

**Charlotte Regional Transportation Planning  
Organization (CRTPO)  
FFY 2018-2021 TIP Financial Plan**

DRAFT

September 2017

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## INTRODUCTION

The Transportation Improvement Program (TIP) identifies the transportation projects and strategies that the Charlotte Regional Transportation Planning Organization (CRTPO) and North Carolina Department of Transportation (NCDOT) plan to undertake over the next ten years. All projects receiving federal funding or are regionally significant, regardless of the funding source, must be in the TIP. The TIP is a staged, prioritized, multi-year intermodal program of transportation projects, prepared in each metropolitan area, which is consistent with that area's Metropolitan Transportation Plan (MTP). Each metropolitan TIP is incorporated in its entirety into the STIP.

The TIP:

- Is updated at least every four years;
- Is realistic in terms of available funding and is not just a "wish list" of projects. This concept is known as fiscal constraint;
- Conforms with the State Implementation Plan (SIP) for air quality (CRTPO is classified as maintenance for ozone);
- Is approved by the CRTPO and the Governor (or his designee); and
- Is incorporated directly, without change, into North Carolina's State Transportation Improvement Program (STIP).

This document provides the basis for determining whether the TIP is fiscally constrained by analyzing revenue sources, funding projections, and amount of funding programmed within the first four years of the ten-year program. The Federal Highway Administration (FHWA) recognizes the first four years of an MPO's TIP; therefore, the 2018-2021 federal fiscal years are the focus of this analysis and report. The determination of fiscal constraint is made by determining the amount of available funds remaining after determining that all of the funds have been adequately appropriated. Section 1 provides an overview of the STIP, followed by Section 2, which provides estimated revenues available for funding the CRTPO TIP.

## SECTION 1

### NORTH CAROLINA 2018 – 2027 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 State and Federal laws. North Carolina's STIP covers a 10 year period, with the first five years (2018-2022 in this version) referred to as the delivery STIP and the latter five years (2023-2027 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 updated every two 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 second 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.

#### 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 project accomplishments, completions and deletions since the 2016-2025 STIP which was approved in 2015.

The transportation program in the STIP is organized by the 14 transportation divisions. Each Division section includes a funding source reference table and is divided between highway and non-highway project schedules. Projects are also listed by county within each division. This results in some duplication since transportation projects frequently extend across county and division lines. When this duplication occurs, a project is listed in each county in which it is found.

Projects are further subdivided by category: interstate, rural, urban, bridge, municipal bridge, bicycle and pedestrian, congestion mitigation, highway safety improvement program, ferry, passenger rail, and

roadside environmental. Interstate, rural, urban, bridge, and ferry projects are described by route number. Municipal bridge, bike and pedestrian projects are listed by city or county. Congestion mitigation and passenger rail projects are listed alphabetically by city or county. Highway safety improvement program projects may be listed by route, city or county. The Public Transportation program list projects first by the transportation partners and providers then by identification numbers.

Projects are also listed by 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.

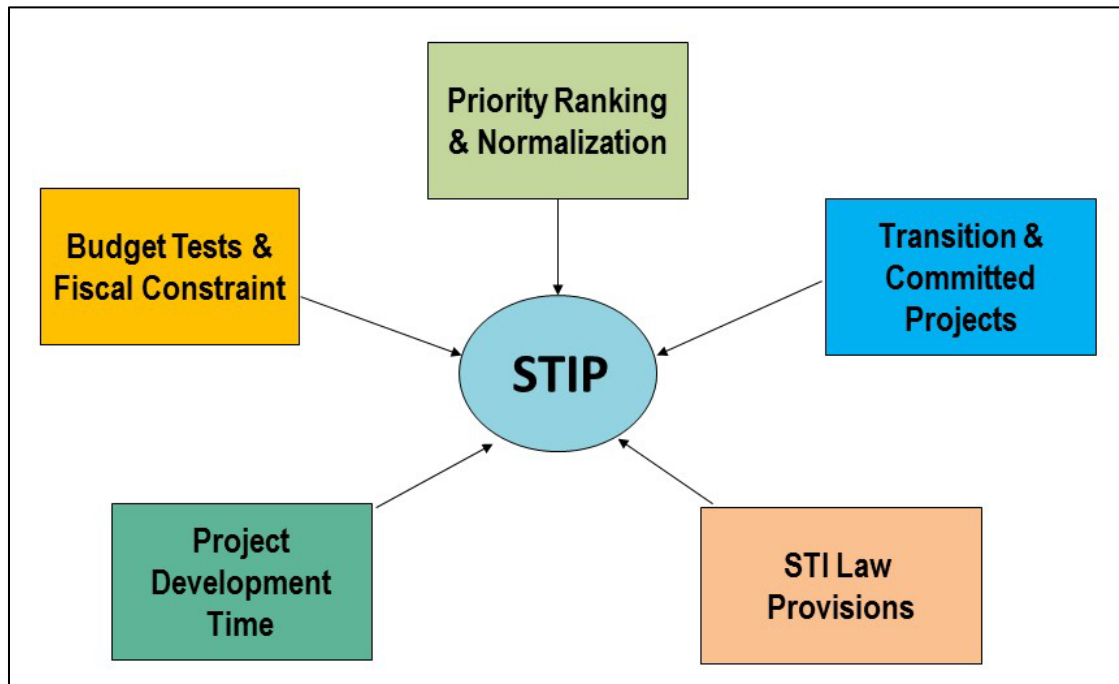
All projects require extensive planning, environmental impact and design studies. The location and exact type of improvements are subject to refinement and modification during the planning and design phases.

### Strategic Prioritization

The Department manages a strategic project prioritization process. The 4th generation of this process, Prioritization 4.0 or P4.0, is a significant component of this STIP development. Strategic prioritization uses transportation data and the input of local government partners and the public to generate scores and rankings of projects across the state. Multiple public input opportunities were provided during the spring and summer of 2016 regarding the submittal of new projects and the assignment of local points to projects. This input assisted each Metropolitan Planning Organization (MPO) and Rural Planning Organization (RPO) and NCDOT's transportation divisions to produce criteria-based methodologies which directed how local points were allocated.

The P4.0 process resulted in each transportation mode using different quantitative criteria, measures and weights to provide technical scores for projects. 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.

**Figure A**



The results of the P4.0 process do not necessarily mean that projects will be programmed in the order of their score and rank. Over a 10-year time frame, funding was provided to the highest scoring projects. However, 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 5 years of the previous 2016-2025 STIP, were considered committed and were not evaluated in P4.0. 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 January 2017, NCDOT hosted 9 public information sessions across the state from March 28 to May 9, 2017. The purpose of these sessions was to inform citizens about projects in the Draft STIP and get feedback on it. As noted in the Strategic Prioritization section multiple public input opportunities were also available ahead of the development of the Draft STIP and from the beginning of the STI implementation process.

