5 OUR PLAN TO PAY FOR THE PLAN

5.1 INTRODUCTION

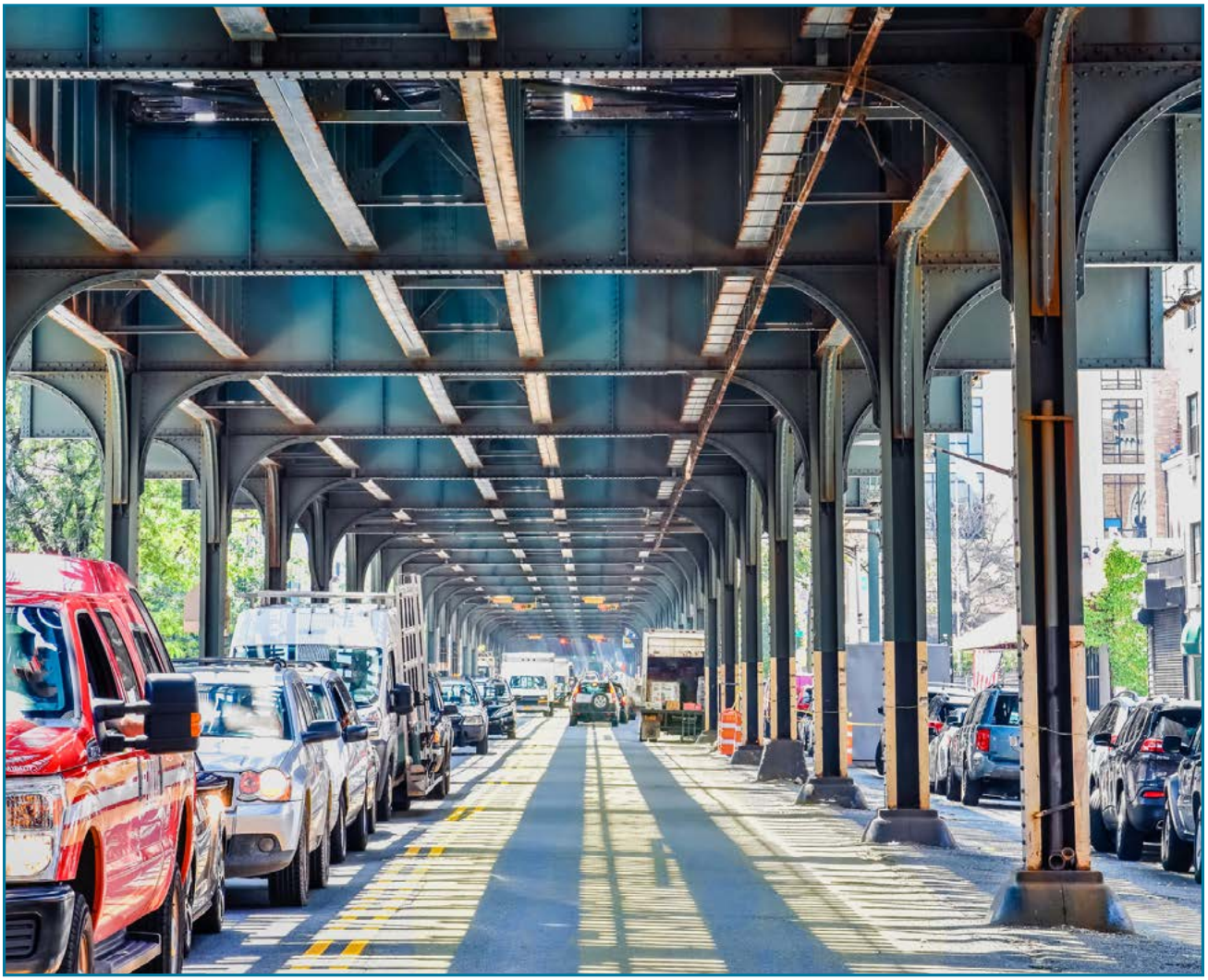
*The purpose of this chapter is to demonstrate how the federal requirements for fiscal constraint are met and how **Moving Forward** can be implemented. Federal regulations require that the financial plan include the following:*

- System-level estimates of the costs and revenues reasonably expected to be available to adequately operate and maintain federal-aid highways and public transportation;
- Estimates of funds that will be available for the implementation of the Plan; and
- Additional financing strategies for the implementation of the Plan.

5.1.1 FINANCIAL PLANNING REQUIREMENTS

At the time of this writing, the current federal legislation that authorizes federal aid to highway and transit programs through September 2021 maintains the pre-existing financial planning requirements, which apply to *Moving Forward*. According to 23 CFR 450.324, *Moving Forward* is required to contain the following:

> *(11) A financial plan that demonstrates how the adopted transportation plan can be implemented.*
>
> *(i) For purposes of transportation system operations and maintenance, the financial plan shall contain system-level estimates of costs and revenue sources that are reasonably expected to be available to adequately operate and maintain the Federal-aid highways (as defined by 23 U.S.C. 101(a)(5)) and public transportation (as defined by title 49 U.S.C. Chapter 53).*
>
> *(ii) For the purpose of developing the metropolitan transportation plan, the MPO(s), public transportation operator(s), and State shall cooperatively develop estimates of funds that will be available to support metropolitan transportation plan implementation, as required under §450.314(a). All necessary financial resources from public and private sources that are reasonably expected to be made available to carry out the transportation plan shall be identified.*
>
> *(iii) The financial plan shall include recommendations on any additional financing strategies to fund projects and programs included in the metropolitan transportation plan. In the case of new funding sources, strategies for ensuring their availability shall be identified. The financial plan may include an assessment of the appropriateness of innovative finance techniques (for example, tolling, pricing, bonding, public private partnerships, or other strategies) as revenue sources for projects in the plan.*
>
> *(iv) In developing the financial plan, the MPO shall take into account all projects and strategies proposed for funding under title 23 U.S.C., title 49 U.S.C. Chapter 53 or with other Federal funds; State assistance; local sources; and private participation. Revenue and cost estimates that support the metropolitan transportation plan must use an inflation rate(s) to reflect "year of expenditure dollars," based on reasonable financial principles and information, developed cooperatively by the MPO, State(s), and public transportation operator(s).*
>
> *(v) For the outer years of the metropolitan transportation plan (i.e., beyond the first 10 years), the financial plan may reflect aggregate cost ranges/cost bands, as long as the future funding source(s) is reasonably expected to be available to support the projected cost ranges/cost bands.*
>
> *(vi) For nonattainment and maintenance areas, the financial plan shall address the specific financial strategies required to ensure the implementation of TCMs in the applicable SIP.*
>
> *(vii) For illustrative purposes, the financial plan may include additional projects that would be included in the adopted transportation plan if additional resources beyond those identified in the financial plan were to become available.*
>
> *(viii) In cases that the FHWA and the FTA find a metropolitan transportation plan to be fiscally constrained and a revenue source is subsequently removed or substantially reduced (i.e., by legislative or administrative actions), the FHWA and the FTA will not withdraw the original determination of fiscal constraint; however, in such cases, the FHWA and the FTA will not act on an updated or amended metropolitan transportation plan that does not reflect the changed revenue situation.*



5.1.2 COST AND REVENUE CATEGORIES

In keeping with the federal financial planning requirements, *Moving Forward's* financial chapter is built around the following activity categories:

1. **Operations and Maintenance (O&M).** This chapter contains current systems-level estimates of costs and revenues for O&M that are reasonably expected to be available to operate and maintain the federally supported transportation system as defined by federal legislation [23 U.S.C. 101 (a)(6) and 49 U.S.C. Chapter 53].
2. **System Preservation** is broadly defined as costs related to the life-cycle replacement, refurbishment, rehabilitation, reconditioning, or reconstruction of components of the federally supported transportation system (i.e., equipment and facilities).
3. **System Enhancement** refers to extensions and/or improvements to the existing transportation system or new segments or services added to the transportation system to improve capacity and/or throughput.

5.1.3 KEY STEPS IN THE DEVELOPMENT OF FINANCIAL FORECASTS

The costs and revenue forecasts associated with transportation-related projects in *Moving Forward* have been developed using the multi-step process outlined below:

1. **Defining the Federally Supported Transportation System.** The transportation system that moves people and goods in the NYMTC planning area is a complex network of services and facilities under a variety of jurisdictions. Some of these facilities are operated and maintained by fiscally self-supporting public authorities that generally do not access federal transportation funding. Others are owned and operated by local municipalities and not federal-aid eligible.

   Given these distinctions, this chapter first defines the federal-aid eligible (i.e., federally supported) portions of the transportation system as a basis for forecasting the long-range costs and resources. The federally supported component is a subset of the overall transportation network in NYMTC's planning area. This chapter assumes that the fiscal needs of those system components owned, operated, and maintained by self-financed public authorities (described below) and local municipalities are met by those authorities and municipalities as demonstrated in their board/council-approved capital and operating budgets, plans, and programs.

2. **Inventorying System Components.** The condition of the facilities and equipment that are determined to be part of the federally supported transportation system have been inventoried as a step toward defining long-term system preservation needs. Note that this includes existing system components and any planned future components that appear in the fiscally constrained element of the Plan.

3. **Forecasting Costs.** Based on the inventory of the federally supported transportation system components, forecasts of O&M, system preservation, and system enhancements costs were developed through the Plan's horizon year. The forecasts are aggregated modally for roadways (including pavements, bridges, and non-motorized facilities) and transit (including facilities and equipment).

4. **Forecasting Revenues.** Resources that are reasonably expected to be available from all sources to support the Plan's implementation are forecasted through the Plan's horizon year.

