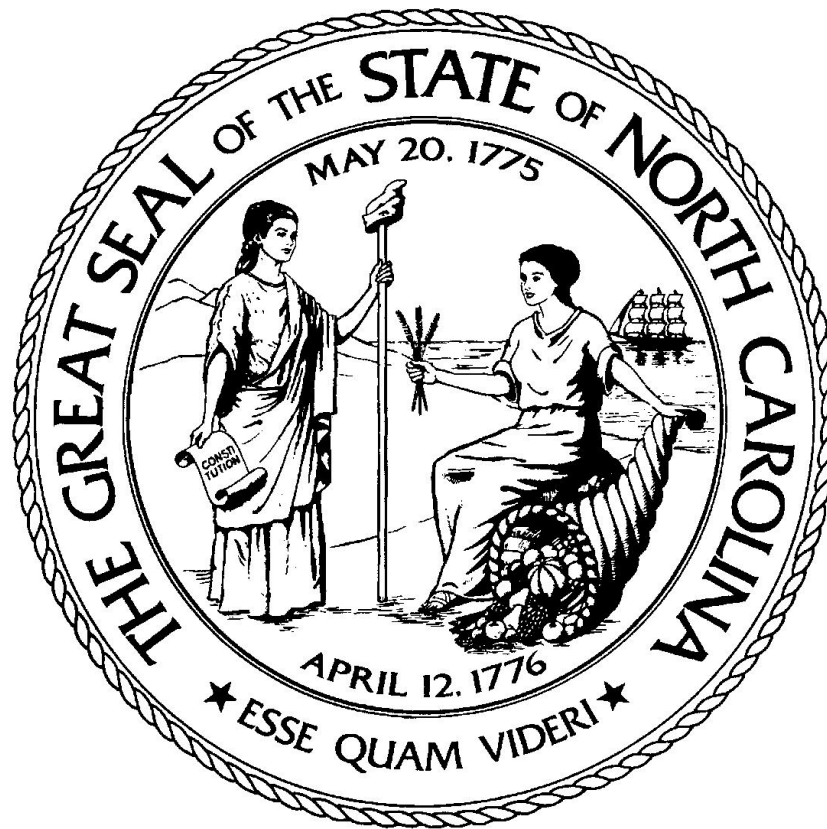


# North Carolina

## Department of Transportation

Strategic Plan

2021 – 2023



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# 1. Strategic Plan Executive Summary

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The North Carolina Department of Transportation (NCDOT) Strategic Plan clearly communicates to our customers and employees our long-term vision, core values, near-term mission statement, and six strategic goals. Our strategic goals encompass our expected outcomes, performance measures, and strategies to achieve each. Our six strategic goals are:

- Make transportation safer
- Provide GREAT customer service
- Deliver and maintain our infrastructure effectively and efficiently
- Improve the reliability and connectivity of the transportation system
- Promote economic growth through better use of our infrastructure
- Make our organization a great place to work

NCDOT uses strategic planning to identify priorities and clearly document and communicate how it plans to achieve its goals. It is important to recognize that a strategic plan does not fully describe all of the work activities an agency performs, but the critical strategic objectives to achieve its vision and mission.

NCDOT uses a three-phase approach to refine, develop, and adopt its biennial strategic plan. The initial phase is a thorough review of the existing vision, values, mission statement, and goals for the agency. NCDOT's Executive Leadership Team reviews the active mission, goal and value statements and works to refine the language of each to better reflect the current demands on our agency's services. Within the framework of this process, the executive team also identifies specific priority areas.

The next phase in the strategic planning process requires that the agency further clarify the results expected for each goal and identify the targeted strategies that will be implemented to achieve success. To that end executive champions are identified to oversee and ultimately hold the agency accountable for delivering positive results (including defining success, performance measures, and strategies).

Work groups, along with the champions, work to clearly describe the desired outcomes and agency-wide strategies that NCDOT will utilize to achieve its goals. Work groups consist of employees representing subject matter experts and diverse functions from across the agency.

The outcomes provide guidance for all business units within NCDOT as they plan their work activities for the next two fiscal years. NCDOT's divisions and business units then ensure their daily operations and efforts align with the overall priorities and strategies of the department. Furthermore, NCDOT's strategic planning efforts align to its employee's performance management system (NCVIP), ensuring what employees do each day is reflected in the agencies vision, values, mission, goals, and priorities.

