NORTH CAROLINA 2024 – 2033
STATE TRANSPORTATION IMPROVEMENT PROGRAM

What is a State Transportation Improvement Program (STIP)?

The STIP is a multi-year capital improvement document which denotes the scheduling and funding of construction projects across the state over a minimum 4-year time period as required by Federal law. North Carolina's STIP covers a 10-year period, with the first five years (2024-2028 in this version) referred to as the delivery STIP and the latter five years (2029-2034 in this version) as the developmental STIP. Per 23 CFR 450.216 & 23 U.S. Code § 135 STIP's must also:

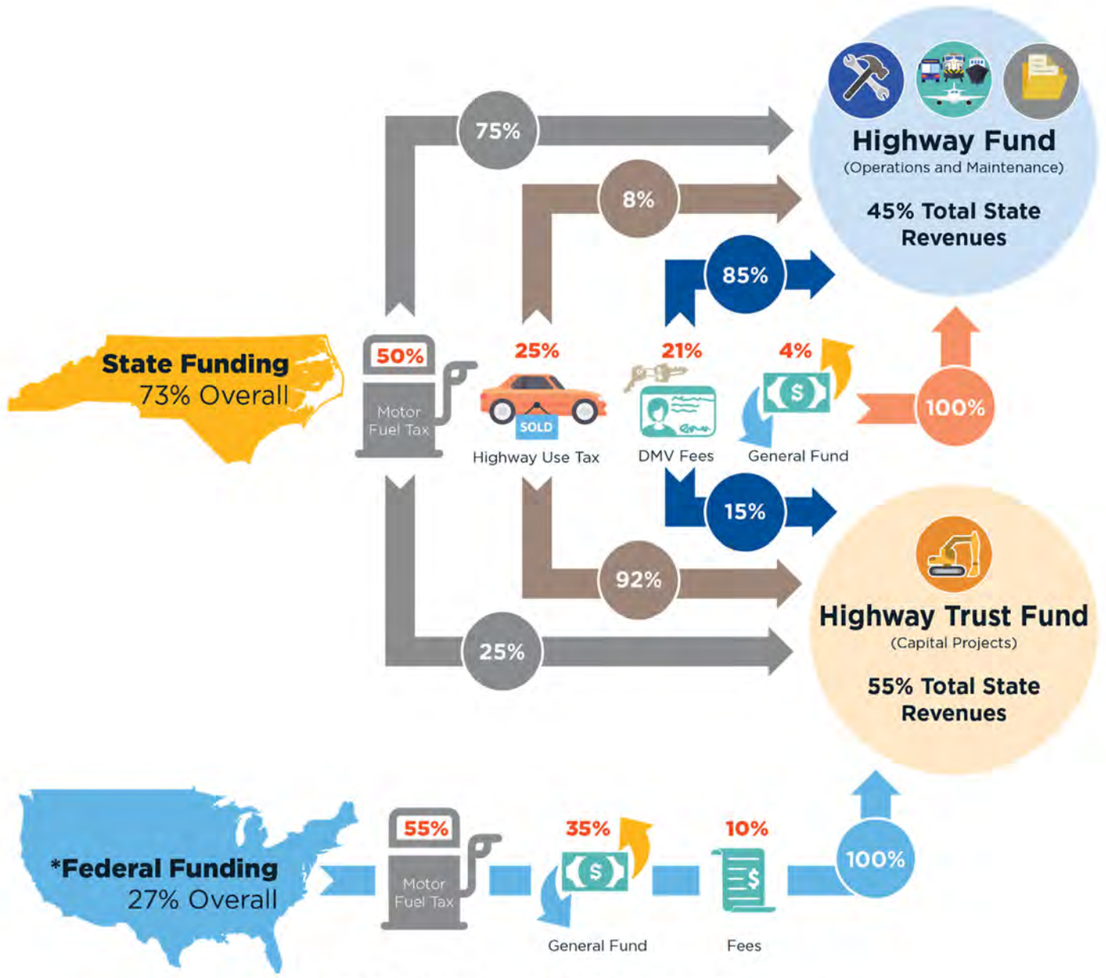
- Be submitted to Federal Highway Administration (FHWA) & Federal Transit Administration (FTA) for approval at least every 4 years
- Be fiscally constrained by year
- Include all capital and non-capital projects using Title 23 USC or Title 49 USC funds, other than certain safety, planning, and research funds
- Include metropolitan TIPs from Metropolitan Planning Organizations
- Provide public comment opportunity on STIP document
- And include the following information:
    - Project description and termini
    - Estimated total cost (NCDOT includes Utility, R/W, and Construction costs)
    - Federal funds to be obligated
    - Responsible agency (such as municipality)

North Carolina's STIP is typically updated every two years (but no later than every four years) and developed in concert with federal and state revenue forecasts, North Carolina Department of Transportation's (NCDOT's) Strategic Prioritization process, preconstruction, and project development timetables, and in adherence with federal and state laws. North Carolina state law requires Board of Transportation (BOT) action to approve the STIP.

This is the fourth STIP developed under the Strategic Transportation Investments (STI) law passed in June 2013. This landmark legislation elevates the use of transportation criteria and the input of local communities to determine project priorities and directs the use of dollars for transportation projects.

Maintenance and Capital Improvement Funding for North Carolina

NCDOT uses three major sources of funds for transportation improvements. Federal Funding and State Highway Trust Funds are used for capital improvements while the Highway Fund is used for maintenance activities. The chart below illustrates these funds and their sources.



* IIJA's USDOT FHWA and FTA FFY 2022-23 Allocations

Performance Management Targets

NCDOT has established performance management targets for highway safety (established in the Strategic Highway Safety Plan (SHSP)), transit tier 2 providers that choose to participate in NCDOT's Group Transit Asset Management (TAM) Plan, and performance management targets for infrastructure condition, congestion, system reliability, emissions, and freight movement. The NCDOT anticipates meeting their identified targets with the State funded Highway Maintenance Improvement Program (HMIP) and the mix of projects included in the STIP aided by the Strategic Transportation Investments Prioritization and Programming process. The HMIP is a State funded program of projects that are programmed outside of the STIP. NCDOT collects data and other information at regular time intervals from the transit agencies relative to measure and assess progress toward meeting performance targets.

In North Carolina, pavement and bridge performance is primarily impacted through state funded programs that are managed outside the STIP. The Department's HMIP, identifies planned maintenance activities for a five-year time period, which include pavement, bridge and other general maintenance projects across our entire roadway network. The amount of funding provided through these state funded programs is roughly equivalent to the amount of state and federal funding programmed in the STIP over the same time period. In relation to NHS specific routes, the STIP does include some specific federal funding for interstate pavement and bridge maintenance through our own internal interstate maintenance program. Federal funding for bridges included in the STIP is applied primarily to non-NHS bridges. While the STIP can have an impact to the condition of our NHS pavements and bridges, specifically on the interstate system, the majority of the funding impacting the condition of our pavements and bridges is managed outside the STIP.

