Nebraska Department of Roads

A Performance-based Transportation Agency

2003 Report

NDOR
Nebraska
Department of Roads

Leaders in Public Safety and Service since 1895

From the Director ...

Since 1895, the Nebraska Department of Roads has served the citizens of Nebraska. We've accomplished this by doing "the right things right" based on valid data collection and analysis and the use of emerging technologies.

We measure our performance in an effort to continually improve the service we provide to our customers and taxpayers of Nebraska.

Again this year, we had a roadway disaster. On I-80 near Big Springs, Nebraska, a semi-trailer truck slammed into the center pier of an overpass and caused the bridge to collapse onto one of the nation's busiest highways. Our crews and partners responded, ensured public safety, and quickly restored I-80 to service.

We may not be able to spend it as we do a dollar bill, but the "Currency of the future is TRUST." We strive to retain your trust by making the best use of every dollar we spend. That has been and will continue to be an ever challenging task.

I submit to you the Nebraska Department of Roads' 2003 Annual Report that summarizes the past year and plans for the future. I welcome your comments on how we are doing and how we can improve.

John L. Craig
Director

Critical Transportation Issues

The Executive Committee of the Transportation Research Board (TRB) has identified some critical issues in transportation that face the nation. The State of Nebraska is affected by many of these issues, is aware of them, and strives to address them.

Safety - Fatalities and injuries from transportation crashes are a major health problem. Thousands more deaths could be averted each year if safety belt use continues to rise beyond 79 percent of motorists.

Security - The transportation system is vulnerable to attacks by terrorists and saboteurs. Improved technologies, operations, and strategies for deterrence are needed. These same measures will also provide better response to disasters and evacuations.

Environment - Worthy environmental goals and values pose serious challenges to the operation and expansion of transportation facilities to meet growing demand. Transportation agencies are key stewards of the environment and must find new ways to satisfy public demand for travel and for meeting environmental goals.

Institutional Constraints - The transportation system is a patchwork of loosely connected modes encompassing 35,000 government owners of roads; ten of thousands of private carriers; and thousands of independent authorities responsible for the numerous modes. The funding mechanisms for these entities remain unconnected and uncoordinated.

Aging Infrastructure - The aging transportation infrastructure must be rebuilt, but the cost exceeds revenues.

Finance - The financing of publicly provided transportation infrastructure is not adequately matched to use or need.

Energy - The U.S. transportation system, which depends on fossil fuels, faces an uncertain future with respect to the availability and cost of energy.

Economics - The economic vitality of the nation depends on global competitiveness, productivity, and efficiency.

Human Resources - Transportation organizations are having difficulty attracting and retaining the technically diverse personnel needed in the 21st century.

Information Technologies - The merging of information technologies with transportation offers the greatest potential for innovation.

Aging Population - An aging population poses special safety and mobility challenges. More than 19 percent of Americans will be age 65 or older by 2025. The mobility needs of older people change, and alternative travel modes are needed.

Congestion - The demand for passenger travel and freight movement is straining the capacity of the U.S. transportation system, and the volume of traffic continues to rapidly grow.

This fourth annual report illustrates how the Nebraska Department of Roads is addressing some of these issues.

Transportation... *Our "True North"*

Our transportation system is safe, reliable, secure, seamless, intelligent, environmentally sensitive, user-friendly, and supports economic growth.

Our Mission Statement

To provide and maintain, in cooperation with public and private organizations, a safe, efficient, affordable, and coordinated statewide transportation system for the movement of people and goods.

Our Values

- **Safety**
  - Public Safety
  - Employee Safety
- **Integrity**
  - Hold the Public Trust by Evidence Based Decision Making
- **Quality**
  - "It is a frame of mind"

Nebraska Transportation at a Glance

Calendar Year 2002

Land Area *(sq. miles)* 76,872.4

Population *(2000 Census)* 1,711,263

Annual Fuel Use *(gallons)*
- Gasoline 563,272,739
- Diesel 357,685,438
- Gasohol 326,135,113
- Total 1,247,093,290

Registered Vehicles
- Passenger 1,076,415
- Mobile Home 35,718
- Bus 1,951
- Motorcycle 26,931
- Trailers 301,979
- Dealer 13,789
- Government 36,110
- Tax Exempt 3,736
- Truck 521,385
- Snowmobile 915
- Total 2,018,929

Licensed Drivers 1,306,513

Annual Vehicle Miles of Travel *(millions)* 18,404

State Tax Rates *(cents per gallon)*
- Gasoline 24.6
- Diesel 24.6
- Gasohol 24.6

Public Road Miles *(highways, roads, streets)*
- City 78,120
- County 8,238
- State 9,969
- Total 96,327

Accidents and Fatalities
- Total Accidents 46,238
- Fatal Accidents 272
- Fatalities 307

Bridges
- State System 3,501
- County and City System 12,125
- Total 15,626

Airports
- Public Use 90
- Commercial Service 6

Transit
- Providers 71
- Counties Served 73

Rail *(2001)*
- Miles Operated 3,480
- Commodities Moved *(tons)* 443,103,601

Waterways
- Terminals 11

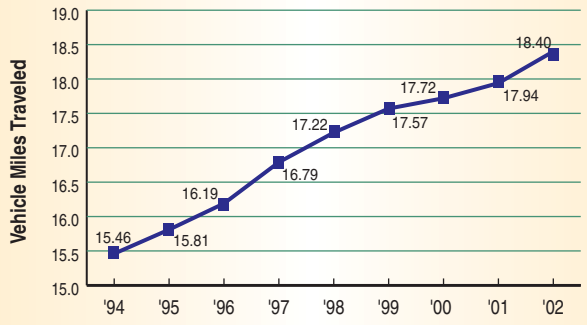
Mission: Safety

As the steward of the state highway system, the Nebraska Department of Roads (NDOR) has made safety of its employees, contractors and the traveling public its highest priority. Our mission is to reduce injuries, deaths and economic losses from motor vehicle crashes in Nebraska.

In 2002, there were 18.40 billion vehicle miles of travel on all roadways in Nebraska, an increase of 10 percent in five years. The approximate 10,000 miles of the state highway system, which is the responsibility of the Department of Roads, carried more than 64 percent of all the traffic and 87 percent of all the commercial truck traffic. Over 3.897 billion vehicle miles of travel occurred on the Interstate system within Nebraska, an increase of 20 percent in five years.

Total Vehicle Miles of Travel on All Roadways in Nebraska

(In Billion Miles)



Although our traffic has increased, the accident rate per million vehicles miles (MVM) has continued to decrease.

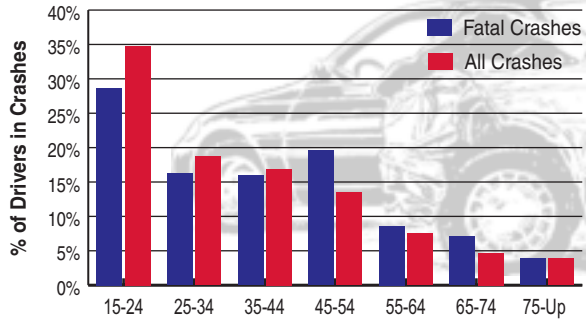
Nebraska Motor Vehicle Traffic Crash Information

Year	Total Accidents	Persons Injured	Persons Killed	Accident Rate *(per MVM)*	Fatality Rate *(per HMVM)*	National Fatality Rate *(per HMVM)*
'92	40,198	22,227	270	3.20	2.1	1.7
'93	43,822	26,149	254	2.97	1.7	1.7
'94	44,222	28,253	271	2.86	1.8	1.7
'95	46,436	30,410	254	2.94	1.6	1.7
'96	47,371	30,758	293	2.93	1.8	1.7
'97	47,997	30,311	302	2.86	1.8	1.6
'98	48,183	30,655	315	2.80	1.8	1.6
'99	48,217	29,905	295	2.74	1.7	1.5
'00	47,933	29,216	276	2.70	1.6	1.5
'01	47,894	26,751	246	2.67	1.4	1.5
'02	46,238	23,379	307	2.51	1.7	1.5

Million Vehicle Miles (MVM) *Hundred Million Vehicle Miles (HMVM)*

In an effort to minimize accidents and fatalities, we continue to build our highways with wider shoulders and bridges, gentler curves and slopes, added recovery areas, improved barrier systems, more advanced traffic devices, and rumble strips to alert drivers. We have also pursued and provided support for two programs, Campaign for Safety Belt Usage and Bicycle and Pedestrian Safety. Both campaigns target younger drivers who are involved in a disproportionate number of crashes.

Percentage of Drivers, by Age, Involved in Fatal Crashes and All Crashes, 2002



Nebraska Highway Safety Summits 1 and 2

The Nebraska Department of Roads and the Federal Highway Administration jointly hosted the second Nebraska Highway Safety Summit in March 2003. One purpose of the summit was to hear about the successful activities undertaken after the first summit in 2002.

- **Installation of Rumble Strips** – To reduce the number of run-off-road crashes, rumble strips have been installed on the shoulders of all rural sections of Interstate 80. Rumble strips are being installed on the shoulders of new and existing rural expressways. NDOR's goal is for all rural four-lane highways to have rumble strips.

  NDOR is also testing, in two locations, the effects of centerline rumble strips to reduce the number of head-on crashes.

  Nationally, 30 percent of reportable crashes are single vehicle run-off-road. Statistics show that rumble strips reduce the rate of run-off-road crashes.

- **Campaign for Safety Belt Usage** – "Click It. Don't Risk It," with University of Nebraska Head Football Coach Frank Solich as the Honorary Chairperson, is a statewide campaign, started in September 2002, that supports the

Nebraska Coalition to Save Lives through Safety Belt Usage. Safety belt usage in Nebraska was 70 percent in 2002, 76 percent in 2003, and the goal of the coalition is to increase it to 80 percent by 2004.

Through the coalition 1.3 million educational brochures were distributed. They targeted two high-risk groups: age groups (males age 21-34 and young teen drivers), and geographic groups (rural pick-up truck drivers). The brochures were distribution to 700,000 homes and to various community groups (faith, school, youth, law enforcement).

An excellent video "Diana's Last Message" about Princess Diana and safety belt use was developed. Copies of the video, to be used in programs statewide, are available for loan from the National Safety Council, Greater Omaha Chapter.

The other purpose of the summit was for highway safety professionals from a variety of areas and expertise to discuss four major topics and to identify strategies to achieve their ultimate goal of reducing highway traffic deaths. The four topics were:

- Red Light Running/Intersection Safety
- Older/Younger Drivers
- Impaired Driving/Alcohol
- Speeding

In the breakout groups, the professionals discussed problems and potential solutions within these broad areas with the goal of "saving lives." One of the groups, Impaired Driving/Alcohol, is already proceeding with activities. The group, led by Simera Reynolds of Mothers Against Drunk Driving (MADD), in partnership with the State Attorney General formed a task force to identify specific strategies to reduce alcohol-related crashes.

A grant was received from the National Highway Traffic Safety Administration (NHTSA) Region VII to support a one-day Impaired Driving/Alcohol Forum. MADD and the State Attorney General will co-host the November 2003 forum in Lincoln. Focus of the forum includes such issues as drunk driving, DWI adjudication, enforcement, and underage drinking with speakers from across the country.

Department Programs

- **Orange Windsocks –** With the assistance of "orange windsocks" erected along Nebraska highways, travelers are now warned of the direction of the wind and its strength. The windsocks alert motorists to the possibility of dangerous gusts and crosswinds. Windsocks are particularly helpful to truckers, especially when they are pulling empty trailers. Of course, anything that helps truckers to stay on the road and in their lane benefits all motorists.

The windsocks wave at the following locations with more planned:

- Nebraska Highway 31 overpass on Interstate 80 (I-80) near Gretna
- I-80 at the Platte River
- At the Waverly exit and west of the Goehner exit
- On US-20 near Long Pine
- At US-77 and Nebraska Highway 33 south of Lincoln
- At the I-80 and I-76 junction near Big Springs.

- **Work Zone Awareness –** Governor Mike Johanns proclaimed April 6-12, 2003 as "Nebraska Work Zone Awareness Week," and the Nebraska Department of Roads conducted an active campaign for Work Zone Safety. Continuous safety education and public awareness is a goal for the Department throughout the year. During the 2003 construction season more than 260 state highway construction projects were underway in Nebraska. It is important to remember that highway work zones are much more than a temporary inconvenience; they are essential for building safer, smoother, improved roads that may ultimately save lives.

Public Transportation Safety Program

The Department sets the minimum equipment and operational safety standards, such as vehicle maintenance schedules, safety inspections, and driver training, for those public transportation systems which receive state and federal funding. In 2003 the Department developed a checklist form for operators of public transit vehicles to complete and sign during their pre-trip inspections. This checklist will assist the operators in their inspections and vehicle maintenance to help ensure that they are driving trip-worthy vehicles.

