
SILVER CENTURY
CELEBRATING
100
YEARS
NEVADA DOT
SAFE AND CONNECTED
Transporting Nevada's Past, Present and Future
1917 - 2017

SILVER CENTURY

Transporting Nevada's Past, Present and Future

1917 - 2017

Written and Edited by: Meg Ragonese, Julie Duewel, Adrienne Packer, Tony Illia and Sean Sever
Photos by: Sholeh Moll and Julie Duewel
Design by: Barron Lauderbaugh

Printed by Bookbaby Book Publishing

Cover Photo: Mike O'Callaghan - Pat Tillman Memorial Bridge, Julie Duewel
Contributors: Governor Brian Sandoval, NDOT Director Rudy Malfabon, Sean Sever, Meg Ragonese
Julie Duewel, Adrienne Packer, Tony Illia, Sholeh Moll

Nevada Department of Transportation Directors

C.C. Cottrell	1917—1920
George W. Borden	1921—1926
S.C. Durkee	1927—1934
Robert Allen	1934—1946
W.T. Holcomb	1946—1950
H.D. Mills	1950—1958
Ed Pine	1958—1959
W.O. Wright	1959—1966
John Bawden	1966—1970
Grant Bastian	1971—1978
Joe Souza	1978—1980
Al Stone	1980—1986
Garth Dull	1986—1994
Thomas E. Stephens	1995—2003
Jeff Fontaine	2003—2006
Susan Martinovich	2006—2012
Rudy Malfabon	2012

Table of Contents

Forward

Brian Sandoval
Governor of Nevada

As Governor of the great State of Nevada, I am proud to congratulate the Department of Transportation on its 100th anniversary.

Since its inception, NDOT has provided invaluable service to our citizens and visitors, maintaining more than 5,400 miles of highway and more than 1,000 bridges, providing rides in our rural areas, and supporting regional aviation and railroad services all across the Silver State.

From the beginning of the vital agency, when Nevada was home to just four state highways and the total miles of paved road numbered in the hundreds, not thousands, transportation and access to our state and the West Coast has been of utmost importance. This access helped the Silver State secure a place in history when a new section of highway in Lovelock was completed, and the last traffic signal on Interstate 80 coast-to-coast was eliminated.

Since that time, our state has been a part of many historic transportation projects, including Project Neon, the largest transportation construction project in Nevada's history. This dedicated work has improved our state for all residents and visitors and will help as we continue to work together to build the new Nevada.

Again, thank you to everyone who has served our state with the Nevada Department of Transportation. Your commitment to safe travels across the Silver State is to be commended, and I congratulate you on this historic milestone.

Introduction

Rudy Malfabon, P.E.
NDOT Director

Thank you for joining us to celebrate the 100-year milestone of Nevada's transportation system.

We may not often realize the importance of transportation in our everyday lives. Roads connecting us to jobs and other destinations, the aviation network bringing in loved ones for family holidays, the freight system efficiently delivering the everyday goods we rely upon or the bicycle paths and mass transit systems giving us additional ways to get around can all be easily taken for granted. It is perhaps only when we take a look back at Nevada's transportation history that we fully understand the importance of our state transportation system.

The Nevada Legislature created a Department of Highways in 1917. That first year, the department's budget was $20,000. Nevada had four state routes, and many roads were no more than dirt paths. A drive across the state often meant agonizingly slow travel on rutted dirt roads. But, the Department of Highways soon began paving roads, and by 1933, there were 2,400 miles of surfaced roads statewide. The Great Depression brought government-sponsored work programs that heightened road construction and employment, only to be followed by a 75 percent employee turnover as many department employees left to serve in World War II. But, expansion soon returned as the state experienced a staggering 650 percent population increase between 1950 and 1990. And Nevada's transportation department continued to build the roads and transportation infrastructure that the state still relies upon today.

Nevada's economy and the state's transportation department is a diverse one. The Nevada Department of Transportation now builds, maintains and operates nearly 5,400 miles of state roads. In fact, our roads have been consistently ranked among the nation's smoothest. Over 336 billion vehicles miles a year travel on Nevada roads. NDOT administers federal funds to rural state transit systems providing more than one and a half million bus rides every year. And, nearly 22 million plane passengers and $150 billion in freight traverse the state every year, bringing tourists, vital goods, services and development to Nevada. The days of dirt highways are well behind us, with an exciting new future of transportation innovation and progress ahead.

Proudly, I present you with a look back at 100 years of Nevada transportation. I began my NDOT career in 1984 as an inspector reviewing construction work on Interstate 15 in Las Vegas. As a proud department employee, I can tell you that our state highway system is a vital transportation system that every NDOT employee and transportation stakeholder has contributed to building over the past century. I hope you will find this trip into Nevada's transportation history interesting and inspiring. Hopefully, it will give you a deep appreciation of how NDOT keeps our state safe and connected every day.

1917 to 1919: Nevada's Road Department Begins

Meg Ragonese

STATE OF NEVADA
Department of Highways

More than 250,000 fortune and adventure seekers and settlers traveled across Nevada during the mid-1850s, leaving trails that would form the future foundation of Nevada roads. By the late 19th century, emerging technology known as the automobile required a more advanced state roadway system.

In 1893, a small section was formed within the Department of Agriculture. With only 250 of Nevada's 12,182 miles of road oiled or graveled, the Department of Agriculture's Office of Road Inquiry was simply a fact-gathering group focused on improving Nevada transportation.

A real highway program only began with federal financial support. The Federal Aid Road Act of 1916 allowed states to qualify for federal money for road construction.

Nevada wasted no time in establishing a state highway program. As per Governor Emmet D. Boyle's recommendation, the Nevada State Legislature created a Department of Highways on March 23, 1917.

The statute accepted the provisions of the Federal Aid Road Act pledging the "good faith of the state ... to make available funds sufficient to at least equal the sums apportioned to the state."

In less than one month, a board of highway directors was appointed and Robert K. West was named the state's first highway engineer. During that first year, Nevada had 1,450 miles of would-be state roads with only minimal funding available from legislative appropriations, auto license fees, the state racing commission, property taxes and other minor tax proceeds.

With meager financing, and the nation still embroiled in World War I, Nevada's first highway construction program would have to wait.

However, road surveys and planning continued; and, in 1919, the department proclaimed, "the era of state highway construction in Nevada is about to be entered with the utmost confidence in the preparations made by our organization."

The state, and indeed the nation, was ready for new roads. "The first vehicle through the country has generally made the location for the future roads, with a result that in some cases the roads are very poorly located," noted the department's first report. "It was no pleasure to take that shiny new car out and attempt to negotiate the average

Sandy roads, the first developed in Nevada, often caused problems for motorists

rutted path serving as a road. Mr. 'Average Citizen' found that the motor car had gradually become almost indispensable to him in his business and professional life and he began to look at the matter of highway improvement from an economic standpoint. There developed a growing and insistent demand throughout the country for better road conditions."

But planning for new routes and balancing maintenance needs of existing roads requires planning. So, Nevada's highway department began utilizing traffic counts to help prioritize road construction and maintenance based on the number of vehicles using those routes.

The first traffic count was taken in September 1917 on what was known as the Reno-Carson Road. A full week of traffic totaled 3,038 vehicles.

After the road was paved three years later, traffic jumped 69 percent. The heavy traffic counts came as a surprise to the department, as did something else: "Another surprising thing brought out by this traffic census is the relatively small percentage of the total represented by foreign cars, that is, cars of other states than Nevada. This will serve to explode one of the popular theories that the transcontinental tourist is the all-important and heaviest user of our highways."

The department's first construction contract for $10,953 was awarded in January 1919 to build a trestle bridge over the Humboldt River in Pershing County. It was a good start, but highway construction was often an arduous undertaking through Nevada's rocky desert expanses.

Teams of horses graded the roads, providing the literal horsepower for the heavy work when motorized equipment couldn't reach remote areas.

Questions about the best paving material arose from the start. While asphalt and concrete are the choices today, they came with a large price tag.

More economical gravel was often used to surface Nevada's first state roadways, as described in the 1917-1918 state highways report: "Of the cheaper types of construction, that of a gravel surface is generally the most suitable for conditions in this state. Where the material is at all available, that is the type of surface adopted. The gravel itself is generally suitable for this purpose, but it is almost always found without bonding material such as clay or shale, and when placed upon an inert soil will undoubtedly require considerable rolling for its thorough packing."

In fact, the first 14 state highway projects were all gravel, except for

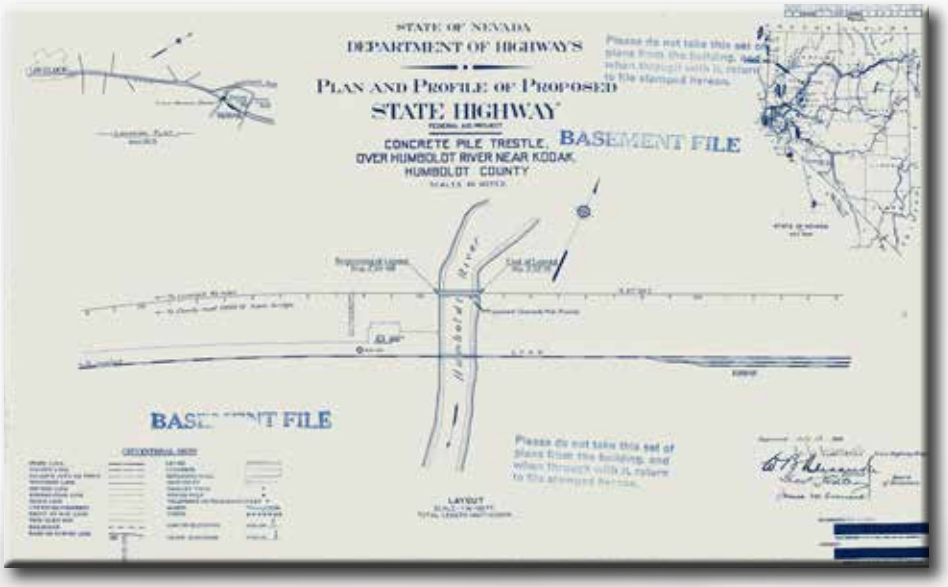
Highway construction was often an arduous process through Nevada's rough and untouched terrain

Goldfield, Nevada, circa 1905

In the late 1800s, residents used wagon trains to traverse the Sierra Nevadas

Nevada surveying teams used horses and carts to prepare for new roadways

Early roadway construction included grading through wide swaths of barren desert land



An early highway blueprint

NDOT crews initially used solid white lines for the centerline of roadways, but the cost and availability of paint became challenging, prompting the department to convert to dotted center lines

one. In mid-1919, a $72,000 project kicked off to build a concrete roadway from Reno south. "Only one piece of the so-called permanent surfacing has been contemplated so far. The road south of Reno to Huffaker's in Washoe County, a distance of 5 ½ miles, will be surfaced with concrete 6 ½ inches in depth or Topeka asphalt 1 ½ inches thick on a broken rock base. Excellent rock has been found for either of these pavements, but a poor quality of sand. The decision as to the type of pavement depends to a large extent upon the price of cement and asphalt."

Roads also needed maintenance regardless of whether they were built using gravel, concrete or asphalt. During the department's first few years, highway maintenance was the responsibility of highway patrolmen.

Assigned a specific section of road, the patrolmen were expected to keep it in good condition for travelers.

With the first state roads also came the need for state road maps. The department met that need with the first official state road map published in 1919.

Construction, maintenance and mapping of state roads began in earnest. But, with only minor revenue sources, and a continuing world war, the young highway department had yet to fully tame Nevada's vast expanses of unpaved roads.

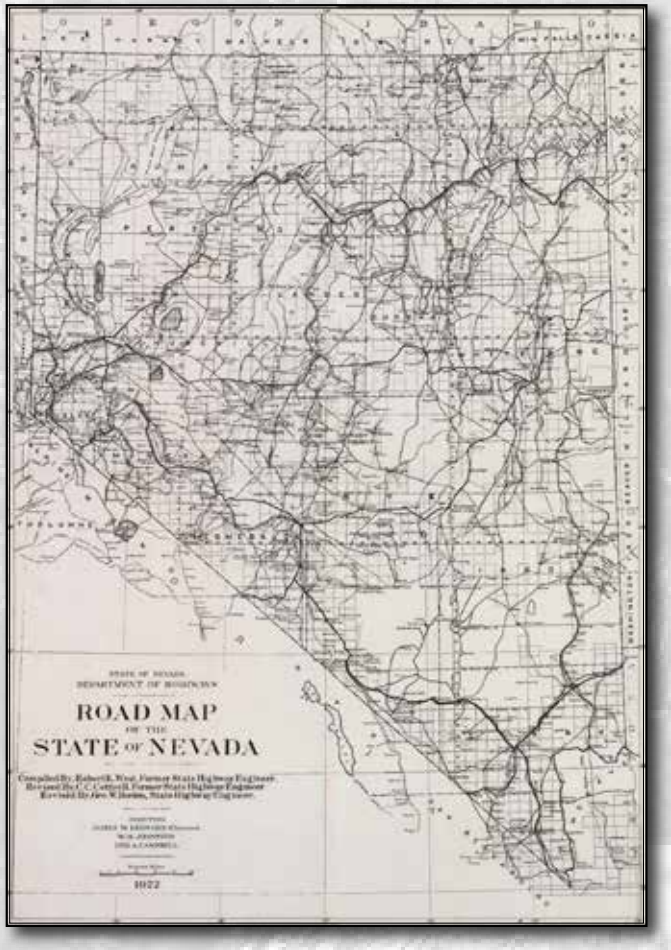
In 1919, a young military man named Dwight D. Eisenhower crossed Nevada as part of a cross-country Army convoy. "From Orr's Ranch, Utah, to Carson City, Nevada, the road is one succession of dust, ruts, pits and holes," he wrote.

