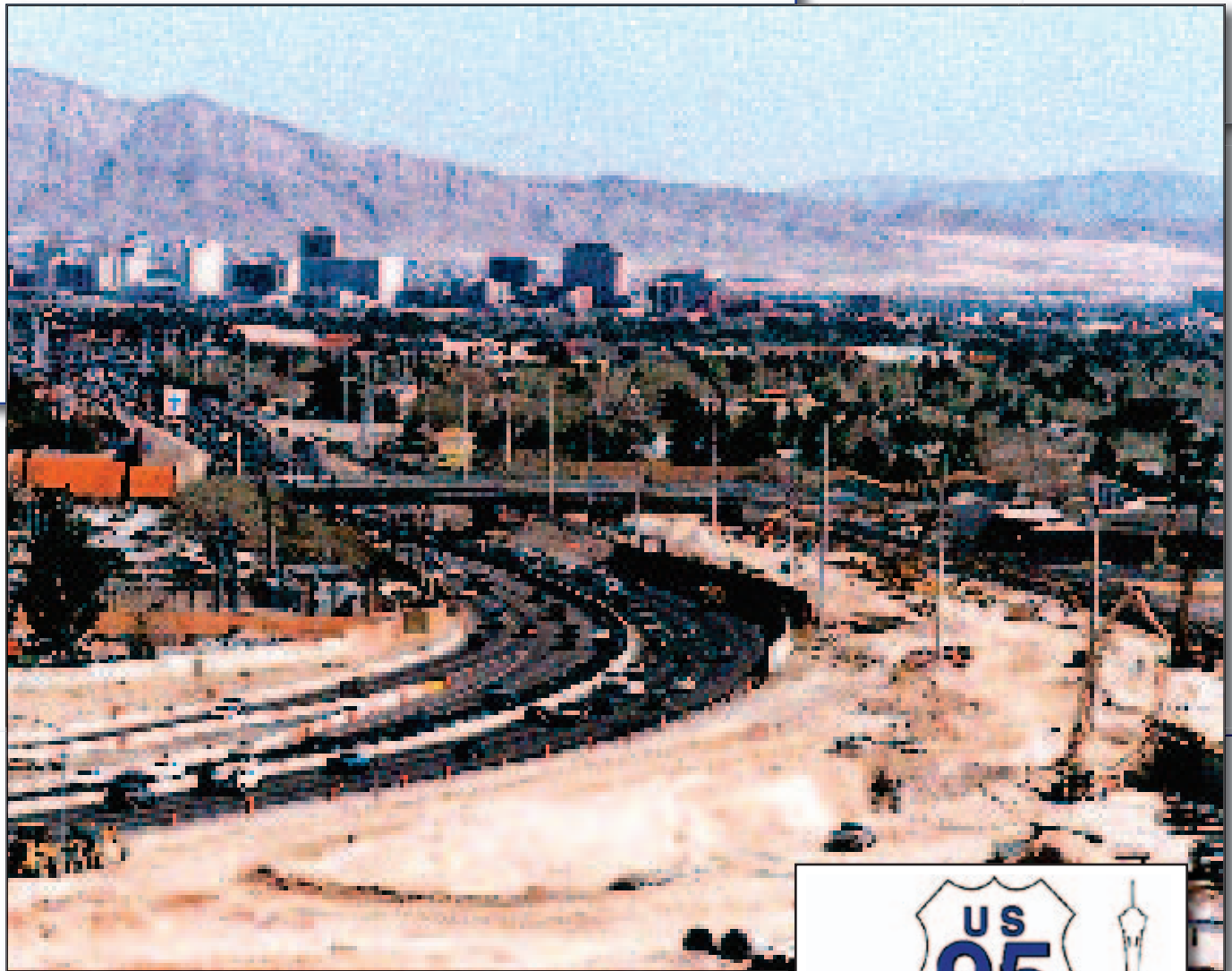


# NDOT NEWS

Spring 2004

TRI-YEARLY PUBLICATION OF THE NEVADA DEPARTMENT OF TRANSPORTATION



# The Director's Corner

Jeff Fontaine, P.E.,  
Director



The Nevada Highway Department was born with safety in mind. In 1917, the Federal Aid Road Act allowed states to qualify for federal money for the construction of improved roads. The Nevada Legislature accepted the provisions of the law by enacting the Nevada State Highway Law on March 23, 1917. The legislation designated a state system of highways, provided for the Department of Highways, and made provisions for their funding.

One of the department's first priorities was to reduce the number of railroad grade crossings by building railroad bridges. By the 1930s, standardized road markers and warning signs were in place. During the Depression, Congress encouraged highway construction to stimulate employment and improve the nation's roadways. In the 30s and 40s, roads were being numbered in an orderly manner to keep accurate records. The 1950s saw radio communications come into play in all phases of highway maintenance, saving lives and money.