Bicycle and Pedestrian Safety

The Nebraska Bicycle Guide can be found on NDOR's website at www.dor.state.ne.us "Hiking and Biking" link. The guide has bicycle safety tips, a summary of Nebraska's bicycle laws, and a state map showing low-volume roadways and roadways with surfaced shoulders. The State Bicycle Coordinator assists riding groups and individual cross-country bicyclists plan their routes through Nebraska. The goal is to minimize conflicts with roadway construction and maximize bicycle safety on the roadways.

The portion of the Nebraska Bicycle Guide, which has bicycle safety tips and a summary of Nebraska bicycle laws, was sent to law enforcement offices and schools for their use in conducting bicycle safety seminars geared for young children.

In July 2003, the Department purchased copies of the bicycle safety/training booklet entitled "From A to Z by Bike." Information in the booklet teaches children to ride bicycles safely and defensively. It is believed that when

Mission: Safety continued

children learn the rules of the road and are taught to ride bicycles safely and courteously, they become better drivers of motor vehicles.

Two copies of this bicycle safety booklet were sent to each elementary school in Nebraska. Additional copies can be sent to elementary schools conducting a bicycle training course. NDOR is also coordinating with city police and sheriff departments, who are conducting bicycle safety seminars for school children.

NDOR continues to coordinate and promote bicycling and walking as a mode of transportation. Our partners in this endeavor include the Game and Parks Commission, Health and Human Services, the Nebraska Office of Highway Safety, and the Nebraska Division of Tourism.

Employee Safety Program

Employee safety is our highest priority. Over the past year 105 employees completed the new employee orientation on rules and policies. Also, there are seventeen safety training modules; such as, CPR, Flagger Operations, Office Safety, and Defensive Driving that are available to the Districts and Divisions.

NDOR's Staff Development personnel updated the Flagger Training Program to include written and hands-on tests. By updating the Program the quality of our training was improved, and the American Traffic Safety Services Association (ATSSA) approved the training.

NDOR now provides training for First Aid and CPR based on the American Heart Association (AHA) standards. The switch from the American Red Cross, which required certification every year, to the AHA, which requires certification every two years, will result in a saving of half the cost.

Goals for 2003 are:

- Complete five additional modules on Forklifts, Inspections, Accident Reviews, and First Aid that are used for Safety Meetings and Training. The modules will be available on NDOR's website and target specific improvements in these areas.
- Revise the Employee Safety Handbook, post on NDOR's website, and publish in a binder. The Handbook will provide guidelines for safety-related operations and exposures faced on the job.
- Increase safety belt use by conducting random spot checks at selected locations.

Highway

The Nebraska Highway Program consists of several major components–highway resurfacing and reconstruction, bridge repair and replacement, and maintenance.

Pavement Management System

The Department has been designing software for a multi-year "pavement optimization program," that would process six major categories of information. It is anticipated that Version 1.0 of this program will be ready for final distribution by January 2004. In 2003, NDOR tested the program using information from four of the categories:

- Pavement Management Data
  - historical ratings
  - customized reports
  - manual and automated pavement ratings
- Digital images of highway surface
- Decision criteria
  - asphalt
  - Portland cement concrete
- Life-cycle cost analysis, budgeting strategies, single-multi-year benefit cost analysis, and rankings

The two remaining categories, Maintenance Data and Performance Curves, are projected for development in the next one to three years.

The output from this "optimization program" provides information to assist upper management in determining what type and degree of maintenance and construction activities should be recommended on certain sections of roadways. It provides guidance on timing and cost in relation to other roadways and is a multi-year "optimization program." Therefore, it can provide information for future-year activities, and can be financially constrained. This enhances our efforts to determine the most cost-effective approach in programming projects for construction, repair, maintenance, and the Pavement Extension Program (PEP). Projects in PEP are usually roadways with a Nebraska Serviceability Index (NSI) between 65 and 72, and the goal is to extend the life of the pavement an additional eight years.

Analysis of the Pavement Management Data are used to develop the annual "State Highway Needs Assessment" document which is published and presented to the Nebraska Legislature each December. Analysis in this document are also used internally to assist management in the allocation of resources between districts.

Program

Pavement Maintenance

Pavement maintenance is the key to pavement preservation. A pavement preservation program integrates many maintenance strategies and treatments aimed at preserving our roadways. In Nebraska, we have three types of pavement maintenance:

- **Preventative** – planned strategy of cost-effective treatments to an existing roadway system that preserves the system, retards future deterioration, and maintains or improves the functional condition of the system.
- **Corrective/reactive** – performed after a deficiency occurs in the pavement, such as moderate to severe rutting, raveling or extensive cracking.
- **Emergency –** performed during an emergency situation, such as a blowup or severe pothole that needs repair immediately and could also include temporary treatments that hold surface together until a more permanent treatment can be performed.

All types of maintenance are needed in a complete pavement preservation program. However, emphasizing preventative maintenance, "completing the right repair on the right road at the right time," may prevent or prolong the need for corrective maintenance. Studies have shown that for every $1.00 spent on preventative maintenance, the life cycle cost of maintaining a given segment of a roadway can be reduced by $4.00.

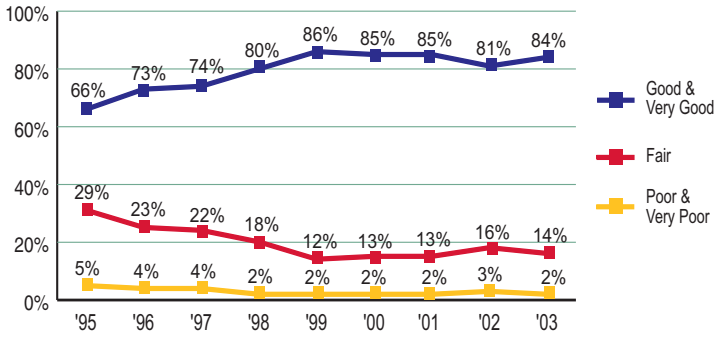
Freight Flow To, From, and Within Nebraska by Truck: 1998

Condition Report

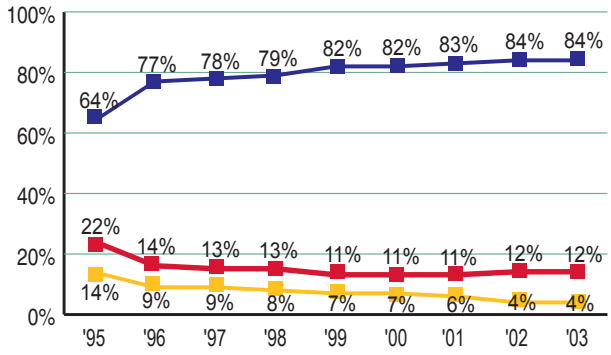
In 2002, the 9,969 miles of state-maintained roadways in Nebraska had 11.82 billion vehicle miles of travel of which 1.92 billion were truck vehicle miles, an increase of 20 percent over the past six years. In 2000, there was an estimated total of **55 billion ton-miles of truck weight** on these roadways.

Even with this increase in miles of truck traffic and gross tons of truck weight, NDOR continues to make progress in improving its roadway condition. The percentage of pavement in good and very good condition statewide has increased from 55 percent in 1994, to 84 percent in 2003. This is due, in part, to the Department's Pavement Extension Program and the annual resurfacing and construction program.

State System
Pavement Condition Ratings
(Nebraska Serviceability Index)



State System
Pavement Smoothness Ratings
(International Roughness Index)



State Highway System

Of the 96,327 miles of highways, roads, and streets in Nebraska, the Department of Roads is responsible for 9,959 miles of roadway and provides the proper planning, design, construction, maintenance, and operation of the state highway system. The system also includes: bridges, culverts, and traffic signals.

	Highways	Bridges	Culverts	Traffic Signals
State System *(NDOR responsibility)*		>20 ft	<20 ft	
Interstate System	482			
Designated Expressways	600			
Balance of Roadways on System	8,877			
Total State System	**9,959**	**3,501**	**37,317**	**773**
County and City Systems	86,368	12,125		
Totals	96,327	15,626	37,317	773*
**(432 vehicle signals, 41 pedestrian crossing signals and approximately 300 beacons)*				

Delivering the Program

The fiscal year 2003 highway construction program contained 157 projects, with an estimated total project cost of $313.3 million. As of June 30, 2003, 154 of the projects have been let at a total project cost of $304.1 million. This reflects a 98 percent delivery rate of the one-year construction program.

Progress made through 2003, based on 1988 Needs Study.

- **1988 Goal** – complete interstate reconstruction in Omaha within 20 years.
  2003 Progress – 100 percent of the interstate projects in Omaha have been completed.
- **1988 Goal** – complete 600 miles of the expressway system within 15 years.
  2003 Progress – 410 miles or 68 percent, of the expressway system has been completed or let to contract.
- **1988 Goal** – Accelerate completion of projects with geometric deficiencies
  2003 Progress – 432 miles of resurfacing and 135 miles of reconstruction were completed this year.

Public Participation

NDOR uses three major means to solicit, receive, and respond to public participation in its Surface Transportation Program. Annually NDOR participates in approximately 150 scheduled public involvement meetings.

- Public input is solicited every fall during transportation planning meetings held in each of the eight field districts across Nebraska. The meetings address the Highway Construction Program, also known as the one- and five-year construction plan, which is annually published and includes the Statewide Transportation Improvement Plan (STIP). These meetings also address public transit issues, maintenance operations, intelligent transportation system programs, and other emerging transportation issues and programs.
- An additional "consultation process" is being developed for the non-metropolitan local officials. The "consultation process" will be implemented in early 2004 and will begin with the Department sending letters to the 625 elected or appointed clerks of the counties, villages, and first- and second-class cities in Nebraska. These local officials will be offered the opportunity to comment and provide input into the STIP and the Long-Range Transportation Plan (LRTP).
- NDOR's Communication Division also coordinates public participation in developing and implementing the Highway Construction Program. Public meetings and hearings are held during the development and design phases of highway projects. These are held across the state year-round and averaged nearly two every week during 2003. Citizen input about projects is also received through personal contact, in writing, by telephone and e-mail throughout the entire process.

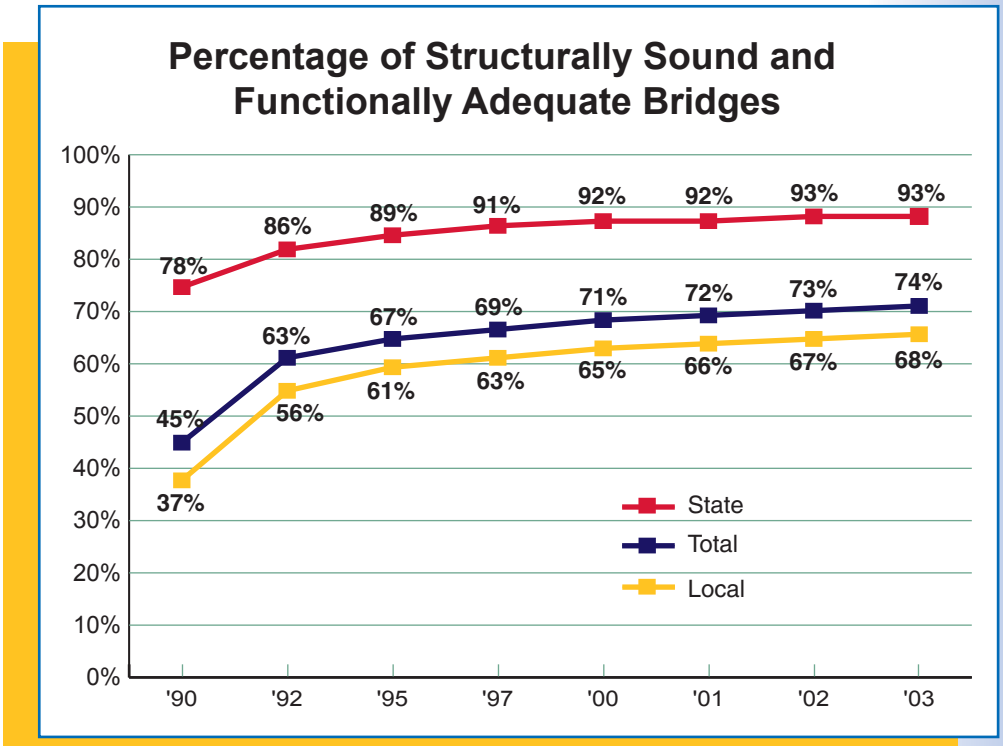
Comments and questions can be sent to NDOR's Communication Division, whose personnel will respond or direct the correspondence to other divisions, such as, Planning and Project Development, Materials and Research, Roadway Design, Bridge, Right-of-Way, Rail and Public Transit, and Highway Commission so their experts can respond.

Bridges

NDOR personnel inspect and assess bridges following the instructions in the Bridge Inspection Manual and Coding Guide which is based on the National Bridge Inventory Standards (NBIS). During the inspection, the condition ratings are entered into laptop computers using the Bridge Inspection System of Nebraska (BISON) software which was developed by NDOR personnel. The data is then downloaded, and in cases where the condition of certain bridge elements has deteriorated, the bridge is reanalyzed for a reduced load-carrying capacity. In addition, BISON links the inspection with digital photography and Geo-Spatial Information Systems (GIS) mapping.

