Annual Report

Odessa-Kearney area

NEBRASKA
Good Life. Great Journey.
DEPARTMENT OF TRANSPORTATION

2023

FROM THE DIRECTOR

Vicki Kramer

In 2023, the Nebraska Department of Transportation (NDOT) remained steadfast in our commitment to supporting the diverse needs of Nebraska. Through focused initiatives, NDOT promoted community growth and enhanced transportation infrastructure across the state. This annual report offers a look into NDOT's multifaceted approach to tackling transportation issues while showcasing accomplishments and sharing our ongoing endeavors and forthcoming plans. Our overarching goal remains centered on enhancing accessibility, innovation and safety in Nebraska's transportation infrastructure, while nurturing economic growth and environmental sustainability.

Thanks to our partnership with the county bridge match program, 30 awards totaling $5 million benefited local agencies and counties. Moreover, our relentless pursuit of discretionary funding opportunities led to NDOT being awarded $21 million from the United States Department of Transportation (USDOT) through the Infrastructure For Rebuilding America program (INFRA). These funds went towards the upcoming interstate project between Kearney and Odessa.

A hallmark event of the past year was the inaugural Transportation Summit, where NDOT facilitated a valuable platform for Nebraska communities to explore available grants, understand funding mechanisms and share best practices. This initiative builds off the momentum in 2023 where Nebraska communities and counties combined for $50 million in Transportation Alternatives Project (TAP) Grant Awards, marking the largest allocation in the program's history, and a total of $2.6 million in Safe Streets 4 All (SS4L) discretionary grants.

While working on our efforts to maintain and strengthen our infrastructure, NDOT made significant strides in modernizing our business practices in 2023. We simplified the bidding process to increase participation and competitive pricing from contractors. By expanding contractor pre-qualification and fostering collaboration in project advertising and letting periods, we prioritized efficiency and effectiveness. When it comes to practical design principles, we ensured our projects remain constructible and not overengineered beyond the needs of the system, optimizing resources and outcomes. Additionally, the Legislature approved NDOT to pursue bonding when the opportunity is right, another unique tool for us to conduct business.

Amidst rising construction costs, NDOT will continue to navigate future challenges by exploring innovative financing options and pursuing discretionary funding opportunities. Through the American Rescue Plan Act (ARPA) funds, we will work to implement an Innovation Hub within NDOT to help empower local communities in their pursuit of grants and initiatives to furthering support to all Nebraskans.

As we continue to navigate the future, NDOT remains focused on innovative strategies with safety as a top priority. We are particularly excited to highlight the forthcoming I-80 six-lane expansion project, which will reduce traffic congestion and brings the opportunity to enhance connectivity and facilitate economic growth across the state . Moreover, our continued emphasis on work zone safety underscores our commitment to protecting both workers and motorists alike.

SAFETY

Improve Safety on Nebraska's Transportation System

"Toward Zero Deaths" are three key words in the Nebraska Department of Transportation's (NDOTs) overall safety goal to reduce deaths and injuries on Nebraska roadways. Topping the list of performance measures, safety is integrated into every aspect of roadway construction and maintenance, as well as non-infrastructure projects. NDOT continues to focus on identifying and prioritizing projects to address safety concerns such as roadway departures, intersection safety, occupant restraint, and distracted driving crashes. New technologies are being implemented like bridge anti-icing systems, improved winter operations, and the "beveled edge" to aid in vehicle re-entry onto the highway after a roadway departure. NDOT is also implementing effective countermeasures, like centerline and edge line rumble strips, and warning signs for statewide projects.

Year	Nebraska Fatalities
2014	225
2015	246
2016	218
2017	228
2018	230
2019	248
2020	233
2021	221
2022	254
2023	231

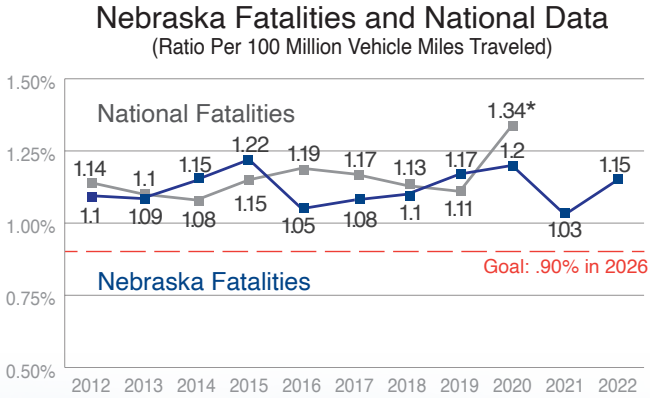
Fatalities on Nebraska Roadways

Description: Measurement of fatalities on Nebraska roadways: interstates, state highways, and local roads and streets.

Purpose: To heighten the awareness of safety and driving responsibility on Nebraska roadways. A consistent decline in fatalities reflects improved safety management practices, greater public awareness of safe driving practices, and will reduce statewide societal costs.

Goal: To reduce fatalities, their number, and the rate to a ratio of 0.9 fatalities per 100 million vehicle miles traveled by 2026.

Outcome: Nebraska's rate of fatalities per hundred million miles traveled in 2022 was 1.15. There were 231 fatalities in 2023, a decrease of 23 compared to 2022.



*National data is not available for 2021-2023.
Nebraska Fatality data is not yet finalized for 2023.

Serious Injury Crashes on Nebraska Roadways

Description: Measurement of serious injury crashes on Nebraska roadways; interstates, state highways, and local roads and streets.

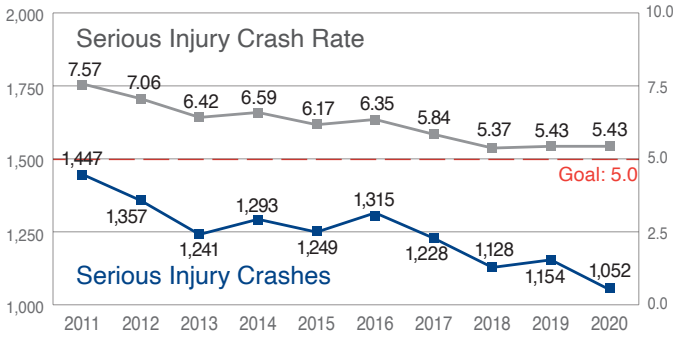
Purpose: To heighten the awareness of safety and driving responsibility on Nebraska roadways. Improved safety management practices and greater public awareness of safe driving practices contributed to a consistent decline in serious injury crashes. Continuation of these practices will reduce statewide societal costs.

Goal: To reduce serious injury crashes in Nebraska to a ratio of 5.0 per 100 million vehicle miles traveled by 2026.

Outcome: Nebraska's serious injury crash rate in 2019 and 2020 was 5.43. Crash data is not yet available for 2021-2023.

Year	Annual Vehicle Miles Traveled (AVMT)
2014	19,612,000,000
2015	20,230,000,000
2016	20,709,000,000
2017	21,011,000,000
2018	20,995,826,000
2019	21,261,959,000
2020	19,379,946,000
2021	21,533,243,000
2022	22,288,024,000
2023	21,540,000,000

Serious Injury Crashes on Nebraska Roadways
(Ratio Per 100 Million Vehicle Miles Traveled)



Turning to Safety

Over the past 15 years, Nebraska has followed a national trend with an increasing number of roadway fatalities and serious injuries, with intersections being a major contributor between 2016-2020. During this period, intersections accounted for 50% (4,140 of 8,302) of all traffic fatalities and serious injuries. Understanding drivers crossing or making a left turn onto a four-lane divided highway must find a gap in both directions of traffic, NDOT looked for a safer alternative.

A solution NDOT turned to was Restricted Crossing U-Turns (also referred as RCUT or Reduced Conflict Intersection or J-Turn). A RCUT makes a driver take a right turn in the same direction of traffic, merge into the left lane, and then make a U-turn in the direction they intend to travel. This process reduces collision points, simplifies a driver's decision-making at intersections and helps drivers focus on safely crossing one direction of traffic at a time. Additionally, it reduces the potential for drivers to misjudge a gap and experience a high severity right-angle crash.