In the 1970s and 1980s, computers came into the forefront and a re-examination began of how transportation should be accomplished. Even as multimillion-dollar projects were designed, questions were raised as to how transportation should look in the future. How will air quality be affected? What are the environmental concerns? Congress passed the Intermodal Surface Transportation Efficiency Act (ISTEA) with the realization that roadways cannot be widened forever and transportation systems have to be made more efficient. And, as the name of the legislation implies, ISTEA established the framework for planning and constructing other important modes of transportation including bicycle and pedestrian facilities.

Through all the changes, safe roadways were the Department of Highway's top priority, and, 87 years later, safety is still the main concern of the Nevada Department of Transportation. Even as more vehicles travel on Nevada roads, we are actively seeking ways to make travel safer. The fatality rates per 100 million vehicle miles traveled are dropping, but this is small comfort to the family members of the more than 300 people who die annually in vehicle crashes. Individually, one of the most important things we can do is use safety belts every time we drive.

As we look to the future, NDOT is focused on its goals and applying resources to the department's most pressing needs. We must deliver projects in a timely manner and identify and plan for the future before issues reach a critical stage. Our planning efforts, including corridor studies, communication with regional transportation commissions, metropolitan planning organizations and county boards, guide our efforts and help us address the transportation needs in the nation's fastest growing state instead of merely reacting.

We plan to build on our success of having the smoothest interstates in the country and achieve broad goals that will make NDOT a leader among state departments of transportation. The goals established by NDOT management and staff are:

- Improve safety in public transportation
- Effectively communicate to improve customer satisfaction
- Develop and deliver beneficial projects in a timely manner
- Make the most of the department's assets and minimize its risks.

With a firm sense of where we've been and where we're going, NDOT is poised to make great progress.

## On The Cover:

Construction is moving apace in Las Vegas where NDOT is widening U.S. 95 in the northwest section of the city. Shown is Rainbow Boulevard where lanes will be increased from four to six lanes from Rainbow Boulevard to Craig Road. One lane in each direction will be dedicated as a high-occupancy vehicle lane. The goal is to complete this \$370 million project by the end of 2006.

# Nevada's Three "Nerve Centers" Provide Instant Communication

When a tractor-trailer began shedding transmission parts and caught fire on I-80 last summer near Fernley, it set in motion a chain of events that showed how well NDOT and police agencies work together, thanks in part to the communications provided by the Northern Nevada Road Operations Center (Reno Roads).

The truck fire ignited the insulated trailer filled with plastic containers of corrosive material, creating billowing clouds of smoke. The first call came into Reno Roads at 8:32 p.m. stating the situation in the eastbound lanes at the county line bordering Churchill and Lyon.

A minute later Jeromie Sorhouet, maintenance worker III, was alerted by Reno Roads to bring Crew 225 to the scene if needed. Thirteen minutes after that, Lyon County sheriff's deputies determined the spill was hazardous and the road would have to be closed.

While the driver escaped injury, the truck and trailer burned all night and fire crews did not move in with fire trucks to extinguish it with foam until the next day.

Crew 225 was dispatched to bring out signs, cones and barricades for traffic control, District Engineer Thor Dyson was notified, and Phil Cammarata, eastern region maintenance manager, went to the accident scene from Reno to determine the detour and

call in the exact re-routing locations. When serious incidents occur, the maintenance manager, assistant district engineer and district engineer are notified.

It's not an exaggeration to call the three road operation locations in Nevada the nerve centers for transportation in the state as they coordinate and relay



*SHUT DOWN—A tractor-trailer and its cargo burned for hours on I-80 last summer. An NDOT crew was dispatched from Reno Roads to put up barriers to close the road and route traffic to a detour.*

information when incidents occur.

Staffed 24 hours a day, seven days a week, Las Vegas, Reno and Elko serve each of the three districts and provide instant communication and information to maintenance crews, the highway patrol and whomever else needs to be called in.

"It may be as simple as the NHP calling in to say debris on the side of the road requires pickup," said Pam Klessig of the Reno Road Operations Center. Dispatchers have a color-coded map at hand that shows which maintenance crew is responsible for every mile of highway within District II. Each call is documented on the Reno Road Reporting System, a record that cannot be altered, and the necessary contacts made. "If it is a serious incident, such as a fatality, we contact the crew, supervisor, and safety personnel, which may include our legal department," Klessig said.

*Continued on next page*



*DMS—Dynamic Message Signs in southern Nevada are controlled from the Freeway and Arterial System of Transportation (FAST). With 12 DMS signs in southern Nevada, the public has an early warning system to make a lane change because of an accident ahead or closed off ramp.*

## Dynamic Signs Create Early Warning System

The Reno Road dispatchers have a wide array of information at their fingertips. Their office has 11 monitors including those that cover the Roadway Weather Information System, weather reports, and a workstation that displays the Dynamic Message System locations. The I-80 DMS display shows the signs in California and Nevada. The shared operation allows each state to post messages such as chain controls and weather advisories as necessary.

