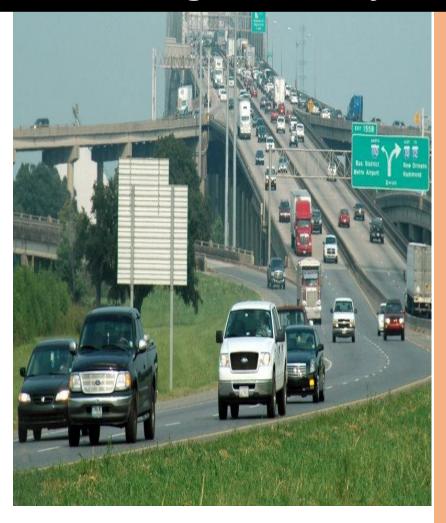


FY 2023 Oct 1, 2022– Sept 31, 2023

Annual Listing of Federally Obligated Projects





Purpose of this Report

Federal Laws, under Bipartisan Infrastructure Law, November 15th, 2021, Bipartisan Infrastructure Law, **Infrastructure Investment and Jobs Act** (**IIJA**) requires that the Capital Region Metropolitan Planning Organization, hereafter referred as "CRMPO", to publish a listing of projects using federal funds obligated annually.

The Federal Metropolitan Planning statue states:

"An annual listing of projects, including investments in pedestrian walkways and bicycle transportation facilities, for which Federal fund have been obligated in the preceding year shall be published or otherwise made available by the cooperative effort of the State, transit operator and metropolitan planning organization for public review. The listing shall be consistent with the categories identified in the TIP."

The annual listing provides a record of project delivery for the previous federal fiscal year. This report will list all transportation projects authorized between October 1, 2021, and September 30, 2022. The listing is also intended to increase the awareness of government spending on transportation projects to the public. Obligations of federal funds means that a project has received federal commitment for reimbursement and does not necessarily mean that the project was initiated or completed in that year or indicate the total cost of that project.

This document is available for download on the CRPC website at https://crpcla.org/, under Publications

Background

Capital Regional Planning Commission is the Metropolitan Planning Organization (MPO) for the Baton Rouge urbanized area. Every metropolitan area with a population of more than 50,000 persons has a designated MPO to qualify for federal highway and transit funding. The MPO study area includes the entirety of East Baton Rouge and Ascension Parish and the urbanized portions of West Baton Rouge, Livingston, and Iberville Parish. This area contains the municipalities of Baton Rouge, Zachary, Baker, Central, Denham Springs, Walker, Livingston, Gonzales, Sorrento, Donaldsonville, Port Vincent, French Settlement, St. Gabriel, White Castle, Plaquemine, Addis, Brusly, and Port Allen. The MPO study area (Figure 1) is comprised of the Baton Rouge Urbanized Area (defined by the 2010 U.S. Census) and the greater Metropolitan Planning Area (MPA). Throughout this document this geographic area is referred to as the CRMPO.

CRMPO has responsibility for planning, programming, and coordinating federal-aid transportation investments within the Baton Rouge urbanized area. CRMPO is statutorily mandated to assess the transportation needs and deficiencies of the region with direction from public officials, citizens, modal representatives, and federal, state, and local planning departments. One of the primary tasks is to carry out the metropolitan transportation planning process that guides investment in the regional transportation system. As established by federal regulation, the Metropolitan Transportation Plan (MTP) "shall include both long-range and short-range strategies/actions that lead to the development of an integrated, multimodal, transportation system that facilitates the safe and efficient movement of people and goods in addressing current and future transportation demand." (23 CFR 450.422, Federal Register May 27, 2016).

The planning process produces a suite of federally mandated documents that guide investment: the long-range Metropolitan Transportation Plan (MTP), the Transportation Improvement Plan (TIP), which programs the implementation of specific projects to address the identified issues and needs, and the annual Unified Planning Work Program (UPWP).

