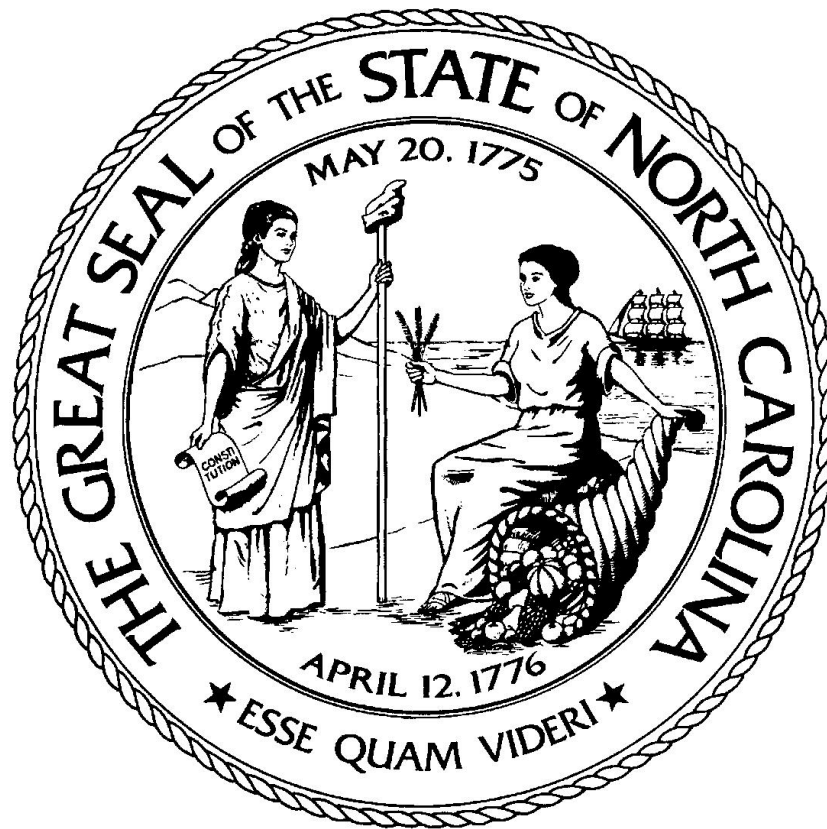


North Carolina

Department of Transportation

Agency & IT Strategic Plan

2019 – 2021



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1. Strategic Plan Executive Summary

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 Priority Work Groups and "executive champions" are identified to oversee and ultimately hold the agency accountable for delivering positive results (including defining success, performance measures, and strategies).

Priority work groups, along with the identified executive champions, work to clearly describe the desired outcomes and agency-wide strategies that NCDOT will utilize to achieve its goals. Each priority work group consists of employees representing business units and diverse functions from across the agency. Transportation Secretary Trogon identified eight priority work groups.

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 our employee's performance

management system (NCVIP), ensuring what employees do each day is reflected in the agencies vision, values, mission, goals, and priorities.

The eight current executive priorities are:

1. Improve Program Delivery and Reduce Cash Balance through Prioritization/Programming, Scoping, Scheduling, Project Development, Procurements, Right-of-Way, Operations and Maintenance, and Revenue and Cash Model.
2. Improve Safety through the Executive Committee for Highway Safety, Vision Zero, Technology Pilots, and Planning and Policy.
3. Improve Mobility and Congestion through State Mobility Models and Analytics, Rural Mobility and Economic Development, Mobility Modernization, Fund Implementation, and Mobility Performance Data.
4. Improve Appearance and Condition of Transportation Facilities through Roadside Appearance, Bridge and Structures, Pavements; Signals/ITS, Transportation Facilities, and Budgeting and Performance Plans.
5. Finance and Sustainable Revenue through Future Revenue Options for Sustained Transportation Delivery and Debt Capacity Instruments.
6. Prepare for Future Technologies through Unmanned Aerial Systems, Connected and Automated Vehicle Policy, Connected and Automated Vehicle Infrastructure and Data, Industry Technology Advisory Group, University Center for Transportation Innovation, and Decision Support and Operations Control Data, Integration, Infrastructure, and Analysis Systems Technology.
7. Improve Human Resources and Workforce Development through Recruiting, Small Business Development, Benefits/Compensation Reform and Modernization, and Scholarships/Internships/Apprenticeships.
8. Improve Communications, Information Management and Outreach through Real Time Internal and External Performance Measures and Dashboarding, External Communications and Outreach of DOT Services including Planning, Project Development, Construction, Operation, Hazard/Emergency Response, Transportation Permits, Vehicle and Driver Services, and Real Time Data Collection, Analysis, Storage, and Reporting Across all Modes, Units, Facilities and Operations to Obtain and Sustain Full Time Situational Awareness.

2. Mission, Vision, and Values

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.

3. Goals, Objectives, and Performance Measures

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 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 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 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 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).

4. Highlights and Opportunities

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) – 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. The N.C. General Assembly in 2014 and 2015 set regulations to protect public safety and privacy and created the NCDOT Division of Aviation’s Unmanned Aircraft Systems Program Office to implement regulations and integrate drone operations into the airspace. The FAA has registered more than 32,300 individual recreational UAS in North Carolina and the NCDOT has issued more than 3,900 commercial and government UAS operator permits. NCDOT has also reached more than 1,000 commercial UAS operators, public safety personnel and hobbyists through a series of drone workshops held across the state to promote N.C. drone-based companies and service providers, connect companies large and small with economic opportunities with multinational firms, government agencies, health centers, universities and community colleges, and grow the state’s drone economy. Public safety agencies, such as N.C. Emergency Management, State Highway Patrol, local law enforcement and fire departments, have begun integrating drone technology to help save lives and protect property. NCDOT support these partnerships by establishing best practices, recommending policies for agencies using UAS in first response, such as conducting search-and-rescue operations or surveying after a flood (evident during and after Hurricane Florence), and working with agencies to safely integrate this technology into their operations. For example, a NCDOT State Highway Patrol project showed that drones could expedite law enforcement’s investigation of traffic collisions, advancing safety and efficiency in managing roadway incidents.

Emerging Technologies: Truck Platooning and Advanced Driver-Assistance Technology – The Triangle Expressway was designated by the U.S. Department of Transportation as one of 10 national test locations for autonomous vehicle proving sites. In 2018, the N.C. Turnpike Authority partnered with Volvo Trucks North America and FedEx to demonstrate Volvo’s connected truck technology – also known as platooning – on the Triangle Expressway in Raleigh. The demonstration marked the first, public, on-highway showcase of platooning technology between a major truck manufacturer and a transportation company in the United States. Three Volvo VNL tractors pulled two 28-foot loaded trailers and remained in constant communication through cooperative adaptive cruise control, a wireless connected vehicle technology.