Public transit projects included in the STIP align with the transit safety planning and target setting process undertaken by the transit agencies and MPOs. While the North Carolina DOT aided with the development of a template for the initial Public Transportation Agency Safety Plans (PTASPs), each large urban transit provider is responsible for implementing its PTASP, which includes transit safety targets. Investments are made in alignment with PTASPs with the intent of keeping the state's public transit operations, vehicles, and facilities safe and meeting transit safety targets. State and federal funding sources that can be used by transit agencies for operations, vehicles, and facility improvements are outlined in the Public Transportation Project Funding section of the NCDOT 2024-2033 Current STIP. Individual transit agencies determine the use of these sources for capital and operating expenses based on their local needs.

How is the STIP organized?

The STIP contains funding information and schedules for transportation modes and programs including: Highways, Aviation, Bicycle and Pedestrian, Ferry, Public Transportation, Rail, Governor's Highway Safety and statewide related programs. The Appendix also contains a reference list of completions and deletions since the 2020-2029 STIP which was approved in 2019.

The transportation program in the STIP is organized in an Excel file that can be sorted and filtered as needed by the reader. The information included for each project includes details on the location of the project: County, NCDOT Highway Division, Route, Description, and Planning Organization. Projects also list the STI category they are funded from, i.e., by Statewide Mobility, Regional Impact, or Division Needs. The phases of projects (such as Right of Way (R), Utility relocation (U), and Construction (C) are listed by Fiscal Year along with their costs and anticipated funding sources. For those projects with their first phase of work beginning in the second half of the STIP (years 2029-2033), they are listed as "Funded for Preliminary Engineering Only." The Department will begin Preliminary Engineering activities (environmental documentation and design work) at the appropriate time, but the project will need to compete for funding in a future round of Prioritization and therefore the funding years for phases are unknown at this time. (See next section titled "Strategic Prioritization" for details on project prioritization.)

All projects require extensive planning, environmental impact and design studies. The location and exact type of improvements are subject to refinement and modification during the planning and design phases.

Strategic Prioritization

The Department manages a strategic project prioritization process known as Prioritization. Strategic prioritization uses transportation data, input of local government partners, and the public to generate scores and ultimately rankings of projects across the state. Multiple public input opportunities were provided during the spring and summer of 2020 regarding the submittal of new projects assisting each Metropolitan Planning Organization (MPO), Rural Planning Organization (RPO), and NCDOT's transportation Divisions.

The P6.0 process (the most recent generation of Prioritization) was organized similarly to previous prioritization cycles and resulted in each transportation mode using different quantitative criteria, measures, and weights to provide technical scores for projects as recommended by the Prioritization Workgroup and approved by the NC Board of Transportation. Also, per the intent of STI for transportation modes to compete for funding, a normalization process was recommended to create minimum percentages of funding for highway and non-highway projects in the combined Regional Impact and Division Needs categories. The minimum percentage for highways was 90% and minimum percentage for non-highways was 4%. These percentages guided the programming process, which ultimately yielded a 95% to 5% highway vs non-highway programmed amount in the combined Regional Impact and Division Needs categories.

P6.0 Highway Criteria & Weights:

Mobility Projects (Roadway Widening, Intersection/Interchange Improvements, Access Management):

Statewide Mobility		Regional Impact		Division Needs	
30%	Congestion	20%	Benefit-Cost	15%	Benefit-Cost
25%	Benefit-Cost	20%	Congestion	15%	Congestion
25%	Freight	10%	Accessibility/Connectivity	10%	Safety
10%	Economic Competitiveness	10%	Freight	5%	Accessibility/Connectivity
10%	Safety	10%	Safety	5%	Freight

Modernization Projects (Modernize Roadway, Upgrade Freeway to Interstate):

Statewide Mobility		Regional Impact		Division Needs	
25%	Freight	25%	Safety	20%	Safety
25%	Safety	10%	Freight	10%	Pavement Condition
20%	Paved Shoulder Width	10%	Lane Width	10%	Paved Shoulder Width
10%	Congestion	10%	Pavement Condition	5%	Freight
10%	Lane Width	10%	Paved Shoulder Width	5%	Lane Width
10%	Pavement Condition	5%	Congestion		

P6.0 Aviation Criteria & Weights

Statewide Mobility		Regional Impact		Division Needs	
40%	NCDOA Project Rating	30%	NCDOA Project Rating	25%	NCDOA Project Rating
30%	FAA ACIP Rating	15%	Benefit/Cost	10%	Benefit/Cost
20%	Benefit/Cost	15%	FAA ACIP Rating	10%	FAA ACIP Rating
10%	Constructability Index	10%	Constructability Index	5%	Constructability Index

P6.0 Bicycle/Pedestrian Criteria & Weights

Statewide Mobility	Regional Impact	Division Needs	
(not eligible)	(not eligible)	20%	Safety
		15%	Accessibility/Connectivity
		10%	Demand/Density
		5%	Cost Effectiveness

P6.0 Ferry Criteria & Weights

Statewide Mobility	Regional Impact		Division Needs	
(not eligible)	20%	Capacity/Congestion	15%	Asset Condition
	15%	Asset Condition	15%	Asset Efficiency
	15%	Asset Efficiency	10%	Accessibility/Connectivity
	10%	Accessibility/Connectivity	10%	Benefits
	10%	Benefits		

P6.0 Public Transportation Criteria & Weights (Demand Response Projects)

Statewide Mobility	Regional Impact		Division Needs	
(not eligible)	25%	Cost Effectiveness	15%	Cost Effectiveness
	20%	Demand/Density	15%	Demand/Density
	15%	Efficiency	10%	Efficiency
	10%	Impact	10%	Impact

P6.0 Public Transportation Criteria & Weights (Facility Projects)