In future decades, Eisenhower's experience traveling Nevada and the western U.S. would set the stage for the nation's largest public works project.

Teams of horses and light machinery were used to grade pathways in anticipation of new highways

1920s: Forging the State's Transportation System

Meg Ragonese



STATE OF NEVADA
Department of Highways

Roadway systems cannot exist without funding. In 1921, a Federal Aid Road Act replaced a dollar-for-dollar matching funds formula with a new blueprint that accounted for the amount of government-owned land within a state.

Where Nevada once received 50 percent matching federal funds for highway construction, it now received 87 percent. In 1923, another vital source of transportation funding was forged as the state gasoline tax came into being. Both funding sources provided an important department resource for developing the state's transportation system, and continue to do so to this day.

Much of the transportation system was built on old railroad alignments. As the 1920s dawned, the Department of Highways purchased a failed railroad between Las Vegas and Beatty.

Further empowered by two legislative bills, the department built 120 miles of road bed between the two towns. The railroad land, which included 55 bridges, was a huge bargain at $3,800. but, transforming railroads into roads often meant removing all railroad ties, not to mention dragging, lowering and widening the entire length of the railroad alignment.

In 1922, the department made another important transportation connection as the entire freeway from Reno to Carson City was surfaced with concrete, furthering the initial 5 ½ mile concrete roadway constructed in 1919.

Building roads through Nevada's desert expanses required a rugged breed of worker. "Extreme heat and cold, isolation and poor living conditions are factors," the department declared. "But men of high type have been obtained who do their work well and cheerfully under these conditions...to those whose employment under the department means more than a living, no small measure of praise and encouragement is due."

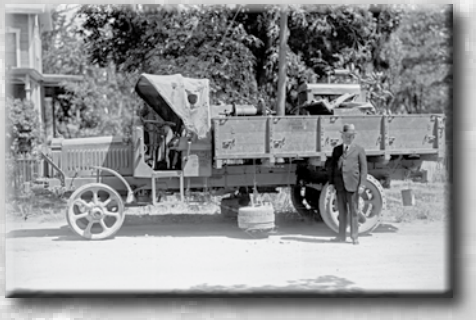
Overseeing the road improvements were the department's resident engineers who were to include precise chronicling of daily construction contractor progress and agreements, not to mention a careful itemization of extra contract work needed on the project. Although the methods and techniques have advanced, the importance of the department's resident engineers and construction administration crews remains the same today.

With a dedicated staff, the department had constructed 300 miles of state highway

Highway Department office staff, circa 1929

Applying oil to new roads offered a far more smooth surface for travelers

Completed oil-sand surface



Early highway equipment had little storage space for tools and roadway materials

Highway workers applying sand

five short years after its inception. By 1922, 35 miles of state road were concrete, 160 miles were gravel and 105 miles were simple graded dirt roads. The department did not want to stop there. In 1923 and 1924, more than 804 miles of potential highway routes were identified.

The fledgling department was eager to keep Nevada drivers updated. On June 11, 1921, the first departmental newsletter was published with one goal: transparency. "We at the Department of Highways are aware that the citizens of Nevada are entitled to know all there is to know of this department. We of Nevada have inaugurated a great state highway building program to extend through the years to come-the responsibility for which is founded in a definite organization which must have the confidence of the public for whom it is working."

As Nevada's highway system advanced, so did the need to provide direction for driver safety. The department subsequently developed and placed standardized road signs and markers for drivers.
In the mid-1920s, the state's 45-mile-per-hour speed limit was removed and replaced with a guideline to limit speeds to that of "sane and safe driving."

The highway department itself grew as well. Previously, department facilities consisted of a Carson City office, an equipment plant in Reno and a sand and gravel plant at Lahontan. In the 1920s, the department established divisions with headquarters and equipment shops at Las Vegas, Elko, East Ely and Tonopah.

In 1927, a board of directors including the governor, attorney general and state controller was established to oversee the department.

Responsible for forging the state's major road network, the department quickly grew. It became the state's largest, most affluent and independent division.

Building Roads through the Neon

The Arrowhead Trail, or Arrowhead Highway, was the first all-weather road connecting Los Angeles to Salt Lake City through Las Vegas. Built before the numbered highway system, the road was designated U.S. Route 91 in 1926. Before it became Interstate 15 in future years, U.S. Highway 91 was actually once part of the Las Vegas Strip. In 1929, the last Nevada link of U.S. Highway 91 near Apex was

oiled, providing a smooth highway from California across Nevada between the California and Arizona state borders. In later years, it would pave the way for Nevada's busiest interstate, I-15, which now travels alongside the iconic Las Vegas Strip.

Confronting Mother Nature

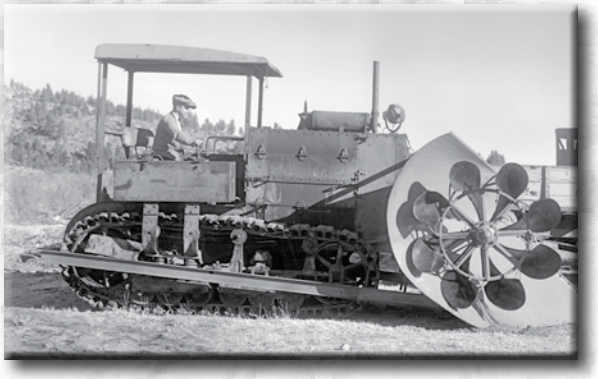
Keeping roads clear and safe for travelers has been a department priority from the beginning. Almost as soon as the highway was developed between Reno and Carson City, a heavy snowstorm hit on December 19, 1921.
Nearly every day until February 23, 1922, the department used plows to keep the road open. It was kept open all except three days, and additional snow plows were purchased and portable snow fences installed.

Known as Washoe Valley, this area still experiences strong weather that the department helps mitigate through steadfast road maintenance and traveler information systems.

Plows kept roads open during three months of snowstorms that swept through Northern Nevada

Newer snow removal equipment allowed crews to clear roads within days rather than weeks

Early snow removal equipment



Early snow removal equipment

Freshly-sanded roads did away with much of the ruts providing much smoother roads in the 1920s

Striping the road

Building mountain roads, such as this one over the Carroll Summit proved to be treacherous and slow work

In the 1920s, a new bridge cost tens of thousands of dollars. Today, those same structures cost millions of dollars

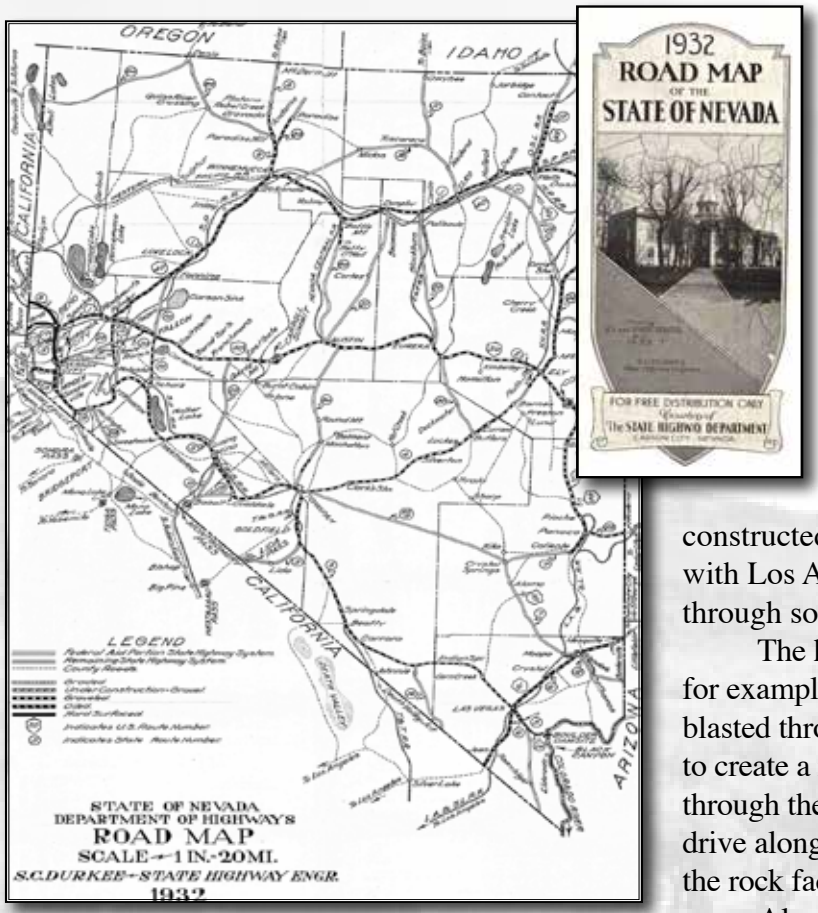
Winding mountain road

Highway department survey crew

NDOT built the Copper Belt Railroad in 1911. It remained active in transporting mining materials until 1947

1930s: Crashing Down and Building Up

Meg Ragonese



As the 1930s dawned, a stock market crash helped spawn the deepest and longest-lasting economic downturn in the history of the Western industrialized world. The Great Depression temporarily slowed the country's economic progress, but it also spurred increased connectivity for Nevada's road system. In many ways, the federal government's New Deal programs kept Nevada's highway department going.

As construction of the Boulder Dam, now known as Hoover Dam, began on Nevada's southern border, the highway department made accommodations for the massive federal construction project. In 1931, the department spent $150,000 paving a road from Las Vegas to Boulder City.

In 1936, this road was incorporated into a new paved highway linking Las Vegas and Kingman, Ariz., via the Hoover Dam. Nevada's highway department also constructed the new Lower Virgin River Bridge on the Arrowhead Trail, connecting Salt Lake City with Los Angeles through Las Vegas. The improvements helped accommodate growing traffic through southern Nevada as thousands migrated to the area for Hoover Dam work and travel.

The highway department also improved connections throughout other areas of the state. In 1931, for example, a 124-foot-long tunnel was blasted through Lake Tahoe's Cave Rock to create a roadway, allowing cars to travel through the rock, instead of a harrowing drive along a road that cantilevered off of the rock face.

Also in the early 1930s, the road that would eventually become State Route 28 along Tahoe's northeastern corner was paved after being home to logging industry railroads since the 1880s.

Later in the decade, the department reconstructed Geiger Grade, known as State Route 341. The mountainous route leading from Reno's southern edge to Virginia City was originally built as a toll road in the 1860s to transport Comstock Lode mining riches and equipment.

By 1933, Nevada boasted more than 2,400 miles of surfaced roads statewide. The highway department consequently needed to grow to accommodate Nevada's burgeoning road system. The road maintenance "camps," built in the 1920s, needed more appropriate housing facilities and equipment storage.

Despite the stock market crash in the 1930s and a subsequent downturn in the economy, NDOT stayed on track to keep its residents connected. It built the 124-foot-long Cave Rock tunnel in 1931

A rural highway maintenance station

In the 1930s, NDOT began spreading its facilities statewide

Early pilot car

Road signs in the 1930s were difficult to read. Nevada eventually turned to the traditional white lettering on a green background because that was considered to be the easiest color combination for the eyes

Storage and maintenance of state road maintenance equipment was now dispersed throughout department regions instead of being housed solely in Reno. A new portable materials testing lab was designed and built to field test road-building materials. The portable testing lab was an innovation unique to Nevada, necessitated by the remote working locations.

By the mid-1930s, the highway department took a closer look at a unique road-building material: cotton. Engineers theorized that the fabric would keep finer soils from migrating into the aggregate and create a sturdier driving surface. A four-mile stretch of Pyramid Lake Highway was built using a layer of cotton mesh between levels of asphalt. The experiment using cotton had dubious results. But the problem was with the material, not the theory. Today, high tech geotextiles are often used in road construction for the same reason.

As the state's Department of Highways built roads to keep Nevadans mobile, it also strived to keep them safe. A traffic safety program was subsequently launched in early 1936. The department's driving safety literature and programs proved so popular that a dozen safety committees were formed within two years to spread the word statewide. Nevada's efforts didn't go unnoticed; the state received a National Safety Council award and, most importantly, traffic fatalities dropped 17 percent by early 1938.

The department realized that changing drivers' mindsets was key to safety. "The education of the motor car driver as to the dangers and responsibilities under his control, and the response on the part of the residents of this state to the point where safety consciousness is a popular achievement." As Governor Richard Kirman, Sr. succinctly put it: "A little more thoughtfulness and just a little more consideration for the 'other fellow' makes for less tragedy and greater safety on all highways."

While educating the public on driving safety, the department additionally made several safety-related roadway improvements. In August 1938, construction of a ten-foot high, 500-foot-long retaining wall was completed on U.S. Highway 40 west of Reno to help keep drivers safe from falling rocks. Bridges and underpasses, such as the Clark Avenue underpass in Las Vegas, were built where street-level railroad crossings once posed the danger of car versus train crashes.