Each session was structured as a 2-hour open house format to allow 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

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participants under the Americans with Disabilities Act as well as special services for English limited participants. Consultation was conducted with stakeholder groups (traditional and non-traditional) throughout North Carolina via emails and direct mailing to encourage participation via multiple feedback options.

### Transportation Conformity

Each Metropolitan Planning Organization (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 do not negatively impact an area's ability to meet air quality goals. 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 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.

### North Carolina Air Quality Non-Attainment/Maintenance Area Summary

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

## Public Transportation Project Funding

The projects listed in the STIP are funded from several different FTA Funds and State Funds. In addition, many of the FTA Funds require a match to the project. Annually, the NCDOT Public Transportation Division conducts a call for projects to provide state funds to assist with part of the match requirements. The amount available for state match is limited to the amount provided in the approved state budget for that year.

All of the FTA program funding amounts are published annually in the Federal Register and posted to the FTA website. NCDOT uses these apportionments to distribute the various funding sources overseen by the Department. Most of the funding for programs in the MPO's with a population of 200,000 or greater is managed directly by the MPO. The MPO's develop projects to list in the STIP from the total apportioned amount received from FTA. NCDOT allocates federal funds to small urban areas less than 200,000 population and for the rural areas. The small urban MPO's then develop projects to list in the STIP within the total allocated amount received from NCDOT and any prior year funding that is unspent. For the rural areas, the NCDOT applies directly to FTA for the funds. The NCDOT funds rural projects to match the total apportioned amount and any available prior year funding. These rural projects are listed in the STIP. The Federal Funding programs managed by NCDOT are listed below and their projects are included in the STIP.

### A. Section 5303 / 5304 Metropolitan Planning and Statewide Planning Program

1. Federal Program Description: 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 of transportation investment priorities. The planning programs are jointly administered by FTA and the Federal Highway Administration (FHWA), which provides additional funding to the MPOs.
2. PTD Goals:
  - 5303 – Create a fair and equitable distribution of planning funds to urbanized areas (UZAs) and foster transit planning on a larger scale.
  - 5304 – Provide for statewide planning and technical studies.

### B. Section 5307 Urban Area Formula Program

1. Federal Program Description: Makes Federal resources available to urbanized areas and to Governors for transit capital and operating assistance, and for transportation related planning in urbanized areas. An urbanized area is an incorporated area with a population of 50,000 or more that is designated as such by the U.S. Department of Commerce, Bureau of the Census.
2. PTD Goals:
  - 5307 Governor's Apportionment (GA) – Work with the governor's apportionment systems to make sure the needs in their 5 year budgets are met and grants are managed appropriately.
  - 5307 Large UZA – Work with the large UZAs to make sure funding earned is fairly and equitably distributed and the needs of the former 5311 recipients are being met.

### C. Section 5310 Enhanced Mobility of Seniors and Individuals with Disabilities Program

1. Federal Program Description: 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), small urbanized (50,000-200,000), and rural (under 50,000). Eligible projects include both traditional capital investment and nontraditional investment beyond the Americans with Disabilities Act (ADA) complementary paratransit services.

3. PTD Goal:
  - Support transportation of seniors and persons with disabilities in small urban (50,000-200,000 population) and rural North Carolina (less than 50,000 population).

#### D. Section 5311 Rural Formula Grant Program

1. Federal Program Description: 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 (5311F) 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.

3. PTD Goals:
  - Support general public transportation in rural North Carolina (less than 50,000 population) and provide a coordinated transportation network.
  - Implement the Rural Transportation Assistance Program (RTAP), Intercity Bus (5311F) and Appalachian Development Transportation Assistance Program activities.

#### E. Section 5339 Bus and Bus Facilities Program

1. Federal Program Description: provides capital funding to replace, rehabilitate and purchase buses and related equipment and to construct bus-related facilities.
2. PTD Goal:
  - Create a small urban and statewide funding program that provides capital funding to replace, rehabilitate and purchase buses and related equipment and to construct bus-related facilities.

## 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 user fees in the form of Motor Fuel Tax (MFT), driver and vehicles fees collected by the NC Division of Motor Vehicles (DMV Fees) and a Highway Use Tax (HUT) on vehicle title transfers. Federal transportation revenues are derived from a federal MFT tax, vehicle fees (mostly on trucks) and since 2008 it has included transfers from the U.S. General Fund. North Carolina's total transportation funding consists of roughly 75 percent state revenues and 25 percent federal.

State revenue projections are obtained from a consensus forecast by the Office of State Budget and Management (OSBM), Legislative Fiscal Research Division and NCDOT. Budget estimates developed for the Governor's biennial budget serves as a base from which NCDOT and OSBM staff develop the forecast for the remaining years. Motor Fuel revenues are forecasted based on crude oil prices from IHS Global Insight, a private financial forecasting company and in-house consumption forecasting models. DMV fee revenue forecasts are based on historical transactional information, vehicle registration, licensed driver numbers and Office of State Budget and Management projected population growth in the age range 19–84. Highway Use Tax revenue is forecasted based on the number of vehicles purchased or traded in, vehicle price and the statutory rate. The number of vehicles sold and the price depend on economic conditions. Regarding DMV/Title Fees, the two variables are statutory rates and the number of transactions, which is based on licensed drivers and vehicle registration. Generally, DMV fees correlate with projected changes in population. Title fees correlate closer to forecasted changes in car sales.

#### Federal Budget

On December 4, 2015, President Obama signed into law the Fixing America's Surface Transportation Act, or "FAST Act." Overall, the FAST Act largely maintains current program structures and funding shares between highways and transit. The law also makes changes and reforms to many Federal transportation programs, including streamlining the approval processes for new transportation projects, providing new safety tools, and establishing new programs to advance critical freight projects. The core formula programs are:

- National Highway Performance Program (NHPP)
- Surface Transportation Program (STP)
- 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

Federal transportation funding is distributed by Congress based on multi-year reauthorization bills and annual appropriations.

The primary variables for both state and federal revenues are the MFT rate and fuel consumption. The passage of S.L. 2015-2 / S20 altered the variable MFT state rate formula starting April 1, 2015. The new variable rate formula is based on changes in population and the Consumer Price Index for Energy (CPI-E)

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beginning on January 1, 2017. The federal MFT rate, set by Congress in 1993, is 18.4 cents per gallon for gasoline and 24.4 cents for diesel. Fuel consumption is affected by fuel prices, which are determined by world markets and economic domestic output, vehicle fuel efficiency and alternate fuel vehicles.

### Federal Aid Program

The Federal Aid Construction 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.

