

2040

NEBRASKA

Good Life. Great Journey.

STATEWIDE TRANSPORTATION PLAN



APRIL 2021



## A Message from the Director

### Dear Transportation Partner

Welcome to Nebraska’s 2040 Statewide Transportation Plan. Hundreds of citizens and stakeholders across Nebraska have invested energy and creativity in helping us develop policy recommendations for guiding the state’s multimodal transportation system through a time of profound change over the next twenty years.

I’m proud of the transportation system we Nebraskans have built together. It seamlessly connects businesses and residents across our state to markets and jobs and essentials like education and healthcare. I also know, however, that we have a duty to be ready for coming challenges and opportunities like accommodation of driverless vehicles, integration of digital technology across our network to make all modes safer, use of new data streams to support decisions, and managing risks to infrastructure resiliency.

In this long-range plan, we set a course for evaluating and – where appropriate – implementing policy and process adjustments to our standing operating protocols that will better prepare Nebraska for challenges and opportunities on the road ahead and continue to serve our mission to *provide the best possible statewide transportation system for the movement of people and goods.*

Thank you to everyone who contributed to the production of this plan including our NDOT staff, many Nebraska citizens, and the Department’s transportation partners who came together to help us create a performance-based plan that will ensure Nebraska meets the mobility and connectivity needs of all transportation system users in the future.

Sincerely,

**John Selmer**  
Director

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- Dan Cotton, University of Nebraska-Lincoln Extension Office
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# INTRODUCTION TO THE PLAN

Every day, a seamless transportation system comprised of statewide, regional, and local elements keeps Nebraska's businesses and citizens connected to markets and jobs that support the state's economy and to community essentials like education and healthcare. With these things in mind, factors like the arrival of driverless vehicles, shifts in where people live, or even rising resiliency risks to infrastructure mean the owners of Nebraska's transportation system – including Nebraska Department of Transportation (NDOT) and its partners in local governments and the private sector – should consider where and when standard operating procedures should be supplemented by new strategies to prepare for the future. The 2040 Statewide Transportation Plan (2040 STP) aims to explore the impacts of these factors on our transportation network over the next 20 years.

# PLAN PURPOSE

The 2040 STP gives the state and its partners in transportation end-to-end information about Nebraska's transportation system, how it is funded, and the influences that are most likely to propel changes between today and 2040. The 2040 STP uses this information to set 20-year goals and objectives for Nebraska's transportation system, set performance metrics for gauging progress, and to set a course for evaluating and – where appropriate – implementing new policies and processes. Together the 2040 STP ensures Nebraska is ready to rise to the challenges and opportunities on the road ahead to 2040 and continue its mission to **provide the best possible statewide transportation system for the movement of people and goods.**

## PLAN RECOMMENDATIONS

The 2040 STP centers on recommendations in seven focus areas that will ensure NDOT and its partners are equipped to make adjustments in policy direction where needed to best support Nebraska's transportation system over the next two decades:



### EXPAND DATA-DRIVEN DECISION-MAKING:

Leverage the power of data to better align decision-making on scoping, selection, and programming of projects with system users' priorities and needs.



### EMBRACE TECHNOLOGY OPPORTUNITIES:

Use technology to keep users safer, improve their mobility, and better support economic and community quality of life concerns shared by all Nebraskans, whether they live in cities or in rural areas of the state.



### EXPAND COLLABORATION WITH STAKEHOLDERS:

Make transportation function seamlessly across governmental divisions to better serve customers' mobility needs by strengthening collaboration among NDOT and its partners.



### IMPROVE ORGANIZATIONAL EFFECTIVENESS:

Continue to explore opportunities to improve organizational effectiveness in ways that foster efficiency, safety, and innovation.



### INCREASE MULTIMODAL CHOICES:

Support the evolving mobility needs of Nebraska's citizens through adoption of emerging multimodal transportation choices.



### IMPROVE SYSTEM RESILIENCY:

Take actions to ensure the resiliency of the transportation network not only against natural threats like extreme weather, but also human-caused threats that will grow with expansion of technology in transportation.



### BUILD EDUCATION AND AWARENESS:

Ensure users and stakeholders understand and support mission critical issues for Nebraska's transportation system.

1

## NEBRASKA'S TRANSPORTATION SYSTEM TODAY

describes conditions on Nebraska's transportation system, explains the state's transportation funding sources, and shows how input from a Stakeholder Advisory Committee and the public inform the 2040 STP's recommendations.

2

## INFLUENCES ON NEBRASKA'S TRANSPORTATION FUTURE

examines influences most likely to give rise to challenges and opportunities for Nebraska's transportation system and projects system needs for the next 20 years.

3

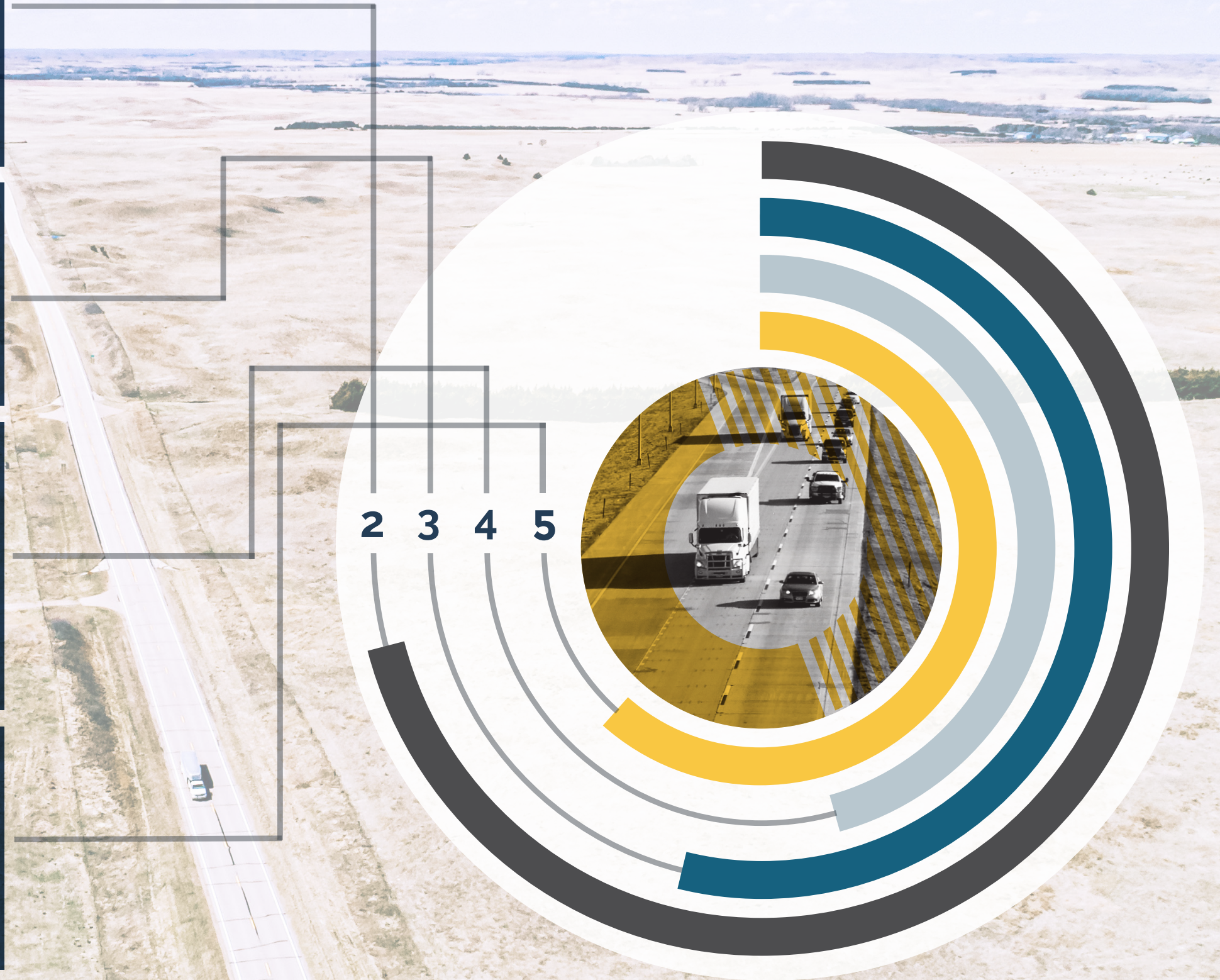
## GOALS, OBJECTIVES & MEASURES

identifies the strategic goals and objectives for Nebraska's transportation system, measures for gauging progress towards them and a system performance report on the future targets established for the federally established transportation measures.

4

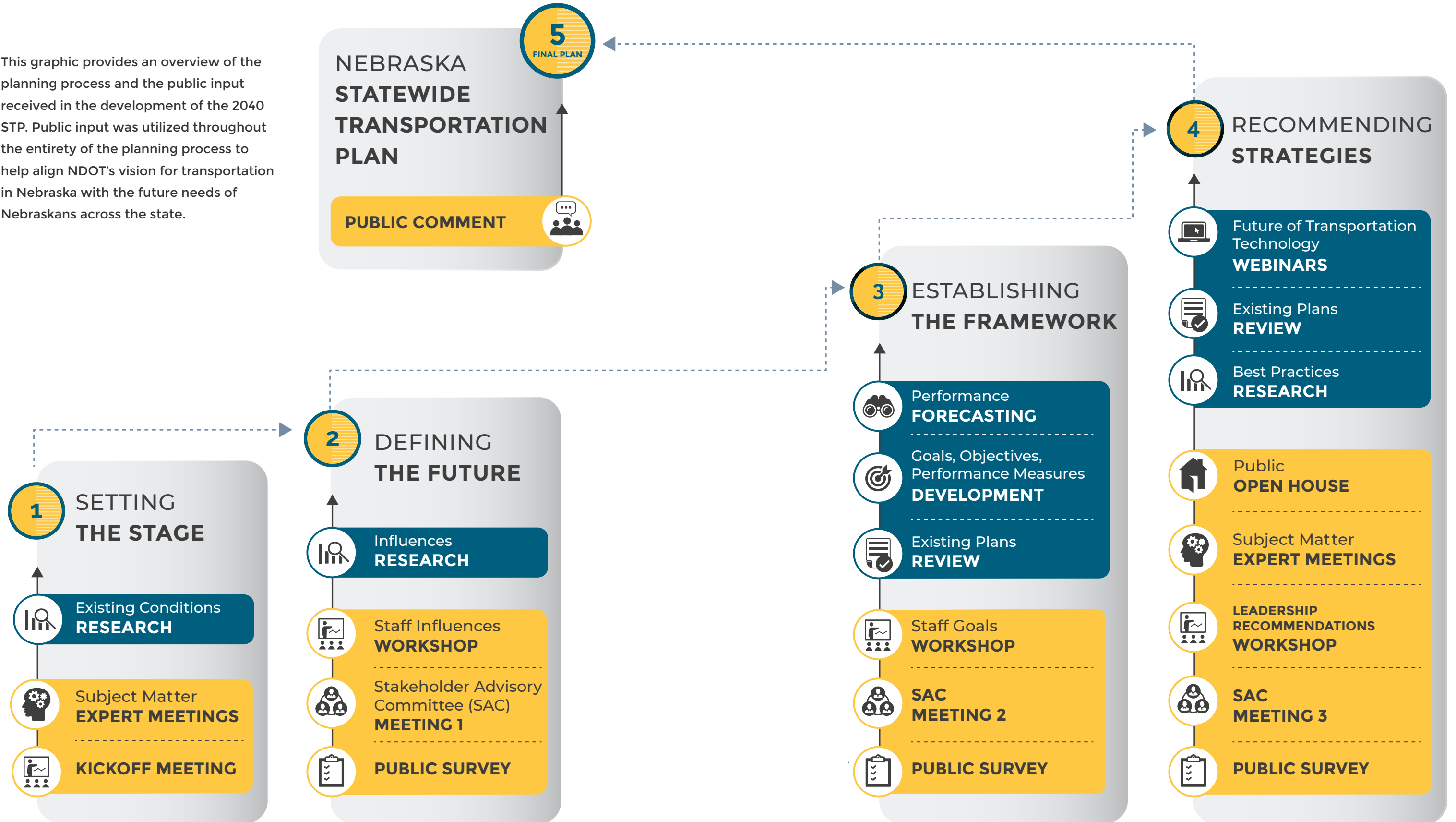
## POLICY RECOMMENDATIONS

outlines a course for NDOT to evaluate and — where appropriate — implement new policies and processes that supplement standard operating protocols and help Nebraska rise to meet new challenges and opportunities on the road ahead to 2040.