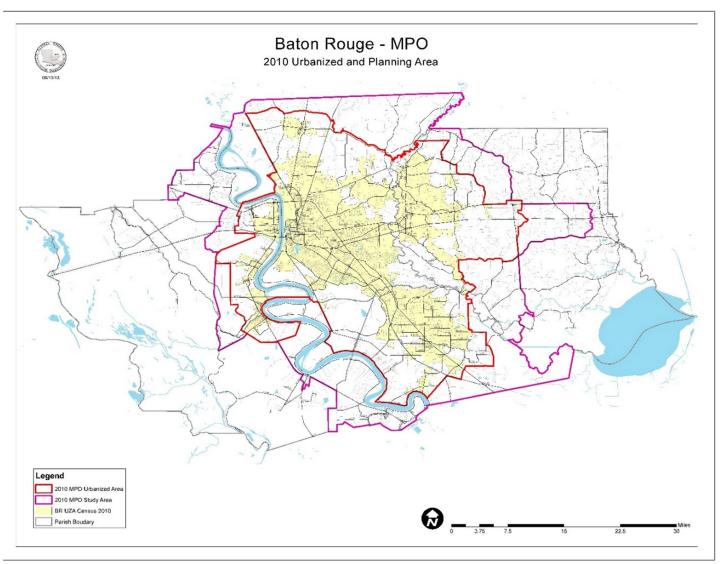


Figure 1. Capital Region MPO Urbanized Planning Area

Adoption of the MTP is the first step towards the implementation of a transportation project. Following formal adoption of the plan, a project can be programmed for design, right-of-way acquisition, or construction in the short-range Transportation Improvement Program (TIP), which identifies funding sources and the estimated amount of funding to be used. TIP is a management tool for implementing the projects programmed in the MTP. The projects in the TIP move towards implementation once the funds are obligated to them.

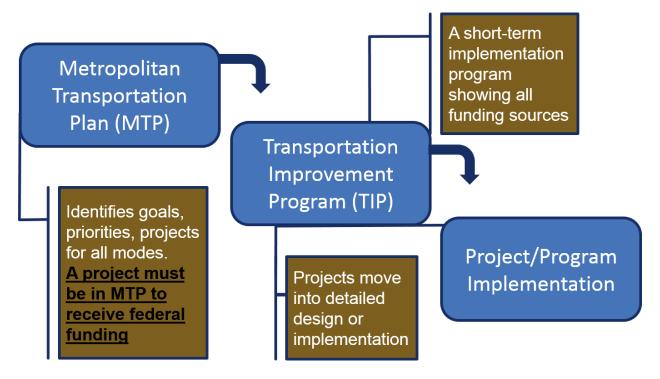


Figure 2: MPO Project Development and Implementation Process

Obligation Report

This report documents all the federally funded highway and transit projects or phases that have been obligated in FFY 2022.

While federal funding is included in this report, no local or state funds are reported. During FY 2022, federal funding was distributed through the following funding categories:

- Congestion Mitigation and Air Quality Improvement Program (CMAQ) funding for projects that demonstrate the three following factors: transportation identity, emissions reduction, and location in or benefitting a nonattainment or maintenance area.
- Federal Bridge On-System (FBR ON) and Federal Bridge Off-System (FBR OFF) are federal funds used for the replacement, rehabilitation or widening of any federal aid facility on-system or off-system, respectively.
- Highway Safety Improvement Program (HSIP) The goal of the program is to achieve a significant reduction in traffic fatalities and serious injuries on all public roads, including non-State-owned public roads and roads on tribal lands. The HSIP requires a data-driven, strategic approach to improving highway safety on all public roads that focuses on performance.
- Federal Surface Transportation Program (STP) This funding may be used for safety infrastructure improvements during preliminary engineering, design, and construction.
- National Highway Performance Program (NHPP) provides support for the condition and performance of the National Highway System (NHS), for the construction of new facilities on the NHS, and to ensure that investments of Federal-aid funds in highway construction are directed to support progress toward the achievement of performance targets established in a state's asset management plan for the NHS.
- Railway Highway Grade Crossing Program This program provides funds for the elimination of hazards at railway-highway crossings.
- Surface Transportation Program (STP >200k) is used within the metropolitan area
 to fund roadway reconstruction, rehabilitation, traffic operational improvements, bicycle
 and pedestrian facilities, and studies.