The bridge ratings are used to establish which bridges will undergo preventative maintenance, major or minor repair work, or replacement. Bridge replacement is scheduled when structural deterioration has progressed to a point where it is more cost-effective to replace it than to repair it.

In 2002, NDOR provided the BISON software to cities and counties for their use when inspecting local bridges. NDOR is planning to provide space on its website for local governments to store their photos and data. At the end of the year this data is combined with the state bridge inspection information and included in the National Bridge Inventory (NBI) database.



In 2003, Nebraska had 15,626 bridges; 3,501 on the state system and 12,125 under the jurisdiction of local governments. Of the total 15,626 bridges, 74 percent meet standards compared to 73 percent nationally which meet standards.

Construction and Maintenance

In November 2002, NDOR hosted its first Project Managers' Summit with the attendees being "people who manage construction projects for NDOR." The focus areas were:

- Contractor Relations
- Traffic Control Issues
- Dealing with the Lincoln Design Divisions
- Dealing with Utilities, Right-of-Way, and Railroads
- Dealing with the Construction and Materials & Research Divisions
- Dealing with the Media and the Public

After all of the discussions, it was generally agreed that the bottom line was for project managers to "be pro-active on their projects."

Based on the input and discussion at the Project Managers Summit, the format of NDOR's annual Project Managers' Conference, held in March 2003, was modified to include six breakout sessions. In these breakout session topics were included that addressed the focus areas identified at the Summit.

At NDOR's May 2003 Maintenance conference there were five breakout sessions. At two of the sessions, Anti-Icing/Deicing and Work Zone Signing, attendees discussed maintenance operations and shared personal experiences. At another session, the Pavement Management personnel showed several web pages on NDOR's website where employees can view pavement distresses and the digital Photolog on the Roadway Explorer page. In the other two sessions, NDOR personnel provided information on Logistics and Human Resources.

Troopers from the Nebraska State Patrol provided information on how to recognize and handle hazardous materials, equipment and supplies, from discarded methamphetamine labs. NDOR's maintenance crews may encounter these hazardous wastes as they perform maintenance work along Nebraska's roadways. For example, in 2002 maintenance personnel spent 5,641 hours at a cost of $407,630, checking and cleaning our current 37,317 culverts.

Rail and Public Transportation Programs

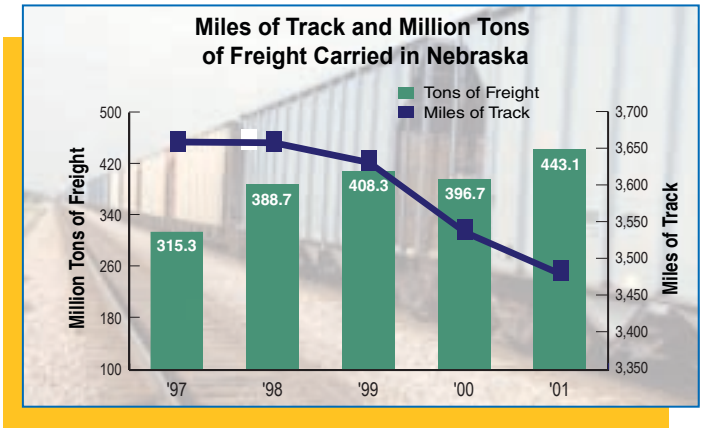
Twelve railroads operate in the State of Nebraska:

- **Two Class I Railroads** - Union Pacific Railroad (UPRR) and Burlington Northern Santa Fe Railway (BNSF).
- **Four Regional Railroads** - Nebraska, Kansas, and Colorado Railnet, Inc; Dakota, Minnesota, and Eastern Railroad, Kyle Railroad, and Chicago, Central, and Pacific Railroad.
- **Three Local Railroads** - Nebraska Central Railroad, Nebraska Northeastern Railway Co, and NEBKOTA Railway, Inc.
- **Three switching or terminal railroads** - Brandon Corporation; Omaha, Lincoln, and Beatrice Railway; and Sidney and Lowe Railroad.

Freight Rail

The Union Pacific Railroad and Burlington Northern Santa Fe Railway are the major rail companies operating in Nebraska. These two railroads are privately owned and maintained. Train counts on the Union Pacific corridor between Gibbon and North Platte exceed 140 per day and is the busiest rail freight corridor in the nation. Counts on the Burlington Northern Santa Fe corridor between Alliance and Ravenna exceed 70 trains per day. Over the last twenty years rail traffic has doubled in Nebraska.

The 1999 map of total rail freight flows to, from, and within Nebraska represents 408.3 million tons. This rail freight is a mixture of commodities; however, coal trains shuttling between the Powder River Basin and power plants to the south and east of Nebraska dominate the flow. Since 1997, the total miles of track in Nebraska has decreased, but the million tons of rail freight carried has increased.



Rail/Highway Grade Crossing Program

Some highway/railroad crossings in Nebraska have more train traffic than any crossing in any other state. At the end of FY-2003 there were a total of 6,670 railroad crossings.

- 3,910 public crossings (271 on the state highway system and 3,639 on local roads)
- 2,760 private crossings

Of these crossings, over 750 carry more than 40 trains per day.

The high density of train traffic through Nebraska has raised public safety concerns. NDOR is continually

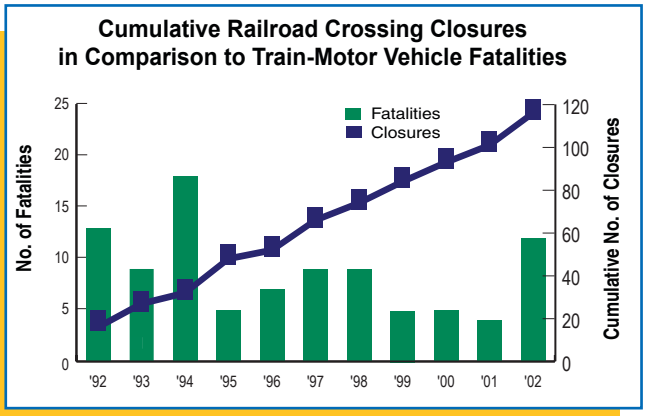
Freight Flows by Rail – 1999 (tons)

involved with the railroads and political subdivisions to increase safety and decrease delays at railroad crossings, but delays are becoming a serious problem.

NDOR works with the railroads and the political subdivisions and recommends corridor safety projects that may include the signalization of a crossing. If signals are placed at a crossing, NDOR may require that an adjacent or nearby crossing be closed. The authority for closing at-grade crossings is solely that of the political subdivisions that have jurisdiction over the crossing. Closing crossings is typically a sensitive local issue and projects are often delayed because the public does not want crossings closed.

With the construction of a new railroad viaduct, NDOR requires the closure of a minimum of two at-grade crossings; one at or near the location of the structure and one or more others as selected and approved by NDOR and the political subdivision.

The following graph shows the cumulative number of crossing closures from 1990 through 2002. The train-motor vehicle fatalities decreased from 1998 through 2001. However, in 2002 there was an increase in these fatalities which will make us even more diligent in pursuing safety measures at railroad crossings.



Shortline Railroads - Light-Density Rail

There are ten shortline railroads in Nebraska. These railroads are light-density rail lines and are typically operated by smaller railroads. The shortline railroads provide a valuable service to local shippers who rely on them for transportation of their goods to market and play a vital role in Nebraska's economy and transportation system. NDOR will continue to work with the shortline industry and the local shippers in order to maintain a viable light-density rail system.

The federal Light-Density Rail Line Assistance Program was created to fund rehabilitation and improvement projects for light-density rail lines. The funding comes from the Light-Density Rail Line Assistance Revolving Fund, which as of February 25, 2003 has a balance of $2,684,456.77. The Nebraska Railway Council, whose members are appointed by the Governor, administers this program. The Council is an independent agency and meets as needed, but at least once a year. It does not have an office staff, so NDOR provides staff support.

The Council hired a consultant to do a study of the light-density rail line system in Nebraska. Phase 1 of this study was completed in mid-2003. In this study a core network of light-density rail lines in Nebraska were determined. Phase 2, if approved by the Council, is projected to start in late-2003. This study would include physical inspections of tracks and bridges, calculation of cost estimates to upgrade lines to minimum standards, and benefits of upgrading lines for continued operations.

Passenger Rail

Passenger rail in Nebraska is limited to Amtrak's California Zephyr that passes through Nebraska on its route between Chicago and San Francisco. It makes stops in Omaha, Lincoln, Hastings, Holdrege, and McCook.

In 1999, The Nebraska Transit and Rail Advisory Council (N-TRAC) was formed. This Governor-appointed Commission is currently studying the feasibility of different types of passenger surface transportation systems, including passenger rail, in Nebraska. N-TRAC hired a consulting firm to do the feasibility study.

In the preliminary results of the study, the consultant, in conjunction with the N-TRAC committee, narrowed the number of corridors to three. These corridors are Kearney to Omaha, Norfolk to Omaha, and South Sioux City to Omaha. Currently, ridership figures and operating costs are being reviewed. By the end of 2003, a draft of the final report will be ready for the N-TRAC committee to review.

Public Transportation Program

Nebraska's public transportation program maintains an important role in the state, particularly in rural areas. Currently, there are 61 rural general public transportation systems which receive state and federal funds to subsidize operations. There are also four intercity bus systems which provide transportation from rural areas to more populated areas of the state. They also receive federal and state funding. There are six urban bus operations located in South Sioux City, Lincoln, Omaha, Papillion, Bellevue, and Ralston. Boardings are shown in the table on the next page. These systems receive state funding from NDOR, with South Sioux City, Lincoln and Omaha being recipients of direct federal funding.

Public Transportation Passenger Boardings

Fiscal Year	Rural Bus	Urban Bus	Intercity Bus	Total
95	582,648	6,417,445	8,441	7,008,534
96	587,714	6,310,503	8,785	6,907,002
97	567,532	6,349,274	7,767	6,924,573
98	556,623	6,367,468	7,525	6,931,616
99	559,122	6,278,440	6,707	6,844,269
00	573,021	5,914,369	6,854	6,494,244
01	627,327	4,291,003	8,478	4,926,808
02	625,222	5,165,565	12,022	5,802,809
Current Systems:	61	6	4	71

NDOR administers a federal capital funding program to assist private nonprofit organizations to purchase vehicles and equipment for the transportation of elderly and disabled persons. NDOR also assists in processing grant applications for funds available specifically for rural transit systems. These grant programs are Intelligent Transportation Systems (ITS), Access to Jobs, and Ferry Boat Discretionary. Buffalo County has received money from ITS, for their automated dispatch system, and from the Access to Jobs.

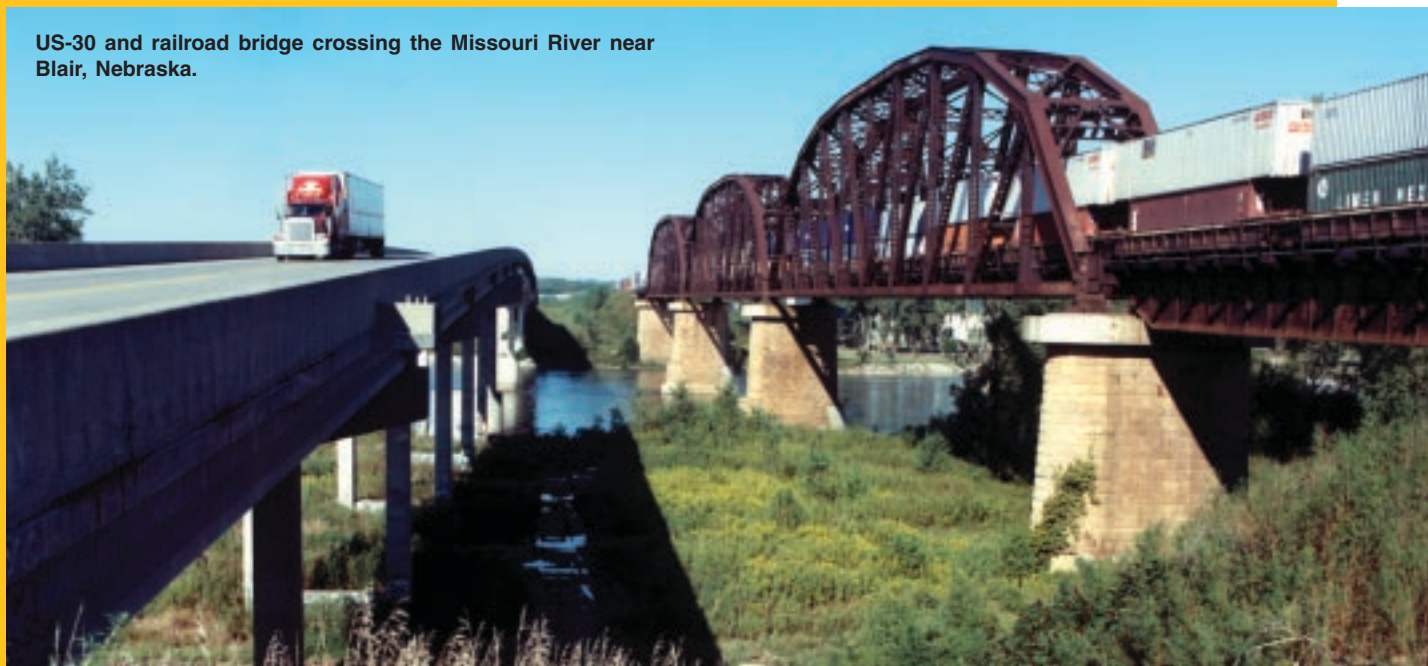
A Statewide Public Transit Needs Assessment Study will be initiated in 2004 and will be funded by NDOR. This will be a study to:

- Determine the feasibility of providing transit services in rural areas of Nebraska with little or no transit service.
- Review the current intercity bus programs and determine the feasibility of expanding those programs.
- Determine the feasibility of creating coordinated regional transit districts or a single statewide coordinated transit program.

