NASHUA-MANCHESTER 40818 (CAPITOL CORRIDOR)

FINANCIAL ANALYSIS REPORT

Prepared for:

New Hampshire Department of Transportation

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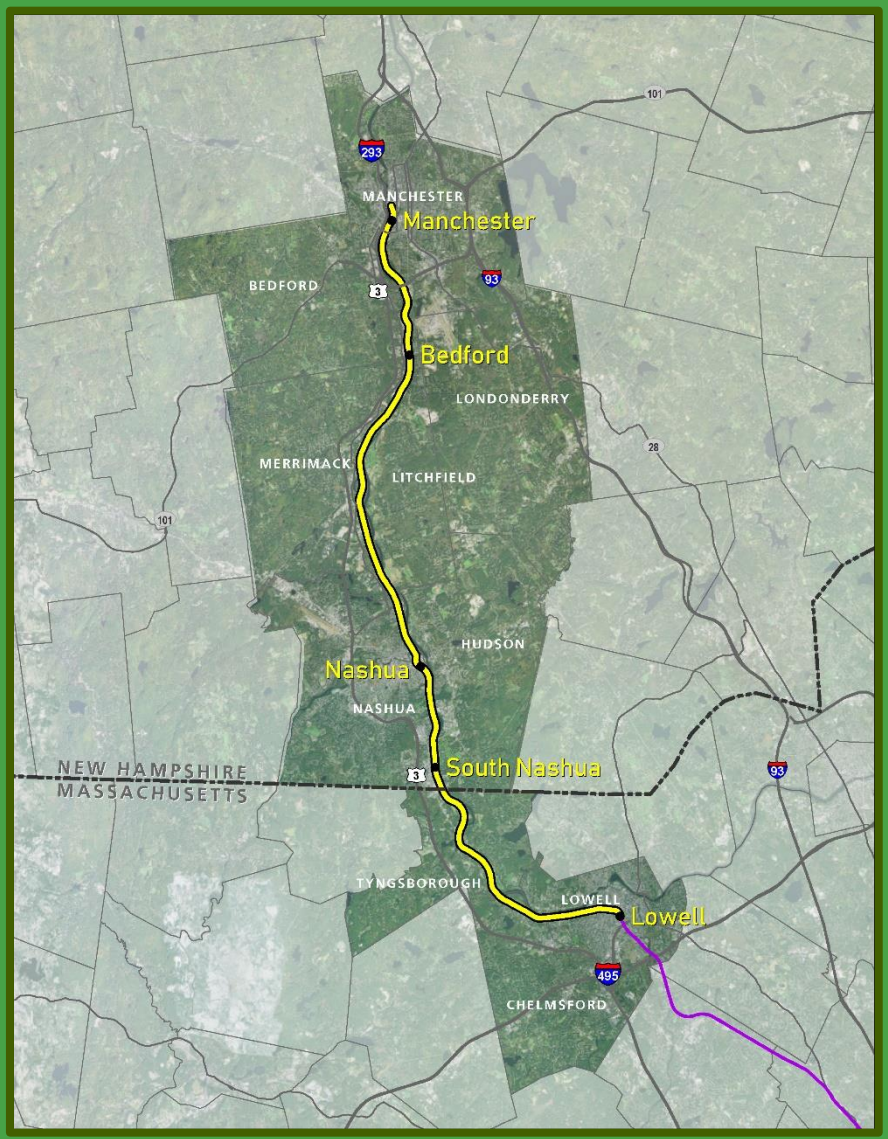

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Executive Summary

This report analyzes the capital and operating & maintenance sources and uses of funds for the Nashua-Manchester (Capitol Corridor) Commuter Rail project.

The Capitol Corridor Commuter Rail project is a proposed extension of the existing Massachusetts Bay Transportation Authority (MBTA) Boston-Lowell Commuter Rail service to southern New Hampshire. The extended line will use upgraded existing tracks owned by MBTA in Massachusetts and CSX Transportation (CSX) in New Hampshire and will provide 16 weekday trips to Manchester in each direction; weekend and holiday service will be half the frequency of weekday service. The service plan for Nashua is similar to what was proposed in the 2014 Alternatives Analysis, but that plan only provided half as much weekday service north of Nashua and no service on weekends. Providing equal service levels for Nashua and Manchester was determined to result in higher ridership, revenue, and economic benefits, and both municipalities are strongly supportive of weekend service. The Lowell Line currently has weekend service and with the proposed layover facility to be located in Manchester and the high number of weekend trip generators in the corridor it was included in the service plan. Four new stations are planned in New Hampshire, including South Nashua Station(adjacent to Pheasant Lane Mall), Nashua Crown Street Station (near downtown), Bedford/MHT Station (near the Manchester-Boston Regional Airport), and Manchester Station (south of Granite Street, near downtown). The New Hampshire Department of Transportation (NHDOT) has been the facilitator of recent federal grants working on different facets of this project, and the expected funding partners are the US Department of Transportation (USDOT), the Massachusetts Department of Transportation (MassDOT), the MBTA, and the cities of Nashua and Manchester.

The USDOT is expected to provide up to 55 percent of the funds for construction through the Federal Transit Administration (FTA) Capital Investment Grant (CIG) funds, Federal Railroad Administration (FRA) State of Good Repair (SGR) grants, and US Department of Transportation (USDOT) Rebuilding American Infrastructure with Sustainability and Equity (RAISE) grants. The states of New Hampshire and Massachusetts would be expected to provide up to approximately 34-39% of the construction funds. The remaining 10.5% would be anticipated to be provided by the cities of Manchester and Nashua to fund their respective downtown stations (Manchester Station and Nashua Crown Street Station). Local funds would likely be derived from bond proceeds leveraging an increase of Nashua's property tax and a portion of Manchester's allocation of the state Meals & Rooms tax. In some of the funding scenarios examined, part of the local downtown stations' funding comes from tax increment financing (TIF). City general funds and additional federal funds realized as a result of the project's implementation, and likely programmed by NHDOT, would also support long-term station renewal costs.

Ridership is estimated to take three years to stabilize after an assumed initiation of service in the year 2031, and Federal, state, and local assistance to these expenditures is required to cover 7 to 42 percent of a typical year's Operating & Maintenance (O&M) costs, depending on the pandemic impact on ridership scenario. Federal support to O&M is done through FTA Section 5307 Urbanized Area Formula Grants, while renewal costs are supported by both FTA Section 5307 Grants and Section 5337 SGR Grants.

The scenarios covered account for 15 combinations of five local funding scenarios with three different levels of pandemic impact on ridership. The funding scenarios differ in the availability of FTA SGR grants, RAISE grants, and local TIF.

The financial analysis was performed in two steps. The first step was a sketch planning analysis to examine sources of funds for annualized construction and renewal costs and for a typical year

of operation and maintenance. The second step developed the annual cash flow in both base year (2022) dollars and in year-of-expenditure (inflated) dollars.

The first section of this report describes the project, the units of government involved in sponsoring and funding the project, and the funding scenarios. The second section describes the capital financial plan, including construction and infrastructure renewal. The third and final section describes the operating financial plan.

1. Introduction

This report describes the 20-year financial plan for the NH Capitol Corridor Commuter Rail project. This project extends the existing commuter rail service that currently runs between Boston and Lowell, Massachusetts, northward to Nashua and Manchester, New Hampshire (Figure 1).

The existing commuter rail service is operated by Keolis Commuter Services, under contract to the Massachusetts Bay Transportation Authority (MBTA), which begins in Boston's North Station and extends for 25.5 miles northward, serving six stations terminating in Lowell. Beyond this point, the 9.5 miles of existing track in MA, up to the NH state line, are owned by the MBTA and CSX Transportation (CSX) operates freight trains via trackage rights. The 20.5 miles of track from the state line north to the proposed Manchester station are owned and operated by CSX. The entire 30 miles north of Lowell currently serve commercial freight only. However, MBTA has trackage rights for commuter rail operations on the line owned by CSX and those trackage rights extend as far north as Concord, NH. The Lowell line is the only one in the MBTA commuter rail network without a layover facility on the suburban end (end of the line outside Boston). The proposed commuter rail extension will upgrade the track, bridges, and grade crossings along the 30 miles from Lowell to Manchester and add a new signal system, four new MBTA type accessible full-length high-level commuter rail platform stations in southern New Hampshire, and a new commuter rail layover facility in Manchester.

The project's facilitator is NHDOT, which has been the primary facilitator since federal grants for planning and other tasks were secured over a decade ago. Other proposed funding partners include the Federal Transit Administration (FTA), Massachusetts Department of Transportation (MassDOT), the City of Manchester, the City of Nashua, and potentially one or more private companies with real estate interests adjacent to the southernmost station.

1.1. Project Description

The purpose of the Nashua-Manchester project (the Project) is to diversify mobility options that connect the southern New Hampshire region with the population, employment and commercial centers in the Greater Boston area, reduce congestion, emissions and travel time, and provide mobility options that promote equity and support demographic trends and preferences in the study area corridor.
Average weekday traffic volume exceeds 100,000 on I-93. Limited intercity and commuter bus services carries approximately 2,200 passengers each day[1]. Commuter rail service north of Lowell was shut down in 1969 when traffic on freeways was lighter, and the economic dependency between southern New Hampshire and the Boston area was much lower than in the present.

1.1.1. Alternatives Evaluated

During the evaluation of alternatives stage in 2014, nine possible options were considered to address the transportation challenges in the corridor, ranging from new bus routes to commuter rail to Manchester or intercity passenger rail service to Concord, New Hampshire. The final recommendation for a commuter rail extension from Lowell, MA, to Manchester, NH, was described in the Service Development Plan in November 2014.

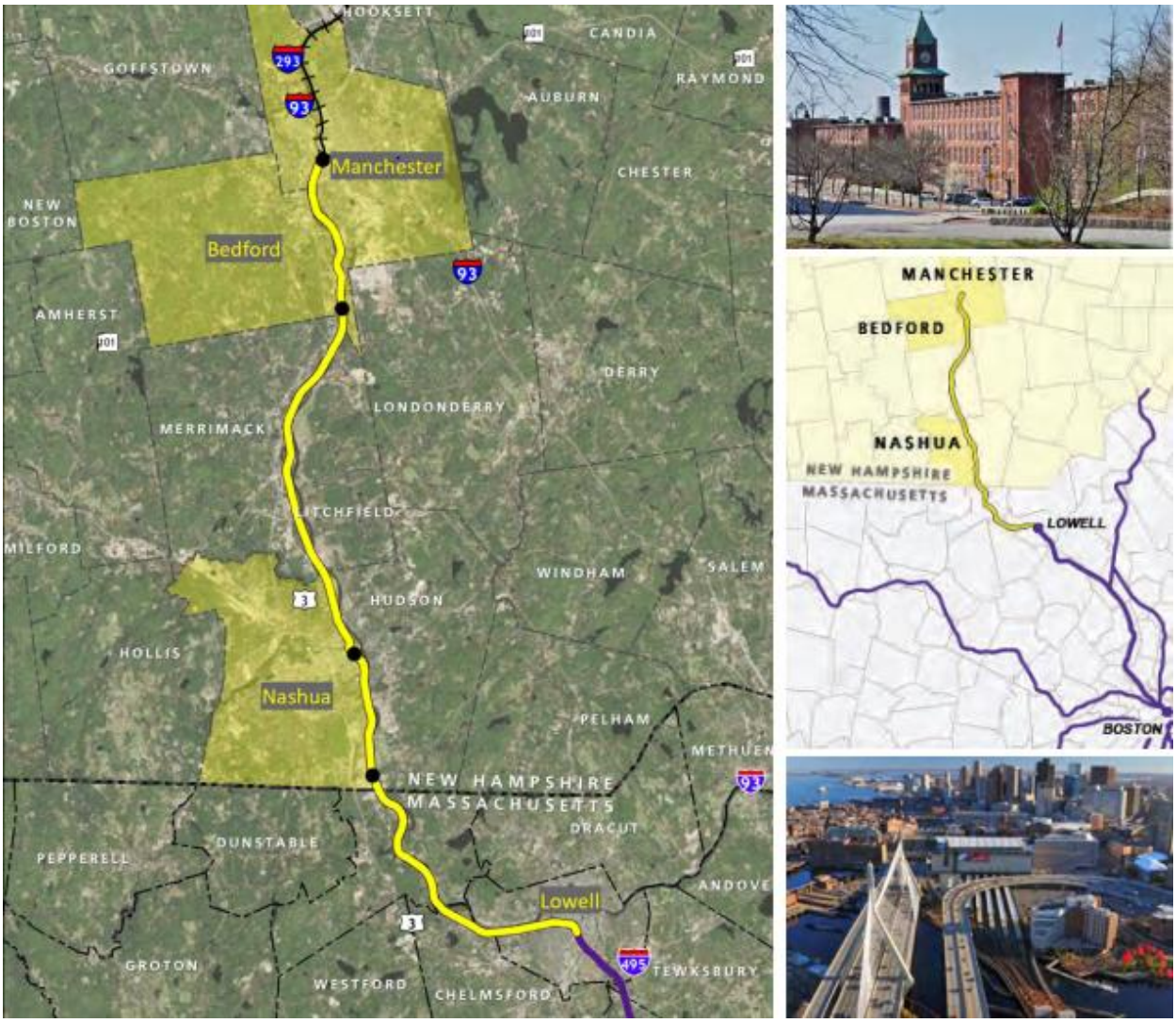
[1] Boston Regional Metropolitan Planning Organization, Traffic Volumes (https://www.ctps.org/node/3303)

1.1.2. Infrastructure

The project includes the construction of four new stations, a layover facility in Manchester with capacity for storing up to five trains overnight, bringing existing track and bridges to a state of good repair, reestablishing a second track in selected locations to support service frequency, and installing a modern signal system. The following new stations are proposed:

1. South Nashua Station adjacent to the Pheasant Lane Mall (just north of the Massachusetts state line).
2. Nashua Crown Street Station (near downtown).
3. Bedford/MHT Station at the interchange of Edward Everett Turnpike and the access road to the Manchester-Boston Regional Airport.
4. Manchester Station south of Granite Street (near downtown).

Figure 1. Project Location



1.1.3. Operation

The commuter rail trains, at initiation of service, are assumed to be consistent with existing MBTA train sets that are powered by a single diesel locomotive with seven to eight coaches each in a push-pull operation (locomotive pushing the train inbound to Boston and pulling it outbound to Manchester). The proposed schedule serving southern New Hampshire includes 16 trips in each direction on weekdays (and roughly half that number on weekends/holidays), with an estimated travel time between Manchester and Boston's North Station of between 1 hour 25 minutes and 1 hour 30 minutes. Thirty-five percent of the total riders are estimated to be from the new stations in New Hampshire.

1.2. Sponsor and Funding Partners

The project facilitator is presumed to be NHDOT as NHDOT would be the likely recipient of identified federal grants. MBTA will operate the proposed service as an extension of the existing commuter service from Boston to Lowell. CSX is the owner of the 20.5 miles of alignment in New Hampshire, over which the MBTA has trackage rights. The anticipated funding partners include:

- **New Hampshire DOT (NHDOT)**: apart from being the project facilitator, NHDOT will be responsible for partially funding the construction and renewal of tracks, systems, and crossings within the state's limits as well as part of the construction and renewal costs of the South Nashua and Bedford/MHT stations. (The source of funds used by NHDOT to be detailed later.)
- **Massachusetts Department of Transportation (MassDOT)**: apart from operating the new line through the MBTA, MassDOT will be responsible for partially funding the construction and renewal of tracks, systems, and crossings improvements within the state's limits and for the layover facility in Manchester.
- **US Department of Transportation (USDOT)**: The Federal Transit Administration (FTA) and Federal Railroad Administration (FRA) will provide partial funding from different federal competitive and formula grant programs for tracks, systems, crossings, the layover facility, and South Nashua and Bedford/MHT stations.
- **City of Manchester**: will be responsible for funding the construction, renewal, and operation & maintenance of its downtown station (Manchester Station).
- **City of Nashua**: will be responsible for funding the construction, renewal, and operation & maintenance of its downtown station (Nashua Crown Street Station).
- **Manchester-Boston Regional Airport (MHT)**: will fund the operation & maintenance and renewal of Bedford/MHT station.

The model used in the financial analysis is flexible and can accommodate changes in the number of funding partners and the level of their participation.

1.3. Scenarios Considered

The financial planning analysis considered five funding scenarios (consisting of various combinations of three grant funding sources) and three ridership and fare scenarios (addressing different levels of pandemic impact on ridership). These scenarios are described in the following sections.

1.3.1. Funding Scenarios

Five funding scenarios were developed addressing combinations of the following sources:

- **FRA Federal-State Partnership for SGR Discretionary Grant:** This is a discretionary grant program that may fund 40% and 80% of the total costs of crossings improvements.
- **USDOT RAISE Discretionary Grant**: This is a competitive discretionary grant program with a maximum award amount of $25 million. Awards are typically made based on the economic development benefits of a project. For the purposes of this report, it is assumed that this improvement will be associated with a station. Because the City of Manchester already received a RAISE grant in its downtown area for another project, it assumed that the RAISE grant associated with this project would fund a portion of the construction of the Bedford/MHT Station.
- **Tax Increment Funding (TIF)**: Potential TIF districts were identified adjacent to the Manchester and Nashua Crown Street stations (near the respective downtowns) and the South Nashua station.

1.3.2. Pandemic Impact on Ridership Scenarios

The long-term impact of the pandemic on projected ridership was examined:

- **Low Pandemic Impact**: 86 percent of the base travel demand model forecast, which uses 2040 as the planning horizon). (Ridership is impacted by 14%)
- **Medium Pandemic Impact**: 75 percent of the base 2040 forecast. (Ridership is impacted by 25%)
- **High Pandemic Impact**: 54 percent of the base 2040 forecast. (Ridership is impacted by 46%)

Table 1 shows the annual ridership estimates for 2040 in the three different scenarios compared to the original base estimation, including weekdays, weekends, and holidays.

Table 1. Pandemic Impact on Ridership

	Base Estimation	Low Impact	Medium Impact	High Impact
Manchester Station	271,538	217,230	214,424	159,135
Bedford/MHT Station	435,260	380,853	323,739	212,670
Nashua Crown Street Station	382,240	327,634	270,310	212,520
South Nashua Station	492,498	437,776	380,004	267,558

Extension Total	**1,581,536**	**1,363,493**	**1,188,477**	**851,882**
		86.2%	75.1%	53.9%

1.3.3. Summary of Scenarios

For each of the three ridership impact scenarios, five funding scenarios were considered, resulting in a total of **15 scenarios,** as described in Table 2:

Table 2. Funding Scenarios Combined with Pandemic Impact Scenarios

Funding Scenarios	1	2	3	4	5
Federal-State Partnership SGR Grant	40%	80%	80%	80%	80%
RAISE Discretionary Grant	NO	NO	YES	YES	NO
Manchester & Nashua TIF	YES	YES	YES	NO	NO
	15 Funding and Pandemic Impact Scenarios Examined				
Pandemic Impact on Ridership Scenarios:	1-Low	2-Low	3-Low	4-Low	5-Low
	1-Medium	2-Medium	3-Medium	4-Medium	5-Medium
	1-High	2-High	3-High	4-High	5-High

1.4. Analysis Methodology

The financial analysis model applied in the development of the financial plan was applied in two steps. First, a sketch planning analysis was undertaken to establish annualized values for uses and sources of funds for a typical year in each of the funding and pandemic impact scenarios. This analysis was performed in base year (2022) dollars.

Second, based on these parameters, a long-range time-sensitive cash flow analysis was undertaken to project annual sources and uses of funds. The analysis was performed in base year (2022) dollars and year of expenditure (inflated) dollars

1.4.1. Sketch Planning Analysis

Sketch planning analysis is the first stage of the development of the financial plan. It applied the following inputs for construction, renewals, and operating & maintenance:

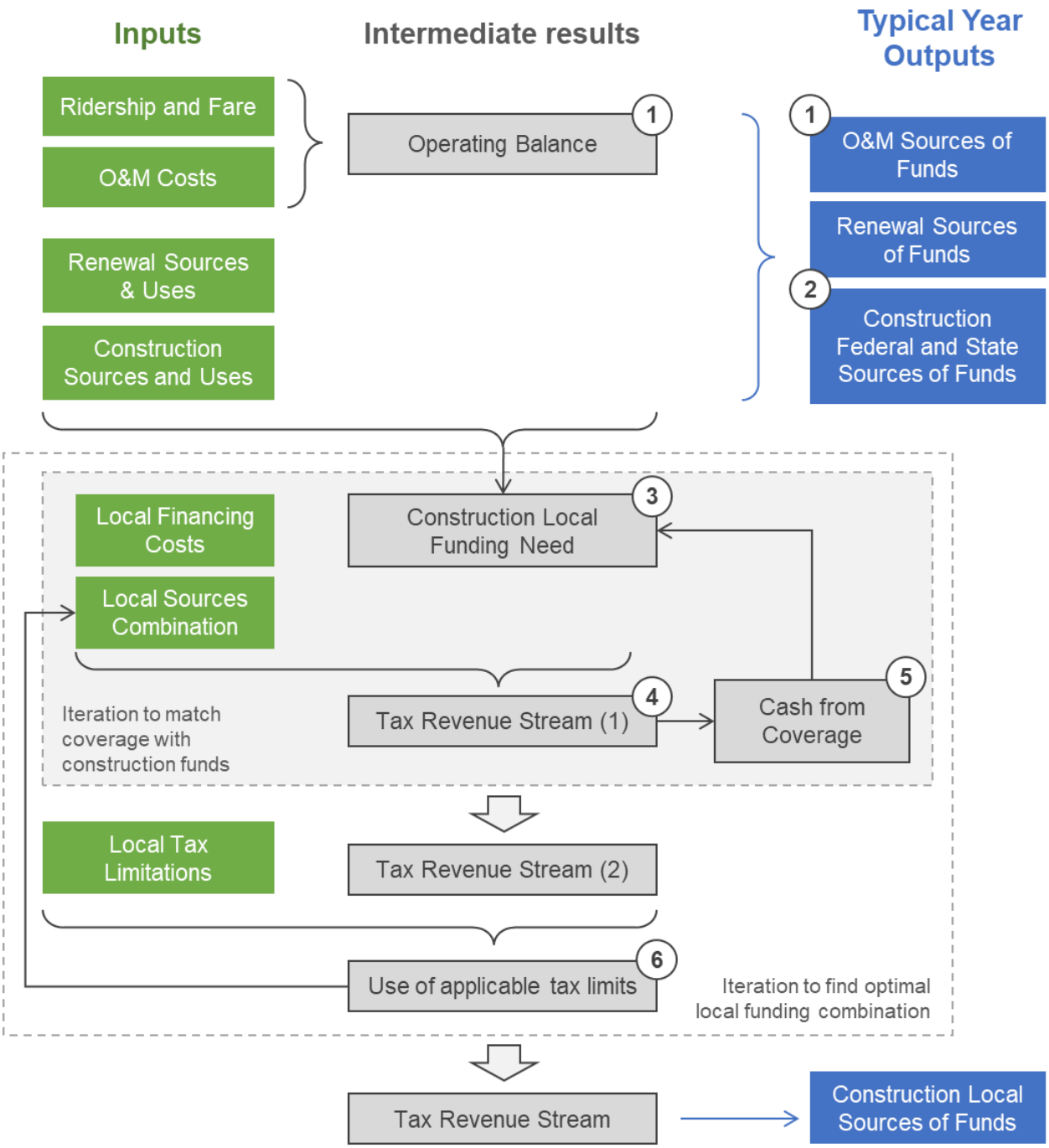
- Pandemic impact on ridership scenarios (low, medium, or high)
- Construction and renewal costs, key milestones, and useful life of the different components, including the availability of federal funding sources (e.g. FRA grants and USDOT RAISE grants).
- Capital sources and uses of funds for construction and renewal (which have triggers and limitations described below).
- Operating and maintenance costs.
- Local funding parameters such as the size of the tax base, reasonable limits on the rates of taxation, interest rates, and cost of financing.
- Ridership, fares, and other revenue projections.

These inputs feed the sketch planning analysis to produce annualized costs and revenues for a typical year in base year dollars. As introduced above, the model operates as follows, based on the scenarios chosen:

1. Calculates the project's revenue and the operating shortfall or surplus.
2. Calculates an annualized renewal cost based on a year-by-year projection using construction costs and the useful life of each component.
3. Sums the different federal, state, local, and private sources and summarizes all the capital costs and calculates the net balance to be covered with local funding.
4. Calculates the tax revenue needed to service the bonds and the coverage required based on the local funding availability inputs.
5. Excess coverage on the bonds for the downtown stations for the first three years after issuance will also be used as additional cash to pay for construction costs (see Section 2). In application, the financial analysis model iterates steps 4 and 5 until this source is exhausted.
6. The model user examines alternative levels of reliance on local funding to pay for the downtown stations within reasonable taxation and local contribution limits.

This process is graphically described in Figure 2. In the sketch planning analysis stage, results relative to construction costs and sources year are finalized, but results relative to O&M and renewal costs and funding sources will be calibrated in the following cash flows analysis.

Figure 2. Sketch Planning Analysis Process



1.4.2. Cash Flow Analysis

The second stage of the financial analysis is the cash flow analysis. This is a time-sensitive projection of the first stage results. This is largely because of the timing of the renewal costs explained above. Developing the renewal expenditures cash flow requires additional year-specific assumptions related to asset useful lives, e.g., peaks and valleys of these costs. The process takes place in the following order:

1. With the O&M costs and funding sources results from the sketch planning analysis and inputs about the year when operations commence, FTA Section 5307 funding begin and stabilization curve, the model projects the O&M cash flow in 2022 dollars and then in inflated Year-of-Expenditure (YOE) dollars. The results from an average year cashflow are not exact, since the inflation rates are different for some categories, which results in a different level of non-federal operating subsidy depending on the year.

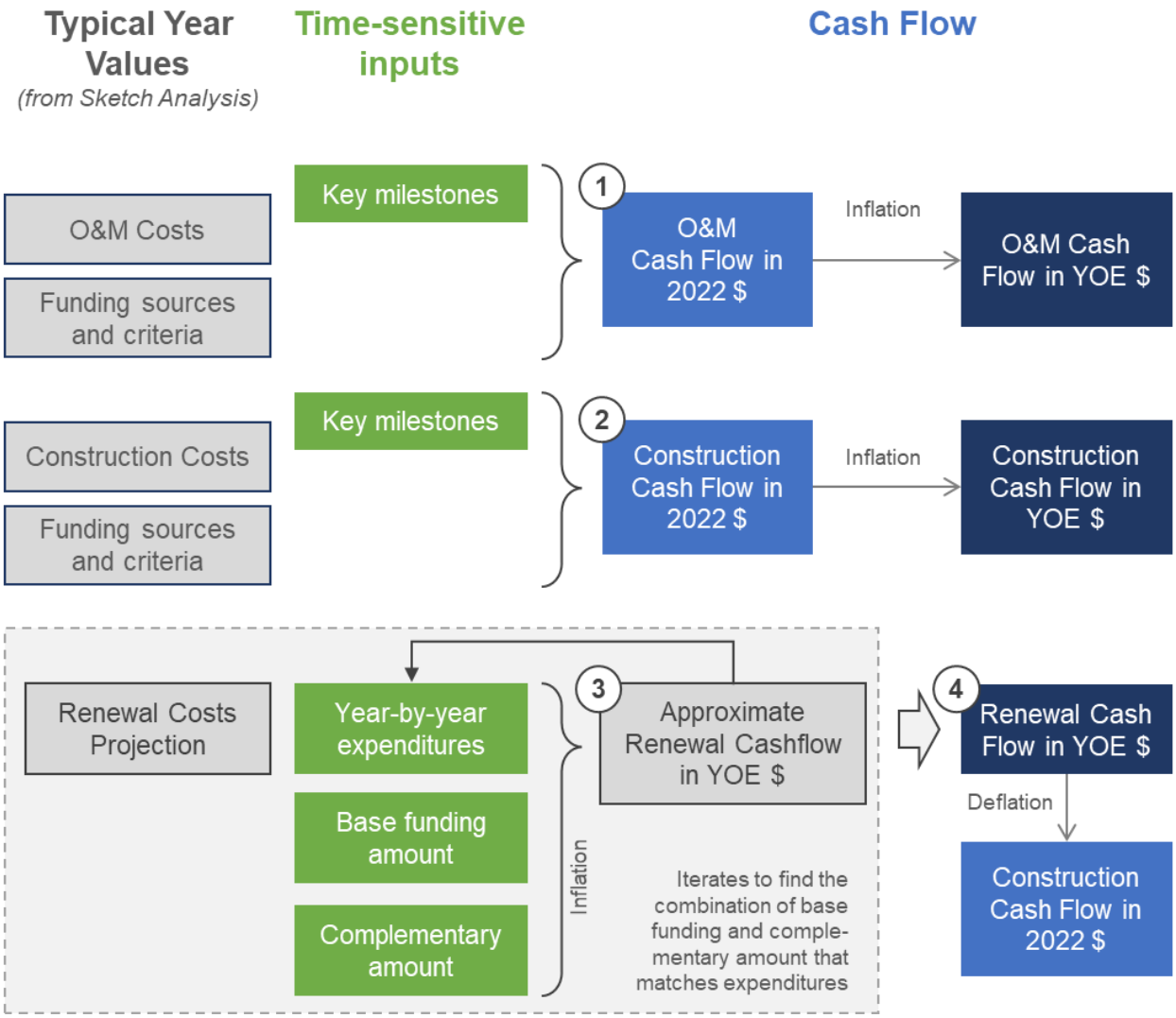
2. With the construction and financing costs and funding sources results from stage one and inputs about the project's key milestones, the model projects construction cash flow in 2022 dollars and in inflated YOE dollars.

3. With the same year-by-year projection of estimated renewal costs used in stage one, the model distributes these costs in an approximately constant annual amount. To better fit the needs and minimize any accumulating balance, the model splits this annual amount in two components: (1) a fixed base funding amount and (2) a variable complementary amount. The model requires the user to input the fixed component in 2022 dollars and the beginning year. It then calculates the complementary component to cover the rest of the costs. Since the distribution of the needs is discrete, and with significant peaks, the purpose of this complementary amount is to distribute those expenditures in fixed amounts over smaller time frames of 5 to 20 years. Since different inflation rates apply, this is done in the YOE dollars inflated cash flow and then converted to the 2022 dollars. The result is an annual projection of renewal funding comprised by both fixed and variable amounts that need to be met each year starting in 2046, which is more reliable than the raw renewal costs discrete projection.

4. With the annual projection of renewal funding needs, and the different cap and delay conditions for federal grants, the presumed federal, state, and local sources are calculated for each year. Because of the difference in inflation rates, some components were first inflated to YOE dollars and then deflated to 2022 dollars.

These steps are summarized in Figure 3.

Figure 3. Cash Flow Analysis Process



2. Capital Uses and Sources of Funds

This section describes the uses and sources for construction and renewal for each of the fifteen funding and pandemic impact scenarios. Results are expressed both in base-year dollars (2022 dollars) and Year-of-Expenditure dollars (YOE dollars).

2.1. Capital Uses of Funds

Construction is projected to take place between 2028 and 2030 and spending is assumed to be evenly distributed over the three years. Renewal expenditures are projected to begin near the end of the useful life of the components, with the shortest life cycle beginning in 2046; while this is after the 2022-2041 analysis period, a tabulation of long-term annual renewal costs is summarized.

2.1.1. Construction Costs

The total construction cost is $597.2 million in 2022 dollars (2022$) and $782.3 million in Year-of-Expenditure dollars (YOE $). The projected cost in YOE dollars is based on the inflation assumptions in Section 2.1.3. The itemized construction costs are summarized in Table 3. In addition to the construction costs, the project has renewal expenditures on a cyclical basis, starting in 2046, and financing costs corresponding to local sources of funds, which are discussed in Sections 2.2, 2.4, and 2.5.

Table 3. Construction Costs in 2022 dollars and YOE dollars

Millions of dollars	2022 $	YOE $
Hard Costs	**$ 407.5**	**$ 533.8**
Guideway and Track Elements	$ 91.6	$ 120.0
Stations (platforms only)	$ 36.1	$ 47.3
Layover Facility	$ 13.5	$ 17.7
Sitework and Special Conditions	$ 60.4	$ 79.1
Systems	$ 90.2	$ 118.2
Contingency	$ 72.9	$ 95.5
Vehicles	$ 42.9	$ 56.2
Soft Costs	**$ 189.7**	**$ 248.5**
Professional Services/Soft Costs	$ 109.4	$ 143.3
ROW and Trackage Rights	$ 26.0	$ 34.1
Contingency	$ 54.3	$ 71.1
Total Construction Costs	**$ 597.2**	**$ 782.3**

2.1.2. Inflation Assumption

Table 4 summarizes the annual inflation assumptions applied in the cash flow analysis. Growth in the consumer price index (CPI) is applied to O&M costs and revenues (except for FTA 5307 Urbanized Area Formula grants). Construction costs in base-year dollars are inflated using Year-of-Expenditure dollars using rates determined by consensus by members of the project team.