5.1.4 CAUTIONS IN FORECASTING LONG-RANGE COSTS AND REVENUES

Forecasting costs and revenues over such a long period presents risks and significant challenges for New York State and for NYMTC. For example, forecasting federal resources is complicated by the perennial threat to the financial solvency of the Highway Trust Fund, which partially supports federal highway and transit programs. Additionally, the COVID-19 pandemic has introduced unpredictable potential impacts during the initial years of the Plan. Taken together, these factors introduce a level of risk and uncertainty into long-range resource and cost forecasts.

5.2 SYSTEM-LEVEL ESTIMATES OF COSTS AND REVENUE SOURCES

Federal Regulatory Language: *For purposes of transportation system operations and maintenance, the financial plan shall contain system-level estimates of costs and revenue sources that are reasonably expected to be available to adequately operate and maintain the Federal-aid highways (as defined by 23 U.S.C. 101(a)(5)) and public transportation (as defined by title 49 U.S.C. Chapter 53).*

5.2.1 THE FEDERALLY SUPPORTED TRANSPORTATION SYSTEM

In ***Chapter 2***, *Moving Forward* presents an inventory of the various components of the transportation system in NYMTC's planning area. As noted in Chapter 2, the multi-state metropolitan area has one of the oldest, most complex, and highly used transportation networks in the world. On a typical weekday in 2019, the region's multimodal transportation network handled more than five million passenger trips and thousands of tons of freight shipments. Notably, public transit mode share on this network is the highest in the United States, accounting for nearly 40 percent of all transit trips taken in the country, which is a testament to the scale of the public transit components of the network.

The federally supported transportation system is a subset of this overall transportation network that is defined through federal-aid eligibility.

Transportation system components that fall within this threshold are eligible for federal funding and/or require a federal action to proceed. ***Table 5-1*** provides details of the general parameters of the federally supported transportation system.

Local roadways that are not part of the federal-aid highway system and whose costs are borne by the locality, regardless of ownership, are not included in the federally supported system. Similarly, any transportation system components that are financed exclusively with non-federal funds through state, local, or private means are not included in the federally supported system, regardless of eligibility.

In the NYMTC planning area, five self-financed public authorities have jurisdiction over significant system components that are not considered part of the federally supported system. Brief descriptions of these five authorities and the system components that are under their jurisdictions are provided below.

Table 5-1

Major Parameters of the Federally Supported Transportation System

More than 19,000 lane miles of interstates, freeways, parkways, expressways, arterial and collector roadways.
More than 2,400 roadway bridges of all types under the ownership of the state, counties and local municipalities.
Nearly 1,300 track miles of commuter rail and 665 mainline track miles of subway tracks in passenger service, plus hundreds of miles of local, express, commuter, and intercity bus routes and an aerial tramway.
An extensive network of passenger hubs, transit stations and stops, bus terminals and subway transfer facilities, ferry landings, and bus stops.
More than 1,300 miles of bicycle facilities, ranging from shared-use bike trails to on-road bike lanes, in addition to pedestrian sidewalks, trails, and paths.
Supporting infrastructure such as rail yards and highway maintenance facilities, highway rest areas, parking lots and garages, bus depots and transit storage yards, bicycle parking areas, toll plazas, signage, signals, electronics, and other equipment.

- **Port Authority** infrastructure assets include the George Washington Bridge and Bus Station; the Lincoln and Holland tunnels; the Bayonne Bridge, Goethals Bridge and Outerbridge Crossing; the Port Authority Bus Terminal in midtown Manhattan; the PATH rapid-transit system and World Trade Center transportation hub; rail freight and car float operations, and the World Financial Center Ferry Terminal. In addition, the Port Authority has taken the lead in financing infrastructure at its airports (JFK, LaGuardia, Newark-Liberty, and Stewart) and marine terminals, including on-dock rail freight service at the container terminals and the Air-Train-JFK and AirTrain-Newark transit links.
- **MTA Bridges and Tunnels** (legally, the Triborough Bridge and Tunnel Authority) is one of the component operating authorities of the MTA. MTA Bridges and Tunnels operates seven bridges (the Robert F. Kennedy, Throgs Neck, Verrazzano-Narrows, Bronx-Whitestone, Henry Hudson, Marine Parkway-Gil Hodges Memorial, and Cross Bay Veterans Memorial) and two tunnels (Hugh L. Carey Tunnel and the Queens-Midtown Tunnel) that connect the five boroughs of New York City over and under various waterbodies. The other operating authorities that compose MTA (i.e., MTA NYCT, MTA MNR, MTA LIRR, MTA Staten Island Railway, and MTA Bus) operate facilities and services that are defined as part of the federally supported transportation system. In addition to funding the operating and capital budgets of MTA Bridges and Tunnels, toll revenue from MTA Bridges and Tunnels helps support other MTA-operated transit services.
- The **New York State Thruway Authority** operates the New York State Thruway (I-87), the New England Thruway (I-95), and the Cross Westchester Expressway (I-287) within the NYMTC planning area; it also operates the Governor Mario M. Cuomo Bridge, which carries the New York State Thruway over the Hudson River between Westchester and Rockland counties.
- The **New York State Bridge Authority** operates the Bear Mountain Bridge that carries U.S. 202 and U.S. 6 over the Hudson River between the northern portions of Westchester and Rockland counties.
- The **Nassau County Bridge Authority** operates the Atlantic Beach Bridge that connects the Nassau Expressway with Atlantic Beach across the Reynolds Channel.

Other transportation facility owners and services that are not included in the financial forecasts for the federally supported transportation system are described below.

- The **National Railroad Passenger Corporation**, otherwise known as Amtrak, provides intercity rail services in the NYMTC planning area but does not program its federally funded projects through NYMTC's metropolitan transportation planning process. Amtrak owns Penn Station and the newly opened Moynihan Train Hall, as well as the trans-Hudson rail tunnels accessing Penn Station.

- **NJ Transit** and **Connecticut Transit** are public benefit corporations operating transit services in the states of New Jersey and Connecticut; they provide services that terminate in Manhattan and in the City of White Plains in Westchester County. Although these carriers are eligible for and make use of federal transportation funding through other MPOs, they do not program federally funded projects through NYMTC's metropolitan transportation planning process.
- Privately owned and operated ferry systems, rail freight systems, and intercity and interstate bus systems that provide services in the NYMTC planning area.
- Suburban municipalities that have jurisdiction over roadways and/or bridges within their jurisdictions.

5.2.2 COST AND RESOURCE FORECASTS

System-level forecasts of costs to operate and maintain infrastructure and services are based on the current operating budgets of NYMTC's member agencies, as well as any longer-range operational plans they maintain. Entities generally have annual operating budgets approved by their respective legislatures or boards, while a capital program may have a longer term. New York State and local municipal sponsors have historically demonstrated both a commitment and track record to match federal capital funding and provide enough funds to balance operating budgets. The O&M costs of system enhancements are included in these estimates in cases where planned enhancements add new components to the system. System enhancements that are included in the fiscally constrained element of the Plan are described in detail in subsequent sections of this chapter.

O&M COST FORECAST

More than $906 billion in year of expenditure (YOE) dollars (an average of $31 billion per year) will likely be needed through the 2050 horizon year to operate and maintain the federally supported transportation system. These O&M cost forecasts are detailed in ***Table 5-2***. ***Figures 5-1*** and ***5-2*** provide a modal and agency breakdown of these projected O&M costs for the federally supported transportation system. Roughly 95 percent of the NYMTC planning area's forecasted O&M costs are related to the operation of transit services.

Table 5-2

Projected O&M Costs
(in millions of YOE dollars)

Owner	Category	Forecast	Inflation Factor
MTA	Transit	$ 837,252.92	2.15%-2.25%
	Roadways	N/A	N/A
	Non-Motorized	N/A	N/A
MTA Total		**$ 837,252.92**	
Westchester	Transit	$ 7,144.75	2.5%
	Roadways	$ 232.39	2.2%
	Non-Motorized	In Roadways	
Rockland	Transit	$ 1,636.61	0.5%
	Roadways	$ 376.70	2.2%
	Non-Motorized	In Roadways	
Putnam	Transit	$ 76.98	2.2%
	Roadways	$ 245.51	2.2%
	Non-Motorized	$ 15.44	2.2%
Lower Hudson Valley Total		**$ 9,728.38**	
Nassau	Transit	$ 5,834.32	2.5%
	Roadways	$ 267.28	2.2%
	Non-Motorized	In Roadways	
Suffolk	Transit	$ 3,800.56	2.4%
	Roadways	$ 1,033.39	2.2%
	Non-Motorized	In Roadways	
Long Beach	Transit	$ 112.76	2.2%
	Roadways	In Nassau	
	Non-Motorized	In Nassau	
Long Island Total		**$ 11,048.31**	
New York City	Transit - NYC Ferries	$ 115.20	1.0% - 2.0%
	Transit - Staten Island Ferry	$ 4,952.75	1.1%
	Roadways	$ 24,425.60	2.0%
	Non-Motorized	In Roadways	
New York City Total		**$ 29,493.55**	
New York State	Transit	$ 483.73	2.5%
	Roadways	$ 18,037.12	2.2%
	Non-Motorized	In Roadways	
New York State Total		**$ 18,520.85**	
Total	Other Transit	$ 24,157.65	
	Transit Total	$ 861,410.58	
	Roadways	$ 44,617.99	
	Non-Motorized	$ 15.44	
	Roadways/Non-Motorized Total	$ 44,633.43	
	Grand Total	$ 906,044.01	