NDOT implemented its first RCUT near Humphrey at the intersection of US-81 and N-91 three years ago. Prior to the RCUT, the intersection experienced five crashes per year, including some fatal and serious injury crashes. Since this RCUT was constructed, the intersection has experienced only one crash per year with no fatalities or serious injuries. The data from Nebraska's first RCUT mirrored national statistics where a RCUT reduced crashes by 54% and reduced fatalities and injuries by 96% compared to traditional minor road stop-controlled intersections.

With this enhanced safety feature in its system, NDOT added another RCUT in 2023 on US-30 near North Bend and is currently constructing one on US-75 near Murray. This effort to safely influence driver behavior aligns with Nebraska's 2022-2026 Strategic Highway Safety Plan to lower serious injuries and fatalities at intersections each year, with the ultimate goal of zero deaths on Nebraska roadways.

Motor Vehicle Crashes on Nebraska Roadways

Description: Measurement of motor vehicle crashes on Nebraska roadways, interstates, state highways, and local roads and streets.

Purpose: To heighten the awareness of safety and driving responsibility on Nebraska roadways. A consistent decline in crashes reflects improved safety management practices, greater public awareness of safe driving practices, and will reduce statewide societal costs.

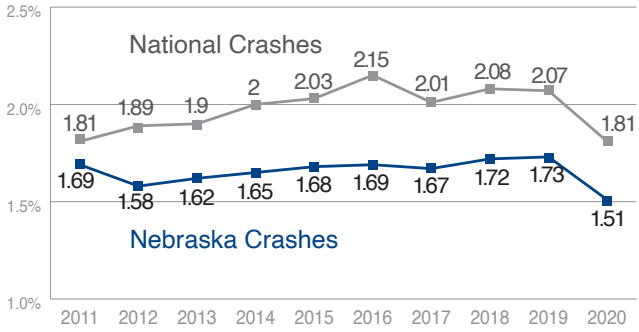
Goal: To reduce motor vehicle crashes in Nebraska to a ratio of 1.5 per million vehicle miles traveled by 2026.

Outcome: Nebraska's crash rate has been below the national rate since 2004. Beginning in 2013, the number of crashes has increased steadily, but the ratio of crashes to one million vehicle miles traveled remained under 1.75. Both national and Nebraska crash rates dropped significantly in 2020 due to temporary changes in travel patterns.

Year	Nebraska Crashes
2011	32,302
2012	30,443
2013	31,377
2014	32,318
2015	33,988
2016	34,890
2017	34,999
2018	36,117
2019	36,706
2020	29,418

TOWARD ZERO DEATHS — NEBRASKA

Nebraska Crashes and National Data
(Ratio Per Million Vehicle Miles Traveled)



Improving Pedestrian and Bicyclist Safety

The Nebraska Strategic Highway Safety Plan (SHSP) is a guidance document for improving safety on Nebraska roads. In coordination with our safety partners at other agencies, NDOT has released an updated 2022-2026 Strategic Highway Safety Plan (SHSP) with the addition of a Vulnerable Road User (VRU) Assessment that focused on the safety of pedestrians and bicyclists.

The safety of all road users is the top priority for NDOT, with a goal of zero fatalities on Nebraska's roads. To work toward achieving this, the SHSP aims to implement innovative safety infrastructure projects as part of a holistic Safe Systems Approach to eliminate serious injuries and fatalities on roadways, for all road users. The addition of the VRU Assessment expands upon the SHSP and provides further insight into trends of pedestrian and bicyclist crashes as compared to overall crashes, providing greater understanding of areas with the greatest opportunities for improvement.

Input from safety stakeholders across the state, paired with both state and federal data, were major contributors to the wide range of strategies in this plan that address both infrastructure and driver behavior concerns. For example, the data from our VRU Assessment and our safety partners provides us additional guidance to show us we must focus more on safety design features such as high-visibility crosswalk markings and signs, roundabouts, crosswalk overhead lighting, connecting sidewalk gaps, and leading pedestrian timing at signals, just to name a few.

We have a shared responsibility between NDOT as the stewards of our infrastructure and road users to achieve the goal of zero deaths on Nebraska roadways. We can achieve this goal together.

FISCAL RESPONSIBILITY

Use Financial Resources Wisely and Make Financial Decisions in an Open and Transparent Way

Fiscal responsibility is defined as (1) living within our means, (2) using financial resources wisely, and (3) making financial decisions in an open and transparent way. The goal is to optimize the use of available funds to build and maintain the state's transportation system. These measures have been established to reflect the progress toward meeting this goal.

Overhead as a Percentage of Annual Expenditures

Description: Measurement of NDOT's costs for construction, maintenance, and overhead.

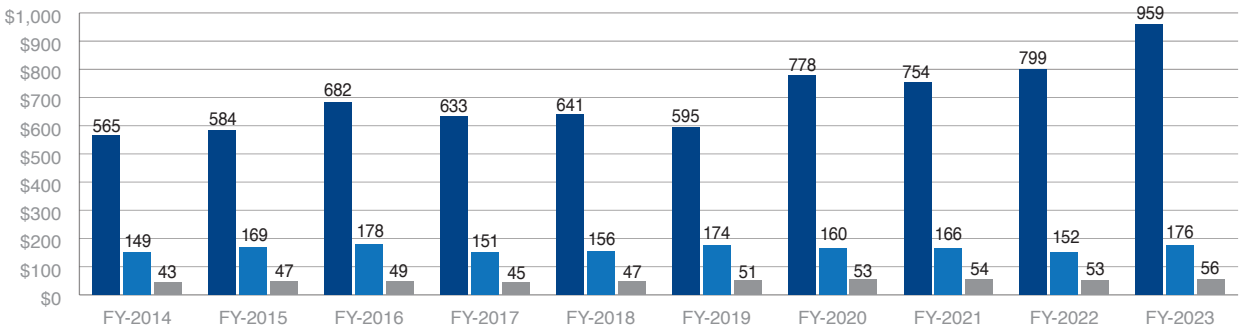
Purpose: To maximize funding for transportation purposes by minimizing overhead costs.

Goal: To have overhead costs less than 10% of annual expenditures.

Outcome: NDOT maintained overhead at less than 10% of annual expenditures over the ten-year period. The overhead for 2023 was 5%.

Transportation and Administrative Expenditures

(Dollar amounts represented in millions)



	FY-2014		FY-2015		FY-2016		FY-2017		FY-2018		FY-2019		FY-2020		FY-2021		FY-2022		FY-2023	
Construction	565	75%	584	73%	682	75%	633	76%	641	76%	595	73%	778	79%	754	77%	799	80%	959	81%
Maintenance	149	20%	169	21%	178	20%	151	18%	156	19%	174	21%	160	16%	166	17%	152	15%	176	15%
Subtotal	$714	94%	$753	94%	$860	95%	$784	95%	$797	94%	$769	94%	$938	95%	$920	95%	$951	95%	$1,135	95%
Overhead	43	6%	47	6%	49	5%	45	5%	47	6%	51	6%	53	5%	54	6%	53	5%	56	5%
Total Costs	$757		$800		$909		$829		$844		$820		$991		$974		$1,004		$1,191	

Accuracy of Project Estimates Contained in the 1-Year Program

Description: Measure the difference between projected construction project estimates and actual awarded contract amounts.

Purpose: Accurately projecting annual construction expenses helps NDOT forecast when future construction projects can be built. NDOT values the important role that reliable project estimating plays in supporting local communities by keeping the highway system in a state of good repair.

Goal: To be within 5% of the total estimated cost of the published program as reported in the 1-Year Program.

Outcome: The goal was last met in 2019.