These rates reflect historical growth in the Engineering News Record Building Cost Index, the American Association of Railroad Cost Index, and the New Hampshire Construction Costs Index prepared by NHDOT.

Table 4. Inflation Rate Assumptions

	Annual Rates		Compounded	
	CPI	Construction	CPI	Construction
2022			1.0000	1.0000
2023	5.0%	5.0%	1.0500	1.0500
2024	3.5%	5.0%	1.0868	1.1025
2025	3.5%	3.5%	1.1248	1.1411
2026	2.0%	3.5%	1.1473	1.1810
2027	2.0%	3.5%	1.1702	1.2224
2028	2.0%	3.5%	1.1936	1.2651
2029	2.0%	3.5%	1.2175	1.3094
2030	2.0%	3.5%	1.2419	1.3553
2031	2.0%	3.5%	1.2667	1.4027
2032	2.0%	3.5%	1.2920	1.4518
2033	2.0%	3.0%	1.3179	1.4953
2034	2.0%	3.0%	1.3442	1.5402
2035	2.0%	3.0%	1.3711	1.5864
2036	2.0%	3.0%	1.3985	1.6340
2037	2.0%	3.0%	1.4265	1.6830
2038	2.0%	3.0%	1.4550	1.7335
2039	2.0%	3.0%	1.4841	1.7855
2040	2.0%	3.0%	1.5138	1.8391
2041	2.0%	3.0%	1.5441	1.8942
2042	2.0%	3.0%	1.5750	1.9511

2.2. Capital Sources of Funds

This section first explains the mechanisms and decision criteria for each funding source. Secondly, this section summarizes the maximum and minimum values of each source by funding partner, representing the range addressed across the 15 funding and pandemic impact scenarios, as described in Section 1.3.

2.2.1. Federal Funds

Federal grants from both Federal Transit Administration (FTA) and Federal Railroad Administration (FRA) will provide 56 percent of the total construction costs and up to 80 percent of the total renewal costs, depending on the funding and pandemic impact scenario. These funds will come from the following grant programs:

- **FTA Section 5309 Capital Investment Grants:** This is an FTA discretionary grant program that will fund 50 percent of the project's total construction costs, up to $391.2 million (YOE $) depending on the funding and pandemic impact scenario.

- **FRA Federal-State Partnership for SGR Grant:** This is an FRA discretionary grant program that is assumed to fund 40 percent ($7.1 million YOE) or 80 percent ($14.2 million YOE) of the needed funds for improvements for at-grade crossings.
- **USDOT Rebuilding American Infrastructure with Sustainability and Equity (RAISE) Grant:** This is a competitive grant program that is assumed to fund $25 million (YOE) for up to 80 percent of the construction costs of the Bedford/MHT station. The RAISE grant is only applied in Scenarios 3 and 4 (Table 2) to address the economic development aspects of the station.
- **Other Federal Grants for Renewals:** FTA Section 5309 Urbanized Area Formula Grants and FTA Section 5337 State of Good Repair Formula Grants will fund up to 80 percent of the cost of renewals, depending on the scenario. In the high pandemic impact scenarios, the 5307 funds will be consumed to cover O&M costs and not available for the cost of renewals.

2.2.2. State Funds

New Hampshire and Massachusetts will need to pay the construction costs (other than for Nashua Crown Street and Manchester stations) net of CIG,)for tracks, systems, and crossings in each respective state. Additionally, Massachusetts will pay for trackage rights, and New Hampshire will fund 20 percent of the construction cost of Bedford/MHT and South Nashua stations. Below is a summary of the state funding components of the five funding scenarios:

- **Scenario 1**: FRA will fund 40 percent of grade crossing costs. New Hampshire will fund $185.4 million (YOE $) and Massachusetts will fund $126.1 million (YOE $).
- **Scenarios 2 and 5**: FRA will fund 80 percent of the crossing costs. New Hampshire's contribution decreases to $180.3 million (YOE $) and Massachusetts's contribution reduces to roughly $124.1 million (YOE $).
- **Scenarios 3 and 4**: FRA will fund 80 percent of the crossing costs. With the RAISE grant awarded, New Hampshire's funding is reduced to $147.6 million (YOE $) and Massachusetts's contribution remains at $124.1 million (YOE $).

2.2.3. Local Funds

The financial analysis assumes that the cities of Manchester and Nashua fund the construction, O&M, and renewal costs of their respective downtown stations. To fund construction, both cities will issue bonds. Nashua bonds will be serviced by an increment in the Nashua Property Tax; Manchester bonds will be serviced by the City's allocation of state Meals and Rooms (M&R) tax revenues. The excess revenue resulting from the debt service coverage requirement on the city bonds over the first three years ($10.5 million (YOE $) combined in scenarios with TIF and $12.4 million (YOE $) combined for scenarios without TIF) will be applied as cash to partially fund the downtown stations construction (Figure 4).

As a result, the total bond proceeds are reduced from the $72.6 million (YOE $) of construction costs of the downtown stations to just $60.16 million (YOE $) in the scenarios applying TIF funds and $62.1 million (YOE $) in scenarios without TIF funds. After construction is complete this excess revenue from the debt service coverage requirement is not allocated to this project and is assumed to be used by the cities for other purposes (which might include early retirement of the

bonds used to finance the cities' share of the downtown stations). The construction and financing costs of each downtown station are shown in Table 5.

Figure 4. Funding Framework for Downtown Stations Construction

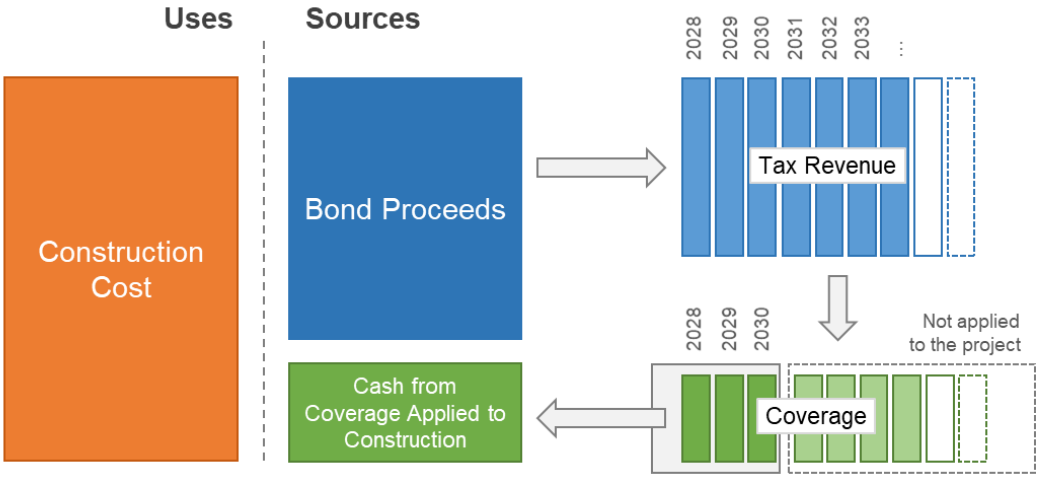


Table 5. Construction Costs and Sources of Funds of Downtown Stations

	Manchester Station		Nashua Crown Street Station	
Millions of YOE $	With TIF	Without TIF	With TIF	Without TIF
Construction Costs	$ 43.87	$ 43.87	$ 28.73	$ 28.73
Financing Costs	$ 7.48	$ 7.08	$ 2.84	$ 2.45
Total Funds Needed	**$ 51.35**	**$ 50.96**	**$ 31.57**	**$ 31.18**
M&R Tax Bonds	$ 33.93	$ 41.66	$ -	$ -
First 3-years Coverage	$ 7.60	$ 9.30	$ -	$ -
Property Tax Bonds	$ -	$ -	$ 25.28	$ 28.03
First 3-years Coverage	$ -	$ -	$ 2.88	$ 3.14
TIF Revenue	$ 9.82	$ -	$ 3.41	$ -

2.3. Capital Sources of Funds

This section describes the sources and uses for construction and renewal costs described in Sections 2.1 and 2.2. Tabular summaries are organized by funding partner. In most cases, minimum and maximum funding levels are shown, representing the range across the 15 funding and pandemic impact scenarios. Tables 6 and 7 summarize the sources for construction funding in 2022 dollars (2022 $) and Year-of-Expenditure dollars (YOE $), respectively. Financing costs for the bonds explained in Section 2.2.3 account for up to $10.3 million (YOE $) and are included in the total combination of sources shown in these tables and will also be reflected in Sections 2.4 and 2.5 which describe the capital sources and uses of funds in the sketch planning analysis and cash flow analysis, respectively.

Table 6. Construction Sources of Funds (Millions of 2022 $)

Agency	Funding Program	Use of Funds	Range		Potential Share	
			Min	*Max*	*Min*	*Max*
FTA / FRA	Capital Investment Grant (5309)	Multiple components	$ 298.6	$ 298.6	49.4%	49.3%
	Federal-State Partnership SGR Grant	Crossings	$ 5.4	$ 10.8	0.9%	1.8%
	RAISE Discretionary Grant	Bedford/MHT Station	-	$ 25.0	0.0%	4.1%
NHDOT	State funds	Tracks, Systems, Crossings, Bedford/MHT Station, South Nashua Station	$ 112.6	$ 141.5	18.6%	23.4%
MassDOT	State funds	Tracks, Systems, Crossings, Layover Facility	$ 76.7	$ 78.3	12.7%	12.9%
	Credit for Trackage Rights	Trackage Rights	$ 18.0	$ 18.0	3.0%	3.0%
Nashua	Property Tax	Nashua Crown Street Station	$ 19.3	$ 21.4	3.2%	3.5%
	Tax Increment Funding		-	$ 2.6	0.0%	0.4%
Manchester	Meals & Rooms Tax	Manchester Station	$ 25.9	$ 31.8	4.3%	5.3%
	Tax Increment Funding		-	$ 7.5	0.0%	1.2%
Combination of sources within range (including financing costs and renewal fund contribution):			**$ 604.5**	**$ 605.1**	**100.0%**	**100.0%**

Table 7. Construction Sources of Funds (Millions of YOE $)

Agency	Funding Program	Use of Funds	Range		Potential Share	
			Min	*Max*	*Min*	*Max*
FTA / FRA	Capital Investment Grant (5309)	Multiple components	$ 391.2	$ 391.2	49.4%	49.3%
	Federal-State Partnership SGR Grant	Crossings	$ 7.1	$ 14.2	0.9%	1.8%
	RAISE Discretionary Grant	Bedford/MHT Station	-	$ 32.7	0.0%	4.1%
NHDOT	State funds	Tracks, Systems, Crossings, Bedford/MHT Station, South Nashua Station	$ 147.6	$ 185.4	18.6%	23.4%
MassDOT	State funds	Tracks, Systems, Crossings, Layover Facility	$ 100.5	$ 102.5	12.7%	12.9%
	Credit for Trackage Rights	Trackage Rights	$ 23.6	$ 23.6	3.0%	3.0%
Nashua	Property Tax	Nashua Crown Street Station	$ 25.3	$ 28.0	3.2%	3.5%
	Tax Increment Funding		-	$ 3.4	0.0%	0.4%
Manchester	Meals & Rooms Tax	Manchester Station	$ 33.9	$ 41.7	4.3%	5.3%
	Tax Increment Funding		-	$ 9.8	0.0%	1.2%
Combination of sources within range (including financing costs and renewal fund contribution):			**$ 791.9**	**$ 792.8**	**100.0%**	**100.0%**

2.4. Construction Sketch Planning Analysis

Table 8 summarizes the uses and sources of construction funds for the five funding scenarios described in Section 1.3.3. Because there is no relationship between ridership and construction funding, the values in Table 8 are the same for all ridership scenarios (low, medium, and high pandemic impact).

Upper table: summarizes numerical values of the uses of funds (construction and financing costs) and sources of funds organized by program and partner.

Lower graph: summarizes these values in two bar charts. The upper bar chart shows the dollar funding by partner. The lower bar chart gives more detail into the local funding sources summarized in the upper chart, excluding the excess revenue due to coverage.

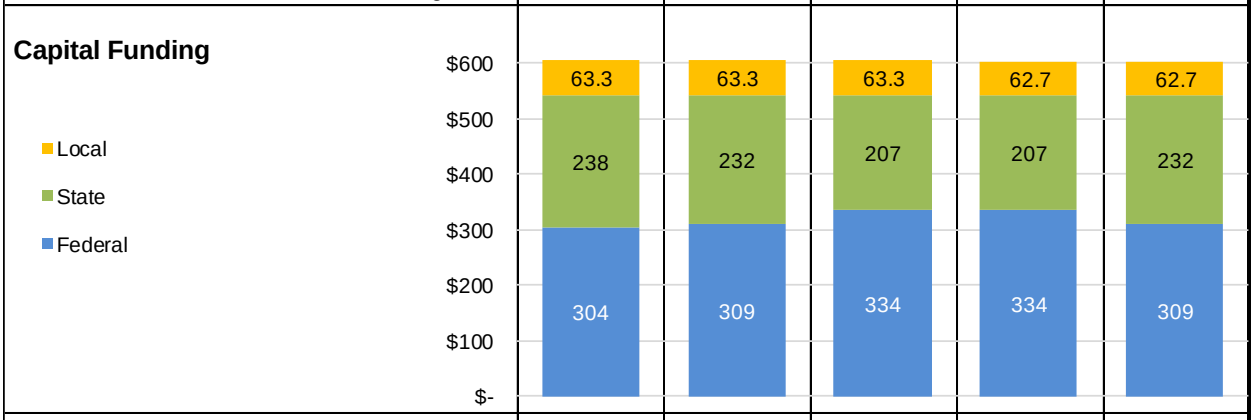
The largest variations are the level of federal funding due to the availability of Federal RAISE grants in Scenarios 3 and 4 and the structure of local funding in Scenarios 4 and 5. Local funding decreases when TIF funds are not applied because of the higher coverage required for Property and Meals & Rooms tax (a portion of the coverage is used as cash contribution to construction costs).

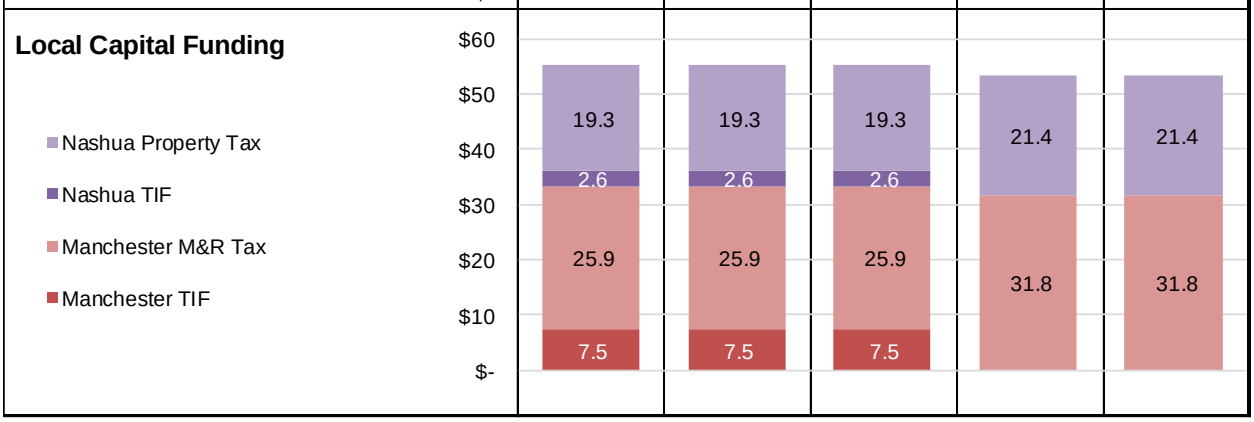
In all funding scenarios, the total amount of local funding (including cash from excess revenue due to coverage) equals the construction cost of the downtown stations plus the total financing costs.

Table 8. Construction Uses and Sources of Funds for All Pandemic Impact Scenarios

Millions of 2022 $, total amounts.

Funding Scenario:	1	2	3	4	5
Construction Costs	$ 597.2	$ 597.2	$ 597.2	$ 597.2	$ 597.2
Financing Costs	$ 8.0	$ 8.0	$ 8.0	$ 7.3	$ 7.3
Total	**$ 605.1**	**$ 605.1**	**$ 605.1**	**$ 604.5**	**$ 604.5**
Federal Funding	**$ 304.0**	**$ 309.4**	**$ 334.4**	**$ 334.4**	**$ 309.4**
FTA Line Item Projects (New Starts)	$ 298.6	$ 298.6	$ 298.6	$ 298.6	$ 298.6
FRA Program for SGR Grant	$ 5.4	$ 10.8	$ 10.8	$ 10.8	$ 10.8
USDOT RAISE Grant	$ -	$ -	$ 25.0	$ 25.0	$ -
State Funding	**$ 237.8**	**$ 232.4**	**$ 207.4**	**$ 207.4**	**$ 232.4**
NH State GO Bonds	$ 141.5	$ 137.6	$ 112.6	$ 112.6	$ 137.6
MassDOT/MBTA Contribution	$ 78.3	$ 76.7	$ 76.7	$ 76.7	$ 76.7
MassDOT/MBTA Credit for Trackage Rights	$ 18.0	$ 18.0	$ 18.0	$ 18.0	$ 18.0
Local Funding	**$ 63.3**	**$ 63.3**	**$ 63.3**	**$ 62.7**	**$ 62.7**
Nashua Property Tax	$ 19.3	$ 19.3	$ 19.3	$ 21.4	$ 21.4
Nashua TIF	$ 2.6	$ 2.6	$ 2.6	$ -	$ -
Manchester M&R Tax	$ 25.9	$ 25.9	$ 25.9	$ 31.8	$ 31.8
Manchester TIF	$ 7.5	$ 7.5	$ 7.5	$ -	$ -
Manchester Excess Revenue due to Coverage	$ 5.8	$ 5.8	$ 5.8	$ 7.1	$ 7.1
Nashua Excess Revenue due to Coverage	$ 2.2	$ 2.2	$ 2.2	$ 2.4	$ 2.4





"Financing Costs" correspond entirely to the local funding for downtown stations

2.5. Construction Cash Flow Analysis

This section summarizes the cash flow analysis of the sources and uses of funds for the construction expenditures. The year-by-year results are shown in both tabular and graphical forms. The analysis period is from 2022 to 2041.

The analysis was undertaken for all fifteen scenarios. This section documents all five funding scenarios but without differentiating between low, medium, or high pandemic impact on ridership because this variable has no relation with capital sources and uses. Scenario 3 has the higher Federal funding (including FTA Section 5309 New Starts, FTA Federal-State Partnership Grants for grade crossing, and a USDOT RAISE grant for improvements at the Bedford/MHT station). This is described in detail in Sections 2.5. Scenarios 1, 2, 4, and 5 are included in Appendix A.

The Construction Plan and the Renewal Plan are shown separately in Sections 2.6 and 2.7 because the first renewal cost occurs after the 2022-2041 20-year analysis period. Each plan is shown in both 2022 dollars and YOE dollars, based on the inflation assumptions from Section 2.1.3.

Tables 9 and 10 and Figures 5 and 6 summarize the cash flow analysis of the construction plan. Financing costs and the contribution to the renewal fund are included in the costs.

Table 9. Cash Flow Analysis for Construction Plan in 2022 $ for Funding Scenario 3 and All Pandemic Impacts

Millions of 2022 $	Total	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041
Construction Funding	**605.2**	-	-	-	-	-	-	**201.7**	**201.7**	**201.7**	-	-	-	-	-	-	-	-	-	-	-
Federal Funding	**334.4**	-	-	-	-	-	-	**111.5**	**111.5**	**111.5**	-	-	-	-	-	-	-	-	-	-	-
Federal Grant Line Item Projects (CIG)	298.6	-	-	-	-	-	-	99.5	99.5	99.5	-	-	-	-	-	-	-	-	-	-	-
FRA Federal-State Program for SGR Grant	10.8	-	-	-	-	-	-	3.6	3.6	3.6	-	-	-	-	-	-	-	-	-	-	-
USDOT RAISE Grant	25.0	-	-	-	-	-	-	8.3	8.3	8.3	-	-	-	-	-	-	-	-	-	-	-
State Funding	**207.4**	-	-	-	-	-	-	**69.1**	**69.1**	**69.1**	-	-	-	-	-	-	-	-	-	-	-
NH State GO Bonds	112.6	-	-	-	-	-	-	37.5	37.5	37.5	-	-	-	-	-	-	-	-	-	-	-
MassDOT/MBTA Contribution	76.7	-	-	-	-	-	-	25.6	25.6	25.6	-	-	-	-	-	-	-	-	-	-	-
MassDOT/MBTA Credit for Trackage Rights	18.0	-	-	-	-	-	-	6.0	6.0	6.0	-	-	-	-	-	-	-	-	-	-	-
Local Funding	**63.4**	-	-	-	-	-	-	**21.1**	**21.1**	**21.1**	-	-	-	-	-	-	-	-	-	-	-
Manchester City Bonds Proceeds	33.5	-	-	-	-	-	-	11.2	11.2	11.2	-	-	-	-	-	-	-	-	-	-	-
Loan backed by M&R tax	25.9	-	-	-	-	-	-	8.6	8.6	8.6	-	-	-	-	-	-	-	-	-	-	-
Loan backed by TIF tax	7.5	-	-	-	-	-	-	2.5	2.5	2.5	-	-	-	-	-	-	-	-	-	-	-
Nashua City Bonds Proceeds	22.0	-	-	-	-	-	-	7.3	7.3	7.3	-	-	-	-	-	-	-	-	-	-	-
Loan backed by Property Tax	19.3	-	-	-	-	-	-	6.4	6.4	6.4	-	-	-	-	-	-	-	-	-	-	-
Loan backed by TIF tax	2.6	-	-	-	-	-	-	0.9	0.9	0.9	-	-	-	-	-	-	-	-	-	-	-
Cash from Excess Revenue Due to Coverage	8.0	-	-	-	-	-	-	2.7	2.7	2.7	-	-	-	-	-	-	-	-	-	-	-
Construction Costs	**(605.2)**	-	-	-	-	-	-	**(201.7)**	**(201.7)**	**(201.7)**	-	-	-	-	-	-	-	-	-	-	-
Hard Costs	**(407.5)**	-	-	-	-	-	-	**(135.8)**	**(135.8)**	**(135.8)**	-	-	-	-	-	-	-	-	-	-	-
Guideway and Track Elements	(91.6)	-	-	-	-	-	-	(30.5)	(30.5)	(30.5)	-	-	-	-	-	-	-	-	-	-	-
Stations	(36.1)	-	-	-	-	-	-	(12.0)	(12.0)	(12.0)	-	-	-	-	-	-	-	-	-	-	-
Layover Facility	(13.5)	-	-	-	-	-	-	(4.5)	(4.5)	(4.5)	-	-	-	-	-	-	-	-	-	-	-
Sitework and Special Conditions	(60.4)	-	-	-	-	-	-	(20.1)	(20.1)	(20.1)	-	-	-	-	-	-	-	-	-	-	-
Systems	(90.2)	-	-	-	-	-	-	(30.1)	(30.1)	(30.1)	-	-	-	-	-	-	-	-	-	-	-
HC Contingency	(72.9)	-	-	-	-	-	-	(24.3)	(24.3)	(24.3)	-	-	-	-	-	-	-	-	-	-	-
Vehicles	(42.9)	-	-	-	-	-	-	(14.3)	(14.3)	(14.3)	-	-	-	-	-	-	-	-	-	-	-
Soft Costs	**(189.7)**	-	-	-	-	-	-	**(63.2)**	**(63.2)**	**(63.2)**	-	-	-	-	-	-	-	-	-	-	-
Professional Services/Soft Costs	(109.4)	-	-	-	-	-	-	(36.5)	(36.5)	(36.5)	-	-	-	-	-	-	-	-	-	-	-
ROW and Trackage Rights	(26.0)	-	-	-	-	-	-	(8.7)	(8.7)	(8.7)	-	-	-	-	-	-	-	-	-	-	-
SC Contingency	(54.3)	-	-	-	-	-	-	(18.1)	(18.1)	(18.1)	-	-	-	-	-	-	-	-	-	-	-
Financing Costs	**(8.0)**	-	-	-	-	-	-	**(2.7)**	**(2.7)**	**(2.7)**	-	-	-	-	-	-	-	-	-	-	-
Construction Cash Flow	**0.0**	-	-	-	-	-	-	**0.0**	**0.0**	**0.0**	-	-	-	-	-	-	-	-	-	-	-

Table 10. Cash Flow Analysis for Construction Plan in YOE $ for Funding Scenario 3 and All Pandemic Impacts

Millions of YOE $		2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041
Construction Funding	**792.8**	-	-	-	-	-	-	**255.2**	**264.2**	**273.4**	-	-	-	-	-	-	-	-	-	-	-
Federal Funding	**438.1**	-	-	-	-	-	-	**141.0**	**146.0**	**151.1**	-	-	-	-	-	-	-	-	-	-	-
Federal Grant Line Item Projects (CIG)	391.2	-	-	-	-	-	-	125.9	130.3	134.9	-	-	-	-	-	-	-	-	-	-	-
FRA Federal-State Program for SGR Grant	14.2	-	-	-	-	-	-	4.6	4.7	4.9	-	-	-	-	-	-	-	-	-	-	-
USDOT RAISE Grant	32.7	-	-	-	-	-	-	10.5	10.9	11.3	-	-	-	-	-	-	-	-	-	-	-
State Funding	**271.7**	-	-	-	-	-	-	**87.5**	**90.5**	**93.7**	-	-	-	-	-	-	-	-	-	-	-
NH State GO Bonds	147.6	-	-	-	-	-	-	47.5	49.2	50.9	-	-	-	-	-	-	-	-	-	-	-
MassDOT/MBTA Contribution	100.5	-	-	-	-	-	-	32.4	33.5	34.7	-	-	-	-	-	-	-	-	-	-	-
MassDOT/MBTA Credit for Trackage Rights	23.6	-	-	-	-	-	-	7.6	7.9	8.1	-	-	-	-	-	-	-	-	-	-	-
Local Funding	**83.1**	-	-	-	-	-	-	**26.7**	**27.7**	**28.6**	-	-	-	-	-	-	-	-	-	-	-
Manchester City Bonds Proceeds	43.8	-	-	-	-	-	-	14.1	14.6	15.1	-	-	-	-	-	-	-	-	-	-	-
Loan backed by M&R tax	34.0	-	-	-	-	-	-	10.9	11.3	11.7	-	-	-	-	-	-	-	-	-	-	-
Loan backed by TIF tax	9.9	-	-	-	-	-	-	3.2	3.3	3.4	-	-	-	-	-	-	-	-	-	-	-
Nashua City Bonds Proceeds	28.8	-	-	-	-	-	-	9.3	9.6	9.9	-	-	-	-	-	-	-	-	-	-	-
Loan backed by Property Tax	25.3	-	-	-	-	-	-	8.2	8.4	8.7	-	-	-	-	-	-	-	-	-	-	-
Loan backed by TIF tax	3.4	-	-	-	-	-	-	1.1	1.1	1.2	-	-	-	-	-	-	-	-	-	-	-
Cash from Excess Revenue Due to Coverage	10.5	-	-	-	-	-	-	3.4	3.5	3.6	-	-	-	-	-	-	-	-	-	-	-
Construction Costs	**(792.8)**	-	-	-	-	-	-	**(255.2)**	**(264.2)**	**(273.4)**	-	-	-	-	-	-	-	-	-	-	-
Hard Costs	**(533.8)**	-	-	-	-	-	-	**(171.9)**	**(177.9)**	**(184.1)**	-	-	-	-	-	-	-	-	-	-	-
Guideway and Track Elements	(120.0)	-	-	-	-	-	-	(38.6)	(40.0)	(41.4)	-	-	-	-	-	-	-	-	-	-	-
Stations	(47.3)	-	-	-	-	-	-	(15.2)	(15.7)	(16.3)	-	-	-	-	-	-	-	-	-	-	-
Layover Facility	(17.7)	-	-	-	-	-	-	(5.7)	(5.9)	(6.1)	-	-	-	-	-	-	-	-	-	-	-
Sitework and Special Conditions	(79.1)	-	-	-	-	-	-	(25.5)	(26.3)	(27.3)	-	-	-	-	-	-	-	-	-	-	-
Systems	(118.2)	-	-	-	-	-	-	(38.0)	(39.4)	(40.7)	-	-	-	-	-	-	-	-	-	-	-
HC Contingency	(95.5)	-	-	-	-	-	-	(30.8)	(31.8)	(32.9)	-	-	-	-	-	-	-	-	-	-	-
Vehicles	(56.2)	-	-	-	-	-	-	(18.1)	(18.7)	(19.4)	-	-	-	-	-	-	-	-	-	-	-
Soft Costs	**(248.5)**	-	-	-	-	-	-	**(80.0)**	**(82.8)**	**(85.7)**	-	-	-	-	-	-	-	-	-	-	-
Professional Services/Soft Costs	(143.3)	-	-	-	-	-	-	(46.1)	(47.7)	(49.4)	-	-	-	-	-	-	-	-	-	-	-
ROW and Trackage Rights	(34.1)	-	-	-	-	-	-	(11.0)	(11.4)	(11.7)	-	-	-	-	-	-	-	-	-	-	-
SC Contingency	(71.1)	-	-	-	-	-	-	(22.9)	(23.7)	(24.5)	-	-	-	-	-	-	-	-	-	-	-
Financing Costs	**(10.5)**	-	-	-	-	-	-	**(3.4)**	**(3.5)**	**(3.6)**	-	-	-	-	-	-	-	-	-	-	-
Construction Cash Flow	**0.0**	-	-	-	-	-	-	**0.0**	**0.0**	**0.0**	-	-	-	-	-	-	-	-	-	-	-

Figure 5. Cash Flow for Construction Plan in 2022 $ (millions) for Funding Scenario 3 and All Pandemic Impacts