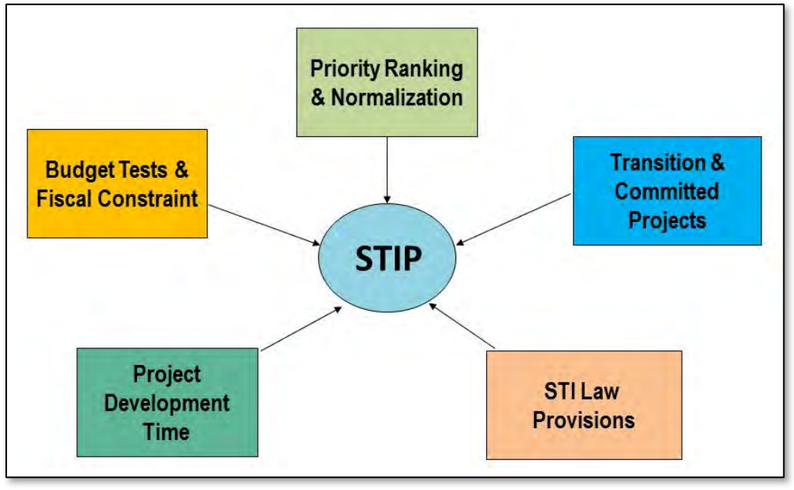
Statewide Mobility	Regional Impact	Division Needs	
(not eligible)	(not eligible)	15%	Cost Effectiveness
		15%	Impact
		10%	Demand/Density
		10%	Efficiency

P6.0 Rail Criteria & Weights

Statewide Mobility		Regional Impact		Division Needs	
35%	Benefit-Cost	25%	Benefit-Cost	15%	System Opportunities
30%	Safety	15%	Safety	10%	Benefit-Cost
15%	System Opportunities	10%	Capacity and Diversion	10%	Capacity and Diversion
10%	Capacity and Diversion	10%	Economic Competitiveness	10%	Safety
10%	Economic Competitiveness	10%	System Opportunities	5%	Economic Competitiveness

Due to rising costs for projects funded in the previously adopted 2020-2029 STIP, little to no funding was projected to be available for new projects in the 2024-2033 STIP timeframe. Therefore, on August 4, 2021, the Prioritization Workgroup recommended, and the N.C. Board of Transportation approved, the P6.0 prioritization cycle be halted. The decision was made to develop the 2024-2033 STIP using existing projects from the previously adopted 2020-2029 STIP. The conclusion of the P6.0 cycle was the release of the quantitative scores and the local input point procedure was halted. The P6.0 Workgroup was reconvened to finalize the methodology and procedures used for this one-time STIP development exception and the N.C. Board of Transportation approved the process. Projects with current construction schedules in the first three years (2024-2027), projects with right-of-way actively underway, and those with federal grants were programmed first; followed by a seniority approach of combined factors as oldest Prioritization cycle and highest scoring projects. There were no newly submitted projects from the P6.0 prioritization cycle included in the 2024-2033 STIP.

Figure A



However, it does not necessarily mean that projects will be scheduled in the STIP in the order of their score and rank. There are other considerations and factors in developing the actual program (Figure A). A major factor in deciding when the top scoring projects are funded is project delivery time. Projects need to fulfill a series of environmental and preliminary engineering requirements, right–of-way must be purchased, utility relocation (where applicable) must be addressed, and final plans must be developed for lettings. The time period to accomplish these activities can be lengthy. Construction funding cannot be allocated to projects before these preconstruction activities have taken place.

There were also STI law provisions (including a corridor cap and individual modal caps) which directed programming decisions and the entire program had to meet budget tests and fiscal constraint per state and federal requirements. STI law also included a provision to exempt from prioritization select projects (Transition Period Projects) scheduled to be obligated for construction prior to July 1, 2015. In addition, projects funded for right-of-way or construction in the first 6 years of the previous 2020-2029 STIP, were considered committed (now called “Scheduled for Delivery”) and were not evaluated in P6.0. However, the funding required for both the transition and committed projects was accounted for when budgeting for other projects.

Public Involvement – Draft STIP

After the release of the Draft STIP in August 2022, each of NCDOT's 14 transportation divisions hosted a weeklong open house between September 1, 2022 and October 28, 2022. The purpose of these open houses was to inform citizens about projects in the Draft STIP and collect feedback. Additionally, multiple public input opportunities were available ahead of the development of the Draft STIP including the STI implementation process.

Each open house allowed participants to study maps of projects in the Draft STIP and review proposed project schedules and information with Department staff. Sessions were held in transit accessible locations and the Department provided auxiliary aids for participants under the Americans with Disabilities Act as well as special services for English limited participants. Consultation was conducted with stakeholder groups throughout North Carolina via emails and direct mailing to encourage participation via multiple feedback options. In addition, the department provided the ability for citizens to take an online survey as well as provide comments online, by phone or mail.

Transportation Conformity

On February 16, 2018, the United States Court of Appeals for the District of Columbia Circuit in South Coast Air Quality Mgmt. District v. EPA ("South Coast II," 882 F.3d 1138) held that transportation conformity determinations must be made in areas that were either nonattainment or maintenance for the 1997 ozone national ambient air quality standard (NAAQS) and attainment for the 2008 ozone NAAQS when the 1997 ozone NAAQS was revoked. These conformity determinations are required in these areas after February 16, 2019. The Research Triangle Region, the Rocky Mount Region were "maintenance" at the time of the 1997 ozone NAAQS revocation on April 6, 2015 and were also designated attainment for the 2008 ozone NAAQS on May 21, 2012. Therefore, the Research Triangle Region, the Metrolina Region, and the Rocky Mount Region will make their conformity determinations as per the 1997 ozone NAAQS on their MTPs and their 2024-2033 TIP. The Metrolina Region will also make their conformity determinations as per the 2008 ozone NAAQS on their MTPs and their 2024-2033 TIP.

Each MPO is required to develop a 20+ year Metropolitan Transportation Plan (MTP). In MPOs that are listed as either a non-attainment or maintenance air quality area, Transportation Conformity must be demonstrated on all plans, projects and TIPs. This ensures that transportation projects that receive federal funding conform to the intent of the air quality State Implementation Plan (SIP). Projects must be grouped by horizon year and the travel demand model must be run for each horizon year. From the travel demand model, speeds and Vehicle Miles Traveled (VMT) are obtained and used in the air quality model to calculate emissions that are compared to the budgets approved by the US Environmental Protection Agency (EPA). As long as the calculated emissions are less than the budget, the area can make a conformity finding. If the area cannot meet the budget, then the MPO's project list does not meet the transportation conformity test and the area may be subject to lapse. A lapse can delay projects as federal actions cannot take place during a lapse and only exempt projects can move forward. A revised Transportation Conformity analysis can be triggered whenever a project is delayed or accelerated such that it crosses a horizon year. Whenever an MPO develops a new MTP, a new conformity analysis must be performed. When a new TIP comes out, the new TIP must be checked to make sure it is consistent with the MTP. If there is any inconsistency between the TIP and the MTP (conformity finding) then FHWA cannot take any federal action including approval of the TIP until this inconsistency is resolved.