The N.C. Turnpike Authority also tested a vehicle with advanced driver-assistance technology on the Triangle Expressway this year. This testing is part of NCDOT’s commitment to safety and staying on the forefront of this emerging technology. The Turnpike Authority spent 30 hours of drive time in a Cadillac CT6 with Super Cruise. NCTA partnered with General Motors, who provided the opportunity to test the vehicle with advanced driver-assistance features. The Turnpike Authority tested the vehicle to see how it worked with the tolling technology on the Triangle Expressway and to research how the advanced safety features reacted to highway conditions and other motorists on a facility in North Carolina. The car is known as the industry's first hands-free and feet-free driving technology for the highway. The car's

cameras and GPS sensors govern steering, braking and acceleration. When Super Cruise is engaged, the driver still has to keep their eyes on the road.

This ongoing research collaboration is part of the NCDOT's priority of keeping customers safe with emerging technology on the roads today.

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 on the web, would streamline the process to share qualified and valid NCDOT data to our local and state partners across the state.

Business Unit 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 work planning process must be emphasized as the means to develop specific goals and measures for each division and unit within the department. NCDOT currently has such a process but is limited by the technology and process tools to be completely efficient and effective.

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 with 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.

5. DIT – Transportation Information Technology Plan Executive Summary

DIT – Transportation is tasked with ensuring safe, efficient & effective use of the latest computer and automation technologies, and to provide a full range of information processing services for the North Carolina Department of Transportation. These services include new software system development, maintenance of existing systems, support of all computer software and hardware, technology consultation, IT training, and end user and customer service support. Underlying all of these responsibilities is the need to assess our information security and cyber security postures and to elevate them to acceptable levels as determined by federal and state laws, and operating principles of the agency regarding data classification.

The DIT – Transportation division is responsible for providing technology services to all divisions of the Department of Transportation. This results in a wide variety of initiatives across the spectrum of technical skills and functions.

The emphasis of this plan over the next biennium will be on deploying technology to improve productivity and performance and to address citizen, transportation systems and infrastructure, optimize process and governance and improve agency collaboration.

Among other activities, there is a focus on enterprise services, such as Enterprise Content Management, expand electronic signature capability, and increasing citizen mobile and online options for DMV and Transportation actions.

Critical gaps continue to be addressed through work in multiple areas with a current focus on the deployment of an information technology support and services toolset (ITSSM). This will help address significant gaps in NCDOT processes related to change, issue response and risk management.

The work within NCDOT is dynamic as needs change and priorities are adjusted. The information contained in this plan reflects the work underway at the time of its creation. This plan should be considered, and will be treated, as a living document with updates made as significant business and legislative changes occur.

6. DIT – Transportation Quick Reference Guide

Goal	Objective	Initiative	Brief Description	Funding Mechanism	Anticipated Completion Date
Goal 1 <i>Make Transportation Safer</i>	Objective 1.1 <i>Road Safety</i>	Initiative 1.1.1 eCrash Replacement	Meet legislative mandate to replace current Crash Reporting System and provide third party maintenance of the replacement solution.	Existing Funds	Q1, FY2021
		Initiative 1.1.2 Roadway Lighting Control and Monitoring System	Identify lighting systems not operating as designed, allow faster dispatch & Provide electronic means for approved vendors to submit automated data using standardized format	Existing Funds	TBD
		Initiative 1.1.3 Traffic Monitoring System Software	Increase efficiency in data loading, validation, processing, analysis, viewing, and reporting	Existing Funds	Q1, FY2019
		Initiative 1.1.4 Fully Autonomous Vehicles Regulation	Design regulation and guidelines for fully autonomous vehicles and determine how to incorporate into titling and vehicle registration procedures.	Admin Project	TBD
Goal 2 Provide GREAT Customer Service	Objective 2.1 <i>Customer-friendly methods of accepting payments</i>	Initiative 2.1.1 Common Payment Process	Refresh credit card terminals at DMV (Driver License) and Vehicle Registration enabling encryption and standardize the Point of Sale platform, enabling six hundred Vehicle Registration card terminals to begin accepting PIN debit card functionality. Upgraded card-present credit card stations Standardize platform for Point of Sale with next generation credit card terminals and acceptance	Existing Funds	Q1, FY2021

Goal	Objective	Initiative	Brief Description	Funding Mechanism	Anticipated Completion Date
			procedures according to security standards.		
		Initiative 2.1.2 DMV Mobile application and web solution platform	Uniform mobile application and web solution for citizens to complete any current and future online DMV merchant transactions or services from their smartphone, tablet, or computer.	Existing Funds	Ongoing
	Objective 2.2 <i>Increase Efficiency</i>	Initiative 2.2.1 Replacement of SADLS legacy system	Continue the replacement of legacy SADLS system for driver services. Framework will be further defined following the completion of the DMV AAI project to move forward.	Existing Funds + TBD	TBD
		Initiative 2.2.2 DMV Vehicle Services Queuing	Provide queuing capabilities in Vehicle Services Offices (LPAs) and allow digital advertising.	Existing Funds	Q3, FY2020
		Initiative 2.2.3 Asset Approval – License Management	Reduce the inefficiencies in the current software license management system by providing Amazon like experience and at the same time automating the software delivery to the user.	Existing Funds	Q3, FY2020
	Initiative 2.2.4 State to State	In compliance with the federal Real ID act, addresses the requirement to verify with other States that customer does not hold multiple driver license or identification cards with other states through AAMVA solution to reduce fraud and increase safety of NC citizens.	Existing Funds	Q3, FY2019	

Goal	Objective	Initiative	Brief Description	Funding Mechanism	Anticipated Completion Date
		Initiative 2.2.5 Occupational Safety Audit Project	Software solution to automate the collection of audit and safety management related information to include audits, safety trends, and training records and work assessments of DOT workers to better align NC DOT with federal labor requirements.	Existing Funds	Q4, FY2021
		Initiative 2.2.6 Law Enforcement Case Management System	More efficient support of L&T activities, elimination of duplicate manual system functions, deter fraudulent motor vehicle activities, and improve L&T reporting capabilities	Existing Funds	Q3, FY2020
	Objective 2.3 <i>Educate the Public</i>	Initiative 2.3.1 DBE Contact Mgmt	A Customer Relationship Management database for Office of Civil Rights to provide customer service to the Disadvantaged Business Enterprises served to track interactions, reduce missed opportunities, neglected clients, and store procurement documents.	Existing Funds	Q4, FY2020
		Initiative 2.3.2 NCDOT Technology Advisory Board (TAB)	The NCDOT TAB will serve in an advisory capacity for the department in all areas of technology. The board will aim to spur economic development, remove internal and external technology innovation obstacles, and advance technological growth within the department to ensure great customer service is delivered; by collaborating with industry best partners, internal and external state employees, municipalities, non-profit entities, and		Ongoing