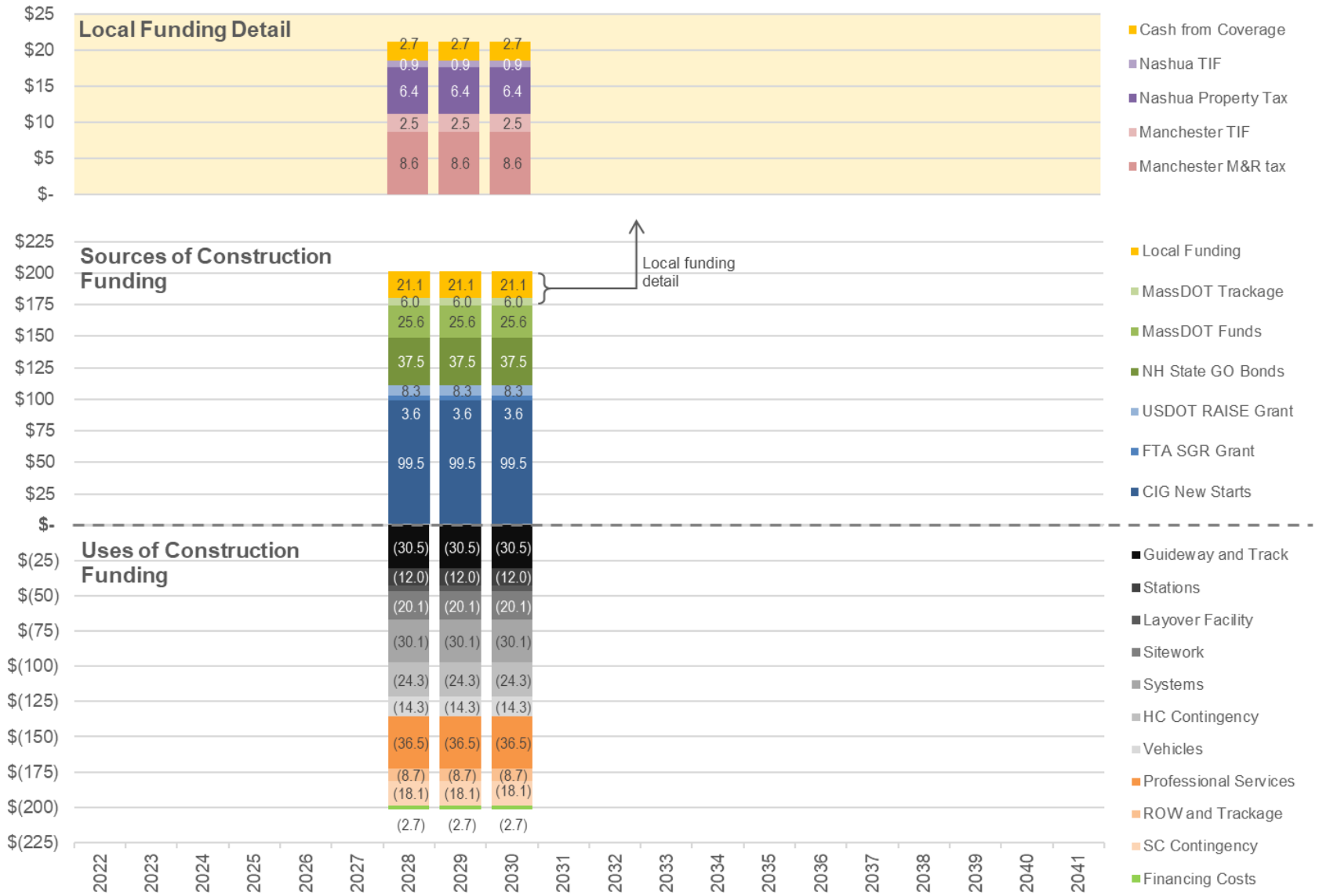
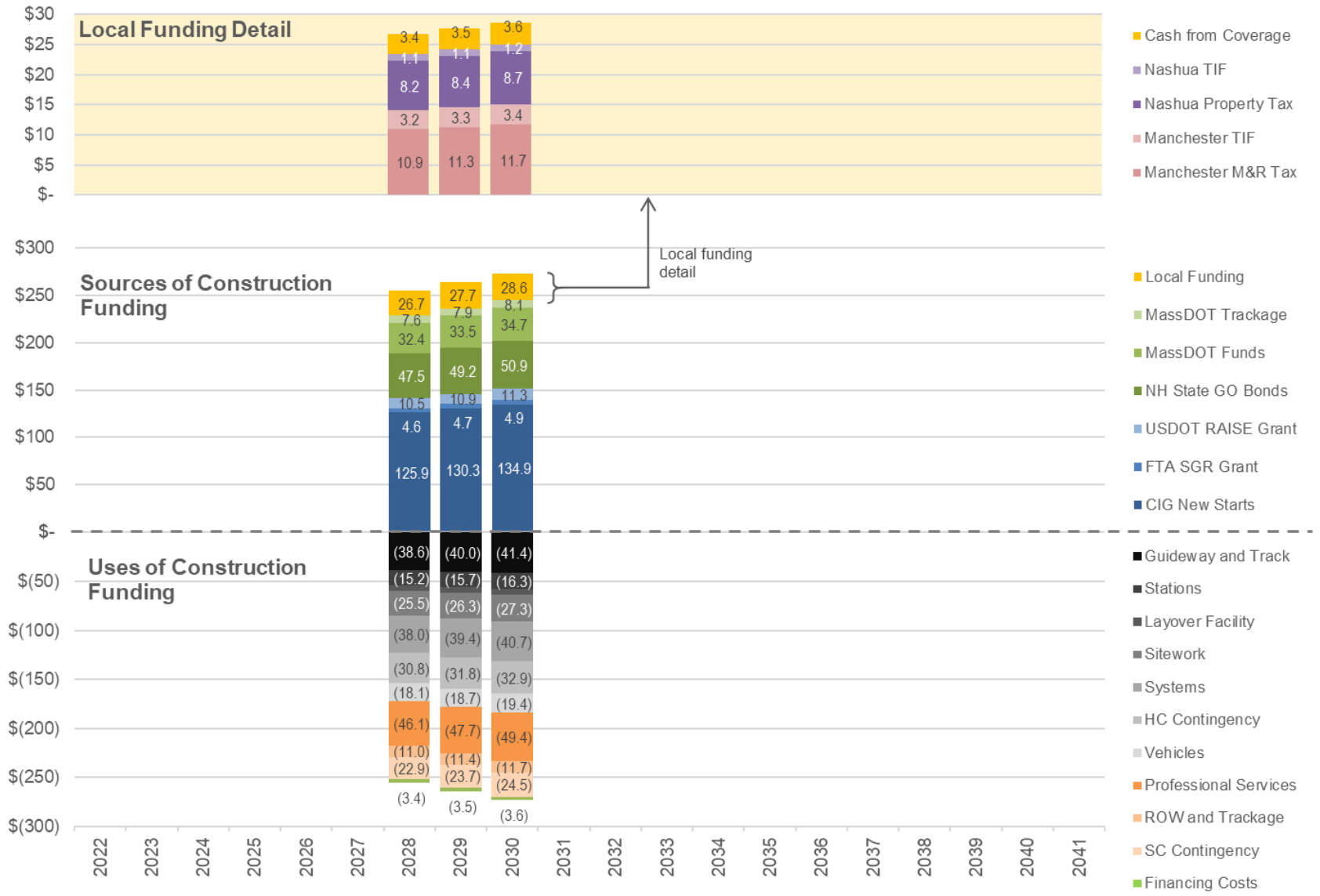


Figure 6. Cash Flow for Construction Plan in YOE $ (millions) for Funding Scenario 3 and All Pandemic Impacts



2.6. Renewal Sketch Planning Analysis

The renewal costs are initially estimated based on the life cycle of the components and are calculated on a yearly basis anticipating and compensating for future peaks and valleys in annual required based on assets' useful lives. Table 11 summarizes the life-cycle average annualized renewal cost starting in 2046. It should be noted that the O&M costs described in Section 3.1 include annual short-cycle renewal costs for track and signals, per the terms of the current contract with Keolis, MBTA's contract operator for commuter rail.

Table 11. Life Cycle Annual Average Costs of Renewals

Millions of 2022 $	**Renewal Costs**
Track & Systems	$2.63
South Nashua Station	$0.24
Nashua Crown Street Station	$0.30
Bedford/MHT Station	$0.51
Manchester Station	$0.56
Layover Facility	$0.09
Capital Improvements cash flow	**$4.34**

Renewal sources of funds include:

- FTA Section 5307 grants (after application to O&M costs)
- FTA Section 5337 grants
- Local funds (for Manchester and Nashua Crown Street stations, located in the respective downtowns)
- State funding for the balance.

Table 12 summarizes the sources for renewal funding in 2022 dollars, showing the reliance on each source across all funding scenarios. The total across all funding sources will be the same in each scenario. Tables 13 to 15 provide details on each funding scenario for low, medium, and high pandemic impact on ridership, respectively.

Table 12. Renewal Sources of Funds in 2022 $ (millions)

	Funding Source	**Expenditure**	**Range**		**Potential Share**	
			Min	*Max*	*Min*	*Max*
FTA	Urbanized Areas Grant (5307) SGR Grant (5337)	Tracks, Systems, Stations, Layover Facility	- $ 2.18	$ 1.46 $ 3.64	0.0% 47.9%	32.1% 80.0%
NHDOT	State funds	Tracks, Systems, Bedford/MHT Station and South Nashua Station	$ 0.73	$ 0.73	16.0%	16.0%
MassDOT	State funds	Tracks, Systems, Layover Facility				
Nashua	Property Tax Tax Increment Funding	Nashua Crown Street Station	$ 0.07	$ 0.07	1.4%	1.4%
Manchester	Meals & Rooms Tax Tax Increment Funding	Manchester Station	$ 0.12	$ 0.12	2.6%	2.6%
Combination of sources within range:			**$ 4.55**	**$ 4.55**	**100.0%**	**100.0%**

Table 13. Renewal Uses and Sources of Funds for Low Pandemic Impact Scenarios

Millions of 2022 $. Annual average 2046-2071. All funding scenarios are identical.

Funding Scenario:	1	2	3	4	5
Total	**$ 4.55**	**$ 4.55**	**$ 4.55**	**$ 4.55**	**$ 4.55**
Federal Funding	**$ 3.64**	**$ 3.64**	**$ 3.64**	**$ 3.64**	**$ 3.64**
FTA Section 5307 Funds	$ 1.46	$ 1.46	$ 1.46	$ 1.46	$ 1.46
FTA Section 5337 Funds	$ 2.18	$ 2.18	$ 2.18	$ 2.18	$ 2.18
State funding	**$ 0.73**	**$ 0.73**	**$ 0.73**	**$ 0.73**	**$ 0.73**
Local Funding	**$ 0.18**	**$ 0.18**	**$ 0.18**	**$ 0.18**	**$ 0.18**
Manchester Station Renewal Funding	$ 0.12	$ 0.12	$ 0.12	$ 0.12	$ 0.12
Nashua Crown St Station Renewal Funding	$ 0.07	$ 0.07	$ 0.07	$ 0.07	$ 0.07

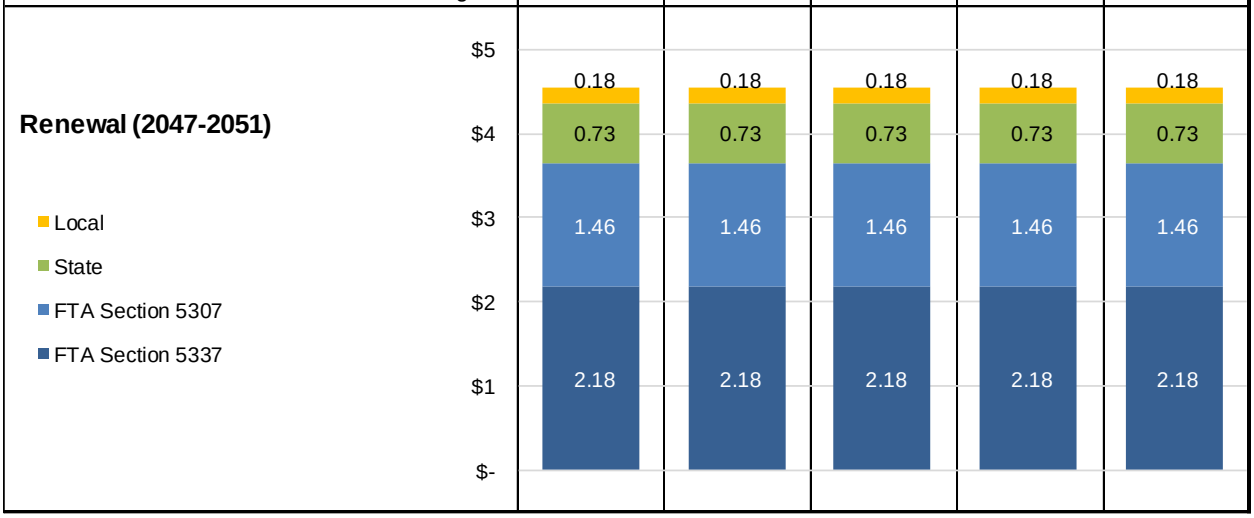


Table 14. Renewal Uses and Sources of Funds for Medium Pandemic Impact Scenarios

Millions of 2022 $. Annual average 2046-2071. All funding scenarios are identical.

Funding Scenario:	1	2	3	4	5
Total	**$ 4.55**	**$ 4.55**	**$ 4.55**	**$ 4.55**	**$ 4.55**
Federal Funding	**$ 3.64**	**$ 3.64**	**$ 3.64**	**$ 3.64**	**$ 3.64**
FTA Section 5307 Funds	$ 0.85	$ 0.85	$ 0.85	$ 0.85	$ 0.85
FTA Section 5337 Funds	$ 2.79	$ 2.79	$ 2.79	$ 2.79	$ 2.79
State funding	**$ 0.73**	**$ 0.73**	**$ 0.73**	**$ 0.73**	**$ 0.73**
Local Funding	**$ 0.18**	**$ 0.18**	**$ 0.18**	**$ 0.18**	**$ 0.18**
Manchester Station Renewal Funding	$ 0.12	$ 0.12	$ 0.12	$ 0.12	$ 0.12
Nashua Crown St Station Renewal Funding	$ 0.07	$ 0.07	$ 0.07	$ 0.07	$ 0.07

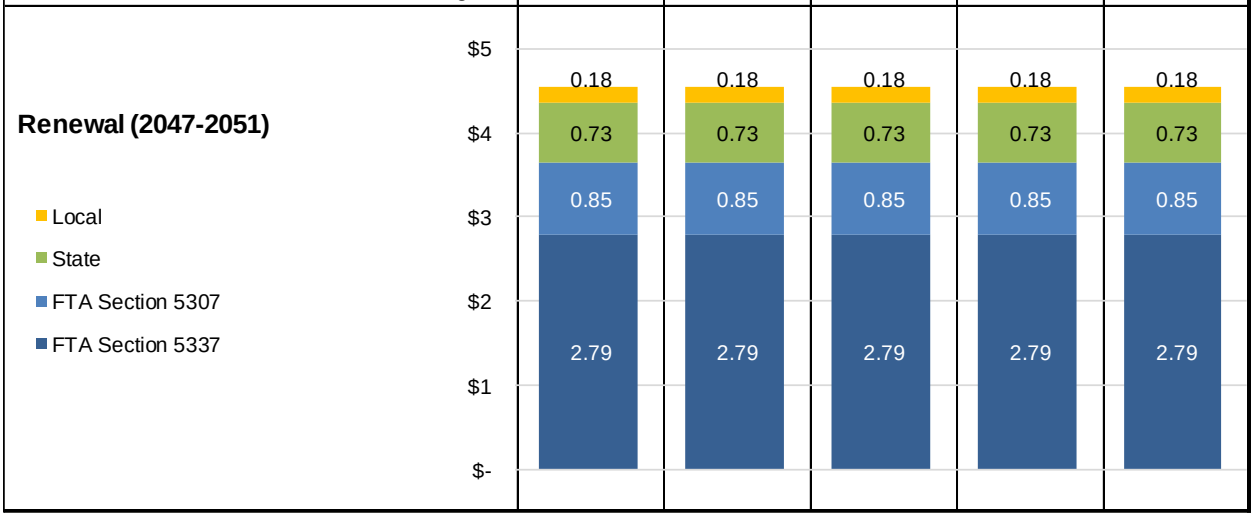
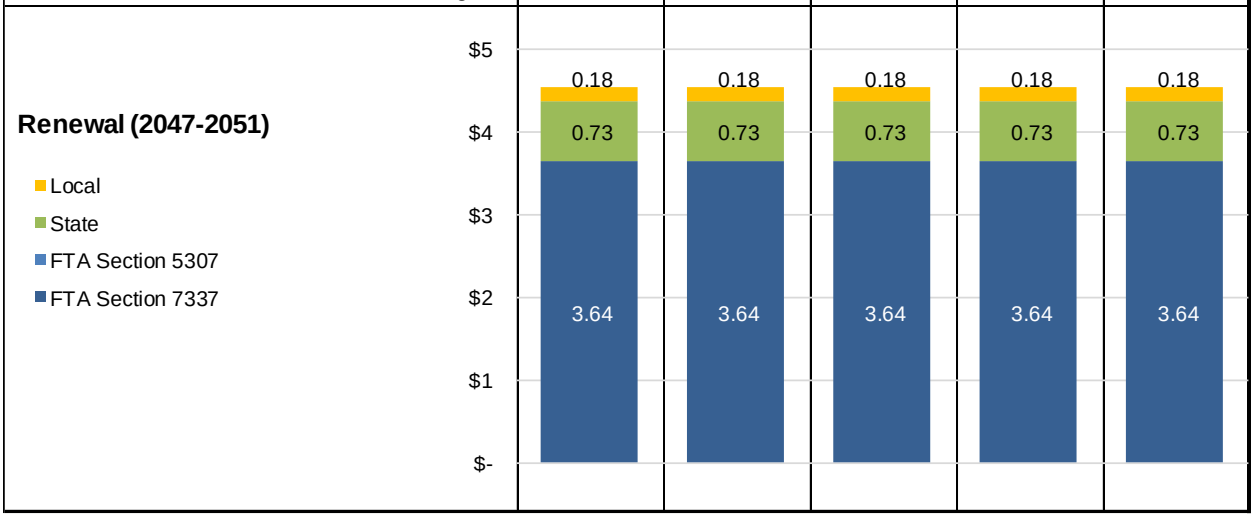


Table 15. Renewal Uses and Sources of Funds for High Pandemic Impact Scenarios

Millions of 2022 $. Annual average 2046-2071. All funding scenarios are identical.

Funding Scenario:	1	2	3	4	5
Total	**$ 4.55**	**$ 4.55**	**$ 4.55**	**$ 4.55**	**$ 4.55**
Federal Funding	**$ 3.64**	**$ 3.64**	**$ 3.64**	**$ 3.64**	**$ 3.64**
FTA Section 5307 Funds	$ -	$ -	$ -	$ -	$ -
FTA Section 5337 Funds	$ 3.64	$ 3.64	$ 3.64	$ 3.64	$ 3.64
State funding	**$ 0.73**	**$ 0.73**	**$ 0.73**	**$ 0.73**	**$ 0.73**
Local Funding	**$ 0.18**	**$ 0.18**	**$ 0.18**	**$ 0.18**	**$ 0.18**
Manchester Station Renewal Funding	$ 0.12	$ 0.12	$ 0.12	$ 0.12	$ 0.12
Nashua Crown St Station Renewal Funding	$ 0.07	$ 0.07	$ 0.07	$ 0.07	$ 0.07



2.7. Renewal Cash Flow Analysis

Table 16 and Figures 7 and 8 summarize the cash flow analysis of renewals for all five funding scenarios with medium pandemic impact on ridership. Similar detail corresponding to low and high pandemic impact are shown in Appendix B. In all cases, renewal expenditures begin in 2046, and every cash flow presented covers the period of 2042-2061, just after the 2022-2041 construction cash flow analysis ends.

The year-by-year expenditures for renewals were calculated based on the life cycle of each component and distributed in short windows of time. As explained in Section 1.4.2, the result is a step-distribution of funds needed. “Local Funding” includes the funds provided by the cities of Manchester and Nashua to complete the funding of the Manchester and Nashua Crown Street stations.

Table 16. Cash Flow Analysis for Renewal Plan in 2022 $ and YOE $ for All Funding Scenarios and Medium Pandemic Impact

Millions of 2022 $	Total	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061
Renewals Funding	**60.4**	-	-	-	-	**3.0**	**5.5**	**5.5**	**5.5**	**5.5**	**5.5**	**3.0**	**3.0**	**3.0**	**3.0**	**3.0**	**3.0**	**3.0**	**3.0**	**3.0**	**3.0**
FTA Section 5307	11.2	-	-	-	-	0.6	1.0	1.0	1.0	1.0	1.0	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
FTA Section 5337	37.1	-	-	-	-	1.8	3.4	3.4	3.4	3.4	3.4	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8
State Funding	9.7	-	-	-	-	0.5	0.9	0.9	0.9	0.9	0.9	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Local Funding	2.4	-	-	-	-	0.1	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Renewal Expenditures	**(60.4)**	-	-	-	-	**(3.0)**	**(5.5)**	**(5.5)**	**(5.5)**	**(5.5)**	**(5.5)**	**(3.0)**	**(3.0)**	**(3.0)**	**(3.0)**	**(3.0)**	**(3.0)**	**(3.0)**	**(3.0)**	**(3.0)**	**(3.0)**
Track & Systems	(36.9)	-	-	-	-	(1.8)	(3.4)	(3.4)	(3.4)	(3.4)	(3.4)	(1.8)	(1.8)	(1.8)	(1.8)	(1.8)	(1.8)	(1.8)	(1.8)	(1.8)	(1.8)
Layover Facility	(3.4)	-	-	-	-	-	(0.2)	(0.2)	(0.2)	(0.2)	(0.2)	(0.2)	(0.2)	(0.2)	(0.2)	(0.2)	(0.2)	(0.2)	(0.2)	(0.2)	(0.2)
Manchester Station	(6.1)	-	-	-	-	(0.6)	(0.7)	(0.7)	(0.7)	(0.7)	(0.7)	(0.2)	(0.2)	(0.2)	(0.2)	(0.2)	(0.2)	(0.2)	(0.2)	(0.2)	(0.2)
Crown St Station	(4.3)	-	-	-	-	(0.1)	(0.3)	(0.3)	(0.3)	(0.3)	(0.3)	(0.3)	(0.3)	(0.3)	(0.3)	(0.3)	(0.3)	(0.3)	(0.3)	(0.3)	(0.3)
Bedford/MHT Station	(7.3)	-	-	-	-	(0.6)	(0.6)	(0.6)	(0.6)	(0.6)	(0.6)	(0.4)	(0.4)	(0.4)	(0.4)	(0.4)	(0.4)	(0.4)	(0.4)	(0.4)	(0.4)
South Nashua Station	(2.4)	-	-	-	-	-	(0.3)	(0.3)	(0.3)	(0.3)	(0.3)	(0.1)	(0.1)	(0.1)	(0.1)	(0.1)	(0.1)	(0.1)	(0.1)	(0.1)	(0.1)
Renewal Cashflow	**(0.0)**	-	-	-	-	**(0.0)**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Millions of YOE $	Total	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061
Renewals Funding	**162.5**	-	-	-	-	**6.6**	**12.4**	**12.8**	**13.1**	**13.5**	**13.9**	**7.9**	**8.1**	**8.3**	**8.6**	**8.9**	**9.1**	**9.4**	**9.7**	**10.0**	**10.3**
FTA Section 5307	30.3	-	-	-	-	1.2	2.3	2.4	2.4	2.5	2.6	1.5	1.5	1.6	1.6	1.6	1.7	1.7	1.8	1.9	1.9
FTA Section 5337	99.8	-	-	-	-	4.0	7.6	7.8	8.1	8.3	8.6	4.8	5.0	5.1	5.3	5.4	5.6	5.8	5.9	6.1	6.3
State funding	26.0	-	-	-	-	1.1	2.0	2.0	2.1	2.2	2.2	1.3	1.3	1.3	1.4	1.4	1.5	1.5	1.5	1.6	1.6
Local Funding	6.5	-	-	-	-	0.3	0.5	0.5	0.5	0.5	0.6	0.3	0.3	0.3	0.3	0.4	0.4	0.4	0.4	0.4	0.4
Renewal Expenditures	**(156.1)**	-	-	-	-	**(6.6)**	**(11.7)**	**(12.0)**	**(12.4)**	**(12.8)**	**(13.2)**	**(7.6)**	**(7.9)**	**(8.1)**	**(8.3)**	**(8.6)**	**(8.8)**	**(9.1)**	**(9.4)**	**(9.7)**	**(9.9)**
Track & Systems	(99.4)	-	-	-	-	(3.9)	(7.6)	(7.8)	(8.1)	(8.3)	(8.5)	(4.8)	(5.0)	(5.1)	(5.3)	(5.4)	(5.6)	(5.7)	(5.9)	(6.1)	(6.3)
Layover Facility	(9.5)	-	-	-	-	-	(0.5)	(0.5)	(0.5)	(0.5)	(0.5)	(0.6)	(0.6)	(0.6)	(0.7)	(0.7)	(0.7)	(0.7)	(0.7)	(0.8)	(0.8)
Manchester Station	(15.8)	-	-	-	-	(1.3)	(1.6)	(1.7)	(1.7)	(1.8)	(1.8)	(0.5)	(0.5)	(0.5)	(0.6)	(0.6)	(0.6)	(0.6)	(0.6)	(0.7)	(0.7)
Crown St Station	(11.9)	-	-	-	-	(0.2)	(0.7)	(0.7)	(0.7)	(0.7)	(0.8)	(0.7)	(0.7)	(0.8)	(0.8)	(0.8)	(0.8)	(0.9)	(0.9)	(0.9)	(0.9)
Bedford/MHT Station	(19.6)	-	-	-	-	(1.3)	(1.3)	(1.4)	(1.4)	(1.4)	(1.5)	(1.0)	(1.0)	(1.0)	(1.1)	(1.1)	(1.1)	(1.2)	(1.2)	(1.2)	(1.3)
South Nashua Station	(6.4)	-	-	-	-	-	(0.7)	(0.7)	(0.7)	(0.8)	(0.8)	(0.2)	(0.2)	(0.3)	(0.3)	(0.3)	(0.3)	(0.3)	(0.3)	(0.3)	(0.3)
Renewal Cashflow	**6.4**	-	-	-	-	**(0.0)**	**0.7**	**0.7**	**0.7**	**0.8**	**0.8**	**0.2**	**0.2**	**0.3**	**0.3**	**0.3**	**0.3**	**0.3**	**0.3**	**0.3**	**0.3**

Table shows 2042-2061 time period (earlier track and signal renewal included in O&M costs)

Figure 7. Renewal Funding Cash Flow in 2022 $ (millions) for All Funding Scenarios and Medium Pandemic Impact

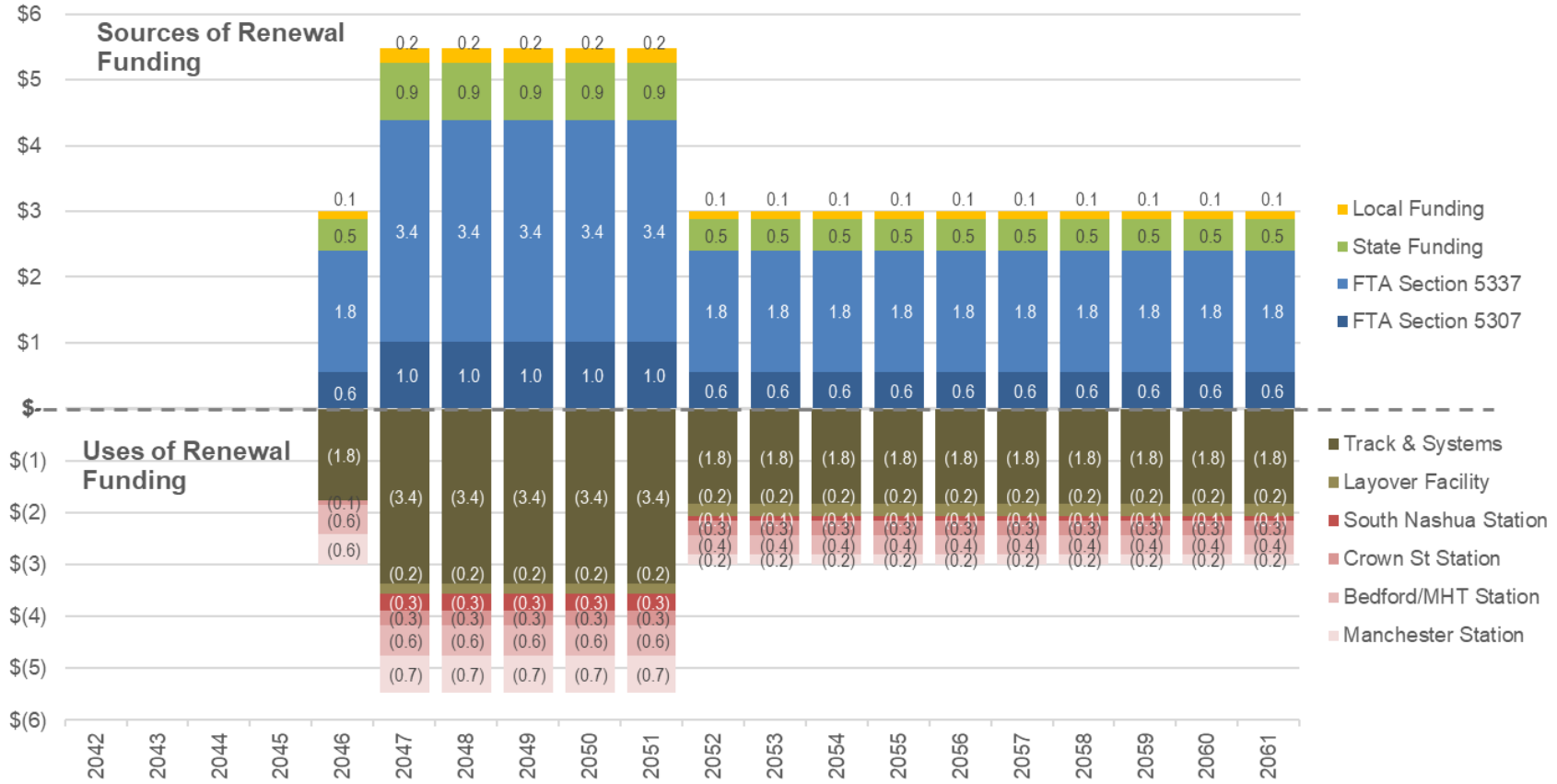
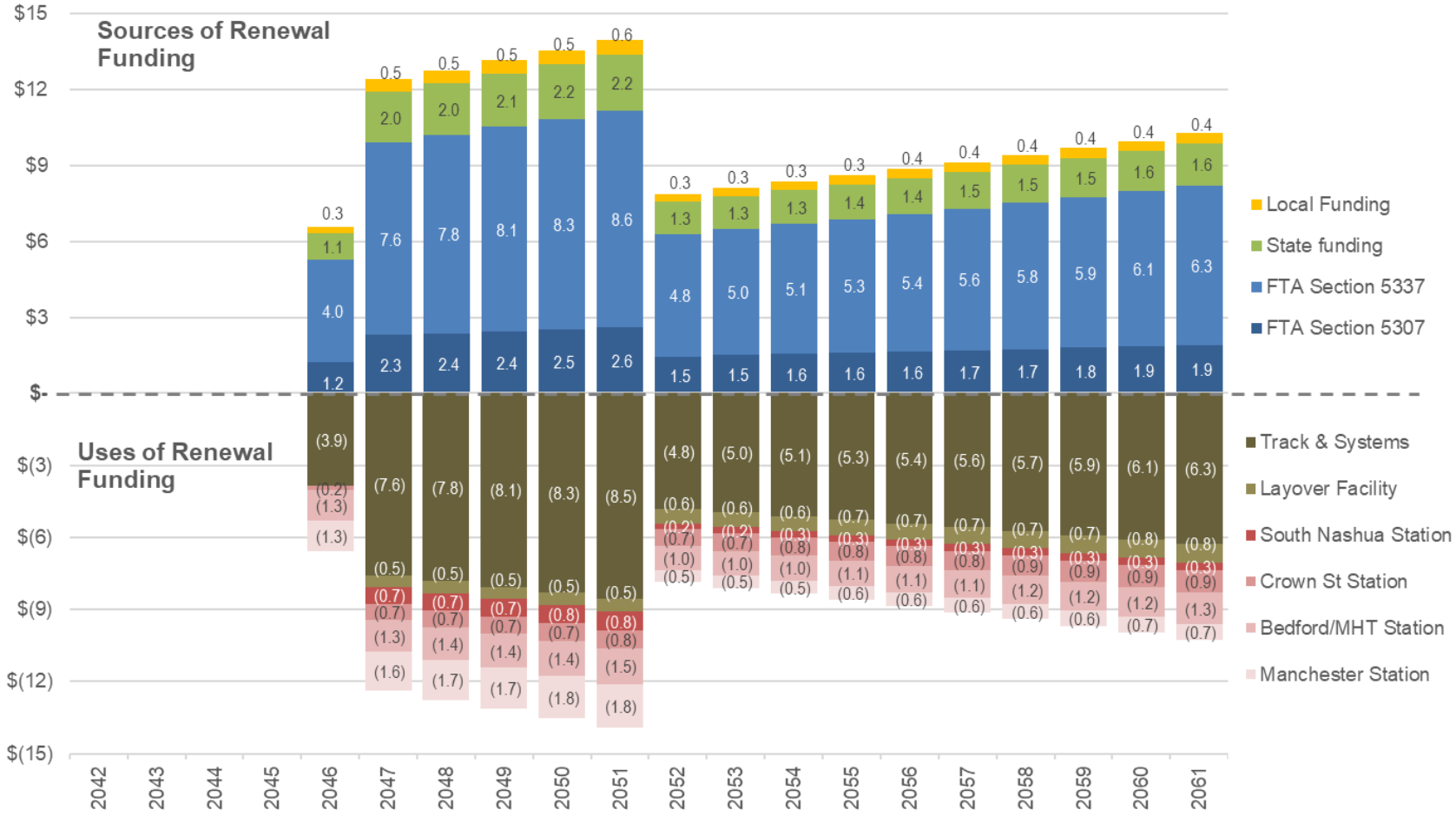


Figure 8. Renewal Funding Cash Flow in YOE $ (millions) for All Funding Scenarios and Medium Pandemic Impact



2.8. Bonds Issuance and Debt Service

As explained in Section 2.2.3, the bonds issued by the cities will mature along a 20-year period and will be serviced by a portion of the Manchester allocation of revenues from the state's Meals & Rooms (M&R) tax and by an increment in the Nashua property tax. Similar to the renewal costs, the typical year values calculated in the sketch planning analysis were projected and adjusted in a year-by-year basis in the cash flow analysis.

Debt service is a fixed amount in the YOE cashflow, based on the adjusted capital costs inflated to the mid-point year of construction. The excess debt service coverage increases with inflation. TIF funds begin after construction and increase linearly. These conditions result an excess of dedicated revenue after operations begin that increases over time. However, there is a small revenue shortfall for debt service in the initial three in scenarios using TIF. This small shortfall will be compensated with one year of the beginning of debt service, which will allow the accumulation of primary tax revenue (M&R tax and property tax in Manchester and Nashua, respectively) during 2028.