As automobile technology improved, reaching higher speeds, highway construction followed suit. "In fairly open country, reasonably high speeds are common," the department's 1936-39 report noted. "To meet this condition, unexpected sharp curves or other hazards must be given consideration and standards for grades and alignments must be adopted which are only slightly lower than those used on major highways."

Seventeen miles of U.S. Highway 40 between Carlin and Elko was widened to remove sharp and potentially dangerous curves, for example. Driving remained a relatively new adventure, making roadway markings and signs critical for motorists to safely reach their destination.

By the mid-1930s, the highway department's new seagull striping machine allowed crews to stripe 27 miles in six hours. It previously would have taken two and a half days. Innovative roadway markings were used, including wavy lines painted down the center, indicating an upcoming railroad crossing. And, with no speed limits imposed in Nevada's rural areas, speed warning signs were often utilized to incite drivers to slow down when reaching a populated area.

Battling Mother Nature

"When weather in Nevada's frost belt gets tough, the fight to keep roads open for traffic is a strenuous one. "a state transportation report said." When storms range in the mountain regions, sometimes continuing for days at a time, the elements get completely out of control. All efforts to combat their forces seem temporarily futile. Nevertheless, the struggle continues until eventually the battle is won."

Constructing the World's Tallest Dam

On April 20, 1931, contract work began to build a 726-foot-tall dam spanning the Colorado River between Arizona and Nevada, about 30 miles southeast of Las Vegas. Administered by the U.S. Bureau of Reclamation, the Hoover Dam was not a Nevada highways project, but it nonetheless transformed state and regional infrastructure. The dam would tame the Colorado River, while using water to generate hydroelectric power that would help to develop the Southwest. However, it would be a daunting job.

Before construction of the dam even began, seven miles of 22-foot-wide, asphalt highway had to be constructed from Boulder City to the dam site. There was also employee housing construction plus more than 20 miles of railroad from the Las Vegas Union Pacific main line to Boulder City with an additional 10 miles from Boulder City to the dam site.

Canyon walls then had to be blasted to create diversion tunnels for the water. Workers bored into 140-degree, carbon monoxide-choked tunnels

Highway department front end loader

Las Vegas load station

1930's road striper

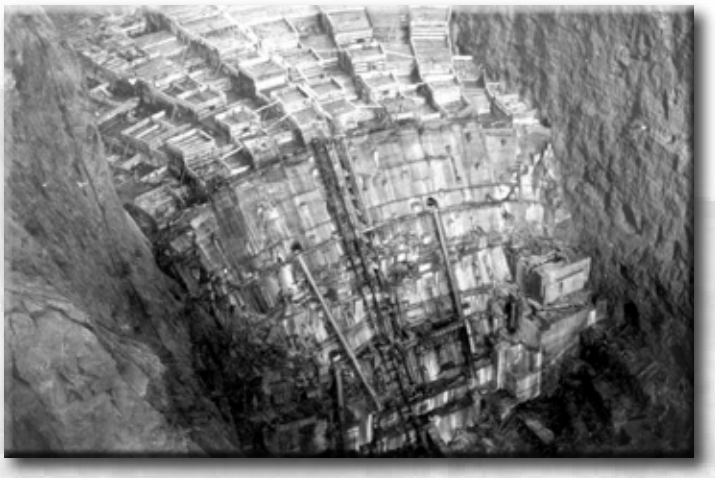
Groundbreaking events to introduce the public to new roads, and show how taxpayer money was used, have been commonplace with NDOT for decades

Crews work on the Geiger Grade, which was a critical route that linked Virginia City and Lake Tahoe

and dangled from 800-foot heights to clear canyon walls. With excavated rock from two of the tunnels forming a temporary dam to re-channel river waters, workers used jackhammers and poles to clear river walls that would hold the future dam.

With the site cleared, construction could begin. The first concrete for the dam was poured on June 6, 1933, and the last concrete was placed on May 29, 1935. Dam construction required about 160,000 cubic yards of concrete monthly. The completed structure utilized 6.6 million tons of concrete or enough material to pave a standard highway from San Francisco to New York City.

When it was complete, roughly 21,000 workers were part of constructing what was the tallest dam in the world at the time. It had been backbreaking perilous work, tragically taking the lives of some. But, the Hoover Dam was also an engineering achievement that dramatically furthered Nevada's development and the entire West.



Dam forms are squeezed into Black Canyon to begin construction of the Boulder Dam

Hoover Dam man mover

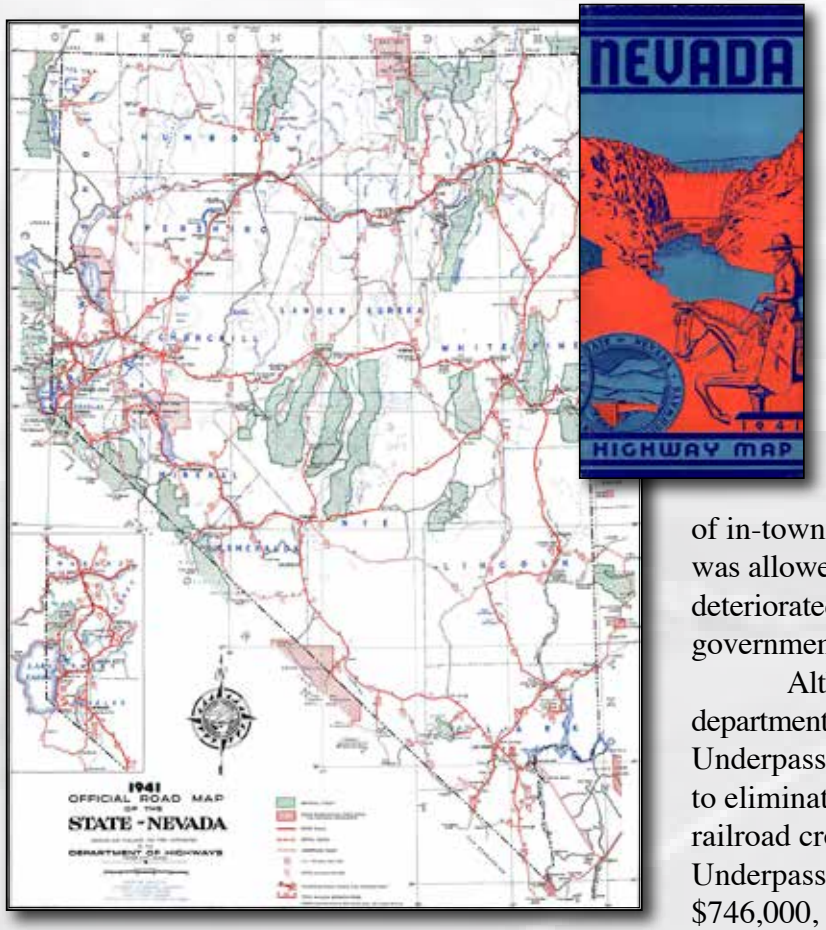
Hoover Dam during construction

The construction of the Boulder Dam, now known as Hoover Dam, was one of the most perilous undertakings in the state's history

Highway department personel, circa 1936

1940s: An Era Defined by War

Julie Duewel



The 1940s were defined by Word War II resulting in many highway department employees leaving for military service. The war put the brakes on highway work with all "non-critical" projects being deferred.

Not only were highway workers in short supply, but asphalt, chemicals, metal and machinery were hard to come by, as well.

State Highway Engineer Robert Allen dedicated the department's 1940-1942 biennial report "to those very fine young men who have left this department to go into the service of our country, and with the sincere hope that they will all return to resume their duties with the department as soon as the world is safe for decent-living people."

In 1941, the War Department designated 1,446 miles of rural roads and 26 miles of in-town roads as part of a system of military highways in Nevada. The highway department was allowed to widen shoulders in order to accommodate military convoys. While other roads deteriorated, the military highways were maintained, improved and funded by the federal government. The Highway Department also kept busy building flight strips for the Air Force.

Although money and men were in short supply, safety continued to be top priority for the department. During this era, several new safety concepts were put into place. The Charleston Underpass, for instance, was built in Las Vegas to eliminate a dangerous at-grade Union Pacific railroad crossing, similar to the Clark Avenue Underpass constructed in 1937. At a cost of a $746,000, the highway department separated the grades, creating a much safer driving experience.

The solid centerline stripe was considered one of the most important roadway safety innovations in use at this time. It was instrumental in keeping drivers in their own lane, especially during periods of poor visibility.

During the war, chemicals needed to make paint were in short supply. Ingenious highway workers, thinking "outside the box," made the decision to dash the centerline. This resourceful solution used half the amount of paint as solid lines; it's a practice still used today on Nevada roads.

Wartime metal and paint shortages also impacted state road signs, many of which were left dilapidated until the war ended.

Army trucks transport anti-aircraft guns

Army convoy making a pit stop along the highway

The department continued using a solid white centerline in the 1940s

In the 1940s, NDOT continued with its emphasis on safety, introducing road warning signs across the state

Reno welcome arch, 1940

State leaders celebrate the opening of Trona Road in Las Vegas

During this time, the department also began replacing old timber bridges with more solid concrete structures that could better withstand severe flooding.

The Uniform Motor Vehicles Driver's License Act was passed in 1941, making the highway department responsible for issuing driver's licenses. All previous licenses were declared void, as a result, forcing drivers to reapply and pass road safety tests.

The law required, among other things, that licenses be issued in the county seat, forcing some rural residents to travel long distances with invalid licenses for renewal. For the convenience of Nevada's rural residents, the highway department sent crews to small towns to sign up drivers for new licenses.

As World War II drew to a close, Congress passed the Federal Aid Act of 1944, which created a 40,000-mile national interstate highway system jointly built by all states. The measure expanded the system of interstate highways, aiding urban areas for reduced traffic congestion and crashes. It additionally improved farm-to-market roads while funding wartime worn road reconstruction.

The highway department struggled to find and retain employees during the war as well as shortly after. Skilled labor was drawn away to higher-paying federal work including defense plants and the armed forces. From 1948 to 1950, the department experienced a phenomenal 75 percent turnover rate. Governor Vail Pittman championed the State Employees Retirement Act in 1947, incentivizing employees who stayed in Nevada.

In 1949, eastern Nevada was hit with massive snowstorms that rendered many roads impassable. The highway department joined forces with the Nevada and California National Guards as well as the U.S. Air Force to save stranded, starving livestock. Inspired by Berlin airdrops during the war, officials devised "Operation Haylift." C-82 airplanes, known as "flying boxcars," were brought to Fallon and Minden and loaded with hay grown in western Nevada. In one week, more than 500 tons of hay was air-dropped to starving livestock near Ely. The highway department supported Operation Haylift providing personnel, snowplows and heavy trucks, while still keeping airport roads drivable.

After the war, the American people conducted a nationwide food drive to gather grain, canned food, and supplies for distribution to starving European families. The goods were collected and loaded onto the American Friendship Train that traveled from Los Angeles to New York, stopping in each state to pick up goods. In Nevada, the highway department volunteered staff and trucks to collect food donations statewide, delivering items to the train's only Nevada stop in Reno.

Nevadans contributed two boxcars packed with much needed supplies for European families.

In 1949, France showed its appreciation by sending each state a boxcar packed with gifts from individual citizens. Nevada's boxcar arrived by train at the V & T Railroad Depot in Carson City.

A hopeful January 1946 *Nevada Highways and Parks* magazine article sums up the end of the 1940s era well, calling tourists to once again travel. "Americans have at last emerged from the A-card era and entered the 'fill-er-up' stage. The Great War has ended. Gas rationing is out, tires are much easier to get with good prospects for future supplies. New cars, with trimmer lines and post-war styles are beginning to show themselves on the highways. Highways are again the paths which draw Americans closer together and make them realize, and no doubt appreciate, the magnitude and wonder of our beloved country."

In 1949, a harsh snow storm struck northern Nevada, stranding hundreds of livestock. NDOT used C-82s to drop hay in areas unreachable by vehicle

Operation Haylift dropped 500 tons of hay near Ely within a week's time

Department engineers discussing road plans

Operation Haylift

Nevadans wait for the "American Friendship Train," which stopped in cities across America to collect food and donations for starving Europeans

American Friendship Train, waiting to be unloaded

American Friendship Train dedication ceremony

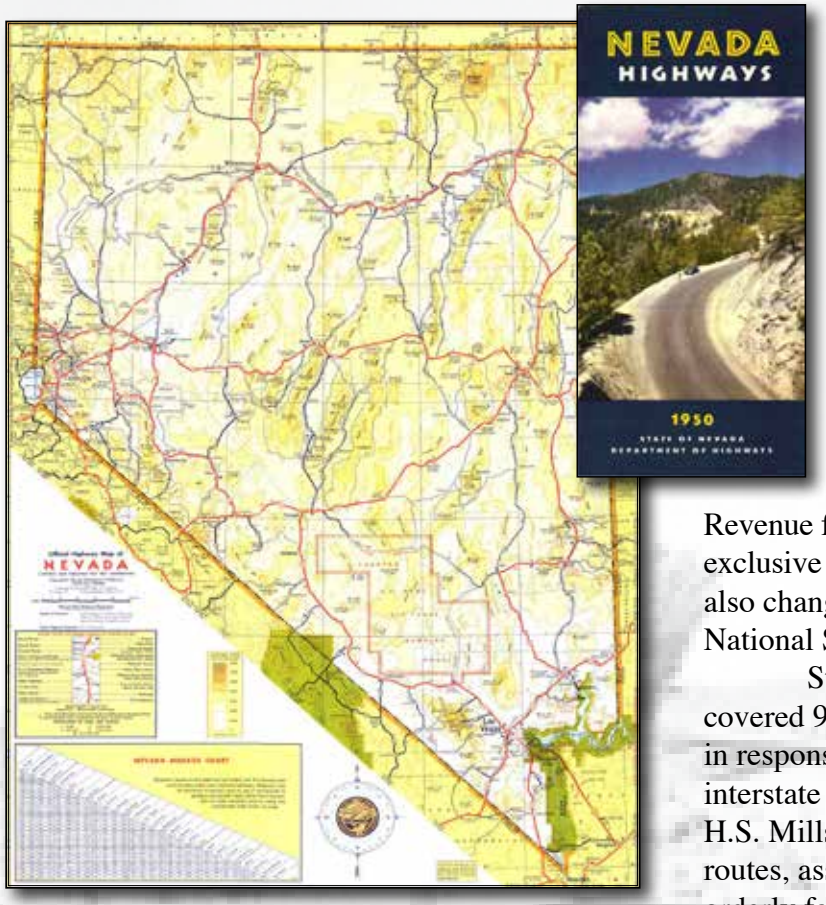
The department coordinated a book collection effort for French students

An aerial view of a road striper

Downtown Reno, circa 1940's

1950s: Establishing a Highway System

Julie Duewel



President Dwight D. Eisenhower, who took office in 1953, understood the value of roads. He traveled with the U.S. Army's first transcontinental convoy of military vehicles from Washington to San Francisco in 1919, seeing the need for a better transportation system firsthand.