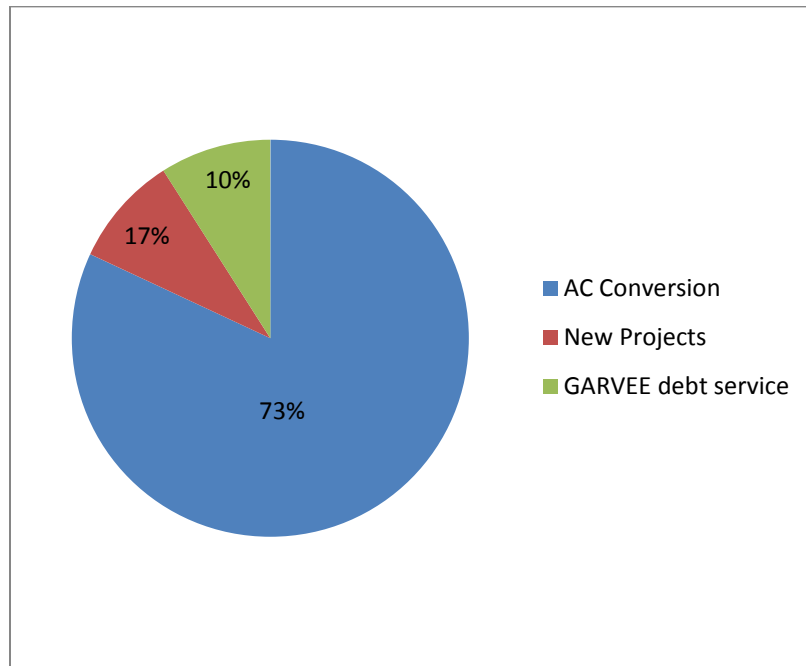
North Carolina's availability of federal funds for the STIP in FFY 2018 is expected to be about \$1,096.6 million, excluding CMAQ and State Planning and Research funds.

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 state matching funds needed for the Federal Aid Program is expected to be \$290 million, which will be funded by the State Highway Trust Fund.

### Federal Aid Construction Program - FFY 2018 (\$ in Millions)

Category	Federal Funds	Required State Matching Funds	Total
National Highway Performance Program	606	152	758
Rail Hwy Crossing	7	2	9
Statewide Planning	17	4	21
TAP	23	6	29
Research Development	5	1	6
Metropolitan Planning	6	2	8
Congestion Mitigation	50	12	62
Surface Transportation Program	400	100	500
Highway Safety Improvement	61	7	68
Freight	29	7	36
<b>Total Apportionment</b>	<b>1,204</b>	<b>293</b>	<b>1,497</b>
<b>Obligation Limitation</b>	<b>1,160</b>	<b>290</b>	<b>1,450</b>

**Proposed Use of FFY 2018 Obligation Authority**



The program is fiscally constrained to the amount of funds projected to be available each year in order to prevent the Department from over committing future revenues. “Advance Construction” (AC) 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. At some future date when the state does have sufficient obligation authority, it may convert an advance-constructed project to a Federal-aid project by obligating the permissible share of its Federal-aid funds and receiving subsequent reimbursements. Advance construction allows a state to conserve obligation authority and maintain flexibility in its transportation funding program. NCDOT uses AC both to support its GARVEE Bond program and to assist in its cash management.

**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. In October 2007, the Department received \$287.6 million in GARVEE bond proceeds, \$242.5 million in 2009, \$145.5 million in 2011, and \$179.5 million in 2012 and \$264.9 million in 2015.

**GARVEE Bond Program  
\$ in Millions**

<b>State Fiscal Year</b>	<b>Proceeds Including Premium</b>	<b>Debt Service</b>
2008	\$299.80	\$ 5.06
2009		59.33
2010	263.14	67.17
2011		82.00
2012	364.90	59.84
2013		86.33
2014		86.33
2015	300.54	86.32
2016		100.00
2017		99.39
2018		99.39
2019		99.39
2020		78.00
2021		78.00
2022		78.00
2023		78.00
2024		38.29
2025		38.29
2026		38.29
2027		38.29
2028		38.29
2029		38.29

**State Highway Trust Fund**

Revenues for the Trust Fund are generated from 29% of the state motor fuels tax, the 3 percent use tax on the transfer of motor vehicle titles, DMV titles and other fees, and interest income. \$49 million of Trust Fund revenues are transferred each year to the NCTA for project funding.

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 \$1,547.7 million for FY 2018 and \$16.9 billion during the 10-year period. Of this \$16.9 billion in revenue, \$490 million goes to NCTA, \$573 million is used for debt service on previous GO bonds and Administration, and \$4 million is transferred to the Highway Fund for Visitor Centers. The remaining \$15.8 billion is available for STIP purposes. Federal aid of \$11.1 billion is also available. After preliminary engineering, a reserve for construction cost overruns, inflation, and Bonus allocation and local participation deductions, \$23 billion is available for programming. (Note – funds available for programming and used in the development of the 2018-2027 STIP were prior to the actions of the 2017 General Assembly.)

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Funds Available for Programming

(\$ in Millions)