Figure 9. Tax Revenue Allocation in 2022 $ (millions) for Scenarios with TIF funds

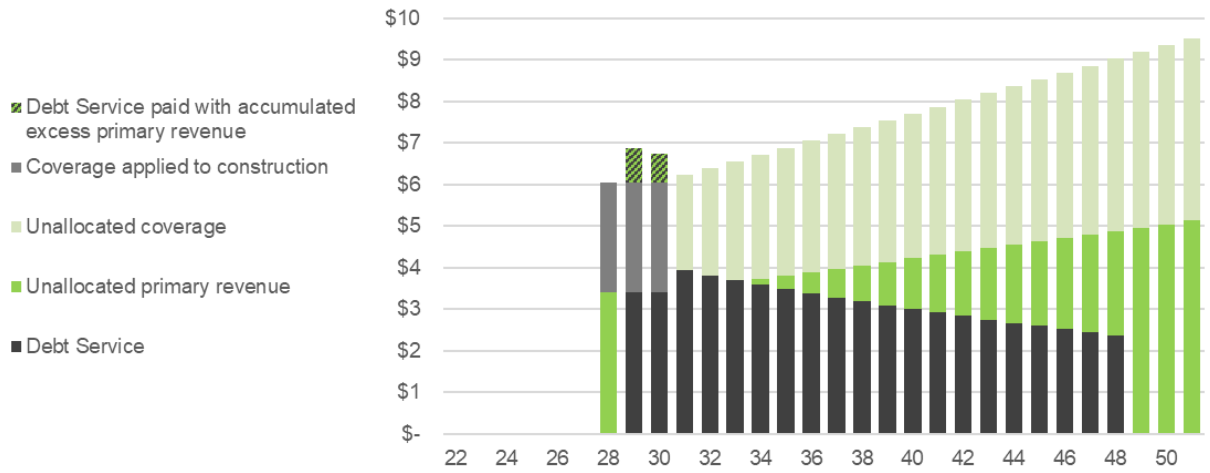


Figure 9 shows the decreasing present value of annual debt service in 2022 dollars during the first 20 years and the allocation of coverage from primary taxes (M&R and property) to construction costs between 2028 to 2030. TIF funds start in 2031 as well as their coverage. Debt service begins in 2029 and the shortfall in years 2029 to 2032 will be covered with M&R and property tax funds from 2028.

3. Operating & Maintenance Sources and Uses

This section describes the uses and sources for operation & maintenance (O&M). O&M costs are the same for all 15 funding and pandemic impact scenarios; however, the O&M sources depend heavily on ridership and the associated fare revenue.

3.1. Operation & Maintenance Uses of Funds

Operations are projected to begin in 2031. The incremental annual O&M costs is $17.27 million (2022 $). The O&M cost components are summarized in Table 17.

Table 17. Operating & Maintenance Costs

2022 $ (millions)	Life-Span Average
Transportation Less Fuel	$ 3.02
Fuel Consumption	$ 3.04
Maintenance of Equipment	$ 2.18
Maintenance of Way	$ 4.39
Casualty & Liability	$ 0.95
7% Contingency	$ 0.95
Subtotal Weekday	**$ 14.55**
Weekend Service less Fuel	$ 1.43
Weekend Fuel	$ 0.87
Total including weekends	**$ 16.85**
Stations (4) maintenance	$ 0.42
Capital Improvements cash flow	**$ 17.27**

Maintenance of equipment and maintenance of way costs in Table 17 exclude –per the terms of the contract with Keolis, MBTA's contract operator of commuter rail service– long-cycle interventions that are included in the renewal costs addressed in this report. It is projected that the maintenance of way will be performed by Keolis south of the Massachusetts state line resulting from MBTA's trackage rights. North of the state line, it is assumed that maintenance of way will be performed by CSX and funded by MBTA. It is assumed that the CSX unit maintenance costs are similar to the Keolis unit maintenance costs.

3.2. Operation & Maintenance Sources of Funds

The primary long-term source of O&M funding is fare revenue. This is a relatively unusual situation as is the result of relatively low incremental costs, largely the result of the elimination of "deadheading" in the current timetable for service to Lowell. Deadheading, as it applies to the MBTA Lowell Line commuter rail service, means that trains layover in Boston and have to start and end their day in Boston and train & engine crews report to work in Boston, meaning that morning trips that start in Lowell originate in Boston, without passengers, and the evening trips that end in Lowell travel back to Boston, without passengers. The extension of the line to Manchester means that train movements to the layover facility are revenue service with

passengers onboard as the Manchester layover facility is located in very close proximity to Manchester Station, the terminus station. With the layover facility in Manchester the trains would be stored there overnight, and crews would report there for work instead of to Boston. In addition, the MBTA distance-based (zone) fare structure, which has been applied to fare modeling, results in relatively high fare revenue per incremental passenger.

Figures 10 and 11 summarize MBTA pandemic ridership trends. Figure 10 summarizes MBTA ridership by mode; commuter rail recovery is among the best across all MBTA modes. Figure 11 summarizes MBTA commuter rail ridership by line; the Lowell Line recovery is close to the average across all commuter rail lines.

As noted in Section 1.3.1, a range of pandemic impacts on ridership were considered. The financial plan results documented in this section correspond to the five scenarios with medium pandemic impact on ridership. The low and high pandemic impact scenarios are summarized in Appendix C.

In addition, the financial analysis assumes a four-year period for market response to the new service, assuming 40, 70, 90, and then 100 percent of the long-term pandemic impact on ridership in the first four years of operation. Ridership is projected to stabilize in the year 2034, three years after operations have begun (Figure 12). Once market response stabilizes, fare revenue is projected to fund 81.5 percent of O&M costs in the medium ridership scenario, which is the ridership scenario shown in the cash flow analysis documented in this report. By comparison, fare revenue would cover 93.4 percent of the O&M costs in the low pandemic impact scenario, while in the high pandemic impact scenario the number would drop down to 58.4 percent.

Because of the encouraging market response to MBTA commuter rail services in the early post-pandemic period it is reasonable to use the medium pandemic impact scenario based on currently available information. Advertising revenue (which is assumed to be based on ridership) also contributes a small amount, about 0.6 percent of total O&M costs in all scenarios.

Figure 10. MBTA Ridership Trends During the Pandemic, by Mode

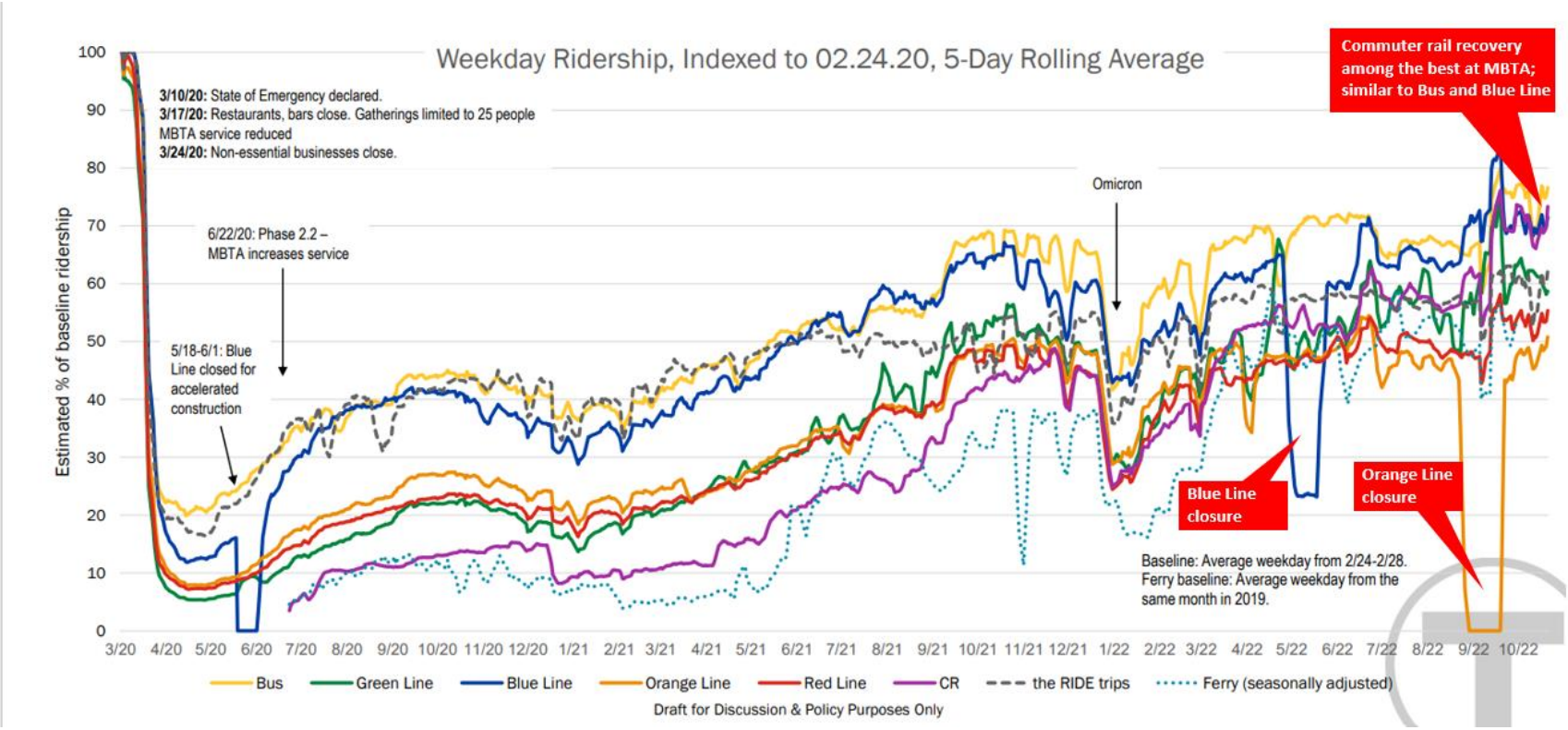
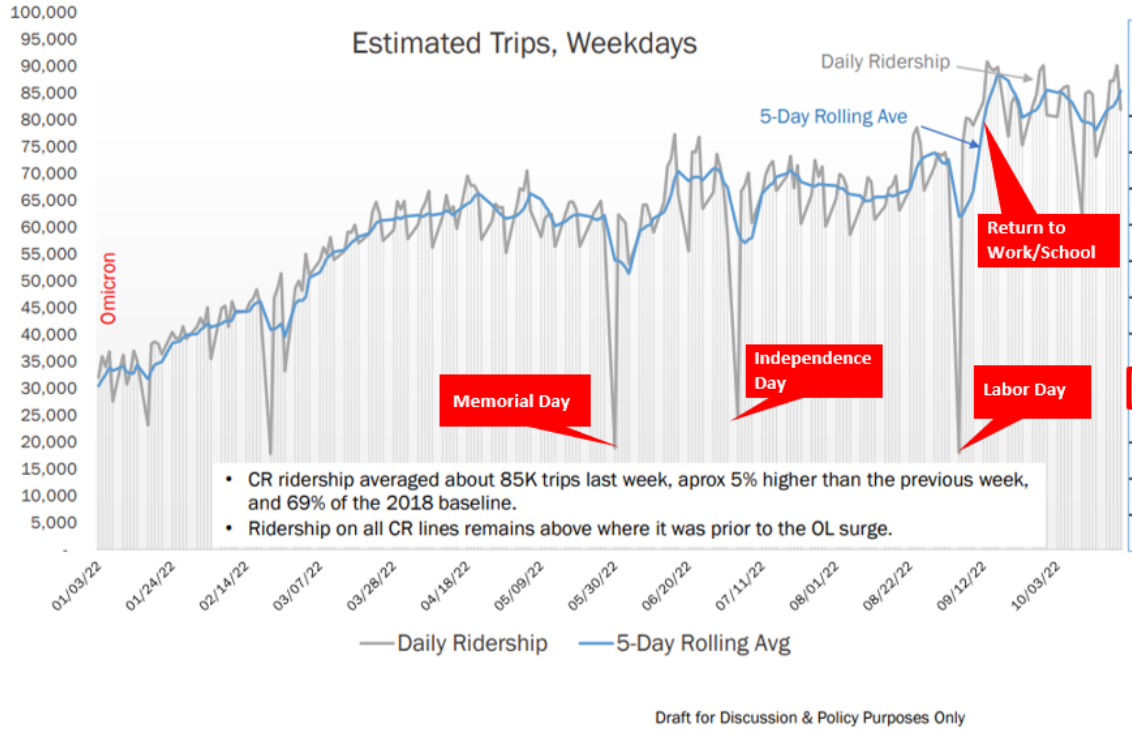


Figure 11. MBTA Commuter Rail Ridership Trends During the Pandemic, by Line



COMMUTER RAIL LINE	Estimated Daily Ridership, Weekdays Oct 17-21, 2022	Estimated % of 2018 Weekday CTPS Counts
Fairmount	2,843	107%
Fitchburg	4,829	52%
Framingham/Worcester	10,606	57%
Franklin	8,771	75%
Greenbush	2,691	44%
Haverhill	5,806	82%
Kingston/Plymouth	4,171	69%
Lowell	6,485	59%
Middleborough/Lakeville	5,261	77%
Needham	4,881	73%
Newburyport/Rockport	11,333	76%
Providence/Stoughton	17,648	69%

Figure 11. Operating Revenues in Medium Pandemic Impact Scenarios in 2022 $ (millions)

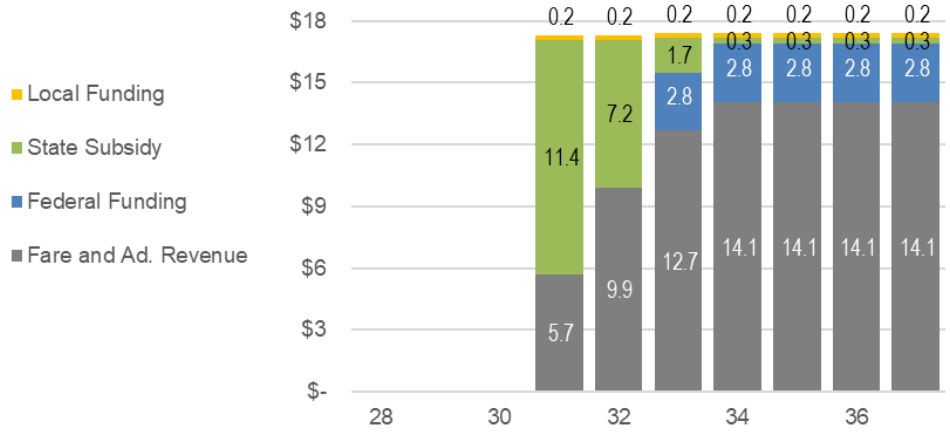


Table 18 summarizes the combination of federal grants, state, local, and private sector funding the difference between O&M cost and fare and advertising revenue:

- **FTA Section 5307 Urbanized Area Formula Grants**: This source is calculated based on the incremental service provided (vehicle revenue miles and fixed guideway directional route miles). Section 5307 will fund from 4.3 percent of the needed O&M funds annually ($0.7 million, 2022 $) in the low pandemic impact scenarios up to 26 percent ($4.5 million annually, 2022 $, which is the maximum available). Funding begins in the third year of operation due to the lag in collection of National Transit Database data by FTA. This amount is less than the cost of maintenance of equipment and maintenance way shown in Table 17. For low pandemic impact scenarios, federal grants are not required to support operations.

- **State (of NH) Funds**: New Hampshire will fund the O&M costs of Bedford/MHT and South Nashua stations, and the rest of the costs that are not covered by fare revenue, federal grants, or the cities. This represents only 1.2 percent of the total costs ($200,000 annually, 2022 $) in the low and medium pandemic impact scenarios and 14.4 percent ($2.5 million, 2022 $) in the high impact scenarios. In the first three years, this amount is higher due to ridership stabilization and FTA Section 5307 grant's delay (as noted above), as it is shown in the cashflow for O&M Section 3.4. It is expected that NHDOT and MHT airport will negotiate specific cost sharing for operations and maintenance of the Bedford/MHT station. With the current ridership projections, in the most probable scenarios (medium pandemic impact on ridership), the State of New Hampshire will only have to cover the O&M costs of these stations.

- **Manchester and Nashua:** Each city funds $100,000 annually for the O&M costs of the its respective downtown station in all scenarios.

Table 18. Operation and Maintenance Expenditures in 2022 $ (millions)

	Funding Source	Expenditure	Range		Potential Share	
			Min	*Max*	*Min*	*Max*
FTA	Urbanized Areas Grants (5307)	Operation & Maintenance	$ 0.73	$ 4.50	64.7%	62.7%
NHDOT	State funds	Tracks & Systems – Bedford/MHT station, South Nashua Station	$ 0.20	$ 2.49	17.6%	34.6%
Nashua	Property Tax Tax Increment Funding	Nashua Crown Street Station	$ 0.10 -	$ 0.10 -	8.8%	1.4%
Manchester	Meals & Rooms Tax Tax Increment Funding	Manchester Station	$ 0.10 -	$ 0.10 -	8.8% 0.0%	1.4% 0.0%
		Total:	**$ 1.13**	**$ 7.19**	**100.0%**	**100.0%**

3.3. Sketch Planning Summary of Operating and Maintenance Plan

Tables 19, 20, and 21 summarize a typical year of uses and sources of O&M for the three sets of pandemic impact scenarios described in Section 1.3.3. The upper part of each table summarizes in dollars the uses of funds and sources of funds organized by program and partner. The lower part shows show these values in a bar chart.

As highlighted above, the O&M uses and sources of funds remain constant within each pandemic impact scenario across all funding scenarios described in Section 1.3. However, funding levels do vary by pandemic impact scenario.

In the low pandemic impact scenario, O&M costs are funded 93 percent by fare revenue; the balance is funded by the cities (for downtown stations operations) and the State of NH. This is the result of:

- Relatively low incremental O&M costs for the project because the proposed end-of-the-line layover facility eliminates current deadhead train hours and car miles. This reduces train & engine crew hours and maintenance of equipment costs.
- Relatively high per-passenger average fare revenue resulting from the MBTA zone-based fare structure applied to the four new stations in southern NH.

In the medium pandemic impact scenario (addressed in the cash flow analysis described in Section 3.4), additional funding is required to supplement the lower fare revenue, and it will be mostly provided by Section 5307. These amounts are higher in the high pandemic impact scenarios.

Table 19. O&M Sources and Uses with Low Pandemic Impact on Ridership

Millions of 2022 $, annual amounts after stabilization year 2035

Funding Scenario:	1	2	3	4	5
Operation Costs	**$ 17.27**	**$ 17.27**	**$ 17.27**	**$ 17.27**	**$ 17.27**
FTA Section 5307	**$ 0.73**	**$ 0.73**	**$ 0.73**	**$ 0.73**	**$ 0.73**
State operating subsidy	**$ 0.20**	**$ 0.20**	**$ 0.20**	**$ 0.20**	**$ 0.20**
Local Funding	**$ 0.20**	**$ 0.20**	**$ 0.20**	**$ 0.20**	**$ 0.20**
Manchester Station Operations	$ 0.10	$ 0.10	$ 0.10	$ 0.10	$ 0.10
Nashua Crown St Station Operations	$ 0.10	$ 0.10	$ 0.10	$ 0.10	$ 0.10
Fare & Advertising	**$ 16.14**	**$ 16.14**	**$ 16.14**	**$ 16.14**	**$ 16.14**

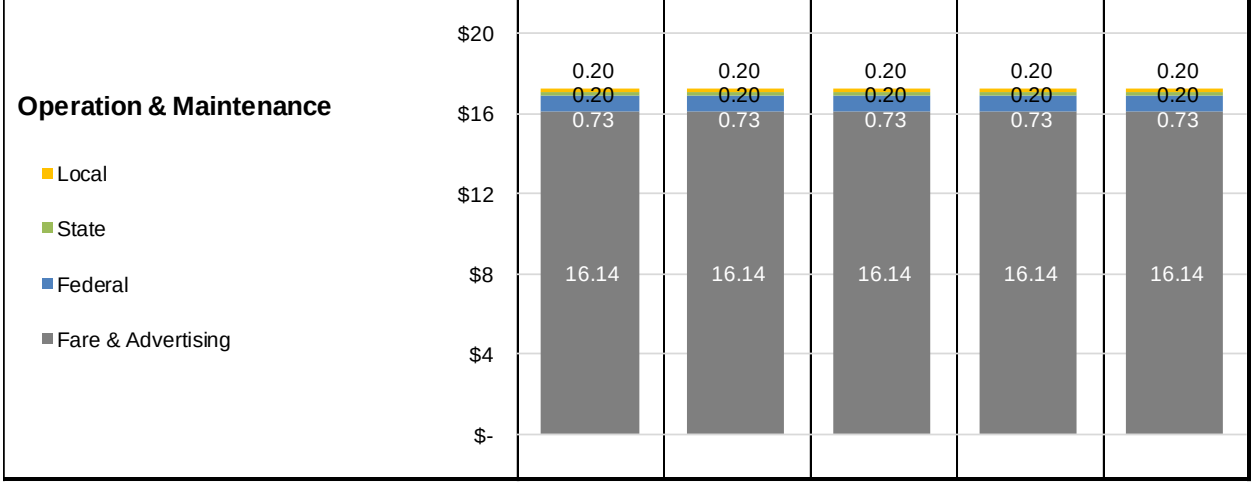


Table 20. O&M Sources and Uses with Medium Pandemic Impact on Ridership

Millions of 2022 $, annual amounts after stabilization year 2035

Funding Scenario:	1	2	3	4	5
Operation Costs	**$ 17.27**	**$ 17.27**	**$ 17.27**	**$ 17.27**	**$ 17.27**
FTA Section 5307	**$ 2.80**	**$ 2.80**	**$ 2.80**	**$ 2.80**	**$ 2.80**
State operating subsidy	**$ 0.20**	**$ 0.20**	**$ 0.20**	**$ 0.20**	**$ 0.20**
Local Funding	**$ 0.20**	**$ 0.20**	**$ 0.20**	**$ 0.20**	**$ 0.20**
Manchester Station Operations	$ 0.10	$ 0.10	$ 0.10	$ 0.10	$ 0.10
Nashua Crown St Station Operations	$ 0.10	$ 0.10	$ 0.10	$ 0.10	$ 0.10
Fare & Advertising	**$ 14.07**	**$ 14.07**	**$ 14.07**	**$ 14.07**	**$ 14.07**

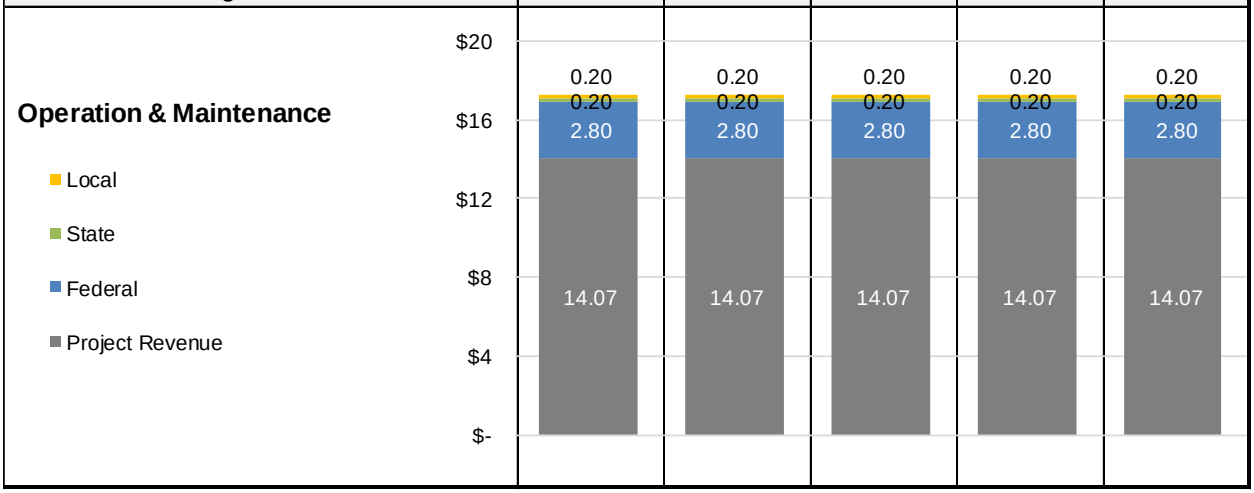
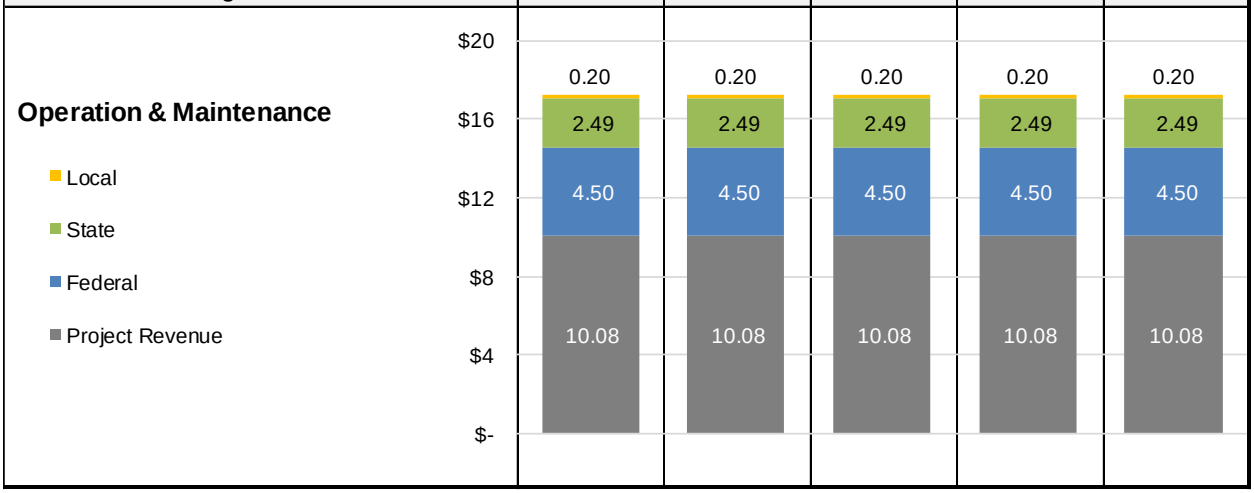


Table 21. O&M Sources and Uses with High Pandemic Impact on Ridership

Millions of 2022 $, annual amounts after stabilization year 2035

Funding Scenario:	1	2	3	4	5
Operation Costs	**$ 17.27**	**$ 17.27**	**$ 17.27**	**$ 17.27**	**$ 17.27**
FTA Section 5307	**$ 4.50**	**$ 4.50**	**$ 4.50**	**$ 4.50**	**$ 4.50**
State operating subsidy	**$ 2.49**	**$ 2.49**	**$ 2.49**	**$ 2.49**	**$ 2.49**
Local Funding	**$ 0.20**	**$ 0.20**	**$ 0.20**	**$ 0.20**	**$ 0.20**
Manchester Station Operations	$ 0.10	$ 0.10	$ 0.10	$ 0.10	$ 0.10
Nashua Crown St Station Operations	$ 0.10	$ 0.10	$ 0.10	$ 0.10	$ 0.10
Fare & Advertising	**$ 10.08**	**$ 10.08**	**$ 10.08**	**$ 10.08**	**$ 10.08**



3.4. Cash Flow Analysis of O&M Plan

This section summarizes the cash flow of the sources and uses of funds for the Operating and Maintenance (O&M) Plan. Since there is no variation across the different funding scenarios, in this section we will describe those with medium pandemic impact on ridership given that it is the most probable condition based on currently available information. The Low and High Pandemic Impact scenarios are summarized in Appendix C.

The plan is shown in Table 22 in 2022 base-year and year-of-expenditure dollars, based on the inflation assumptions from Section 2.1.3. In Figures 13 and 14, “Local Funding” summarizes the funds provided by Manchester and Nashua general funds to support the operation of Manchester and Nashua Crown Street stations, respectively.

Table 22. Cash Flow Analysis for O&M Plan in 2022 $ and YOE $ (millions) for All Funding Scenarios and Medium Pandemic Impact

Millions of 2022 $	Total	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041
O&M Funding	**191.0**	-	-	-	-	-	-	-	-	-	**17.3**	**17.3**	**17.4**	**17.4**	**17.4**	**17.4**	**17.4**	**17.4**	**17.4**	**17.4**	**17.4**
Project Revenue	**140.8**	-	-	-	-	-	-	-	-	-	**5.7**	**9.9**	**12.7**	**14.1**	**14.1**	**14.1**	**14.1**	**14.1**	**14.1**	**14.1**	**14.1**
Fare Revenue	139.8	-	-	-	-	-	-	-	-	-	5.59	9.79	12.58	13.98	13.98	13.98	13.98	13.98	13.98	13.98	13.98
Advertising Revenue	1.0	-	-	-	-	-	-	-	-	-	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09
FTA Section 5307	**25.2**	-	-	-	-	-	-	-	-	-	-	-	**2.80**	**2.80**	**2.80**	**2.80**	**2.80**	**2.80**	**2.80**	**2.80**	**2.80**
State operating subsidy	**22.8**	-	-	-	-	-	-	-	-	-	**11.39**	**7.19**	**1.72**	**0.32**	**0.32**	**0.32**	**0.32**	**0.32**	**0.31**	**0.31**	**0.31**
Local Funding	**2.2**	-	-	-	-	-	-	-	-	-	**0.2**	**0.2**	**0.2**	**0.2**	**0.2**	**0.2**	**0.2**	**0.2**	**0.2**	**0.2**	**0.2**
Manchester Station	1.1	-	-	-	-	-	-	-	-	-	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
Nashua Crown St Station	1.1	-	-	-	-	-	-	-	-	-	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
O&M Uses	**(190.0)**	-	-	-	-	-	-	-	-	-	**(17.3)**	**(17.3)**	**(17.3)**	**(17.3)**	**(17.3)**	**(17.3)**	**(17.3)**	**(17.3)**	**(17.3)**	**(17.3)**	**(17.3)**
Weekday	(164.7)	-	-	-	-	-	-	-	-	-	(15.0)	(15.0)	(15.0)	(15.0)	(15.0)	(15.0)	(15.0)	(15.0)	(15.0)	(15.0)	(15.0)
Weekend	(25.3)	-	-	-	-	-	-	-	-	-	(2.3)	(2.3)	(2.3)	(2.3)	(2.3)	(2.3)	(2.3)	(2.3)	(2.3)	(2.3)	(2.3)
Alloc. of surplus to renewals	(0.0)	-	-	-	-	-	-	-	-	-	-	0.0	0.0	(0.0)	(0.0)	(0.0)	-	-	-	(0.0)	-
O&M Cash Flow	**1.0**	-	-	-	-	-	-	-	-	-	-	-	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**

Millions of YOE $	Total	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041
O&M Funding	**263.1**	-	-	-	-	-	-	-	-	-	**21.6**	**22.1**	**22.5**	**22.9**	**23.4**	**23.9**	**24.4**	**24.8**	**25.3**	**25.8**	**26.4**
Project Revenue	**199.0**	-	-	-	-	-	-	-	-	-	**7.2**	**12.8**	**16.7**	**18.9**	**19.3**	**19.7**	**20.1**	**20.5**	**20.9**	**21.3**	**21.7**
Fare Revenue	197.6	-	-	-	-	-	-	-	-	-	7.1	12.6	16.6	18.8	19.2	19.6	19.9	20.3	20.8	21.2	21.6
Advertising Revenue	1.4	-	-	-	-	-	-	-	-	-	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
FTA Section 5307	**34.5**	-	-	-	-	-	-	-	-	-	-	-	**3.5**	**3.6**	**3.7**	**3.7**	**3.8**	**3.9**	**4.0**	**4.1**	**4.1**
State operating subsidy	**26.5**	-	-	-	-	-	-	-	-	-	**14.2**	**9.0**	**2.0**	**0.2**	**0.2**	**0.2**	**0.2**	**0.2**	**0.2**	**0.2**	**0.2**
Local Funding	**3.1**	-	-	-	-	-	-	-	-	-	**0.3**	**0.3**	**0.3**	**0.3**	**0.3**	**0.3**	**0.3**	**0.3**	**0.3**	**0.3**	**0.3**
Manchester Station	1.5	-	-	-	-	-	-	-	-	-	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2
Nashua Crown St Station	1.5	-	-	-	-	-	-	-	-	-	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2
O&M Uses	**(266.2)**	-	-	-	-	-	-	-	-	-	**(21.9)**	**(22.3)**	**(22.8)**	**(23.2)**	**(23.7)**	**(24.2)**	**(24.6)**	**(25.1)**	**(25.6)**	**(26.1)**	**(26.7)**
Weekday	(230.8)	-	-	-	-	-	-	-	-	-	(19.0)	(19.3)	(19.7)	(20.1)	(20.5)	(20.9)	(21.4)	(21.8)	(22.2)	(22.7)	(23.1)
Weekend	(35.4)	-	-	-	-	-	-	-	-	-	(2.9)	(3.0)	(3.0)	(3.1)	(3.2)	(3.2)	(3.3)	(3.3)	(3.4)	(3.5)	(3.5)
Alloc. of surplus to renewals	(0.0)	-	-	-	-	-	-	-	-	-	-	0.0	0.0	(0.0)	(0.0)	(0.0)	-	-	-	(0.0)	-
O&M Cash Flow	**(3.1)**	-	-	-	-	-	-	-	-	-	**(0.3)**	**(0.3)**	**(0.3)**	**(0.3)**	**(0.3)**	**(0.3)**	**(0.3)**	**(0.3)**	**(0.3)**	**(0.3)**	**(0.3)**