Actual and Estimated 1-Year Program Project Cost

Fiscal Year	Projects in 1-Year Program	1-Year Program Estimate	Fiscal Year-End Total Project Cost	Over/Under Program Estimate	Over/ Under
2011	144	$407,556,000	$400,925,000	($6,631,000)	-2%
2012	142	$333,466,000	$342,528,000	$9,062,000	3%
2013	135	$380,732,000	$376,220,000	($4,512,000)	-1%
2014	152	$466,460,000	$446,529,000	($19,931,000)	-4%
2015	153	$447,786,000	$501,012,000	$53,226,000	12%
2016	110	$453,412,000	$467,351,000	$13,939,000	3%
2017	95	$506,168,000	$498,937,000	($7,231,000)	-1%
2018	100	$483,240,000	$482,144,000	($1,096,000)	-.2%
2019	110	$512,666,000	$519,813,000	$7,147,000	1%
2020*	93	$793,503,000	$896,697,000	$103,194,000	13%
2021	90	$702,656,000	$741,966,000	$39,310,000	5.6%
2022	103	$549,643,000	$642,764,000	$93,121,000	16.9%
2023	107	$578,969,000	$708,891,000	$129,922,000	22.4%

**FY 2020 construction program list was adjusted throughout the year to accommodate expenses for the repairs after the Historic 2019 Floods. The Program Delivery data does not include contracted flood repair projects or expenses.*

Accuracy of Project Estimates Contained in the One-Year Program

NDOT revises the estimated cost to prepare and construct a transportation project at various points during its development. In general, the development time of a project from inception to letting is three to five years, with more complex projects taking a decade or more. Each year, NDOT publishes the list of projects anticipated to be contracted for letting within the next fiscal year based on projected revenues and total project costs.

One of the performance measures that NDOT tracks is the comparison of the project estimate used to establish the One-Year Program against the total project costs after the project is contracted. The goal is to be within 5% of the amount published in the One-Year Program. Referencing the table above, in fiscal year 2023 there were 107 projects estimated for a total of $578,969,000 compared to the total project cost of $708,891,000 after those projects were contracted, a difference of $129,922,000 or 22.4% above the One-Year Program estimate.

Prior to 2019, NDOT was consistently within the target range. The increase in recent periods is a testament to the significant increases in construction prices experienced in lettings. Factors that directly impacted the increased construction costs were supply chain issues and material shortages combined with higher inflation and gas prices than previous years.

Construction Competitiveness

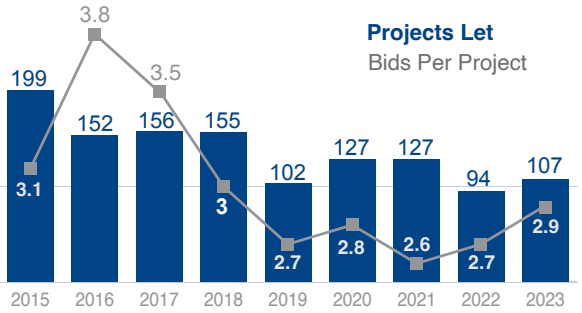
Description: Measurement of the number of projects let in a calendar year and the average number of bids that NDOT receives on those projects.

Purpose: Measure the number of projects let to construction in a calendar year and measure the average competition among the industry players for that calendar year's projects.

Goal: Maintain a minimum average of three bidders over a calendar year.

Outcome: The minimum average of three bidders over a calendar year was last met in 2018.

Number of Projects Let Per Year and Average Number of Bids Per Project



The significant cost and contractor effort expended in response to the 2019 Governor-declared flood disasters resulted in a lower number of programmed contracts awarded in 2019, as well as a lower number of available bidders for those contracts. In addition to the 100 projects let to bid, there were 49 force account agreements for flood repair that were executed by the Districts and Central Complex staff.

Construction Competitiveness

NDOT tracks the number of bidders on projects due to the known linkage between the number of bids received and the competitiveness of the bids. The goal for number of bids received per project was set at 3.5 bidders because the study showed that receiving an average of at least 3.5 bids per project provided optimal competitiveness.

NDOT worked with the construction industry to identify processes that hinder competition and determine how it could positively influence letting practices to encourage additional bidders. NDOT saw a low bidder rate in the early part of the year, but beginning in July NDOT began to see a rise in the number of bidders per project in the lettings with a peak in September with a maximum of 4.4 bidders per project.

NDOT evaluates the bidding information in various ways. One factor in the analysis is the character of work that NDOT lets has changed over the years. This resulted in the size of the calendar year totals for lettings increasing from an average of $425 million from 2016 to 2018 to an average of $656 million from 2020 to 2023.

In addition, the average size of a project jumped from $2.7 million in 2016 through 2018 to $6.7 million in 2020 through 2023. The major change occurred between 2019 and 2020, when the size of the annual program rose from $436 million to $733 million. These changes occurred without a corresponding and equal increase in the industry's capabilities to build the additional work.

Since most of the adjacent states are experiencing the same increase in work, NDOT does not expect more contractors will be crossing the state border to help build the additional work being let by NDOT. Specific aspects of the industry have begun to build capacity, however, this is not an overall adjustment. Consequently, it is unknown whether the industry will increase bidding activity. NDOT continues to evaluate ways to increase bidding activity.

ENVIRONMENTAL STEWARDSHIP

Integrate Environmental Considerations into Planning/Design, Construction, and Operational Activities of Nebraska's Transportation System

Environmental Stewardship is the integration of environmental considerations into the planning, design, construction, and operational activities associated with the Nebraska transportation system. These environmental considerations include cultural, natural, and human elements. NDOT is committed to its role as an environmental steward and to preserving and protecting the environmental features and resources of the state. This goal emphasizes that transportation decisions and investments must be balanced with environmental considerations. The performance measures linked to this strategic goal illustrate our promise to carry environmental commitments forward into construction, take swift corrective action to benefit the environment, when necessary, and to encourage an environmentally sustainable transportation system.

Commitments in Compliance

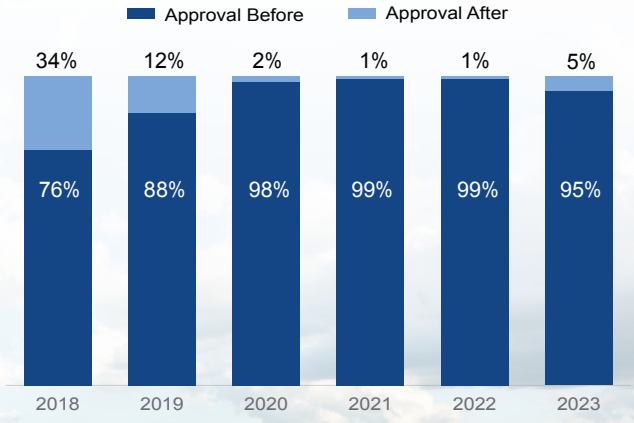
Description: A key component of NDOT's environmental stewardship goal is to ensure that National Environmental Policy Act (NEPA) process commitments are being managed to meet the Federal Highway Administration's NEPA implemention regulations. Meeting NEPA process goals, such as approval of Categorical Exclusion (CE) NEPA documentation prior to the Final Project Plans turn in date is paramount for State DOT's that have assumed NEPA approval authority for certain CE actions from FHWA, referred to as CE Assumption. Meeting CE Assumption processing goals ensures that NDOT will retain the streamlining and efficiency benefits afforded by federal NEPA Assumption program provisions.

Purpose: To ensure NDOT is following through with CE Assignment and FHWA implemention regulation environmental review and processing requirements as required by NDOT's Memorandum of Understanding with FHWA for State Assumption of Responsibility for Categorical Exclusions (23 U.S.C. 326).

Goal: 100% of the environmental commitments are in compliance.

Outcome: NDOT has effectively met this CE Assumption process goal for the past four years.