State Fiscal Year	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	10 Year STIP Total
Motor Fuels Tax	\$ 564.6	\$ 585.9	\$ 600.2	\$ 610.8	\$ 619.5	\$ 626.3	\$ 630.7	\$ 635.0	\$ 638.5	\$ 640.9	\$ 6,152.4
DMV Fees & Investment Income	162.2	161.1	160.9	176.0	178.1	181.3	185.0	205.8	209.6	213.4	1,833.4
Use Tax	820.8	839.3	858.8	867.8	878.1	894.2	912.6	930.1	947.3	964.5	8,913.4
<b>Total State Highway Trust Fund Revenues</b>	<b>\$ 1,547.7</b>	<b>\$ 1,586.3</b>	<b>\$ 1,619.9</b>	<b>\$ 1,654.6</b>	<b>\$ 1,675.7</b>	<b>\$ 1,701.7</b>	<b>\$ 1,728.3</b>	<b>\$ 1,770.8</b>	<b>\$ 1,795.4</b>	<b>\$ 1,818.8</b>	<b>\$ 16,899.2</b>
NCTA GAP Funding	(49.0)	(49.0)	(49.0)	(49.0)	(49.0)	(49.0)	(49.0)	(49.0)	(49.0)	(49.0)	(490.0)
GO Debt Service	(52.2)	(50.0)	(59.8)	-	-	-	-	-	-	-	(162.0)
Visitors Center	(0.4)	(0.4)	(0.4)	(0.4)	(0.4)	(0.4)	(0.4)	(0.4)	(0.4)	(0.4)	(4.0)
Program Administration	(37.6)	(38.6)	(39.4)	(40.2)	(40.8)	(41.4)	(42.0)	(43.1)	(43.7)	(44.2)	(411.0)
<b>Available Trust Fund Revenues</b>	<b>\$ 1,408.5</b>	<b>\$ 1,448.3</b>	<b>\$ 1,471.3</b>	<b>\$ 1,564.9</b>	<b>\$ 1,585.5</b>	<b>\$ 1,611.0</b>	<b>\$ 1,636.9</b>	<b>\$ 1,678.3</b>	<b>\$ 1,702.4</b>	<b>\$ 1,725.2</b>	<b>\$ 15,832.2</b>
Federal Aid	1,159.8	1,186.3	1,214.5	1,214.4	1,214.4	1,214.4	1,214.4	1,214.4	1,214.4	1,214.4	12,061.4
Less SPR Funds	(33.2)	(34.0)	(34.8)	(34.8)	(34.8)	(34.8)	(34.8)	(34.8)	(34.8)	(34.8)	(345.4)
Less CMAQ	(30.0)	(30.0)	(30.0)	(30.0)	(30.0)	(30.0)	(30.0)	(30.0)	(30.0)	(30.0)	(300.0)
Less EEP	(30.0)	(30.0)	(30.0)	(30.0)	(30.0)	(30.0)	(30.0)	(30.0)	(30.0)	(30.0)	(300.0)
Less Yadkin River GARVEE debt service	(17.2)	(15.6)	(5.1)	(5.1)							(43.1)
<b>Available Federal Aid</b>	<b>\$ 1,049.4</b>	<b>\$ 1,076.7</b>	<b>\$ 1,114.6</b>	<b>\$ 1,114.5</b>	<b>\$ 1,119.6</b>	<b>\$ 1,119.6</b>	<b>\$ 1,119.6</b>	<b>\$ 1,119.6</b>	<b>\$ 1,119.6</b>	<b>\$ 1,119.6</b>	<b>\$ 11,073.0</b>
<b>Total Available Funds</b>	<b>\$ 2,457.9</b>	<b>\$ 2,525.0</b>	<b>\$ 2,585.9</b>	<b>\$ 2,679.4</b>	<b>\$ 2,705.1</b>	<b>\$ 2,730.6</b>	<b>\$ 2,756.5</b>	<b>\$ 2,798.0</b>	<b>\$ 2,822.0</b>	<b>\$ 2,844.8</b>	<b>\$ 26,905.1</b>
Preliminary Engineering	(200.0)	(200.0)	(200.0)	(200.0)	(200.0)	(200.0)	(200.0)	(200.0)	(200.0)	(200.0)	(2,000.0)
Construction Cost Overruns	(58.0)	(60.0)	(61.8)	(64.6)	(65.4)	(66.2)	(66.9)	(68.2)	(68.9)	(69.6)	(649.7)
Bonus Alloc. for Tolling & Local Participation	(69.3)	(39.1)	(22.6)	(48.8)	(42.6)	(25.2)	(25.4)	(28.4)	(10.9)	(28.4)	(340.5)
Less Inflation	(10.7)	(33.6)	(58.0)	(84.0)	(109.8)	(111.7)	(112.9)	(114.6)	(116.4)	(116.6)	(868.3)
<b>Funds Available for Programming</b>	<b>\$ 2,120.0</b>	<b>\$ 2,192.3</b>	<b>\$ 2,243.5</b>	<b>\$ 2,282.0</b>	<b>\$ 2,287.4</b>	<b>\$ 2,327.5</b>	<b>\$ 2,351.3</b>	<b>\$ 2,386.8</b>	<b>\$ 2,425.8</b>	<b>\$ 2,430.2</b>	<b>\$ 23,046.7</b>

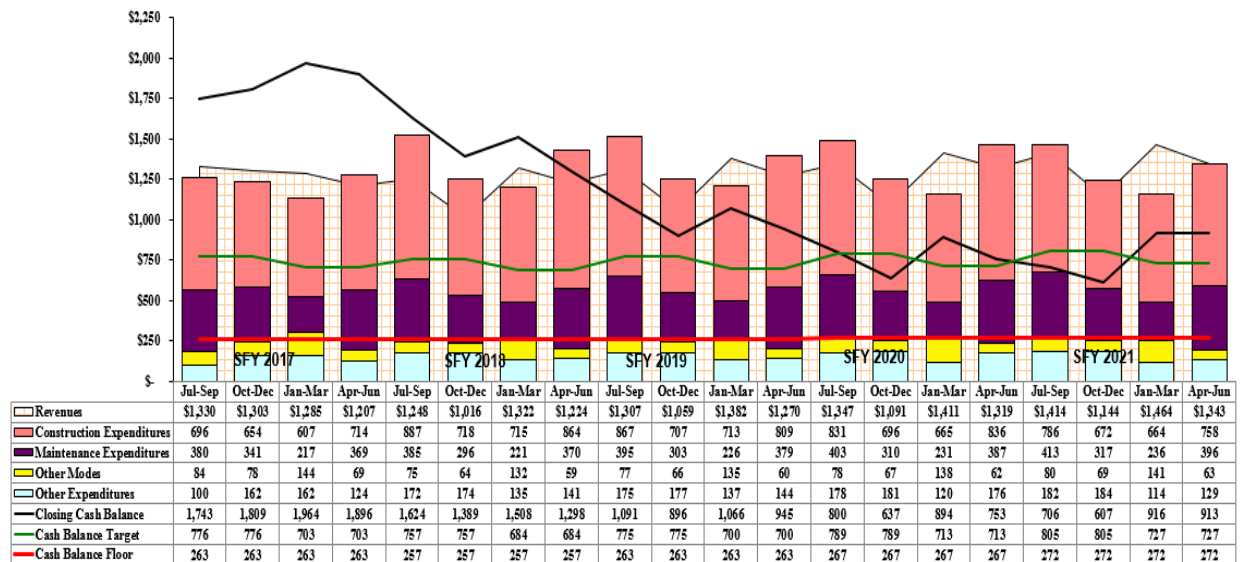
## Anticipated Inflation Impact

Inflation is not explicitly factored into the above revenue estimates. However, before programming projects in the STIP, available funds were reduced by an amount for inflation. The following inflation factors for future construction and right of way cost increases were used: 2018 - 1.005, 2019 - 1.0151, 2020 – 1.0252, 2021 – 1.0355, 2022 through 2027 - 1.0458. This allows project costs used in the Program to be shown in current (2018) dollars.

## Cash Model

NCDOT uses a cash model to manage its operations on a cash-flow basis; the Department uses statistical models that were developed specifically to support NCDOT programs. The models are used to forecast future cash demands and financial capacity. These projections serve as the basis for the dollar values found herein.

