Nebraska's aging infrastructure is affecting quality of life.

Report Card assesses condition of Nebraska's infrastructure.

Traffic congestion and our children's overcrowded schools are daily reminders that the state's infrastructure directly affects our economy and quality of life. The American Society of Civil Engineers (ASCE) has prepared a 2007 Report Card for Nebraska's infrastructure - assigning a cumulative grade of C, reflecting the state's infrastructure condition. The condition of our state's roads, bridges, drinking water and wastewater systems, and other public works are critical to our quality of life and economic future. The state of Nebraska is one of the largest and most diverse in the nation. It is very difficult to apply a single grade to a type of infrastructure that will prove to be accurate for small systems in rural communities and still be accurate for the more developed areas of the state. We have collected facts and figures from the largest and smallest communities, interviewed state and local government employees and tried to present a fair view of the state of the state.

"Americans are spending more time stuck in traffic and less time at home with their families," says ASCE Past President William F. Henry, PE, FASCE. "We need to establish a comprehensive, long-term infrastructure plan opposed to our current "patch and pray" method to ensure a better quality of life for everyone."

To remedy Nebraska's current and looming problems, ASCE, Nebraska Section estimates an investment need of $3 billion over a five-year period from all levels of government and the private sector. This amount does not include estimates for infrastructure security needs. The investment needed for protecting our nation's critical infrastructure is still being defined within the Department of Homeland Security framework.

The 2007 Report Card was assembled by an advisory group of 20 civil engineers representing a broad spectrum of civil engineering disciplines. Each category was evaluated on the basis of condition and performance as reported by local and state sources; capacity versus need; and current and pending investment of state, local and federal funding versus need. For more information, including state infrastructure statistics, visit www.asce.org/reportcard.

Founded in 1852, ASCE represents more than 140,000 civil engineers worldwide, and is America's oldest national engineering society. The Nebraska Section represents about 1000 civil engineers statewide.
The State of Nevada has put forth considerable effort in preserving and expanding its transportation network. The State has experienced a 92% growth rate from 1990 to 2003, making it the fastest growing state in the nation. Despite this growth, with its proactive approach to preventative maintenance for its roadways, the condition of the pavement on the National Highway System was ranked #1 in 2003. And the FHWA recently rated Nevada as having no deficient bridges in the nation. Even with this great ‘rideability’ record, the State currently has growing congestion issues in the metropolitan areas. Las Vegas was recently rated the 10th most congested city in the nation by a major magazine. The State also has some safety concerns with a highway fatality rate 42% higher than the national average.

Nevada has recently completed a comprehensive safety plan. The plan will need commitment from multiple agencies to succeed.

The most pressing issue with the State of Nevada is the current revenue shortfall for highway projects from 2008 to 2015, estimated at $3.8 billion. This figure includes all the NDOT “super/mega” projects and the current preventative maintenance plan. The current funding mechanisms cannot make up for this $3.8 billion shortfall. This figure is in 2006 dollars, so the shortfall will grow with escalation and inflation.

Construction materials have experienced double digit escalation percentagess over the last couple of years. A Blue Ribbon Task Force was formed to address these funding issues. Recommendations have been put forth to address the revenue shortfall, but legislation is needed to implement them. With the lack of additional funding mechanisms in place, the condition of Nevada highways and bridges as well as the rise in congestion will be bleak. Combining considerations of current conditions and future sustainability, the transportation infrastructure needs attention in order to protect the health, safety, and welfare of the traveling public.

As Nevada continues to grow in population the demand for air travel and cargo also grows. The major airports (Las Vegas and Reno) handle the majority of air traffic in the state, and both airports have growth plans that will increase their facility management requirements. Unfortunately, the Federal Aviation Administration contributions to Nevada’s airports do not increase at the level to meet the increasing demand, causing a deficit resulting in more frequent air traffic delays. The annual investment needed to achieve a C grade is $6.5 billion.

The State of Nevada is both large and diverse. There is one authorized Regional Flood Control District (in Clark County). Within Clark County the Clark County Regional Flood Control District oversees a Capital Program and Regional Masterplan with an estimated worth of $2.8 billion. The program is funded 72% sales tax. In 1990, 20 years ago $1.1 billion had been invested with tremendous results.

There are about 38 state- determined dams that are deficient in Nevada. Nevada has 134 high hazard dams. A high hazard dam is defined as a dam which failure would cause a loss of life and significant property damage. The rehabilitation cost for Nevada’s major dams is estimated at $30.2 million.

Nevada’s drinking water infrastructure needs $602 million over the next 20 years. The good news is that the first $200 million of the populated areas funding exists to cover the cost. The Southern Nevada Water Authority (SNWA) has a $1 billion capital plan, the Las Vegas Valley Water District has a $750 million plan and the Cities of North Las Vegas and Henderson have similar project lists funded by rate payers.

In the rural areas the situation is quite different. Water infrastructure has revenues insufficient to cover replacement, and little to no programmed maintenance is the norm. State wide resource planning and protection is a top priority. The water supply to the state is critical for our very existence. Demand is in excess of sustainable supply in many areas. There is little to require conservation on a statewide basis.

The collection and treatment of wastewater is an essential public service for Nevada. In order to assess the state of Nevada’s wastewater infrastructure, data was collected from approximately 43 of Nevada’s wastewater systems. Grading was based upon system capacity, facility plans for future expansion and upgrades for the facilities. They were evaluated to perform the planned expansions and upgrades. Systems were evaluated for both small and large communities.

There are currently 63 permitted wastewater systems within Nevada that serve approximately 2.44 million people. The state’s average daily discharge of treated wastewater in Nevada is approximately 299 million gallons per day. Approximately 85% of the permitted wastewater systems within Nevada are in compliance with their discharge limits.

There are nearly 5,428 miles of sewer pipelines within Nevada. Of this number, more than 1,425 miles of pipelines are over 20 years old or older (~30%). More than 90 miles of sewer lines currently need to be rehabilitated due to deteriorating conditions. More will be needed as we continue to grow. About $1.15 billion will be spent on wastewater systems in order to maintain capacity, expand treatment capacity and rehabilitate old infrastructure. There will be a reported funding shortfall of more than $60 million for wastewater systems.

There are approximately 49 sewer lift stations in Nevada. These facilities require reliable power sources and careful management to avoid system overflows.

The Clean Water Coalition of Southern Nevada is preparing to design and construct the Sumps Conveyance and Operations Program (SCOP), which will remove most of Nevada’s treated wastewater from the Las Vegas Wash and discharge directly into Lake Mead. The principal drivers for this project are to improve lake levels and improving water quality at the point of discharge into Lake Mead. This project will cost approximately $350 million.

42% of Nevada’s schools have at least one inadequate classroom, and 57% of Nevada’s schools have at least one unsatisfactory environmental condition. In Clark County, bond issues have provided for some new schools and rehabilitation of existing schools. Currently, the backlog of maintenance and repair for the Clark County school district alone is approximately $1 billion.

In the faster growing areas of the state, increasing student body population outpaces supply of classroom space. In the slower growth areas the maintenance and rehabilitation needs are in excess of the funding. School funding is the perennial topic of both local and state government.

In 2007 Nevada Infrastructure GPA

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