CE Approval Prior to Project Plans Turned In Date



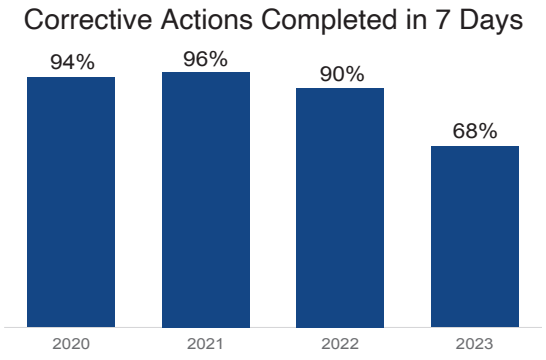
Problem-Solving Swiftly

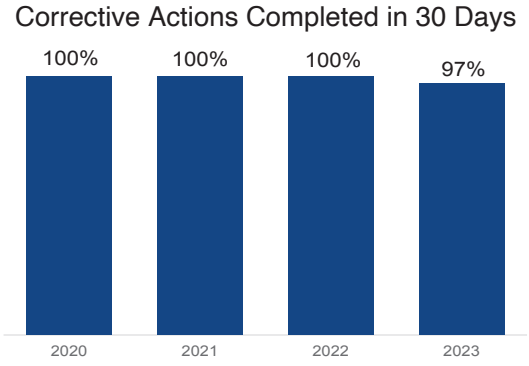
Description: This important component of NDOT's environmental stewardship goal is to ensure that corrective actions related to environmental commitments for construction projects are resolved within a seven-day window. Speed of resolution is key to maintaining compliance.

Purpose: To ensure NDOT is performing timely corrective actions and tracking the compliance information necessary to deliver appropriate environmental training for staff and contractors.

Goal: 100% of corrective actions completed within seven days.

Outcome: In 2023, percentage of corrective actions completed within seven days dropped significantly. This can be due to several factors including complexity of construction phasing operations or frequency of weather events, but indicates an emphasis area for continued training and monitoring to make necessary compliance program adjustments to achieve our compliance goals.





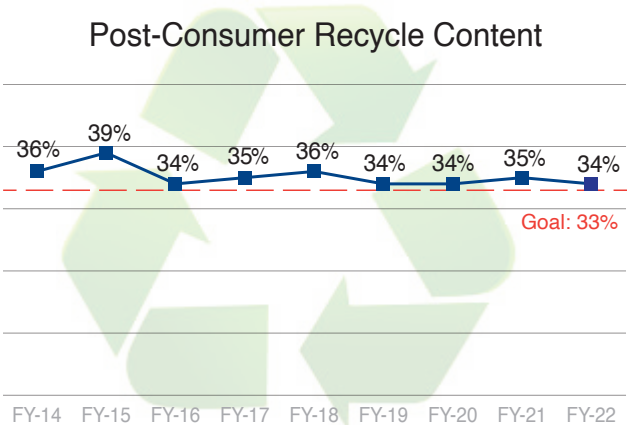
Paving It Forward

Description: Measurement of material removed during highway construction or maintenance work that is recycled into new roadway pavement.

Purpose: To ensure NDOT is striving to maximize the use of removed or salvaged material. This minimizes the use of virgin materials and keeps reclaimed material out of landfills.

Goal: A minimum of 33% overall replacement content.

Outcome: NDOT continues to meet the recycling goal. Post-consumer recycle content of roadway pavement for fiscal year 2022 was 34%.



Post-Consumer Recycle Content

	Overall Replacement Content		
Fiscal Year	Raw Materials (tons)	Recycle Content Raw Materials (tons)	Est. Value Recycled
2014	3,796,902	1,350,476	$59,292,024
2015	3,215,669	1,246,427	$45,750,906
2016	3,717,875	1,250,980	$47,568,953
2017	4,346,961	1,534,604	$60,233,179
2018	2,993,035	1,088,647	$49,670,595
2019	3,243,560	1,104,208	$61,257,110
2020	3,506,284	1,175,577	$61,617,867
2021	3,530,896	1,230,025	$77,148,114
2022	3,033,886	1,041,155	$77,974,124

NDOT Project Delivery and the NEPA Process

National Environmental Policy Act (NEPA) – procedural law where NDOT conducts environmental reviews when a project or action is: 1) federally funded; or 2) requires a federal permit or approval.

Purpose & Need
- Reason for project
- Screen alternatives

Alternatives
- CE – None
- EA – Build/No Build
- EIS – All reasonable alternatives

Impacts
- Survey project area for environmental resources
- Assess project design impacts to environmental resources

Mitigation
- Avoid and minimize impacts through design alterations
- Determine mitigation strategies to offset unavoidable impacts

Public Involvement
- Present project to public and gather public comment
- If possible, incorporate public comment into project

Interagency Coordination
- Coordinate with regulatory and oversight agencies
- Receive agency approval or permits

Documentation
- Categorical Exclusion (CE)
- Environmental Assessment (EA)
- Environmental Impact Statement (EIS)

Science Aids Conservation

While often a mythical creature associated with vampires and the creepy crawlies of Halloween, bats play a pivotal role in the ecosystem. Despite their importance, bat populations are declining due to habitat destruction, unnecessary extermination and diseases. Nebraska is home to 13 different species of bats, only one of which is officially listed as endangered under the federal Endangered Species Act. So, how does NDOT know if an endangered species of bats is around a project or planned project? They use science.

To determine which bat species is potentially present along a project, bat guano (partially decomposed excrement) is collected. Through collaboration with Northern Arizona University, NDOT's environmental professionals bring sample kits while conducting surveys. If guano is found, they can put a small sample in the kit and send it for a laboratory DNA analysis since each species has a unique DNA profile. From the analysis, NDOT can determine what sorts of conservation actions are needed based on the specific species that is present.

Additionally, the samples collected are geolocated, enabling NDOT, U.S. Fish and Wildlife Service and the Nebraska Game and Parks Commission to better assess the habitat ranges for an at-risk bat population. Not only is this biological information beneficial, but the outcome allows a more effective and efficient project delivery process for all Nebraskans.

PROJECT DELIVERY

Use Known State and Industry Best Practices, New Technologies and Creativity to Continually Improve and Deliver Well-Designed, High-Quality Projects, Products, and Services

The department's goal is to continuously improve project delivery. Project delivery refers to the steps taken to progressively develop plans that define how each highway project will be built. Project delivery teams are responsible for developing these plans and must predict, minimize or prevent negative impacts to the environment, project costs, and construction schedules for stakeholders.

The department strives to:

- Continuously enhance our expertise in laws and regulations that affect highway projects
- Lead efforts to streamline complex processes
- Implement creative, efficient and flexible solutions to expedite project delivery and construction

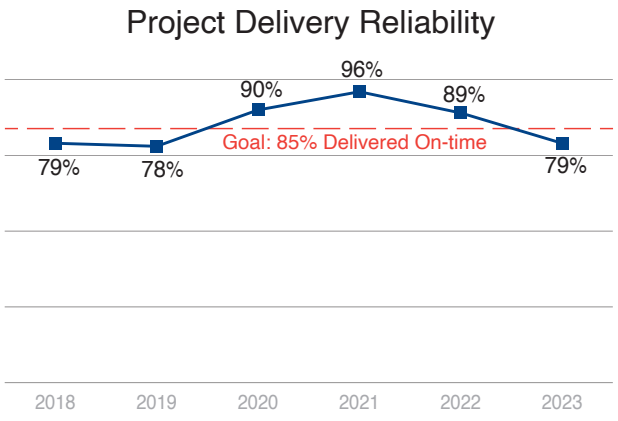
Project Reliability

Description: Measurement of NDOT's reliability in delivering construction projects in the one-year construction program to letting on time.

Purpose: This measurement reflects how accurately NDOT predicted in advance, which letting each project would be advertised in during the upcoming year.

Goal: To deliver 85% of projects on time.

Outcome: This measurement began in 2017, when 52% of projects were on time. In 2023, 79% of projects were on time. NDOT has implemented many changes to improve reliability, meeting the goal three of the last four years.