60 Month Cash Model  
Sample View  
(\$ in Millions)



NCGS §143C:6-11 revised the cash target to 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 revised the cash balance floor to at least 7.5% of the total appropriations for the current fiscal year. If this floor is not maintained, no further transportation project contract commitments may be entered into until the floor is restored. Session Law 2014-100 Senate Bill 744 Section 34.23(c) established a cash balance ceiling of one billion dollars. If the balance exceeds the ceiling, the Department must report to the General Assembly and Fiscal Research the reasons for exceeding the ceiling and the plans to reduce the balance.

The proposed STIP was modeled to insure that the department would have adequate cash to pay for all programmed projects. Based on the program of projects and anticipated revenue, it appears that there should be adequate funding available to support the program.

The North Carolina Turnpike Authority (NCTA)

NCTA is a public agency of the State of North Carolina located within NCDOT. The Triangle Expressway is the first modern toll facility in North Carolina. The Expressway 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. The Triangle Expressway was completed on schedule on January 2, 2013, approximately five percent under budget providing excess bond proceeds. During Fiscal Year (“FY”) 2014, the Turnpike Authority developed a fiscally-responsible plan to utilize these proceeds. Included in this plan were partially funding two additional interchanges, the Veridea Parkway Interchange (formerly the Old Holly Springs-Apex Road Interchange) and the Morrisville Parkway Interchange, which will provide increased connectivity and access along the Expressway.

## **Charlotte Regional Transportation Planning Organization FFY 2018-2021 TIP**

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Total revenues, inclusive of toll revenue and processing fees, but excluding transponder revenues, were \$36.3 million and \$29.0 million for FY 2016 and FY 2015. FY 2016 total revenues increased by 25% year-over-year (YOY) when compared to FY 2015. Transponder revenues were \$0.60 million and \$0.45 million for FY 2016 and FY 2015, respectively, increasing by 33% YOY. Operating expenses totaled \$14.8 million and \$13.6 million for FY 2016 and FY 2015. FY 2016 operating expenses increased by 9% YOY from the previous year due, in part, to the increased number of transactions.

SECTION 2

CRTPO TRANSPORTATION IMPROVEMENT PROGRAM

While Section 1 provides an overview of revenue sources used to fund the STIP, which includes projects for all MPO and non-MPO areas across the state, Section 2 focuses on estimated revenues available for funding projects exclusively within the CRTPO planning area. Highway revenues are discussed first and include sources used to fund highway and bridge projects as well as highway maintenance. Non-highway revenues, discussed at the end of this section, are programmed to transit, rail, aviation, and greenways projects. Both highway and non-highway revenues are compared to the estimated project costs for the CRTPO planning area to illustrate the financial feasibility of the TIP.

Highway Revenue

The funding summary table below was provided by NCDOT. It provides a summation of the programmed dollars by the various highway funding sources for projects within the CRTPO planning area. This includes federal, state, and local funds for the first four years of the STIP (2018-2021). Local funds represent required matching funds for any programs requiring matching funds or any local commitments towards projects in the STIP. As shown in **Table 1**, the CRTPO planning area could potentially receive \$1,751 million over the four-year period based on these projections.

Table 1: Projected CRTPO Planning Area Highway Revenue, FFY 2018-2021

Funding Source	Fund Description	Funding Type	<i>(estimates are in millions of YOY dollars)</i>				
			2018	2019	2020	2021	Totals
BA	Bonus Allocation	S	\$8.4	\$17.2	\$16.2	\$0.0	\$41.8
CMAQ	Congestion Mitigation	F	\$16.7	\$9.4	\$0.0	\$0.0	\$26.1
HSIP	Highway Safety Improvement Program	F	\$0.9	\$0.3	\$0.0	\$0.0	\$1.3
L	Local	O	\$12.0	\$15.2	\$8.9	\$20.2	\$56.4
NHP	National Highway Performance Program	F	\$108.4	\$88.0	\$211.6	\$191.3	\$599.3
NHPBA	National Highway Performance Program (Bonus Allocation)	F	\$23.8	\$24.0	\$0.0	\$0.0	\$47.8
NHPIM	National Highway Performance Program (Interstate Maintenance)	F	\$49.2	\$35.2	\$15.3	\$9.4	\$109.1
S(M)	State Match for STP-DA or Garvee Projects	S	\$0.0	\$4.3	\$0.0	\$1.6	\$5.9
STBG	Surface Transportation Block Grant Program	F	\$16.7	\$32.6	\$25.1	\$21.4	\$95.7
STBGBA	Surface Transportation Block Grant Program (Bonus Allocation)	F	\$4.0	\$1.5	\$0.0	\$0.0	\$5.5
STBGDA	Surface Transportation Block Grant Program (Direct Attributable)	F	\$8.3	\$26.0	\$13.3	\$36.2	\$83.9
STPOFF	Surface Transportation Program (Off System)	F	\$1.4	\$0.0	\$2.3	\$0.2	\$3.8
T	Highway Trust Funds	S	\$155.5	\$140.4	\$170.2	\$208.5	\$674.7
		<b>Total</b>	<b>\$405.4</b>	<b>\$394.1</b>	<b>\$462.9</b>	<b>\$488.9</b>	<b>\$1,751.2</b>

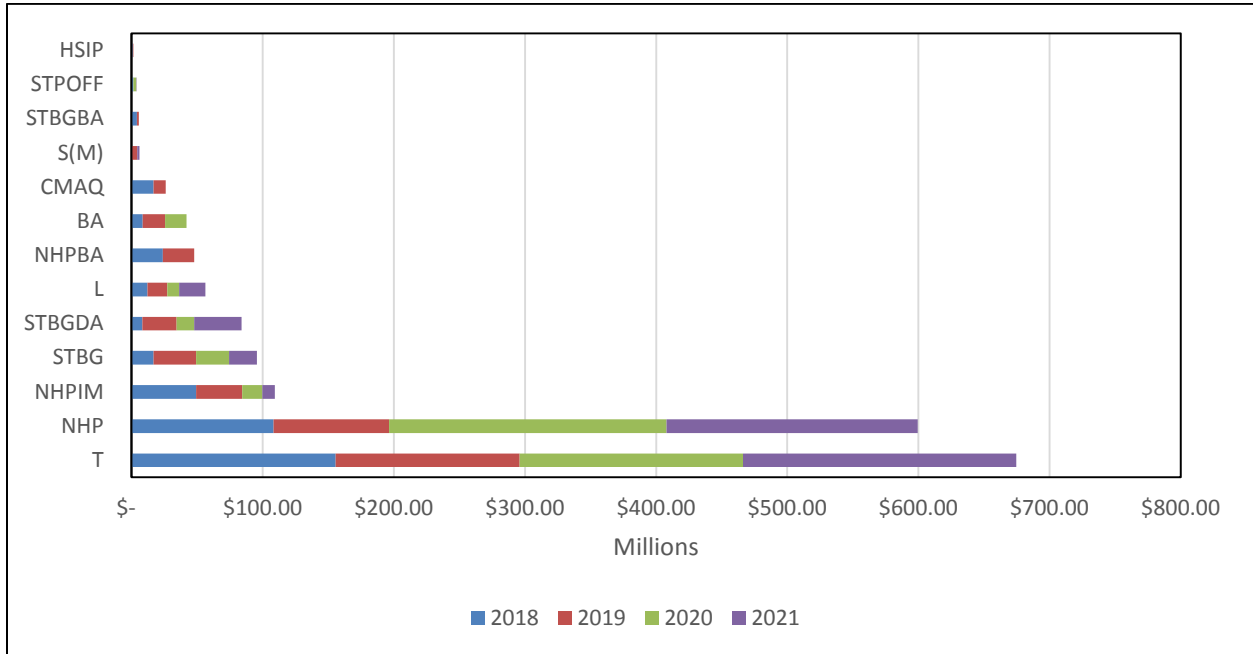
Sources: NCDOT (July 25, 2017)  
 Notes: Abbreviations for funding types are as follows: "F" – Federal, "S" – State, "O" – Other