- Surface Transportation Program (STP Flex) is a flexible funding category that is typically used by LaDOTD to fund roadway reconstruction, Intelligent Transportation System (ITS) projects, or bridge or interchange work.
- The funds resulting from this apportionment are available for obligation until September 30, 2024. Any amounts not obligated by the State on or before September 30, 2024, shall lapse.
- The funds resulting from this apportionment are available for obligation immediately and are not subject to any limitation on obligations.
- The Federal share payable shall be up to 100 percent at the option of the State.
- The program codes to be used when obligating these funds are as follows:

Covid Supplemental(Z970) 100 % Federal Share

 Highway Infrastructure – COVID Supplemental – 23 U.S.C. 133(b) activities in any area of the State

COVID Special Authority(Z971)

o Highway Infrastructure - COVID Special Authority - special eligibilities in any area of the State

COVID Supplemental >200K (Z972)

 Highway Infrastructure – COVID Supplemental – 23 U.S.C. 133(b) activities in urbanized areas with a population over 200,000

COVID Special Authority > 200K (K973)

- Highway Infrastructure COVID Special Authority special eligibilities in urbanized areas with a population over 200,000
- FTA Section 4510 funds are used for capital, operating assistance, preventive
 maintenance, and planning purposes for mass transportation improvements in urbanized
 areas.
- FTA Section 4550 grants fund projects that create or enhance public transportation services and remove barriers for the disabled. New Freedom projects must be new (i.e., non-operational and/or unfunded prior to 2005) and must exceed the current requirements

of the Americans with Disabilities Act of 1990. Activities funded by New Freedom must derive from the regional Coordinated Human Services Transportation Plan.

Some projects include a mixture of different federal funding categories, and thus one project line under one funding source does not necessarily equal the total obligated funding for that project. Table 1-3 below are based on records obtained from LaDOTD, FHWA, CATS and FTA, as CRMPO does not directly participate in the obligation prices

Public Involvement

CRPC aims to proactively engage the public in the regional transportation planning process and embraces federal requirements that MPOs provide the public with complete information, timely public notice, full public access to key decisions, and early and continuing involvement in developing the LRTP, TIP, and other products. CRPC's public involvement strategies include presenting information and educating the public, continually soliciting public input, helping information flow between the public and decision makers, and considering and responding to public concerns.

Summary of Federally Obligated Projects

A total of \$316.87 million was obligated in FY 2023 for 118 transportation projects. Of this, \$301.16 million was for highway/bridge projects and \$15.71 million for transit projects. Highway Projects accounted for 95.05 % of funds with transit accounted for the remaining 4.95 %. Figure 2 below illustrates the distribution of funds between transit and highway projects:

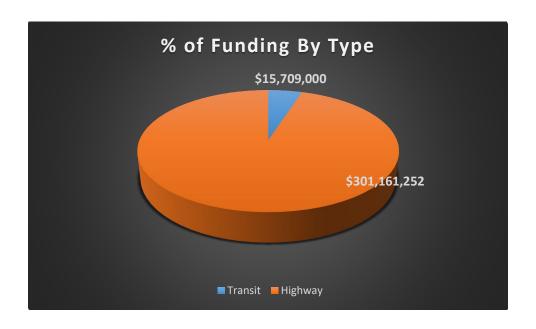


Figure 2. FY 2023 Federally Obligated Projects Summary

Table 1. List of Highway Project FY 2023

Project Number	Project Description	Project Phase	Funding Source	Grand Total
H.000358	US 190: LA 415 & RR OVERPASS REPL (HBI)	Engineering	NHPP	\$126,756.22
H.001234	LA 1:PORT ALLEN CANAL BR REPL (PH1)(HBI)	I CONSTRUCTION I		\$9,325,525.37
H.001597	LA 73 WIDENING (US 61 - I-10)	Construction	CMAQ	\$1,029,129.12
H.002337	LA 327-S: BAYOU FOUNTAIN	Engineering	STP FLEX	\$171,635.22
H.002370	LA 42 (US 61 - LA 44)	Construction	STP FLEX	\$78,530.66
H.002424	LA 70: SUNSHINE BRIDGE - LA 22	Construction	NHPP, STP FLEX	\$22,044,474.12
H.003047	PECUE LANE/I-10 INTERCHANGE PHASE III	Construction	STP>200K, STP>200K-E	\$22,179,987.35
H.003425	I-12: LA 63 - TANGIPAHOA PARISH LINE	Construction	NHPP-E	\$2,316,080.41