Other entities in the State are also conducting transit studies. A bus maintenance and storage facility feasibility study is being completed for Kearney's Reach Your Destination Easily (R.Y.D.E.) transit system. There is also a feasibility study underway in Omaha for an Intermodal Transportation Facility that would link all area surface transportation services at one location.

The Department partners with Metro Area Transit (MAT) by requesting congressional earmarks for transit projects. The Stockyard Transit Center and an Intermodal Transportation Facility are two projects currently benefiting from this partnership. The Stockyard Transit Center construction plans are underway through a joint partnership involving MAT, Omaha Public Library, Metro Community College, and South Omaha Community Development Corporation. The Stockyard Transit Center will serve as a bus transfer center, as well as, provide public transportation for both the Omaha Public Library and the Metro Community College.

NDOR hosted a Transit Summit in September 2003. The Summit activities focused on transit issues in the State of Nebraska and included presentations by representatives from various areas of federal, state, and local transit programs. Participants included those with an interest in the future of transit in Nebraska. Representatives from local governing boards, state and federal officials, consulting firms, transit related industries, and local transit programs and providers attended.



US-30 and railroad bridge crossing the Missouri River near Blair, Nebraska.

District Activity

Major 2003 Transportation Projects and Total Construction Costs

District 1

US-75 Expressway Nebraska City South

This $8 million expressway project is located on US-75 south of Nebraska City to the intersection with N-128. The project began in October 2000 with the first two lanes opened in December 2001. Through traffic was maintained on the existing lanes during the first phase then moved to the newly constructed lanes during the second phase. The road was opened to four-lane traffic in May 2003, with the finish work completed in July 2003.

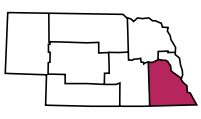
The project consisted of grading, culverts, concrete pavement, asphalt shoulders, lighting, and seeding. This project provided the first 30' concrete pavement with a 5' outside shoulder. This provides a 3' full-depth concrete shoulder on both sides to help prevent damage from heavy vehicle wheel loads on the shoulder. Hydrated lime stabilization subgrade was also used.

Several challenges were overcome with partnering efforts with the utility companies, city-, county-, and state-maintenance, and contractor. An early start, to allow work on the culverts during the first winter, required extra effort and coordination with the utility companies. Weekly progress meetings were held at the Nebraska City Maintenance Shop.

This project improved the safety of a very busy two-lane road with many steep grades by upgrading to a four-lane section.

District Area Facts

Area *(Square Miles)*.....7,467
Population *(2000 Census)*.....392,798
Number of Bridges.....703
Highway System Mileage.....1,575



2003 Construction Costs

	Cost
Roadway	$50,513,828
Bridge	$ 4,803,756
Railroad Viaduct	$ 0
Total Let to Contract	**$55,317,584**

District 2

US-6 and N-31 Reconstruction In Gretna and South

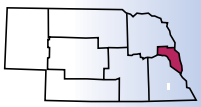
Highway US-6 and N-31 between N-370 and Interstate 80 was reconstructed. The project included a four-lane divided highway through Gretna and south to I-80. It also involved the reconstruction of all the connecting side streets, major utilities relocation, and the installation of street lighting. The construction was needed to safely handle the increased traffic due to the influx of residents and businesses along the roadway.

The majority of the work was completed by the fall of 2002, and the roadway was opened to traffic. The early completion of the mainline provided a safer and more convenient highway for the traveling public. It also provided an alternate route in case of incidents on I-80.

The project was 3.3 miles long and cost approximately $7.4 million. It began in April 2002 and was completed in August 2003.

District Area Facts

Area *(Square Miles)*.....1,791
Population *(2000 Census)*.....653,287
Number of Bridges.....425
Highway System Mileage.....504



2003 Construction Costs

	Cost
Roadway	$ 94,721,633
Bridge	$ 14,744,214
Railroad Viaduct	$ 0
Total Let to Contract	**$109,465,847**

District 3

US-30 Expressway Schuyler East and West

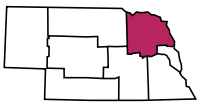
District 3 sees a major improvement with the expressway travel from Columbus to Schuyler on US-30 with the completion of the Schuyler East and West Expressway project. This $19.2 million project is the next to last phase on US-30 for District 3 to link with District 2 and Omaha.

This project consisted of building two overpasses, one for County Road 9 and Excel Corporation and one for N-15 and a link to Schuyler. This project involved the purchase of a considerable amount of right-of-way due to the relocation of US-30 to bypass Schuyler to the north. The construction consisted of grading, mechanically stabilized earth (MSE) walls, culverts, concrete pavement, and bridges.

A unique aspect of this project was the use of a dredging operation to build the fill for the majority of the project. At times there were three separate dredgers running a 24-hour operation. Six lakes were created, three of which are on state right-of-way. A sand/gravel mix was dredged through a series of pipes to the fill areas with some piping runs approaching 1700' in length. In approximately eight months over 2.2 million cubic yards of excavation borrow was moved though this dredging operation.

District Area Facts

Area *(Square Miles)*.....8,786
Population *(2000 Census)*.....185,949
Number of Bridges.....590
Highway System Mileage.....1,527



2003 Construction Costs

	Cost
Roadway	$27,500,557
Bridge	$ 6,362,806
Railroad Viaduct	$ 0
Total Let to Contract	**$33,863,363**

District 4

N-92 and US-30
New Viaduct Construction

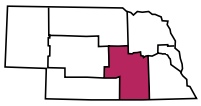
This project consists of the construction of a new viaduct for N-92 over US-30 and the Union Pacific Railroad as well as a new N-92 and US-30 intersection.

The original design used steel girders but the contractor and the consultant requested a value-engineering proposal that uses concrete girders that are connected by tie rods over the piers. This was approved and the project was completed in the summer of 2003. The structure was also chosen as a test project to see if using the maturity method of establishing concrete strength would be applicable and beneficial on concrete structures.

The work consisted of removal of the existing viaduct, grading, culverts, roadway lighting, bituminous paving, mechanically stabilized earth (MSE) walls, and construction of the new viaduct.

District Area Facts

Area *(Square Miles)*.....9,744
Population *(2000 Census)*.....214,738
Number of Bridges.....632
Highway System Mileage.....1,715



2003 Construction Costs

	Cost
Roadway	$30,426,994
Bridge	$ 6,688,031
Railroad Viaduct	$ 0
Total Let to Contract	**$37,115,025**

District 5
US-26 – Scottsbluff to Minatare

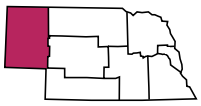
Work on the $8.5 million project on US-26, between Scottsbluff and Minatare, began in March and is scheduled for completion in the spring of 2004. The 7.5 miles of US-26 will be transformed from two lanes to four lanes with raised islands in the urban sections and earthen median in the rural section.

Much of the 514,000 cubic yards of excavation for the project is coming from three sites adjacent to the project. These sites are also being developed into new wetlands in order to replace those that were destroyed during construction. Approximately 15 acres of existing hydric soils and vegetation along the project were salvaged for use in constructing the new wetlands. One of the new sites, approximately 20 acres in size, is the wetland mitigation site for this project. The other two sites, totaling approximately 33 acres, will be constructed as wetland banks for future projects.

The project included an asphaltic concrete overlay of existing US-26, which will become the new eastbound lanes, and building of two new concrete lanes for westbound traffic. Construction of irrigation structures that were affected by the project was completed in early 2003 under a separate contract. A portion of the project also ties in with the N-71 Expressway.

District Area Facts

Area *(Square Miles)*.....14,187
Population *(2000 Census)*.....90,410
Number of Bridges.....377
Highway System Mileage.....1,253



2003 Construction Costs

	Cost
Roadway	$37,150,441
Bridge	$ 9,966,133
Railroad Viaduct	$ 0
Total Let to Contract	**$47,116,574**

District 6
N-25 and US-30 in Sutherland

The project is located on N-25 in Sutherland. A viaduct was constructed over the Union Pacific Railroad with grading of 233,000 cubic yards of embankment, bituminous surfacing, culverts, lighting, guardrail, and a pedestrian bridge.

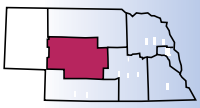
The pedestrian bridge is the first of its kind in the State of Nebraska. Its unique design allows for a single span structure over the railroad tracks. The design is aesthetically pleasing and completely accessible according to the Americans with Disabilities Act (ADA).

With the completion of the project, N-25 traffic and pedestrians will no longer be subjected to rail train traffic. Delays and safety are greatly improved with the elimination of two at-grade railroad crossings that were present in the middle of Sutherland.

The project is 1.1 miles long and will cost approximately $4.4 million. The project will be completed by the end of 2003.

District Area Facts

Area *(Square Miles)*.....12,803
Population *(2000 Census)*.....84,258
Number of Bridges.....351
Highway System Mileage.....1,314



2003 Construction Costs

	Cost
Roadway	$31,711,894
Bridge	$ 5,029,609
Railroad Viaduct	$ 0
Total Let to Contract	**$36,741,503**

District 7

N-10 – Franklin South

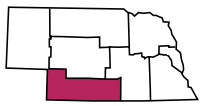
Improvements to this 3.4-mile stretch of N-10 began in September 2001 and were completed at a cost of $3.9 million. The project is located just south of Franklin and involved the replacement of two bridges, culverts, earthwork to improve the grade line and widen the shoulders, and a new asphalt surface.

A wider bridge over the Republican River was built on a new alignment thus allowing traffic continued use of the old bridge throughout the first construction season. Trusses from the existing historic bridge, built in 1932, were salvaged and installed on the new bridge. While a substantial amount of grading was completed the first year, all work was limited to areas outside the traveled way. This substantially reduced the amount of time a detour was necessary.

This project provided many safety improvements including construction of six-foot turf shoulders, improved county road intersections, flatter foreslopes, elimination of one bridge and the widening of another, and a much-improved grade line. These improvements also allowed for an increase in the posted speed limit to 60 mph.

District Area Facts

Area *(Square Miles)*.....9,251
Population *(2000 Census)*.....59,742
Number of Bridges.....288
Highway System Mileage.....1,030



2003 Construction Costs

	Cost
Roadway	$9,429,020
Bridge	$ 2,820,591
Railroad Viaduct	$ 0
Total Let to Contract	**$12,249,611**

District 8

US-281 – O'Neill North

The project began one block north of the junction of US-20 and US-281 and continued north on US-281 for 13 miles. Planned Phase I for the 2003 construction season included grading, pipe and box culvert extensions, and construction of two temporary roads, which are required to maintain traffic for the construction of two new box culverts.

The box culverts being constructed in 2003 are to be completed and the new roadway surfaced and opened to traffic by November 29, 2003.

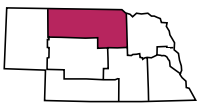
Phase II of the project is scheduled to be completed in 2004. This project includes, 100 mm hydrated lime stabilization, 125mm Type SP4 asphaltic concrete surfacing, shoulder construction, striping and seeding.

Safety will improve, with the addition of 8' wide surfaced shoulders and a turning lane to be constructed at Hynes Avenue, in O'Neill.

The cost to complete this project is approximately $5.3 million.

District Area Facts

Area *(Square Miles)*.....13,286
Population *(2000 Census)*.....29,901
Number of Bridges.....135
Highway System Mileage.....1,041



2003 Construction Costs

	Cost
Roadway	$10,267,751
Bridge	$1,203,608
Railroad Viaduct	$ 0
Total Let to Contract	**$11,471,359**

Department Research Highlights

The Department continues to partner with the public and private side of the transportation industry in their research activities. This is very evident by the Nebraska Transportation Research Council (NTRC) whose members include representatives from the Department, University of Nebraska, contractors, consultants, cities, counties, and FHWA. NTRC annually meets, reviews, and prioritizes potential transportation research projects to be funded by the Department. The Department also continues to be in the forefront in using new technology in maintenance and construction activities.