# THE PLAN DEVELOPMENT PROCESS

This graphic provides an overview of the planning process and the public input received in the development of the 2040 STP. Public input was utilized throughout the entirety of the planning process to help align NDOT's vision for transportation in Nebraska with the future needs of Nebraskans across the state.

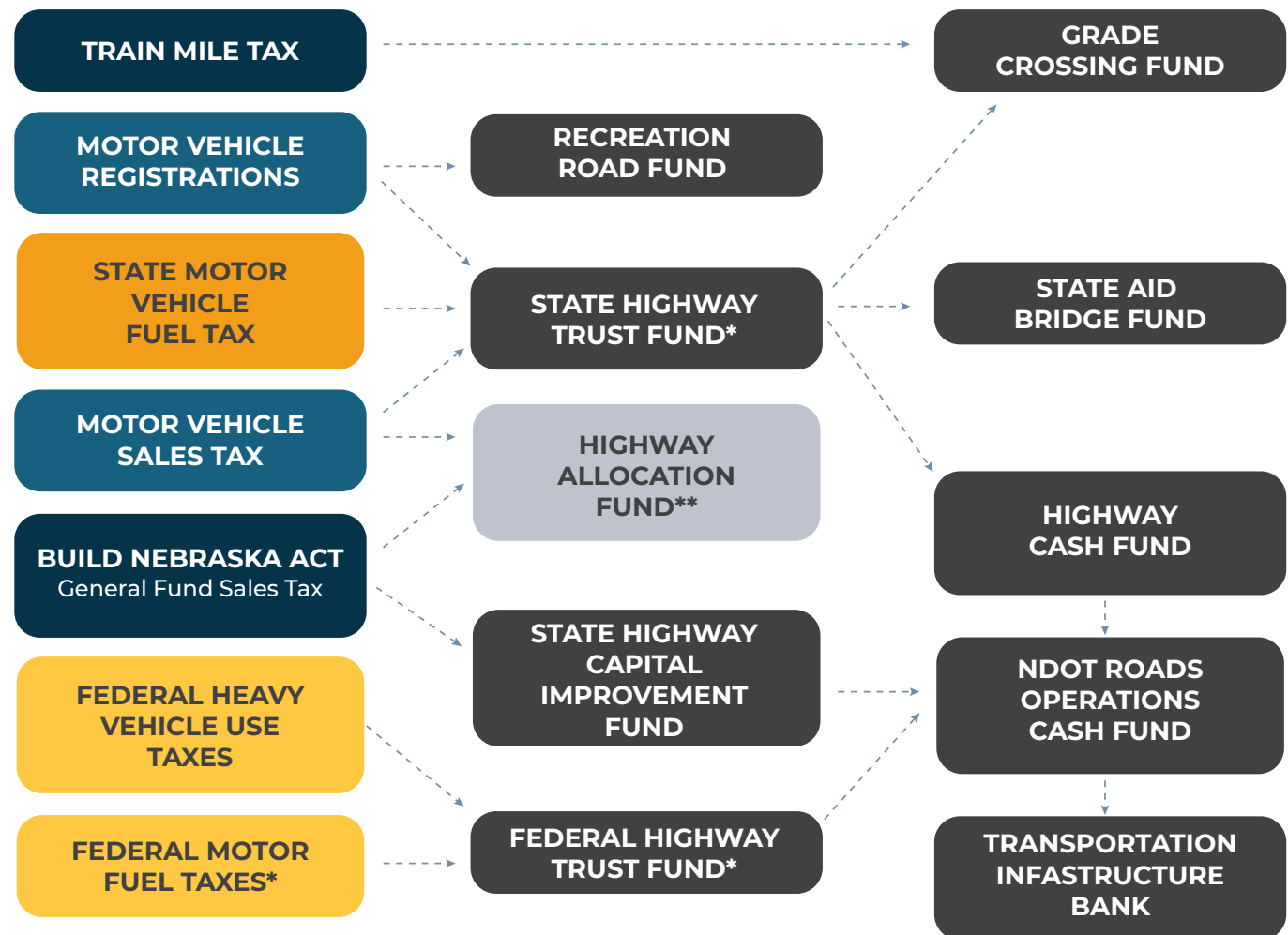




# NEBRASKA'S TRANSPORTATION REVENUE

Figure 1.2

Funding for transportation in Nebraska comes from a mix of federal aid and various state sources including fuel taxes, fees for vehicle purchases and registration, a train mile tax, and a dedicated fraction of state sales taxes.



\*Cities and counties receive a share of the State Highway Trust Fund revenue via the Highway Allocation Fund  
 \*\*Also directly funds city & county transportation

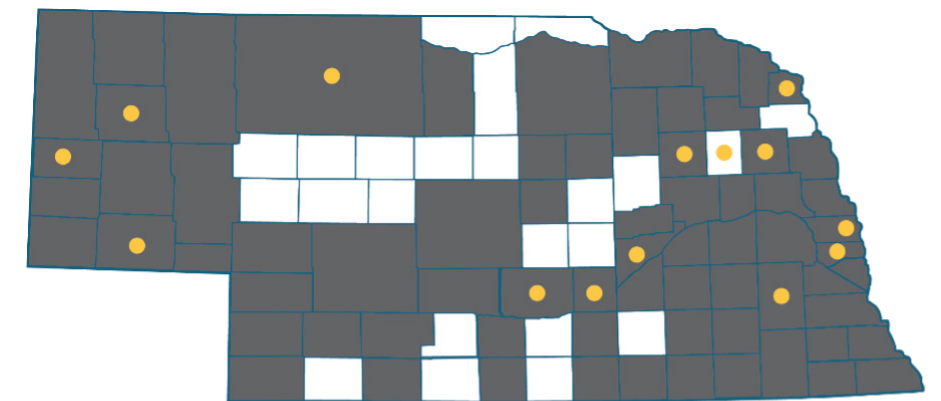
■ Federal Taxes    
 ■ State Fuel Taxes    
 ■ State Vehicle Ownership Taxes and Fees    
 ■ State Sales Tax

Federal aid for Nebraska's transportation is supported by federal taxes on fuels; tires for commercial trucks, truck and trailer sales; and the use of heavy trucks above 55,000<sup>1</sup> pounds. Nebraska statutes set state tax rates and fees and define how funds are allocated to NDOT and local transportation partners. Receipts from state transportation revenue sources are allocated by formula to the Highway Cash Fund and the Highway Allocation Fund, which support NDOT's and local governments' transportation needs respectively.

<sup>1</sup> Federal Highway Administration (2018). The Highway Trust Fund. Retrieved from <https://www.fhwa.dot.gov/policy/olsp/fundingfederalaid/07.cfm>.

# NEBRASKA'S TRANSPORTATION STAKEHOLDERS

The Nebraska transportation system serves all Nebraskan citizens and businesses and their communities. To ensure the 2040 STP reflects the diversity of transportation perspectives across the state, opportunities for input occurred throughout plan development.



● Location of SAC members  
 ■ Counties with public survey responses

Figure 1.3  
 Transportation Stakeholders

## 2040 STP WEBSITE AND DIGITAL SURVEY

NDOT developed a public website and an online survey to inform the public about the 2040 STP planning process and to solicit their input on transportation issues. Nearly 1,200 residents from 70 counties responded to the survey including a mix of transportation professionals, business owners, and community representatives. Survey results show Nebraskans are most focused on four transportation topics:

- Improved mobility through increased reliability, capacity, and efficiency and more choices;
- Safety for transportation system users across all modes;
- Preservation of existing system assets and resiliency to risks; and
- Readiness to take advantage of advances in transportation technology.

## STAKEHOLDER ADVISORY COMMITTEE

NDOT worked with a Stakeholder Advisory Committee (SAC) to gather insights from members representing Nebraskan agriculture, trucking, state and local governments, healthcare, community groups, tribal interests, and others. The SAC met three times to provide input on the 2040 STP and reviewed the draft plan.

## NEBRASKA 2040 STP STAKEHOLDER ENGAGEMENT TIMELINE



Figure 1.4  
Stakeholder Engagement Timeline



## FUTURE OF TRANSPORTATION TECHNOLOGY FORUM

NDOT invited expert panelists from across the United States in academia, government, and the private sector to present on numerous technical topics related to the future of transportation via three webinars which were recorded and provided on NDOT's 2040 STP website. Stakeholders across Nebraska participated in these three live webinars which educated NDOT and our stakeholders about:

- emerging mobility options;
- best practices other state DOTs are adopting to better prepare for the future of transportation;
- and preparations for rural connectivity and urban transportation in a future with automation.

The Future of Transportation Technology Forum introduced new concepts and ideas for NDOT and its partners to consider in planning for the future of transportation in Nebraska which were considered in the development of the 2040 STP recommendations. The Technology Forum expanded the dialog between NDOT and its partners about Nebraska's future transportation system.