Figure 12. Cash Flow Analysis for O&M Plan in 2022 $ (millions) for All Funding Scenarios and Medium Pandemic Impact

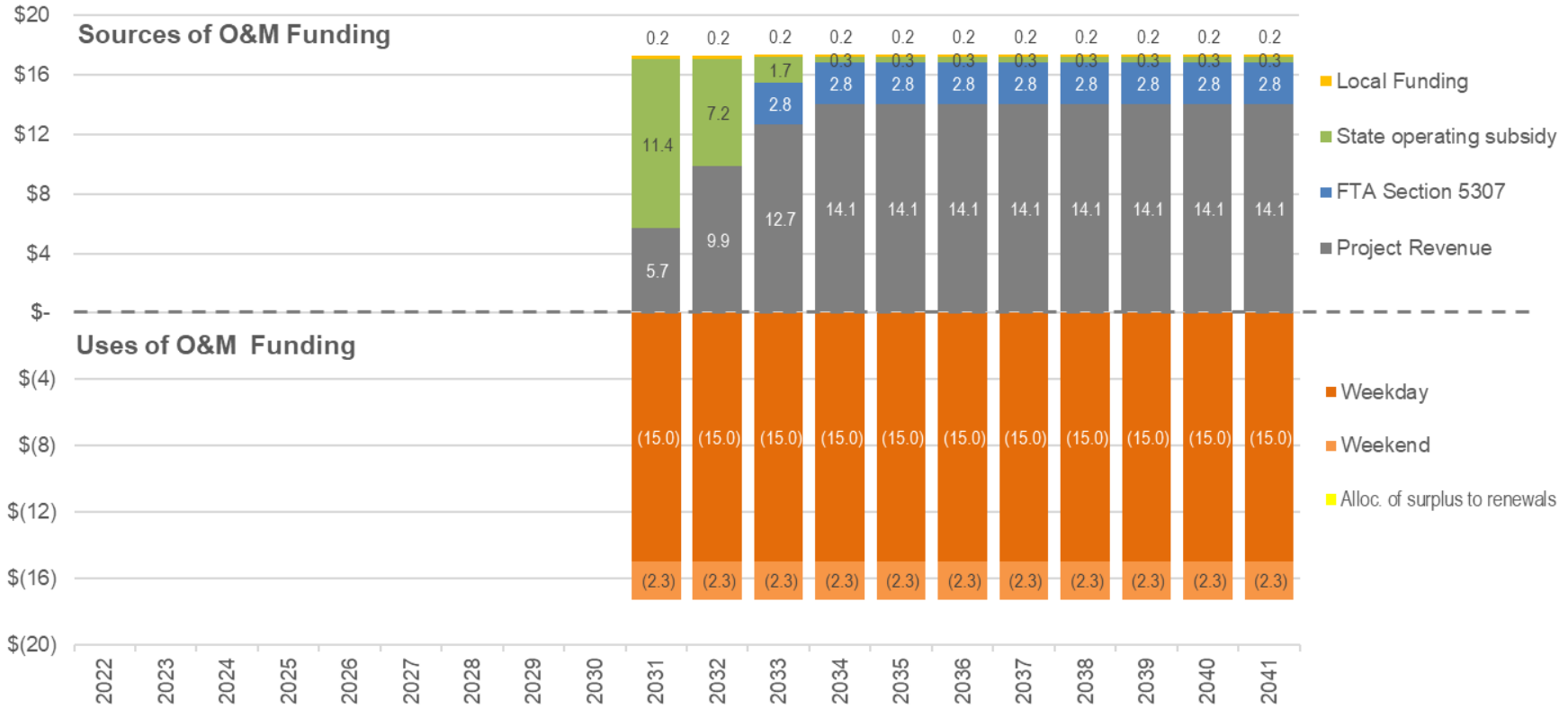
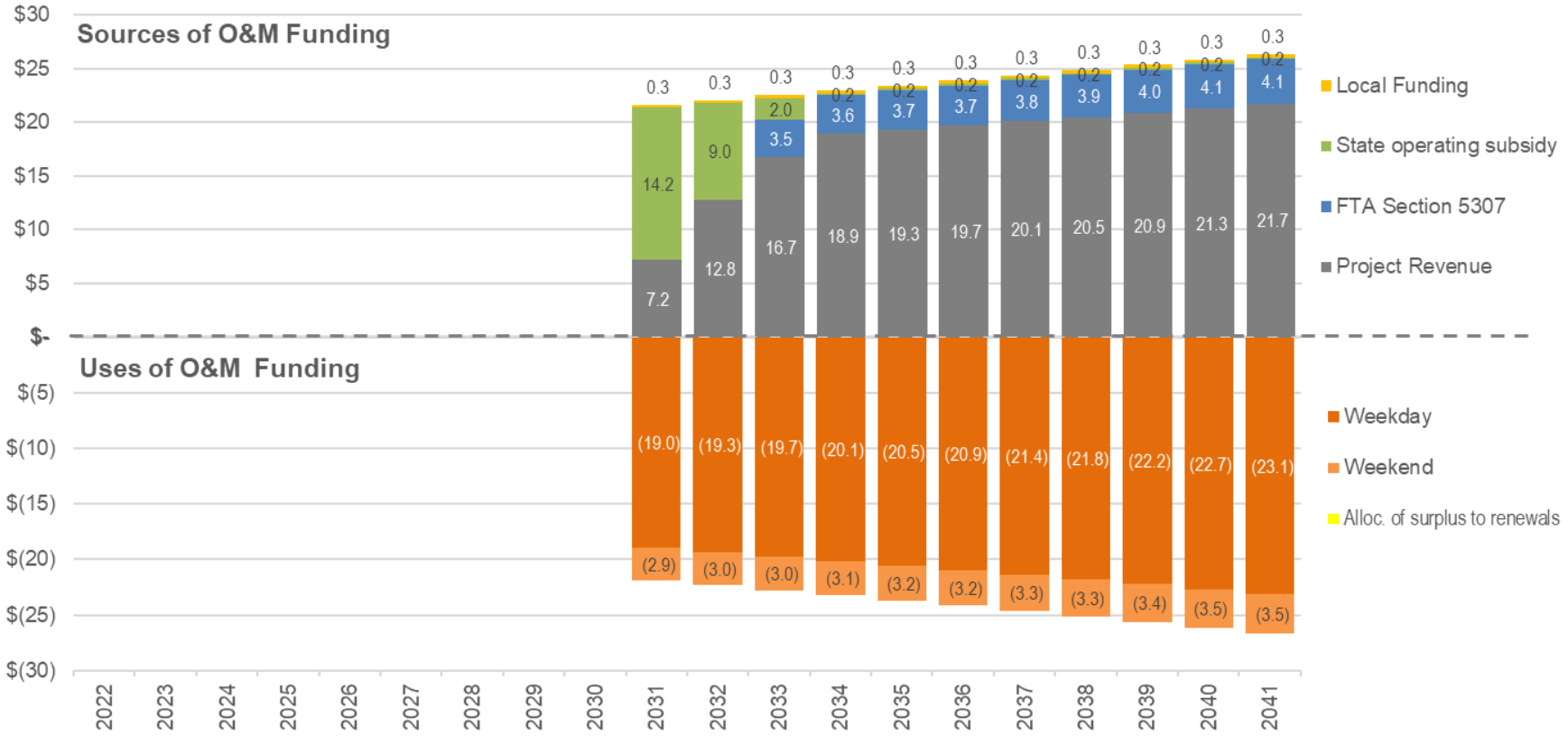


Figure 13. Cash Flow Analysis for O&M Plan in YOE $ (millions) for All Funding Scenarios and Medium Pandemic Impact



Appendix A: Construction Cash Flow Analysis

Cash Flow Analysis for Capital Plan for Funding Scenarios 1, 2, 4, and 5

Table A-i. Cash Flow Analysis for Construction Plan in 2022 $ (millions) for Funding Scenario 1 and All Pandemic Impacts

Millions of 2022 $	Total	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041
Construction Funding	**605.2**	-	-	-	-	-	-	**201.7**	**201.7**	**201.7**	-	-	-	-	-	-	-	-	-	-	-
Federal Funding	**304.0**	-	-	-	-	-	-	**101.3**	**101.3**	**101.3**	-	-	-	-	-	-	-	-	-	-	-
Federal Grant Line Item Projects (CIG)	298.6	-	-	-	-	-	-	99.5	99.5	99.5	-	-	-	-	-	-	-	-	-	-	-
FRA Federal-State Program for SGR Grant	5.4	-	-	-	-	-	-	1.8	1.8	1.8	-	-	-	-	-	-	-	-	-	-	-
USDOT RAISE Grant	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
State Funding	**237.8**	-	-	-	-	-	-	**79.3**	**79.3**	**79.3**	-	-	-	-	-	-	-	-	-	-	-
NH State GO Bonds	141.5	-	-	-	-	-	-	47.2	47.2	47.2	-	-	-	-	-	-	-	-	-	-	-
MassDOT/MBTA Contribution	78.3	-	-	-	-	-	-	26.1	26.1	26.1	-	-	-	-	-	-	-	-	-	-	-
MassDOT/MBTA Credit for Trackage Rights	18.0	-	-	-	-	-	-	6.0	6.0	6.0	-	-	-	-	-	-	-	-	-	-	-
Local Funding	**63.4**	-	-	-	-	-	-	**21.1**	**21.1**	**21.1**	-	-	-	-	-	-	-	-	-	-	-
Manchester City Bonds Proceeds	33.5	-	-	-	-	-	-	11.2	11.2	11.2	-	-	-	-	-	-	-	-	-	-	-
Loan backed by M&R tax	25.9	-	-	-	-	-	-	8.6	8.6	8.6	-	-	-	-	-	-	-	-	-	-	-
Loan backed by TIF tax	7.5	-	-	-	-	-	-	2.5	2.5	2.5	-	-	-	-	-	-	-	-	-	-	-
Nashua City Bonds Proceeds	22.0	-	-	-	-	-	-	7.3	7.3	7.3	-	-	-	-	-	-	-	-	-	-	-
Loan backed by Property Tax	19.3	-	-	-	-	-	-	6.4	6.4	6.4	-	-	-	-	-	-	-	-	-	-	-
Loan backed by TIF tax	2.6	-	-	-	-	-	-	0.9	0.9	0.9	-	-	-	-	-	-	-	-	-	-	-
Cash from Excess Revenue Due to Coverage	8.0	-	-	-	-	-	-	2.7	2.7	2.7	-	-	-	-	-	-	-	-	-	-	-
Construction Costs	**(605.2)**	-	-	-	-	-	-	**(201.7)**	**(201.7)**	**(201.7)**	-	-	-	-	-	-	-	-	-	-	-
Hard Costs	**(407.5)**	-	-	-	-	-	-	**(135.8)**	**(135.8)**	**(135.8)**	-	-	-	-	-	-	-	-	-	-	-
Guideway and Track Elements	(91.6)	-	-	-	-	-	-	(30.5)	(30.5)	(30.5)	-	-	-	-	-	-	-	-	-	-	-
Stations	(36.1)	-	-	-	-	-	-	(12.0)	(12.0)	(12.0)	-	-	-	-	-	-	-	-	-	-	-
Layover Facility	(13.5)	-	-	-	-	-	-	(4.5)	(4.5)	(4.5)	-	-	-	-	-	-	-	-	-	-	-
Sitework and Special Conditions	(60.4)	-	-	-	-	-	-	(20.1)	(20.1)	(20.1)	-	-	-	-	-	-	-	-	-	-	-
Systems	(90.2)	-	-	-	-	-	-	(30.1)	(30.1)	(30.1)	-	-	-	-	-	-	-	-	-	-	-
HC Contingency	(72.9)	-	-	-	-	-	-	(24.3)	(24.3)	(24.3)	-	-	-	-	-	-	-	-	-	-	-
Vehicles	(42.9)	-	-	-	-	-	-	(14.3)	(14.3)	(14.3)	-	-	-	-	-	-	-	-	-	-	-
Soft Costs	**(189.7)**	-	-	-	-	-	-	**(63.2)**	**(63.2)**	**(63.2)**	-	-	-	-	-	-	-	-	-	-	-
Professional Services/Soft Costs	(109.4)	-	-	-	-	-	-	(36.5)	(36.5)	(36.5)	-	-	-	-	-	-	-	-	-	-	-
ROW and Trackage Rights	(26.0)	-	-	-	-	-	-	(8.7)	(8.7)	(8.7)	-	-	-	-	-	-	-	-	-	-	-
SC Contingency	(54.3)	-	-	-	-	-	-	(18.1)	(18.1)	(18.1)	-	-	-	-	-	-	-	-	-	-	-
Financing Costs	**(8.0)**	-	-	-	-	-	-	**(2.7)**	**(2.7)**	**(2.7)**	-	-	-	-	-	-	-	-	-	-	-
Construction Cash Flow	**0.0**	-	-	-	-	-	-	**0.0**	**0.0**	**0.0**	-	-	-	-	-	-	-	-	-	-	-

Figure A-i. Cash Flow Analysis for Construction Plan in 2022 $ (millions) for Funding Scenario 1 and All Pandemic Impacts

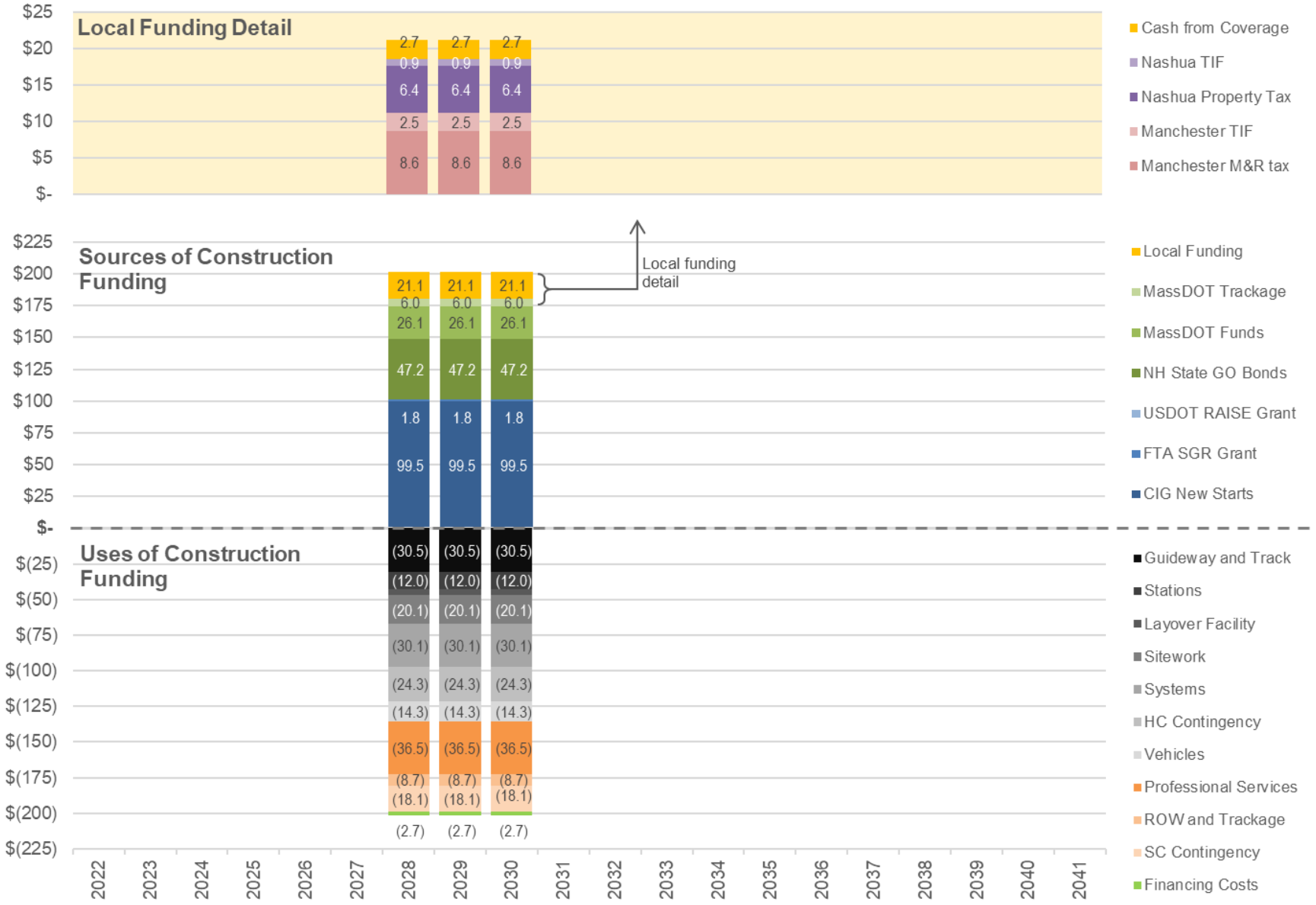


Table A-ii. Cash Flow Analysis for Construction Plan in YOE $ (millions) for Funding Scenario 1 and All Pandemic Impacts

Millions of YOE $		2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041
Construction Funding	**792.8**	-	-	-	-	-	-	**255.2**	**264.2**	**273.4**	-	-	-	-	-	-	-	-	-	-	-
Federal Funding	**398.2**	-	-	-	-	-	-	**128.2**	**132.7**	**137.3**	-	-	-	-	-	-	-	-	-	-	-
Federal Grant Line Item Projects (CIG)	391.2	-	-	-	-	-	-	125.9	130.3	134.9	-	-	-	-	-	-	-	-	-	-	-
FRA Federal-State Program for SGR Grant	7.1	-	-	-	-	-	-	2.3	2.4	2.4	-	-	-	-	-	-	-	-	-	-	-
USDOT RAISE Grant	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
State Funding	**311.5**	-	-	-	-	-	-	**100.3**	**103.8**	**107.4**	-	-	-	-	-	-	-	-	-	-	-
NH State GO Bonds	185.4	-	-	-	-	-	-	59.7	61.8	63.9	-	-	-	-	-	-	-	-	-	-	-
MassDOT/MBTA Contribution	102.5	-	-	-	-	-	-	33.0	34.2	35.4	-	-	-	-	-	-	-	-	-	-	-
MassDOT/MBTA Credit for Trackage Rights	23.6	-	-	-	-	-	-	7.6	7.9	8.1	-	-	-	-	-	-	-	-	-	-	-
Local Funding	**83.1**	-	-	-	-	-	-	**26.7**	**27.7**	**28.6**	-	-	-	-	-	-	-	-	-	-	-
Manchester City Bonds Proceeds	43.8	-	-	-	-	-	-	14.1	14.6	15.1	-	-	-	-	-	-	-	-	-	-	-
Loan backed by M&R tax	34.0	-	-	-	-	-	-	10.9	11.3	11.7	-	-	-	-	-	-	-	-	-	-	-
Loan backed by TIF tax	9.9	-	-	-	-	-	-	3.2	3.3	3.4	-	-	-	-	-	-	-	-	-	-	-
Nashua City Bonds Proceeds	28.8	-	-	-	-	-	-	9.3	9.6	9.9	-	-	-	-	-	-	-	-	-	-	-
Loan backed by Property Tax	25.3	-	-	-	-	-	-	8.2	8.4	8.7	-	-	-	-	-	-	-	-	-	-	-
Loan backed by TIF tax	3.4	-	-	-	-	-	-	1.1	1.1	1.2	-	-	-	-	-	-	-	-	-	-	-
Cash from Excess Revenue Due to Coverage	10.5	-	-	-	-	-	-	3.4	3.5	3.6	-	-	-	-	-	-	-	-	-	-	-
Construction Costs	**(792.8)**	-	-	-	-	-	-	**(255.2)**	**(264.2)**	**(273.4)**	-	-	-	-	-	-	-	-	-	-	-
Hard Costs	**(533.8)**	-	-	-	-	-	-	**(171.9)**	**(177.9)**	**(184.1)**	-	-	-	-	-	-	-	-	-	-	-
Guideway and Track Elements	(120.0)	-	-	-	-	-	-	(38.6)	(40.0)	(41.4)	-	-	-	-	-	-	-	-	-	-	-
Stations	(47.3)	-	-	-	-	-	-	(15.2)	(15.7)	(16.3)	-	-	-	-	-	-	-	-	-	-	-
Layover Facility	(17.7)	-	-	-	-	-	-	(5.7)	(5.9)	(6.1)	-	-	-	-	-	-	-	-	-	-	-
Sitework and Special Conditions	(79.1)	-	-	-	-	-	-	(25.5)	(26.3)	(27.3)	-	-	-	-	-	-	-	-	-	-	-
Systems	(118.2)	-	-	-	-	-	-	(38.0)	(39.4)	(40.7)	-	-	-	-	-	-	-	-	-	-	-
HC Contingency	(95.5)	-	-	-	-	-	-	(30.8)	(31.8)	(32.9)	-	-	-	-	-	-	-	-	-	-	-
Vehicles	(56.2)	-	-	-	-	-	-	(18.1)	(18.7)	(19.4)	-	-	-	-	-	-	-	-	-	-	-
Soft Costs	**(248.5)**	-	-	-	-	-	-	**(80.0)**	**(82.8)**	**(85.7)**	-	-	-	-	-	-	-	-	-	-	-
Professional Services/Soft Costs	(143.3)	-	-	-	-	-	-	(46.1)	(47.7)	(49.4)	-	-	-	-	-	-	-	-	-	-	-
ROW and Trackage Rights	(34.1)	-	-	-	-	-	-	(11.0)	(11.4)	(11.7)	-	-	-	-	-	-	-	-	-	-	-
SC Contingency	(71.1)	-	-	-	-	-	-	(22.9)	(23.7)	(24.5)	-	-	-	-	-	-	-	-	-	-	-
Financing Costs	**(10.5)**	-	-	-	-	-	-	**(3.4)**	**(3.5)**	**(3.6)**	-	-	-	-	-	-	-	-	-	-	-
Construction Cash Flow	**0.0**	-	-	-	-	-	-	**0.0**	**0.0**	**0.0**	-	-	-	-	-	-	-	-	-	-	-

Figure A-ii. Cash Flow Analysis for Construction Plan in YOE $ (millions) for Funding Scenario 1 and All Pandemic Impacts

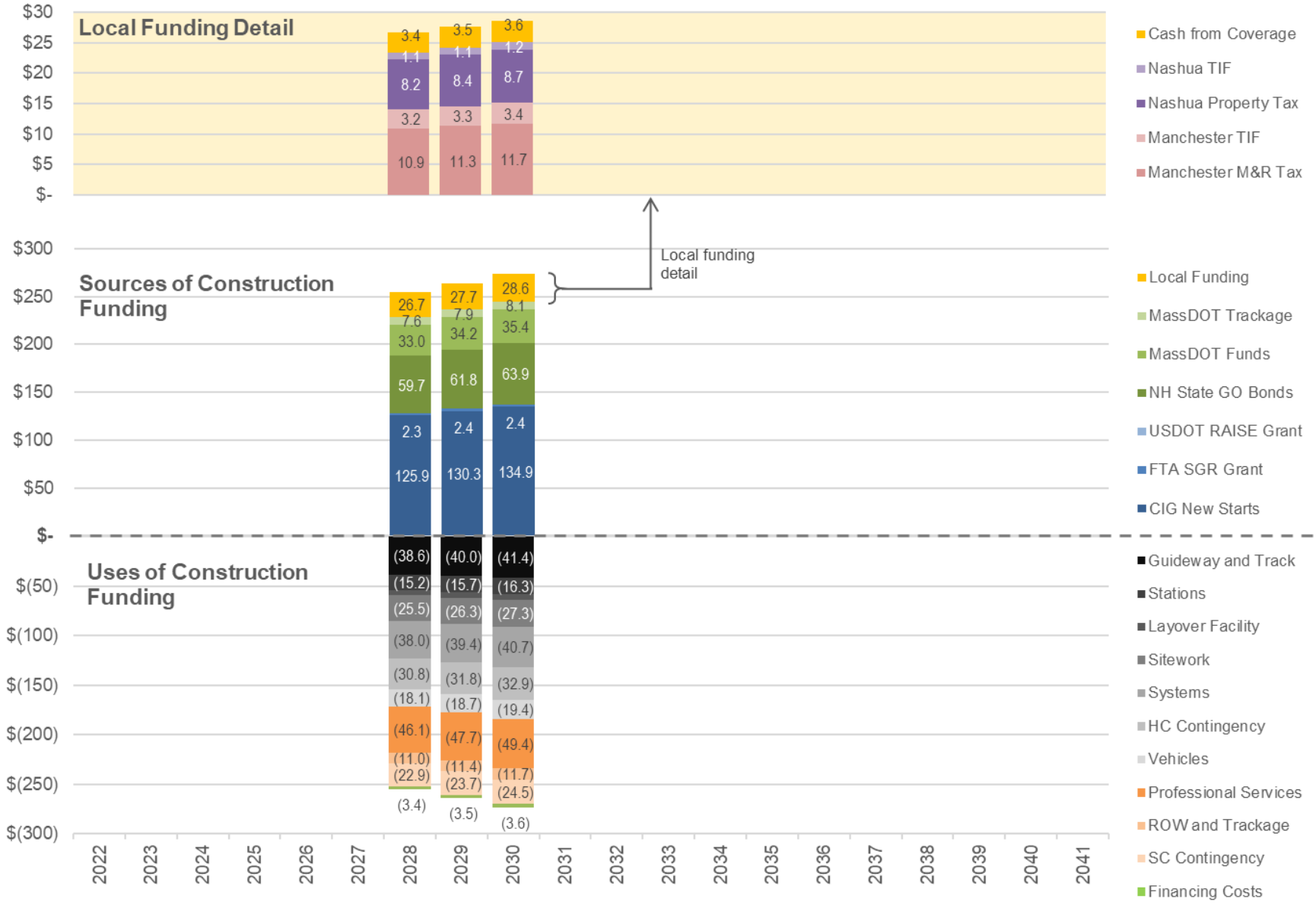


Table A-iii. Cash Flow Analysis for Construction Plan in 2022 $ (millions) for Funding Scenario 2 and All Pandemic Impacts

Millions of 2022 $	Total	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041
Construction Funding	**605.2**	-	-	-	-	-	-	**201.7**	**201.7**	**201.7**	-	-	-	-	-	-	-	-	-	-	-
Federal Funding	**309.4**	-	-	-	-	-	-	**103.1**	**103.1**	**103.1**	-	-	-	-	-	-	-	-	-	-	-
Federal Grant Line Item Projects (CIG)	298.6	-	-	-	-	-	-	99.5	99.5	99.5	-	-	-	-	-	-	-	-	-	-	-
FRA Federal-State Program for SGR Grant	10.8	-	-	-	-	-	-	3.6	3.6	3.6	-	-	-	-	-	-	-	-	-	-	-
USDOT RAISE Grant	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
State Funding	**232.4**	-	-	-	-	-	-	**77.5**	**77.5**	**77.5**	-	-	-	-	-	-	-	-	-	-	-
NH State GO Bonds	137.6	-	-	-	-	-	-	45.9	45.9	45.9	-	-	-	-	-	-	-	-	-	-	-
MassDOT/MBTA Contribution	76.7	-	-	-	-	-	-	25.6	25.6	25.6	-	-	-	-	-	-	-	-	-	-	-
MassDOT/MBTA Credit for Trackage Rights	18.0	-	-	-	-	-	-	6.0	6.0	6.0	-	-	-	-	-	-	-	-	-	-	-
Local Funding	**63.4**	-	-	-	-	-	-	**21.1**	**21.1**	**21.1**	-	-	-	-	-	-	-	-	-	-	-
Manchester City Bonds Proceeds	33.5	-	-	-	-	-	-	11.2	11.2	11.2	-	-	-	-	-	-	-	-	-	-	-
Loan backed by M&R tax	25.9	-	-	-	-	-	-	8.6	8.6	8.6	-	-	-	-	-	-	-	-	-	-	-
Loan backed by TIF tax	7.5	-	-	-	-	-	-	2.5	2.5	2.5	-	-	-	-	-	-	-	-	-	-	-
Nashua City Bonds Proceeds	22.0	-	-	-	-	-	-	7.3	7.3	7.3	-	-	-	-	-	-	-	-	-	-	-
Loan backed by Property Tax	19.3	-	-	-	-	-	-	6.4	6.4	6.4	-	-	-	-	-	-	-	-	-	-	-
Loan backed by TIF tax	2.6	-	-	-	-	-	-	0.9	0.9	0.9	-	-	-	-	-	-	-	-	-	-	-
Cash from Excess Revenue Due to Coverage	8.0	-	-	-	-	-	-	2.7	2.7	2.7	-	-	-	-	-	-	-	-	-	-	-
Construction Costs	**(605.2)**	-	-	-	-	-	-	**(201.7)**	**(201.7)**	**(201.7)**	-	-	-	-	-	-	-	-	-	-	-
Hard Costs	**(407.5)**	-	-	-	-	-	-	**(135.8)**	**(135.8)**	**(135.8)**	-	-	-	-	-	-	-	-	-	-	-
Guideway and Track Elements	(91.6)	-	-	-	-	-	-	(30.5)	(30.5)	(30.5)	-	-	-	-	-	-	-	-	-	-	-
Stations	(36.1)	-	-	-	-	-	-	(12.0)	(12.0)	(12.0)	-	-	-	-	-	-	-	-	-	-	-
Layover Facility	(13.5)	-	-	-	-	-	-	(4.5)	(4.5)	(4.5)	-	-	-	-	-	-	-	-	-	-	-
Sitework and Special Conditions	(60.4)	-	-	-	-	-	-	(20.1)	(20.1)	(20.1)	-	-	-	-	-	-	-	-	-	-	-
Systems	(90.2)	-	-	-	-	-	-	(30.1)	(30.1)	(30.1)	-	-	-	-	-	-	-	-	-	-	-
HC Contingency	(72.9)	-	-	-	-	-	-	(24.3)	(24.3)	(24.3)	-	-	-	-	-	-	-	-	-	-	-
Vehicles	(42.9)	-	-	-	-	-	-	(14.3)	(14.3)	(14.3)	-	-	-	-	-	-	-	-	-	-	-
Soft Costs	**(189.7)**	-	-	-	-	-	-	**(63.2)**	**(63.2)**	**(63.2)**	-	-	-	-	-	-	-	-	-	-	-
Professional Services/Soft Costs	(109.4)	-	-	-	-	-	-	(36.5)	(36.5)	(36.5)	-	-	-	-	-	-	-	-	-	-	-
ROW and Trackage Rights	(26.0)	-	-	-	-	-	-	(8.7)	(8.7)	(8.7)	-	-	-	-	-	-	-	-	-	-	-
SC Contingency	(54.3)	-	-	-	-	-	-	(18.1)	(18.1)	(18.1)	-	-	-	-	-	-	-	-	-	-	-
Financing Costs	**(8.0)**	-	-	-	-	-	-	**(2.7)**	**(2.7)**	**(2.7)**	-	-	-	-	-	-	-	-	-	-	-
Construction Cash Flow	**0.0**	-	-	-	-	-	-	**0.0**	**0.0**	**0.0**	-	-	-	-	-	-	-	-	-	-	-

Figure A-iii. Cash Flow Analysis for Construction Plan in 2022 $ (millions) for Funding Scenario 2 and All Pandemic Impacts

