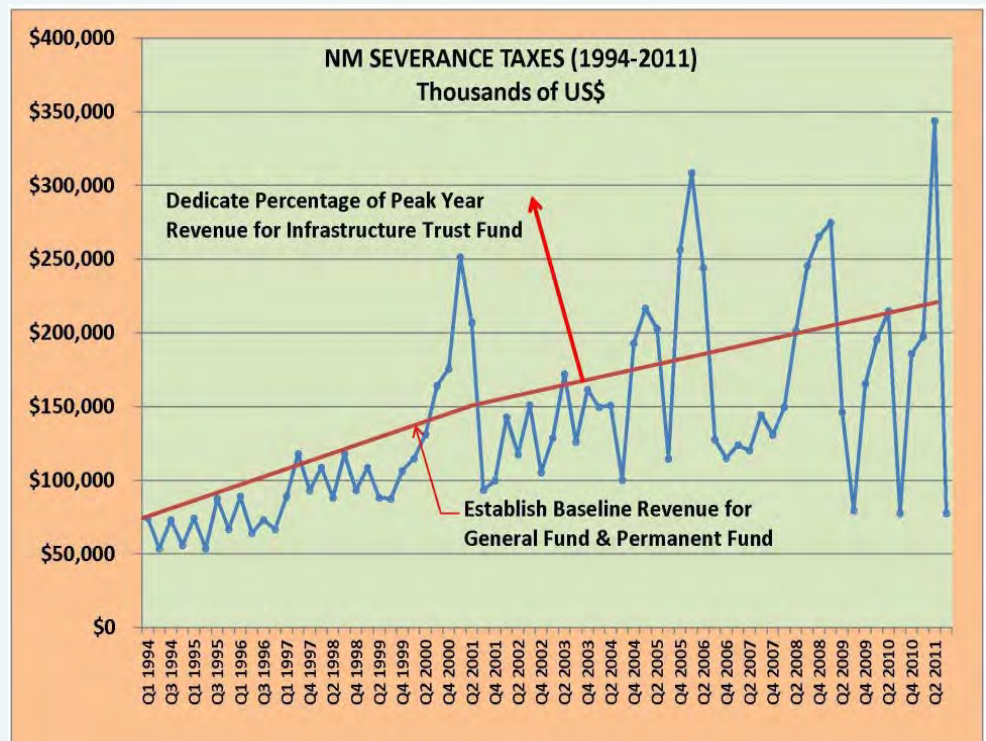
In a way that improves the government's financial solvency by gaining revenue through tolls, user fees, increased efficiency, and other broad-based funding mechanisms.

Specifically, infrastructure funding based on current tax strategies such as Aviation, Bridges, and Roads needs to be augmented by other permanent revenue streams that are driven by the oil and gas economy. Grants from federal and state agencies, loans, private partnerships, improved maintenance and operations contracts, managed competition, tax relief for owners who invest in infrastructure improvements, and other financial measures must all be considered to maximize viable funding opportunities.

New Revenue Stream – Where?

Federal and State fuel taxes funding transportation infrastructure have been at level rates since 1993, while the cost of infrastructure has increased by 60%! ASCE believes that indexing New

Mexico's Severance Tax, which is largely oil and gas related, to infrastructure improvements could be used to provide a dedicated revenue source to an Infrastructure Trust Fund. As the price of oil and gas spikes upward and downward in a market driven economy, a percentage of revenue during peak years can be directed to infrastructure improvements that are related to the oil and gas market including transportation.