Crumb Rubber Modified Asphalt

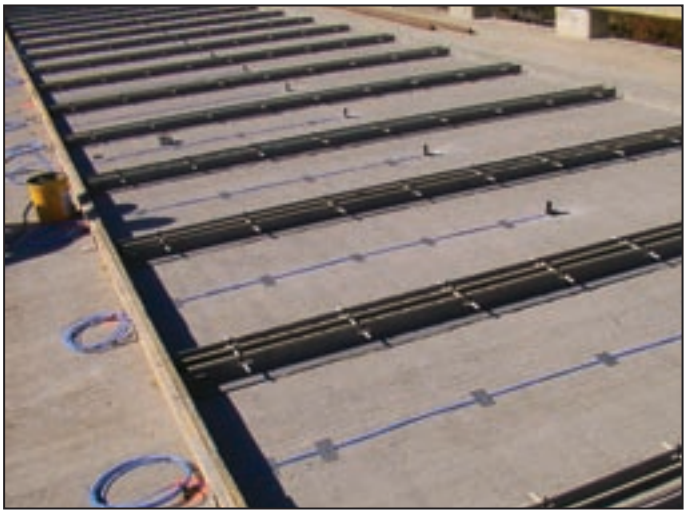
Each year the United States discards about 285 million used tires. In order to ensure that the bulk of these tires do not end up in landfills, the transportation industry is making more alternative uses of them. One of these uses is the mixture of crumb rubber in hot-mix asphalt.

- **October 2001** – Three-inch, gap-graded, Crumb Rubber Modified Asphalt (CRMA) overlay was placed on Nebraska Highway 2 from 56th to 84th Street. Approximately 16,400 tires were recycled and used in the mixture. The project is being evaluated and the results indicate that it is performing well by resisting deformation and rutting; however, the overlay has experienced some reflective cracking.
- **2002** – CRMA overlay was placed on Interstate 80 between Gibbon and Shelton where approximately 47,000 recycled tires were used. The overlay is performing well and has experienced less reflective cracking than on the Nebraska Highway 2 project.
- **2003** – CRMA was placed on Highways 14 and 83. On Highway 14, CRMA was used to overlay existing asphalt and an estimated 24,000 tires were recycled. The Highway 183 project utilized Crumb Rubber in a spray application used for chip seal. In 2004, Highway 67 is scheduled for CRMA overlays in Dunbar, Lorton, and Brock.

All CRMA sections will be monitored throughout the life of the projects. Performance will be evaluated based on comparisons of the CRMA projects and conventional strategy performance expectations. Life-cycle cost analysis will be performed in order to make cost comparisons between the various applications.

Conductive Concrete

In October 2002, the first conductive concrete bridge of its kind was constructed in Roca, Nebraska. The bridge is divided into 52 slabs, each containing a cable which provides electricity to the slab. Electricity is then distributed throughout the slab by steel fibers in the concrete. The bridge deck maintains an above-freezing temperature during the winter season in an effort to prevent ice from forming on the deck. In March 2003 the bridge was put to the test for the first time and was successful at keeping the bridge deck ice-free.



During construction - bridge slabs with cables for electricity.

First successful test of melting the snow off the bridge, May 7, 2003.

Environmental Stewardship

What impacts the environment eventually impacts us all. The Department strives to protect and enhance the environment as we create a safe, reliable, secure, seamless, intelligent, user-friendly transportation system throughout the state.

Grassland Studies

Our Roadside Development Unit, in partnership with the University of Nebraska Center for Grassland Studies, is looking for ways to improve vegetation of all types within the I-80 highway corridor between Lincoln and Omaha. The group has discussed new ways to use native grasses to improve the appearance along the highway and reduce maintenance. They are also looking at ways to optimize the woody plant materials along the roadside by utilizing more native woody plants, as well as, understanding the economic impact of an attractive roadway on the state economy.

This joint committee is composed of university academics, landscape architects, turf and plant specialists, researchers, nursery and grass seed producers and retailers, in addition to other State agencies involved with plants. Dr. Martin Massengale, University of Nebraska at Lincoln (UNL) and Mr. John Craig, director of the Nebraska Department of Roads, foresee this joint effort as beneficial to both agencies and the state as a whole.

Nebraska Project Selected for Environmental Streamlining

Congress and the Office of the President of the United States has placed an emphasis on streamlining the environmental review process for transportation projects, in order to see projects move more quickly to construction. Secretary of Transportation Norman Mineta has stated, "Too many transportation projects become mired for too long in the complex web of clearances required by Federal and State law."

The Interstate 80 upgrade from four to six lanes between the Platte River crossing and Lincoln, was one of six projects nationally placed on a project priority list by the Department of Transportation in February of 2003. This was done in response to President Bush's Executive Order of September 18, 2002—"Environmental Stewardship and Transportation Infrastructure Project Reviews." The Executive Order was intended to help complete the environmental review process more quickly, at less cost, and without damaging the environment. The project, a simple increase in the number of lanes on existing alignment, has been delayed with numerous issues related to the Endangered Species Act. The placement of the project on the national project priority list resulted in expedited environmental reviews and clearances which allowed construction to begin in the fall of 2003.

A key initiative of the Environmental Section of the Department of Roads has been to find ways to improve our methods for environmental review, and to develop agreements with review and approval agencies that will accelerate the review and approval process. Two years ago the Environmental Section signed an agreement with the Nebraska Game and Parks Commission under which NDOR will conduct in-house reviews of its projects for Threatened and Endangered (T&E) Species impacts. Game and Parks will retain the final review and approval authority, but the legwork to provide the data necessary to support an informed decision was shifted from Game and Parks to NDOR's staff of biologists. The result has been very positive, allowing NDOR to consider project impacts to T&E species at the earliest stages of project planning, thus allowing for negative impact minimization.

When the interagency agreement was initiated, Game and Parks was several years behind in their project reviews, due to lack of sufficient funding and staffing. Over the last two years the backlog of 194 project reviews has been eliminated and we are now working on reviews for projects to be let for construction in 2005 and beyond. This agreement has allowed for NDOR's efficient scheduling of field surveys for habitat and presence of T&E species, along with other phases of work and within the window of time when a survey should be conducted. In addition, the Environmental Section has received training in consultations for T&E species that has resulted in more effective negotiations to bring the issues to closure.

An architectural historian has been added to the Highway Archeology staff, in order to assist in timely and accurate submittals for review by the Nebraska State Historical Society. In addition, we have executed Programmatic Agreements between NDOR and the State Historic Preservation Office, in the areas of historic bridges and minor impact construction projects. Both agencies recently completed a cooperative effort to survey and document historic structures and historic highway characteristics for five of the existing historic highways in Nebraska. The database of information created as a result of this project should accelerate project reviews along those highways.

In addition to ongoing efforts to be good environmental stewards while constructing our projects, we will continue to seek new partnerships, agreements and methods to

speed up environmental reviews of our projects without compromising environmental values. This initiative moves NDOR toward the goal of construction of projects in a timely manner, to maximize safety and achieve positive environmental benefits.

Rubberized Asphalt

Nebraska Department of Roads received a $361,037 grant from the Nebraska Department of Environmental Quality for its work with rubberized asphalt. The grant provides funding for those with innovative approaches to recycle the 3.5 million scrap passenger tires that Nebraskans generate annually. The rubberized asphalt mixture is made in part from finely ground tires. NDOR has worked with the rubberized asphalt for three years, continually refining the mixture to develop the optimal blend for Nebraska's extreme climate. Nearly 90,000 tires were recycled for the NDOR projects described on page 19.

Alternative Fuel Use

As good stewards of the environment our vehicle fleet consists of three compact hybrid gas/electric cars and 206 vehicles that use E-85. E-85 is a federally designated alternative fuel that is composed of 85 percent ethanol and 15 percent gasoline.

Kestrel and Bluebird Nesting Boxes

Photo courtesy of NebraskaLand Magazine/NGPC

Two native Nebraska birds are getting a helping hand from a partnership between NDOR, Bluebirds Across America, the Sierra Club and Nebraska Game and Parks Commission. Kestrel and bluebird nesting boxes are being placed on poles at interchanges and rest areas along I-80. NDOR set ten kestrel poles between Gretna and York. Bluebirds Across America set the bluebird poles and mounted both the kestrel and bluebird houses along the same section of I-80. Volunteers from Bluebirds Across America and the Sierra Club will monitor the boxes twice a week until the kestrels have established a nest. The Kestrel and bluebirds will be banded with U.S. Fish and Wildlife Service bands.

Western Prairie Fringed Orchid

Western Prairie Fringed Orchids

Twenty orchid species are native to Nebraska. Among these is the Western Prairie Fringed Orchid which is listed as threatened by the federal government and by the state of Nebraska. In a joint effort, NDOR is partnering with the Henry Doorly Zoo in Omaha where Dr. Margaret From of the Lab for Rare and Endangered Plants is leading the effort. The two major goals of the research effort are:

- To provide NDOR with an alternative to property purchase when road construction will result in unavoidable impacts to orchid populations. Propagating orchids in a laboratory and introducing them into natural habitats may provide NDOR with an additional option for mitigating project-related impacts to orchid populations.
- To further the scientific understanding of the Western Prairie Fringed Orchid's life history and its relationship with its environment. The orchid's life cycle and its environmental "prompts" are complex and are currently only partially understood. By gaining and sharing new research results, increasing the national population of the orchid may be possible.

Systems Operation–Technology

Intelligent Transportation Systems in Nebraska

Traffic and roadway monitoring will be the backbone of Nebraska's Intelligent Transportation System. The Nebraska Department of Roads' objective is to ensure the continued safe, secure, and efficient movement of people and goods across the state. There is tremendous public benefit in a transportation system that provides near real-time information on traffic flow, pavement conditions, and weather to both system operators and users. Better information provided to the users translates to better decision making.

Nebraska will see several Intelligent Transportation System projects take shape or reach completion during the upcoming year, including the development of eight District Operations Centers and the deployment of several forms of ITS technologies across Nebraska. Roadside installations include traffic cameras, bridge anti-icing systems, overhead electronic message boards, and traffic sensors. These roadside installations will communicate to their respective District Operations Centers.

District Level Intelligent Transportation Systems

Each of Nebraska's eight engineering districts will support system operations from a District Operations Center that will manage state highway systems at the local and regional level. Regional systems include field equipment and associated communications for processing the information required for comprehensive measurement of roadway and traffic conditions for management of localized incidents. Regional systems also provide information to local travelers. The local Intelligent Transportation Systems will include all devices traditionally used for transportation management including closed circuit video, vehicle detectors, electronic message boards, and weather and pavement monitoring systems.

NDOR employee working at the District 1 Operation Center.

Statewide Intelligent Transportation System

Statewide management includes much of the same ITS field equipment, associated communication, and information processing as do the District Operation Centers. However, the level of information required changes when managing major regional or statewide incidents, providing information to long distance travelers, and offering standardized information for distribution by the media and other information providers. Roadside ITS instruments will communicate with the District Operations Centers, with the District 2 Operations Center being the most sophisticated of the eight regional centers because it will serve 100 miles of freeways. The Omaha Center will also have the ability to provide operational support to the other centers.

Intelligent Transportation Systems Info Structure

The Nebraska Intelligent transportation info structure is starting to take shape after a lengthy planning process. The info structure in each of Nebraska's eight District Operations Centers will generate reliable, real-time data on the status of Nebraska's state highway system. In terms of data collection and operations, NDOR will need to provide data on conditions throughout Nebraska. Travelers do not want or need surprises and Nebraska's Intelligent Transportation Systems will become part of the solution. To fulfill the promise technology holds, it will be necessary to institute new institutional relationships; define shared management responsibility for traffic operations and incident management; and redesign current incident management processes and programs.

Nebraskan's will see several important developments in the deployment of Intelligent Transportation Systems statewide during the upcoming year, which will include:

- **Rural Electronic Message Boards**

  The first major ITS project in Nebraska was the installation of nine permanent overhead electronic message boards on Interstate 80 in the Omaha area. During the first six months of operation, the Omaha signs have been activated for traffic control of local events and freeway incidents. Within 30 days of activation, the Nebraska Department of Roads, in cooperation with the Nebraska State Patrol, used the signs for Nebraska's first Amber Alert. The USDOT has only recently allowed the usage of the signs for Amber Alert messages.

  Additional overhead electronic message boards will be installed across the Nebraska Interstate 80 corridor in 2004. With few exceptions, the signs are to augment safe and efficient traffic management by informing

motorists of roadway conditions requiring action by drivers. Operations, road condition and driver safety focused messages are allowable.