Another monitor shows the DMS signs along Mt. Rose and Washoe Valley. The Washoe Valley DMS and Spooner Summit Highway 50 signs are activated automatically when winds reach a certain speed, advising big rigs to use caution or prohibit them altogether.

The alerts are broadcast to the public via our statewide Highway Radio Advisory System (HARS) and show up on our web site under Traveler Information.

Becoming proficient at dispatching is a skill that takes two or three months to learn, Klessig said. During winter storms, monitoring road conditions and accidents keeps the one or two dispatchers on duty constantly busy.

Part of the dispatchers' work is relaying information from RWIS stations. Dispatchers can tell maintenance crews if a snowstorm is approaching and if the temperature of pavement is dropping. Spraying brine under those conditions can delay freezing of the road and the build-up of snow and ice.

### In FAST Company

In Las Vegas, snow and ice are seldom problems, but keeping traffic flowing is a constant concern. With 12 Dynamic Message System signs in southern Nevada, the public has an early warning system to make a lane change because of an accident ahead, or notice that an off ramp is closed.

Challenges in southern Nevada are huge. Rapid growth and ongoing construction meet a 24-hour town with workers and visitors traveling at all times of the day and night.

NDOT is a part of the Freeway and Arterial System of Transportation (FAST). The group, which will be administered by the Regional Transportation Commission of Southern Nevada, also includes managing the coordination of local traffic signals in Clark County, Las Vegas, North Las Vegas and Henderson. The area will see continued capacity projects and a further reliance on Intelligent Transportation Systems (ITS).

FAST will soon be located with the Nevada Highway Patrol Southern Command at a new facility now under construction at Decatur and Sunset near



*RENO ROADS—Pam Klessig supervises the Reno Roads operation. The three districts in the state each have communication centers that provide information to maintenance crews, the highway patrol and others.*

the Clark County 215 Beltway.

The \$15 million complex will cover 13 acres and is comprised of two buildings: a 56,000-square-foot office building, and a 10,500-square-foot warehouse and maintenance facility.

As new ITS elements are brought on line, Las Vegas motorists will see ramp metering and signs suggesting detours when the road ahead is closed. Already in place are closed-circuit cameras around the city and a traffic detection system to monitor and streamline traffic.

The new FAST system will monitor traffic, manage incident response and post messages to the Amber Alert

system as requested by the managing enforcement agency or NHP. FAST will also coordinate road condition reporting and advisory communication.

### Elko Roads Dispatch Center

The recently remodeled Elko Roads Dispatch Center serves the largest district (in square miles) in the state.

“Elko Roads is our most important link with employees in the field,” District III Assistant Engineer Mike Murphy said. “During a winter storm we can have 50 to 80 employees out plowing snow. It’s tough keeping track of everything, and the person staffing Elko Roads is on the line.”

Murphy said the “art” of dispatching requires staying calm in stressful situations and being able to do several things at once.

Five construction aides staff Elko Roads in the winter, and in the summer the Elko office staff provides coverage during the day with temporary employees handling the evening shift.

Jeanette Medrano, Elko Roads supervisor, recently revised the dispatch procedures manual to level out the learning curve. The new manual came in handy as a storm hit on the last day of training. But for Kay Auge, putting in her fifteenth season as a dispatcher, it was nothing new.

For many NDOT employees, Auge is the voice of Elko Roads. She has enjoyed having the off-season for fun in prior years, but she would like to see the job become full-time.

Auge is now working swing shift, but for 12 seasons she worked the graveyard shift. “I really enjoy the work,” she said. “It wouldn’t be smart to not like it after

all these years.”

In the closely-knit communities of northern Nevada, Kay hears very familiar voices now and then. “My son, Roy was a maintenance worker for Crew 331 in Currie. I talked to him on the road and he’d let me know what was going on.”



*ELKO ROADS—The link between employees in the field and headquarters are dispatchers. Standing: Leslie de Beaux, Jeanette Medrano (supervisor), Sheree Murphy, and Carrie Rowley. Seated are Kay Auge and Sandy Terry.*

Her brother, Jack Hoots, with Crew 371 in Battle Mountain, works a different shift than Auge this season, but they had a chance to trade information in previous years.

Each of the traffic nerve centers around the state has its own distinctive character and situations to deal with, but the vital service of providing around-the-clock help to the traveling public never changes.



*FAST FACILITIES—New facilities for FAST are being built for traffic monitoring, incident management, road condition reporting and advisories. Now under construction, the \$15 million complex will be home to the NHP and the Traffic Management Center.*

# Jim Kraus Forges Radio Links Vital to NDOT Highway Crews

For the road information network to work properly, it is critical for the nerve centers to be able to talk to the NDOT crews and the crews to be able to talk to one another. The department counts on communications systems specialists like Jim Kraus to maintain radios, install equipment and even work on telephone and computer systems as the needs arise.

NDOT has its own 800mhz statewide public safety and law enforcement radio communication system that relies on mountain top antennas and computers to relay signals. A decade of building the system has created a comprehensive network, one that is almost completely built out to avoid dead spots in radio coverage.