Figure 5-1

O&M Costs by Mode
Federally Supported Transportation System
(in millions of YOE dollars)

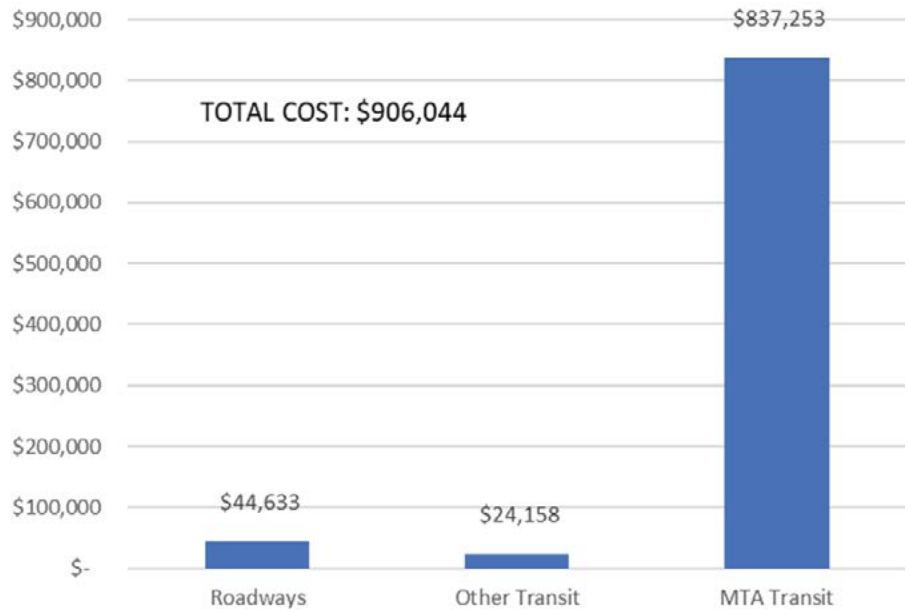
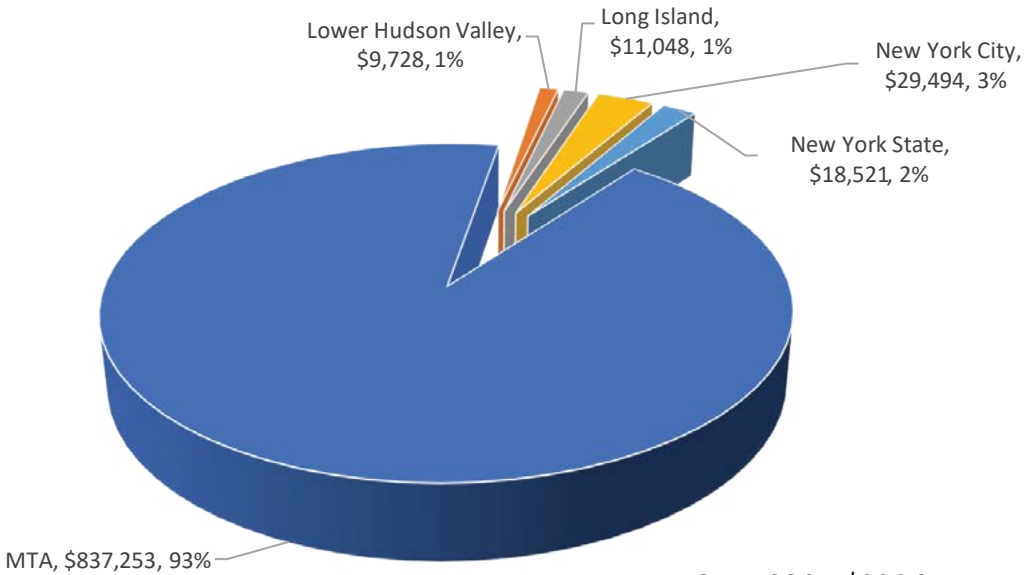


Figure 5-2

O&M Cost by Agency
Federally Supported Transportation System
(in millions of YOE dollars)



O&M REVENUE FORECAST

Forecasts of revenue sources that will be available to adequately operate and maintain the federally supported transportation system are based on revenues reasonably expected to be available from all sources. These funding sources were projected into the future using the assumptions of local tax receipts, user fees, and/or budget allocations that underlie the individual agency operating budgets. *Table 5-3* identifies the escalation rates that were employed, compounded annually.

Table 5-3

Projected O&M Revenues
(in millions of YOE dollars)

Owner	Category	Source	Forecast	Escalation Factor
MTA	Transit	Operating Revenue	$ 224,653.73	Average 0.360%
		Federal Formula	–	N/A
		Federal Discretionary/Other	–	N/A
		State/Local	$ 612,670.61	Varies
	Roadways	State/Local	–	N/A
Westchester	Transit	Operating Revenue	$ 1,431.05	0.0%
		Federal Formula	$ 757.57	See note
		Federal Discretionary/Other	$ 38.80	See note
		State/Local	$ 3,991.11	2.2%
	Roadways	State/Local	$ 216.76	2.0%
Rockland	Transit	Operating Revenue	$ 851.41	0.0%
		Federal Formula	$ 192.04	See note
		Federal Discretionary/Other	$ 6.28	See note
		State/Local	$ 764.81	2.2%
	Roadways	State/Local	$ 353.52	2.0%
Putnam	Transit	Operating Revenue	$ 2.65	0.0%
		Federal Formula	$ 13.88	See note
		Federal Discretionary/Other	$ 8.45	See note
		State/Local	$ 45.37	2.0%
	Roadways	State/Local	$ 188.14	2.2%
Nassau	Transit	Operating Revenue	$ 1,070.74	1.5% every 2 years
		Federal Formula	$ 370.06	See note
		Federal Discretionary/Other	–	N/A
		State/Local	$ 4,433.64	3.0%
	Roadways	State/Local	$ 228.67	2.2%
Suffolk	Transit	Operating Revenue	$ 238.63	0.0%
		Federal Formula	$ 95.36	See note
		Federal Discretionary/Other	$ 128.80	See note
		State/Local	$ 3,152.55	2.0%
	Roadways	State/Local	$ 512.88	2.2%
Long Beach	Transit	Operating Revenue	$ 10.84	0.0%
		Federal Formula	$ 6.61	See note
		Federal Discretionary/Other	–	N/A
		State/Local	$ 88.34	2.0%
	Roadways	State/Local	in Nassau	
New York City	Transit	Operating Revenue	$ 105.49	0.0%
		Federal Formula	$ 514.75	See note
		Federal Discretionary/Other	–	N/A
		State/Local	$ 5,147.12	2.0%
	Roadways	Federal Formula	$ 2,168.73	2.0%
		State/Local	$ 22,772.60	2.2%
New York State	Transit	State/Local	$ 483.73	2.5%
	Roadways	State/Local	$ 18,037.12	2.2%
Total	Transit Total	State/Local	$ 861,274.45	
	Roadways Total		$ 44,478.42	
	Grand Total		$ 905,752.87	

Note: Federal funds are forecast to increase 24.78% with each new authorization act every 6th years while remaining constant during each 5-year period.

State and Local Revenue Sources. Public authority and municipal operating budgets are assumed to address most of the O&M costs. *Figure 5-3* presents the forecasted O&M revenue that is detailed in *Table 5-3*.

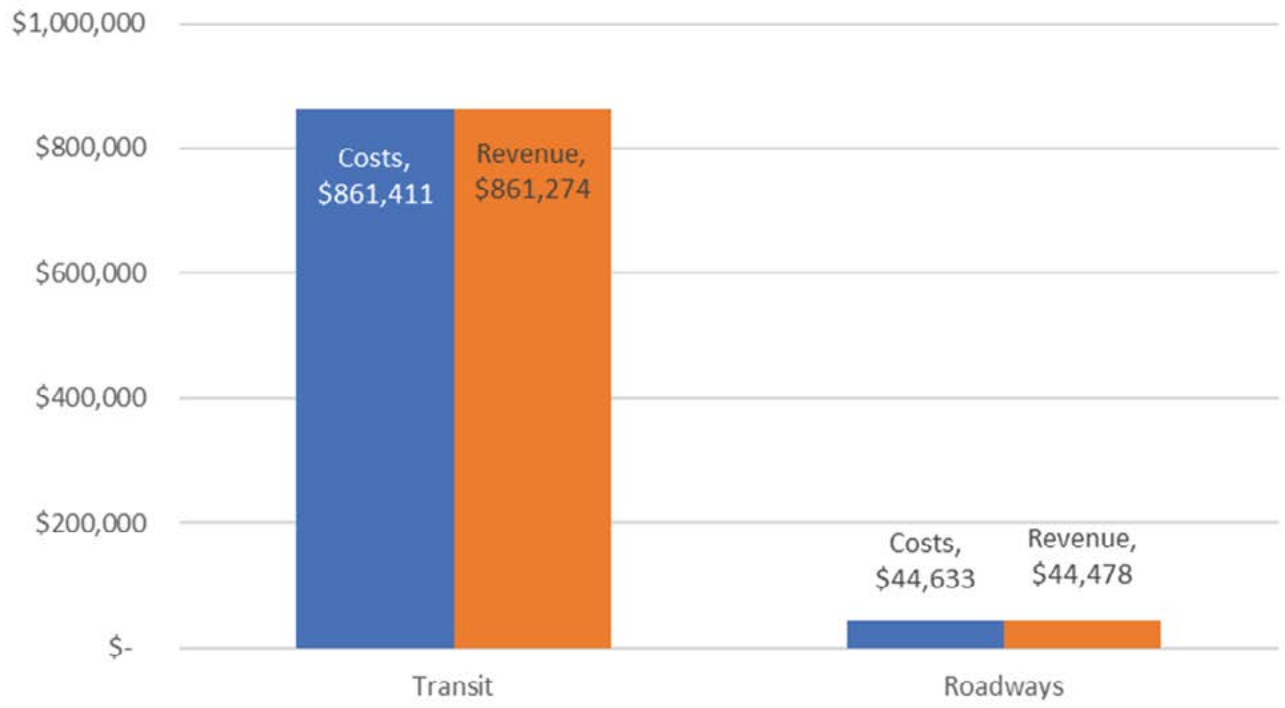
A forecast of roughly $906 billion in YOE dollars will be reasonably available through the 2050 horizon year for operating and maintaining the federally supported transportation system. Similar to O&M costs, more than 95 percent of the revenues are related to the operation and maintenance of transit services.