Statewide Camera Integration Project

More than 90 video cameras will soon be deployed across Nebraska with the intention of disseminating the data and video imagery from the state highway system as widely as possible. The general public will have access to video imagery from across Nebraska via the Internet. Several benefits are expected to be derived from the deployment of video imagery, including:

- Crash reduction
- Informing the public
- Facilitating route choices
- Facilitating the provision of additional traveler information services by others.

The testing phase of camera deployment began in the fall of 2003 and will extend into early 2004. Camera test sights will be located in both urban and rural environments.

Nebraska 511 Traveler Information Sees Continuous Improvements

Voice Activated 511 and Amber Alert

Nebraska was the first state to offer travelers advanced road and weather information in segments on a statewide basis when the Nebraska 511 Traveler Information number was deployed during the winter of 2002. Since that time, travelers have been able to gain information regarding road weather condition in 60-mile segments across the entire 10,000-mile Nebraska state highway system. Travelers can call on either cellular or landline telephones then use the telephone keypad to select menu items. NDOR is working with its 511 provider to develop and deploy voice activated menu selection capabilities within the next year. Travelers who use 511 by phone will now hear descriptions that include landmarks and city names for greater clarity.

Those who use 511 on the Web (www.safetravelusa.com) will find the new identifiers will default to a preselected color on the map of Nebraska. After zooming in on specific area, the user should click on the colored road segments to view a text version of any detailed observed information that may be available. All users, either by phone or web, will receive the same information.

511 Amber Alert Upgrade

The Nebraska Department of Roads will add a new menu item to the statewide 511 Traveler Information number in 2005 with the introduction of Amber Alert information. NDOR currently cooperates with the Nebraska's Amber Alert Program plan by allowing the use of its permanent, overhead electronic message boards. While this is a fast and effective way to gain the attention of motorists and alert them to the current situation, the boards can only convey a limited amount of information. When there is a need to convey more extensive information to travelers, such as a child abduction, other sources of traveler information are a more desirable mode. Among the key issues that hold broad implications beyond Amber Alert nationally are the lack of communications systems and protocols between the public safety community and the transportation community. The Nebraska Department of Roads and the Nebraska State Patrol have addressed those issues concerning the Amber Alert Program.

Photo courtesy of the Omaha World-Herald

Traveler Information Portal

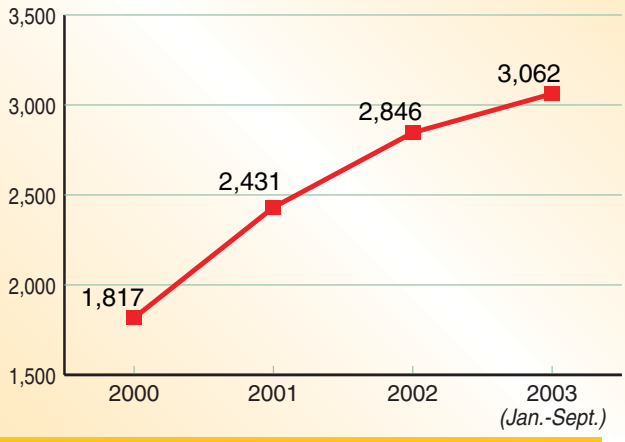
Intelligent Transportation Systems is about getting more information, more clearly to the right people in the right places at the right times. The Traveler Information Portal (TIP) will help us meet that objective. TIP is Nebraska's new highway condition reporting system and it will deliver a more accurate snapshot of the Nebraska highway system 24 hours a day, 7 days a week.

The TIP website will be available during the 2004 winter driving season and can be accessed through the NDOR internet portal. A dynamic color-coded map with icons and text will provide users with details on a variety of highway conditions, including construction zones, lane closures and conditions and planned events that affect highway capacity. Nearly 180 NDOR staff will be involved in providing detailed information to TIP. That information will be shared with a variety of users in various formats for a wide variety of applications, including media outlets, travelers, trucking firms, transportation planners, emergency responders, as well as, providing information for the 511 system. Getting more highway condition information, more clearly, to the right people in the right places at the right times is becoming a reality in Nebraska.

Website Features

The Department's steadily growing transportation portal, which can be accessed from www.dor.state.ne.us or www.nebraskatransportation.org, is designed to offer a wide variety of travel and business information to users. On-line enhancements include technical manuals for our contractors, the Driver's Accident Report, the new State map, a web version of the 511 Traveler Information System, and automated truck permit system. Additionally, the site has proven its worth as a first resource for updates in the event of emergency road closures of long duration, such as the Big Springs bridge collapse.

Average Daily Website Visits
www.nebraskatransportation.org



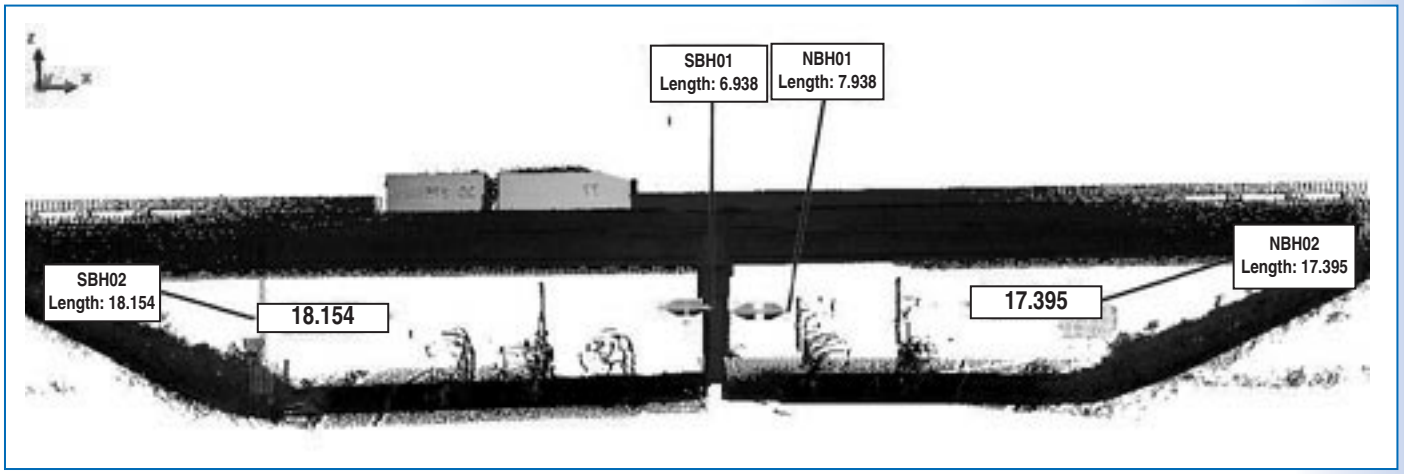
NECTAR

Nebraska Enterprise Centerline Transportation Attribute Resource (NECTAR) uses a global positioning system (GPS) to interlink everything from traffic counts to construction data and maintenance history onto an interactive map. This allows NDOR employees easy access to highway data that can be utilized as a decision-support tool.

Motorist Assist Patrol to Expand

The Nebraska Motorist Assist Patrol will see growth in 2004 with the addition of a Motorist Assist Program operating from the Nebraska State Patrol's Grand Island Troop area. The newest addition to Motorist Assist follows the successful program operation from the Omaha and Lincoln state patrol areas.

The Omaha Metro Area Motorist Assist Patrol celebrated five years of public service in 2003. More than 35,000 "assists" have been logged in the Omaha metro area since 1998. The Lincoln Motorist Assist program was initiate in 2000 and serves Interstate 80 from the Platte River to Lincoln. Motorist Assist will expand in 2004 to serve Interstate 80 travelers from Grand Island to Lincoln. Motorist Assist is operated and managed by the Nebraska State Patrol. The Nebraska Department of Roads, the Nebraska Department of Motor Vehicles and numerous sponsors provide governance and financial support to the Motorist Assist Program. The most unique aspect of Nebraska's Motorist Assist Program is that it is fully staffed by volunteers who must complete rigorous screening and training to participate. Program sponsors, including the Nebraska Department of Roads, provide about half of the annual program costs, with the remainder coming from private sector sponsors. The Motorist Assist vans sport the logos of program sponsors.



Three-dimensional model of a bridge created using the LIDAR system.

New Technology – Surveying Equipment

What do atomic clocks, satellite constellations, Bluetooth (Reg) technology, point clouds using LIDAR sensing technology, digital leveling using barcodes, and laser distance measures have in common? These are all ways or tools of the latest technology that NDOR uses to survey the roads and bridges prior to design and construction.

New technology is changing the nature of the work of NDOR surveying. Surveyors are increasingly using the Global Positioning System (GPS). GPS is a worldwide satellite navigation system formed from a "constellation" of 24 satellites and their ground stations. It uses these "man-made stars" as reference points for locations on earth, measuring the distance using travel time of radio signals. The travel time is measured using extremely accurate atomic clocks. With this new technology, positions can now be measured to within a centimeter.

In 1995, NDOR personnel, with the assistance of the National Geodetic Survey (NGS) used GPS equipment and completed a High Accuracy Reference Network (HARN) of 214 control points for Nebraska. These control points represent the highest level of spatial accuracy available in the state. In 2000, NDOR and NGS personnel reviewed this network and made enhancements. NDOR is working to tie together the entire state so that the ground surveys of the past and present will match the satellite surveys of the future.

GPS surveying equipment.

A further use of GPS by NDOR personnel, involves Real Time Kinematic (RTK) surveying. A GPS receiver is set over a control point of known location. A second receiver, called a rover, is then used to determine and store the locations of needed points. This rover uses Bluetooth(Reg), short range wireless radio technology, to communicate between the antenna and the receiver. For the RTK GRS surveyors, the advantage of this technology is the ability to operate a rover that is cable free.

The Department recently completed a survey of all the overhead structures on Nebraska's highways for vertical and lateral clearance using Light Detection and Ranging (LIDAR) technology. The LIDAR system determines the distance from the sensor to a point on the surface of the object to be surveyed by measuring the time delay between an emitted pulse of infra red light and its return from a surface reflection. As LIDAR captures 30,000 data points per second, a cloud of points is created representing a three-dimensional (3-D) model of the object(s) being surveyed. The highly accurate 3-D point cloud can be easily imported into NDOR's modeling software.

With the digital level system, the automatic surveyor's level reads the leveling rod. Instead of the usual pattern on the leveling rod, there is a barcode pattern which the level's electronics interprets as a reading, accurate to less than 1 mm. The system also gives the distance to the rod from the instrument. The reading can be electronically recorded for later transfer to a project file on a computer. These instruments are still fairly new, but are quick and accurate.

Working Together

In this era of tightening budgets it has become even more vital that we participate in partnerships. In partnering with others we are better able to serve the traveling public by combining our resources and talents.

Scenic Byways Grant

The Department received a $715,600 Scenic Byways Program grant from the Federal Highway Administration. A portion of the grant is being used to renovate the grain silo at Cairo into a Sandhills journey byways wayside facility and interpretation center. The additional funding is being used to market the byways.

Nebraska currently has nine highway routes designated as Nebraska byways. NDOR's director designates the byways and then obtains the Governor's concurrence. Byways are non-interstate highway corridors that have been identified as significant alternate routes throughout the state that highlight diverse scenic, historical, recreational, cultural, or archaeological features. The Nebraska Scenic Byways Committee, which provides oversight of the program, consists of representatives from the Nebraska Department of Roads, Division of Travel and Tourism; Nebraska Game and Parks Commission; Nebraska State Historical Society; and Nebraska Natural Resources Commission.

Ogallala Spruce Street Visitors Center

The Nebraska Department of Roads awarded $132,905 of Transportation Enhancement and Scenic Byway funds to the City of Ogallala to renovate a historic Standard Oil Company Service Station. The funds were used to rehabilitate and preserve the two existing buildings and convert them into the Spruce Street Visitor Center, Main Street Office, public meeting room and ADA accessible public restroom facility. Ogallala is near many historical trails and byways including the Oregon Trail, Mormon Trail, Lincoln Highway, and Pony Express. The Spruce Street Visitor Center is also near the Western Trails Byway, which leads to Lake McConaughy, Ash Hollow State Historical Park, Chimney Rock, and Scotts Bluff National Monument. The Spruce Street Visitor Center was opened with a ribbon cutting ceremony in August.

Mormon Trail Markers

Markers have been placed along the Nebraska portion of the Mormon Trail at rest areas and pullouts. The Mormon Trail markers were made possible by the combined efforts of the Nebraska Department of Roads, the Nebraska Mormon Trail Association, the State Historical Society, the National Parks Service, and the Department of Economic Development.

2004 Lewis and Clark Bicentennial Celebration

Two thousand and four marks the bicentennial of Lewis and Clarks expedition to the American West. NDOR in partnership with the National Parks Service has placed 51 signs along US-73 and US-75 from Falls City to South Sioux City, US-20 and N-12 from South Sioux City to Spencer, and US-281 north to South Dakota. In addition NDOR is serving as an advisory member on the Nebraska Lewis and Clark Bicentennial Commission.