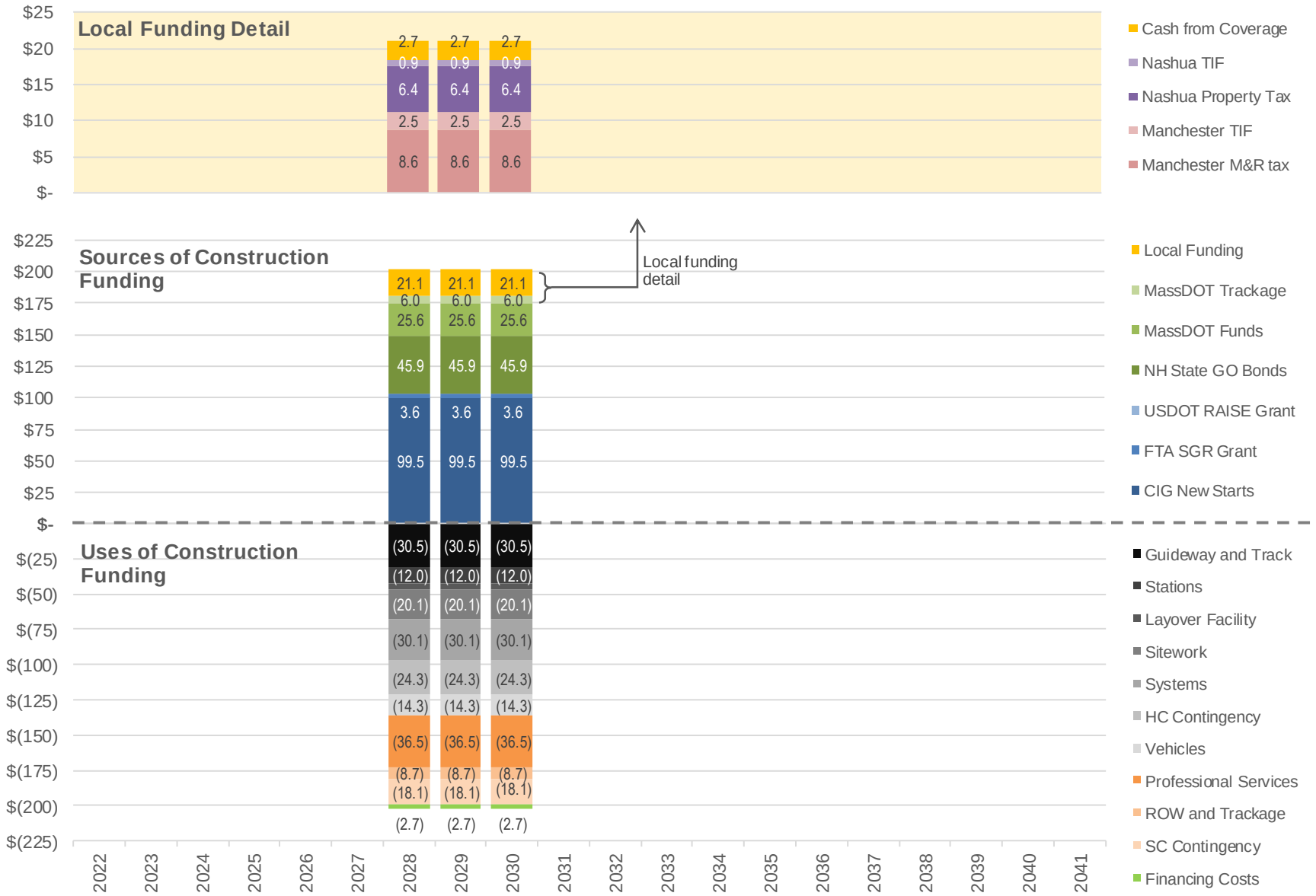


Table A-iv. Cash Flow Analysis for Construction Plan in YOE $ (millions) for Funding Scenario 2 and All Pandemic Impacts

Millions of YOE $		2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041
Construction Funding	**792.8**	-	-	-	-	-	-	**255.2**	**264.2**	**273.4**	-	-	-	-	-	-	-	-	-	-	-
Federal Funding	**405.3**	-	-	-	-	-	-	**130.5**	**135.1**	**139.8**	-	-	-	-	-	-	-	-	-	-	-
Federal Grant Line Item Projects (CIG)	391.2	-	-	-	-	-	-	125.9	130.3	134.9	-	-	-	-	-	-	-	-	-	-	-
FRA Federal-State Program for SGR Grant	14.2	-	-	-	-	-	-	4.6	4.7	4.9	-	-	-	-	-	-	-	-	-	-	-
USDOT RAISE Grant	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
State Funding	**304.4**	-	-	-	-	-	-	**98.0**	**101.4**	**105.0**	-	-	-	-	-	-	-	-	-	-	-
NH State GO Bonds	180.3	-	-	-	-	-	-	58.0	60.1	62.2	-	-	-	-	-	-	-	-	-	-	-
MassDOT/MBTA Contribution	100.5	-	-	-	-	-	-	32.4	33.5	34.7	-	-	-	-	-	-	-	-	-	-	-
MassDOT/MBTA Credit for Trackage Rights	23.6	-	-	-	-	-	-	7.6	7.9	8.1	-	-	-	-	-	-	-	-	-	-	-
Local Funding	**83.1**	-	-	-	-	-	-	**26.7**	**27.7**	**28.6**	-	-	-	-	-	-	-	-	-	-	-
Manchester City Bonds Proceeds	43.8	-	-	-	-	-	-	14.1	14.6	15.1	-	-	-	-	-	-	-	-	-	-	-
Loan backed by M&R tax	34.0	-	-	-	-	-	-	10.9	11.3	11.7	-	-	-	-	-	-	-	-	-	-	-
Loan backed by TIF tax	9.9	-	-	-	-	-	-	3.2	3.3	3.4	-	-	-	-	-	-	-	-	-	-	-
Nashua City Bonds Proceeds	28.8	-	-	-	-	-	-	9.3	9.6	9.9	-	-	-	-	-	-	-	-	-	-	-
Loan backed by Property Tax	25.3	-	-	-	-	-	-	8.2	8.4	8.7	-	-	-	-	-	-	-	-	-	-	-
Loan backed by TIF tax	3.4	-	-	-	-	-	-	1.1	1.1	1.2	-	-	-	-	-	-	-	-	-	-	-
Cash from Excess Revenue Due to Coverage	10.5	-	-	-	-	-	-	3.4	3.5	3.6	-	-	-	-	-	-	-	-	-	-	-
Construction Costs	**(792.8)**	-	-	-	-	-	-	**(255.2)**	**(264.2)**	**(273.4)**	-	-	-	-	-	-	-	-	-	-	-
Hard Costs	**(533.8)**	-	-	-	-	-	-	**(171.9)**	**(177.9)**	**(184.1)**	-	-	-	-	-	-	-	-	-	-	-
Guideway and Track Elements	(120.0)	-	-	-	-	-	-	(38.6)	(40.0)	(41.4)	-	-	-	-	-	-	-	-	-	-	-
Stations	(47.3)	-	-	-	-	-	-	(15.2)	(15.7)	(16.3)	-	-	-	-	-	-	-	-	-	-	-
Layover Facility	(17.7)	-	-	-	-	-	-	(5.7)	(5.9)	(6.1)	-	-	-	-	-	-	-	-	-	-	-
Sitework and Special Conditions	(79.1)	-	-	-	-	-	-	(25.5)	(26.3)	(27.3)	-	-	-	-	-	-	-	-	-	-	-
Systems	(118.2)	-	-	-	-	-	-	(38.0)	(39.4)	(40.7)	-	-	-	-	-	-	-	-	-	-	-
HC Contingency	(95.5)	-	-	-	-	-	-	(30.8)	(31.8)	(32.9)	-	-	-	-	-	-	-	-	-	-	-
Vehicles	(56.2)	-	-	-	-	-	-	(18.1)	(18.7)	(19.4)	-	-	-	-	-	-	-	-	-	-	-
Soft Costs	**(248.5)**	-	-	-	-	-	-	**(80.0)**	**(82.8)**	**(85.7)**	-	-	-	-	-	-	-	-	-	-	-
Professional Services/Soft Costs	(143.3)	-	-	-	-	-	-	(46.1)	(47.7)	(49.4)	-	-	-	-	-	-	-	-	-	-	-
ROW and Trackage Rights	(34.1)	-	-	-	-	-	-	(11.0)	(11.4)	(11.7)	-	-	-	-	-	-	-	-	-	-	-
SC Contingency	(71.1)	-	-	-	-	-	-	(22.9)	(23.7)	(24.5)	-	-	-	-	-	-	-	-	-	-	-
Financing Costs	**(10.5)**	-	-	-	-	-	-	**(3.4)**	**(3.5)**	**(3.6)**	-	-	-	-	-	-	-	-	-	-	-
Construction Cash Flow	**0.0**	-	-	-	-	-	-	**0.0**	**0.0**	**0.0**	-	-	-	-	-	-	-	-	-	-	-

Figure A-iv. Cash Flow Analysis for Construction Plan in YOE $ (millions) for Funding Scenario 2 and All Pandemic Impacts

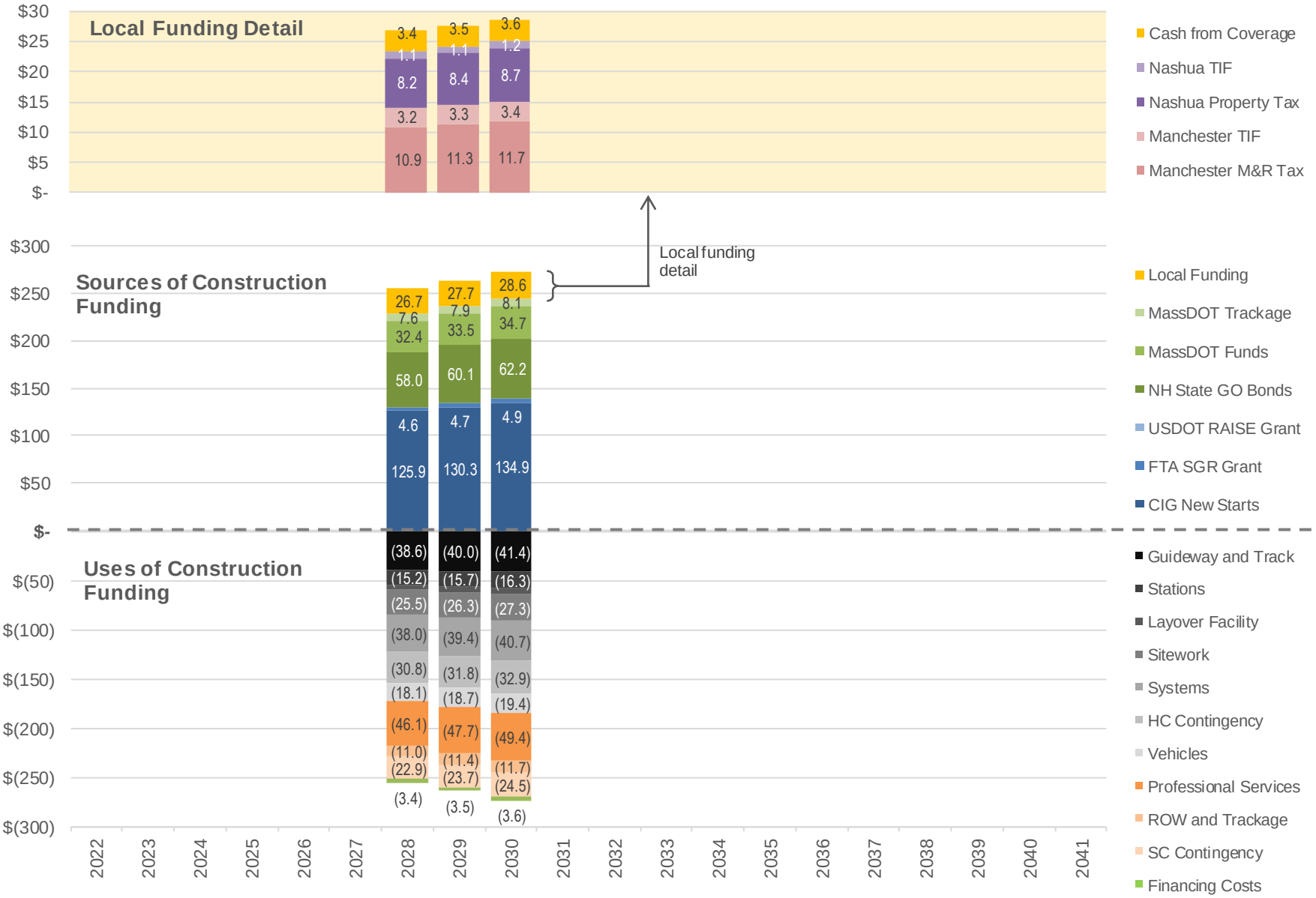


Table A-v. Cash Flow Analysis for Construction Plan in 2022 $ (millions) for Funding Scenario 4 and All Pandemic Impacts

Millions of 2022 $	Total	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041
Construction Funding	**604.5**	-	-	-	-	-	-	**201.5**	**201.5**	**201.5**	-	-	-	-	-	-	-	-	-	-	-
Federal Funding	**334.4**	-	-	-	-	-	-	**111.5**	**111.5**	**111.5**	-	-	-	-	-	-	-	-	-	-	-
Federal Grant Line Item Projects (CIG)	298.6	-	-	-	-	-	-	99.5	99.5	99.5	-	-	-	-	-	-	-	-	-	-	-
FRA Federal-State Program for SGR Grant	10.8	-	-	-	-	-	-	3.6	3.6	3.6	-	-	-	-	-	-	-	-	-	-	-
USDOT RAISE Grant	25.0	-	-	-	-	-	-	8.3	8.3	8.3	-	-	-	-	-	-	-	-	-	-	-
State Funding	**207.4**	-	-	-	-	-	-	**69.1**	**69.1**	**69.1**	-	-	-	-	-	-	-	-	-	-	-
NH State GO Bonds	112.6	-	-	-	-	-	-	37.5	37.5	37.5	-	-	-	-	-	-	-	-	-	-	-
MassDOT/MBTA Contribution	76.7	-	-	-	-	-	-	25.6	25.6	25.6	-	-	-	-	-	-	-	-	-	-	-
MassDOT/MBTA Credit for Trackage Rights	18.0	-	-	-	-	-	-	6.0	6.0	6.0	-	-	-	-	-	-	-	-	-	-	-
Local Funding	**62.7**	-	-	-	-	-	-	**20.9**	**20.9**	**20.9**	-	-	-	-	-	-	-	-	-	-	-
Manchester City Bonds Proceeds	31.8	-	-	-	-	-	-	10.6	10.6	10.6	-	-	-	-	-	-	-	-	-	-	-
Loan backed by M&R tax	31.8	-	-	-	-	-	-	10.6	10.6	10.6	-	-	-	-	-	-	-	-	-	-	-
Loan backed by TIF tax	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nashua City Bonds Proceeds	21.4	-	-	-	-	-	-	7.1	7.1	7.1	-	-	-	-	-	-	-	-	-	-	-
Loan backed by Property Tax	21.4	-	-	-	-	-	-	7.1	7.1	7.1	-	-	-	-	-	-	-	-	-	-	-
Loan backed by TIF tax	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cash from Excess Revenue Due to Coverage	9.5	-	-	-	-	-	-	3.2	3.2	3.2	-	-	-	-	-	-	-	-	-	-	-
Construction Costs	**(604.5)**	-	-	-	-	-	-	**(201.5)**	**(201.5)**	**(201.5)**	-	-	-	-	-	-	-	-	-	-	-
Hard Costs	**(407.5)**	-	-	-	-	-	-	**(135.8)**	**(135.8)**	**(135.8)**	-	-	-	-	-	-	-	-	-	-	-
Guideway and Track Elements	(91.6)	-	-	-	-	-	-	(30.5)	(30.5)	(30.5)	-	-	-	-	-	-	-	-	-	-	-
Stations	(36.1)	-	-	-	-	-	-	(12.0)	(12.0)	(12.0)	-	-	-	-	-	-	-	-	-	-	-
Layover Facility	(13.5)	-	-	-	-	-	-	(4.5)	(4.5)	(4.5)	-	-	-	-	-	-	-	-	-	-	-
Sitework and Special Conditions	(60.4)	-	-	-	-	-	-	(20.1)	(20.1)	(20.1)	-	-	-	-	-	-	-	-	-	-	-
Systems	(90.2)	-	-	-	-	-	-	(30.1)	(30.1)	(30.1)	-	-	-	-	-	-	-	-	-	-	-
HC Contingency	(72.9)	-	-	-	-	-	-	(24.3)	(24.3)	(24.3)	-	-	-	-	-	-	-	-	-	-	-
Vehicles	(42.9)	-	-	-	-	-	-	(14.3)	(14.3)	(14.3)	-	-	-	-	-	-	-	-	-	-	-
Soft Costs	**(189.7)**	-	-	-	-	-	-	**(63.2)**	**(63.2)**	**(63.2)**	-	-	-	-	-	-	-	-	-	-	-
Professional Services/Soft Costs	(109.4)	-	-	-	-	-	-	(36.5)	(36.5)	(36.5)	-	-	-	-	-	-	-	-	-	-	-
ROW and Trackage Rights	(26.0)	-	-	-	-	-	-	(8.7)	(8.7)	(8.7)	-	-	-	-	-	-	-	-	-	-	-
SC Contingency	(54.3)	-	-	-	-	-	-	(18.1)	(18.1)	(18.1)	-	-	-	-	-	-	-	-	-	-	-
Financing Costs	**(7.3)**	-	-	-	-	-	-	**(2.4)**	**(2.4)**	**(2.4)**	-	-	-	-	-	-	-	-	-	-	-
Construction Cash Flow	**0.0**	-	-	-	-	-	-	**0.0**	**0.0**	**0.0**	-	-	-	-	-	-	-	-	-	-	-

Figure A-v. Cash Flow Analysis for Construction Plan in 2022 $ (millions) for Funding Scenario 4 and All Pandemic Impacts

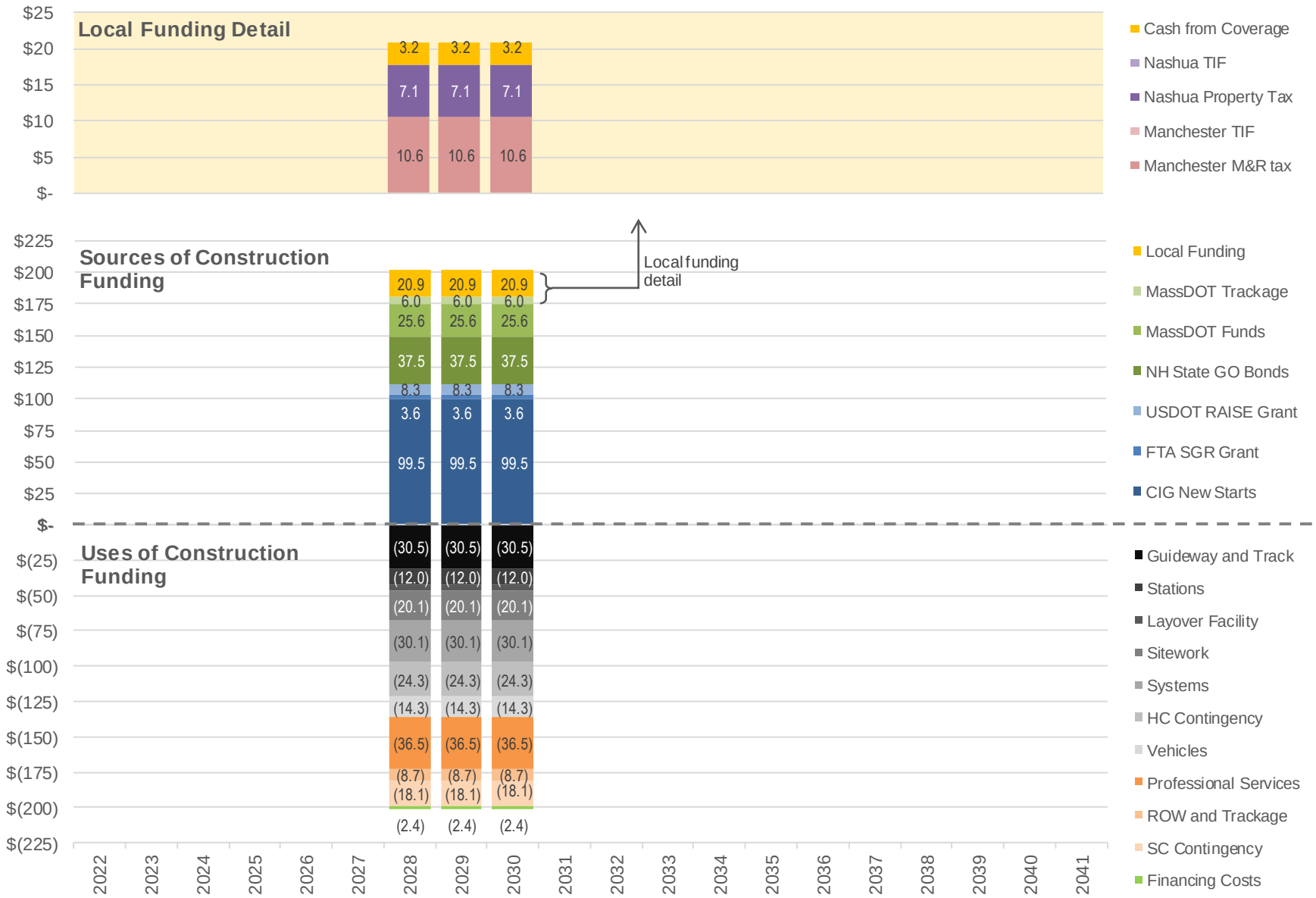


Table A-vi. Cash Flow Analysis for Construction Plan in YOE $ (millions) for Funding Scenario 4 and All Pandemic Impacts

Millions of YOE $		2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041
Construction Funding	**791.9**	-	-	-	-	-	-	**254.9**	**263.9**	**273.1**	-	-	-	-	-	-	-	-	-	-	-
Federal Funding	**438.1**	-	-	-	-	-	-	**141.0**	**146.0**	**151.1**	-	-	-	-	-	-	-	-	-	-	-
Federal Grant Line Item Projects (CIG)	391.2	-	-	-	-	-	-	125.9	130.3	134.9	-	-	-	-	-	-	-	-	-	-	-
FRA Federal-State Program for SGR Grant	14.2	-	-	-	-	-	-	4.6	4.7	4.9	-	-	-	-	-	-	-	-	-	-	-
USDOT RAISE Grant	32.7	-	-	-	-	-	-	10.5	10.9	11.3	-	-	-	-	-	-	-	-	-	-	-
State Funding	**271.7**	-	-	-	-	-	-	**87.5**	**90.5**	**93.7**	-	-	-	-	-	-	-	-	-	-	-
NH State GO Bonds	147.6	-	-	-	-	-	-	47.5	49.2	50.9	-	-	-	-	-	-	-	-	-	-	-
MassDOT/MBTA Contribution	100.5	-	-	-	-	-	-	32.4	33.5	34.7	-	-	-	-	-	-	-	-	-	-	-
MassDOT/MBTA Credit for Trackage Rights	23.6	-	-	-	-	-	-	7.6	7.9	8.1	-	-	-	-	-	-	-	-	-	-	-
Local Funding	**82.2**	-	-	-	-	-	-	**26.5**	**27.4**	**28.3**	-	-	-	-	-	-	-	-	-	-	-
Manchester City Bonds Proceeds	41.6	-	-	-	-	-	-	13.4	13.9	14.4	-	-	-	-	-	-	-	-	-	-	-
Loan backed by M&R tax	41.6	-	-	-	-	-	-	13.4	13.9	14.4	-	-	-	-	-	-	-	-	-	-	-
Loan backed by TIF tax	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nashua City Bonds Proceeds	28.1	-	-	-	-	-	-	9.0	9.4	9.7	-	-	-	-	-	-	-	-	-	-	-
Loan backed by Property Tax	28.1	-	-	-	-	-	-	9.0	9.4	9.7	-	-	-	-	-	-	-	-	-	-	-
Loan backed by TIF tax	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cash from Excess Revenue Due to Coverage	12.5	-	-	-	-	-	-	4.0	4.2	4.3	-	-	-	-	-	-	-	-	-	-	-
Construction Costs	**(791.9)**	-	-	-	-	-	-	**(254.9)**	**(263.9)**	**(273.1)**	-	-	-	-	-	-	-	-	-	-	-
Hard Costs	**(533.8)**	-	-	-	-	-	-	**(171.9)**	**(177.9)**	**(184.1)**	-	-	-	-	-	-	-	-	-	-	-
Guideway and Track Elements	(120.0)	-	-	-	-	-	-	(38.6)	(40.0)	(41.4)	-	-	-	-	-	-	-	-	-	-	-
Stations	(47.3)	-	-	-	-	-	-	(15.2)	(15.7)	(16.3)	-	-	-	-	-	-	-	-	-	-	-
Layover Facility	(17.7)	-	-	-	-	-	-	(5.7)	(5.9)	(6.1)	-	-	-	-	-	-	-	-	-	-	-
Sitework and Special Conditions	(79.1)	-	-	-	-	-	-	(25.5)	(26.3)	(27.3)	-	-	-	-	-	-	-	-	-	-	-
Systems	(118.2)	-	-	-	-	-	-	(38.0)	(39.4)	(40.7)	-	-	-	-	-	-	-	-	-	-	-
HC Contingency	(95.5)	-	-	-	-	-	-	(30.8)	(31.8)	(32.9)	-	-	-	-	-	-	-	-	-	-	-
Vehicles	(56.2)	-	-	-	-	-	-	(18.1)	(18.7)	(19.4)	-	-	-	-	-	-	-	-	-	-	-
Soft Costs	**(248.5)**	-	-	-	-	-	-	**(80.0)**	**(82.8)**	**(85.7)**	-	-	-	-	-	-	-	-	-	-	-
Professional Services/Soft Costs	(143.3)	-	-	-	-	-	-	(46.1)	(47.7)	(49.4)	-	-	-	-	-	-	-	-	-	-	-
ROW and Trackage Rights	(34.1)	-	-	-	-	-	-	(11.0)	(11.4)	(11.7)	-	-	-	-	-	-	-	-	-	-	-
SC Contingency	(71.1)	-	-	-	-	-	-	(22.9)	(23.7)	(24.5)	-	-	-	-	-	-	-	-	-	-	-
Financing Costs	**(9.6)**	-	-	-	-	-	-	**(3.1)**	**(3.2)**	**(3.3)**	-	-	-	-	-	-	-	-	-	-	-
Construction Cash Flow	**0.0**	-	-	-	-	-	-	**0.0**	**0.0**	**0.0**	-	-	-	-	-	-	-	-	-	-	-

Figure A-vi. Cash Flow Analysis for Construction Plan in YOE $ (millions) for Funding Scenario 4 and All Pandemic Impacts

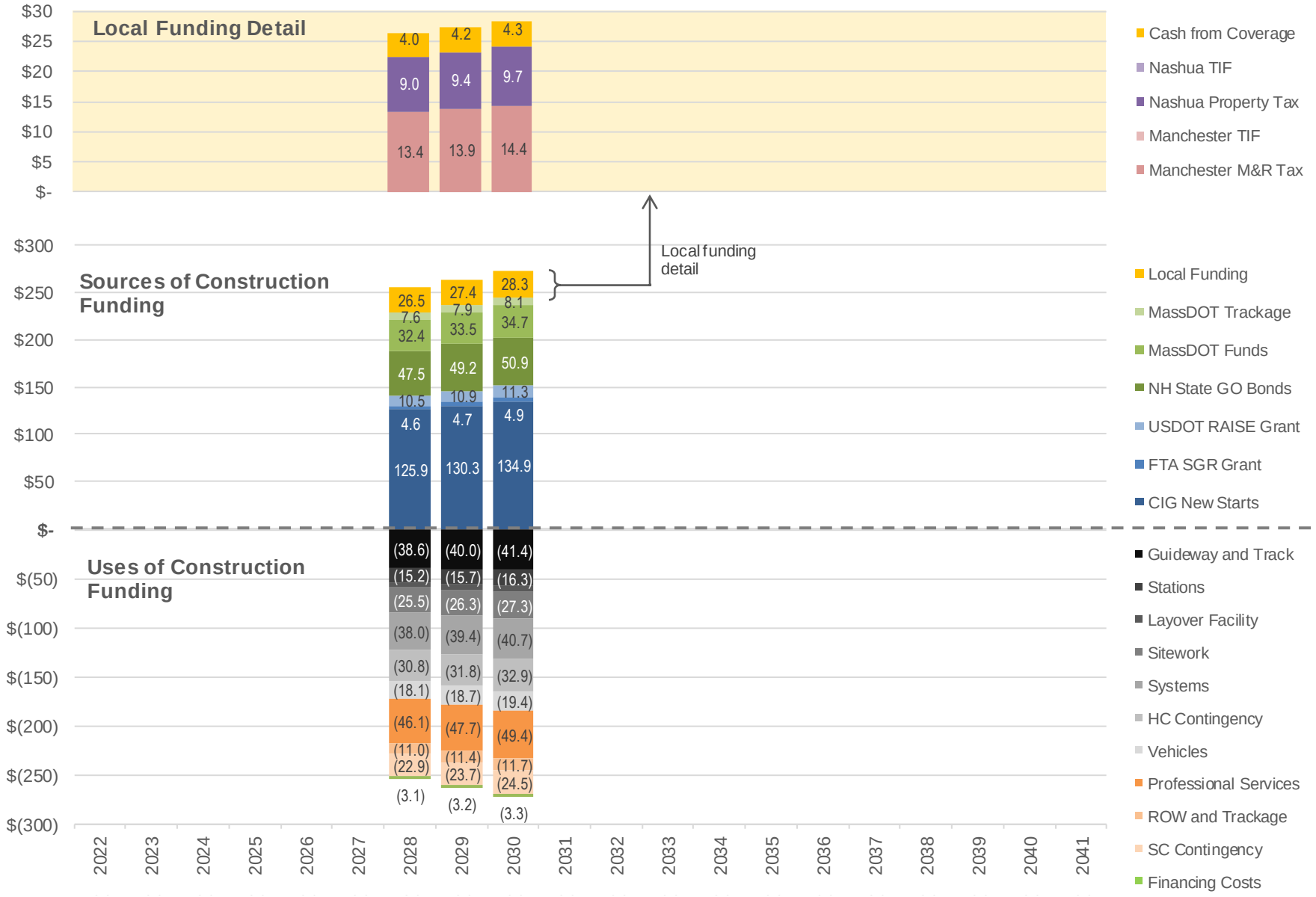


Table A-vii. Cash Flow Analysis for Construction Plan in 2022 $ (millions) for Funding Scenario 5 and All Pandemic Impacts

Millions of 2022 $	Total	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041
Construction Funding	**604.5**	-	-	-	-	-	-	**201.5**	**201.5**	**201.5**	-	-	-	-	-	-	-	-	-	-	-
Federal Funding	**309.4**	-	-	-	-	-	-	**103.1**	**103.1**	**103.1**	-	-	-	-	-	-	-	-	-	-	-
Federal Grant Line Item Projects (CIG)	298.6	-	-	-	-	-	-	99.5	99.5	99.5	-	-	-	-	-	-	-	-	-	-	-
FRA Federal-State Program for SGR Grant	10.8	-	-	-	-	-	-	3.6	3.6	3.6	-	-	-	-	-	-	-	-	-	-	-
USDOT RAISE Grant	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
State Funding	**232.4**	-	-	-	-	-	-	**77.5**	**77.5**	**77.5**	-	-	-	-	-	-	-	-	-	-	-
NH State GO Bonds	137.6	-	-	-	-	-	-	45.9	45.9	45.9	-	-	-	-	-	-	-	-	-	-	-
MassDOT/MBTA Contribution	76.7	-	-	-	-	-	-	25.6	25.6	25.6	-	-	-	-	-	-	-	-	-	-	-
MassDOT/MBTA Credit for Trackage Rights	18.0	-	-	-	-	-	-	6.0	6.0	6.0	-	-	-	-	-	-	-	-	-	-	-
Local Funding	**62.7**	-	-	-	-	-	-	**20.9**	**20.9**	**20.9**	-	-	-	-	-	-	-	-	-	-	-
Manchester City Bonds Proceeds	31.8	-	-	-	-	-	-	10.6	10.6	10.6	-	-	-	-	-	-	-	-	-	-	-
Loan backed by M&R tax	31.8	-	-	-	-	-	-	10.6	10.6	10.6	-	-	-	-	-	-	-	-	-	-	-
Loan backed by TIF tax	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nashua City Bonds Proceeds	21.4	-	-	-	-	-	-	7.1	7.1	7.1	-	-	-	-	-	-	-	-	-	-	-
Loan backed by Property Tax	21.4	-	-	-	-	-	-	7.1	7.1	7.1	-	-	-	-	-	-	-	-	-	-	-
Loan backed by TIF tax	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cash from Excess Revenue Due to Coverage	9.5	-	-	-	-	-	-	3.2	3.2	3.2	-	-	-	-	-	-	-	-	-	-	-
Construction Costs	**(604.5)**	-	-	-	-	-	-	**(201.5)**	**(201.5)**	**(201.5)**	-	-	-	-	-	-	-	-	-	-	-
Hard Costs	**(407.5)**	-	-	-	-	-	-	**(135.8)**	**(135.8)**	**(135.8)**	-	-	-	-	-	-	-	-	-	-	-
Guideway and Track Elements	(91.6)	-	-	-	-	-	-	(30.5)	(30.5)	(30.5)	-	-	-	-	-	-	-	-	-	-	-
Stations	(36.1)	-	-	-	-	-	-	(12.0)	(12.0)	(12.0)	-	-	-	-	-	-	-	-	-	-	-
Layover Facility	(13.5)	-	-	-	-	-	-	(4.5)	(4.5)	(4.5)	-	-	-	-	-	-	-	-	-	-	-
Sitework and Special Conditions	(60.4)	-	-	-	-	-	-	(20.1)	(20.1)	(20.1)	-	-	-	-	-	-	-	-	-	-	-
Systems	(90.2)	-	-	-	-	-	-	(30.1)	(30.1)	(30.1)	-	-	-	-	-	-	-	-	-	-	-
HC Contingency	(72.9)	-	-	-	-	-	-	(24.3)	(24.3)	(24.3)	-	-	-	-	-	-	-	-	-	-	-
Vehicles	(42.9)	-	-	-	-	-	-	(14.3)	(14.3)	(14.3)	-	-	-	-	-	-	-	-	-	-	-
Soft Costs	**(189.7)**	-	-	-	-	-	-	**(63.2)**	**(63.2)**	**(63.2)**	-	-	-	-	-	-	-	-	-	-	-
Professional Services/Soft Costs	(109.4)	-	-	-	-	-	-	(36.5)	(36.5)	(36.5)	-	-	-	-	-	-	-	-	-	-	-
ROW and Trackage Rights	(26.0)	-	-	-	-	-	-	(8.7)	(8.7)	(8.7)	-	-	-	-	-	-	-	-	-	-	-
SC Contingency	(54.3)	-	-	-	-	-	-	(18.1)	(18.1)	(18.1)	-	-	-	-	-	-	-	-	-	-	-
Financing Costs	**(7.3)**	-	-	-	-	-	-	**(2.4)**	**(2.4)**	**(2.4)**	-	-	-	-	-	-	-	-	-	-	-
Construction Cash Flow	**0.0**	-	-	-	-	-	-	**0.0**	**0.0**	**0.0**	-	-	-	-	-	-	-	-	-	-	-