1,183

Public  
Survey  
Responses

313

Attendees  
at the Future of  
Transportation  
Technology  
Forum webinars

968

Participants  
in the Virtual  
Public Open  
House

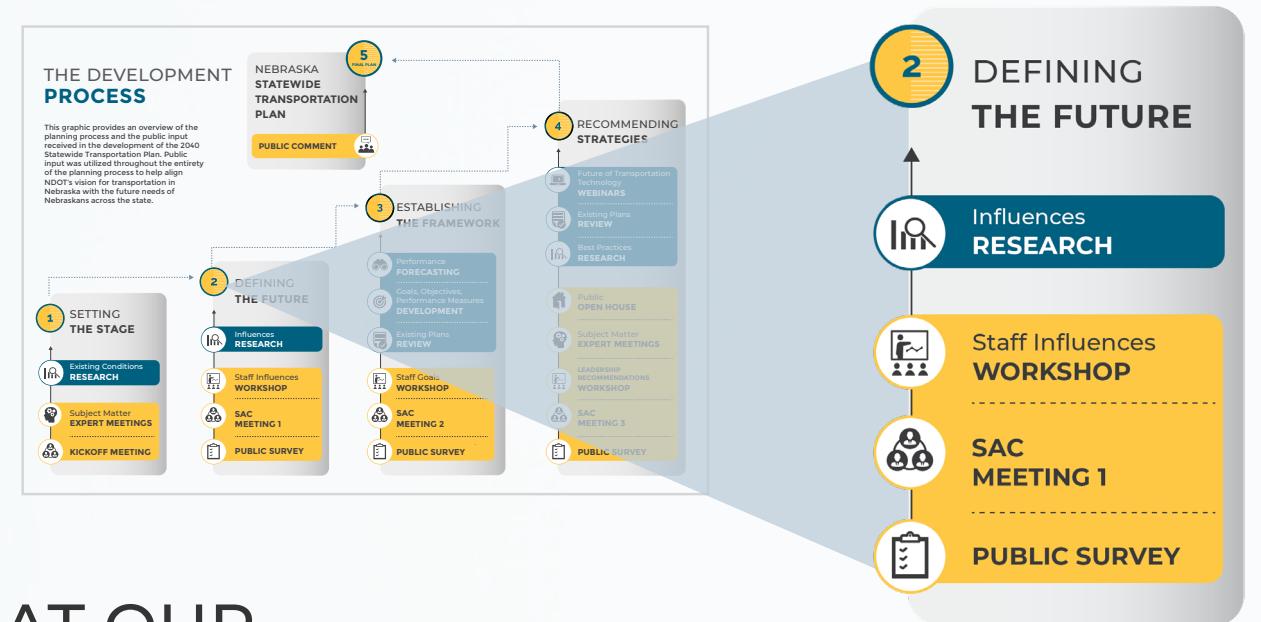
# 2

## INFLUENCES ON NEBRASKA'S TRANSPORTATION FUTURE

In the future, changes in a range of demographic, economic, technological, and environmental factors will have consequences for how, where, why, and when people and goods move on Nebraska's multimodal transportation system. These changes and their consequences — while hard to predict precisely — will undoubtedly result in new challenges and opportunities for transportation in Nebraska. This chapter describes eight influences that NDOT, its stakeholders, and the public identify as most likely to drive a need for adjustments in policy direction for Nebraska's transportation system over the next 20 years:

- Aging Population
- New Transportation Choices
- Smart Infrastructure
- Urban/Suburban Growth
- Electric Vehicles
- Extreme Weather Events
- Information Society
- Connected & Automated Vehicles

This chapter also includes an estimate of the statewide 20-year cost of meeting basic transportation needs across the state's multimodal transportation system and a projection of the share of future revenues from federal and state sources.



## WHAT OUR STAKEHOLDERS SAY

Transportation stakeholders in Nebraska were asked what influences they think will be important for Nebraska's transportation system over the next 20 years. They shared stories of changes – some already in motion and others likely to create pressure points in the future and the input they provided helped shape the eight influences described here.

### PUBLIC SURVEY RESULTS FIGURE 2.1

#### Top-Rated Technologies to Consider

- Electric Vehicles **52%**
- Smart Corridors **48%**
- Connected Vehicles **36%**
- Autonomous Vehicles **36%**
- 5G Service **35%**

#### Top-Rated Future Influences

- Changing Technology in Vehicles **55%**
- Increase Shared Mobility Options **44%**
- Changes in Where We Live **44%**
- A Change in How Our Transportation System Responds to External Influences, System Resiliency, Extreme Weather Events **43%**

# Aging Population

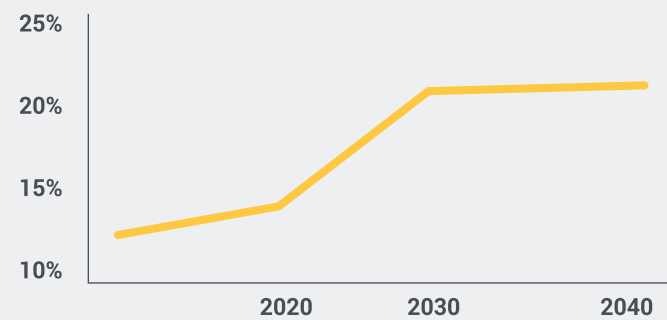
Like the United States as a whole, Nebraska's population is getting older.

In the last fifty years, the share of Nebraskans who are 65 and older has grown from 12 percent to 15 percent of the State's population. Over the next twenty years, the State's population will continue to age; those 65 years and older are expected to be nearly 21 percent of Nebraska's population by 2040.

**Transportation Consequences** - An aging population may need improved access to healthcare and human service resources and will increase demand for alternatives to driving alone such as transit service (including on-demand service). It may also lower demand for peak hour travel and put stress on revenue sources for transportation that depend on gasoline taxes if vehicle miles traveled (VMT) growth shrinks.



PERCENTAGE OF POPULATION 65+<sup>3</sup>



# Information Society

The internet is quickly changing the ways transportation supports work, commerce, education, and services like healthcare.

Today, for example, people are able to access work, medical care and education from home, and e-commerce is growing relative to bricks and mortar retail. The COVID-19 pandemic only accelerated these changes.

## Transportation Consequences

The rise of an information society may re-shape travel patterns; some workers, for example, may opt to live further from traditional labor hubs, which could increase travel, but others may choose non-traditional employment models such as telecommuting that could reduce travel. Local freight distribution patterns may shift as e-commerce takes hold and could affect asset deterioration.



Remote work and limited in-person social activity significantly decreased traffic during the 2020 COVID-19 global pandemic. Between mid-March and mid-May, **weekly traffic counts decreased between 19 and 35 percent compared to 2016-2018 averages in Nebraska.**



# Urban/Suburban Growth

Between 1990 and 2018, Nebraska's population grew 20 percent (320,000 people).<sup>3</sup>

Most of this growth (95 percent) was concentrated in Douglas, Lancaster, and Sarpy counties. These three counties, which are characterized by urban and suburban land uses, now account for 55 percent of Nebraska's total population and by 2040 they are expected to hold 63 percent of Nebraska's population.



# Innovative Transportation Choices

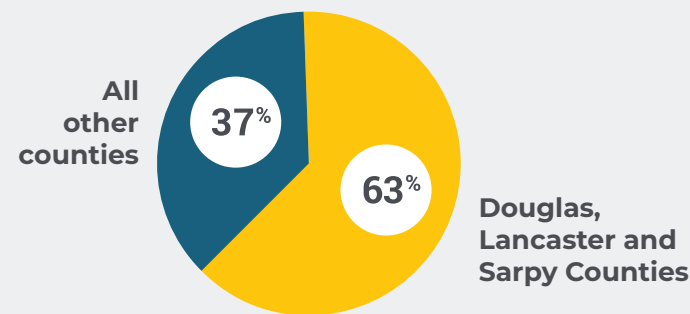
Enabled by the convenience of smart phones with built-in GPS and payment apps, new Mobility-as-a-Service (MaaS) choices like ride-hailing services are an emerging transportation alternative to traditional transit or auto ownership, particularly in urban areas where population density makes them cost-efficient.

Likewise, 'micro mobility' solutions that include shared-use fleets of bikes and e-scooters are highly visible in many cities. Despite their high profile, new transportation choices like MaaS or micro mobility account for a small fraction of total trips made today, but growth in use of these options is happening fast.

## Transportation Consequences

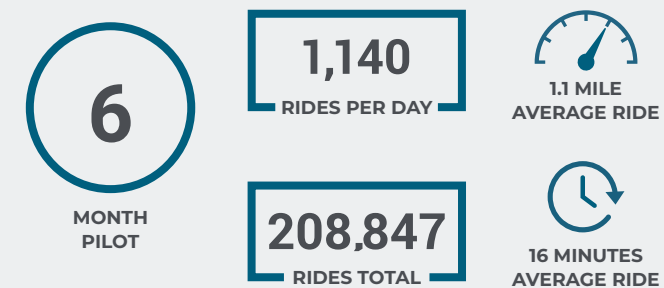
Ride-hailing services may generate more VMT as users switch from multi-passenger transit, or long 'dead head' trips made by drivers in-between rides. Urban infrastructure may need to adapt to pick up and drop off preferences of users. MaaS and micro mobility may also compete with traditional transit for riders and are deployed less often in dispersed rural environments where for-profit operators find fewer trips and therefore, less revenue.

2040 POPULATION DISTRIBUTION<sup>3</sup>



**Transportation Consequences** - The future demographics of communities across Nebraska could affect where transportation improvements will be needed, the type of improvements that will best serve community needs, and the sustainability of revenues to pay for maintaining and improving transportation. As they grow in prosperity and population, the state's most urbanized regions will bear the brunt of traffic growth, associated congestion and wear and tear on infrastructure, whereas maintaining a large local road system in expansive rural areas with a shrinking local tax base will be challenging.

OMAHA 2019 SCOOTER PILOT



<sup>3</sup> All population projections referenced in this plan are based on 2010-2050 Nebraska County Population Projections from the Center for Public Affairs Research at the University of Nebraska at Omaha. Drozd, D., & Deichert, J. (2015). Nebraska County Population Projections: 2010-2050. Omaha, NE: Center for Public Affairs Research; University of Nebraska at Omaha.

## Connected & Automated Vehicles

Connected vehicles (CVs) and automated vehicles (AVs) (sometimes referred to as autonomous vehicles) are two independent technologies that can work together.

CVs communicate with other vehicles or components of the transportation system; they can be human-driven or autonomously driven. AVs are vehicles that operate without a human driver. AVs can be connected or unconnected. Together, the technology is referred to as connected and automated vehicles or CAVs. Auto manufacturers have prototyped CAVs and are gearing up for mass production in the next decade. The National Highway Traffic Safety Administration says fully automated vehicles could begin sales around 2025.<sup>4</sup> By 2045, the Center for Transportation Research at the University of Texas at Austin estimates that nearly 25 percent of the light-duty vehicle fleet will be highly automated.<sup>5</sup> However, the data CAVs require to operate may limit their range in rural areas presenting a barrier to adoption.

### Transportation Consequences

The impacts of CAVs present both opportunities and challenges. CAVs offer long-term potential to improve congestion as they can operate safely while traveling close together and better utilize the roadway. But the convenience of CAVs may accelerate growth of vehicle miles traveled (VMT). Over the long term, CAVs are likely to reduce crashes, however, in the shorter term, a mix of CAVs and human-operated vehicles may increase safety problems for passengers as well as active transportation users. While CAVs may be able to more efficiently utilize transportation infrastructure, physical infrastructure may need to be re-designed to accommodate CAVs; for example, to allow pedestrians to navigate streets full of CAVs, or to accommodate pavement condition standards that meet technology needs.



The National Highway Traffic Safety Administration estimates **94 percent** of serious crashes are due to human error.

## Smart Infrastructure

In the future, connected vehicles could act as sensors that feed information to transportation infrastructure.

Standard features like toll booths or traffic lights, when connected, enable advanced traffic management systems capable of providing highly efficient incident response and day-to-day traffic optimization.

### Transportation Consequences

More weather emergencies, more truck traffic and more congestion are all challenges NDOT can expect in the future. Smart transportation corridors would help improve safety, relieve congestion, improve freight movement efficiency, and support emergency management on the most heavily traveled routes across Nebraska. Creating a system that is compatible with advanced technology may require investments such as connected infrastructure or broadband.



Field testing for vehicle-to-infrastructure applications indicate travel time could be reduced by **up to 27 percent** through improved traffic signal timing.

## Weather Extremes

Transportation resilience is the ability of a transportation network to avoid, adapt to, and bounce back from stressors on physical infrastructure and operations caused by natural disasters like extreme weather. Nebraska, like the nation, has experienced an increase in the frequency of billion-dollar weather events in the last four decades.

Most recently, in March 2019, winter storms led to widespread historic flooding. At the peak of the flooding, over 3,300 miles of roads were closed due to blizzard conditions or water on roads.

### Transportation Consequences

Extreme weather may accelerate pavement and bridge deterioration. In order to build infrastructure resiliency, NDOT and its partners may need to make strategic investments that incorporate hard-wearing design and construction practices. Improving resiliency may also require development of strategic system redundancies.