On February 16, 2018, the United States Court of Appeals for the District of Columbia Circuit in the *South Coast Air Quality Mgmt. District v. EPA* case ("*South Coast II*," 882 F.3d 1138) held that transportation conformity determinations must still be made in areas that were either nonattainment or maintenance for the 1997 ozone national ambient air quality standard (NAAQS) and attainment for the 2008 ozone NAAQS when the 1997 ozone NAAQS was revoked. However, these conformity determinations may be made without the requirement of a Regional Emissions Analysis (REA) and comparison to the emission budgets approved by the US EPA. Consistency between the TIP and MTP must still be ensured.

North Carolina 2008 Ozone Maintenance Area Requiring a REA

Region	Counties	Pollutant(s)
		8- Hour Ozone
Metrolina	Cabarrus (Partial)	✓
	Gaston (Partial)	✓
	Iredell (Partial)	✓
	Lincoln (Partial)	✓
	Mecklenburg	✓
	Rowan (Partial)	✓
	Union (Partial)	✓

North Carolina 1997 Ozone Maintenance Areas NOT Requiring a REA

Region	Counties	Pollutant(s) 8- Hour Ozone
Triangle	Chatham (Partial)	✓
	Durham	✓
	Franklin	✓
	Granville	✓
	Johnston	✓
	Person	✓
	Wake	✓

Region	Counties	Pollutant(s) 8- Hour Ozone
Rocky Mount	Edgecombe	✓
	Nash	✓

Region	Counties	Pollutant(s) 8- Hour Ozone
Metrolina	Cabarrus	✓
	Gaston	✓
	Iredell (Partial)	✓
	Lincoln	✓
	Mecklenburg	✓
	Rowan	✓
	Union	✓

Public Transportation Project Funding

The projects listed in the STIP are funded from various Federal Transit Administration (FTA), Federal Highway Administration (FHWA) and North Carolina State Funds, many requiring a state and/or local funding match. Annually, the NCDOT Integrated Mobility Division (IMD) provides state funds to assist in meeting these match requirements. The amount available for state match is limited to the amount appropriated by the General Assembly.

FTA program funding apportionment amounts are published annually in the Federal Register and posted to the FTA website. NCDOT uses these apportionments to allocate funding to qualifying sub-recipients. Most FTA funding apportioned to urbanized areas with a population of 200,000 or greater is managed directly by the MPO or transit agency. The MPO develops projects that appear in the STIP, using, in part, funds received directly from FTA. NCDOT IMD allocates federal funds to small urban areas less than 200,000 population and rural, non-urbanized areas of the state. MPOs and NCDOT IMD develop projects and programs that appear in the STIP using appropriated and apportioned federal and state funding amounts, including unobligated prior year funding. Amendments or modifications are made to the STIP for transit projects when the funding amount changes from the amount contained in the approved STIP.

The following Federally funded programs appear in the STIP:

A. Metropolitan Planning and Statewide Planning Program (Section 5303 / 5304)
Provides funding and procedural requirements for multimodal transportation planning in metropolitan areas and states that are cooperative, continuous and comprehensive, resulting in long-range plans and short-range programs that reflect transportation investment priorities. These planning programs are jointly administered by FTA and the FHWA, which provides additional funding to MPOs.

IMD Goals:

- 5303 – Create a fair and equitable distribution of planning funds to urbanized areas (UZAs) and foster transit planning on a regional and inter-regional scale.
- 5304 – Provide for statewide planning and technical studies.

B. Urban Area Formula Program (Section 5307)
Makes Federal resources available to qualifying areas for transit capital, operating assistance, and transportation planning in MPOs and urbanized areas with a population of 50,000 or more as designated by the U.S. Department of Commerce, Bureau of the Census.

IMD Goals:

- 5307 Governor's Apportionment (GA) – Work with small, urbanized areas to offer technical assistance, as needed. Section 5307 grants are managed by the FTA direct recipient in these small, urbanized areas.
- 5307 Large Urbanized Areas – Work with large urbanized areas for technical assistance, as needed.

C. Enhanced Mobility of Seniors and Individuals with Disabilities Program (Section 5310)
Improve mobility for seniors and individuals with disabilities by removing barriers to transportation service and expanding transportation mobility options. This program supports transportation services planned, designed, and carried out to meet the special transportation needs of seniors and individuals with disabilities in all areas – large urbanized (over 200,000 population), small urbanized (50,000-200,000 population), and rural (under 50,000 population). Eligible projects include both traditional capital investment and nontraditional operational assistance investment beyond the Americans with Disabilities Act (ADA) complementary paratransit services.

IMD Goal:

- Support transportation of seniors and persons with disabilities in small, urbanized areas (50,000-200,000 population) and rural North Carolina (less than 50,000 population).

D. Rural Formula Grant Program (Section 5311)
Provides capital, planning, and operating assistance to states to support public transportation in rural areas with populations of less than 50,000, where many residents often rely on public transit to reach their destinations. The program also provides funding for state and national training and technical assistance through the Rural Transportation Assistance Program (RTAP), Intercity Bus (5311(f)) and Appalachian Development Transportation Assistance Program. North Carolina is one of 13 states receiving the Appalachian Development grants in the following 29 counties: Alexander, Alleghany, Ashe, Avery, Buncombe, Burke, Caldwell, Cherokee, Clay, Davie, Forsyth, Graham, Haywood, Henderson, Jackson, McDowell, Macon, Madison, Mitchell, Polk, Rutherford, Stokes, Surry, Swain, Transylvania, Watauga, Wilkes, Yadkin, and Yancey.

IMD Goals:

- Support general public transportation in rural North Carolina (less than 50,000 population) and provide a coordinated transportation network.
- Enhance access in rural areas to health care, shopping, education, employment, public services and recreation.
- Encourage the most efficient use of transportation funds to provide passenger trips in rural areas through coordination of programs and services.

E. Bus and Bus Facilities Program (Section 5339)
Provides capital funding to replace, rehabilitate and purchase buses and related equipment and to construct bus-related facilities.

IMD Goal:

- Support the small urban and statewide funding program to provide capital funds to replace, rehabilitate and purchase buses and related equipment and construct bus-related facilities.

F. Public Transportation Safety Program – State Safety Oversight (Section 5329)
Provides funds for program operational and administrative expenses, including employee training activities. This funding is provided to North Carolina to support the rail fixed guideway public transportation systems in the City of Charlotte. This funding is administered by the NCDOT Rail Division.

IMD Goal:

- Provide any needed technical assistance and support to the NCDOT Rail Division as it administers these funds.