H.004100	I-10: LA 415 TO ESSEN ON I-10 AND I-12	Construction, Engineering, ROW	CRPFLEX, DEMO, NHPP, NHPP-E, RCAF, STP>200K	\$62,754,232.64
H.004104	PECUE LANE/ I-10 INTERCHANGE	Engineering	NHPP	\$67,185.90
H.005121	LA 1/LA 415 CONNECTOR	Engineering	STP>200K	\$1,224,379.80
H.006457	ROUNDABOUT @ PR 929 & PARKER ROADS	Construction	STP>200K	\$770,771.47
H.006459	ROUNDABOUT AT CHURCHPOINT RD AND RODDY R	Construction	HSIP, STP>200K	\$678,304.60
H.006499	WESTDALE & BERNARD TERRACE SIDEWALKS	Construction	HSIPPEN	\$467,420.40
H.007963	BLACKWATER BAYOU BRIDGE	Construction	STP FLEX	\$1,355,415.26
H.008170	LA 1024 CREEK BRS. NEAR FRIENDSHIP	Construction, Utilities	FBR-OFF	\$2,793,879.11
H.008173	US 190 & LA 1032	ROW	HSIP	\$2,407,254.88
H.009266	I-10: LA 73 TO LA 30	Engineering	NHPP-E	\$215,476.96
H.009484	LA 75: BAYOU BREAUX BRIDGE	Construction	STP FLEX	\$238,475.39
H.009956	LA 44: TURN LANES	Construction	HSIP	\$69,105.67
H.010319	I-110: NORTH ST PLANK RD.	Engineering	NHPP, NHPP-E, RCAF	\$606,466.87
H.010652	LA 73: US 61 (AIRLINE) - ESSEN LANE	Construction	NHPP	\$22,303,495.27
H.010960	LA 30 ROUNDABOUTS @ TANGER MALL & I-10	Construction	CMAQ, STP FLEX	\$5,335,626.11
H.011278	I-12:MEDIAN CABLE BARRIER	Construction	HSIP	\$1,075,824.04
H.011617	LA75 & LA 141-1: CP, OVLAY & STAB, OVLAY	Construction	STP FLEX	\$72,156.13
H.011684	LA 327 SPUR: STARING LANE EXTENSION	Engineering	STP FLEX	\$683,205.18
H.011827	DUNN ROAD IMPROVEMENTS	Construction	STP>200K	\$222,931.64
H.011828	FORREST DELATTE ROAD IMPROVEMENTS	Construction	STP>200K	\$101,747.74
H.011936	I-12 & I-10 PATCHING IN EBR PARISH	Construction	NHPP	\$139,244.73
H.012057	LA 431:VILLAR CANAL AND DRAINAGE BRIDGES	Utilities	STP FLEX	\$117,870.00
H.012110	LA 68: US 61 - LA 964	Construction	STP FLEX	\$413,960.37
H.012232	LA 3064 TO BLUEBONNET BLVD PHASE 2	Construction, ROW	STP>200K	\$25,347,244.64
H.012235	WHITE CASTLE SIDEWALKS	Construction	SRTS OPT	\$51,929.99
H.012348	LA 1026: ROUNDABOUT @ EDEN CHURCH ROAD	Construction, Utilities	CMAQ, STP FLEX	\$6,019,213.48
H.012528	LA 3251: IC RR XING (GEISMAR)	Construction	STP FLEX	\$88,935.00
H.012563	LA 73: BAYOU MANCHAC BRIDGE (HBI)	Engineering	STP FLEX	\$226,521.68