Projects Completed Within the Adjusted Days Allowed

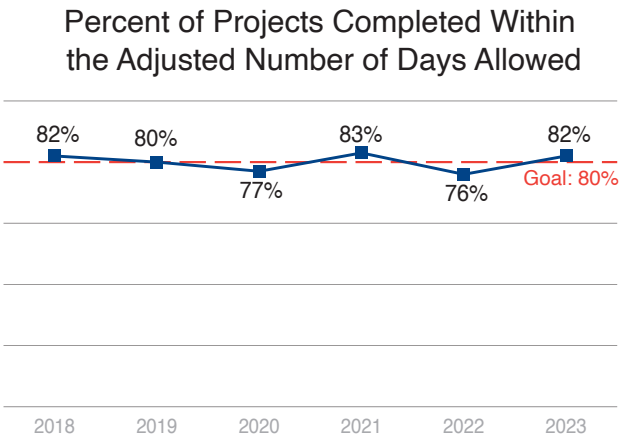
Description: Measurement of estimated time to complete a project.

Purpose: This is a measure of NDOT's ability to accurately estimate the amount of time necessary to complete a construction project (contract time allowance).

Goal: 80% of calendar year projects completed within the current contract time allowance.

Outcome: NDOT met the goal twice.

Year	Projects Completed
2018	118
2019	120
2020	145
2021	86
2022	88
2023	111



1-Year Program Projects Delivered to Letting

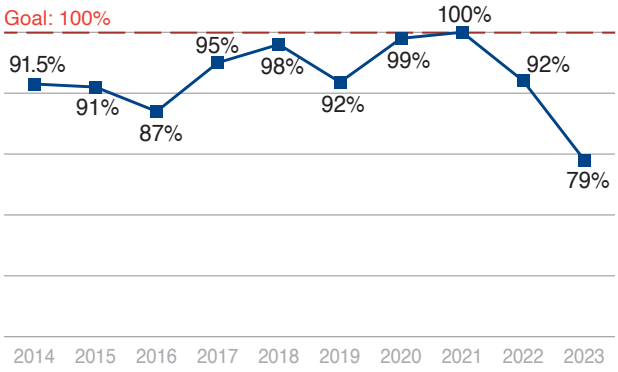
Description: Measurement of the ability to let projects which are identified in NDOT's one-year schedule of highway improvement projects (1-Year Program).

Purpose: This measurement monitors the delivery of projects to the public. NDOT's performance reflects how well promises are kept to the public.

Goal: To deliver 100% of projects.

Outcome: NDOT last met the goal in 2021.

Percent of Projects Delivered in the 1-Year Program



Fiscal Year	1-Year Projects[1]	Projects Delivered
2014	152	139
2015	153	139
2016	110	96
2017	95	90
2018	100	98
2019	110	101
2020	93	92
2021	90	90
2022	103	93
2023	107	85

[1] *Projects from the Nebraska Surface Transportation Program not included are those counted in the previous fiscal year, projects withdrawn, and projects built by entities other than the State of Nebraska.*

5-Year Program Projects Delivered to Letting

Description: Measurement for success in delivering projects displayed in the 5-Year Planning Program in 2018 and included a five-year projection for 2019-2023.

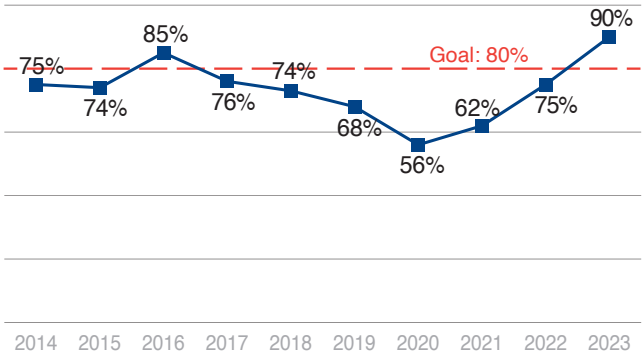
Purpose: This measurement monitors the delivery of projects to the public. In 2023, NDOT assessed how many projects in the 5-Year Planning Program in 2018 were actually let between 2019 and 2023.

Goal: To deliver 80% of projects in the 5-Year Program on time.

Outcome: 90% of projects identified in the five-year schedule of highway projects in 2018 were delivered to letting by 2023, meeting NDOT's goal.

Program Period	5-Year Projects	Projects Delivered
2010-2014	376	283
2011-2015	428	316
2012-2016	410	349
2013-2017	395	300
2014-2018	428	318
2015-2019	450	307
2016-2020	489	263
2017-2021	439	270
2018-2022	360	270
2019-2023	363	327

Percent of Projects Delivered in the 5-Year Program



Alternative Delivery Expands NDOT's Tool Box

Alternative Project Delivery Methods (APDM) are tools that NDOT is authorized to use in meeting the needs of the state's transportation program. APDM may not be appropriate for all projects, but when the right projects are selected, they may offer significant benefits for NDOT and the public. The decision to use APDM is made through a series of key considerations weighing risks and benefits.

In 2016, the Transportation Innovation Act (TIA) authorized NDOT to use ADPM. A taskforce integrated stakeholders from ACEC, AGC, FHWA and NDOT to focus on education and implementation of ADPM and functions that align Nebraska's engineering and construction activities with best practices driving safe and efficient project delivery. In 2024, new guidelines on how the program will be administered were approved for NDOT, industry partners, and regulators to prepare for the use of these tools. NDOT will be applying these guidelines to both select and deliver projects for APDM methods in the future.

Objectives when using APDM can include:

- Greater partnership opportunities between public and private sectors
- Accelerated project delivery
- Increased cost and schedule certainty
- Technical innovation
- Improved project life-cycle costs and/or quality
- More options for project oversight

Alternative Project Delivery Methods NDOT Considers	
Construction Manager/General Contractor (CM/GC)	The owner has a contract with a designer to design the project and a separate concurrent contract with a CM/GC contractor for pre-construction services for the project. Both are contractually required to work together during the pre-construction phase or design phase to complete the design and to establish a price for construction guaranteed by the CM/GC contractor.
Design-Build (DB)	The owner has one contract with an entity to design and construct the project, with selection typically based on best value (a combination of price, qualifications and technical approach). Typically, the price is bid as a lump sum at the time of award for the design-build contract.
Collaborative Design-Build (CDB)	The owner selects the Design-Builder based on qualifications early in the project development process, then the Design-Builder assists the owner with risk identification and scope definition and develops the design. As the design is advanced, price, schedule, and other commitments are negotiated, and when the owner and Design-Builder agree, the contract is amended for the construction.
Public-Private Partnership (P3)	The owner has one contract with an entity to design and construct the project and any combination of project finance as well as operations and maintenance of the facility for a fixed number of years. For P3 projects, selection is usually based on a combination of qualifications and price, where price is usually measured as net present value.

Alternative Delivery eligible projects will be noted in the 2024 Program Book.

ASSET MANAGEMENT

Operate, Maintain, Upgrade, and Expand Physical Assets Effectively Throughout Their Life Cycle

Performance measures have been developed to monitor the condition of Nebraska roadways, bridges, and fleet. Various strategies are used to meet goals and objectives to preserve, rehabilitate, and replace major assets managed by NDOT.

Pavement Condition of Nebraska Highways

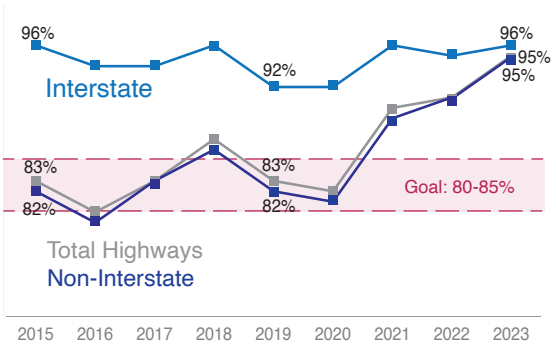
Description: Measurement of the pavement quality of the state highway surface.