Goal	Objective	Initiative	Brief Description	Funding Mechanism	Anticipated Completion Date
			applicable public/higher education institutions.		
Goal 3 <i>Deliver and maintain our infrastructure effectively and efficiently</i>	Objective 3.1 <i>Provide Enterprise Platform</i>	Initiative 3.1.1 eCrash Replacement	Comprehensive repository for collision data and reports Provide electronic submission application for collision data and reports with predictive analytics with an option to purchase reports	Existing Funds	Q1, FY2021
		Initiative 3.1.2 Enterprise Active Directory Service (EADS)	Provide control of State IT assets, networking components, and services.	Existing Funds	TBD/Q1, FY2021
		Initiative 3.1.3 SAP HANA Platform Upgrade	NCDOT enterprise platform that will support GIS & IoT enablement, threat detection and response, mobile enablement, user friendly web interfaces, real-time analytics and reporting, intelligence and predictive analytics, executive dashboards, single sign-on, data governance, business process improvements, enterprise asset management, vendor and employee self-services, as well as many other modern IT services.	Existing Funds	Ongoing
	Objective 3.2 <i>Safety of State Employees</i>	Initiative 3.2.1 Facilities Access Control System (FACS)	Replace part or all of existing Access Control System and integrate existing Intrusion Detection Systems. Create a redundant site in case primary site is compromised.	Existing Funds	Q1, FY2021
		Initiative 3.2.2	Reduces exposure to unnecessary risks to NC DOT employees and the people of	Existing Funds	Q4, FY2021

Goal	Objective	Initiative	Brief Description	Funding Mechanism	Anticipated Completion Date
		Occupational Safety Audit Project	North Carolina by ensuring required audits are conducted, solutions identified, and information shared across the State. Provide centralized platform for employees to complete their training.		
		Initiative 3.2.2 Occupational Safety Audit Project	Implement a comprehensive DOT IT Web Gateway Control Center Solution that will control and monitor web gateway traffic for the purpose of protecting against misuse and malware attacks.	Existing Funding	Q1, FY2020
	Objective 3.3 <i>Improvement and Availability of Business Systems</i>	Initiative 3.3.1 IT Service Management Tool Implementation	State-of-the-art solution to provide improved management and control over IT system infrastructure, resulting in reduced risk of outages and improved efficiency of IT service delivery	Existing Funds	Q3, FY2019
		Initiative 3.3.2 SAP HANA Upgrade	NCDOT enterprise platform that will support GIS & IoT enablement, threat detection and response, mobile enablement, user friendly web interfaces, real-time analytics and reporting, intelligence and predictive analytics, executive dashboards, single sign-on, data governance, business process improvements, enterprise asset management, vendor and employee self-services, as well as many other modern IT services.	Existing Funds	Q4, FY2019
		Initiative 3.3.3 DMV Applications	Development of methodology and roadmap to modernize legacy DMV apps while	Existing Funds	TBD

Goal	Objective	Initiative	Brief Description	Funding Mechanism	Anticipated Completion Date
		and Interoperability	enabling remaining legacy apps to continue to work.		
		Initiative 3.3.4 Pre-Construction Collaboration	Enable internal DOT engineers and external consultants to collaborate on design work online by providing a tool to create design collaboration sites using templates and authorize appropriate user access.	Existing Funds	Q4, FY2019
		Initiative 3.3.5 Enterprise Document and Imaging Management (EDIM)	Provide an updated and supported enterprise document capture, store, retrieval, and manipulation solution to address DMV Strategic Business Objectives.	Existing Funds	Q1, FY2020
		Initiative 3.3.6 DMV ELT Replacement Project (DERP)	Meet legislative mandate to re-establish/implement an electronic lien and title (ELT) program.	Existing Funds	Q1, FY2020
		Initiative 3.3.7 Right of Way Management System	Replace legacy system with COTS-based system used for acquisition of land and right of way used for construction and improvements of highways which are part of the State Highway System	Existing Funds	Q4, FY2020
		Initiative 3.3.8 Trans Online Planning Prioritization Programming System (TOP3S)	Implement a robust GIS-based solution that will support the Strategic Prioritization Office of Transportation (SPOT) in its role of evaluating and scoring capital improvement projects subject to the Strategic Transportation Investments (STI) legislation and integrate the planning and programming of business processes.	Existing Funds	Q3, FY2020

Goal	Objective	Initiative	Brief Description	Funding Mechanism	Anticipated Completion Date
Goal 4 <i>Improve the reliability and connectivity of the transportation system</i>	Objective 4.1 <i>Manage Traffic Information</i>	Initiative 4.1.1 ATMS Infrastructure Alignment	Provide redundant command and control capability to operator all ITS devices from multiple locations in the state and integrate all tools an operator uses to manage an incident into one application.	Existing Funds	Q1, FY2020
		Initiative 4.1.2 ATMS Software Integration	Implement a command and control system that provides operators with a single consistent interface to manage an incident from detection to incident clearance and operate all ITS devices for TMC.	Existing Funds	Q1, FY2020
		Initiative 4.1.3 Traffic Monitoring System Software	Replace legacy system with more scalable, automated solution using a COTS application with integration to the new Roads and Highway system.	Existing Funds	Q1, FY2019
	4.2 <i>Improve Mobility and Capacity on Roadways</i>	Initiative 4.2.1 Monroe Bypass	Allow for high-speed region travel between Wingate and Marshville including tools which will be used to assist in repayment of bonds needed for financing roadway.	Existing Funds	Q2, FY2019
		Initiative 4.2.2 Roadway Lighting Control and Monitoring System	Improved mobility on roadways through controlling and maintaining adequate lighting	Existing Funds	TBD
	Goal 5 <i>Promote economic growth</i>	Objective 5.1 <i>Options for Accepting Payments</i>	Initiative 5.1.1 Common Payment Process	Provides a credit card solution for Point of Sale that also accepts debit cards and meets security standards	Existing Funds