“We plan to install a new system in Amargosa Valley south of Beatty,” Kraus said. “That will greatly enhance the NSRS (Nevada Shared Radio System).”

The NDOT system will be placed on a 160-foot antenna at a sheriff’s sub-station and fire station in Nye County. The relay to the new tower from Sawtooth Peak will get around Black Marble Mountain, which currently hinders signals to part of southwest Nevada. Once the new antenna is in place, it will be the 12th system Kraus is responsible for. With possibly one more antenna and relocation of another, the communication specialist will be satisfied that the 20,000 square mile area he covers will have good coverage with few “holes” or “fringe” areas.

Similar to a cell phone system, NDOT radio is more powerful and is available in more areas. It also has the advantage of providing communication to many people or just one person.

Cooperation among agencies is the rule, because of the expense of constructing new antennas.

“Other agencies such as the National Guard, Capitol Police and power companies share resources,” Kraus said. “Some agencies use our mountain tops, and we use some of theirs.”

Kraus can perform technical work for the U. S. Forest Service and the Department of Information Technology at sites atop Mt. Brock. The mountain above Tonopah also relays information for the Federal Aviation Administration, Los Angeles County, and television networks.

The communication technician brings a lot of experience to his work. “I was a typical kid fascinated by electronics,” Kraus said. “I built crystal radios, Morse code sets, all kinds of electronic hobby projects.” He was trained in telecommunications in the army, and worked overseas as a civilian on communications systems.

Kraus, a 24-year resident of Tonopah, worked 11 years at the Nevada Test Range and has worked 13 years for NDOT.



*ANTENNA MAN—Jim Kraus takes a call prior to working on equipment located on Mt. Brock above Tonopah. The cooperative statewide radio network provides excellent service for public agencies and others.*

# Highway Safety Takes Many Forms

## Highway Safety is summarized as the four E's: Education, Enforcement, Engineering and Emergency Response

Think about waking up each morning knowing that one person in Nevada will die in a traffic accident that day, and another person the next day, and so on. In those terms, it is probably not acceptable to you knowing that you and your loved ones who drive could be the next victim.

Three hundred and sixty-five people died on Nevada's highways last year, and more than 42,000 nationwide. The toll is one death every 12 minutes. NDOT, the Office of Traffic Safety (OTS), and our statewide safety partners are taking action to reduce the deaths and crashes.

When it comes to highway safety, many state agencies have their parts to play, from enforcement by the Nevada Highway Patrol, educational programs by the Health Division, DUI checkpoints and teen driving programs provided by the Office of Traffic Safety (OTS) to road design and engineering features by NDOT.

The Department of Transportation is devoting more resources to roadway safety. As resources are available, culverts are extended, guardrail is placed and shoulders are widened to reduce the impact of leaving the roadway.

Of course, Nevada legislators deserve credit for passage of a tougher DUI law that went into effect on Sept. 23, 2003. Supporters of the .08 legislation that decreases the allowable amount of blood alcohol say the new law not only saves lives, but also millions of dollars in taxpayers' money spent on DUI law enforcement and prosecution.

A Mothers Against Drunk Driving spokeswoman said it is expected the .08 legislation will accomplish what it has in other states: creating a general deterrent to bring down the numbers of impaired drivers on the state's streets and highways.

Several state agencies have safety program in place, and at a coordination and introduction meeting for a "safety summit," various departments came together to develop a "Statewide Strategic Safety Plan." The idea is to pool resources and increase the number of people who can be reached.

The highway patrol is taking advantage of a new comparable statistics program called Safe Stat which collects and makes data available rapidly to adjust manpower where needs are greatest.

At safety summits proposed for May, one in northern Nevada and one in southern Nevada, areas of focus will include:

- Safety education in school
- Learning from collision re-enactments
- Safety in the work zone
- General education
- Design standards
- Proposed legislation
- Partnerships among agencies

The goal of the summits will be to identify needs, set priorities, and decide on efforts to address them in a comprehensive manner. NDOT's hope is that by combining the expertise and resources of all the statewide partners, we can make a difference in preventing fatalities on Nevada's highways.



*SIGNED IN—Nevada became the 42<sup>nd</sup> state to pass the .08 blood alcohol level last year. At the bill's ceremonial signing are Laurel Stadler, president, MADD; Danielle Christenson, MADD member; Chuck Abbott, chief of the Nevada Office of Traffic Safety; Jim Holmes, Northern Nevada DUI Task Force; Annie Holmes, mother of DJ Benardis, killed by a drinking driver; Fred Hinners, DOT; and John Johansen, Office of Traffic Safety. Gov. Kenny Guinn wields the pen.*

# Lake's Environmental Improvement Program Combines Aesthetics and Function at Tahoe

NDOT identifies a \$100 million plan to improve the "Jewel of the Sierra"

Since 1995, the Nevada Department of Transportation has identified 31 projects with an estimated cost of more than \$100 million to preserve the delicate environment of Lake Tahoe. These include state-of-the-art erosion control and water quality projects to minimize discharge of sediment and pollutants from roadways and adjacent cut and fill slopes, all of which drain to the lake. Fifteen projects have been completed while others will be undertaken over the next several years. NDOT is working from an environmental improvement master plan adopted for all its facilities in the Lake Tahoe Basin.