G. State of Good Repair (Section 5337)
Provides capital funds for maintenance, replacement and rehabilitation projects of high-intensity fixed guideway and bus systems to help transit agencies maintain assets in a state of good repair. Additionally, State of Good Repair grants are eligible for developing and implementing Transit Asset Management Plans. This funding is apportioned directly to the systems in the State with fixed guideway systems. This FTA funding is not administered by IMD.

H. Capital Investment Grant (CIG) Program (Section 5309)
The FTA discretionary grant program funds transit capital investments, including heavy rail, commuter rail, light rail, streetcar and bus rapid transit. Federal transit law requires transit agencies seeking CIG funding to complete a series of steps over several years. For New Starts and Core Capacity projects, the law requires completion of two phases in advance of receipt of a construction grant agreement – Project Development and Engineering. For Small Starts projects, the law requires completion of one phase in advance of receipt of a construction grant agreement – Project Development. This FTA funding is not administered by IMD.

Project Descriptions

EPA's Transportation Conformity Regulation states "The degree of specificity required in the transportation plan and the specific travel network assumed for air quality modeling do not preclude the consideration of alternatives in the NEPA process of other project development studies." In an effort to not unduly influence the outcome of NEPA studies the STIP has used fairly generic descriptions of proposed work although the cost estimates were derived from specific future cross sections. In future documents, more specific descriptions will be used as the NEPA process determines a preferred alternative. So, while the out years 6 through 10 may use a description like "widen to multi-lanes" as the NEPA process defines a recommended cross section this may become "widen to 4 lane median-divided cross section" as the project comes closer to having right of way and construction actually funded.

PROGRAM BUDGETS

Transportation Revenue Forecast

State Budget

State transportation revenues are derived from four sources: user fees in the form of Motor Fuel Tax (MFT), driver and vehicles fees collected by the NC Division of Motor Vehicles (DMV Fees), a Highway Use Tax (HUT) on vehicle title transfers, and a portion of the state sales tax proceeds. Federal transportation revenues are derived from a federal MFT tax, commercial vehicle fees, and transfers from the U.S. General Fund. North Carolina's total transportation funding consists of roughly 75 percent state revenues and 25 percent federal revenues.

State revenue projections are developed using a consensus forecast process by the Office of State Budget and Management (OSBM), Legislative Fiscal Research Division, and NCDOT. Budget estimates developed for the Governor's biennial budget serve as a base from which NCDOT and OSBM staff develop the forecast for the remaining years. The OSBM and NCDOT forecasts are produced using numerous data sources, but largely rely on economic data and research produced by S&P Global, a private financial forecasting company and in-house consumption forecasting models, and internal historical data. Motor fuel tax revenues are forecast using crude oil prices, and estimates for consumption, fuel efficiency, and miles travelled. Highway Use Tax (HUT) revenue forecasts are based on historical data and predicted values for new and used vehicle transactions and vehicle price. Sales tax revenue forecasts rely on economic measures, such as gross national product (GNP), personal income, and the consumer price index (CPI). DMV fee revenue forecasts are based on historical transactional information, such as vehicle registration and licensed driver data, and OSBM population projections. DMV title fee estimates are obtained using licensed driver and vehicle registration data. The number of vehicle transactions, vehicle price, motor fuel consumption, the purchase of goods and services, and sales tax revenues correlate strongly with economic conditions. Generally, DMV fees correlate with projected changes in population. Title fees closely correlate to forecasted changes in vehicle sales.

The motor fuel tax rate is adjusted annually based on a variable rate formula that measures changes in population and the Consumer Price Index for Energy (CPI-E). Effective January 1, 2023, the motor fuel tax rate is 40.5 cents per gallon. DMV fees are adjusted every four years based on changes in the CPI. HUT and sales tax rate changes are made by acts of the North Carolina General Assembly.

Federal Budget

After a one-year extension of the Fixing America's Surface Transportation Act, or "FAST Act", President Biden signed into law the five-year $1.2 trillion Infrastructure Investment and Jobs Act (IIJA) on November 15, 2021. The IIJA largely maintains current program structures and funding shares between highways and transit, but it includes significant expansions in funding, new discretionary and competitive grant programs, and two new formula programs. The law emphasizes the goals of creating a resilient, efficient, safe, and connected transportation system. The formula programs are:

- National Highway Performance Program (NHPP)
- Surface Transportation Block Grant Program (STBG)
- Congestion Mitigation and Air Quality Improvement Program (CMAQ)
- Highway Safety Improvement Program (HSIP)
- Railway-Highway Crossings (subset of the HSIP)
- Metropolitan Planning
- Construction of Ferry Boats and Ferry Terminal Facilities
- Transportation Alternatives (TA)
- National Highway Freight Program
- Carbon Reduction Program
- PROTECT Program
- Bridge Program
- National Electric Vehicle Formula Program

Federal transportation funding is distributed by USDOT based on Congressional multi-year reauthorization bills and annual appropriation acts. The federal MFT rate, set by Congress in 1993, is 18.4 cents per gallon for gasoline and 24.4 cents per gallon for diesel fuel. Unlikely prior multi-year reauthorization bills, the IIJA legislation was approved by Congress using record General Fund transfers and advanced appropriations which have been assumed to be partially continue past the expiration of IIJA in federal FY 2026.

Federal Aid Program

The Federal Aid Program consists of many funding categories. Funding in most of these individual categories is subject to overall federal budget constraints and Federal Obligation Limitation. The obligation limitation effectively limits the amount of federal funds that can be utilized in any one year.

North Carolina's availability of federal funds for the STIP is expected to be about $1,497 million in FY 2024 and $1,522 in FY 2025.

Virtually all federal-aid projects require a local or state fund contribution. Most highway and transit programs require a 20% local or state share. The amount of matching funds needed for the Federal Aid Program is expected to be approximately $359 million in FY 2024 and $365 million in FY 2025, most of which will be funded by the State Highway Trust Fund.