President Eisenhower studied and envied Germany's rural superhighways both during and after World War II. "The old convoy had started me thinking about good, two-lane highways, but Germany had made me see the wisdom of broader ribbons across the land," Eisenhower said. Thus began what has been called the "greatest road building program ever undertaken."

In 1956, President Eisenhower signed the Federal Highway Act, establishing a national highway trust fund to build 41,000 miles of interstate across the United States. The Social Security Trust Fund was used as a model for the Highway Trust Fund. Revenue from taxes on highway user products would be credited to the Highway Trust Fund for exclusive use on the interstate system and other federal-aid highway and bridge projects. The law also changed the name of the interstate system to reflect its importance to national defense: The National System of Interstate and Defense Highways.

State highway departments nationwide went to work quickly. In Nevada, federal funding covered 95 percent of construction costs, with the state paying for road maintenance. In 1957, in response to new federal standards for the interstate system, State Highway Engineer H.S. Mills selected and designated new routes, assigning them numbers in an orderly fashion. This was a much needed task since the existing routes were a hodgepodge with no numerical order.

"Prior to this biennium, we have concentrated on what might be labeled pioneer roadbuilding, the gradual development of the dirt trails 40 years ago into a 4,300-mile network of paved roads. Now, in turning our attention to the building of the modern, four-lane interstate freeways, we are entering a new and expanded phase of highway activity," Mills stated. The highway department's 40th anniversary marked an operational turning point.

By 1959, a 25-mile, high-speed, dual highway east of Reno/Sparks through the Truckee Canyon (now Interstate 80) replaced the Emigrant Trail, once worn deep by United States emigrants going West. This tremendous engineering feat required removing more than four million

State highway department engineers, 1951

Did you know stop signs used to be yellow, so they could be better seen at night? In the 1950s, they transitioned to red to indicate a warning

Second Cave Rock tunnel under construction

State Route 431 "Highway to the Sky" previously known as Nevada Route 27

cubic yards of earth, a more than $7 million expenditure, plus placing 93,000 tons of paving material, 6,500 cubic yards of concrete and 1,205,900 pounds of steel. As a whole, these figures represented the most impressive and expensive section of Nevada highway to date.

Among the engineering innovations were five of the largest under and overpasses yet to be built in the state. At the time, this stretch of freeway was the longest ever completed in Nevada, representing the first link in the 411 miles of four-lane highways that would eventually span the northern part of the state.

A 1959 *Nevada* magazine article stated, "the canyon freeway is thus a preview of things to come—a small sample of the kind of highway design that Nevadans will enjoy tomorrow." The freeway was expected to encourage migration to the West. "Instead of pack trains and wagons of yesterday, tomorrow's emigrants will be Americans on the move, riding smoothly in cars, trucks, trailers and buses."

Many other interstate projects were also started and finished during this era. More than 29 miles of U.S. Highway 93 north of Wells was widened in Elko County for $1,268,295, making it the largest single contract ever awarded by the highway department.

Work then began on Interstate 15 (formerly Highway 91), with the first project building 10 miles of interstate highway northeast of Las Vegas.

Nevada's pivotal role in the completion of the interstate system was solidified when a new section of interstate in Lovelock was completed, eliminating the last traffic signal between the Pacific and Atlantic coasts on Interstate 80.

Construction of the second Cave Rock tunnel began in 1957 when U.S. Highway 50 near Lake Tahoe was widened to four lanes at a cost of just over $450,000. State Route 431, or the "Highway to the Sky," was completed.

During the 1950s, department personnel increased by 20 percent. The critical communications division was developed, adding the invaluable state radio system that helped district maintenance crews talk with one another while still in the field.

In 1957, the Nevada State Legislature created a legal division, whose primary responsibility was property acquisition through condemnation proceedings. A new NDOT safety section was established in 1958.
As is true now, road maintenance crews during this era were invaluable.

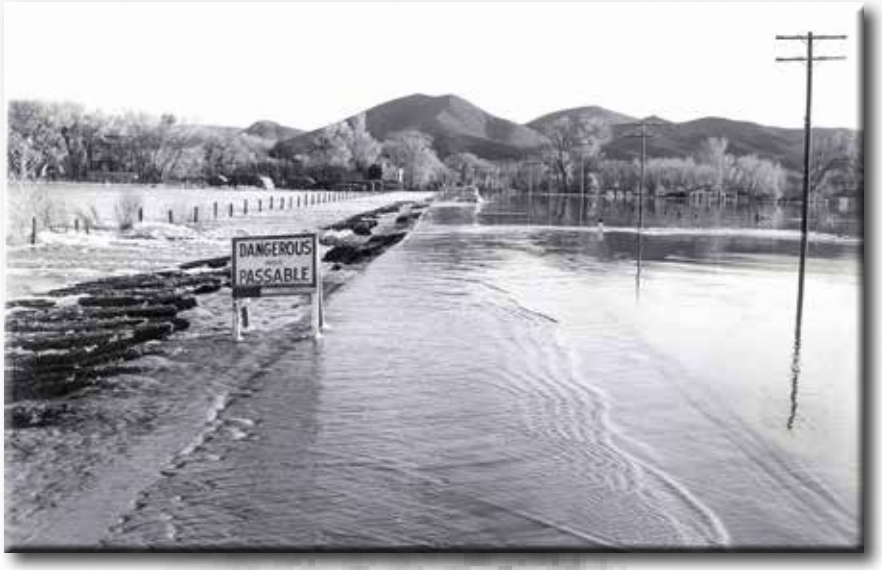
Exceptionally heavy winter snows in 1952 caused near disastrous conditions in the northeastern part of the state, particularly Elko, Eureka and White Pine counties. Governor Charles Russell declared a state of emergency and provided more than $100,000 in federal funding that same year. Dedicated highway

personnel worked diligently to open snow-packed roads, helping move hay and feed to rural ranchers. Twenty five tractors were secured from the Army to aid in the effort. Severe flooding in northern Nevada kept highway workers extremely busy in 1952 and 1955. Unseasonably high temperatures and rapid-moving storms melted most of the Sierra Nevada snowpack, causing flooding and considerable damage to roads and bridges throughout northern Nevada.

This era is also remembered by some important safety changes. At the time, there were no maximum speed limits outlined in the state highway statutes. Mills, stating that the highways were being "redesigned for faster moving automobiles and trucks," asked the legislature for the authority to establish speed zones on hazardous sections of highway. A speed limit law was passed in 1955.

The red, reflective stop sign was also adopted at this time, replacing the previous yellow sign. Testing indicated that the color red was universally associated with danger.

Additionally, the department began using a new striping method, marking both the shoulders and the centerline in white. This proved very beneficial, as the outer lines discouraged drivers from passing along the shoulders while providing better visibility in snow and fog.



In 1952 and 1955, historic flooding struck northern Nevada, wreaking havoc on roads and bridges

A bridge is nearly wiped out by flood waters

A motorists traverses a flooded road near Reno

Then-Gov. Charles Russell declared a state of emergency to secure $100,000 in federal repair funds

President Dwight D. Eisenhower introduced the Federal Highway Act and a Highway Trust Fund, which was later renamed the National System of Interstate and Defense Highways to reflect the importance of national defense

NDOT had to plow through record-breaking snowfall to keep roads clear and safe in northern Nevada

Mount Rose snow

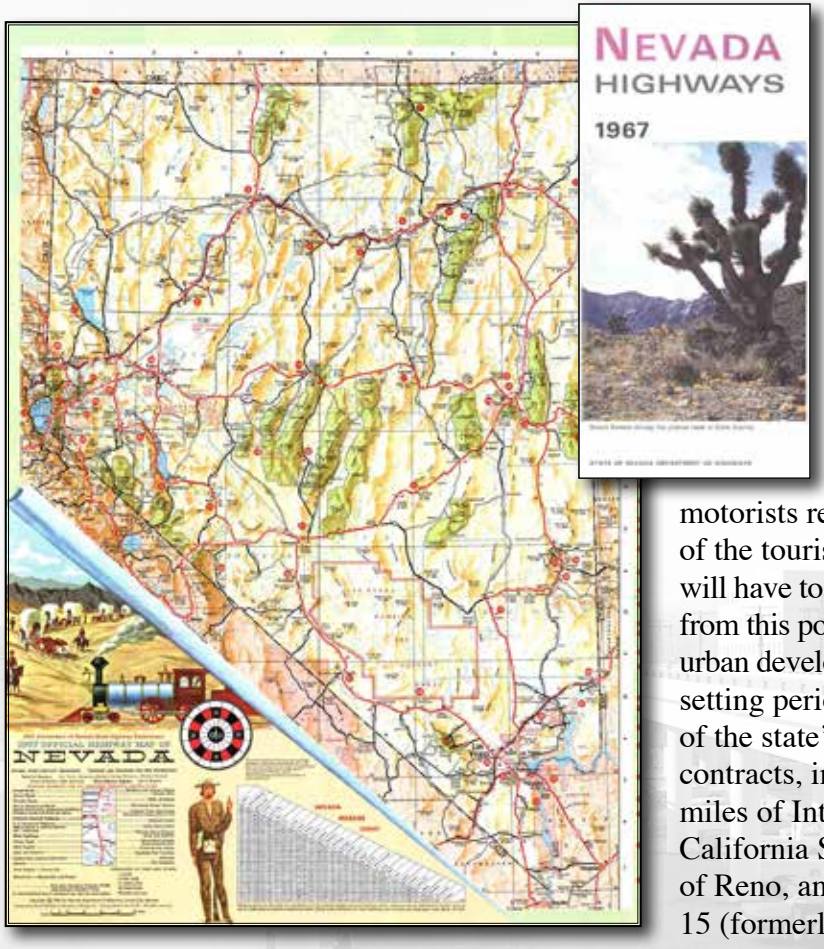
Clearing roads of debris after flooding has always been a priority for NDOT

Rural Nevada road

In 1954, an earthquake near Fallon freed large boulders from the mountainside

1960s: Continuation of the Interstate System

Julie Duewel



The Eisenhower Administration ended in 1961. By the time John F. Kennedy was elected president, 10,440 miles or 25 percent, of the 41,000-mile interstate system had been opened to traffic at a cost of more than $10 billion.

Completion of the interstate system through Nevada remained a top priority. And, by the mid-1960s, the highway department celebrated the midway point of the interstate system's completion with eight interstate contracts totaling more than $27 million. Eighty-six miles of new multi-lane highway had been added to the system with 271 miles completed; all but 23 miles of Interstate 15 across the southern part of the state were constructed.

Nevada was no longer just a state with wide open spaces and more cow pastures than people. More than three-quarters of the state's population and its motorists resided in the urban areas of western and southern Nevada, which also attracted most of the tourist traffic. As stated in the 1965-1966 NDOT Biennial Report, "future highway activity will have to meet the needs resulting from this population growth and urban development." This record-setting period included the award of the state's first $5 million contracts, including the scenic 3.3 miles of Interstate 80 from the California State line to Verdi, west of Reno, and 6.4 miles of Interstate 15 (formerly U.S. Highway 91) between McCarran International Airport and Sahara Avenue in Las Vegas.

The original Las Vegas Spaghetti Bowl was completed in 1968. The interchange connected Interstate 15 to the new, crosstown Las Vegas Expressway. That highway, which carried U.S. Highway 95, served as a mile-long spur to Las Vegas Boulevard in downtown Las Vegas on the east, and eventually became a new bypass of Rancho Drive for U.S. Highway 95 traffic to the west and north.

Construction also began on a new expressway between Las Vegas and Mercury, home of the Nevada Test Site. Previously deemed the "widow maker" by commuting locals, the $1 million, 12.6-mile, four-lane highway (now part of U.S. Highway 95)

In 1966, a more efficient and speedier trek to southern California unveiled to the public – the opening of Interstate 15. The sign boasted that drivers could get from Las Vegas to L.A. in just 4 1/2 hours

NDOT headquarters building ribbon cutting, 1965

Completion of the four lane highway near Winnemucca

1963 registered engineers meeting

greatly improved safety from seven miles west of Indian Springs to the Mercury junction.