H.012713	LA 74: IBERVILLE P/L - US 61	Construction	STP FLEX	\$441,436.41
H.012834	JOLIET TRAIL (BRUSLY)	Construction	CMAQ	\$237,700.51
H.012964	US 61: BLUEBONNET BLVD - S END US 190	Construction	NHPP	\$734,609.69
H.013029	I-12 @ SHERWOOD FOREST PED/BIKE SAFETY	Construction	HSIPPEN, HSIP- VRU	\$2,870,845.77
H.013191	LA 1: LA 75 - PORT ALLEN CANAL BR	Construction	NHPP	\$4,649,834.06
H.013328	LA 73: LA 3064 / ESSEN - LA 426 (RT II)	Construction	NHPP	\$76,480.41
H.013366	DOWNTOWN GREENWY LOUISIANA CONNECTOR EBR	Construction	TAP>200K	\$58,711.81
H.013387	DIST. 61 FLASHING YELLOW ARROW PART 1	Construction	STP FLEX	\$486,292.67
H.013458	MANCHAC ACRES RD & H H WILSON RD BRIDGES	Construction	FBR-OFF	\$2,973,596.57
H.013482	I-10 WBR QUEUE WARNING SYSTEM PROJECT	Construction	NHPP	\$2,335,207.78
H.013751	DOWNTOWN GREENWAY LA CONNECTOR (BR)	Construction	HSIPPEN, HSIP- VRU	\$858,637.18
H.013764	WEST & HOMESTEAD: UP RR XINGS(IBERVILLE)	Construction	RAIL PD	\$117,870.00
H.013897	I-10 & I-12 COLLEGE DR FLYOVER RAMP	Construction	NHPP	\$471,480.00
H.014087	US 61: ST. JAMES PL - 2450' S. OF LA 22	Engineering	NHPP	\$92,687.07
H.014100	LA 408: I-110 - END OF CONCRETE SECTION	Construction	NHPP	\$13,156,565.93
H.014128	US 190: UPASS US 61 - LIVINGSTON P/L	Engineering	NHPP	\$963,868.96
H.014131	LA 22 & LA 73: PCC AT I-10 INTERCHANGES	Construction	NHPP, STP FLEX	\$456,588.97
H.014171	LA 30(NICHOLSON DR) CLEARING & GRUBBING	Engineering	STP>200K	\$15,701,700.00
H.014258	LA 1:PORT ALLEN CANAL BR REPL (PH2)(HBI)	Engineering	NHPP	\$541,873.14
H.014259	LA 37: HUBS BYU AND SANDY CREEK BRIDGES	Engineering	STP FLEX	\$113,399.19
H.014274	HANKS DR/LANDIS DR PED IMPRVMNTS, PH 2&3	Construction	TAP>200K, TAP FLEX	\$2,686,771.30
H.014320	VAN BUREN STREET OVER CORPORATION CANAL	Construction, Engineering	FBR-OFF	\$1,065,342.48
H.014323	I-10: MISS RIVER BR FENDER REP. (PIER 6)	Construction	NHPP	\$338,357.10
H.014358	AMITE CHURCH ROAD	Construction	STP>200K	\$411,532.66
H.014359	AYDELL LANE: LA 447 TO PARK ST	Construction	STP>200K	\$177,723.13
H.014371	PLAQUEMINE RIVERFRONT REC TRAIL PH 3 & 4	Construction	STP>200K	\$1,059,252.46