The projected revenue sources that can be reasonably expected to be available to NYMTC's members from all sources to address the forecasted O&M costs are within 0.3 percent the forecasted costs. This slight difference is due mainly to the budgeting practices and forecasting assumptions of the larger members, such as MTA and NYC DOT.

Through these forecasts, *Moving Forward* meets the federal regulatory requirement for a financial plan that contains system-level estimates of costs and revenue sources that are reasonably expected to be available to operate and maintain federal-aid highways (as defined by 23 U.S.C. 101(a)(6)) and public transportation (as defined by title 49 U.S.C. Chapter 53).

Figure 5-3

O&M Revenue Sources
Federally Supported Transportation System
(in millions of YOE dollars)



5.3 PROJECTS AND STRATEGIES PROPOSED FOR FUNDING

Federal Regulatory Language: *In developing the financial plan, the MPO shall take into account all projects and strategies proposed for funding under title 23 U.S.C., title 49 U.S.C. Chapter 53 or with other Federal funds; State assistance; local sources; and private participation. Revenue and cost estimates that support the metropolitan transportation plan must use an inflation rate(s) to reflect "year of expenditure dollars," based on reasonable financial principles and information, developed cooperatively by the MPO, State(s), and public transportation operator(s).*

The projects and strategies proposed for funding through *Moving Forward* fall into two broad categories:

- **System Preservation** includes project and program costs related to the life-cycle replacement, refurbishment, rehabilitation, reconditioning, or reconstruction of the components (i.e., equipment and facilities) of the federally supported transportation system under the jurisdiction of NYMTC's member agencies.
- **System Enhancements** include project and program costs related to the expansion of the federally supported system's capacity through the addition of new components or the significant expansion of the capacity of existing components to move, people, vehicles, and/or goods.

5.3.1 SYSTEM PRESERVATION

System preservation forecasts incorporate several regional and local assumptions and policies, such as pavement treatment costs and strategies as well as transit fleet life-cycle replacement cycles. The unit costs for the preservation of individual system components, such as lane miles of roadway or track miles of rail, are assumed to include costs of peripheral infrastructure, such as signage, lighting, and fencing.

Inflation rates are applied to unit cost estimates to represent YOE dollars, using either local inflation data for planning and programming estimates, or, in the absence of such data, applying a default inflation rates of 2.2 percent, compounded annually, to their cost estimates. These inflation rates were arrived at through a trend analysis of the Consumer Price Index.

Based on the forecasts of the member agencies' costs to preserve the various components of the federally supported transportation system under their jurisdiction (see ***Table 5-4*** for details), approximately $750 billion in YOE dollars ($26 billion annual average) in system preservation projects and strategies may need to be funded through the 2050 horizon year for this purpose. ***Figure 5-4*** provides a modal breakdown of these projected system preservation costs for the federally supported transportation system.

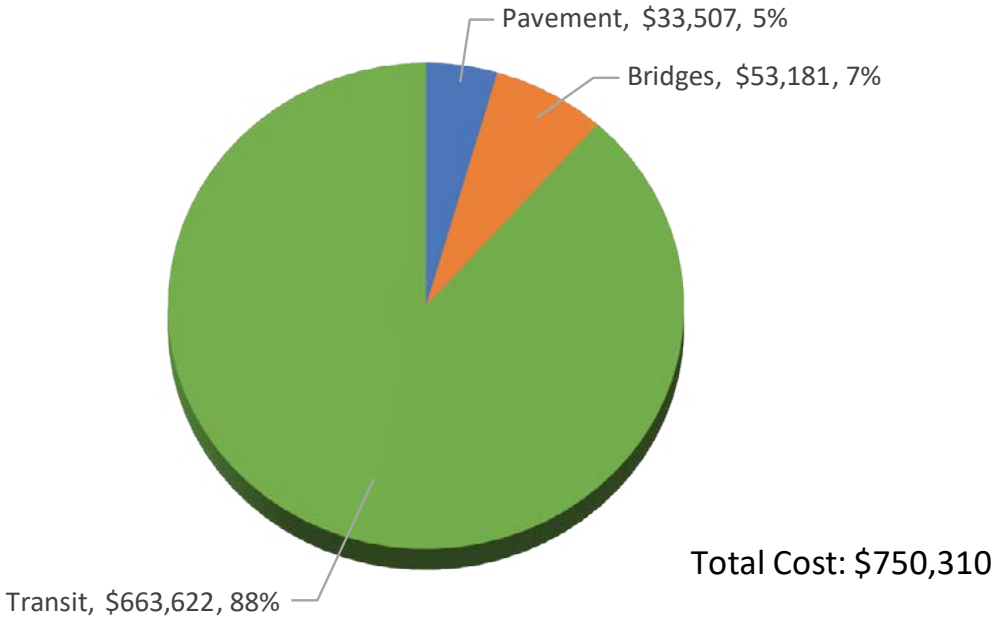
Table 5-4

Projected System Preservation Costs
(in millions of YOE dollars)

Category	Owner	System	2022-2026	2027-2031	2032-2036	2037-2041	2042-2046	2047-2050	TOTAL
Transit	MTA	MTA New York City Transit, MTA Bus Company, MTA LIRR, MTA MNR	$53,496.11	$75,481.35	$95,507.54	$123,598.36	$158,358.44	$147,781.77	$654,223.57
	New York City	NYC Ferry, Staten Island Ferry	$182.49	$446.98	$782.40	$1,116.63	$1,757.25	$1,743.58	$6,029.33
	Putnam	PART	$2.53	$3.03	$1.91	$3.47	$4.49	$1.45	$16.87
	Rockland	TOR, Clarkstown Mini-Trans, Rockland Coaches (Red & Tan), TRIPS Paratransit, Monsey Trails, Hudson Transit	$15.38	$37.92	$70.63	$9.44	$100.58	$17.64	$251.59
	Westchester	Bee-Line System	$351.61	$151.24	$402.89	$28.85	$739.33	$250.18	$1,924.10
	Nassau	NICE Bus	$72.77	$71.70	$182.57	$121.32	$175.88	$66.64	$690.88
	Long Beach	Long Beach Bus	$4.95	$1.65	$4.23	$4.59	$4.70	$4.79	$24.89
	Suffolk	Suffolk County Transit (SCT)	$45.16	$100.45	$66.20	$103.23	$103.92	$15.08	$434.03
	Huntington	HART	$2.05	$6.46	$5.05	$6.68	$4.49	$2.20	$26.94
Pavement			$4,378.57	$4,881.87	$5,443.03	$6,068.70	$6,766.28	$5,968.87	$33,507.32
Bridges			$6,949.41	$7,748.23	$8,638.87	$9,631.89	$10,739.06	$9,473.45	$53,180.91
Total		**Transit**	**$54,173.06**	**$76,300.77**	**$97,023.41**	**$124,992.56**	**$161,249.07**	**$149,883.32**	**$663,622.20**
		Roadways	**$11,327.98**	**$12,630.11**	**$14,081.91**	**$15,700.59**	**$17,505.34**	**$15,442.31**	**$86,688.24**
		Grand Total	**$65,501.04**	**$88,930.88**	**$111,105.32**	**$140,693.15**	**$178,754.41**	**$165,325.63**	**$750,310.44**

Figure 5-4

System Preservation Costs by Mode
Federally Supported Transportation System
(in millions of YOE dollars)



5.3.2 SYSTEM ENHANCEMENT

System enhancement includes forecasted costs related to projects and strategies proposed to be funded to expand the federally supported transportation system's capacity through the addition of new components or by significantly expanding the capacity of existing components. These include both major system enhancement projects—generally defined as transportation projects or programs that meet this definition with an estimated cost of $100 million or greater and/or those of regional scope or impact—and minor system enhancements with lower estimated costs and/or lesser scope or impact. Generally, major system enhancement projects included in the fiscally constrained Plan and/or FFYs 2020–2024 TIP are derived from the Shared Vision described in ***Chapter 1***.

The system enhancement projects and strategies proposed for funding as part of the fiscally constrained Plan and FFYs 2020–2024 TIP are itemized in ***Table 5-5*** and total $49.6 billion in YOE dollars through the 2050 horizon year.