## NCDOT Focus Areas and Initiatives:

*NCDOT will focus our work across three overarching focus areas, with ten supporting initiatives across the department. These focus areas, coupled with ten supporting initiatives will help us achieve our vision and execute our mission.*

**Deliver Today** - *We are going to safely deliver on our projects and services on time and on budget.*

- **Project and Service Delivery Resiliency Initiative:** We will deliver all of our work across all divisions in an efficient, effective, safe, resilient, and equitable manner. Everyday services will meet the needs of our customers, with an emphasis on accuracy, timeliness, and accessibility. Projects will be efficiently managed from start to finish, delivered on time and on budget, utilizing value engineering processes to ensure cost-effectiveness. We will increase efforts to build, maintain, and provide resilient infrastructure and services. We will provide training on procurement, project management, customer service, equity, etc. to ensure our employees are able to effectively manage their work.
- **Financial and Asset Responsibility Initiative:** NCDOT will be a financially accountable and transparent organization and ensure we take care of our assets in order to proactively work to build trust, stability, and predictability with our partners. Maintaining our existing assets is essential to demonstrate financial responsibility. Continual enhancement of our Cash Spend Plan System inclusive of external Dashboard Reporting will promote transparency and accountability. We will engage and connect with all partners in transportation to ensure a basic understanding of the financial health of the organization is achieved.
- **Effectiveness Measures Initiative:** To better demonstrate our value to the state, NCDOT will develop measures of effectiveness of our investments and services. Measures might include how our work aligns with needs of residents; return on investment; accessibility improvements, safety, etc. This initiative will also recommend a process for evaluating effectiveness as a standard project close-out activity.

**Modernize DOT** - *We will modernize our processes, operations, and culture.*

- **Workgroup on Revenue Streams:** Create a workgroup to examine existing fees and rates for cost recovery, as well as explore new revenue options. We want to provide stable and sufficient revenue to meet the transportation needs of the public.
- **Multi-Modal Coordination Initiative:** We will increase the emphasis on coordinating all modes of transportation in all our work. We will improve internal coordination across modal units as well as focus externally on how the coordination of our different modes can better serve the state. We want to ensure our policies, investments and services align with the needs of all residents, including those who do not have a vehicle or have other mobility challenges.
- **Initiative to Embed Diversity, Equity, and Inclusion in all Transportation Programs and Services:** Some customers in our state have benefited more than others from our policies, programs, decisions, and investments. Determine who has been historically underserved and calibrate our functions to serve them equitably going forward. Embed a DEI perspective in the decisions and services provided by the entire NCDOT organization from planning and operations, to construction and design.

- **Initiative to Modernize Technology and Increase Online Accessibility:** We will implement new or upgraded technologies to improve our operations, increase the transparency of our work, and modernize our systems and processes. We will focus both on internal systems that help us operate more efficiently and external technologies that allow our citizens, customers, and vendors more easily access our services and programs.

**Prepare and Attract the Workforce of the Future** – *NCDOT will be a forward-thinking, learning organization and will position our employees and contractors for success.*

- **Initiative to Recruit and Attract More Women and People of Color to All Levels of Workforce Including Our Contractors:** We will utilize a variety of revamped marketing and recruitment strategies to increase the diversity of our workforce at all levels. Efforts may include: increased social media presence; internship programs; partnerships with HBCUs; recruiting from more geographically diverse parts of the state; working with millennials at NCDOT; and partnerships with high schools. We will also recruit more historically underutilized M/WBE vendors to participate in our contracting efforts.
- **Initiative to Provide On-Going Professional Development:** To prepare our diverse workforce to grow and continue on career paths we will provide more on-going professional development. We will survey employees and supervisors about professional development needs. We will explore reinstating the Legacy Leadership program and creating a racial equity training. We will encourage more cross-training and mentorship relationships. We will offer skills-based training in topics including forecasting and project management, technology, and customer service.
- **Initiative to Build a Culture of Continuous Improvement and Innovation:** Throughout NCDOT, we want to empower employees to identify ways to improve services through continuous improvement. We will encourage innovation in all divisions, always seeking to do better.

### 3. Mission, Vision, and Values

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#### Vision Statement

North Carolina Department of Transportation: A global leader in providing innovative transportation solutions.

#### Mission Statement

Connecting people, products, and places safely and efficiently with customer focus, accountability, and environmental sensitivity to enhance the economy and vitality of North Carolina.

#### Organizational Values

- Safety (and Health\*) – We are dedicated to providing a safe transportation network and work environment.
- Customer Service – We serve our customers in a respectful, professional and timely manner.
- Diversity (and Inclusion\*) – We respect one another while drawing strength from our diverse opinions, ideas and experiences.
- Integrity (and Ethics\*) – We earn and maintain trust through data-driven decisions, accountability, and transparency.
- Quality – We pursue excellence in delivering our projects, programs, services and initiatives.
- Teamwork (and Collaboration\*) – We work together using our diverse strengths and skills, collaborating to solve problems and serve our communities.
- Innovation (and Creativity\*) – We promote the development and use of new and better solutions.