Figure A-vii. Cash Flow Analysis for Construction Plan in 2022 $ (millions) for Funding Scenario 5 and All Pandemic Impacts

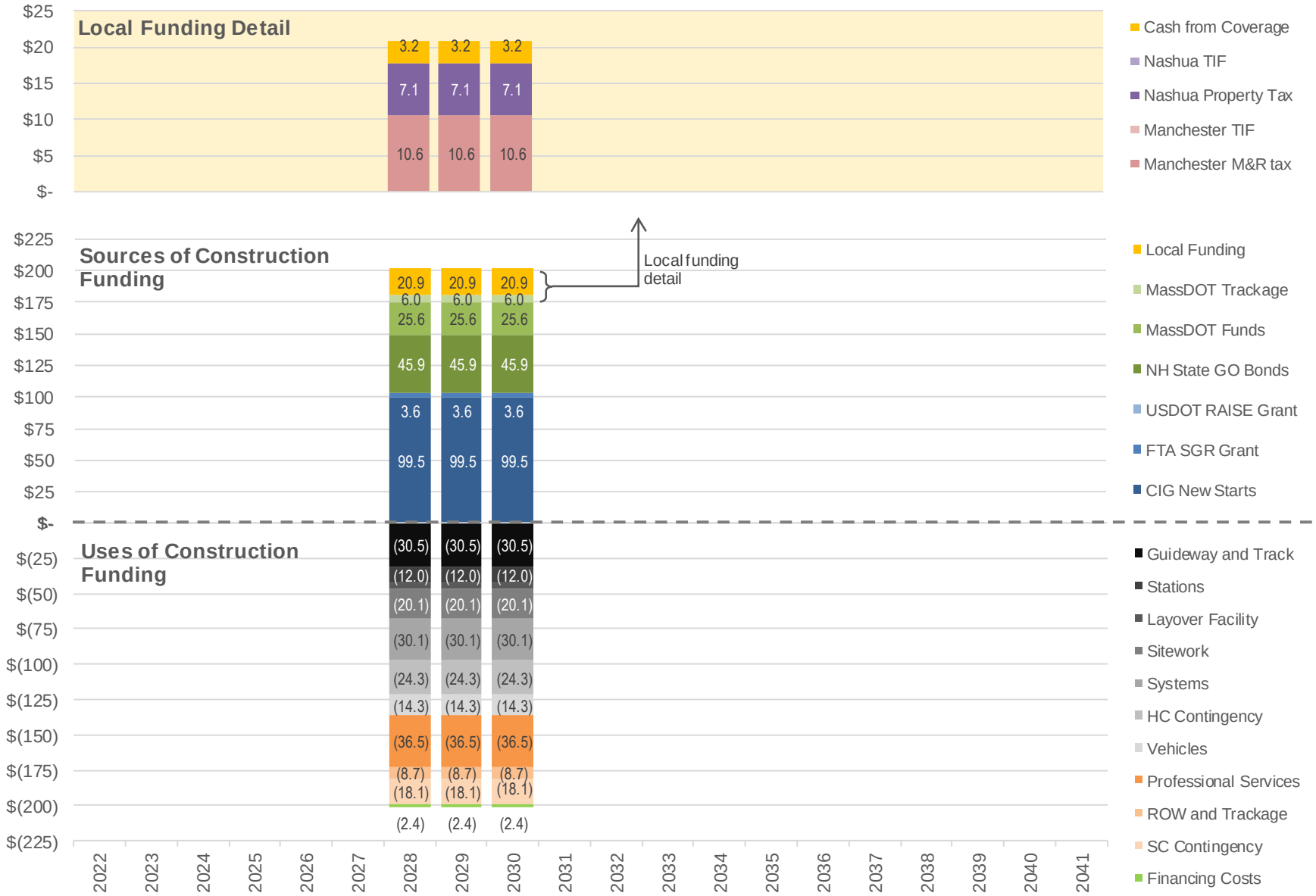
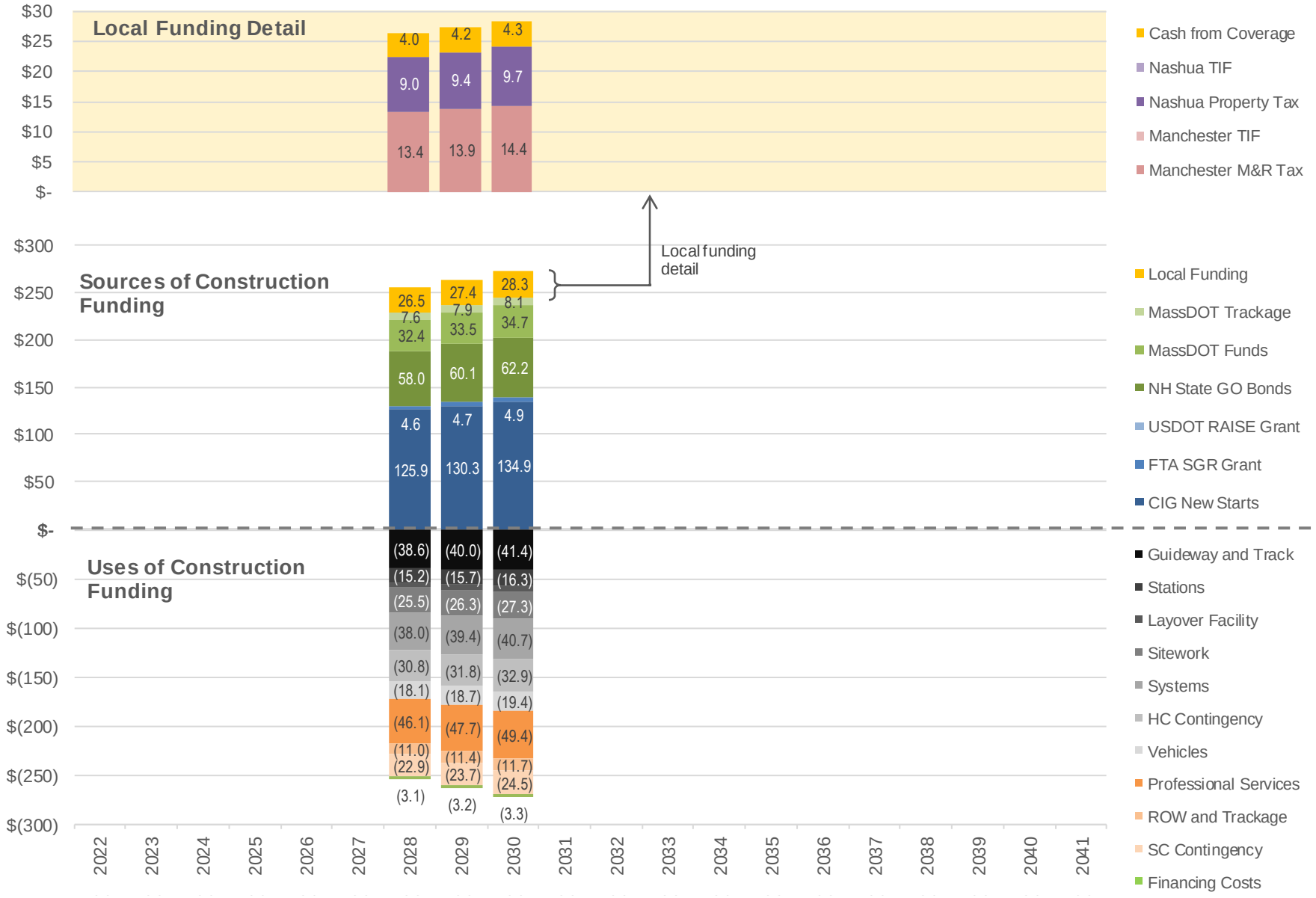


Table A-viii. Cash Flow Analysis for Construction Plan in YOE $ (millions) for Funding Scenario 5 and All Pandemic Impacts

Millions of YOE $		2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041
Construction Funding	**791.9**	-	-	-	-	-	-	**254.9**	**263.9**	**273.1**	-	-	-	-	-	-	-	-	-	-	-
Federal Funding	**405.3**	-	-	-	-	-	-	**130.5**	**135.1**	**139.8**	-	-	-	-	-	-	-	-	-	-	-
Federal Grant Line Item Projects (CIG)	391.2	-	-	-	-	-	-	125.9	130.3	134.9	-	-	-	-	-	-	-	-	-	-	-
FRA Federal-State Program for SGR Grant	14.2	-	-	-	-	-	-	4.6	4.7	4.9	-	-	-	-	-	-	-	-	-	-	-
USDOT RAISE Grant	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
State Funding	**304.4**	-	-	-	-	-	-	**98.0**	**101.4**	**105.0**	-	-	-	-	-	-	-	-	-	-	-
NH State GO Bonds	180.3	-	-	-	-	-	-	58.0	60.1	62.2	-	-	-	-	-	-	-	-	-	-	-
MassDOT/MBTA Contribution	100.5	-	-	-	-	-	-	32.4	33.5	34.7	-	-	-	-	-	-	-	-	-	-	-
MassDOT/MBTA Credit for Trackage Rights	23.6	-	-	-	-	-	-	7.6	7.9	8.1	-	-	-	-	-	-	-	-	-	-	-
Local Funding	**82.2**	-	-	-	-	-	-	**26.5**	**27.4**	**28.3**	-	-	-	-	-	-	-	-	-	-	-
Manchester City Bonds Proceeds	41.6	-	-	-	-	-	-	13.4	13.9	14.4	-	-	-	-	-	-	-	-	-	-	-
Loan backed by M&R tax	41.6	-	-	-	-	-	-	13.4	13.9	14.4	-	-	-	-	-	-	-	-	-	-	-
Loan backed by TIF tax	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nashua City Bonds Proceeds	28.1	-	-	-	-	-	-	9.0	9.4	9.7	-	-	-	-	-	-	-	-	-	-	-
Loan backed by Property Tax	28.1	-	-	-	-	-	-	9.0	9.4	9.7	-	-	-	-	-	-	-	-	-	-	-
Loan backed by TIF tax	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cash from Excess Revenue Due to Coverage	12.5	-	-	-	-	-	-	4.0	4.2	4.3	-	-	-	-	-	-	-	-	-	-	-
Construction Costs	**(791.9)**	-	-	-	-	-	-	**(254.9)**	**(263.9)**	**(273.1)**	-	-	-	-	-	-	-	-	-	-	-
Hard Costs	**(533.8)**	-	-	-	-	-	-	**(171.9)**	**(177.9)**	**(184.1)**	-	-	-	-	-	-	-	-	-	-	-
Guideway and Track Elements	(120.0)	-	-	-	-	-	-	(38.6)	(40.0)	(41.4)	-	-	-	-	-	-	-	-	-	-	-
Stations	(47.3)	-	-	-	-	-	-	(15.2)	(15.7)	(16.3)	-	-	-	-	-	-	-	-	-	-	-
Layover Facility	(17.7)	-	-	-	-	-	-	(5.7)	(5.9)	(6.1)	-	-	-	-	-	-	-	-	-	-	-
Sitework and Special Conditions	(79.1)	-	-	-	-	-	-	(25.5)	(26.3)	(27.3)	-	-	-	-	-	-	-	-	-	-	-
Systems	(118.2)	-	-	-	-	-	-	(38.0)	(39.4)	(40.7)	-	-	-	-	-	-	-	-	-	-	-
HC Contingency	(95.5)	-	-	-	-	-	-	(30.8)	(31.8)	(32.9)	-	-	-	-	-	-	-	-	-	-	-
Vehicles	(56.2)	-	-	-	-	-	-	(18.1)	(18.7)	(19.4)	-	-	-	-	-	-	-	-	-	-	-
Soft Costs	**(248.5)**	-	-	-	-	-	-	**(80.0)**	**(82.8)**	**(85.7)**	-	-	-	-	-	-	-	-	-	-	-
Professional Services/Soft Costs	(143.3)	-	-	-	-	-	-	(46.1)	(47.7)	(49.4)	-	-	-	-	-	-	-	-	-	-	-
ROW and Trackage Rights	(34.1)	-	-	-	-	-	-	(11.0)	(11.4)	(11.7)	-	-	-	-	-	-	-	-	-	-	-
SC Contingency	(71.1)	-	-	-	-	-	-	(22.9)	(23.7)	(24.5)	-	-	-	-	-	-	-	-	-	-	-
Financing Costs	**(9.6)**	-	-	-	-	-	-	**(3.1)**	**(3.2)**	**(3.3)**	-	-	-	-	-	-	-	-	-	-	-
Construction Cash Flow	**0.0**	-	-	-	-	-	-	**0.0**	**0.0**	**0.0**	-	-	-	-	-	-	-	-	-	-	-

Figure A-viii. Cash Flow Analysis for Construction Plan in YOE $ (millions) for Funding Scenario 5 and All Pandemic Impacts



Appendix B: Renewals Cash Flow Analysis

Cash Flow Analysis for Renewal Plan for Low and High Pandemic Impact on Ridership Scenarios

Table B-i. Cash Flow Analysis for Renewal Plan in 2022 $ and YOE $ (millions) for All Funding Scenarios and Low Pandemic Impact

Millions of 2022 $	Total	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061
Renewals Funding	**60.4**	-	-	-	-	**3.0**	**5.5**	**5.5**	**5.5**	**5.5**	**5.5**	**3.0**	**3.0**	**3.0**	**3.0**	**3.0**	**3.0**	**3.0**	**3.0**	**3.0**	**3.0**
FTA Section 5307	19.4	-	-	-	-	1.0	1.8	1.8	1.8	1.8	1.8	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
FTA Section 5337	28.9	-	-	-	-	1.4	2.6	2.6	2.6	2.6	2.6	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4
State Funding	9.7	-	-	-	-	0.5	0.9	0.9	0.9	0.9	0.9	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Local Funding	2.4	-	-	-	-	0.1	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Renewal Expenditures	**(60.4)**	-	-	-	-	**(3.0)**	**(5.5)**	**(5.5)**	**(5.5)**	**(5.5)**	**(5.5)**	**(3.0)**	**(3.0)**	**(3.0)**	**(3.0)**	**(3.0)**	**(3.0)**	**(3.0)**	**(3.0)**	**(3.0)**	**(3.0)**
Track & Systems	(36.9)	-	-	-	-	(1.8)	(3.4)	(3.4)	(3.4)	(3.4)	(3.4)	(1.8)	(1.8)	(1.8)	(1.8)	(1.8)	(1.8)	(1.8)	(1.8)	(1.8)	(1.8)
Layover Facility	(3.4)	-	-	-	-	-	(0.2)	(0.2)	(0.2)	(0.2)	(0.2)	(0.2)	(0.2)	(0.2)	(0.2)	(0.2)	(0.2)	(0.2)	(0.2)	(0.2)	(0.2)
Manchester Station	(6.1)	-	-	-	-	(0.6)	(0.7)	(0.7)	(0.7)	(0.7)	(0.7)	(0.2)	(0.2)	(0.2)	(0.2)	(0.2)	(0.2)	(0.2)	(0.2)	(0.2)	(0.2)
Crown St Station	(4.3)	-	-	-	-	(0.1)	(0.3)	(0.3)	(0.3)	(0.3)	(0.3)	(0.3)	(0.3)	(0.3)	(0.3)	(0.3)	(0.3)	(0.3)	(0.3)	(0.3)	(0.3)
Bedford/MHT Station	(7.3)	-	-	-	-	(0.6)	(0.6)	(0.6)	(0.6)	(0.6)	(0.6)	(0.4)	(0.4)	(0.4)	(0.4)	(0.4)	(0.4)	(0.4)	(0.4)	(0.4)	(0.4)
South Nashua Station	(2.4)	-	-	-	-	-	(0.3)	(0.3)	(0.3)	(0.3)	(0.3)	(0.1)	(0.1)	(0.1)	(0.1)	(0.1)	(0.1)	(0.1)	(0.1)	(0.1)	(0.1)
Renewal Cashflow	**(0.0)**	-	-	-	-	**(0.0)**	-	-	-	-	-	-	-	-	-	**(0.0)**	-	**0.0**	-	-	**(0.0)**

Millions of YOE $	Total	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061
Renewals Funding	**162.5**	-	-	-	-	**6.6**	**12.4**	**12.8**	**13.1**	**13.5**	**13.9**	**7.9**	**8.1**	**8.3**	**8.6**	**8.9**	**9.1**	**9.4**	**9.7**	**10.0**	**10.3**
FTA Section 5307	52.1	-	-	-	-	2.1	4.0	4.1	4.2	4.3	4.5	2.5	2.6	2.7	2.8	2.8	2.9	3.0	3.1	3.2	3.3
FTA Section 5337	77.9	-	-	-	-	3.2	5.9	6.1	6.3	6.5	6.7	3.8	3.9	4.0	4.1	4.2	4.4	4.5	4.6	4.8	4.9
State funding	26.0	-	-	-	-	1.1	2.0	2.0	2.1	2.2	2.2	1.3	1.3	1.3	1.4	1.4	1.5	1.5	1.5	1.6	1.6
Local Funding	6.5	-	-	-	-	0.3	0.5	0.5	0.5	0.5	0.6	0.3	0.3	0.3	0.3	0.4	0.4	0.4	0.4	0.4	0.4
Renewal Expenditures	**(156.1)**	-	-	-	-	**(6.6)**	**(11.7)**	**(12.0)**	**(12.4)**	**(12.8)**	**(13.2)**	**(7.6)**	**(7.9)**	**(8.1)**	**(8.3)**	**(8.6)**	**(8.8)**	**(9.1)**	**(9.4)**	**(9.7)**	**(9.9)**
Track & Systems	(99.4)	-	-	-	-	(3.9)	(7.6)	(7.8)	(8.1)	(8.3)	(8.5)	(4.8)	(5.0)	(5.1)	(5.3)	(5.4)	(5.6)	(5.7)	(5.9)	(6.1)	(6.3)
Layover Facility	(9.5)	-	-	-	-	-	(0.5)	(0.5)	(0.5)	(0.5)	(0.5)	(0.6)	(0.6)	(0.6)	(0.7)	(0.7)	(0.7)	(0.7)	(0.7)	(0.8)	(0.8)
Manchester Station	(15.8)	-	-	-	-	(1.3)	(1.6)	(1.7)	(1.7)	(1.8)	(1.8)	(0.5)	(0.5)	(0.5)	(0.6)	(0.6)	(0.6)	(0.6)	(0.6)	(0.7)	(0.7)
Crown St Station	(11.9)	-	-	-	-	(0.2)	(0.7)	(0.7)	(0.7)	(0.7)	(0.8)	(0.7)	(0.7)	(0.8)	(0.8)	(0.8)	(0.8)	(0.9)	(0.9)	(0.9)	(0.9)
Bedford/MHT Station	(19.6)	-	-	-	-	(1.3)	(1.3)	(1.4)	(1.4)	(1.4)	(1.5)	(1.0)	(1.0)	(1.0)	(1.1)	(1.1)	(1.1)	(1.2)	(1.2)	(1.2)	(1.3)
South Nashua Station	(6.4)	-	-	-	-	-	(0.7)	(0.7)	(0.7)	(0.8)	(0.8)	(0.2)	(0.2)	(0.3)	(0.3)	(0.3)	(0.3)	(0.3)	(0.3)	(0.3)	(0.3)
Renewal Cashflow	**6.4**	-	-	-	-	**(0.0)**	**0.7**	**0.7**	**0.7**	**0.8**	**0.8**	**0.2**	**0.2**	**0.3**	**0.3**	**0.3**	**0.3**	**0.3**	**0.3**	**0.3**	**0.3**

Figure B-i. Cash Flow Analysis for Renewal Plan in 2022 $ (millions) for All Funding Scenarios and Low Pandemic Impact

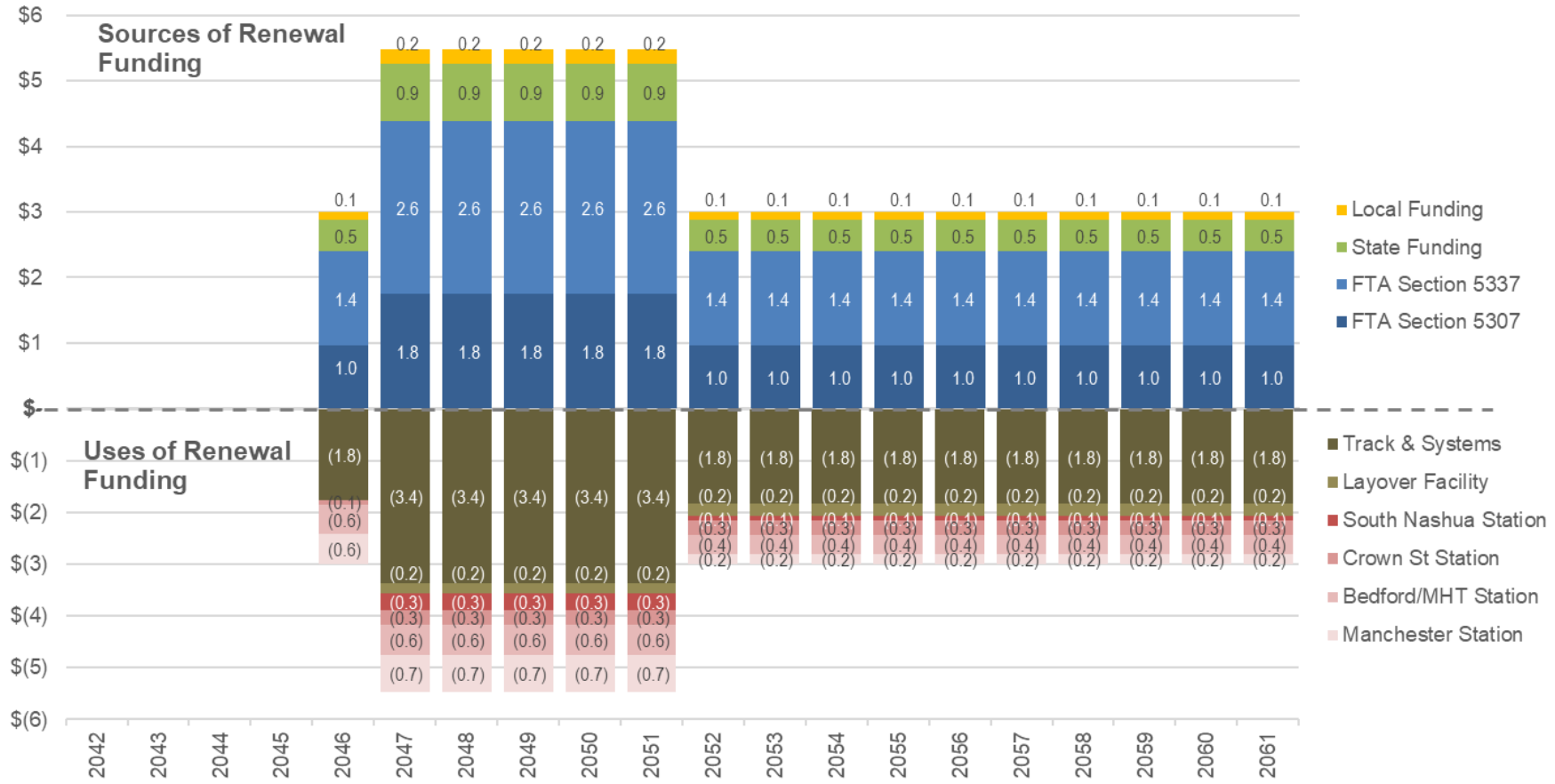


Figure B-ii. Cash Flow Analysis for Renewal Plan in YOE $ (millions) for All Funding Scenarios and Low Pandemic Impact

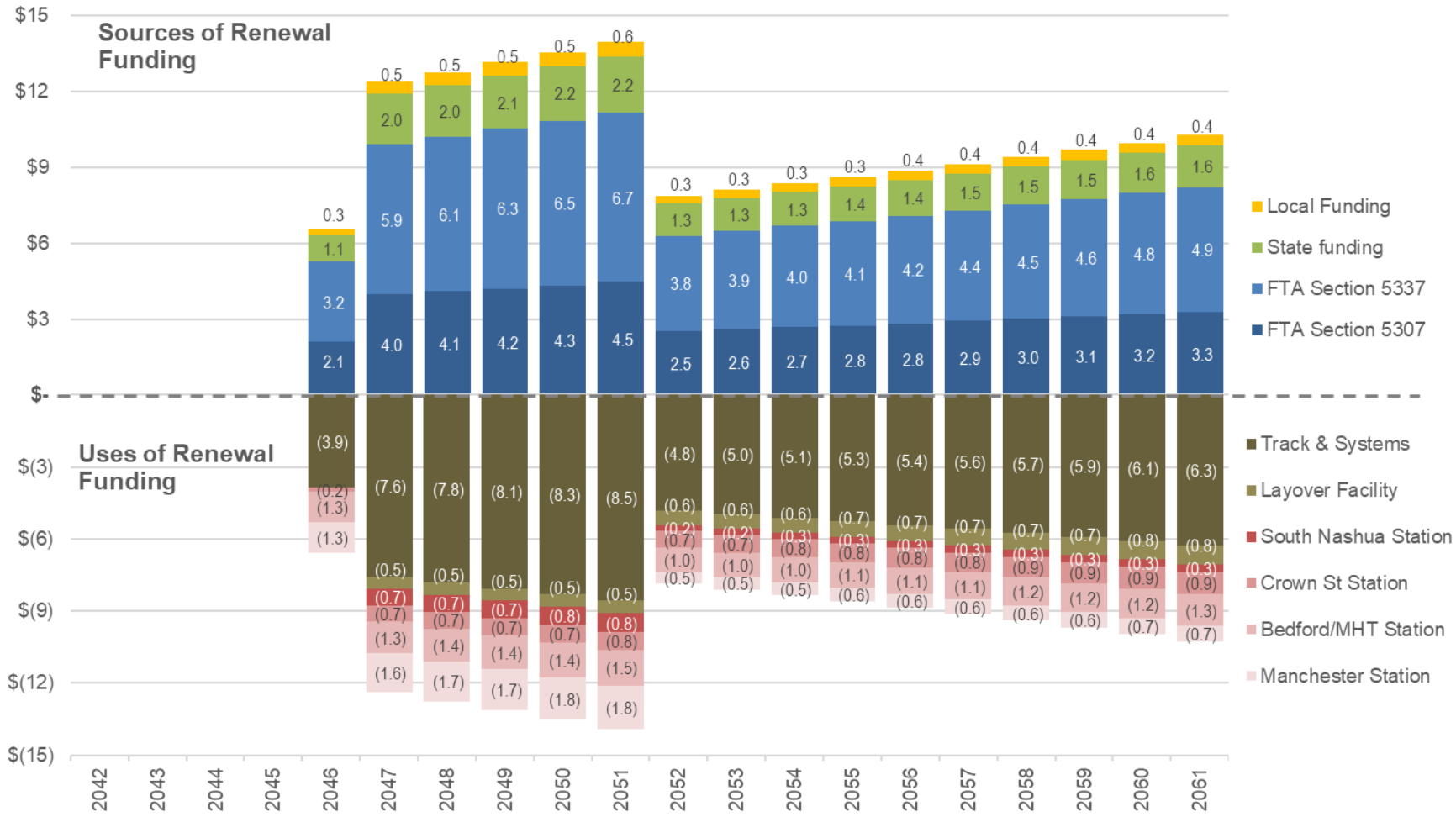


Table B-ii. Cash Flow Analysis for Renewal Plan in 2022 $ and YOE $ (millions) for All Funding Scenarios and High Pandemic Impact

Millions of 2022 $	Total	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061
Renewals Funding	**60.4**	-	-	-	-	**3.0**	**5.5**	**5.5**	**5.5**	**5.5**	**5.5**	**3.0**	**3.0**	**3.0**	**3.0**	**3.0**	**3.0**	**3.0**	**3.0**	**3.0**	**3.0**
FTA Section 5307	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
FTA Section 5337	48.3	-	-	-	-	2.4	4.4	4.4	4.4	4.4	4.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4
State Funding	9.7	-	-	-	-	0.5	0.9	0.9	0.9	0.9	0.9	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Local Funding	2.4	-	-	-	-	0.1	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Renewal Expenditures	**(60.4)**	-	-	-	-	**(3.0)**	**(5.5)**	**(5.5)**	**(5.5)**	**(5.5)**	**(5.5)**	**(3.0)**	**(3.0)**	**(3.0)**	**(3.0)**	**(3.0)**	**(3.0)**	**(3.0)**	**(3.0)**	**(3.0)**	**(3.0)**
Track & Systems	(36.9)	-	-	-	-	(1.8)	(3.4)	(3.4)	(3.4)	(3.4)	(3.4)	(1.8)	(1.8)	(1.8)	(1.8)	(1.8)	(1.8)	(1.8)	(1.8)	(1.8)	(1.8)
Layover Facility	(3.4)	-	-	-	-	-	(0.2)	(0.2)	(0.2)	(0.2)	(0.2)	(0.2)	(0.2)	(0.2)	(0.2)	(0.2)	(0.2)	(0.2)	(0.2)	(0.2)	(0.2)
Manchester Station	(6.1)	-	-	-	-	(0.6)	(0.7)	(0.7)	(0.7)	(0.7)	(0.7)	(0.2)	(0.2)	(0.2)	(0.2)	(0.2)	(0.2)	(0.2)	(0.2)	(0.2)	(0.2)
Crown St Station	(4.3)	-	-	-	-	(0.1)	(0.3)	(0.3)	(0.3)	(0.3)	(0.3)	(0.3)	(0.3)	(0.3)	(0.3)	(0.3)	(0.3)	(0.3)	(0.3)	(0.3)	(0.3)
Bedford/MHT Station	(7.3)	-	-	-	-	(0.6)	(0.6)	(0.6)	(0.6)	(0.6)	(0.6)	(0.4)	(0.4)	(0.4)	(0.4)	(0.4)	(0.4)	(0.4)	(0.4)	(0.4)	(0.4)
South Nashua Station	(2.4)	-	-	-	-	-	(0.3)	(0.3)	(0.3)	(0.3)	(0.3)	(0.1)	(0.1)	(0.1)	(0.1)	(0.1)	(0.1)	(0.1)	(0.1)	(0.1)	(0.1)
Renewal Cashflow	**(0.0)**	-	-	-	-	**(0.0)**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Millions of YOE $	Total	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061
Renewals Funding	**162.5**	-	-	-	-	**6.6**	**12.4**	**12.8**	**13.1**	**13.5**	**13.9**	**7.9**	**8.1**	**8.3**	**8.6**	**8.9**	**9.1**	**9.4**	**9.7**	**10.0**	**10.3**
FTA Section 5307	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
FTA Section 5337	130.0	-	-	-	-	5.3	9.9	10.2	10.5	10.8	11.1	6.3	6.5	6.7	6.9	7.1	7.3	7.5	7.7	8.0	8.2
State funding	26.0	-	-	-	-	1.1	2.0	2.0	2.1	2.2	2.2	1.3	1.3	1.3	1.4	1.4	1.5	1.5	1.5	1.6	1.6
Local Funding	6.5	-	-	-	-	0.3	0.5	0.5	0.5	0.5	0.6	0.3	0.3	0.3	0.3	0.4	0.4	0.4	0.4	0.4	0.4
Renewal Expenditures	**(156.1)**	-	-	-	-	**(6.6)**	**(11.7)**	**(12.0)**	**(12.4)**	**(12.8)**	**(13.2)**	**(7.6)**	**(7.9)**	**(8.1)**	**(8.3)**	**(8.6)**	**(8.8)**	**(9.1)**	**(9.4)**	**(9.7)**	**(9.9)**
Track & Systems	(99.4)	-	-	-	-	(3.9)	(7.6)	(7.8)	(8.1)	(8.3)	(8.5)	(4.8)	(5.0)	(5.1)	(5.3)	(5.4)	(5.6)	(5.7)	(5.9)	(6.1)	(6.3)
Layover Facility	(9.5)	-	-	-	-	-	(0.5)	(0.5)	(0.5)	(0.5)	(0.5)	(0.6)	(0.6)	(0.6)	(0.7)	(0.7)	(0.7)	(0.7)	(0.7)	(0.8)	(0.8)
Manchester Station	(15.8)	-	-	-	-	(1.3)	(1.6)	(1.7)	(1.7)	(1.8)	(1.8)	(0.5)	(0.5)	(0.5)	(0.6)	(0.6)	(0.6)	(0.6)	(0.6)	(0.7)	(0.7)
Crown St Station	(11.9)	-	-	-	-	(0.2)	(0.7)	(0.7)	(0.7)	(0.7)	(0.8)	(0.7)	(0.7)	(0.8)	(0.8)	(0.8)	(0.8)	(0.9)	(0.9)	(0.9)	(0.9)
Bedford/MHT Station	(19.6)	-	-	-	-	(1.3)	(1.3)	(1.4)	(1.4)	(1.4)	(1.5)	(1.0)	(1.0)	(1.0)	(1.1)	(1.1)	(1.1)	(1.2)	(1.2)	(1.2)	(1.3)
South Nashua Station	(6.4)	-	-	-	-	-	(0.7)	(0.7)	(0.7)	(0.8)	(0.8)	(0.2)	(0.2)	(0.3)	(0.3)	(0.3)	(0.3)	(0.3)	(0.3)	(0.3)	(0.3)
Renewal Cashflow	**6.4**	-	-	-	-	**(0.0)**	**0.7**	**0.7**	**0.7**	**0.8**	**0.8**	**0.2**	**0.2**	**0.3**	**0.3**	**0.3**	**0.3**	**0.3**	**0.3**	**0.3**	**0.3**