Other major jobs awarded or completed included the U.S. Highway 40 (Interstate 80) reconstruction through Reno and Sparks, the four-lane rebuilding of U.S. Highway 395 over Lakeview Hill north of Carson City, the completion of U.S. Highway 50 between Middlegate and Austin, and the rebuilding of Lake Mead Boulevard in Henderson.

More than 12 miles of four-lane highway between Golconda and the east foot of Golconda Summit was completed, and the "long-awaited" relocation and reconstruction of U.S. Highway 93 between Glendale and Alamo was also finished. In addition, for the first time in more than a decade, federal land highway funds were made available to Nevada, including $500,000 to realign U.S. Highway 50 over Carroll Summit.

During this era, Governor Grant Sawyer dedicated the new state highway headquarters administration building in Carson City on June 25, 1965.
At roughly the same time, the department entered the computer age. New technology was used for accounting, planning, design and field surveying projects. The new IBM System 360 computer system was delivered in 1966.

That same year, the highway department added a systems analysis section and an urban transportation section as part of the planning division.

A formal training program was also established for employees and a collaboration began with the University of Nevada, Reno, for the training of future department engineers.

Employee safety was making great strides as well. A new hard hat program was adopted for all employees working around overhead hazards, and a safety vest policy was also implemented.

Department employees now had to wear fluorescent safety vests while working on road surfaces. "It is expected, by wearing of this garment, that the motorist will become more aware of employees and will therefore slow down and keep his vehicle under better control, and thus avoid striking a workman," the NDOT Biennial Report said.

In 1965, President Lyndon Johnson signed into law the Highway Beautification Act, authorizing money to be appropriated from the federal general fund for "outdoor advertising, control of junkyards and landscaping and scenic enhancement." The department, in 1967, completed its pilot beautification project by screening from view a large automobile junkyard on Interstate 15 in Las Vegas. Rest areas and viewpoints were also being developed.

Construction on I-80 in Sparks, 1966

Construction finished on I-80 in Sparks, 1966

Interstate 80 connected metropolitan areas in northern Nevada to rural communities

Blasting at Carlin Tunnels

Holcomb Construction Company, 1966

Freemont Street, Las Vegas, 1968

Roadwork, 1968

A newer sign welcomes visitors from California at the state line near Lake Tahoe

NDOT built its 293,000 square foot headquarters building in Carson City

The highway department's Design Division, circa 1960s

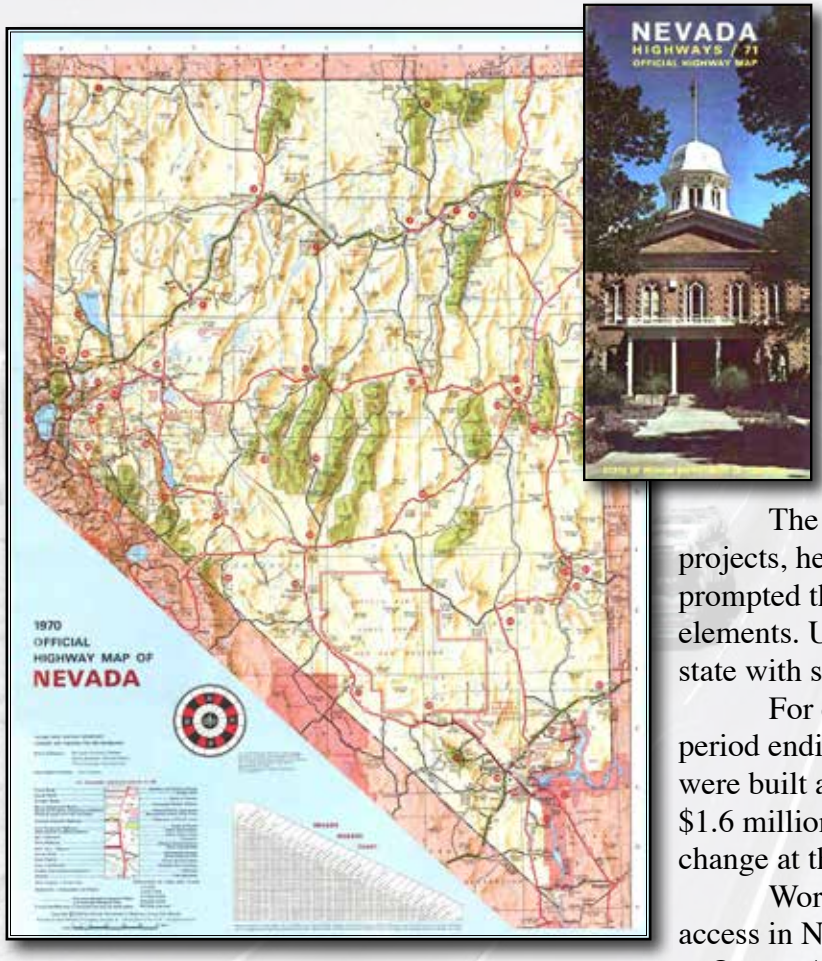
Road construction equipment in action, 1966

Transportation board meeting, 1966

Interstate 15 has proven to be an invaluable resource in transporting visitors and commerce between the Las Vegas Valley and southern California

1970s: Fuel Shortage Prompts New Funding Sources

Adrienne Packer



The Vietnam War was winding down in the early 1970s, but the United States continued to be rocked by "oil shock" and gas rationing due to the Middle East oil embargo.

The Nevada Department of Highways wasn't immune to global fuel rationing. It received a significant portion of funding from fuel tax revenues. The motoring public wasn't driving as often due to high gas prices and shortages. The country was hit with a second oil shock later in the decade, which produced the same challenges.

Despite the war and gas shortage, the highway department in the early 1970s forged ahead in identifying new funding sources that would help keep up with the ever-growing population. In 1970, the Federal Aid Urban System was adopted, providing federal funds for improvements to local streets and roads.

The department received additional federal funding that helped launch a variety of road projects, helping shape both northern and southern Nevada. The Federal Aid Urban System prompted the department to begin work on its already-aging interstate system while adding new elements. Ultimately some $12.2 million in projects were able to get underway throughout the state with several others to follow.

For example, during a two-year-period ending in 1972, five structures were built along Interstate 15 at a cost of $1.6 million, which was a good chunk of change at the time.

Work was done to greatly improve access in North Las Vegas with bridges at Owens Avenue, carrying the railroad over the freeway, as well as a bridge taking Lake Mead Boulevard over the freeway. There were also traffic crossings over the freeway at Bonanza Road, F and D streets and Washington Avenue. North Las Vegas received its first concrete highway along a four-mile stretch of Interstate 15 between Carey Avenue and Lamb Boulevard.

Next, the department began focusing on Charleston Boulevard to Bonanza Avenue along Interstate 15. The Cheyenne Avenue interchange on Interstate 15 was constructed, too, and later reconstructed in 1988. And a second section of U.S. Highway 95 from Rancho Road to Highland Avenue was built. Meanwhile, three miles of scenic State Route 39 in Kyle Canyon

Traffic was a lot lighter back in the 1970s!

The completion of I-15 proved to be a critical tourism link between southern Nevada and California

On May 22, 1972, the final section of Interstate 80 through Reno and Sparks opened to traffic

The Spaghetti Bowl in Las Vegas was crucial in creating a connection between U.S. 50 and I-15, allowing easier access to all corners of the Valley

were widened with turnouts being added.

In northern Nevada, construction picked up too, with U.S. Highway 395 and Interstate 80 being completed through Reno. In fact, by 1972, Interstate 80 was in its final stages of completion, except for portions near Lovelock, Elko and Wells, east to Wendover. On May 22, the final section of Interstate 80 through Reno and Sparks opened to traffic. In 1972, U.S. Highway 395 was completed over the Truckee River and Kietzke Lane in Reno.

One of the first highway tunnels built in Nevada was on U.S. Highway 50 through Cave Rock, overlooking Lake Tahoe. In the early 1970s, the Carlin Canyon Tunnels near Elko were constructed at a cost of $12.2 million. The tunnels were built with the safety goal of bypassing the sharp curvy stretch of U.S. Highway 40 that followed the path of the Humboldt River. The new straighter segment of Interstate 80 through the east and westbound tunnels would also accommodate the expected traffic increase and higher traffic speeds. The tunnels were opened to traffic on September 25, 1975.

In 1972, the final beam was put into place linking together the intersection of Interstate 80 and U.S. Highway 395 with Reno's East Second Street.

Sparks, once a sleepy bedroom community to neighboring Reno, was the first Nevada city to be dissected by a freeway. Sparks additionally became the first city to benefit from a complete freeway landscaping effort. In 1972, that little bedroom community became state's third largest city.

As the highway and interstate system were built, billboards began cropping up. The highway department, in response, adopted new regulations in order to better manage the proliferation of billboards. The department required approval, issuing a black and yellow license plate that was to be affixed to the billboard. If the sign didn't have the proper license plate, it could be removed.

The highway department's revenue gradually grew to $16.5 million as gas tax revenues grew. Meanwhile, the department made a concerted effort to diversify its staff. As of June 1972, of the 1,532 career opportunities, 132 were minorities. The name of the department's Equal Opportunity Division was changed to the Equal Opportunity Section, which fell under the labor compliance officer.

At the end of the decade, the Department of Highways changed its name to the Nevada Department of Transportation and revised its direction, seeking to develop and coordinate balanced transportation policy and planning. The added department responsibilities also entailed state social, environmental and economic goals.

NDOT employee Kris Porstall, Eagle Creek, 1974

The Las Vegas Spaghetti Bowl, shown here in the early 1970s, has become a key interchange in the middle of the city

U.S 50 construction, 1971

U.S. Highway 50 was named "America's Lonliest Road" by Life Magazine *in 1986. Pictured is the construction of the highway*

After fuel revenue picked up following the gas shortage, projects like U.S. Highway 395 soon got underway

The Monrow Construction Company works on the Bonanza Road Expressway in Las Vegas

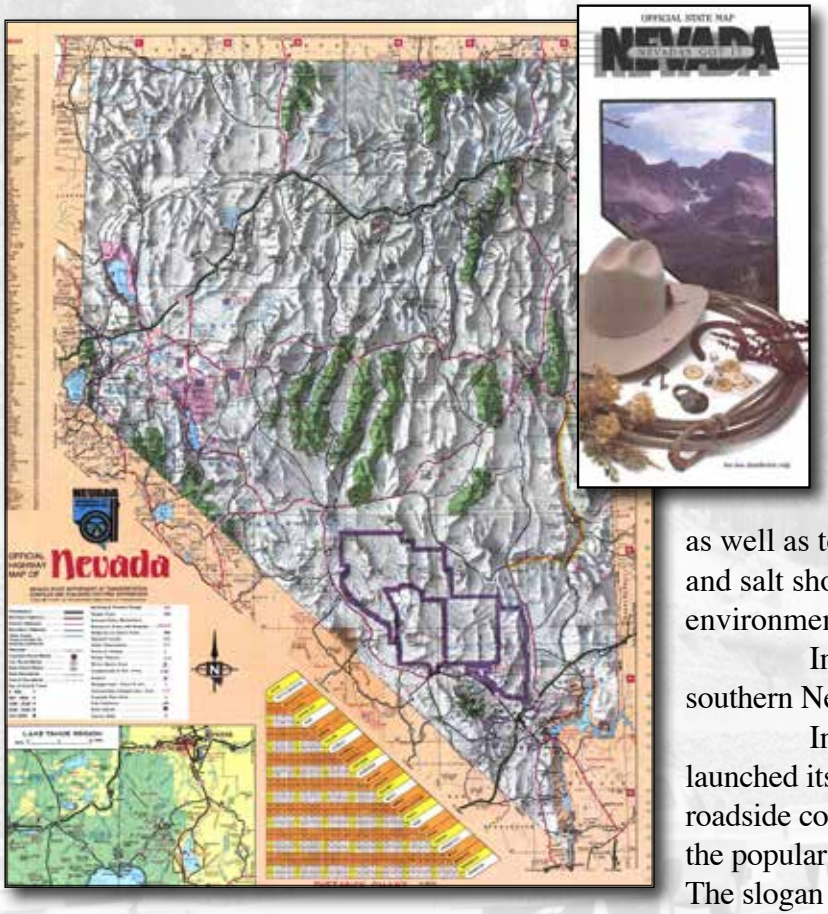
The Monrow Construction Company works on the Bonanza Road Expressway in Las Vegas

Welcome to Nevada sign, touting state tourism

Construction takes place on Interstate 80 in Reno, an important route that stretches from the ports of Oakland, California

1980s: The Department Rebounds from Recession

Adrienne Packer



The Nevada Department of Transportation pulled out of financial troubles after the gas crisis and plummeting fuel tax revenue by launching into the 1980s, a decade that was – at the time – historic.

In November 1983, the department issued its 2,000th contract for a $165,547 repair to a Humboldt County bridge along old U.S. Highway 40. By comparison, its first contract, awarded in 1917, was for a concrete bridge built for $10,953.

Also in 1983, Interstate 80 was completed at a cost of $15 million. At the time, it was the largest dollar amount spent on a single project by the department.