\*Note: Values included in parentheses denote the additional statewide values as defined by the Office of State Human Resources and included in NCVIP.

## 4. Goals, Objectives, and Performance Measures

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### Goal 1 - Make transportation safer

*NCDOT is committed to connecting people, products, and places safely. Focusing our work efforts and paying attention to every detail provides a safe traveling environment for our citizens, visitors, and employees. We will accomplish our goal of making transportation safer by reducing fatalities, severe injuries, and crashes on our entire transportation network.*

#### **1.1 Objective** – Reduce fatalities by at least 2 percent or greater

*Transportation related fatalities are an industry standard measure. Although NCDOT's strives for zero fatalities, a reduction in the annual trend would exceed expectations. Crashes, severe injuries, and seat belt usage are all leading indicators to the fatality rate outcome.*

##### **1.1.1 Measures of Success** – Fatality rate/count

*The fatality rate is calculated as the number (or count) of statewide fatalities per year divided by the vehicle miles traveled (VMT) in 100 million. VMT is defined as the total distance traveled in miles by all motor vehicles in a selected region in a given period of time. The transportation network fatality data is sourced from the Division of Motor Vehicles' Crash Database and managed by the Traffic Engineering Accident Analysis System. The Transportation Mobility and Safety Division tracks this measure.*

**Strategies/Initiatives** – Better utilize sound engineering principles to promote safety. Improve the quality of transportation safety data. Renew focus on employee's responsibility to model safe behavior and practices and to report safety concerns when appropriate. Maximize educational opportunities to promote safe behaviors of all transportation users. Employ evidence-based enforcement activities.

##### **1.1.2 Measures of Success** – Severe injury rate/count

*The injury rate is calculated as the number (or count) of statewide severe injuries per year divided by the vehicle miles traveled (VMT) in 100 million. VMT is defined as the total distance traveled in miles by all motor vehicles in a selected region in a given period of time. A severe injury is defined by the USDOT. The injury data is sourced from the Division of Motor Vehicles' Crash Database and managed by the Traffic Engineering Accident Analysis System. The Transportation Mobility and Safety Division tracks this measure.*

**Strategies/Initiatives** – Better utilize sound engineering principles to promote safety. Improve the quality of transportation safety data. Renew focus on employee's responsibility to model safe behavior and practices and to report safety concerns when appropriate. Maximize educational opportunities to promote safe behaviors of all transportation users. Employ evidence-based enforcement activities.

##### **1.1.3 Measures of Success** – Crash rate/count



*The crash rate is calculated as the number (or count) of statewide vehicle related crashes per year divided by the vehicle miles traveled (VMT) in 100 million. VMT is defined as the total distance traveled in miles by all motor vehicles in a selected region in a given period of time. All transportation crash data is sourced from the Division of Motor Vehicles' Crash Database and managed by the Traffic Engineering Accident Analysis System. The Transportation Mobility and Safety Division tracks this measure.*

**Strategies/Initiatives** – Better utilize sound engineering principles to promote safety. Improve the quality of transportation safety data. Renew focus on employee's responsibility to model safe behavior and practices while driving and to report safety concerns when appropriate. Maximize educational opportunities to promote safe behaviors of all transportation users. Employ evidence-based enforcement activities.

#### **1.1.4 Measures of Success** – Personal restraint usage (seat belt, child/booster seats)

*NCDOT's goal for vehicle occupant protection is to increase personal restraint usage through education and enforcement. NCDOT conducts a seat belt survey in 25 counties each June to determine North Carolina's overall seat belt usage rate, as required by the National Highway Traffic Safety Administration. The selection of counties is based on fatality and road segment data. NCDOT strives to increase the statewide safety belt use rate by decreasing fatalities from non-restraint use, increasing usage rates among the 16 to 24 year old age group, and increasing the usage rate among male drivers. The Governor's Highway Safety Program tracks this measure annually.*

**Strategies/Initiatives** – Improve the quality of transportation safety data. Renew focus on employee's responsibility to model safe behavior and practices and to report safety concerns when appropriate. Maximize educational opportunities to promote safe behaviors of all transportation users. Employ evidence-based enforcement activities.