# Charlotte Regional Transportation Planning Organization FFY 2018-2021 TIP

Figure 1 depicts the estimated revenue sources for funding highway projects programmed in the TIP.

Figure 1: Projected CRTPO Planning Area Highway Revenue, 2018-2021 TIP



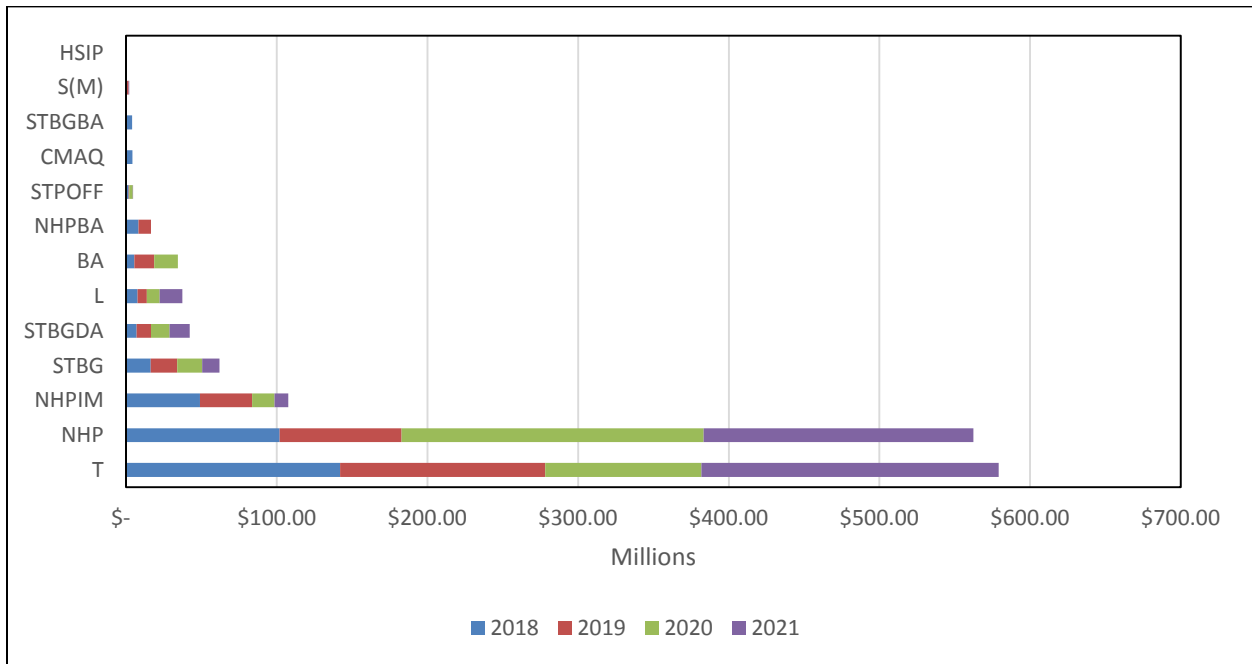
## Charlotte Regional Transportation Planning Organization FFY 2018-2021 TIP

Proposed highway expenditures for the TIP are listed below in **Table 2** and shown graphically in **Figure 2**. The expenditures total approximately \$1,457 million.

**Table 2: CRTPO Planning Area Proposed Highway Expenditures, 2018-2021 TIP**

Funding Source	Fund Description	Funding Type	<i>(estimates are in millions of YOY dollars)</i>				
			2018	2019	2020	2021	Totals
BA	Bonus Allocation	S	\$5.4	\$13.2	\$15.8	\$0.0	\$34.4
CMAQ	Congestion Mitigation	F	\$4.1	\$0.0	\$0.0	\$0.0	\$4.1
HSIP	HIGHWAY SAFETY IMPROVEMENT PROGRAM	F	\$0.5	\$0.0	\$0.0	\$0.0	\$0.5
L	Local	O	\$7.5	\$6.1	\$8.5	\$15.1	\$37.3
NHP	National Highway Performance Program	F	\$101.9	\$80.8	\$200.7	\$179.0	\$562.4
NHPBA	National Highway Performance Program(Bonus Allocation)	F	\$8.3	\$8.3	\$0.0	\$0.0	\$16.6
NHPIM	National Highway Performance Program (Interstate Maintenance)	F	\$49.0	\$34.7	\$14.9	\$9.1	\$107.7
S(M)	State Match for STP-DA or Garvee Projects	S	\$0.0	\$1.5	\$0.0	\$0.6	\$2.1
STBG	Surface Transportation Block Grant Program	F	\$16.2	\$17.6	\$16.5	\$11.5	\$61.9
STBGBA	Surface Transportation Block Grant Program (Bonus Allocation)	F	\$4.0	\$0.0	\$0.0	\$0.0	\$4.0
STBGDA	Surface Transportation Block Grant Program (Direct Attributable)	F	\$6.9	\$9.6	\$12.3	\$13.5	\$42.3
STPOFF	Surface Transportation Program (Off System)	F	\$1.7	\$0.5	\$2.2	\$0.2	\$4.5
T	Highway Trust Funds	S	\$142.0	\$136.1	\$103.7	\$197.3	\$579.1
		<b>Total</b>	<b>\$347.3</b>	<b>\$308.4</b>	<b>\$374.6</b>	<b>\$426.4</b>	<b>\$1,456.8</b>
<b>Notes:</b>							
1. As of July 2017.							
2. Abbreviations for funding types are as follows: F=Federal, S=State., O=Local/Other							

**Figure 2: CRTPO Planning Area Proposed Highway Expenditures, 2018-2021 TIP**



To demonstrate the TIP’s fiscal constraint, the overall \$1,751 million in projected highway revenue has been compared to proposed highway expenditures for FFY 2018-2021 in the CRTPO planning area. As shown above, proposed highway expenditures total approximately \$1,457 million, about \$294 million less than the region’s projected revenue. This difference does not suggest that surplus revenues are available for programming additional projects, but simply shows that the highway projects in the CRTPO TIP are financially constrained.