In 1985, NDOT led the transportation industry by installing a Road Weather Information System (RWIS) along Mt. Rose Highway in northern Nevada. The system included embedded sensors that transmitted road condition information as well as temperatures. It allowed NDOT to better control when, where and how much sand and salt should be used on roads during stormy weather. It additionally enabled a far more environmentally friendly approach to improving roadway safety.

In 1987, the department broke ground on the Spring Mountain Road interchange in southern Nevada at a cost of $66 million, which, at the time, was NDOT's most costly project yet.

In 1989, the department launched its safety campaign to protect roadside construction workers using the popular slogan "Give 'em a Brake." The slogan was an instant success in Nevada, and it continues to be used today.

After a turbulent decade in the 1970s, a time during when the department saw its construction employees fall to an all-time low of about 180, it turned its attention to road maintenance needs as well as building new infrastructure in order to improve better statewide interstate access.

Southern Nevada focused on Interstate 515 through Las Vegas, a route that was already identified as playing an integral role in the Canada-Mexico (CANAMEX) commerce corridor. The corridor was expected to improve tourism, enhance economic diversification and bolster commerce between Nevada and Arizona.

Paving continued in the 1980s on U.S. Highway 50, also known as the "Loneliest Road in America"

The east leg of U.S. Highway 50 opens in 1986

Interstate 580 was nowhere near as congested in 1986, prior to the population boom

A series of critical viaducts and roadbeds were built between Las Vegas Boulevard and Boulder Highway. The endeavor consisted of a $9.8 million interchange at Flamingo Road, among other things. The 515 alignment, which overlaid U.S. Highways 93 and 95, was built to interstate standards.

Efficiency and accessibility led to the first discussions about building the Las Vegas Beltway – a 53-mile highway that nearly circled the valley.

The endeavor was initially launched by Clark County in southern Nevada, but portions of the highway were later folded into the interstate system.

The Carlin Bypass in northern Nevada opened in 1981 and the department discovered a new method of financing. It convinced the state legislature to allow bonding to fund highways.

In Clark County, this innovation enabled the Spring Mountain Road interchange to break ground, shattering previous project cost records set earlier in the decade. Crews built a viaduct over Industrial Road and the railroad tracks, a northbound Interstate 15 off-ramp to Spring Mountain Road and a flyover from Interstate 15 south to Spring Mountain Road east. A southbound ramp was added from Spring Mountain Road to Interstate 15, improvements were made to Fashion Show Drive and Desert Inn Road from Industrial Road to Highland Drive was completed.

Things were accelerating at the department when the maximum speed limit was upped from 55 to 65 miles per hour.

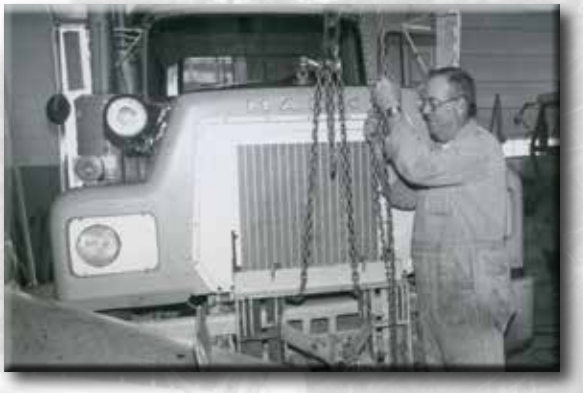
However, the department still focused on safety. In fact, safety was a key factor in the widening and straightening of Blue Diamond Road, or as southern Nevadans had called it, the "widow maker." And speaking of monikers, U.S. Highway 50 was officially named the "Loneliest Road in America" by *Life magazine* in 1986.

Crews work on Interstate 15 in 1985

Machinery clearly evolved over the decades as shown here during a roadwork project in 1988

Paving U.S. Highway 50 in 1988

Equipment operations committee, 1986



Jim Pattani from District 3, 1985

Surveyors at work in Las Vegas in 1985

Crews work on State Route 28, the link between U.S. Highway 50 and the California state line

Road Weather Information Systems were placed on major highways and arterials in the 1980s. They transmitted weather and road conditions to better prepare NDOT crews for adverse conditions

Little known fact: State Route 28, pictured here in the 1980s, went right past the Bonanza Ranch, home of the famous television show "Bonanza"

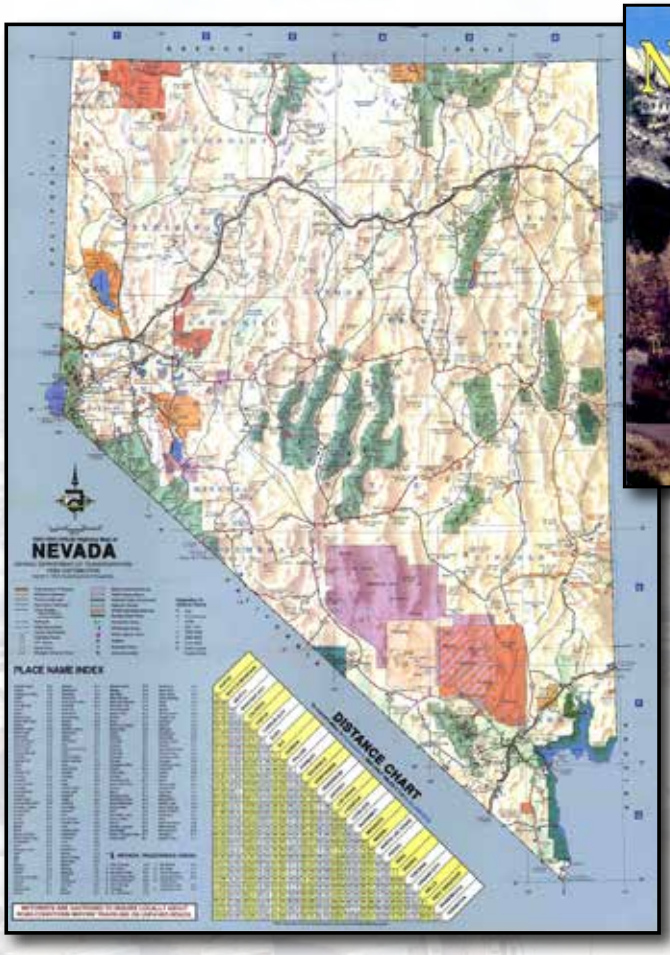
Paving takes place on U.S. Highway 50 in 1988

Highway 395 in Reno

Typical flagger, 1988

1990s: Population Growth Fuels Critical Improvements

Adrienne Packer



A statewide population explosion was the story of the 1990s. Alleviating congestion, maintaining existing highways and freeways and building new ones were the challenge the department faced during the decade.

Clark County's population jumped from 770,000 to 1.2 million people. The number of Washoe County residents increased by more than 30 percent. Elko County's population increased by 12,000, and Carson City's inhabitants grew by 9,000 people between 1990 and 1996.

NDOT, in response, released a list of "super highway" construction plans totaling $1.5 billion. The super highway strategy included widening Interstate 15 between Las Vegas and the California state line, widening U.S. Highway 95 in the northwest Las Vegas Valley, extending Interstate 580 between Reno and Carson City, improving U.S. Highway 93 through Boulder City and starting construction on the Las Vegas Beltway.

The beltway proved crucial to the Las Vegas Valley, which had seen housing tracts develop far away from Interstate 15 and U.S. Highway 95. To enhance and improve residential commute times, construction on the beltway began. The first leg between Interstate 15 and McCarran International Airport finished in 1994.

The 53-mile temporary Beltway later wrapped around most of the Las Vegas Valley, with the exception of Nellis Air Force Base.

NDOT Director Stephens announcing new speed limits, 1995

In northern Nevada, work was completed on the U.S. Highway 395 freeway extension south of Reno between South Meadows Parkway and Mount Rose Highway. The $53 million project was the largest state road contract ever awarded at the time; it included a four-mile elevated freeway. The new project relieved traffic along South Virginia Street, which averaged 45,000 vehicles per day.

By the latter part of the decade, as the population in Nevada continued to grow, the department organized several ribbon cuttings while launching important projects that had been previously shelved. There was a ribbon cutting for the widening of Interstate 15 from Stateline to the

Dignitaries celebrate the opening of the U.S. Highway 395 Carson City Bypass, a project that was completed using federal funding from the Transportation Equity Act for the 21st Century

Crews take a group photo at the U.S. Highway 395 ribbon-cutting ceremony

Pedestrian bridges built across the Las Vegas Strip been a huge success in improving traffic flow through the tourist corridor

Las Vegas Valley and another for the new Ann Road/Rancho Drive interchange.

Auxiliary lanes were added to U.S. Highway 95 in the northwest Las Vegas Valley; the Washoe Lake wetlands were developed, the new Cheyenne Avenue interchange was designed and a groundbreaking was held for the Pyramid Interchange. The flurry of construction heightened work zone safety concerns. As a result, the state enacted a new law that doubled fines in work zones to encourage driver awareness, thereby improving overall safety.

The federal government, in order to aid growing communities, passed the Transportation Equity Act for the 21st Century (TEA-21). Under the Act, Nevada received $1 billion over a six-year period. TEA-21 funded projects included the $370 million U.S. Highway 395 Carson City Bypass, the $4 million widening of U.S. Highway 50 between Fallon and Fernley; the $9 million U.S. Highway 395/ Interstate 580 freeway extension to Carson City; the $5 million reconstruction of the Interstate 15 interchange at Sahara and Rancho Road and the $2 million widening of Craig Road in North Las Vegas.

The revamping of the Interstate 15/U.S. Highway 95 "Spaghetti Bowl" interchange was launched at a department record $91.8 million. The renovation of the state's busiest interchange included eight new freeway-to-freeway flyovers. The department proved once again to be innovative with the "Spaghetti Bowl" endeavor. Crews used precast segments as the renovations were made right before the community's eyes with little traffic disruption. All in all, the interchange that carried 330,000 vehicles a day had 675 precast segments weighing 66 tons apiece placed in the project.

Up north, on June 25, 1999, officials unveiled the new $28.8 million urban interchange along Interstate 80 in Sparks. Billed as the "Gateway to Sparks for the 21st Century," it is better known as the Interstate 80 Pyramid Way single-point interchange.

"I hope that in years to come, people remember that projects like this change people's lives," U.S. Senator Harry Reid said at the time.

Still, as the millennium approached, new transportation solutions meant leveraging technology.

The department, for example, installed the state's first Intelligent Transportation System (ITS), which monitored ramp metering and coordinated traffic signals. It additionally erected Dynamic Message Signs (DMS) that warned motorists of trouble ahead as well as travel times to various destinations.

In 1991, the state legislature established a department bicycle and pedestrian planning position responsible for integrating the needs of bicyclists into

department projects and programs. In December of 1991, the U.S. Congress passed legislation furthering the state's authority over pedestrian issues. This new position literally put in the footwork to help Nevada state roads become more safe and accessible for those on bicycle and foot.

The department leaned on civic-minded folks when it formed the Adopt-A-Highway program, which enabled residents to voluntarily clean up stretches of state highways. The program saved time and tax dollars while freeing up money and manpower for other maintenance tasks.

In 1998, the department implemented the Freeway Service Patrol, a fleet of vans that cruised the freeways in order to aid disabled vehicles and stranded motorists to keep traffic flowing. This free service was extended to the Reno area in 2002. The Freeway Service Patrol still remains a popular and invaluable department asset.

Floods Ring In the New Year

Two weather-related activities contributed to historical flooding in the Reno/Sparks region in January 1997. Flooding was triggered by an unusually large snowpack (more than 180 percent of normal) in the Sierra Nevada Mountains, according to the Natural Resource Conservation Service.

Subsequently, a subtropical storm system began to brew in the central Pacific Ocean near Hawaii producing heavy rains that melted most of the snowpack. The runoff from the rainfall at higher elevations, combined with the meltwater from lower elevations, caused one of the most damaging floods the region had seen in 150 years.

In the Reno/Sparks area, downtown streets flooded and bridges across the Truckee River were closed due to water surging over the roadways. Westbound lanes of Interstate 80 near the Helms Pit in Sparks crumbled, so emergency operations were undertaken by the department to stop further collapse of the highway. Large rocks and 125,000 cubic yards of material were dumped into the south end of the pit and the roadway was stabilized in six days.

Further west, Interstate 80 near the California state line was closed because of massive amounts of mud and water covering the roadway. The Reno/Tahoe International Airport was closed for almost two days, stranding holiday travelers. The extensive flooding caused about $540 million in damage along the Truckee River, according to the U.S. Geological Survey.