Federal Aid Construction Program – FFY 2024
($ in Millions)

Category	Federal Funds	Required Matching Funds	Total
National Highway Performance	715	179	894
Rail-Highway Crossing	7	0	7
Statewide Planning & Research*	19	5	24
Transportation Alternatives	37	9	46
Research Development*	7	2	9
Metropolitan Planning*	8	2	10
Congestion Mitigation Air Quality	54	14	68
Surface Transportation Block Grant	332	83	415
Highway Safety Improvement	76	8	84
Freight	35	9	44
Carbon Reduction	32	8	40
Protect	37	9	46
Bridge	99	25	124
National Electric Vehicle Infrastructure	22	6	28
Appalachian Development	17	0	17
Total Available Funds	**1,497**	**359**	**1,856**

*Category not required to be included in the STIP

Federal Aid Construction Program – FFY 2025
($ in Millions)

Category	Federal Funds	Required Matching Funds	Total
National Highway Performance	728	182	910
Rail-Highway Crossing	7	0	7
Statewide Planning & Research	19	5	24
Transportation Alternatives	38	10	48
Research Development	7	2	9
Metropolitan Planning	8	2	10
Congestion Mitigation Air Quality	55	14	69
Surface Transportation Block Grant	339	85	424
Highway Safety Improvement	77	8	85
Freight	36	9	45
Carbon Reduction	33	8	41
Protect	37	9	46
Bridge	99	25	124
National Electric Vehicle Infrastructure	22	6	28
Appalachian Development	17	0	17
Total Available Funds	**1522**	**365**	**1887**

During the balancing of the State Transportation Improvement Program (STIP), the program is fiscally constrained to the amount of funds projected to be available each year to prevent the Department from over committing future revenues. NCDOT extensively uses “Advance Construction” (AC), which allows states to begin a project even in the absence of sufficient federal-aid obligation authority to cover the federal share of project costs. It is codified in Title 23, Section 115. Advance Construction eliminates the need to set aside full obligational authority before starting projects. As a result, a state can undertake a greater number of concurrent projects than would otherwise be possible. In addition, Advance Construction helps facilitate construction of large projects, while maintaining obligational authority for smaller ones.

Prior to authorizing a project (or phase of a project), a federal agency is typically required to obligate the total amount of funds needed to complete the project (or phase). So, if NCDOT plans to construct a project estimated to cost $40 million without using Advance Construction, Federal Highway Administration (FHWA) would need to obligate their full share, typically 80 percent, or $32 million; even though some of those funds will not be needed for several years.

Advance Construction allows FHWA to authorize the project without obligating the funds needed to complete the project. Under an Advance Construction authorization, FHWA does not commit the federal government to funding the project but makes the project eligible for reimbursement at a later date as federal funds become available.

As an Advance Construction project progresses, NCDOT will obligate federal funding and bill FHWA for expenditures that have occurred (typically at 80 percent). For instance, if after a year of construction, the $40 million construction project described above has $10 million of expenditures and federal funds are available, NCDOT may obligate $8 million of federal funds and send FHWA a bill for $8 million.

In March 2021, NCDOT developed a policy to govern the use of Advance Construction. This policy requires a yearly analysis of the Advance Construction program to ensure that the use of Advance Construction is within prescribed limits. The results of this analysis are posted on the Department’s website and reported to the Board of Transportation.

When analyzing Advance Construction usage at NCDOT, a distinction is made between Advance Construction used for Grant Anticipation Revenue Vehicles (GARVEE) bonded projects and non-GARVEE traditional Advance Construction projects. GARVEE is a type of bond or similar financing method used by a state to finance transportation projects and is a specific type of Advance Construction. Outstanding GARVEE debt is considered in the yearly Advance Construction analysis by reserving the funds that are needed to make the bond payments. However, GARVEE AC balances should be viewed differently since they are long-term well-defined commitments. The North Carolina General Assembly has imposed restrictions on the use of GARVEE to ensure that the Department’s use of this funding technique remains within reasonable levels. Prior to the issuance of GARVEE bonds, the limits imposed by the General Assembly are checked to ensure that the Department will remain in compliance. State law constrains the total amount of GARVEE debt such that the total GARVEE outstanding principal amount cannot exceed the previous year’s total federal budget authorization, or the debt service cannot exceed 20 percent of anticipated annual future federal revenues.

Since non-GARVEE Advance Construction is more fluid, a yearly analysis is required by the Department’s Advance Construction policy. The Advance Construction levels for non-GARVEE projects are subject to the following two limits:

- Amount of unreimbursed state funds expended (by funding source) should not exceed 1 year of federal apportionments.
- AC balance (by funding source) should not exceed 4 years of anticipated federal apportionments.

The table on the following page provides the projected non-GARVEE balances for FY 2024 through FY 2027 in the two largest categories, National Highway Performance Program (NHPP) and Surface Transportation Block Grant Program (STBG) as well as our Highway Safety Improvement Program (HSIP).

	National Highway Performance Program				Surface Transportation Block Grant				Highway Safety Improvement Program			
	2024	**2025**	**2026**	**2027**	**2024**	**2025**	**2026**	**2027**	**2024**	**2025**	**2026**	**2027**
AC Beginning Balance	$1,522,260	$1,734,495	$1,541,759	$1,612,635	$566,126	$891,080	$1,033,705	$890,095	$149,689	$149,689	$149,689	$149,689
New AC in STIP	$865,804	$460,794	$724,756	$238,944	$691,316	$510,074	$228,551	$285,129	$56,365	$56,365	$56,365	$56,365
AC Converted	$653,569	$653,530	$653,880	$653,678	$366,361	$367,449	$372,161	$371,471	$56,365	$56,365	$56,365	$56,365
AC Ending Balance	$1,734,495	$1,541,759	$1,612,635	$1,197,901	$891,080	$1,033,705	$890,095	$803,753	$149,689	$149,689	$149,689	$149,689

NOTE: Dollars in thousands and exclude GARVEE.

GARVEE Bonds

In 2005, House Bill 254 authorized NCDOT to issue Grant Anticipation Revenue Vehicles (GARVEE bonds) to finance federal aid highway projects. All funds derived from GARVEE bonds are backed by the receipt of future federal funds and no state funds may be committed to the debt service. Below is a summary of the GARVEE bond issuances and debt service requirements.

GARVEE Bond Program ($ in Millions)

State Fiscal Year	Proceeds Including Premium	Debt Service
2008	$299.80	$5.06
2009		59.33
2010	263.14	67.16
2011		82.00
2012	364.9	59.84
2013		86.33
2014		86.33
2015	300.54	86.32
2016		100.00
2017		99.39
2018	253.15	95.94
2019	719.04	95.94
2020		131.63
2021		131.64
2022	306.16	154.33
2023		154.34
2024		118.08
2025		118.08
2026		118.08
2027		118.09
2028		118.09
2029		118.09
2030		118.09
2031		79.80
2032		79.79
2033		79.80
2034		79.80
2035		22.70
2036		22.70

BUILD NC Bonds

In 2018, Senate Bill 758 authorized NCDOT to issue Build NC bonds to finance highway projects at the regional impact and divisional need project categories. Subject to appropriation by the General Assembly, funds from the Highway Trust Fund shall be the source for repayment of debt service. Below is a summary of Build NC bond debt service requirements.