Table 5-5

Major System Enhancement Projects and Programs

No.	Plan ID#/PIN #	Category/Item	Funding category	TIP		PLAN						Total $$ programmed (in billions)
				Pre-2022	2022-2024	2025-2026	2027-2031	2032-2036	2037-2041	2042-2046	2047-2050	
Minor Projects (from TIP & Plan)												
FFYs 2020-24 TIP			Formula federal	$ 0.315	$ 0.254							$ 0.254
			Project-specific: federal	$ 0.005	$ 0.024							$ 0.024
			Project-specific: state/local	$ 0.505	$ 0.230							$ 0.230
FFYs 2022-2050 Plan			Formula federal	N/A		$ 0.247	$ 0.150	$ 0.059	$ 0.059	$ 0.059	$ 0.047	$ 0.622
			Project-specific: federal	N/A								$ -
			Project-specific: state/local	N/A		$ 0.062	$ 0.038	$ 0.015	$ 0.015	$ 0.015	$ 0.012	$ 0.155
Major Projects (Itemized)												
1	PLAN ID: NSSC650C	NY Route 347 Safety, Mobility and Environmental Improvements	Formula federal	$ 0.080		$ 0.009	$ 0.369	$ 0.071				$ 0.449
			Project-specific: federal									$ -
			Project-specific: state/local	$ 0.064	$ 0.019	$ 0.024	$ 0.070	$ 0.018				$ 0.130
2	PLAN ID: NYCM2663C	MTA NYCT Second Avenue Subway Phase 2	Formula federal									$ -
			Project-specific: federal	$ 1.000			$ 0.435					$ 0.435
			Project-specific: state/local	$ 0.540			$ 2.575					$ 2.575
3	PLAN ID: NYCM2664C	MTA NYCT Second Avenue Subway Phase 3-4	Formula federal									$ -
			Project-specific: federal					$2.895	$7.380	$4.689		$ 14.964
			Project-specific: state/local					$2.895	$7.380	$4.689		$ 14.964
4	PLAN IDs: MHSDM708C, NYCDM2304C, NSDM2305C	Transportation Systems Management & Operations Programs	Formula federal		$ 0.482	$ 0.337	$ 0.909	$ 1.014	$ 0.894	$ 1.260	$ 1.118	$ 6.015
			Project-specific: federal		$ -		$ -	$ -	$ -	$ -	$ -	$ -
			Project-specific: state/local		$ 0.121	$ 0.084	$ 0.227	$ 0.253	$ 0.224	$ 0.315	$ 0.278	$ 1.502
5	PIN: X77338 PLAN ID: NYCQ2361C	Great Streets Vision Zero – Queens Boulevard	Formula federal	$ 0.002	$ 0.020	$ 0.022						$ 0.042
			Project-specific: federal									
			Project-specific: state/local	$ 0.046	$ 0.140	$ 0.090						$ 0.230
6	PLAN ID: MHSMC767C	Penn Station Access: New Haven Line via Amtrak's Hell Gate Line	Formula federal	$ 0.065	$ -							
			Project-specific: federal									$ -
			Project-specific: state/local	$ 1.575	$ 0.186							$ 0.186
8	PLAN ID: NYCBX2162C	Hunts Point Interstate Access Improvement	Formula federal	$ 0.329								
			Project-specific: federal									
			Project-specific: state/local	$ 0.946	$ 0.486							$ 0.486
9	PLAN ID: NYCQ386C	Woodhaven Boulevard Select Bus Service - Capital Improvements	Formula federal									
			Project-specific: federal									
			Project-specific: state/local				$ 0.236					$ 0.236
11	PLAN ID: NYCMB5413C	Central Business District Tolling Program	Formula federal									
			Project-specific: federal									
			Project-specific: state/local		$ 0.503							$ 0.503
12	PIN: 082498; PLAN ID: NSNC1787C	Nassau Hub Transit Initiative	Formula federal									$ -
			Project-specific: federal				$ 0.016	$ 0.164				$ 0.180
			Project-specific: state/local				$ 0.079	$ 0.141				$ 0.220
13	PIN: G609/01/AA 09; PLAN ID: NYCMB2411C	Jamaica Capacity Improvements - Phase 2	Formula federal									
			Project-specific: federal									
			Project-specific: state/local						$ 0.140			$ 0.140
14	PLAN ID: NYCMB5127C	ADA Accessibility at Subway Stations	Formula federal									
			Project-specific: federal		$ 0.450							$ 0.450
			Project-specific: state/local		$ 1.165	$ 3.490						$ 4.655
15	PIN: G609/01/AA 09; PLAN ID: NYCMB2411C	MTA LIRR East Side Access Project	Formula federal									
			Project-specific: federal									
			Project-specific: state/local	$ 0.330								
16	PLAN ID: NYCQ2707C	Van Wyck Expressway (Interstate 678) Capacity and Access Improvement to JFK Airport	Formula federal									
			Project-specific: federal									
			Project-specific: state/local	$ 1.293								
17	PLAN ID: NYCQ388C	AirTrain LaGuardia Project	Formula federal									
			Project-specific: federal									
			Project-specific: state/local	$ 2.050								
Subtotals			**Formula federal**	$ 0.791	$ 0.756	$ 0.615	$ 1.429	$ 1.144	$ 0.953	$ 1.319	$ 1.165	**$ 7.381**
			Project-specific: federal	$ 1.005	$ 0.474	$ -	$ 0.451	$ 3.059	$ 7.380	$ 4.689	$ -	**$ 16.053**
			Project-specific: state/local	$ 7.349	$ 2.849	$ 3.750	$ 3.225	$ 3.322	$ 7.759	$ 5.019	$ 0.290	**$ 26.213**
			TOTALS	**$ 9.145**	**$ 4.080**	**$ 4.365**	**$ 5.104**	**$ 7.525**	**$ 16.092**	**$ 11.027**	**$ 1.455**	**$ 49.648**

5.3.3 TOTAL SYSTEM COSTS

In total, the projects and strategies proposed for funding in the fiscally constrained Plan and the FFYs 2020–2024 TIP are forecast to cost $800 billion in YOE dollars ($27.5 billion annual average) to preserve and enhance the federally supported transportation system through the planning period.

5.4 ESTIMATES OF AVAILABLE FUNDS

Federal Regulatory Language: *For the purpose of developing the metropolitan transportation plan, the MPO(s), public transportation operator(s), and State shall cooperatively develop estimates of funds that will be available to support metropolitan transportation plan implementation, as required under §450.314(a). All necessary financial resources from public and private sources that are reasonably expected to be made available to carry out the transportation plan shall be identified.*

5.4.1 FEDERAL FUNDING FORECASTS

The strong federal partnership that has characterized transportation funding in the NYMTC planning area is assumed to continue during the planning period and to play a significant role in the preservation and enhancement of the federally supported transportation system. As of this writing, the FAST Act has been extended through FFY 2021, and the detailed discussions in Congress on replacing the FAST Act are expected to occur prior to the end of the FAST Act extension on September 30, 2021.

The COVID-19 pandemic has resulted in Congressional action on four emergency relief acts and three supplemental appropriations since the declaration of a national public health emergency in March 2020. Through these legislative actions, emergency operating assistance has been provided to transportation agencies and transit providers to avoid employee layoffs and furloughs, and reductions in transit service. Of these, the Coronavirus Aid, Relief, and Economic Security (CARES) Act provided $25 billion to transit agencies in FFY 2020 to help to offset costs related to the pandemic. As of this writing, the Coronavirus Response and Relief Supplemental Appropriations Act (CRRSAA) is providing an additional $13.2 billion in UZA formula funding for transit providers in FFY 2021 and $10 billion in Surface Transportation Block Grant program funding. Additionally, the American Rescue Plan Act is providing an additional $30.5 billion in UZA formula funding for transit providers.

Using historical federal funding trends dating from the Intermodal Surface Transportation Efficiency Act of 1991, six successor authorization acts to the FAST Act are assumed beginning in FFY 2022. Each successor act is assumed to be five years in duration, with federal funding authorizations in each act escalating per the historical trend (see ***Figure 5-5*** and ***Table 5-6***). State and local funds are assumed to escalate at the same rate as the authorized federal funding.

Figure 5-5

Average Annual Federal Authorization (National) (in millions of YOE dollars)

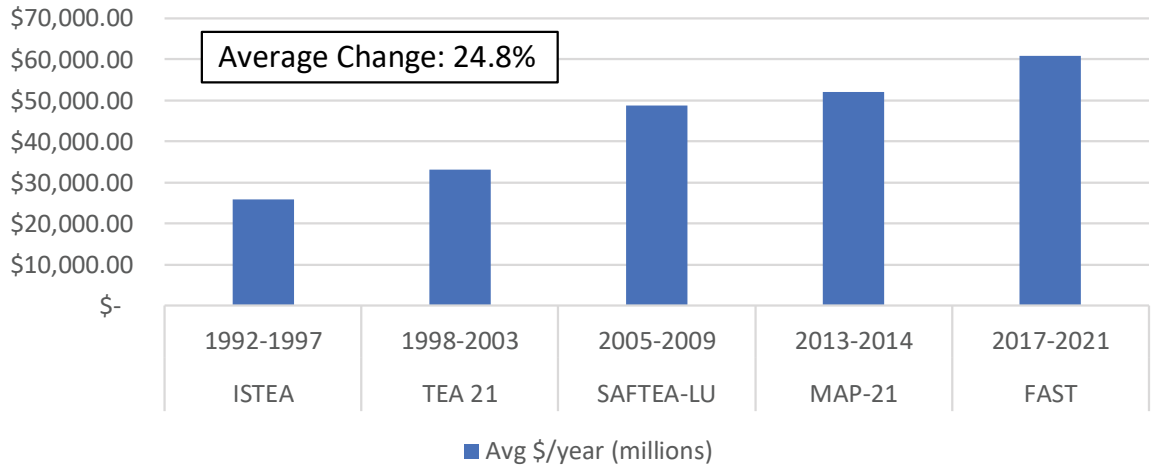


Table 5-6

Assumed Future Federal Authorization Acts
(in millions of YOE dollars, historical escalation rate: 1.2478)

Federal Act	Federal Fiscal Years	Total Authorized (National)	Average Annual NYMTC Formula Federal Planning Target	Total NYMTC Formula Federal Planning Target
Successor 1	2022-2026	$ 380,173.47	$ 2,417.84	$ 12,089.21
Successor 2	2027-2031	$ 474,380.45	$ 2,975.51	$ 14,877.55
Successor 3	2032-2036	$ 591,931.93	$ 3,708.38	$ 18,541.92
Successor 4	2037-2041	$ 738,612.66	$ 4,689.35	$ 23,446.76
Successor 5	2042-2046	$ 921,640.87	$ 5,919.47	$ 29,597.36
Successor 6	2047-2050	$ 1,150,023.48	$ 7,507.50	$ 30,030.00
Totals		**$ 4,256,762.85**		**$ 128,582.78**

5.4.2 STATE AND LOCAL FUNDING FORECASTS

New York State-authorized revenues for transportation purposes were projected from base year funding levels and generally follow a 2 percent annual growth rate. Additional state and local revenues are assumed to be available, as necessary, to address the forecasted non-federal share. NYMTC's members have a long-standing and demonstrated history of providing the non-federal share necessary to leverage any additional funds that are apportioned/allocated to the region.