In addition to water quality, erosion control and drainage improvements, other projects are more mundane and designed merely to keep the roadway in place. Along US-50 near Cave Rock, for example, bin walls supporting the highway were deteriorating

TEMPORARY FIX—Wood is used to patch up the bin wall.



2

1



BEFORE—A deteriorating bin wall for a third of a mile along US-50 near Cave Rock required a \$2.7 million replacement and drainage improvements.

and had to be replaced. In keeping with aesthetic concerns for the lake, the new bin walls were constructed with concrete forms that give the appearance of stone walls.

NDOT has completed 15 environmental improvement projects since 1996. These cover approximately 12 miles of roadway with a construction cost of \$38 million. Of this amount, \$31 million was spent on environmental improvement of our roadways.

In the area of maintenance, NDOT owns and maintains nine Road Weather Information Systems (RWIS) throughout the basin. RWIS stations monitor air and pavement temperatures that help determine the precise amount of brine or salt/sand mixture to apply to the roadways.

The system has helped NDOT reduce application of sand and salt in the basin by 73 percent and the resulting impacts to the lake's water quality.



3



*DURING—A cement snorkel truck delivers material where needed.*

The results of this research will be available to all implementing agencies, providing valuable information for design decisions in future water quality projects.

Best management practice improvements installed to date:

<b>Improvements</b>	<b>Total</b>
Seeding (acres)	50
Drop inlets	240
Dikes, curbs and gutters (linear foot)	81,735
Paved swales (linear foot)	30,080
Pipe (linear foot)	21,125
Rip rap (cubic yard)	28,000
Sediment/infiltration basins	25
Sediment traps	6
Pretreatment vaults	15
Rockery walls (linear foot)	6,800
Timber check structures (linear foot)	5,550

In conjunction with the Desert Research Institute, NDOT is monitoring several highway best management practices structures along State Route 28 and US-50.

The research project is funded by the Forest Service, Nevada Lake Tahoe license plate program, NDOT and DRI. The objective is to determine the effectiveness of three types of sediment structures in removing fine-grained sediment and nutrients from roadway runoff.

**“NDOT has completed 15 environmental improvement projects since 1996.”**

4



*AFTER—Appearance of stone work adds to the aesthetic appeal of bin walls.*

# NDOT Plans for Future With Corridor Studies

What will interstates in fast-growing Nevada look like two decades from now?

Planning for the future at NDOT includes studies that project transportation needs two decades from now. With the help of consulting companies, the department is looking into I-15, I-515, and US-95 in southern Nevada, along with Project Neon in Las Vegas. In northern Nevada, Washoe County freeways and US-395 through Douglas County are subjects of a corridor studies.

Each corridor study is to develop a program of improvements to address the short and long-term transportation needs in response to continued growth. Studies identify areas of existing and future congestion and evaluate alternatives to improve transportation performance. In creating the studies, various ways are suggested to improve mobility, accessibility and safety. Another important consideration is enhancing opportunities for public and other types of transportation.

The US-95 corridor through Las Vegas is one of the busiest highway corridors in the state and the segment from Cheyenne Avenue north to Kyle Canyon Road is an area of rapid development. Existing roadways will be unable to handle expected growth. Potential alternatives include adding one general purpose lane in each direction or a general purpose lane and a high occupancy vehicle lane.

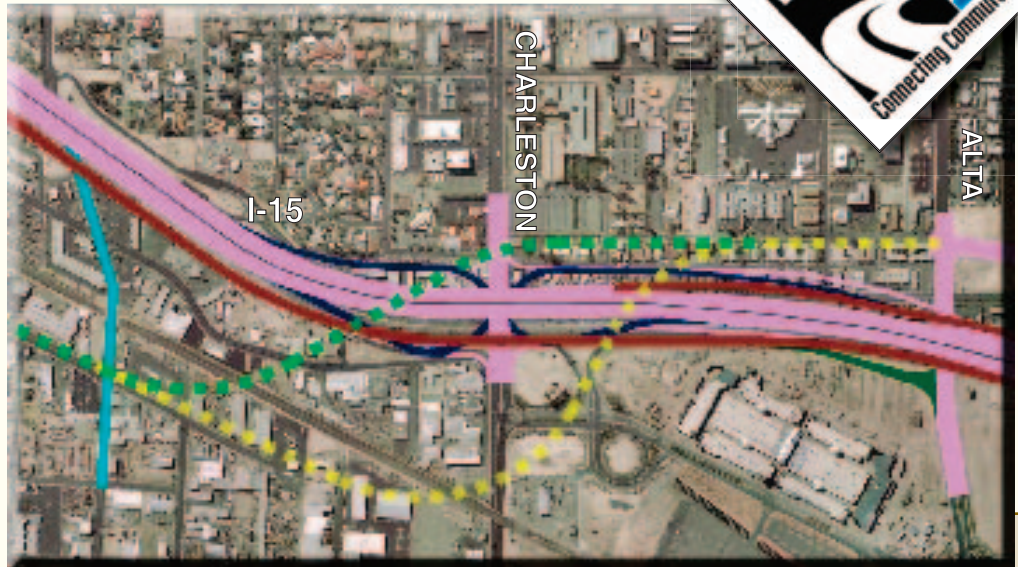
The I-515 Corridor Study is evaluating the transportation needs of the southeastern region of the Las Vegas Valley served by the I-515 Freeway. Various ideas are being explored to widen the freeway and potential new interchanges. Recommendations are being made that local jurisdictions adopt and pursue a number of arterial street and transit projects which would make substantial improvements when combined with enhancements to I-515.