NUMBER OF NEBRASKA BILLION-DOLLAR DISASTER EVENTS (1980 - 2020)<sup>6</sup>



## Electric Vehicles

While electric vehicle (EV) ownership in Nebraska is low today, future EV sales are projected to grow as technology improves and becomes more affordable.

Beyond a need for new charging infrastructure, electric vehicles are unlikely to alter transportation system infrastructure needs, but they could dramatically affect funding for transportation, since revenue in Nebraska and the United States relies on gasoline taxes.

The mid-2020s are often predicted to be the point for price parity between electric and internal combustion engine vehicles.

<sup>4</sup> USDOT, NHTSA, Automated Vehicles for Safety (2020). <https://www.nhtsa.gov/technology-innovation/automated-vehicles-safety>

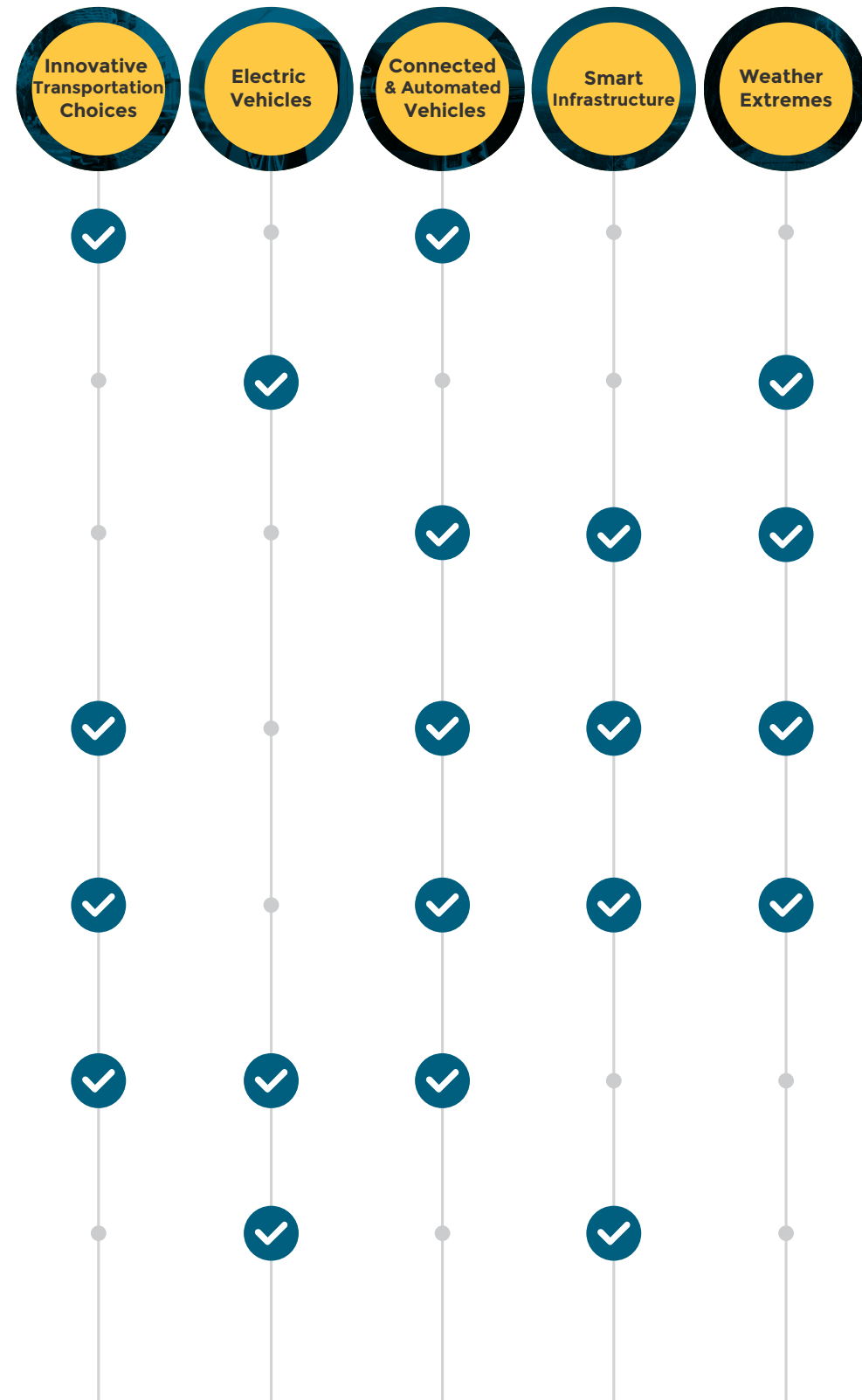
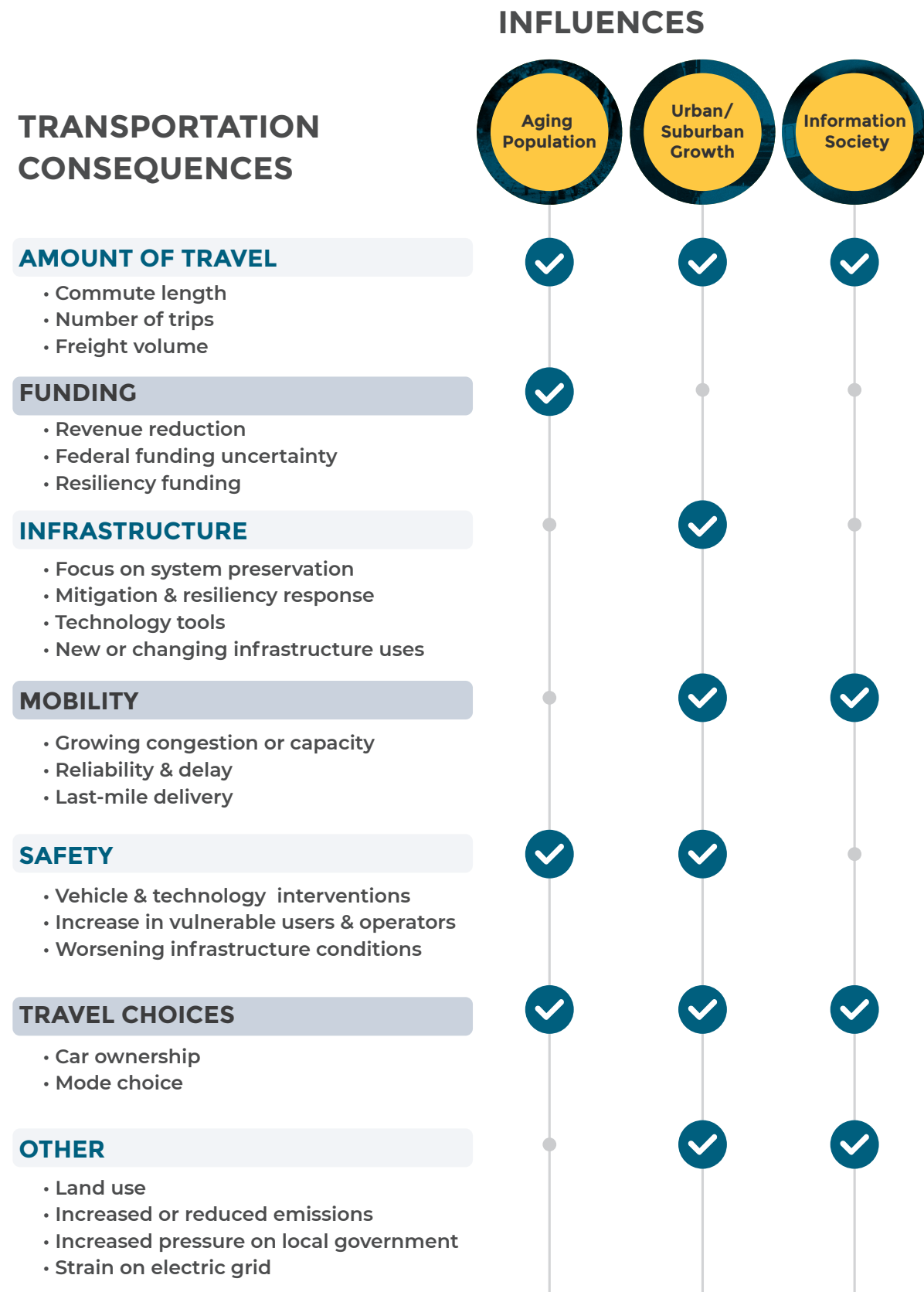
<sup>5</sup> Bansal, Prateek & Kockelman, Kara. (2017). Forecasting Americans' long-term adoption of connected and autonomous vehicle technologies. Transportation Research Part A: Policy and Practice. 95. 49-63. 10.1016/j.tra.2016.10.013.

<sup>6</sup> NOAA National Centers for Environmental Information (NCEI) U.S. Billion-Dollar Weather and Climate Disasters (2020). <https://www.ncdc.noaa.gov/billions>

Figure 2.2

# INFLUENCES AND TRANSPORTATION CONSEQUENCES

*This graphic shows the different ways that the 8 influences could affect Nebraska's transportation future.*



# TWENTY-YEAR TRANSPORTATION NEEDS

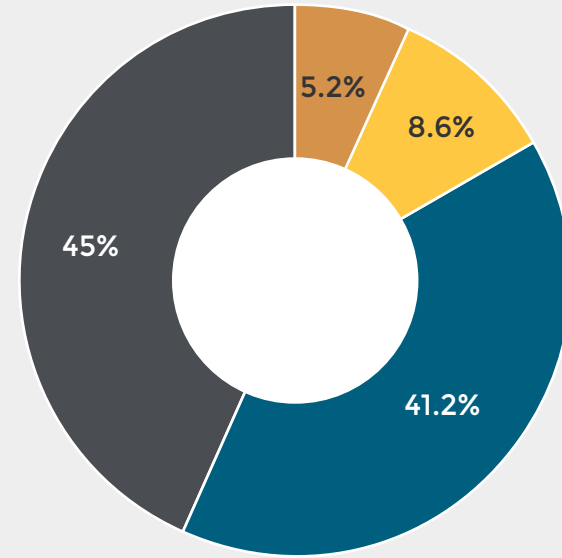
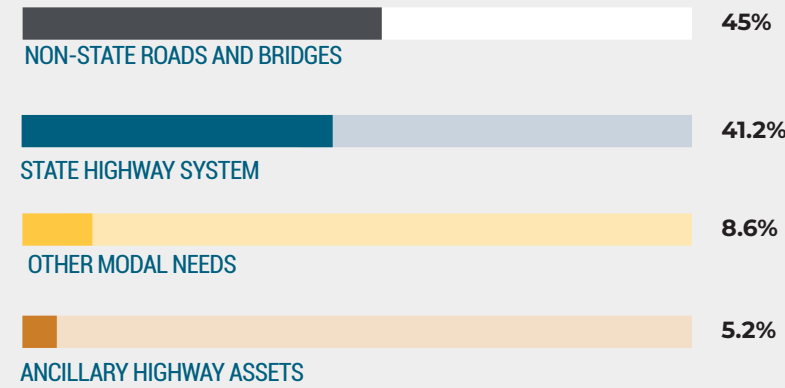


Figure 2.3  
Twenty-Year Need Forecast

As part of the 2040 STP, NDOT evaluated the long-term needs on the transportation system. NDOT annually develops a 20-year need forecast for NDOT assets. NDOT expanded the needs analysis for the 2040 STP to include urban transit, bicycle and pedestrian facilities, and local roads and bridges. The 20-year cost of meeting Nebraska's transportation needs across modes is estimated at \$28.94 billion. NDOT understands that the transportation system needs may change over the next 20 years and will continue to adjust its data driven NDOT needs analysis annually given future considerations.