# Charlotte Regional Transportation Planning Organization FFY 2018-2021 TIP

## Non-Highway Revenue

The funding summary table below was provided by NCDOT. It provides a summation of the programmed dollars by the various non-highway funding sources for projects within the CRTPO planning area. This includes federal, state, and local funds for the first four years of the STIP (2018-2021). Local funds represent required matching funds for any programs requiring matching funds or any local commitments towards projects in the STIP. **Table 4** and **Figure 3** show projected non-highway revenues by major category for 2018-2021. Proposed non-highway expenditures for the TIP are also listed below in **Table 5** and shown graphically in **Figure 4**.

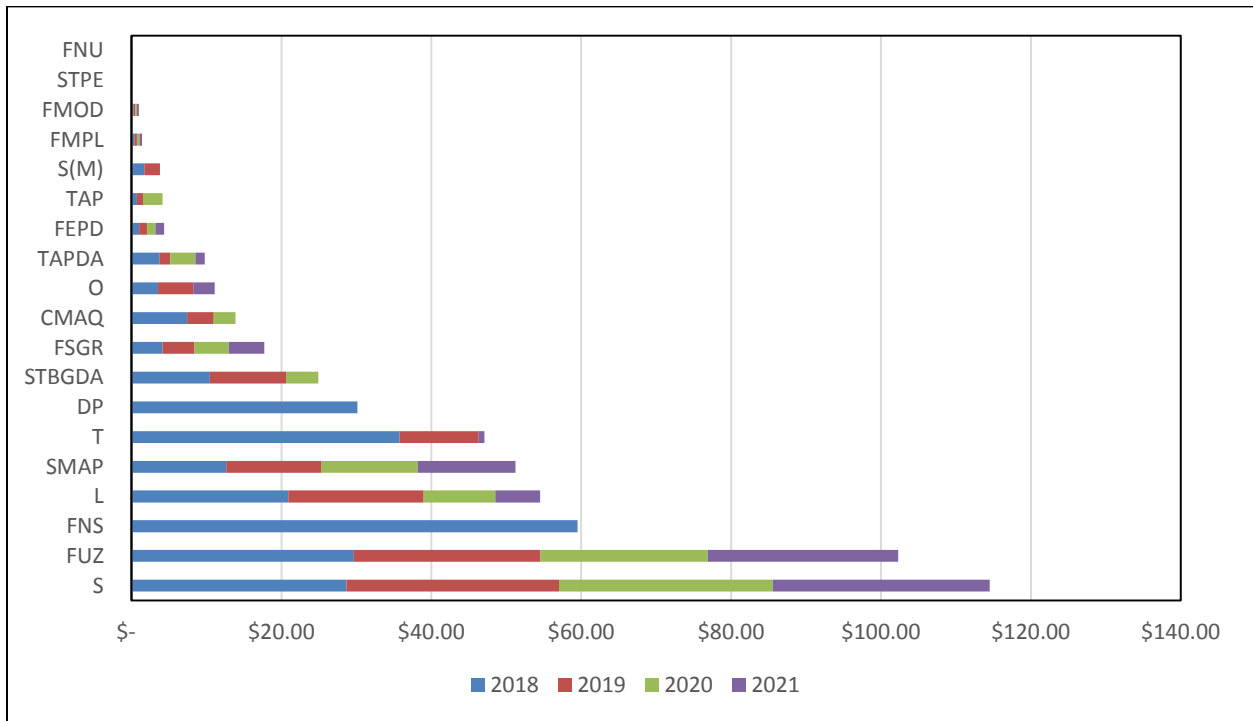
**Table 4: Projected CRTPO Planning Area Non-Highway Revenue, FFY 2018-2021**

Funding Source	Fund Description	Funding Type	<i>(estimates are in millions of YOY dollars)</i>				
			2018	2019	2020	2021	Totals
CMAQ	Congestion Mitigation	F	\$7.4	\$3.6	\$2.9	\$0.0	\$13.9
DP	Discretionary or Demonstration	F	\$30.1	\$0.0	\$0.0	\$0.0	\$30.1
FEPD	Elderly and Persons with Disability (5310)	F	\$1.0	\$1.1	\$1.1	\$1.1	\$4.3
FMOD	Fixed Guideway Modifications	F	\$0.2	\$0.2	\$0.2	\$0.2	\$1.0
FMPL	Metropolitan Planning (5303)	F	\$0.3	\$0.4	\$0.4	\$0.4	\$1.4
FNS	New Starts - Capital (5309)	F	\$59.5	\$0.0	\$0.0	\$0.0	\$59.5
FNU	Non Urbanised Area Formula Program (5311)	F	\$0.0	\$0.0	\$0.0	\$0.0	\$0.1
FSGR	State of Good Repair	F	\$4.1	\$4.3	\$4.6	\$4.7	\$17.7
FUZ	Capital Program -Bus Earmark (5309)	F	\$29.6	\$24.9	\$22.3	\$25.4	\$102.3
L	Local	O	\$20.9	\$18.1	\$9.6	\$6.0	\$54.5
O	Local, Non Federal or State Funds	O	\$3.5	\$4.7	\$0.0	\$2.8	\$11.1
S	State	S	\$28.7	\$28.4	\$28.5	\$28.9	\$114.5
S(M)	State Match for STP-DA or Garvee Projects	S	\$1.7	\$2.1	\$0.0	\$0.0	\$3.8
SMAP	Operating Assistance and State Maintenance	S	\$12.6	\$12.7	\$12.9	\$13.0	\$51.2
STBGDA	Surface Transportation Block Grant Program (Direct Attributable)	F	\$10.4	\$10.2	\$4.3	\$0.0	\$24.9
STPE	Surface Transportation Program (Enhancement)	F	\$0.1	\$0.0	\$0.0	\$0.0	\$0.1
T	Highway Trust Funds	S	\$35.8	\$10.5	\$0.0	\$0.8	\$47.1
TAP	Transportation Alternatives Program	F	\$0.7	\$0.8	\$2.6	\$0.0	\$4.1
TAPDA	Transportation Alternatives Program (Direct Attributable)	F	\$3.7	\$1.4	\$3.4	\$1.2	\$9.8
		<b>Total</b>	<b>\$250.6</b>	<b>\$123.3</b>	<b>\$92.8</b>	<b>\$84.7</b>	<b>\$551.4</b>

Sources: NCDOT (July 25, 2017)

Notes: Abbreviations for funding types are as follows: "F" – Federal, "S" – State, "O" – Other