5.4.3 ESTIMATED FUNDS FOR PLAN IMPLEMENTATION

Funds reasonably expected to be available for the implementation of the fiscally constrained Plan are $805 billion in YOE dollars from all sources, an annual average of $27.8 billion. ***Table 5-7*** and ***Figure 5-6*** detail reasonably expected revenues during the planning period.

Table 5-7

Resource Forecasts (in millions of YOE dollars)

	2022-2026	2027-2031	2032-2036	2037-2041	2042-2046	2047-2050	TOTAL
CMAQ	$ 473.833	$ 591.249	$ 737.761	$ 920.578	$ 1,148.697	$ 1,146.675	**$ 5,018.794**
NHPP	$ 1,759.317	$ 2,195.276	$ 2,739.265	$ 3,418.055	$ 4,265.049	$ 4,257.542	**$ 18,634.503**
STBG FLEX	$ 159.463	$ 198.977	$ 248.284	$ 309.809	$ 386.579	$ 385.899	**$ 1,689.011**
STBG LG URBAN	$ 862.523	$ 1,076.256	$ 1,342.953	$ 1,675.736	$ 2,090.984	$ 2,087.303	**$ 9,135.755**
STBG-OFF	$ 88.151	$ 109.995	$ 137.251	$ 171.262	$ 213.701	$ 213.325	**$ 933.685**
Total Title 23 Formula Funds	**$ 3,343.287**	**$ 4,171.753**	**$ 5,205.514**	**$ 6,495.440**	**$ 8,105.010**	**$ 8,090.745**	**$ 35,411.748**
Title 23 Formula Funds Used for O&M	$ 296.560	$ 328.234	$ 363.405	$ 402.486	$ 445.947	$ 391.638	**$ 2,228.269**
Title 23 Formula Funds Available for System Preservation/Enhancement	**$ 3,046.727**	**$ 3,843.519**	**$ 4,842.109**	**$ 6,092.954**	**$ 7,659.063**	**$ 7,699.107**	**$ 33,183.479**
Title 49 Formula Funds	$ 8,745.919	$ 10,705.792	$ 13,336.404	$ 16,951.316	$ 21,492.347	$ 21,939.252	**$ 93,171.030**
Title 49 Formula Funds Used for O&M	$ 178.508	$ 222.742	$ 277.937	$ 346.810	$ 432.750	$ 431.988	**$ 1,890.735**
Title 49 Formula Funds Available for System Preservation/Enhancement	**$ 8,567.411**	**$ 10,483.050**	**$ 13,058.467**	**$ 16,604.506**	**$ 21,059.598**	**$ 21,507.264**	**$ 91,280.295**
Total Federal Formula	$ 12,089.206	$ 14,877.545	$ 18,541.918	$ 23,446.756	$ 29,597.357	$ 30,029.997	**$ 128,582.778**
Total Federal Formula Available for System Preservation/Enhancement	**$ 11,614.138**	**$ 14,326.570**	**$ 17,900.576**	**$ 22,697.460**	**$ 28,718.661**	**$ 29,206.370**	**$ 124,463.774**
HSIP	$ 168.023	$ 209.658	$ 261.612	$ 326.439	$ 407.331	$ 406.614	**$ 1,779.677**
HPP	$ 8.082	$ -	$ -	$ -	$ -	$ -	**$ 8.082**
Title 23 Discretionary Funds	$ 176.105	$ 209.658	$ 261.612	$ 326.439	$ 407.331	$ 406.614	**$ 1,787.759**
Title 49 Discretionary Funds	$ 2,124.231	$ 2,523.870	$ 4,050.744	$ 2,240.546	$ 2,290.053	$ 3,827.386	**$ 17,056.829**
Project-Specific Federal Discretionary	$ 474.210	$ 450.600	$ 3,059.070	$ 7,380.235	$ 4,689.099	$ -	**$ 16,053.214**
Total Federal Discretionary	**$ 2,774.545**	**$ 3,184.128**	**$ 7,371.426**	**$ 9,947.220**	**$ 7,386.482**	**$ 4,234.000**	**$ 34,897.803**
Total Federal Available for System Preservation / Enhancement	**$ 14,388.683**	**$ 17,510.698**	**$ 25,272.002**	**$ 32,644.680**	**$ 36,105.143**	**$ 33,440.371**	**$ 159,361.577**
State/Local - Formula Match for MTA	$ 2,086.912	$ 2,535.172	$ 3,140.780	$ 3,979.567	$ 5,033.791	$ 5,132.485	**$ 21,908.708**
State/Local - Discretionary / Other Match for MTA	$ 508.472	$ 602.786	$ 977.521	$ 516.257	$ 517.761	$ 902.191	**$ 4,024.987**
State/Local - Overmatch for MTA	$ 39,134.771	$ 58,569.470	$ 78,055.070	$ 98,960.205	$ 127,129.356	$ 118,139.295	**$ 519,988.167**
Total State/Local for MTA	**$ 41,730.156**	**$ 61,707.428**	**$ 82,173.371**	**$ 103,456.029**	**$ 132,680.908**	**$ 124,173.971**	**$ 545,921.862**
Other State/Local - Formula Match	$ 473.853	$ 689.193	$ 1,048.482	$ 1,456.452	$ 1,816.038	$ 1,879.361	**$ 7,363.380**
Other State/Local - Discretionary/Other Match	$ 66.611	$ 80.596	$ 100.568	$ 125.489	$ 156.585	$ 156.310	**$ 686.160**
Other State/Local - Overmatch	$ 8,475.464	$ 10,149.760	$ 10,927.774	$ 11,973.559	$ 12,913.017	$ 10,964.415	**$ 65,403.989**
Total Other State/Local	**$ 9,015.929**	**$ 10,919.549**	**$ 12,076.824**	**$ 13,555.501**	**$ 14,885.641**	**$ 13,000.085**	**$ 73,453.529**
Project-Specific Formula Match	$ 342.769	$ 357.278	$ 285.881	$ 238.346	$ 329.836	$ 289.746	**$ 1,843.855**
Project-Specific Discretionary Match	$ 118.553	$ 112.650	$ 764.768	$ 1,845.059	$ 1,172.275	$ -	**$ 4,013.304**
Project-Specific State/Local Overmatch	$ 6,137.799	$ 2,754.687	$ 2,271.305	$ 5,675.179	$ 3,516.827	$ -	**$ 20,355.796**
Total Project-Specific State/Local	**$ 6,599.120**	**$ 3,224.614**	**$ 3,321.954**	**$ 7,758.584**	**$ 5,018.937**	**$ 289.746**	**$ 26,212.955**
Total Non-Federal	**$ 57,345.205**	**$ 75,851.591**	**$ 97,572.149**	**$ 124,770.113**	**$ 152,585.486**	**$ 137,463.802**	**$ 645,588.346**
Formula Revenue	**$ 14,517.673**	**$ 17,908.212**	**$ 22,375.719**	**$ 28,371.825**	**$ 35,898.326**	**$ 36,507.963**	**$ 155,579.718**
Discretionary/Other Revenue	**$ 57,216.215**	**$ 75,454.077**	**$ 100,468.431**	**$ 129,042.969**	**$ 152,792.303**	**$ 134,396.210**	**$ 649,370.205**
Grand Total	**$ 71,733.888**	**$ 93,362.289**	**$ 122,844.151**	**$ 157,414.793**	**$ 188,690.629**	**$ 170,904.173**	**$ 804,949.923**

Figure 5-6

Estimated Funds for Plan Implementation
Federally Supported Transportation System
(in millions of YOE dollars)