Figure 2.4  
NEBRASKA'S TRANSPORTATION NEEDS

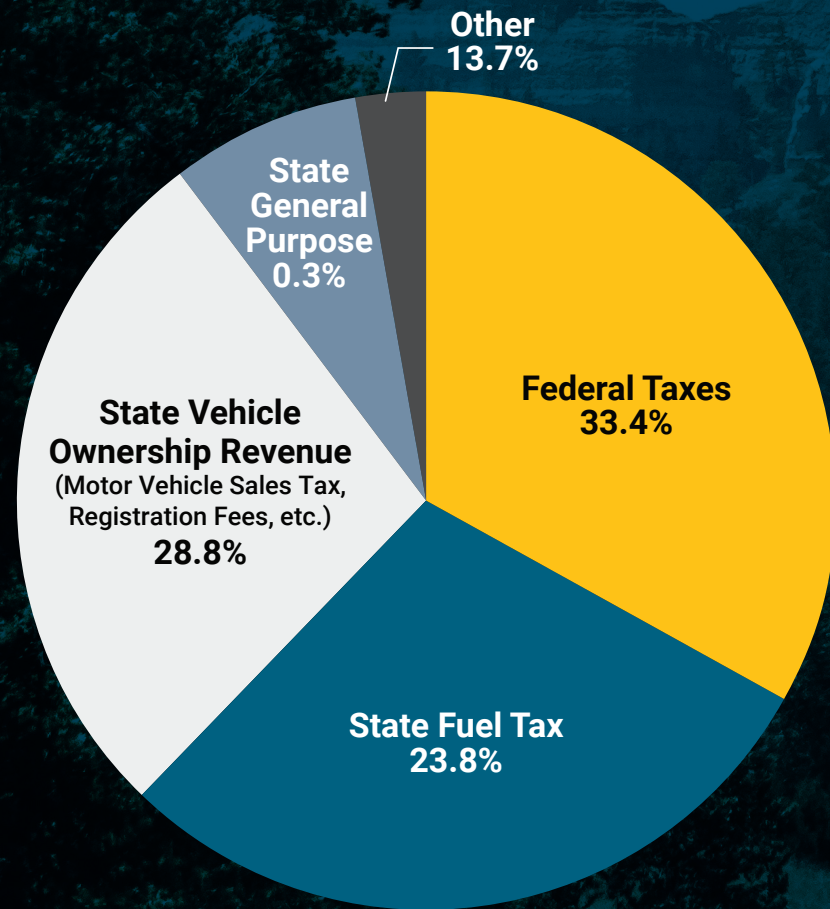
TYPE OF NEED - WHAT IS INCLUDED	DESCRIPTION	CONSIDERATIONS FOR THE FUTURE
<b>ASSET PRESERVATION</b> Pavement & bridges  <b>STATE HIGHWAY SYSTEM NEEDS:</b> 41.2% of total needs <sup>7</sup>  <b>SYSTEM MODERNIZATION</b> Roadways, bridges & rail crossings  <b>CAPITAL IMPROVEMENTS</b> Roadway expansion, grade separations	Pavement and bridge preservation needs are influenced by past treatments, environmental conditions, traffic volumes, traffic loads, and annual maintenance practices  System modernization includes improvements without adding capacity. It addresses safety, geometry, or mobility deficiencies, shoulder widths, and vertical curves.  Capital improvement needs are associated with projects that add roadway capacity or provide infrastructure for economic development. (e.g. bypasses, new roads or interchanges, additional lanes, upgraded freeways, or completion of the expressway system).	<ul style="list-style-type: none"> <li>• NDOT has systems and staff in place to explore new technology and materials that lead to improved pavement and bridge performance.</li> <li>• More frequent severe weather may increase asset preservation needs.</li> <li>• Changes in freight patterns (e.g. due to increasing e-commerce or drone delivery) could impact system deterioration.</li> <li>• CVs and AVs may alter standards of pavement as some vehicle technologies rely on clear pavement markings and smooth pavement surfaces.</li> <li>• As design standards and best practices advance, system modernization investments emerge, but the level of investment may fluctuate with community expectations.</li> <li>• Capital improvements should respond to or prepare for changes in population, land use, or community planning.</li> <li>• Freight changes resulting from driverless trucks, economic shifts, or first-and-last mile delivery of e-commerce goods could impact capital improvement needs as freight is both a large portion of travel and depends on travel reliability.</li> <li>• Vehicle technology advances may alter capital improvement needs. CAVs are expected to require less roadway, therefore increasing existing capacity.</li> </ul>
<b>ANCILLARY HIGHWAY NEEDS:</b> 5.2% of total needs  <i>(Rest areas, weigh stations, ITS, roadway maintenance)</i>	Ancillary highway needs cover a range of supporting transportation assets including ITS - digital communications networks that gather and disseminate travel information to the public. ITS devices include communications infrastructure, electronic devices, software, and hardware to manage the system, and various cameras and messaging devices.	<ul style="list-style-type: none"> <li>• ITS needs are likely to significantly increase if smart infrastructure and CAVs advance.</li> <li>• Other ancillary highway needs will adapt to the use of the future highway system; rest areas and weight stations may become less critical with CAVs and alternative freight delivery or more critical with increased freight demand and increased VMT.</li> </ul>
<b>NON-STATE ROADS AND BRIDGES NEEDS:</b> 45% of total needs  <i>(Local road &amp; bridge preservation)</i>	The non-state roads and bridges in Nebraska are not maintained by NDOT but comprise a large portion of the state's transportation system.	<ul style="list-style-type: none"> <li>• Like state roads and bridges, local asset preservation needs may increase with more extreme weather events.</li> <li>• If Nebraska's population concentrates in urban and suburban areas, the resources available and travel demand may concentrate as well.</li> <li>• As e-commerce grows, first-and-last mile freight connections on local roads and bridges may necessitate improvements.</li> </ul>
<b>MULTIMODAL NEEDS:</b> 8.6% of total needs  <i>(Freight rail, aviation, bicycle and pedestrian, intercity bus, rural transit, urban transit)</i>	Non-highway modes require unique infrastructure to serve the movement of people and goods via bike and pedestrian transportation, aviation, freight rail, intercity bus, rural transit, and urban transit.	<ul style="list-style-type: none"> <li>• Needs for non-highway modes are likely to increase if the aging population increases and Nebraska's population continues to concentrate in urban and suburban areas.</li> <li>• Growth in the number, use, &amp; sophistication of alternative transportation options will increase multimodal needs.</li> </ul>

<sup>7</sup> Based on NDOT Annual State Highway Needs Assessment report

# BASELINE TRANSPORTATION REVENUE PROJECTION BY FUNDING SOURCE

Figure 2.5  
20-Year Baseline Revenue Projection  
**Projected FY 2021-2040**

Nebraska's transportation system is funded through a mix of federal aid and state tax revenue. To help reflect NDOT's funding sources and how they will generate revenue over time, a revenue forecast was created based on current legislation and past trends.<sup>8</sup> These assumptions provide a baseline for understanding transportation funding through 2040, but trends and policy will shift as the future of transportation changes. Planning for and considering expected funding will help NDOT prepare for future performance and programming needs.



<sup>8</sup> Baseline revenue forecast assumes annual federal apportionments for highways and transit remain at fiscal year 2020 levels and that state laws regarding NDOT funding sources remain the same and that drivers of revenue growth such as vehicle miles traveled, sales tax, fuel economy, vehicle ownership, and electric vehicle ownership follow historic trends.

FUNDING SOURCE	CONSIDERATIONS FOR THE FUTURE
FEDERAL FUEL, SALES, AND TIRE TAXES	May trend downward with changing American travel patterns, vehicle fuel economy, and electric vehicle adoption
STATE FUEL TAX	May trend downward with vehicle fuel economy and electric vehicle adoption
STATE VEHICLE OWNERSHIP REVENUE	May trend upward or downward depending on population growth, inflation, and vehicle ownership per capita
STATE GENERAL PURPOSE FUNDS	May increase proportionally to the size of Nebraska's retail economy General Fund allocations expire after FY 2033
OTHER	Motor carrier-related revenues may increase proportionally to the size of the national economy; interest earnings will depend on cash management and interest rates



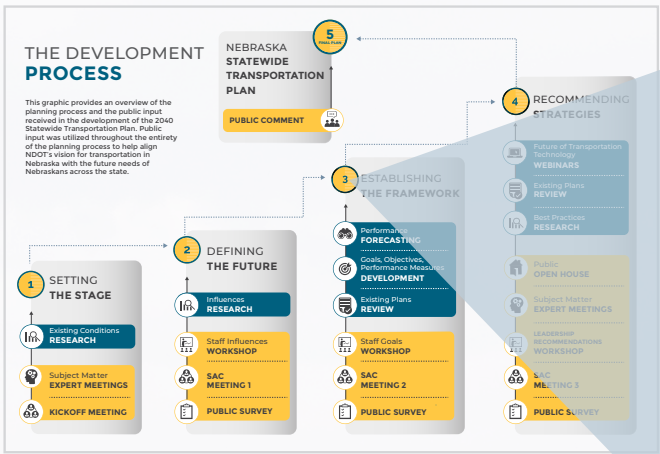
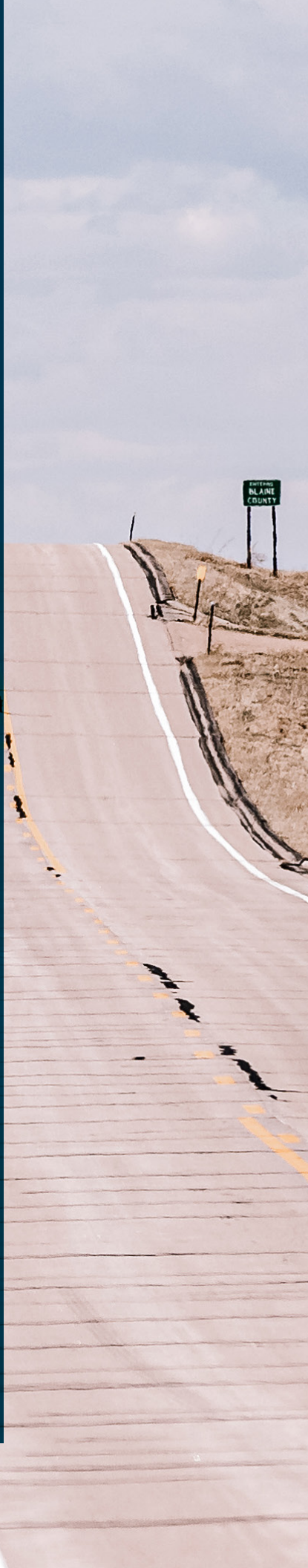
# 3

## GOALS, OBJECTIVES, AND PERFORMANCE MEASURES

Through the 2040 STP process, NDOT identified the anticipated future funding, expected future transportation needs, and potential future influences. Through consideration of the needs, revenue, and influences along with public and stakeholder engagement, NDOT identified the strategic direction for the 2040 STP.

Goals in the 2040 STP are broad statements expressing desired results that will support the department’s mission across a wide range of responsibilities. Objectives are assigned to each goal and serve as specific, measurable outcomes that NDOT should attain in order to achieve each goal. Performance measures are quantifiable data points that will measure progress towards each objective and goal. Some performance measures are required under federal rulemaking, while others are specific to Nebraska’s goals. The performance measures will allow NDOT to regularly track its progress towards achieving its objectives and make decisions that will help achieve the goals.