Purpose: This is a measure of the pavement condition of the state's 10,000 miles of highways. Pavement condition ratings are based upon annual automated and visual inspections and rated according to the Nebraska Serviceability Index (NSI). Highway pavement sections are rated on an NSI scale of 0-100 with any section rated 70 or above considered good. This information is used to help determine appropriate strategies for maintenance, rehabilitation, or reconstruction.

Goal: 80-85% of the highway system miles shall be rated at least good (NSI rating ≥70).

Outcome: In 2023, 96% of the highway system was rated at least good, exceeding the goal.

Percent of Miles at Least "Good" (NSI ≥ 70)



Smoother Roads

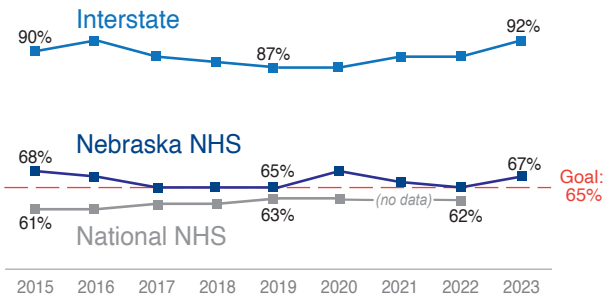
Description: Measurement of the smoothness of the roads on the National Highway System (NHS). The NHS is a subset of the highway system and includes roads that are important to the nation's economy, defense, and mobility. The National Highway System is comprised of 3,655 miles of state highways and local roads.

Purpose: One measure of the smoothness of roads is the International Roughness Index (IRI). This index measures pavement roughness in terms of the number of inches per mile. The lower the IRI number, the better the ride. A smoother roadway is safer and more satisfying to the users of our highway system.

Goal: 67% of all miles on the National Highway System shall be maintained at an acceptable ride quality of "good" (IRI ratings <95 in/mi). National data was not available for 2021.

Outcome: In 2023, 67% of Nebraska's National Highway System miles had an IRI rating of "good," meeting the goal.

Percent of "Smooth" Miles on the NHS (IRI < 95)



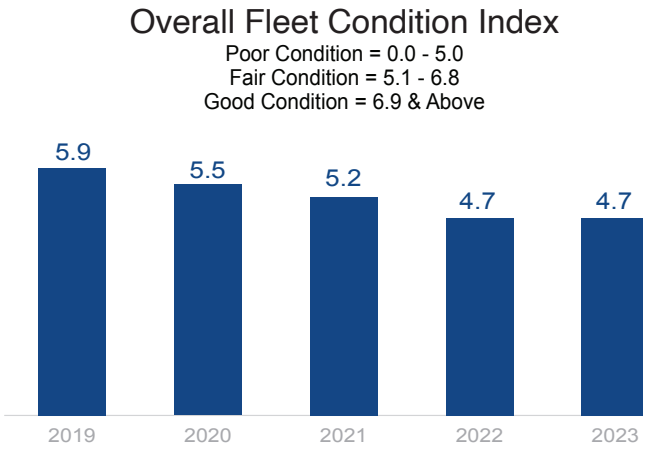
Fleet Condition Index

Description: Measurement of the current condition of NDOT's fleet.

Purpose: This measure is used to determine appropriate strategies for proper maintenance, repair, and replacement of fleet equipment.

Goal: Achieve and maintain an overall fleet condition index of good.

Outcome: The overall Fleet Condition Index for 2023 was 4.7. The rating shows that NDOT's fleet was rated in "Poor Condition." Fleet data also showed that over 66% of the core fleet is at or beyond its expected life-cycle age and unplanned repair costs continue to rise. With the rising cost of equipment, NDOT will need to increase its equipment funding to improve the overall equipment Fleet Condition Index.



NDOT's fleet replacement value is $324M for strictly Core Equipment

Exploring the Testing Work of NDOT's Materials and Research Division

The Materials and Research Division at NDOT focuses on a range of activities related to the development, testing and implementation of materials used in transportation infrastructure. Some responsibilities they perform are testing and evaluating materials, ensuring quality control, and analyzing data and costs.

For quality control, they conduct random core sampling of concrete through their Random Coring Program which tests for compressive strength and pavement thickness. Tests are run on-site at the NDOT lab to make sure the materials contractors are using meet NDOT's minimum specifications (minimum 3500 psi). The cement blend NDOT uses for their roads incorporates supplemental cementitious materials which reduce early deterioration, providing a cost-effective solution that is locally available. Additional core samples may be taken when there is a concern about strength or thickness for a specific placement or for forensic analysis to determine concrete pavement failures.

The Random Coring Program is important for two reasons. First, it functions as a verification tool over the contractor's and the concrete producer's quality control programs. Second, it provides a defined quality acceptance program.

The Materials and Research Division utilizes the NSI rating, a 0 to 100 index, for preservation treatment analysis. A rating of 70 or higher is considered satisfactory, aligning with NDOT's goal of 80 to 85% highway coverage. However, NSI rating is just one aspect influencing treatment decisions. As pavement naturally deteriorates, ranging from minor crack sealing to major overlays or rebuilds becomes necessary. Standardizing pavement condition assessments statewide aids NDOT in strategic project planning.

Nebraska Bridges in a State of Good Repair

Description: Measurement of the progress toward keeping state-owned bridges in a condition of good repair.

Purpose: All bridges in Nebraska are safety inspected every two years and the condition information is stored in the Nebraska Bridge Inventory. This condition information is used by the Bridge Management Section to determine cost-effective strategies to keep the bridges in good repair. The necessary work may include preservation, repair, maintenance, re-decking, rehabilitation, or replacement.

Goal: To have 95% of Nebraska state-owned bridges in good or fair condition.*

Outcome: 97.1% of Nebraska's state-owned bridges are in good or fair condition and 2.9% are in poor condition.*

Major Bridge Components - bridge deck, superstructure, substructure

Good - major bridge components are all in good condition or better

Poor - one or more major bridge components are in poor condition or worse

Fair - all other bridges

**Percent Good, Fair and Poor is calculated from bridge deck area.*

County Bridge Match Program

As part of the Transportation Innovation Act (TIA), the County Bridge Match Program (CBMP) was created "…to promote innovative solutions and provide additional funding to accelerate the repair and replacement of deficient bridges on the county road system." The program, started with a request for proposals in October 2016, has been extended by revised statute 39-2805 to terminate in June 2029.

The CBMP provides a means for NDOT to directly fund bridge construction projects that replace or rehabilitate bridges that are in poor condition or have operational deficiencies.

The program is administered by NDOT in coordination with a working group of County Highway Superintendents and the Nebraska Association of County Officials (NACO). With the extension of the program, there is an opportunity to adjust participation criteria.

Previous results from the CBMP have resulted in projects that have or will allow for replacement or removal of more than 360 deficient bridges in 58 counties.

For more detailed information about previous CBMP proposals and awards: dot.nebraska.gov/projects/tia/bridge-match/

Bridge Construction for I-80 Six-lane Widening West of Lincoln

The long-awaited work to extend the six-lane service on I-80 west of Lincoln has begun and eventually will be six lanes all the way to the Grand Island interchange. To reduce the impact on traffic, this work will be done sequentially on segments of the interstate that are around eight to 10 miles long. Each segment would be completed in about two years as the work advances westward. The exact strategies at the western end of the widening are still in preliminary design.

A total of about 93 bridges will be affected by the work with 29 of these carrying traffic over I-80 and the other 64 carrying mainline traffic. Almost all these structures were built with the original development of I-80 in the 1960s. This series of projects provides an opportunity to replace and repair these structures to assure that they can cost-effectively remain safe and serviceable for generations to come.

For each segment of construction, the work on the mainline I-80 will be phased to construct a few lanes on each phase. Phasing the work will ensure that traffic has minimal disruption. The mainline bridge replacement work will be done in coordination with the pavement construction for each phase.

The overhead bridge construction will also be coordinated with the pavement construction but the traffic on these bridges will not be maintained during their replacement. Instead, these replacements will be completed sequentially for every other overhead bridge. This way, when one bridge over I-80 is closed, the detour route can use the next nearest bridge over the interstate to minimize the inconvenience to travelers.