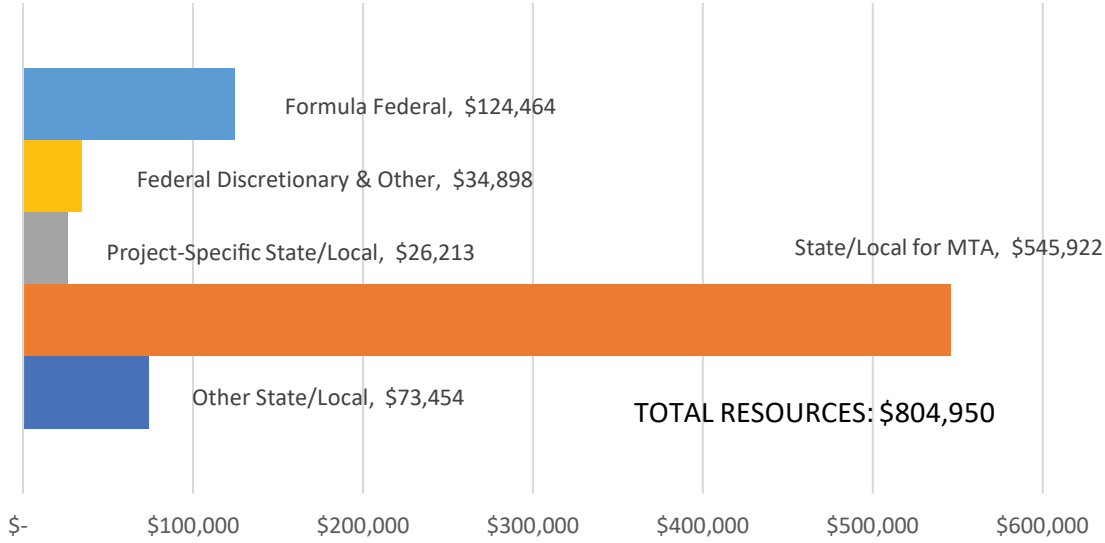
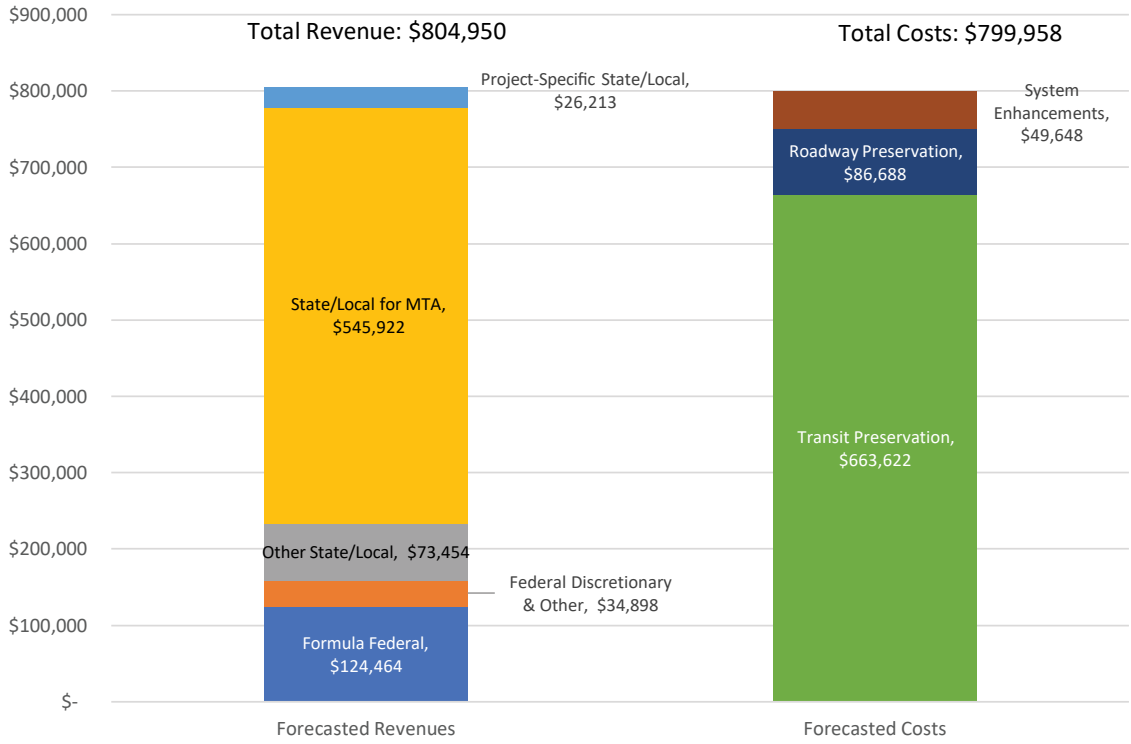


Figure 5-7 compares the forecasts of reasonably expected revenues to the forecasts of the estimated costs to implement the projects and strategies proposed for funding in the fiscally constrained Plan and FFYs 2020–2024 TIP. Broadly speaking, the reasonably expected revenues will address the projected costs of Plan implementation.

Figure 5-7

Revenues vs. Costs
Federally Supported Transportation System
(in millions of YOE dollars)



5.5 ADDITIONAL FINANCING STRATEGIES

Federal Regulatory Language: *The financial plan shall include recommendations on any additional financing strategies to fund projects and programs included in the metropolitan transportation plan. In the case of new funding sources, strategies for ensuring their availability shall be identified. The financial plan may include an assessment of the appropriateness of innovative finance techniques (for example, tolling, pricing, bonding, public private partnerships, or other strategies) as revenue sources for projects in the plan.*

Moving Forward identifies a number of project-specific federal, state, and local funding sources among its estimates of available funding.

The availability, adoption, and implementation of these additional funding opportunities are subject to legislative actions at various levels of government, as well as budgeting and policy decisions. As an organization, NYMTC does not have the statutory authority to adopt or implement these additional funding opportunities because they fall outside the metropolitan transportation planning process.

5.5.1 PROJECT-SPECIFIC FUNDING STRATEGIES

This section outlines various project-specific funding opportunities that are expected to be plausibly available for *Moving Forward* projects. This judgement is based on a study of feasibility, merit, and precedents in the New York area and elsewhere, as well as the recent financing plans developed for large projects in the NYMTC planning area.

PUBLIC-PRIVATE PARTNERSHIPS

Public-private partnerships (P3s) are contracts between a governmental entity or public authority and a private company, either for the purpose of funding, constructing, operating, or maintaining a piece of infrastructure or program. Transportation projects or programs can be financed through these contractual arrangements, especially if they can generate user fees to compensate the private entity. A P3 arrangement can be undertaken for newly built infrastructure, replacement projects, the privatization of existing infrastructure, or for the privatization of government programs.

In a Design-Build P3, the public partner finances the project while the private partner designs and builds the project. Under the Design-Build-Finance-Operate-Maintain Concessions approach, the responsibilities for designing, building, financing, and operating are bundled together and transferred to private sector partners. In Design-Build-Operate-Maintain P3s, the private partner assumes responsibility for design, construction, and long-term operation, and/or maintenance services. The public sector is responsible for securing the project's financing independently and retains the operating revenue risk. In a Design-Build-Finance-Maintain partnership, the private sector is responsible for designing, building, financing, and maintaining the facility or project.

Finally, brownfield projects for existing infrastructure facilities can generate private investment through O&M concessions, such as those employed at the Port Newark Container Terminal. In these instances, private operating entities can receive revenues or more beneficial lease agreements in exchange for private investment in infrastructure investment.

According to FHWA, 37 states have enacted legislation authorizing P3 agreements for the development of transportation infrastructure.[1] New York is not currently one of these states, but several entities within the state have the ability in certain circumstances to engage in P3 agreements, including MTA and the Port Authority (*Table 5-8*). P3 agreements are slowed by the absence of legal provisions at the state level in New York. Once an entity is legally allowed to enter into a P3 agreement, it often takes years to complete the contract and bid negotiations required to select and onboard a private entity, and as such, this approach requires a substantial amount of lead planning time to implement.

Crucially, it is through these contracts and bid negotiations that the governmental entity or public authority has the chance to lay out the payment incentives the private entity will have to match to meet the governmental entity's project goals. This is a key step in the process that can have significant ramifications after project implementation.

Table 5-8

Examples of Current P3s[2]

Project	Description	P3 Type	Public Partner(s)
LaGuardia Airport Terminal B	The project involves building the new 840,000-square-foot Terminal B at LaGuardia Airport. The project is being developed in partnership with LaGuardia Gateway Partners LLC, which is entitled to develop, design, construct, operate, and maintain new Terminal B facilities and to charge, collect, and retain revenues from the operation of such facilities through a 35-year lease that will expire in December 2050.	Design-Build-Finance-Operate-Maintain	Port Authority
TWA Hotel at JFK Airport	The project involved redeveloping the TWA Flight Center at JFK Airport into a hotel.	Design-Build-Finance-Operate-Maintain	Port Authority
Hudson-Bergen Light Rail	The Hudson-Bergen Light Rail is a light rail system connecting the communities of Bayonne, Jersey City, Hoboken, Weehawken, Union City, and North Bergen.	Design-Build-Operate-Maintain	NJ Transit, NJ DOT, USDOT FTA
Goethals Bridge Replacement	This project consists of demolishing and replacing the 85-year old Goethals Bridge. The Port Authority operates the facility and collects tolls. It makes annual availability payments of $56.5 million to the concessionaire from pooled Port Authority revenues not tied to usage of the bridge.	Design-Build-Finance-Maintain	Port Authority
Port Newark Container Terminal	The container operations at Port Newark Container Terminal, owned by the Port Authority, operates on a concessions-based model for the lease of Ports America's operations at the Port. In exchange for over $500 million in investment of Port infrastructure, the Port Authority and Ports America agreed to a long-term, 50-year lease. This agreement has spurred investment in port rail infrastructure and a revamp of other facilities at the terminal since 2011.	O&M	Port Authority

VALUE CAPTURE

Value capture is a funding mechanism that uses the increase in property values that would result from infrastructure improvements to fund the improvements. One form of value capture is tax increment financing (TIF), which uses projected increases in tax revenues resulting from increases in property values associated with infrastructure improvements to fund the improvements. Although TIF can take various forms, a development entity is usually created to manage TIF-financed projects. Such an entity can often issue bonds to fund the infrastructure improvements, with the bonds being repaid through the TIF revenues. Often, all tax amounts in excess of the original tax amount in the investment zone flow into a fund used to make payments for the issued bonds. Since TIF generates revenues from the increase on the original tax amount, it is most appropriate for investment in undeveloped or under-developed land.