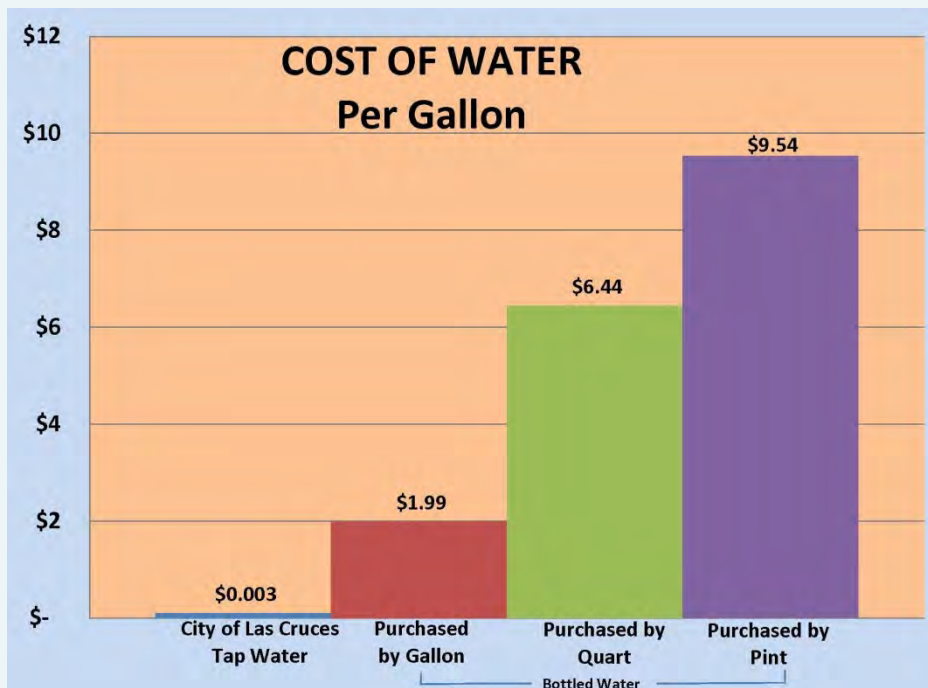


Recommended Actions (continued)

- (2) **Relate improved infrastructure to positive economic development and associated benefits.** Studies have shown that those states that have invested more in infrastructure tend to have greater economic output, greater private investment, and higher employment growth. In particular, user fees for utilities such as water, wastewater, and solid waste should reflect the **value** of the service and not the initial capital cost alone, but also include the financing of sustainable improvements. The community must support infrastructure agencies to gain the full attention of the political powers within the state and federal government to navigate strategic pathways to monetize and manage our infrastructure for maximum benefit. It will be up to special state legislative committees to see that the goals are met.

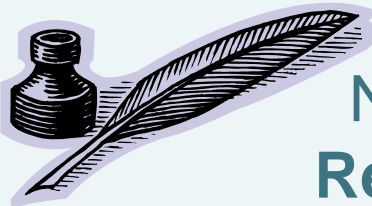
What is Water Worth?

Water is a bargain! Tap water is delivered to your home fresh, clean, disinfected, safe, and on demand for less than a penny a gallon. How many people are only too willing to pay over 9,000% more for bottled water yet complain over a 5% rate increase in their City water rates? Infrastructure based on a User Fee Revenue Stream should accurately reflect the **value** of water instead of the raw cost. Sustainable and resilient infrastructure needs revenue invested in long -term resource management.



Recommended Actions (continued)

- (3) Report on the regular assessments of the important components of our infrastructure.** The evaluations of these assessments must be conducted at publicly advertised times with public input. The results of these evaluations must be presented as a formal part of New Mexico's legislative process, with transparent agendas and timelines. In addition, ASCE state and local chapter members must also serve as the strongest, most vocal constituency in support of the current administration's initiative to repair this New Mexico's infrastructure to the benefit of all Americans.
- (4) Comprehensively consider large projects that cross city, county, and state lines.** Projects that have a broader impact are more efficient and often more profitable than smaller, independent projects. Community Infrastructure Capital Improvement Plans (ICIPs) should be cross-filed for comment with adjoining entities prior to acceptance by the Department of Finance and Administration (DFA). For example, a City water system ICIP should be filed with adjoining municipalities, the County, the Office of the State Engineer, the NM Environment Department, irrigation districts, and adjacent water service providers before it is accepted by DFA.
- (5) Assess project outcomes against defined standards to prioritize and maximize efficiency, safety, and cost-effectiveness.** State funding should be based on a principled statewide outcomes assessment of priorities. As an example, if the NMDOT establishes a State baseline standard for Safety, Congestion, and Air Quality, then funding applications should document empirically how improvements will specifically address these areas of concern in order to receive priority points at the local, MPO, STIP, and State Legislative level. Similarly, if the NM Environment Department identifies Water Conservation as a statewide priority, then community projects should quantify exactly how potable water delivered to all customers (gallons per customer per day) will be reduced in any given project.



NM Infrastructure Report Card 2012

Methodology



The New Mexico Report Card Committee is comprised of nearly fifty engineers and infrastructure professionals with expertise in the various disciplines under the ten categories. The infrastructure categories assessed for this report are aviation, bridges, drinking water, flood control, rail, roads, schools, solid waste, transit, and waste water. The category chairs selected team members who assisted in generating the report card grades and report.