**Figure 3: Projected CRTPO Planning Area Non-Highway Revenue, 2018-2021 TIP**



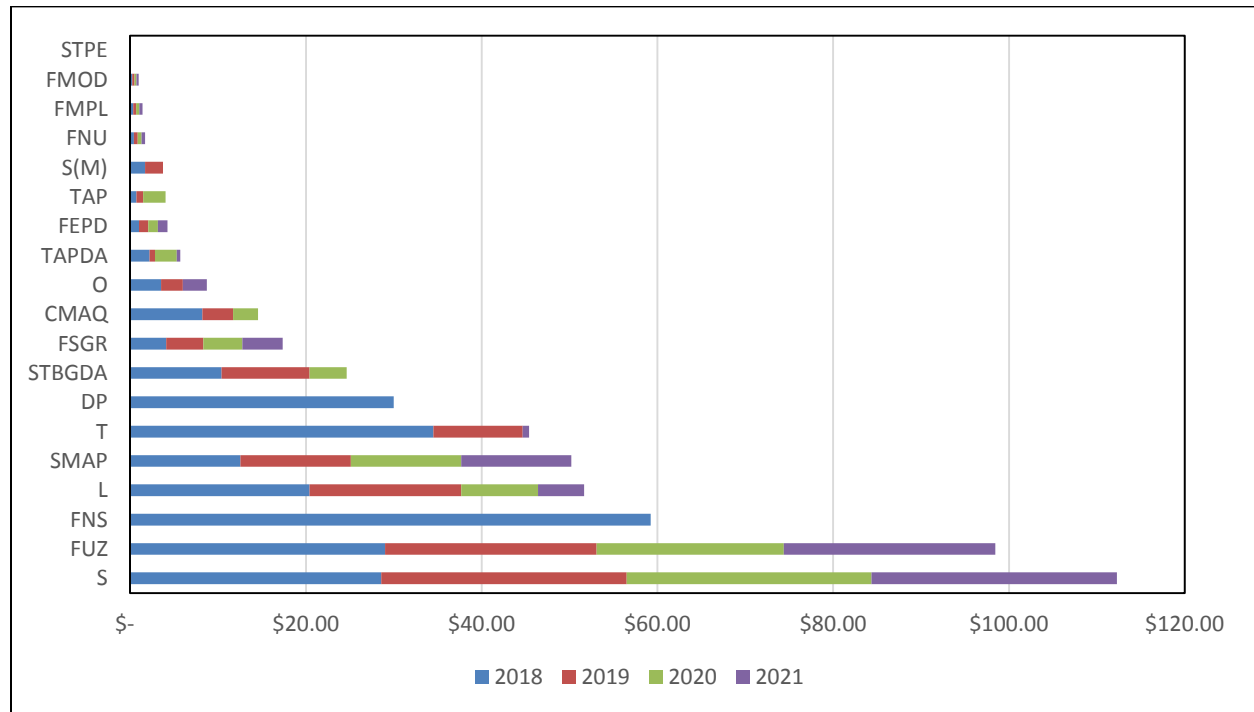
## Charlotte Regional Transportation Planning Organization FFY 2018-2021 TIP

**Table 5: CRTPO Planning Area Proposed Transit Expenditures, 2018-2021 TIP**

Funding Source	Fund Description	Funding Type	<i>(estimates are in millions of YOY dollars)</i>				
			2018	2019	2020	2021	Totals
CMAQ	Congestion Mitigation	F	\$8.2	\$3.5	\$2.8	\$0.0	\$14.6
DP	Discretionary or Demonstration	F	\$30.0	\$0.0	\$0.0	\$0.0	\$30.0
FEPD	Elderly and Persons with Disability (5310)	F	\$1.0	\$1.0	\$1.1	\$1.1	\$4.3
FMOD	Fixed Guideway Modifications	F	\$0.2	\$0.2	\$0.2	\$0.2	\$1.0
FMPL	Metropolitan Planning (5303)	F	\$0.3	\$0.3	\$0.3	\$0.3	\$1.4
FNS	New Starts - Capital (5309)	F	\$59.2	\$0.0	\$0.0	\$0.0	\$59.2
FNU	Non Urbanised Area Formula Program (5311)	F	\$0.4	\$0.4	\$0.4	\$0.4	\$1.7
FSGR	State of Good Repair	F	\$4.1	\$4.2	\$4.4	\$4.6	\$17.3
FUZ	Capital Program -Bus Earmark (5309)	F	\$29.0	\$24.1	\$21.3	\$24.1	\$98.4
L	Local	O	\$20.4	\$17.3	\$8.8	\$5.2	\$51.7
O	Local, Non Federal or State Funds	O	\$3.5	\$2.5	\$0.0	\$2.7	\$8.7
S	State	S	\$28.6	\$27.9	\$27.8	\$28.0	\$112.3
S(M)	State Match for STP-DA or Garvee Projects	S	\$1.7	\$2.1	\$0.0	\$0.0	\$3.8
SMAP	Operating Assistance and State Maintenance	S	\$12.6	\$12.6	\$12.6	\$12.6	\$50.2
STBGDA	Surface Transportation Block Grant Program (Direct Attributable)	F	\$10.4	\$10.0	\$4.2	\$0.0	\$24.6
STPE	Surface Transportation Program (Enhancement)	F	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
T	Highway Trust Funds	S	\$34.5	\$10.2	\$0.0	\$0.7	\$45.4
TAP	Transportation Alternatives Program	F	\$0.7	\$0.8	\$2.5	\$0.0	\$4.0
TAPDA	Transportation Alternatives Program (Direct Attributable)	F	\$2.2	\$0.6	\$2.5	\$0.4	\$5.7
		<b>Total</b>	<b>\$247.1</b>	<b>\$117.7</b>	<b>\$89.1</b>	<b>\$80.4</b>	<b>\$534.3</b>

**Sources:** NCDOT (July 25, 2017)  
**Notes:** Abbreviations for funding types are as follows: "F" – Federal, "S" – State, "O" – Other

**Figure 4: CRTPO Planning Area Proposed Transit Expenditures, 2018-2021 TIP**



To demonstrate the TIP’s fiscal constraint, the overall \$551 million in projected non-highway revenue has been compared to proposed non-highway expenditures for FFY 2018-2021 in the CRTPO planning area. As shown above, proposed non-highway expenditures total approximately \$534 million, about \$17 million less than the region’s projected revenue. This difference does not suggest that surplus revenues are available for programming additional projects, but simply shows that the non-highway projects in the CRTPO TIP are financially constrained.

**Summary**

This analysis demonstrates that the funding sources identified within the CRTPO planning area and the revenue estimates identified by NCDOT cover the cost of the projects included in the FFY 2018-2021 TIP, meeting the federal requirement for a fiscally constrained TIP.