Goal	Objective	Initiative	Brief Description	Funding Mechanism	Anticipated Completion Date
<i>through better use of our infrastructure</i>		Initiative 5.1.2 DMV Mobile Application and Web Solution	Uniform mobile application and web solution for citizens to complete any current and future online DMV merchant transactions or services from their smartphone, tablet, or computer.	Existing Funds	Ongoing
		Objective 5.2 <i>Revenue Opportunities</i>	Initiative 5.2.1 DMV Vehicle Services Queuing	Allow for digital advertising to display along with the queuing application at Driver License and Vehicle services offices	Existing Funds
		Initiative 5.2.2 Monroe Bypass	Tolls will be added to this bypass to be used to assist in repayment of bonds that were secured to finance the roadway	Existing Funds	Q2, FY2019
	Goal 6 <i>Make Our Organization a Great Place to Work</i>	Objective 6.1 <i>Improve Access to Data</i>	Initiative 6.1.1 SAP HANA Upgrade	NCDOT enterprise platform that will support GIS & IoT enablement, threat detection and response, mobile enablement, user friendly web interfaces, real-time analytics and reporting, intelligence and predictive analytics, executive dashboards, single sign-on, data governance, business process improvements, enterprise asset management, vendor and employee self-services, as well as many other modern IT services.	Existing Funds
		Initiative 6.1.2 Pre-Construction Collaboration	Addresses the needs of the DOT Highway Design Units to store and share CADD files across Central Units, Divisions,	Existing Funds	Q4, FY2019

Goal	Objective	Initiative	Brief Description	Funding Mechanism	Anticipated Completion Date
			and external professional engineering firms (PEFs).		
		Initiative 6.1.3 SAS Data Analytics	Identify trends and analyze data in respective business units to drive a more transparent organization.	Existing Funds	Ongoing
	Objective 6.2 <i>Modernize Tools</i>	Initiative 6.2.1 SAP HANA Upgrade	NCDOT enterprise platform that will support GIS & IoT enablement, threat detection and response, mobile enablement, user friendly web interfaces, real-time analytics and reporting, intelligence and predictive analytics, executive dashboards, single sign-on, data governance, business process improvements, enterprise asset management, vendor and employee self-services, as well as many other modern IT services.	Existing Funds	TBD
		Initiative 6.2.2 IT Service Management Tool Implementation	Provide a state of the art, user friendly, self-service solution that includes help desk, change management, asset management, and service request management	Existing Funds	Q3, FY2019
		Initiative 6.2.3 Law Enforcement Case Management System	Provide DMV L&T division tool to monitor and more efficiently process cases, eliminate redundant processes and enable automated workflow processes	Existing Funds	Q3, FY2020

Goal	Objective	Initiative	Brief Description	Funding Mechanism	Anticipated Completion Date
	Objective 6.3 <i>Improve Work Environment</i>	Initiative 6.3.1 Occupational Safety Audit Project	Automate the collection of audit and safety management related information to include audits, safety trends, and training records and work assessments of DOT workers to better align NC DOT with federal labor requirements.	Existing Funds	Q4, FY2021

7. DIT – Transportation IT Vision, Mission, and Values

7.1 IT Vision

The North Carolina Department of Transportation (NCDOT) employs more than 10,000 people who oversee all modes of transportation in North Carolina, including highways, rail, aviation, ferries, public transit, and bicycle and pedestrian transportation. The department also oversees the North Carolina Division of Motor Vehicles. The DIT – Transportation’s mission, goals, and strategic plan is in support of the NCDOT mission, goals and strategic plan.

7.2 IT Mission

DIT – Transportation’s mission is to support the DOT mission of connecting people, products, and places safely and efficiently, with customer focus, accountability and environmental sensitivity to enhance the economy and vitality of North Carolina by delivering innovative, cost effective and reliable technology solutions, services and processes to DOT and to the residents of North Carolina.

7.3 IT 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.

8. DIT – Transportation IT Goals, Objectives, and Measures of Success

DIT – Transportation is tasked with ensuring safe, efficient, and effective use of the latest computer and automation technologies; and to provide a full range of information processing services for the North Carolina Department of Transportation. These services include new software system development, maintenance of existing systems, support of all computer software and hardware, technology consultation, IT training, and end user and customer service support. Underlying all of these responsibilities is the need to assess our information security and cyber security postures and to elevate them to acceptable levels as determined by federal and state laws, and operating principles of the agency regarding data classification.

The DIT – Transportation division is responsible for providing technology services to all divisions of the Department of Transportation. This results in a wide variety of initiatives across the spectrum of technical skills and functions.

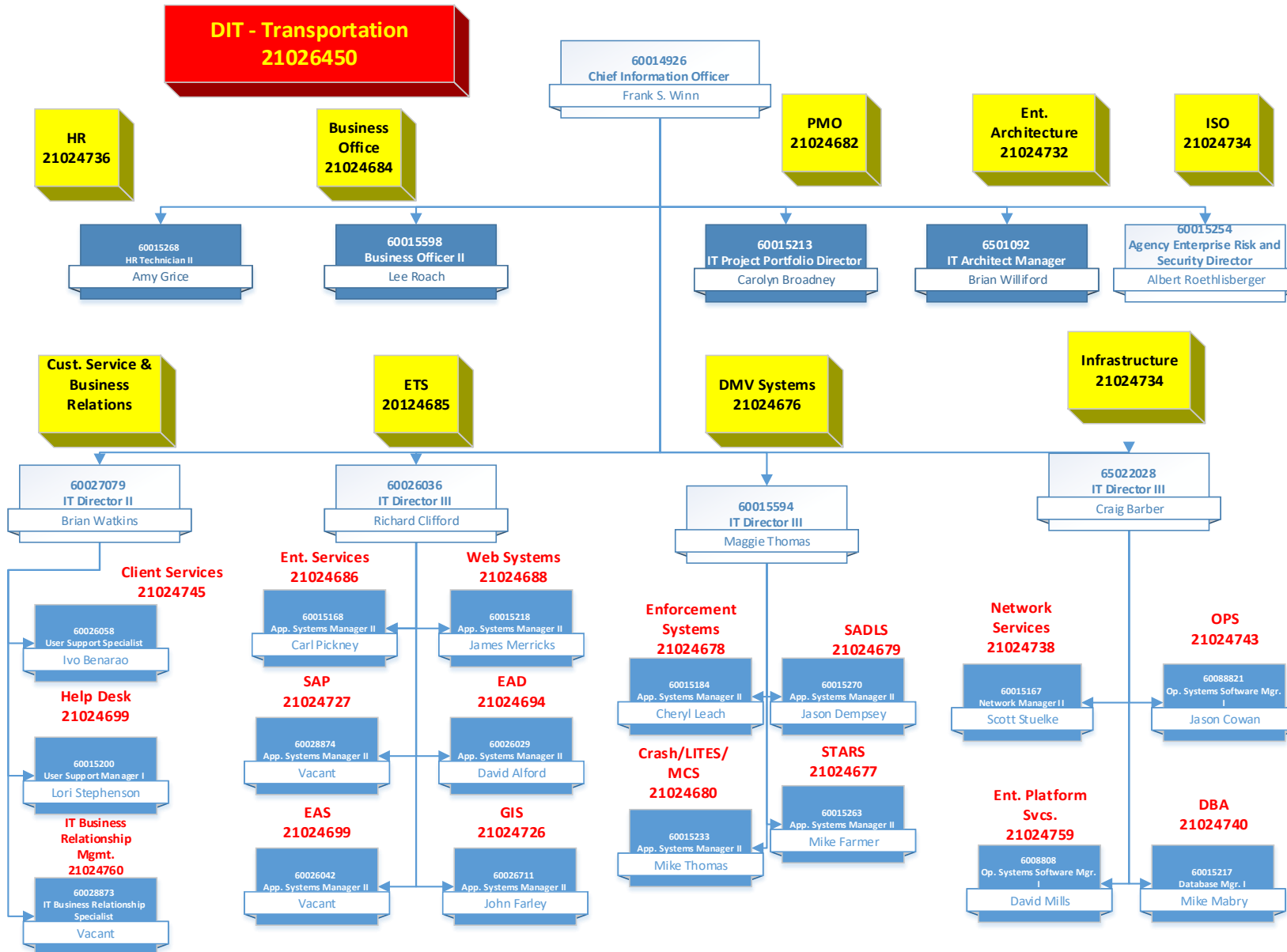
The emphasis of this plan over the next biennium will be on deploying technology to improve productivity and performance and to address citizen, transportation systems and infrastructure, optimize process and governance and improve agency collaboration. Among other activities, there is a focus on enterprise services, such as Enterprise Content Management, expand electronic signature capability, and increase citizen mobile and online options for DMV and Transportation actions.