The New Mexico ASCE 2012 Report Card methodology is modeled after the National ASCE report card structure, which identified seven components under each category: capacity, condition, funding, future need, operations and maintenance, public safety, and resilience. In general, the seven components were assessed with some variation based on the nature of the category. In some cases, committees considered the *Future Need* component to be better embedded in the *Funding* component. In other cases, *Future Need* is replaced by the *Planning* component used in this report. If further deviation was required, it is addressed under the category heading. Questions were generated for each component in order to obtain the proper data to assess and evaluate that component. Twenty-five cities and six counties were identified as jurisdictions from which to collect this publically available data. Each team determined weighting factors for each component, based on the level of importance that component contributed to the overall grade. Subcomponents were also weighted and graded based upon their

contribution to the overall category component. The components are defined as follows:

Capacity: Evaluation of the infrastructure system capacity to meet current and future demand.

Condition: Evaluation of the existing or near future physical condition of the infrastructure.

Funding: Evaluation of the current and future level of funding for the infrastructure category as compared to the estimated funding need.

Operations and Maintenance: Evaluation of the owner's ability to operate and maintain the infrastructure properly and determine that the infrastructure is in compliance with government regulations.

Planning and Future Need: Evaluation of the owner's ability to develop and update a master plan by which the six components listed herein are evaluated.

Public Safety: Evaluation of the extent the public's safety is jeopardized by the condition of the infrastructures and what the consequences of failure may be.

Resilience: Evaluation of the ability to expeditiously recover and reconstitute critical services with minimum damage to public safety and health, the economy, and national security.



Report Card Categories

New Mexico's 2012 Report Card follows a letter grade scale similar to that used in other infrastructure report cards.

The New Mexico Report Card uses the *2009 Report Card for America's Infrastructure*:

Grade	Percent	Evaluation
A	90 - 100%	Exceptional
B	80 - 89%	Good
C	70 - 79%	Average
D	51 - 69%	Poor
F	50% or lower	Failure

Each team determined a letter grade for the subcomponents based on both publically available data and the judgment of the engineers on the committee. These subcomponents were then given a weighted grade based upon their level of importance to the overall component grade. The sum of these subcomponent grades produced the overall component grade. In the same way, overall component grades were weighted and summed to produce the final category grade. These tables are found in the Appendices.



The New Mexico Report Card Committee Chairs and Members

Committee Chairs and Members by Category

Report Card Chair: Sonya L. Cooper, P.E.

Aviation

Chair: Jane M. Lucero, AICP
Members: Steve Benson
 Kent Freier, P.E.
 Mark Huntzinger, P.E.
 Mike Provine, P.E.

Roads

Chair: Ruinian Jiang, P.E.
Members: Robert Armijo, P.E.
 Ajay Singh, P.E.
 Kenneth R. White, P.E.

Bridges

Chair: Kenneth R. White, P.E.
Members: David V. Jauregui, P.E.
 Ruinian Jiang, P.E.
 Jeff Vigil, P.E.
 Amanda J. White, P.E.

Schools

Chair: Kenny Stevens, P.E.
Members: Chris Aguilar
 Wanda Bulger Tamez

Drinking Water

Chair: Tim F. Cynova, P.E.
Members: James Olsen, P.E.
 Richard Rose, P.E.
 Bruce Thompson, P.E.

Solid Waste

Chair: Jack P. Chappelle, P.E.
Members: Danita S. Boettner, P.E.
 Jerome L. Kamieniecki

Flood Control

Chair: J. Phillip King, P.E.
Members: John Allen
 Paul Dugie, P.E.
 Elaine Pacheco, P.E.

Transit

Chair: Ajay Singh, P.E.
Members: Patrick S. Byrd, P.E.
 Andrew de Garmo

Rail

Chair: Steven Metro, P.E.
Members: Tim Harris
 Robert Gonzales
 Ted Keener
 John Whatley

Waste Water

Chair: Bruce Thompson, P.E.
Members: Tim Cynova, P.E.
 James Olsen, P.E.
 Richard Rose, P.E.

Contributors: ASCE NM Section Past-President: Jerry Paz, P.E.; ASCE NM Section President: Gerald Parker, P.E.; ASCE Region 6 Governor Elvidio Diniz, P.E.