BUILD NC Bond Program ($ in Millions)

State Fiscal Year	Proceeds Including Premium	Debt Service
2019	$357.34	
2020		28.18
2021	848.69	69.26
2022	334.01	93.04
2023		121.44
2024		121.44
2025		121.44
2026		121.44
2027		121.44
2028		121.44
2029		121.43
2030		121.44
2031		121.44
2032		121.44
2033		121.44
2034		121.44
2035		93.26
2036		28.39
2037		28.39

State Highway Trust Fund

Revenues for the Trust Fund are generated from state motor fuels tax, the highway use tax (transfer of motor vehicle titles), DMV titles and other fees, sales tax transfer from the general fund and interest income (as shown in the graphic on page T-2). $49 million of Trust Fund revenues are transferred each year to the NCTA for project funding, as well as $45 million to the State Ports.

The STIP budget is based on a consensus forecast by the OSBM, Legislative Fiscal Research Division, and NCDOT. These estimates were used to develop the draft program and are the basis for air quality and fiscal constraint tests. The Trust Fund revenues are projected to be about $2.2 billion for FY 2024 and $26.3 billion during the 10-year period. Of this $26.3 billion in revenue, $490 million goes to NCTA, $611.6 million is used for program administration, $4 million is transferred to the Highway Fund for Visitor Centers and $450 million is transferred to State Ports. The remaining $24.8 billion is available for STIP purposes. After preliminary engineering, the state match for federal planning (SPR) funds, inflation, and bonus allocation, $19.4 billion is available for programming.

NORTH CAROLINA TRANSPORTATION
REVENUE PROJECTIONS
FISCAL YEARS 2024-2033

(Dollars in Millions)

CATEGORY	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2024 THRU 2033
Total State Highway Trust Fund Revenues	**$ 2,197.00**	**$ 2,442.10**	**$ 2,490.10**	**$ 2,517.70**	**$ 2,655.85**	**$ 2,731.11**	**$ 2,774.82**	**$ 2,806.18**	**$ 2,836.62**	**$ 2,887.53**	$ 26,339.01
Less Transfers for NCTA GAP Funding	(49.00)	(49.00)	(49.00)	(49.00)	(49.00)	(49.00)	(49.00)	(49.00)	(49.00)	(49.00)	$ (490.00)
Less Transfer to Highway Fund	(0.40)	(0.40)	(0.40)	(0.40)	(0.40)	(0.40)	(0.40)	(0.40)	(0.40)	(0.40)	$ (4.00)
Less Program Administration	(51.01)	(56.71)	(57.82)	(58.46)	(61.67)	(63.42)	(64.43)	(65.16)	(65.87)	(67.05)	$ (611.59)
Less Transfer to State Ports	(45.00)	(45.00)	(45.00)	(45.00)	(45.00)	(45.00)	(45.00)	(45.00)	(45.00)	(45.00)	$ (450.00)
Less PE	(250.00)	(250.00)	(250.00)	(250.00)	(250.00)	(250.00)	(250.00)	(250.00)	(250.00)	(250.00)	$ (2,500.00)
Less State Match for SPR Funds	(9.17)	(9.35)	(9.53)	(9.53)	(9.53)	(9.53)	(9.53)	(9.53)	(9.53)	(9.53)	$ (94.78)
Net State Trust Fund Revenues	1,792.42	2,031.64	2,078.35	2,105.31	2,240.25	2,313.76	2,356.45	2,387.09	2,416.82	2,466.55	$ 22,188.64
Less Bonus Alloc. for Tolling & Local Participation	$ (79.43)	$ (84.22)	$ (41.87)	$ (40.16)	$ (41.22)	$ (23.84)	$ (0.20)	$ (0.20)	$ (0.20)	$ -	$ (311.34)
Subtotal	1,712.98	1,947.43	2,036.48	2,065.14	2,199.03	2,289.92	2,356.25	2,386.89	2,416.62	2,466.55	$ 21,877.29
Less Inflation	(25.69)	(88.51)	(156.43)	(225.34)	(313.12)	(326.07)	(335.51)	(339.87)	(344.11)	(351.22)	$ (2,505.87)
Total Available State Trust Funds for Programming	**1,687.29**	**1,858.92**	**1,880.05**	**1,839.80**	**1,885.91**	**1,963.86**	**2,020.74**	**2,047.01**	**2,072.51**	**2,115.34**	**$ 19,371.42**
Total Available State Trust Funds for Programming (1000s)	1,687,289	1,858,916	1,880,048	1,839,798	1,885,907	1,963,859	2,020,742	2,047,015	2,072,512	2,115,336	19,371,424
Federal Aid	**1,497.30**	**1,522.40**	**1,525.00**	**1,525.00**	**1,525.00**	**1,525.00**	**1,525.00**	**1,525.00**	**1,525.00**	**1,525.00**	15,219.70
Less SPR Funds	(36.68)	(37.41)	(38.13)	(38.13)	(38.13)	(38.13)	(38.13)	(38.13)	(38.13)	(38.13)	(379.13)
Less CMAQ	(30.00)	(30.00)	(30.00)	(30.00)	(30.00)	(30.00)	(30.00)	(30.00)	(30.00)	(30.00)	(300.00)
Less ADHS	(16.10)	(16.10)	(16.10)	(16.10)	(16.10)	(16.10)	(16.10)	(16.10)	(16.10)	(16.10)	(161.00)
Less CARBON Reduction	(20.00)	(20.00)	(20.00)	(20.00)	(20.00)	(20.00)	(20.00)	(20.00)	(20.00)	(20.00)	(200.00)
Net Federal Aid Revenues	1,394.52	1,418.89	1,420.77	1,420.77	1,420.77	1,420.77	1,420.77	1,420.77	1,420.77	1,420.77	14,179.57
Less Inflation	(20.92)	(64.49)	(109.13)	(155.03)	(202.31)	(202.31)	(202.31)	(202.31)	(202.31)	(202.31)	(1,563.41)
Total Available Federal-Aid for Programming	**1,373.60**	**1,354.40**	**1,311.64**	**1,265.74**	**1,218.46**	**1,218.46**	**1,218.46**	**1,218.46**	**1,218.46**	**1,218.46**	**$ 12,616.16**
Total Available Federal-Aid for Programming (1000s)	1,373,602	1,354,401	1,311,636	1,265,739	1,218,465	1,218,465	1,218,465	1,218,465	1,218,465	1,218,465	12,616,165
Total Available for Programming (State + Federal)	**3,060.89**	**3,213.32**	**3,191.68**	**3,105.54**	**3,104.37**	**3,182.32**	**3,239.21**	**3,265.48**	**3,290.98**	**3,333.80**	**31,987.59**
Check Total Subtotals (State + Federal)	3,186.94	3,450.53	3,499.12	3,526.08	3,661.02	3,734.53	3,777.22	3,807.86	3,837.59	3,887.32	36,368.21
Check Total Less Bonus Allocation	(79.43)	(84.22)	(41.87)	(40.16)	(41.22)	(23.84)	(0.20)	(0.20)	(0.20)	-	(311.34)
Check Total Less Inflation	(46.61)	(153.00)	(265.56)	(380.38)	(515.43)	(528.37)	(537.82)	(542.18)	(546.41)	(553.52)	(4,069.28)
Check Total Available for Programming	3,060.89	3,213.32	3,191.68	3,105.54	3,104.37	3,182.32	3,239.21	3,265.48	3,290.98	3,333.80	31,987.59
Less Transition Funding	(47.78)	(17.86)	(10.36)	-	-	-	-	-	-	-	(76.00)
Funds Available to Allocate to Categories	$ 3,013.11	$ 3,195.46	$ 3,181.32	$ 3,105.54	$ 3,104.37	$ 3,182.32	$ 3,239.21	$ 3,265.48	$ 3,290.98	$ 3,333.80	$ 31,911.59
STATEWIDE	1,205.25	1,278.18	1,272.53	1,242.21	1,241.75	1,272.93	1,295.68	1,306.19	1,316.39	1,333.52	12,764.64
REGIONAL	903.93	958.64	954.40	931.66	931.31	954.70	971.76	979.64	987.29	1,000.14	9,573.48
LESS STBGDA ON REGIONAL AND STATEWIDE ROUTES	(22.64)	(15.73)	(9.77)	(12.69)	(4.84)	(1.38)	(0.31)	0.00	0.00	0.00	(67.36)
REGIONAL TOTAL REVISED	881.29	942.91	944.62	918.97	926.47	953.32	971.45	979.64	987.29	1,000.14	9,506.12
DIVISION	903.93	958.64	954.40	931.66	931.31	954.70	971.76	979.64	987.29	1,000.14	9,573.48