Helms Pit during the Sparks flood in 1997

NDOT personnel was busy in 1997 when flooding ravaged Reno and Sparks

Federal funding celebration, 1995

In 1991, the department leaned on civic-minded organizations to keep shoulders of highways and interstates clean and safe

Interstate 15 and U.S. Highway 95 Reconstruction in Las Vegas

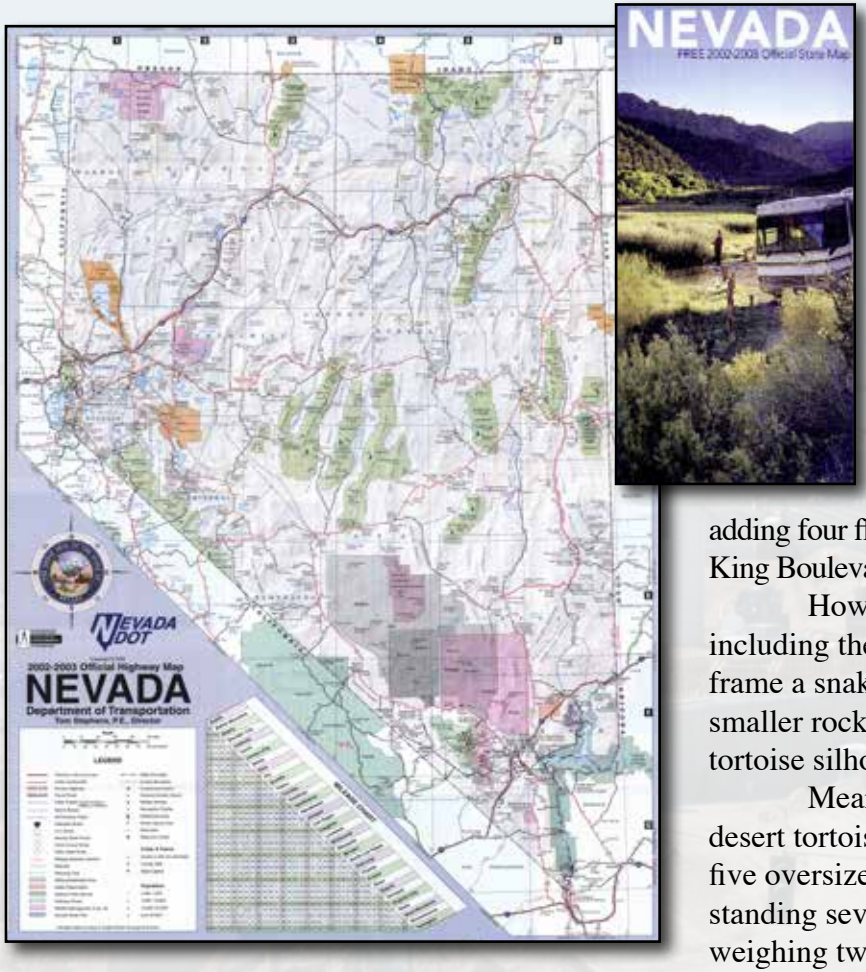
Rancho Road reconstruction groundbreaking, 1996

Nevada upped the speed limit on rural stretches of highways and interstates to 75 mph in 1996

In 1998, the Freeway Service Patrol program was introduced, consisting of a fleet of vans that roam the state's urban regions seeking to help stranded motorists

2000s: Nevada Sees Development Boom

Tony Illia



The department entered the new millennium amid explosive growth that fueled a residential and commercial building boom, straining the state's maturing transportation network. The agency, in response, undertook ambitious projects like completing the makeover of the Interstate 15/U.S. Highway 95 "Spaghetti Bowl" interchange where traffic counts had swollen to 330,000 vehicles daily, which is 10 times higher than the volume it saw when opened in 1969.

The project finished six months early in August 2000 under the leadership of department Director Tom Stephens. Work entailed building 11 new bridges made up from 675 precast segments, each weighing 66 tons, while adding 13.3 mile lanes of concrete travel lanes and five miles of new asphalt roadway.

The project marked Nevada's first use of precast concrete segmental bridges, adding four flyover interchange ramps, including the 70-foot-tall, three-quarter-mile-long Martin Luther King Boulevard exit from Interstate 15, which consisted of a 1,772-foot, 15-span segmental bridge.

However, the most striking visual feature is the desert landscaping with native plants, including the extensive use of Joshua Trees and native rock. Large red sandstone boulders frame a snaking desert arroyo, while smaller rocks from ground-plane tortoise silhouette sculptures.

Meanwhile, the endangered desert tortoise is celebrated by five oversized concrete sculptures standing seven feet tall, and weighing two tons each.

Motorists can observe the design from a variety of angles, each offering different perspectives, including the brightly painted modern pictographs mounted along the varied free-standing walls and climbing support columns. The 62-acre Spaghetti Bowl project created a focal point not only for the city of Las Vegas, but for the entire Las Vegas Valley.

The nine-years-in-the-making project was "like seeing your youngster graduate from high school without the cap and gown," said NDOT Project Manager Tom Greco.

In Reno, meanwhile, the department broke ground on a three-year $53 million makeover of the U.S. Highway 395 and Interstate 80 Spaghetti Bowl interchange in August 2002. It

The Mike O'Callaghan-Pat Tillman Memorial Bridge, considered a civil engineering wonder, opened in 2010. It is commonly referred to as the Hoover Dam bridge

Then Gov. Kenny Guinn speaks at the Interstate 15 and Sahara Avenue dedication

The Henderson "Spaghetti Bowl" opened in 2006, linking Clark County 215 with U.S. Highway 95

Carson City Freeway, 2006

Reno "Spaghetti Bowl" reconstruction, 2003

marked the interchange's first major upgrade since opening in the early 1970s; traffic had climbed to 233,000 vehicles daily.

A 35 percent population increase in northern Nevada residents during the last decade contributed to "a great deal of wear and tear," causing "deterioration of pavement and bridges," Stephens said. The project, finished in 2005, improved traffic flow with additional travel lanes, new pavement and renovated bridges.

Henderson, located 16 miles southeast of Las Vegas at the time, had similar burgeoning transportation needs amid breakneck growth. A makeover of the Interstate 515 and 215 Beltway interchange, known as the "Henderson Spaghetti Bowl," broke ground in September 2003 with Jeff Fontaine as department director.

The $82 million project created a newly-configured interchange with three flyover ramps while adding a new diamond interchange at Interstate 215 and Gibson Road. Construction entailed a 2,500-foot-long, 60-foot-tall steel bridge that crossed over two other new bridge structures.

Other enhancements consisted of two new miles of Interstate 215 freeway from just west of Gibson Road to the Interstate 515 interchange as well as drainage improvements, sound walls, bike paths and lighting. Work occurred while still maintaining traffic flows for 115,000 vehicles daily. The new interchange, opened in 2006, marked the department's second largest project behind the Las Vegas Spaghetti Bowl.

The department buzzed with an unprecedented amount of construction activity, embarking upon the Carson City Freeway, an Interstate 580 extension in Carson City, which included four bridges over Arrowhead Drive, Northgate Lane, College Parkway and Emerson Drive. The initial $120 million first phase, consisting of a 3.5-mile-long freeway from U.S. Highway 50 to U.S. Highway 395 north of Carson City, was completed in 2006.

A $45 million second phase broke ground in 2007, creating two miles of separated two-lane freeway from U.S. Highway 50 south to Fairview Drive while also completing the Carson City Freeway/U.S. Highway 50 interchange and building a partial Fairview Drive interchange and a grade separation structure allowing East Fifth Street traffic to pass over the freeway.

Las Vegas, likewise, undertook record-sized projects that included a $520 million, seven-year widening of U.S. Highway 95 in northwest Las Vegas. The nine-mile-long undertaking added four travel lanes between Martin Luther King and Rainbow boulevards; another two lanes from Rainbow Boulevard to Craig Road; and created a high-occupancy vehicle (HOV) lane in each direction.

There were also seven new over and underpasses added, plus 13 miles of sound walls, storm drainage and redesigned connector ramps that weaved traffic lanes. The improvements, completed in 2007, were designed to accommodate 302,600 vehicles a day.

Residents and visitors across the state began noticing the department's implementation of its Landscape and Aesthetics Master Plan as creative, decorative sculptures began popping up alongside new and refurbished highways and roadways.

The Nevada Board of Transportation adopted the plan in 2002, triggering a wave of new decorative designs along 11 of the state's major highways and interstates. Since being enacted, the department has set aside up to three percent of federal funds for landscaping, including native plants and animals that call Nevada home.

The master plan also called for the department to provide quality rest areas for motorists. In some cases, such as in Virginia City along State Route 341, the department preserved the state's history by incorporating historic markers into a "comfort station" design.

The department also paid $14 million to move the 39-year-old O.K. Adcock Elementary School because it was too close to the newly widened highway. Transportation officials subsequently razed and built the new facility about a quarter mile west from its old location. The 62,500 square-foot school at 6350 Hyde Avenue opened on January 6, 2003. Meanwhile, the department spent $4 million for air filters and air monitoring equipment at schools along the expanded highway while retrofitting school buses for cleaner emissions.

The department also began using technology to better manage congestion by building a $15 million complex in southwest Clark County for the Freeway and Arterial System of Transportation (FAST). The 56,000-square-foot office building and accompanying 10,500-square-foot warehouse opened at 4615 West Sunset Road, Las Vegas, in 2005. It enabled traffic management and monitoring for the state's three largest cities – Las Vegas, Henderson and North Las Vegas – through 600 cameras and a network of pavement, Bluetooth and microwave sensors.

FAST could display travel times to 110 destinations on 42 digital messaging signs. It operated from a main video wall control room with 20 operators and 10 highway patrol dispatchers, sending out road crews, public alerts, and adjusting signal timing, as needed.

"The data we gather is very valuable in maintaining traffic flow and easing

NDOT started to incorporate decorative features into its sound walls around 2002 after its Landscape and Aesthetics Master Plan was adopted

Bridge repair on I-80 in Winnemmucca, 2002

In 2005, the department opened the Freeway Arterial and System of Transportation building. The 56,000-square-foot building houses the Nevada Highway Patrol and traffic managers who man 600 cameras

Digital messaging signs notify motorists of approximate times to their destination

After traffic volumes climbed to 233,000 a day, the department embarked on a $53 million makeover of the Reno Spaghetti Bowl in 2002

Aerial view of Carson Freeway, 2004

congestion by up to 25 percent in the Las Vegas area," FAST Director Brian Hoeft said.

Beyond mobility, NDOT focused on traffic safety. Statewide traffic fatalities reached an all-time high in 2006 with more than 430 lives lost on Nevada roads. Collaboratively with traffic and safety stakeholders across the state, the department launched the Strategic Highway Safety Plan in 2006. To this day, the plan identifies targeted strategies to save lives on Nevada roads through its Zero Fatalities program.

Along with building new highways and bridges, the department dedicated resources to preserving historical sites throughout Nevada.

Beginning in 2001, and with the help of $200,000 in Transportation Equity Act for the 21st Century (TEA-21) funds, NDOT oversaw the restoration of the Fernley-Lassen Train Depot. The depot was constructed between 1912 and 1914 primarily to facilitate a connection between the Red River Lumber Company businesses with Southern Pacific railroad's main line that scooted through Fernley. However, its primary consumer was the Fruit Growers Supply Company, which had an active connection to the depot between 1920 and 1953. By 1956, the depot that served both freight and passengers throughout northern California and Nevada, was all but obsolete. The depot finally closed in 1985. It is listed in both the Nevada State Register of Historic Places and the National Register of Historic Places.

The department continued its out-of-the-box problem solving by embarking upon its first design-build project in 2007 – a $242 million 5.8-mile-long Interstate 15 widening from the Spaghetti Bowl interchange to Craig Road in North Las Vegas.

The undertaking expanded Interstate 15 from six to 10 lanes from the Spaghetti Bowl interchange to Lake Mead Boulevard, and from four and five lanes to eight lanes between Lake Mead Boulevard and Craig Road, while configuring interchange ramps, adding auxiliary lanes and replacing aging 40-year-old bridges at Bonanza Road, D Street and Washington Avenue.

"We had the enabling legislation in 1999, but it was a matter of finding a good project that would lend itself to design-build," said NDOT Assistant Project Management Chief Jeff Hale. "We're looking for the most bang for our buck, including quality, schedule and technical solutions."

The department got its wish: it condensed a 5 and a half-year project down to less than three years, while receiving added value by replacing rather than widening three aging bridges. The project finished 7 and a half-months

early in January 2010 with no construction accidents or claims.

The $240 million Hoover Dam bypass bridge, by comparison, was far more complicated suffering decades of debate, delays and planning that stretched back to the 1960s. The 1,960-foot-long, 88-foot-wide, steel-and-concrete crossing opened on October 19, 2010, soaring nearly 90 stories above the Colorado River. The four-lane bridge eliminated the switchbacks, narrow roadways, and low travel speeds that had long plagued the crossing over the dam crest – a key route identified in the North America Free Trade Agreement (NAFTA) and CANAMEX Corridor.

Bridge construction required controlled explosives to carve out the steep and rugged Black Canyon walls, which descend 850 feet down to the river below. An oversized clothes line stretched 2,500 feet across the gorge shuttled bridge segments into place. Work took place on each of the mountain passes until segments met in the middle, with tieback cables suspending pieces in midair until a full bridge arch was formed. The end result was an iconic structure with twin 277-foot-deep concrete arch ribs and 440 concrete spandrel column sections.

The bridge is the centerpiece of a larger more complex undertaking that included a 1.8-mile-long Arizona roadway approach with a 900-foot-long bridge over a 200-foot-deep ravine on the east side of Sugarloaf Mountain. The 2.11-mile Nevada approach has six new bridges over rocky terrain, with a 463-foot steel structure over a 160-foot-deep gulch.

"There will only be one bridge built in the shadow of the Hoover Dam," Federal Highways Project Manager Dave Zanetell said. "And NDOT was a huge and thriving force on the project and part of a dedicated multi-agency and multi-stakeholder team that helped build it."