## **Goal 2 - Provide GREAT customer service**

*NCDOT is committed to delivering its services with a customer focus. We will accomplish our goal of providing GREAT customer service through increasing customer satisfaction – focusing on our "GREAT" customer service program that stands for Greeting, Respecting, Empathizing, Answering, and Thanking each customer, providing efficient options to access information and services, educating employees and the public about the Department, and improving the delivery of all services.*

### **2.1 Objective** – Achieve an overall customer satisfaction result of 85 percent or greater

*To objectively determine the perceptions and level of satisfaction of NCDOT customers, a random, address-based sample of North Carolina residents is essential. Assessing customer satisfaction provides NCDOT useful feedback for a variety of subject areas including identifying performance improvement areas.*

#### **2.1.1 Measures of Success** – Percentage of positive customer feedback (through customer surveys)

*Tracking basic feedback from our customers is central to the surveys and everyday business of the agency. A statewide NCDOT customer survey is conducted annually to collect citizen feedback and benchmark results. The Performance Metrics Office tracks this measure.*

**Strategies/Initiatives** – Develop and implement effective customer feedback tools. Acquire, utilize, and maintain user-friendly business tools. Embed a customer service function within the organizational structure.

**2.1.2 Measures of Success** – Percentage of employee attendance in classes related to customer service

*NCDOT has implemented customer service training modules in recent years, specifically at the Division of Motor Vehicles, and tracking our employee attendance in the courses leads to overall agency customer satisfaction results. Human Resources tracks this measure.*

**Strategies/Initiatives** – Develop a tailored Customer Service Training Program incorporating industry standards

**2.1.3 Measures of Success** – Percentage of customers reached

*Tracking customers and citizens with whom NCDOT has had contact through various media and social media outlets allows for the transparency and fluidness of important NCDOT information. This measure of success is new and tracked by the Communications Office.*

**Strategies/Initiatives** – Continually educate external and internal customers on available services and share information about the Department. Develop and implement effective customer feedback tools.

**2.1.4 Measures of Success** – Percentage change in response time (DMV customer wait time)

*The reduction in time that Division of Motor Vehicle (DMV) customers must wait to receive services is important to the overall satisfaction of those citizens that require interaction. This measure, relatively new, is being implemented at all DMV facilities that interact with customers through a transaction tracking system. This measure of success is tracked by DMV.*

**Strategies/Initiatives** – Continually analyze and evaluate business processes, including staffing and locations.

### **Goal 3 - Deliver and maintain our infrastructure effectively and efficiently**

*NCDOT is committed to delivering and maintaining our infrastructure safely and efficiently with customer focus, accountability, and environmental sensitivity. We will accomplish our goal of delivering and maintaining our infrastructure effectively and efficiently by improving program and project delivery across all transportation modes, optimizing use of available resources to strengthen our infrastructure, and strategically improving our infrastructure to meet existing and future needs.*

### **3.1 Objective** – Let to contract at least 90 percent of our planned projects on schedule

*Delivering transportation projects efficiently and effectively is essential to NCDOT being successful. With dynamics of the project development process, achieving a delivery rate of 85 percent or greater meets expectations.*

#### **3.1.1 Measures of Success** – Percentage of projects completed on schedule

*Project completion is defined as when a project is “advertised for bid” and awarded to a contractor for construction (or “let to contract”). This step generally means that the construction phase of a project begins. The process step of “advertising for bid” is also referred to as “letting.” The Pre-Construction phase of a project is complete once it has been awarded to a contractor for construction. The percentage is computed by comparing the number of projects that were planned for let at the beginning of a year to the actual number of projects that were let in that year. This measure of success is tracked by the Schedule Management Office.*

**Strategies/Initiatives** – Develop priorities and realistic, attainable schedules that help establish stability in program delivery. Employ existing and new data, technology and products to improve results and save time and money. Increase departmental and partner knowledge to improve transportation decision-making and processes. Effectively plan, coordinate and provide feedback to make sure we include everyone needed to do it right the first time in a timely and efficient manner.

#### **3.1.2 Measures of Success** – Percentage of budget to actual expenditures

*NCDOT is a state agency that has legislative authority to operate on a “cash flow” basis. The department may let contracts against revenue it expects to receive in the future. Advantages of a cash flow method are: 1) acceleration of multi-year project awards; 2) user fees strategically expended for immediate needs; and 3) cash is not “idle” as multi-year project expenditures are matched to multi-year revenue collections. The Department’s objective is to forecast receipts and expenditures within a specific threshold to effectively manage cash. This measure of success is tracked by the Financial Management Division, Funds Administration Section.*

**Strategies/Initiatives** – Employ existing and new data, technology and products to improve results and save time and money. Increase departmental and partner knowledge to improve transportation decision-making and processes. Develop priorities and realistic, attainable schedules that help establish stability in program delivery. Effectively plan, coordinate and provide feedback to make sure we include everyone needed to do it right the first time in a timely and efficient manner.