Critical gaps continue to be addressed through work in multiple areas with a current focus on the deployment of an information technology support and services toolset (ITSSM). This will help address significant gaps in NCDOT processes related to change, issue response and risk management.

The work within NCDOT is dynamic as needs change and priorities are adjusted. The information contained in this plan reflects the work underway at the time of its creation. This plan should be considered, and will be treated, as a living document with updates made as significant business and legislative changes occur.

The work within NCDOT is dynamic as needs change and priorities are adjusted. The information contained in this plan reflects the current work underway at the time of its creation. Success criteria, measurements and how each supports NCDOT goals and priorities are indicated in the project's documentation, which is maintained on the DIT EPMO Touchdown system. Non-projects are those included in the new initiatives/projects table of Appendix A in this information and will be ongoing initiatives over this 2019-2021 biennium. This plan should be considered, and will be treated, as a living document with updates made as significant business and legislative changes occur.

9. DIT – Transportation Organizational Structure



10. DIT – Transportation Enterprise IT Opportunities

ITSSM (ServiceNow) – potential for external state agencies to work off NCDOT specific contract.

Data Management and Analytics – Further expand the Data Analytics initiatives in place & work streams initiatives to work 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 Analytics 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 on the web, would streamline the process to share qualified and valid NCDOT data to our local and state partners across the state.

Expansion of SAP HANA Platform Implementation.

10.1. Potential Initiatives

N/A

10.2. Collaborative Opportunities

Interfacing DMV Systems with State Board of Elections.

Appendix A: DIT – Transportation Major IT Projects

Initiative/ Project	Short Description <i>(indicate if >\$500,000)</i>	Related Goals and Objectives	Funding Mechanism	Anticipated Benefits	Anticipated Completion Date
Initiative/Project Name	<i>Provide a short description of this item (Please also indicate if this is a project or application with a cost over \$500,000).</i>	<i>To what agency goals and objectives and/or SCIO goals does this project relate?</i>	<i>Please identify funding strategy (expansion, grant, etc.) For existing projects, note whether they are fully funded or require expansion.</i>	<i>Provide a summary of any anticipated benefits.</i>	<i>Provide an estimated completion date for the project.</i>
New Initiatives/Projects					
SAP HANA Upgrade	NCDOT enterprise platform that will support GIS & IoT enablement, threat detection and response, mobile enablement, user friendly web interfaces, real-time analytics and reporting, intelligence and predictive analytics, executive dashboards, single sign-on, data governance, business process improvements, enterprise asset management, vendor and employee self-services, as well as many	Goal 2 – Provide GREAT Customer Service Goal 3 – Deliver and maintain our infrastructure effectively and efficiently Goal 6 - <i>Make Our Organization a Great Place to Work</i>	State Funding	NCDOT enterprise platform that will support GIS & IoT enablement, threat detection and response, mobile enablement, user friendly web interfaces, real-time analytics and reporting, intelligence and predictive analytics, executive dashboards, single sign-on, data governance, business process improvements, enterprise asset management, vendor and employee self-services, as well as many other modern IT services. These services will support multiple devices including: desktops,	Ongoing

Initiative/ Project	Short Description <i>(indicate if >\$500,000)</i>	Related Goals and Objectives	Funding Mechanism	Anticipated Benefits	Anticipated Completion Date
	other modern IT services. (over \$500,000)			laptops, tablets and smart phones and will serve as a secure single source of truth.	
DMV Mobile Application and Web Solution	Mobile application and web solution to complete any current and future online DMV merchant transactions or services from their smartphone, tablet, or computer. (over \$500,000)	Goal 2 – Provide great customer service Goal 3 – Deliver and maintain our infrastructure effectively and efficiently	State Funding	Mobile application and web solution to complete any current and future online DMV merchant transactions or services from their smartphone, tablet, or computer. As users increase and utilize mobile application, foot traffic in DMV offices will decrease, which further enhances individualized customer service and greater results. In addition, the PayIt platform allows for future technological trends to be integrated over, and allows DIT – Transportation development teams to provide better support to NCDOT Business units.	Ongoing
SAS Visual Analytics + Dashboards	Identify trends and analyze data in respective business	- Visualization and Transparency	State Funded	Identify trends and analyze data in respective business	Ongoing based on contract terms