Bridge Investment Program

The Bridge Investment Program, or BIP, is a competitive, discretionary grant program that focuses on existing bridges to reduce the overall number of bridges in poor condition or in fair condition at risk of falling into poor condition. All levels of government, from states to Tribes and local governments, can apply for funding directly to FHWA, making it easier to advance projects, large and small.

On Dec. 20, 2023, FHWA released a Notice of Funding Opportunity (NOFO) for more than $9.5 billion for FYs 23-26 under the Program. The funding is broken into three categories: Large Bridge Projects (> $100M), Bridge Projects (< $100M) and Planning Projects. Per statutory requirements, between FY22-26, USDOT will award no fewer than one Large Bridge Project or two Bridge Projects to each state from which an eligible project is submitted and deemed justified. To date, Nebraska has received one BIP award, a $440,000 planning grant in 2022 for the City of Bellevue focused on the Fort Crook Road Bridge.

Eligible bridge project costs include project development, feasibility analysis, revenue forecasting, environmental review, preliminary engineering and design work, construction, acquisition of and improvements to land, environmental mitigation, construction contingencies and acquisition of equipment and operational improvements that are directly related to improving system performance.

While NDOT is invested in assessing and identifying optimal bridge projects for BIP grant application on the state system, it is also committed to finding ways to provide technical assistance to local agencies to support applications for funding at the Tribal, MPO, county, city, town, and village level. These supports include grant program fact sheets and NDOT letters of support as well as efforts underway to develop an NDOT infrastructure hub and grants pairing portal that will help local partners assess project fit and provide resources to directly assist in the application and administration processes.

Further detailed information about the Bridge Investment Program, including application templates, benefit-cost analysis tools and other resources to assist with application development, can be found on FHWA's site at www.fhwa.dot.gov/bridge/bip/ or email bridgeinvestmentprogram@dot.gov.

Nebraska Bridge Funding

Bridge Formula Program (BFP)

Approx. $6M Annually Awarded

Federal funds to replace, rehabilitate, preserve, protect and construct highway bridges – 15% of each state's distributed funds are set aside for use on off-system bridges.

All allocated funding is currently programmed.

Federal Fund Purchase Program (FFPP)

Approx. $12M Annually Awarded

Federal funds eligible for highway/bridge repair, replacement and maintenance.

Funding is automatically distributed by the state to first class cities and counties.

County Bridge Match Program

Approx. $4M Annually Awarded

State program allocating funds for the innovative replacement and repair of structurally deficient bridges on the county system.

$8M of the initial $40M funding remains for use in 2024 and 2025.

Bridge Investment Program (BIP)

Potentially, approx. $10B across U.S.

Federal Discretionary Grant program providing approx. $10B per year for the life of the 2023-26 program. Categories include: planning level projects, bridge projects (<$100M) and large bridge projects (>$100M).

Cost sharing requirements may apply. (To date, Nebraska has received $440,000)

MOBILITY

Improve Mobility on Nebraska's Transportation System Through Increased Reliability, Capacity, and Efficiency

The purpose of the goal is to improve mobility on Nebraska's transportation system through increased reliability, capacity, and efficiency. Goal objectives include reducing the duration of incident response and clearance times as well as improving the system's operating efficiency. By responding to and clearing an incident on the roadway as quickly as possible, traffic returns to normal conditions, thereby improving the system mobility.

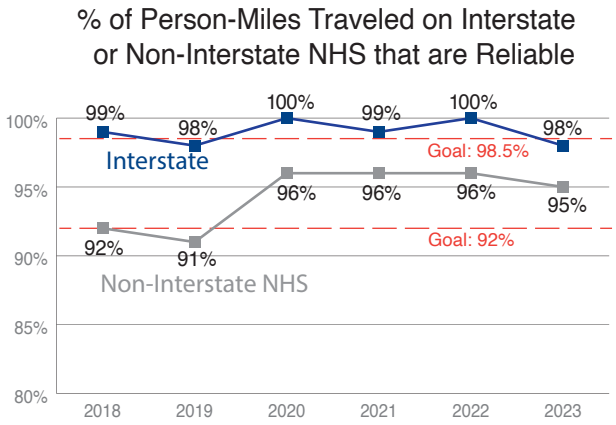
Percent of Reliable Person-Miles Traveled

Description: Measures primarily recurring congestion for the interstate system and the non-interstate National Highway System (NHS). Reports the percent of travel on roads where the worst day of the week's travel time is less than 50% longer than an average day.

Purpose: To increase awareness of reliable travel and reduce disruption from traffic congestion. Reliable travel offers travelers assurance of reaching their destination within a reasonable time. Through traffic management and operations strategies, NDOT can successfully reduce long travel times.

Goal: A reliability percentage of 98.5% for interstates and 92% for non-interstate NHS highways.

Outcome: The reliability percentage goal for interstates was 98%, narrowly missing the goal. For non-interstates, 95% of person-miles traveled were reliable, meeting the goal.



Greater Omaha Metro Area Enhances Safety with Motor Assist Relaunch

As the Greater Omaha Metro Area keeps growing, so does the area's traffic volume on the highways and interstates. The growth also translates into increased traffic congestion, more traffic incidents and a higher number of stranded motorists.

NDOT made a strategic decision on Nov. 1, 2023, to relaunch the motor assists program to ease the burdens of traffic demands and enhance safety for all road users. The program aids in providing safety for first responders at traffic incidents and helps prevent secondary crashes by aggressively, yet safely, clearing congestion-causing incidents and/or hazards from the roadway. It also provides timely and accurate information to the Statewide Operations Center to better allow them to manage traffic through various ITS equipment and technology. Additionally, it quickly addresses the needs of stranded motorists by providing: jump starts, tire changes and up to two gallons of fuel.

The program covers approximately 86 roadway miles within the Greater Omaha Metro Area with three trucks during peak travel times and two trucks in non-peak travel times. As of Feb. 24, 2024, there were 2,347 assists; over 1,100 of those assists were related to disabled vehicles. Others assists include abandoned vehicles, crashes, car fires, traffic control and scene safety.

COMMUNICATION, COORDINATION, COLLABORATION, & COOPERATION (4Cs)

Matching Transportation Needs to Grant Programs

On August 23, more than 225 state, federal, and local government officials gathered in Kearney for the state's first-ever Transportation Summit. The event focused on discretionary grant opportunities made available through the Infrastructure and Investment and Jobs Act (IIJA) of 2021. The IIJA, also known as the Bipartisan Infrastructure Law, serves as guidance for the distribution of federal formula and discretionary funding through 2026. It brought changes to the distribution of federal funding, creating opportunities for state Departments of Transportation and Local Public Agencies (LPAs) to gain access to additional federal funding.

These new discretionary grant opportunities bring updated processes and require deliberate approaches to how agencies develop projects. NDOT partnered with the Federal Highway Administration (FHWA) to provide an overview of the opportunities through the IIJA before diving into how to match transportation needs to grant programs, draft and submit grant applications, navigate federal funding requirements and execute grant agreements.

The FHWA presented alongside NDOT and provided information on technical assistance available to responsible charges and the process involved for direct recipient grants. NDOT was open with the LPAs in attendance about the challenges of competing for and executing projects with federal discretionary funds but pointed to the level of opportunity and their commitment to partnerships to assist Nebraska communities with the administration of projects.

WORKFORCE DEVELOPMENT

Support and Facilitate the Development of a Skilled Workforce that Enhances Workplace Productivity and Increases Opportunities for Employees to Learn New Skills

ELDT Training Program: Revolutionizing CDL Training

In February 2022, NDOT embraced the new federal requirements of Entry-Level Driver Training (ELDT) for all new or upgrading CDL holders. When faced with long waitlists, significant downtime and soaring costs associated with utilizing external training providers, NDOT recognized the need for a transformative solution.