H.014408	LA 67: RCUT @ BLOUNT RD	Construction	HSIP	\$82,290.06
H.014419	E. RAILROAD AVENUE IMPROVEMENTS	Construction	STP>200K	\$475,782.08
H.014448	US 61: IC RR XING MARKINGS (BATON ROUGE)	Construction	RAIL HE	\$535,323.20
H.014466	LA 1 @ EVERGREEN: UPRR XING (IBERVILLE)	Construction, Engineering	RAIL HE	\$559,626.09
H.014482	LA 16: US 190 - LA 1019	Construction	NHPP	\$18,483,698.24
H.014506	I-10 WB OFF RAMP: LT TURN LANE AT SIEGEN	Construction	CMAQ	\$1,704,675.67
H.014526	LA 37: TREE AND STUMP REMOVAL	Construction	HSIP	\$1,257,771.68
H.014591	I-12: US 61 BRIDGES GIRDER REPAIRS	Engineering	NHPP	\$187,153.99
H.014608	LA1: BAYOU PLAQUEMINE BR STRENGTHENING	Construction	NHPP	\$519,618.11
H.014638	CONGRESS BLVD: KCS RR XING (BATON ROUGE)	Construction	STP FLEX	\$266,789.90
H.014642	PR 929 OVERLAY: US 61 - LA 42	Construction	STP>200K	\$1,501,722.53
H.014697	LA 64: US 61 - BARNETT RD	Construction	STP FLEX	\$1,792,114.56
H.014704	ASCENSION PARISH OVERLAY PROGRAM	Construction	STP>200K	\$645,768.82
H.014784	LA 1019: LA 16 - LA 447	Construction	STP FLEX	\$9,950,886.37
H.014865	US 61: LA 74 - LA 42	Construction	NHPP	\$15,097,186.77
H.014866	LA 30: VETERAN'S BLVD - US 61	Construction	NHPP	\$5,413,599.18
H.014930	RUMBLE STRIPS: DISTRICT 61 - AREA C	Construction	HSIP	\$2,833,455.25
H.014988	CAREY ROAD OVER BLACKWATER BAYOU	Engineering	FBR-OFF	\$106,556.84
H.014989	NEFF LANE OVER WIND CREEK	Engineering	FBR-OFF	\$108,804.61
H.014990	S TIGER BEND RD AND E ACHORD RD BRIDGES	Engineering	FBR-OFF, STP FLEX	\$204,586.96
H.014991	EAST STATE ST OVER CORPORATION CANAL	Engineering	STP FLEX	\$104,092.18
H.014992	MCHUGH ROAD OVER BRUSHY BAYOU	Engineering	STP FLEX	\$107,654.21
H.014993	LEMON RD OVER DRAINAGE BAYOU	Engineering	FBR-OFF	\$108,804.61
H.015108	LA 30 @ LA 3115 TRAFFIC SIGNAL	Construction	NHPP	\$295,850.85
H.015111	US 61: INT. IMPROVEMENTS AT ALCO AVE	Construction	HSIP	\$877,996.77
H.015142	PLANCHET ROAD IMPROVEMENTS	Construction	STP>200K	\$1,297,965.25
H.015227	US 61 @ VICTORIA DR. PED CROSSING	Engineering	HSIP-VRU	\$152,054.66
H.015341	CARNEY ROAD OVER DRAINAGE BAYOU	Engineering	FBR-OFF, FBR- OFF E	\$235,740.00

H.015409	I-10: MISS R. BR W. APPR GIRDER RE PH 1	Engineering	NHPP	\$532,223.12
H.015417	I-110: EMERGENCY REP - 22ND PUMP STATION	Construction	STP FLEX	\$373,978.14
H.015424	LA 67: PLANK RD. @AIRLINE - GIRDER REP.	Engineering	NHPP	\$252,151.94
H.015429	CARROLL AVENUE OVER COLYELL CREEK	Engineering	FBR-OFF, FBR- OFF E	\$235,740.00
H.015430	HOOD ROAD OVER COLYELL CREEK	Engineering	FBR-OFF, FBR- OFF E	\$235,740.00
H.015526	CHIPPEWA ST PUMP STATION IMP PHASE 1	Engineering	NHPP	\$323,207.79
H.015530	DEVALL ROAD OVER DRAINAGE DITCH	Engineering	FBR-OFF, FBR- OFF E	\$235,740.00
H.015531	BECO ROAD OVER DUCKROOST BAYOU	Engineering	FBR-OFF, FBR- OFF E	\$235,740.00
H.015548	E FLANACHER ROAD OVER DRAINAGE BAYOU	Engineering	FBR-OFF, FBR- OFF E	\$235,740.00
H.015551	CATALINA AVE OVER ENGRS. DEPOT CANAL	Engineering	FBR-OFF, FBR- OFF E	\$235,740.00
H.015552	WAX ROAD OVER DRAUGHAN CREEK	Engineering	FBR-OFF, FBR- OFF E	\$235,740.00
H.972433	SOUTHERN UNIV SUMMER TRANSP INSTITUTE	Engineering	DBE/SS	\$50,000.00
		`	GRAND TOTAL	\$314,288,069.10