“Project Neon” is the name given to I-15 widening and linking Martin Luther King Boulevard to Industrial Road and reconstructing the Charleston

interchange. Options include going over or under I-15 to make the connection. To widen I-15, one option would involve increasing it to as many as 16 lanes between Sahara Avenue and the Spaghetti Bowl. The other two possibilities call for adding lanes and separating them into express and local lanes.

In northern Nevada, the Washoe County freeway study identifies freeway improvements needed within the Reno/Sparks metropolitan area through the year 2030. The Washoe County Regional Transportation Plan forecasts a 2020 population of 450,000, a 43 percent increase over the 2000 population.

In a cost/benefit comparison, the greatest benefits are produced from improvements to northbound US-395 between Damonte Ranch Road and Glendale Avenue. Improvements to the I-80/US-395 Spaghetti Bowl interchange complex also produce a high ratio of benefits.



*There are three options to join Martin Luther King Boulevard to Industrial Road as part of Project Neon. The green line shows a connection from King to Industrial over I-15 south of Charleston Boulevard. A second choice, in yellow, goes north of Charleston. A third option would go under I-15 north of Charleston. The project includes rebuilding I-15 at Charleston and widening the interstate between the Spaghetti Bowl and Sahara Avenue.*

# NDOT Staffers Rescue Cacti As Lanes are Added to US-95

It is no surprise to fellow NDOT employees, but the general public would probably be amazed that so much of our work is designed to preserve the environment and mitigate the effects of our highway projects.

The Searchlight maintenance crew, a private contractor and inmates from the women's correctional

We had the trenches already dug, and we rolled the cactus into the trench and the women prisoners from the Jean Correctional Center did the backfilling."

The supervisor said a private company also did similar work.

Most of the cactus rescue was done a year ago and the transplanting has had a high success rate. The cacti were given a light sprinkling of water during the summer.

For the final section of widening, from the California border to Searchlight, cacti will be transplanted adjacent to the new roadway north of the town to save plants the stress of planting and replanting.



*NURSERYMAN—Ed Milliren, supervisor of the Searchlight Maintenance Station, stands among thousands of cacti that have been successfully rescued from the path of the US-95 widening project. The plants are temporarily located in a materials pit.*

facility in Jean all contributed to saving a number of desert plants that would have been destroyed by highway widening projects. The vegetation will be replanted in the area after the highway work is completed.

NDOT dug trenches with a backhoe in the large material pit near Searchlight. The one square mile pit provided much of the material for the recent four-lane widening north of the town.

One section of the pit is a garden spot with thousands of rescued cacti. "We've pulled out cholla, Joshua trees, yucca trees, beavertail cactus, barrel cactus and others," Searchlight maintenance supervisor Ed Milliren said. "Our crew harvested the cactus by rolling up a backhoe bucket and then easing the cactus onto the bed of a truck.



*TORTOISE TRAINING—NDOT senior biologist Julie Ervin-Holoub teaches highway maintainers in southern Nevada how to handle desert tortoises when they have to be moved for their own safety. Classes are held at the Desert Tortoise Conservation Center.*

## Tortoise

Motorists probably don't notice the mesh fencing extending from the ground to the bottom strand of barbed wire, but the one-inch by two-inch mesh protects tortoises from crawling onto the roadway. Before the fences were installed, tortoises were frequently killed on the pavement, but the mesh has proved effective. The reptiles use culverts to cross underneath the road.

The mesh fencing needs to be in good condition to be effective, and the Searchlight maintenance station patrols 132 miles of tortoise fencing on a regular basis.

# Conveyor System Clears the Road

With all the growth in the valleys north of Reno and Sparks, the last thing the public would want are road delays because of a parade of dump trucks moving dirt from one side of Pyramid Highway to the other.

That scene was a distinct possibility with construction of Los Altos Parkway, from Sparks Boulevard to the Pyramid Highway. The Regional Transportation Commission project means 150,000 to 200,000 tons of dirt must be moved from the west side of Pyramid to the east. The dirt will be used as structural fill for the new road and building pads for development.