Adopt-a-Highway

There are currently 1,340 groups that have adopted 2,713 miles of highway right-of-way as their own. These volunteer groups faithfully pick up litter and debris along the roadsides twice a year, thus saving NDOR approximately $700,000.

NDOR became part of the widely acclaimed Adopt-a-Highway Litter program in 1990. To participate, adopting groups agree to pickup litter on both sides of a two-mile section of highway, two times a year for two years. As part of the Adopt-a-Highway program, the NDOR launches the Great Nebraska Trash-Off each spring to give groups an opportunity to complete their first litter pickup of the year. The Trash-Off is a statewide event, and this year's participants included 428 Adopt-a-Highway groups, representing an estimated 5,552 volunteers cleaning litter along 1,800 miles of right-of-way. This program has proven to be a worthwhile opportunity for private citizens and civic groups to make an effective contribution in preserving Nebraska's natural resources while saving taxpayer dollars.

NDOR Employee Reward and Recognition Congress

The NDOR Employee Rewards and Recognition Congress was convened with representatives from all NDOR divisions and districts. The goal of the Congress was to find ways to improve the Rewards and Recognition Program. Brainstorming groups were formed for the four areas: ceremonies; promoting the rewards and recognition program; nomination/selection process; and rewards/awards. On the final day, the four group's recommendations were presented and votes were taken. Following the Congress, NDOR Human Resources evaluated and implemented some of the recommendations.

Partnering Efforts with Local Governments

The Comprehensive Plan Assistance Program

The Comprehensive Plan Assistance Program offers smaller communities financial assistance, up to a maximum of $75,000, to aid in creating and/or updating that community's comprehensive plan and long-range transportation plan. These plans help project future growth areas and develop a future traffic assignment model within a community, normally for a 15- to 20-year time frame. This activity aids the community with formulating long-term plans and helps the Department coordinate future planning of the state road system to align with the community's needs. Grand Island has completed its plans and is now evaluating the findings.

Originally these funds were available for communities with populations between 7,500 and 50,000. The program was expanded this year to also include communities with populations between 5,000 and 50,000. This increased the number of communities that are eligible to apply for these funds from 15 to 25. NDOR currently has agreements with Kearney, Columbus, and Blair.

Advanced County Highway City Street Superintendents License

Biannually, NDOR holds a three-day training workshop for the County Highway and City Street Superintendents. The training helps to prepare the superintendents for the Class B licensing exam that is given a month after the workshop. NDOR is assisting the Board of Examiners in implementing the new second-level licensing, Class A, created by LB 500. Current holders of Class B licenses could apply for a Class A license upon showing experience as a highway or street superintendent or comparable work experience.

Photo courtesy of Ogallala Main Street

The Spruce Street Standard Oil Station was a modern marvel back in the 1920s.

Federal-Aid Programs for Counties and Municipalities

NDOR administers various federal-aid programs to the local municipalities. These programs provide matching funding to local municipalities to improve qualified county roads and bridges. Emergency relief funds are also administered when the President declares a federal disaster area.

Collaborative Relationships

Through the use of summits, meetings, and symposiums, NDOR has experienced success in drawing parties together to discuss critical local and national transportation-related issues that affect Nebraska. In 2003, NDOR hosted the Intelligent Transportation Systems (ITS) Heartland Summit, Transit Summit, Nebraska GIS Symposium, and Highway Safety Summit. These events brought together professionals from local, state, and federal agencies, elected representatives, consultants, venders, and university staff to share ideas. A summit, meeting or conference of interested stakeholders lays the groundwork for future solutions while also fostering an atmosphere of engagement.

The Nebraska Intelligent Transportation System (ITS) is driving organizational improvements created by the benefits of information sharing. Multi-state cooperation is one result. Causes of recurring congestion include insufficient capacity, unrestrained demand, and events that impact across jurisdictional boundaries, including events in other states. For example, if a bridge is out on the I-80 system this will affect the entire interstate system. Nebraska is developing standard operating procedures and information sharing practices with neighboring states in a variety of multi-state forums, including the Five-State Snow Conference, the High Plains Coalition, and ITS Heartland. Those collaborative relationships will lead to additional benefits to travelers within a wide region.

Photo courtesy of Ogallala Main Street

The station has been restored to its original design and now serves as the Ogallala Spruce Street Visitor Center.

I-80 Big Springs Bridge

On Friday, May 23, disaster struck I-80 in western Nebraska for the second time within a year. A westbound semi-trailer truck, loaded with food cargo, slammed into the center support of a country road overpass head-on about three miles west of Big Springs, killing the driver and causing the bridge to collapse onto one of the nation's busiest highways. To compound the situation, the accident occurred during the busy Memorial Day weekend.

For the second time in a year, Nebraska Department of Roads employees, contractors, subcontractors, law enforcement officials, emergency responders, and many other transportation partners joined forces during a busy holiday weekend to complete needed cleanup and traffic restoration in record time.

Within 48 hours of the crash, all four lanes of I-80 were reopened, surpassing most estimates and easing concerns about problems with Memorial Day traffic. Six miles of I-80 were closed on both sides of the bridge while crews worked around the clock to remove 650-700 tons of debris from the crash site.

In addition to the semi that slammed into the bridge, three other eastbound semis were damaged, one when the bridge collapsed on the trailer, trapping it. The other two were damaged when they struck the partially collapsed bridge. A car was also trapped under the wreckage.

The interstate was not damaged, since the bridge landed on the median. NDOR maintenance forces hauled twenty truckloads (approximately 200 cubic yards) of sand to protect the interstate mainline pavement.

More than 57 Nebraska Department of Roads workers from Districts 5 and 6 were involved in both cleanup and traffic control efforts. Districts 1 and 2 provided message boards and web postings. Capital Contractors Inc., of Lincoln, Nebraska, was the prime contractor for the demolition and removal of the structure. Several subcontractors assisted, including MGM of Ogallala, which was responsible for the removal of the destroyed semis and car.

The Nebraska State Patrol dispatched troopers from Troop D, North Platte and Troop E, Scottsbluff. Troop E handled the investigation, detour route and security. The Deuel County Sheriff's Department also assisted. The Union Pacific Roadmaster managed the rail crossing on the detour route and assisted with flagging and traffic control. The Colorado Department of Transportation managed the traffic control for the detour route through Julesburg, Colorado, for the I-76 detour traffic.

Eastbound traffic on I-76 was directed around the closure on Highway 138 from Julesburg, Colorado through Big Springs, Nebraska. Westbound traffic exited at Big Springs and was directed on Highway 30 to Chappell, Nebraska.

Before the damage on the I-80 overpass near Big Springs could be cleared, sand was brought in to cover and protect the interstate below the collapse.

Wreckage of trucks after semi-trailer truck slams into bridge center pier near Big Springs, Nebraska.

Fortunately for this driver, his truck cab was not directly under the collapsed overpass.

Massive cleanup begins, as crews hurry to clear I-80 of debris, and restore traffic during the busy Memorial Day weekend.

When the interstate was closed at 9:30 p.m. on Friday, May 23, the most optimistic plans were to have I-80 reopened by the following Monday morning. But workers opened a westbound lane by midmorning Sunday, May 25, and had all four lanes in both directions open at 11:00 p.m. Monday, May 26.

Nebraska Governor Mike Johanns called the non-stop cleanup an “incredible accomplishment.” He added, “There was a major amount of destruction that occurred out there. To think that that much debris was cleaned up and removed in that short of a time period is nothing short of miraculous.”

Cleanup costs after the accident totaled $263,000, including amounts for both contractors and state crews.

Les O’Donnell, NDOR District 6 Engineer, said the interstate bridge, built in 1969, was in good condition. Plans are to build a new two-span bridge eliminating the shoulder piers. The new bridge will be 28-feet wide, 6-feet wider than the demolished bridge. Cost to build the new bridge is approximately $727,000 and Reiman Corp. of Cheyenne, Wyoming, is the contractor. A temporary road, which carried local traffic from the county road to the I-80 interchange at Big Springs, about three miles to the east, was constructed at a cost of approximately $350,000. Federal matching funds will help cover costs.

To help keep the media and the public updated on the repairs, a Big Springs web page was posted early Saturday morning, May 24 on the NDOR website, www.nebraskatransportation.org. It provided continuous updates throughout the I-80 cleanup. The website received an unusually high number of visits (11,500) from May 24-25, and the Big Springs page received 2,902 visits from May 24-31—almost 4 percent of the total hits for the entire NDOR site.

On November 4, 2003, the county road overpass was opened for traffic.

History of Nebraska Highway Funding

Our surface transportation system is the lifeblood of Nebraska and our nation. The transportation system plays a vital role in the quality of our lives and our economy. Highways are critical components to our mobility, well-being, movement of goods, productivity, employment, national security, and the very health of our economy. In effect, an efficient transportation system is one of the key elements that allow any society to function.

Principal funding of state roads in Nebraska began with passage of the Federal Aid Road Act of 1916 and establishment of the Federal-Aid Highway Program. The Nebraska Legislature appropriated $640,000 to provide a 50 percent match to a three-year appropriation of federal funds. At that time, state-matching funds came from property taxes rather than highway user fees.

The first Nebraska gas tax of 2 cents per gallon was imposed in 1925. The revenues generated from this tax were for the State roads and served as the primary source of funding State highways. From 2 cents a gallon in 1925, the gas tax has increased to the current tax of 24.6 cents per gallon.

Motor vehicle registration fees began in 1913 at $2.00 per passenger vehicle and fluctuated up and down for several years. In 1969 the fee on passenger vehicles was set at $15.00, and there is where it has stayed to this day. Registration fees on heavy trucks vary depending on the load carrying capacity of the truck. The majority of the registration fees went to the counties until 1926, when the State began to receive a larger share.

The 1956 Congress passed the Federal-Aid Highway Act, which was historic in that it created the Federal Highway Trust Fund, and established funding for the National System of Interstate and Defense Highways. President Dwight D. Eisenhower signed the act into law and the Interstate System has since been named after him. The Interstate System was modeled after the "autobahn" system in Germany. Nebraska's first Interstate project was let to contract in June 1957. Nebraska claims to have been the first state to complete its mainline Interstate in October 1974, at a total cost of about $400 million.

In 1965, the Nebraska Legislature authorized a sweeping study of the needs of Nebraska's highways, roads and streets. Subsequently, in 1967 consultants performed studies that included engineering needs, financing and management. In 1969, the Nebraska Legislature, led by Senator Jerome Warner, passed legislation that addressed the needs identified in the 1967 consultant studies. That legislation involved the following areas:

- Required functional classification of highways, roads and streets.
- Increased highway user revenues and the distribution formula that allocated funds to the State, cities and counties.
- Required one- and five-year planning programs for highways, roads and streets.
- Authorized $20 million in highway bonds, that were issued to complete the Interstate System.
- Authorized, for the first time, the **Motor Vehicle Sales Tax** receipts to be deposited in the Highway Trust Fund rather than the General Fund.

As a result of the oil embargo of 1974, fluctuations in the price of fuel reduced fuel consumption and people began buying smaller, more fuel-efficient vehicles. Nebraska's gas tax revenues became very unstable. In 1980 the Legislature, with Senator Warner again leading the way, passed legislation that established the Variable Motor Fuel Tax that went into effect October 1, 1980.

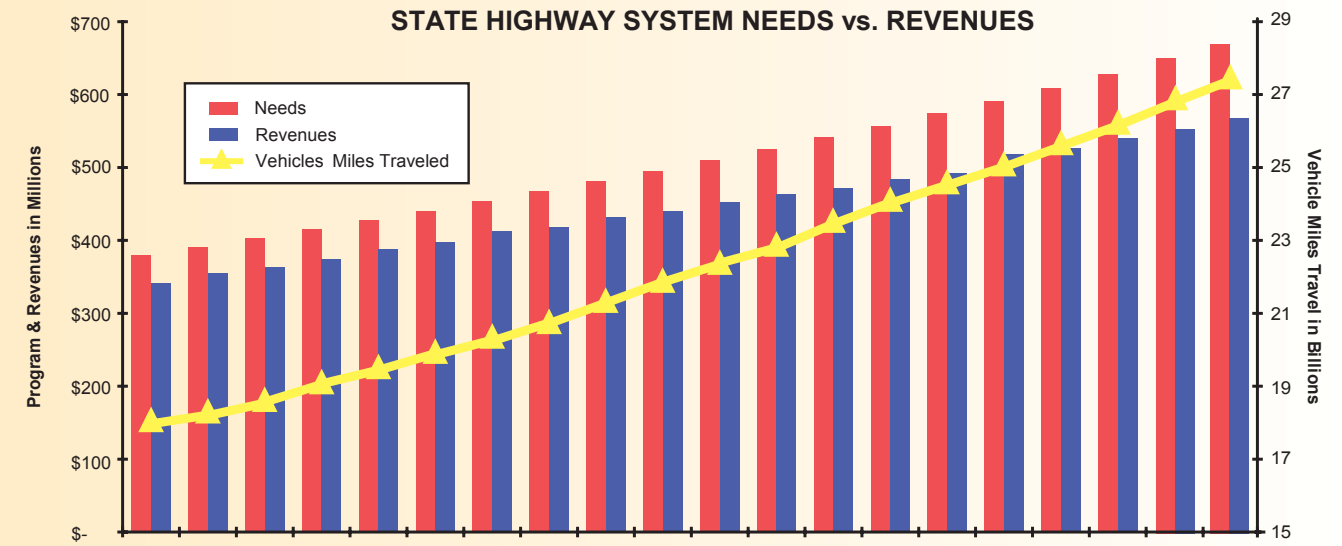
The purpose of the **Variable Motor Fuel Tax** was to provide stability in funding so there wouldn't be large swings up and down in revenues to fund Nebraska's highway construction program. The Department of Roads receives one hundred percent of the revenues from the Variable Motor Fuel Tax.