Table 2. Breakdown of Obligations Amounts among Funding Sources

FUNDING SOURCE	TOTAL
CMAQ	\$19,512,595.36
COVID	\$15,950,764.48
CRPFLEX	\$131,000.00
DBE/SS	\$50,000.00
DEMO REPUR	\$190,937.01
FBR-OFF	\$7,489,265.43
FBR-OFF E	\$1,697,328.00
HSIP	\$1,202,159.08
HSIPPEN	\$653,619.23
HSIP-VRU	\$3,776,235.49
NHPP	\$143,388,868.14
NHPP-E	\$13,764,217.60
RAIL HE	\$725,202.06
RAIL PD	\$106,395.92
RCAF	\$542,196.11
SRTS OPT	\$73,915.10
STP FLEX	\$13,806,002.93
STP>200K	\$75,464,606.35
TAP>200K	\$2,433,016.39
TAP-FLEX	\$202,926.82
GRAND TOTAL	\$301,161,251.50

Since there are a large amount of funding sources for the highway projects, Table 2 provides a listing of the project funding sources and amount, so the distribution of funds could be easier understood.

Table3. FY 2023 Federally Obligated Highway/Bridge Projects by Funding Category

FUNDING SOURCE	% OF ALL FUNDING
CMAQ	6.48%
COVID	5.30%
CRPFLEX	0.04%
DBE/SS	0.02%
DEMO REPUR	0.06%
FBR-OFF	2.49%
FBR-OFF E	0.56%
HSIP	0.40%
HSIPPEN	0.22%
HSIP-VRU	1.25%
NHPP	47.61%
NHPP-E	4.57%
RAIL HE	0.24%
RAIL PD	0.04%
RCAF	0.18%
SRTS OPT	0.02%
STP FLEX	4.58%
STP>200K	25.06%
TAP>200K	0.81%
TAP-FLEX	0.07%
GRAND TOTAL	100.00%

Figure 3 shows the distribution of funds between various funding sources for the highway projects with the largest percentage of highway/bridge funds (47% total) obligated to NHPP funding. These funds are used within the metropolitan area to fund roadway reconstruction, rehabilitation, traffic operational improvements, bicycle and pedestrian facilities, and studies

Table 4. FY 2023 Listing of Transit Projects

Funding Source	Entity	Project Description	Line-Item Description	Total Cost (\$000)
FTA 5307	CATS	Transit Security	Support facilities/equipment for rolling stock and fixed facilities	\$500
FTA 5307	CATS	Rolling Stock	(2) 35-ft Diesel Buses	\$985
FTA 5307	CATS	Transit Center/Hub Improvements	Bus Shelters	\$250
FTA 5307	CATS	Bus Associated Transit Enhancements	Bus Shelters	\$250
FTA 5307	CATS	Bus Support Equipment	Support Vehicle	\$75
FTA 5307	CATS	Preventative Maintenance	Capital Cost of Preventive Maintenance	\$4,700
FTA 5307	CATS	System Planning	Short - and Long-Range Planning	\$300
FTA 5307	CATS	Rolling Stock	ADA Vans	\$400
FTA 5307	CATS	Transit Center/Hub Improvements	Transit Center/Hub- Improvements (North Transit Center)	\$1,817
FTA 5307	CATS	Operating Assistance	Operating Assistance	\$1,500
FTA 5339	CATS	Rolling Stock	Bus Lease Payments	\$656

FTA 5339	CATS	Rolling Stock	Transit Vehicles with Power Package	\$130
Areas of Persistent Poverty Grant	CATS	System Planning	General Development/Comprehensive Planning	\$744
American Rescue Plan Grant	CATS	System Planning	General Development/Comprehensive Planning	\$514
STP>200K	CATS	Rolling Stock	3 Electric Buses	\$2,888

Table 5. FY 2023 Federally Obligated Transit Projects by FTA Funding Category

Federal Funding Source	Funding Amount
American Rescue Plan Grant	\$ 514,000
Areas of Persistent Poverty	
Grant	\$ 744,000
FTA 5307	\$ 10,777,000
FTA 5339	\$ 786,000
STP>200K	\$ 2,888,000
Grand Total	\$ 15,709,000

Figure 5 summarizes the funding for the transit projects sorted by funding source. Most of the transit funding comes from FTA Section 5307. These funds are used for capital, operating assistance, preventive maintenance, and planning purposes for mass transportation improvements in urbanized areas.