By setting long-range goals, objectives, and performance measures, NDOT can continue to “provide the best possible statewide transportation system for the movement of people and goods” in a changing world. NDOT will work in partnership with planning partners and local governments to work toward the 2040 STP goals and objectives.



## WHAT OUR STAKEHOLDERS SAY

The 2040 STP goals and objectives reflect priorities shared by Nebraskans. **Public Survey** - The 2040 STP’s public survey asked for input on the current state of the system and what respondents value most in Nebraska’s transportation system. Two-thirds of survey respondents indicated that **mobility access and choices** is the most important value for users.

In addition to mobility, the **safety of transportation system users of all modes** was selected as a top value by more than half of survey respondents. Public respondents want all users and transportation employees to be safe when using the system.

Additionally, respondents felt that **maintaining current system assets** should be an emphasis and existing assets should be prioritized over system expansion. Most respondents consider the current transportation system as average or better and indicated that NDOT should ensure the system remains in good condition across the state.

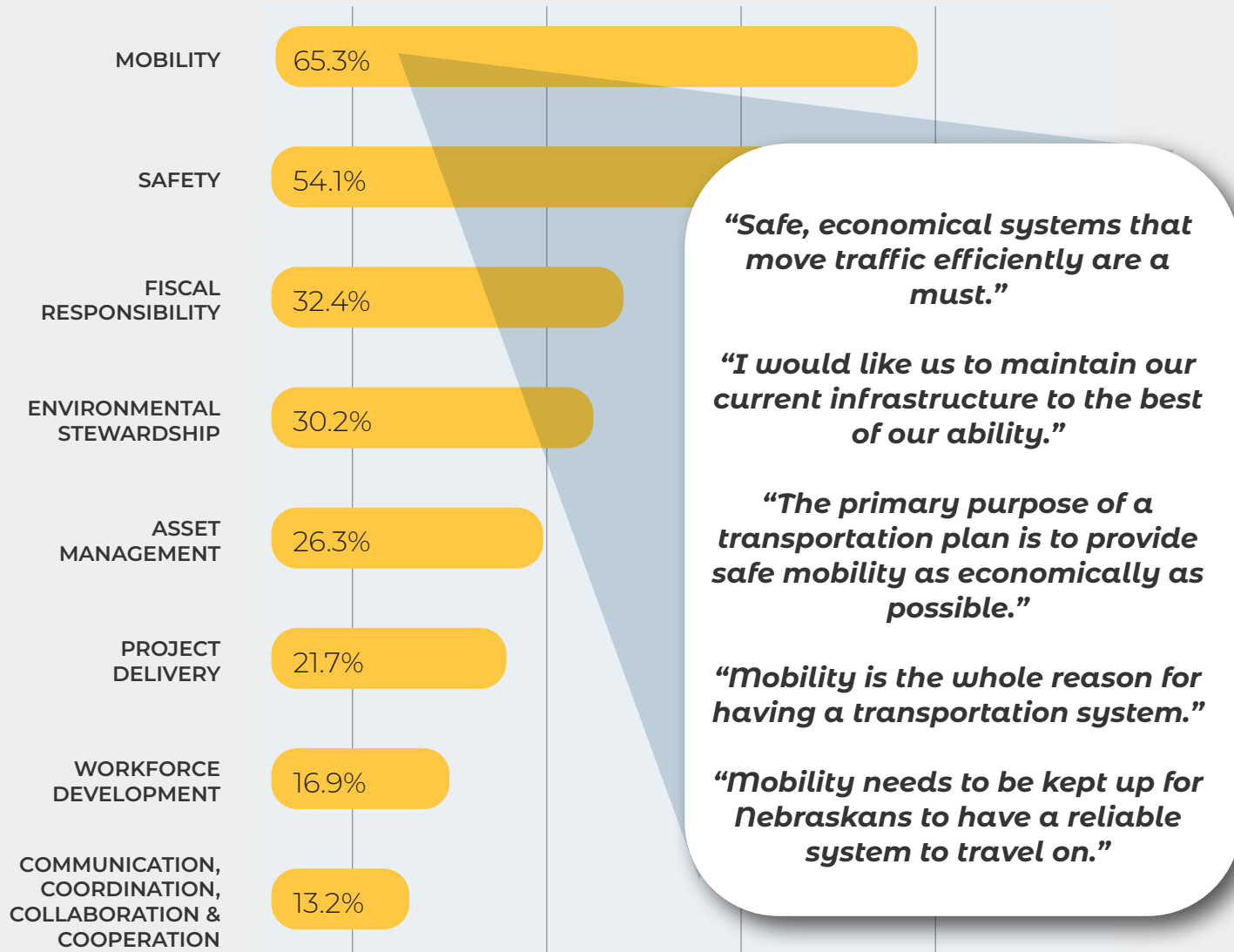
Other highly rated values such as **fiscal responsibility** and **environmental stewardship** are repeating themes throughout the goals and objectives. Priorities that arose from survey comments, such as resiliency to extreme weather, were also considerations in the development of the 2040 STP framework.

**SAC Feedback** - The SAC serves as a representative voice for Nebraska communities and interests and their feedback helped ensure that the 2040 STP’s goals and objectives meet the needs of Nebraskans. The SAC broadly supported the goals and agreed that they addressed Nebraskans’ transportation needs. For 18 out of 26 objectives, the SAC unanimously felt that the draft objectives supported the corresponding goals. For the remaining eight objectives, over 80 percent of the SAC agreed that the objectives supported the goal.

# TOP TRANSPORTATION VALUES

Figure 3.1

by Percent of All Public Survey Respondents



*“Safe, economical systems that move traffic efficiently are a must.”*


*“I would like us to maintain our current infrastructure to the best of our ability.”*

*“The primary purpose of a transportation plan is to provide safe mobility as economically as possible.”*

*“Mobility is the whole reason for having a transportation system.”*

*“Mobility needs to be kept up for Nebraskans to have a reliable system to travel on.”*

# THE 2040 STATEWIDE TRANSPORTATION GOALS

-  ASSET PRESERVATION
-  MOBILITY CHOICES FOR PEOPLE AND FREIGHT
-  SECURE & RESILIENT TRANSPORTATION
-  SAFETY
-  SUPPORT FOR ECONOMIC & COMMUNITY VITALITY

The 2040 STP goals, supporting objectives, and performance measures NDOT will utilize to assess progress toward the goals follow.



## ASSET PRESERVATION

*Keep Nebraska's multimodal transportation assets in a state of good repair*

- **Aging infrastructure** on Nebraska's transportation system will necessitate wise investment decisions to keep transportation assets in a state of good repair.
- Widespread adoption of **electric vehicles or other external influences** could drive a decline in gas tax revenues or **federal funding, risking the adequacy of resources for asset preservation.**
- **Concentration of population in urban and suburban areas** will create difficult decisions regarding asset management priorities.
- Increased **flooding** could strain asset preservation funding and spending priorities.

### OBJECTIVES

Optimize road and bridge preservation investment decisions to provide best use of limited funds.

Invest in the preservation of other important transportation assets including aviation, bicycle and pedestrian systems, transit facilities and vehicles, ITS, and rest areas.

Upgrade essential stormwater/drainage infrastructure on major highway system elements to minimize risk of flood damage or disruption.

Maximize the useful life of transportation assets by using condition data and responding with appropriate maintenance actions.

### PERFORMANCE MEASURES

- Percent of Interstate pavement in Good condition
- Percent of Non-Interstate National Highway System (NHS) pavement in Good condition
- Percent of NHS bridges by deck area classified as in Good condition
- Percent of non-NHS state highway system bridges by deck area classified as in Good condition
- Percent of transit revenue vehicles that have met or exceeded their useful life benchmark (ULB)
- Percent of state airports meeting minimum updated NASP (Nebraska Airport System Plan) standards



## MOBILITY CHOICES FOR PEOPLE & FREIGHT

*Provide efficient, affordable, and equitable options across all modes for moving people and goods throughout Nebraska and beyond*

- **Concentration of population in urban and suburban areas** of the state will necessitate increased efficiency of movement and reduction in travel time delays.
- **New technologies** will change mobility options and needs, including growth of mobility-as-a-service solutions, CAV, e-commerce, and remote work.
- Adequacy of funding for mobility improvements could be a concern if widespread adoption of **electric vehicles** drives a decline of gas tax revenues.
- The continued **aging of Nebraska's population** will drive a greater need for non-single occupancy vehicle (SOV) transportation solutions, particularly in rural areas.

### OBJECTIVES

Maintain or improve reliable travel times.

Optimize mobility investments to provide best use of limited funds.

Provide support for freight mobility needs across Nebraska.

Improve coordination, and partnerships among government entities and with the private sector to provide mobility options.

Use technology such as connected infrastructure and real-time travel information to improve the efficiency of the existing transportation system.

Improve system connectivity for all modes; particularly in underserved and fast-growing communities.

### PERFORMANCE MEASURES

- Percent of the person-miles traveled on the Interstate that are reliable
- Percent of the person-miles traveled on the non-Interstate NHS that are reliable
- Truck Travel Time Reliability (TTTR) Index
- Percent of programmed local road and street projects that are let in the programmed year
- Total number of dollars (millions) committed to local public government authorities
- Private sector and local investment created by the Economic Opportunity Program and the County Bridge Match Program
- System miles that are actively managed / monitored by ITS
- Annual ridership for urban public transit operators
- Annual ridership for rural public transit operators



## SECURE & RESILIENT TRANSPORTATION

*Manage the risk and magnitude of major disruptions to Nebraska's transportation systems*

- Increases in damaging **flooding** events and **security risks** like cyber-attacks that necessitate investment in resiliency strategies to mitigate risks from natural or human-caused disasters.

### OBJECTIVES

Reduce vulnerabilities on the transportation system.

Build redundancies into key routes to provide adequate continuity of operations in the event of disasters.

Secure critical transportation assets to protect users in Nebraska.

Provide adequate coordination among local, tribal, state, and Federal agencies to prepare for, respond to, and recover from events such as natural disasters, extreme weather, or terrorist attacks.

Maintain a secure ITS to protect the ITS infrastructure, personal data of customers, and transportation system data.

### PERFORMANCE MEASURES

- Average minutes per closure on I80
- Annual number of crashes on I80
- Percent of NDOT ITS assets that can perform with electric power grid disruption
- Percent of NDOT assets monitored by CCTV
- Number of 511 interactions via the website, phone calls, app, and rest area kiosks
- Total miles of road closed due to flooding



## SAFETY

*Provide a transportation system in Nebraska that is safe for all users*

- **New technologies** including **CAVs** and smart infrastructure will create both challenges and opportunities for safety.
- The continued **aging of Nebraska's population** will drive a larger need to consider the special safety needs of an older population.
- **Concentration of population in urban and suburban areas** of the state may heighten risks for vulnerable active transportation users.

### OBJECTIVES

Consider safety of relevant types of transportation system users in the scoping and design of transportation improvements.

Reduce fatalities and serious injuries on the multimodal transportation system to work toward zero deaths.

Improve work zone safety for both motorists and those working to improve our transportation system.

Foster a workplace culture of safety first.

Invest in safety technology (such as cameras, dynamic message signs (DMS), and fiber optics) improvements to safety and security for all users.