Anticipated Inflation Impact

Inflation is not explicitly factored into the above revenue estimates. However, before programming projects in the STIP, available funds were reduced to account for future inflation. NCDOT uses a 3% per year inflation factor. The 3% was compounded annually for the first five years, then held constant for the last five years. In the first year (2024), ½ of the inflation rate was used (1.5%) to ramp up to the 3% in year 2 (2025). This allows project costs used in the Program to be shown in current (2024) dollars.

State Highway Fund

Revenues for the Highway Fund are generated from the state motor fuels tax and DMV fees. The Highway Fund primarily supports projects that maintain the state's existing transportation system. This includes general maintenance, roadside environmental activities, resurfacing highways, replacing bridges, paving unpaved secondary roads, and state aid to municipalities. Funds are distributed across North Carolina based on need.

Cash Model and Fiscal Constraint of the STIP

In a traditionally financed federal-aid highway project, the FHWA approves the project and obligates (promises to pay) federal funds (typically 80 percent of eligible costs) at the start of a contract. The Department then begins construction, pays construction costs with state funds, and submits weekly federal reimbursement requests to FHWA. However, at its discretion, NCDOT may also use a funding technique called Advance Construction. In Advance Construction, the FHWA only approves a project as being eligible for federal funding and does not obligate (promise to pay) federal funds at the start of a project. The Department then begins construction, pays construction costs with state funds, submits a request to obligate an amount of federal funds necessary for reimbursement of a percentage of eligible costs (typically 80 percent), and submits a request for reimbursement to FHWA.

NCDOT heavily utilizes Advance Construction because it allows the Department to accelerate projects by undertaking a greater number of concurrent federal-aid projects than would otherwise be possible. However, when Advance Construction is utilized, care must be taken to ensure that adequate funds will be available to implement the schedule of projects included in the STIP. NCDOT relies on its cash model to insure fiscal constraint of both the STIP and its entire operation. The Department uses a cash model to manage its operation on a cash-flow basis using statistical models that were developed specifically to support NCDOT programs. The models are used to forecast future cash demands and financial capacity.

North Carolina's General Assembly in §143C:6-11 dictates that the Department's cash target to be between 15% and 20% of the total appropriations from the Highway Fund and Highway Trust Fund for the current fiscal year. Any federal funds on hand shall not be considered as cash for this purpose. The target shall include an amount necessary to make all municipal-aid funding requirements. Also, NCGS §143C:6-11 requires the minimum cash balance from the Highway Fund and Highway Trust Fund to be at least 7.5% of the total appropriations for the current fiscal year. If this minimum is not maintained, no further transportation project contract commitments may be entered into until the cash balance has been regained. The Department may modify or supplement transportation contract commitments for existing transportation projects that (i) results in a savings from the total estimated project cost of the existing commitment, based on cost-savings analysis, or (ii) relate to the needs of an existing transportation project to continue. Any federal funds on hand shall not be considered as cash for the purpose of the minimum cash balance requirement.

The North Carolina Turnpike Authority (NCTA)

NCTA is a public agency of the State of North Carolina located within NCDOT. NCTA's mission is to supplement the traditional non-toll transportation system serving the citizens of North Carolina by accelerating the delivery of roadway projects using alternative financing options and facilitating the development, delivery, and operation of an integrated system of toll roads. The Triangle Expressway, North Carolina's first modern toll facility is approximately 18.8 miles of new highway construction, extending the partially complete "Outer Loop" around the greater Raleigh area from I-40 in the north to the NC 55 Bypass in the south opening fully to traffic on January 2, 2013. The Monroe Expressway, the second all electronic toll facility in North Carolina, opened to traffic on November 27, 2018. The Monroe Expressway is approximately 19.8 miles of new highway construction that serves as a bypass to U.S. 74 from I-485 in eastern Mecklenburg County to U.S. 74 between the towns of Wingate and Marshville in Union County. Since the STI law passed in June 2013, the identification of potential Turnpike projects has fallen under the strategic project prioritization process. Funding for Turnpike projects may be derived from a combination of State transportation revenues, Federal aid dollars, and toll revenue bonds.

Total revenues for the Triangle Expressway were $54.0 million and $39.1 million for FY 2022 and FY 2021, respectively. FY 2022 total revenues increased by 38.3% year-over-year (YOY) when compared to FY 2021. Operating expenses for the Triangle Expressway totaled $14.1 million and $13.9 million for FY 2022 and FY 2021, respectively. FY 2022 operating expenses increased by 1.7% YOY from the previous year.

Total revenues for the Monroe Expressway were $27.0 million and $21.0 million for FY 2022 and FY 2021, respectively. FY 2022 total revenue increased by 29.0% YOY when compared to FY 2021. Operating Expenses for the Monroe Expressway totaled $12.5 million and $11.2 million for FY 2022 and FY 2021, respectively. FY 2022 operating expenses increased by 11.8% YOY from the previous year.