Initiative/ Project	Short Description <i>(indicate if >\$500,000)</i>	Related Goals and Objectives	Funding Mechanism	Anticipated Benefits	Anticipated Completion Date
	units to drive at a more transparent organization.	<ul style="list-style-type: none"> - Auto theft mapping & analysis - Customer Intelligence - Environmental Analysis 		<p>units to drive at a more transparent organization.</p> <p>The data analysis has been targeted to free up developer resources with efforts towards reporting/analysis requests and shift more efforts toward system maintenance requests and enhancement projects.</p> <p>Further expand the current work streams in the Transportation Analytics Center.</p>	
SADLS Replacement	Continue the replacement of legacy SADLS system for driver services. Framework will be further defined following the completion of the DMV AAI project to move forward.	<p>Goal 2 - Provide Great Customer Service</p> <p>Goal 3 – Deliver and Maintain our Infrastructure Effectively and Efficiently</p>	State Funded + TBD		TBD - based on AAI framework and decisions to move forward.
Existing Initiatives/Projects					
Asset Approval – License Management	Reduce the inefficiencies in the current software	Goal 2 – Provide great customer service	State Funded	Faster software request, delivery and installation	Q3, FY2020

(ITP.00293)	license management system by providing Amazon like experience and at the same time automating the software delivery to the user.	Goal 3 – Deliver and maintain our infrastructure effectively and efficiently	150701 F00045	<p>processes for end users and support teams which results in cutting down on wait times and provides increased productivity.</p> <p>Improved software license management and visibility to ensure licenses are controlled, distributed and reclaimed only as needed which results in reducing costs associated with license purchases.</p> <p>Reduced redundancy and streamlined business processes for greater efficiency.</p>	
ATMS Infrastructure Alignment (ITP.00282)	<p>Deliver infrastructure hardware and networking designed to support a statewide Intelligent Transportation System with multiple regional Transportation Management Centers.</p> <p><i>(over \$500,000)</i></p>	Improve IT networking and infrastructure to support existing ITS business needs along with ATMS software.	State funded 150701 F00045, 150017, 21IM.SW	Reduce incident duration, reducing secondary accidents and reducing fatal incidents and injuries	December 2018
ATMS Software Integration (ITP.00281)	Provide redundant command and control capability to operator all ITS devices from multiple locations in the state and	Implement a COTS ATMS software solution.	State funded 150701 F00045, 21IM.SW	Reduce incident duration, reducing secondary accidents and reducing fatal incidents and injuries	Q1, FY2020

	integrate all tools an operator uses to manage an incident into one application. <i>(over \$500,000)</i>				
Common Payment Process (ITP.00271)	Refresh credit card terminals at DMV (Driver License) and Vehicle Registration enabling encryption and standardize the Point of Sale platform, enabling six hundred Vehicle Registration card terminals to begin accepting PIN debit card functionality. <i>(over \$500,000)</i>	Execute a credit card terminal refresh cycle and standardize the platform for Point of Sale that is acceptable to affected businesses.	State funded 151268 IO S0205	Reduce liability for card-present transactions and lowers cost per transaction.	Q1, FY2021
DBE Contact Mgmt (ITP.00296)	A Customer Relationship Management database for Office of Civil Rights to provide customer service to the Disadvantaged Business Enterprises served to track interactions, reduce missed opportunities, neglected clients, and store procurement documents.	Goal 2 – Provide great customer service Goal 3 - Deliver and maintain our infrastructure effectively and efficiently Goal 5 – Promote economic growth	State funded 151081 S00009	Automate manual process, increase efficiency and increase participation in program which will grow small and disadvantaged businesses in NC	Q4, FY2020

	(over \$500,000)	through better use of our infrastructure			
DMV Applications Alignment and Interoperability (ITP.00238)	Development of methodology and roadmap to modernize legacy DMV apps while enabling remaining legacy apps to continue to work. (over \$500,000)	Provide strategic vision for improving customer service and business practices.	State funded 150021	Obtain voice of customer, initiate process redesign, develop channel strategy	Q3, FY2019
DMV ELT Replacement Project (ITP.00303)	In accordance with G.S. 20-58. 4A the DMV implemented an Electronic Lien and Title (ELT) solution in 2015 utilizing RFP 54-VB-201 40 205. That RFP was for a period of three years without renewal options. Thus, the need exists to rebid this solution.	To re-establish a solution for NC DMV electronic lien and title program Establish a new contract with selected ELT solution provider Establish a Memorandum of Understanding with selected ELT solution provider for ongoing operations.	State funded 150021	Faster notifications of lien releases Improved timeliness of lien and title data exchange with the North Carolina DMV Better organization of liens and titles in one central place Reduced administrative burden for processing and filing paper titles Easier storage of titles Reduction of the fees and time necessary to mail paper titles Access to expedited title printing	Q1, FY2020

				Reduction in title fraud Improved data and forms security Improved data accuracy	
DMV IVR Phase II (ITP.00249)	Take advantage of new capabilities on upgraded IVR platform to increase quality of existing services and introduce new service delivery channel to citizens. <i>(over \$500,000)</i>	Accept credit cards for: renew Class C driver license, duplicate driver license, ID cards and Permits, restoration of a driver license, call back assist/virtual hold	150021	Additional DMV services via IVR will reduce foot traffic at DMV, reduce calls to Help Desk, accept card payments, reduce customer frustration	November 2018
DMV Vehicle Services Queuing and Scheduling (ITP.00254)	Provide queuing capabilities and scheduling in Vehicle Services Offices (LPAs) and allow digital advertising. <i>(over \$500,000)</i>	Remotely monitor customer volume, wait times, and service times, upgrade kiosks	150021	Improve customer satisfaction and customer service	Q3, FY2020
Driver 360 (D360) (ITP.00280)	Complete replacement of SADLS legacy application (Phase II & III) <i>(over \$500,000)</i>	Improve overall customer service and efficiencies.	150021	Improve customer service, lower operating and maintenance costs	TBD – dependent on AAI Framework to lead into SADLS Replacement
eCrash Replacement (ITP.00290)	Statewide maintenance of Crash Reporting Program	Meet legislative mandate to replace current Crash Reporting System	150021	Automate crash reporting system, comply with Federal guidelines, reduce	Q1, FY2021