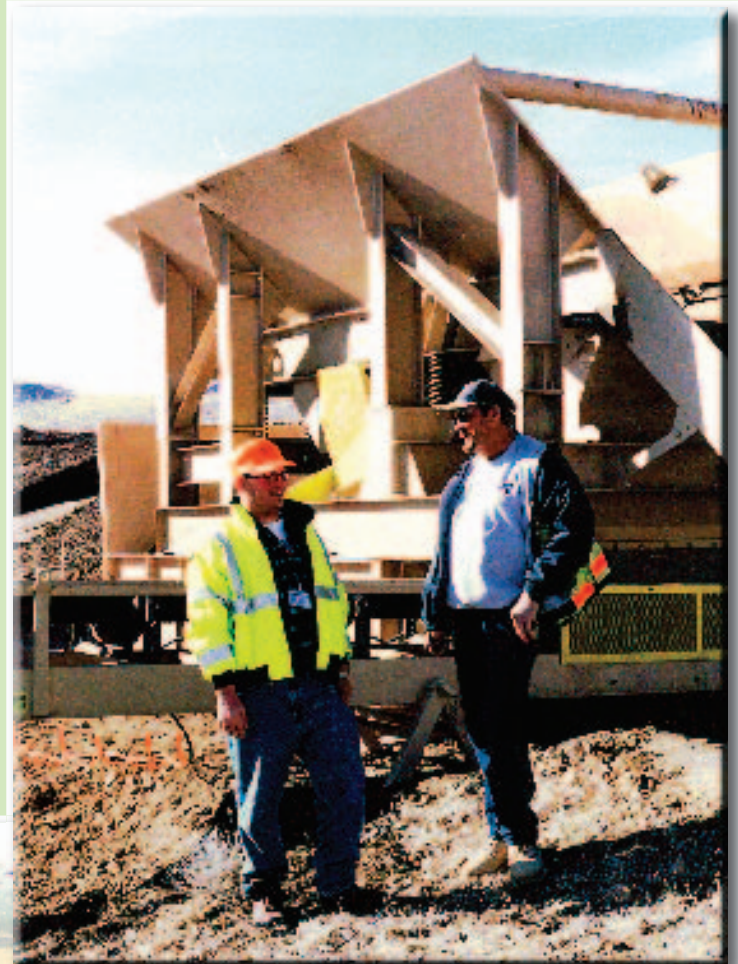
The standard way to move an amount of material of that size would be with dump trucks at night to lessen effects on traffic. Highway flaggers would have to be exposed to traffic, and the heavy trucks would cause ruts in the asphalt.

Luckily for the area residents, Peavine Construction hit on a much better idea. A conveyor belt has been set up through a conduit that runs underneath the divided four-lane highway. NDOT approved the use of the conduit for the conveyor.

"We're planning to move 600 tons per hour and have all the dirt moved in 59 working days," said Mike Merlino, project superintendent for Peavine.

By the end of the year, more commercial and residential development will be found in the area,

including a four-way signal where Los Altos Parkway intersects with the Pyramid Highway. However, the new road configuration will also provide transportation alternatives to residents who use Pyramid Highway to travel east without using McCarran Boulevard.



*PROGRESS REPORT—NDOT traffic engineer Mike Fuess discusses the conveyor project with Mark Robl of Peavine Construction in front of the large hopper that will move dirt onto the moving belt.*



*UNDERGROUND MOVEMENT—The conveyor is in place on Pyramid Highway and ready to move thousands of tons of dirt to provide fill for construction on Los Altos Parkway.*

# Will Advances in Quiet Pavement Eliminate Need for Sound Walls?

**NDOT supports a study on affordable low noise pavement that could save millions of dollars in sound wall costs and increase the quality of life in urban neighborhoods.**

At \$1 million to \$5 million a mile, sound walls along freeways are a costly item. Advances in quiet pavement probably will never eliminate the need for sound barriers, but there may come a time when a new type of pavement can, at times, be a substitute for sound walls.

In addition to cost, sound walls cut off views and light. To minimize their effect, walls are sometimes decorated with mountain scenes, paintings or even translucent panels at the top to let in illumination for nearby homeowners.

However, there is no getting around the fact that sound walls are expensive and can be obtusive. In the future, quiet road surfaces may be a cheaper alternative. Other techniques that have been used to reduce noise pollution include earth berm barriers, sloped barriers, as well as elevated and depressed highway sections.

The National Center for Asphalt Technology (NCAT) is studying pavement noise in an effort to develop low noise hot mix asphalt pavement. NCAT has measured and will evaluate noise levels for various pavements throughout the United States, including 10 locations in Las Vegas. The findings will be compiled in a report to assist NCAT in developing a low noise pavement surface design.