### PERFORMANCE MEASURES

- Rate of fatalities per 100 million VMT
- Rate of serious injuries per 100 million VMT
- Number of non-motorized fatalities and serious injuries
- Number of fatalities
- Number of serious injuries
- Work zone crashes per million dollars in construction costs



## SUPPORT FOR ECONOMIC AND COMMUNITY VITALITY

*Choose investments in Nebraska's transportation system that best support the vitality of Nebraska's economy and all of its communities*

- The **fourth 'industrial revolution'** will require Nebraska to adapt to emerging forces like CAVs, new mobility options, changing workforce characteristics, and evolution of transportation's role in industry.
- An **aging population** will demand new mobility options that best serves the transportation needs of an older customer base.
- Nebraska can capitalize on continued **concentration of population in urban and suburban areas** through transportation investments that attract jobs and residents to Nebraska.

## OBJECTIVES

Improve broadband access that supports both 'smart' transportation infrastructure needs and wider needs for communities 'connected' to digital resources.

Ensure project selection criteria consider social and economic factors as well as engineering and safety concerns.

Consider communities' wider quality of life concerns in the scoping and design of transportation improvements by coordinating closely with county, local, and tribal governments.

Minimize and mitigate environmental impacts in the design and construction of transportation projects.

Improve access to freight intermodal facilities, industrial land uses, and agricultural uses for the efficient movement of goods on the transportation system.

Improve transportation connectivity to established and emerging economic, employment, and social centers.

## PERFORMANCE MEASURES

- Percent of construction projects in National Environmental Policy Act compliance
- Percent of environmental commitments for construction projects resolved in a seven-day window
- Post-Consumer Recycled Content "Overall Replacement Content" to combine with Recycled/ Reused Materials from Maintenance Activities and Construction/Demolition Projects
- Total freight value moved
- Truck Count measured by truck annual average daily traffic percentage
- Number of projects made possible by the Economic Opportunities Program and County Bridge Match Program
- Number of full-time jobs created by the Economic Opportunities Program
- Number of counties with transit service

# SYSTEM PERFORMANCE REPORT AND FUTURE PERFORMANCE

In accordance with 23 Code of Federal Regulations Part 490, NDOT has established targets for Nebraska's transportation system performance in terms of safety, infrastructure (pavement and bridge) condition, congestion, and travel time reliability. NDOT and Nebraska's transit agencies have established targets for the condition of transit assets such as facilities, public transportation equipment, and fleet vehicles.

Tracking and reporting these measures gives NDOT critical information about important aspects of its near-term system performance related to the federal transportation performance measures. Setting data-driven, realistic targets for the measures allows NDOT to use its resources to improve performance that supports and aligns with the national transportation goals and those set in this 2040 STP. To help predict how future influences and system needs will impact future system performance, these short-term targets were also deployed in sophisticated statistical forecasting.

The forecasting modeled variations in the direction of selected influences (e.g. adoption of CAVs or a shift in population to or from urban areas of the state), the needs cataloged in the needs analysis, and the funding expected from revenue projections to predict and present different performance conditions for the future Nebraska transportation system. Lessons learned from this performance forecasting exercise are presented along with the system performance in the following sections. The strategies recommended in this plan will help NDOT work toward reaching the target performance.

## SAFETY

NDOT's safety targets are updated annually through a Highway Safety Improvement Program (HSIP) report, which uses a data-driven and strategic approach to improving highway safety. The HSIP also reports performance and identifies projects which will improve highway safety based on crash history, roadway characteristics, and available mitigating infrastructure improvements.



TABLE 1: NEBRASKA 2019-2021 SAFETY TARGETS

RELATED GOAL SAFETY	2019			2021
	ACTUAL	TARGET	TARGET MET?	TARGET
NUMBER OF FATALITIES*	248	239	X	241
NUMBER OF SERIOUS INJURIES*	1,400	1,540	●	1,408
FATALITY RATE PER HMVMT*	1.167	1.180	●	1.130
SERIOUS INJURY RATE PER HMVMT*	6.591	7.5	●	6.507
TOTAL NON-MOTORIZED FATALITIES & SERIOUS INJURIES*	129	140	●	126.6

PERFORMANCE MEASURE

\* LOWER IS BETTER

● YES - The target number was met

X NO - The target number was NOT met

When forecasting future safety performance through 2040 for the 2040 STP, the most impactful changes resulted from changes in:

- travel demand (fewer miles traveled per capita leading to fewer crashes per capita),
- urbanization (urban residents drive less, speeds in urban areas are often lower, and all else being equal, urban VMT results in fewer fatalities), and
- deployment of connected and automated vehicles.

While CAVs are anticipated to create dramatic safety improvements from better decision-making, increased awareness of surroundings, and the elimination of distractions, the predicted deployment and adoption of CAVs are unlikely to result in large safety benefits during the horizon of this plan. Meanwhile, NDOT has a meaningful opportunity to plan for and encourage CAV adoption that maximizes safety benefits in the 20+ year timeframe and to continue to build on recent safety improvements attributed to innovations in vehicle design, roadway engineering, emergency medical services, state safety programs, enforcement, and improved driver awareness.

## PAVEMENT & BRIDGE CONDITION

As per federal requirements, NDOT measures pavement condition through metrics including roughness, rutting, faulting, and cracking which indicate the overall condition of the pavement. Bridge condition is measured using the data in the National Bridge Inventory (NBI) and by considering the condition of different components of each bridge to evaluate its overall condition. Through its pavement and bridge management systems, NDOT preserves its system with a goal of maintaining Nebraska's transportation network at the highest possible level given finite funding. The infrastructure condition measures and targets are updated biennially.

Forecasting future asset preservation involved modeling the deterioration rate that will impact asset condition over time, accounting for programmed preservation projects, and

the future budget available to NDOT for improvements. While the conditions that alter deterioration (including VMT) were considered, the long lifetime of asset investments means performance will not change significantly during the period of this plan. Ongoing maintenance and preservation, however, will help prevent a fall off the performance ledge in 20+ years. Lastly, forecasting future performance clarified that while revenue is expected to change slightly as more alternative fuel vehicles enter the fleet, asset preservation performance can be stabilized with a heavier focus on NDOT preservation allocation.

Given a lack of drastic forecasted changes, NDOT can preserve assets through continued smart investments including making innovative, data-driven, efficient decisions, increasing knowledge and partnerships, and planning for resiliency.

TABLE 2: PAVEMENT PERFORMANCE TARGETS 2019 & 2021				
RELATED GOAL ASSET PRESERVATION	2019			2021
	ACTUAL	TARGET	TARGET MET?	TARGET
PERCENT OF INTERSTATE NHS PAVEMENT IN GOOD CONDITION**	80.3%		N/A	50.0%
PERCENT OF INTERSTATE NHS PAVEMENT IN POOR CONDITION*	0.1%		N/A	5.0%
PERCENT OF NON-INTERSTATE NHS PAVEMENT IN GOOD CONDITION**	58.1%	40.0%	●	40.0%
PERCENT OF NON-INTERSTATE NHS IN POOR CONDITION*	2.1%	10.0%	●	10.0%

\* LOWER IS BETTER    \*\* HIGHER IS BETTER    ● YES - The target number was met    N/A 2-YR Targets not required in initial performance report

TABLE 3: BRIDGE PERFORMANCE TARGETS 2019 & 2021				
RELATED GOAL ASSET PRESERVATION	2019			2021
	ACTUAL	TARGET	TARGET MET?	TARGET
PERCENTAGE OF NHS BRIDGES BY DECK AREA CLASSIFIED AS IN GOOD CONDITION**	56.5%	55.0%	●	55.0%
PERCENTAGE OF NHS BRIDGES BY DECK AREA CLASSIFIED AS IN POOR CONDITION*	1.9%	10.0%	●	10.0%

\* LOWER IS BETTER    \*\* HIGHER IS BETTER    ● YES - The target number was met    X NO - The target number was NOT met

# SYSTEM RELIABILITY

Reliability measures are meant to capture the consistency or dependability of travel times across different days or times of day by measuring the extent of unexpected delays.<sup>9</sup> NDOT calculates the percentage of reliable person-miles traveled on the interstate and truck travel time reliability (TTTR) using the National Performance Management Research Data Set (NPMRDS). The level of travel time reliability is calculated as a ratio of the 80th percentile travel time to the 50th percentile over an entire year. The TTTR index is a ratio of the 95th percentile travel time by the 50th percentile travel time on the Interstate. Updated biennially, the system reliability measures and targets strongly relate to the Mobility Choices for People and Freight goal.

**TABLE 4: SYSTEM RELIABILITY PERFORMANCE TARGETS 2019 & 2021**

RELATED GOAL MOBILITY CHOICES FOR PEOPLE AND FREIGHT	2019			2021
	ACTUAL	TARGET	TARGET MET?	TARGET
PERCENT OF RELIABLE PERSON-MILES TRAVELED ON THE INTERSTATE**	97.5%	98.9%	X	94.0%
PERCENT OF RELIABLE PERSON-MILES TRAVELED ON THE NON-INTERSTATE NHS**	91.3%		N/A	88.0%
TRUCK TRAVEL TIME RELIABILITY (TTTR) INDEX*	1.15	1.10	X	1.25

*2-YR Targets not required in initial performance report*

\* LOWER IS BETTER    \*\* HIGHER IS BETTER    ● YES - The target number was met    X NO - The target number was NOT met

When forecasted over the life of the plan, Nebraska's reliability was most sensitive to urbanization. If urban and suburban areas reach the projected level for 2040, interstate reliability falls below the four-year target but remains above 90 percent. More drastic urbanization, however, does not result in drastically different reliability as urban residents traditionally drive less. Considering the changing nature of Nebraska's population, numerous recommendations are included in this plan to enhance data-driven decision making, deploy tools and technology to optimize traffic operations, and increase transportation choices across all modes.

<sup>9</sup> FHWA. Travel Time Reliability Measures. [https://ops.fhwa.dot.gov/perf\\_measurement/reliability\\_measures/index.htm](https://ops.fhwa.dot.gov/perf_measurement/reliability_measures/index.htm)

# TRANSIT ASSETS

Transit Asset Management is a federal requirement for transit providers that use, own, or maintain assets while providing service. Transit Asset Management uses the conditions of assets to guide the optimal prioritization of transit funding to keep transit networks in a state of good repair and ensure safe operation of assets. NDOT serves as the sponsor for Nebraska's Group Transit Asset Management Plan for Tier II transit agencies which must be updated every four years. The group TAM plan reports performance targets for assets of 59 providers including tribal and municipal providers. Other urban and tribal providers directly report their performance targets to the National Transit Database on an annual basis.