	(over \$500,000)			cost of operating crash reporting	
Enterprise Active Directory Service (EADS) (ITP.00286)	Provide control of State IT assets, networking components, and services. (over \$500,000)	Provide core infrastructure, resources, and guidance necessary to enable organizations to build upon and transfer services to the infrastructure provided by DIT.	State funded 150701	NC will have the ability to manage, through DIT's new platform, enterprise resources across all agencies while having permissions to seamlessly move users, workstations, or servers more easily.	Q4, FY2020
Enterprise Document and Imaging Management (EDIM) (ITP.00272)	Provide an updated and supported enterprise document capture, store, retrieval, and manipulation solution to address DMV Strategic Business Objectives. (over \$500,000)	Migrate current NCDOT end of life document capture system, ImagePlus and ImagePlus Workstation Program to Content Manager z/OS V8.5.	State Funded 151267 S0140	Decrease operations and maintenance effort, eliminate microfilm scanning	Q1, FY2020
Facilities Access Control System (FACS) (ITP.00273)	Replace part or all of existing Access Control System and integrate existing Intrusion Detection Systems. Create a redundant site in case primary site is compromised. (over \$500,000)	Improve performance, prepare for future growth, and leverage advanced capabilities.	State Funded F0153 151268	Better accountability of ID badges, improved security enhancements, monitor security burglar alarms, reduce maintenance costs	Q1, FY2021
Ferry Digital Schedules (FDS) (ITP.00301)	Implementation of digital displays at key Ferry locations providing public with information	Provide Great Customer Service	State Funded	- Ease of updating ferry schedules - Visitors and employees are able to view any	Q4, FY2024

	of Ferry related schedules, departure times, estimated wait times and emergency information. Reduces paper schedules and provides up to date information to customers. (over \$500,000)			directory and see active departure and delay information - Emergency information is easily disseminated quickly	
IT Service Management Tool Implementation (ITP. 00248)	Provide state of the art, user friendly, self-service solution that includes help desk, change management, asset management, and service request management. (over \$500,000)	Improved IT customer satisfaction, increased availability of business systems, improved management control over IT system infrastructure	State Funded 150701 F00045	Reduce cost of IT service delivery, maintenance, and operations, reduced risk of outages, improved efficiency of IT service delivery	Q3, FY2019
Law Enforcement Case Management System (ITP.00298)	Provide DMV L&T division tool to monitor and more efficiently process cases, eliminate redundant processes and enable automated workflow processes (over \$500,000)	Goal 2 – Provide great customer service and Goal 6 – Make our organization a great place to work.	State Funded 150021	More efficient support of L&T activities, elimination of duplicate manual system functions, deter fraudulent motor vehicle activities, and improve L&T reporting capabilities	Q3, FY2020
Monroe Bypass (ITP.00285)	Convert US-74 bus lanes to reversible HOV/HOT Express Lanes	Establish a toll and ITS system for this stretch of roadway	State Funded 64208-1550-TP01-Admin-400001, Field-401130	Improve mobility and capacity, allow for high-speed regional travel while maintaining access to	Q2, FY2019

	(over \$500,000)			properties along US 74. Tolls will be used to assist in repayment of bonds secured for financing the roadway.	
Occupational Safety Audit Project (ITP.00295)	Automates to collect audit information and safety management related information to include audits, safety trends, and training records and work assessments DOT workers, and better align NC DOT with federal labor requirements. (over \$500,000)	New software solution that will record, track, and report on safety audits Provide centralized platform for employees to complete their training. Track OSHA meetings and activities across the organization Calculate worker's compensation distributions	State Funded 150148 S0005	This project is intended to reduce exposure to unnecessary risks to NC DOT employees and the people of North Carolina by ensuring required audits are conducted, solutions identified, and information shared across the State.	Q4, FY2021
Portable Capture Solution (ITP.00304)	Develop an integrated solution that includes all necessary capture components into a portable case to provide secure driver license services at any location external to a brick and mortar Driver License office.		State Funded		Q4, FY2020

<p>Pre-Construction Collaboration (ITP.00260)</p>	<p>Addresses the needs of the DOT Highway Design Units to store and share CADD files across Central Units, Divisions, and external professional engineering firms (PEFs).</p> <p><i>(over \$500,000)</i></p>	<p>Expand functionality and accessibility of CADD workspace to allow collaboration.</p>	<p>State Funded S0064 / 150706</p>	<p>Enable DOT engineers and external consultants collaboration,</p>	<p>Q4, FY2019</p>
<p>Right of Way Management System Project (ITP.00245)</p>	<p>Addresses the shortfalls of the Right of Way (ROW) legacy system and provide a solution that supports and facilitates standardization of the ROW acquisition process that interfaces with key internal applications (GIS, SAP, SharePoint, DocuSign).</p> <p><i>(over \$500,000)</i></p>	<p>Replace existing system with one that supports and facilitates standardization of Right of Way business processes.</p>	<p>State Funded</p>	<p>Reduce cycle times by at least 25%, process standardization, cross-department integration and collaboration, detailed audit trail</p>	<p>Q4, FY2020</p>
<p>Roadway Lighting Control and Monitoring System (ITP.00264)</p>	<p>Provide a roadway lighting control and monitoring system that meets DOT objectives defined in IGA Report.</p> <p><i>(over \$500,000)</i></p>	<p>Make transportation network safer by identifying lighting systems not operating as designed, make lighting control accessible to authorized users from anywhere in the US with GIS-based systems providing real-time monitoring</p>	<p>State Funded</p>	<p>Allow faster dispatch and repair, fewer roadway accidents due to poor lighting</p>	<p>TBD</p>