The extension of MTA NYCT's No. 7 subway line to Hudson Yards on the far west side of Manhattan was financed through PILOTs (i.e., payments in lieu of taxes, a variant of TIF) as well as through additional density bonuses. PILOTs are payments made to the government to offset losses from property tax revenues due to the existence of tax-exempt properties. In this case, developers building new commercial buildings in Hudson Yards were given tax breaks through PILOTs, which are discounted by 40 percent for 19 years. In addition, the right to build taller buildings than otherwise allowed by the zoning code was awarded to real estate developers who made financial contributions to a fund that paid for infrastructure improvements. Using a TIF financing structure, New York City issued bonds to finance the No. 7 subway line extension. These bonds will be repaid through a set of revenue streams created by New York City, including PILOTs. Notably, this approach has been taken the furthest in Hong Kong, where a significant share of the city's transit system is funded by real estate development orchestrated by the local transit agency. New York State explicitly authorizes the use of PILOTs but not other kinds of TIF.

Tax assessment districts are another way that municipalities in New York have used value capture to finance transportation improvements. This approach allows the municipality to charge a tax or surcharge in a specific geographic area to pay for infrastructure improvements that enable new development in the area. In the 1980s, the Town of Greenburgh in Westchester County established a structure like this to fund roadway improvements on Route 119 in anticipation of several large nearby development projects.

Value capture programs have a wide range of implementation timeframes. Some mechanisms, such as assessment districts, are less complex than TIF- or PILOT-based projects, which require land acquisition, rezonings, and the creation of specialized legal entities. Furthermore, properties subject to value capture can take a significant amount of time to generate the surplus revenues needed for the financing if the development is long-term, phased, or dependent on growing market demand.

Notably, density bonuses require market conditions that would support construction in excess of what it currently permitted under the zoning code—these conditions exist in multiple areas in the New York City region, including in both New York City's boroughs and some suburban municipalities, particularly near transit.

DEBT FINANCING

In debt financing, the funding capital is loaned for construction or equipment purchase and then repaid over time with any interest accrued. Debt financing can occur through the sale of bonds, federal credit programs (such as Transportation Infrastructure Finance and Innovation Act, or TIFIA, loans), and government infrastructure banks.

Debt financing is primarily used for infrastructure improvements that can generate a revenue stream. Local examples include the currently under-construction MTA LIRR East Side Access project. Funding for this project was included in the Rebuild and Renew Transportation Bond Act of 2005. In accordance with the act, the state would take on $2.9 billion in debt to issue bonds to fund transportation projects, $450 million of which was dedicated to the East Side Access project.[3]

TIFIA financing was used for the construction of the Governor Mario M. Cuomo Bridge, the Goethals Bridge replacement project and the reconstruction of the Staten Island Ferry terminals and acquisition of three new ferry boats.

Debt financing is a common funding approach for infrastructure improvements around the country. A project that generates user fees is a prime candidate for debt financing, including managed lanes toll conversions, as well as future cordon pricing projects. Bond issuance is generally a quick process and can be structured to be repaid over various timeframes depending on repayment revenue projections, but it does require various agency and governmental approvals, as well as ratings agency assessments.

TIFIA financing is available from the federal government on a competitive basis. TIFIA provides low-cost loans for transportation infrastructure projects. TIFIA loans can be used to cover up to 33 percent of a project's cost (or up to 49 percent under compelling circumstances).[4] The program requires an identified repayment source, such as tolls or taxes. The main benefit of TIFIA over other bond sales is lower interest rates that can translate to major project cost savings over time.

There is currently no federal infrastructure bank. Loans made by governmental infrastructure banks are generally offered interest-free or at lower rates than would otherwise be available through the private market.

DISCRETIONARY FEDERAL FUNDING

Additional project-specific funding may also be available through competitive discretionary federal funding programs authorized and appropriated by Congress. These competitive funding programs are offered at the discretion of the U.S. Secretary of Transportation for projects of various sizes, innovative practices, and other selected opportunities to improve mobility and infrastructure. At this writing, major discretionary funding programs identified in federal transportation legislation include the Rebuilding American Infrastructure with Sustainability and Equity (RAISE) program (formerly the Better Utilizing Investments to Leverage Development program), Infrastructure for Rebuilding America (INFRA) program, Capital Investments Grant program (including New Starts discretionary funding), and Consolidated Rail Infrastructure and Safety Improvement Grants.

To date, various projects in the NYMTC planning area have benefited from many of the discretionary federal funding programs. Examples include:

- Sections 5309 (Capital Investment Grants) and 5339 (Buses and Bus Facilities) funding has been employed in Phase I of the Second Avenue Subway project on the East Side of Manhattan and will be sought for Phase II of this project, as well as in the MTA LIRR's East Side Access project. It has also been used for SBS projects in New York City. Other discretionary programs have been applied in the region on a smaller scale, including:
  - Nassau County Hempstead Intermodal Facility
  - Westchester County's Electric Bus Purchase Program
- RAISE and INFRA discretionary funding sources were used for the Brooklyn Bridge Approach Arches and Towers Rehabilitation program, Phase I of the Moynihan Station project adjacent to Penn Station in midtown Manhattan, Vision Zero safety improvements, Fordham Plaza in the Bronx, Hunts Point freight improvements in the Bronx, greenway improvements, and the Cross-Harbor Freight Program.

Given NYMTC's varied use of discretionary funds, continued pursuit of these funding opportunities for a wide variety of potential needs should continue. However, it is important to note that the scope, availability of funds, and their eligibility criteria are subject to change over time.

CORDON PRICING

Cordon pricing introduces a surcharge for entering a certain geographical area, usually the dense core of a city. Tolls can be flat-fee or variable based on time of day, vehicle type, and other parameters. Cordon pricing has been implemented in a significant number of cities around the world, most prominently in London, Stockholm, and Milan, and has been shown to lower congestion and pollution, while raising transit travel speeds and a significant amount of revenue. While it has not been implemented in any cities in the United States, multiple cities, including New York City, Seattle, Los Angeles, and Chicago, are studying or actively developing cordon pricing.

In March 2019, New York State passed legislation authorizing the state to seek federal approval to implement cordon pricing in the Manhattan central business district. Manhattan's central business district tolling program is expected to generate an estimated $15 billion of funding for MTA's capital needs.[5] As of this writing, the program is proceeding with a National Environmental Policy Act environmental assessment.

5.5.2 STRATEGIES FOR ENSURING THE AVAILABILITY OF ADDITIONAL FINANCING

Moving Forward assumes the availability of a certain amount of reasonably expected local, state, and federal funding for the duration of the planning period. The alternative funding strategies detailed above present project-based and regionwide opportunities to fund the future of transportation initiatives in the region beyond typical reliance on property, sales, or gas taxes. These strategies, both proven and unproven in the New York region, have the potential to expand the potential revenue base from which to meet future transportation demand through 2050.

The strategic basis for the additional funding sources identified above is found in *Moving Forward's* Shared Vision for Regional Mobility as stated in ***Chapter 1***. Specifically, the guiding principles identified by NYMTC's members as

part of their approach to the shared vision include the following:

We will make the best use of federal resources for the regional transportation system and increase them where practical, while leveraging local resources as efficiently and effectively as possible.

NYMTC's members and the region's other elected officials must think regionally about transportation needs, solutions, strategies, and investment priorities. In developing a Shared Vision for Regional Mobility, NYMTC's members support the position that these investments and actions are a shared priority and are of strategic importance to this region and to the nation.

Increasing the availability of federal resources and leveraging local resources as efficiently and effectively as possible will require collaborative work to ensure reasonably expected revenues and to increase the use of alternative methods of financing transportation investments, as necessary, to supplement these existing sources. Thus, *Moving Forward's* exploration of additional funding opportunities is drawn from within its strategic planning framework. Evidence of the current implementation of several of these additional funding sources can be found in the fiscally constrained components of the planning process—the TIP and the constrained element of the Plan—which demonstrate that NYMTC and its members are already using some of these sources to advance system enhancement projects.

ENDNOTES

1 USDOT FHWA. State P3 Legislation. ***https://www.fhwa.dot.gov/ipd/p3/legislation/.***

2 Dentons. "US Infrastructure: Maximizing the benefits of private participation." ***https://impactnyc.org/wp-content/uploads/2019/08/PPP-Infrastructure-whitepaper.pdf.;*** USDOT FHWA. Project Profile: Hudson-Bergen Light Rail. ***https://www.fhwa.dot.gov/ipd/project_profiles/nj_hudson_bergen.aspx.;*** USDOT FHWA. Project Profile: Goethals Bridge Replacement. ***https://www.fhwa.dot.gov/ipd/project_profiles/ny_goethals.aspx.***

3 MTA. Transportation Bond Act. ***http://web.mta.info/mta/bondact.htm.***

4 USDOT. 2021. Build America Bureau. TIFIA Credit Program Overview. ***https://www.transportation.gov/buildamerica/financing/tifia/tifia-credit-program-overview.***

5 New York State website. April 1, 2019. "Governor Cuomo announces highlights of FY 2020 budget." ***https://www.governor.ny.gov/news/governor-cuomo-announces-highlights-fy-2020-budget.***