### **3.2 Objective** – Achieve an infrastructure health composite index of 80 percent or greater

*In addition to delivery of transportation projects, the upkeep, health, and maintenance of our infrastructure is just as important. Our transportation infrastructure includes our bridges, pavements, and other roadside features such as guardrails, signs, lighting and vegetation.*

**3.2.1 Measures of Success** – Infrastructure health composite index (by asset type and mode)

*The infrastructure health index is defined as a composite score based on pavement condition, bridge health index, and roadside feature condition scores. Three comprehensive statewide surveys are used to evaluate the condition of the state highway system: (1) the Maintenance Condition Survey, (2) the Bridge Condition Survey, and (3) the Pavement Condition Survey. Pavement condition is defined as the percent of highway lane miles in good condition. Good condition for pavement is defined as a Pavement Condition Rating (PCR) value of 80 or higher. Bridge health is defined as the percent of bridges in good condition. A bridge is considered to be in good condition if the Level of Service (LOS) for Deck, Sub-Structure and Super Structure are all greater than or equal to 6. The Roadside Feature Condition is defined as a weighted value score that represents the physical condition of all highway features and elements excluding pavements and bridges. The composite index is a weighted average of the three metrics described above. This measure of success is tracked by the Transportation Asset Analytics Unit.*

**Strategies/Initiatives** – Develop priorities and realistic, attainable schedules that help establish stability in program delivery. Employ existing and new data, technology and products to improve results and save time and money. Increase departmental and partner knowledge to improve transportation decision-making and processes. Effectively plan, coordinate and provide feedback to make sure we include everyone needed to do it right the first time in a timely and efficient manner.

**3.2.2 Measures of Success** – Percentage change in composite infrastructure health conditions per dollar invested

*See measure 3.2.1. This measure is a variation of the infrastructure health composite index accounting for dollars invested and expended on each type of infrastructure element or asset. This measure of success is new.*

**Strategies/Initiatives** – Employ existing and new data, technology and products to improve results and save time and money. Increase departmental and partner knowledge to improve transportation decision-making and processes. Develop priorities and realistic, attainable schedules that help establish stability in program delivery. Effectively plan, coordinate and provide feedback to make sure we include everyone needed to do it right the first time in a timely and efficient manner.

## Goal 4 - Improve the reliability and connectivity of the transportation system

*NCDOT is committed to connecting people, products, and places. We will accomplish our goal of improving the reliability and connectivity of the transportation system by operating dependable connections among major hubs and destinations across the state and improving connectivity within and between all modes of transportation.*

**4.1 Objective** – Increase the percentage when highway travel times are met based on speed limits to 80 percent or greater

*Moving people and products in an efficient, safe, and fast way is an expectation of the traveling public. This objective emphasizes standards for high volume Interstates to operate at or above 50 mph during the peak travel hours.*

**4.1.1 Measures of Success** – Percentage of time when travel times are met based on highway speed limits

*This measure tracks the assumed travel time from one location to another based on speed limits. Travel time is measured using a Travel Time Index (TTI) that uses data provided by a third party and compares the actual travel time to the ideal travel time as defined by the posted speed limits. A value of 1.00 means traffic is moving at the posted speed limit, while a result greater than 1.00 means traffic is slower than the posted speed limit. A result less than 1.00 means traffic is moving above the posted speed limit, which is feasible in rural and less populated areas. The data is gathered and presented in time segments based on different traffic congestion patterns. The desired change is to decrease the time it takes to travel from one destination to another on any normal day. This measure of success is managed by the Traffic Systems Operations Unit in the Transportation Mobility and Safety Division.*

**Strategies/Initiatives** – Implement new and improve existing traffic operations strategies. Improve the mobility within our corridors. Strengthen our partnerships (with communities, governments and businesses). Better market and communicate transportation information.

**4.1.2 Measures of Success** – Percentage of travel times between hubs that are adequate for each logical mode

*In order to connect our residents to jobs and commerce, this measure tracks the length of time it takes to travel from one type of transportation option to another, and whether it is adequate based on user needs. “Logical mode” refers to the transportation means that would reasonably be considered. For example, a ferry would not be a logical mode for a trip from Manteo to Charlotte, nor would a bicycle be a logical mode for a trip from Asheville to Greenville. It is also important to measure the transfer time from mode to mode. For example, can a user travel by public transit to the airport efficiently. This new measure of success is tracked by the Transportation Mobility and Safety Division.*

**Strategies/Initiatives** – Implement new and improve existing traffic operations strategies. Improve the mobility within our corridors. Strengthen our

partnerships (with communities, governments and businesses). Better market and communicate transportation information.