In response, NDOT embarked on a groundbreaking initiative to develop an in-house CDL Training Program. Leveraging the expertise and dedication of our own workforce, NDOT launched this pioneering program in January 2023 with the objective of training CDL holders efficiently, cost-effectively and in alignment with the demands of operations.

Since its inception, NDOT's CDL Training Program achieved remarkable success, training 101 new CDL holders in its inaugural year alone. This achievement represents a significant cost savings between $8-10K per trainee in tuition and travel expenses. Also, it empowers NDOT to schedule flexible training sessions to accommodate the dynamic needs of the workforce and the demands of road maintenance and construction projects.

The success of NDOT's ELDT Training Program underscores a commitment to innovation, efficiency, and investment in the workforce. Employees are empowered to become certified ELDT trainers and are provided with the resources and support they need to excel. With this, NDOT meets regulatory requirements and sets a new standard for excellence in CDL training.

Looking ahead, NDOT remains dedicated to further enhancing and expanding its training program to meet the evolving needs of the workforce and transportation industry. This dedication ensures NDOT continues to drive success and safety on Nebraska's roads.

CDL Training Program Key Features

Customized Curriculum: Tailored to meet the specific needs and challenges of NDOT's operations and training curriculum to ensure CDL holders are equipped with the necessary skills and knowledge for success on the road.

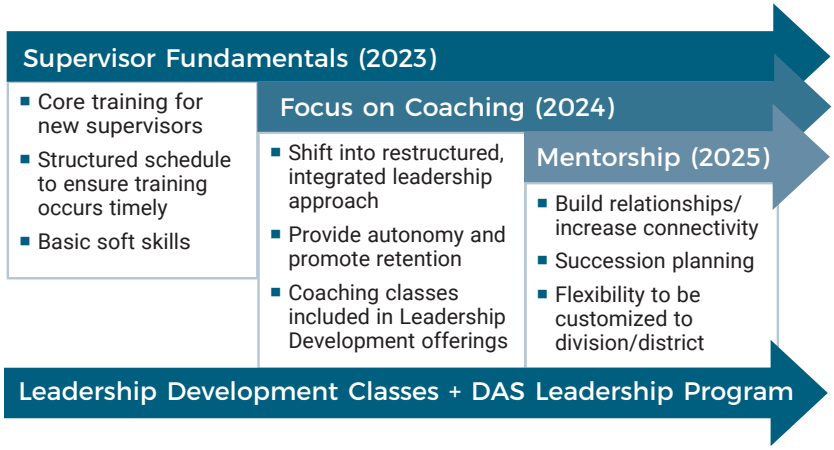
Certified ELDT Trainers: NDOT's dedicated team of certified ELDT trainers, drawn from within the department, bring real-world experience and expertise to the training process, ensuring high-quality instruction and mentorship.

Cost Savings: By eliminating the need for external training providers and reducing downtime associated with waitlists, the in-house program delivers substantial cost savings while maximizing operational efficiency.

Flexibility and Adaptability: With the ability to schedule training sessions according to operational priorities, NDOT can ensure that CDL training aligns seamlessly with the demands of NDOT's projects and workforce availability.

Leadership Development Program

"Back to the Basics" was the motto for 2023 Leadership Development. As part of the three-year Strategic Leadership Development plan, there was a focus on creating and implementing a program for all new supervisors to receive fundamental training on people leadership and basic management functions. Supervisor Fundamentals was rolled out to existing supervisors, and multiple sessions across the state captured the majority of supervisors from all divisions and districts. As this basic training was being facilitated, leadership development courses were offered as stand-alone courses for anyone wishing to enhance their leadership skills. The State of Nebraska Leadership Certificate Program was a new resource promoted to offer a structured Leadership Development Program. Seven NDOT People Leaders opted to participate in this valuable program in 2023.



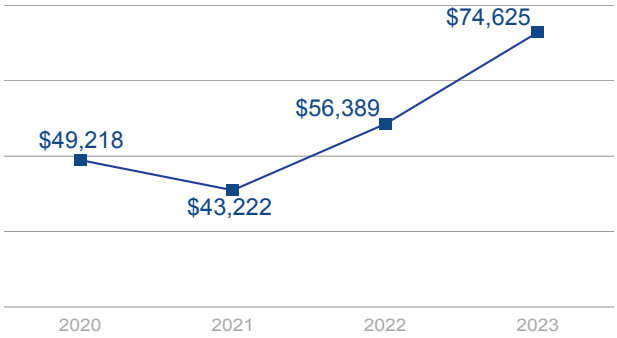
License/Certification Reimbursement Program

The License and Certification Reimbursement Program encourages NDOT teammates to improve their industry knowledge through relevant certifications, licensing and professional organization memberships. With the program continuing to grow each year, this year additional resources for exam preparation were made reimbursable but could also be directly purchased by NDOT with a limit of $2,000 per person. This procedure change was made due to the industry shifting to a plethora of online study preparation programs as opposed to hands-on study materials. Hands-on study materials are also available for the reimbursement program if that is preferred. As a note, the exam preparation fees are not included in the cost of license reimbursements listed in the chart. FE exam preparation and licenses are now also included in the procedure of reimbursable licenses/certifications.

Tuition Reimbursement Program

The tuition reimbursement program has proven to be an unequivocal success. Not only has it enriched the skills and knowledge base of NDOT employees, but it has also fostered a culture of continuous learning and growth within the organization. The program has empowered individuals to pursue higher education, enhancing their capabilities and enabling them to contribute more effectively to NDOT's collective goals. As a result, we've witnessed an increase of employees utilizing the tuition reimbursement program from previous years. The investment in our employees' education has undeniably yielded significant returns, both in terms of individual career advancement and organizational success.

Tuition Amount Reimbursed



AERONAUTICS DIVISION

Nebraska's airport system is a dynamic part of the state's economy which enhances quality of life through infrastructure and services that meet the diverse and evolving needs of all Nebraskans.

- Two bills passed the Nebraska Legislature in 2023 substantially impacting Aeronautics' ability to financially assist airports:
  - LB138 provides that administrative costs of the Division of Aeronautics may be paid out of the Highway Cash Fund at the discretion of NDOT's Director.
  - LB727 created the Department of Transportation Aeronautics Capital Improvement Fund, into which aircraft sales and use taxes are to be deposited. This fund is administered by NDOT to build, repair, renovate, rehabilitate, restore, modify, or improve infrastructure at public-use airports licensed by the Division of Aeronautics.
- During 2023, 12 State of Nebraska agencies utilized the state-owned King Air C90GTx for a total of 127 hours, which converts to 15,674 total statute miles and included operations to 23 airports in Nebraska.
- Completed installation and commissioning of a new Automated Weather Observing System (AWOS) at the Cambridge Municipal Airport (CSB) on Sept. 29, 2023. The Navigational Aids team maintains 22 non-federal AWOS sites across the state. These systems provide weather information to pilots, aviation-related websites, the National Weather Service, local media and is disseminated via National Airspace Data Interchange Network (NADIN).

79
Public-use Airports

9
Airports with Commercial Service

1,817
Based Aircraft at Public-use Airports

$93M
2023 Federal Grants for NE Airports

Federal Funding for Nebraska Airports

	FY19	FY20	FY21	FY22	FY23
State Apportionment	$3,047,769	$3,410,005	$3,096,016	$3,155,920	$3,110,839
NonPrimary	9,473,774	9,685,530	8,559,443	8,924,222	9,141,400
Primary & Cargo	16,278,164	12,492,485	6,824,918	1,867,000	7,850,500
Discretionary	5,126,462	2,946,280	2,900,919	7,849,488	16,612,161
Stimulus/Supplemental	---	15,194,523	11,039,000	3,369,500	---
CARES/ARPA	---	2,554,966	2,201,187	38,250	11,619,197
BIL	---	---	---	223,000	45,884,573
	$33,926,169	**$46,283,789**	**$34,621,483**	**$25,427,380**	**$94,218,670**

Valentine - US-83

For more on NDOT operations, projects and fiscal reports visit our Publications page
https://dot.nebraska.gov/news-media/publications/