<p>State to State (ITP.00299)</p>	<p>In compliance with the federal Real ID act, addresses the requirement to verify with other States that customer does not hold multiple driver license or identification cards with other states through AAMVA solution to reduce fraud and increase safety of NC citizens.</p> <p>(over \$500,000)</p>	<p>Make our transportation system safer by improving the ability to detect/deter fraud and decline issuance of fraudulent or invalid DL/IDs by integrating with AAMVA's State-to-State Verification Service (S2S).</p> <p>Make our transportation data network move people and goods more efficiently by increasing the accuracy of the issuance of DL / ID.</p> <p>Make our organization a place that works well by reducing business costs through improving efficiency and accuracy in the issuance processes and improving the ability to detect fraud and/or ineligible applicants.</p> <p>Make our organization a great place to work by increasing automation.</p>	<p>State Funded 150021</p>	<p>Reduce or eliminate manual processes being performed by field examiners to electronically transfer driving record information to another state.</p> <p>Identify and resolve internal data inconsistencies; person holding multiple credentials (DL / ID) issued in NC; i.e. duplicates; a person issued a Commercial Driver License (CDL) and a non-commercial Driver License</p> <p>Identify and resolve data inconsistencies across participating states; person holding multiple credentials; i.e. DL / ID issued in NC and other states.</p> <p>Eliminate the costs incurred to resolve data inconsistencies with the duplicate issuance of DL / ID</p> <p>Resolve duplicates improves the integrity of US issued credentials;</p>	<p>Q3, FY2019</p>
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				<p>compliance with state laws; i.e. maintaining one unique credential for a person.</p> <p>Consolidate credentials so that a person only has one active DL; as well as to detect and deter identity theft and government benefits fraud.</p> <p>Allow DMV to leverage its efforts to improve DL/ID processes by participating in a federal grant program</p> <p>Reduce the workload at the central office by integrating S2S with the Certification / Issuance process in SADLS to automate the DL / ID verification process.</p> <p>Improve effectiveness of field examiners in identifying fraudulent or invalid applications for Driver License and ID Cards.</p> <p>Align North Carolina with future federally-sponsored projects for further advanced technological applications related to</p>	
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				identity verification process improvements Participation in the Clean File process will allow NCDMV the opportunity to verify eligibility during the issuance process; and to identify and resolve data inconsistencies.	
Traffic Monitoring System Software (ITP.00232)	Replace legacy system with more scalable, automated solution using a COTS application with integration to the new Roads and Highway system. <i>(over \$500,000)</i>	Eliminate manual processes; minimize human errors by automatically uploading counter files to new application, increase processing efficiency from data collection to reporting using interactive maps.	State Funded	Increase efficiency in data loading, validation, processing, analysis, viewing, and reporting	Q1, FY2019
Trans Online Png Prioritization Programming Sys (TOP3S) (ITP.00279)	Implement a robust GIS-based solution that will support the Strategic Prioritization Office of Transportation (SPOT) in its role of evaluating and scoring capital improvement projects subject to the Strategic Transportation Investments (STI) legislation and integrate the planning and	Automate integration of all data needed to support prioritization process, provision a method for MPOs, RPOs and division to view and test all project recommendations on a GIS layer prior to submission for prioritization	State Funded	Improve project evaluation methodology, decreases TCO	Q3, FY2020

	<p>programming business processes.</p> <p><i>(over \$500,000)</i></p>				
<p>Web Gateway Content Control (WGCC) Project (ITP.00294)</p>	<p><i>Implement a comprehensive IT Web Gateway Control Center solution that will control and monitor internet traffic protecting against misuse and malware attacks.</i></p> <p><i>(over \$500,000)</i></p>	<p>Threat Protection: Provide internet web security that goes beyond basic URL and IP address filtering to detect and prevent malware and viruses through additional controls such as website reputation, code analysis and granular policy definition.</p> <p>Resource Management: Provide control and monitoring through policy enforcement of resource consumption to reduce impact to infrastructure such as local and wide area network utilization.</p> <p>Data Loss Protection: Provide control and monitoring through policy enforcement of data classification to reduce data breach and loss. Acceptable Use Enforcement: Identify</p>	<p>State Funded</p> <p>150701 F00045</p>		<p>Q1, FY2020</p>

		and eliminate abuse and unacceptable internet use.			
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Appendix B: DIT – Transportation Major IT Projects

FY17-19 Goal	FY17-19 Objective	FY17-19 Initiative	Progress Review	Anticipated Completion Date
Goal 1 <i>Make Transportation Safer</i>	Objective 1.1 Road Safety	Initiative 1.1.2 <i>Ignition Interlock Management System</i>	<i>Completed</i>	<i>06/27/2018</i>
	Objective 1.2 Protect Airways	Initiative 1.2.1 <i>Unmanned Aircraft System (UAS) Website</i>	<i>Completed</i>	<i>06/23/2017</i>
Goal 2 <i>Provide Great Customer Service</i>	Objective 2.1 <i>Customer-friendly methods of payment accepting</i>	Initiative 2.1.2 <i>MyDMV Portal</i>	Completed	08/25/2017
		Initiative 2.1.3 <i>Remittance Processor – STARS Interface</i>	Completed	10/16/2018
		Initiative 2.1.4 Virtual Hearings and Fees	Completed	07/25/2018
	Objective 2.2	Initiative 2.2.1	Completed	10/06/2016

FY17-19 Goal	FY17-19 Objective	FY17-19 Initiative	Progress Review	Anticipated Completion Date
	Increase Efficiency	<i>District Road Files and Encroachments</i>		
		Initiative 2.2.5 <i>NCDMV Optimization</i>	Completed	05/25/2017
		Initiative 2.2.6 <i>NCDOT Web Site Redesign and Restructuring</i>	Completed	07/25/2018
		Initiative 2.2.7 <i>Virtual Hearings and Fees</i>	Completed	08/31/2018
	Objective 2.3 Educate the Public	Initiative 2.3.1 <i>Unmanned Aircraft System (UAS) Website</i>	Completed	06/23/2017
Goal 3 <i>Deliver and Maintain our Infrastructure Effectively and Efficiently</i>	Objective 3.1 Provide Enterprise Platform	Initiative 3.1.1 3C and Data Services Framework	Completed	12/30/2016
		Initiative 3.1.4 <i>Road Operations and Management Effort</i>	Completed	05/23/2017
	Objective 3.3 Improvement and Availability of Business Systems	Initiative 3.3.2 <i>Replacement of the Vehicle Safety and Emission Testing Solution</i>		
		Initiative 3.3.3 <i>PDEA Tracking Upgrade</i>	Completed	08/11/2017
		Initiative 3.3.5 <i>Remittance Processor – STARS Interface</i>	Completed	10/16/2018

FY17-19 Goal	FY17-19 Objective	FY17-19 Initiative	Progress Review	Anticipated Completion Date
		Initiative 3.3.7 <i>Road Operations and Management Effort</i>	Completed	05/23/2017
Goal 4 <i>Improve the Reliability and Connectivity of the Transportation System</i>	Objective 4.1 Manage Traffic Information	Initiative 4.1.3 <i>Road Operations and Management Effort</i>	Completed	05/23/2017
Goal 5 <i>Promote Economic Growth through Better Use of our Infrastructure</i>	Objective 5.2 Revenue Opportunities	Initiative 5.2.3 <i>Motor Vehicle Inspection and Law Enforcement System</i>	Completed	12/08/2017
		Initiative 5.2.4 <i>Virtual Hearings and Fees</i>	Completed	07/25/2018
Goal 6 <i>Make our Organization a Great Place to Work</i>	Objective 6.2 Modernize Tools	Initiative 6.2.3 <i>Virtual Hearings and Fees</i>	Completed	07/25/2018
	Objective 6.3 <i>Improve Work Environment</i>	Initiative 6.3.1 <i>NCDMV Optimization</i> <i>Improve efficiency of space and use of employees in meeting customer needs</i>	Completed	05/25/2017
		Initiative 6.3.2 <i>Virtual Hearings and Fees</i>	Completed	08/31/2018