Figure B-iii. Cash Flow Analysis for Renewal Plan in 2022 $ (millions) for All Funding Scenarios and High Pandemic Impact

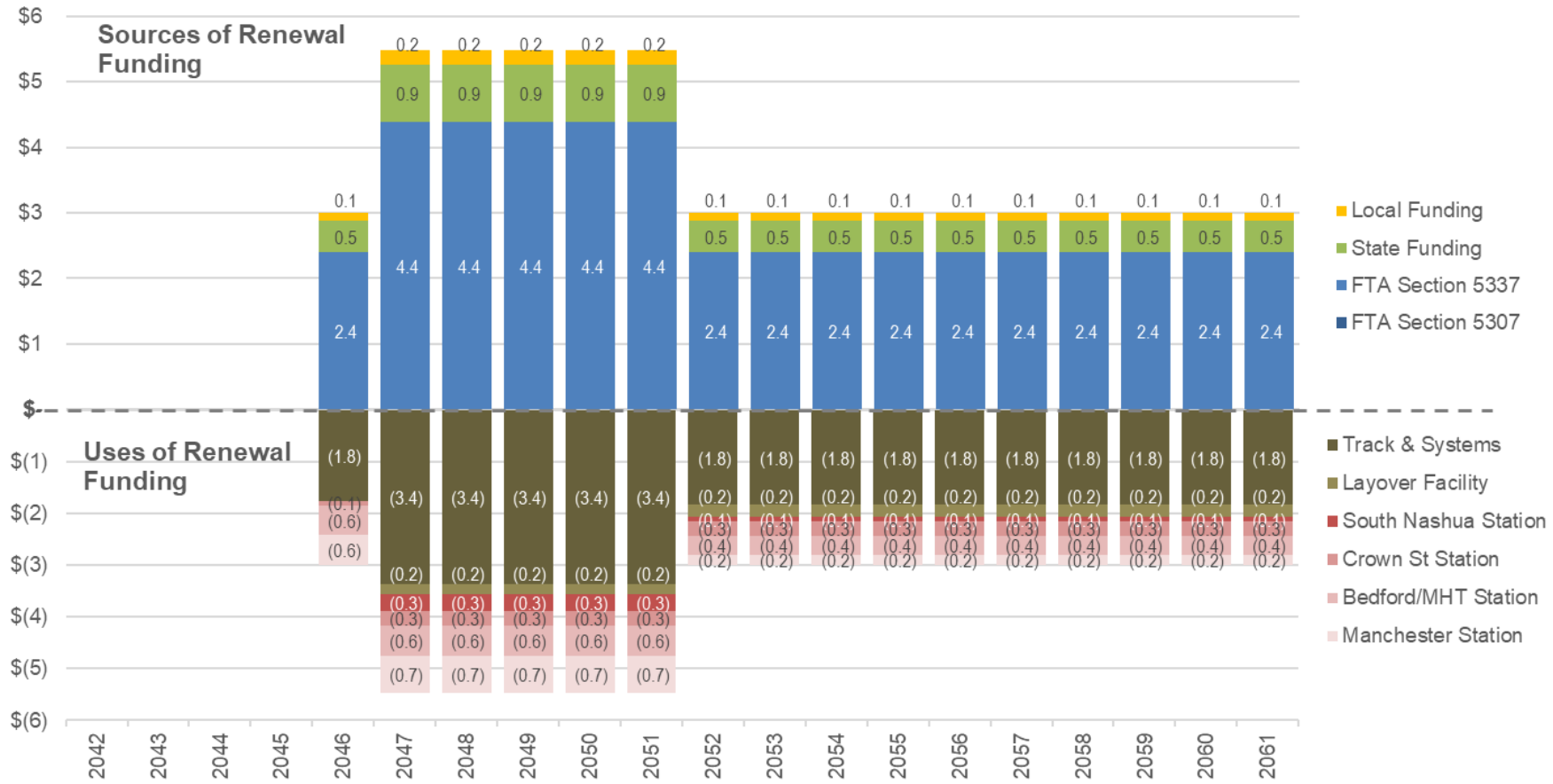
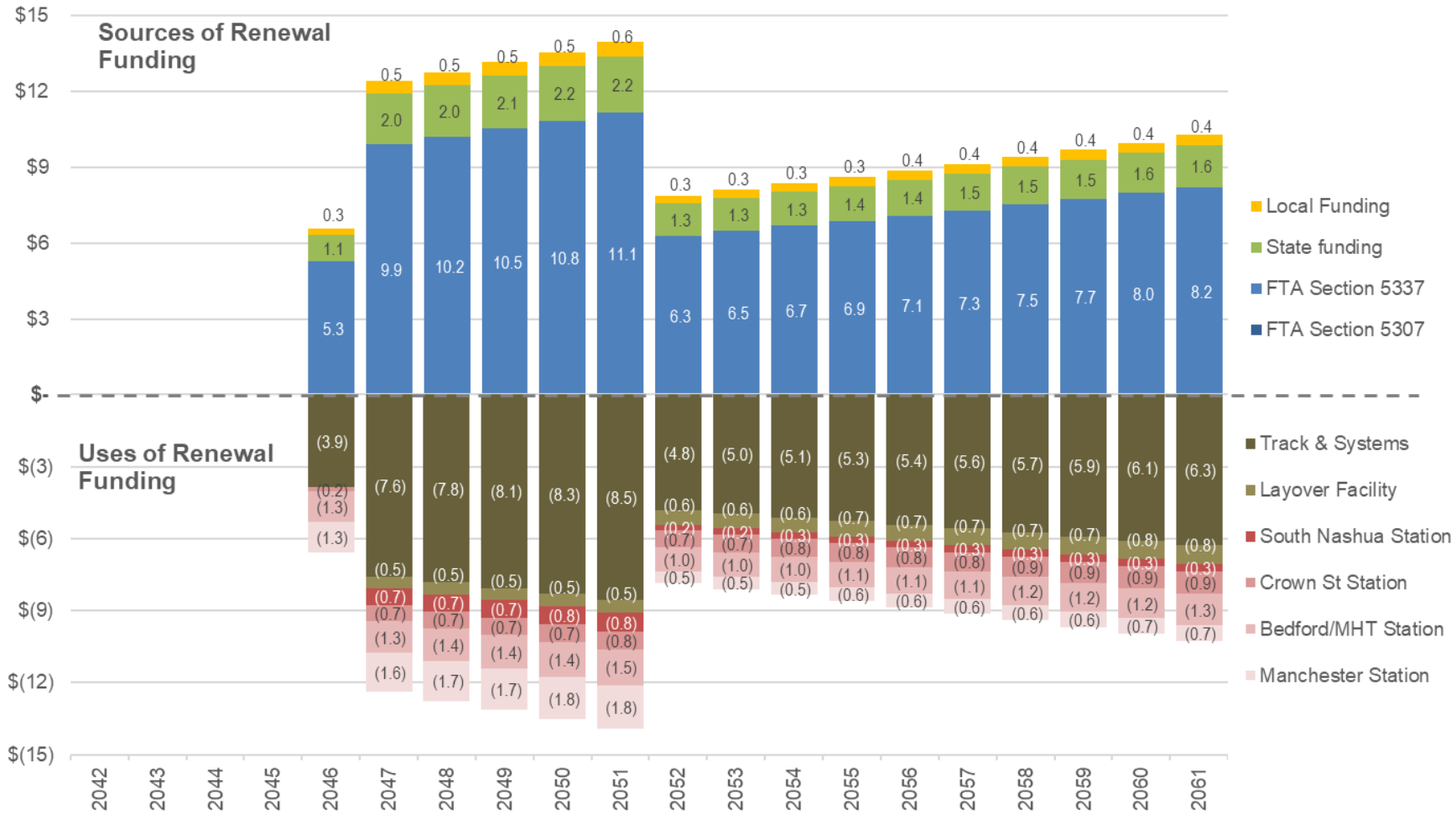


Figure B-iv. Cash Flow Analysis for Renewal Plan in YOE $ (millions) for All Funding Scenarios and High Pandemic Impact



Appendix C: O&M Cash Flow Analysis

Cash Flow Analysis for O&M Plan for Low and High Pandemic Impact on Ridership Scenarios

Table C-i. Cash Flow Analysis for O&M Plan in 2022 $ and YOE $ (millions) for All Funding Scenarios and Low Pandemic Impact

Millions of 2022 $	Total	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041
O&M Funding	**190.2**	-	-	-	-	-	-	-	-	-	**17.3**	**17.3**	**17.3**	**17.3**	**17.3**	**17.3**	**17.3**	**17.3**	**17.3**	**17.3**	**17.3**
Project Revenue	**161.5**	-	-	-	-	-	-	-	-	-	**6.5**	**11.3**	**14.5**	**16.1**	**16.1**	**16.1**	**16.1**	**16.1**	**16.1**	**16.1**	**16.1**
Fare Revenue	160.3	-	-	-	-	-	-	-	-	-	6.41	11.22	14.43	16.03	16.03	16.03	16.03	16.03	16.03	16.03	16.03
Advertising Revenue	1.2	-	-	-	-	-	-	-	-	-	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11
FTA Section 5307	**6.6**	-	-	-	-	-	-	-	-	-	-	-	**0.73**	**0.73**	**0.73**	**0.73**	**0.73**	**0.73**	**0.73**	**0.73**	**0.73**
State operating subsidy	**20.0**	-	-	-	-	-	-	-	-	-	**10.55**	**5.74**	**1.83**	**0.23**	**0.23**	**0.23**	**0.23**	**0.23**	**0.23**	**0.23**	**0.23**
Local Funding	**2.2**	-	-	-	-	-	-	-	-	-	**0.2**	**0.2**	**0.2**	**0.2**	**0.2**	**0.2**	**0.2**	**0.2**	**0.2**	**0.2**	**0.2**
Manchester Station	1.1	-	-	-	-	-	-	-	-	-	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
Nashua Crown St Station	1.1	-	-	-	-	-	-	-	-	-	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
O&M Uses	**(190.0)**	-	-	-	-	-	-	-	-	-	**(17.3)**	**(17.3)**	**(17.3)**	**(17.3)**	**(17.3)**	**(17.3)**	**(17.3)**	**(17.3)**	**(17.3)**	**(17.3)**	**(17.3)**
Weekday	(164.7)	-	-	-	-	-	-	-	-	-	(15.0)	(15.0)	(15.0)	(15.0)	(15.0)	(15.0)	(15.0)	(15.0)	(15.0)	(15.0)	(15.0)
Weekend	(25.3)	-	-	-	-	-	-	-	-	-	(2.3)	(2.3)	(2.3)	(2.3)	(2.3)	(2.3)	(2.3)	(2.3)	(2.3)	(2.3)	(2.3)
Alloc. of surplus to renewals	(0.0)	-	-	-	-	-	-	-	-	-	0.0	0.0	0.0	(0.0)	(0.0)	-	-	-	-	(0.0)	-
O&M Cash Flow	**0.3**	-	-	-	-	-	-	-	-	-	-	-	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**

Millions of YOE $	Total	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041
O&M Funding	**263.1**	-	-	-	-	-	-	-	-	-	**21.6**	**22.1**	**22.5**	**22.9**	**23.4**	**23.9**	**24.4**	**24.8**	**25.3**	**25.8**	**26.4**
Project Revenue	**228.2**	-	-	-	-	-	-	-	-	-	**8.3**	**14.6**	**19.2**	**21.7**	**22.1**	**22.6**	**23.0**	**23.5**	**23.9**	**24.4**	**24.9**
Fare Revenue	226.6	-	-	-	-	-	-	-	-	-	8.1	14.5	19.0	21.5	22.0	22.4	22.9	23.3	23.8	24.3	24.8
Advertising Revenue	1.6	-	-	-	-	-	-	-	-	-	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2
FTA Section 5307	**9.0**	-	-	-	-	-	-	-	-	-	-	-	**0.9**	**0.9**	**1.0**	**1.0**	**1.0**	**1.0**	**1.0**	**1.1**	**1.1**
State operating subsidy	**22.8**	-	-	-	-	-	-	-	-	-	**13.1**	**7.2**	**2.2**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**
Local Funding	**3.1**	-	-	-	-	-	-	-	-	-	**0.3**	**0.3**	**0.3**	**0.3**	**0.3**	**0.3**	**0.3**	**0.3**	**0.3**	**0.3**	**0.3**
Manchester Station	1.5	-	-	-	-	-	-	-	-	-	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2
Nashua Crown St Station	1.5	-	-	-	-	-	-	-	-	-	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2
O&M Uses	**(266.2)**	-	-	-	-	-	-	-	-	-	**(21.9)**	**(22.3)**	**(22.8)**	**(23.2)**	**(23.7)**	**(24.2)**	**(24.6)**	**(25.1)**	**(25.6)**	**(26.1)**	**(26.7)**
Weekday	(230.8)	-	-	-	-	-	-	-	-	-	(19.0)	(19.3)	(19.7)	(20.1)	(20.5)	(20.9)	(21.4)	(21.8)	(22.2)	(22.7)	(23.1)
Weekend	(35.4)	-	-	-	-	-	-	-	-	-	(2.9)	(3.0)	(3.0)	(3.1)	(3.2)	(3.2)	(3.3)	(3.3)	(3.4)	(3.5)	(3.5)
Alloc. of surplus to renewals	(0.0)	-	-	-	-	-	-	-	-	-	0.0	0.0	0.0	(0.0)	(0.0)	-	-	-	-	(0.0)	-
O&M Cash Flow	**(3.1)**	-	-	-	-	-	-	-	-	-	**(0.3)**	**(0.3)**	**(0.3)**	**(0.3)**	**(0.3)**	**(0.3)**	**(0.3)**	**(0.3)**	**(0.3)**	**(0.3)**	**(0.3)**

**State operating subsidy is higher the combined maintenance cost of Bedford/MHT and South Nashua stations because it is covering a small gap in federal funding caused by differential inflation rates between this source and fare revenue.*

Millions of 2022 $

Figure C-i. Cash Flow Analysis for O&M Plan in 2022 $ (millions) for All Funding Scenarios and Low Pandemic Impact

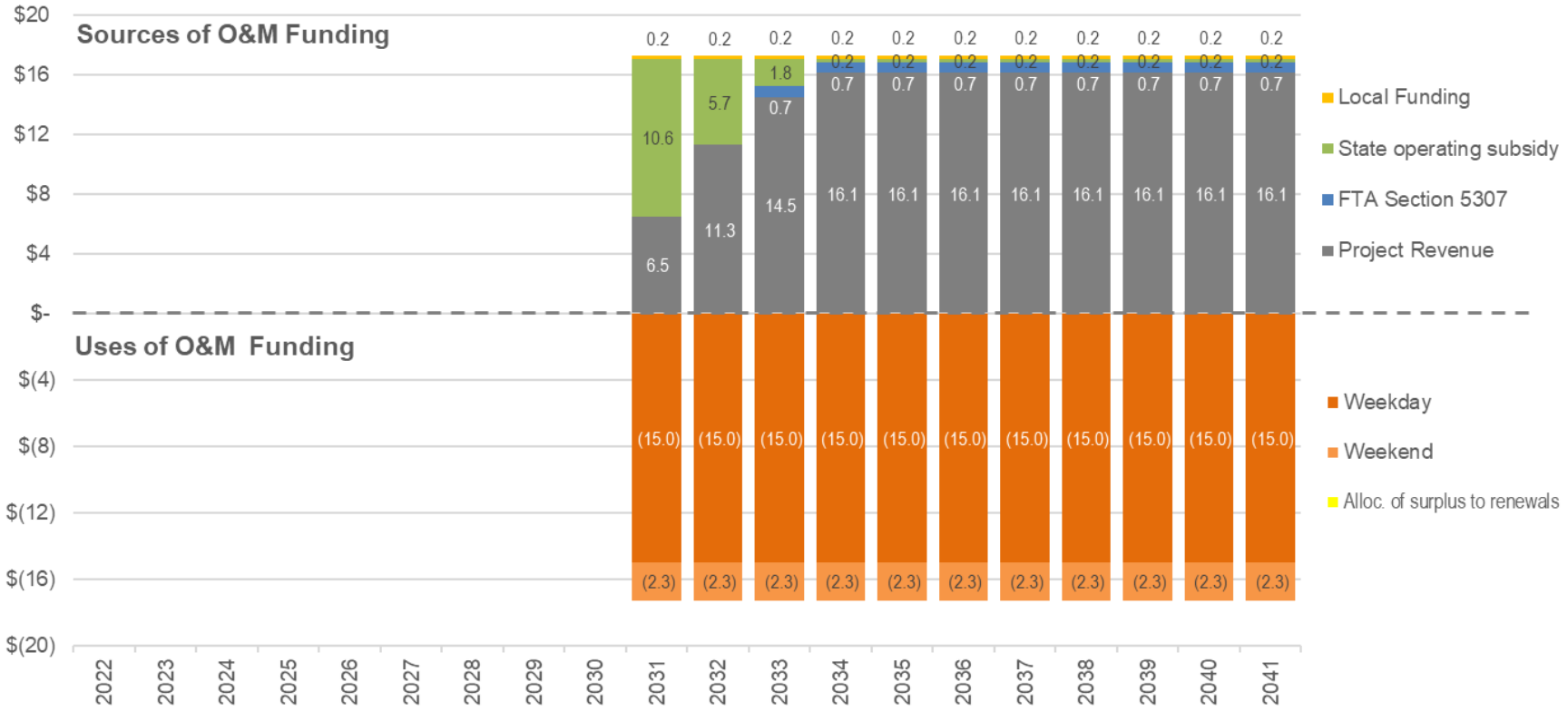


Figure C-ii. Cash Flow Analysis for O&M Plan in YOE $ (millions) for All Funding Scenarios and Low Pandemic Impact

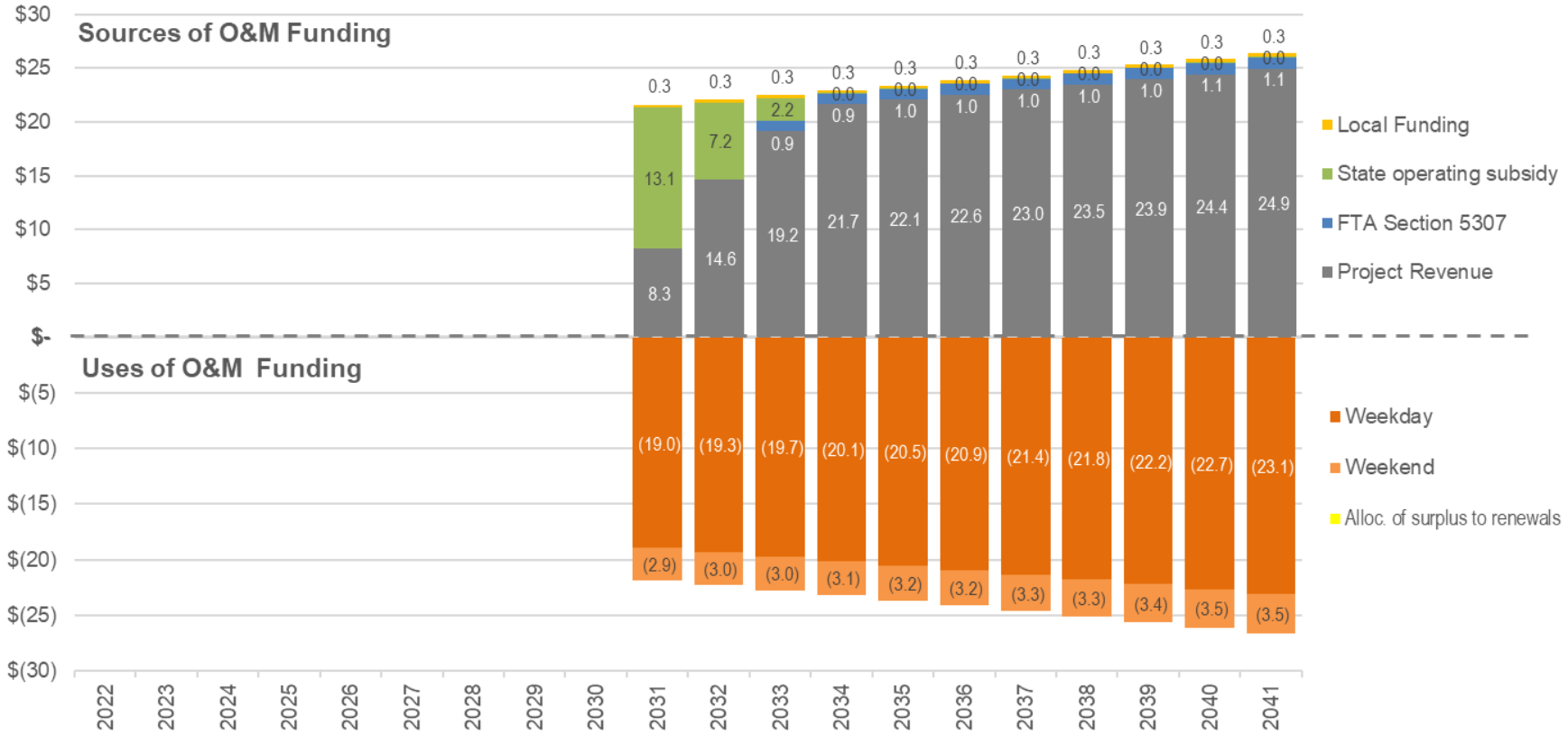


Table C-ii. Cash Flow Analysis for O&M Plan in 2022 $ and YOE $ (millions) for All Funding Scenarios and High Pandemic Impact

Millions of 2022 $	Total	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041
O&M Funding	**191.7**	-	-	-	-	-	-	-	-	-	**17.3**	**17.3**	**17.5**	**17.5**	**17.5**	**17.5**	**17.5**	**17.5**	**17.5**	**17.5**	**17.5**
Project Revenue	**100.9**	-	-	-	-	-	-	-	-	-	**4.1**	**7.1**	**9.1**	**10.1**	**10.1**	**10.1**	**10.1**	**10.1**	**10.1**	**10.1**	**10.1**
Fare Revenue	100.1	-	-	-	-	-	-	-	-	-	4.01	7.01	9.01	10.01	10.01	10.01	10.01	10.01	10.01	10.01	10.01
Advertising Revenue	0.7	-	-	-	-	-	-	-	-	-	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07
FTA Section 5307	**40.5**	-	-	-	-	-	-	-	-	-	-	-	**4.50**	**4.50**	**4.50**	**4.50**	**4.50**	**4.50**	**4.50**	**4.50**	**4.50**
State operating subsidy	**48.0**	-	-	-	-	-	-	-	-	-	**13.00**	**9.99**	**3.68**	**2.68**	**2.67**	**2.67**	**2.67**	**2.67**	**2.67**	**2.67**	**2.67**
Local Funding	**2.2**	-	-	-	-	-	-	-	-	-	**0.2**	**0.2**	**0.2**	**0.2**	**0.2**	**0.2**	**0.2**	**0.2**	**0.2**	**0.2**	**0.2**
Manchester Station	1.1	-	-	-	-	-	-	-	-	-	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
Nashua Crown St Station	1.1	-	-	-	-	-	-	-	-	-	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
O&M Uses	**(190.0)**	-	-	-	-	-	-	-	-	-	**(17.3)**	**(17.3)**	**(17.3)**	**(17.3)**	**(17.3)**	**(17.3)**	**(17.3)**	**(17.3)**	**(17.3)**	**(17.3)**	**(17.3)**
Weekday	(164.7)	-	-	-	-	-	-	-	-	-	(15.0)	(15.0)	(15.0)	(15.0)	(15.0)	(15.0)	(15.0)	(15.0)	(15.0)	(15.0)	(15.0)
Weekend	(25.3)	-	-	-	-	-	-	-	-	-	(2.3)	(2.3)	(2.3)	(2.3)	(2.3)	(2.3)	(2.3)	(2.3)	(2.3)	(2.3)	(2.3)
Alloc. of surplus to renewals	0.0	-	-	-	-	-	-	-	-	-	-	0.0	(0.0)	0.0	0.0	0.0	0.0	-	(0.0)	0.0	0.0
O&M Cash Flow	**1.7**	-	-	-	-	-	-	-	-	-	-	-	**0.2**	**0.2**	**0.2**	**0.2**	**0.2**	**0.2**	**0.2**	**0.2**	**0.2**

Millions of YOE $	Total	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041
O&M Funding	**263.1**	-	-	-	-	-	-	-	-	-	**21.6**	**22.1**	**22.5**	**22.9**	**23.4**	**23.9**	**24.4**	**24.8**	**25.3**	**25.8**	**26.4**
Project Revenue	**142.6**	-	-	-	-	-	-	-	-	-	**5.2**	**9.1**	**12.0**	**13.6**	**13.8**	**14.1**	**14.4**	**14.7**	**15.0**	**15.3**	**15.6**
Fare Revenue	141.6	-	-	-	-	-	-	-	-	-	5.1	9.1	11.9	13.5	13.7	14.0	14.3	14.6	14.9	15.2	15.5
Advertising Revenue	1.0	-	-	-	-	-	-	-	-	-	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
FTA Section 5307	**55.5**	-	-	-	-	-	-	-	-	-	-	-	**5.7**	**5.8**	**5.9**	**6.0**	**6.2**	**6.3**	**6.4**	**6.5**	**6.7**
State operating subsidy	**62.0**	-	-	-	-	-	-	-	-	-	**16.2**	**12.7**	**4.6**	**3.3**	**3.4**	**3.5**	**3.5**	**3.6**	**3.7**	**3.7**	**3.8**
Local Funding	**3.1**	-	-	-	-	-	-	-	-	-	**0.3**	**0.3**	**0.3**	**0.3**	**0.3**	**0.3**	**0.3**	**0.3**	**0.3**	**0.3**	**0.3**
Manchester Station	1.5	-	-	-	-	-	-	-	-	-	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2
Nashua Crown St Station	1.5	-	-	-	-	-	-	-	-	-	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2
O&M Uses	**(266.2)**	-	-	-	-	-	-	-	-	-	**(21.9)**	**(22.3)**	**(22.8)**	**(23.2)**	**(23.7)**	**(24.2)**	**(24.6)**	**(25.1)**	**(25.6)**	**(26.1)**	**(26.7)**
Weekday	(230.8)	-	-	-	-	-	-	-	-	-	(19.0)	(19.3)	(19.7)	(20.1)	(20.5)	(20.9)	(21.4)	(21.8)	(22.2)	(22.7)	(23.1)
Weekend	(35.4)	-	-	-	-	-	-	-	-	-	(2.9)	(3.0)	(3.0)	(3.1)	(3.2)	(3.2)	(3.3)	(3.3)	(3.4)	(3.5)	(3.5)
Alloc. of surplus to renewals	0.0	-	-	-	-	-	-	-	-	-	-	0.0	(0.0)	0.0	0.0	0.0	0.0	-	(0.0)	0.0	0.0
O&M Cash Flow	**(3.1)**	-	-	-	-	-	-	-	-	-	**(0.3)**	**(0.3)**	**(0.3)**	**(0.3)**	**(0.3)**	**(0.3)**	**(0.3)**	**(0.3)**	**(0.3)**	**(0.3)**	**(0.3)**

Figure C-iii. Cash Flow Analysis for O&M Plan in 2022 $ (millions) for All Funding Scenarios and High Pandemic Impact

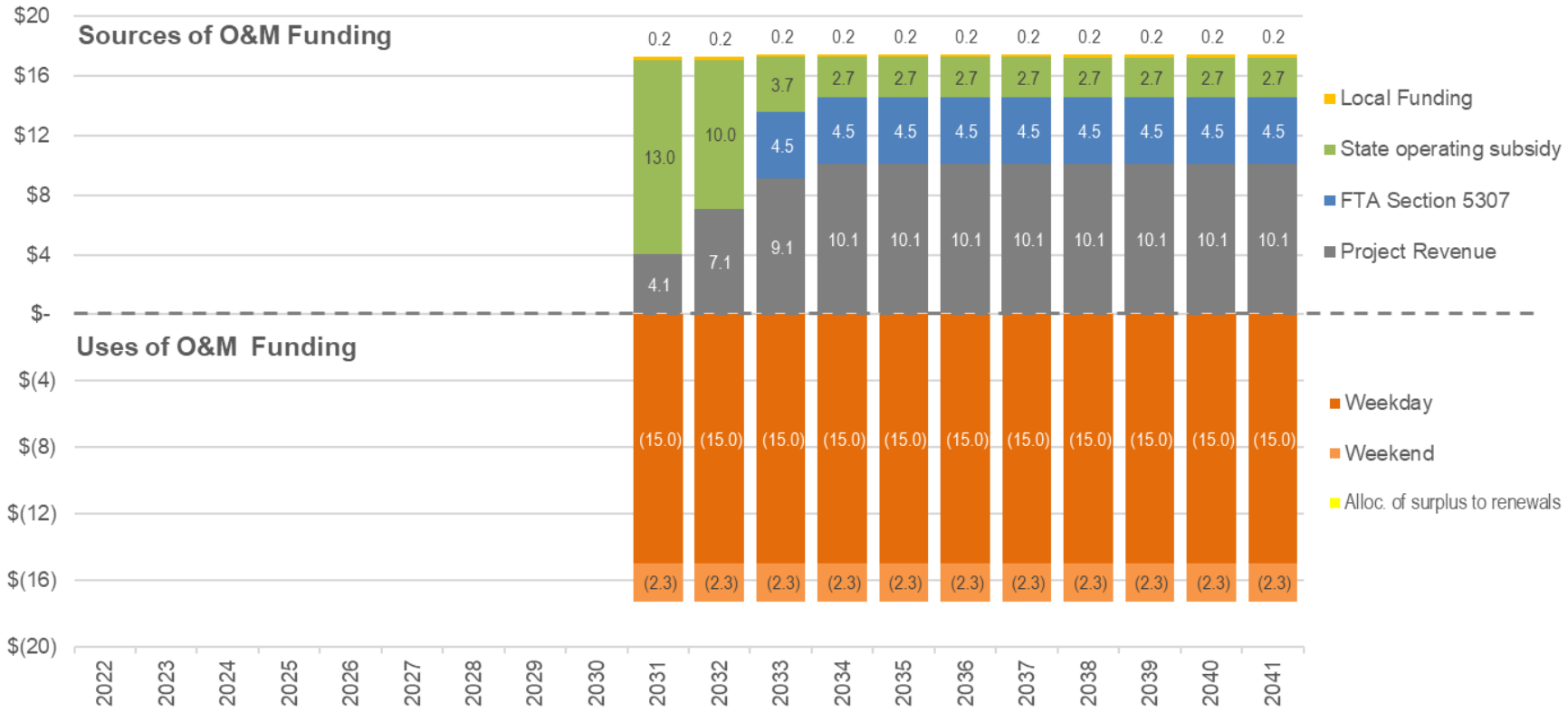


Figure C-iv. Cash Flow Analysis for O&M Plan in YOE $ (millions) for All Funding Scenarios and High Pandemic Impact