**TABLE 5: 2019 TRANSIT PERFORMANCE TARGETS<sup>10</sup>**

RELATED GOAL ASSET PRESERVATION	GROUP PLAN AGENCIES	CITY OF LINCOLN	TRANSIT AUTHORITY OF OMAHA	WINNEBAGO TRIBE	OMAHA TRIBE PUBLIC TRANSIT	
ASSET CLASSIFICATION	REVENUE VEHICLES - % AT OR PAST ULB					
	BUS	N/A	21.57	16.00	40.00	N/A
	CUTAWAY BUS	50.00	89.75	10.00	0.00	N/A
	MINIVAN	50.00	N/A	N/A	N/A	100.00
	VAN	50.00	N/A	N/A	0.00	75.00
	AUTOMOBILE	75.00	N/A	0.00	N/A	N/A
	SPORTS UTILITY VEHICLE	50.00	N/A	N/A	N/A	N/A
	EQUIPMENT - % AT OR PAST ULB					
	AUTOMOBILE	N/A	N/A	66.67	N/A	N/A
	TRUCKS & OTHER RUBBER TIRE VEHICLES	N/A	50.00	100.00	N/A	N/A
	FACILITIES - % WITH TRANSIT ECONOMIC REQUIREMENTS MODEL (TERM) CONDITION RATING LESS THAN 3					
	PASSENGER/ PARKING	N/A	N/A	10.00	N/A	N/A
ADMIN/ MAINTENANCE	70.00	100.00	0.00	0.00	0.00	

N/A 2-YR Targets not required in initial performance report

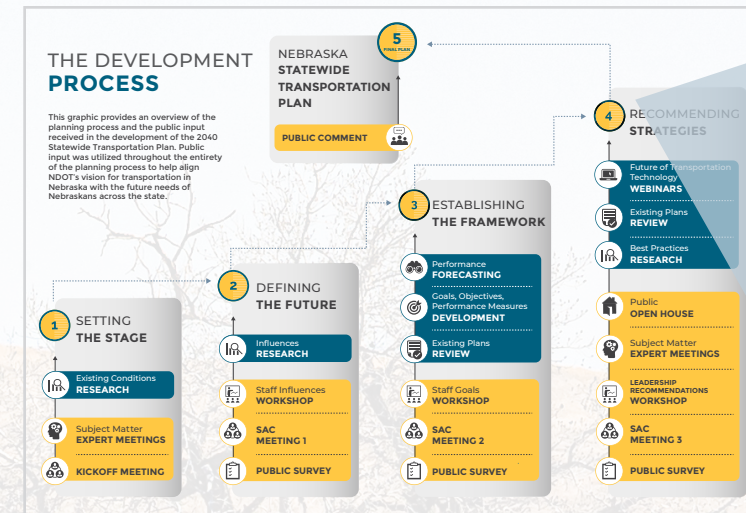
Transit asset condition was not included in the forecasting model; however, it is well documented that transit agencies across the nation have a backlog of asset maintenance that relies on continued, stable funding. Strategies that leverage funding and provide better information and infrastructure for improved transit access will help improve transit asset management performance through stable budgets and ridership.

<sup>10</sup> National Transit Database <https://www.transit.dot.gov/ntd>

# 4 RECOMMENDATIONS

The 2040 STP concludes with policy recommendations across seven focus areas that will ensure NDOT and its partners are equipped with a course for evaluating and — where appropriate — implementing new policies and processes that supplement standard operating protocols and make adjustments in policy direction where needed to best support Nebraska’s transportation system over the next two decades.

The recommendations are based on a mix of best practices, research, other strategy and planning documents by NDOT and other Nebraska agencies, public survey results, input from transportation experts external to and within NDOT, and the SAC. Some of the recommendations are already underway as NDOT prepares for the future every day with an internal research division and various plans, studies, processes, technology, and systems.



- 4 RECOMMENDING STRATEGIES**
- Future of Transportation Technology WEBINARS
- Existing Plans REVIEW
- Best Practices RESEARCH
- Public OPEN HOUSE
- Subject Matter EXPERT MEETINGS
- LEADERSHIP RECOMMENDATIONS WORKSHOP
- SAC MEETING 3
- PUBLIC SURVEY

## WHAT OUR STAKEHOLDERS SAY

Input from the statewide public survey guided the early development of the recommendations. When asked to rate the importance of 12 transportation improvement strategies on a scale of 1 (low priority) to 5 (high priority), Nebraska respondents prioritized maintenance and asset preservation strategies including pavement improvements, maintenance of existing assets, and improvements to the bridge system. Strategies to improve response to and preparation for major weather events, improve traffic congestion, and increase public transit options were also rated relatively high. The average priority rating for each proposed strategy is shown in Figure 4-1.

Figure 4.1  
Most Important Improvement Strategies  
by Average Public Survey Priority Rating



Input on potential strategies was also gathered from meetings with the SAC. Conversations throughout the planning process highlighted SAC priorities but the third and final SAC meeting provided an opportunity for direct discussion on draft recommendations. SAC members offered feedback and support and asked for clarifications that were integrated into draft strategies. The recommendations were then refined and approved by NDOT management, NDOT subject matter experts, and division heads during virtual meeting and interviews with the NDOT project team.

# RECOMMENDATIONS

The recommendations identified for the 2040 STP respond to current conditions, prepare for the anticipated future, and advance the strategic framework of this plan. The recommendations range from research and expansion of existing programs to the creation of new policies. The recommendations are intended to allow NDOT to:

- leverage opportunities, and
- adapt to and prepare for challenges ahead.

NDOT will consider these recommendations for implementation over the next 20 years. The recommendations are organized across seven themes which were continuously referenced as areas of interest and opportunity throughout the plan process. The seven themes are presented here alongside one of the numerous corresponding strategies. While over forty strategies were identified for the 2040 STP, many are already being advanced by the ongoing work of NDOT and its partnerships.

## 01. THEME 1: Expand Data-Driven Decision Making

Transportation is entering a period of great change - advances like driverless cars and MaaS are indicators of physical transformations ahead. Another feature of this transformation is growth in data related to just about every aspect of transportation. By turning data into knowledge, NDOT can maintain and improve the alignment of its investment decisions with system users' changing priorities and needs in an anticipated era of aging infrastructure, hard-to-predict resiliency challenges, more vehicles on the road, shifting freight patterns, rising demand for transit and active transportation solutions, and emerging technologies.

### HIGHLIGHTED RECOMMENDATION

**Expand opportunities to use predictive performance data-based tools & techniques to strengthen the prioritization of transportation needs and project selection decisions.**

NDOT uses data to drive decisions and forecast performance with bridge and pavement asset management tools through the NDOT Transportation Asset Management Plan (TAMP). NDOT should continue to examine historically observed data and develop strategies to use predictive, performance data-based tools and techniques in transportation decisions.



**Related Goal:**  
Asset Preservation

## 02. THEME 2: Increase Multimodal Opportunities

With changing demographics ahead - including an older population, more people living and working in Nebraska's cities, and a need to sustain dispersed rural communities - all Nebraskans can benefit from emerging and often technology-enabled multimodal transportation that supports the evolving mobility needs of communities where they live and work.

### HIGHLIGHTED RECOMMENDATION

Develop and adopt a 'complete streets' policy

'Complete streets' policies provide roadway design guidelines that prioritize safe, comfortable transportation by relevant users, including pedestrians, bicyclists, motorists, and transit riders of all ages and abilities. A 'complete street' is designed to balance safety and convenience for everyone using the road. NDOT should develop and adopt its own 'complete streets' policy and produce a 'complete streets' manual. Complete streets policies help planners and engineers design roads that improve safety and mobility for all relevant users, depending on the need and the physical context of the project.

**Related Goals:** Mobility Choices, Safety, Economic and Community Vitality



## 03. THEME 3: Upgrade Infrastructure Resiliency

With weather extremes expected to occur more frequently in the future, Nebraska's transportation infrastructure faces uncertain risks and NDOT should take actions to ensure the resiliency of the transportation network not only against natural threats like extreme weather but also against human-caused threats like cyber-attacks.

### HIGHLIGHTED RECOMMENDATION

Incorporate findings of the NDOT vulnerability assessment into the planning and design of NDOT's highways and bridges

NDOT is in the early stages of a vulnerability assessment to analyze the risk of flooding along NDOT roadways and bridges. NDOT should incorporate the findings of the ongoing flood vulnerability assessment into planning and design activities to reduce the flood risks of the assets included in the assessment.

**Related Goal:** Secure and Resilient



## 04. THEME 4: Embrace Technology Opportunities

Technologies like 'smart' infrastructure, EVs, AVs, or unmanned aerial devices are already starting to change transportation in many ways. Taking advantage of technology advances can help NDOT be the best steward for a Nebraska transportation network that keeps its users safer, improves their mobility, and better supports economic and community quality of life concerns shared by all Nebraskans, whether they live in cities or rural areas of the state.

### HIGHLIGHTED RECOMMENDATION

Create a CAV committee

CAVs promise more mobility choices, improved safety, and congestion relief, but could mean more vehicles on Nebraska's roads and require infrastructure improvements to accommodate them safely. To prepare for CAVs, NDOT should consider setting up a committee that can guide NDOT's efforts to examine CAV-related challenges in areas such as law enforcement, wireless data connectivity, infrastructure gaps, or outreach and education needs. This may help create new partnerships around CAV adoption in Nebraska.

**Related Goals:** Mobility Choices, Safety, Economic and Community Vitality



### HIGHLIGHTED RECOMMENDATION

Prepare for smart corridors in Nebraska

'Smart corridors' use a range of technologies to help overcome challenges like congestion, incident management, or severe weather. By continuously monitoring traffic and road conditions, for example, smart corridors can use automated tools like variable speed limit signs, electronic message signs, queue detection and warnings, dynamic junction and lane use controls, real-time truck parking information, adaptive ramp metering, or traffic signal management to improve traffic flow. NDOT should identify and prepare for the deployment of smart corridors across Nebraska in partnership with neighboring states as well as local and regional governments. With these partners, NDOT should leverage findings from the Advanced Transportation and Congestion Management Technologies Deployment multi-state pilot project along I-80, which offers lessons for other important transportation corridors in the state.

**Related Goals:** Mobility Choices, Safety, Economic and Community Vitality



## 05. THEME 5: Expand Collaboration with Stakeholders

By fostering stronger partnerships and more collaboration, NDOT can leverage the reach of its work via more engaged and supportive stakeholders who help create a more seamless transportation network across Nebraska that bridges governmental divisions to better serve customers' mobility needs.

### HIGHLIGHTED RECOMMENDATION

Engage with key stakeholders to make progress in broadband initiatives

The private telecommunication sector has experience in providing and expanding access to broadband for Nebraska's businesses and residents. NDOT can benefit from sharing knowledge with the private sector telecommunication industry through coordination with the private telecommunication providers and other governmental entities to increase access to broadband across Nebraska. NDOT should participate in statewide plans and initiatives to increase access to broadband or other forms of digital connectivity like 5G.

**Related Goal:**  
Economic and Community Vitality



## 06. THEME 6: Build Education and Awareness

By making changes in the ways NDOT educates and learns from its partners, the traveling public, and its own team, the agency can build its capacity to create a more seamless transportation network across Nebraska.

### HIGHLIGHTED RECOMMENDATION

Continue to support and expand on a distracted driver awareness campaign

While improvements in vehicle equipment like seat belts, airbags, or brake assist technology have helped reduce the danger of crashes, driver distraction caused by digital devices in vehicles is a fast-growing problem on Nebraska's roads that poses a rising threat to vehicle occupants, as well as to pedestrians and bicyclists who share the roads. NDOT should continue to partner with stakeholders through the Drive Smart Nebraska Coalition to continue to provide, update, and expand upon education to the public about the dangers of distracted driving.

**Related Goal:** Safety



## 07. THEME 7: Improve Organizational Effectiveness

NDOT's 2040 STP goals are ambitious. To achieve them, NDOT must continue to explore opportunities to improve its organizational effectiveness in ways that foster efficiency, safety, and innovation.

### HIGHLIGHTED RECOMMENDATION

Further expand use of practical design principles where appropriate

NDOT's project designs are increasingly shaped by 'practical design' approaches that evaluate whether strictly uniform standards can sometimes be replaced by design elements tailored to better achieve project-level goals and objectives. NDOT should seek to further expand the use of practical design approaches where applicable via updates to its road design manual.

**Related Goal:**  
Asset Preservation





# NEBRASKA

DEPARTMENT OF TRANSPORTATION

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