A variety of NDOT's road surfaces were studied by NCAT, including several open-graded asphalt sections of varying age, a dense grade surface, and concrete sections. Results show that the open-graded asphalt surfaces being placed in the Las Vegas area provide a quiet pavement surface for the traveling public. Older open-graded asphalt is generally noisier.

For concrete surfaces, NCAT states that longitudinal grooving provides the quietest texture.

While sound walls are likely to be part of the urban landscape for some time, NDOT is working toward the day when a more desirable and less expensive alternative is possible.



*OLD AND NEW?—While not taken in Nevada, this photo of the NCAT close proximity trailer illustrates the type of equipment used for noise testing of pavement. The tests may be one of the keys for reducing the number of sound walls to be built in the future.*

# Railroad Bridge:

# Promising New Life For V&T Railroad

Transport of the bridge from Las Vegas to Carson City is the first tangible sign of rebirth for the Virginia and Truckee Railroad

Construction of the Virginia and Truckee Railroad in 1870 created an economic boom by connecting the silver mines of Virginia City to the mills of Carson City. More than 130 years later, area residents are hoping the economy will boom with tourism when the V&T is rebuilt. The Nevada Commission for the Reconstruction of the Virginia and Truckee Railroad and the Northern Nevada Railway Foundation are spearheading the project.

Progress on the 17-mile historic rail line received a boost this spring. The Nevada Department of Transportation donated a railway bridge to be used in crossing US-50 at the Carson City and Lyon County border. The bridge will allow the V&T access to the scenic Carson River canyon.

The bridge, located in Las Vegas, became obsolete when I-15 needed to be widened to accommodate more lanes. A new railroad bridge was built for the Union Pacific Railroad, and the two end spans, approximately 60' x 16' and the center span, 46' x 16', were taken down in March to be shipped north on big rigs.

"NDOT employees deserve a lot of credit for coming up with the idea of using the Las Vegas bridge up here for the V&T," Tom Young of Lumos and Associates said. Young, a volunteer consultant to the project, said a local landowner, James Parker, has agreed

to store the bridge adjacent to US-50 for free until it can be put into place.

"We estimate the bridge will save the foundation \$300,000, but even more importantly, this is a true rail



*HEADING NORTH—The Las Vegas railroad bridge in the background will be transported to the Mound House area to await reconstruction as a vital link in the rebirth of the Virginia and Truckee Railroad.*

bridge with girders that gives it an older look," Young said. "If we built it from scratch it would probably be concrete, not steel."

Recent progress on the railway includes obtaining needed rights-of-way for 10 miles of the route, a large enough stretch that construction could begin as early as this summer. Once construction begins, the project should take about two years. A final design and acquisition of right-of-way is still needed where the



railroad bridge will cross US-50, Young said. Even though the railroad group will have the free use of a bridge, the V&T Commission is paying the costs of dismantling the bridge, trucking it to Carson City, and rebuilding it. Dismantling and trucking is

estimated at more than \$60,000.

The additional costs of building concrete abutments on the new site, guardrails, bridge modifications, moving and setting the bridge will be more than half a million dollars.

For its part, NDOT will continue to be involved in the project, as engineering plans will be submitted to the department to approve a structure spanning a U.S. highway.

“This is a win-win project for everyone,” NDOT roadway design engineer John Bradshaw said. “This is a heavy duty railroad freight bridge. By their nature, they are rarely re-used; usually they are cut up into scrap metal.



*LOWBOY--Sections of the former Union Pacific Railroad bridge have been loaded on trailers to be moved north.*

“Our previous director, Tom Stephens, and our deputy director Susan Martinovich wanted the difficulties worked out and the bridge re-established for the V&T.”



*THE RENDERING—Portola, CA artist Ken Roller brought together the old and new in this rendition of the V&T Railroad crossing US-50 near the Carson City-Lyon County line. The V&T Commission is planning to raise funds by selling prints of the painting.*

# Lamb Boulevard Interchange Will Aid Traffic Flow

Traffic will move more quickly at Lamb Boulevard and I-15 when a \$17.4 million single point interchange is built to replace the current configuration of a southbound off ramp and northbound on ramp to I-15.

Now under construction, the interchange will consist of an overpass on I-15 to cross Lamb Boulevard and provide single point signaling for traffic control for I-15 off and on ramps and Lamb Boulevard traffic. Landscaping will also be added.

The old Lamb Boulevard bridge has already been demolished, and ramps will remain closed for the duration of the project, expected to be completed in May 2005.

NDOT remains committed to maintaining traffic flow on I-15 as much as possible during through the yearlong construction period. Two lanes of traffic in each direction will be maintained during construction.

Currently more than 27,000 vehicles travel I-15 at Lamb Boulevard, compared to 13,000 in 1993.



*PHOTO SIMULATION--When completed, the Lamb Boulevard Interchange at I-15 will be similar to this.*



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*NDOT News is published and distributed from the Public Information Office, NEVADA DOT Headquarters, 1263 South Stewart Street, Carson City, Nevada 89712. (775) 888-7000 or*

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