**4.2 Objective** – Increase the percentage of time when trips with published schedules are met to 80 percent or greater

*Moving people and products in an efficient, safe, and fast way is an expectation of the traveling public. This objective emphasizes accomplishing and delivering on the published travel schedules of passenger rail services within North Carolina and ferry services along the North Carolina coast.*

**4.2.1 Measures of Success** – Percentage of time when trips with published schedules are met

*The Ferry Division and intrastate passenger rail (Amtrak) publish regular schedules for customers and the traveling public. In order to meet public expectations, it is critical for these schedules to be delivered on time. This measure combines the “on-time performance” of passenger rail and ferry services and tracks whether expectations are sufficiently met. This measure of success is maintained by the Performance Metrics Office.*

**Strategies/Initiatives** – Implement new and improve existing traffic operations strategies. Improve the mobility within our corridors. Strengthen our partnerships (with communities, governments and businesses). Better market and communicate transportation information.

**4.2.2 Measures of Success** – Percentage of logical mode-to-mode transfer points that are co-located

*This measure tracks whether adequate transportation modes (bus, rail, air, walking, etc.) are available to the public and are efficiently coupled together (co-located) within certain activity centers. For example, can a user travel by public transit to the airport efficiently, and vice versa. This new measure of success is managed by the Transportation Mobility and Safety Division with some data provided by the non-highway divisions.*

**Strategies/Initiatives** – Implement new and improve existing traffic operations strategies. Improve the mobility within our corridors. Strengthen our partnerships (with communities, governments and businesses). Better market and communicate transportation information.

## Goal 5 - Promote economic growth through better use of our infrastructure

*NCDOT is committed to enhancing the economy and vitality of North Carolina. We will accomplish our goal of promoting economic growth through better use of our infrastructure by improving the reliability of all modes of our transportation network, increasing access to key infrastructure (such as interstates, airports, rail, ports, etc.), and reducing business costs (for transportation purposes).*

**5.1 Objective** – Increase the economic vitality of North Carolina

*The economic vitality of North Carolina is critical to NCDOT’s success. Our objective is to increase the economy with all appropriate decisions.*

### 5.1.1 Measures of Success – Change in overall highway travel time

*Travel time is measured using a Travel Time Index (TTI) that uses data provided by a third party and compares the actual travel time to the ideal travel time as defined by the posted speed limits. A value of 1.00 means traffic is moving at the posted speed limit, while a result greater than 1.00 means traffic is slower than the posted speed limit. A result less than 1.00 means traffic is moving above the posted speed limit, which is feasible in rural and less populated areas. The data is gathered and presented in time segments based on different traffic congestion patterns. The desired change is to decrease the time it takes to travel from one destination to another. This measure of success is managed by the Traffic Systems Operations Unit in the Transportation Mobility and Safety Division.*

**Strategies/Initiatives** – Establish a permanent, centralized, and accountable economic performance function. Develop stronger data sharing agreements between NCDOT and partners. Establish repository to store data. Cyclically refine methodologies and data sources to ensure consistency and accuracy.

### 5.1.2 Measures of Success – Percentage change in overall tax revenue

*An expanded market for goods and services will change the overall tax revenue. A well-maintained transportation infrastructure will contribute to the expansion. Although NCDOT has minimal direct control over tax revenue, NCDOT does influence economic growth by providing these services and maintaining the transportation system at a desired level of service. This newly adopted measure of success is tracked by our Division of Planning and Programming with data provided by the Departments of Revenue and Commerce.*

**Strategies/Initiatives** – Establish a permanent, centralized, and accountable economic performance function. Develop stronger data sharing agreements between NCDOT and partners. Establish repository to store data. Cyclically refine methodologies and data sources to ensure consistency and accuracy.

### 5.1.3 Measures of Success – Percentages change in jobs and Gross State Product Index

*An increase in jobs and the economic output of North Carolina is critical to our success. This measure tracks the change in the number of North Carolina jobs created and the total Gross State Product Index over time. This new measure of success is being developed by our Division of Planning and Programming.*

**Strategies/Initiatives** – Establish a permanent, centralized, and accountable economic performance function. Develop stronger data sharing agreements between NCDOT and partners. Establish repository to store data. Cyclically refine methodologies and data sources to ensure consistency and accuracy.