Hoover Dam bridge work, 2006

Hoover Dam bridge work, 2006

Hoover Dam bridge work, 2006

Carson City Freeway construction, 2004

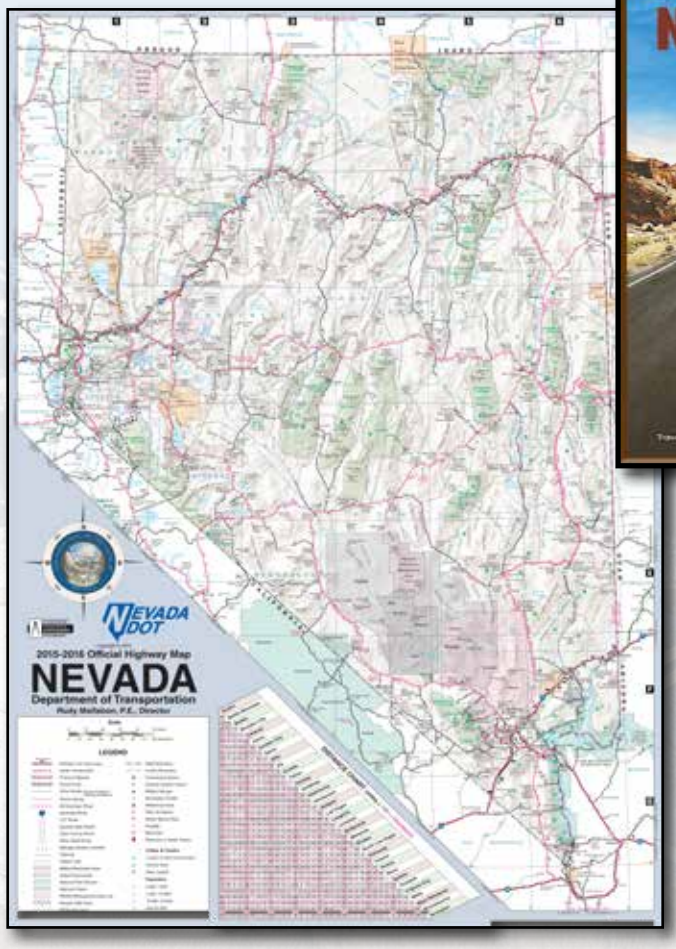
Interstate 80/U.S. Highway 395 construction in Reno, 2004

Crews worked on a much-needed interchange at Interstate 215 and U.S. Highway 95 in 2005

Reno Spaghetti Bowl, 2002

2010 and Beyond: Nevada Embraces the Future with Innovation

Tony Illia



Nevada fearlessly faces the new decade and beyond with proactive and innovative projects addressing the state's infrastructure needs for all users.

In 2011, the department's existing bicycle and pedestrian planning efforts were heightened when the Nevada State Bicycle and Pedestrian Education Program came under NDOT's responsibility. Whether traffic safety presentations and bike safety "rodeos" or supplying helmets and other biking and walking safety information to Nevadans across the state, the department's bicycle and pedestrian group supports roughly 100 events and efforts each year.

The department continued to innovate by using Accelerated Bridge Construction (ABC) in 2012 – a first for Nevada – to swap out 1,000-ton, 45-foot-wide sections of Interstate 15's exit 120 in Mesquite, which is 80 miles northeast of Las Vegas. The $14 million design-build project erected new bridges on temporary foundations alongside the existing structure, which were demolished and swapped out with newer wider replacements that were slid into place using hydraulic jacks and steel rails with liquid dish soap as lubricant.

"ABC reduced construction time by six months, while saving an estimated $12.7 million in delays and fuel costs," said Susan Martinovich, who started at NDOT in 1984 and took the helm as the first female director in 2007. "It enables better work zone safety and construction efficiency."

Design-build also helped deliver a $246.5 million, seven-mile widening of Interstate 15 South between Silverado Ranch Boulevard and Tropicana Avenue. A portion of the project used more than one million pounds of recycled tires to create a smoother, less noisy driving surface.

Similar success occurred up north with a $72 million, 10-mile-long, design-build upgrade of Interstate 80 from Robb Drive to Vista Boulevard in Reno and Sparks. Both projects successfully finished in 2012.

Department crews and contractors made record time when severe flooding hit Moapa Valley, about 30 miles northeast of Las Vegas. On September 8, 2014, the area was

The Galena Greek Bridge along Interstate 580

Nevada Moves Day is part of the bicycle and pedestrian planning effort

Under the leadership of then-Director Susan Martinovich, NDOT performed its first bridge slide, building a new bridge on Interstate 15 and then sliding it into place using dish soap

Interstate 15 was left in shambles after a massive 2014 storm near Moapa. It took 3,000 man hours of work for every 24 hours to reopen the interstate in just four days

hit with a year's worth of rain in just two hours causing the Muddy River to swell 12 feet. One hundred and thirty nine homes were damaged, motorists were stranded and dozens were evacuated. Also, portions of Interstate 15 washed out between Glendale and Mesquite resulting in a temporary closure. Governor Brian Sandoval subsequently declared it a state emergency.

Construction crews recorded 3,000 man hours of work for every 24-hour period to repair the interstate, which was reopened to one lane of traffic in each direction after only four days. Twenty-two tractor trailer trucks made 300 trips daily to deliver 10,200 tons of aggregate material used to repair the roughly three-quarters-of-a-mile damaged area.

The department, meanwhile, improved efficiency by implementing electronic bidding. Online submittals decreased calculation errors while reducing agency staff time, paperwork and other manual procedures by 70 percent.

NDOT additionally embraced partnering, requiring that projects over $10 million use mandatory partnering procedures to quickly resolve issues before they impacted cost or completion. Partnering was critical in helping the department undertake a $290 million multi-phase upgrade of U.S. Highway 95 in northwest Las Vegas.

The project, which began in 2010, extended from Washington Avenue to Kyle Canyon Road, and included the $47 million U.S. Highway 95/215 Beltway "Centennial Bowl" interchange that broke ground in 2015. It called for building north and southbound U.S. Highway 95 connection ramps to the east and westbound Beltway, respectively, including a 60-foot-tall, 2,500-foot-long flyover bridge and a one-mile-long southbound collector-distributor road. The department is partnered with the city as well as the Regional Transportation Commission of Southern Nevada and Clark County Flood Control District for the project, scheduled to finish in mid-2017.

Another epic-sized program was undertaken in northern Nevada with a $600 million 8.5-mile extension of Interstate 580 between Reno and Carson City that bypasses the busy, accident-prone U.S. Highway 395 that sees 40,000 vehicles daily in Pleasant Valley. The new six-lane extension includes a 1,722-foot-long, 295-foot-tall cathedral-arch bridge with a 689-foot-long center-span that traverses Galena Creek.

The 62-foot-wide, three-lane parallel structures – North America's longest cathedral arch bridges – were erected using a shotcrete-reinforced

temporary bridge arch, a custom-fabricated interior slip form and a dozen computer-controlled, 85-ton strand jacks that uniformly grab, lift and lower cables through hollow centers at a dozen points in the bridge deck. Conventional concrete falsework was too heavy for traditional cables and winches.

Other project work called for three miles of asphalt frontage roads, 26,246 linear feet of mechanically stabilized earth walls, 14 miles of drainage pipe and 25 miles of concrete barrier rail. The extension and bridge finished in 2012.

The department, additionally broke ground on the first $83 million phase of the long-awaited Interstate 11 in 2015. The initial 2.5-mile section of four-lane interstate from Foothill to Silverline roads in Boulder City, includes a full diamond interchange at Railroad Pass as well as a restoration of the railroad tracks previously severed by U.S. Highway 93 by building a 180-foot-long steel truss bridge, thereby allowing the mainline freeway to pass underneath.

Interstate 11 will improve motorist safety and convenience while reducing travel time by 30 minutes with a direct link bypassing Boulder City for higher travel speeds with no signal lights. The project marked the first new infrastructure to the Interstate Highway System since it was deemed complete in 1992. Construction was scheduled for completion in late 2017.

In 2016, the state embarked upon an even bigger undertaking with “Project Neon” – the largest and most expensive public works project ever undertaken during Nevada’s 152-year history. The nearly $1 billion project will widen 3.7 miles of Interstate 15 between Sahara Avenue and the “Spaghetti Bowl” interchange in downtown Las Vegas.

This is the busiest stretch of highway in Nevada with 300,000 vehicles daily, or one-tenth of the state population, seeing 25,000 lane changes per hour. Traffic through the corridor is expected to double by 2035.

The centerpiece of Project Neon is an 81-foot-tall, 2,606-foot-long High Occupancy Vehicle (HOV) flyover bridge from southbound U.S. Highway 95 to southbound Interstate 15. The project additionally converts the two existing Interstate 15 express lanes into a general purpose and HOV lane, thereby creating 22 consecutive miles of carpool lanes between Interstate 15 and U.S. Highway 95.

In addition, the design-build project will create a full diamond

The Galena Creek Bridge in northern Nevada was one of the department’s largest undertakings

Galena Creek bridge work

Completed Galena Creek Bridge

In 2015, NDOT broke ground on Interstate 11, a route that will connect two cities – Phoenix and Las Vegas. The interstate will bypass Boulder City, alleviating traffic jams through downtown

Twenty years in the making, the nearly $1 billion Project Neon endeavor will improve Interstate 15 in downtown Las Vegas

Governor Brian Sandoval and NDOT Director Rudy Malfabon attend the groundbreaking of Project Neon, the state's largest and most expensive capital project in department history

interchange at Charleston Boulevard for easier access to downtown, the Medical District and Symphony Park, and several "ramp braids" will reduce merge and weave movements on Interstate 15. Meanwhile, Martin Luther King Boulevard will become a feeder-like roadway paralleling the Interstate 15 for improved performance and accessibility.

Other planned upgrades include extending Grand Central Parkway over the Union Pacific Railroad tracks as well as connecting to Industrial Road for improved resort corridor access and mobility. There will also be aesthetic and landscape upgrades, active traffic management signs and improved drainage.

Scheduled for completion in the summer of 2019, Project Neon will create 4,000 local jobs as well as numerous opportunities for disadvantaged business enterprises.

"Construction will finish nearly a year earlier than anticipated for nearly $80 million in time savings for local taxpayers, thanks to the design-build approach," said NDOT Director Rudy Malfabon. "The project's accelerated schedule still maintains local street accessibility for residents and businesses during construction."

Another design-build project in northern Nevada will reduce travel times by as much as 38 percent for those traveling between U.S. Highway 50 and Interstate 80. The $75.9 million, 12-mile USA Parkway extension will create an approximately 18-mile-long, four-lane state roadway connecting Interstate 80 and U.S. 50 near Silver Springs. Known as State Route 439, the new roadway will further link the greater Reno/Sparks area with the U.S. 50 corridor in Silver Springs, enhancing regional mobility and creating an additional route for commuter, freight and other traffic. The road will also help support regional economic development and serve as another route in the event of emergency or weather-related road closures.

The USA Parkway extension joins the original privately built six-mile-long road for a new 18-mile thoroughfare. The project is a key economic catalyst for attracting the Tesla motors plant that is projected to create 6,500 high paying jobs and more than $600 million in societal benefits during its first 20 years of operation.

"USA Parkway will continue our ongoing efforts and progress in building the necessary infrastructure for the New Nevada economy," said Governor Brian Sandoval. "It provides a necessary corridor that will open up western Nevada to area development and growth and will help ease congestion

for both commercial and commuter traffic."

The department, meanwhile, is experienced, trained and well equipped for facing the state's future transportation needs, regardless of the challenge. In 2015 for example, it created stormwater division to ensure that department projects and facilities meet and exceed federal and state requirements. The division helps prevent contamination by controlling sources of pollutants while preserving water clarity and reducing runoff pollution, thereby protecting water resources today and for future generations. Over the last century it has become a national transportation leader, embracing new technology and techniques, for greater efficiency and accountability. Today, NDOT is responsible for nearly 5,400 miles of state road. Every year, more than 25 billion vehicles miles are traveled on Nevada roads. NDOT administers federal funds to rural Nevada transit systems providing more than one and a half million bus rides every year.

The department continues cutting edge research while exploring innovative new multimodal solutions, including light rail, autonomous vehicles, and high speed trains, among other things. NDOT is committed to improving the quality of life for all Nevadans, working tirelessly to ensure a safe and connected future.

The Centennial Bowl, shown here under construction here in 2015, will accommodate motorists in the fast-growing northwest region of the Las Vegas Valley

The Cactus Avenue overpass across Interstate 15 was completed in 2014, providing an important east-west arterial for residents in the southern portion of Clark County

"The Loneliest Road" U.S. Highway 50 going through Eureka, 2014

NDOT designers created historical murals under the F Street underpass below Interstate 15

Lamoile Highway resurfacing in Elko, 2014

Significant upgrades were made to Cave Rock in Lake Tahoe in 2016

The department inspects its bridges every two years. A Dunphy Bridge inspection is shown here in 2015

Sources

Building Nevada's Highways by Jennifer E. Riddle and Elizabeth Dickey

Engineering News-Record Magazine

History.com – "Hoover Dam Facts and Figures"

Inside NDOT Newsletters

Las Vegas Business Press

Las Vegas Review-Journal

Nevada Appeal

Nevada Department of Highways, various reports and publications

Nevada Highways and Parks Magazine

Nevada Highway Report Biennials

Nevada State Department of Highways Road Systems Handbook

NDOT Centerline Newsletters

NDOT News

Reno Gazette-Journal

Southwest Contractor

United States Bureau of Reclamation- Usbr.gov/lc/hooverdam

Wikipedia