The State Board of Equalization and Assessment was established in 1980, as the variable fuel tax rate setting body. The Board was comprised of the Governor, Secretary of State, Tax Commissioner, State Treasurer, and State Auditor. The Board set the variable fuel tax rate once a year, prior to the beginning of each fiscal year. However, the variable tax could be and was adjusted regularly on a quarterly bases.

As the years passed, the legislature recognized that the Board of Equalization and Assessment (State Tax Board) had become a political forum, rather than a perfunctory tax rate setting body. Consequently, in 1999, Senator Doug Kristensen crafted legislation that:

- Eliminated the State Tax Board.
- Changed the setting of the Variable Fuel Tax to two times a year, from four times a year.
- Placed the rate setting authority with the Director of the Department of Roads, who certifies to the State Tax Commissioner, what the variable tax should be so that the Department of Roads can meet its annual Highway Cash Fund appropriation.
- Assigned authority to issue highway bonds to the State Highway Commission.

In response to two pieces of legislation, passed during the 1988 Legislative Session, the Department of Roads published its first annual Highway Needs Study. The first piece of legislation required the department to: (1) establish criteria for determining highway needs, (2) establish and report minimum design standards, and (3) perform an assessment of what the State Highway System needs actually were.



Fiscal Year	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	TOTAL
Needs	$380	$391	$403	$415	$427	$440	$453	$467	$481	$495	$510	$525	$541	$557	$574	$591	$609	$627	$646	$665	$10,197
Revenues	$345	$355	$365	$375	$386	$397	$406	$416	$426	$437	$448	$459	$471	$483	$495	$507	$519	$532	$545	$559	$ 8,926
Vehicles Miles Traveled In Billions	17.9	18.3	18.7	19.1	19.5	19.9	20.4	20.9	21.4	21.9	22.4	22.9	23.4	23.9	24.4	25.0	25.6	26.2	26.8	27.4	

As a result of the second piece of legislation, the department developed a 20-year long-range highway plan to accomplish the following at an estimated cost of $3.8 billion:

- Complete the rehabilitation of the Interstate in Omaha in 10 years.
- Complete or let to contract a 600-mile Expressway System in 15 years.
- Eliminate nearly 5,000 miles of geometric highway deficiencies in 20 years.

Many identified needs, from the original “1988 Needs Study” have been completed. However, completion of the 600-mile Expressway System has fallen behind schedule due to insufficient revenues.

Fifteen years later, many new needs have been identified. The “2003 State Highway System Needs Assessment” report identified current needs at $7.6 billion. Those projected needs, with an inflation factor of 3 percent per year over the next 20 years, would cost an estimated $10.2 billion. At the same time, considering conservative increases in state and federal revenues, total funds available would accumulate to approximately $8.9 billion.

Based on the preceding assumptions, currently identified state highway system needs could not be achieved as the revenues necessary to accomplish these needs would fall short by $1.3 billion. Also shown on the chart, traffic volumes are projected to continue to increase. Sufficient revenues do not exist today to meet current needs. Consequently, any diversion of highway funds even further compounds the issue of unfunded and unmet needs.

In fiscal year 2003, the Legislature authorized the transfer of $14.4 million from the **Highway Trust Fund** to the **Cash Reserve Fund.** This action resulted from a one-half cent increase in the State sales tax and the equivalency of $14.4 million generated from the sales of new and used motor vehicles. The Department of Roads’ share of the transferred funds was $7.7 million, and our agency appropriation was reduced by a like amount.

The action taken by the Legislature in 2002 established a precedent for the 2003 legislative session. In 2003, Senators introduced several pieces of legislation to divert highway funds from either the Highway Cash Fund or the Highway Trust Fund to the General Fund. However, the majority of those bills were defeated either in committee, or on the floor of the Legislature. The Department of Roads’ appropriations for fiscal years 2004 and 2005 were relatively preserved, but there were some reductions and transfers of funds.

Nebraska has had a very stable, reliable, and steady funding mechanism for surface transportation for many years. It is important that Nebraska’s transportation system continue to be reliably funded. The most recent “needs” assessment identified $7.6 billion of needs and nearly $900 million of wants. Preservation of the funding mechanism and growth in the funding levels must occur if Nebraska’s transportation needs are to be met and the system preserved and improved.

Financial Status and Sources

Net Asset Value of Nebraska Department of Roads

As with any corporation/organization its net asset value is very important to the employees and the owners, which in our case, are the residents of the State of Nebraska. Our net assets approximate $6.9 billion and include:

- **Current assets:** cash and receivables
- **Long-term assets:** highways and bridges, land, buildings, equipment, and inventory

Surface Transportation Financing

The Department of Roads receives revenues from fees and taxes assessed to the users of the transportation system. The three primary revenue funding sources and their percent of the total are: state 62 percent, federal 33 percent, and local 5 percent. Less than 0.1% comes from the state general fund. The revenues are initially deposited in the state and federal highway trust funds and distributed to the state through formulas established by state and federal laws. In FY-2003, the Department received $555 million to fund the state's surface transportation needs.

Department of Roads Revenues

- **State Funds**

  Highway-user fees and taxes generate the largest portion of state revenue, approximately 62 percent. These fees and taxes are: fuel taxes, sales tax collected on purchases of new and used motor vehicles, and motor vehicle registration fees. This is the most stable funding source for the Department. The fees and taxes are deposited into the State Highway Trust Fund, distributed to the Highway Cash Fund, and used specifically for surface transportation purposes. Changes in the level of state revenue from year to year normally represent the results of increased or decreased consumption of motor fuel and purchases of motor vehicles

  The Department also receives less than 0.1% of revenue from the state general fund appropriations. This revenue is used exclusively for the support of transit and rail activities in Nebraska.

- **Federal Funds**

  Revenue received from the federal government, 33 percent, is the second largest source of funding. Federal revenue is the return of fuel and excise taxes that are levied at the national level. These taxes are collected and deposited in the Federal Highway Trust Fund (FHTF) and then returned to the state by the Federal Highway Administration by means of reimbursements. The federal highway program is a reimbursable process and not a grant program. These funds are used on eligible projects in all areas of the state.

- **Local Funds**

  Revenue received from local governments represents 5 percent of the total Department revenue. Local revenues are funds contributed by cities and counties for their share of construction projects. This local revenue is matching funds to municipal highway system projects that are administered by the Department of Roads.

Department of Roads Revenues

Department of Roads Expenditures

The Department spent $569 million in FY-2003 to move people and goods across and throughout the state by means of a safe and efficient surface transportation system.

- Approximately 79 percent of the Department's expenditures are for surface transportation construction. Two-thirds of this is for system preservation of the existing $6.5 billion infrastructure investment and one-third is for new construction.
- Approximately 15 percent is spent on maintenance activities that include: mowing, snow removal, ditch cleaning, litter pickup, sign and signal repairs, striping, guard rail repairs, and pothole patching.
- Only 5 percent is spent on supportive services, i.e. administrative salaries, heavy road equipment, supply inventories, computers, office furniture, engineering and technical equipment, and so forth. Expenditures for administrative costs is one of the lowest in the nation.

- Expenditures of 1 percent of the total are for public transit and rail functions that are administered by the Department of Roads.

Department of Roads Expenditures

1% Public Transit & Rail

5% Services & Support

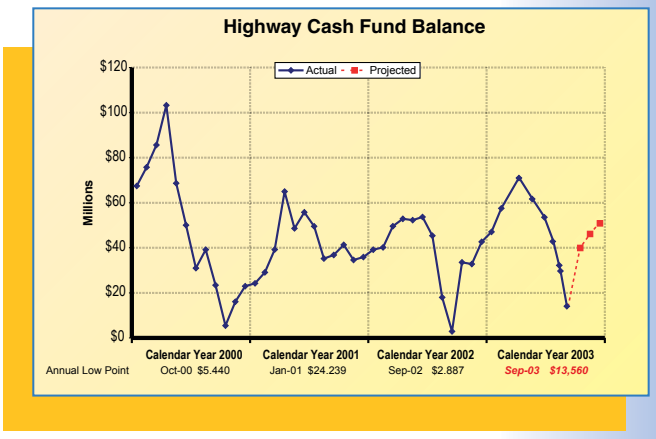
15% Maintenance

79% Construction

Highway Cash Fund Balance

The Department accounts for all of its revenues and expenditures by means of a cash flow management system. This system is managed on a daily basis and projections are made for future revenues and expenditures. Also, the system reports actual daily cash balances and projects low point balances that are anticipated throughout the current fiscal year and into the following fiscal year.

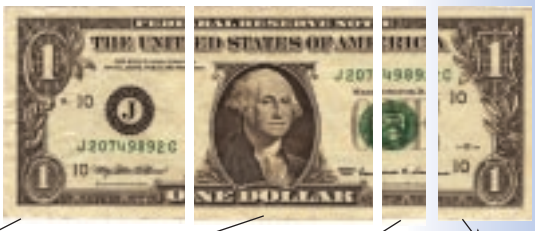
Revenues accrue in NDOR's Roads Operations Cash Fund from month-end distributions made from the state's Highway Trust Fund and through weekly reimbursements of federal-aid highway funds. Actual cash balances can range from a high point of $120 million to a low point of less that $3.0 million on any given day of the year. The difference between funds received and dollars spent is reflected as cash balances.



During the winter months as the contract construction season slows, revenues begin to accumulate. In the following summer and fall months, these cash balances are drawn down as contractors are paid for the work they perform and low cash balances occur.

Transportation Costs for NDOR

In FY-2003 the State of Nebraska's annual expenditures was $6.127 billion. Of this total, NDOR's expenditures were $569 million, 9 percent of the entire state expenditures.



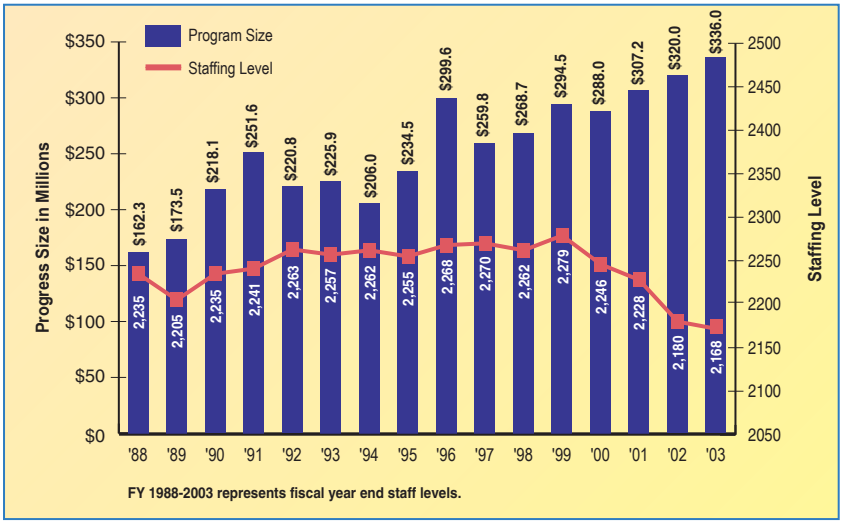
37% All Education

35% Health & Human Services

9% Department of Roads

19% All Other State Agencies

NDOR Total Construction Program compared to Staffing Levels



Construction Program Compared to Staffing Levels

NDOR's mission is to provide a safe, efficient, affordable, and coordinated stateside transportation system for the movement of people and goods. NDOR achieved this mission by producing a state highway system program that has shown a modest but steady growth since FY-1988. While the highway construction program has grown, NDOR workforce has declined.

An efficient, quality transportation system continues to be a major key in ensuring Nebraska's ability to compete in a global economy by providing the means to move products and people. With the constantly changing economy, the flow of goods and the movement of people remains a vital function of the nation.

Traffic is expected to continue to increase, and Nebraska will continue to enhance its efforts to work with elected officials, businesses, citizens, and all stakeholders to plan for future transportation needs. To remain ready for future growth, Nebraska must continue to make sound investments in transportation services and infrastructure.

Nebraska Department of Roads
1500 Highway 2
PO Box 94759
Lincoln NE 68509-4759
www.nebraskatransportation.org