## Goal 6 - Make our organization a great place to work

*NCDOT is committed to valuing our employees and motivating each team member to provide the highest quality of services to the citizens of North Carolina. We will accomplish our goal of making our*

*organization a great place to work by providing fair compensation, preventing employee injuries, and improving employee satisfaction and engagement.*

**6.1 Objective** – Achieve an employee engagement survey score of 5.25 or greater (on a 7-point scale)

*Engaged employees transfer to satisfying customers, which leads to overall achieved performance results for the agency. The objective is to have a high performing and engaged workforce at NCDOT by collecting data through an employee survey.*

**6.1.1 Measures of Success** – Employee engagement survey results

*Employee engagement is defined as the extent to which employees commit to something or someone in the organization and how hard they work and how long they stay as a result of that commitment. The employee engagement index is calculated by averaging an employee’s emotional commitment, rational commitment, discretionary effort and intent to stay at NCDOT. The results are generated through a 42 question department-wide employee survey conducted annually that measures the feelings and attitudes of employees. This measure of success is tracked by the Performance Metrics Office and administered by the Human Resources Division.*

**Strategies/Initiatives** – Develop an engagement leadership team for engagement training based on biennial survey results. Treat current NCDOT employees well (reward loyalty). Better implement internal safety incentives, rewards, and recognition programs.

**6.1.2 Measures of Success** – Percentage of DOT employees that are paid at the market rate for their classification and level

*All employees desire and deserve fair and equitable compensation. This measure has been initiated to track the number of employees that receive market rate compensation compared to those that are not meeting statewide objectives. Compensation of employees is a challenging dynamic that will take years to affect. This new measure of success is being developed by our Human Resources Division.*

**Strategies/Initiatives** – Treat current NCDOT employees well (reward loyalty). Endorse market pay strategies for our employees. Better implement internal safety incentives, rewards, and recognition programs. Create a web-based employee incident and injury reporting tool. Develop an engagement leadership team for engagement training based on biennial survey results.

**6.1.3 Measures of Success** – Number of preventable accidents or injuries in the work place

*Employee safety is the Department’s top priority. To better achieve this priority, employee safety measures have been tracked with substantial improvements gained in recent years. A key component is to eliminate any accident (to an asset) or injury (to an employee) that is preventable. A preventable accident or injury is one in which the employee failed to*



*exercise reasonable precaution to prevent the occurrence. This measure of success is a new metric tracked by the Safety and Risk Management Unit.*

**Strategies/Initiatives** – Create a web-based employee incident and injury reporting tool (for tracking preventable accidents or injuries). Better implement internal safety incentives, rewards, and recognition programs. Treat current NCDOT employees well (reward loyalty). Endorse market pay strategies for our employees. Develop an engagement leadership team for engagement training based on biennial survey results.

#### **6.1.4 Measures of Success** – Rate of recordable employee injuries

*Employee safety is a top priority of the Department. A recordable employee injury is defined by OSHA as any work-related fatality, any work-related injury or illness that results in loss of consciousness, days away from work, restricted work, or transfer to another job, any work-related injury or illness requiring medical treatment beyond first aid, or any work-related diagnosed case of cancer, chronic irreversible diseases, fractured or cracked bones or teeth, and punctured eardrums. Although always treated, minor first aid is not considered “recordable.” The calculated rate is based on the number of cases and the total working hours so results can be aligned regardless of the size of the business unit and division. This measure of success is managed by the Safety and Risk Management Unit.*

**Strategies/Initiatives** – Create a web-based employee incident and injury reporting tool (for tracking recordable employee injuries). Better implement internal safety incentives, rewards, and recognition programs (same as 6.1.3).

#### **6.1.5 Measures of Success** – Percentage of employees retained after three years

*Employee retention is critical to the health of an organization. This measure tracks the number of employees retained after their initial start date over a three-year period. This measure of success is managed by the Human Resources Division.*

**Strategies/Initiatives** – Develop an engagement leadership team for engagement training based on biennial survey results. Treat current NCDOT employees well (reward loyalty). Better implement internal safety incentives, rewards, and recognition programs. Endorse market pay strategies for our employees (same as 6.1.1).

## 5. Highlights and Opportunities

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The purpose of this section is to highlight what is working, share best practices, and learn about potential opportunities or collaborations.

### Agency Highlights and Best Practices

**Emerging Technologies: Unmanned Aircraft Systems (UAS) Integration Pilot** – North Carolina is at the forefront of drone-friendly states in the United States, with safety and privacy topping the list of concerns of state residents.

In May 2018, the Federal Aviation Administration selected the N.C. Department of Transportation as one of 10 participants in its Unmanned Aircraft Systems (UAS) Integration Pilot Program, which involves implementing drone programs to integrate emerging technology into current state and federal regulations.

The UAS Integration Pilot Program is an opportunity for state, local and tribal governments to partner with private sector entities, such as UAS operators or manufacturers, and gather data on the efficiency of drone programs.

The program has two main goals:

- To foster a meaningful dialogue on the balance of local and national interests related to unmanned aircraft systems.
- To provide useful data to the U.S. Department of Transportation for expanding and implementing unmanned aircraft systems into the National Airspace System.

In North Carolina, the program is focused primarily on using drones to deliver life-saving medical supplies, run food delivery services, and to conduct bridge and infrastructure inspections, especially after natural disasters.

NCDOT and its partners UPS, Matternet and WakeMed launched the country's first ever commercial drone delivery service in March 2019. Efforts are underway to launch similar medical delivery services in other parts of the state, as well as set up a food delivery service in the Town of Holly Springs in Wake County.

After the outbreak of COVID-19, efforts were refocused on using drones to assist in the fight against the disease. This included medical supply delivery to relieve stress on supply chains and food delivery to make it easier for people to abide by stay-at-home orders.

**Emerging Technologies: Autonomous Vehicles** – The NCDOT and the National Park Service is partnering to launch the first self-driving vehicle to be tested at a recreational public lands site in the nation. The Connected Autonomous Shuttle Supporting Innovation, or CASSI, was launched at the Wright Brothers National Memorial in Kill Devil Hills – the site of the world's first powered flight.

The CASSI will help the National Park Service and NCDOT learn more about how driverless vehicles can be safely and effectively used in the future. The CASSI will be tested at the Wright Brothers National Memorial for three months.

Autonomous vehicles use cutting-edge technology to operate without a driver. However, as part of this pilot, a trained customer service operator will ride in the vehicle to ensure the safety of passengers. The operator will monitor conditions and be able to manually stop the vehicle at any time.

The vehicle will navigate its route using remote sensing laser technology called LiDAR and GPS used to map and then monitor a fixed route. Sensors continuously scan the shuttle's surroundings and signal for it to stop when an obstacle is too close. The NCDOT is working with TransLoc to provide real-time tracking software and a map to keep riders updated on CASSI's location on the NCDOT's website.

During the pilot, information will be collected about things such as the number of passengers, trips and the vehicle's battery usage. NCDOT and NPS will use the data to better understand how autonomous vehicles perform in different settings. The vehicle operates at speeds between 8 mph and 12 mph.

The vehicle was originally introduced at the 2020 Transportation Summit in Raleigh and then it was piloted at N.C. State University's Centennial Campus last spring. This ongoing research collaboration is part of the NCDOT's priority of keeping customers safe with emerging technology.

## Potential Initiatives

**Data Management and Analytics** – Currently not all agency data is integrated into a data warehouse for cross analytics and internal data-sharing. To continue to improve upon the analysis and visual representation of performance data, additional support is desired to integrate remaining data systems into an automated fashion for more robust data forecasting and analytical tools.

**Transportation Data Center** – NCDOT is a data rich organization. With new federal transportation laws emphasizing measuring performance and setting targets, local governments and other agencies are seeking transportation data to make decisions and comply with federal requirements. The establishment of a "transportation data center" available online, would streamline the process to share qualified and valid NCDOT data to our local and state partners across the state.

**Operational Work Planning Improvements** – NCDOT has a very effective strategic planning process that adopts an agency vision, mission, and goals. North Carolina state government has a very sound result-based performance management system with the establishment of NCVIP for annual employee appraisals. In order to connect the agencies strategic goals with the employee's annual goals, a business unit operational work planning process must be emphasized as the means to develop specific goals and measures for each division and unit within the department.

## Collaborative Opportunities

**Statewide Strategic Planning and Performance Dashboarding** – It is important for all state agencies to unite under the same strategic direction as to not compete with one another. In order to maximize resources and improve decision-making, a statewide strategic planning effort would effectively align all state services with its strategic direction. This would align financial and human resources. To establish transparency and accountability, the adopted statewide strategic plan with its goals, objectives, performance measures, and strategies would be the basis to a statewide government performance dashboard depicting real-time results to residents and partners of our state.

**Integration and automation of agency performance results within the NCVIP system** – NCDOT maintains accountability for various strategic key performance indicators such as highway crash rates, bridge condition scores, project delivery rates, etc. These measures, many that are included as goals or tasks on employee or manager NCVIP performance plans, are maintained and tracked within internal management systems maintained by DOT. If these systems and results were directly automated to the NCVIP system, it would not require a manual effort to periodically gather and enter results into the evaluations related to NCVIP for thousands of NCDOT employees.